Getting Started with Ubuntu 10.04

Second Edition

The Ubuntu Manual Team

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Contents

Prologue

Welcome

Welcome to *Getting Started with Ubuntu*, an introductory guide aimed at helping 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 guide you through some of the most popular applications. We designed the manual 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 even if you are a novice computer user or migrating from another operating system for the first time.

This guide is still a work in progress, and always will be. It is written specifically for Ubuntu 10.04 LTS, and although we have tried not to 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 these changes and also make available a new version of this guide.

What this guide is not

This document 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 in technical details.

If you are after more detail, there are excellent resources available at `help.ubuntu.com`, produced by the Ubuntu Docs Team. The in-built system documentation in Ubuntu is also very useful for accessing help on specific topics. This can be found by clicking on **System ▸ Help and Support** in Ubuntu. If something isn't covered here, chances are you will find the information you are looking for in one of those locations.

More information about the on-line docs and the system docs can be found in Chapter 9: Learning more about Ubuntu.

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 as we know it 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 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 9: Learning more about Ubuntu for the definition of "free"), and could compete with other mainstream operating systems. With the Debian operating system as a code 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 and the size of the community rapidly increased, and it soon became the most popular Debian-based Linux distribution.

Now 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. For example in 2007, Dell began a collaboration with Canonical to sell computers with Ubuntu pre-installed. 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 Euro" in Windows licensing fees. By the year 2012, the French Police expect 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 2010, Ubuntu is installed on nearly 2% of the world's computers. This equates to millions of users worldwide—and is growing each year.

Canonical, the financial backer of Ubuntu, provides support for the core Ubuntu system. It has over 200 paid staff members worldwide who ensure that the foundation of the operating system is stable, and also check all the work submitted by volunteer contributors. To learn more about Canonical, go to http://www.canonical.com

For information on Ubuntu Server Edition, and how you can use it in your company, visit http://www.ubuntu.com/products/whatisubuntu/serveredition/features

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 Facebook and Google, run some variant of a Unix system.

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. Initially, Linux was entirely command-line based, until graphical user interfaces (GUIs) began to emerge in the late 1980's. These early GUIs were difficult to configure and clunky at best, and generally only used by seasoned computer programmers. In the past decade however, graphical desktop environments 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.

Whilst modern graphical desktop environments have generally replaced early command-line based operating systems, the command-line can still be a quick and efficient way of performing many tasks. See Chapter 6: The command-line for more information, and Chapter 2: Around your Desktop to learn more about GNOME and other desktop environments.

MISSING SCREENSHOT

Screenshot of the entire default GNOME desktop and nautilus

Figure 1: Screenshot of the entire default GNOME desktop and nautilus

Is Ubuntu right for you?

New users to Ubuntu may find that it takes some time to feel comfortable with the operating system. You will no doubt notice some similarities to both Microsoft Windows and Mac OS X, as well as some things that work very differently. Users coming from Mac OS X are likely to notice more similarities due to the fact both these operating systems 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

—and expect to find differences. We also suggest taking the following into account:

▸ **Ubuntu is community based**. That is, Ubuntu is made, developed and maintained by the community. Because of this, support is probably not available at your local computer store—in fact the employees may never have even heard of Ubuntu. Thankfully, the community is there to help. There are a lot of articles, guides, and manuals available, as well as users on various internet forums and Internet Relay Chat (IRC) rooms that are willing to help out beginners to Ubuntu. Additionally, near the end of this guide we include a troubleshooting chapter: Chapter 8: Troubleshooting.

▸ **Many Windows or Mac applications will not run on Ubuntu**. For the vast majority of tasks that people use their computers for everyday, there are suitable 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.

▸ **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, where they can make the most profit. Since Ubuntu's market share is not as great as Windows or Mac, most game developers will not allocate resources towards making their games compatible with Ubuntu. If you 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 Software Center. Additionally, some games developed for Windows will work in Ubuntu with a program called WINE.

See Chapter 5: Software and Packaging to learn more about the Software Center. To learn more about dual-booting (running Ubuntu side-by-side with another operating system), see Chapter 1: Installation. For more information on WINE, go to `http://www.winehq.org/`

Contact details

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

The Ubuntu Manual Team

Home Page: `http://www.ubuntu-manual.org/`

Launchpad Page: `https://launchpad.net/~ubuntu-manual`

Mailing List: `ubuntu-manual@lists.launchpad.net`

Project Wiki Page: `https://wiki.ubuntu.com/ubuntu-manual`

Ubuntu Manual Planet: `http://planet.ubuntu-manual.org/`

1   Installation

Getting Ubuntu

Before you can get started with Ubuntu, the first thing you will need to do is get hold of the Ubuntu installation CD. There are several options available to you for obtaining a copy of the CD, as follows.

Downloading Ubuntu

The easiest and most common method for getting Ubuntu is to download the Ubuntu *CD image* directly from `http://www.ubuntu.com`. Simply head to the website and click the "Download Ubuntu" button at the top. You will be asked to select a download location, and then click the "Begin Download" button.

32-bit vs 64-bit

You may notice that the default download button on the website says "Ubuntu Desktop 10.04 (32-bit)" underneath. If you are unsure what 32-bit means, don't worry. 32-bit will work on most computers, so if in doubt, simply proceed with the download. However if you know that your computer is capable of using 64-bit software, you may wish to try the 64-bit version instead. Simply click the "Alternative download options" button and make your selection.

Downloading Ubuntu as a torrent

When a new version of Ubuntu is released, sometimes the servers can get clogged up with large numbers of people downloading or upgrading at once. If you are familiar with using torrents, you may wish to download the .torrent file by clicking "Alternative download options", and 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. Again if you are unsure what a torrent is, simply stick with the default download options on the website and you will be fine.

Burning the CD image

Once your download is complete you will be left with a file called "ubuntu-10.04-desktop-i386.iso" or similar (note: the i386 refers to the 32-bit version). This file is a CD image—a bit like a 'snapshot' of the contents of a CD—which you will need to burn to a CD disc. To find out how to burn a CD image on your computer, refer to your operating system or manufacturer help. You can

also find detailed instructions at `https://help.ubuntu.com/community/`
`BurningIsoHowto`.

Ordering a free CD

Alternatively, you can order a free CD from Canonical. This option may be
preferred if you don't have access to a CD burner, have limited bandwidth,
or a slow internet connection. There are **no shipping costs or other charges
when you order a Ubuntu CD**. Simply visit `http://shipit.ubuntu.com` to
request your free Ubuntu Desktop Edition CD. The CD usually takes from
four to ten weeks to arrive, depending on your location and current demand.
If you would rather get started with Ubuntu sooner, you may prefer to follow
the instructions above for downloading the CD image, and then burn it to a
disc instead.

Note: You will be required to create a free
online account with Launchpad before you
can place your CD order. Once you have
Ubuntu installed and running, you will be
likely to need this account again for various
purposes.

The Live CD

The Ubuntu CD that you have downloaded and burnt to a disc (or had
shipped out to you) functions not only as an installation CD for putting
Ubuntu onto your computer, but also as a *Live CD*. A Live CD allows you
to test Ubuntu without making any permanent changes to your computer, by
running the entire operating system straight from the CD.

The speed at which your computer can 'read' information from a CD is
much slower than reading information from 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 programs to access when Ubuntu is
running from your hard drive. Because of this, the Live CD experience will
feel slightly slower than it does when Ubuntu is actually installed on your
computer. However, running Ubuntu from the CD is a great way to test things
out, and allows you to try some default applications, browse the internet, and
get a general feel for the operating system. It's also a great way to check that
your computer hardware works properly in Ubuntu and that there are no
major compatibility issues.

To try out Ubuntu using the Live CD, simply insert the Ubuntu CD into
your CD drive and restart your computer. Most computers are able to detect
when a 'bootable' CD is present in your drive at startup—that is, a CD that
will temporarily take precedence over your usual operating system. As your
computer starts, it will run whatever information is on this bootable CD,
rather than the information the computer usually looks for which is stored on
your hard drive.

Once your computer finds the Live CD, you will be taken to a menu that
looks like the following:

Choose the option "Try Ubuntu without installing" and press `Enter` on
your keyboard to start running Ubuntu from the Live CD.

In some cases, your computer will simply
run as normal and appear not to recognize
there is a CD present when it starts up. This
is ok, generally it means that the priority
given to different devices when your
computer starts up needs to be changed.
For example, your computer might be set to
look for information from your hard drive
first, and then to look for information on
a CD second. In order to run Ubuntu from
the Live CD, we need it instead to look
for information from a CD first. Changing
your boot priority is beyond the scope
of this guide. If you need assistance to
change the boot priority, see your computer
manufacturers documentation for more
information.

MISSING SCREENSHOT
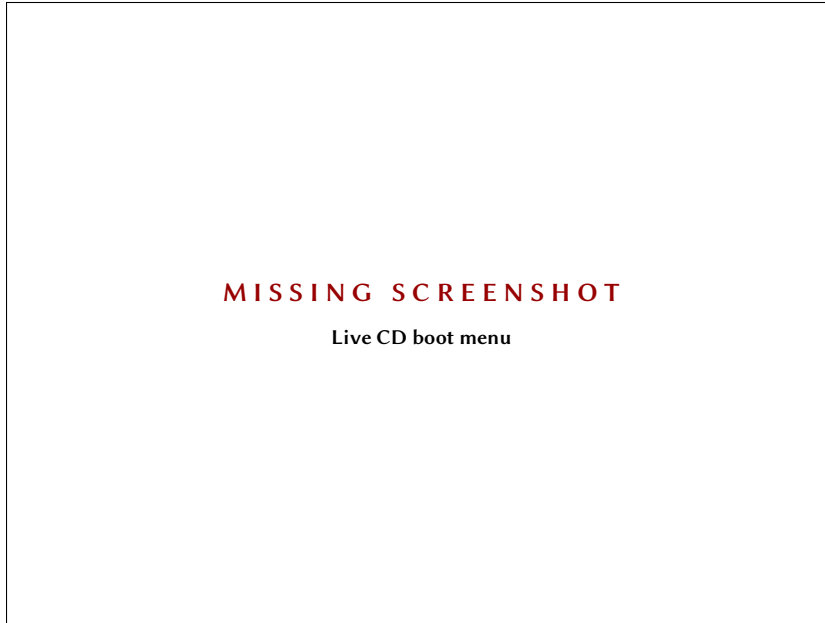
Live CD boot menu

Once Ubuntu loads, you will see in front of you the default desktop. We will talk more about how to actually use Ubuntu in Chapter 2: Around your Desktop, but for now feel free to test things out, open some programs, 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.

Once you are finished testing things out, simply restart your computer by clicking the button in the top right corner of your screen and selecting **Restart**.... Follow the prompts that appear on screen, including removing the Live CD, and then your computer will restart. You will find that it has returned to it's original state as though nothing ever happened!

Installing Ubuntu

Ubuntu is easy to install. Installation is a very streamlined and fast process and most people should not have any difficulty getting their system up and running. Even though it's easy to install, we still include a step-by-step guide to ensure nothing goes wrong! However, we do suggest using the Live CD to test out Ubuntu before installing to see if you like it, and also to ensure that it works well with your hardware.

Recommend rephrasing so that if a user has difficulty installing, they do not start to think that they're dumber than most

Using Wubi

Wubi stands for Windows Ubuntu Installer, and it allows you to install Ubuntu inside Windows. Once installed, Ubuntu will appear in your Add/Remove programs (in Windows) like any other application. When it installs Ubuntu, it will set up a series of files (called loop files) which you can specify

in size, where it stores all of Ubuntu's data. It will also add an entry to the Windows boot loader, so when you reboot your computer you will be able to choose between Windows or Ubuntu.

It's a very simple way to dual-boot and test out Ubuntu running natively on your machine—and, if you don't like it, just uninstall Ubuntu from the Windows Add/Remove Programs menu. It won't harm your Windows installation in any way.

There are a couple of things to keep in mind when using Wubi:

▸ If you install Ubuntu using Wubi, and decide you like it but find yourself running out of hard drive space, it is very difficult to increase the hard drive space without having to completely reinstall Ubuntu.
▸ The read/write times will not be as fast as if Ubuntu was installed directly onto your hard drive, instead of having to access the data through a virtual hard drive. It won't be hugely noticeable, however .

> This sentence is confusing

> if it's not important, why mention it? either make it important, or remove this bullet point

MISSING SCREENSHOT

Screenshot of Wubi dialog in Windows 7

Figure 1.3: Screenshot of Wubi dialog in Windows 7

Installing Ubuntu to your hard drive

To install Ubuntu directly to your hard drive, you will need to have at least 3 GB free on a partition somewhere to install the base system. We recommend at least 10 GB for extra programs and your own content. You can either install Ubuntu over Windows and erase Windows, or install it alongside Windows and choose to dual-boot. The option for this is given to you in the partitioning stage of the installation which we cover in detail later on in this chapter.

Minimum system requirements:

Ubuntu should run reasonably well on a computer with the following minimum hardware specification.

Ubuntu will run on computers with lower specifications than these, but you will need to use the **alternate CD** to install Ubuntu.

- ‣ 700 MHz x86 processor
- ‣ 384 MB of system memory (RAM)
- ‣ 8 GB of disk space
- ‣ Graphics card capable of 1024×768 resolution
- ‣ Sound card
- ‣ A network or Internet connection

All 64-bit (x86-64) PCs should be able to run Ubuntu. Use the 64-bit installation CD for a 64-bit flavor of Ubuntu. Most computers made after 2008 should have a 64-bit capable processor. To check, contact your manufacturer and quote the model number.

First steps of installation

To get started, insert the Ubuntu CD into your disk drive and boot into the CD.

Choose your language with the `arrow keys`, and press `Enter` to select one.

Need to explain what "booting into a CD" means

Figure 1.3: Installation: Language options

MISSING SCREENSHOT

Installation: Language options

Press the `down arrow` so that **Install Ubuntu** is highlighted, then press `Enter` on the keyboard.

Wait for a few seconds as the CD is loaded into your system memory. Choose your native language and then click on **Forward** to continue.

You can optionally choose **Check disc for defects** to make sure no errors were encountered when burning your CD. You can also test your computer memory (RAM) by choosing **Test memory**.

Tell Ubuntu where you are located by clicking on your location. This will set the system clock for you. You can also use the **drop-down list** at the bottom of the screen. Click on **Forward** to move on.

Do we need to be specific here about the CD being loaded into memory? Recommend rephrasing to remove advanced concept

MISSING SCREENSHOT

Boot CD main menu with Install Ubuntu highlighted

Figure 1.4: Boot CD main menu with Install Ubuntu highlighted

MISSING SCREENSHOT

Installation: Where are you? Screen
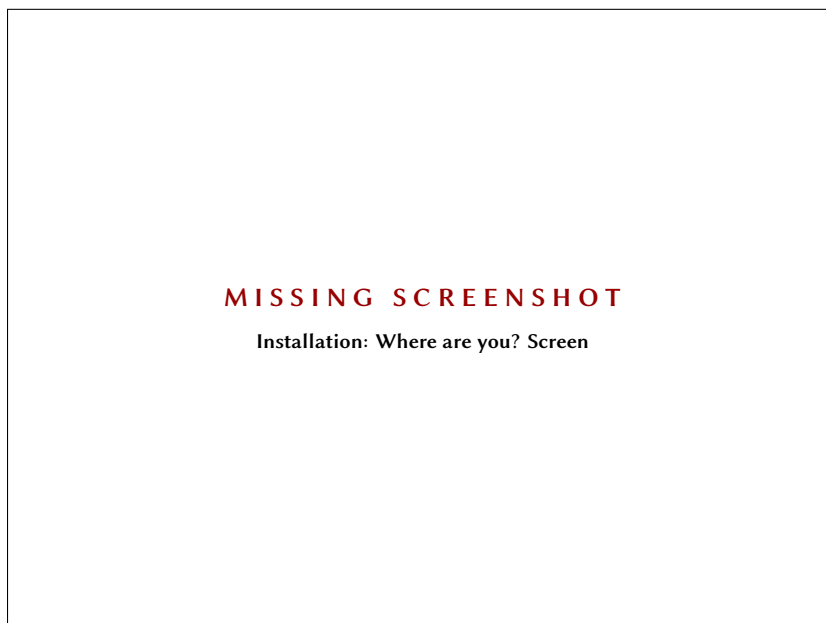
Figure 1.5: Installation: Where are you? Screen

MISSING SCREENSHOT

Installation: first installation screen

Figure 1.6: Installation: first installation screen

Next, you need to tell Ubuntu what keyboard you are using. Typically, the default option should be satisfactory. Click on **Forward** to continue once you have tested your keyboard.

Unclear, is user supposed to test their keyboard? We didn't ask them to.

Figure 1.7: Installation: keyboard screen

MISSING SCREENSHOT

Installation: keyboard screen

Guided partitioning

Next, choose how you want to install Ubuntu. If you want to delete your existing operating system, or the hard drive is already empty and you want to let the installer automatically partitionthe hard drive for you, select the second option, **Use the entire disk**.

> "Partition" is a new concept, should be introduced before using it

MISSING SCREENSHOT

Installation: partitioning screen

Figure 1.8: Installation: partitioning screen

If you already have another operating system installed on your hard drive, and want to install Ubuntu alongside it, choose the **Install them side by side, choosing between them each startup** option.

Specifying partitions manually

This option is for advanced users to create special partitions or format the hard drive with other filesystems than the default one. But it can also be used to create a separate /home partition, which is very useful in case you have to reinstall the whole system one day.

Ubuntu installs a **home folder** where your personal files and configuration data are located by default. If you choose to have a separate home folder, then in the unlikely scenario where you have to reinstall Ubuntu, your personal files and configuration data won't be lost.

Who are you?

Here you need to tell Ubuntu:

> Need? Should explain why Ubuntu needs these, and the privacy implications of specifying this information

‣ Your real name
‣ Your desired username
‣ Your desired password
‣ What you want to call your computer

MISSING SCREENSHOT
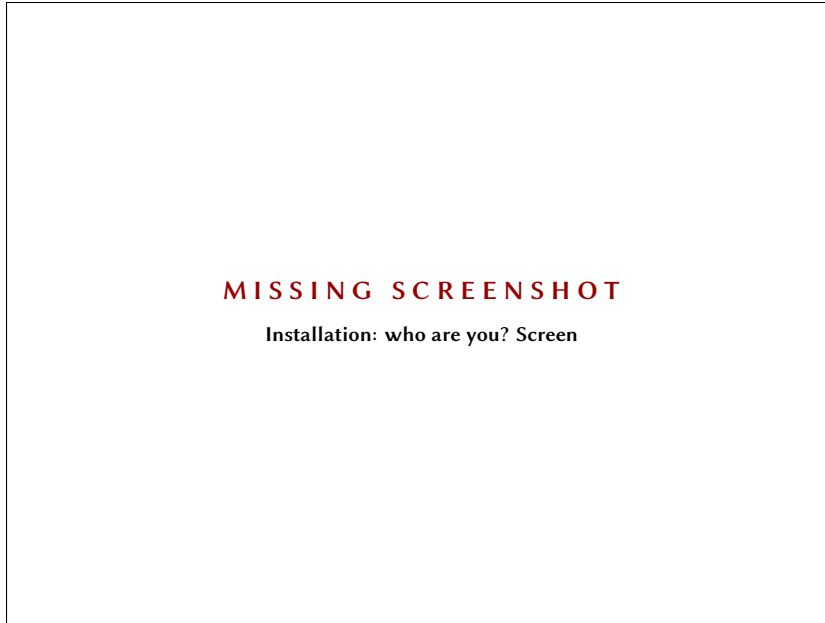
Installation: who are you? Screen

‣ How you want Ubuntu to log you in.

The first three steps are self explanatory. Choose a simple username, we recommend just your first name, all lowercase. Your password should be strong so no one can easily guess it.

The name of your computer can be anything you like, although most people generally choose something like "john-desktop" or "john-laptop." The main reason for this is to distinguish your computer from other computers on a network.

When choosing how to log in, you have three options:

No, they are not… Recommend explaining each one individually

Need to explain "strong" in more detail; users do not know what that means

Log in automatically

Ubuntu will log in for you when you start up the computer. It means you don't have to enter your password to get into your computer—not recommended due to security reasons .

Why is this not recommended? We need to explain the pluses and minuses; this is a legitimate option

Require my password to login

This option is the default—when you turn on your computer, you will need to enter your password. This helps prevent unauthorized access to your computer.

Require my password to login and decrypt my home folder

Your home folder is where all of your personal details are stored. By choosing this option, Ubuntu will automatically enable encryption on your home

folder, so that it cannot be accessed unless your password unlocks it. Even if someone had physical access to your hard drive, they would not be able to see your files without your password entered on your computer. It's very secure, and recommended.

Confirm your settings and begin installation

Nothing you have actually specified yet has been written to the disk, so you need to make sure that all your details are correct and then click on **Install** to begin the installation process.

Recommend omitting this detail; just instruct the use to click the button

MISSING SCREENSHOT

Installation: confirmation screen

Figure 1.10: Installation: confirmation screen

Ubuntu will now install. As the installation progresses, you will be presented with a slideshow that gives you an introduction to some of the default applications included 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.

After the splash screen, you will see the login window:

what about "..after the screen with the Ubuntu logo?

Click your username and enter your password, then press Enter or click on **Log in** to log in to Ubuntu and see your new desktop!

Not if the user uses automatic login...

MISSING SCREENSHOT

Installation: first slide in the slideshow

Figure 1.11: Installation: first slide in the slideshow

MISSING SCREENSHOT

Installation: screenshot of "restart now" dialog box
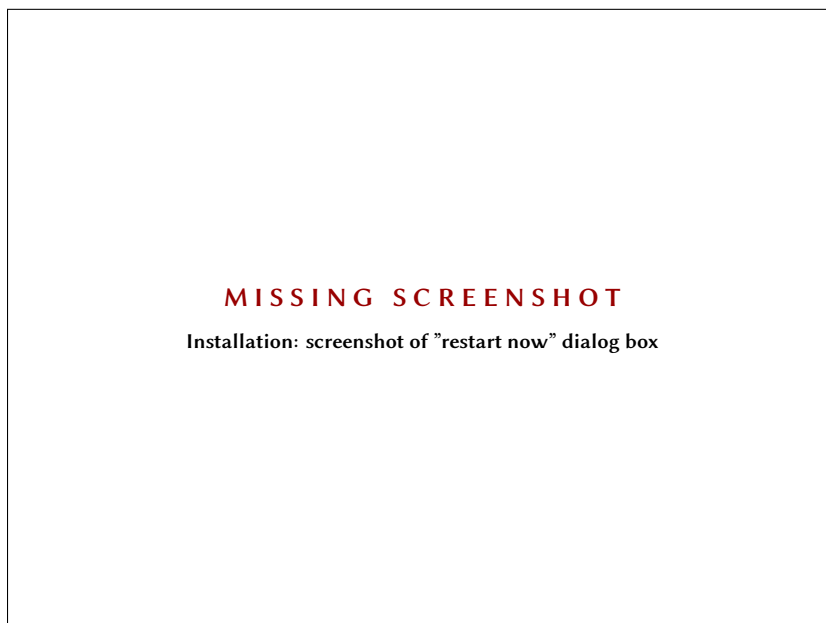
Figure 1.12: Installation: screenshot of "restart now" dialog box

MISSING SCREENSHOT

Installation: screenshot of the GDM login

Figure 1.13: Installation: screenshot of the GDM login

2 Around your Desktop

The GNOME environment

GNOME (GNU Network Object Model Environment) is the default desktop environment used in Ubuntu. Most of the desktop you see in front of you will be part of GNOME. Although the GNOME desktop environment is highly customizable (as is true with many of Ubuntu's features), we will deal with the default desktop, as described below.

Understanding the desktop

The desktop

Much like Windows or Mac OS X, Ubuntu uses a graphical user interface (GUI) and a window management system to provide user interaction with applications.

By default, the desktop will have panels at the top and bottom.

The desktop itself will have a wallpaper that is part of the default Ubuntu theme, known as the Human theme. The desktop is highly customizable. You can move the panels to the sides of the desktop, set the panels to autohide, and you can remove or add panels as you desire. By default, Ubuntu requires that you maintain at least one panel on the desktop. If you prefer a Windows look, a panel at the bottom of the desktop can be set up to open and dock programs. If you prefer a Mac OS X look, you can keep the top panel and add an applications dock.

You can change the wallpaper, and place program launchers or file shortcut icons on the desktop. For now, we will look at the default desktop and the options that it offers. As we move forward in this chapter, you will learn how to make some basic modifications to the desktop.

A **panel** is a bar that sits on the edge of your screen. It contains **applets** which provide useful functions such as running programs, viewing the time or accessing the main menu.

Some applications dock programs you can check out include Avant Window Navigator (AWN), Cairo-Dock, and GNOME-Do with Docky, all of which are available in the **Ubuntu Software Center** or **Synaptic Package Manager**.

The top panel

The default Ubuntu desktop has panels at the top and bottom. We will briefly look at the applets on the top panel. Starting from the left, you will see three menu headings: Applications, Places, and System. After that, you will see two program icons; the Firefox web browser launcher, and the Ubuntu help launcher. To the right of the panel you'll find the Notification Area, which is similar to the system tray in Windows or, more similar to the "menu extras" on the Mac OS X menu bar. To the right of that is the *MeMenu* with the name you entered during installation. This applet allows you check emails, receive

An **applet** is a small application that runs within a program
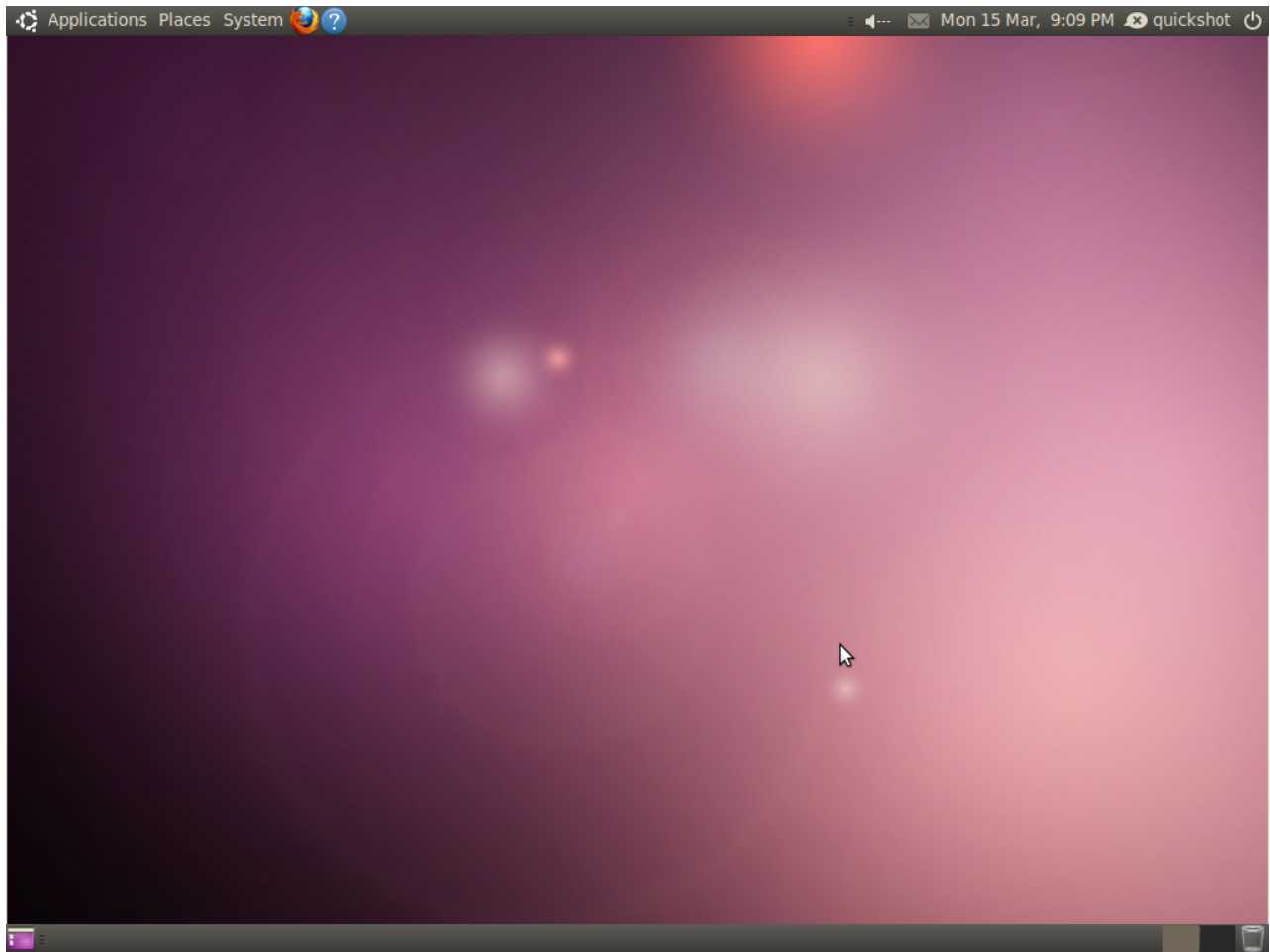
Figure 2.1: The Ubuntu 10.04 desktop.

instant messages and update social network sites like Twitter and Facebook. Finally, on the far right, is the power button icon. When you click on it, a menu opens with options for locking your computer, logging yourself out, restarting, or shutting it down completely.

The top panel is customizable. Right-click on any open area of the panel to access the options menu. You can add applets to the panel for reference, information, or fun. You can also add program launchers to the top panel by opening the **Applications** menu. Once you find the program, drag it to an open space on the panel. In this way, the panel also serves as an application dock. You can also adjust panel properties, such as orientation of the panel on the screen (top, bottom, left, right), panel size, and panel color and transparency.

The Notification Area

Just as Windows has the system tray and Mac OS X has the menu extras, Ubuntu has the Notification Area. The items that you'll find there include the volume adjustment, network indicator, Bluetooth indicator (if your computer has Bluetooth capability), new mail notification applet, and the date and time. Some programs will install an icon in the Notification Area when you first open them, such as Tomboy Notes or Rhythmbox, and other programs will put an icon there when modifications are made in the program.

For example, if you adjust the settings in OpenOffice.org so that it will load into memory (for faster startup when you need to look at a document, etc.), an OpenOffice.org icon will appear in the Notification Area. Right-clicking most icons in the Notification Area will bring up a list of options available. The only right-click features available on the sound and mail/IM notification icons allow you to lock the icon's position on the panel, or remove it entirely. Some icons in the Notification Area also perform actions when you left-click on them. To adjust the volume, just click on the volume adjustment icon and the volume slider will appear. When you click on the date and time, a calendar opens. If you use Evolution to send and receive your email, you can click on a date on the calendar and it will open up your Evolution calendar on the date you clicked.

The icons don't perform the actions... the user does. Suggest rephrasing. -ilya

Below the calendar is the Location box. Click the + sign to show the world calendar. To enter your location, click on the **Edit** button. In the window that opens up, click on the **Add** button. Type your location in the box. If you live in a major city, it may be on the list already. If your location isn't in the list, you can enter the latitude and longitude for your location (you can search online if you don't already have this information). Make sure to select the time zone for your location. If your location is on the list, you will be able to display weather data for it below the calendar.

The bottom panel

When you open a program, or a window, in Ubuntu, it will be displayed as a button on the bottom panel. This is similar to the taskbar in Windows, or the bottom portion of the Dock in OS X.

At times, your desktop may get cluttered, and you may wish to minimize all the open windows. Click on the **Show Desktop** button on the far left of the bottom panel. All programs on your screen will minimize and you will see your desktop. Click the same button again to re-open any windows you had open.

On the far right side of the panel, you'll find the workspace switcher. By default, it is set for two workspaces. You can use multiple workspaces to have two or more different desktops with their own sets of open windows.

To switch workspaces, just click on the portion of the switcher that isn't highlighted. This makes it possible to, say, have a web browser open in one workspace, and a text document you're working on in the other workspace, thus reducing clutter on your screen. To add more workspaces, right-click on the icon and select Preferences. For example, if you would like to have four workspaces you could select 2 rows by 2 columns (or 1 row by 4 columns). Also on the right side of the panel is the Trash applet. This is much like the Recycle Bin in Windows or the Trash in OS X. Any files you delete go to the Trash. To see the contents of the Trash, click on it to open its window. Once the window is open, you can empty the trash by clicking on the **Empty Trash** button. You can also empty the trash by right-clicking the Trash and selecting Empty Trash from the menu.

Ubuntu can be set to provide two or more "virtual desktops," or workspaces. Using these workspaces can reduce desktop clutter by opening many items on many desktops, without needing a separate monitor. The desktop switcher is located on the right side of the bottom panel.

Managing windows

Managing your program windows in Ubuntu works in much the same way as Windows and OS X. Your typical program window will have an icon or button of some sort in the top left corner of the window. When you right-click on that button or icon, a menu will open with some options for manacing widnows (for example Minimize, Maximize, Always on Top, etc). The name of the program or file is displayed on the top of the window frame.

Closing, maximizing, restoring, and minimizing windows

To close a window, click on the "X" in the upper right corner of the window. Just to the left of the "X" is a box-shaped icon that when clicked will "maximize" the window, making it fill the entire screen.

Click the maximize button a second time, and the window will return to its original size. If you want to minimize the window to the lower panel, click the "-" button. To display the window on the desktop again, click the spot on the lower panel where the window's name is displayed.
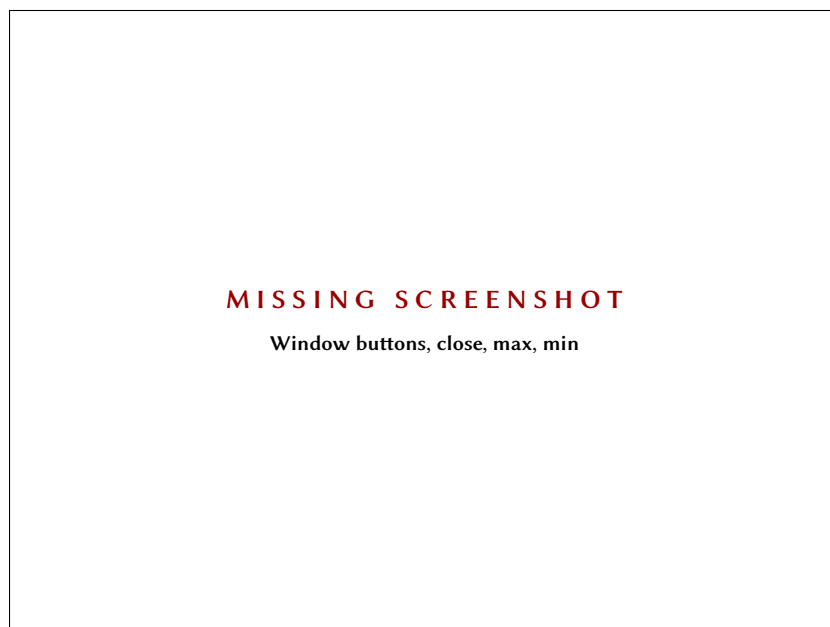
Moving and resizing windows

To move a window around the workspace, place the cursor on the top of the window, then click and drag the window. To resize a window, place the cursor on and 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.

Switching between open windows

There are two ways in Ubuntu to switch between open windows in a workspace. You can find the window on the bottom panel taskbar and click to bring it up on the screen, or you can use Alt+Tab to select the window you wish to work on. Press-and-hold down the Alt key, and keep pressing the Tab button until the window you're looking for appears on the desktop.

Getting help

Ubuntu, just like other operating systems, has a built-in help reference, called the **Ubuntu Help Center**. To access it, click on the Help icon—a blue circle with a white question mark (?) in the middle. You can also access it as "Help and Support" through the System menu on the top panel.

This manual should give you answers to many of your questions as you start learning the Ubuntu operating system. If you need more information, the Ubuntu Help Center mentioned previously, and the help documentation built in to many of the programs, should provide you with the answers you seek.

MISSING SCREENSHOT

Help and support icon

You can also check out the Ubuntu Wiki or Ubuntu Forum. Many Ubuntu users also find that problems can be solved by searching for information on the Web using a search engine such as Yahoo or Google. Should you choose to get help by searching the Web, please check any information you find using multiple sources, and only follow directions if you understand them completely.

Using the Applications Menu

There are three menu headers in the top panel. Let's take a look at those menus in a bit more detail, starting with the Applications menu.

Accessories

The Accessories sub-menu has many programs that are suited for productivity, including Calculator and Tomboy Notes. Other programs in Accessories include the CD/DVD Creator, gedit text editor (similar to Windows Notepad and OS X's TextEdit), Search for Files (we'll discuss that later), and Take Screenshot, which allows you to take a picture of your desktop screen.

Games and Applications

Ubuntu has several games built in for your entertainment. If you enjoy card games, check out AisleRiot Solitaire. Perhaps you're looking for more of a challenge: in that case, there's gBrainy and Sudoku. The Games menu also includes Mahjongg, Mines (similar to Windows Minesweeper game) and

If you can't find an answer to your question in the Help Center, you can reach out to the Ubuntu community through the Ubuntu Forum. Many Ubuntu users open an account on the Forum to receive help. Later, as they gain knowledge of Ubuntu, they provide help to others. `http://ubuntuforums.org`. Another useful website is the Ubuntu Wiki, maintained by the Ubuntu community. `https://wiki.ubuntu.com`

You may find that there are programs in the Applications menu that you don't use frequently, or just don't want to be displayed on the menu. To hide those applications (without deleting the actual programs), click on System menu and select **Preferences ▸ Main Menu**. Find the applications in the right panel that you want to remove from the Applications menu, and click to un-check the box.

See Chapter 3: Working with Ubuntu for more information about the included applications.

Quadrapassel (similar to Tetris).

Graphics

Under the Graphics sub-menu, you'll find the F-Spot photo manager, OpenOffice Drawing, and some scanner applications.

Internet

The Internet sub-menu is where you will find the Firefox web browser, Empathy IM client, and Ubuntu One, an online storage site that syncs with your Ubuntu data.

Office

The Office sub-menu is where you will find your OpenOffice programs (word processing, spreadsheet, etc.), the Evolution mail client, and an on-line dictionary.

Sound and Video

The Sound and Video sub-menu has programs for working with multimedia, such as the **Brasero Disk Burner**, **Totem Movie Player**, **Pitivi Video Editor**, **Rhythmbox Music Player**, and **Sound Recorder**.

Ubuntu Software Center

At the very bottom of the Applications menu is the **Ubuntu Software Center**. This application gives you access to a library of free software that you can download. The main screen in the Software Center is similar to your Applications menu, for easy searching. If you know the name of the program you're looking for, just enter it in the search box on the top right of the Software Center window. The Software Center keeps track of programs that are installed on your computer. If you're simply curious as to what is available, you can explore the software available using the categories listed on the left side of the window.

Using the System Menu

The system menu, located on the top panel, contains two important sub-menus. Those sub-menus, Preferences and Administration, make it possible for you to make modifications to how your system looks and works. Through the System menu, you can also open the Ubuntu Help Center (Help and Support), find out more about your GNOME desktop environment (About GNOME), and find out more about Ubuntu in general (About Ubuntu). The System menu and its sub-menus are the equivalent of the Control Panel in Windows and OS X's Systems Preferences.

Preferences

You can use the Preferences sub-menu to modify the appearance of the desktop and windows, assign a default printer, designate keyboard shortcuts, change the entries listed in the Applications menu, edit network connections, and change mouse settings, among other options.

Administration

The Administration sub-menu contains programs you can use to monitor computer performance, change disk partitions, activate third-party drivers, manage all installed printers, and manage how your computer receives updates from Ubuntu. This sub-menu also has the **Synaptic Package Manager**, which is a more technical resource for locating and downloading software packages.

Browsing files on your computer

There are two ways to locate files on your computer. You can use the **Search for Files** tool in the Applications menu, under Accessories. You can also use the Places menu on the top panel.

Places

The Places menu is a list of commonly used folders (such as Home Folder, Documents, Music, Downloads). You can also browse all disks on the computer by clicking on Computer in the Places menu. If you set up a home network, you will find a menu item to access shared files/folders. You can also access the Search for Files tool from the Places menu, and browse a list of recently opened documents.

Your home folder

The home folder is where each user's personal files are located. When you installed Ubuntu, you entered a name to set up your user account. That same name is assigned to your folder in the Home Folder. When you open your personal folder, you will see that there are several folders there—Desktop (any files that are located on the Desktop), Documents, Downloads, Music, Pictures, Public, Templates, and Videos. You will also see a link named Examples. Double- click on that link to open a folder full of example documents, spreadsheets, and multimedia.

Nautilus file browser

Just as Windows has Windows Explorer and OS X has the Finder to browse files and folders, Ubuntu uses the **Nautilus** file browser by default. We will

now look at the features offered in Nautilus.

The Nautilus file browser window

When you open a folder on the Desktop or from the Places menu, the **Nautilus** file browser window opens up. The standard browser window contains the following features:

▸ Menubar: The menubar is located at the top of the window. 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 up a box so you can search for a file by name.

▸ Additional Navigation Tools: Just below the toolbar, you will see a representation of where you are currently browsing, similar to the "tree" you find on many forum sites. You can click on the locations to navigate back through the file browser.

▸ 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 by clicking the down arrow beside "Places" near the top.

▸ The largest, central pane shows the files and folders in the directory that you're currently browsing.

If you bookmark a folder, it will appear in the Places menu.

Opening files

To open a file, you can either double-click on its icon or right-click and select Open With (program).

Copying and moving files and folders

You can copy files through the Edit menu in **Nautilus** (either using Copy or Copy To), or by right-clicking on the file and selecting Copy or Copy to from the popup menu. When using the Edit menu in **Nautilus**, make sure you've selected the file (click on it to select it) before you click on the Edit menu. Multiple files can be selected by holding the left mouse button down while dragging the cursor across the files you want. The click-drag move is good when you are selecting files whose icons are grouped together. To select files that are not grouped together, press-and-hold the Ctrl key and click on each file you wish to select.

To move files and folders around, locate the file or folder you want to move. Click-and-hold on the file or folder and drag it to the new location.

Another way of moving folders or files is to use the Copy command, followed by Paste in the new location.

Navigating between directories

To navigate between directories, use the bookmarks in the left pane of the **Nautilus** file browser. 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**.

Creating new folders

To create a new folder, you can either right-click on the file browser window (or on the Desktop) and select Create Folder from the popup menu, or select Create Folder from the File menu in Nautilus. If you wish to hide certain folders or files, place a dot (.) in front of the file name (i.e. ".Personal Finances").

You can view hidden files by clicking the "View" menu and then clicking on "Show Hidden Files" or by pressing `Ctrl+H`.

Using multiple tabs and multiple nautilus windows

The **Nautilus** file browser gives you the option to do tabbed browsing as an alternative to opening several **Nautilus** windows. To open new tabs in **Nautilus**, select New Tab from the File menu. If you prefer having separate **Nautilus** windows open, select New Window from the File menu. You can move files and folders using the drag method using either separate windows or tabbed browsing. When you open a new tab, it will produce a second window of the current directory that you're working in. To select a different directory for the new tab, navigate to the desired location using the left pane.

Searching for files on your computer

Eariler, we found that you can search for files on the computer by using the Search for Files feature on the Places menu in the top panel. We also discovered that you can use the **Nautilus** browser to search for files, as explained above. Some files or folders may have dot (.) in front of the file or folder name. Those files and folders are hidden files. To display hidden files in **Nautilus**, select "Show Hidden Files" from the View menu in the file browser or press `Ctrl+H`.

Customizing your desktop

Now that you've been thoroughly introduced to the GNOME desktop environment, let's take a look at customizing its features.

Appearance

There are many things you can do with the desktop appearance. The panels can be moved from their top or bottom positions to the sides of the screen, they can be set to hide, or you can change the panel color. To access these features, right-click the panel you want to modify and select Properties from the pop-up menu. The General tab has options to autohide, position the panel, and change the panel size. By default, the panels cover the entire length of the desktop. To change that, un-check the Expand box. To hide the panel on the left or right corner of the desktop, select the Show Hide Buttons. To put arrows on the hide buttons, check the Arrows on Hide Buttons box (by default, this box will be checked when you select Show Hide Buttons). To make the panel disappear, select Autohide. The panel will reappear when you place the cursor on the side of the screen where the panel was before it hid. The Background tab in Panel Properties allows you to use the system theme (default setting), or select a color of your choosing. You can also set the transparency of the panels, or even select a picture or design from your files as a panel background.

You can also choose to delete the panels, and install a Mac OS X-style dock. Two dock programs available in the Ubuntu Software Center are Cairo-Dock and Avant Window Navigator (AWN).

Changing the desktop background is quite simple. You can either right-click on the desktop and select Change Desktop Background from the pop-up menu, or, from the top panel, select the System menu, Preferences, Appearance. When the Appearance Preferences window opens up, click on the Background tab. You will see some stock backgrounds to choose from. If you are looking for something beyond these, you can use any picture on your computer as a desktop background. Click on the **Add**... button and find the picture you wish to use. Double-click on it, and the change will take effect immediately. Once you do this, the picture will become available in the Appearance Preferences. To find even more great desktop backgrounds, click on 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 `GNOMElook.org` website.

You can also change the fonts through the Appearance Preferences window. Just click on the Fonts tab. You can individually set the font style and size for applications, documents, desktop items, window titles, and for anything using fixed width fonts. The Rendering section at the bottom of the Fonts window gives you four options for font rendering.

Windows

The Appearance Preferences window has a Theme tab, where you can select a theme that will control the appearance of your windows, buttons, scroll bars, panels, icons, and other parts of the desktop. Ubuntu comes with nine themes to choose from, and the Human theme is selected by default. You can download additional themes by clicking the "Get More Themes Online" link on the bottom of the Themes window. The link will take you to the `GNOMElook.org`

website, where you can download from a large selection of themes. To add
downloaded themes to the Themes tab, drag the downloaded file into the
Themes window (this will work for most themes). You can customize any
theme: select the theme, and click on the **Customize** button. This will al-
low you to mix elements of different themes, thus creating your own special
theme.

Screensaver

Ubuntu offers a selection of screensavers. By default, Ubuntu displays a black
screen after a period of inactivity. To select a different screensaver, click on
the System menu on the top panel, select Preferences, and select Screensaver.
This will open the Screensaver Preferences window. The available screen-
savers are listed on the left side of the window. When you select a screen-
saver, you will see a mini-preview in the window. To see how it will look on
your screen, click the Preview button. To exit the preview, click on the **Leave
Fullscreen** button on the top of the screen. The left and right arrow buttons in
Fullscreen allow you to scroll through the available screensavers while still in
full screen mode. Make sure that the Activate Screensaver When Idle option is
selected to activate the screensaver. The slider can be adjusted to set the idle
time. For added security, you can select the Lock Screen When Screensaver Is
Active option. Ubuntu will ask you for your login password when you return
to using the computer.

Accessibility

Ubuntu has built-in tools that make using the computer easier for people
with certain physical limitations. You can find these these tools by opening
the System menu, then choosing Preferences, then **Assistive Technologies**.
In addition to the **Assistive Technologies**, certain appearance tweaks, such
as selecting high contrast themes and larger on-screen fonts can assist those
with limited vision. You can also adjust keyboard and mouse settings through
the Assistive Technologies window. Just click on the Keyboard Accessibilty
or Mouse Accessibility buttons in the Preferences section to access those
features.

Assistive Technologies

Orca, a tool for persons with visual impairments, is pre-installed on Ubuntu.
To run **Orca**, Press ALT+F2, type **Orca** in the command box, and click on
the **Run** button. You can also run **Orca** from the command line. To do this,
open a Terminal (**Applications ▸ Accessories ▸ Terminal**), type **Orca** at the
prompt and press Enter. **Orca**'s voice synthesizer will activate to navigate you
through the various voice options, Braille, and screen magnification. Once
you have selected all settings, log out of the computer. Once you log back in,

the **Orca** settings you chose will automatically run every time you use your computer.

Shutting down your computer

When you're done working on your computer, you can shut down the computer or place it in standby through the Session Indicator applet on the far right end of the top panel. You can also access these options by pressing the `Ctrl+Alt+Del` keys.

Logging out

To log out and leave the computer running, select **Log Out** from the Session Indicator menu.

Rebooting

To reboot your computer, select **Restart** from the Session Indicator menu.

Shut down

To totally power down your computer, select **Shut Down** from the Session Indicator menu.

Other options

From the Session Indicator menu, 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 menu toset up a guest session for a friend to try Ubuntu, or to switch the desktop to let another use another user account without closing your running applications.

3   Working with Ubuntu

Getting online

Before you can use your computer to its fullest, you must make sure that you
are connected to the internet. This section of the manual will help you check
or configure you internet connection.

While this manual discusses only the
internet, connecting to office or other
networks is usually performed in a similar
manner.

Ubuntu can connect to the internet using a wired, wireless, or dialup
connection. It also supports some more advanced connection methods.

A **wired** connection is used when your computer is physically connected
to a router or an ethernet port via a cable. This is the most common connec-
tion for desktop computers.

A **wireless** connection is used when your computer is connected to the
internet via a wireless radio network, also known as Wi-Fi. It is common for
laptop computers to use wireless connections, especially when on the go. In
order to connect to a wireless connection you must have a working wireless
network. This is usually the case if you've previously purchased and installed
a **wireless router** or **access point**, or if you are in a place where a wireless
network is already established.

A **dialup** connection is when your computer uses a **modem** and a tele-
phone line to connect to an internet service provider.

Ubuntu can also connect using mobile broadband, VPNs, or DSLs.

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

NetworkManager

In order to connect to the internet in Ubuntu, you need to use the **Network-
Manager** 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. Its icon may look different if you already have a connection, or
if your connection is wired or wireless. If you hover your mouse over the
icon, it should read "Wired connection..." or "No connection" or "Networking
disabled" or something else related to networking or connections.

If you are currently connected to the internet, you can click on the icon.
This will bring up a list of network connections that are available to you, with
your current connection highlighted in bold.

You can also right-click on the NetworkManager icon. This will open a
menu where you can enable or disable networking, view technical details

MISSING SCREENSHOT

Partial screen shot that points out network manager when connected with a wired network (point it out with an arrow?)

Figure 3.1: Partial screen shot that points out network manager when connected with a wired network (point it out with an arrow?)

MISSING SCREENSHOT

NetworkManager with the menu open showing auto eth0

Figure 3.2: NetworkManager with the menu open showing auto eth0

MISSING SCREENSHOT

NetworkManager with the right-click menu open, showing Enable Networking checked

Figure 3.3: NetworkManager with the right-click menu open, showing Enable Networking checked

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 when you must shut off all wireless communication, for example in an airplane.

Establishing a connection

In order to get online, you need to make sure that you have established a connection. There are many different ways to connect to the internet with Ubuntu—some of these we will cover below.

Wired

If you have an Ethernet wire running from a wall socket, a router, or some other device, then you will want to create a **wired network connection** in Ubuntu. This is the most common way for desktop and other stationary computers to connect to the internet.

In order to connect with a wired connection, you need to know whether your network connection supports **DHCP**. This stands for "Dynamic Host Configuration Protocol", and is a way for computers on your network to automatically receive IP addresses and related configuration. If you are unsure, try DHCP set up first; if this does not work then ask your network administrator for static address information.

Note: 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.

Automatic connections with DHCP

If your network supports DHCP, you may already be online. To check if you are online, right-click on the NetworkManager icon in the top panel and select the **Connection Information** option.
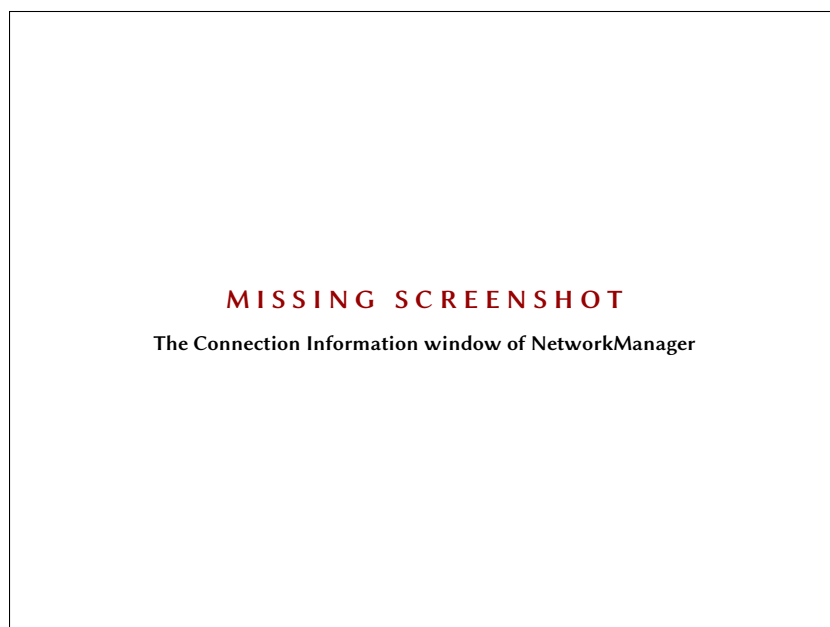
Figure 3.4: The Connection Information window of NetworkManager

MISSING SCREENSHOT

The Connection Information window of NetworkManager

You should see a window showing details about your connection. If your IP address is 0.0.0.0, or starts with 169.254, then DHCP did not successfully provide your computer an address. If it shows another address then most likely your connection was configured correctly.

If you cannot display the Connection Information window because the option on the NetworkManager menu is gray then your connection is not active. To see if your connection is turned on, verify that the **Enable Networking** option in the menu is selected.

Then, click on the NetworkManager icon. There should be an option for "Wired Network" in the menu that is displayed. If this option is followed by a gray word "disconnected" then find the option called "Auto eth0" in the list and choose it to attempt a connection. If "Auth eth0" is shown directly under "Wired Network" then your computer is set up correctly for DHCP.

If after following these steps you are still not online, you may want to check with your network administrator and possibly proceed with manual configuration with 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.

▸ **IP Address**—this will be your computer's address. It is always given in the form of four numbers separated by decimal points. For example, 192.168.0.2

▸ **Network mask**—this tells your computer how large your local network is. It takes the same form as an IP address, but is usually something like 255.255.255.0

▸ **Gateway**—this is an IP address of your network's router: where your computer sends data which gets sent on to the internet

▸ **DNS servers**—one or more IP addresses of "Domain Name System" servers, which convert names like www.ubuntu.com into IP addresses like 91.189.94.156; one server is required, and any additional ones are used in case the first one fails.

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

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

The list may already have an entry, such as "Auto etho", or having some other name. If a connection is listed, click on it and then click the **Edit** button. If no connection is listed, click the **Add** button instead.

If you are adding a connection, you first need to provide a name. In the "Connection name" field, please provide some 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. Type in your IP address in the field below the **IP Address** header.
6. Click to the right of the IP address, directly below the **Network Mask** header, and type in your network mask. If you are unsure of your network mask, a mask of "255.255.255.0" is the most common.
7. Click to the right of the network mask, directly below the **Gateway** header, and type in your gateway address.
8. In the **DNS servers** field below, type in the addresses of your DNS server. If your network has more than one DNS server, enter them separated by spaces or commas.
9. Click **Apply** to save your changes.

MISSING SCREENSHOT

manual connection editing screen, on the IPv4 tab

In some cases, you may need to enter a MAC address as well. This is entered on the "Wired" tab of the editing screen. A MAC address is a hardware address for your computer's network card, and entering it is sometimes important for cable modem and similar connections.

When you are once again at the "Network Connections" screen, your newly-added connection should now be listed. Click **Close** to return to the desktop. If you configured the connection correctly, the NetworkManager icon should have changed to show an active connection. Use instructions in the DHCP section, above, to check if your connection looks properly set up.

The final test of setting up your connection will come when trying to use a web browser, as described later in this chapter.

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 will usually detect available wireless networks. 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 shown filled in, the stronger is the connection that your computer has to that wireless network.

A wireless network may be open to anyone to connect, or may be protected with network security. The list of available wireless networks should show a small icon of a "lock" next to the signal meter to the right of the name. You will need to know the correct password in order to connect to a secured wireless network.

To connect to a wireless network, click on one of the network names in the list. You should know which network you wish to connect to—it should be the one that you had set up when you installed your wireless router or access point. If you are in a place of business or education, the wireless network may be named with the name of the place.

If the network is open (the network signal meter did not have a lock next to it), a connection should be established within a few seconds. The Network-Manager icon in the top panel will display an animation while Ubuntu tries to connect to the network, and should then change to show signal meter bars once the connection is established.

Ubuntu will also show a notification message in the upper right of your screen informing you that a connection was established.

If the network is secured, Ubuntu will display a window called "Wireless Network Authentication Required". This window means that the wireless network requires a password to allow a connection.

Figure 3.6: detail shot of the "Wireless Network Authentication Required" window

MISSING SCREENSHOT

detail shot of the "Wireless Network Authentication Required" window

If you know the password, enter it in the **Password** field, and click on the **Connect** button. When typing, a password will be obscured to prevent people looking over your shoulder from seeing the typed-in password. If you prefer to see the password when typing it in, select the **Show password** option when typing your password.

After you click the Connect button, the NetworkManager icon in the top panel will display an animation while it tries to connect to the network. If you had entered the correct password, the NetworkManager icon should then change to show signal meter bars when the connection is established.

Much like for open wireless networks, Ubuntu will show a pop up message in the upper right of your screen informing you that a connection was established.

If you did not provide the correct password then the NetworkManager icon will display an animation, and then eventually once again display the "Wireless Network Authentication Required" window. You will now be able to provide the correct password, or click **Cancel** to abort your connection. If you do not know the password to the network you had selected, you will need to get the password from the network administrator.

Once you have a successful network connection established, Ubuntu will save this connection. This will make it easier to connect to the same wireless network in the future.

Will users get prompted for a keyring password here somewhere??

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 is settings saved. This will work for both open and secured wireless network.

If you have multiple saved wireless networks 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 did change, Ubuntu will open the "Wireless Network Authentication Required" window. In this case, please follow 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 its security settings from your network administrator.

To connect to a hidden network:

1. Click on the NetworkManager icon in the top panel.
2. Choose 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 an **"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.

verify that the hidden network does show up as described

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.

To do this, right-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, right-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. Right-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 **SSID** field. A "SSID" 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 SSID is set according to your network administrator's instructions.

8. Below the SSID, 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. The key is usually entered as a sequence of digits 0 through 9 and letters A through F.

    is this true? or will it support a passphrase too here?

    ‣ **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 LEAP, Dynamic WEP, or WPA & WPA2 Enterprise security, you will need to have the administrator help you set up those security modes

10. On the **IPv4 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.

> TODO confirm if this is true

Troubleshooting common problems with wireless connections

> Needs to be written or removed

Dialup

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.

> expand; it's actually pretty simple

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".

> expand

You can also use NetworkManager to establish a VPN (Virtual Private Network) connection. These are commonly used to create secure connectivity to a workplace.

> I think that in some areas, VPNs are used in addition to normal DSL/Cable/fibre connections to the home... if so, need to cover them here at least briefly

Browsing the web

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

Starting Firefox

To start Firefox, click on the **Applications** menu, then **Internet**, and select **Firefox Web Browser**.

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 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 select **View ▸ Full Screen** or press F11.

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

Navigating to another page

To navigate to a new web page, you need to type 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/".

To navigate:

1. Click the Location Bar to select the URL that is already there.
2. Type 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—Yahoo 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 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 the **Back** or **Forward** button.

- To go back or forward more than one page, click the small triangles on the **Back** and **Forward** buttons. 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 typed into the Location Bar, click 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 use 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 should a list of folders. Click the folders to displays subfolders, or titles of web pages you've visited in the past. Click 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 the **Stop** button.

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

Opening new windows

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

There are two ways to create a new window:

- On the menubar, click the **File** menu, then select **New Window**
- 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 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 bring up its popup menu. Select the **Open Link in New Window** option. A new window should open, containing the web page for the link you clicked.
- Hold down the Shift key while clicking the link. A new window should open, containing the web page for the link you clicked.

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.

Opening a new blank tab

There are three ways to create a new blank tab:

▸ Click the **New Tab** button on the right side of the last tab.
▸ On the menubar, click 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 three ways to open a link in its own tab:

▸ 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.
▸ 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.
▸ Hold down the `Ctrl` key while clicking the left mouse button on the link. A new tab should oepn, containing the web page for the link you clicked.

Closing a tab

Once you are done viewing a web page in a tab, you can close that tab.

There are three ways to close a tab:

▸ Click on the **Close** button on the right side of the tab you want to close.
▸ On the menubar, click 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`

Restoring a closed tab

Sometimes, you have closed the wrong tab by accident, or for another reason would want to bring back a tab that you've recently closed.

To bring back a tab you've closed:

‣ On the menubar, click the **History** menu, select **Recently Closed Tabs**, and then select 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 on the tab with your left mouse button and hold the mouse button as you 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.

Moving a tab between windows

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

To move a tab from one Firefox window to another already open window, click on the tab with your left mouse button, hold down the left mouse button, and then 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 on the tab with your left mouse button, hold down the left mouse button, and then 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 Yahoo 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 *world cup*:

1. Click in the **Search Bar**.
2. Type the phrase "*world cup*". Your typing replaces any text currently in the Search Bar.
3. Hit `Enter` to search.

Search results from Yahoo for "world cup" should appear in the Firefox window.

Selecting search engines

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

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

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 display a popup menu. Select the option **Search [Search Engine] for "[your selected words]"**.

Firefox should open a new tab which should contain search results for your highlighted words using the currently selected search engine.

Searching within a page

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

1. Press `Ctrl+F` or select **Edit ‣ Find** to open the **Find Toolbar** at the bottom of Firefox.
2. Type 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 the **Highlight all** button to highlight occurrences of your search words in the current page.
   ‣ Select the **Match case** field 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 select **Edit ‣ Find Again** from the menubar.

Copying, saving, and printing 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 with your mouse.
2. Select **Edit ▸ Copy** from the menubar.

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

1. Position the pointer over the link or image.
2. Right-click on the link or image to display a popup menu.
3. Choose **Copy Link Location** or **Copy Image Location**. If an image is also a link, you can choose either menu item.

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

Saving all or part of a page

To save an entire page in Firefox:

1. Select **File ▸ Save Page As** from the menubar. 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 the **Save** button.

    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. Type a file name for the image and click the **Save** button.

Changing your homepage

Bu default, Firefox will show the **Ubuntu Start Page** when you start Firefox. If you prefer to display another page when you start Firefox, you will need to change your homepage preference.
   To change your homepage:

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

3. In the "Startup" section on the **Main** tab, which is shown by default, click the **Use Current Pages** button. If you had more than one tab open then all the tabs will be opened when Firefox starts.
4. Click the **Close** button

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

If you have navigated to a web page and would like to bookmark it for future visits, you will need to add the page as a bookmark.

There are two ways to bookmark a page:

‣ From the menubar, select **Bookmarks** and then **Bookmark This Page**. A window will open. Provide a descriptive name for the bookmark, and click the **Done** button.
‣ Press `Ctrl+D`. A window will open. Provide a descriptive name for the bookmark, and click the **Done** button.

Navigating to a bookmarked page

To navigate to a bookmarked page, select the **Bookmarks** item from the menubar, and then click on 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, select the **Bookmarks** item from the menubar, and then right-click 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 previously visited without needing to remember the page's URL, or even bookmarking it.

To see your most recent history, select the **History** item from the menubar. The menu should then display several of the most recent web pages that you were viewing. Click one of the pages to return to it.

To see history from an older time, press `Ctrl+H`. Firefox should open a "sidebar" on the left side of the browser window, which should contain your browsing history categorized as Today, Yesterday, Last 7 days, This month, and then monthly for the times before that.

Click one of the item categories in the sidebar to expand this category, and see the pages you've visited during that time period. Then, once you find the page you need, click 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

Troubleshooting connection problems

Using a different web browser

Reading and composing email

To send and receive email in Ubuntu, you can use the **Evolution** mail application. To start Evolution, open the **Applications** menu, then choose **Internet** and then **Evolution Mail**.

In addition to email, Evolution also can help manage your contact list, your calendar, and a list of tasks.

⚠️ *You do not need to use Evolution if you are using a webmail system, such as Yahoo Mail, Hotmail, or Gmail. To access these services, use the Firefox web browser to access them on the web.*

Running Evolution for the first time

When you start Evolution for the first time, you will need to configure it to connect to your email account.

When Evolution starts you should see the "Evolution Setup Assistant" window, welcoming you to Evolution. Click the **Forward** button to continue with the setup.

Next, on the "Restore from backup" screen, Evolution may ask you to restore from a previous backup. Since this is the first time you are running Evolution, you can click the **Forward** button to skip this step.

On the next screen, "Identity", you need to enter your name and the email address you wish to use with Evolution. Enter your full name in the **Full**

Name field, and the full email address in the **Email Address** field. You can fill in the optional information, or leave it unchanged if you desire. Click the **Forward** button when you are done.

Next, you should see the "Receiving Email" screen. On this screen, you need to provide Evolution with the details of your email servers. If you do not know these details, you will need to ask your network administrator or check with your email provider.

There are two common types of internet email connections: IMAP, and POP. These are described below. In work environments there are sometimes other types, such as Microsoft Exchange or Novell GroupWise—for more information on those types of connections, please see the documentation for Evolution.

Setting up an IMAP connection

IMAP connections allow you to manage your email remotely—the actual email and folders reside on your email server, while Evolution allows you to view, edit, and delete the messages and folders as needed.

If your email provider recommends an IMAP connection, select **IMAP** in the **Server Type** field. In the **Server** field, enter the internet name of your mail server. For example, **imap.gmx.com**. In the **Username** field, enter the username that you use to log into your email system, for example **joe.x.user**.

Your email provider may specify the security settings you will need to use in order to receive email. If your connection does not use security, leave the **Use Secure Connection** field set to **No encryption**. Otherwise, select either **TLS encryption** or **SSL encryption** as recommended by your email provider.

After selecting these options, click the **Forward** button to proceed to "Receiving Options" screen. While it is normal to leave all options unselected, you may want to select the **Check for new messages** option to have Evolution automatically check email on a regular basis.

When you are finished setting the options, click the **Forward** button to continue to the next screen.

Setting up a POP connection

POP connections let you manage your email locally—Evolution will connect to your email provider and download any new messages you may have received, and store them in folders on your computer. The messages will be deleted off the server.

If your email provider recommends an POP connection, select **POP** in the **Server Type** field. In the **Server** field, enter the internet name of your mail server. For example, **pop.gmx.com**. In the **Username** field, enter the username that you use to log into your email system, for example **joe.x.user**, or **joe.x.user@gmx.com**.

Your email provider may specify the security settings you will need to use

in order to receive email. If your connection does not use security, leave the **Use Secure Connection** field set to **No encryption**. Otherwise, select either **TLS encryption** or **SSL encryption** as recommended by your email provider. After selecting these options, click **Forward** to proceed to the next screen.

After selecting these options, click the **Forward** button to proceed to "Receiving Options" screen. While it is normal to leave all options unselected, you may want to select the **Check for new messages** option to have Evolution automatically check email on a regular basis.

You may also wish to adjust the Message Storage options, which determine what Evolution does after downloading email to your computer. Select the **Leave messages on server** option to have Evolution keep the messages on your email system after downloading them. This will allow you to use another computer to redownload all of your new messages. Select the **Delete after 7 days** option to have Evolution keep the messages for a few days, and delete them after a while. You can adjust the number of days that Evolution keeps the messages.

When you are finished setting the options, click the **Forward** button to continue to the next screen.

Setting up your Sending options

The next screen should be the "Sending Email" screen. Here, you will need to configure your connection for sending email through your email provider.

The most common type of sending connection is SMTP, which is the default server type selected.

In the **Server** field, type in the name of the outbound mail server (also known as the SMTP server), as described by your email provider. For example, **mail.gmx.com**.

If your email provider requires authentication, select the **Server requires authentication** option. This is common for commercial email providers. In the "Authentication" section of the screen, select the type of authentication from the **Type** field—the most common authentication type is "PLAIN". Type your username in below, in the **Username** field, for example **joe.x.user**, or **joe.x.user@gmx.com**.

Your email provider may specify the security settings you will need to use in order to send email. If your connection does not use security, leave the **Use Secure Connection** field set to **No encryption**. Otherwise, select either **TLS encryption** or **SSL encryption** as recommended by your email provider. After selecting these options, click **Forward** to proceed to the next screen.

Finalizing account options

On the next screen, "Account Management", enter in a descriptive name for this account. If you plan to use more than one email provider with Evolution, you will use this name to distinguish between the different accounts.

When finished, click the **Forward** button. This will bring you to the "Done" screen. If you believe that you've entered the correct options, click the **Apply** button to finish setup. Otherwise, click the **Back** button to go back one or more screens to correct your settings, or the **Cancel** button to abort setup and discard your account settings.

After you finish setup, Evolution may ask you if you would like to make it your default email client. Click the **Yes** button if you plan on reading and sending email only with Evolution. Click the **No** if you plan on installing or using a different email program.

Around the Evolution workspace

The Evolution window is divided into four parts. At the top are the menubar and toolbar. The menubar lets you access most of the functionality of Evolution, while the toolbar provides some convenient shortcuts to some of the most frequently used features.

On the left side of the window is the folder list. Every message that you send or receive will reside in one of the folders in this list.

Below the folder list on the left side of the window are the **Mail**, **Contacts**, **Calendars**, **Tasks**, and **Memos** buttons. When working with email, the **Mail** button is selected. The other buttons take you to other parts of Evolution.

On the right side of the window are the message list, and the message preview beneath it. The message list shows all of the messages in the currently selected folder, or matching your search request. The message preview shows the contents of your currently selected message in the list above the preview.

Understanding the folder list

The folder list is the way that Evolution separates and categorizes your email. The first group of folders in the list is titled "On This Computer". This set of folders are you *local* folders—they reside on your computer only. If you use POP servers to retrieve your email, any new message will be placed in the **Inbox** local folder.

You can click on any folder to see its contents appear in the message list on the right side of the window.

Each of the initial folders in the list is special:

- **Inbox** stores your incoming messages.
- **Drafts** stores messages that you've worked on, but have not yet sent.
- **Junk** stores messages that have been identified as being junk. Junk mail is also known as "spam".
- **Outbox** contains messages that you've finished composing, but which have not been sent yet. For example, if you are working on your email whlie offline (such as in an airplane), you can still click the **Send** button on an email message that you finish writing. The message will be moved to the Outbox, and will remain there until the next time you are able to send

and receive messages. Once you can send and receive messages, all email messages in the outbox will be sent out.

▸ **Sent** contains copies of messages that you had sent. Once a message from an Outbox is sent, it is copied to the Sent folder.

▸ **Templates** stores email message templates—partial messages that you have composed and saved as templates. You can use a message stored in the template folder as a starting point for other messages.

▸ **Trash** contains messages that you have deleted. By default, the trash will be emptied every time you exit Evolution.

If a folder contains any unread messages, the folder's name will be displayed in bold, and the number of unread messages will be displayed in parentheses following the folder name.

If you use an IMAP server to retrieve your email, then your remote IMAP folders will be shown in the folder list below the "On This Computer" section. The list of remote folders will be shown with a heading of the name that you have given to the account. With IMAP, your email messages will arrive in your remote Inbox.

Towards the bottom of the folder list, Evolution will show a list of "Search Folders". These are special folders that represent certain messages that match search rules. Please see the section on Finding Messages for more on search folders.

Managing folders

In addition to the initial folders, you can create your own folders to manage your email.

To create a new folder, choose the **Folder** menu, and then choose **New**. Type in a name for the folder that you would like to create. Then, from the list of folders below, select the *parent* folder. For example, if you would like your new folder to be placed under the Inbox then select the Inbox folder. If you select "On This Computer", then your new folder will be placed under "On This Computer" in the folder list.

Once you've made your selection, click the **Create** button to create the folder. Your new folder should now be in the folder list.

You can move folders that you have created. To do so, click on the folder that you would like to move, hold down the mouse button, and drag the folder to a new parent folder. Once the mouse cursor highlights a new parent folder, release the mouse button to finish the move.

You can also right click on a folder, and select the **Move...** option. Then, select the new parent folder, and click the **Move** button.

To delete a folder, right click on the folder and select the **Delete** option. To confirm that you want to delete the folder, click the **Delete** button.

Checking and reading messages

Checking mail

When you finish setup, or when you start Evolution in the future, Evolution will first try to connect to your email provider to check your email. In order to connect, Evolution will need to know your email account password, and will ask you for it.
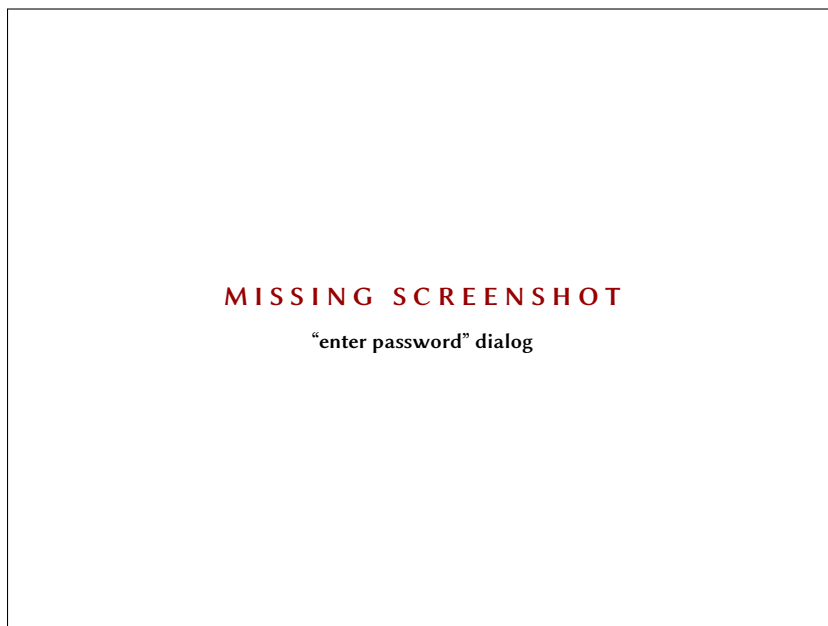
MISSING SCREENSHOT
"enter password" dialog

In the "Enter Password" window, enter your password and click the "OK" button. If you wish for Evolution to remember this password and not ask you in the future, you can select the **Remember this password** option.

Evolution will then show a "Send and Receive" window, showing the progress of the operation such as how many messages are being retrieved.

Listing messages

The top right portion of the Evolution window is the message list. Here, you can see email messages for your currently selected folder, or matching your search terms.

By default, the message list shows six columns of information for each message. The first column is a read/unread indicator. If a message has been read, the column shows an icon of an open envelope. If a message has not been read, the icon will show a closed envelope.

The second column is an attachment indicator. If a message contains an attached file, Evolution will show an icon of a paperclip in this column. Oth-
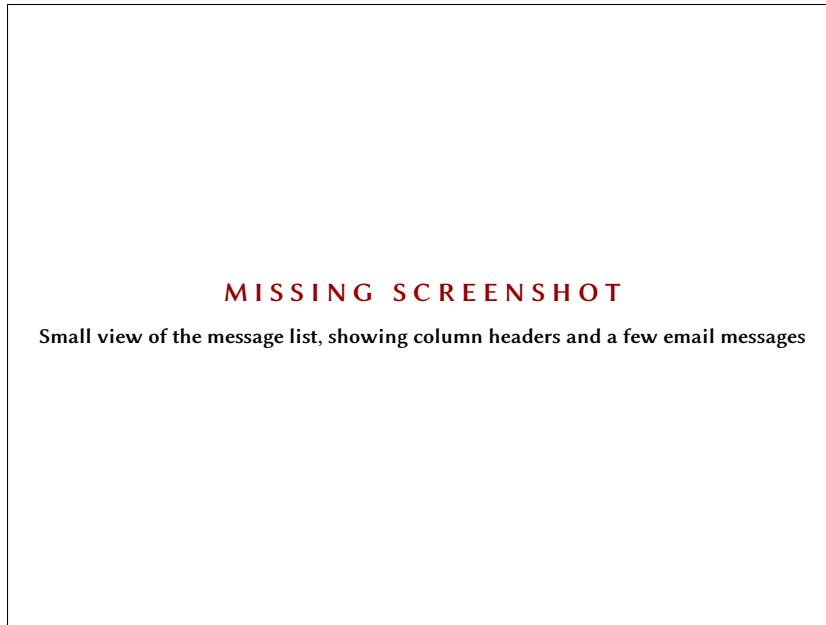
erwise, the column will be blank.

The third column is an importance indicator. If someone sends you a message marked with high importance, Evolution will show an exclamation mark in this column. Otherwise, this column will be blank.

The fourth column contains the sender of the message. Both the name and email, or just the email address, may be displayed in this column.

The fifth column contains the subject of the email message.

Finally, the sixth column is the date that the email was sent.

When you click on a message, its contents will be displayed in the preview pane below the message list. Once you select a message by clicking it, you can click the **Reply** button in the toolbar to begin composing a reply message to be sent to the sender, or click the **Reply to All** button to begin composing a reply message to be sent to the sender and other recepients of your selected message.

You can also click the **Trash** button in the toolbar in order to put the message in the Trash folder, or the **Junk** button to put the message as in the Junk folder. Note that Evolution, or your mail server, may automatically classify some mail as Junk.

In addition to the buttons on the toolbar, you can right click a message in the list. Evolution will open a menu with actions that you can perform for the message.

Sometimes, you may wish to take an action on multiple email messages (for example, delete multiple messages, or forward them to a new recepient). You can do this in Evolution by holding down the Ctrl key while clicking multiple messages—the messages you click will be selected. You can also

click one message to select it, then press and hold the `Shift` key and click on another message in the list. All messages in the list between the original selection and the one you just clicked will be selected. Once you have multiple messages selected, right click on one of them to perform your desired action.

Directly above the message list are the **Show** selector, and the search options. You can use the **Show** options to filter your view to show only unread messages, or only messages with attachments, etc.

The search options will be covered in a later section.

Previewing messages

When you select an email message, its contents will be shown in the preview pane below the message list.

The top of the preview pane will show the message header, which contains the sender, recepients, and subject of the message, as well as the date the message was sent. Below the header, Evolution shows the contents of the message itself.

If a message was sent with HTML formatting, some of the images may not be displayed when a message is previewed. To display the missing images, select **View** from the menubar, then **Load Images**, or press `Ctrl+I`. If your internet connection is active, the missing images should then load.

Note that loading images may provide a way for the sender to track your receipt of the message. We do not recommend loading images in messages that you suspect are Junk.

Opening messages

At times, you may want to display multiple messages at the same time. To do so, you can open each message in a separate window instead of just viewing it in the preview pane.

The open a message in its own window, double click a message in the message list. The message should then open in a separate window. You can go back to the message list and open another message, if needed.

In the open message window, you can use the options in the menubar or on the toolbar to reply to the message, categorize it, delete it, as well as perform other message actions.

Finding messages

There are three ways to search for messages in Evolution: you can use the search option at the top of the message list, use the Advanced Search function, or create a search folder.

To use message list search, enter the text you want to find in the **Search** field at the top right of the message list, and press `Enter`. The list of messages will change to show only those messages containing the text you entered.

To the right of the search field you should be able to see a drop down list of options such as "Current Folder", "Current Account", and "All Accounts". By default, Evolution will use the "Current Folder" option and will only show you results within the folder you've got selected in the folder list on

your left. If you choose the "Current Account" option, Evolution will search for messages in all folders within the current email account—such as all the folders "On This Computer" or in your IMAP folders, depending on your email setup. If you have multiple email accounts added to Evolution, choosing "All Accounts" option lets you search for messages in all of your accounts.

If no messages match the text you've entered, you can edit the text and try searching again. To return to the folder display, choose **Search** from the menubar and then choose **Clear**, or instead erase all the text you've entered in the **Search** field and press `Enter`.

In some cases, you may want to search for messages using multiple criteria. For example, you may want to find a message from a particular user with some specific words in the subject of the message. In Evolution, you can perform this search using the Advanced Search function.

To use Advanced Search, choose **Search ▸ Advanced Search**. Evolution should open the "Advanced Search" window. In the middle section of the window, specify your search criteria. For our example, to find messages from myfriend@example.com that contained "boat" in the subject, you would enter `myfriend@example.com` in the text field to the right of the drop down list with "Sender" selected, and would enter `boat` in the text field to the right of the drop down list with "Subject" selected. Then, click on **Remove** to the right of all lines that are unused, and click **OK** to perform the search. The message list should then only display messages that match your advanced search criteria.

When specifying the criteria for advanced search, you can use the **Add Condition** button to add additional lines. You can also change the selection in the drop down list at the beginning of each line to specify a different field to be checked, or change the drop down with "contains" selected by default in order to have a different type of a match. Please refer to the Evolution help documents for more information.

In some cases, you may want to perform the same search request on a regular basis. For example, you may want to always be able to see all messages from myfriend@example.com regardless of which folder you've used to store the message. To help with this type of a search, Evolution allows you to create Search Folders.

To create a search folder, choose **Search ▸ Create Search Folder From Search** from the menubar. Give the folder a name by entering it in the **Rule name** field at the top. Then, specify search criteria in the same way as in Advaned Search. Below the criteria, pick which folders should be searched by this search folder—for example, you can choose "All local and active remote folders" to search in all of your account's folders. When you are finished, click **OK**.

The new search folder should now be added to the list of search folders towards the bottom of the message list. If you click on the search folder to select it, you should be able to see a list of messages that match your search criteria.

Subscribing to IMAP folders

If you use IMAP to retrieve your email, you should see a set of folders in the folder list on the left side of the window that is titled with the name of your IMAP account. Folders like Inbox, Drafts, Junk and others should be displayed in the folder list.

If you have other folders in your IMAP account, you will need to subscribe to them. If you subscribe to a folder, Evolution will download messages for that folder whenever you check your email.

To subscribe to a folder select **Folder ▸ Subscriptions** from the menubar. Evolution should open the "Folder Subscriptions" window. From the **Server** drop down list choose your account name. Evolution should then show a list of folders in the list below.

Choose the folders you would like to subscribe to by selecting the check box to the left of the folder name. When you are finished, click **Close**. The folders will be updated the next time you check your email.

Composing and replying to messages

In addition to reading email, you will likely want to reply to the email you read, or compose new messages.

Composing new messages

To compose a new message, click the **New** button on the toolbar. Evolution should open a "Compose message" window.

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; Evolution will display the list of matching contacts below your text. Once you see the contact you intend to address, click their email address or use the `down arrow` key and then `Enter` to select the address.

If you would like to carbon-copy some contacts, enter their email addresses in the **Cc**: field in the same manner as the To: recipients. 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 **View ▸ Bcc Field** from the menubar. A **Bcc**: field should appear below the **Cc**: field. 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. To do so, click the **To:**, **Cc:** or **Bcc:** buttons to the left of the text fields. Evolution should open the "Select Contacts from Address Book" window. Use the list on the left side of the window to choose your contact, or type a few letters from your contact's first or last name in the **Search** field to filter the list to only show matching contacts.

Once you identify the contact you would like to address, click their name in the list. Then, click the **Add** button to the left of either the "To:", "Cc:", or "Bcc:" fields on the right of the screen. Your chosen contact will be added to that list. If you've added the contact in error, click their name in the list on the right, and click the **Remove** button. When you are finished picking contacts, click **Close** to return to the composing screen.

Enter a subject for your email. Messages should have a subject to help the recepient to identify the email while glancing at their message list; if you do not include a subject, Evolution 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, new messages will be sent in "Plain Text" mode. This means that no formatting or graphics will be shown to the recepient, but the message is least likely to be rejected or displayed illegibly to the receipients. If you know that your recipient uses a contemporary computer and a modern email program, you can send them messags that include formatting. To switch to this mode, click the drop down list button on the left side directly above the text field for the message contents. Change the selection from "Plain Text" to "HTML" to enable advanced formatting. When using HTML mode, a new toolbar should appear right under the mode selection that will allow you to perform advanced advanced font styling and message formatting.

When you have finished composing your email, click the **Send** button on the window's toolbar. Your message will be placed in the Outbox, and will be sent when you next check your email.

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 **Add Attachment** button at the bottom right of the email message window. Evolution should show the "Add attachment" window.

Select the file you would like to include in your message and click on the **Attach** button. Evolution will return you to the email message window, and your selected file should be listed in a section below **Add Attachment** button.

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 which 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 toolbar.

Evolution should 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. Each line in the message should be prefixed with a ">" character.

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 when you next check your email.

Using signatures

In order to give your messages a footer, Evolution allows you to use a "signature". Signatures in email are a bit of standard text that is added to the bottom of any new messages or replies.

When composing of replying to a message, click on the **Signature** drop down list below the toolbar just above the **To:** field. This list should contain any signatures that you have created, as well as an "Autogenerated" signature. If you select **Autogenerated**, Evolution will add two dashes, and then your name and email address to the bottom of the email message.

You can also specify some custom signatures. To create a signature, open the "Evolution Preferences" window by selecting **Edit ▸ Preferences** from the menubar. On the left side of the Evolution Preferences window, select **Composer Preferences** and then select the **Signatures** tab.

Click on the **Add** to add a new signature. Evolution should then open the "Edit Signature" window. Give your signature a name, and enter the contents of your signature in the big text field below. When finished, click on the **Save** button on the toolbar (the button's icon looks like a floppy disk). Your new signature's name should appear in the list in preferences. Close the preferences window.

Your signature should now show up in the drop down list in the compose/reply window.

Note that the two dashes are added automatically by Ubuntu, so there is no need to include them in your custom signature

Staying organized

The **Evolution** application in Ubuntu can let you keep and manage a list of your contacts, maintain a calendar, and a task list.

If you have already set up Evolution with an email account, you do not need to do any further setup to use these features. If you do not wish to use Evolution for email, you can still use it for managing your contacts or maintaining a schedule, as well as keep track of tasks and memos that you can create for yourself.

To start Evolution, open the **Applications** menu, then choose **Internet** and then **Evolution Mail**.

Managing your contacts

If you would like to keep a list of your contacts—personal or professional contact information for people and organizations—you can manage these contacts in Evolution.

To view contacts, click on the **Contacts** button below the folder list on the left side of the Evolution window. The folder list on the left will be replaced by a list of address book types. Click on an address book, for example "Personal".

The right side of the window will display a list of contacts. Click a contact to show the contact's details in the lower portion of the right side of the window.

If you use **Ubuntu One**, you may have two address books—a "Personal" address book stored on your computer, and an "Ubuntu One" address book. You can add contacts to either address book, though only the "Ubuntu One" address book is synchronized to your Ubuntu One account.

An address book is a collection of contacts and contact lists. It can either be stored on your computer, or on a remote server.

Searching for contacts

To find a contact, type in a few a few letters from the contact's first or last name in the search text box on the upper right of the window, and press Enter. The list below should change to only show contacts whose name matches your search term.

Adding or editing a contact

To make changes to an existing contact, find the contact in the list and double-click on the entry. Evolution should open a "Contact Editor" window for the contact.

Switch between the different tabs in the contact editor to make changes to the contact. Click **OK** when you have finished making your changes.

To add a new contact, click the **New** on the toolbar. Evolution should open the "Contact Editor" window. Enter the contact's details in the contact editor window, and click **OK** when finished.

Managing your schedule

If you like to manage your schedule with a computer, you can maintain this schedule in Ubuntu using Evolution.

To view your calendar, click on the **Calendars** button below the folder list on the left side of the Evolution window. The folder list on the left will be replaced by a list of calendars, and a mini-calendar showing the current month.

Evolution allows you to manage more than one calendar. For example, you could have a personal calendar and a school or work calendar. You can also subscribe to the calendar of a friend or family member who may choose to share their calendar with you.

Click on one of the calendars in the list. By default, you should have a "Personal" calendar in the list. The middle of the window should now show a view of the current day, showing all the hours of the current day.

If the calendar already has some events, Evolution will show the event in the day view between the hours when the event starts and finishes. You can double-click on the event to open its details, or drag the event to a different time or date to reschedule it.

In the day view, you can click on a different day on the mini-calendar on the left side of the screen. Evolution will then display that day in the day view.

You may also wish to see more than one day at a time. This will allow you to compare schedules on different days, or find a free day for an event you wish to schedule. In Evolution, you can click on the **Work Week** or **Week** buttons on the toolbar to see an entire week at the same time. Click the **Month** button on the toolbar to see a view of the entire month—if an event is difficult to read due to the small space alotted to each day, you can hover your mouse over the event to have Evolution show the full title of the event. Finally, the **List** button on the toolbar shows upcoming appointments in a list, allowing you to see all of your upcoming appointments at a glance.

On the right side of the window, Evolution displays a list of tasks and memos. You can add a new task or memo to Evolution

Adding a new event

The simplest way to add a new task is to click a time in the day view, and begin typing. An event "bubble" will appear, containing the text that you are typing. If you want to add a longer event, drag your mouse from the first time slot to the last before starting to type.

To add a new event without using the day view, click on the **New** button on the toolbar. Evolution should open the "Appointment" window. In the **Summary** field, enter a short title for the event as you want it to appear on the calendar. Optionally specify the location and enter a longer description if

Figure 3.9: visual example of adding an event in the day view by typing

you would like. Make sure that the time and date, as well as the duration, are as you want them. Finally, click on the **Save** button on the toolbar to save this new event (the button looks like a floppy disk, and is the first button on the toolbar).

Scheduling a meeting

If you would like to schedule a meeting with one of your contacts, Evolution can assist you in sending out an invitation and processing replies.

To create a meeting invitation, choose **File ▸ New ▸ Meeting** from the menubar. Specify the subject, location, time and duration, and description as when you create a regular event.

You will then need to add attendees to this meeting. To add an attendee, click on the **Add** button. In the list of attendees, Evolution will add a new row —type the attendee's email address or contact name.

When you are finished adding attendees, click on the **Save** button on the toolbar. Evolution should then ask you if you would like to send meeting invitations to your selected participants. Click **Send** to send out these invitations. The invitations will be sent the next time you check email in Evolution.

If your contact chooses to reply to the meeting invitation, Evolution will show you a new email message. In the body of the email message, Evolution will display an **Update Attendee Status** button. Click on that button to mark your contact as attending the meeting.

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, click **Applications** from the menubar, then choose **Internet** and then **Empathy IM Client**.

Figure 3.10: Main Empathy window

Empathy lets you connect to many instant messaging networks. You can connect to AIM™, Gadugadu, Google Talk, Groupwise, ICQ®, Jabber®, MSN®, Myspace®, qq®, XMPP™, Sametime®, Silc, SIP, Yahoo®, or 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 an 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 the **Forward** button to continue.

On the next screen, choose your account type from the drop down box 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 password.

Figure 3.11: 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 network to retrieve that information.

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

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

Enter your first name in the **First name** field, and your last name in the **Last name** field. Type in a way that you would like to be identified on your local network in the **Nickname** field. When you have filled all of the information, click the **Apply** button.

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 the **Apply** button.

You would like an 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 the **Forward** button to display the next set of options.

Choose the account type that you would like to create from the drop down 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 proceeding 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 the **Forward** button.

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 the **Apply** button 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 the **Apply** button.

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 on-line nearby for now** option.

Click the **Forward** button 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 the **Forward** button.

Changing account settings

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

Adding an account

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

Editing an account

You might need to edit and account if you change the password or get the password wrong. Select the account you want to change on the left side of
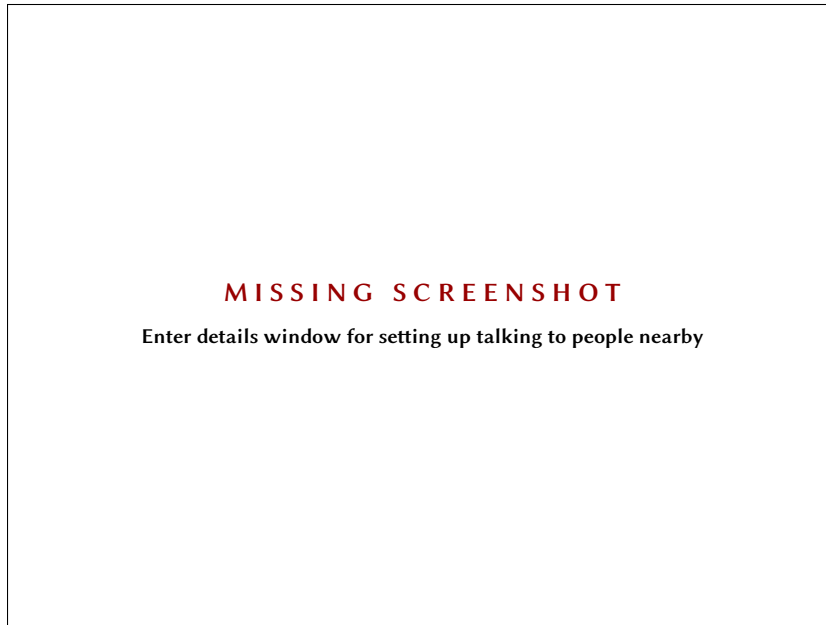
Figure 3.12: Enter details window for setting up talking to people nearby

the "Accounts" window. Empathy should show the current settings for the account. Once you have made your changes, click the **Save** button.

Removing an account

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

Editing contacts

Adding a contact

To add an account click the **Chat** menu, then click **Add contact**, this opens the "New Contact" window.

In the **Account** dropdown choose the account that you want to add the contact to. Your must add you contact to an account type that matched theirs.

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 e-mail ends in "@hotmail.com" then you would need to add it to an account ending in "@hotmail.com".

When you have chosen the account that you wish to add the contact to, you will need to add either their login id, username, screen name or e-mail address to the **Identifier** text field.

Then in the **Alias** text field enter the contacts name as you would like to see it in your contact list. Click the **Add** button to add the contact to your list

of contacts.

Removing a contact

Click the contact that you want to remove and then click the **Edit** menu, then click **Contact**, then click **Remove**. This will open the "Remove contact" window.

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

Communicating with contacts

Text

To communicate with a contact, choose 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, type 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 talking to more than one person then all of the conversations will be shown in tabs within the same window.

Audio

If your contact has audio capabilities then there will be an icon of a microphone next to their name. Click the microphone icon to open a 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 pressing the **Hang up** button.

Video

If your contact has video chat capabilities then there will be an icon of a webcam next to their name. Click the icon to open a 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 choosing 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, click the **Contact** menu and then click **Send file**.

Empathy should open the "Select file" window. Find the file that you wish to send and click the **Send** button. A "File Transfers" window will open showing the chosen 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 contacts name. Empathy will open the "Select a destination" window. Choose a location where you would like Empathy to save the file, and click the **Save** button. Empathy should open the "File Transfers" window.

The "File Transfers" window shows you the progress of current file transfers. You can stop file transfers by clicking the **Stop** button, open transferred files by clicking the **Open** button, and clear the list of completed transfers by choosing 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", "Invisible" and "Off-line". These can be changed in the main Empathy window from the drop down at the top of the window.

The same drop down lets you set a custom status by choosing "Custom Message..." next to the icon thats matches your status. Type what you would like your status to say, and click the green tick.

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 choosing the **Edit** menu, then choosing **Personal Information**.

Emapthy should open the "Personal Information" window. From the **Account** drop down choose the account that you want to change, then click the picture on the right hand side of the window.

Empathy should open the "Select Your Avatar Image" window. Find the file cotnaining your picture, and click the **Open** button. If you would like to return it to the default click the **No Image** button instead.

Viewing and editing photos

To view and edit photos you can use a program called F-spot this can be found by clicking the **Applications** menu, then **Graphics**, then **F-spot Photo Manager**. When you launch F-spot for the first time you will see the "Import" window, how to use this is covered in '**Importing**'.

F-spot displays your photos by date you can view photos from a specific month by clicking that month in the time line near the top of the window.

You can play slide shows of your pictures by clicking the green play triangle.
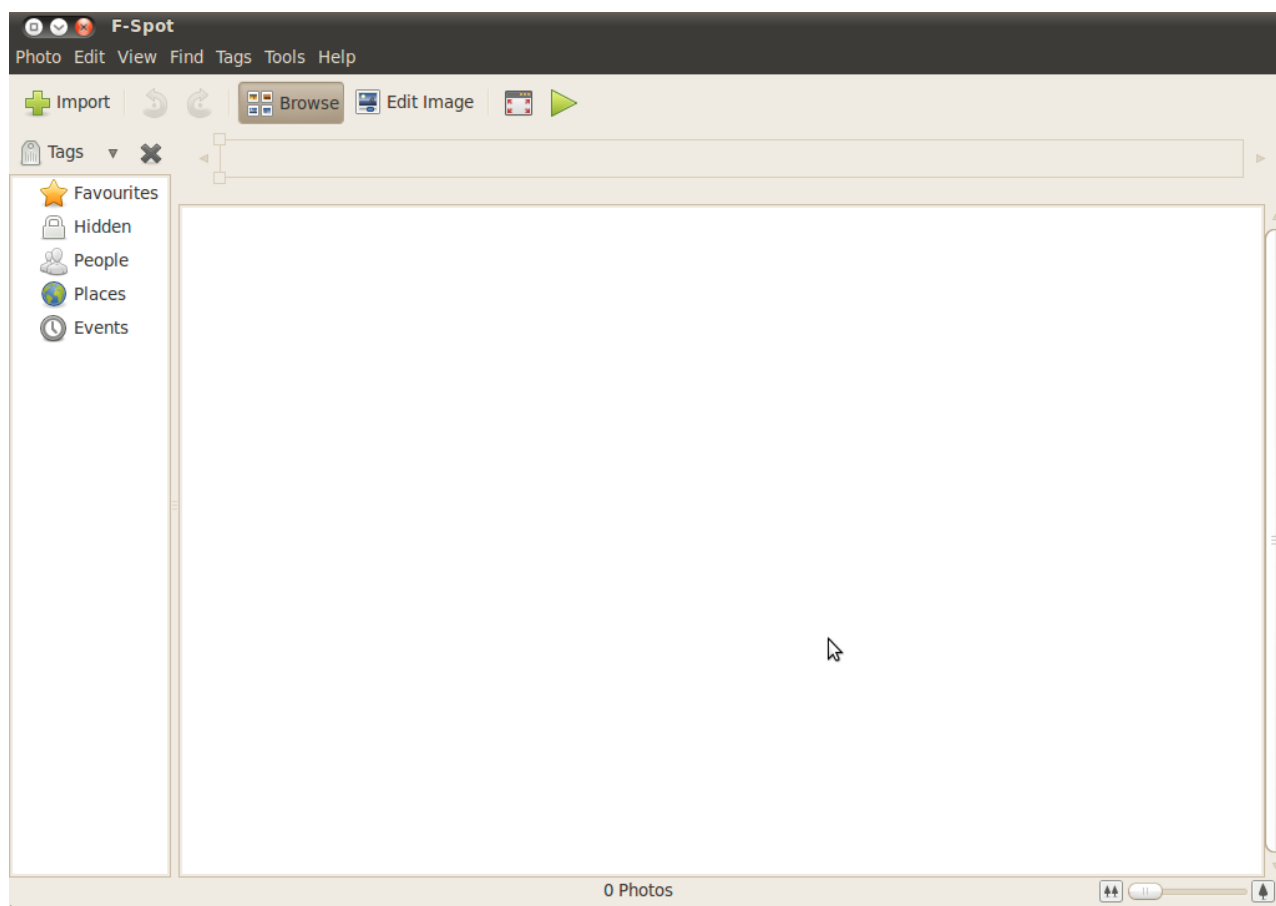

Figure 3.13: F-Spot let's you store, tag, and edit your photos.

A lot of this guide refers to the side bar on the left if you can't see it click the **View**, then click **Componets** and choose **Sidebar** making sure the option box is selected.

Version system

So when you edit a photo F-spot creates a new version so that the original is not lost. You can create a new version by clicking the **Photo** menu, then **Create New Version**.... This opens the "Create New Version" window. In the **Name** text field you can type what you would like to call the version and then click the **OK** button. A new version will have been created.

You can view previous versions by clicking the photo that you wish to view then clicking the **Edit Image** button. This changes the side bar on the left to the "Edit" side bar. In the bottom left the **Version** drop down allows you to choose previous versions of the photo.

You might want to rename a version so that you remember which version is which. To rename a version click the photo that you want to change, then click the **Edit Image** button. This changes the side bar on the left to the "Edit" side bar. In the bottom left the **Version** drop down choose the version of the photo that you want to rename. Then click the **Photo**, then click **Rename Version**, this will open the "Rename Version" window. Enter the new name in the **New name** text field, then if you want to rename the version click the **OK** button, if you don't want to rename the version click the **Cancel** button.

If when editing photos you may make a mistake and want to remove that version as you don't need it. To delete a version click the photo that you want to change, then click the **Edit Image** button. This changes the side bar on the left to the "Edit" side bar. In the bottom left the **Version** drop down choose the version of the photo that you want to delete. Then click the **Photo**, then click **Delete Version**, this will open the "Really Delete?" window. If you want to delete the version click the **Delete** button, if you don't want to delete the version click the **Cancel** button.

Importing

When you launch F-spot for the first time you will see the "Import" window. After the first launch you can import more photos by clicking the **Import** button.

When you import only the photos that you have just imported are shown to show all of your photos click the grey **X** to the right of the blue **Find**.

Where f-spot save photos

When importing pictures in the "Import" the **Copy files to the Photos folder** depends on where the photos are saved.

If the **Copy files to the Photos folder** option is ticked then F-spot will copy the photos into the **Photos** folder which is within the **Pictures** folder. The pictures are then sorted by year, month and then date.

If the **Copy files to the Photos folder** option is un-ticked then F-spot will not copy the pictures into the **Photos** folder.

From file

To import photos that are saved on you computer click **Select Folder** from the **Import Source** drop down. This gives you the "Import" window, in this window navigate to the folder that the photos are in and click the **Open** button.

When the loading bar says "Done Loading" all the photos in that folder and any sub-folders are then displayed in the "Import" window. You can exclude importing photos from sub-folders buy clicking the **Include subfolders** option so that the option is un-ticked.

All of the photos are imported by default, but you can choose individual photos by holding down the **Ctrl** key. Duplicates are automatically detected when the **Detect duplicates** option is selected.

You can attach tags by typing the names of the your current tags in the **Attach Tags** text field. If you want to use multiple tags then separate them with a comma.

Once you have chosen the photos that you want import click the **Import** button.

From digital camera

Plug your camera into the computer and turn the camera on a new window should pop up, check that **Open F-spot** is shown in the drop down and click the **OK** button. This will show the "Import" window, in the **Import Source** drop down click the option that looks like ...**Camera**.

A "Select Photos to Copy from Camera..." window will open, you can then click the photos that you want to copy. All of the photos are selected by default but you can add or remove individual photos by holding the **Ctrl** key.

You can attach tags to all of them by clicking the **Attach tag** option and choosing the tag in the **Attach tag:** drop down. For more information about tags see "Organizing photos"

You can change where the files are saved in the **Target location** drop down. The default is the **Photos** folder, this is where F-Spot saves the pictures.

Once you have chosen the pictures that you want to import click the **Copy** button.The "Transferring Pictures" window opens and shows the copying progress, when the copying is complete the progress bar will say **Download Complete**. Fianly Click the **OK** button to show the pictures in F-spot

Organizing photos

F-Spot makes finding photos of the same type easier by using tags, you can apply as many tags to a photo as you like.

You can apply tags to photos by selecting the photos and then right click and move the mouse to **Attach Tag** and click the tag you want add. You can attach tags when importing photos this is covered in the "Importing" section.

You can make new tags by clicking the **Tags** and clicking **Create New Tag**.... This will open up the "Create New Tag" window, type the name of the tag in the **Name of New Tag:** text field. The **Parent Tag:** drop down allows you to choose the tag that it is a sub-tag of.

Editing Images

A photo might want to be edited to remove; something at the edge, discoloring, red-eye's or straighten a photo. To edit a photo click the one that you want to edit and then click the **Edit Image** button. This changes the side panel on the left of the "F-Spot" window. The panel shows eight options **Crop**, **Red-eye Reduction**, **De-saturate**, **Sepia Tone**, **Straighten**, **Soft Focus**, **Auto Color**, **Adjust Colors**. Some of these options are explained in more detail in the next section.

Crop

You might want to crop a photo to change the framing or remove part of the edge of the photo. Click the **Crop** on the left panel, then in the **Select an area to crop** drop down you can choose the ratio that you would like to crop with. You might want choose the ratio that matches the ratio that you print, so that the photo is not stretched.

You can create custom constraints if one of the defaults does not meet your requirements. This is done by choosing **Custom Ratios** from the **Select an area to crop** drop down. This gives you the "Selection Constraints" window, click add this will place a new entry on the left of the window.

Once you have chosen your constraint, move the cursor to one conner of the section that you want to keep. Click and hold the left mouse button and drag it to the opposite corner of the section that you want to keep. You can then let go of the mouse button.

To resize the box move the mouse until an arrow points to the side that you want to move. Click and hold the left mouse button, move the mouse until the edge is in the right place.

All ratios work in portrait and landscape mode, to change between you need to click the edge as if you were to resize the box. Moving the cursor between top right and bottom left switches between portrait and landscape.

Red-eye Reduction

If you have taken a photo and the flash caused the subject to have red-eye's this can be removed by first clicking the **Red-eye Reduction** button. Move the cursor to the one corner of the subjects eye and hold the left mouse button, then drag the cursor to the opposite corner and let go of the mouse button.

This box can be moved by moving the cursor into the middle until a hand is shown, then click and hold the left mouse button and move it into the

correct place. When it is in the correct place you can let go of the left mouse button.

To resize the box move the mouse until an arrow points to the side that you want to move. Click and hold the left mouse button, move the mouse until the edge is in the right place.

When the box covers all of the red in one eye click the **Fix**. You will need to repeat the process for each of the subject's eyes that is effected. and a

Straighten

If you have a photo that you took an is at an angle then the click the **Straighten** button. Then move the slider until the picture is straight again. F-Spot will auto crop the picture to remove any white parts that occur due to the rotation. When you are happy that the picture is straight then click the **Straighten** button.

Auto Color

To automatically correct the coloring of the photo click the **Auto Color** button.

Exporting to web services

F-spot allows you to export you photos to a Web Gallery, Folder or CD and the following services; SmugMug©, PicasaWeb™, Flickr™, 23hq and Zooomr™.

You can export to these services by choosing a picture and then clicking **Photo** the **Export to** and click the service that you require. This will open a window in which you can enter your account name and password, then you will be able to upload pictures.

Watching videos and movies

You can play videos and dvds, click **Applications**, then click **Sound & Video**, then click **Movie Player**. This will open the "Movie Player" window.

Codecs

⚠️ *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, this is done by enabling the **Multiverse** repositories for how to do this see Chapter 5: Software and Packaging.
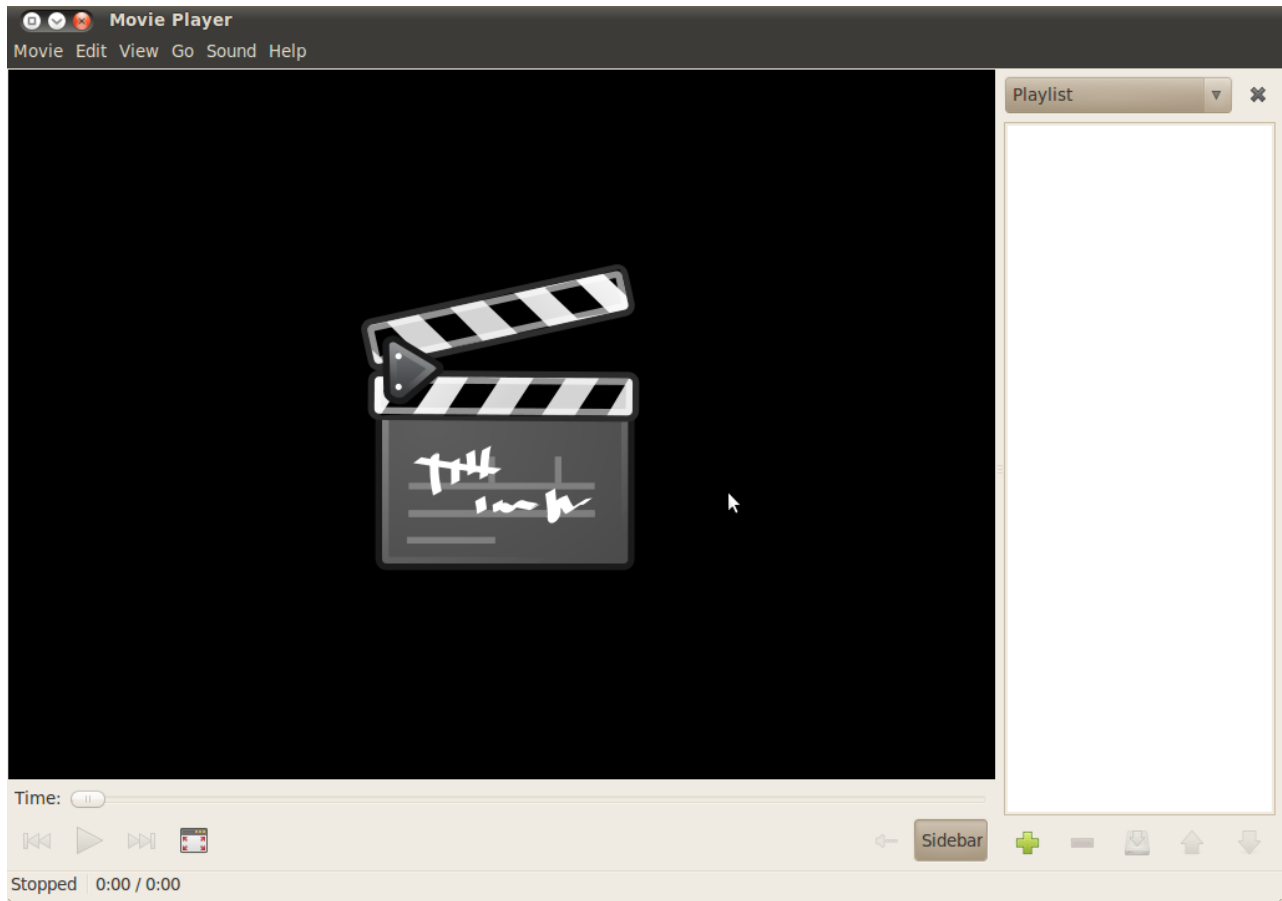
Figure 3.14: Totem plays music and videos.

Once you have enabled the repositories, click **Applications** then **Ubuntu Software Centre**. When the "Ubuntu Software Centre" window opens use the search box in the top right and search for the following "gstreamer0.10-ffmpeg," "gstreamer0.10-plugins-bad," "gstreamer0.10-plugins-ugly," "gstreamer0.10-plugins-base," "gstreamer0.10-plugins-good," "libdvdread4" and "libdvdnav4," "libdvdcss2."

When you find each one click it and then if there is an **Install** button click it, if there is a **Remove** button then it is already installed. Clicking the **Install** button may open the "Authenticate" window, enter you passowrd in the **Password** text feild. Once you have entered your password click the **Authenticate** button, this will start the installation.

You also need to run a command, click **Applications** then click **Accessories** then click **Terminal**. This will open the "Terminal" window, then type the command as shown below.

For more information on the terminal see Chapter 6: The command-line

```
$ sudo /usr/share/doc/libdvdread4/install-css.sh
```

Once you have typed the command, press the enter/return key. You may be asked for your password to authorise this type in you password and press the enter/return key and wait for it to finish. Once it has finished you can close the "Terminal" window.

Playing videos from file

Click **Movie**, then click **Open**…, this will show the "Select Movies or Playlists" window. Find the file(s) that you want to play and click the **Add** button. The video(s) will start playing straight away.

Playing a dvd

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

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

Listening to audio and music

Working with documents, spreadsheets, and presentations

Quite often, you may need to use your computer for work. You may have a need to use a word processor to write a document. You may need to work on a spreadsheet, do calculations on a table of data or create a data chart. You may want to work on slides for a presentation.

In Ubuntu, you can use the OpenOffice.org suite of applications for these tasks.

Working with documents

If you need to work with documents, you can use the OpenOffice.org Word Processor. To start the word processor, open the **Applications** menu, choose **Office**, and then choose **OpenOffice.org Word Processor**. Ubuntu should then open the main window for the word processor. .

The OpenOffice.org Word Processor is also known as the OpenOffice.org 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 OpenOffice.org Spreadsheet. To start the spreadsheet application, open the **Applications** menu, choose **Office**, and then choose **OpenOffice.org Spreadsheet**.

Working with presentations

If you need to work with slides for a presentation, you can use the OpenOffice.org Presentation. To start the presentation application, open the **Applications** menu, choose **Office**, and then choose **OpenOffice.org Presentation**.

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.

Taking notes

You can take notes in a program called **Tomboy Notes**, you can use it to make a shopping or a to do list. Click **Applications**, then click **Accessories** and click **Tomboy Notes**

You can search all of your notes by typing a word in the **Search:** text field in the main tomboy window.

Making notes

To create a new note click **File**, then click **New**, the "New Note" window will open.

The "New Note" window will contain a blue title "New Note" this can be deleted and changed to a title that makes the note more memorable. The main content of the note can be typed where it says "Describe your new note here." Once you have entered your text just close your note as all changes are automatically saved.

MISSING SCREENSHOT

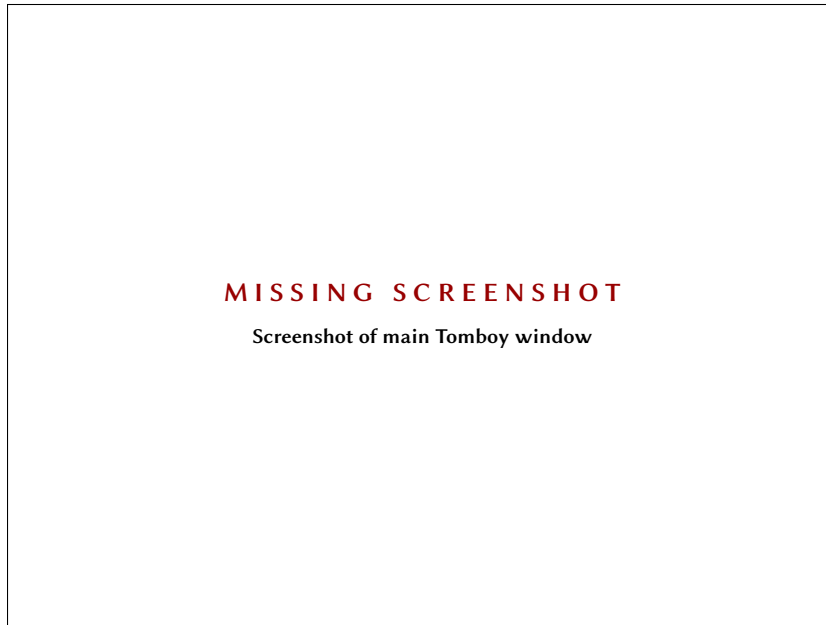**Screenshot of main Tomboy window**

Figure 3.15: Screenshot of main Tomboy window

To delete the note click the red delete note button, this will open a "Really delete this note?" window. If you do want to delete the note click the **Delete** button, otherwise click the **Cancel** button.

You can add a note to a notebook by clicking the **Notebook** button and clicking the option next to the notebook that you want to move the note to.

Organizing notes

You can organize your notes in Tomboy using "Notebooks," This makes finding you notes quicker and in a more logical location. To create a new note book click **File**, then **Notebooks**, and click **New Notebook**....

The "Create a new notebook" window will open, type the name of the notebook in the **Notebook name:** text field. Once you have typed the notebook name click the **Create** button.

The notebook will now show up in the sidebar of Tomboy Notes. You can click and hold on the note of your choice and drag it on top of the notebook that you want to move it to.

Synchronizing

You can synchronize you notes with you ubuntu one account, this means that you can access them across all of your ubuntu computer. You can also access them from `https://one.ubuntu.com/`.

To synchronize you notes click the **Edit**, then click **Preferences**, this will open the "Tomboy Preferences" window. Click the **Synchronization** tab and then in the **Service** drop down click **Tomboy Web**.

Next click the **Connect to Server** button, this will open a web page in **Firefox** you will need to enter the e-mail address that you use for ubuntu one and your password. Then click the **Continue** button, then in the **Computer Name** text field enter a name that reminds you of that computer and click the **Add This Computer** button. Firefox will then display a page that says something similar to "Tomboy Web Authorization Successful"

Now back at the "Tomboy Preferences" window click the **Save** button. A new window will pop up asking if you want to "synchronize your notes now," click the **Yes** button and the "Synchronizing Notes ..." window will show, once the synchronization is complete click the **Close** button.

If you want to synchronize the notes again click **Tools** and click **Synchronize Notes**. Your notes will start synchronizing, when they are done click the **close**

4   Preferences and 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 **Applications** scroll down to **Ubuntu Software Center**, When the "Ubuntu Software Centre" window opens use the search box in the top right and search for the following "sysinfo" Now click **More Info** and then click **Install** to install the application.

Now to run the application go to **Applications System Tools Sysinfo** the program should open up providing you with access to information about all your hardware on your system.

Keyboard and mouse

The keyboard and mouse are essential input devices for a large number of computer users today. Being a very common piece of kit for many computer users has led to some variation in the mouses and keyboards on offer today. In this section we will look at the different settings of your keyboard and mouse which will be of great use to international users.

Keyboard

The keyboard is likely to be one of the main ways that you interact with your computer. Without a keyboard this manual couldn't be written by the Ubuntu Manual team! Unfortunately not all keyboards are uniform in design, they can differ by country, by language or even by style. As an American if by mistake you purchase a keyboard from a UK retailer, then not only will you find that the

Displays

Hardware Drivers

A hardware driver is a small bit of code packaged in a file, which tells your computer how to utilize a piece of hardware. Every component in a computer requires a hardware driver to function, whether it's the printer, DVD

player, hard disk, or graphics card. Your graphics device is the component in your computer that powers your display. When you're watching videos on YouTube or 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.

Majority of the Graphics Devices are manufactured by three well known companies: Intel®, AMD/ATI®and NVIDIA®corp. You can find your device manufacturer by referring to your computer manual or looking for the specifications of your particular model over the Internet. The Ubuntu Software Center houses a number of programs that allow detailed system information to be obtained. **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 above companies, and many others, out of the box. That means that you don't have to find and install any drivers by yourself, Ubuntu takes care of it on its own.

In keeping 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 the proprietary driver (restricted driver) provided by the company may provide better performance or features that are not present in the open source driver written by the developer community. In other cases, your particular device may not be supported by the 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 from the start 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. To see if restricted drivers are available for your system, click **System** in the top panel, go to **Administration** and find **Hardware Drivers**. If a driver is provided by the company for your particular device, it will be listed there. You can simply click **Activate** and use the driver if you want. This process will require an active Internet connection and will ask for your password.

The Ubuntu developers prefer open source drivers because they allow the problem to be identified and fixed by anyone with knowledge in the community. Ubuntu development is extremely fast and it is a good chance that your device will be supported by open source drivers. You can use the Ubuntu Live CD to check for your device compatibility before installing Ubuntu or go online in the Ubuntu forums to ask about your particular device. Another useful resource is the official online documentation (help.ubuntu.com), which contains detailed information about various graphics drivers and known quirks.

Setting up your Screen Resolution

One of the most common display related tasks is setting up your screen resolution. Think of Screen Resolution in terms of displayable information on the your monitor/LCD; the higher the resolution, the better the result. Your monitor/LCD has a "native resolution," which is the highest resolution it designed to work at. Ubuntu correctly identifies that screen resolution by itself and sets it for you. However, due to a huge variety of devices out there, sometimes it can make a mistake and set up an undesirable resolution.

To set up or just check your screen resolution, go to **System**. Click **Preferences** and find **Display**. The Display application shows you your monitor name and size, the screen resolution and refresh rate. Clicking on the displayed resolution *for e.g. 1024 x 768 (4:3)*, would open a drop-down menu from where you can select the resolution of your choice.

Connecting and using your printer

You can add, remove, and change printer properties by clicking **System** then clicking **Administration** and then **Printing**. This shows the "Printing-localhost" window.

When you use and add printer it will need to be plugged in with a usb lead or connected to you network. It will also need to be switched on.

Adding a local printer

If you have a printer that is connected to your computer with a usb lead then this is a local printer. You can add a printer by clicking **Server**, then clicking **New** then **Printer**. The "New Printer" window will open.

In the left hand pain 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 the **Forward**

If your printer can automatically do double sided printing and 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 you will need to make sure the **Duplexer Installed** option is checked and then click the **Forward** button.

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.

Adding a network printer

Setting default printer

Changing printer options

Sound

USB drives

Burning CDs and DVDs

To create a CD or DVD click the **Applications** then click **Sound and Video** and click **Brasero Disc Burner**. This opens the "Brasero" window, this window has a side bar that gives yo five options to choose from. Each one of these is explained.
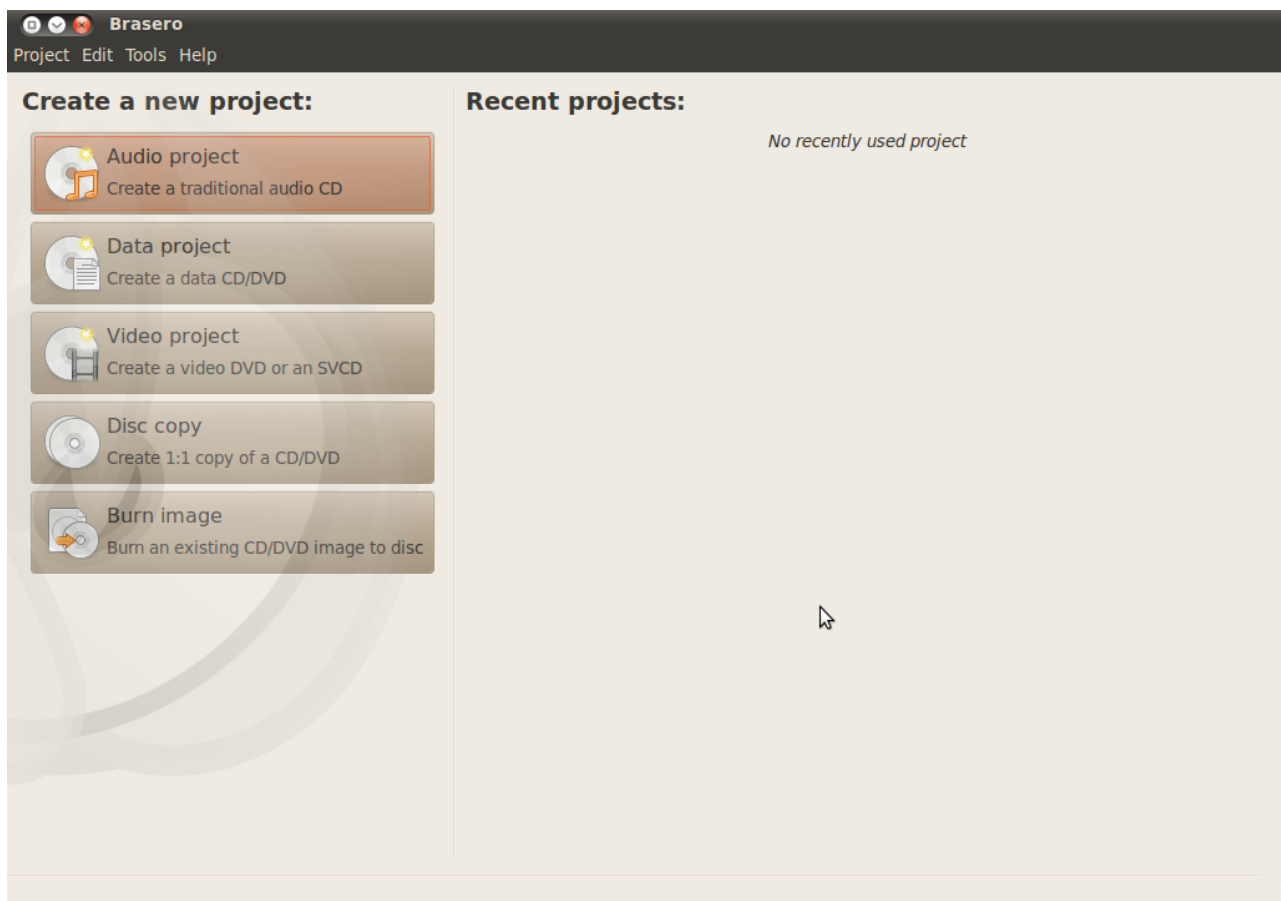

Figure 4.1: Brasero burns music, video, and data DVDs and CDs.

Universal options

These 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, this opens the "Select Files" window will open. Then navigate you way to the file that you want to add and click it and then click the **Add** button. Repeat this process for each file that you want to add.

Saving a project

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

Removing files

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

Burning the disc

Blanking a disk

If you are using a disk that has "RW" written on it and you have used it before then you can blank it so that you can use it again. By doing this you will lose all of the data currently on the disk. To blank a disc click the **Tools** menu and then click **Blank**, the "Disc Blanking" window will show. 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 make it quicker. However this will not fully remove the files and if you have any sensitive data on it would be best not to enable the **Fast blank** option.

Once the disc is blank the "The disc was successfully blanked" window is shown click the **close** button to finish.

Audio project

If you record your own music then you may want to make it into an audio cd so that your friends and family can listen. You can start an audio project by clicking **Project** then clicking **New Project** and then **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 || button.

You can slice files into parts by clicking the **Knife** like 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 the **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 type the name

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 clicking **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 may want to copy a disc so that you have another copy of

Burn image

Using a webcam

Scanning text and images

Most of the time, Ubuntu will simply detect your scanner and you just be able to use it. To scan a document, you need to follow these steps:

1. Place what you want to scan on the scanner.
2. Go to **Applications ▸ Graphics ▸ XSane Image Scanner**.
3. Alternately, pressing the scan button on the scanner should also work.

Does my scanner work with Ubuntu?

There are three ways to see if you scanner works in Ubuntu:

1. Simply plug it in. If it is a newer USB scanner, it is likely that it will just work.
2. Check <https://wiki.ubuntu.com/HardwareSupportComponentsScanners> which is Ubuntu specific.
3. SANE project listing of support scanners. The SANE (Scanner Access Now Easy) project provides most of the backends to the scanning software on Ubuntu.

Ubuntu can't find my scanner

There are a few reason why Ubuntu may give you a "No devices avaliable message":

- 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.
- The driver for your scanner is not being autoloaded.
- You need to install the firmware file (probably a `*.fw` or `*.usb`) for your particular scanner. You simply need to copy the file into `/usr/share/sane/`. In my case I got the firmware file from the CD that came with the scanner (if the file is not there, try installing the cd with WINE- don't use the program but search for the needed file and copy it or do a quick internet search) and copied this file "ccd548.fw" into /usr/share/sane/gt68xx/
- You have a parallel port scanner and you are not a member of the scanner group. The device /dev/parporto (or whichever parallel port your scanner is connected to) by default is only readable and writable by user lp and group scanner. You can become member of group scanner via the User Privileges tab of the Account Properties dialog in the User Settings (Users and Groups) administration tool.

Other devices

Firewire

Bluetooth

5 Software and Packaging

Software management in Ubuntu

On occasion, you may find that you need some additional software. You may decide to get an alternative web browser, or a different email program. You may need to do audio editing, or you may want to install some games.

Ubuntu is designed to make software very easy to find and install. Ubuntu keeps track of tens of thousands of different software, and helps you install the ones you want and then keep them up to date.

Differences with other operating systems

In most other operating systems, installing software requires you to purchase it in a store, or find and install software from a site on the internet.

In Ubuntu, you can install software in the same manner. However, you can also install over 25,000 software packages from the **Ubuntu Software Center**. The Software Center is a central location for software that the developers of Ubuntu have tested and determined to work with Ubuntu.

While other operating systems do not differentiate the sources of software, Ubuntu has a concept of *repositories*. A repository is a catalog of software that is available to an operating system.

When you install Ubuntu, you will automatically have access to the official Ubuntu repositories. You can choose to add additional repositories so that you can access additional software.

Software in Ubuntu is delivered in *packages*. A package is a collection of code that runs the application. In Ubuntu, applications can share packages to minimize hard drive usage and improve efficiency. These shared packages are called *dependencies* or *libraries*.

Using the Ubuntu Software Center

The **Ubuntu Software Center** is the most common way to install software in Ubuntu. The Software Center can help you install most of the applications that are available in the official repositories.

To start the Software Center, open the **Applications** menu and choose **Ubuntu Software Center**. Ubuntu should then display the main window for the Software Center.

Some software, such as command line utilities and some advanced servers, are not possible to install from the Software Center. You will need to use Synaptic Package Manager to install these packages.

The Software Center window has two parts—a list of sections on the left, and a set of icons on the right. Each icon represents a *department*, which is a category of software.

Figure 5.1: You can install and remove applications from your computer using the Software Center.

The sections on the left side of the window represent your current view of the Software Center's catalog. Choose the "Get Free Software" section from the list to see software in the catalog, or "Installed Software" to see a list of software that is already installed on your computer.

Finding software

If you are looking for some software to install on your computer, you may know the name of the software (for example, "Thunderbird" is a popular email application), or you may just know the category of software (for example, "audio editor" describes a number of software applications that can edit audio files).

To help you find software, you can either browse the Software Center catalog by department, or use the built-in search to look for software by name or keywords.

To browse browse the Software Center's catalog, choose the "Get Free Software" section from the list on the left. The Software Center should display a list of departments such as "Office," "Games," or "Sound & Video".

Installing software

Installing applications is two mouse clicks away. Once you find the software you are looking for,

1. *Click on the ➡ button to the right of the selected application.* You will be taken to the application's profile page. If you want to go back, you can click on the buttons on the top, they will look like this: **Get Free Software ▸ Selected Category ▸ Selected application**.
2. *Click the **Install** button.* You will be asked to input your password. This is one of the in-built security features to prevent anyone else installing software that you might not want. If your authentication was granted, you will be taken to the **In Progress** section while your application is installed.
3. *Wait until the application is finished installing.* When operations—such as application installations and removals—are currently running, you will see an animated icon of rotating arrows to the left of **In Progress** section in the sidebar. While waiting for the application to be downloaded and installed, you can read details about the current operation, watch the progress bar fill out, or click the **<stock-cancel>** icon to cancel the operation. You can also go back to the main software browsing window and queue other software to be installed.

Now you can run your application. Depending on what the program does, it will appear on the **Applications** menu, **System ▸ Administration** or **System ▸ Preferences**.

Note: If your password does not work, you are probably not permitted to install software on the computer. If you have further problems, please go to Chapter 8: Troubleshooting.

Removing software

If you thought installing an application was simple, removing one is just as easy.

To remove an application, follow these instructions:

1. *Find the application you want to remove* (either by using the search bar or by filtering through categories).
2. *Go to its page* by clicking on the ➡ button to its right, on the application list.
3. *Click the **Uninstall** button.* You will be asked to input your password. If your authentication was granted, you will be taken to the **In Progress** section while your application is installed. Your application will now be either in process of removal or waiting in line for it, in the **In Progress** section.

The same as when you install a new application, when you remove one the menus get updated too. This is one benefit of having an organized software management system.

Package managers

Package managers—like the **Software Center**—are applications that interact with the repositories. Package managers will let you search for, view information about and install and remove applications and packages. Other additional actions or information you will be able to reach depend entirely on the package manager you are using.

The principal package managers that Ubuntu provides are the **Software Center** and the **Synaptic Package Manager**. To find out more about them, read their respective sections in this chapter.

Different ways to obtain software

Even though Ubuntu provides the Software Center and the official repositories to help you install software, there are other ways to get software installed.

To see more information about Security in Ubuntu, visit Chapter 7: Security.

1. **Official repositories**, the standard method of downloading software. By getting software through the official repositories you ensure that your software is free of viruses or any other malware, that it is stable, and that it works with Ubuntu.
2. **Third-party repositories** that you can add to expand your software sources. These repositories are not as reliable as the official ones: the repository maintainer can put whatever they want into them. There is no solid guarantee that the software inside them is secure, stable, or that it works with your system. Read more instructions on this matter at Software Sources.

3. **Installers / deb packages** that you can download from software websites,
    CDs, USB drives, etc. This method is the most insecure of all. You should
    only obtain software this way when you trust the source. If you are new to
    Ubuntu, then you are probably accustomed to obtain software this way as
    it's similar to .exe files in Windows.

Making more software available

The **Software Center** will only list the applications available in the reposito-
ries of your software sources. To add more, or learn more about this, visit the
Using the Ubuntu Software Center section.

Synaptic Package Manager

The **Synaptic Package Manager** serves a similar purpose as the Ubuntu
Software Center, but gives your more control over dependencies and libraries.
    The **Synaptic Package Manager** is the most complete visual package
manager available in Ubuntu. Through it, you will be able to access any
package in your repositories; not just user applications.
    The **Synaptic Package Manager** will come in handy when you are looking
to perform actions other than just installing and removing packages. The
Synaptic Package Manager lets you:

Note: If you are not very familiar with advanced computing in Ubuntu you may probably want to stick with the **Software Center**.

- ▸ **Install** any package in your repositories. You can even select which version
  of a package to install, but note that this option is not available for all the
  packages.
- ▸ **Reinstall** in case the package's contents have been damaged, or you just
  want to get the default version back.
- ▸ **Update** every time a new version of the package is released.
- ▸ **Remove** any package you no longer need.
- ▸ **Purge** when you wish to remove completely a package, including saved
  preferences and stored configuration files.
- ▸ **Fix** broken packages.
- ▸ **Check properties** of any package, such as version, contained files, package
  size, dependencies, and much more.
- ▸ **Read and save** markings in your computer.

Usage

Using this package manager is very simple once you understand the basics
behind it. Ideally, you will mark different actions to perform on different
packages first, and then apply your changes. When you click the **Apply** but-
ton, the **Synaptic Package Manager** will do each of your marked actions, one
by one. Then you will be free to close the program, or wait until the process is
complete to make more changes.

To open the **Synaptic Package Manager** go to **System ▸ Administration ▸ Synaptic Package Manager**.

Finding what you want

If you are having difficulties finding the package you are looking for, you may try the **Quick search** box, the **Search** button (which opens a search dialog) or sort by the categories in the left side pane.

You can use the **Reload** button when you have made changes to your software sources, such as adding or removing repositories, so that the package manager can notice the changes and act accordingly.

Applying Your Changes

Once you find the package you are looking for, you can just open its right-click menu and there you will see listed all the actions you can perform on it. You can alternatively access these options through the **Package** menu.

When you are ready marking actions, click the **Apply** button and wait until the changes are made. Afterwards, you can close the application or mark more changes.

Software Sources

The **Software Center**—or the package manager you are using—will list only applications that are available in the repositories of your software sources. You can add or remove repositories to your software sources with the **Software Sources** application.

To start off, lets open the **Software Sources** application in the **System ▸ Administration ▸ Software Sources**.

Configuring the Ubuntu repositories

Ubuntu has four main repositories—which classify as the *official repositories* —which contain different types of packages.

- **Canonical-supported open source software (main)** - This repository contains all the open source packages that Canonical helps maintain.
- **Community-maintained open source software (universe)** - This repository contains all the open source packages that the community helps write and maintain.
- **Proprietary drivers for devices (restricted)** - This repository contains all the drivers available to devices or hardware you may use with your computer, which are non-free.
- **Software restricted by copyright or legal issues (multiverse)** - This repository contains all other software that, as the name suggests, might be illegal to use in some countries or states, so it's not enabled by default.

However, you can still use it if you enable this repository, under your own responsibility.

The **Source code** checkbox should not be enabled unless you are used to building applications from source.

Building applications from source is an advanced process that developers do to create packages. The only time you would ever need to build from source would be if you were using a custom kernel or want the latest version of an application that hasn't been packaged for Ubuntu yet. It's considered an advanced skill and therefore we don't cover building from source in this manual.

Selecting the best software server

Ubuntu grants permission to many servers all across the world to host exact copies of the Ubuntu official repositories. Ubuntu does this so that wherever you are you may have a server that is close to you to guarantee the best download speed possible.

If your downloads are slow, you might be getting your software from the wrong server. There are some aspects you should consider before selecting your server:

▸ **Connection speed**. Depending on the physical distance between you and your server, the connection speed may vary. Luckily for you, Ubuntu had thought about this long ago, and thus provides a tool to select the server to which your computer connects the best.

To select the fastest server available for you, click the combobox of the current server and select the **Other** menu option. After you are taken to the server selection window, click on the **Select Best Server** button, to the upper right. You will have to wait for your computer to connect to all the servers and then select the server with which it had the fastest connection.

▸ **Location**. You should choose the server closest to your location to provide the best connection speed.

To select a server by country, click on the drop-down menu of the current server. A window with all the countries with Ubuntu servers and the respective servers registered to them will appear.

▸ **Security**. This should not concern you at all, as Canonical ensures the third party servers are trustworthy. However, if you still think you might be at risk with just any server, you could select one of the Ubuntu secure servers, such as the **Main server** or the **http://ubuntu.securedservers.com** server.

If you are not connected to the internet, you may insert your CD to your computer and select the checkbox in the **Installable from the CD-ROM/DVD** box. Expect no more than the **Cdrom with Ubuntu 10.04 'Lucid Lynx'** inside the box.

Configuring Updates

Because Ubuntu is a *very* customizable operating system, it lets you specify which kinds of updates you want to download. To customize your updates, go to the **Updates** tab, in your **Software Sources** window.

Ubuntu Updates

This is where you specify which kinds of updates you will like to get installed in your system.

▸ **Important security updates** - These ensure that you get all the updates that make Ubuntu such a secure operating system time and time again when they are released. As the title suggests, it is important that you enable these updates.

▸ **Recommended updates** - These updates are not mandatory or important, but if you wish to keep your whole system up-to-date, you should consider enabling them.

▸ **Pre-released updates** - These updates are for those who just cannot wait whenever new versions of applications are out. Note that these updates have not being tested enough, so you may encounter problems with the updated applications. However, if you did encounter a problem, you could easily roll-back to the previous version, using the **Synaptic Package Manager**.

▸ **Unsupported updates** - These are the updates that the Ubuntu staff has not reviewed. Even though they are secure, as with the previous ones, you may encounter problems when using them.

Automatic Updates

Here you can customize your systems behaviour towards updates. You can customize whether it checks for updates or not, if it should install important updates right away (without asking for your permission), if it should only download them, or if it should only notify you about them. You can also customize the frequency with which your system checks for new updates.

Release Upgrade

Here you can customize which kind of system upgrades you will like to have available.

▸ **Never** - Choose this if you don't want to be notified about new Ubuntu releases at all.

▸ **Normal releases** - Choose this if you always want to have the latest Ubuntu release, no matter if it is Long Term Support 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 have—as the title suggests—support for a long time. If you own a company and you have Ubuntu as the operating system for your employees, you probably want to select this option.

Note: Every 6 months, Ubuntu releases a new version of the operating system. These are called normal releases. Every four normal releases—or 24 months—Ubuntu releases a Long Term Support (LTS) release. Long Term Support releases receive extra effort from the developers so they are more stable, and thus are used by companies that need extra-reliable setups.

Adding more software repositories

As you have probably read before in this chapter, there is a way that you can get software, from a package manager, from third-party—or non-Ubuntu—repositories. These "third-party repositories" are called **PPA**s.

To add a PPA to your software sources, go to the **Other Software** tab in the **Software Sources** window.

Definition: A **PPA** is a Personal Package Archive, or a third-party repository. The PPAs are spaces where people host digital projects, such as applications, documents, and many more.

What you will need

1. *The PPA intelligent URL.* To get it, go to the project owner's launchpad page, whether it is a team or a single launchpad user. When you are taken to the page, look for a header labelled "Personal Package Archives"; click on the link to the one that best matches the project you are trying to add a repository of. Then, you will be taken to a page titled "PPA for (…)". Look for a link below, in bold font, similar to this one: **lp:package**. That's your PPA intelligent URL.

MISSING SCREENSHOT

Screenshot of PPA page on Launchpad.

Figure 5.2: Screenshot of PPA page on Launchpad.

2. *The key file.* To get it, go to the same page where you got your PPA intelligent URL. Now, instead of copying that URL, click on **Technical details about this PPA** link. Then click the link below the "Signing key" header. Afterwards, make your last click on the 8-digit code. Copy all the text in the page and save it as a text file. That file is your key file.

Note: The key file is the security method used by Ubuntu to ensure that you are the one who is adding the PPA

Adding the PPA and authorizing the key

After you have the requirements, adding a PPA is a two step procedure:

1. *Add the PPA* by clicking on the **Add…** button, and copy the *PPA intelligent URL* to the **APT Line** input box.
2. *Authorize the key* by going to the **Authentication** tab (in the **Software Sources** window) and clicking the **Import Key File…** button. That will open up a browser for you; find your key file and you are done.

Before closing **Software Sources**, read the next section.

Getting ready to use it

Because Ubuntu needs to keep track of a long list—about 25,000 items long —of applications, it just does not attempt to update it with every small change you make. You have to update it every time you change a setting in **Software Sources**, such as adding a new repository/PPA.

Luckily for you, upon closing **Software Sources** you will be asked if you want to reload the software sources. To do so, click the **Reload** button. After **Software Sources** finishes reloading the database and closes itself, you will be able to access your package from any package manager.

6   The command-line

Introduction to the terminal

Throughout this manual, we have focused primarily on the graphical desktop user interface. However in order to fully realise 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, also known as a *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, also known as a *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?

For the average Ubuntu user, most day-to-day activities can be completed 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. 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 **Applications ‣ Accessories ‣ 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

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. There are different types of shells that accept slightly different commands. The most popular is called "bash", and is the default shell in Ubuntu.
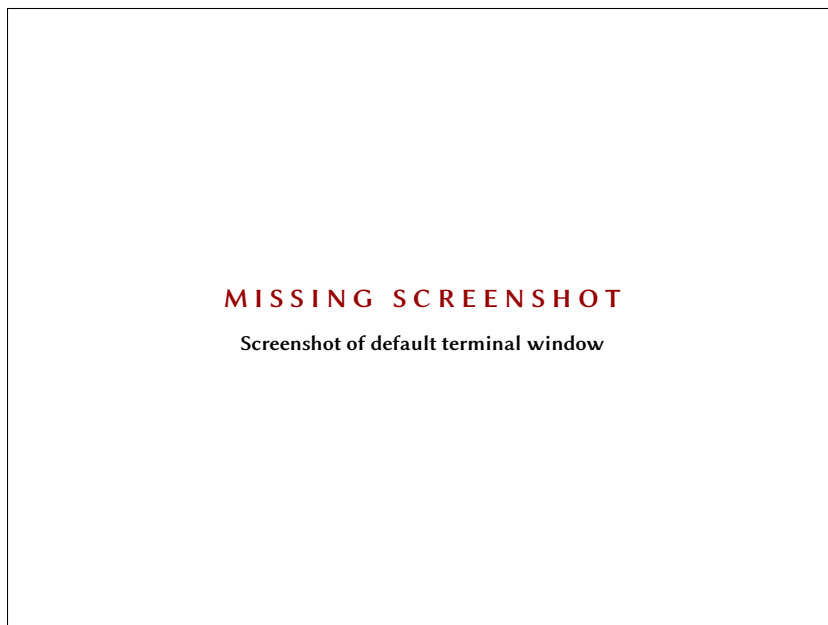
MISSING SCREENSHOT

Screenshot of default terminal window

by the current folder. The tilde ( ) means that the current folder is your home folder. Finally, the blinking block is the *cursor*—this marks where text will be entered as you type.

To test things out, type `pwd` and press Enter. The terminal should display "/home/*your-username*". This text is called the "output". You have just used the "pwd" (print working folder) command, and the output that was displayed shows the current folder.

All commands in the terminal follow the same approach. Type in the name of 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 folder (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 there are almost infinite possibilities available to you when using the command-line interface in Ubuntu. Throughout Part II 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.

Getting started with the command-line

Navigating folders

The pwd command is short for *print working directory*. It can be used to display the folder you are currently in. Note that the prompt (the text just

before the blinking cursor) also displays your current folder, so this command
is not usually necessary.

```
$ pwd
/home/yourusername/
```

The terms directory and folder refer to the same thing. They are used interchangeably throughout this manual as well as most guides you may find online.

The cd command is short for *change directory*. It allows you to change
from one folder to another.

```
$ cd /directory/you/want/to/go/to/
```

Getting a list of files

The ls command is used to get a list of all the files and folders that exist inside
the current folder.

```
$ ls
folder1
folder2
file1.txt
file2.txt
```

Moving things around

The mv command is used to move a file from one folder to another.

```
$ mv /move/this/file.txt /to/this/directory/
```

Note that the terminal is case-sensitive. For example, if you have a directory called Folder1, you must remember to include the capital letter whenever referring to it in the terminal, otherwise the command will not work.

The cp command is used to copy a file from one folder into another.

```
$ cp /copy/this/file.txt /to/this/directory/
```

Creating directories

The mkdir command is short for *make directory*, and is used to create a new
directory in the current folder or another specified location. For example, this
command will make a folder called "newdirectory" inside the current folder:

```
$ mkdir newdirectory
```

This command will ignore your current folder, and instead make one called
"newdirectory" inside a hypothetical folder called */tmp/example/*:

```
$ mkdir /tmp/example/newdirectory
```

You could then 'move into' this new folder (i.e. make it your current working directory), by using the cd command.

```
$ cd /tmp/example/newdirectory
```

Deleting files and folders

The rm command is used to delete files. For example, to delete a file located in your current folder:

```
$ rm deleteme.txt
```

To delete a file located in another folder (i.e. not inside your current working directory), you would need to include the *path* to the file. In other words, you are specifying the file's location. For example:

```
$ rm /tmp/example/deleteme.txt
```

The rmdir command is similar to the rm command, except it is used to delete folders. For example, this command would delete the folder called "newdirectory" that we created earlier.

```
$ rmdir /tmp/example/newdirectory/
```

Introducing sudo

When Ubuntu is first installed two accounts are created; your primary user account, and a 'root' account that operates behind the scenes. This root account has the necessary privileges required for modifying system files and settings, whereas your primary user account does not. Rather than logging out of your primary user account and then logging back in as root, the 'sudo' command can be used to borrow root account privileges for performing administrative tasks such as installing or removing software, creating or removing new users, and modifying system files.

For example, the following command would open Ubuntu's default text editor *gedit* with root privileges. This then allows you to edit important system files that would otherwise be protected. Your sudo password is the same password you use to login to your primary account, and is set up during the Ubuntu install process.

```
$ sudo gedit
[sudo] password for username:
Opening gedit...
```

When using sudo in the terminal, you will be prompted to enter your password. You will not see any dots, stars or other characters appearing in the terminal as you type your password, however don't be put off—this is an extra security feature to help protect you from any prying eyes.

⚠️ *The sudo command can give you virtually unlimited access to important system files and settings. It is important you only use sudo if you understand what you are doing. You can find out more about using sudo in Chapter 7: Security.*

Managing software through the terminal

In Ubuntu there are a number of ways to manage your software. GUI tools such as the Ubuntu Software Centre and Synaptic Package Manager were discussed in Chapter 5: Software and Packaging, however many people prefer to use the *apt* command (Advanced Packaging Tool) to manage their software from within the terminal. Apt is extremely versatile and encompasses several tools, however the most commonly used apt tool is the *apt-get* command.

Using apt-get

Apt-get is used for installing and removing packages from your system. It can also be used to refresh the list of packages available in the repositories, as well as download and install any new updates for your software.

Updating and upgrading

The *apt-get update* command can be used to quickly refresh the list of packages that are available in the default Ubuntu repositories, as well as any additional repositories added by the user (see Chapter 5: Software and Packaging for more information on repositories).

```
$ sudo apt-get update
```

You can then use *apt-get upgrade* to download and install any available updates for your currently installed packages. It is best to run *apt-get update* prior to running *apt-get upgrade*, as this will ensure you are getting the most recent updates available for your software.

```
$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be upgraded:
tzdata
1 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 683kB of archives.
After this operation, 24.6kB disk space will be freed.
Do you want to continue [Y/n]?
```

The terminal will give you a summary of what packages are to be up-
graded, the download size, and how much extra disk space will be used (or
freed), and then ask you to confirm before continuing. Simply press 'y' then
Enter, and the upgrades will be downloaded and installed for you.

Installing and removing

The following command would be used to install VLC media player using
apt-get:

Notice the sudo command before the apt-get
command. In most cases it will be necessary
to use sudo when installing software, as you
will be modifying protected parts of your
system. Many of the commands we will be
using from here on require root access, so
expect to see sudo appearing frequently.

```
$ sudo apt-get install vlc
[sudo] password for username:
```

To remove VLC, you would type:

```
$ sudo apt-get remove vlc
```

Cleaning up your system

Often software in Ubuntu depends on other packages being installed on your
system in order to run correctly. If you attempt to install a new package
and these *dependencies* are not already installed, Ubuntu will automatically
download and install them for you at the same time (provided the correct
packages can be found in your repositories). When you remove a package in
Ubuntu however, any dependencies that were installed alongside the original
package are not also automatically removed. These packages sit uselessly
in your system and can build up over time, taking up disk space. A simple
way to clean up your system is to use the *apt-get autoremove* command. This
will select and remove any packages that were automatically installed but no
longer required.

```
$ sudo apt-get autoremove
```

Adding extra software repositories

Sometimes you might want to install some software that isnt in the official
repositories but may be available in a whats called a *PPA*, ppa's or Personal
Package Archives contain software that you can install simply by adding that
ppa to your system, in versions of Ubuntu prior to Ubuntu 9.10 adding a ppa
to your system meant typing several really long commands in to a terminal,
however in Ubuntu 9.10 and later adding a ppa is as easy as typing one short
command into a terminal.

```
$ sudo add-apt-repository ppa:example/ppa
```

Now that you have installed a ppa you can just install software from it the usual way using the *apt-get install* command.

TODO: apt-get autoclean: removes all stored archives in cache for packages that can no longer be downloaded (packages that are no longer in the repo or that have a newer version in the repo).

apt-get clean: removes all stored archives in your cache.

apt-cache: used for searching through the packages stored in the computer's repository cache.

7   Security

This chapter introduces how to keep your Ubuntu computer secure.

Why Ubuntu is safe

Ubuntu is secure by default due to a number of reasons:

‣ Ubuntu has a clear divide between normal users and administrative users
‣ Open source software allows security flaws to be easily detected
‣ Security patches for open sources software are often released quickly
‣ Many viruses target Windows based system and so do not affect Ubuntu
  systems.

Security basics

This section describes basic security concepts and procedures.

Sudo

Ubuntu includes a special user, root, which has full administration privileges.
Where as a normal user can only access their own files and can not make
changes to the system such as installing programs.

In Ubuntu the root account has been disabled to improve security and can
not be used directly. Instead the initial user account created during the install
process has permission to conduct administrative tasks by using the **sudo**
command.

The sudo command allows a user to be given administration privilege for
a specific task. The following example runs the apt-get clean command as an
super-user:

```
$ sudo apt-get clean
```

> ⚠️ *sudo should only be used when needed. Operations that can be completed
> without sudo should be executed as the normal user.*

In addition to sudo the Ubuntu Desktop has a graphical version of sudo for
programs that require administration permissions. For example if a during a
system update the desktop is faded out and box asking for the user passwords
appears; this is to grant administration privileges permission to the user.

In Ubuntu, after using sudo in a shell, there is a period of 15 minutes where
you will not have to reenter the sudo password again. Once this timelimit

expires you wil be prompted to enter the sudo password again. It is possible to change this timelimit to any time that you like. Setting the timeout to 0 will mean that you will always be prompted for a password, it is also possible to extend this grace period.

Users must be given permission to use the sudo command, this can be done by adding users to the Admin group. See section Users and groups for details of how to do this.

⚠   *Only users that need administration access should be giving sudo permission.*
Do not give administration privileges to all users to make administration
easier.

Basic security precautions

Separate user accounts

When Ubuntu is installed, it is set up for a single person to use. If more than one person will use the computer, it is best for each person to have their own individual user account. This way each user can have separate settings, documents, and other files. If necessary, files can also be protected from being viewed or modified by other users without administrative privileges. See Users and groups for how to add additional users.

Passwords

Strong passwords are one of the simplest ways to increase the security of your computer. Passwords should not use names, common words and phases.

By default the minimum length of a password in Ubuntu is 4 characters. This can be changed by executing the following command, where the number following min and max are the minimum and maximum length of a password.

```
$ password required pam_unix.so nullok obscure min=6 max=8 md5
```

Regularly changing passwords also help to improve security. A users passwords can be set to expire after a given time. The current settings for a user password can be view by executing the following command.

```
$ sudo chage -l username
```

The following commands can be used to change the expiry date of a password.

Set the expiry date of the current password to 31st April 2010.

```
$ sudo chage -E 04/31/2010 username
```

Set the maximum number of days for a password to 90.

```
$ sudo chage -M 90 username
```

Set today as the last day for the current password.

```
$ sudo chage -d username
```

The options of these commands above can be combined into a single command.

```
$ sudo chage -E 01/31/2008 -M 90 -d username
```

Locking the screen

When leaving your computer unattended lock the screen, this stops anyone using your computer and requires your password to unlock the screen. To lock the screen:

‣ Click the User Switcher in the top right of the panel and then press Lock Screen, or
‣ Press Control+Alt+L to lock the screen. This keyboard shortcut can be changed in **System ‣ Preferences ‣ Keyboard Shortcuts**.

System updates

Ubuntu provides software and security updates; these updates should be applied regularly. See Chapter **??**: **??** for how to update your Ubuntu computer.

Trusting third party sources

Normally adding applications to your computer is done using the Software Centre which downloads software from the Ubuntu repositories as described in Chapter 5: Software and Packaging. However sometimes it is necessary to added software from other sources. For example when an application is not available in the Ubuntu repository or a newer version is needed to the one available.

Additional repositories are available from site such as nd Launchpad PPAs which can be added as described in Chapter 5: Software and Packaging. Some applications can be downloaded as .deb packages from a the website of a project. Alternately applications may be built from the source code for the application.

Using recognised sources such as a projects website, PPA or community repositories such as s more secure than downloading applications from an arbitrary source.

Whenever using a third party source consider how trustworthy the source is and be sure you know what it is you are installing.

Users and groups

Ubuntu, as with most PC Operating Systems, support multiple users accounts. This allows each user to have a separate user account. Ubuntu also has user groups, every user is a member of one or more groups. Every user also has a group with the same name as the user, of which the user is a member. Files and folders can be set to be accessible by a user and a group. By default a users files are only accessible by the user and system files are only accessible by the root user.

MISSING SCREENSHOT

Screenshoots of User and Groups window

Figure 7.1: Screenshoots of User and Groups window

Managing users

Management of users and groups can be done using the User and Group administration application, **System ▸ Administration ▸ Users and Groups**

To make adjustments to the user and group setting click the keys icon next the word "Click to make changes." This will produce a promote for your password to grant sudo privileges while using the User and Groups application.

Adding a user   Click the **Add User** button and complete the dialog which appears. Privileges granted to the new user can be changed in the **Privileges** tab, but in most cases the defaults privileges will be adequate. To create the user click the **OK** button.

Modify a user   Double click on a user in the list of users or select a user and click the **Properties** button. Change the details as required in the dialog that

appears. Click OK to apply the changes.

Delete a user   Select a user from the list and click the **Delete** button. This will deactivate the users account, but not remove the home folder.

Managing groups

Click the **Manage Groups** button to open the group management dialog.

Adding a group   To add a group click the **Add** button. In the dialog window that appears enter the group name and select the members of the group.

Modifying a group   To alter the users in an existing group. Select a group and click the **Properties** button. Select and de-select the users as required and 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 of a file of folder open **Nautilus** and navigate to the file or folder which need the group to be changed. Then either select the folder and use the **File ▸ Properties** menu item or right click on the file / folder and select **Properties**. In the Properties dialog that appears Click the the **Permissions** tab and select the required group from the **Groups** dropdown box, and select close.

Using the command line

User and group management can also be achieved by using the command line. It is recommended you use the graphical method above unless you have good reason to use the command line. For more information see the Ubuntu Server Guide https://help.ubuntu.com/9.10/ serverguide/C/user-management.html

Setting up a secure system

This section describes how to use additional security programs to increase the security of your system.

Firewall

A firewall is used protect your computer against unauthorized access by people on the Internet or your network. Firewalls block connections to your computer from unknown sources, which helps to prevent security breaches.
    Uncomplicated Firewall (UFW) is the standard firewall configuration program in Ubuntu. It is a command line program, but there is a graphical

interface for it called Gufw. See Chapter 5: Software and Packaging for how to install the Gufw package.

Figure 7.2: GUFW Window with Add service window

MISSING SCREENSHOT

GUFW Window with Add service window

Once installed started Gfuw **System ▸ Administration ▸ Firewall configuration**. To enable the firewall click the **Enable** check by default all incoming connections are denied. This should be suitable for most users.

If you are running servers on your system you will need to open the ports these services use. If you do not know what this means, then you are probably not running any servers and you should not open any ports.

To open a port click the **Add** button. For most usages the the **Preconfigued** tab can be used. 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

Ubuntu includes a number of tools to encrypt files and folders. Two common methods will be covered here. For further information on using encryption with single files and email see the Ubuntu Community Help https://help.ubuntu.com/community.

Home folder

During the install process it is possible to chose to encrypted a user home folder, see Chapter 1: Installation for how to do this.

Private folder

If you have not chosen to encrypt a user home folder it is possible to encrypt a single folder in a users home folder named Private. To do this:

1. Install ecryptfs-utils.
2. Run **ecryptfs-setup-private** to setup the private folder.
3. Enter your login password when prompted.
4. Either choose a mount pass phrase or generate one.
5. Record both pass phrases in a safe location. **These are required if you ever have to recover your data manually**.
6. Logout and Log back in to mount the encrypted folder.

After the Private folder has been setup any files or folders in Private folder will be encrypted when written to the disk.

If you need to recover your encrypted files manually see https://help.ubuntu.com/community/EncryptedPrivateDirectory.

8 Troubleshooting

Resolving problems

Sometimes, things simply do not work as they are supposed to. From time to time, we have all encountered problems setting up and using our Ubuntu systems, but these glitches are generally easily fixed. Below, we offer a troubleshooting guide to help resolve basic problems that users may encounter while using Ubuntu. If you exhaust the troubleshooting advice below, there are plenty of other options for getting assistance and support. See Getting more help to learn about community support.

Troubleshooting guide

The key to effective troubleshooting is to work slowly and methodically, documenting the changes that you make to your Ubuntu system. That way, you will always be able to roll back your work and also give fellow users information about your previous attempts, in the unlikely event that you should need to turn to the community for support.

I installed Windows and can no longer start Ubuntu

Sometimes, you may install Ubuntu and then decide to install Microsoft Windows as a second operating system running side-by-side with Ubuntu. While this is supported by Ubuntu, you may find that after installing Windows you may no longer be able to start Ubuntu.

When you first turn on your computer, Ubuntu or another operating system must also be started by the bootloader.   When you installed Ubuntu, you installed an advanced bootloader called **GRUB** that allowed you to choose between the various operating systems on your computer, like Ubuntu, Windows and others. However, when you installed Windows, you removed GRUB, taking away the option of which operating system to start. You can easily restore GRUB and your bootloader choice by using the CD you used to install Ubuntu.

Insert your Ubuntu CD into your computer and restart, making sure to have your computer start the operating system that is on the CD itself (see Chapter 1: Installation). Choose your language and select **Try Ubuntu**. Wait while the software loads, and then open a terminal. You will need to type some code to restore your bootloader. On the **Applications** menu, click **Accessories**, and then click the **Terminal** item. Enter the following:

Definition: A **bootloader** is initial software that loads the operating system when you turn on the computer.

```
$ 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 means that your system (Linux) is installed on device /dev/sda1, but your computer is booting to /dev/sda2 (where Windows is located).

First, you need to create a place to manipulate your Ubuntu installation:

```
$ sudo mkdir /media/root
```

Now, you need to 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
```

Now reboot your Ubuntu Live CD, removing the disk from the tray, and enjoy your Ubuntu system once again!

My login screen no longer appears when I turn on my computer or

The graphics on my screen appear corrupted

The simplest and easiest way to correct this issue is to order Ubuntu to reset the graphics configuration. Press and hold **Control**, **Alt** and **F1**. You should
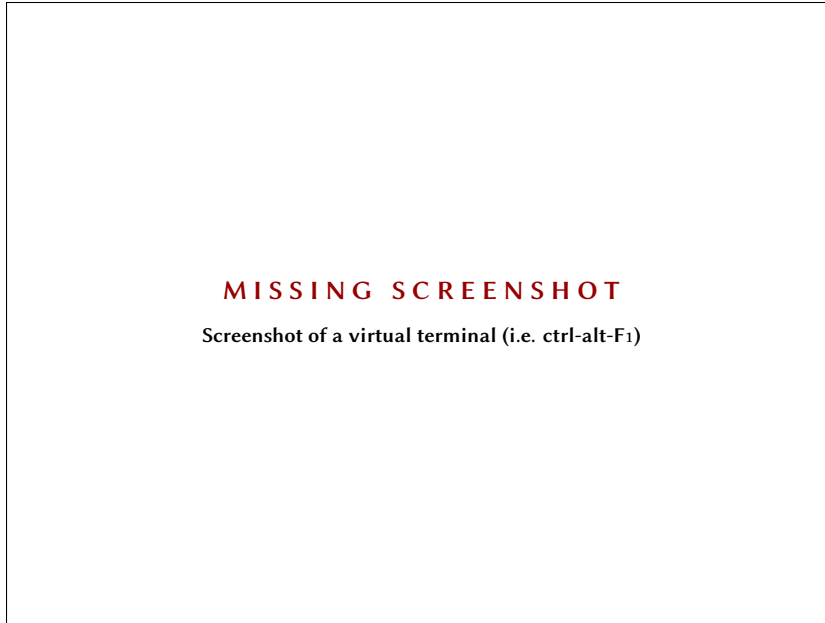
Figure 8.1: Screenshot of a virtual terminal (i.e. ctrl-alt-F1)

MISSING SCREENSHOT

Screenshot of a virtual terminal (i.e. ctrl-alt-F1)

now see a black and white screen with a prompt for your username and password.

Enter your username, press **Enter**, and then enter your password. Characters *will not* appear on the screen as you enter your password. Do not worry—this behavior is normal and was implemented for security purposes. Then, enter the following code and press enter:

```
$ sudo dpkg-reconfigure -phigh xserver-xorg
```

Enter your password at the prompt, as above. Allow Ubuntu to process the command, then enter:

```
$ sudo reboot now
```

Ubuntu will reboot, and your login screen should be restored.

I forgot my password

If you forget your password in Ubuntu, you will need to reset it using the "Rescue mode".

To start Rescue mode, shut down your computer and then power it up. As the computer starts up, press **Esc** when you see the white-on-black screen with a countdown (the GRUB prompt). Select the **Rescue mode** option using the arrow keys on your keyboard. Rescue mode should be the second item in the list.

MISSING SCREENSHOT

GRUB screen with Rescue Mode option highlighted

Figure 8.2: GRUB screen with Rescue Mode option highlighted

Wait while Ubuntu starts up. You *will not* see a normal login screen. Instead, you will be presented with a terminal prompt along the lines of

```
root@something#
```

To reset your password, enter:

```
$ passwd username
```

Replace 'username' above with your username. Ubuntu will prompt you for a new password. Enter your desired password, press enter and then enter your password again, pressing enter after you are done. 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.

Some text looks incorrect or corrupted

If you are seeing some text that looks odd or fails to display entirely, the designer probably intended it to be viewed using fonts that are not installed on your computer. This can be fixed by installing the missing fonts, available in

the Universe repository. See Chapter 5: Software and Packaging (Configuring the Ubuntu Repositories) to enable this repository.

Open the **Synaptic Package Manager** by navigating to the **System** menu in the top-left corner of the screen and choosing **Administration** and then **Synaptic Package Manager**. Enter your password when prompted. In the search box in the top toolbar of the application, enter **mscorefonts**. Mark the package **ttf-mscorefonts-installer** for installation. Click **Apply** in the top toolbar, then wait while Ubuntu installs the fonts.

Refreshing the troublesome page or reopening the offending document should fix the problem.

Where are my deleted files?

If you have 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. To access the "Trash" folder, select the **Places** menu, and choose **Computer**. Ubuntu will open the "Computer - File Browser" window. Choose **Trash** from the list of places in the left-hand sidebar of the window. To remove items from the trash, simply drag them wherever you would like.

I can't play certain audio or video files, or interact with some websites

Many of the formats used to deliver rich media content are **proprietary**, meaning they are not free to use, modify and distribute with an open source operating system like Ubuntu. Therefore, the default Ubuntu installation does not include the ability to use these formats. If you find yourself in need of a proprietary format, you may install the files necessary for using this format with one command. Make sure you have your Universe and Restriced repositories enabled. See Synaptic Package Manager (Configuring the Ubuntu Repositories) to enable this repository.

Open the **Synaptic Package Manager** by navigating to the **System** menu in the top-left corner of the screen and choosing **Administration** and then **Synaptic Package Manager**. In the search box in the top toolbar of the application, enter **ubuntu-restricted-extras**. Mark the package **ubuntu-restricted-extras** for installation. Click **Apply** in the top toolbar, then wait while Ubuntu installs the appropriate software.

Once this command has finished, your rich media content item should work properly.

Everything on my monitor is too big or too small

How can I change my screen resolution?

The image on every monitor is made up of millions of little colored dots called pixels. Changing the number of pixels displayed is called changing the

Determine if this is possible to perform with the Software Center in Lucid

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 actual 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 **Display** allows users to change the resolution. Open it by choosing **System** from the Main Menu, then choosing **Preferences** and then **Display**. The resolution can be changed using the drop down list within the program. Picking options higher up on the list, those with larger numbers, will increase the resolution.

Figure 8.3: gnome-display-properties screenshot with resolution dropdown open

MISSING SCREENSHOT

gnome-display-properties screenshot with resolution dropdown open

Test out various resolutions by clicking **Apply** at the bottom of the window. 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. A dialog box will also be displayed. It gives the option of reverting to the previous resolution setting or keeping new resolution. The dialog box will time out in 30 seconds, restoring the old resolution.

This feature was implemented to prevent the user from being locked out of the computer by a poorly-rendering resolution. When you have finished setting the screen resolution, click **Close**.

MISSING SCREENSHOT

gnome-display-properties screenshot of confirm or revert dialog

Ubuntu is not working properly on my Apple MacBook or MacBook Pro

Ubuntu installations on Apple hardware often do not enable the use of all of the built-in hardware, including the iSight camera and the wireless internet adapter. The Ubuntu community offers documentation on fixing these and other problems. If you are having trouble installing or using Ubuntu on your Apple laptop, please follow the instructions at `https://help.ubuntu.com/community/MacBook`. You can select the appropriate guide after identifying your laptop model number. Instructions are included on the web page above.

Ubuntu is not working properly on my Asus EeePC

Ubuntu installations on EeePC hardware often do not enable the use of all of the built-in hardware, including the keyboard hotkeys and the wireless internet adapter. The Ubuntu community offers documentation on fixing these and 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 also links to a specific installation guide for EeePC hardware.

My hardware is not working

Ubuntu sometimes has problems running on certain computers, generally when hardware manufacturers use non-standard or proprietary components. The Ubuntu community offers documentation to help you troubleshoot whatever issues arise, including problems with wireless cards, scanners, mice and

printers. The complete guide can be found on Ubuntu's support wiki, acce-sible at `https://wiki.ubuntu.com/HardwareSupport`. If you continue to need support, please see Getting more help for more troubleshooting options, including human assistance.

System maintenance

Cleaning unused packages

Over time, Ubuntu's software packaging system can accumulate unused packages or temporary files. These temporary files, also called caches, contain package files from all of the packages that you have ever installed. Eventually, this cache can grow quite large.

To clear the cache, you can either use the *clean*, or the *autoclean* option for a command-line program called **apt-get**. The clean command will remove ev-ery single cache item, and the autoclean command only remove cached items that can no longer be downloaded. Items that can no longer be downloaded are generally useless. To run clean, open a terminal window and type:

```
$ sudo apt-get clean
```

Packages can also become unused over time. If a package was installed to satisfy a dependency of a program, and then that program was removed, you no longer need the package. This means that it is useless and you can remove it with the autoremove option.

Go to a terminal and type:

```
$ sudo apt-get autoremove
```

to remove the useless packages.

Clearing the package cache

To clear out the cache one can run the command:

> This is covered twice above al-ready

```
$ sudo apt-get clean
```

This will remove everything except the lock files from the following loca-tions: /var/cache/apt/archives/ and /var/cache/apt/archives/partial/ .

> Must we mention these locks here?

Purge an Application

To totally remove an application and its configuration files (as well as deleting the application package install files, the cache) one can use the following command, replacing *packagename* with the package to be purged:

```
$ sudo apt-get purge packagename
```

This purge command is useful to use if an application is giving you trouble, and you would like to reinstall it from scratch.

Performing a file system check

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 opportunties online. You can access extensive and free documentation, buy professional support services, query the community for free support or explore technical solutions. More information is available here: http://www.ubuntu.com/support

9 Learning more about Ubuntu

What else can I do with Ubuntu?

By now, you should be able to use your Ubuntu desktop to do all your normal day to day activities—like browsing the web and editing 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 provide you with more detail about versions of Ubuntu that are specialized for certain tasks. To do this, we'll first discuss the technologies that make Ubuntu a powerful piece of software.

Open source software

Ubuntu is open source software. Simply put, open source software is software whose source code isn't owned exclusively by any one person, group or organization, but is rather made freely available.   This makes Ubuntu different from proprietary software, which requires users to purchase licenses before they are able to use the software on their computers.   Microsoft Windows and Adobe Photoshop are examples of propritary software.

Definition: The **source code** of a program is the files that have been written to make the program.

Definition: **Proprietary software** is software that cannot be copied, modified, or distributed freely.

Computer users can share and distribute open source software without fear of breaking intellectual property laws. They can also modify open source software to suit their individual needs, improve it, or translate it into other languages—as long as they release their changes to others who might wish to do the same. 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. Most open source programs cost nothing to obtain or run. Users needn't purchases a license to run Ubuntu, for example.

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 GNU/Linux (an open source operating system). While other versions of GNU/Linux, or "distributions," may look different from Ubuntu at first glance, they share

similar characteristics because of their common roots.

GNU/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 subsequnt distributions are based. For example, "Debian" refers to both the name of a distribution as well as the family of distributions derived from Debian. Ubuntu is part of the Debian family of distributions, as are Linux Mint, Xandros and Crunchbang Linux. Distributions in the Red Hat family include Fedora, OpenSUSE, and Mandriva.

The most significant difference between Debian-based and Red Hat-based distros 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 .rpms files.

You will also find 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.

Distribution: A distribution, or "**distro**", is a operating system made from open source programs, bundled together to make them easier to install and use.

Definition: 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.

Choosing amongst Ubuntu and its derivatives

Just as Ubuntu is based on Debian, several distributions are subsequently based on Ubuntu. Some of these are made for general use, and each differs with respect to the software included as part of the distribution. Others are designed for specialized uses.

Four derivative distributions are officially recognized and supported by both Canonical and the Ubuntu community. These are:

‣ **Ubuntu Netbook Remix**, which is optimized for netbook computers.
‣ **Kubuntu**, which uses the *KDE* graphical environment instead of the GNOME environment found in Ubuntu.
‣ **Edubuntu**, which is designed for use in schools.
‣ **Ubuntu Server Edition**, which is designed for use on servers, and typically is not used as a desktop operating system (because users must interact with it via the command line).

Three other officially recognized derivatives of Ubuntu are available. These include:

‣ **Xubuntu**, which uses the *XFCE* graphical environment instead of the GNOME environment used by Ubuntu.
‣ **Ubuntu Studio**, which is designed for creating and editing multimedia.
‣ **Mythbuntu**, which is designed for creating a home theater PC with MythTV (an open source digital video recorder)

For more information about these derivative distributions, see `http://www.ubuntu.com/products/whatisubuntu/derivatives`.

Using Ubuntu Netbook Remix

Ubuntu Netbook Remix is a version of Ubuntu designed specifically for net-book computers. It is optimized to run on Intel Atom processors—the most common processor found in netbooks from manufacturers like ASUS, Acer, HP, and Dell. Ubuntu Netbook Remix sports an interface tailored to fit net-books' smaller screens, and features a collection of software applications particularly useful to on-the-go users.

Because many netbooks do not contain CD-ROM drives, Ubuntu Net-book Remix allows users to install it on their computers using USB flash drives. To learn more about using a flash drive to install Ubuntu Netbook Remix on a netbook computer, visit `https://help.ubuntu.com/community/Installation/FromImgFiles`.

Using Ubuntu Server Edition

You can carry out nearly all your day-to-day work on a standard desktop Ubuntu distribution. However, some tasks often require more specialized dis-tributions. Such tasks include running a website or an email system. In these cases, you may wish to use a specialized server distribution in conjunction with server hardware. Computers performing these tasks run perpetually and consume quite a lot of power. It is possible to run a server distribution on a desktop computer, but we recommend doing this only for testing purposes.

This manual does not cover the process of running a secure webserver or performing other tasks with Ubuntu Server Edition. For more informa-tion about this edition, see the guide at `http://doc.ubuntu.com/ubuntu/serverguide/C/`.

Using Ubuntu Studio

This derivative of Ubuntu is designed specifically for people who use comput-ers to create and edit multimedia projects. For instance, it features applica-tions to help users manipulate images, create musical compositions, and edit video. While users can install these applications on computers running the desktop version of Ubuntu, Ubuntu Studio collects makes them all avaialble immediately upon installation.

If you would like to learn more about this derivative of Ubuntu (or obtain a copy for yourself), visit `http://ubuntustudio.org/home`.

Using Mythbuntu

Mythbuntu allows users to turn their computers into entertainment systems. It helps users organize and view various types of multimedia content—like movies, television shows, or video podcasts. Users with TV tuners in their computers can also use Mythbuntu to record live video.

To learn more about Mythbuntu, visit `http://www.mythbuntu.org/`.

32 bit or 64 bit?

As mentioned earlier in this manual, Ubuntu and its derivatives are available in two flavors: 32-bit and 64-bit. This difference refers to the way computers process information. Computers capable of running 64-bit software process information using more memory than computers running 32-bit software. These computers can gain performance enhancements by running 64-bit software.

Why choose one over another? Pay attention to the flavor you select in the following cases:

- ‣ If your computer is fairly old (made before 2007), then you may want to install the 32-bit flavor of Ubuntu. This is also the case for most netbooks.
- ‣ If your computer has more than 4GB of memory (RAM), then you may want the 64-bit flavor. Without it, you will not be able to use all of the memory.

In general, we recommend that you install the 64-bit flavor of Ubuntu.

Learning even more

This manual is not intended as an introduction to everything you might wish to do with your Ubuntu computer. For more information reagarding specialized tasks, please see the official Ubuntu documentation available either through the blue help and support icon, or at http://help.ubuntu.com.

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Glossary

applet An applet is a small program that runs in a panel that provides a
useful function such as starting a program, viewing the time, or accessing
the main menu.. 23, 143

Canonical Canonical, the financial backer of Ubuntu, provides support for
the core Ubuntu system. It has over 200 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.. 8

panel A panel is a bar that sits on the edge of your screen. It contains applets
which provide useful functions such as running programs, viewing the
time, or accessing the main menu.. 23, 143

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