Part I

Getting Started With Ubuntu and Kubuntu

Chapter 1

The Ubuntu Linux Project

Personal computers and their operating systems have come a long way since the late 1970s, when the first home computer hit the market. At that time, you could only toggle in a program by flipping switches on the front of the machine, and the machine could then run that program and only that program until you manually loaded another, at which time the first program was kicked off the system. Today's personal computers provide powerful graphics and a rich user interface that make it easy to select and run a wide variety of software concurrently.

The first home computer users were a community of interested people who just wanted to do something with these early machines. They formed computer clubs and published newsletters to share their interests and knowledge — and often the software that they wrote for and used on their machines. Sensing opportunities and a growing market, thousands of computer companies sprang up to write and sell specific applications for the computer systems of the day. This software ranged from applications such as word processors, spreadsheets, and games to operating systems that made it easier to manage, load, and execute different programs.

Although the power and capabilities of today's personal computers is light-years beyond the capabilities of those early machines, the idea of writing software and freely sharing it with others never went away. While it never got much press because nobody was making money from it, free software (and often its source code) has continued to be available from computer clubs, bulletin boards systems, and computer networks such as today's Internet. The free software movement finally blossomed with three seminal events:

- The creation of the GNU Project (`www.gnu.org`) by Richard Stallman in 1983, a project dedicated to developing software whose source code would always be freely available

- The announcement of the Free Software Foundation (FSF) (`www.fsf.org`), initially dedicated to fundraising for the GNU project

- The introduction of a free operating system project in 1991 that came to be known as Linux, by a Finnish computer software student named Linus Torvalds

The book that you hold in your hands wouldn't exist without these three events, the resulting shockwave of independence and empowerment, and the perpetuation of the community spirit throughout the computer industry that these events (and many related ones) caused. Sometimes, if you're lucky, the more things change, the more they stay the same.

The operating system and applications discussed in this book are free, and their source code is freely available. Anyone who wants to can build, install, and run them. A huge online community of users has sprung up around them, including specialized groups who create easily installed sets of this software, known as Linux distributions. This chapter explores the philosophy, community, and history behind one of the newest, and arguably the best, of these easily obtained, easily installed, and easy-to-use free software environments, known as the Ubuntu Linux distribution.

Background

The emergence of Linux, a freely available operating system, is a landmark event in modern personal computing. Today, Linux is arguably the most popular operating system in use for server environments, and is quickly gaining significant numbers of users as a personal computer operating system for home use. The following two sections provide some background on Linux if you're just considering adopting it or are unfamiliar with some standard Linux terms such as the idea of a Linux distribution. If you're already familiar with Linux and are interested in Ubuntu as your Linux distribution of choice, you can skip this section and go directly to "Introducing Ubuntu Linux."

Why Use Linux?

Presumably, you've bought this book because you want to use Linux, but if you're just reading to find out why you might want to do so, some common reasons for using Linux are the following:

■ **Powerful, modern design:** Linux was designed from the ground up to enable you to run multiple programs at the same time and to provide services that your computer and others can use. Most other desktop computer operating systems, such as Microsoft Windows, started out as small operating systems that could run only one program at a time, and they have been trying to catch up ever since.

■ **Freely available source code means no lock-in to a single vendor:** Regardless of the operating system that you're currently using, you may have encountered problems with applications or the way things worked. However, if you're using an off-the-shelf operating system from Microsoft or Apple, you can get fixes and updates only from Microsoft or Apple. Linux is open and free, so if you don't like the way that Red Hat's Linux works, how much it costs, or the type of customer support that's available, you can always switch to Novell's SUSE Linux, Mandriva Linux, or (preferably) to Ubuntu Linux.

■ **Thousands of free, powerful applications:** Need a word processor? Download and install OpenOffice Writer, AbiWord, Kwrite, or dozens of others. Need a database? Download and install MySQL, PostgreSQL, or many others. Need to create graphics or manipulate digital photographs? It doesn't get much better than GIMP (GNU Image Manipulation Program). If anything, a problem with Linux can be that you have too many choices, none of which cost money.

■ **Support for standards:** Linux and Linux applications are designed to support standards, because standards are the language of free intellectual commerce. Linux applications support modern application and data formats for audio, multimedia, document formatting, spreadsheet data, and

many more. Because Linux is open and free, there can be no such thing as a proprietary Linux data or application format. This not only fosters data exchange between Linux applications, but also guarantees that you'll always be able to get to your data.

- **Lower total cost of ownership:** If you want to use Linux on your desktop or throughout your business, it's free to obtain and there are legions of Linux wizards available who can help you do whatever you want with it. There are no licensing fees — if you need to pay for something, you can pay for updates and support from the vendor of your Linux distribution.
- **Stable, powerful, and virus-free:** Linux is a mature, multiuser system that is dependable, stable, has built-in security and is immune to viruses except through system administration slipups.

It used to be the case that using Linux required some amount of special knowledge, but that's basically not the case any longer. Linux distributions such as Ubuntu make Linux easy — or, more properly, they make Linux invisible. As you'll see throughout the rest of this book, Ubuntu Linux provides an easy-to-use operating system and all of the applications that you need to do almost anything. The goal of this book is to explore Ubuntu Linux and its sister distribution, Kubuntu, explain how to have fun and get work done with them, and to provide any special details, insights, or knowledge that you might need. Shhh! Your grandmother doesn't have to know that she's running Linux.

What Is a Linux Distribution?

If you've been curious about Linux for a while, you've probably noticed that a bewildering number of different versions of it seem to be available. Computer magazines and Linux-related Web sites discuss Red Hat Linux, SUSE Linux, the Novell Linux Desktop, Fedora Core Linux, and many other things ending in Linux, each available from a different company or organization. Understanding exactly what people mean when they say "Linux" is the key to understanding how so many different versions of the same thing can be available, but that requires a little insight into how personal computers actually work in terms of software.

When you install an operating system such as Linux, Microsoft Windows, or Apple's Mac OS X on your computer system, you're installing some amount of software that is invisible to any regular user because it runs behind the scenes. This software handles scheduling, starting, and stopping different programs, communicating with your computer's hardware, handling communications with peripherals such as your printer, and so on. This is generally known as system software because regular users don't directly interact with it, but it needs to be present and running to provide the services that application software relies on. The core piece of this system software is usually referred to as a *kernel* because it is the central piece of the operating system and everything else builds upon the fundamental services that it provides.

By itself, a kernel isn't very interesting — people don't actually want to run a kernel, they want to run applications. These applications depend on services that are provided both by the kernel and by other system software. For example, if you want to print a file, whatever application you're using needs to create a version of your file that is formatted in a way that your printer understands, and then schedule that file for printing. Another piece of software handles sending the formatted file to the printer, making sure that the file prints correctly, and so on.

In popular usage, "Linux" is the collective name for an operating system kernel and its associated applications. In reality, Linux is technically the name of just the kernel — most of the applications that anyone uses with Linux come from other free software projects. A *Linux distribution* is the correct term for a Linux kernel, a set of applications that can run on top of it (regardless of where they come from), and a tool to install everything and configure your system. Each company or organization that provides a Linux

distribution is taking advantage of the open source nature of the Linux kernel and the applications that run on top of it by putting together the "right" version of the Linux kernel with what they view as the "right" collection of core applications that anyone would want to run on top of it.

> **NOTE**   **Because many of the key applications that systems running the Linux kernel depend upon have their roots in the GNU project, the historically proper way of referring to a Linux distribution is as a GNU/Linux distribution. However, given the number of other projects that have made huge contributions to today's Linux distributions, this book simply refers to the term as Linux distributions, rather than as GNU/GNOME/KDE/TeX/*your-favorite-project-here/* Linux distributions. This in no way minimizes the fundamental and huge contributions that the GNU projects and the FSF have made to modern computing. I'm an FSF member, and strongly suggest that you should be one, too. See `www.fsf.org/associate` for details. It's always a good idea to support the things that you believe in (and depend on).**

Of course, getting a CD or DVD that just contained a bunch of software would be next to useless without some easy way of installing it, configuring it so that it works with your particular computer system (identifying peripherals, setting it up to communicate over your network or with your ISP, creating user accounts, and so on). Therefore, anyone who puts together a Linux distribution also provides a tool for installing and configuring the system, which is generally what runs when you boot from a Linux CD or DVD for the first time. This installation and configuration tool generally leverages a package management system that makes it easy to add or remove sets of related applications, identifying dependencies between different software components to ensure that the applications that you install will actually execute correctly.

Linux distributions are the key to understanding how Linux can be free and sold at the same time. The source code for the Linux kernel and open source applications is indeed freely available from thousands of sites on the Internet. Anyone who wants it can get it, but putting it all together in an easily installable, usable form is another thing entirely. When people sell a Linux distribution, they are basically just charging you for the media that it comes on, the time and effort that they invested in putting it all together, and (in some cases) "charging in advance" for any customer support that you might need if you encounter installation or initial configuration problems.

Developing Linux distributions and making them widely available has been critical to the adoption of Linux as an operating system because these distributions have made it possible for people to actually install and use Linux, the GNU utilities, and so on.

Introducing Ubuntu Linux

Ubuntu Linux is a Linux distribution founded in 2004. Originally focused on the needs of desktop and laptop users, Ubuntu has branched out since then, and now also offers distributions focused on the needs of commercial users with its Ubuntu Server distribution, Ubuntu JeOS for virtualization platforms, and Ubuntu Mobile for mobile and embedded devices such as smart phones, Internet tablets, and so on. All of these flavors of Ubuntu Linux are products of the Ubuntu project sponsored by Canonical, Ltd. (`www.canonical.com`), a company founded by Mark Shuttleworth, a successful South African entrepreneur, long-time Debian Linux developer, and general open source advocate. Ubuntu is a Debian-based Linux distribution (more about that later in this chapter) that uses a graphical user interface known as GNOME as its desktop environment. (GNOME is discussed in detail in Chapter 5, "Using the GNOME Desktop.") Sister projects (officially known as "Ubuntu Editions") to Desktop Ubuntu include:

- Kubuntu, a version of Ubuntu that uses the KDE desktop environment instead of GNOME. Versions of KDE are discussed in Chapter 7, "Using the KDE 3 Desktop" and Chapter 8, "Using the KDE 4 Desktop," and KDE applications are discussed throughout this book.

- Xubuntu, a version of Ubuntu that uses the lighter-weight Xfce desktop.

- Gobuntu, a version of Ubuntu that uses completely open source software.

- Edubuntu, a version of Ubuntu that focuses on educational applications and popularizing the use of Linux in schools.

NOTE   **All of the versions of Ubuntu are built and distributed in the same way, and simply target different groups of users. Aside from their target audience, the only real differences between them are how they are installed, the set of applications that they provide when they are first installed, and how the Linux operating system itself is pre-configured for each. For more information about these different editions of Ubuntu, and what differentiates them from each other, see the section later in this chapter entitled "What Versions of Ubuntu Are Available?"**

Everything has to have a name, but what is the Ubuntu in *Ubuntu Linux*? Not too surprisingly, the Ubuntu Linux Web site puts it best:

> Ubuntu is an ancient African word, meaning "humanity to others." Ubuntu also means "I am what I am because of who we all are." The Ubuntu Linux distribution brings the spirit of Ubuntu to the software world.

Although that may be a bit touchy-feely for some, it's hard to argue with success and commitment. In 2005, its first year of availability, Ubuntu Linux received awards such as the *Linux Journal*'s Reader's Choice award, *Tux Magazine*'s Reader's Choice 2005 for Favorite Linux Distribution award, Ars Technica's Best Distribution award, the UK Linux & Open Source Industry's Best Distribution award, and the Linux World Expo's Best Debian Derivative Distribution award. Not too shabby for the new distribution on the block. Since 2005, Ubuntu has almost always been the most popular Linux distribution listed on the central Linux distribution site `www.distrowatch.org`. Ubuntu's popularity with users extends to computer vendors as well — computer hardware vendors such as Dell Computer have selected Ubuntu as their distribution of choice to ship with new hardware.

Aside from its technical excellence and usability (and some good funding thanks to Mark Shuttleworth), much of the success to date of Ubuntu Linux grows from the fact that its creators and proponents are not just the traditional Linux fanatics, but are genuinely committed to creating and promoting a usable and easily managed Linux distribution for end users all over the world.

The Ubuntu Manifesto

The Ubuntu Manifesto is a mission statement phrased in the classic manifesto form much beloved of artistic and political movements. The Ubuntu Manifesto is available online in the Philosophy section of the Ubuntu Web site (`www.ubuntulinux.org/ubuntu/philosophy`). Its core ideas are as follows:

- Every computer user should have the freedom to run, copy, distribute, study, share, change, and improve his software for any purpose, without paying licensing fees.

- Every computer user should be able to use her software in the language of her choice.

- Every computer user should be given every opportunity to use software, even if the user works under a disability.

The first bullet is largely a clear restatement of the goals of open source software in general, but the second and third bullets are two of the big drivers for the success of Ubuntu.

Internationalization is the term for producing software that is capable of displaying all prompts, dialogs, system messages, and so on, in any user's native language and any specific character set used with that language. The term internationalization is such a mouthful that it is frequently referred to as *i18n* because the word *internationalization* consists of the letter "i" followed by 18 letters and ends with an "n." The two aspects of i18n are *translation*, ensuring that versions of operating system and application messages and text are available in other languages, and *localization*, which ensure that messages and text can be displayed in a language's native character set(s). Amusingly, localization is often referred to as *l10n*.

Linux and its applications have been focused on i18n for years, thanks to initiatives such as the Linux Internationalization Initiative (`www.li18nux.net/`, known as *Li18nux*) and the Free Standards Group's Open Internationalization Initiative (`www.openi18n.org/`). These initiatives focus on ensuring that open source applications take i18n into account when developing, maintaining, and enhancing code. Many of the structural enhancements to the last few releases of desktop environments such as GNOME and KDE have been related to making sure that these environments and their applications support different languages and character sets.

The key to successful internationalization is two-fold — not only do applications and graphical environments need to support multiple languages and character sets, but the translations of prompts, dialogs, and system messages have to be available. Ubuntu's focus on a truly usable Linux distribution for an international audience has helped it become a hub for translation and localization work in Linux (`www.ubuntulinux.org/community/participate#l10n`) and GNOME (its primary graphical environment — more about that later) through an online translation system known as Rosetta (`https://launchpad.net/rosetta`), documentation translation efforts, active mailing lists, and other resources.

> **TIP** For additional information about Linux Internationalization, see additional Web resources such as the i18nGurus' Linux Internationalization Resources page at `www.i18ngurus.com/docs/984813514.html` **and the Linux Internationalization HOWTO, available online at sites such as** `http://home.no.net/david/i18n.php`.

Although many of the structural enhancements to the last few releases of desktop environments such as GNOME and KDE have been related to internationalization, a great deal of work has also been done to make Linux graphical environments easier to use by people with disabilities. Ensuring that graphical applications provide keyboard or gesture shortcuts for all menu commands and dialog interaction has been a growing focus for GNOME, KDE, and graphical application development. Ubuntu's emphasis on usability is a boon to all computer users, regardless of whether or not they have a physical disability.

> **TIP** For additional information about Linux Accessibility projects and usability awareness, see additional Web resources such as the Linux Accessibility HOWTO (`www.tldp.org/HOWTO/Accessibility-HOWTO/`), the Linux Developers Accessibility HOWTO (`http://larswiki.atrc.utoronto.ca/wiki`), and the Linux Accessibility Resource Site (`http://larswiki.atrc.utoronto.ca/wiki`).

Ubuntu and Kubuntu Release Schedule

Given the pace of open source software development, it's important for anyone who depends on a Linux distribution to be able to get the latest and greatest kernels and versions of software packages. Kernel and associated device driver improvements provide security fixes, facilitate the use of the latest hardware, and often provide performance improvements in the handling of existing devices and protocols. The latest versions of software packages typically provide improvements in both capabilities and usability. Because

the open source community model virtually guarantees that thousands of improvements are in progress at any given moment, delivering an integrated and tested version of the latest and greatest Linux kernel and supported software packages is a complex task, but is one that is extremely important to the success and widespread adoption of any Linux distribution.

The Ubuntu folks deliver a fresh Ubuntu release every six months. These regular releases provide an up-to-date and tested kernel and a well-tested, integrated set of user software including the X Window system release from X.Org, the latest stable GNOME desktop, and core Linux and GNOME applications including Ubuntu-specific applications and customizations. Kubuntu releases, which use the same set of packages as Ubuntu with the exception of the KDE desktop and KDE-based applications, follow the same schedule as Ubuntu releases.

A regular release schedule is something that is unique in the Linux space, and has led to a unique approach to version numbering for Ubuntu releases. Traditional software releases are numbered according to major and minor release numbers, where the major release number is essentially arbitrary and generally indicates some major upgrade in functionality. For example, in traditional release numbering, version 4.2 is the minor release of version 4 of the software that follows version 4.1. Ubuntu uses major release numbers that identify the year in which the software was released, and what appear to be the minor numbers actually represent the month in which the release was made. Therefore, version 8.04 is the Ubuntu release from the fourth month of 2008. In typical, lighthearted Linux fashion, each Ubuntu release also has a nickname. The following are the Ubuntu releases to date:

- 4.10: Warty Warthog (October, 2004)
- 5.04: Hoary Hedgehog (April, 2005)
- 5.10: Breezy Badger (October, 2005)
- 6.06 LTS: Dapper Drake (June, 2006) a Long Term Support (LTS) release
- 6.10: Edgy Eft (October, 2006)
- 7.04: Feisty Fawn (April, 2007)
- 7.10: Gutsy Gibbon
- 8.04 LTS: Hardy Heron, a Long Term Support (LTS) release
- 8.10: Intrepid Ibex
- 9.04: Jaunty Jackalope (in beta at the time of this writing)

This is a refreshing approach to version numbering, especially in the open source space where software is essentially under continuous development. Not only does it make it possible for users and system administrators to predict and schedule system updates to their systems, but it also makes it easy to identify the vintage of existing, installed systems without consulting a reference text or the Web.

Ubuntu Update and Maintenance Commitments

The frequency with which a distribution is released is important to any user in order to guarantee that they have access to the latest and greatest system and application software. However, for any business that is interested in the power, cost savings, and flexibility of Linux, the period of time in which a release will be updated and maintained is even more important. Many businesses have hundreds or thousands of computer systems. Businesses with substantial infrastructure on top of deployed systems need to spend significant time testing updates and new releases before they can even think about rolling them out to all

of their computer systems. Once testing is complete, the physical act of updating deployed systems takes significant time, which literally translates into money in terms of MIS and IT personnel.

By default, security updates for each Ubuntu release are issued for 18 months after the release date — after that date, existing security updates are still available, but there is no guarantee that new updates for that release will be provided. To address the longer-term requirements of commercial Ubuntu users, Mark Shuttleworth and Canonical, Ltd., the founders and sponsors of Ubuntu Linux, formed and funded the Ubuntu Foundation in mid-2005. The Ubuntu Foundation employs some of the core Ubuntu community members to help guarantee the success and continuity of the Ubuntu development and release process. One aspect of the Ubuntu Foundation is an increased commitment to maintenance and updates. Ubuntu version 6.06 was the first Ubuntu Linux release to benefit from this when the Ubuntu Foundation announced that Ubuntu version 6.06 would be supported for three years on the desktop and five years on the server, doubling the standard 18-month support commitment that is a backbone of Ubuntu. The acronym LTS, for Long Term Support, was added to its release number to highlight that fact. Ubuntu 8.04 is the latest long-term support release. Long-term support commitments are valuable to any Ubuntu user because they guarantee that both support and updates will be available for an extended period of time, but are especially important for business users who need to select a stable and long-lived platform to satisfy their enterprise computing requirements.

Given the pace of hardware and open source software development, Ubuntu's regular release schedule and long maintenance commitment help ensure that Ubuntu users always have stable, secure, and up-to-date versions of the software that they depend on. Ubuntu also provides a firm update and support commitment that is mandatory for its successful commercial adoption of Ubuntu.

Ubuntu and the Debian Project

Debian is one of the longest-lived Linux distributions available, and is the Linux distribution that is the conceptual parent of Ubuntu Linux. Debian is pronounced Deb'-ian, with a soft e, and is a contraction of the names of the founders of the Debian Project, Debra and Ian Murdock.

The Debian Project (`www.debian.org`) was founded in 1993 and has been delivering quality GNU/Linux distributions ever since. Debian is well known for stable releases based on a huge collection of thoroughly tested and completely integrated software packages. Unfortunately, the downside of balancing testing and integration with keeping up with the pace of open source development has led to a painfully slow release history — there have literally been years between official Debian releases. To be fair, three versions of the current Debian release are always available: stable (the released version), testing (the candidate for the next release), and unstable (the development version). However, many businesses (and users) are uncomfortable depending on something labeled *testing* or *unstable*. Providing a faster release process, focusing on specific core technologies such as the GNOME desktop interface, and providing a better structured mechanism to deliver software updates and notify users of their availability are the key reasons why the Ubuntu project was born.

Some of the key ways in which the Debian and Ubuntu Linux distributions interact are the following:

■   Ubuntu shares the software packaging format used by Debian (known as DEB packages), and also relies on the excellent and impressive technologies that were pioneered by Debian for identifying and resolving dependencies and relationships between different open source software packages.

■   Ubuntu developers feed their changes and enhancements to open source packages back to the open source community, but also provide them directly to the Debian developers responsible for that package and even record patch information directly into the Debian bug-tracking system. Bug fixes and related enhancements made by Ubuntu developers are delivered as they are made

during the Ubuntu release and testing process, not in a big bang fashion once an Ubuntu release is complete. This is better for everyone.

■ The Debian and Ubuntu distributions are based on a slightly different selection of open source packages, but follow the same general organization of those packages into separate domains, as explained in Chapter 23, "Adding, Removing, and Updating Software."

The Debian and Ubuntu Linux distributions are closely linked, complementary distributions with different goals. Ubuntu would not exist without the pioneering efforts and contributions of the Debian distribution, but provides a more predictable distribution with better support channels for many users and enterprise computing environments.

Why Choose Ubuntu or Kubuntu?

As mentioned earlier in this chapter, and in any recent computer magazine, and if you've ever looked at the Linux section in your local bookstore, there are zillions of different Linux distributions. After all, it's free, so why not? Techies aside, most of the users of any Linux distribution are people who have heard that they should be using a specific Linux distribution, got a free Linux CD for some distribution in a Linux magazine that they bought, or happened to buy a book about a specific Linux distribution.

Ubuntu means "humanity to others," but the title bar on the Ubuntu Web pages has often stated "Linux for People," and that's what Ubuntu is really about — a Linux distribution for people who want to get work done with a minimum of fuss and bother. Never mind that it's also a technically sophisticated Linux distribution with up-to-date software. Does it do what I want it to do?

The answer is unquestionably "Yes!" However, if you're unconvinced or find yourself in a discussion about Linux at a cocktail party, you may want more empirical data. Here are a few of the attributes of Ubuntu Linux that make it an attractive distribution to just about anyone:

■ **Regular, up-to-date releases:** The Linux kernel and the thousands of software packages that make up the Linux user and administrative environment are constantly being updated. As discussed earlier in this chapter, providing the latest and greatest kernel and application software on a regular schedule is a fundamental principle of Ubuntu Linux.

■ **Commitment to quality:** The quality of a Linux distribution hinges on two things: how good it is in the first place, and the distributing vendor's degree of commitment to fixing problems that arise. In both cases, Ubuntu shines. Each release goes through extensive internal testing by the Ubuntu team and extensive public testing of release candidates. Once a release occurs, updates for that release are delivered for a minimum of eighteen months (as needed, of course).

■ **Community and commercial support:** Much of the support for any Linux distribution comes from its user community, and it's hard to beat the passion and commitment of the Ubuntu community. However, just as no business can afford to depend on an operating system without a reasonable maintenance commitment, no business can afford to depend on an operating system without some chance of guaranteed support. As discussed later in this chapter, a complete spectrum of commercial and community support is readily available for Ubuntu Linux.

■ **Easy retrieval and application of updates:** The previous bullets have stressed the importance of being able to keep installed Linux systems up-to-date. Ubuntu provides great tools that notify users when updates are available and makes them easy to obtain and install. Ubuntu's graphical Update Manager and Synaptic Package Manager tools (discussed in Chapter 23, "Adding, Removing, and Updating Software") are the best examples of such tools that I have ever used.

- **Focus on usability:** Ubuntu defines itself as "Linux for People" and provides custom graphics, window decorations, and color schemes designed to provide an attractive, usable desktop environment for real people for personal use and to get work done. Like any other Linux distribution, you can customize this extensively, even switching to any of a variety of other window managers or desktop environments that are easily retrieved and installed through the Synaptic Package Manager. Ubuntu uses the GNOME desktop environment by default, which is well known for its support of and sensitivity toward accessibility requirements such as keyboard equivalents for menus and menu commands. Kubuntu uses the KDE desktop environment, which has always been regarded as a very user-friendly and easy-to-use desktop environment.

- **Focus on internationalization:** Ubuntu is extremely focused on supporting translation efforts and providing a Linux distribution that people anywhere on the planet can use in their native language, with their native character sets.

- **Active and involved community:** As I'll discuss in the next section, it is hard to conceive of a more active, dynamic, and involved user community than that which surrounds Ubuntu. An active and involved community translates into more places to ask questions, a better chance of getting answers, and a more friendly experience when doing so.

As you can see from this list, Ubuntu and Kubuntu focus on solving many of the issues that plague other Linux distributions or that make it difficult for new users to adopt Linux as their operating system of choice. Most general-purpose Linux distributions would claim that they address the same sorts of issues, but in my experience, Ubuntu and Kubuntu are exceptional in terms of delivering on them.

What Versions of Ubuntu Are Available?

As discussed earlier in this chapter, a number of different versions of Ubuntu are available directly from the folks at Canonical or from the distribution sites for sister projects. In addition to Ubuntu's "official" sister projects, a number of other Linux distributions are available that are based on Ubuntu, taking advantage of the rich set of packages that are supported by Canonical and the Ubuntu build infrastructure and distribution tools, just as Ubuntu itself leveraged the Debian Linux distribution to create the first Ubuntu distributions. The free and open source nature of most Linux code and applications makes it easy (well, relatively easy) to create different Linux distributions that are tailored to the needs and personal tastes of different types of users.

The standard Ubuntu Desktop distribution, using GNOME as its desktop environment, is my personal favorite for desktops and modern laptops, and is the one that I recommend for most people. It's hard to argue with success. On the other hand, other versions of Ubuntu may be better for you depending on your goals and personal tastes. This section discusses the different Ubuntu and Ubuntu-based distributions to help you decide which of these best suits your tastes and requirements, dividing these distributions based on the audience and type of user that they target.

NOTE   **This book focuses on the GNOME-based Ubuntu Desktop, Kubuntu Desktop, and Ubuntu Server distributions. If you decide to use one of the other Ubuntu or Ubuntu-based distributions that are covered in the next few sections, the discussions of using various desktop applications, server applications, and the GNOME and KDE desktops will still be valuable to you. Unfortunately, there is no discussion of the applications and tools that are specific to other distributions. Finishing this book in my lifetime was a requirement from the publisher.**

Desktop and Laptop Users

By desktop and laptop computer users, I mean end users (like myself) who are typically looking for a Linux distribution that is stable and easy to maintain, and that provides a rich set of available applications. End users typically want to have some fun and get some work done. This isn't limited to home computing, and includes office, development, and educational environments. The following are the Ubuntu and Ubuntu-based distributions that I am most familiar with that target end users. You'll see what differentiates them from other flavors of Ubuntu, and where to get them:

■ **Edubuntu: A**n official edition of Ubuntu that focuses on educational applications and popularizing the use of Linux in schools. Edubuntu uses GNOME as its default desktop environment, and provides a number of different desktop themes that are designed to be attractive (and useful) for users of different age groups. Edubuntu provides an incredibly rich set of educational applications, such as the KDE Edutainment suite (education and entertainment, get it?), GCompris for kindergarten users, Tux4Kids (paint, math, and typing applications), and the OpenOffice suite of desktop applications. You can find out more about Edubuntu or download a copy from the Edubuntu web site at `www.edubuntu.org`. A Live CD version of Edubuntu is available if you want to experiment with it before permanently installing an Ubuntu distribution.

■ **Fluxbuntu:** An extremely lightweight Linux distribution that is based on Ubuntu, and which targets machines with limited amounts of memory, relatively small disks, and so on. It refers to itself as an LPAE (Lightweight, Productive, Agile, Efficient) Linux distribution, which is both accurate and a fine addition to your collection of computer-related abbreviations. Fluxbuntu's official memory requirements are less than 64MB, and its disk requirements are under 1.5GB, making it ideal for older or inexpensive machines that you don't want to invest in additional hardware for. Fluxbuntu isn't limited to older or low-power hardware — for example, a 64-bit version of Fluxbuntu is available. Fluxbuntu uses the Fluxbox window manager as its default graphical environment, and includes AbiWord as its primary word-processing application, GnuMeric as its default spreadsheet application, and lightweight Web applications such as Kazehakase (web browser, `http://kazehakase.sourceforge.jp/`), Claws (e-mail client, `www.claws-mail.org/`), and Pidgin (instant messaging, discussed later in this book). Like any Ubuntu-based distribution, many other packages are available. You can find out more about Fluxbuntu or download a copy from the Fluxbuntu web site at `www.fluxbuntu.org`.

■ **Geubuntu:** Another lightweight Linux distribution that is based on Ubuntu. Unlike Fluxbuntu, Geubuntu uses E17, which is the window manager formerly known as Enlightenment (`www.enlightenment.org/`), which now includes various desktop features and the Xcompmgr compositing manager. Enlightenment has always been known as one of the most attractive and configurable window managers, and this Ubuntu-based distribution is an excellent choice for use on lower-power machines or on systems for which you prefer to devote as much of your CPU and memory as possible to the processes you're running versus the desktop environment. The founder of the Geubuntu effort is an Italian designer, so the aesthetics of Geubuntu are attractive and compelling. Geubuntu is available both as a live/install CD, and via a script that enables you to add its packages to an existing Ubuntu installation. For more information about Geubuntu or to download a copy, see the Geubuntu web site at `http://geubuntu.intilinux.com/Home.html`.

■ **Gobuntu:** An official edition of Ubuntu that uses completely open source software with no restrictions on use or redistribution. The primary goal of Gobuntu is to provide a powerful and usable Ubuntu-based distribution that adheres to the Free Software Foundation's four freedoms (`www.fsf.org/licensing/essays/free-sw.html`). Gobuntu therefore does not include any firmware, drivers, applications, or other content for which the complete source code is not available and whose license does not provide the right to use, study, modify, and redistribute the body

of work. Gobuntu is the most philosophically pure Ubuntu-based distribution available. However, because of the restrictive licensing terms that are greedily imposed on device drivers and much audio, video, and other multimedia software, you may find it hard to use Gobuntu on certain hardware or to play certain types of audio or video files on Gobuntu. If this isn't critical to you and you are more philosophically pure than I am, you can find out more about Gobuntu or download a copy from the Ubuntu site at `www.ubuntu.com/products/whatisubuntu/gobuntu`.

■ **Kubuntu:** An official edition of Ubuntu that uses the KDE desktop environment instead of GNOME. The KDE desktop environment is a powerful, extremely usable desktop environment for modern UNIX and UNIX-like computer systems that pre-dates the GNOME desktop and has a large and fanatical following for good reason. Many people prefer KDE to GNOME, and the discussions/arguments about selecting one desktop interface over the other have consumed just as much time and disk space as any other type of religious argument. Kubuntu combines the traditional ease-of-use of KDE with the stability and power of Ubuntu. Old and new Linux distributions such as Ark, Corel, Linspire, Mandrake, Mandriva, Mepis, OpenSUSE, Sabayon, SUSE, and Xandros use KDE as their default desktop environment. If you are already a user of one of these distributions or simply like what you've heard about KDE, Kubuntu may be the distribution for you. For more information about the KDE desktop itself, see Chapters 7 and 8, aptly titled "Using the KDE 3 Desktop" and "Using the KDE 4 Desktop," respectively. This book also includes discussions of all of the KDE-based equivalents to standard Ubuntu applications. For more information about KDE, see the official KDE web site at `www.kde.org`. You can find out more about Kubuntu or download a copy from their web site at `www.kubuntu.org`. A Live CD version of Kubuntu is available if you want to experiment with it before permanently installing an Ubuntu distribution.

■ **Ubuntu Christian Edition:** A standard version of Ubuntu that has been augmented by adding Christian software such as content filtering packages (DansGuardian, pre-configured to filter many offensive web sites), daily Bible verse software, GnomeSword (a Bible study tool), BibleMemorizer, e-Sword and The Word (two truly impressive Bible study and research tools), Firefox with Christian themes and the WhatWouldJesusDownload toolbar (one of my favorite package names ever!), and much more. Beyond simply addressing some of the requirements of Christian computer users, this distribution also demonstrates the tremendous range of available software for Linux and how easy it is to customize Ubuntu to address the requirements of a specific audience. This distribution is currently available only for the 32-bit x86 systems. For more information about Ubuntu Christian Edition or to download a copy, see the web site at `www.whatwouldjesusdownload.com/christianubuntu`.

■ **Ubuntu Muslim Edition:** A standard version of Ubuntu that has been augmented by adding Islamic software such as Islamiccal (an Islamic calendar), content-filtering packages (DansGuardian and Tinyproxy, preconfigured to filter many offensive web sites), Minibar (an application that identifies daily prayer times), and Zekr (a Qur'an study tool). Beyond simply addressing some of the requirements of Muslim computer users, this distribution also demonstrates the tremendous range of available software for Linux and how easy it is to customize Ubuntu to address the requirements of a specific audience. This distribution is currently available only for the 32-bit x86 systems. The Islamic software packages used by Ubuntu Muslim Edition can also be installed on any existing Ubuntu distribution by downloading and executing a script that installs them on your current system. For more information about Ubuntu Muslim Edition or to download a copy, see its web site at `http://ubuntume.com`. A Live CD version of Ubuntu Muslim Edition is available if you want to experiment with it before permanently installing an Ubuntu distribution.

■ **Ubuntu Studio:** A version of Ubuntu that targets creating and editing multimedia. Ubuntu Studio is a relatively young Ubuntu-based distribution that was first available in late 2007. If you

routinely work with graphics, audio, or other types of multimedia, Ubuntu Studio is well worth a look. It includes standard graphics applications such as GIMP and Inkscape, but also includes Ardour 2, an audio recording and editing application much like traditional audio applications such as ProTools and Blender, for modeling and rendering three-dimensional graphics and animations; PiTiVi, Kino, and Cinepaint, for video creation and editing; and much more. I have the graphics skills of a block of wood and, music-wise, used to play the drums, but anyone with artistic ability who is interested in using open source software should definitely investigate Ubuntu Studio. You can get more information about Ubuntu Studio or download a copy from the Ubuntu Studio web site at `http://ubuntustudio.org`.

■ **Xubuntu: A**n official edition of Ubuntu edition that uses the Xfce desktop rather than GNOME or KDE. Xfce is a much lighter-weight desktop environment than GNOME or KDE without sparing power or usability. Using Xfce makes Xubuntu a good choice for use on older or less-powerful systems where you still want to use a desktop environment rather than simply a window manager such as that provided by Fluxbuntu. (Desktop environments support capabilities such as drag and drop and other forms of application interaction rather than simply managing applications on the desktop — for more information about the differences between window managers and desktop environments, see the "What's a Desktop? Graphical Environments for Linux" section in Chapter 5. Xubuntu includes applications such as Thundar (a lightweight file manager), the GIMP image editor, the AbiWord word processor, the Firefox web browser, and many popular GNOME applications. For more information about Xubuntu or to download a copy, see the Xubuntu web site at `www.xubuntu.org`. A Live CD version of Xubuntu is available if you want to experiment with it before permanently installing an Ubuntu distribution.

NOTE **Canonical's Launchpad web site (**`http://launchpad.net`**) provides a web-based software development, source code control, and build system that hosts many other Ubuntu-based distributions, such as Elbuntu (Ubuntu with the Enlightenment window manager as its primary GUI,** `http://launchpad.net/elbuntu`**), Mint (focused on producing an elegant desktop,** `http://launchpad.net/linuxmint`**), and many more.**

Other Ubuntu-based distributions are available, but weren't listed here because I haven't actually had the chance to experiment with them or because they don't seem to be supported any longer. I did not list complete distributions such as Freespire (the community version of Linspire, `www.freespire.org/`), Linspire (`www.linspire.com`), MEPIS (`www.mepis.org/`), Sabayon (`www.sabayonlinux.org`), and others that are based on the Ubuntu packages but which are independent distributions in their own right. I also didn't list "distributions" that are only scripts that add specific sets of packages to an existing Ubuntu installation. If I've missed an installable, ready-to-run, Ubuntu-based distribution that you enjoy, please let me know. I'm always happy to learn, too.

Server Users

While it is quite possible to run server applications such as mail systems, web servers, DNS servers, print servers, and file servers on a desktop Linux system, this is often the wrong thing to do in enterprise or academic environments. Many server systems are lean and mean, command-line oriented machines that devote all available cycles to the server processes that they are running, rather than "wasting" them by running a GUI (at least by default). Ubuntu offers two distributions that are targeted to different types of servers:

■ **Ubuntu Server Edition:** A version of Ubuntu that brings the power, stability, and easy management of Ubuntu Linux to the server room. By default, Ubuntu Server Edition provides a basic, secure system with no open network ports, but you can install other fundamental configurations

such as a LAMP (Linux, Apache, MySQL, and Perl) system in which these key server components are preconfigured to work together, minimizing your installation and administrative efforts. The Server Edition also provides out-of-the-box support for LTSP (Linux Terminal Server Project), which supports thin clients and enables one server system to satisfy the storage and application requirements of many lightweight desktop systems. Ubuntu Server Edition does not install a graphical user interface by default, but the standard GNOME desktop (or the X Window system window manager of your choice) is available as a package that can be manually installed. For more information about the Ubuntu Server Edition or to download a copy, see `www.ubuntu.com/products/whatisubuntu/serveredition`.

■ **Ubuntu Server Edition, JeOS:** A version of Ubuntu that targets servers that are intended to run virtual machines, aka virtual appliances. JeOS stands for "Just Enough Operating System," meaning that JeOS is optimized for a small disk and memory footprint and minimal resource consumption, leaving as much of your server hardware as possible available for use by virtual machines. Unfortunately (unless you're a VMware shop), JeOS is optimized for use with the VMware virtualization solutions (`www.vmware.com`), which isn't the best virtualization solution in my opinion. I suspect that JeOS will prove equally useful for more sophisticated virtualization solutions such as Xen, KVM, and others. For more information about JeOS or to download a copy, see `www.ubuntu.com/products/whatisubuntu/serveredition/jeos`. For more information about virtualization on Ubuntu, see Bonus Chapter 7, "Using Virtual Machines and Emulators."

Specialty Platform Users

Canonical has announced a distribution called the Ubuntu Mobile Internet Device (MID) Edition that is designed to bring the power, manageability, and flexibility of Ubuntu Linux to the developers of Mobile Internet Devices (MID), which are tablet-like, touch-screen devices with full network support. The millions of developers in the open source software and Ubuntu communities are an incredible resource for embedded systems development, and MID hardware is actively under development from hardware vendors such as Intel.

Originally targeted for release in October 2007, the first releases of this distribution were based on the Ubuntu 8.04 Hardy release in April of 2008. For more information about this Ubuntu-based distribution, see `www.ubuntu.com/products/mobile`. To download install images of this distribution, see `http://cdimage.ubuntu.com/mobile/releases/hardy`. This site provides a KVM (Kernel Virtual Machine) image of Ubuntu MID that you can run as a virtual machine on any Ubuntu or Kubuntu system that can run KVM. (See Bonus Chapter 7 for more information about KVM.) This site also offers MID install images for the McCaslin and Menlow MID platforms (which are, respectively, the 2007 and 2008 generations of Intel's prototype MID hardware).

Installation Requirements

As Linux distributions have moved to the 2.6 kernel and Linux is becoming more and more popular, the chances of your having hardware that is not supported by Ubuntu Linux grow less and less. This section outlines the types of systems on which Ubuntu is supported, and the general hardware requirements for a usable system.

NOTE One of the best things about Linux is the wide range of system types on which it is sup-
ported. Most Linux distributions, including Ubuntu, will run on older systems that would
probably otherwise be discarded or used as doorstops. However (and feel free to repeat this
quote), software runs slower on slower hardware. When running on older systems, you will probably want
to use the command-line interface or a lighter-weight graphical environment than the default GNOME
(or KDE for Kubuntu) desktops. Desktops such as Xfce or window managers such as Fluxbox and IceWM
are popular and powerful alternatives to GNOME and KDE. More about these in the "What's a Desktop?
Graphical Environments for Linux" section in Chapter 5.

Supported System Types

Ubuntu and Kubuntu are supported on any of the following types of systems:

- i386 or compatible processors from Intel, AMD, and so on
- 64-bit AMD or EM64T processors (which include the Athlon64, Opteron, and EM64T Xeon)

NOTE Ubuntu was officially supported by Canonical on PowerPC (PPC) processors, such as those
used on many Macintosh computer systems, through the Ubuntu 6.10 release. Similarly,
Ubuntu was also officially supported by Canonical on UltraSPARC platforms from the
Ubuntu 6.10 through 7.10 distributions. Subsequently, the PPC and UltraSPARC versions of Ubuntu became
community-supported distributions. This means that Canonical may still produce them, but that PPC- or
SPARC-specific problems will not hold up an official Ubuntu release, and versions of Ubuntu for these plat-
forms may not be available from all Ubuntu download sites. See the Ubuntu PowerPC FAQ at `https://`
`wiki.ubuntu.com/PowerPCFAQ` for more information about Ubuntu distributions for the PPC.

Hardware Requirements

As with any computer software, you'll have a better experience if you install and use Ubuntu on the most
powerful system that you have available, but Ubuntu and Kubuntu will technically still run fine (although
slowly) on your dusty 25 MHz i386. However, the American national slogan is eminently true here: "More
is better." Taking off my Linux evangelist hat for a moment, you shouldn't really bother trying to install
and run Ubuntu or Kubuntu on a system with a processor that runs slower than 166 MHz or that has less
than 96MB of memory. I use a system with exactly those characteristics for testing purposes (an old IBM
ThinkPad 380XD that I just can't bear to part with), and GNOME is excruciating on that system. If you
really need to run Ubuntu on such a system, see the note earlier in this section about alternate graphical
environments for low-speed or low-memory systems — or simply get Xubuntu.

The minimum hardware requirements for installing Ubuntu or Kubuntu and having a reasonable user
experience are as follows:

- 700 MHz or better processor
- 384MB of memory
- CD-ROM drive
- Ethernet interface
- VGA graphics interface capable of 1024 × 768 resolution
- 3GB of available disk space

> **NOTE** If you want to use Ubuntu or Kubuntu's compositing and advanced visual effects capabilities, you should have at least a 1.2 GHz processor and a recent ATI, Intel, or nVidia graphics card.

If your system satisfies or exceeds these, you're good to go. You can certainly install Ubuntu or Kubuntu on slower systems or systems with less memory, but that's like putting racing slicks on a Hyundai — you're not really going to get the most out of the experience.

Time Requirements

The amount of time that it takes to install Ubuntu or Kubuntu depends on the speed of your system, how you are configuring that system, and the type of distribution that you're installing. Installing Ubuntu or Kubuntu on a laptop that already runs Microsoft Windows, Solaris, or even Mac OS X and which you want to set up as a dual-boot machine may take an hour or two. Installing any version of Ubuntu or Kubuntu on a new machine can take less than an hour. In general, you should plan on spending an hour or two installing Ubuntu or Kubuntu — I'm assuming that you're not going to complain if it takes less time than that.

Ubuntu CDs

The DVD that is included with this book is the Ubuntu Desktop DVD, which enables you to test-drive Ubuntu on an existing computer system without changing anything, and which also provides a simple, easy-to-use installer that enables you to install Ubuntu on that system permanently. Three different CDs are available for Ubuntu. These CDs and the capabilities that they provide are as follows:

■ **Desktop DVD:** The DVD that is included with this book provides a bootable version of Ubuntu Linux that enables you to run and experiment with Ubuntu without changing anything on your existing computer system. This DVD, known as a "Live DVD," also includes an easy-to-use graphical installer that makes it easy for you to permanently install Ubuntu on your computer system. Finally, this DVD includes a special installer that you can use to install and use Ubuntu on a system running Microsoft Windows without re-partitioning the disk. For information about using this DVD, see Chapter 2, "Installing Ubuntu."

■ The Kubuntu web site provides an equivalent to the Ubuntu Desktop DVD that supports the same capabilities (Live CD or DVD, Installer, and Kubuntu on Windows) but uses the KDE desktop environment and provides KDE-based applications.

> **NOTE** When running from any live CD, any work that you do, files that you create, and so on, will be lost when you reboot your computer system unless you save it to another system over the network or to removable storage such as a USB stick, removable hard drive, and so on. See the section of Chapter 2 entitled "Using Desktop CD Persistence" for information on using a USB stick or other removable media to automatically save and restore any changes that you make while running from the Ubuntu Desktop DVD, or see the sections "Accessing Your Hard Drive from the Desktop CD" and "Copying Files to Other Machines Over a Network" in Chapter 2 for information about manually saving any work that you do while running from the Ubuntu Desktop DVD.

■ **Server Install CD:** Enables you to install versions of Ubuntu Linux targeted to machines that are being used as servers. You can choose to install a generic server and add the server software of your choice, or you can install a LAMP (Linux, Apache, MySQL, Perl) server where the traditional packages required for a Linux Web server will be preinstalled. None of the versions of Ubuntu installed from this CD include a graphical user interface, although you can always add

one subsequently. For more information about obtaining this CD and installing from it, see the section "Install Options on the Server Install CD" in Chapter 3.

■ **Alternate Install CD:** Enables you to install Ubuntu on systems with certain hardware characteristics, or in specialized configurations. These include creating preconfigured systems for redistribution by Original Equipment Manufacturers (OEM), upgrading existing systems without network access, and setting up automated Ubuntu installations for multiple systems. Hardware-wise, the install options on this disk enable you to install Ubuntu on systems that use Logical Volume Management (LVM), use Redundant Arrays of Inexpensive Disks (RAID), where you want to install GRUB in a location other than the Master Boot Record (MBR), or on systems with limited amounts of memory (i.e., less than 192MB of RAM). For more information about obtaining this CD and installing from it, see the section "Install Options on the Alternate Install CD" in Chapter 3.

The Desktop DVD included with this book is the one that most people use to install Ubuntu. However, depending on the type of system that you want to create, you may want to download and burn a copy of another installation CD. The Ubuntu Web site provides freely downloadable ISO images of all of the available Ubuntu CDs, for all supported platforms, at `http://us.releases.ubuntu.com/releases`. (ISO images are files that contain an image of a CD in International Standards Organization CD format, which you can download and then burn to a CD yourself.) Pick the directory associated with the latest release, select the appropriate ISO image, download it, and burn a copy — or you can request that the folks at Ubuntu ship you a set of CDs. To do this, go to the page at `https://shipit.ubuntu.com`, create an account by entering your e-mail address and a password, and request Ubuntu CDs for the current release. You can even order free CDs for multiple system types at the same time. The Ship-It site is cool for getting copies of Ubuntu to turn on your friends, but is not a good personal alternative if you're into instant gratification, because shipping and delivery can take a few weeks.

Support for Ubuntu and Kubuntu

By its nature, computer software occasionally requires that you ask questions about how to use it or ask for help with resolving specific problems. This is especially true of software such as Linux, where you are installing not only a zillion applications, but also the operating system that they depend on. The primary advantage of off-the-shelf operating systems from a single commercial source, such as Microsoft Windows and Apple's Mac OS X, is that you can presumably contact the vendor if you're having problems installing, configuring, or using it. However, in reality, just try contacting Microsoft if you're having a problem using Windows. (Let me know how that goes.) In general, books like this one provide a central resource for installation, configuration, and general "how do I . . ." questions, but there are always specific questions that I can't anticipate. So how do you get your questions answered or find help when you need it?

Ubuntu offers an impressive array of support opportunities, ranging from community resources to paid support from Ubuntu's sponsor company, Canonical, Ltd., and a number of other companies located all over the world. The next few sections highlight the various ways in which you can ask questions, get answers, request paid support, and even hire experts to help with custom Ubuntu and Kubuntu programming and support tasks.

Community Support and Information

Because Linux software depends on the community development model, getting timely, free help for problems often relies on a similar community approach. This is one of the areas in which Ubuntu truly

shines, hosting mailing lists, blogs, and interactive forums that are all excellent sources of up-to-date information about Ubuntu. Forums and mailing lists enable you to post specific questions and receive responses from other Ubuntu users who have already solved the issue that you're experiencing. These online resources also serve as excellent feeder sites for the Ubuntu project, helping the project identify issues and common problems that should be addressed in future Ubuntu releases.

Blogs

Blogs (from the term "We*b log*") are a popular buzzword, and it often seems as though almost anyone with a keyboard and any control over their Web site has one. The Ubuntu blog, known as Planet Ubuntu (`http://planet.ubuntulinux.org/`) is a bit different because it's not a continuous stream of consciousness from a single individual. Instead, Planet Ubuntu is a place where Ubuntu developers and community members can share various musings, insights, complaints, and successes.

If you're enough of a blog or Ubuntu fan to want to subscribe to it rather than simply visiting its Web page, Planet Ubuntu is also available in the following popular RDF (Resource Description Framework) and general markup formats:

- **FOAF:** Friend of a Friend, available at `http://planet.ubuntulinux.org/foafroll.xml`.

- **OPML:** Outline Processor Markup Language, available at `http://planet.ubuntulinux.org/opml.xml`.

- **RSS:** Really Simple Syndication or Rich Site Summary, depending whom you ask. Planet Ubuntu feeds are available in RSS 1.0 (`http://planet.ubuntulinux.org/rss10.xml`) or RSS 2.0 (`http://planet.ubuntulinux.org/rss20.xml`) formats. You should use the appropriate format for your RSS reader.

Ubuntu Forums

Forums are the latest generation of what used to be known as bulletin board systems, and are an attractive alternative to mailing lists if you have the time to visit the Web site that hosts them. Ubuntu's forums are hosted at `www.ubuntuforums.org/`. This site provides a huge selection of well-organized forums that you can easily search to find specific information, where you can post questions, or where you can simply chat with or see the posts of other Ubuntu users, dipping your toe into the waters of the Ubuntu community if you're not already an active member. You don't have to be a member of the forums to read them, but you do need to be a member to post there. Registration is free and easy — just go to `www.ubuntuforums.org/register.php`, and read and accept the Ubuntu Forum rules. You can then specify the username that you want to use on the forums, enter a password, and provide your e-mail address and some minimal personal information.

The forums index page at `www.ubuntuforums.org/index.php` displays the categories into which the Ubuntu forums are organized, as follows:

- **Absolute Beginner Talk:** A forum section where anyone can ask questions about computers, Linux, UNIX, and Ubuntu. If you were ever afraid to ask a question because it might be too basic, this forum is for you!

- **Main Support Categories:** A forum section that provides a number of different forums dedicated to various support topics for any release of any official Ubuntu/Kubuntu/Xubuntu/Edubuntu distribution. Specific forums include Apple Intel Users, Apple PPC Users, Desktop Environments, Desktop Effects & Customization, General Help, Hardware & Laptops, Installation & Upgrades,

Multimedia & Video, Multimedia Production, Networking & Wireless, Sun Sparc Users, System76 Support, Dell Ubuntu Support, and x86 64-bit Users.

■ **Other Community Discussions:** A forum section that provides a number of different forums dedicated to general topics, Ubuntu and community announcements, available Ubuntu projects, colocation and development teams, and much more. Specific forums include 3rd Party Projects, Accessibility Discussions, Art & Design, Community Announcements & News, Gaming & Leisure, Ubuntu Gamers Arena (an offsite link), Education & Science, Servers & Security, Tutorials & Tips, Ubuntu LoCo Team Forums, Ubuntu Testimonials & Experiences, Ubuntu Weekly Newsletter, Development & Programming, Virtualization, and WINE.

■ **Forum Community Discussions:** A set of forums dedicated to general discussions and topics about the forums themselves. Specific forums include Community Cafe, Community Cafe Games, Community Market, Forum Feedback & Help, Forum Council Agenda, Other OS Talk, The Fridge Discussions, and the Ubuntu Forum Teams.

Although other distributions have similar forum sites (such as Fedora Core's `www.fedoraforum.org` site), the Ubuntu forums embrace and reflect Ubuntu's commitment to users of the current Ubuntu release and previous Ubuntu releases that are still supported, which is truly unique.

Although you can ask questions about and discuss KDE and Kubuntu issues on the standard Ubuntu forums, Kubuntu-specific forums are available at the following locations:

■ `www.kubuntuforums.net`

■ `http://kubuntuway.net`

In addition to the English-language forums discussed previously, Ubuntu forums are also available in many other languages, reflecting the commitment of Ubuntu and Ubuntu users to provide a truly international Linux distribution. These are not just translated, native character set versions of the English-language forums — in many cases, different native language sites host their own forums and organize those forums differently. You can find pointers to these forums on the page at `www.ubuntulinux.org/community/forums`. At the time of this writing, specialized Chinese, Dutch, Finnish, French, German, Italian, Polish, and Portuguese forum sites are hosting forums in those languages, using any associated character sets. Ubuntu is truly an international effort!

IRC

Internet Relay Chat (IRC) is a popular mechanism for interactive online discussions of just about anything. The English-language Ubuntu IRC channel is named #ubuntu, and is available through the IRC site at `irc.freenode.net`. IRC channels for other versions of Ubuntu are available at #kubuntu, #edubuntu, and #xubuntu. Non-English IRC channels are also available, including Chinese (#ubuntu-zh), Dutch (#ubuntu-nl), German (#ubuntu-de), Hebrew and Arabic (#ubuntu-il), Italian (#ubuntu-it), Portuguese (#ubuntu-pt), Russian (#ubuntu-ru), and Spanish (#ubuntu-es), at the time of this writing. For a complete list of Ubuntu-related IRC channels, see `https://help.ubuntu.com/community/InternetRelayChat`.

An IRC channel is a great, real-time mechanism for asking about current problems and getting online help to resolve them (assuming that your problem isn't related to getting online in the first place). The Pidgin instant messaging client is installed by default as a basic part of Ubuntu Linux, which also can be used for IRC communication. Similarly, the Kopete instant messaging and IRC client is installed by default as a part of Kubuntu Linux. Providing IRC support by default makes it easy to connect and take advantage of IRC as a support and community resource. For more information, see Chapter 13, "Sending and Receiving Instant Messages."

Mailing Lists

Mailing lists are a great push format, meaning that questions and posts are delivered (pushed) directly to you, unlike forums, which are generally referred to as a pull format, because you have to connect to the Web site that hosts them and locate new posts and information yourself.

There are a huge number of Ubuntu mailing lists, many of which are quite specialized, and listing them all here would simply waste paper because you have to subscribe to them online in the first place. The standard Ubuntu mailing lists, as listed at `www.ubuntulinux.org/community/lists`, include the following:

- **Ubuntu Announcement list** (ubuntu-announce) has very few e-mails (less than one a month, usually) and will keep you up-to-date on new releases of Ubuntu, and significant new developments.

- **Ubuntu Development list** (ubuntu-devel) is intended for highly technical discussions and imple-mentation details regarding current Ubuntu development.

- **Ubuntu Security Announcement list** (ubuntu-security-announce) is a read-only mailing list to which announcements of security updates to Ubuntu releases are posted. This list is extremely useful for Ubuntu system administrators or anyone who wants to make sure that they know about the latest security-related Ubuntu package updates.

- **Ubuntu Users list** (ubuntu-users) is an extremely high-traffic mailing list for technical support discussions and to which Ubuntu users can post new feature requests and wish lists.

- **Ubuntu Women list** (ubuntu-women) is intended as a mailing list for all Ubuntu users, volun-teers, developers, and others who wish to involve more women in the Ubuntu community.

- **Kubuntu Users list** (kubuntu-users) is a high-traffic list that is focused on Kubuntu and KDE-related topics.

There are many more lists, of course — these are just some of the highlights. You can find a complete, up-to-date list of available Ubuntu mailing lists at `http://lists.ubuntu.com`, which will take you to `http://lists.ubuntu.com/mailman/listinfo`. The Ubuntu mailing lists are managed using the popular MailMan mailing list management package.

> **TIP**   **For Usenet fans, the Ubuntu mailing lists are also available as Usenet news groups thanks to the folks at Gmane (**`www.gmane.org`**). The Ubuntu-related mailing lists available as news groups are listed at** `http://news.gmane.org/index.php?prefix=gmane.linux.ubuntu`**.**

What's on the Fridge?

Remember how your parents would post your latest accomplishments on their refrigerator? Let's hope they've stopped now, but the Ubuntu Web site provides a software implementation of the same con-cept. The Fridge (`http://fridge.ubuntu.com`) provides a central location where Ubuntu users can find out what's truly new in the Ubuntu community. It features summaries of upcoming Ubuntu-related events, recent information about Ubuntu on the Web and in print media, status messages from various Ubuntu teams and projects, and newsletters such as the Ubuntu Desktop News and Ubuntu Documentation News.

Documentation

Traditional software products provide printed or online documentation to help anticipate and answer users' questions. However, as both a writer and long-time computer user, I've always appreciated and

evangelized for good documentation. It doesn't matter how good software or an operating system is if you can't figure out how to use it. Linux documentation is an interesting issue because most Linux distributions are freely downloadable. There are few Linux distributions that you can actually buy off the shelf at a computer retailer, and even these provide relatively little printed documentation. Given the speed at which Linux distributions evolve and the tremendous variety of hardware on which Linux can be installed, complete printed documentation is difficult to produce in a timely fashion and is even harder to maintain. Novell's SUSE Linux is famous for the quality and bulk of the printed documentation that accompanies its boxed products.

Ubuntu has a large and well-organized documentation team that is focused on producing quality, user-oriented documentation that is just as easy to use as Ubuntu itself. Ubuntu documentation is available at two primary locations:

- `http://help.ubuntu.com`: The source for all of the official documentation that has been developed by the Ubuntu documentation team. By default, this page displays the documentation for the current Ubuntu release, but documentation for older releases is available through tabs that you can select in the upper-right corner of the page.

- `https://wiki.ubuntu.com/UserDocumentation`: A hierarchical collection of resources in wiki format that makes it easy to find documentation on specific topics.

A good deal of information on Ubuntu Linux and other Ubuntu-based distributions such as Fluxbuntu and Mint is available at the Ubuntu Documentation Storage facility at `http://doc.gwos.org/doku.php`.

The Ubuntu documentation team produces quality documentation that is well-organized and adheres to a single style guide to provide the sort of consistency that you'd expect from an organized documentation effort. The home page for the Ubuntu Documentation Project is at `http://doc.ubuntu.com/`, where you can find pointers to both current documents and works in progress. All communications between documentation team members is done online, using IRC and mailing lists described at `https://wiki.ubuntu.com/DocteamCommunications`. If you're interested in contributing to the Ubuntu documentation effort, a list of current and planned projects is available at `https://wiki.ubuntu.com/DocteamProjects`. Documentation that is contributed by the Ubuntu community in general is available at `https://help.ubuntu.com/community`.

Commercial Support for Ubuntu Linux

As discussed earlier, it's especially important for companies that are planning on adopting an enterprise-wide Linux solution to have a source from which they can get guaranteed support. Although you can typically find answers to most of your questions and solutions to most problems by simply searching the Web, most CEOs and IT managers won't accept "I'm googling it" as a suitable status message when an entire business is offline or some of their employees are unproductive because of a software or operating system problem. In business situations, it's important to have specific resources that you can depend on to solve problems in a timely fashion.

Although the majority of this chapter has stressed the scope and usability of the Ubuntu community and related resources in terms of helping you solve problems, commercial support is also available for Ubuntu from a variety of sources, as described in the next two sections.

Paid Support from Canonical, Ltd.

Canonical, Ltd. the sponsor of the Ubuntu Linux Project, offers two levels of paid support for Ubuntu Linux, known as 9x5 support and 24x7 support, which reflect the hours during which you can expect to

get responses to your support questions. These support packages and their current pricing are described at `www.ubuntu.com/support/paid`. These support levels are available for three different types of production systems: Desktop, Server, and Thin Client/Cluster systems, each of which has different costs depending on the hours of support that you're interested in.

The software packages that Canonical supports depends on the portion of the Ubuntu software repository in which those packages are located. As described in detail in Chapter 23, "Adding, Removing, and Updating Software," the software in the Ubuntu repository is grouped into several different classes, essentially depending upon the license(s) under which a software package has been released. Ubuntu support agreements include full support for packages in the *main* class, partial support for packages in the *restricted* class, and no support for software in the *universe* and *multiverse* classes. See Chapter 23 for details on the organization of the Ubuntu repository and the differences between package classes.

The Ubuntu Marketplace

The Ubuntu Marketplace is a portion of the Ubuntu Web site that lists the network of companies that provide support for desktop and server systems running Ubuntu Linux. The main page for the Ubuntu marketplace is `www.ubuntu.com/support/supportoptions/marketplace`, which provides centralized access to lists of companies all over the world that support Ubuntu, organized into separate pages listing such companies in Africa, Asia, Europe, Latin America, North America, and Oceania. (A related URL is the Community Market forum at `www.ubuntuforums.org`, which was mentioned earlier, although that contains much more information than the actual Ubuntu Marketplace.)

Providing a centralized clearinghouse for companies that can help you or your firm with support problems is a tremendous advantage for companies that are just moving to Linux and would like to engage with a support organization that is geographically close to your physical location.

At the time of this writing, there are no specific certification requirements to have your company listed in the Ubuntu Marketplace — you simply fill out a form that is linked to from the Marketplace page.

Getting More Information About Ubuntu

Ubuntu Linux is increasing in popularity faster than any Linux distribution that I have previously encountered. Technical excellence aside, much of the credit for its increasing popularity lies in the excellent organization and breadth of coverage provided on the main Ubuntu Web site. However, let's face it — the Ubuntu Web site is largely blowing its own horn. What do other people say? Are there locations other than the mother ship where you can go for information about and help with Ubuntu?

The answer to these questions is a definite "yes!" There are a huge number of sites that provide information about Ubuntu beyond simple software reviews. In addition to the support and general Web resources listed previously in this chapter, some of my favorite Ubuntu-related sites are as follows:

- **DistroWatch** (`http://distrowatch.com/table.php?distribution=ubuntu`) provides summary information about the contents of most Linux distributions, including Ubuntu. Their Ubuntu page provides high-level information about the contents of the various Ubuntu releases, but more importantly provides links to many Ubuntu-related Web sites, reviews of the various Ubuntu releases, and much more. If you're not already familiar with DistroWatch, it's an essential Linux site for finding out almost anything about any Linux distribution.

- **Ubuntu Blog** (`http://ubuntu.wordpress.com/`) is a blog about Ubuntu that provides a great selection of entries about general Ubuntu tasks organized into categories such as administration,

office, servers, and so on. It also features links to other sites and great task-specific articles such as the best instructions for getting the MythTV package working on an Ubuntu system.

■ **UbuntuGuide** (`http://ubuntuguide.org/`) hosts an Ubuntu "Getting Started" guide that is an excellent information resource, although it may not always reflect the latest Ubuntu release. The Ubuntu Starter Guide provides a great deal of very detailed information about how to do specific tasks on Ubuntu Linux, and is well worth a look.

■ **Ubuntu Women** (`www.ubuntu-women.org/`) provides FAQs, a wiki, a blog, and mentoring programs, and is much more focused on getting more women involved in Ubuntu and FLOSS (Free/Libre/Open-Source Software) in general. This is a great site with a great message and purpose, through which we all win.

■ **Ubuntux** (`www.ubuntux.org/`) is a community of Ubuntu users that provides a variety of forums, blogs, links to recent articles about Debian and Ubuntu, and a variety of other resources designed to help users work with Ubuntu. The forums are especially nice, covering the spectrum of topics from getting started with Ubuntu to specific customization and optimization topics. Ubuntux also features forums targeted toward Ubuntu-based distributions such as Kubuntu, Edubuntu, and Ubuntu Lite, as well as a forum on the Ubuntu server distribution. The Ubuntux site also offers an RSS feed to help you keep up-to-date with the latest Ubuntu-related happenings.

There are many other Ubuntu-related sites on the Web, with more appearing every day. The DistroWatch site provides a good collection of Links to Ubuntu-related sites and reviews, but as with anything on the Internet, your favorite search engine is your friend and will quickly help you find hundreds of other sites to search for answers to specific questions or simply to see what others think and say about Ubuntu.

Summary

Ubuntu is the fastest growing Linux distribution in recent memory, and is one of the finest examples of the power of open source and community that I've ever seen. After providing some general information about Linux, this chapter provided an overview of the philosophy behind Ubuntu Linux and the goals of the distribution. As discussed in this chapter, much of the success of Ubuntu to date beyond its technical excellence and ease of use is rooted in a rich, fast-growing user community and a well-organized Web site that provides easy access to various Ubuntu-related resources.