Getting Started with Ubuntu 11.10

The Ubuntu Manual Team

Revision number: 177   Revision date: 2012-03-23 09:00:44 +0100

Contents

Prologue

Welcome

Welcome to *Getting Started with Ubuntu*, an introductory guide written to help new users get started with Ubuntu.

Our goal is to cover the basics of Ubuntu (such as installation and working with the desktop) as well as hardware and software management, working with the command line, and security. We designed this guide to be simple to follow, with step-by-step instructions and plenty of screenshots, allowing you to discover the potential of your new Ubuntu system.

Please bear in mind that this guide is still very much a work in progress and always will be. It is written specifically for Ubuntu 11.10, and although we have aimed to not limit our instructions to this version, it is unavoidable that some things will change over the life of Ubuntu. Whenever a new version of Ubuntu is released, we will incorporate updates and changes into our guide, and make a new version available at http://www.ubuntu-manual. org.

Getting Started with Ubuntu 11.10 is not intended to be a comprehensive Ubuntu instruction manual. It is more like a quick-start guide that will get you doing the things you need to do with your computer quickly and easily, without getting bogged down with technical details. As with prior versions, Ubuntu 11.10 incorporates many new features, including enhancements to the Unity shell. More about the Unity shell and what it means can be found in Chapter 2: The Ubuntu Desktop.

For more detailed information on using Unity and the Ubuntu desktop, see the "Ubuntu Desktop Guide," which can be obtained in the following ways:

‣ in the Dash, type yelp;
‣ in the desktop menubar, click **Help ‣ Help with Ubuntu**; or
‣ go to https://help.ubuntu.com, **Ubuntu 11.10 ‣ Ubuntu Desktop Help**.

The Internet is also an excellent resource. For example, on https://help. ubuntu.com you will find documentation on installing and using Ubuntu, and at the Ubuntu Forums (ubuntuforums.org) you find answers to many Ubuntu related questions.

If something isn't covered in this manual, chances are you will find the information you are looking for in one of those locations. We will try our best to include links to more detailed help wherever we can.

More information about Ubuntu's online and system documentation can be found in Chapter 8: Learning More. Popular forums for Ubuntu discussion and support are the Ubuntu Forums, http://ubuntuforums.org, and Askubuntu at http://askubuntu.com.

Ubuntu Philosophy

The term "Ubuntu" is a traditional African concept that originated from the Bantu languages of southern Africa. It can be described as a way of connecting with others—living in a global community where your actions affect all of humanity. Ubuntu is more than just an operating system: it is a community of people that come together voluntarily to collaborate on an international software project that aims to deliver the best possible user experience.

The Ubuntu Promise

‣ Ubuntu will always be free of charge, along with its regular enterprise releases and security updates.
‣ Ubuntu comes with full commercial support from Canonical and hundreds of companies from across the world.
‣ Ubuntu provides the best translations and accessibility features that the free software community has to offer.
‣ Ubuntu's core applications are all free and open source. We want you to use free and open source software, improve it, and pass it on.

A brief history of Ubuntu

Ubuntu was conceived in 2004 by Mark Shuttleworth, a successful South African entrepreneur, and his company Canonical. Shuttleworth recognized the power of Linux and open source, but was also aware of weaknesses that prevented mainstream use.

Shuttleworth set out with clear intentions to address these weaknesses and create a system that was easy to use, completely free (see Chapter 8: Learning More for the complete definition of "free"), and could compete with other mainstream operating systems. With the Debian system as a base,Shuttleworth began to build Ubuntu. Using his own funds at first, installation CDs were pressed and shipped worldwide at no cost to the end user. Ubuntu spread quickly, the size of the community rapidly increased, and it soon became the most popular Linux distribution available.

With more people working on the project than ever before, Ubuntu continues to see improvement to its core features and hardware support, and has gained the attention of large organizations worldwide. One of IBM's open source operating systems is based on Ubuntu. Additionally, in 2005, the French Police began to transition their entire computer infrastructure to a variant of Ubuntu—a process which has reportedly saved them "millions of euros" in licensing fees for Microsoft Windows. By the year 2012, the French Police anticipates that all of their computers will be running Ubuntu. Canonical profits from this arrangement by providing technical support and custom-built software.

While large organizations often find it useful to pay for support services, Shuttleworth has promised that the Ubuntu desktop system will always be free. As of 2011, Ubuntu is installed on an estimated 2% of the world's computers. This equates to millions of users worldwide, and is growing each year. Because of a lack of registration, the percentage of Ubuntu users should be treated as an estimate.

What is Linux?

Ubuntu is built on the foundation of Linux, which is a member of the Unix family. Unix is one of the oldest types of operating systems and has provided reliability and security in professional applications for almost half a century. Many servers around the world that store data for popular websites (such as YouTube and Google) run some variant of a Unix system. The Linux kernel is best described as the core, or almost the brain, of the operating system.

The Linux kernel is the controller of the operating system; it is responsible for allocating memory and processor time. It can also be thought of as the program which manages any and all applications on the computer itself.

Canonical is the company that provides financial and technical support for Ubuntu. It has employees based around the world who work on developing and improving the operating system, as well as reviewing work submitted by volunteer contributors. To learn more about Canonical, go to http://www.canonical.com.

Debian is the Linux operating system that Ubuntu is based upon. For more information visit http://www.debian.org/.

For information on Ubuntu Server Edition, and how you can use it in your company, visit http://www.ubuntu.com/business/server/overview.

Linux was designed from the ground up with security and hardware compatibility in mind, and is currently one of the most popular Unix-based operating systems. One of the benefits of Linux is that it is incredibly flexible and can be configured to run on almost any device—from the smallest micro-computers and cellphones to larger super-computers. Unix was entirely command line-based until graphical user interfaces (GUIS) began to emerge in the early 1990s.

These early GUIs were difficult to configure, clunky, and generally only used by seasoned computer programmers. In the past decade, however, graphical user interfaces have come a long way in terms of usability, reliability, and appearance. Ubuntu is just one of many different Linux *distributions*, and uses one of the more popular graphical desktop environments called GNOME.

Is Ubuntu right for you?

New users to Ubuntu may find that it takes some time to feel comfortable when trying a new operating system. You will no doubt notice many similarities to both Microsoft Windows and Mac OS X, and some differences. Users coming from Mac OS X are more likely to notice similarities due to the fact that both Mac OS X and Ubuntu originated from Unix.

Before you decide whether or not Ubuntu is right for you, we suggest giving yourself some time to grow accustomed to the way things are done in Ubuntu. You should expect to find that some things are different from what you are used to. We also suggest taking the following into account:

Ubuntu is community based. That is, Ubuntu is developed, written, and maintained by the community. Because of this, support is probably not available at your local computer store. Fortunately, the Ubuntu community is here to help. There are many articles, guides, and manuals available, as well as users on various Internet forums and Internet Relay Chat (IRC) rooms that are willing to assist beginners. Additionally, near the end of this guide, we include a troubleshooting chapter: Chapter 7: Troubleshooting.

Many applications designed for Microsoft Windows or Mac OS X will not run on Ubuntu. For the vast majority of everyday computing tasks, you will find suitable alternative applications available in Ubuntu. However, many professional applications (such as the Adobe Creative Suite) are not developed to work with Ubuntu. If you rely on commercial software that is not compatible with Ubuntu, yet still want to give Ubuntu a try, you may want to consider dual-booting. Alternatively, some applications developed for Windows will work in Ubuntu with a program called Wine. For more information on Wine, go to http://www.winehq.org.

Many commercial games will not run on Ubuntu. If you are a heavy gamer, then Ubuntu may not be for you. Game developers usually design games for the largest market. Since Ubuntu's market share is not as substantial as Microsoft's Windows or Apple's Mac OS X, most game developers will not allocate resources towards making their games compatible with Ubuntu. If you just like to play a game every now and then, there is active game development within the community, and many high quality games can be easily installed through the Ubuntu Software Center.

While modern graphical desktop environments have generally replaced early command-line interfaces, the command line can still be a quick and efficient way of performing many tasks. See Chapter 6: Advanced Topics for more information, and Chapter 2: The Ubuntu Desktop to learn more about GNOME and other desktop environments.

A *desktop environment* is a sophisticated and integrated user interface that provides the basis for humans to interact with a computer using a monitor, keyboard and a mouse.

To learn more about Linux distributions, see Chapter 8: Learning More.

To learn more about dual-booting (running Ubuntu side-by-side with another operating system), see Chapter 1: Installation.

See Chapter 5: Software Management to learn more about Ubuntu Software Center.

Contact details

Many people have contributed their time to this project. If you notice any errors or think we have left something out, feel free to contact us. We do everything we can to make sure that this manual is up to date, informative, and professional. Our contact details are as follows:

The Ubuntu Manual Team
Website: http://www.ubuntu-manual.org/
Email: ubuntu-manual@lists.launchpad.net
IRC: #ubuntu-manual on irc.freenode.net
Bug Reports: http://bugs.ubuntu-manual.org

About the team

Our project is an open source volunteer effort to create and maintain quality documentation for Ubuntu and its derivatives.

Our mission is to provide a wide range of quality educational materials to lower the Linux barrier to entry for new users and in turn increase Ubuntu's market share.

Want to help?

We are always looking for talented people to work with, and due to the size of the project we are fortunate to be able to cater to a wide range of skill sets:

- Authors, editors
- Programmers (Python or TᴇX)
- User interface designers
- Icon and title page designers
- Event organizers and ideas people
- Testers
- Web designers and developers
- Translators and screenshotters
- Bug reporters and triagers

To find out how you can get started helping, please visit http://ubuntu-manual.org/getinvolved.

Conventions used in this book

The following typographic conventions are used in this book:

- Button names, menu items, and other GUI elements are set in **boldfaced type**.
- Menu sequences are sometimes typeset as **File ‣ Save As**…, which means, "Choose the **File** menu, then choose the **Save As**…."
- `Monospaced type` is used for text that you type into the computer, text that the computer outputs (as in a terminal), and keyboard shortcuts.

1   Installation

Getting Ubuntu

Before you can get started with Ubuntu, you will need to obtain a copy of the Ubuntu installation image for CD or USB. Some options for doing this are outlined below.

Minimum system requirements

Ubuntu runs well on most computer systems. If you are unsure whether it will work on your computer, the Live CD is a great way to test things out first. Below is a list of hardware specifications that your computer should meet as a minimum requirement.

The majority of computers in use today will meet the requirements listed here; however, refer to your computer documentation or manufacturer's website for more information.

‣ 1 GHz x86 processor (Pentium 4 or better)
‣ 1 GB of system memory (RAM)
‣ 5 GB of disk space (at least 15 GB is recommended)
‣ Graphics card capable of 1024×768 resolution
‣ Sound card
‣ A network or Internet connection

Downloading Ubuntu

The easiest and most common method for getting Ubuntu is to download the Ubuntu CD image directly from http://www.ubuntu.com/download. Choose how you will install Ubuntu:

‣ Download and install
‣ Try it from a CD or USB stick
‣ Run it with Windows

   For the *Download and install*, or *Try it from a CD or USB stick* options, select whether you require the 32-bit or 64-bit version (32-bit is recommended for most users), then click "Start download."

Installing and run alongside Windows

For the *Run it with Windows* option, simply select "Start download," and then follow the instructions for the Ubuntu installer for Windows.

32-bit vs 64-bit

Ubuntu and its derivatives are available in two versions: 32-bit and 64-bit. This difference refers to the way computers process information. Computers capable of running 64-bit software are able to process more information than computers running 32-bit software; however, 64-bit systems require more memory in order to do this. Nevertheless, these computers gain performance enhancements by running 64-bit software.

32-bit and *64-bit* are types of processor architectures. 64-bit is newer, and most recent computers will come with a 64-bit capable processor.

‣ If your computer has a 64-bit processor install the 64-bit version.
‣ If your computer is older, a netbook, or you do not know the type of processor in the computer, install the 32-bit version.

If your computer has a 64-bit processor, click on the "64-bit" option before you click "Start download."

Downloading Ubuntu as a torrent

When a new version of Ubuntu is released, the download servers can get "clogged" as large numbers of people try to download or upgrade Ubuntu at the same time. If you are familiar with using torrents, you may wish to download the torrent file by clicking "Alternative downloads," and then "BitTorrent download" to obtain your copy of the CD image this way instead. You may see significant improvements to your download speed, and will also be helping to spread Ubuntu to other users worldwide.

Torrents are a way of sharing files and information around the Internet via peer-to-peer file sharing. A file with a .torrent extension is made available to users, which is then opened with a compatible program such as uTorrent, Deluge, or Transmission. These programs download parts of the file from other people all around the world.

Burning the CD image

Once your download is complete, you will be left with a file called *ubuntu-11.10-desktop-i386.iso* or similar (*i386* here in the filename refers to the 32-bit version. If you had downloaded the 64-bit version, the filename would contain *amd64* instead). This file is a CD image—a snapshot of the contents of a CD—which you will need to burn to a CD.

While the 64-bit version of Ubuntu is referred to as the "AMD64" version, it will work on Intel, AMD, and other compatible 64-bit processors.

Creating a bootable USB drive

If your PC is able to boot from a USB port, you may prefer to use a USB memory stick instead of burning a CD. Scroll down to "Burn your CD or create a USB drive," select CD or *USB stick*, choose the OS you are using to create the USB drive, and then click *Show me how*. If you select the "USB Stick" option, your installation will be running from the USB memory stick. In this case, references to Live CD, will refer to the USB memory stick.

The Live CD/USB stick

The Ubuntu CD and USB stick function not only as installation media, but also allow you to test Ubuntu without making any permanent changes to your computer by running the entire operating system from the CD or USB stick.

Your computer reads information from a CD at a much slower speed than it can read information off of a hard drive. Running Ubuntu from the Live CD also occupies a large portion of your computer's memory, which would usually be available for applications to access when Ubuntu is running from your hard drive. The Live CD/USB experience will therefore feel slightly slower than it does when Ubuntu is actually installed on your computer. Running Ubuntu from the CD/USB is a great way to test things out and allows you to try the default applications, browse the Internet, and get a general feel for the operating system. It's also useful for checking that your computer hardware works properly in Ubuntu and that there are no major compatibility issues.

To try out Ubuntu using the Live CD/USB stick, insert the Ubuntu CD into your CD drive, or connect the USB drive and restart your computer.

After your computer finds the Live CD/USB stick, and a quick loading screen, you will be presented with the "Welcome" screen. Using your mouse, select your language from the list on the left, then click the button labeled **Try Ubuntu**. Ubuntu will then start up, running directly from the Live CD/USB drive.

In some cases, your computer will not recognize that the Ubuntu CD or USB is present as it starts up and will start your existing operating system instead. Generally, this means that the priority given to *boot devices* when your computer is starting needs to be changed. For example, your computer might be set to look for information from your hard drive, and then to look for information on a CD or USB. To run Ubuntu from the Live CD or USB, we want the computer to look for information from the appropriate device first. Changing your *boot priority* is usually handled by BIOS settings; this is beyond the scope of this guide. If you need assistance with changing the boot priority, see your computer manufacturer's documentation for more information.
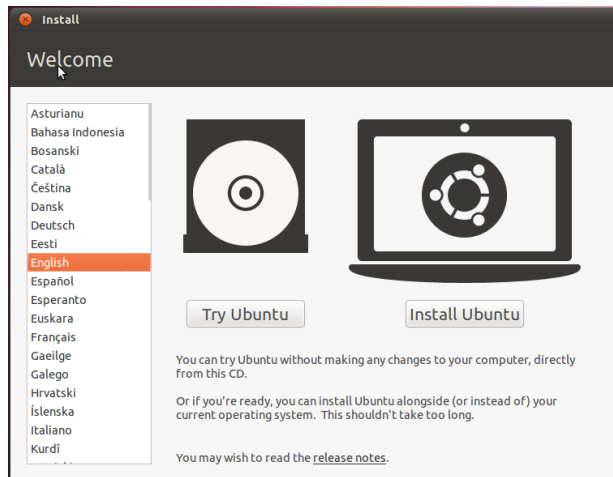
Once Ubuntu is up and running, you will see the default desktop. We will talk more about how to actually use Ubuntu in Chapter 2: The Ubuntu Desktop, but for now, feel free to test things out. Open some applications, change settings and generally explore—any changes you make will not be saved once you exit, so you don't need to worry about accidentally breaking anything.

When you are finished exploring, restart your computer by clicking the "Power" button in the top right corner of your screen (a circle with a line through the top) and then select **Restart**. Follow the prompts that appear on screen, including removing the Live CD and pressing Enter when instructed, and then your computer will restart. As long as the Live CD is no longer in the drive, your computer will return to its original state as though nothing ever happened!

Alternatively, you can also use your mouse to double-click the "Install Ubuntu 11.10" icon that is visible on the desktop when using the Live CD. This will start the Ubuntu installer.

Installing Ubuntu

The process of installing Ubuntu is designed to be quick and easy. To help you get started, we have included step-by-step instructions below, along with screenshots so you can see how things will look along the way.

At least 5GB of free space on your hard drive is required in order to install Ubuntu; however, 15 GB or more is recommended. This will ensure that you will have plenty of room to install extra applications later on, as well as store your own documents, music, and photos.

Getting started

To get started, place the Ubuntu CD in your CD drive and restart your computer. Your computer should load Ubuntu from the CD. When you first start from the CD, you will be presented with a screen asking you whether you want to first try out Ubuntu or install it. Select the language you want to view the installer in and click on the **Install Ubuntu** button. This will start the installation process.

If you have an Internet connection, the installer will ask you if you would like to "Download updates while installing." We recommend you do so. The second option, "Install this third-party software," includes the Fluendo MP3 codec, and software required for some wireless hardware. If

Clicking on the underlined "release notes" link will open a web page containing any important information regarding the current version of Ubuntu.

you are not connected to the Internet, the installer will help you set up a wireless connection.

The "Preparing to install Ubuntu" screen will also let you know if you have enough disk space and if you are connected to a power source (in case you are installing Ubuntu on a laptop running on battery). Once you have selected your choices, click **Continue**.

Internet connection

If you are not connected to the Internet, the installer will ask you to choose a wireless network (if available).

We recommend that you connect during install, though updates and third-party software can be installed after installation.

1. Select **Connect to this network**, and then select your network from the list.
2. If the list does not appear immediately, wait until a triangle/arrow appears next to the network adapter, and then click the arrow to see the available networks.
3. In the **Password** field, enter the network wep or wpa key (if necessary).
4. Click **Connect** to continue.
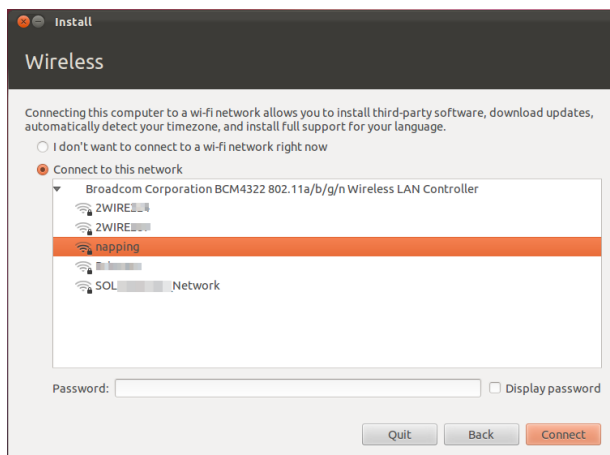
Figure 1.2: Set up wireless.

Allocate drive space

This next step is often referred to as partitioning. Partitioning is the process of allocating portions of your hard drive for a specific purpose. When you create a partition, you are essentially dividing up your hard drive into sections that will be used for different types of information. Partitioning can sometimes seem complex to a new user; however, it does not have to be. In fact, Ubuntu provides you with some options that greatly simplify this process. The Ubuntu installer will automatically detect any existing operating system installed on your machine, and present installations options based on your system. Not all of the options listed below may appear:

If you are installing on a new machine with no operating system, you will not get the first option. The upgrade option is only available if you are upgrading from a previous version of Ubuntu.

1. Install alongside other operating systems
2. Upgrade Ubuntu ... to 11.10
3. Erase ... and install Ubuntu
4. Something else

Install alongside other operating systems.

If you are a Windows or Mac user and you are trying to install Ubuntu for the first time, select the **Install alongside other operating systems** option. This option will enable you to choose which operating system you wish to use when you computer starts. Ubuntu will automatically detect the other operating system and install Ubuntu alongside it.

⚠ *For more complicated* dual-booting *setups, you will need to configure the partitions manually.*

Ubuntu provides you with the option of either *replacing* your existing operating system altogether, or installing Ubuntu alongside your existing system. The latter is called *dual-booting*. Whenever you turn on or restart your computer, you will be given the option to select which operating system you want to use for that session.
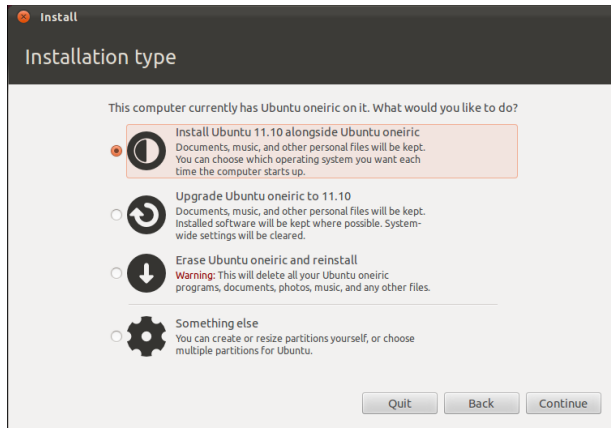
Figure 1.3: Choose where you would like to install Ubuntu.

Upgrade Ubuntu ... to 11.10

This option will keep all of your Documents, music, pictures, and other personal files. Installed software will be kept when possible (not all your currently installed software may be supported on the new version). System-wide settings will be cleared.

Erase disk and install Ubuntu

Use this option if you want to erase your entire disk. This will delete any existing operating systems that are installed on that disk, such as Windows XP, and install Ubuntu in its place. This option is also useful if you have an empty hard drive, as Ubuntu will automatically create the necessary partitions for you.

⚠ *Formatting a partition will destroy any data currently on the partition. Be sure to back up any data you want to save before Formatting.*

Something else

This option is for advanced users and is used to create special partitions, or format the hard drive with a file system different to the default one.

After you have chosen the installation type, click **Continue**, or **Install Now**.

Ubuntu installs a *home folder* where your personal files and configuration data are located by default. If you choose to have your home folder on a separate partition, then in the event that you decide to reinstall Ubuntu or perform a fresh upgrade to the latest release, your personal files and configuration data won't be lost.

More information and detailed instructions on partitioning are available at: https://help.ubuntu.com/community/HowtoPartition.

Confirm Partition choices and start install

If you chose **Something else**, configure the partitions as you need. Once you are happy with the way the partitions are going to be set up, click the **Install Now** button at the bottom right to move on.

To reduce the time required for installation, Ubuntu will continue the installation process "in the background" while you configure important user details—like your username, password, keyboard settings and default timezone.

Where are you?
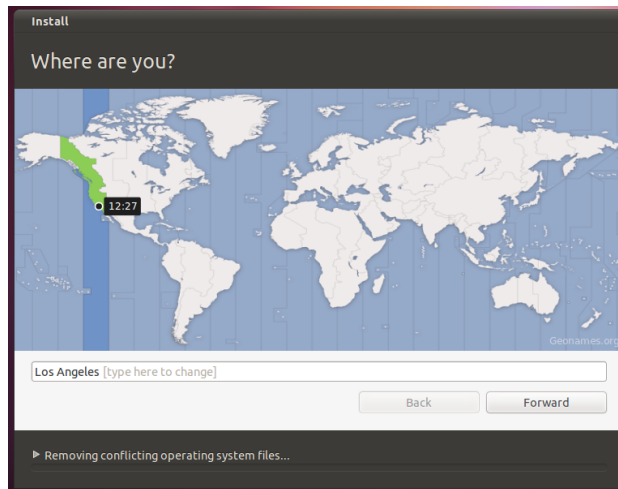
Figure 1.4: Tell Ubuntu your location.

The next screen will display a world map. Using your mouse, click your geographic location on the map to tell Ubuntu where you are. Alternatively, you can use the **drop-down lists** underneath the map. This allows Ubuntu to configure your system clock and other location-based features. Click **Forward** when you are ready to move on.

Keyboard layout

Next, you need to tell Ubuntu what kind of keyboard you are using. In most cases, you will find the suggested option satisfactory. If you are unsure which keyboard option to select, you can click the **Detect Keyboard Layout** button to have Ubuntu determine the correct choice by asking you to press a series of keys. You can also manually choose your keyboard layout from the list of options. If you like, enter text into the box at the bottom of the window to ensure you are happy with your selection, then click **Continue**.

Who are you?

Ubuntu needs to know some information about you so it can set up the primary user account on your computer. When configured, your name will appear on the login screen as well as the MeMenu, which we discuss in Chapter 2: The Ubuntu Desktop.

On this screen you will need to tell Ubuntu:

‣ your name
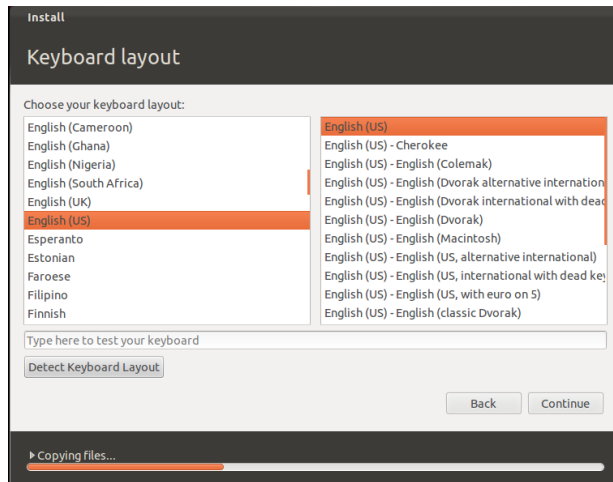
‣ what you want to call your computer
‣ your desired username
‣ your desired password
‣ how you want Ubuntu to log you in
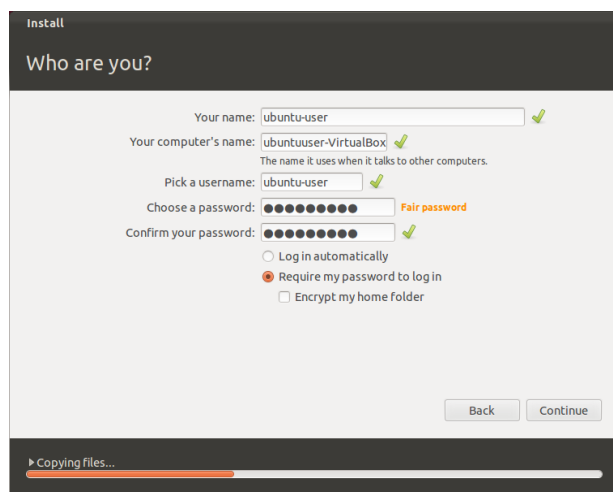
Enter your full name under "Your name?". The next text field is the name your computer uses, for terminals and networks. You can change this to what you want, or keep the predetermined name. Next is your username, the name that is used for the Me Menu, your home folder, and behind the scenes. You will see this is automatically filled in for you with your first name. Most people find it easiest to stick with this. However, it can be changed if you prefer.

Next, choose a password and enter it into the password field on the left, and then enter same password into the password field on the right. When both passwords match, a strength rating will appear to the right that will show you whether your password is "too short," "weak," "fair," or "strong." You will be able to continue the installation process regardless of your password strength, but for security reasons it is best to choose a

strong one. This is best achieved by having a password that is at least six characters long, and is a mixture of letters, numbers, symbols, and upper-case/lowercase. Avoid obvious passwords that include your birth date, spouse's name, or the name of your pet.

Login Options

Finally, at the bottom of this screen you have three options from which to choose regarding how you wish to log in to Ubuntu.

‣ Log in automatically
‣ Require my password to log in
‣ Encrypt my home folder

Log in automatically

Ubuntu will log in to your primary account automatically when you start up the computer so you won't have to enter your username and password. This makes your login experience quicker and more convenient, but if privacy or security are important to you, we don't recommend this option. Anyone who can physically access your computer will be able to turn it on and also access your files.

Require my password to login

This option is selected by default, as it will prevent unauthorized people from accessing your computer without knowing the password you created earlier. This is a good option for those who, for example, share their computer with other family members. Once the installation process has been completed, an additional login account can be created for each family member. Each person will then have their own login name and password, account preferences, Internet bookmarks, and personal storage space.

Encrypt my home folder

This option provides you with an extra layer of security. Your home folder is where your personal files are stored. By selecting this option, Ubuntu will automatically enable encryption on your home folder, meaning that files and folders must be decrypted using your password before they can be accessed. Therefore if someone had physical access to your hard drive (for example, if your computer was stolen and the hard drive removed), they would not be able to see your files without knowing your password.

⚠ *If you choose this option, be careful not to enable automatic login at a later date. It will cause complications with your encrypted home folder, and will potentially lock you out of important files.*

Installation Slideshow

Ubuntu will now finish installing on your hard drive. As the installation progresses, a slideshow will give you an introduction to some of the default applications included with Ubuntu. These applications are covered in more detail in Chapter 3: Working with Ubuntu.

After approximately twenty minutes, the installation will complete and you will be able to click **Restart Now** to restart your computer and start

Ubuntu. The CD will be ejected, so remove it from your CD drive and press Enter to continue.
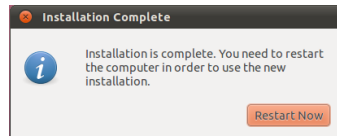
Figure 1.8: You are now ready to restart your computer.

Wait while your computer restarts, and you will then see the login window (unless you selected automatic login).

Click your username and enter your password, then press Enter or click **Log in**. You will then be logged in to Ubuntu and will be presented with your new desktop!

Ubuntu installer for Windows

You can install and run Ubuntu alongside your current installation of Windows:

1. Download the Ubuntu installer for Windows http://www.ubuntu.com/download/ubuntu/windows-installer
2. Run the download file
3. Install Ubuntu

Download and run the installer

After the file, *wubi.exe*, is downloaded, run the file to start the installation. If a security message appears, click **Continue**, to proceed with the installation:
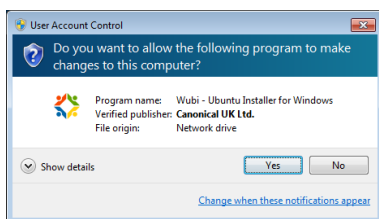
Figure 1.9: User Account Control dialog

Install

The Ubuntu Installer will start. Choose and enter a "Username" and "Password." The password must be entered twice to ensure accuracy. After choosing a password, click **Install**. The Ubuntu Installer will download and install Ubuntu. This process will take some time. The download file size is 700Mb. After the installation is complete, click **Finish** on the "Completing the Ubuntu Setup Wizard" screen to reboot the computer.
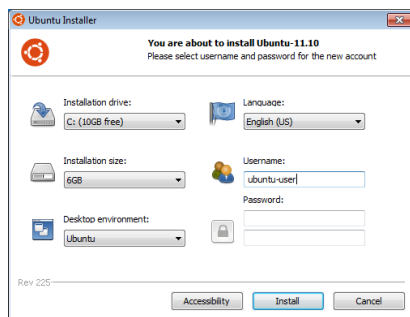
Figure 1.10: Ubuntu Windows Installer

Installation complete

After the computer restarts, you can select "Ubuntu" from the boot menu. You will then be logged in to Ubuntu and will be presented with your new desktop!

2 The Ubuntu Desktop

Understanding the Ubuntu desktop

Initially, you may notice many similarities between Ubuntu and other operating systems such as Microsoft Windows or Mac os x. This is because they are all based on the concept of a graphical user interface (GUI)—*i.e.*, you use your mouse to navigate the desktop, open applications, move files, and perform most other tasks. In short, things are visually oriented, which means that it's important for you to become familiar with where and what to click in Ubuntu.
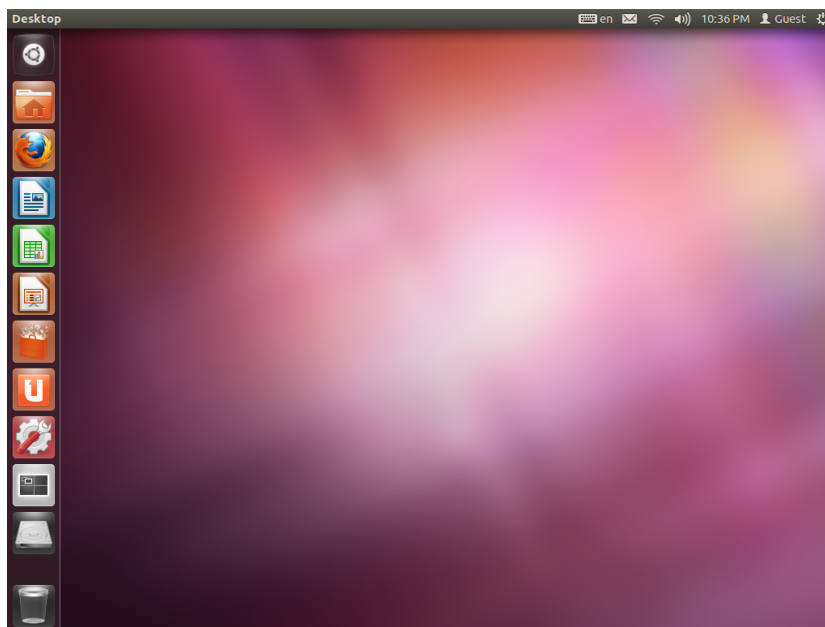
Unity

All GUI-based operating systems use a *desktop environment*. Desktop environments encompass many things, such as:

‣ The look and feel of your system
‣ The way the desktop is laid out
‣ How the desktop is navigated by the user

In Linux distributions (such as Ubuntu), there are a number of desktop environments available for use. Ubuntu uses Unity as the default desktop environment.

KDE, XFCE, GNOME and LXDE are other popular desktop environments. Since Ubuntu uses Unity, we will focus this guide on exploring the Unity desktop.

After installation and log in, you will see the Unity desktop. Let's explore the default layout that is in front of you. This initial view is comprised of

the The Desktop Background and two *bars*—one at the top of your desktop, The Top Bar, and one on the left, Using Launcher.

The Desktop Background

Below the **Top Bar** is an image that covers the entire desktop. This is the desktop background or wallpaper and the one you see in front of you belongs to the default Ubuntu 11.10 theme known as *Ambiance.* To learn more about customizing your desktop including changing your background, see the section on Customizing your desktop below.

The Top Bar

The **Top Bar** incorporates all of the functions that you need. First, the right part of the bar is the Indicator area. To access an indicator, just left-click on it. Starting from the left, the Indicators are:

‣ the Keyboard Indicator—allows you to select the keyboard layout you would like and change your keyboard preferences.
‣ the Messaging Indicator—incorporates all your *social applications.* From here, you can access your instant messenger, your email client, your microblogging application, and even UbuntuOne, your personal cloud!
‣ the Network Indicator—allows you to manage your network connections and connect quickly and easily to a wired or wireless network.
‣ the Sound Indicator—allows you to adjust the sound volume, and access your music player and Sound Settings.
‣ the Clock—shows you the current time and provides you with an easy way to access your calendar and *Time and Date settings.*
‣ the Me Menu—allows you to easily switch between different users and access your online and user *accounts*
‣ the Session Indicator—provides you an easy way to access *System Settings*, *Updates*, Printers, and session options for locking your computer, logging out of your session, restarting the computer, or shutting down completely.

"Top Bar" is also referred as "Top Panel."

For more about:

‣ the Messaging Indicator see Microblogging;
‣ the Network Indicator see Getting online;
‣ the Session Indicator see Session options.

Figure 2.2: The Indicators of the **Top Bar**.

Every application has a menu (like **File**, **Edit**, **View** etc.), called the *application menu.* In Unity, the application menu isn't on the titlebar of the application, like in other desktop environments, but is instead located on the left area of the **Top Bar**. To show an application's menu, just move your mouse to the **Top Bar**. This is the second key concept of the **Top Bar**, the incorporation of application menus on the **Top Bar**. This feature of *Unity* provides you with more free work space; especially beneficial for netbook and laptop users.

Note that some older applications may still display their menu within the application window.

The Launcher

The bar on the left side of the screen is called the *Launcher*. The **Launcher** provides you with an easy way to access applications, mounted devices and Trash. If you run a maximized application, **Launcher** is automatically hidden. To show the *Launcher*, move your mouse to the left side of your

screen. Starting from the top, the first item of the **Launcher** is **the Dash**—we will describe the Dash in depth later—next there are some applications, the Workspace lens, any mounted devices, and at the bottom of the Launcher is the Trash. By default there are some applications on the **Launcher**, like Firefox. Also, all of the applications that you are running are available from the **Launcher**, including the minimized applications.

Workspaces helps you to select the workspace or the window you want. Trash contains deleted files.

Tip: Pressing Meta+S will show the Workspaces.

The Dash

The Dash is a tool that helps you to access the application, files and music, you want, if you are a Windows user you can see the Dash as a more advanced approach of the *Start menu.* If you are a Mac user, the Dash is something like Launchpad in the dock. If used a previous version of Ubuntu or another GNOME distro, Dash replaces the GNOME menus.

To explore the Dash, move your cursor to the **Launcher** and click on the top icon, containing the Ubuntu logo.

The Dash allows the user to search for information: locally (installed applications, recent files, bookmarks, etc.) and remotely (Twitter, Google Docs, etc.). This is accomplished by utilizing one or more Lenses; each responsible for providing a category of search results for the Dash. For more information regarding the Dash and lenses, see: https://wiki.ubuntu.com/Unity
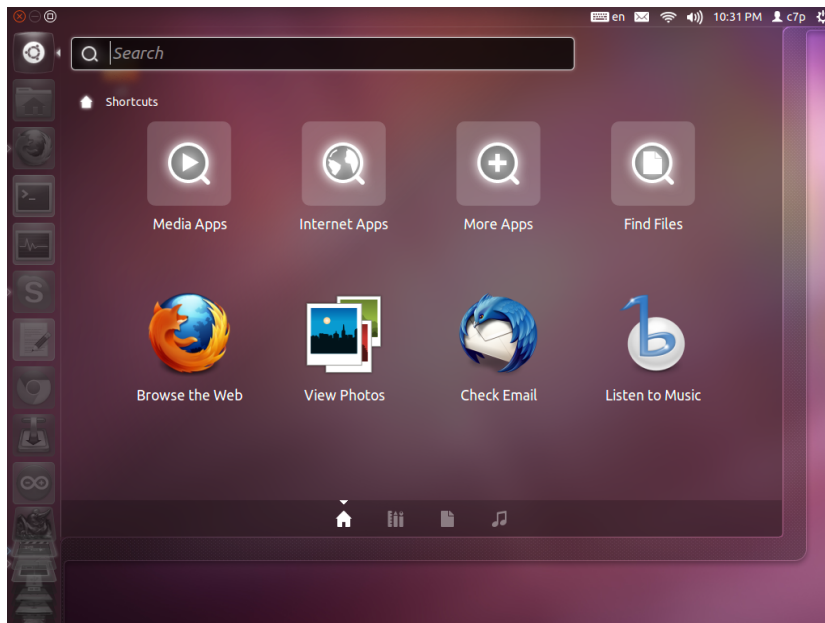
Figure 2.3: The Dash

Now, you can see the search bar on the top, some shortcuts for your media, mail and photo applications as well as icons to restrict your search to particular file-types below. These are called *lenses.* When you type in the search bar, the Dash will start searching for applications, files, folders or music that match what you've typed.

At the bottom area of the Dash, are four icons, *Home, Application Lens, File Lens* and *Music Lens.* Lenses serve to specialize search categories in the Dash.

Figure 2.4: Dash lenses

Search for files and applications with the Dash

As mentioned, the Dash is the tool that helps you find what you want. So if you are searching for an application, a file, a music album etc, the Dash is the right place for you. The search bar in the the Dash will locate both applications and files.

If you want to maximize the Dash, you only have to click on the icon at the bottom right corner of the Dash.

Search applications

If you need an application, open the the Dash and press on the *Application Lens.* The Dash automatically categorizes the application to "Most Frequently Used," "Installed," and "Apps Available for Download." Enter the name of the application you are looking for, and the Dash will return the results. If you can't find what you want, you can also filter the results by pressing *Filter results* in the top right corner of the Dash, and then selecting a category.

More information on the applications you will need can be found in Chapter 3: Working with Ubuntu.
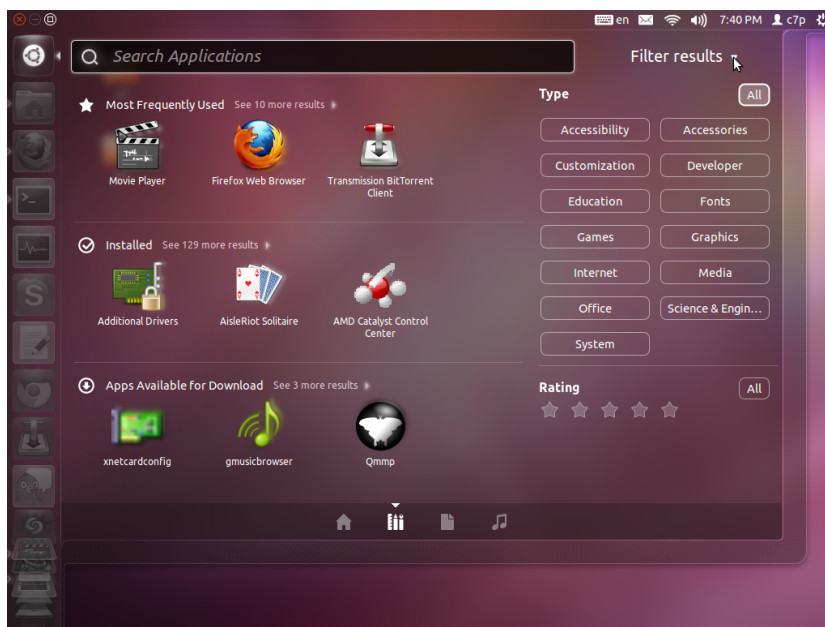
Figure 2.5: You can see the default results when you press Application Lens, and also the criteria on the right side.

Search Files and Folders

Open the Dash, and then click on the *File Lens.* Now you can see files categorized to "Recent," "Downloads," and "Folders." You can add criteria to fine-tune the results. To do this, click on *Filter results* and select file or folder modification times, or file type (.odt, .pdf, .doc, .tex., etc.), or its size.

Browsing files on your computer

There are two ways to locate files on your computer; either search for them or access them directly from their folder. You can search for a file via the Dash or Files & Folders in the **Launcher**. You can use the Files & Folders tool to access commonly used folders (such as **Documents**, **Music**, **Downloads**), and most recently accessed files.

You can open your Home folder from the **Launcher**

Places

On the desktop, hover your mouse over the **Top Bar**, and select **Places**. The **Places** menu holds a list of commonly used folders (such as **Documents**, **Music**, **Downloads**, and the **Home Folder**). You can also browse the disks on your computer by clicking **Computer** in this menu. If you set up a home network, you will find a menu item to access shared files or folders. You can also access the Search for Files tool from the **Places** menu, or browse a list of recently opened folders.

If you do not see the desktop menu, click somewhere on the desktop and it will appear.

Your Home Folder

The home folder is where your personal files are located. When you open your personal folder, you will see that there are several folders inside: Desktop (which contains any files that are visible on the desktop), Documents, Downloads, Music, Pictures, Public, Templates, and Videos.

Using Launcher

Running applications

To run an application from the **Launcher**, just click on the application's icon. Any running application exists on the **Launcher**, and has one or more triangles on the left side of its icon, indicating the number of the application windows. The application that is on the foreground has a white triangle on the right side of the application's icon.

If you hold the Meta key for a while, a number will appear on each of the first ten applications. You can launch an application with a number n on it, with Meta+n.

You can also run an application through the Dash. We will talk about the Dash, in the The Dash section.

If you minimize an application, it is minimized to the Launcher, and can be restored later from there.

Adding and removing applications from Launcher

If you want to add an application to the **Launcher**, there are two ways to do so:

▸ Open the Dash, find the application you want, and then drag and drop it on the Launcher
▸ Run the application you want to add to the Launcher, and then right-click on the application's icon on the Launcher, and select **Keep in launcher**.

If you want to remove an application from the **Launcher**, right-click on the application's icon and then select **Remove from launcher** or deselect **Keep in launcher**—if the application is running.

Figure 2.6: You can see the Home Folder on the foreground, having a triangle on the right of its icon. And Firefox with two triangles, indicating that there are two opened windows of the browser.

Workspaces

Workspaces are virtual desktops—separate views of your desktop which let you group your open windows. These virtual desktops increase the size of your working area. Workspaces are meant to reduce clutter and make the desktop easier to navigate. By default Ubuntu has four workspaces. For example, you can have all the media applications windows on one workspace, the web browser and office suite windows on another.

Switching between workspaces

To explore workspaces, click on the Workspaces lens, located on the Launcher. This lens let you switch workspaces, and choose the one you want to work on.

Managing windows

When you open a program in Ubuntu (such as a web browser or a text editor—see Chapter 3: Working with Ubuntu for more information on using applications)—a *window* will appear on your desktop. If you have used another operating system before, such as Microsoft Windows or Mac os x, you are probably familiar with the concept of a "window"—the box that appears on your screen when you start a program. In Ubuntu, the top part of a window (the *titlebar*) will have the title of the window in the center, and three buttons in the top left corner. From left to right, these buttons *close*, *minimize*, and *maximize* the window. Additionally, you can right-click anywhere on the titlebar for a list of other window management options.

Closing, maximizing, restoring, and minimizing windows
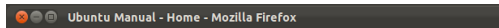
Figure 2.7: This is the **Top Bar** of a window, named *Titlebar*. The close, minimize, and maximize buttons are on the top-left corner of windows.

To *close* a window, click on the "×" in the upper left corner of the window —this will be the first button on the left-hand side. The button immediately to the right of this, is used to *minimize* the window to the Launcher. Once minimized the window will no longer be visible, but its corresponding icon will remain on the **Launcher**. This icon will have a triangle on the left side of it, indicating the program is still running. Clicking this icon, will *restore* the window to its original position. Finally, the right-most button of this group will *maximize* the window, making it fill the entire screen. Clicking this button again will return the window to its original size. Note that if you maximize a window its buttons and menu are automatically hidden from view. To show them, just move your mouse to the left side of the **Top Bar**.

Moving and resizing windows

To move a window around the workspace, place the mouse pointer over the window's titlebar, then click and drag the window while continuing to hold down the left mouse button. To resize a window, place the pointer on an edge or corner of the window so that it turns into a larger arrow, the resize icon. You can then click and drag to resize the window.

You can also move a window by holding the Alt key and dragging the window
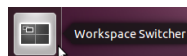
Figure 2.8: The *Workspaces Lens* on the Launcher.

Switching between open windows

In Ubuntu there are many ways to switch between open windows.

1. If the window is visible on your screen, you can click any portion of it to raise it above all other windows.

Meta key (Meta), is also known as the Windows key (Win key). Press Meta+D to hide all window and display the desktop, the same works to restore all windows.

2. Use `Alt+Tab` to select the window you wish to work on. Hold down the `Alt` key, and keep pressing `Tab` until the window you're looking for appears in the popup.
3. Click on the corresponding icon on Launcher. Move your mouse to left side of your screen to show the Launcher, and right-click on the application icon. If the application has multiple windows open, double-click on the icon in order to select the window you want.

Moving a window to different workspace

To move a window to a different workspace, make sure the window isn't maximized. If it is maximized click on the right-most button to restore it to its original size. Then right-click on the window's title bar, and select:

‣ **Move to Workspace Left**, to move the window to the left workspace
‣ **Move to Workspace Right**, to move the window to the right workspace
‣ **Move to Another Workspace**, and then choose the Workspace you want, to move the window to the preferred workspace.

Window always on the top or on visible workspace

At times, you may want to have a *window always on top* so that it can be seen or monitored while you work with other applications. For example you may want to browse the web and at the same time have the instant messenger on the top, to watch the chat.

To do this you can right-click on the window's title bar, and then select **Always on the top**. Note that this window will be on the top of all windows that are opened on the current workspace.

If you want to have a window always on the top regardless of which workspace the window is on, right-click on the window's titlebar, and then select **Always on Visible Workspace**. Doing so this window will be always on the top of all windows, on all workspaces.

Nautilus file manager

Just as Windows has Windows Explorer and Mac os x has Finder to browse files and folders, Ubuntu uses the Nautilus file manager by default. We will now look at Nautilus in more detail.

The Nautilus file manager window

When you select the Home Folder shortcut in the launcher, or click on a folder in Files & Folders, the Dash, or on the desktop, the Nautilus file manager window opens up. The normal window contains the following features:

Menubar The menubar is located at the top of the screen. These menus allow you to modify the layout of the browser, navigate, bookmark commonly used folders and files, and view hidden folders and files.

Toolbar The toolbar has tools for navigation and a tool to make the contents of the window larger or smaller. A drop-down list gives you the option of switching the view from **Icon View** to **List View** or **Compact View**. The search icon (which looks like a magnifying glass) opens a field so you can search for a file by name.

If you bookmark a folder, it will appear in the **Bookmarks** menu and in the left pane.

Additional Navigation Tools Just below the toolbar, you will see a represen-
tation of where you are currently browsing. This is similar to the history
function of most browsers; it keeps track of where you are and allows
you to backtrack if necessary. You can click on the locations to navigate
back through the file browser.

Left Pane The left pane of the file browser has shortcuts to commonly-used
folders. When you bookmark a folder, it appears in the left pane. No
matter what folder you open, the left pane will always contain the same
folders. This left pane can be changed to display different features, such
as Information, Tree, History etc., by clicking the down arrow beside
"Places" near the top.

Central Pane The largest pane shows the files and folders in the directory
that you are currently browsing.

If you start typing a location starting with a /
character, Nautilus will automatically change
the navigation buttons into a text field labeled
Location. It is also possible to convert the
navigation buttons into a text field by pressing
Ctrl+L.
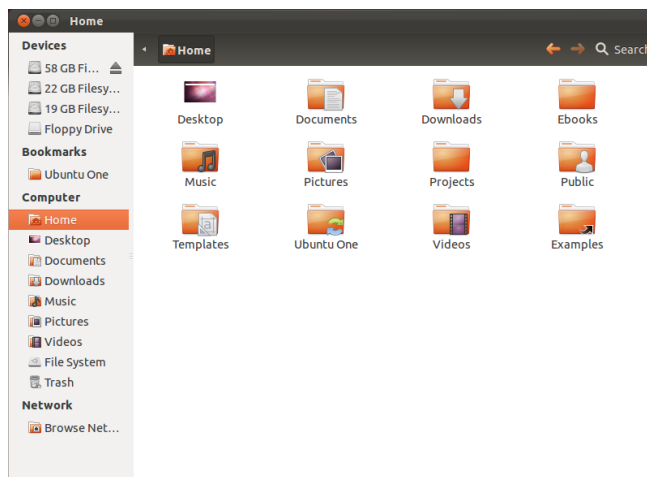
Figure 2.9: Nautilus file manager displaying
your home folder.

Navigating Nautilus

To navigate between directories, use the bookmarks in the left pane of
the Nautilus file manager. You can also retrace your steps by clicking on
the name of a folder where it is listed just below the navigational icons.
Double-clicking on a visible directory will cause you to navigate to it in
Nautilus.

What is a Directory? A Folder? A directory is a
division of space in a file system that you can
use to organize files. A folder is the name given
to a directory in a Graphical User Interface
environment like Nautilus.

Opening files

A file in its simplest form, is data. Data can represent a text document,
database information, or data that will be used to produce music or video.
To open a file, you can either double-click on its icon or right-click and
select **Open With** (program).

Creating new folders

To create a new folder from within Nautilus click **File ▸ Create Folder**, then
name the folder that appears by replacing the default "untitled folder" with
your desired label (*e.g.*, "Personal Finances"). You can also create a new
folder by pressing Ctrl+Shift+N, or by right-clicking in the file browser

Note that you can easily view hidden files
by clicking **View ▸ Show Hidden Files**, or
alternatively by pressing Ctrl+H. Hiding files
with a dot (.) is *not* a security measure—instead
it provides a way of keeping your folders
organized and tidy.

window and selecting **Create Folder** from the popup menu (this action will also work on the desktop).

Hidden Files and Folders

If you wish to hide certain folders or files, place a dot (.) in front of the name (*e.g.*, ".Personal Finances"). In some cases it is impossible to hide files and folders without prefixing them with a dot. In Nautilus these folders can be hidden by creating a .hidden file. Open the file and enter in the name of the file or folder you wish to hide. Make sure that each file or folder is on a separate line. When you open Nautilus the folder will no longer be visible.

Copying and moving files and folders

You can copy files or folders in Nautilus by clicking **Edit ▸ Copy**, or by right-clicking on the item and selecting **Copy** from the popup menu. When using the **Edit** menu in Nautilus, make sure you've selected the file or folder you want to copy first (by left-clicking on it once).

> You can also use the keyboard shortcuts `Ctrl+X`, `Ctrl+C` and `Ctrl+V` to cut, copy and paste (respectively) files and folders.

Multiple files can be selected by left-clicking in an empty space (*i.e.*, not on a file or folder), holding the mouse button down, and dragging the cursor across the files or folders you want. This "click-drag" move is useful when you are selecting items that are grouped closely together. To select multiple files or folders that are not positioned next to each other, hold down the `Ctrl` key while clicking on each item individually. Once multiple files and/or folders are selected you can use the **Edit** menu to perform actions just like you would for a single item. When one or more items have been "copied," navigate to the desired location then click **Edit ▸ Paste** (or right-click in an empty area of the window and select **Paste**) to copy them to the new location.

> When you "cut" or "copy" a file or folder, nothing will happen until you "paste" it somewhere. Paste will only affect the most recent item that was cut or copied.

While the *copy* command can be used to make a duplicate of a file or folder in a new location, the *cut* command can be used to move files and folders around. That is, a copy will be placed in a new location, and the original will be removed from its current location.

> In the Nautilus **Edit** menu, you will also find the **Copy To** and **Move To** buttons. These can be used to copy or move items to common locations, and can be useful if you are using panes (see below). Note that it is unnecessary to use **Paste** when using these options.

To move a file or folder, select the item you want to move then click **Edit ▸ Cut**. Navigate to your desired location, then click **Edit ▸ Paste**. . As with the copy command above, you can also perform this action using the right-click menu, and it will work for multiple files or folders at once. An alternative way to move a file or folder is to click on the item, and then drag it to the new location.

> If you click on a file or folder, drag it, and then hold down the `Alt` key and drop it to your destination folder, a menu will appear asking whether you want to *copy, move* or *link* the item. Notice that the symbol of the mouse cursor changes from an arrow into a question mark as soon as you hold down the `Alt` key

Using multiple tabs and multiple Nautilus windows

Opening multiple Nautilus windows can be useful for dragging files and folders between locations. The option of *tabs* is also available in Nautilus, as well as the use of *panes*. When browsing a folder in Nautilus, to open a second window select **File ▸ New Window** or press `Ctrl+N`. This will open a new window, allowing you to drag files and folders between two locations. To open a new tab, click **File ▸ New Tab** or press `Ctrl+T`. A new row will appear above the space used for browsing your files containing two tabs —both will display the directory you were originally browsing. You can click these tabs to switch between them, and click and drag files or folders between tabs the same as you would between windows. You can also open a second pane in Nautilus so you can see two locations at once without having to switch between tabs or windows. To open a second pane, click

> When dragging items between Nautilus windows, tabs or panes, a small symbol will appear over the mouse cursor to let you know which action will be performed when you release the mouse button. A plus sign (+) indicates you are about to copy the item, whereas a small arrow means the item will be moved. The default action will depend on the folders you are using.

View ‣ Extra Pane, or press F3 on your keyboard. Again, dragging files and folders between panes is a quick way to move or copy items.

Searching for files and folders on your computer

You can search for files and folders using the Dash, the Launcher's Files and Folders lens or Nautilus.

Search for files and folders quickly by pressing Ctrl+F in Nautilus and then typing what you want to find.

Search using the Dash

In the Dash, click **Search for Files**. Open the drop-down menu on the right side of the search bar. Select Folders, All Files, or one of the special folders, *e.g.*, Documents. It is sufficient to type the first few letters of the file or folder you are searching for.

Search using the Launcher's Files and Folders lens

Go to the Launcher's Files and Folders lens. Open the drop-down menu on the right side of the search bar. Select Folders, All Files, or one of the special folders, *e.g.*, Documents. It is sufficient to type the first few letters of the file or folder you are searching for.

Search using Nautilus

In Nautilus, click **Go ‣ Search for Files**, or press Ctrl+F. This opens the search field where you can type the name of the file or folder you want to find.

Customizing your desktop
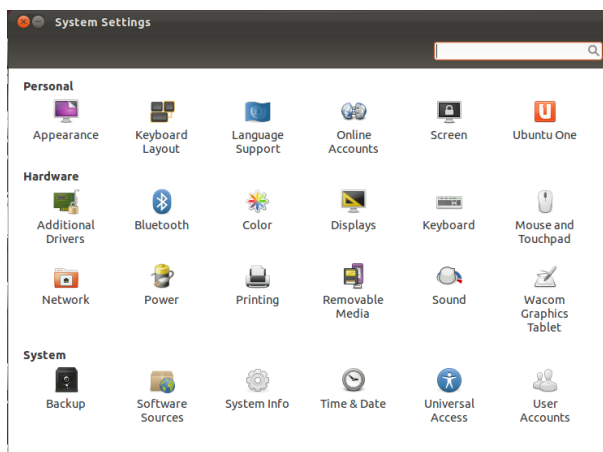
Figure 2.10: You can change most of your system's settings here.

Most customizations can be reached via the Session Indicator and then selecting **System Settings** to open the System Settings application window. The Dash, Desktop appearance, Themes, Wallpapers, Screensavers, Accessibility, and other configuration settings are available here. For more information see Session options.

Appearance

You can change the background, fonts, and window theme to further modify the look and feel of your desktop. To begin, open Appearance by either right-clicking on your background and selecting **Change Desktop Background** or selecting **Session Indicator** then **System Settings** then **Appearance** .

Theme

The "Appearance" window will display the current selected background wallpaper and theme when it opens. You may select a theme that will control the appearance of your windows, buttons, scroll bars, panels, icons, and other parts of the desktop. The *Ambiance* theme is used by default, but there are other themes you can choose from. Just click once on the theme you want to try. The theme will change immediately.

Desktop background

Under Background, you may choose from **Wallpapers**, **Pictures Folder**, and **Colors and Gradients**. When **Wallpapers** is selected, you will see Ubuntu's default selection of backgrounds. To change the background simply click the picture you would like to use. You're not limited to this selection though.

To use one of your own pictures, click the +... button, and navigate to the image you want. Double-click it, and the change will take effect immediately. This image will also then be added to your list of available backgrounds.

If you are after a larger selection of desktop backgrounds, click the "Get More Backgrounds Online" link at the bottom of the Appearance Preferences window. This link will open your web browser, and direct you to the http://art.gnome.org/backgrounds website.

Accessibility

Ubuntu has built-in tools that make using the computer easier for people with certain physical limitations. You can find these tools by opening the

Dash and searching for "Universal Access." On the **Seeing** tab you can manage the text size, the contrast of the interfaces, enable a zoom tool and even a screen reader. Selecting high-contrast themes and larger on-screen fonts can assist those with vision difficulties. You can activate "Visual Alerts" though the **Hearing** tab, if you have hearing impairment. Also you can adjust keyboard and mouse settings to suit your needs through the **Typing** and **Pointing and Clicking** tabs respectively.
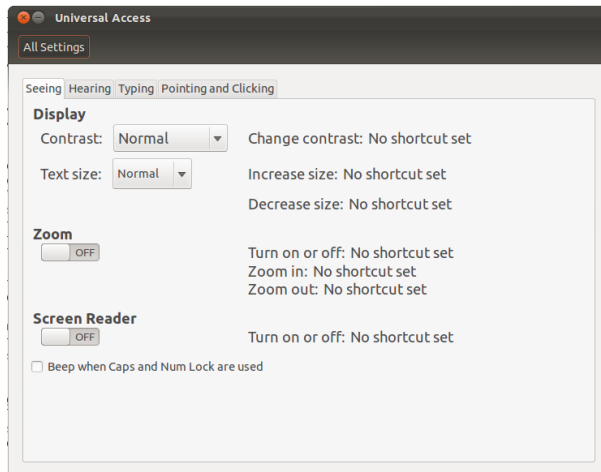
Figure 2.12: Universal allows you to enable extra features to make it easier to use your computer.

Orca screen reader

Orca is a useful tool for people with visual impairments, and comes pre-installed. To run Orca, click on the **Dash** and type `Orca`, and click on the shown result. Orca is the Screen Reader of the Universal Access, and can be launched once the "Screen Reader" is activated. Orca's voice synthesizer will activate and assist you through the various options such as voice type, voice language, Braille, and screen magnification. Once you have finished selecting your settings, you will need to log out of the computer (Orca will offer to do this for you). When you log back in, the Orca settings you chose will automatically run every time you use your computer.

Session options

When you have finished working on your computer, you can choose to log out, suspend, restart, or shut down through the Session Indicator on the far right side of the top panel. You can also quickly access these options by pressing the `Ctrl+Alt+Del` keys.

Logging out

Logging out will leave the computer running but return you to the login screen. This is useful for switching between users, such as when a different person wishes to log in to their account, or if you are ever instructed to "log out and back in again." You should save your work before logging out.

Suspend

To save energy, you can put your computer into suspend mode, which will save its current condition and allow you to start more quickly while remaining on but using very little energy. Suspending the computer spins down the hard disk and saves your session to memory, so it is very quick to suspend and resume from suspension.

Hibernate

Hibernate is similar to suspend, except that instead of saving your session to memory, hibernate will save your session to the hard disk. This takes a little longer, but with the added benefit that hibernation uses no power while it is in a hibernated state.

Rebooting

To reboot your computer, select **Shut Down**… from the "Session Indicator" and click on **Restart**.

Shut down

To totally power down your computer, select **Shut Down**… from the "Session Indicator" and click on **Shutdown**.

Other options

From the Session Indicator, you can also select **Lock Screen** to require a password before using the computer again—this is useful if you need to leave your computer for some duration. You can also use the Session Indicator to set up a guest session for a friend to try Ubuntu, or to *switch users* to log into another user account without closing your applications.

You can lock your screen quickly by using the keyboard shortcut `Ctrl+Alt+L`. Locking your screen is recommended if you move away from your computer for a short amount of time.

Getting help

Ubuntu, just like other operating systems, has a built-in help reference, called the Ubuntu Desktop Guide. To access it, click on **the Dash** and type `Help`. Alternately, you can press F1 while on the desktop, or click Ubuntu Help in the Top Bar.

Many applications have their own help which can be accessed by clicking the **Help** menu within the application window.

If you can't find an answer to your question in this manual or in the Ubuntu Desktop Guide, you can contact the Ubuntu community through the Ubuntu Forums (http://ubuntuforums.org).

Many Ubuntu users open an account on the forums to receive help, and in turn provide support to others as they gain more knowledge. Another useful resource is the Ubuntu Wiki (https://wiki.ubuntu.com), a website maintained by the Ubuntu community.

We encourage you to check any information you find on other websites with multiple sources when possible, but only follow directions if you understand them completely.
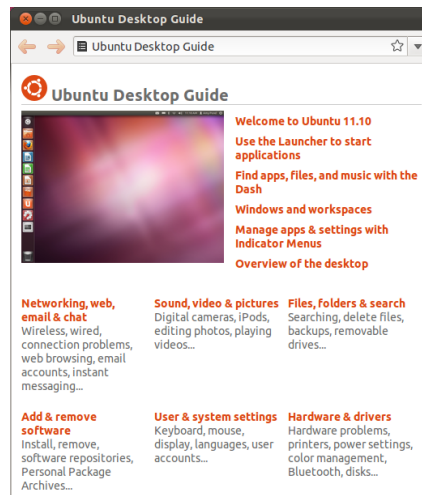
Figure 2.13: The built-in system help provides topic-based help for Ubuntu.

3 Working with Ubuntu

All the applications you need

If you are migrating from a Windows or Mac platform, you may wonder if the programs that you once used are available. Some of the programs you already use have native Linux versions. And, for those that don't, there are free and open-source applications that will cover your needs. This section will recommend some alternates that will work well on Ubuntu. Most of the applications listed in this section are available via the Software Center. Those followed by an asterisk (*) can be downloaded directly from their official websites.

You can search for more applications in the Ubuntu Software Center, by the category that you are interested in.

Office Suites

▸ Windows: Microsoft Office, LibreOffice
▸ Mac OS: iWork, Microsoft Office, LibreOffice
▸ Linux: LibreOffice, KOffice, GNOME Office, Kexi (database application)

In Ubuntu you may choose among many office suites. The most popular suite is the LibreOffice (formerly OpenOffice). Included in the suite:

▸ Writer—word processor
▸ Calc—spreadsheet
▸ Impress—presentation manager
▸ Draw—drawing program
▸ Base—database
▸ Math—equation editor

LibreOffice Suite is installed by default. Note that Base is not installed by default and it can be installed through Ubuntu Software Center.

Email Applications

▸ Windows: Microsoft Outlook, Mozilla Thunderbird
▸ Mac OS: Mail.app, Microsoft Outlook, Mozilla Thunderbird
▸ Linux: Mozilla Thunderbird, Evolution, KMail

As with office suites, there are multiple options for email applications. One very popular email application is Mozilla Thunderbird, which is also available for Windows. Thunderbird is the default email application in Ubuntu. Another option is Evolution—similar to Microsoft Outlook, it also provides a calendar.

Web Browsers

▸ Windows: Microsoft Internet Explorer, Mozilla Firefox, Opera, Chromium, Google Chrome
▸ Mac OS: Safari, Mozilla Firefox, Opera, Chromium, Google Chrome
▸ Linux: Mozilla Firefox, Opera*, Chromium, Google Chrome*, Epiphany

The most popular web browsers can be installed directly from the Ubuntu Software Center.

Opera is available for download from http://www.opera.com/browser/download/. Google Chrome is available for download from https/chrome.google.com.

PDF Readers

‣ Windows: Adobe Reader
‣ Mac OS: Adobe Reader
‣ Linux: Evince, Adobe Reader, Okular

Evince is a user-friendly and minimalistic reader, and it is the default PDF reader. If Evince doesn't cover your needs, Adobe Reader is available for Ubuntu too.

Multimedia Players

‣ Windows: Windows Media Player, VLC
‣ Mac OS: Quicktime, VLC
‣ Linux: Totem, VLC, Mplayer, Kaffeine

For multimedia, Ubuntu users have a wide variety of options for high quality players. Two popular and powerful media players for Ubuntu are VLC and Mplayer. Meanwhile, the classic and user-friendly Totem is the default media player in Ubuntu.

Music Players and Podcatchers

‣ Windows: Windows Media Player, iTunes, Winamp
‣ Mac OS: iTunes
‣ Linux: Banshee, Rhythmbox, Amarok, Audacity, Miro

There are several options for listening to music with Ubuntu: Banshee (installed by default), Rhythmbox, and Amarok, among others. With these you can listen to music and your favorite podcasts. Audacity is similar to Winamp. There is Miro for those of you who watch video podcasts and TV series from the Internet.

CD/DVD Burning

‣ Windows: Nero Burning ROM, InfraRecorder
‣ Mac OS: Burn, Toast Titanium
‣ Linux: Brasero, K3b, Gnome-baker, Nero Burning ROM*

The are several popular disk burning applications such as Gnome-baker, Brasero, Ubuntu's default CD burner, and K3b. These burners are powerful tools, offering user-friendly interfaces, many features and they are all open source and free of charge! Also Nero Burning ROM is available for Linux, but you have to buy it.

Photo Management

‣ Windows: Microsoft Office Picture Manager, Picasa
‣ Mac OS: Aperture, Picasa
‣ Linux: Shotwell, gThumb, Picasa*, Gwenview, F-Spot

You can view and manage your favorite photos with Shotwell, Ubuntu's default photo manager, or with gThumb, Picasa, Gwenview, and Fspot.

Picasa is available for download from http://picasa.google.com/linux/.

Graphics Editors

‣ Windows: Adobe Photoshop, GIMP
‣ Mac OS: Adobe Photoshop, GIMP
‣ Linux: GIMP

GIMP is a very powerful graphics editor. You can create your own graphics, taper your photographs, modify your pictures. GIMP, a powerful alternative to Photoshop, covers the needs of novice users, professional photographers, and designers.

⚠ *GIMP is not loaded by default, but can be installed via the Software Center.*

Instant Messaging

‣ Windows: Windows Live Messenger, AIM, Yahoo! Messenger, Google Talk
‣ Mac OS: Windows Live Messenger, AIM, Yahoo! Messenger, Adium, iChat
‣ Linux: Empathy, Pidgin, Kopete, aMSN

None of the other platform IM clients have Linux versions. However, you can use Pidgin, Empathy or Kopete to communicate over most protocols including: AIM, MSN, Google Talk (Jabber/XMPP), Facebook, Yahoo!, and ICQ. This means you need only one client to communicate with all of your friends. The drawback is that some of these clients have limited video support. If you are using MSN exclusively, aMSN may be worth a try.

VoIP Applications

‣ Windows: Skype, Google Video Chat
‣ Mac OS: Skype, Google Video Chat
‣ Linux: Ekiga, Skype, Google Video Chat

VoIP technologies allow you to talk to people over the Internet. The most popular such application is Skype, which is available for Linux. An open-source alternative Ekiga supports voice communication using the SIP protocol. Note that Ekigka isn't compatible with the Skype.

BitTorrent Clients

‣ Windows: uTorrent, Azureus
‣ Mac OS: Transmission, Azureus
‣ Linux: Transmission, Deluge, Azureus, KTorrent

There are a number of BitTorrent clients for Ubuntu: Transmission, Ubuntu's default client, is simple and light-weight, Deluge, Azureus and KTorrent offer many features and can satisfy the most demanding of users.

Getting online

If you are in a location with Internet access, you will want to make sure you are connected in order to get the most out of your Ubuntu operating system. This section of the manual will help you check your connection and

configure it where necessary. Ubuntu can connect to the Internet using a wired, wireless, or dialup connection. It also supports some more advanced connection methods, which we will briefly discuss at the end of this section.

A wired connection refers to when your computer is physically connected to a router or an Ethernet port with a cable. This is the most common connection for desktop computers.

A wireless connection is when your computer is connected to the Internet via a wireless radio network, also known as Wi-Fi. Laptop computers commonly use Wi-Fi due to portability, making it easy to access the Internet from different rooms in the house or when traveling.

In order to connect wirelessly, you must be in a location with a working wireless network. To have your own, you will need to purchase and install a *wireless router* or *access point.* Some locations may already have a publicly accessible wireless network available.

A dialup connection is when your computer uses a *modem* to connect to an Internet service provider through your telephone line.

NetworkManager

In order to connect to the Internet in Ubuntu, you need to use the NetworkManager utility. NetworkManager allows you to turn all networking on or off, and helps you manage your wired, wireless, and other connections.

You can access all the functions of NetworkManager using its icon in the top panel. This icon may look different depending on whether you currently have a working connection, and whether the connection is wired or wireless. If you are unsure, try hovering your mouse over the icon until a short description appears near the cursor. This will read "Wired network connection 'Auto eth0' active" (for example) if you have a working wired connection, or otherwise something else related to networking or connections such as "No connection" or "Networking disabled."

Clicking this icon will bring up a list of network connections that are available to you. If you are currently connected to the Internet, the name of this connection will be highlighted in bold.

This menu also includes options to let you enable or disable networking, view technical details about your current connection, or edit all connection settings. In the image above, the check box next to **Enable Networking** is currently selected; you can deselect it to disable all network connections. This may be useful if you need to shut off all wireless communication, such as when in an airplane.

Establishing a wired connection

If you have an *Ethernet* cable running from a wall socket, a router, or some other device, then you will want to set up a wired network connection in Ubuntu.

In order to connect with a wired connection, you need to know whether your network connection supports DHCP. *Dynamic Host Configuration Protocol*, is a way for computers on your network to automatically receive configuration information from your Internet service provider (ISP). This is usually the quickest and easiest way of establishing a connection between your computer and your ISP in order to access the Internet, although some ISPs may provide what is called a *static address* instead. If you are unsure whether your ISP supports DHCP, you may wish to contact their customer service line to check. They will also be able to provide you with information

If you are unsure whether your computer has a wireless card, check with your manufacturer.

Figure 3.1: NetworkManager will display this icon in the top panel when you are connected to a wired network.
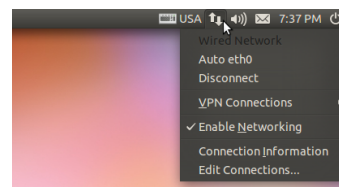

Figure 3.2: Here you can see the currently active "auto eth0" connection listed in the NetworkManager menu.

Are you already online? If the NetworkManager icon in the top panel shows a connection, then you may have successfully connected during the installation process. If so, you do not need to follow the rest of this section.

on your static address if one has been allocated to you (in many cases isps only allocate static addresses to customers upon request).

Automatic connections with DHCP

If your network supports dhcp, you may already be set up for online access. To check this, click on the NetworkManager icon. There should be a "Wired Network" heading in the menu that is displayed. If "Auto eth0" appears directly underneath, then your computer is currently connected and probably already set up correctly for dhcp. If "disconnected" appears in gray underneath the wired network section, look below to see if an option labeled "Auto eth0" appears in the list. If so, click on it to attempt to establish a wired connection.

To check if you are online, click on the NetworkManager icon in the top panel and select the **Connection Information** option.

You should see a window showing details about your connection. If your ip address is displayed as 0.0.0.0 or starts with 169.254, then your computer was not successfully provided with an address through dhcp. If it shows another address, it is most likely that your connection was automatically configured correctly. To test out your Internet connection, you may want to open the Firefox web browser to try loading a web page. More information on using Firefox can be found later in this chapter.

If you are still not online after following these steps, you may need to try setting up your Internet configuration manually, using a static ip address.

Manual configuration with static addresses

If your network does not support dhcp, then you need to know a few items of information before you can get online.

- An *ip address* is a unique address used for identifying your computer on the Internet. When connecting through dhcp this is likely to change at times. However, if your isp has provided you with a static address then it will not. An ip address is always given in the form of four numbers separated by decimal points, for example, 192.168.0.2.
- The *network mask* tells your computer how large the network is that it belongs to. It takes the same form as an ip address, but is usually something like 255.255.255.0
- The *gateway* is the ip address at your isp's end. It helps your computer connect or "talk" with their network, which acts as a "gateway" between your computer and the Internet.
- *dns servers* are one or more ip addresses of "Domain Name System" servers. These servers convert standard web addresses (like http://www.ubuntu.com) into ip addresses such as 91.189.94.156. This step allows your computer to "find" the correct web site when you enter the web address you wish to visit. A minimum of one dns server is required, up to a maximum of three. The additional ones are used in case the first one fails.

To manually configure a wired connection, click on the NetworkManager icon and select **Edit Connections**. Make sure you are looking at the **Wired** tab inside the "Network Connections" window that is displayed.

The list may already have an entry such as "Auto eth0," or a similar name. If a connection is listed, select it and then click the **Edit** button. If no connection is listed, click the **Add** button instead.
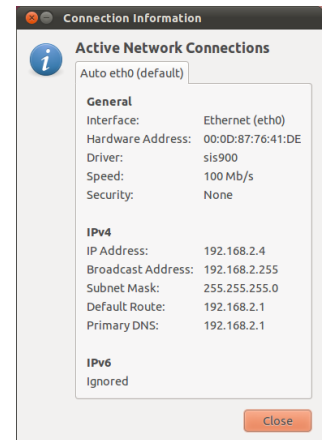
Figure 3.3: This window displays your IP address and other connection information.

An Internet Protocol (IP) address is a numerical label assigned to devices on a computer network. It is the equivalent of phone numbers for your house and allows your computer to be uniquely identified so you can access the Internet and share files with others.

To access the "Connection Information" window, you will need to make sure that networking is enabled. Otherwise this option will be gray and you will not be able to select it through the menu of the NetworkManager icon. To enable networking, click on the NetworkManager icon and select **Enable Networking** from the popup menu.

If you do not already have these settings, you will need to consult your network administrator or ISP customer support to receive them.

If you are adding a connection, you first need to provide a name for the connection so you can distinguish it from any others that are added later. In the "Connection name" field, choose a name such as "Wired connection 1."

To set up the connection:

1. Under the connection name, make sure that the **Connect automatically** option is selected.
2. Switch to the IPV4 **Settings** tab.
3. Change the **Method** to "Manual."
4. Click on the **Add** button next to the empty list of addresses.
5. Enter your IP address in the field below the **Address** header.
6. Click to the right of the IP address, directly below the **Netmask** header, and enter your network mask. If you are unsure of your network mask, "255.255.255.0" is the most common.
7. Click to the right of the network mask, directly below the **Gateway** header, and enter the address of your gateway.
8. In the DNS **servers** field below, enter the addresses of your DNS server. If your network has more than one DNS server, enter them all, separated by spaces or commas.
9. Click **Apply** to save your changes.

*A MAC address is a hardware address for your computer's network card, and entering it is sometimes important when using a cable modem connection or similar. If you know the MAC address of your network card, this can be entered in the appropriate text field in the **Wired** tab of the editing window.*

When you have returned to the Network Connections screen, your newly-added connection should now be listed. Click **Close** to return to the desktop. If your connection is configured correctly, the NetworkManager icon should have changed to show an active connection. To test if your connection is properly set up, refer to the instructions above for checking a DHCP connection.

Wireless

If your computer is equipped with a wireless (Wi-Fi) card and you have a wireless network nearby, you should be able to set up a wireless connection in Ubuntu.

Connecting to a wireless network for the first time

If your computer has a wireless network card, you should be able to connect to a wireless network. Most laptop and netbook computers have a wireless network card.

Ubuntu is usually able to detect any wireless networks that are available within range of your wireless card. To see a list of wireless networks, click on the NetworkManager icon. Under the "Wireless Networks" heading, you should see a list of available wireless networks. Each network will be shown with a name on the left, and a signal meter on the right. A signal meter looks like a series of bars—the more bars that are filled in, the stronger the connection will be.

A wireless network may be open to anyone to connect, or may be protected with network security. A small padlock will be displayed next to the
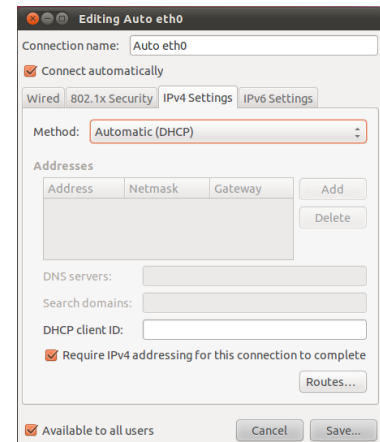

Figure 3.4: In this window you can manually edit a connection.

To improve speed and reliability of your connection, try to move closer to your router or access point.

signal meter of any wireless networks that are protected. You will need to know the correct password in order to connect to these.

To connect to a wireless network, select the desired network's name from the list. This will be the name that was used when the wireless router or access point was installed. If you are in a workplace or a location with a publicly accessible wireless network, the network name will usually make it easy to identify.

If the network is unprotected (*i.e.*, the network signal meter does not display a padlock), a connection should be established within a few seconds. The NetworkManager icon in the top panel will animate as Ubuntu attempts to establish a connection. If it connects successfully the icon will change to display a signal meter. A notification message in the upper right of your screen will also appear, informing you that a connection was established.

If the network is secured, Ubuntu will display a window called "Wireless Network Authentication Required" once it tries to connect. This means that a password is required in order to connect.

Figure 3.5: Enter your wireless network passphrase.

If you know the password, enter it in the **Password** field, and then click **Connect**. As you type your password, it will be obscured to prevent others from seeing it. If you prefer, you can select the **Show password** option to see the password as you type.

After you click the **Connect** button, the NetworkManager icon in the top panel will animate as it tries to connect to the network. If you have entered the correct password, a connection will be established and the Network-Manager icon will change to show signal meter bars. Again, Ubuntu will display a pop up message in the upper right of your screen informing you that a connection was established.

If you entered the wireless network's password incorrectly, Network-Manager will attempt to establish a connection then return to the "Wireless Network Authentication Required" window. You can attempt to enter the correct password again, or click **Cancel** to abort your connection. If you do not know the password to the network you have selected, you will need to get the password from the network administrator.

Select the **Show Password** option to make sure you haven't made a mistake when entering the password.

Once you have successfully established a wireless network connection, Ubuntu will store these settings (including the network password) in order to make it easier to connect to the same wireless network in future. You may also be prompted to select a *keyring* password here. The keyring stores network and other important passwords in the one place, so you can access them all in future by just remembering your keyring password.

Connecting to a saved wireless network

If you have previously successfully established a wireless connection, that connection's password will be saved on your computer. This will allow you to connect to the same network without having to re-enter the password.

In addition, Ubuntu will automatically try to connect to a wireless network within range if it has its settings saved. This will work for both open and secured wireless networks.

If you have many saved wireless networks that are in range, Ubuntu may choose to connect to one of them, while you may prefer to connect to another. In this case, click on the NetworkManager icon. You should see a list of wireless networks in range, along with their signal meters. Click on your desired network.

If the password and other settings have not changed, Ubuntu will connect to the wireless network you chose. If the password has changed, Ubuntu will open the "Wireless Network Authentication Required" window. In this case, follow the instructions in the previous section.

Connecting to a hidden wireless network

In some circumstances, you may need to connect to a hidden wireless network. These hidden networks do not broadcast their names, which means that they will not show up in the list of wireless networks in the Network-Manager menu. In order to be able to connect to a hidden network, you will need to get its name and security settings from your network administrator.

To connect to a hidden network:

1. Click on the NetworkManager icon in the top panel.
2. Select the **Connect to Hidden Wireless Network** option. Ubuntu should open the "Connect to Hidden Wireless Network" window.
3. By default, the **Connection** field should show "New..."—you can leave this unchanged.
4. In the **Network name** field, enter the name of the wireless network. This name is also known as a *ssid*. Please enter the network name exactly as it was given to you.
5. In the **Wireless security** field, select one of the options. If the network is open, leave this field as "None." If you do not know the correct setting for the network you will not be able to connect to the hidden network.
6. Click on the **Connect** button.

The rest of the process should work exactly as in the section on the initial connection to wireless networks. Once set up according to the instructions above, the hidden network should show up in the list of saved networks.

Disabling and enabling your wireless network card

Wireless access in Ubuntu is enabled by default if you have a wireless network card in your computer. In certain cases, for example on airplanes, you may need or be required to turn your wireless radio off.

Some computers may have a physical switch or button to turn off Wi-Fi.

To do this, click on the NetworkManager icon, and deselect the **Enable Wireless** option. Your wireless network will be turned off, and your computer will no longer search for available wireless networks.

To turn wireless networking back on, click on the NetworkManager icon, and click on the **Enable Wireless** option to re-select it. Your wireless network will be turned back on. Ubuntu will then search for nearby wireless networks and will connect to any saved networks within range.

Changing an existing wireless network

At times, you may want to change the settings for a wireless connection that you have previously saved. Its password may have changed, or your system administrator asked you to change some networking or security settings.

To edit a saved wireless network connection:

1. Click on the NetworkManager icon and select **Edit Connections**…
2. A "Network Connections" window should open. Click on the **Wireless** tab to see a list of saved wireless connections.
3. By default, this list shows connections in the order of most recently used to least recently used. Find the connection you want to edit, click on it, and then click **Edit**.
4. Ubuntu should open a window called "Editing ⟨*connection name*⟩", where ⟨*connection name*⟩ is the name of the connection you are editing. The window should display a number of tabs.
5. Above the tabs, you may change the **Connection name** field if you want to give the connection a more recognizable name.
6. If the **Connect automatically** option is not selected, Ubuntu will detect the wireless network but will not automatically connect to it without you choosing it from the NetworkManager menu. Select or deselect this setting as needed.
7. On the **Wireless** tab of the "Editing ⟨*connection name*⟩" window, you may need to edit the ssɪᴅ field. A ssɪᴅ is the wireless connection's network name—if set incorrectly, the network may not be detected and a connection may not be made. Please make sure that the ssɪᴅ is set according to your network administrator's instructions.
8. Below the ssɪᴅ, you should see the **Mode** field. The "Infrastructure" mode means that you would be connecting to a wireless router or access point. This is the most common mode for wireless networks. The "Ad-hoc" mode is a computer-to-computer mode and is often only used in advanced cases.
9. On the **Wireless Security** tab of the "Editing ⟨*connection name*⟩" window, you may need to change the **Security** field to the correct setting. A selection of **None** means that you are using an open network with no security. Other selections may require slightly different additional information:

   wep 40/128-bit Key is an older security setting still in use by some wireless networks. If your network uses this security mode, you will need to enter a key in the **Key** field that should appear after you select this mode.

   wep 128-bit Passphrase is the same older security setting as the entry above. However, instead of a key, your network administrator should have provided you with a text passphrase—a password—to connect to the network. Once you select this security mode, you will need to enter your passphrase in the **Key** field.

   wpa & wpa2 Personal is the most common security mode for wireless network connections at home and at businesses. Once you select this mode, you will need to enter a password in the **Password** field.

   If your network administrator requires ʟᴇᴀᴘ, Dynamic wep, or wpa & wpa2 Enterprise security, you will need to have the administrator help you set up those security modes.

10. On the **ɪᴘᴠ4 Settings** tab, you may need to change the **Method** field

from "Automatic (DHCP)" to "Manual," or one of the other methods. For setting up manual settings (also known as static addresses), please see the section above on manual set up for wired network connections.

11. When you finish making changes to the connection, click **Apply** to save your changes and close the window. You can click **Cancel** to close the window without making changes.

12. Finally, click **Close** on the "Network Connections" window to return to the desktop.

After making changes, your new settings should go into effect immediately.

Other connection methods

There are other ways to get connected with Ubuntu.

With NetworkManager, you can also configure Mobile Broadband connections to keep online through your cellular or other mobile data carrier.

You can also connect to DSLs (Digital Subscriber Lines), which are a method of Internet connection that uses your telephone lines and a "DSL modem."

It's also possible to use NetworkManager to establish a VPN (Virtual Private Network) connection. These are commonly used to create secure connectivity to a workplace.

A VPN is a "Virtual Private Network," and is sometimes used to help secure connections. DSLs are "Digital Subscriber Lines," a type of broadband connection.

The instructions for making connections using mobile broadband, VPNs, or DSLs, are beyond the scope of this guide.

Browsing the web

Once you have connected to the Internet, you should be able to browse the web with Ubuntu. Mozilla Firefox is the default application for browsing the web in Ubuntu.
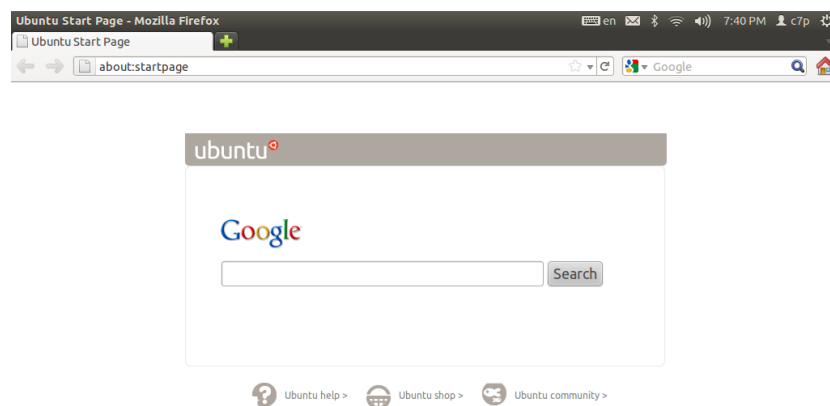

Figure 3.6: The default Ubuntu home page for the Firefox web browser.

Starting Firefox

To start Firefox, click on the Dash (the top-most icon in the Launcher) and either search for 'firefox' using the search box or click on the 'Browse the Web' button. If your keyboard has a "www" button, you can also press that button to start Firefox.

Navigating web pages

Viewing your homepage

When you start Firefox, you will see your home page. By default, you will see the Ubuntu Start Page.

To go to your home page quickly, press Alt+Home.

Navigating to another page

To navigate to a new web page, you need to enter its Internet address (also known as a URL) into the Location Bar. URLs normally begin with "http://" followed by one or more names that identify the address. One example is "http://www.ubuntu.com/."

URL stands for uniform resource locator and WWW stands for world wide web.
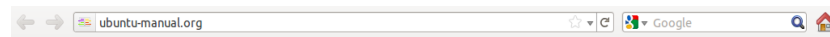
Figure 3.7: You can enter a web address or search the Internet by typing in the location bar.

To navigate:

1. Click on the Location Bar to select the URL that is already there.
2. Enter the URL of the page you want to visit. The URL you type replaces any text already in the Location Bar.
3. Press Enter.

To quickly select the URL of the Location Bar, press Ctrl+L.

If you don't know a URL, try typing something specific to the page you want to visit (for example a name or other search request) into the Location Bar and press Enter. This will search your preferred search engine—Google by default—for that term, and take you to the web page that is the top result from the search.

Clicking a link

Most web pages contain links you can click to move to other pages.

To click a link:

1. Move the mouse pointer until it changes to a pointing finger. This happens whenever the pointer is over a link. Most links are underlined text, but buttons and pictures on a web page can also be links.
2. Click on the link once. While Firefox locates the link's page, status messages will appear at the bottom of the window.

Retracing your steps

If you want to visit a page you have seen before, there are several ways to do so.

▸ To go back or forward one page, click on the **Back** or **Forward** button, at the left side of the Location Bar.

To go backwards and forwards you can also use Alt+Left to go backwards or Alt+Right to go forwards.

▸ To go back or forward more than one page, click on the small trian-
gle next to the **Forward** button. You should see a list of pages you've
recently visited. To return to a page, select it from the list.
▸ To see a list of any URLs you've entered into the Location Bar, click on
the down arrow at the right end of the Location Bar. To view a page,
select it from the list.
▸ To choose from pages you've visited during the current session, open
the **History** menu and choose from the list in the bottom section of the
menu.
▸ To choose from pages you've visited during the past several sessions,
open the **History** menu and select **Show All History**. Firefox should
open a "Library" window, which shows a list of folders. Click on the
folders to displays sub-folders, or titles of web pages you've visited in the
past. Click on a page's title to view that page.

Stopping and reloading

If a page is loading too slowly or you no longer wish to view a page, click
on the **Stop** button or press `Esc`.

    To reload the current page or to get the most up-to-date version, click on
the **Reload** button or press `Ctrl+R`.

Stop and **Reload** buttons are at the right end of
the Location Bar.

Opening new windows

At times, you may want to have more than one browsing window. This may
help you organize your browsing session better, or separate web pages that
you are viewing for different reasons.

    There are three ways to create a new window:

▸ On the top bar, open the **File** menu, then select **New Window**.
▸ Right-click on the Firefox's icon on the Launcher, and then select **Open
New Windows**
▸ Press `Ctrl+N`.

    Once a new window has opened, you can use it just like the first window
—including navigation and opening tabs.

Opening a link in a new window

Sometimes, you may want to click on a link to navigate to another web
page, but do not want the original page to close. To do this, you can open
the link you'd like to click in its own window.

    There are two ways to open a link in its own window:

▸ Right-click on a link to open its popup menu. Select the **Open Link in
New Window** option. A new window will open, containing the web
page for the link you clicked.
▸ Press-and-hold the `Shift` key while clicking a link. This will also open
the web page in a new window.

Tabbed browsing

If you would like to visit more than one web page at a time, you can use
Tabbed Browsing to navigate the web.

    Tabbed browsing lets you open several web pages within a single Firefox
window, each displaying in its own tab. This frees up space on your desktop

since you don't have to have a window open for every web page you're currently visiting. You can open, close, and reload web pages in one place without having to switch to another window.

You can alternate quickly between different tabs by using the keyboard shortcut `Ctrl+Tab`.

Opening a new blank tab

There are three ways to create a new blank tab:

‣ Click on the **Open new tab** button on the right side of the last tab.
‣ On the top bar, open the **File** menu, and then select **New Tab**.
‣ Press `Ctrl+T`.

When you create a new tab, it will contain a blank page with the Location Bar focused. Start typing a web address (URL) or other search term to open a website in the new tab.

Opening a link in its own tab

Sometimes, you may want to click on a link to navigate to another web page, but do not want the original page to close. To do this, you can open the link you'd like to click in its own tab.

There are many ways to open a link in its own tab:

‣ Right-click on a link to open its popup menu. Select the **Open Link in New Tab** option. A new tab will open, containing the web page for the link you clicked.
‣ If your mouse has a middle button, or a wheel, click on the link with the middle mouse button or wheel. A new tab should open, containing the web page for the link you clicked.
‣ Press-and-hold the `Ctrl` key while clicking the left mouse button on the link. A new tab should open, containing the web page for the link you clicked.
‣ Click on a link, holding both left and right mouse buttons.
‣ Click on the link with the left mouse button, and keep holding down the mouse button. Drag the link up to a blank space on the tab bar, and release the mouse button. A new tab should open, containing the web page for the link you dragged.

Closing a tab

Once you have finished viewing a web page in a tab, you can close that tab.

There are various ways to close a tab:

‣ Click on the **Close** button on the right side of the tab you want to close.
‣ Open the **File** menu, and then select **Close Tab**.
‣ Click on the tab you want to close with the middle mouse button, or the mouse wheel, if you have one.
‣ Press `Ctrl+W`.
‣ Click on the tab with both mouse buttons.

Restoring a closed tab

Sometimes, you may close the wrong tab by accident, or want to bring back a tab that you've recently closed.

To bring back a tab you've closed, do one of the following:

▸ Open the **History** menu, select **Recently Closed Tabs**, and then choose the name of the tab you want to restore.
▸ Press Ctrl+Shift+T to re-open the most recently closed tab.

Changing the tab order

To move a tab to a different location on the tab bar, drag it there using your mouse. Click-and-hold on the tab and drag the tab to a new place on the tab bar. While you are dragging the tab, Firefox will display a small indicator to show where the tab will be moved.

When moving a tab to a new window it may reload the page. Remember to save your work before doing this.

Moving a tab between windows

If you have more than one Firefox window open, you can move an open tab to a different window. You can also split a tab off to become its own window.

To move a tab from one Firefox window to another already open window, click-and-hold on the tab and drag it to the tab bar on the other Firefox window. When you release the mouse button, the tab will be attached to the new window.

To move a tab from one window into its own window, click-and-hold on the tab and drag the tab below the tab bar. When you release the mouse button, the tab will become a new window.

Searching

You can search the web, or other collections, from within Firefox without first visiting the home page of the search engine.

By default, Firefox will search the web using the Google search engine.

Searching the web

To search the web in Firefox, type a few words into the Firefox search Bar.

For example, if you want to find information about the *Ubuntu*:

1. Click on the **Search Bar**.
2. Type the phrase "Ubuntu." Your typing replaces any text currently in the Search Bar.
3. Press Enter to search.

Search results from Google for "Ubuntu" should appear in the Firefox window.

Selecting search engines

If you do not want to use Google as your search engine in the Search Bar, you can change the search engine that Firefox uses.

To change the search engine, click on the icon on the left side of the Search Bar. Choose one of the other search engines in the list. Some search engines, like Google, Yahoo, Bing search the whole web; others, like Amazon.com, Wikipedia only search specific sites.

Figure 3.8: These are the other search engines you can use—by default—from the Firefox search bar.

The Ubuntu home page's search bar uses Google by default, but will automatically use Yahoo if Yahoo is selected in the Search Bar.

Searching the web for words selected in a web page

Sometimes, you may want to search for a phrase that appears on a different web page. Instead of copying and pasting the phrase into the Search Bar,
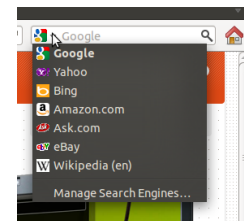
Firefox allows you to search the web for words you select within a web page.

1. Highlight any words in a web page using your left mouse button.
2. Right-click on the text you've highlighted to open a popup menu. Select the option **Search [Search Engine] for "[your selected words]"**.

Firefox should open a new tab containing search results for your highlighted words, found using the currently selected search engine.

Searching within a page
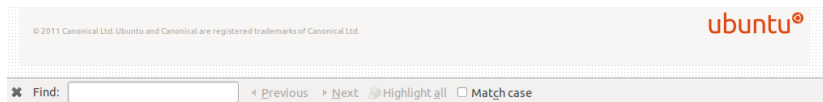
Figure 3.9: You can search within web pages using the **Find Toolbar**.

You may want to look for specific text within the web page you are viewing. To find text within the current page in Firefox:

1. Press `Ctrl+F` or choose **Edit ▸ Find** to open the **Find Toolbar** at the bottom of Firefox.
2. Enter the text you want to find into the **Find** field in the Find Toolbar. The search automatically begins as soon as you type something into the field.
3. Once some text has been matched on the web page, you can:
   - ▸ Click **Next** to find text in the page that is below the current cursor position.
   - ▸ Click **Previous** to find text that is above the current cursor position.
   - ▸ Click on the **Highlight all** button to highlight occurrences of your search words in the current page.
   - ▸ Select the **Match case** option to limit the search to text that has the same capitalization as your search words.

To find the same word or phrase again, press `F3` or click on the **Edit** menu and select **Find Again**.

Viewing web pages full screen

To display more web content on the screen, you can use *Full Screen mode.* Full Screen mode condenses the Firefox's toolbars into one small toolbar. To enable Full Screen mode, simply choose **View ▸ Full Screen** or press `F11`.

Copying and saving pages

With Firefox, you can copy part of a page so that you can paste it elsewhere, or save the page or part of a page as a file on your computer.

Copying part of a page

To copy text from a page:

1. Highlight the text and/or images with your mouse.
2. Right click on highlighted text and select **Copy** or press `Ctrl+C`.

You can paste the text into other applications.
To copy a text or image link (URL) from a page:

1. Position the pointer over the link or image.
2. Right-click on the link or image to open a popup menu.
3. Select **Copy Link Location**. Note that if the image works as a link you can copy you would have to select **Copy Image Location**

You can paste the link into other applications or into Firefox's Location Bar.

Saving all or part of a page

To save an entire page in Firefox:

1. Choose **File ▸ Save Page As** from the top bar. Firefox should open the "Save As" window.
2. Choose a location for the saved page.
3. Type a file name for the page, and click **Save**.

To save an image from a page:

1. Position the mouse pointer over the image.
2. Right-click on the image to display a popup menu.
3. Select **Save Image As**. Firefox should open the "Save Image" window.
4. Choose a location for the saved image.
5. Enter a file name for the image and click **Save**.

Changing your homepage

By default, Firefox will show the Ubuntu Start Page when you start Firefox. If you prefer to view another page when you start Firefox, you will need to change your homepage preference.
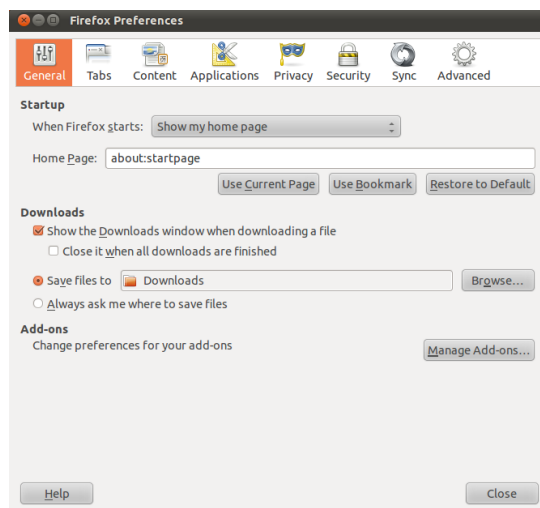

Figure 3.10: You can change Firefox settings in this window.

To change your homepage:

1. Navigate to the page that you would like to become your new homepage.
2. Choose **Edit ▸ Preferences** from the top bar.

3. In the "Startup" section on the **General** tab, which is shown by default, click on the **Use Current Page** button. If you had more than one tab open then all the tabs will be opened when Firefox starts. If you prefer to have one page open, close the other tabs and repeat steps 2–4.
4. Click **Close**.

Download settings

In **Edit ▸ Preferences** you can change how Firefox behaves with downloads. You can tell Firefox where to place downloaded files, or to ask where each time. You can also set the behavior of Firefox's Downloads window. The Downloads window can be hidden entirely, or set to hide when downloads finish.

Bookmarks

When browsing the web you may want to come back to certain web pages again without having to remember the URL.

In Firefox, you can create *bookmarks*, which are saved in the web browser and which you can use to navigate back to your picked web pages.

Bookmarking a page

After navigating to a web page you can save its location by bookmarking it. There are two ways to bookmark a page:

‣ From the top bar, choose **Bookmarks ▸ Bookmark This Page**. A window will open. Provide a descriptive name for the bookmark, and click on the **Done** button.
‣ Press `Ctrl+D`. A pop-up will appear. Provide a descriptive name for the bookmark, and click on the **Done** button.

Navigating to a bookmarked page

To navigate to a bookmarked page, open the **Bookmarks** menu from the top bar , and then choose your bookmark's name. Firefox should open the bookmark in the current tab.

You can also press `Ctrl+B` to display bookmarks in a sidebar on the left side of the browser window. Press `Ctrl+B` again to hide the sidebar.

Deleting a bookmark

If you would like to delete a bookmark that you have previously made, open the **Bookmarks** menu from the top bar, and then right-click on your bookmark's name. Firefox should open a popup menu for your bookmark. Select the **Delete** option from the menu. Your bookmark should then be deleted.

History

Whenever you are browsing the web, Firefox is saving your browsing history. This allows you to come back to a web page that you have recently visited, without needing to remember the page's URL, or even bookmarking it.

The homepage can also be set by entering the addresses that should be open in the **Home Page**, with a pipe—|—separating pages to be opened in a new tab

The Downloads window shows the progress of currently downloading files, and lists files downloaded in the past. It can be used to open or re-download files.

To see your most recent history, open the **History** menu from the top bar. The menu should then display several of the most recent web pages that you were viewing. Choose one of the pages to return to it.

To see the web pages you have visited recently, press `Ctrl+H`. Firefox will open a "sidebar" on the left side of the browser window, that contains your browsing history, categorized as "Today," "Yesterday," "Last 7 days," "This month," the past 6 months (listed month by month), and finally "Older than 6 months." If history for a category does not exist, that category will not be listed.

Click on one of the date categories in the sidebar to expand it. Then it will reveal the pages you visited during that period. Then, once you find the page you need, click on its title to return to it.

You can also search for a page by its title. Enter a few letters, or a word, in the **Search** field at the top of the history sidebar. The sidebar should then display a list of web pages whose titles match your search words. Click on the title of the page you need to return to it.

If you would like to hide the history sidebar again, press `Ctrl+H` again.

Clearing private data

At times, you may want to delete all private data that Firefox stores about your browsing history. While this data is stored only on your computer, you may want to remove it if you share access to your computer.

To delete your private data, open the **Tools** menu from the top bar, and select **Clear Recent History**. In the drop down list for the **Time range to clear**, choose how far back you would like Firefox to delete.

If you would like more control over what you clear, click on the **Details** text to display a list of options.

When done, click on the **Clear Now** button.

Using a different web browser
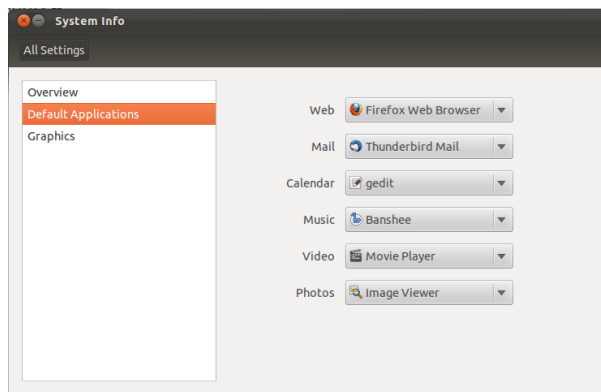
Figure 3.11: You can change the default browser with the "System Info" utility. To use it, open System Info from **System Settings…** -click on **Session Indicator**, on the top right corner of your screen-.

If you install a different web browser on your computer, you may want to use it as the default browser when you click on links from emails, instant messages, and other places.

To change your preferred web browser, open click on the **Session Indicator** and then search for "System Info," and open it. Then click on "Default Applications" from the sidebar, and choose your new preferred web browser from the **Web** dropdown list.

Reading and composing email

Introduction to Thunderbird

Thunderbird is an easy to setup and use email client developed by Mozilla. It is free, fast and comes packed full of useful features. Even if you are new to Ubuntu and Thunderbird, you will be up and running in no time, checking your email and staying in touch with friends and family.

Setting up Thunderbird

In the top right corner of the Ubuntu desktop you will see an envelope icon in the notification area. This is the *messaging menu*, from here you can launch Thunderbird by clicking **set up mail**. Alternatively you can click the Ubuntu button in the top left corner of the screen at the top of the launcher to bring up the Dash and type **Thunderbird** into the search box. Once Thunderbird opens you will be greeted by a pop-up box that will prompt you to setup your email account.
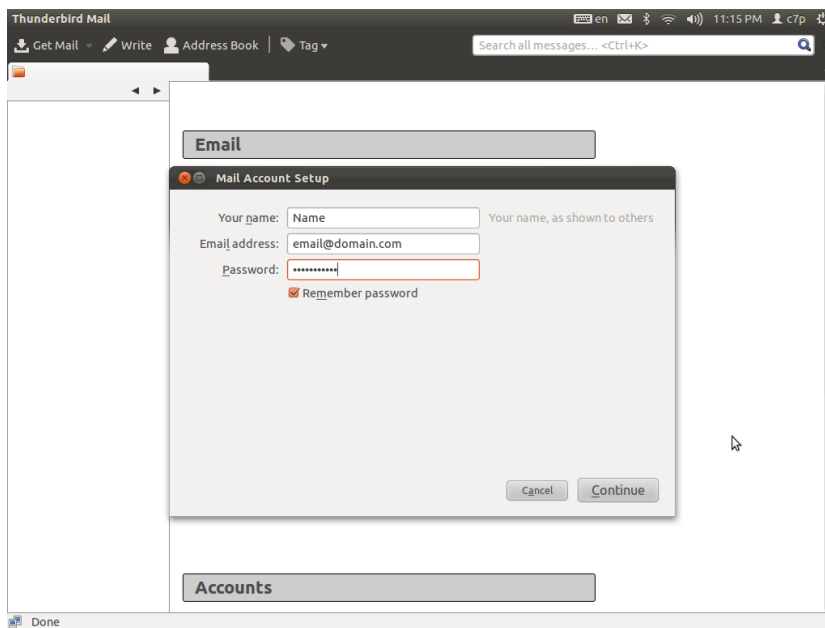
Figure 3.12: setting up Thunderbird

Enter your name in the first text box, your email address in the second text box, for example username@domain.com and your email password in the third text box.

Once you have done this click the continue button. Thunderbird will automatically set up your email account for you. When Thunderbird finishes detecting your email settings click "create account" and Thunderbird will do the rest. You can also set Thunderbird as your default news and rss reader by checking the boxes in the pop-up box that appears after you click create account. If you don't want to see this message box every time you start Thunderbird simply deselect **Always perform this check when starting Thunderbird**. You are now ready to start using Thunderbird.

Around the Thunderbird workspace

Now that you have your email account set up lets get to know the Thunderbird workspace. Thunderbird is designed to be very user friendly and easy to navigate. When you open it you will see the main workspace with your email folders (all folders window) on the left. On the right of the screen you will see two windows. The top right window displays a list of your email and the bottom right window displays the current email you are viewing. The size of these windows can be easily re-sized to suit your own needs. To do this simply left click and hold the dividing bar that separates the two windows and drag the bar up or down to your desired position. The all folders windows is where you can see all your mail folders. You will see:
  Your remote folders for your account are listed here and can include:

‣ inbox: Where your email is stored and accessed
‣ email address folder: You will see one of these folders for each of the accounts you have setup
‣ drafts: Where your draft mails are stored
‣ sent mail: Where the emails you have sent are stored
‣ spam: This is where suspected spam email is stored so you can check them to make sure you haven't lost any important emails
‣ trash: This is where messages you've deleted are stored so you can double check to make sure you haven't accidentally deleted an important email (also one of the local folders)
‣ important: This is where emails you have marked as important are stored
‣ starred: This is where emails you have marked with a star are stored
‣ personal: This is where emails you have marked as personal are stored
‣ receipts: You can move important receipts to this folder. Records of your on line purchases for example
‣ travel: You can use this folder to store travel emails such as flight times and bookings
‣ work: You can store work emails in this folder to keep them separate from your personal email
‣ outbox: Where the emails you are in the process of sending are stored (also one of the local folders)

  Across the top of the Thunderbird workspace you will see four control buttons, **get mail**, **write**, **address book** and **tag**. These are used to get your mail, write your mail, access your address book and tag your email messages.
  At the top and to the right of the all folders window you will see a set of quick filter buttons, **unread**, **starred**, **contact**, **tags** and**attachment**. You can use these buttons to filter your email messages so that you only see your unread mail, your favorite mail (starred), mail from people in your address book, mail you have tagged and mail that includes attachments.
  If you are used to a more traditional desktop and you have Thunderbird maximized to full screen you might be wondering where the menus are, they are still there and if you want to access them, move your mouse to the top of the screen and you will see the familiar menus, file, edit, view, go, message, tools and help.
  At the top of the window that displays your email you can see five action buttons, **reply**, **forward**, **archive**, **junk**, and **delete**. You will find these very useful for quickly replying to email, forwarding your email to another person, archiving (backing up) your email, marking an email as junk mail and quickly deleting an email. To the left of these quick action buttons you

will see information about the email you are viewing that includes who the email is from, the subject of the email, the address to reply to and who the email was sent to.

Using your address book

At the top of the main workspace you will see the address book button, click this button to access your address book. Once the address book opens you will see the address book window, from here you can organize your contacts very easily. At the top of the address book window you will see five buttons, **new contact**, **new list**, **properties**, **write** and **delete**.

‣ new contact: This button allows you to add a new contact and add as much detail as you like including, name, nickname, address, email, additional email, screen name, work number, home number, fax, pager and mobile/cell number.
‣ new list: This button allows you to add lists for your contacts such as family, friends, acquaintances, etc.
‣ properties: This button allows you to rename your address book name. The default name is 'personal address book' but using this button you can change the name to what suits you best.
‣ write: This button allows you to quickly send an email to a selected contacted without needing to go back to the main Thunderbird workspace. Simply select a contact from your contacts list and click this button to send them an email.
‣ delete: This button allows you to quickly delete a contact from your address book. Just select the contact you want to delete and press this button to remove the contact from your address book.

Checking and reading messages

Thunderbird will automatically check your email account for new messages every ten minutes or so but if you need to manually check for new messages left click the get mail button in the top left corner of the workspace. Thunderbird will then check your email account for new messages and download them. As they are downloaded you will see your email appear in the message window on the right side of the workspace. When you click on one of your emails it will appear in the window below your email list. If you want to view your email in a full window double left click your chosen email and Thunderbird will display the email in a full window in its own tab. At the top of the open email you will see information about the email and the five quick action buttons, **reply**, **forward**, **archive**, **junk** and **delete**, as previously discussed. If an email has remote content you will see a message asking if you want to display the email or not.

You may want to filter your emails from time to time; this is easily done with Thunderbird. When you have an email selected and you want to tag the email simply click the **tag** button and a drop down list will be displayed. In the list you have the options to **Remove All Tags** or **Mark as**..., **Important**, **Work**, **Personal**, **To Do**, **Later** or **create a new tag** that is more suited to your own personal requirements.

Composing and Replying to Messages

To compose a new email message click the write button in the top left of the workspace. This will bring up a new window where you will compose

your new email. In the **To**: field, enter the email address of the destination —the contact to whom you are sending this email. If there is more than one contact to whom you are writing, separate multiple recipients with commas. If a contact that you are addressing is in your address book, you can address them by name. Start typing the name of the contact; Thunderbird will display the list of mailing contacts below your text. Once you see the contact you intend to address, click on their email address or use the down arrow key and then Enter to select the address. If you would like to carbon-copy (Cc) some contacts, click the To: field and select Cc: Contacts on the To: and Cc: lines will receive the email, and will see the rest of the contacts to whom an email was sent. If you would like to send an email to some contacts without disclosing to whom your email was sent, you can send a blind carbon-copy, or Bcc. To enable Bcc, select Bcc: by clicking the To: field and selecting Bcc: Any contacts entered in the Bcc: field will receive the message, but none of the recipients will see the names or emails of contacts on the Bcc: line.

Instead of typing the email addresses, or names, of the contacts you are addressing in the message, you can also select the contacts from your address book. Start typing a few letters from your contact's first or last name in the To: field to filter the list to only show mailing contacts. Once you identify the contact you would like to address, click on their name in the list. If you've added the contact in error, delete their address and enter the correct address.

You may enter a subject for your email in the Subject field. Messages should have a subject to help the recipient to identify the email while glancing at their message list; if you do not include a subject, Thunderbird will warn you about this. Enter the contents of your message in the big text field below the subject. There is no practical limit on the amount of text you can include in your message. By default Thunderbird will auto-detect the correct format for your email but you can change this by clicking Options then mouse over Format and select your preferred option from the list.

You have a choice of Auto-Detect, Plain Text Only, Rich Text (HTML) Only and Plain and Rich (HTML) Text. When you have finished composing your email, click on the **Send** button on the window's toolbar. Your message will be placed in the Outbox, and will be sent to your desired recipient.

Attaching files

At times, you may want to send files to your contacts. To send files, you will need to attach them to your email message. To attach a file to an email you are composing, click on the Attach button and when the new window opens select the file you want to send and click open. That file will then be attached to the email when you click send.

Replying to Messages

In addition to composing new messages, you may want to reply to messages that you receive. There are three types of email replies:

- ‣ Reply (or "Reply to Sender")—sends your reply only to the sender of the message to whom you are replying.
- ‣ Reply to All—sends your reply to the sender of the message, as well as anyone else on the To or Cc lines.
- ‣ Forward—allows you to send the message, with any additional comments you may add, to some other contacts.

To use any of these methods, click on the message to which you want
to reply and then click the Reply, Reply to All, or Forward button on the
message toolbar. Thunderbird will open the reply window. This window
should look much like the window for composing new messages, but the
To, Cc, Subject, and main message content fields should be filled in from the
message to which you are replying. Edit the To, Cc, Bcc, Subject or main
body as you see fit. When your reply is finished, click on the Send button
on the toolbar. Your message will be placed in the Outbox, and will be sent.

Using instant messaging

Instant messaging allows you to communicate with people you know in real
time. Ubuntu includes the Empathy application that lets you use instant
messaging features to keep in touch with your contacts. To start Empathy,
open the **Messaging Menu** (the envelope icon on the menubar), then select
Chat.

Empathy lets you connect to many instant messaging networks. You
can connect to: Facebook Chat, Google Talk, Jabber, People Nearby, AIM,
Gadu-Gadu, Groupwise, ICQ, IRC, MSN, mxit, myspace, QQ, sametime, silc,
SIP, XMPP, Yahoo!, and Zephyr.

Running Empathy for the first time

When you open Empathy for the first time you will need to configure it
with the details of your instant messaging accounts.

When Empathy starts you will see the "Welcome to Empathy" window.
Choose the option corresponding to your situation.

You have a previous account

If you have an account that you have used previously with another instant
messaging program, then select the **Yes, I'll enter my account details now**
option. Then, click **Forward** to continue.

On the next screen, choose your account type from the drop-down list
below **What kind of chat account do you have?**. Then, enter your account
details in the field below.

Depending on the account type that you choose, Empathy may request
that you enter a username, or an ID for your account, followed by a pass-
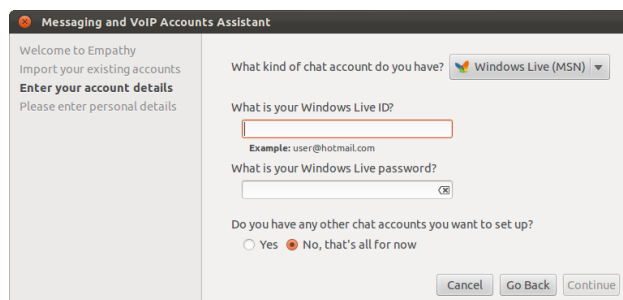word.

Figure 3.13: Creating a new instant messenger
account in Empathy.

If you do not remember your account information, you will need to visit
the website of the instant messaging service to retrieve that information. (It
is suggested that you visit the web sites where you have instant messenger

accounts, before you start Empathy, so you can gather all of the credentials for each account.)

If you have another account to add then select the **Yes** option, and click **Forward** to repeat the above process. When you have entered all of your accounts leave the **No, that's all for now** option selected, and click **Apply** to finish the setup process.

Next, Empathy should display the "Please enter personal details" screen. If you choose to fill in this information, you will be able to communicate with people who are on your local network either at home or from the office.

Enter your first name in the **First name** field, and your last name in the **Last name** field. Enter a nickname that you want to use on your local network in the **Nickname** field. When you have completed all of the information, click **Apply**.

If you don't want to communicate with people on your local network, select the **I don't want to enable this feature for now** option, and click **Apply**.

You do not have a previous account

If you don't have an account that you can use, then you can create one by selecting the **No, I want a new account** option. Click **Forward** to display the next set of options.

Choose the account type that you would like to create from the drop-down list below **What kind of chat account do you want to create?** You can create either a Jabber or a Google Talk account.

Next, enter the account name that you would like in the text field, and in the following text field enter a password of your choice. If you would like to set up another account then select the **Yes** option, and repeat the above process.

When you have entered all the accounts leave the **No, that's all for now** option selected, and click **Forward**.

Empathy should display the "Please enter personal details" window. Providing this information allows you to communicate with people who are on your local network either at home or in the workplace.

Enter your **First name** in the text field, and enter your **Last name** in the next field. In the **Nickname** field enter a nickname by which you would like to be identified. When you have filled all of the text fields click **Apply** to save your settings.

If you don't want to talk to people on your local network then select the **I don't want to enable this feature for now** option and click **Apply**.

You want to talk to people nearby

If you would only like to communicate with people on your local network either at home or in the workplace, then you should select the **No, I just want to see people online nearby for now** option.

Click **Forward** to display the next set of options. Then enter your **First name** in the text field, and enter your **Last name** in the next field. In the **Nickname** field enter a nickname by which you would like to be identified. When you have filled all of the text fields, click **Forward**.

Note: If you wish to create a type of account other than one of these, then you will need to visit the relevant website and create the account first. Then follow the instructions in the "You have an account" section.
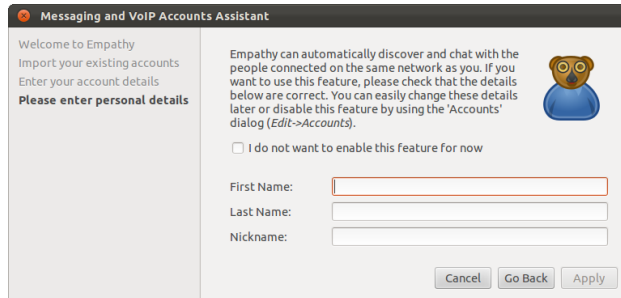
Changing account settings

If you need to add more accounts after the first launch, open the **Edit** menu, then select **Accounts**. Empathy will then display the "Accounts" window.

Adding an account

To add an account click on the + button on the bottom left of the "Accounts" window. Empathy should display some options on the right-hand side of the window. Choose your account type from the **Protocol** drop-down list. Next, enter your account name in the first text field. Then enter your password in the **Password** text field. Finally click on the **Log in** button to save and verify your settings.

Editing an account

You might need to edit an account if you change the password or get the password wrong. Fortunately, this is very easy to do. Select the account you want to change on the left side of the "Accounts" window. Empathy should show the current information for the account. Once you have made your changes, click **Save**.

Removing an account

To remove an account select the account on the left hand side of the window and click on the - button. Empathy should open the "Do you want to remove" window. Click on the **Remove** button to confirm that you want to remove the account, or click **Cancel** to keep the account.

Editing contacts

Adding a contact

To add a contact open the **Chat** menu, then select **Add contact**. Empathy should open the "New Contact" window.

In the **Account** drop-down list, choose the account that you want to add the contact to. When creating a contact you must select the service that matches the service your contact is using.

For example if your contact's address ends in "@googlemail.com" then you will need to add it to an account that ends in "@googlemail.com". Likewise if the contact's email ends in "@hotmail.com" then you will need to add it to an account ending in "@hotmail.com."

After choosing the account you wish to add the contact to, enter their login ID, their username, their screen name or their email address in the

Identifier text field. Next, in the **Alias** text field, enter the name you want to see in your contact list. Click **Add** to add the contact to your list of contacts.

Removing a contact

Click on the contact that you want to remove, then on the Unity bar at the top of the screen, open the **Edit** menu, select **Contact**, then **Remove**. This will open the "Remove contact" window.

Click on the **Remove** button to confirm that you want to remove this contact, or click **Cancel** to keep the contact.

Communicating with contacts

Text

To communicate with a contact, select the contact in Empathy's main window and double-click their name. Empathy should open a new window where you can type messages to your contact, and see a record of previously exchanged messages.

To send a message to the contact, enter your message in the text field below the conversation history. When you have typed your message press the Enter key to send the message to your contact. If you are communicating with more than one person then all of the conversations will be shown in tabs in your Empathy window.

Audio

If your contact has audio capabilities then there will be a microphone icon next to their name. Click on the microphone icon to open the popup menu. Select the **Audio call** option from the menu. Empathy should then open the "Call" window.

This window shows your picture on the right and your contact's picture on the left. Ensure that your microphone and speakers are connected, and proceed with the audio conversation. You can finish the conversation by clicking on the **Hang up** button.

Video

If your contact has video chat capabilities then there will be a webcam icon next to their name. Click on the icon to open a popup menu. Select the **Video call** option from the menu. Empathy should then open the "Call" window. This window shows your webcam view in the top right and your contact's webcam will be in the middle. If you don't have a webcam then your picture will be shown instead. You can finish the call by clicking on the **Hang up** button.

Sending and receiving files

Sending a file

When you are in a conversation with a contact and you would like to send them a file, open the **Contact** menu, then select **Send file**. Empathy should open the "Select file" window. Find the file you wish to send, and click on the **Send** button. A "File Transfers" window will open showing the file and its transfer progress. When the file transfer is complete, you can close the "File Transfers" window.

Receiving a file

When a contact wants to send you a file, the status icon to the left of the contact's name will flash with an icon of a paper plane. To receive the file, double-click the contact's name. Empathy will open the "Select a destination" window. Choose the location where you would like Empathy to save the file, and click **Save**. Empathy should open the "File Transfers" window. The "File Transfers" window shows you the progress of current file transfer. You can stop the file transfer by clicking on the **Stop** button, open transferred files by clicking on the **Open** button, and clear the list of completed transfers by clicking on the **Clear** button.

Changing your status

You can use your status to show your contacts how busy you are or what you are doing. You can use the standard statuses, which are:

‣ Available
‣ Busy
‣ Away
‣ Invisible
‣ Off-line

These can be changed in one of two ways. The first method is in the main Empathy window from the drop-down list at the top of the window.

The same drop-down list lets you set a custom status by choosing "Custom Message…" next to the icon that matches your status. Enter what you would like your status to say, and click on the green check mark.

The second method is to click the **Messaging Icon** on the top Unity Bar. From this menu, you will see all of the same options that Empathy presents, but accessible without having to open the application window.

Changing your picture

Your picture is what your contacts will see next to your name in their contact list. The default picture is the outline of a person. You can change your picture by opening the **Edit** menu, then choosing **Personal Information**. Empathy should open the "Personal Information" window. From the **Account** drop-down list choose the account that you want to change, then click on the picture on the right-hand side of the window. Empathy should open the "Select Your Avatar Image" window. Find the file containing your picture, and click **Open**. If you would like to return it to the default avatar, click on the **No Image** button, instead.

Desktop Sharing

Desktop sharing is a very nifty feature available with Ubuntu. It can be used for a lot of purposes like troubleshooting, online meetings or just showing off your cool desktop to your friend. It is very easy to get remote desktop sharing working between two Ubuntu machines.

1. Click on **System ‣ Preferences ‣ Remote Desktop** and select **Allow remote desktop**. It is strongly recommended you add a password, for security reasons.

2. Open Empathy and login using your Google/Jabber client ID

3. Double click on the user with whom you want to share your desktop

4. From the new window, click on **Contact ‣ Share your desktop**.

It should be noted that the other user will obviously be able to see the information displayed on your screen. Please be sure to keep this in mind if you have documents or files that are of a private nature open on your desktop.
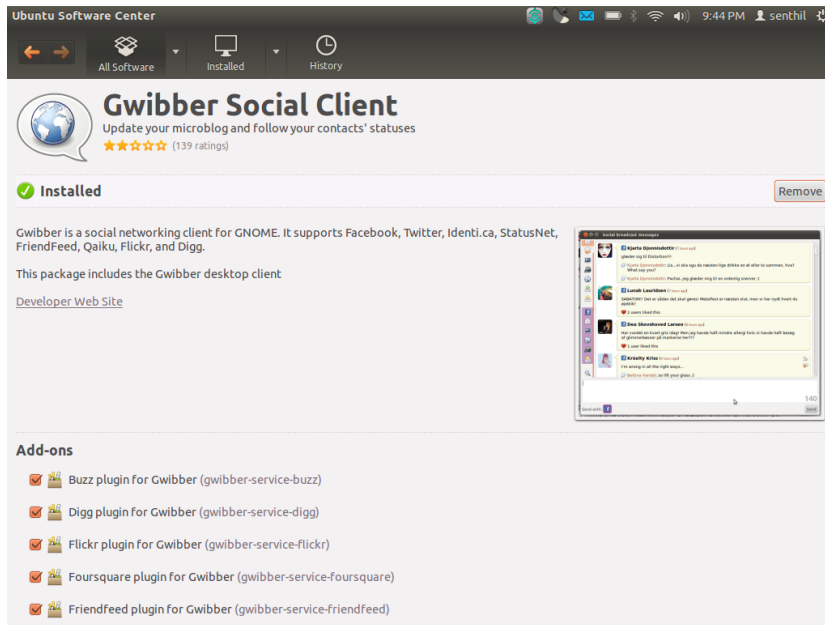
Microblogging

Figure 3.15: Gwibber Social Client

Gwibber is the default microblogging application that connects several microblogging accounts in one window without loading a browser. Gwibber can be used to access and post on Twitter, Facebook, Identi.ca, Ping.fm, Flickr, Digg, Status.net, Qaiku and FriendFeed. Support for Google+ will be available once the API is released.

Upgrades and add-ons

If you intend to access Ping.fm, Flickr, Digg, Status.net, Qaiku or Friend-Feed, you will need add-ons. Go to Ubuntu Software Center and search for Gwibber. Make sure the appropriate add-ons are selected and installed.

You also may like to install an add-on to search Gwibber feeds using Unity Lens.

Gwibber feeds can be searched and accessed from Unity Lens.

Setting up Gwibber Accounts

Access Gwibber from the Message menu on the top panel bar. Click **Broadcast** to start Gwibber.

To add a new account, click **Edit** and select **Accounts**. This will open a new window for the "Accounts Manager". Click the **+** button to add a new account. After you enter your login and password, choose an account color and then click **Add**. You will have to authorize Gwibber to use Twitter or Facebook, and enable the API for Qaiku, if you are using Qaiku.

Removing accounts is easier. Go to the "Accounts Manager" window and select the account to be removed. Click the − button to remove the account.
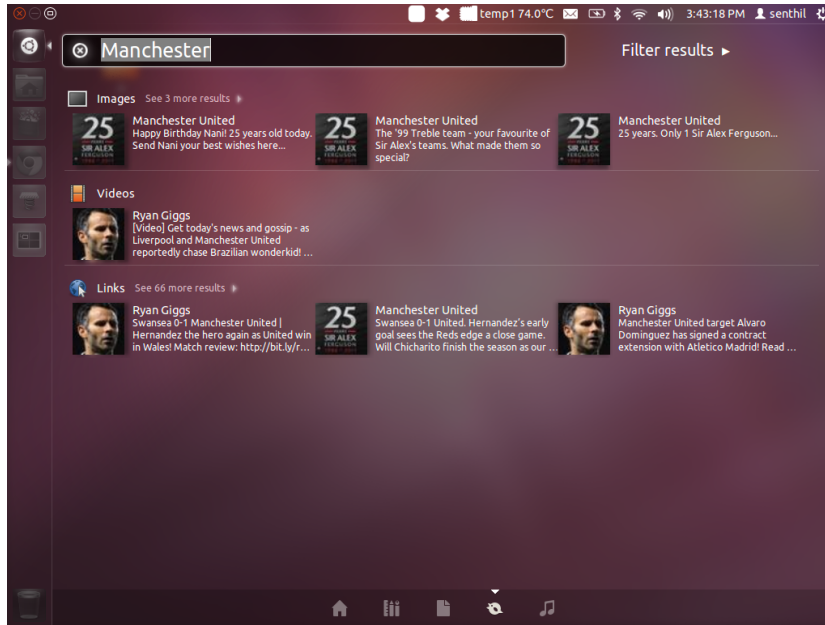
Figure 3.16: Gwibber Lens Add-on
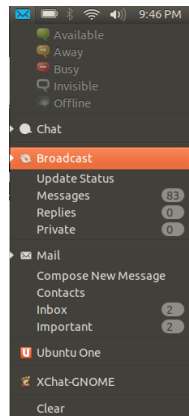
Figure 3.17: Accessing Gwibber from the Message Menu
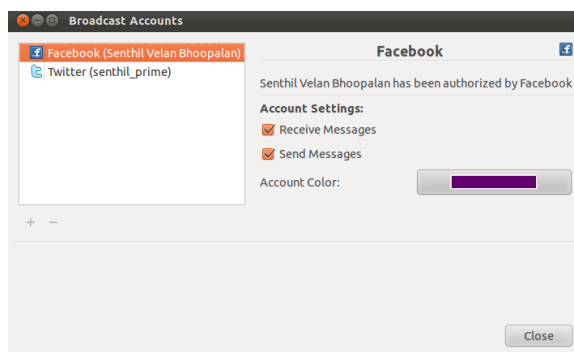
Figure 3.18: Gwibber Accounts Window. You can add more than one account from a service provider.
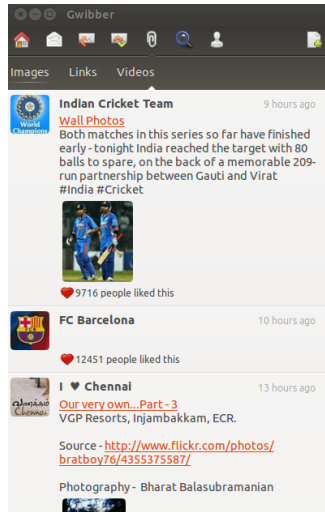
Figure 3.19: Clicking on the image would open the Facebook page on a browser.

Using Gwibber to follow streams

Gwibber displays feeds from each service provider as streams. You can select for them to be listed in either ascending or descending order by selecting the Sort option under **View** menu. You can separate the feeds as messages, replies, and private messages.

In addition, the attachments from the feed are sorted as images, links, and videos. Clicking the image, link, or the video would take you to the actual website by opening a new tab in your default browser.

Notifications

Feeds can be displayed in the notification bubble by selection for the option in the "Preferences" window. You can also choose the rate at which Gwibber searches for new feeds.
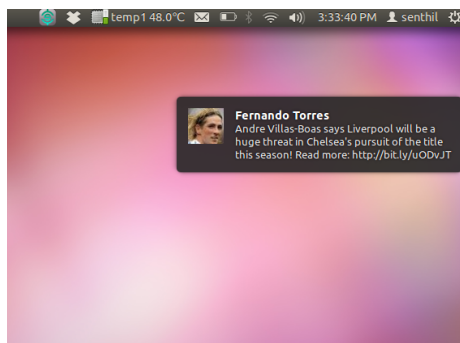
Figure 3.20: Notifications from Gwibber can be customized from the Preferences window.

Replying, liking, and retweeting

Each tweet can be liked, retweeted, or replied from within Gwibber's window by selecting the Twitter icon on the top right of each post.
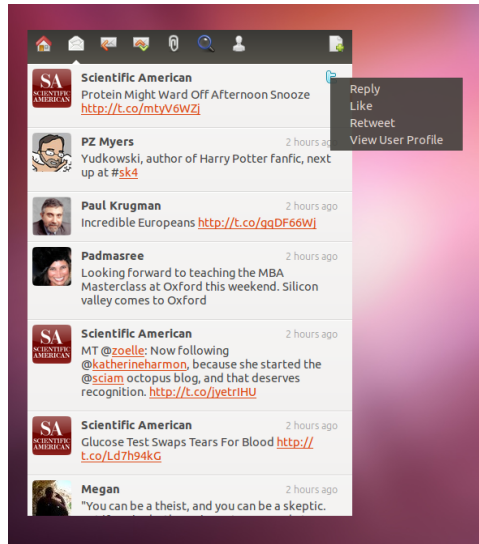
Status updates

Select the Message menu from the top panel and click **Update Status**. This would open a new window. Enter your status message and post it to all your accounts in one click.

You can deselect an account from posting using Gwibber.

Advanced options

Gwibber can be customized to have individual colors for each account. You can also shorten URLs as you post from Gwibber using a list of URL shortening services. Play with Gwibber and discover other cool things it can do. Visit http://gwibber.com/docs/user-guide/current/master_social_networking_with_gwibber.pdf for more information.

Viewing and editing photos

Shotwell Photo Manager is the default photo application in Ubuntu allowing you to view, tag, edit, and share your photos. To start Shotwell, click on the **Ubuntu icon** near the top left of the screen, then select the Shotwell icon labeled **View Photos**.

Importing

When you launch Shotwell for the first time, you will be greeted by the "Import" window. After the first launch, you can import more photos by dragging the photos into the Shotwell window. You can also import photos by connecting your camera or external storage device to the computer.

From a digital camera   Connect your camera to the computer using the data cable and power it on. If your camera is properly detected, you will see a new window prompting you to launch an application. Select **Shotwell** in the drop-down menu then click **OK**. Your camera will be listed in the Shotwell sidebar. Select your camera in the sidebar. You will see a preview of the camera's contents. Select individual photos by pressing and holding
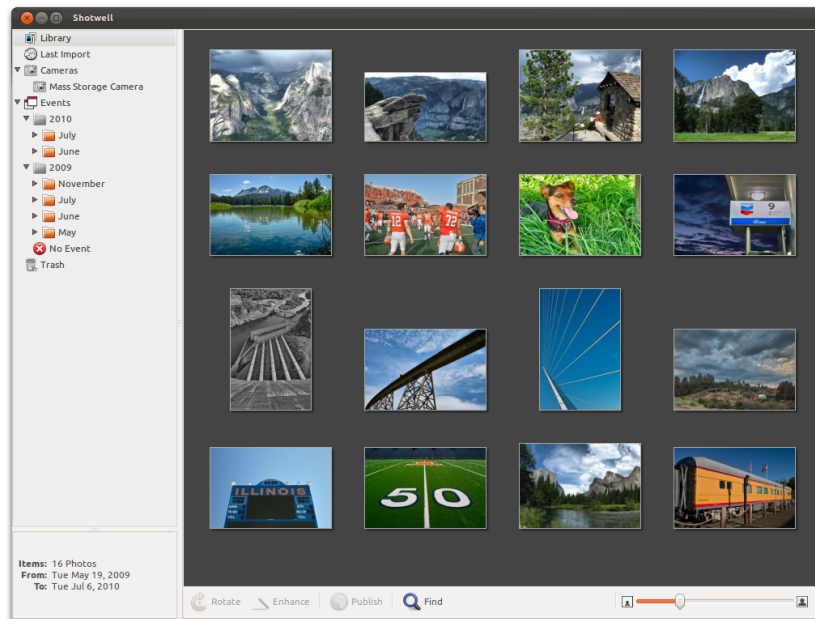
`Ctrl` and clicking on each photo you want to import, and then clicking **Import Selected** on the bottom bar of the window. Or, you can choose to import all photos by clicking **Import All**.

From your computer   You can import photos into Shotwell by dragging photos from your file browser into the Shotwell window. Alternatively, you can click **File Import From Folder**, ▸ select the folder containing the photos you want to import.

From external hard drive, USB flash drive, or CD/DVD   Importing photos from external storage is similar to importing from your computer. Your external storage device may also appear under the **Camera** label on the Shotwell sidebar. Follow the instructions for importing from a camera or computer.

Choosing where Shotwell saves photos

The default location for the Shotwell Library is your `Pictures` folder. When importing pictures in the "Import" window, you will be given the option to copy the files to your Library, or keep the files in place.

If you have your photos stored on your computer, the option **Import in Place** will be suitable so photos aren't duplicated. If you are importing photos from an external source, such as a portable hard drive, USB flash drive, or CD/DVD, you should select **Copy into Library** so the photos are copied to your computer—otherwise they won't appear when you remove the external source.

Viewing photos

Choose **Library** or any collection in the sidebar to display photos from your selection. Use the slider on the bottom bar to adjust the size of the thumbnails. To view a full-window image, double-click an individual photo.

In the full-window view, you can navigate through the collection using the back and forward arrows, zoom on the image using the slider, pan by clicking and dragging the image, and exit the full-window view by double-clicking the image.

To view the collection in full-screen mode, press F11 or go to **View ▸ Fullscreen**. You can navigate through the collection using the toolbar that is available by moving your mouse to the bottom of the screen. To view a slideshow presentation of the collection, press F5 or go to **View ▸ Slideshow**. Press the Esc key to exit the Fullscreen or Slideshow views.

Organizing photos

Shotwell makes finding photos of the same type easier by using tags. You can apply as many tags to a photo as you like. To apply tags to photos, first select the photos. Then right-click on the photos and select **Add Tags**. Enter the tags you want into the text field, separated by commas. If you are adding new tags, these will appear in the side bar on the right under the **Tags** label.

Editing images

You may want to edit some of the photos you import into Shotwell. For example, you may want to remove something at the edge, adjust the color, reduce the red-eye effect, or straighten the image. To edit a photo, double-click on the photo that you want to edit and then click on one of the following buttons:

Rotate

Click **Rotate** to rotate the image 90° clockwise. You can click the button more than once and it will rotate the image clockwise in 90° intervals.

Crop

Click **Crop** to change the framing of the photo. The image will darken and a selection will appear. Adjust the selection to your desired crop by dragging a corner or side. If you want to choose a specific aspect ratio, use the drop-down menu to select one of the preset ratios or enter your own custom ratio. A pivot button is provided to change your selection from landscape to portrait and vice versa. Once you are happy with the selection, click **OK** to apply the crop or **Cancel** to discard it.

Red-eye reduction

If you have taken a photo and the flash has caused the subject to have red eyes, you can fix this problem in Shotwell.

Click the **Red-eye** button. A circle will appear.

Drag this circle over one of the subjects eyes and then use the slider to adjust the circle size.

When the circle is over the eye, click **Apply** to fix the red eye. You will need to repeat this for each individual eye. Use caution when adjusting the size of the circle. A circle too large and covering the skin may cause discoloration when applying the red-eye reduction.

Adjust

Clicking Adjust will bring up a window that lets you edit a few things:

‣ Levels: Similar to contrast
‣ Exposure: How bright the image is
‣ Saturation: How colorful the image is
‣ Tint: The overall color
‣ Temperature: Whether the image is warm (more yellow) or cool (more blue)
‣ Shadows: How dark the shadows are

To change these values, drag the sliders until you are satisfied with the image. Click **OK** to apply the changes, **Reset** to undo the changes and start over, or **Cancel** to discard the changes.

Enhance

Click **Enhance** to let Shotwell automatically adjust the color, levels, exposure, contrast and temperature to make a more pleasing image.

Reverting an edited photo to the original

When you edit a photo in Shotwell, your original image remains untouched. You can undo all of the changes and revert to the original version by right-clicking on the photo, then selecting **Revert to Original**. This option is only available for photos you have edited.

Sharing your photos

You can easily share your photos on the web using Shotwell's Publish feature. Select the photos you want to share, then click the **Publish** button located on the bottom bar. Choose Facebook, Flickr, or Picasa Web Albums in the drop-down menu and log-in with your credentials. Some services may require you to authorize Shotwell before allowing the application to publish photos. Follow the instructions on the window, select your desired options, and click **Publish** to upload your images to the web.

Further information

We've only just touched on the features of Shotwell. To get more help, select **Help** ‣ Contents. The User Manual option will take you to http://trac. yorba.org/wiki/UsingShotwello.7 which gives more detailed instructions on how to use Shotwell effectively.

Watching videos and movies

To watch videos or DVDs in Ubuntu, you can use the Movie Player application. To start the Movie Player, click on **Dash**, then search for "Movie Player" and select it. This will open the "Movie Player" window.

Codecs

Watching DVDs may require Ubuntu to install a "codec," which is a piece of software that allows your computer to understand the contents of the DVD, and display the video.
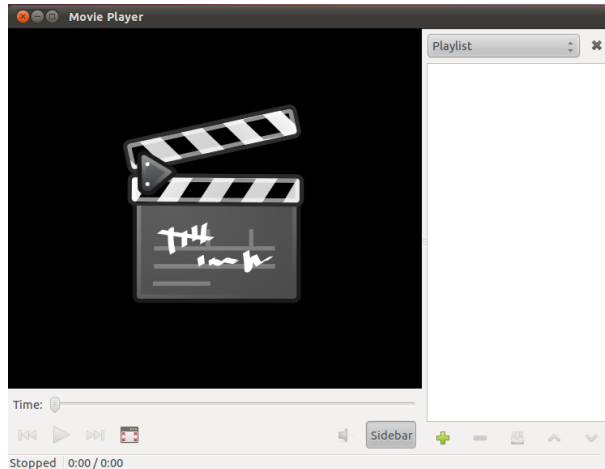
⚠ *Legal Notice: Patent and copyright laws operate differently depending on which country you are in. Please obtain legal advice if you are unsure whether a particular patent or restriction applies to a media format you wish to use in your country.*

So that you can play all videos and DVDs, you will need to install some codecs. These are located within the Multiverse repository. This is now enabled by default.

To install the codecs, open the Ubuntu Software Center, either through Dash or the Launcher. When the "Ubuntu Software Center" window opens, use the search box in the top right and search for the following:

- ubuntu-restricted-extras
- libdvdread4
- libdvdnav4

When you find each one, select it with a double-click and then click the **Install** button. This may open an "Authenticate" window. If so, enter your password then click **Authenticate** to start the installation process.

Playing videos from file

Open the **Movie** menu, then select **Open**…. This will open the "Select Movies or Playlists" window. Find the file or files that you want to play and click on the **Add** button. The video or videos will start playing.

Playing a DVD

When you insert a DVD in the computer, Ubuntu should open the "You have just inserted a Video DVD. Choose what application to launch" window. Make sure that **Open Movie Player** is chosen in the drop-down list and then click **OK**. The "Movie Player" window will open and the movie will start.

If the "Movie Player" window is already open, open **Movie** menu, then select **Play Disc**… and the movie will start.

Listening to audio and music

Ubuntu comes with the Banshee Music Player for listening to your music, streaming Internet radio and managing playlists and podcasts. Banshee also comes bundled with multiple ways to find and purchase music, TV shows, Movies and even ways to subscribe to your favorite RSS feeds.
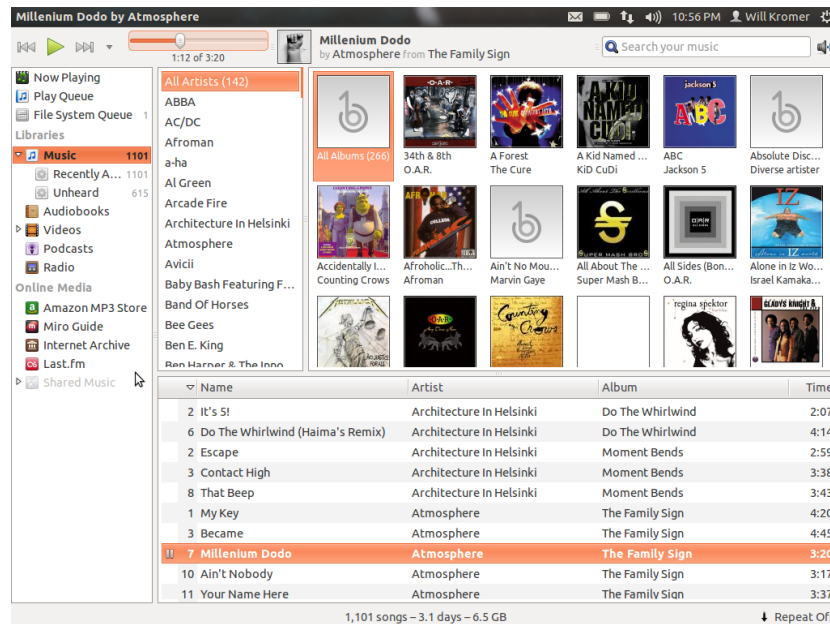
Figure 3.24: Banshee Music Player

Starting Banshee

To start Banshee, open the Dash, then click on **Listen to Music** with the Banshee logo above it. You can also type *Banshee* then click on the Banshee Icon, or browse the list of applications manually. Ubuntu 11.10 comes with an indicator menu for sound-related devices. This menu includes a link to start Banshee as well as basic playback and volume controls. To quit Banshee, move your mouse into the upper right corner and window controls will appear. Then, click the orange **x**. You can also click `Ctrl+Q` on your keyboard. Banshee will continue to run in the background, but you can still control your music from the Sound indicator.

Playing music

To play music, you must first import music into your library. Choose **Music ▸ Import Folder** or press `Ctrl+O` on your keyboard to import a folder of media, a single file, an Amazon Mp3 purchase or media from an iPod, iPhone or iPad. The Banshee toolbar contains most of the controls that you will use for browsing and playing your music. If you want to play a song, double-click a track or click it and press the **Play** button on the toolbar (you can also choose **Playback ▸ Play** from the menubar or press `Space`). When a song is playing, the **Play** button will become a **Pause** button. Clicking on it will pause the song. **Next** and **Previous** buttons are next to the Play/Pause button. You can click on these buttons to play the next and previous songs

in your library or playlist. Banshee also has options to toggle **Shuffle** or **Repeat** modes. Banshee offers five different types of shuffling, all of which can be accessed by clicking on the drop-down menu next to **Next** button or by using the global menubar (**Playback ▸ Shuffle**). Repeat controls are located in bottom right hand corner and through the global menubar (/menuPlayback ▸ Repeat).

Playing Audio CDs

To play your CD, insert it into your drive. It will automatically appear within Banshee in the *Side Pane* beneath your Music Library and Video Library. You can click the CD (named Audio CD, or the name of the album) and *double-click* a track in it to play the tracks on the CD.

Importing/Ripping Audio CDs

Begin by inserting a CD. Banshee will automatically detect it and add it to the side menu. Click the CD. Uncheck any tracks you don't want imported. Press the **Import CD** button, located near the *upper-right* corner of Banshee. Banshee will begin importing the CD. As it finishes each track, they will appear in your Music Library.

Listening to Streaming Radio

Banshee is pre-configured to enable you to stream radio from various sources. These include Internet broadcast stations (**Radio** from the Side Pane) as well as **Last.fm**. Streaming radio is a term that refers to radio stations that are broadcast over the Internet. To listen to an Internet radio station, right-click **Radio** in the *Side Pane* and enter all relevant information into the corresponding field and click save. The station is now saved in Banshee and you can play it by double-clicking it or by selecting it and clicking the **Play** button. To listen to music from Last.fm, configure your *Account Settings*.

Streaming radio are radio stations that are broadcast over the Internet.

Connect digital audio players

Banshee can connect with many popular digital media players. Connected players will appear in the *Devices list*. Features will vary depending on the player (and often the player's popularity), but common tasks like transferring songs and playlists should be supported.

Listen to shared music

If you are on the same network as other Banshee users (or most other music player software), you can share your music and listen to their shared music. Under the *Online Media* category in the sidepane, there is a subcategory titled **Shared Music**. Media shares should be listed automatically, but you may be required to add the IP manually. To do this click **Media ▸ Add Remote DAAP Server**. Then enter the IP address and the port number. Then click **OK**. Clicking a shared library will enable you to browse and play songs from other computers. You can also import music from shared libraries by clicking **Media ▸ Import Media** (`Ctrl+I`) then scrolling down to the desired media share.

DAAP stands for "Digital Audio Access Protocol," and is a method designed by Apple Inc. to let software share media across a network.
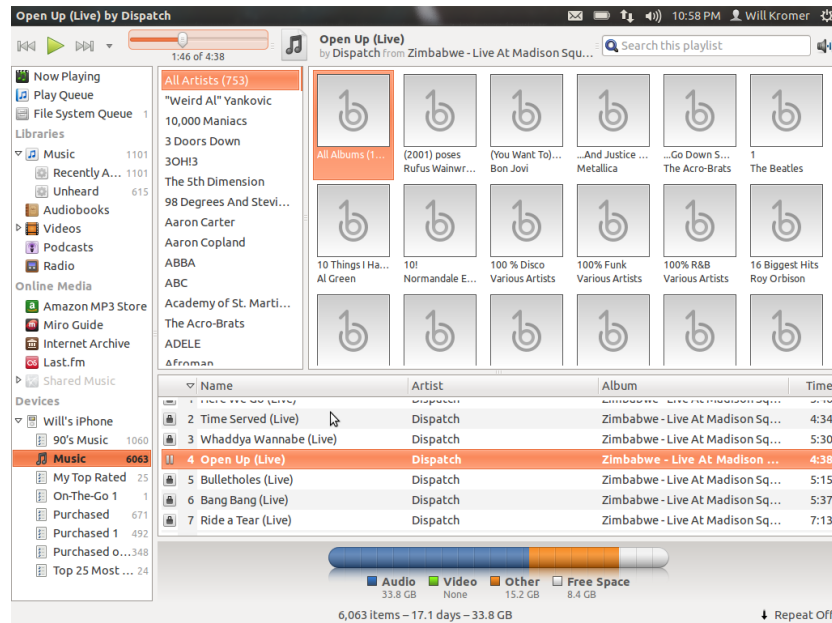
Manage podcasts

Banshee can manage all of your favorite podcasts. Select *Podcasts* from the Side Pane to view all added podcasts. The toolbar will display additional options to *Subscribe to a New Podcast* (the icon with the green cross) and *Check all Podcasts for New Episodes*. Choose **Media ▸ Add Podcast**, `Ctrl+Shift+F`, or or press the **Subscribe** button in the toolbar to import a podcast. Podcasts will be automatically downloaded at regular intervals or you can manually update feeds. Select an episode and click buttonPlay. You can also delete episodes.

View

Banshee comes with the option of a *fullscreen* mode. To enter fullscreen mode press `F` on your keyboard or use the global menubar (**View ▸ Fullscreen**), to exit from fullscreen mode press `F`. Banshee also has a browser bar that is enabled by default (this area is the top half of the program window). It gives you the option to search your music by artist (upper-right) or album (upper-left). This browser can be disabled through the menubar (**View ▸ Browser**) or with your keyboard (`Ctrl+B`).

Banshee preferences

The default configuration of Banshee may not be exactly what you want. Choose **Edit ▸ Preferences** to alter the application settings. The Preferences tool is broken into three main areas: *General*, *Source Specific* and *Extensions*.

General Options include how you want Banshee to interact with the actual media files as well as usability and bug reporting options.

Source Specific options allow you to choose the source of your music, your music folder, and file organization, as well as how to sort albums by the same artist and automatically detecting the BPM (Beats per Minute) of your songs. ▸ [Extensions] options give you the opportunity to add

functionality to Banshee. They include Context Pane extensions, Core extensions, Device Support extensions, Online Source extensions and Utilities extensions.

Managing your music

Banshee supports creating playlists. *Playlists* are either static lists of songs that are played in order or can be smart playlists based on filter criteria. Playlists contain references to songs in your library. They do not contain the actual song file, or even the song in you library. If you remove a song from a playlist (**right-click on the song ▸ Remove from Playlist**), it will remain in your library and on your hard drive. To create a playlist, choose **Media ▸ New Playlist**, `Ctrl+N` or right-click **Music** in the side pane and click **New Playlist**. Then give the new playlist a name. You can then either drag songs from you library to the new playlist in the side pane or right-click on songs and select **Add to Playlist** and pick the playlist. *Smart Playlists* are created almost the same way as static playlists. Choose **Media ▸ New Smart Playlist**. Next, define the filter criteria. You can add multiple filter rules and select a name. Finally, click Save. Smart Playlists will appear in your side pane with a different icon than any static playlists. You can update any playlist by right-clicking on the name and choosing Edit. Banshee supports song ratings. Select a song in your library and choose **Edit ▸ Rating** or **right-click** on the song and click on the appropriate amount of stars. Other song information such as Title, Artist, and Album can be arranged from right-clicking a song, clicking **Edit Track Information**, then looking under the **Basic Details** tab. To delete a song, click delete or **right-click** it and select **Remove from Library**. To delete a song from your hard drive entirely, **right-click** it and select **Delete from Drive**. If you ever want to move a song, highlight the song (or group of songs) from your library and drag it to a folder or to your desktop. This will make a copy of the audio file in the new location.

Banshee Extensions

Banshee comes with a variety of extensions. These are tools that you can enable and disable that add more features to Banshee. Examples include *Youtube* searching, *Wikipedia* Integration, and various music stores. Some extensions are enabled by default. To view the list of available extensions, Choose **Edit ▸ Preferences ▸ Extensions**.

Music stores

Banshee has two music stores which give you access to an extremely large catalog of music with a variety of licensing options. The *Ubuntu One Music Store* (see figure below) sells music from global major and minor music labels. The store offers *DRM-free* (no copy protection) songs encoded in high-quality MP3 format. You can browse the catalog, play previews, and buy songs with the Ubuntu One Music Store. The Ubuntu One Music Store also integrates with the Ubuntu One service as the name suggests. All purchases are transferred to your personal cloud storage and then automatically copied to all of your computers. For that reason, an Ubuntu One account is required (it is free of charge and quick to register). The catalog of music available for purchase will vary depending on where you live in the world. More information about the Ubuntu One Music Store can be found

at https://one.ubuntu.com/music/. The Amazon Music Store is the other music store included with Banshee. It offers a large variety of music from various sources. Both stores have very competitive prices.
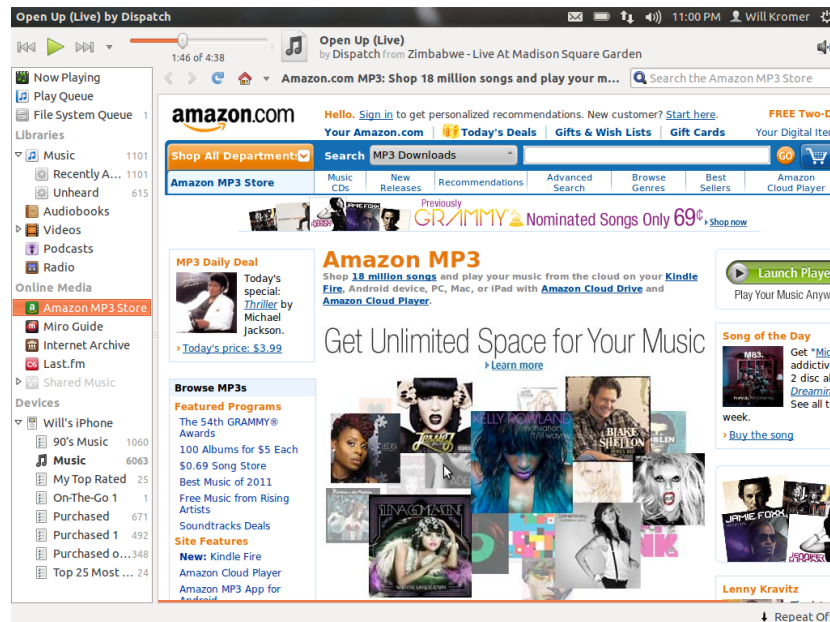
Figure 3.26: Amazon MP3 Store

Audio codecs

Different audio files (MP3, WAV, AAC) require unique tools to decode them and play the contents. These tools are called codecs. Rhythmbox will attempt to detect any missing codecs on your system so you can play all of your audio files. If a codec is missing, it will try to find the codec in online resources and guide you through installation.

Banshee support

Banshee is used by many users throughout the world. There are a variety of support resources available in many languages.

‣ Click the **Help** button for a variety of support options and information about reporting Banshee bugs.
‣ The Banshee website: http://banshee.fm/
‣ The Multimedia & Video category of Ubuntu Forums: http://ubuntuforums.org/forumdisplay.php?f=334

Burning CDs and DVDs

To create a CD or DVD open the **Dash** and search for `Brasero Disc Burner`, then open Brasero. This opens Brasero, which gives you five options to choose from. Each one of these is explained below.

Getting Started

Before you can get started with Brasero, you need to **Create a new project**. There are three types of projects that are available to you: Audio Project,
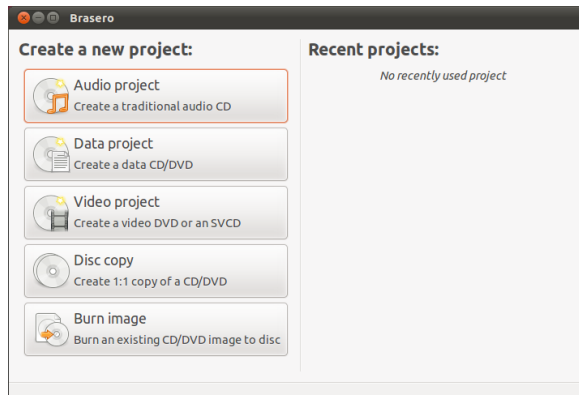
Data Project, and Video Project. Make your selection based on which you require. Please note that at the moment Brasero does not support Blu-Ray.

These following options apply for all projects except **Disc copy** and **Burn Image**.

Adding files to a project

To add files to the list, click the **Green +** button, which opens the "Select Files" window. Then navigate your way to the file you want to add, click it, and then click the **Add** button. Repeat this process for each file that you want to add.

Removing files

If you want to remove a file from the project, click the file in the list and click on the **Red -** button. To remove all the files in the list click on the **Broom shaped** button.

Icons of a broom are often used in Ubuntu to represent clearing a text field or returning something to its default state.

Saving a project

To save a project so that you can finish it later, choose **Project ▸ Save**. The "Save Current Project" window will be opened. Choose where you would like to save the project. Then, in the **Name:** text field, enter a name for the project so that you will remember it. Now click the **Save** button.

Burning the disc

When you click the **Burn…** button you will see the "Properties of …" window.

You can specify the burning speed in the **Burning speed** drop down. It is best to choose the highest speed.

To burn your project directly to the disc, select the **Burn the image directly without saving it to disc** option. With this option selected, no image file is created and no files are saved to the hard disk.

The **Simulate before burning** option is useful if you encounter problems burning discs. Selecting this option allows you to simulate the disc burning process without actually writing data to a disc—a wasteful process if your computer isn't writing data correctly. If the simulation is successful, Brasero will burn the disc after a ten second pause. During that ten second pause, you have the option to cancel the burning process.

Temporary files are saved in the /tmp folder by default. Should you wish to save these files in another location, you will need to change the setting in the **Temporary files** drop down menu. Under normal conditions, you should not need to change this setting.

Blanking a disk

If you are using a disc that has RW written on it and you have used it before, then you can blank it so that you can use it again. Doing this will cause you to lose all of the data currently on the disc. To blank a disc, open the **Tools** menu, then select **Blank**. The "Disc Blanking" window will be open. In the **Select a disc** drop down choose the disc that you would like to blank.

You can enable the **Fast blank** option if you would like to shorten the amount of time to perform the blanking process. However, selecting this option will not fully remove the files; if you have any sensitive data on your disc, it would be best not to enable the **Fast blank** option.

Once the disc is blank the you will see *The disc was successfully blanked.* Click the **Close** button to finish.

Audio project

If you record your own music, then you may want to transfer this music onto an audio CD so your friends and family can listen. You can start an audio project by clicking **Project ▸ New Project ▸ New Audio Project**.

So that each file does not play straight after each other you can add a two second pause after a file. This can be done by clicking the file and then clicking the pause button.

You can slice files into parts by clicking the **Knife** button. This opens a "Split Track" window. The **Method** drop down gives you four options each one of these lets you split the track in a different way. Once you have split the track click **OK**.

In the drop down at the bottom of the main "Brasero" window make sure that you have selected the disc that you want to burn the files to. Then click the **Burn** button.

Data project

If you want to make a back up of your documents or photos it would be best to make a data project. You can start a data project by clicking **Project** then clicking **New Project** and then **New Data Project**.

If you want to add a folder you can click the **Folder** picture, then enter the name of the folder.

In the drop down at the bottom of the main "Brasero" window make sure that you have selected the disc that you want to burn the files to. Then click the **Burn** button.

Video project

If you want to make a DVD of your family videos it would be best to make a video project. You can start a video project by clicking **Project**, then **New Project** and then **New Video Project**.

In the drop down at the bottom of the main "Brasero" window make sure that you have selected the disc that you want to burn the files to. Then click the **Burn** button.

Disc copy

You can copy a disc clicking **Project**, then **New Project** and then **Disc copy**. This opens the "Copy CD/DVD" window.

If you have two CD/DVD drives you can copy a disc from one to the other, the disc that you want to copy to must be in the CD-RW/DVD-RW drive. If you have only one drive you will need to make an image and then burn it to a disc. In the **Select disc to copy** drop-down choose the disc to copy. In the **Select a disc to write to** drop-down either choose image file or the disc that you want to copy to.

Image file

You can change where the image file is saved by clicking **Properties**, this shows the "Location for Image File". You can edit the name of the file in the **Name:** text field.

The default save location is your home folder, you can change this by clicking the + next to **Browse for other folders**. Once you have chosen where you want to save it click **Close**.

Back in the "Copy CD/DVD" window click **Create Image**. Brasero will open the "Creating Image" and will display the job progress. When the process is complete click **Close**.

Burn image

To burn an image, open the **Project ▸ New Project**, and then **Burn Image**. Brasero will open the "Image Burning Setup" window. Click on the **Click here to select a disc image** drop-down and the "Select Disc Image" window will appear. Navigate your way to the image you wish to burn, click on it, and then click **Open**.

In the **Select a disc to write to** drop-down menu, click on the disc to which you'd like to write, then click **Create Image**.

Working with documents, spreadsheets, and presentations

LibreOffice suite is the default office suite when working with: word documents, spreadsheets, and slide presentations.

Working with documents

If you need to work with documents, you can use the LibreOffice Word Processor. To start the word processor, open the **Dash home** of the Launcher, search for `LibreOffice Writer` and select it. Ubuntu should then open the main window for the word processor.

The LibreOffice Word Processor is also known as the LibreOffice Writer. Spreadsheet is also known as Calc, and Presentation is known as Impress.

Working with spreadsheets

If you need to work with spreadsheets, you can use the LibreOffice Spreadsheet. To start the spreadsheet application, click on the **Dash home**, type `LibreOffice Calc` and select **LibreOffice Calc**.

Working with presentations

If you need to work with slides for a presentation, you can use the LibreOffice Impress. To start the presentation application, open the **Dash home** menu, type `LibreOffice Impress`, and then click on it.

Getting more help

Each of these applications comes with a comprehensive set of help screens. If you are looking for more assistance with these applications, press the F1 key after starting the application.

Ubuntu One

What is Ubuntu One?

Ubuntu One is an optional, online storage service that allows you to save and access your data over the Internet and to share and synchronize information with other people and devices. Ubuntu One is run by Canonical, the people who develop Ubuntu.

Although the name implies that it is an Ubuntu-specific feature, at its simplest, Ubuntu One can be used with any device that has a web browser and Internet access, regardless of operating system. You don't need to be an Ubuntu user at all! However, to make best use of all the Ubuntu One features, you will need to install some special Ubuntu One software on your device. There are currently versions available for Windows, Android and iPhone/iPad. (Of course, there is also an Ubuntu version, which is automatically installed as part of the standard Ubuntu set up).

Internet-based services such as Ubuntu One are often referred to as "cloud services." The word "cloud" is often used to denote a remote network such as the Internet, which would often be drawn as a cloud shape on diagrams.

You may see this software referred to as the Ubuntu One client (because it runs on a user's (*i.e.*, client) machine, rather than a server. There are also non-official Ubuntu One client versions available for other operating systems, such as Fedora.

Uses for Ubuntu One

Here are some situations where you may find Ubuntu One useful:

You have multiple devices and want to share files between them

If you often work at several different machines, it can be frustrating to realize that a file you want to use is stored on another machine. One solution is to carry a USB memory stick around and save files onto this. But there are some problems with this: you may not have the stick with you when you need it; the device you are using (a smartphone, say) may not have a USB socket; or the device's USB sockets may have been disabled (as they often are, *i.e.*, in Internet cafés). Plus, there is always the risk of losing the stick...Ubuntu One provides a neat alternative to this problem. Storing your files online means they can be accessed from any device that has Internet access.

You want to share files with family and friends

Ubuntu One allows you to share some of your online files with other people. There are several reasons you might want to do this. You don't have to send the files to them directly—for example, as email attachments. This is particularly useful if the files are large: large attachments can be annoying for the recipients because they are slow to download and can clog up inboxes. Instead of sending the files themselves, you include a link to them instead. A typical example might be a couple away on holiday uploading photographs from their smartphone to Ubuntu One for the rest of the family back home to see. Sharing files online also makes it easier to collaborate. Having a single copy of documents accessible by everybody makes it easier to coordinate changes and avoids inadvertently creating multiple versions, which might happen if documents are circulated around by email. A small

club or society might find this useful, for example, to collaborate on documents such as agendas, publicity material, meeting minutes and so on.

Which files you share and who you share them with is up to you. Files can be visible just to you, to a defined group, or to everybody.

You want a simple way to backup files online

There are many ways to lose data, for example:

‣ accidentally deleting a file (although you may be able to recover it from the trash bin);
‣ inadvertently re-formatting a disk or partition;
‣ losing a USB stick;
‣ device failure, such as a hard drive breaking;
‣ damage to media, such as scratching a CD or DVD;
‣ fire, theft etc.

It is always prudent to make backups of valuable files and Ubuntu One provides a good solution because, whatever may befall your own media or devices, your files will remain safe and secure on Ubuntu One servers.

You are a music fan and like to listen to music on different devices

Ubuntu One provides a neat solution for people who like to listen to music on multiple devices. You can use your Ubuntu One account as an online jukebox and have your music streamed to whatever device you are currently using. Your music collection is available at any time on any device. You can also purchase music quickly and easily in the Ubuntu One Music Store and have it delivered directly in to your account, ready for streaming.

⚠️ *Ubuntu One Music Streaming requires payment of a subscription.*

How safe is Ubuntu One?

Before using Ubuntu One, you should bear the following points in mind:

Ubuntu One uses the same encryption techniques used to secure online banking.

‣ Uploading, downloading and synchronizing your information with Ubuntu One is done over an encrypted connection, which prevents anybody eavesdropping on your information as it is being transferred.
‣ Information uploaded to Ubuntu One can potentially be accessed by Canonical, so as with other online services and websites, you are implicitly trusting them to respect your privacy. If you don't feel you can trust them with certain information, don't upload it to Ubuntu One.
‣ If you violate the Ubuntu One terms and conditions and store illegal material, Canonical may be required to hand the information over to law enforcement agencies without your consent.
‣ Your online information can be accessed by anybody who knows (or can guess) your account name and password. For this reason, you should choose a good password and keep it secure.

Getting started with Ubuntu One

To use Ubuntu One, you will need to create an online account and subscribe

5GB is enough to store about 1,500 music files or 5,000 photographs (depending on size).

to the Ubuntu One service. Subscribing is free and will give you 5GB of online storage. If you find this is not enough, you can purchase additional storage in 20GB blocks for either a monthly or annual subscription.

⚠️ *Note: you will need an email address in order to set up Ubuntu One. If necessary, first create an email account. You will also need to be connected to the Internet.*

There are two ways to create an Ubuntu One account. You can sign up online by going to the Ubuntu One website https://one.ubuntu.com and clicking the Sign Up link. Alternatively, you can sign up using the Ubuntu One Control Panel.

Creating an Ubuntu One account using the Ubuntu One Control Panel

In the launcher, click the **Ubuntu One** button.
This will open the Ubuntu One Control Panel.

Figure 3.28: Launcher Icon
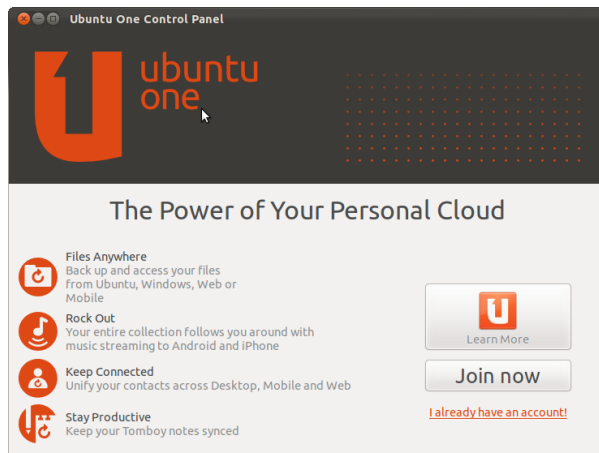
Figure 3.29: Control Panel Initial View

Click the **Join now** button. The Create Ubuntu One account dialog will appear.

Figure 3.30: Control Panel Create Account

Fill in the details requested. Make sure you use a valid email address that only you have access to. The squiggly text below your details is a *captcha*. You need to re-type the captcha text back into the text box below. Because

captchas are automatically generated, they can sometimes be difficult to read. If you get one that is indecipherable, just click the **circular blue arrow** to generate another.

You should review the terms and conditions before signing up. When you're happy, click **Forward**.

The captcha acts as a check that it really is a person filling in the form and not a computer (because a computer won't be able to read the captcha text).

Figure 3.31: Control Panel Create Account
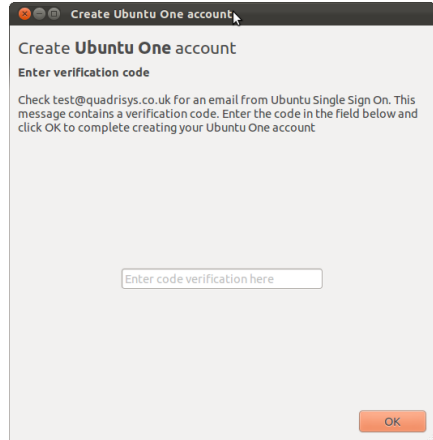
You will be sent an email containing the verification code (this may take a few minutes to arrive, so be patient!). Enter the verification code into the box and click **OK**. If all goes well, you will get a congratulatory message and then see the main Ubuntu One Control Panel. You will also get another email welcoming you to Ubuntu One. Congratulations, you're now signed up!

Using Ubuntu One

Now you're signed up, there are various things you can do using your Ubuntu One account:

‣ Manage your cloud data via the Ubuntu One website
‣ Manage your account via the Ubuntu One Control Panel
‣ Set up contact synchronization with Thunderbird
‣ Synchronize your cloud and local files using Nautilus

The following sections cover each of these.

Using the Ubuntu One website

You can access your cloud data through the Ubuntu One website at https:// one.ubuntu.com. Sign in using the same email address and password you used in the sign up process. Once signed in, you should see your account dashboard.

The dashboard summarizes your account use and provides a central point of access. Through the dashboard, you can:

‣ Create 'post it' style reminder notes
‣ Manage your contacts

Managing your cloud files and folders

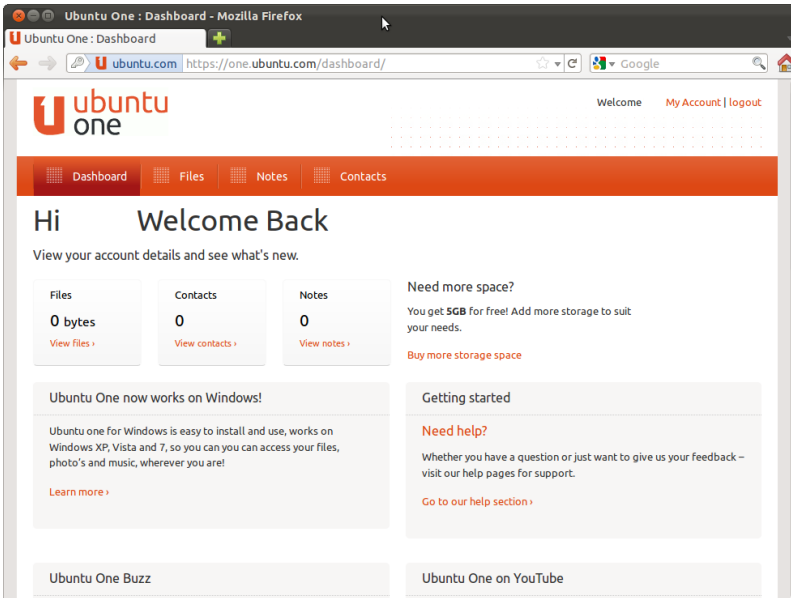On the dashboard screen, click the **Files** link. The Files page appears.

Uploading a file to Ubuntu One

‣ Click **Upload file**. A small pop-up window appears.
‣ Click **Browse** to open the file selector and select a file to upload.
‣ Then click **Upload** to upload the file.
‣ The file will then appear in your online storage.

Once a file has been uploaded, you have several options:

Delete File If you no longer need the file, you can delete it from your account. You will be asked to confirm this action.

Download file This allows you to retrieve a file from online storage. Depending on the type of file and your browser's configuration, you may see either a download prompt or the file may be displayed in a new browser tab.

Publish File Publishing a file makes it publicly available for other people to view (but not change). When you publish a file, Ubuntu One will assign it a unique URL through which the file can be viewed directly. You can give this URL to anybody who would like to view the file. When a file is published, its icon becomes embellished with a globe and its public URL will be shown. To stop publishing the file, click **Stop publishing**. The file will no longer be available at the URL and anybody trying to view it will receive an error message.

Using Folders

Ubuntu One allows you to group your files into folders to make them easier to manage, just as you would with local files.

Creating a new folder

Click **New folder**, enter a name in the pop-up window then click **Create**. The new folder will be created and will appear in your storage.

You can only upload one file at a time. If you have a lot of files, it is easier to use *file synchronization*, described later.

You may need to click **More** on the right hand side of the page to see these options. You can also download a file by clicking its name.

Be careful not to publish files unintentionally! Bear in mind that published files can potentially be viewed by *anybody*, not just people you give the URL to: there is always a chance that other people may stumble across the file's URL accidentally—for example, by mistyping the URL of another file published by somebody else. *If the file is confidential, you should probably not publish it!* You can publish the file again later if you wish. Its public URL will be the same as before.

Adding and deleting files from a folder

In order to manage the files in a folder, you first need to navigate into it so that it becomes the current folder. You do this by clicking the folder name. Once in the folder, adding and deleting files is done exactly as before. It is also possible to create sub-folders (and sub-sub-folders if you wish). To return to your main folder, click **My Storage** in the location path.

Deleting a folder

Deleting a folder is similar to deleting a file. Just click **Delete folder** and confirm that this is what you want to do. Deleting a folder will also delete all the files and folders inside it.

Sharing a folder

Sharing a folder allows you to give one or more people access to the folder and its contents. You can also specify whether each person can modify the files in the folder or just view them. Anybody you would like to share a folder with will either need to have an existing Ubuntu One account or be prepared to sign up for one. To share a folder with someone else, click **Share folder**. A pop-up box will appear. Enter the email address of the person you would like to share with. This person will be sent an email containing instructions for viewing the shared folder and for signing up to Ubuntu One if necessary. The share name is the name of the folder as the other person will see it. For example, you might have a folder called `Pix_2011_06_Small`, but want to share it as the more friendly `Our Holiday Photos`. The **Allow modification** check box specifies whether the sharer will be able to modify the contents of the folder (that is, to add, edit, or delete files and sub-folders). If the box is not ticked, they will be restricted to read-only access. Click **Share this folder** to begin sharing. You can share a folder with several people by repeating these steps for each person in turn. You can stop sharing a folder with someone by clicking **Stop sharing**.

Sharing is not the same as publishing. Sharing is more secure because there is no public URL for the folder and the people you share with have to be authenticated by signing in to their Ubuntu One account.

Accepting a share invitation from someone else

If you are invited to share a folder by someone else, you will receive an email containing a link. Clicking the link will take you to the Ubuntu One website where you can log in and accept the share. After you have done so, the shared folder will appear in your list of files.

Figure 3.33: Web Files Shared Folder
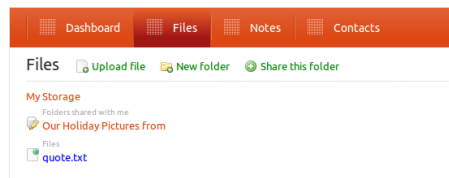
If you have been allowed to modify the folder by the sharer, you will be able to add, edit and delete files and sub-folders as if the folder was one of your own. If you don't have modify permissions, you won't be able to make any changes.

Files in folders shared by other people do not count towards your 5GB storage allowance, because the files are not actually stored in your account.

Using the Ubuntu One Control Panel

The Ubuntu One Control Panel gives you a quick and easy way to manage your Ubuntu One account. The control panel is opened by clicking the **Ubuntu One** button in the launcher.
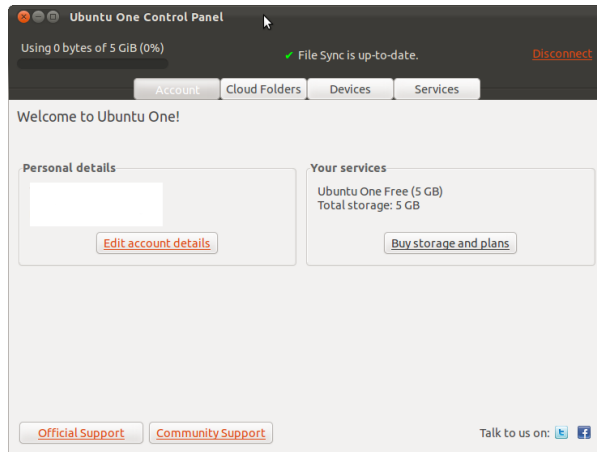
Figure 3.34: Control Panel Account

The control panel has four tabs:

‣ Account: lets you amend your account details
‣ Cloud Folders: lets you control file and folder synchronization between your current device and your Ubuntu One account
‣ Devices: lets you manage the devices attached to your Ubuntu One account
‣ Services: lets you set up and manage additional synchronization options, such as synchronizing your contacts.

The Cloud Folders tab

The Cloud Folders tab lets you control which folders are being synchronized. You can specify whether a cloud folder is synchronized with a local folder by ticking or clearing the **Sync locally?** check box.

The Devices tab

The Devices tab lists the devices that have been set up to synchronize with your Ubuntu One account, with the current device highlighted. There are two uses for this tab. Firstly, you can remove a device so that it no longer synchronizes. Secondly, you can configure *bandwidth throttling* to limit the amount of your connection's capacity that Ubuntu One will use during synchronization. By default, there is no throttling, but you may wish to change this if you find that synchronization is affecting your other online activities, such as web-browsing. Obviously, the more the bandwidth is throttled, the longer it will take to synchronize files.

The Services tab

The services tab allows you to configure additional synchronization features. By default, synchronization of files is always enabled. However, it

When you first open the Ubuntu One Control Panel, you may see the Introductory page (with the Join Now option) shown in the 'Creating an Ubuntu One subscription' section. At this point, the Control Panel is connecting to your Ubuntu One account. Once this has been done, the page will change to the Welcome to Ubuntu One page shown here.

You can also control folder synchronization through Nautilus (see later).

This controls the synchronization with your current device only. You can choose to synchronize different cloud folders with different devices. For example, if someone is sharing a folder with you, you may only want to synchronize it with your desktop computer and not with your laptop or smartphone. (Of course, you can always access any cloud folder via the Ubuntu One website whether or not it is synchronized).

is possible to synchronize other information as well—*i.e.*, your contacts, Tomboy notes and software selection. If you intend to use these extra features, you should install the ubuntuone-desktopcouch package, by clicking the **Install now** button on this page.

Synchronizing Contacts with Thunderbird

Your Ubuntu One account can synchronize contacts between the following sources:

‣ Your Facebook account
‣ Your mobile phone
‣ Your Thunderbird address book

Thunderbird synchronization

Synchronization is handled by a Thunderbird plug-in, which can be installed from the Services tab of the Ubuntu One Control Panel.

Click the **Install now** button in the Contacts section to install the plug-in. Once installed, the 'Enable Contacts Sync' check-box will be ticked.

After a synchronization cycle, you will see your online contacts appear in the Ubuntu One folder in your Thunderbird address book. Synchronization is bi-directional: if you add a contact to your Ubuntu One address book, it will appear in your Ubuntu One account and *vice versa*.

Thunderbird contact synchronization is currently only available for Ubuntu. For other operating systems, you will need to access contacts through the Ubuntu One website.

You need to have installed the ubuntuone-desktopcouch package first.

You may need to restart Thunderbird to activate the plug-in.

Using Ubuntu One with Nautilus

Basic file and folder synchronization using Nautilus

If you created your Ubuntu One account using the Ubuntu One Control Panel and have uploaded some files, you may be surprised to see that copies of these files have appeared in the "Ubuntu One" folder in your home folder. This is Ubuntu One's file synchronization feature at work. Synchronization is the process of replicating files and folders between devices and your Ubuntu One account. The synchronization occurs continuously in the background (as long as you are connected to the Internet) and is bi-directional, so that changes to either the local or cloud copy of a file will be replicated to the other. By default, the "Ubuntu One" folder is automatically synchronized. However, it is possible to synchronize other folders as well.

In Nautilus, synchronized folders are indicated with a tick mark.

Because the "Ubuntu One" folder is automatically synchronized, it provides quick and easy access to your cloud storage: any files or folders you create in this folder will automatically be synchronized to your Ubuntu One account with no further effort on your part. This is much easier than manually uploading and downloading files via the Ubuntu One website. If you make a lot of changes to synchronized files and folders in a short time, the synchronization process may not be able to keep up with them all immediately. This is especially likely to happen if you have a slow Internet connection or you have restricted the bandwidth that synchronization is allowed to use. However, the pending changes will all eventually get written.

The synchronization state of each file or folder is indicated by a badge on its icon: a green tick means the file is synchronized, whilst a circle of green and blue arrows means synchronization is pending or underway. In the screenshot below, quote.txt is up to date, but 'LargeFile.txt' is still being synchronized.

You can only synchronize folders in your home folder.

Figure 3.35: Ubuntu One Folder Icon

You can also get an overview of the synchronization state from the Ubuntu One Control Panel, which will show either "File Sync in progress" or "File Sync is up-to-date." However, the Control Panel does not show the state of individual files.
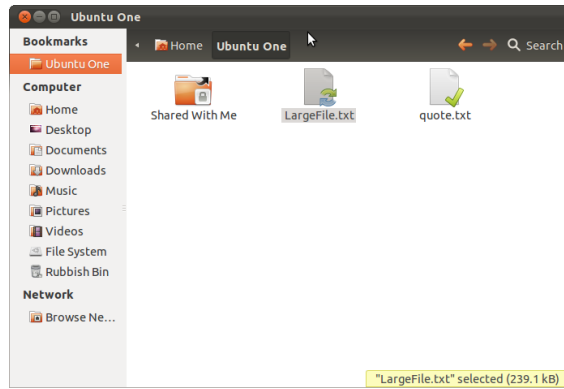
Figure 3.36: Ubuntu Nautilus Badges

You can make any changes you like to the local copy of the file and they will automatically be synchronized to Ubuntu One. This table summarises how changes to the local file are synchronized:

Ubuntu One File Actions		
Action	Effect in Cloud	Notes
Move file: into Ubuntu One folder	Remote file created	Any new file that appears in the Ubuntu One folder will automatically begin to be synchronized.
Update file: edit and save	Remote file updated to new contents	
Rename file	Remote file renamed	
Delete file	Remote file deleted	
Move file: to another (un-synchronized) folder	Remote file deleted	Because the file has been removed from the Ubuntu One folder, this is treated as a deletion. The file is no longer under synchronization.

Synchronizing additional folders

You can specify additional folders that should be synchronized, as long as they are in your home folder. For instance, you may wish to synchronize your Documents folder so that your documents are available on all your devices. To synchronize another folder, navigate to the folder in Nautilus, then tick the *Synchronize this folder*.

Alternatively, right-click a folder icon to display its shortcut menu, then select **Ubuntu One** ‣ Synchronize This Folder.

Encrypting files for security

You can give yourself an extra layer of security by encrypting sensitive files before putting them on Ubuntu One. This will help protect you if your Ubuntu One account is compromised. Here is a simple way to do this:

This is not a very robust encryption method. If you need greater protection, consider using an application such as GPG (GNU Privacy Guard) that uses cryptographic keys rather than passwords.
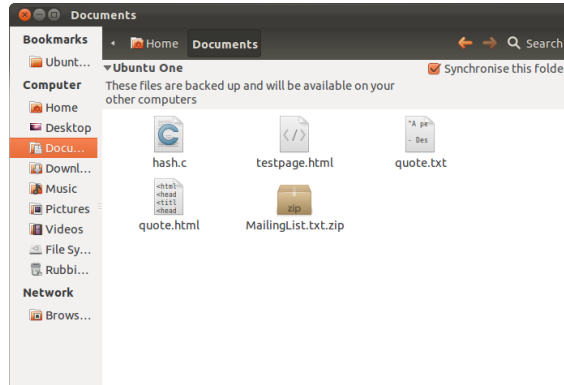
‣ In Nautilus, right-click on the file you want to encrypt and select **Compress**....

- The "Compress" dialog will appear with your filename selected.
- For the filetype, choose **.zip**.
- Click the arrow next to Other Options to expand the section and see the **Password** box.
- Enter a password, then click **Create**.

A new file will be created with a .zip extension in the same folder as your original document. This file contains an encrypted version of the original file, which you can then safely upload to Ubuntu One.

⚠️ *Make sure you only upload the encrypted version of the file to Ubuntu One and not the original! Don't use your account password to protect your document. If somebody knows your account password, they will probably try this first.*

Some applications, such as LibreOffice, can already create password-protected documents. If a document is already encrypted, there is no need to re-encrypt it.

The .zip format will also try to compress your file, so you may find that the encrypted file is smaller than the original. Don't worry about this: none of your information has been lost and when you decrypt the file, it will be exactly the same as before.

Decrypting an encrypted file

To recover the original document, double-click the .zip file. This will open the Archive Manager application. Click the **Extract** button on the toolbar, specify a location for the decrypted file, then click **Extract**. At this point, you will be prompted to enter the original password so that the file can be decrypted.

The Shared With Me folder

Shared With Me is a special folder where folders that other people are sharing with you can be synchronized. By default, shared folders are not synchronized. To enable synchronization, use the Cloud Folders tab of the Ubuntu One Control Panel and ensure the **Sync locally?** box is ticked for the shared folder you want to synchronize. The folder will then appear in the Shared With Me folder and begin to synchronize. Once the synchronization is complete, the folder emblem will change from circular blue and green arrows to a green tick.

4 Hardware

Using your devices

Ubuntu supports a wide range of hardware, and support for new hardware improves with every release.

Hardware identification

To identify your hardware you can install the following application: Click **Ubuntu Software Center** from the Unity launcher. When the "Ubuntu Software Center" window opens, use the search box in the top right and search for the following: `sysinfo`. Now select the Application, click **Install** and enter your password to install the application.

To run the application, search for Sysinfo at the Dash search bar. Click on the program once you find it. The Sysinfo program will then open a window with information about the hardware that is part of your system.

Displays

Hardware drivers

A driver consists of code that is packaged in a file, which tells your computer how to communicate with a piece of hardware. Every component in a computer requires a driver to function, whether it's the printer, DVD player, hard disk, or graphics card.

A majority of graphics cards are manufactured by three well-known companies: Intel, AMD/ATI, and NVIDIA Corp. You can find your video card manufacturer by referring to your computer's manual, looking for the specifications of your particular model on the Internet, or by using the command `lspci` in a terminal. The Ubuntu Software Center houses a number of applications that can tell you detailed system information. SysInfo is one such program that you can use to find relevant information about your System devices. Ubuntu comes with support for graphics devices manufactured by the above companies, and many others, out of the box. That means you don't have to find and install any drivers yourself, Ubuntu takes care of it all.

Keeping in line with Ubuntu's philosophy, the drivers that are used by default for powering graphics devices are open source. This means that the drivers can be modified by the Ubuntu developers and problems with them can be fixed. However, in some cases a proprietary driver (restricted driver) provided by the company may provide better performance or features that are not present in the open source driver. In other cases, your particular device may not be supported by any open source drivers yet. In those scenarios, you may want to install the restricted driver provided by the manufacturer.

For both philosophical and practical reasons, Ubuntu does not install restricted drivers by default but allows the user to make an informed choice. Remember that restricted drivers, unlike the open source drivers for your device, are not maintained by Ubuntu. Problems caused by those drivers will be resolved only when the manufacturer wishes to address them.

Your graphics card is the component in your computer that outputs to the display. When you're watching videos on YouTube, viewing DVDs, or simply enjoying the smooth transition effects when you maximize/minimize your windows, your graphics device is doing the hard work behind the scenes.

To see if restricted drivers are available for your system, press the Su-per/Windows key on your keyboard to show the dash or click the Ubuntu icon on the Unity launcher, and search for **Additional Drivers**. If a driver is provided by the company for your particular device, it will be listed there. You can simply click **Activate** to enable the driver. This process requires an active Internet connection and it will ask for your password. Once installation is complete you may have to reboot your computer to finish activating the driver.

The Ubuntu developers prefer open source drivers because they allow any problem to be identified and fixed by anyone with knowledge within the community. Ubuntu development is extremely fast and it is likely that your device will be supported by open source drivers. You can use the Ubuntu Live CD to check your device's compatibility with Ubuntu before installing, or go online to the Ubuntu forums or to http://www.askubuntu.com to ask about your particular device.

Another useful resource is the official online documentation (http://help.ubuntu.com), which contains detailed information about various graphics drivers and known problems. This same documentation can be found by searching for **Yelp** in the **Dash** search bar or by pressing F1 on your keyboard.

Setting up your screen resolution

One of the most common display related tasks is setting your screen resolution.

Ubuntu correctly identifies your native screen resolution by itself and sets it for you. However, due to a wide variety of devices available, sometimes it can't properly identify your resolution.

To set or check your screen resolution, go to **System Settings ▸ Displays**. The "Displays" window shows you your monitor's name, size, screen resolution, and refresh rate. From the **Resolution** drop-down menu you can select the resolution of your choice.

Displays are made up of thousands of tiny pixels. Each pixel displays a different color, and when combined they all display the image that you see. The native screen resolution is a measure of the amount of actual pixels on your display.

Adding an extra display

Sometimes, you may want to add more than one display device to your desktop, or may want to add an external monitor to your laptop. Doing this is quite simple. Whether it's an extra monitor, LCD TV, or a projector, Ubuntu can handle it all. Ubuntu supports the addition of multiple displays by default, which is as easy as plug and play. Ubuntu recognizes almost all the latest monitors, TVs and projectors by default. Sometimes it may happen that your additional display is not detected when you connect it to the machine. To resolve this, go to **System Settings ▸ Displays** and click on **Detect Displays**. This will detect the monitors connected to the machine. This menu can also be found from the **Power Off** menu on the top panel. You can also search for Displays at the Dash search bar. Now, there are two modes which you can enable for your displays. One option is to spread your desktop across two or more monitors. This is particularly useful if you are working on multiple projects and need to keep an eye on each of them at the same time. The second option is to mirror the desktop onto each of the displays. This is particularly useful when you are using a laptop to display something on a larger screen or a projector. To enable this option just check the box beside **Mirror displays** and click **Apply** to save the settings. You will get a pop-up notification asking if you want to keep the current setting or revert to the previous setting. Click to keep the current setting.

Connecting and using your printer

Ubuntu supports most new printers. You can add, remove, and change printer properties by navigating to **System Settings ▸ Printing**. You can also search for Printing from the Dash search bar. Opening Printing will display the "Printing-localhost" window.

When you want to add a printer, you will need to make sure that it is switched on, and plugged into your computer with a USB cable or connected to your network.

Adding a local printer

If you have a printer that is connected to your computer with a USB cable then this is termed a *local printer*. You can add a printer by clicking on the **Add Printer** button.

In the left hand pane of the "New Printer" window any printers that you can install will be listed. Select the printer that you would like to install and click **Forward**.

You can now specify the printer name, description and location. Each of these should remind you of that particular printer so that you can choose the right one to use when printing. Finally, click **Apply**.

If your printer can automatically do double sided printing, it will probably have a duplexer. Please refer to the instructions that came with the printer if you are unsure. If you do have a duplexer, make sure the **Duplexer Installed** option is checked and then click the **Forward** button.

Adding a network printer

Make sure that your printer is connected to your network either with an Ethernet cable or via wireless and is turned on. You can add a printer by clicking **Add Printer**. The "New Printer" window will open. Click the "+" sign next to *Network Printer*.

If your printer is found automatically it will appear under *Network Printer*. Click the printer name and then click **Forward**. In the text fields you can now specify the printer name, description and location. Each of these should remind you of that particular printer so that you can choose the right one to use when printing. Finally click **Apply**.

You can also add your network printer by entering the IP address of the printer. Select "Find Network Printer," enter the IP address of the printer in the box that reads **Host:** and press the **Find** button. Ubuntu will find the printer and add it. Most printers are detected by Ubuntu automatically. If Ubuntu cannot detect the printer automatically, it will ask you to enter the make and model number of the printer.

The default printer is the one that is automatically selected when you print a file. To set a printer as default, right-click the printer that you want to set as default and then click **Set As Default**.

Changing printer options

Printer options allow you to change the printing quality, paper size and media type. They can be changed by right-clicking a printer and choosing **Properties**. The "Printer Properties" window will show; in the left pane, select *Printer Options*.

You can now specify settings by changing the drop-down entries. Some of the options that you might see are explained.

Media Size

This is the size of the paper that you put into your printer tray.

Media source

This is the tray that the paper comes from.

Color Model

This is very useful if you want to print in **Grayscale** to save on ink, or to print in **Color**, or **Inverted Grayscale**.

Media type

Depending on the printer you can change between:

‣ Plain Paper
‣ Automatic
‣ Photo Paper
‣ Transparency Film
‣ CD or DVD Media

Print quality

This specifies how much ink is used when printing, **Fast Draft** using the least ink and **High-Resolution Photo** using the most ink.

Sound

Ubuntu usually detects the audio hardware of the system automatically during installation. The audio in Ubuntu is provided by a sound server named PulseAudio. The audio preferences are easily configurable with the help of a very easy to use GUI which comes preinstalled with Ubuntu.

Volume icon and Sound Preferences

A volume icon, sitting on the top right corner of the screen, provides quick access to a number of audio related functions. When you left-click on the volume icon you are greeted with four options: A mute option at the very top, a slider button which you can move horizontally to increase/decrease volume, a shortcut to the default music player Banshee and an option for accessing the Sound Preferences. Selecting *Sound Preferences* opens up another window which provides access to sound themes, hardware, input and output preferences. Sound Preferences can also be found if you go to **System Settings ‣ Sound**.

Sound Effects   The first tab which shows up by default is *Sound Effects*. You can disable the existing sound theme or configure it with the options available.

You can add new sound themes by installing them from Software Center (*e.g.*, Ubuntu Studio's GNOME audio theme.) You will get the installed sound themes from the drop down menu. You can also enable window and button sounds.

Hardware   The *Hardware* tab will have a list of all the sound cards available in your system. Usually there is only one listed; however, if you have a graphics card which supports HDMI audio, it will also show up in the list.

A microphone is used for making audio/video calls which are supported by applications like Skype or Empathy. It can also be used for sound recording.

Input   The third tab is for configuring audio *Input.*You will be able to use this section when you have an in-built microphone in your system or if you've pluged in an external microphone. You can also add a bluetooth headset to your input devices which can serve as a microphone. You can

You should note that by default in any Ubuntu installation, the input sound is muted. You will have to manually unmute to enable your microphone to record sound or use it during audio/video calls.

increase/decrease and mute/unmute input volume from this tab. If there is more than one input device, you will see them listed in the white box which reads *Choose a device for sound input.*

Output   The *Output* tab is used for configuring the output of audio. You can increase/decrease and mute/unmute output volume and select your preferred output device. If you have more than one output device, it will be listed in the section which reads "Choose a device for sound output." The default output hardware, which is automatically detected by Ubuntu during installation will be selected.

If you change your sound output device, it will remain as default.

Applications   The *Applications* tab is for changing the volume for running applications. This comes in handy if you have multiple audio applications running, for example, if you have Rhythmbox, Totem Movie Player and a web-based video playing at the same time. In this situation, you will be able to increase/decrease, mute/unmute volume for each application from this tab.

The Ubuntu Design Team have made a few changes to the volume icon in this release of Ubuntu 11.10.

More functionality

The icon can control various aspects of the system, application volume and music players like Banshee. The volume indicator icon can now be easily referred to as the sound menu, given the diverse functionality of the icon. Media controls available include play/pause, previous track, and next track. You can also switch between different playlists from the *Choose Playlist* option. There is also a seek bar which you can manually drag to skip some portions of any song. If the current playing song has album art, it will show up beside the name of the current track, otherwise you will see only the details of the song. It displays the track name, the artist name and the album name of the current track.

You can start and control the default music player, Banshee, by simply left clicking on the sound menu and selecting Banshee from the list. Clicking the **play** button also starts the player.

Using a webcam

Webcams often come built into laptops and netbooks. Some computers, such as Apple desktops, have a webcam built into their display. If you purchase a webcam because your computer doesn't have its own, it will most likely have a USB connection. To use a USB webcam, plug it into an empty USB port on your computer.

Almost all new webcams are detected by Ubuntu automatically. You can configure webcams for individual applications such as Skype and Empathy from the application's setup menu. For webcams which do not work right away with Ubuntu, visit https://wiki.ubuntu.com/Webcam for help.

There are several applications which are useful if you have a webcam. Cheese can capture pictures with your webcam and VLC media player can capture video from your webcam. You can install these from the Ubuntu Software Center.

Scanning text and images

Scanning a document or an image is very simple in Ubuntu. Scanning is handled by the application Simple Scan. Most of the time, Ubuntu will simply detect your scanner and you should just be able to use it. To scan a document, follow these steps:

1. Place what you want to scan on the scanner.
2. Click to open the Dash and enter **scan**.
3. Click on Simple Scan.

4. Click to choose between **Text** or **Photo** from **Document ▸ Scan ▸ Text**.
5. Click **Scan**.
6. Click the **Paper Icon** to add another page.
7. Click **Save** to save.

You can save the scanned documents and pictures in jpeg. You can also save in pdf format to enable opening in Acrobat Reader. To do that, add the extension ".pdf" at the end of the filename.

Help! Ubuntu can't find my scanner!

If your scanner is not detected, Ubuntu may give you a "No devices available" message when trying to scan. There may be a reason why Ubuntu cannot find your scanner.

‣ Simply unplug the scanner and plug it back in. If it is a newer USB scanner, it is likely that it will just work.
‣ The driver for your scanner is not being automatically loaded. Restart your system. It might help!
‣ Your scanner is not supported in Ubuntu. The most common type of scanner not supported is old parallel port or Lexmark All-in-One printer/scanner/faxes.
‣ SANE project listing of supported scanners. The SANE (Scanner Access Now Easy) project provides most of the back-ends to the scanning software on Ubuntu.
‣ Check https://wiki.ubuntu.com/HardwareSupportComponentsScanners to find out which scanners work with Ubuntu.

Other devices

USB

USB ports are available as standard on almost all computers available now. They are used to connect a multitude of devices to your computer. These could include portable hard drives, flash drives, removable CD/DVD/Blu-ray drives, printers, scanners and mobile phones. When connected, flash drives and portable hard drives are automatically detected—the file manager will open and display the contents of the drive. You can then use the drives for copying data to and from the computer. All new cameras, camcorders and mobile phone SD cards are automatically detected by Ubuntu. These SD cards have different types of data, so a window will appear with a drop down menu to choose between video, audio import and the file manager —you can choose your desired action from this menu.

Firewire

Firewire is a connection on some computers that allows you to transfer data from devices. This port is generally used by camcorders and digital cameras.
If you want to import video from your camcorder you can do so by connecting your camcorder to the Firewire port. You will need to install a program called Kino which is available in the Ubuntu Software Center.

Firewire is officially known as IEEE 1394. It is also known as the Sony i.LINK and Texas Instruments Lynx.

To find out more about Kino, visit http://www.kinodv.org/.

Bluetooth

Bluetooth is a wireless technology that is widely used by different types of devices to connect to each other. It is common to see a mouse or a keyboard

that supports Bluetooth. You can also find GPS devices, mobile phones, headsets, music players and many other devices that can connect to your desktops or laptop and let you transfer data, listen to music, or play games as an example.

If your computer has Bluetooth support then you should see a Bluetooth icon in the top panel, usually near the volume icon. Click on the Bluetooth icon to open a popup menu with several choices, such as an option to **Turn off Bluetooth**.

The Bluetooth preferences can also be accessed from **System Settings ▸ Bluetooth**. If you want to connect a new device—for example, to have a mobile phone send pictures or videos to your computer—select **Setup new device**....

Ubuntu will open a window for new device setup. When you click **Forward**, Ubuntu will show you how many Bluetooth devices are present near your computer. The list of available devices might take a minute or so to appear on the screen as your system scans for these devices. Each device will be displayed as soon as it is found by Ubuntu. Once a device you'd like to connect with appears in the list, click on it. Then, choose a PIN number by selecting **PIN options**.

Three predefined PIN numbers are available, but you can also create a custom PIN. You will need to enter this PIN on the device you will be pairing with Ubuntu.

Once the device has been paired, Ubuntu will open the "Setup completed" window. In Ubuntu, your computer is hidden by default for security reasons. This means that your Ubuntu system can search other Bluetooth devices, but others cannot find your Ubuntu system when they perform a search on their own computer. If you would like to let another device find your computer, you will have to explicitly allow your computer to be found. To allow your computer to be found, select "Make computer discoverable" in Bluetooth preferences. You can also click on the Bluetooth icon and select **Visible** to make your computer discoverable.

You can also add a fancy name for your Bluetooth-enabled Ubuntu system by changing the text under **Friendly Name**.

Another feature present in the Bluetooth icon menu is "Send files to device." Use this option to send a file to a mobile phone without pairing with the computer.
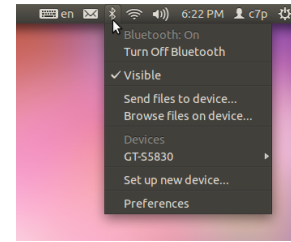

Figure 4.1: The Bluetooth applet menu.

When you *pair* two Bluetooth devices, you are letting each device trust the other one. After you pair two devices, they will automatically connect to each other in the future without requiring a PIN.

Android devices need to be paired at all times, even while transferring files.

5 Software Management

Software management in Ubuntu

As discussed in Chapter 3: Working with Ubuntu, Ubuntu offers you a wide range of applications for your daily work. Ubuntu comes with a basic set of applications for common tasks like surfing the Internet, checking your email, listening to music, and organizing your photos and videos. Sometimes you may need an extra level of specialization: for example you may want to retouch your photos, run some software for your business, or play some new games. In each of these cases you can search for an application, install it and use it—usually, with no extra cost.

Software in Ubuntu is delivered as *packages*, simplifying the installation to one click. A package is a compressed file archive containing everything needed to run the application. Packages can also contain information describing which other applications, called *dependencies* or *libraries*, are needed. Linux is designed in a way that any *library* can be updated without having to reinstall the complete application, minimizing hard drive usage by letting other applications use the same *library*.

Most other operating systems require a user to purchase commercial software (online or through a physical store), or search the Internet for a free alternative (if one is available). The correct installation file must then be verified for integrity, downloaded and located on the computer, followed by the user proceeding through a number of installation prompts and options. By default Ubuntu gives you a centralized point with two different ways to browse the *repositories* for searching, installing and removing software.

Figure 5.1: Software Center icon

We recommend Ubuntu Software Center for searching, installing and removing applications, although you still have the possibility to use the command-line application apt-get, or install and use the advanced application Synaptic Package Manager.

‣ Ubuntu Software Center
‣ Command line apt-get

Searching, installing and/or removing applications with Ubuntu Software Center is the easiest and most comfortable way. It is recommended for all kinds of users, starting from beginners to the most experienced.

Using the Ubuntu Software Center

There are numerous ways to install software on an operating system. In Ubuntu, the quickest and easiest way to find and install new applications is through the Ubuntu Software Center.

To start the application, click on the Ubuntu Software Center icon in the launcher, or click on the **Dash** and search for Ubuntu Software Center.

The Ubuntu Software Center can be used to install applications that are available in the official Ubuntu repositories. The Software Center window has two parts—a list of categories on the left, a banner at the top, and two featured areas on the right. Clicking on a category will take you to a list of related applications. For example, the Internet category contains Firefox Web Browser. The featured areas highlight What's New and Top Rated software. Each area shows different application icons. Just click an icon to get more information on the application or to install it. To see all software the area contains, click More.

Three sections at the top represent your current view of the Software Center's catalog. Click the All Software button to see software that is available to install, click Installed to see a list of software that is already installed on your computer, or click History to see previous installations and deletions organized by date.

Find your application

Ubuntu Software Center displays different sources in the "Get Software" section. Clicking the arrow next to "All Software" will show a list of individual sections. Selecting "Provided by Ubuntu" will show free official software, "For Purchase" will show software for purchasing, and "Canonical Partners" will show software from partners of Canonical, such as Adobe.

If you are looking for an application, you may already know a specific name (for example, VLC Media Player), or you may just have a general category in mind (for example, the Sound and Video category includes a number of different software applications such as video converters, audio editors, and music players).

To help you find the right application, you can browse the Software Center catalog by clicking on the category that reflects the type of software you are looking for, or use the Search field at the top right of the window to look for specific names or keywords.

When you select a category, you will be shown a list of applications. Some categories have sub-categories—for example, the Games category has subcategories for Simulation and Card Games. To move through categories you can use the back and forward buttons at the top of the window.

Installing software

Once you have found an application you would like to try, installing it is just one click away.

To install software:

1. Click the **Install** button to the right of the selected package to install it. If you would like to read more about the software package before installing it, first click on "More Info." This will take you to a short description of the application, as well as a screenshot and a Web link when available. Related add-ons will be listed below the application's description. You can click **Install** from this screen as well. In addition, if you use the Gwibber micro-blogging application, you can hit the "Share..." link below the description of an application to tell your friends about it.

2. After clicking **Install**, enter your password into the authentication window that appears. This is the same password you use to log in to your account. You are required to enter it whenever installing or removing software in order to prevent someone without administrator access from making unauthorized changes to your computer. If you receive an Authentication Failure message after typing in your password, check that you typed it correctly by trying again. If the error continues, this may mean that your account is not authorized to install software on the computer.

3. Wait until the package is finished installing. During the installation (or removal) of programs, you will see an animated icon of rotating arrows to the left of the In Progress button in the sidebar. If you like, you can now go back to the main browsing window and choose additional software packages to be installed by following the steps above. At any time, clicking the Progress button on the top will take you to a summary of all operations that are currently processing. Here you can also click the X icon to cancel any operation.

Once the Software Center has finished installing an application, it is ready to be used. You can start the newly installed application by going to the **Dash** and typing the name of the application in the search bar. You may want to add the application to the Launcher.

Removing software

Removing applications is very similar to installing them. First find the installed software in Ubuntu Software Center. You can click on the **Installed** button which will show all the installed software listed in different categories. Scroll down to the application you wish to remove. If you click on the arrow next to **Installed** button, you will find a list of software providers, which can help you to narrow your search. You also can enter keywords in the Search field to quickly find installed software, or you can search by date in the History tab (more on History below).

To remove software:

1. Click the Remove button to the right of the selected application.
2. Enter your password into the authentication window that appears. Removing Software also requires that you enter your password to help protect your computer against unauthorized changes. The package will then be queued for removal, and will appear under the progress section in the top.

Removing a package will also update your menus accordingly.

You must have administrative privileges, and you will need to be connected to the Internet for the Software Center to work. To learn how to set up your Internet connection, see Getting online.

Software history

The Ubuntu Software Center keeps track of past software management
in the History section. This is useful if you wish to revert installations or
removals and do not remember the application's name.

There are four buttons in the history section—**All Changes**, **Installations**,
Updates and **Removals**. Clicking one will show a list of days that action
occurred. If you click the arrow next to a day, a list of individual packages
will be shown, along with what was done with them and at what time. The
History section shows all software installation history, not just changes
made within the Software Center. For example, packages updated through
the Update Manager will also be listed.

Managing additional software

Although the Ubuntu Software Center provides a large library of appli-
cations to choose from, initially only those packages available within the
official Ubuntu repositories are listed. At times, you may be interested in a
particular application that is not available in these repositories. If this hap-
pens, it is important to understand some alternative methods for accessing
and installing software in Ubuntu, such as downloading an installation file
manually from the Internet, or adding extra repositories. First, we will look
at how to manage your repositories through Software Sources.

Software Sources

The Ubuntu Software Center lists only those applications that are available
in your enabled repositories. Repositories can be added or removed through
the Software Sources application. To open this, click on the **Dash** and enter
`Software Sources`. Then open the application from the results shown.

You can also open Software Sources from the
Ubuntu Software Center. Simply go to **Edit ▸
Software Sources**.

Managing the official repositories

When you open Software Sources, it shows you the **Ubuntu Software** tab
where the first four options are enabled by default.

The **Ubuntu Software** tab lists the official
Ubuntu repositories, each containing different
types of packages.

Canonical-supported open source software (main) This repository contains
all the open-source packages that are maintained by Canonical.
Community-maintained open source software (universe) This repository
contains all the open-source packages that are developed and maintained
by the Ubuntu community.
Proprietary drivers for devices (restricted) This repository contains propri-
etary drivers, which may be required to utilize the full capabilities of
some of your devices or hardware.

Closed-source packages are sometimes
referred to as *non-free*. This is a reference to
freedom of speech, rather than monetary cost.
Payment is not required to use these packages.

Software restricted by copyright or legal issues (multiverse) This repository
contains software that may be protected from use in some states or
countries by copyright or licensing laws. By using this repository you
assume responsibility for the usage of any packages that you install.
Source code This repository contains the source code that is used to build
the software packages from some of the other repositories. The **Source
code** option should not be selected unless you have experience with
building applications from source.

Building applications from source is an ad-
vanced process for creating packages, and
usually only concerns developers. You may
also require source files when using a custom
kernel, or if trying to use the latest version of
an application before it is released for Ubuntu.
As this is a more advanced area, it will not be
covered in this manual.

Selecting the best software server

Ubuntu provides and allows many servers around the world to mirror the packages from the sources listed under "Managing the official repositories."

When selecting a server, you may want to consider the following:

Distance to server. This will affect the speed you can achieve with the file server.
Internet Service Provider. Some Internet service providers offer cheaper, or even unlimited free downloads from their own servers.
Quality of server. Some servers may only offer downloads at a capped speed, limiting the rate at which you can install and update software on your computer.

Ubuntu will automatically choose an appropriate server while installing, and as such these settings should not be changed unless your physical location changes drastically or if you feel a higher speed should be achieved by your Internet connection. The guide below will help in choosing an optimal server.

Ubuntu provides a tool for selecting the server that provides the fastest connection with your computer.

1. Click the dropdown box next to "Download from:" in the Software Sources window.
2. Select "Other…" from the list.
3. In the "Server Selection" window that appears. Click the **Select Best Server** button in the upper right. Your computer will now attempt a connection with all the available servers, then select the one with the fastest speed.

If you are happy with the automatic selection, click **Choose Server** to return to the Software Sources window.

If you are not happy with the automatic selection or prefer not to use the tool, the fastest server is often the closest server to you geographically. In this case simply choose "Other" then find the nearest location to your computer. When you are happy with the settings chosen click **Choose Server** to return to the Software Sources window.

If you do not have a working Internet connection, updates and programs can be installed from the installation media itself by inserting your media and clicking the box under "Installable from CD-ROM/DVD." Once this box is checked the media within theCD-ROM/DVD drive will function as an online repository and as such the software on the media will be installable from the Ubuntu Software Center.

Adding more software repositories

Ubuntu makes it easy to add additional, third-party repositories to your list of software sources. The most common repositories added to Ubuntu are called PPAs. These allow you to install software packages that are not available in the official repositories, and automatically be notified whenever updates for these packages are available.

If you know the web address of a PPA's Launchpad site, adding it to your list of software sources is relatively simple. To do so, you will need to use the **Other Software** tab in the "Software Sources" window.

On the Launchpad site for a PPA, you will see a heading to the left called "Adding this PPA to your system." Underneath will be a short paragraph

Ubuntu grants permission to many servers all across the world to act as *mirrors*. That is, they host an exact copy of all the files contained in the official Ubuntu repositories.

A PPA is a *Personal Package Archive*. These are online repositories used to host the latest versions of software packages, digital projects, and other applications.

containing a unique URL in the form of ppa:test-ppa/example. Highlight this URL by selecting it with your mouse, then right-click and select **Copy**.
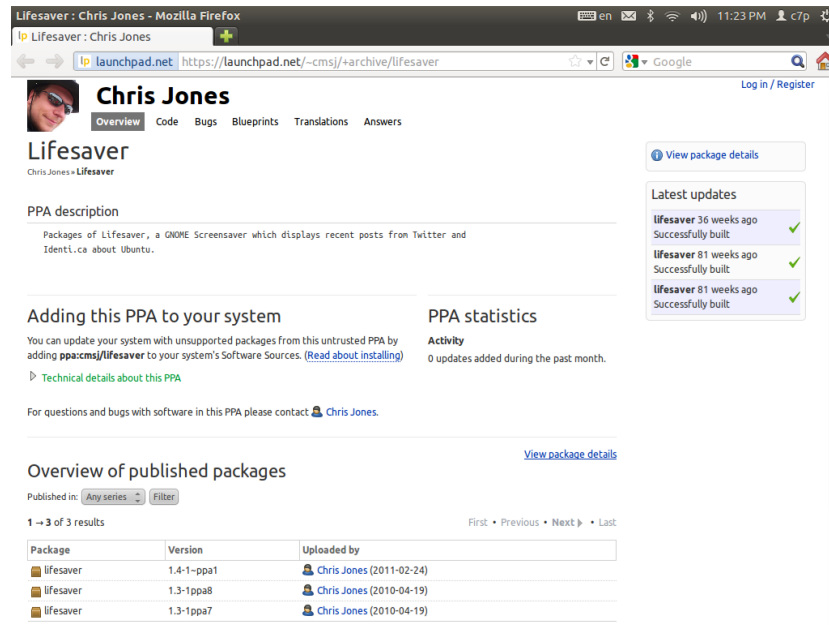

Figure 5.3: This is an example of the Launchpad page for the Lifesaver PPA. Lifesaver is an application that is not available in the official Ubuntu repositories. However, by adding this PPA to your list of software sources, it would then be easy to install and update this application through the Software Center.

Return to the "Software Sources" window, and in the **Other Software** tab click **Add…** at the bottom. A new window will appear, and you will see the words "Apt line:" followed by a text field. Right-click on the empty space in this text field and select **Paste**, and you should see the URL appear that you copied from the PPAs Launchpad site earlier. Click **Add Source** to return to the "Software Sources" window. You will see a new entry has been added to the list of sources in this window, with a selected check box in front meaning it is enabled.

If you click **Close** in the bottom right corner of this window, a message will appear informing you that "The information about available software is out-of-date." This is because you have just added a new repository to Ubuntu, and it now needs to connect to that repository and download a list of the packages that it provides. Click **Reload**, and wait while Ubuntu refreshes all of your enabled repositories (including this new one you just added). When it has finished, the window will close automatically.

Congratulations, you have just added a PPA to your list of software sources. You can now open the Software Center and install applications from this PPA, in the same way you previously installed applications from the default Ubuntu repositories.

Manual software installation

Although Ubuntu has extensive software available, on some occasions you may want to manually install software packages that are not available in the repositories. If there is not a PPA for the software, you will need to install it manually. Before you choose to do so, make sure you trust the package and its maintainer.

Packages in Ubuntu have a .deb extension. Double-clicking a package

will open an overview page in the Software Center, which will give you more information about that package.

The overview gives some technical information about that package, a website link (if applicable) and the option to install. Clicking **Install** will install the package just like any other installation in the Software Center.

Updates and upgrades

Ubuntu also allows you to decide how to manage package updates through the **Updates** tab in the Software Sources window.

Ubuntu updates

In this section, you are able to specify the kinds of updates you wish to install on your system, and usually depends on your preferences around stability, versus having access to the latest developments.

Important security updates These updates are highly recommended to ensure your system remains as secure as possible. These are enabled by default.

Recommended updates These updates are not as important for keeping your system secure, but will mean your packages always have the most recent bug fixes or minor updates that have been tested and approved. This option is also enabled by default.

Pre-released updates This option is for those who would rather remain up-to-date with the very latest releases of applications, at the risk of installing an update that has unresolved bugs or conflicts. Note that it is possible that you will encounter problems with these updated applications, therefore this option is not enabled by default.

Unsupported updates These are updates that have not yet been fully tested and reviewed by Canonical. Some bugs may occur when using these updates, and so this option is also not enabled by default.

Automatic updates

The middle section of this window allows you to customize how your system manages updates, such as the frequency with which it checks for new packages, as well as whether it should install important updates right away (without asking for your permission), download them only, or just notify you about them.

Release upgrade

Here you can decide which system upgrades you would like to be notified about.

Never Choose this if you would rather not be notified about any new Ubuntu releases.

Normal releases Choose this if you always want to have the latest Ubuntu release, regardless of whether it is a Long Term Support release or not. This option is recommended for normal home users.

Long Term Support releases only Choose this option if you need a release that will be more stable and have support for a longer time. If you use Ubuntu for business purposes, you may want to consider selecting this option.

Every 6 months, Canonical will release a new version of the Ubuntu operating system. These are called *normal releases*. Every four normal releases—or 24 months—Canonical releases a *long-term support* (LTS) release. Long-term support releases are intended to be the most stable releases available, and are supported for a longer period of time.

6   Advanced Topics

Ubuntu for advanced users

By now, we hope you understand how using Ubuntu can make your computing experience easier, safer, and more efficient. So far, we've provided detailed instructions on getting the most from Ubuntu's basic features. In this chapter, we'll detail some of Ubuntu's more advanced features—like the terminal, a powerful utility that can help you accomplish tasks without the need for a graphical user interface (GUI). We'll also discuss some advanced security measures you can implement to make your computer even safer. We've written this chapter with advanced users in mind. If you're new to Ubuntu, don't feel as though you'll need to master these topics to get the most out of your new software (you can quite easily skip to the next chapter without consequence). However, if you're looking to expand your knowledge of Ubuntu, we encourage you to keep reading.

Introduction to the terminal

Throughout this manual, we have focused primarily on the graphical desktop user interface. However, in order to fully realize the power of Ubuntu, you may want to learn how to use the terminal.

What is the terminal?

Most operating systems, including Ubuntu, have two types of user interfaces. The first is a graphical user interface (GUI). This is the desktop, windows, menus, and toolbars that you click to get things done. The second, and much older, type of interface is the command-line interface (CLI).

   The *terminal* is Ubuntu's command-line interface. It is a method of controlling some aspects of Ubuntu using only commands that you type on the keyboard.

Why would I want to use the terminal?

You can perform most day-to-day activities without ever needing to open the terminal. However, the terminal is a powerful and invaluable tool that can be used to perform many useful tasks you might not be able to accomplish with a GUI. For example:
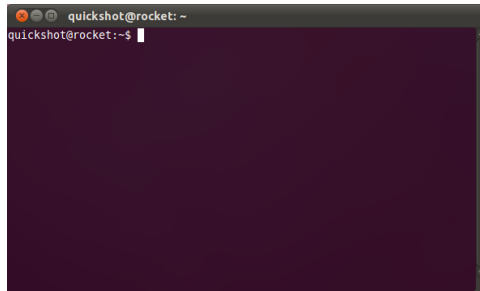
▸ Troubleshooting any difficulties that may arise when using Ubuntu sometimes requires you to use the terminal.
▸ A command-line interface is sometimes a faster way to accomplish a task. For example, it is often easier to perform operations on many files at once using the terminal.
▸ Learning the command-line interface is the first step towards more advanced troubleshooting, system administration, and software development skills. If you are interested in becoming a developer or an advanced Ubuntu user, knowledge of the command-line will be essential.

Opening the Terminal

You can open the terminal by clicking **Dash ▸ Applications ▸ Terminal**.

When the terminal window opens, it will be largely blank apart from some text at the top left of the screen, followed by a blinking block. This text is your prompt—it displays your login name and your computer's name, followed by the current directory. The tilde (~) means that the current directory is your home directory. Finally, the blinking block is the cursor —this marks where text will be entered as you type.

To test a terminal command, type **pwd** and press Enter. The terminal should display /home/*yourusername*. This text is called the "output." You have just used the pwd (print working directory) command, which outputs (displays) the current directory.

The *terminal* gives you access to what is called a *shell*. When you type a command in the terminal the shell interprets this command, resulting in the desired action. Different types of shells accept slightly different commands. The most popular is called "bash," and is the default shell in Ubuntu.

In GUI environments the term "folder" is commonly used to describe a place where files are stored. In CLI environments the term "directory" is used to describe the same thing and this metaphor is exposed in many commands (*i.e.*, cd or pwd) throughout this chapter.

Figure 6.1: The default terminal window allows you to run hundreds of useful commands.

All commands in the terminal follow the same approach: Type a command, possibly followed by some parameters, and press Enter to perform the specified action. Often some output will be displayed that confirms the action was completed successfully, although this depends on the command. For example, using the cd command to change your current directory (see below) will change the prompt, but will not display any output.

The rest of this chapter covers some very common uses of the terminal. However, it cannot address the nearly infinite possibilities available to you when using the command-line interface in Ubuntu. Throughout the second part of this manual, we will continue to refer to the command line, particularly when discussing steps involved in troubleshooting and the more advanced management of your computer.

Parameters are extra segments of text, usually added at the end of a command, that change how the command itself is interpreted. These usually take the form of **-h** or **--help**, for example. In fact, **--help** can be added to most commands to display a short description of the command, as well as a list of any other parameters that can be used with that command.

Ubuntu file system structure

Ubuntu uses the Linux file system, which is based on a series of folders in the root directory. Each of these folders contains important system files that cannot be modified unless you are running as the root user or use *sudo*. This restriction exists for both security and safety reasons: computer viruses will not be able to change the core system files, and ordinary users should not be able to accidentally damage anything vital.

Below are some of the most important directories.

The root directory—denoted by /—contains all other directories and files. Here are the contents of some essential system directories:

/bin & /sbin Many essential system applications (equivalent to C:\Windows)

/etc System-wide configuration files

/home Each user will have a subdirectory to store personal files (for example /home/your-username, equivalent to C:\Users or C:\Documents and Settings)
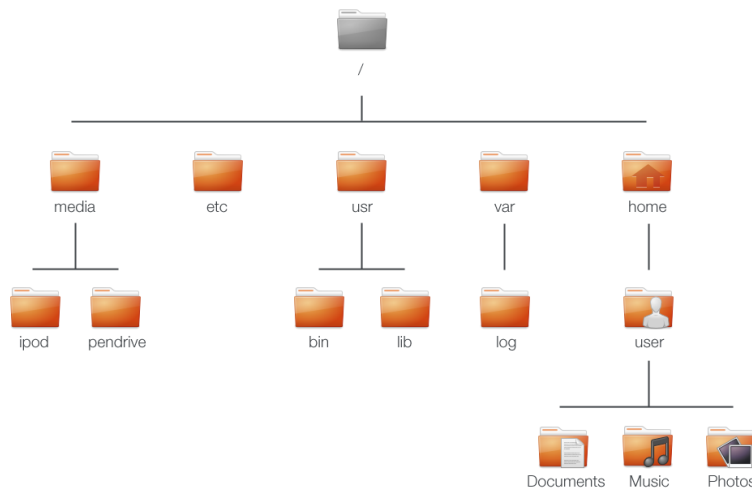
ADVANCED TOPICS 107

Figure 6.2: Some of the most important
directories in the root file system.

/lib Library files, similar to `.dll` files on Windows

/media Removable media (CD-ROMS and USB drives) will be mounted in this directory

/root This contains the root user's files (not to be confused with the root directory)

/usr Pronounced "user," it contains most program files (not to be confused with each user's home directory, equivalent to `C:\Program Files`)

/var/log Contains log files written by many applications

Every directory has a *path*. The path is a directory's full name—it describes a way to navigate the directory from anywhere in the system.

For example, the directory `/home/your-username/Desktop` contains all the files that are on your Ubuntu desktop. The path, /home/your-username/Desktop, can be broken down into a few pieces:

1. /—indicates that the path starts at the root directory
2. home/—from the root directory, the path goes into the home directory
3. your-username/—from the home directory, the path goes into the your-username directory
4. Desktop—from the your-username directory, the path ends up in the Desktop directory

Every directory in Ubuntu has a complete path that starts with the / (the root directory) and ends in the directory's own name.

Directories and files that begin with a period are hidden directories. These are usually only visible with a special command or by selecting a specific option. In the Nautilus you can show hidden files and directories by selecting **View ▸ Show Hidden Files**, or by pressing `Ctrl+H`. There are many hidden directories in your home folder used to store program preferences. For example, `/home/your-username/.evolution` stores preferences used by the Evolution mail application.

Mounting and unmounting removable devices

Any time you add storage media to your computer—an internal or external hard drive, a USB flash drive, a CD-ROM—it needs to be *mounted* before it is

accessible. Mounting a device means to associate a directory name with the device, allowing you to navigate to the directory to access the device's files.

When a device such as a USB flash drive or a media player is mounted in Ubuntu, a folder is automatically created for it in the *media* directory and you are given the appropriate permissions to be able to read and write to the device.

Most file managers will automatically add a shortcut to the mounted device in the side bar of your home folder, so the device is easy for you to access. You shouldn't have to physically navigate to the *media* directory in Ubuntu, unless you choose to do so from the command line.

When you've finished using a device, you can *unmount* it. Unmounting a device disassociates the device from its directory, allowing you to eject it.

Securing Ubuntu

Now that you know a bit more about using the command line, we can use it to make your computer more secure. The following sections discuss various security concepts, along with procedures for keeping your Ubuntu running smoothly, safely, and securely.

Why Ubuntu is safe

Ubuntu is secure by default for a number of reasons:

▸ Ubuntu clearly distinguishes between normal users and administrative users.
▸ Software for Ubuntu is kept in a secure online repository, which contains no false or malicious software.
▸ Open-source software like Ubuntu allows security flaws to be easily detected.
▸ Security patches for open-source software like Ubuntu are often released quickly.
▸ Many viruses designed to primarily target Windows-based systems do not affect Ubuntu systems.

Basic security concepts

The following sections discuss basic security concepts—like file permissions, passwords, and user accounts. Understanding these concepts will help you follow the remaining procedures for securing your computer.

Permissions

In Ubuntu, files and folders can be set up so that only specific users can view, modify, or run them. For instance, you might wish to share an important file with other users, but do not want those users to be able to edit the file. Ubuntu controls access to files on your computer through a system of "permissions." Permissions are settings that you can configure to control exactly how files on your computer are accessed and used.

To learn more about modifying permissions, visit https://help.ubuntu.com/community/FilePermissions.

Passwords

You should use a strong password to increase the security of your computer. Your password should not contain names, common words or common phrases. By default, the minimum length of a password in Ubuntu is four characters. We recommend a password with more than the minimum number of characters. A password with a minimum of eight characters which includes both upper and lower case letters, numbers and symbols is considered strong.

Locking the screen

When you leave your computer unattended, you may want to lock the screen. Locking your screen prevents anyone from using your computer until your password is entered. To lock the screen:

▸ Click the session menu icon in the right corner of the top panel, then select **Lock Screen**, or
▸ press `Ctrl+Alt+L` to lock the screen. This keyboard shortcut can be changed in **Dash ▸ Applications ▸ Keyboard Shortcuts**

User accounts

Users and groups

When Ubuntu is installed, it is automatically configured for a single person to use. If more than one person will use the computer with Ubuntu, each person should have her or his own user account. This way, each user can have separate settings, documents, and other files. If necessary, you can also protect files from being viewed or modified by users without administrative privileges.

Like most operating systems, Ubuntu allows you to create separate user accounts for each person that uses the computer. Ubuntu also supports user groups, which allow you to administer permissions for multiple users at the same time.

Every user in Ubuntu is a member of at least one group—the group's name is the same as the name of the user. A user can also be a member of additional groups. You can configure some files and folders to be accessible only by a user and a group. By default, a user's files are only accessible by that user; system files are only accessible by the root user.
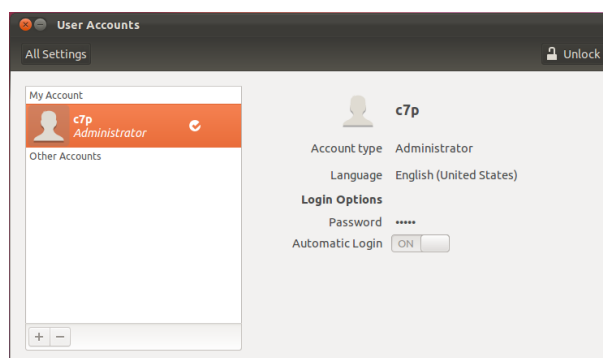
Figure 6.3: Add, remove and change the user accounts.

Managing users

You can manage users and groups using the Users and Groups administration application. To find this application, click **Session Indicator ‣ Systems and Settings ‣ User Accounts**.

To adjust the user and group settings, first select the user that you want to modify from the list. Then click "Change…" next to the element that you want to make changes to. You will need to input your password in order to make changes to user and group settings.

Adding a user   Click the **Add** button which appears underneath a list of the current user accounts that have already been created. A window will appear that has two fields. The **Name** field field is for a friendly display name. The **Username** field is for the actual username. Fill in the requested information, then click **OK**. A new dialog box will appear asking you to enter a password for the user you have just created. Fill out the fields, then click **OK**. Privileges you grant to the new user can be altered in "Users Settings".

Modifying a user   Click on the name of a user in the list of users, then click on the **Change**… button, which appears next to each of following options:

‣ Account type:
‣ Password:

For more advanced user options click on the **Advanced Settings** button. Change the details as required in the dialog that appears. Click **OK** to save the changes.

Deleting a user   Select a user from the list and click **Delete**. Ubuntu will deactivate the user's account, and you can choose whether remove the user's home folder or leave it.

Managing groups

Click on the **Manage Groups** button to open the group management dialog.

Adding a group   To add a group, click **Add**. In the dialog that appears, enter the group name and select the names of users you would like to add to the group.

Modifying a group   To alter the users in an existing group, select a group and click on the **Properties** button. Select and deselect the users as required, then click **OK** to apply the changes.

Deleting a group   To delete a group, select a group and click **Delete**.

Applying groups to files and folders

To change the group associated with a file or folder, open the Nautilus file browser and navigate to the appropriate file or folder. Then, either select the folder and choose **File ‣ Properties** from the menubar, or right-click on the file or folder and select **Properties**. In the Properties dialog that appears, click on the **Permissions** tab and select the desired group from the **Groups** drop-down list. Then close the window.

Using the command line

You can also modify user and group settings via the command line. We recommend that you use the graphical method above unless you have a good reason to use the command line. For more information on using the command line to modify users and groups, see the Ubuntu Server Guide at https://help.ubuntu.com/11.10/serverguide/C/user-management.html

System updates

Good security depends on an up-to-date system. Ubuntu provides free software and security updates. You should apply these updates regularly. See Updates and upgrades to learn how to update your Ubuntu computer with the latest security updates and patches.

Trusting third party sources

Normally, you will add applications to your computer via the Software Center, which downloads software from the Ubuntu repositories as described in Chapter 5: Software Management. However, it is occasionally necessary to add software from other sources. For example, you may need to do this when an application is not available in the Ubuntu repositories, or when you need a newer version of the one available in the Ubuntu repositories.

Additional repositories are available from sites such as getdeb.net and Launchpad PPAs, which can be added as described in Software Sources. You can download the DEB packages for some applications from their respective project sites on the Internet. Alternately, you can build applications from their source code (an advanced method of installing and using applications).

Using only recognized sources such as a project's site, PPA, or various community repositories (such as getdeb.net) is more secure than downloading applications from an arbitrary (and perhaps less reputable) source. When using a third party source, consider its trustworthiness, and be sure you know exactly what you're installing on your computer.

Firewall

A firewall is an application that protects your computer against unauthorized access by people on the Internet or your local network. Firewalls block connections to your computer from unknown sources. This helps prevent security breaches.

Uncomplicated Firewall (UFW) is the standard firewall configuration program in Ubuntu. It is a program that runs from the command line, but a program called Gufw allows you to use it with a graphical interface. See Chapter 5: Software Management to learn more about installing the Gufw package.

Once it's installed, start Gufw by clicking **Dash ‣ Applications ‣ Firewall configuration**. To enable the firewall, select the **Enable** option. By default, all incoming connections are denied. This setting should be suitable for most users.

If you are running server software on your Ubuntu system (such as a web server, or an FTP server), then you will need to open the ports these services use. If you are not familiar with servers, you will likely not need to open any additional ports.

To open a port click on the **Add** button. For most purposes, the **Precon-figured** tab is sufficient. Select **Allow** from the first box and then select the program or service required.

The **simple** tab can be used to allow access on a single port, and the **Advanced** tab can be used to allow access on a range of ports.

Encryption

You may wish to protect your sensitive personal data—for instance, financial records—by encrypting it. Encrypting a file or folder essentially "locks" that file or folder by encoding it with an algorithm that keeps it scrambled until it is properly decoded with a password. Encrypting your personal data ensures that no one can open your personal folders or read your private data without your private key.

Ubuntu includes a number of tools to encrypt files and folders. This chapter will discuss two of these. For further information on using encryption with either single files or email, see Ubuntu Community Help documents at https://help.ubuntu.com/community.

Home folder

When installing Ubuntu, it is possible to encrypt a user's home folder. See Chapter 1: Installation for more on encrypting the home folder.

Private folder

If you have not chosen to encrypt a user's entire home folder, it is possible to encrypt a single folder—called `Private`—in a user's home folder. To do this, follow these steps:

1. Install the `ecryptfs-utils` software package from the Ubuntu Software Center. (For more information about the Software Center, review Using the Ubuntu Software Center.)
2. Use the terminal to run `ecryptfs-setup-private` to set up the private folder.
3. Enter your account's password when prompted.
4. Either choose a mount passphrase or generate one.
5. Record both passphrases in a safe location. *These are required if you ever have to recover your data manually.*
6. Log out and log back in to mount the encrypted folder.

After the `Private` folder has been set up, any files or folders in it will automatically be encrypted.

If you need to recover your encrypted files manually see https://help.ubuntu.com/community/EncryptedPrivateDirectory.

7 Troubleshooting

Resolving problems

Sometimes, things may not work as they should. Luckily, problems that are encountered while working with Ubuntu are often easily fixed. Below, we offer a guide for resolving the basic problems that users may encounter while using Ubuntu. If you need any additional help beyond what this chapter provides, take a look at other support options that are discussed in Finding additional help and support later in this book.

Troubleshooting guide

The key to an effective troubleshooting is to work slowly, complete all of troubleshooting steps, and to document the changes that you make to Ubuntu. This way, you will be able to undo your work, or give fellow users the information about your previous attempts in cases when you need to turn to the community for support.

Ubuntu fails to start after I've installed Windows

Occasionally you may install Ubuntu and then decide to install Microsoft Windows as a second operating system running side-by-side with Ubuntu. This is supported by Ubuntu, but you might also find that after installing Windows you will no longer be able to start Ubuntu.

When you first turn on your computer, a "bootloader" must start Ubuntu or another operating system. When you installed Ubuntu, you installed an advanced bootloader called GRUB which allows you to choose between the various operating systems on your computer, such as Ubuntu, Windows, Solaris or Mac OS X. However, when you installed Windows, it replaced the GRUB with its own bootloader, thus removing the ability to choose which operating system you'd like to use. You can restore GRUB and regain the ability to choose your operating system by using the same CD you used to install Ubuntu.

A *bootloader* is the initial software that loads the operating system when you switch on the computer.

First, insert your Ubuntu CD into your computer and then restart it, making sure to have your computer start from the CD (see Chapter 1: Installation). Next, choose your language (*e.g.*, English) and select **Try Ubuntu**. Once Ubuntu starts, click on the top-most icon in the launcher (the Dash icon). Then, search for **Terminal** using the search box and then select Terminal in the search results. A window should open with a blinking prompt line. Enter the following, and press Enter:

```
$ sudo fdisk -l
Disk /dev/hda: 120.0 GB, 120034123776 bytes
255 heads, 63 sectors/track, 14593 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1              1        1224       64228+  83  Linux
/dev/sda2    *      1225        2440     9767520   a5  Windows
/dev/sda3            2441       14593    97618972+   5  Extended
/dev/sda4           14532       14593      498015   82  Linux swap
```

```
Partition table entries are not in disk order
```

This output shows that your system (Linux, on which Ubuntu is based) is installed on device /dev/sda1, but your computer is booting to /dev/sda2 (where Windows is located). We need to fix this by telling the computer to boot to the Linux device instead.

To do this, first create a place to connect your existing existing Ubuntu installation with your temporary troubleshooting session:

```
$ sudo mkdir /media/root
```

Next, link your Ubuntu installation and this new folder:

```
$ sudo mount /dev/sda1 /media/root
```

If you've done this correctly, then you should see the following:

```
$ ls /media/root
bin dev home lib mnt root srv usr
boot etc initrd lib64 opt sbin sys var
cdrom initrd.img media proc selinux tmp vmlinuz
```

Now, you can reinstall GRUB:

```
$ sudo grub-install --root-directory=/media/root /dev/sda
Installation finished. No error reported.
This is the contents of the device map /boot/grub/device.map.
Check if this is correct or not. If any of the lines is incorrect,
fix it and re-run the script grub-install.
(hd0) /dev/sda
```

Finally, remove the Ubuntu disc from your CD-ROM drive, reboot your computer, and then start enjoying your Ubuntu operating system once again.

This guide may not work for all Ubuntu users due to differences in the various system configuration. Still, this is the recommended and most successful method for restoring the GRUB bootloader. If you are following this guide and if it does not restore GRUB on your computer, then try the other troubleshooting methods at https://help.ubuntu.com/community/RecoveringUbuntuAfterInstallingWindows.

Ubuntu doesn't present the login screen when my computer boots

The simplest and easiest way to correct this issue is to reset the graphics configuration. Press and hold Ctrl+Alt+F1. You should now see a black and white screen with a prompt for your username and password.

Enter your username, and press Enter. Then, enter your password and press Enter. Next, enter the following commands, pressing Enter after each line. You will be asked for your password again.

```
$ sudo cd /etc/X11
$ sudo mv ./xorg.conf ./xorg.conf_old
$ sudo service gdm stop
$ sudo X -configure
$ sudo mv ./xorg.conf.new ./xorg.conf
$ sudo reboot now
```

Now Ubuntu will reboot, and your login screen should be restored.

The device (/dev/sda1, /dev/sda2, etc) we are looking for is identified by the word "Linux" in the System column. Modify the instructions below if necessary, replacing /dev/sda1 with the name of your Linux device.

(Characters *will not* appear on the screen as you enter your password. This behavior is normal and was implemented for security purposes).

I forgot my password

If you forget your password in Ubuntu, you will need to reset it using the "Recovery mode."

To start the Recovery mode, shut down your computer and then start again. As the computer starts up, press Shift. Select the **Recovery mode** option using the arrow keys on your keyboard. Recovery mode should be the second item in the list.
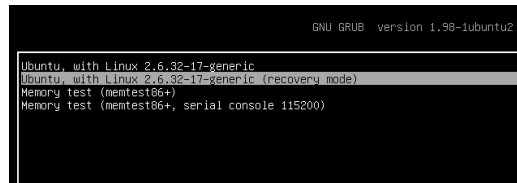

Figure 7.1: This is the grub screen in which you can choose recovery mode.

Wait until Ubuntu starts up—this may take a few minutes. Once booted, you *will not* be able to see a normal login screen. Instead, you will be presented with the **Recovery Menu**. Select **root** using the arrow keys and press Enter.

You will now be at a terminal prompt:

```
root@ubuntu:~#
```

To reset your password, enter:

 # passwd *username*

Replace "username" above with your username, after which Ubuntu will prompt you for a new password. Enter your desired password and press the Enter key and then re-type your password again, and press Enter. (Ubuntu asks for your password twice to make sure you did not make a mistake while typing). Once you have restored your password, return to the normal system environment by entering:

 # init 2

Login as usual and continue enjoying Ubuntu.

I accidentally deleted some files that I need

If you've deleted a file by accident, you may be able to recover it from Ubuntu's trash folder. This is a special folder where Ubuntu stores deleted files before they are permanently removed from your computer.

To access the trash folder click on the Trash icon at the bottom of the Unity Launcher.

If you want to restore deleted items from the trash:

1. Open Trash
2. Click on each item you want to restore to select it. Press and hold Ctrl to select multiple items.
3. Click **Restore Selected Items** to move the deleted items back to their original locations.

How do I clean Ubuntu?

Over time, Ubuntu's software packaging system can accumulate unused packages and temporary files. These temporary files, also called caches,

contain files from all of the packages that you have installed. Over time this cache can grow quite large. Cleaning out the cache allows you to reclaim space on your computer's hard drive for storing your documents, music, photographs, or other files.

To clear the cache, you can either use the clean, or the autoclean option for the command-line program apt-get.

To run clean, open Terminal and enter:

```
$ sudo apt-get clean
```

The clean command will remove every single cached item, while the autoclean command only removes cached items that can no longer be downloaded (these items are often unnecessary).

Packages can also become unused over time. If a package was installed to assist with running another program—and that program was subsequently removed you no longer need the supporting package. You can remove it with apt-get autoremove.

Load Terminal and enter:

```
$ sudo apt-get autoremove
```

I can't play certain audio or video files

Many of the formats used to deliver rich media content are *proprietary*, meaning they are not free to use, modify, or distribute with an open-source operating system like Ubuntu. Therefore, Ubuntu does not include the capability to use these formats by default; however, users can easily configure Ubuntu to use these proprietary formats. For more information about the differences between open source and proprietary software, see Chapter 8: Learning More.

If you find yourself in need of a proprietary format, you may install the files necessary for using this format from the Ubuntu Software Center. Ensure that you have Universe and Multiverse repositories enabled before continuing. See the Software Sources section to learn how to do this. When you are ready to continue, install the necessary software as follows:

1. Open the Ubuntu Software Center by searching for it from the Dash (the top-most button on the Launcher).
2. Search for ubuntu-restricted-extras by typing "Ubuntu restricted extras" in the search box on the right-hand side of the Ubuntu Software Center main window. When the Software Center finds the appropriate software, click the arrow next to its title.
3. Click **Install**, then wait while Ubuntu installs the software.

One program that can play many of these formats is VLC media player. It can be installed from the Ubuntu Software Center. Once Ubuntu has successfully installed this software, your rich media content should work properly.

How can I change my screen resolution?

The image on every monitor is composed of millions of little colored dots called pixels. Changing the number of pixels displayed on your monitor is called "changing the resolution." Increasing the resolution will make the displayed images sharper, but will also tend to make them smaller. The opposite is true when screen resolution is decreased. Most monitors have a "native resolution," which is a resolution that most closely matches the number of pixels in the monitor. Your display will usually be sharpest when

your operating system uses a resolution that matches your display's native resolution.

The Ubuntu configuration utility Displays allows users to change the resolution. Open it by clicking on the **session indicator** and then on **Displays**.... The resolution can be changed using the drop-down list within the program. Picking options higher up on the list (for example, those with larger numbers) will increase the resolution.
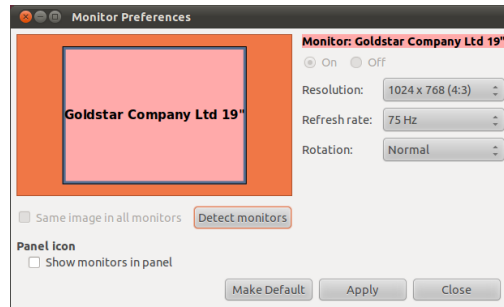

Figure 7.2: You can change your display settings.

You can experiment with various resolutions by clicking **Apply** at the bottom of the window until you find one that is comfortable for you. Typically the highest resolution will be the native resolution. Selecting a resolution and clicking **Apply** will temporarily change the screen resolution to the selected value and a dialog box will also be displayed. It allows you to revert to the previous resolution setting or keep the new resolution. The dialog box will disappear in 30 seconds, restoring the old resolution.
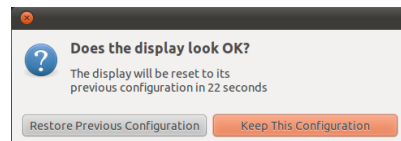

Figure 7.3: You can revert back to your old settings if you need to.

This feature was implemented to prevent someone from being locked out of the computer by a resolution that distorts the monitor and makes it unusable. When you have finished setting the screen resolution, click **Close**.

Ubuntu is not working properly on my Apple MacBook or MacBook Pro

When installed on notebook computers from Apple—such as the MacBook or MacBook Pro—Ubuntu does not always enable all of the computer's built-in components, including the iSight camera and the Airport wireless Internet adapter. Luckily, the Ubuntu community offers documentation on fixing these and other problems. If you are having trouble installing or using Ubuntu on your Apple notebook computer, please follow the instructions at https://help.ubuntu.com/community/MacBook. You can select the appropriate guide after identifying your computer's model number. For instructions on doing this, visit the web page above.

Ubuntu is not working properly on my Asus EeePC

When installed on netbook computers from Asus—such as the EeePC— Ubuntu does not always enable all of the computer's built-in components,

including the keyboard shortcut keys and the wireless Internet adapter. The Ubuntu community offers documentation on enabling these components and fixing other problems. If you are having trouble installing or using Ubuntu on your Asus EeePC, please follow the instructions at https://help.ubuntu.com/community/EeePC. This documentation page contains information pertaining specifically to EeePC netbooks.

To enable many of the features and Function Keys, a quick fix is to add 'acpi_osi=Linux' to your grub configuration. From the Terminal

```
$ gksudo gedit /etc/default/grub
```

and very carefully change the line

```
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
```

to

```
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash acpi_osi=Linux"
```

Save and close the file. Then, from the terminal:

```
sudo update-grub
```

After the command finishes, and you restart the computer, you will be able to use the Fn Keys normally.

My hardware is not working properly

Ubuntu occasionally has difficulties running on certain computers, generally when hardware manufacturers use non-standard or proprietary components. The Ubuntu community offers documentation to help you troubleshoot many common issues that may arise from this situation, including problems with wireless cards, scanners, mouse and printers. You can find the complete hardware troubleshooting guide on Ubuntu's support wiki, accessible at https://wiki.ubuntu.com/HardwareSupport. If your hardware problems persist, please see Getting more help for more troubleshooting options or information on obtaining support or assistance from an Ubuntu user.

Getting more help

This guide does not cover every possible workflow, task or issue in Ubuntu. If you require assistance beyond the information in the manual, you can find a variety of support opportunities online.

More details about many support options available to you can be found at Finding additional help and support later in this book.

8   Learning More

What else can I do with Ubuntu?

By now, you should be able to use Ubuntu for most of your daily activities —such as browsing the web, sending email, and creating documents. But you may be interested in learning about other versions of Ubuntu you can integrate into your digital lifestyle. In this chapter, we'll introduce you to additional versions of Ubuntu specialized for certain tasks. We'll also provide you with resources for answering any remaining questions you may have, and tell you how you can get involved in the worldwide community of Ubuntu users. But first, we'll discuss the technologies that make Ubuntu a powerful collection of software.

Open source software

Ubuntu is open source software. Open source software differs from proprietary software—software whose source code is not freely available for modification or distribution by anyone but the rightsholder. Microsoft Windows and Adobe Photoshop are examples of proprietary software.

The *source code* of a program is the collection of files that have been written in a computer language to make the program.

Proprietary software is software that cannot be copied, modified, or distributed freely.

Unlike proprietary software applications, the software included with Ubuntu is specifically licensed to promote sharing and collaboration. The legal rules governing Ubuntu's production and distribution ensure that anyone can obtain, run, or share it for any purpose she or he wishes. Computer users can modify open source software like Ubuntu to suit their individual needs, to share it, to improve it, or to translate it into other languages—provided they release the source code for these modifications so others can do the same. In fact, the terms of many open source licensing agreements actually make it illegal not to do so. For more information regarding Ubuntu's software licensing standards, see http://www.ubuntu.com/project/about-ubuntu/licensing.

Because open source software is developed by large communities of programmers distributed throughout the globe, it benefits from rapid development cycles and speedy security releases (in the event that someone discovers bugs in the software). In other words, open source software is updated, enhanced, and made more secure every day as programmers all over the world continue to improve it.

Aside from these technical advantages, open source software also has economic benefits. While users must adhere to the terms of an open source licensing agreement when installing and using Ubuntu, they needn't pay to obtain this license. And while not all open source software is free of monetary costs, much is.

To learn more about open source software, see the Open Source Initiative's open source definition, available at http://www.opensource.org/docs/definition.php.

Distribution families

Ubuntu is one of several popular operating systems based on Linux (an open source operating system). These Linux-based operating systems—

called Linux "distributions,"—may look different from Ubuntu at first glance, but they share similar characteristics because of their common roots.

Linux distributions can be divided into two broad families: the Debian family and the Red Hat family. Each family is named for a distribution on which subsequent distributions are based. For example, "Debian" refers to both the name of a Linux distribution as well as the family of distributions derived from Debian. Ubuntu is part of this family. When describing relationships between various open source projects, software developers often use the metaphor of tributaries connecting to a common body of water. For this reason, you may hear someone say that Ubuntu is located "downstream" from Debian, because alterations to Debian flow into new versions of Ubuntu. Additionally, improvements to Ubuntu usually trickle "upstream"—back to Debian and its family members. Other distributions in the Debian family include Linux Mint, Xandros, and CrunchBang Linux. Distributions in the Red Hat family include Fedora, openSUSE, and Mandriva.

A distribution, or "distro," is an operating system made from open source applications, which are bundled together to make them easier to install and use.

The most significant difference between Debian-based and Red Hat-based distributions is the system each uses for installing and updating software. These systems are called "package management systems." Debian software packages are DEB files, while Red Hat software packages are RPM files. The two systems are generally incompatible. For more information about package management, see Chapter 5: Software Management.

Package management systems are the means by which users can install, remove, and organize software installed on computers with open source operating systems like Ubuntu.

You will also find Linux distributions that have been specialized for certain tasks. Next, we'll describe these versions of Ubuntu and explain the uses for which each has been developed.

Choosing amongst Ubuntu and its derivatives

Just as Ubuntu is based on Debian, several distributions are subsequently based on Ubuntu. Each differs with respect to the software included as part of the distribution. Some are developed for general use, while others are designed for accomplishing a more narrow set of tasks.

Alternative interfaces

Ubuntu features a graphical user interface (GUI) based on the open source GNOME desktop. As we explained in Chapter 2: The Ubuntu Desktop, a "user interface" is a collection of software elements—icons, colors, windows, themes, and menus—that determines how someone may interact with a computer. Some users prefer using alternatives to GNOME, so they have created Ubuntu distributions featuring different user interfaces. These include:

▸ Kubuntu, which uses the KDE graphical environment instead of the GNOME environment found in Ubuntu;
▸ Lubuntu, which uses the LXDE graphical environment instead of the GNOME environment found in Ubuntu; and
▸ Xubuntu, which uses the XFCE graphical environment instead of the GNOME environment found in Ubuntu.

Additionally, each of these distributions may contain default applications different from those featured in Ubuntu. For instance, the default music player in Ubuntu is Banshee, but in Lubuntu the default music player is Aqualung, and in Kubuntu the default is Amarok. Be sure to investigate

these differences if you are considering installing an Ubuntu distribution with an alternative desktop environment.

For more information about these and other derivative distributions, see http://www.ubuntu.com/project/derivatives.

Task-specific distributions

Other Ubuntu distributions have been created to accomplish specific tasks or run in specialized settings.

Ubuntu Server Edition

The Ubuntu Server Edition is an operating system optimized to perform multi-user tasks when installed on servers. Such tasks include file sharing and website or email hosting. If you are planning to use a computer to perform tasks like these, you may wish to use this specialized server distribution in conjunction with server hardware.

This manual does not explain the process of running a secure web server or performing other tasks possible with Ubuntu Server Edition. For details on using Ubuntu Server Edition, refer to the manual at http://www.ubuntu.com/business/server/overview.

A *server* is a computer that's been configured to manage, or "serve," files many people wish to access.

Edubuntu

Edubuntu is an Ubuntu derivative customized for use in schools and other educational institutions. It contains software similar to that offered in Ubuntu, but also features additional applications—like a collaborative text editor and educational games.

For additional information regarding Edubuntu, visit http://www.edubuntu.org/

Ubuntu Studio

This derivative of Ubuntu is designed specifically for people who use computers to create and edit multimedia projects. It features applications to help users manipulate images, compose music, and edit video. While users can install these applications on computers running the desktop version of Ubuntu, Ubuntu Studio makes them all available immediately upon installation.

If you would like to learn more about Ubuntu Studio (or obtain a copy for yourself), visit http://ubuntustudio.org/home.

Mythbuntu

Mythbuntu allows users to turn their computers into entertainment systems. It helps users organize and view various types of multimedia content such as movies, television shows, and video podcasts. Users with tv tuners in their computers can also use Mythbuntu to record live video and television shows.

To learn more about Mythbuntu, visit http://www.mythbuntu.org/.

Finding additional help and support

This guide cannot possibly contain everything you'll ever need to know about Ubuntu. Because *Getting Started with Ubuntu 11.10* could never an-

swer all your questions, we encourage you to take advantage of Ubuntu's vast community when seeking further information, troubleshooting technical issues, or asking questions about your computer. Next, we'll discuss a few of these resources so you can learn more about Ubuntu or other Linux distributions.

Live chat

If you are familiar with Internet relay chat (IRC), you can use chat clients such as XChat or Pidgin to join the channel #ubuntu on irc.freenode.net. Here, hundreds of volunteer users can answer your questions or offer support in real time.

LoCo teams

Within the Ubuntu community are dozens of local user groups called "LoCo teams". Spread throughout the world, these teams offer support and advice, answer questions and promote Ubuntu in their communities by hosting regular events. To locate and contact the LoCo team nearest you, visit http://loco.ubuntu.com/.

Official Ubuntu Documentation

The Ubuntu Documentation team maintains a series of official wiki pages designed to assist both new and experienced users wishing to learn more about Ubuntu. The Ubuntu community endorses these documents, which serve as a reliable first point of reference for users seeking help online. You can access these at http://help.ubuntu.com. To get to the built-in Ubuntu Desktop Guide, press F1 on your desktop, or type yelp in the Dash.

In addition to official Ubuntu and community help, you will often find third-party help available on the Internet. While these documents can often seem like great resources, some could be misleading or outdated. It's always best to verify information from third-party sources before taking their advice. When possible, rely on official Ubuntu documentation for assistance with Ubuntu.

The Ubuntu Forums

The Ubuntu Forums are the official forums of the Ubuntu community. Millions of Ubuntu users use them daily to seek help and support from one another. You can create an Ubuntu Forums account in minutes. To create an account and learn more about Ubuntu from community members, visit http://ubuntuforums.org.

Launchpad Answers

Launchpad, an open source code repository and user community, provides a question and answer service that allows anyone to ask questions about any Ubuntu-related topic. Signing up for a Launchpad account requires only a few minutes. Ask a question by visiting Launchpad at https://answers.launchpad.net/ubuntu/+addquestion.

Ask Ubuntu

Ask Ubuntu is a free community driven Question and Answer website for Ubuntu users and developers. It is part of the Stack Exchange network of websites. This is one of the best Ubuntu support resources available for free. Visit http://www.askubuntu.com to get started.

Search Engines

Because Ubuntu is a popular open source operating system, many users have written about it online. Therefore, using search engines to locate answers to your questions about Ubuntu is often an effective means of acquiring help. When using search engines to answer questions about Ubuntu, ensure that your search queries are as specific as possible. In other words, a search for "Unity interface" will return results that are less useful than those associated with the query "how to use Ubuntu Unity interface" or "how to customize Ubuntu Unity interface."

Community support

If you've exhausted all these resources and still can't find answers to your questions, visit Community Support at http://www.ubuntu.com/support/community.

The Ubuntu community

Surrounding Ubuntu is a global community of passionate users who want to help others adopt, use, understand, and even modify or enhance Ubuntu. By choosing to install and run Ubuntu, you've become part of this community. As you learn more about Ubuntu, you may wish to collaborate with others to make it better—to discuss the future of Ubuntu, to report software bugs you discover, to promote Ubuntu to new users, to share Ubuntu advice, or to answer other users' questions. In this section, we'll discuss a few community projects that can connect you to other Ubuntu users.

Full Circle Magazine

Full Circle Magazine is "the independent magazine for the Ubuntu Linux community." Released every month, Full Circle Magazine contains reviews of new software (including games) for Ubuntu, step-by-step tutorials for projects you can undertake with Ubuntu, editorials discussing important issues in the Ubuntu community, and Ubuntu tips from other users. You can download issues of Full Circle Magazine at http://fullcirclemagazine.org/.

The Ubuntu UK Podcast

Produced by members of the UK's Ubuntu LoCo team, this bi-weekly online audio broadcast (or "podcast") features lively discussion about Ubuntu, and often includes interviews with Ubuntu community members who work to improve Ubuntu. Episodes are available at http://podcast.ubuntu-uk.org/.

A *podcast* is a radio-style broadcast available as an audio file for download to computers and portable media players.

OMG! Ubuntu!

OMG! Ubuntu! is a weblog that aims to inform the Ubuntu community about Ubuntu news, events, announcements, and updates in a timely fashion. It also allows Ubuntu users to discuss ways they can promote or share Ubuntu. You can read this blog or subscribe to it at http://www.omgubuntu.co.uk/.

Contributing to this manual

You can also participate in the Ubuntu community by contributing to this
manual. You might choose to write new content for it, edit its chapters
so they are easier for new Ubuntu users to understand and use, or trans-
late it in your own language. You may also provide the screenshots found
throughout the manual. To get involved in the Ubuntu Manual Project, visit
http://ubuntu-manual.org/getinvolved.

A   License

Creative Commons Attribution–ShareAlike 3.0 Legal Code

1. Definitions

    (a) "Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that constitutes a Collection will not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered an Adaptation for the purpose of this License.

    (b) "Collection" means a collection of literary or artistic works, such as encyclopedias and anthologies, or performances, phonograms or broadcasts, or other works or subject matter other than works listed in Section 1(f) below, which, by reason of the selection and arrangement of their contents, constitute intellectual creations, in which the Work is included in its entirety in unmodified form along with one or more other contributions, each constituting separate and independent works in themselves, which together are assembled into a collective whole. A work that constitutes a Collection will not be considered an Adaptation (as defined below) for the purposes of this License.

    (c) "Creative Commons Compatible License" means a license that is listed at http://creativecommons.org/compatiblelicenses that has been approved by Creative Commons as being essentially equivalent to this License, including, at a minimum, because that license: (i) contains terms that have the same purpose, meaning and effect as the License Elements of this License; and, (ii) explicitly permits the relicensing of adaptations of works made available under that license under this License or a Creative Commons jurisdiction license with the same License Elements as this License.

    (d) "Distribute" means to make available to the public the original and copies of the Work or Adaptation, as appropriate, through sale or other transfer of ownership.

(e) "License Elements" means the following high-level license attributes as selected by Licensor and indicated in the title of this License: Attribution, ShareAlike.

(f) "Licensor" means the individual, individuals, entity or entities that offer(s) the Work under the terms of this License.

(g) "Original Author" means, in the case of a literary or artistic work, the individual, individuals, entity or entities who created the Work or if no individual or entity can be identified, the publisher; and in addition (i) in the case of a performance the actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret or otherwise perform literary or artistic works or expressions of folklore; (ii) in the case of a phonogram the producer being the person or legal entity who first fixes the sounds of a performance or other sounds; and, (iii) in the case of broadcasts, the organization that transmits the broadcast.

(h) "Work" means the literary and/or artistic work offered under the terms of this License including without limitation any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression including digital form, such as a book, pamphlet and other writing; a lecture, address, sermon or other work of the same nature; a dramatic or dramatico-musical work; a choreographic work or entertainment in dumb show; a musical composition with or without words; a cinematographic work to which are assimilated works expressed by a process analogous to cinematography; a work of drawing, painting, architecture, sculpture, engraving or lithography; a photographic work to which are assimilated works expressed by a process analogous to photography; a work of applied art; an illustration, map, plan, sketch or three-dimensional work relative to geography, topography, architecture or science; a performance; a broadcast; a phonogram; a compilation of data to the extent it is protected as a copyrightable work; or a work performed by a variety or circus performer to the extent it is not otherwise considered a literary or artistic work.

(i) "You" means an individual or entity exercising rights under this License who has not previously violated the terms of this License with respect to the Work, or who has received express permission from the Licensor to exercise rights under this License despite a previous violation.

(j) "Publicly Perform" means to perform public recitations of the Work and to communicate to the public those public recitations, by any means or process, including by wire or wireless means or public digital performances; to make available to the public Works in such a way that members of the public may access these Works from a place and at a place individually chosen by them; to perform the Work to the public by any means or process and the communication to the public of the performances of the Work, including by public digital performance; to broadcast and rebroadcast the Work by any means including signs, sounds or images.

(k) "Reproduce" means to make copies of the Work by any means including without limitation by sound or visual recordings and the right of fixation and reproducing fixations of the Work, including storage of a protected performance or phonogram in digital form or other electronic medium.

2. Fair Dealing Rights. Nothing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.

3. License Grant. Subject to the terms and conditions of this License, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

    (a) to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections;

    (b) to create and Reproduce Adaptations provided that any such Adaptation, including any translation in any medium, takes reasonable steps to clearly label, demarcate or otherwise identify that changes were made to the original Work. For example, a translation could be marked "The original work was translated from English to Spanish," or a modification could indicate "The original work has been modified.";

    (c) to Distribute and Publicly Perform the Work including as incorporated in Collections; and,

    (d) to Distribute and Publicly Perform Adaptations.

    (e) For the avoidance of doubt:

        i. Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;

        ii. Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor waives the exclusive right to collect such royalties for any exercise by You of the rights granted under this License; and,

        iii. Voluntary License Schemes. The Licensor waives the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this License.

    The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. Subject to Section 8(f), all rights not expressly granted by Licensor are hereby reserved.

4. Restrictions. The license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

    (a) You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the rights granted to that recipient under the terms of the License. You may not sublicense the Work. You must keep intact all notices that refer to this License and to the disclaimer of warranties with every copy of the Work You Dis-

tribute or Publicly Perform. When You Distribute or Publicly Perform the Work, You may not impose any effective technological measures on the Work that restrict the ability of a recipient of the Work from You to exercise the rights granted to that recipient under the terms of the License. This Section 4(a) applies to the Work as incorporated in a Collection, but this does not require the Collection apart from the Work itself to be made subject to the terms of this License. If You create a Collection, upon notice from any Licensor You must, to the extent practicable, remove from the Collection any credit as required by Section 4(c), as requested. If You create an Adaptation, upon notice from any Licensor You must, to the extent practicable, remove from the Adaptation any credit as required by Section 4(c), as requested.

(b) You may Distribute or Publicly Perform an Adaptation only under the terms of: (i) this License; (ii) a later version of this License with the same License Elements as this License; (iii) a Creative Commons jurisdiction license (either this or a later license version) that contains the same License Elements as this License (*e.g.*, Attribution-ShareAlike 3.0 US)); (iv) a Creative Commons Compatible License. If you license the Adaptation under one of the licenses mentioned in (iv), you must comply with the terms of that license. If you license the Adaptation under the terms of any of the licenses mentioned in (i), (ii) or (iii) (the "Applicable License"), you must comply with the terms of the Applicable License generally and the following provisions: (I) You must include a copy of, or the URI for, the Applicable License with every copy of each Adaptation You Distribute or Publicly Perform; (II) You may not offer or impose any terms on the Adaptation that restrict the terms of the Applicable License or the ability of the recipient of the Adaptation to exercise the rights granted to that recipient under the terms of the Applicable License; (III) You must keep intact all notices that refer to the Applicable License and to the disclaimer of warranties with every copy of the Work as included in the Adaptation You Distribute or Publicly Perform; (IV) when You Distribute or Publicly Perform the Adaptation, You may not impose any effective technological measures on the Adaptation that restrict the ability of a recipient of the Adaptation from You to exercise the rights granted to that recipient under the terms of the Applicable License. This Section 4(b) applies to the Adaptation as incorporated in a Collection, but this does not require the Collection apart from the Adaptation itself to be made subject to the terms of the Applicable License.

(c) If You Distribute, or Publicly Perform the Work or any Adaptations or Collections, You must, unless a request has been made pursuant to Section 4(a), keep intact all copyright notices for the Work and provide, reasonable to the medium or means You are utilizing: (i) the name of the Original Author (or pseudonym, if applicable) if supplied, and/or if the Original Author and/or Licensor designate another party or parties (*e.g.*, a sponsor institute, publishing entity, journal) for attribution ("Attribution Parties") in Licensor's copyright notice, terms of service or by other reasonable means, the name of such party or parties; (ii) the title of the Work if supplied; (iii) to the extent reasonably practicable, the URI, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work; and (iv) , consistent with Ssection 3(b), in the case of an Adaptation, a credit identifying the use of the Work in the Adaptation (*e.g.*, "French translation of the

Work by Original Author," or "Screenplay based on original Work by Original Author"). The credit required by this Section 4(c) may be implemented in any reasonable manner; provided, however, that in the case of a Adaptation or Collection, at a minimum such credit will appear, if a credit for all contributing authors of the Adaptation or Collection appears, then as part of these credits and in a manner at least as prominent as the credits for the other contributing authors. For the avoidance of doubt, You may only use the credit required by this Section for the purpose of attribution in the manner set out above and, by exercising Your rights under this License, You may not implicitly or explicitly assert or imply any connection with, sponsorship or endorsement by the Original Author, Licensor and/or Attribution Parties, as appropriate, of You or Your use of the Work, without the separate, express prior written permission of the Original Author, Licensor and/or Attribution Parties.

(d) Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, if You Reproduce, Distribute or Publicly Perform the Work either by itself or as part of any Adaptations or Collections, You must not distort, mutilate, modify or take other derogatory action in relation to the Work which would be prejudicial to the Original Author's honor or reputation. Licensor agrees that in those jurisdictions (*e.g.* Japan), in which any exercise of the right granted in Section 3(b) of this License (the right to make Adaptations) would be deemed to be a distortion, mutilation, modification or other derogatory action prejudicial to the Original Author's honor and reputation, the Licensor will waive or not assert, as appropriate, this Section, to the fullest extent permitted by the applicable national law, to enable You to reasonably exercise Your right under Section 3(b) of this License (right to make Adaptations) but not otherwise.

5. Representations, Warranties and Disclaimer
   UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTIBILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Termination

(a) This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License. Individuals or entities who have received Adaptations or Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License.

(b) Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and this License will continue in full force and effect unless terminated as stated above.

8. Miscellaneous

(a) Each time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License.

(b) Each time You Distribute or Publicly Perform an Adaptation, Licensor offers to the recipient a license to the original Work on the same terms and conditions as the license granted to You under this License.

(c) If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

(d) No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.

(e) This License constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Licensor and You.

(f) The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24, 1971). These rights and subject matter take effect in the relevant jurisdiction in which the License terms are sought to be enforced according to the corresponding provisions of the implementation of those treaty provisions in the applicable national law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not intended to restrict the license of any rights under applicable law.

Creative Commons Notice

Creative Commons is not a party to this License, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever,

including without limitation any general, special, incidental or consequential damages arising in connection to this license. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licensor hereunder, it shall have all rights and obligations of Licensor.

Except for the limited purpose of indicating to the public that the Work is licensed under the CCPL, Creative Commons does not authorize the use by either party of the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time. For the avoidance of doubt, this trademark restriction does not form part of the License.

Creative Commons may be contacted at http://creativecommons.org/.

Glossary

Canonical Canonical, the financial backer of Ubuntu, provides support for the core Ubuntu system. It has over 310 paid staff members worldwide who ensure that the foundation of the operating system is stable, as well as checking all the work submitted by volunteer contributors. To learn more about Canonical, go to http://www.canonical.com.

cursor The (usually) blinking square or vertical line used to show you where text will appear when you start typing. You can move it around with the arrow keys on your keyboard prompt in a terminal or other text-input application.

decrypted When you decrypt an encrypted file it becomes decrypted, and viewable. Encrypted files on Ubuntu are not recognizable in any language, they are just a string of random numbers and letters until they are decrypted using a password.

desktop environment A generic term to describe a GUI interface for humans to interact with computers. There are many desktop environments such as GNOME, KDE, XFCE and LXDE just to name a few.

DHCP DHCP stands for *Dynamic Host Configuration Protocol*, it is used by a DHCP server to assign computers on a network an IP address automatically.

dialup connection A dialup connection is when your computer uses a modem to connect to an ISP through your telephone line.

distribution A distribution is a collection of software that is already compiled and configured ready to be installed. Ubuntu is an example of a distribution.

dual-booting dual-booting is the process of being able to choose one of two different operating systems currently installed on a computer from the boot menu. Once selected your computer will then boot into whichever operating system you chose at the boot menu. Dual booting is often used generically, and may refer to booting among more than two operating systems.

Ethernet port An Ethernet port is what an Ethernet cable is plugged into when you are using a wired connection.

GNOME GNOME (which once stood for GNU Network Object Model Environment) is the default desktop environment used in Ubuntu.

GUI The GUI (which stands for Graphical User Interface) is a type of user interface that allows humans to interact with the computer using graphics and images rather than just text.

ISP ISP stands for *Internet Service Provider*, an ISP is a company that provides you with your Internet connection.

kernel A kernel is the central portion of a Unix-based operating system, responsible for running applications, processes, and providing security for the core components.

maximize When you maximize an application in Ubuntu it will fill the whole desktop, excluding the panels.

MeMenu The MeMenu in Ubuntu 11.10 allows you to manage your presence on social networking services. It also allows you to publish status messages to all of your accounts by entering updates into a text field.

output The output of a command is any text it displays on the next line after typing a command and pressing enter, *e.g.*, if you type `pwd` into a terminal and press `Enter`, the directory name it displays on the next line is the output.

package Packages contain software in a ready-to-install format. Most of the time you can use the Software Center instead of manually installing packages. Packages have a .deb extension in Ubuntu.

parameter Parameters are special options that you can use with other commands in the terminal to make that command behave differently, this can make a lot of commands far more useful.

partition A partition is an area of allocated space on a hard drive where you can put data.

partitioning partitioning is the process of creating a partition.

prompt The prompt displays some useful information about your computer, it can be customized to display in different colors as well as being able to display the time, date and current directory as well as almost anything else you like.

proprietary Software made by companies that don't release their source code under an open source license.

router A router is a specially designed computer that using its software and hardware, routes information from the Internet to a network. It is also sometimes called a gateway.

server A server is a computer that runs a specialized operating system and provides services to computers that connect to it and make a request.

shell The terminal gives access to the shell, when you type a command into the terminal and press enter the shell takes that command and performs the relevant action.

Software Center The Software Center is where you can easily manage software installation and removal as well as the ability to manage software installed via Personal Package Archives.

terminal The terminal is Ubuntu's text only interface, it is a method of controlling some aspects of the operating system using only commands entered via the keyboard.

USB Universal Serial Bus is a standard interface specification for connecting peripheral hardware devices to computers. USB devices range from external hard drives to scanners and printers.

wired connection A wired connection is when your computer is physically connected to a router or Ethernet port with a cable, this is the most common connection for desktop computers.

wireless connection A network connection that uses a wireless signal to communicate with either a router, access point, or computer.

Credits

This manual wouldn't have been possible without the efforts and contributions from the following people:

Team leads

Benjamin Humphrey—Project Creator
Kevin Godby—Lead TEXnician
Rick Fosburgh—Editor in Chief (Maverick, Oneiric)
John Xygonakis—Authors Coordinator & Translation Maintainer
Hannie Dumoleyn—Translation Maintainer
Thorsten Wilms—Design
Adnane Belmadiaf—Web development

Authors

Herat Gandhi Amrish	Che Dean	Brian Peredo
Bryan Behrenshausen	Hannie Dumoleyn	Kartik Sulakhe
Senthil Velan Bhooplan	Will Kromer	Tom Swartz
Mario Burgos	Simon Lewis	Ryan Ward
Sayantan Das	Ryan Macnish	David Wales
Patrick Dickey	Mez Pahlan	John Xygonakis

Editors

Alan Beebe	Rick Fosburgh	Sam Mercier
Bryan Behrenshausen	Kevin Godby	Paco Patag
Bob Bolin	haydoni	James Romines
Mario H. Burgos	Ilya Haykinson	Anthony Venable
Sara de la Cruz	Linda Horne	Chris Woollard
Sayantan Das	Isabell Long	Uli
Hannie Dumoleyn	Ryan Macnish	

Designers

Thorsten Wilms

Developers

Adnane Belmadiaf	Kevin Godby

Translation editors

Fran Diéguez (Galician)
Hannie Dumoleyn (Dutch)
Shazedur Rahim Joardar (Bengali)

Xuacu Saturio (Asturian)
Daniel Schury (German)
Shrinivasan (Tamil)

Chris Woollard (British English)
John Xygonakis (Greek)

Special thanks

Chris_Ilias
Manualbot
crocodoc.com

The Ubuntu Documentation Team
The Ubuntu Community Learning Project

Past contributors

Jason Cook (Editor)
Jamin Day (Editor)
Joe Burgess (Author)
Thomas Cantara (Author)
Kelvin Gardiner (Author)
Matt Griffin (Author)
Wolter Hellmund (Author)
Josh Holland (Author, Translation Maintenance)

Benjamin Humphrey (Author, Project Leader)
Luke Jennings (Author, Editor, Developer)
Elan Kugelmass (Author)
Alexander Lancey (Author)
Neil Tallim (Developer)
David Nel (Designer)
K. Vishnoo Charan Reddy (Designer)
Wolter Hellmund (Designer)

Index