

The Ubuntu Manual

By The Ubuntu Manual Team

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Part I

Start here

Prologue

0.1 About this Manual

Welcome to the Ubuntu Manual.

This manual was written as a guide for new Ubuntu users by Ubuntu users. It covers the basics of Ubuntu — such as installation, desktop settings and popular applications, and it should also give you an introduction to Linux and the power of open source. The manual is designed to be simple to follow, with step by step instructions and clear diagrams — allowing even the most novice computer users to discover the potential that their new Ubuntu system possesses.

This manual is still a work in progress, and will always be. While the Ubuntu Manual Team tries to make sure that instructions are not limited to specific releases of Ubuntu, it is unavoidable that some things will change over the life of Ubuntu. Every time a new version of Ubuntu is released, the team will revise this manual and make the appropriate changes. At the time of writing, the current version is Ubuntu 10.04 (Lucid Lynx).

If you spot any errors, or you think we have left something out, then feel free to contact us. We will do everything we can to make sure that this manual is current, informative and professional.

0.2 Welcome

We have come together as a group of Ubuntu enthusiasts and have put together this book voluntarily to help you through your Ubuntu journey. We hope you get a lot of information out of this book, and use it as your first point of reference for any problems you may encounter.

To see where you can get more help, visit Chapter 10

0.3 Contact Details

The Ubuntu Manual Team
<https://launchpad.net/~ubuntu-manual>
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0.4 Ubuntu Philosophy

Ubuntu is an ethic or humanist philosophy focusing on people's allegiances and relations with each other. The word has its origin in the Bantu languages of southern Africa. Ubuntu is seen as a classical African concept. Ubuntu is more than just an operating system, it is a community of people that come together to collaborate on an international software project that aims to deliver the best possible user experience and feature-packed operating system available today.

0.5 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.

0.6 A Brief History of Ubuntu

Ubuntu was started in 2004 by Mark Shuttleworth, a successful South African millionaire, and his company **Canonical**. Mark recognized the power of Linux and open source, but he also saw its weaknesses that prevented mainstream use. He set out with clear intentions to solve these weaknesses and create something that was easy to use, better than the competition, and completely free. Ubuntu quickly rose to be the most popular Linux distribution, thanks to the financial backing from Mark personally — allowing free CDs to be pressed and shipped worldwide at no cost to the end user.

Ubuntu spread quickly, and the size of the community rapidly increased. With more people working on the project than ever before, Ubuntu quickly caught up to Microsoft® Windows® and Apple® Mac OS X® in terms of features and hardware support. Ubuntu continued to march on and gain the attention of large companies, such as Dell, who began selling computers with Ubuntu pre-installed as a collaboration with Canonical. As of 2010, Ubuntu is installed on nearly 1% of the world's personal computers — while that may seem small, it means that there are hundreds of thousands of users worldwide.

0.7 Canonical

Canonical, the company behind 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 secure and check all the work that the volunteer contributors submit.

ou may wonder how Canonical can pay staff members, provide support and continue shipping free CDs, when they do not charge for any of their services. While it is true that Canonical are making a loss, not a profit, they do charge for professional server support and installations — which is where Linux is the dominant operating system of choice.

Website

To learn more about Canonical, go to <http://www.canonical.com>

As an example, in 2005, the French Police began a program that switched their entire computer system to Ubuntu, which they say saved them millions in Windows licensing fees. This switch is still in progress, and by the year 2012 the French expect every computer will be running Linux. Canonical charge the French for support services and develop software for them to replace the software they had under Windows, hence how they make their money. Mark Shuttleworth has promised that Ubuntu desktop will always be free.

0.8 Linux

Ubuntu is built on the foundation of Linux, which is a type of an operating system. Linux itself is a member of the Unix family, which is one of the oldest type of computer operating systems — dating back to the 1970s. Originating long before Microsoft Windows, the Unix operating systems have provided reliability and security in professional applications for almost half a century. Many of the servers around the world that hold all the information for websites like Facebook and Google run some variant of a Unix-like system. Linux was designed from the ground up with security and hardware compatibility in mind, and is currently the most popular Unix-like operating system.

For many years, Linux was entirely command line based — it didn't have a Graphical User Interface (GUI), meaning that only seasoned computer programmers knew how to use it. In the past decade however, desktop environments have come into fruition. Ubuntu uses GNOME, one of the more popular desktop environments. Improving the desktop experience on Linux was one of Mark Shuttleworth's goals, as he saw not having an easy-to-use desktop as a huge barrier to Linux becoming a mainstream success for everyday users.

See chapter XX to learn more about KDE and other desktop environments

0.9 Software Management

Unlike Microsoft Windows and Mac OS X, Ubuntu uses a software management system to install and remove software. The user can choose to enable certain Software Sources, or repositories. The default repositories that Ubuntu ships with contain a database of thousands of trusted programs, that have been checked by Ubuntu developers to make sure they don't contain anything nasty. Software is installed simply by ticking the applications you want to install in a program called Software Center — at which point Ubuntu will automatically download and install the program itself and any dependencies or packages that it may require. Ubuntu is clever — if many programs require the use of one dependency (often referred to as "libraries"), then it will only install that library once and allow many programs to use it. This saves space, and in turn makes the computer faster and more efficient.

The **Ubuntu Software Center** contains thousands of different open source programs that you can install. See *Chapter XX...*

0.10 Is Ubuntu right for you?

Ubuntu, and Linux in general, is very different from operating systems such as Microsoft Windows or Mac OS X. Before you decide that you want to use Ubuntu, we suggest taking the following into account:

- Ubuntu is community based — it runs on the community, it is made by the community and maintained by the community. Because of this, support is not available down the road at your local computer store — most likely the employees at most computer stores would have never heard of Ubuntu. If something breaks, you have to fix it yourself, but, thankfully the community is there to help. There are a lot of articles, guides, manuals and users on various internet forums that are willing to help out beginners to Ubuntu — and this is where you should turn if something goes wrong.
- Windows or Mac applications will not run on Ubuntu. For the vast majority of applications that most people use, there are suitable free alternatives available in Ubuntu. The rest are generally professional applications (such as the Adobe Creative suite) — if you absolutely cannot live without the latest Adobe software, then Ubuntu may not be for you.
- Game developers usually design games for the largest market, where they can make the most money. Since Ubuntu is not as popular as Microsoft's or Apple's operating systems, game developers frequently do not develop for Ubuntu, as there would be little profit for them in doing so. If you're a heavy gamer, then Ubuntu may not be for you. If you like to play the odd game, then certain popular games will work under a Windows Emulation Layer called Wine (see chapter XX). Of course, Ubuntu has games developed for it as well, which are easily attained in the Software Center.

You may consider dual-booting, which allows you to run Ubuntu side-by-side with some other operating system. See chapter XX for more.

Chapter 1

Installation

1.1 Getting Ubuntu

Ubuntu is available in many shapes and forms, allowing you to choose the version most specific to your needs. All Linux distributions, theoretically, are the same — just with different kernels and packages installed by default. Server and Desktop editions will require different programs to suit the requirement, for example — a server will not require a media player, but a desktop system will. The user could configure their system themselves, but this would take time and effort — therefore Ubuntu ships several different versions that come with specific packages pre-installed, to make your life easier.

Definition

A **kernel** is the central portion of an operating system, responsible for running programs.

To find out more about different distributions, see Chapter 10

Downloading Ubuntu

You have several options when it comes to downloading Ubuntu, the easiest, and most common way is to download the CD image directly from <http://www.ubuntu.com>. At the time of new releases, it may be faster to download Ubuntu using a torrent — the servers get clogged up when everyone upgrades at release time.

After you've downloaded the CD image, all you have to do is burn it to a CD.

Ordering a free CD

You can order a free CD from Canonical if the above method seems too hard, or you have limited bandwidth or a slow connection. There is no shipping cost or charge to order a CD. Simply visit www.ubuntu.com and choose to get a free CD — you will have to create an account but this is very simple and not time consuming at all. Be warned, however — the CD usually takes about four weeks to ship, so if you need Ubuntu in a hurry, downloading it and burning it to a disc would be preferred.

1.2 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. We suggest using the Live CD to test out Ubuntu before installing, and also to ensure that it plays nice with your hardware.

The Live CD

Ubuntu has an excellent feature that allows you to test it out before you install, although it doesn't provide a full experience. It runs off the CD and your computer's RAM and so will feel sluggish (because CD read speeds are a lot slower than a hard drive and a large chunk of your RAM is occupied by it), but it should give you an impression

of what Ubuntu is like. The Live CD will let you test out all the default applications, play around with settings and surf the internet.

It's not only useful for you to get a feel, but also for you to check if it works properly with your computer hardware.

To boot from the Live CD, just insert the Ubuntu CD into your disk drive and boot into the CD. Boot priority is usually configurable in the BIOS, or most computers will give you the option of booting from CD by pressing a shortcut before the hard drive kicks in. See your manufacturers documentation for more information.

You will see a menu similar to this:

Choose the option "Try Ubuntu without any change to your computer" and press enter on your keyboard to boot into the Live CD off the disk itself.

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 like any other application. When it installs Ubuntu, it will set up a series of large files (called loop files), which you can specify in size, in which 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.

There are a couple of things to keep in mind, however:

- 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.

Installing Ubuntu to the Hard Drive

To install Ubuntu directly to your hard drive, you will need to have at least 3GB free on a partition somewhere to install the base system. We recommend 10GB at least 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.

To get started, insert the Ubuntu CD into your disk drive and boot into the CD. Choose the option "Install Ubuntu" and follow the prompts.

Chapter 2

Around your Desktop

2.1 The GNOME environment

The GNOME desktop environment is the default environment used in Ubuntu. Most of the desktop you see in front of you will be part of GNOME.

Panels

Panels are the bars at the top and bottom of the screen. They are configurable, and can contain menus, notification areas, window lists, or a multitude of other widgets. To add, remove or move a widget, right click on the panel. Certain areas (such as icons in the notification area) may have their own right click menu.

As a simple example, we can go through adding a launcher to the panel. Let's say that you use the word processor from OpenOffice.org frequently and would like to be able to start it without going through the menu. The easy way is to just drag and drop the menu item onto an empty space in the panel. Alternatively, you can right click on the space you want the launcher to appear, select "Add to Panel. . .", then "Application Launcher. . ." and simply find the right application, in this case the OpenOffice.org Word Processor.

Notice that the "Add to Panel. . ." window does not close immediately after you select an item. This is a common behaviour among GNOME configuration windows. They apply the settings immediately, without any need for clicking an "Apply" button and only go away when you tell them to.

Appearance and themes

To change how your desktop looks, go to the "System" menu, choose "Preferences" and then the "Appearance" item.

Chapter 3

Default Applications

Chapter 4

Preferences and Hardware

Chapter 5

Software and Packaging

5.1 Introduction

The way you obtain software in Ubuntu – and in many other Linux distributions – is different from how you would do it in other popular operating systems. In Ubuntu all software is archived and organized in virtual warehouses called "repositories". The repositories are maintained by Ubuntu staff, which is why they are not only more organized than the other ways of getting software, but also more secure; the staff members classify software in categories to make it easier for you to find what you are looking for and make sure that it is malware-free.

However, you can also obtain software in the old-fashioned way. You can install software in Ubuntu the way you do in other operating systems: downloading installers, or wizards. These are known as "debs" and are inherited from Ubuntu's ascendant, Debian.

Software Management

Deb Packages

Software Sources

Software Sources is the main application to administer the software available installable from your computer. Please read ahead to find out what you can do in every tab of this application's interface.

Software Center

The Software Center is the main application in Ubuntu where you can get software right off from the repositories. In this release of Ubuntu, the Ubuntu Software Center is only able to install user applications; however, in the future it will be capable of installing any package in the repositories.

Installing software with the Ubuntu Software Center is rather simple. When you open the Software Center it will display all the software categories available, by default. This way, you can sort applications depending on what they are used for. However, you can also filter through your current results by using the search box (to the upper right).

The Software Center will list only applications that are available in the software sources. You can open the Software Sources application through the "Edit" menu in the Software Center menubar. To find out more about Software Sources, read the respective section of this chapter.

Synaptic Package Manager

The Synaptic Package Manager is an older version of the Ubuntu Software Center. The advantage of this package is that it not only displays applications, in contrast with the Ubuntu Software Center, but rather lets you install any package in the Ubuntu repositories.

Chapter 6

System Maintenance

6.1 Updating your computer

Cleaning Unused Packages

Over time Ubuntu's underlying packaging system, apt, can build up unused caches and packages. These caches, are stored package files from all of the packages that you have ever installed. After a while, this cache can grow quite large.

To clear out these cache stores you can either use the clean, or the autoclean option for apt-get. The clean command will remove every single cache item, where 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 these, head to a terminal 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

Performing a File System Check

Part II

Advanced topics

Chapter 7

The Command Line

7.1 Introduction to the Terminal

What is a terminal?

A terminal(also known as a shell) is the linux equivalent to a command prompt in windows. It is used to enter commands which then either perform an action or display some information. One of the most popular linux shells and the one included by default in Ubuntu is BASH(Bourne Again SHell) It can be opened through the main menu by going to:

Applications -> Accessories -> Terminal

This is what the default terminal looks like in Ubuntu Lucid Lynx:

Sudo in the terminal

Sudo is a method of logging in as a sort of administrator, this administrator or root user has the ability to modify any part of the operating system, this is commonly referred to as logging in as root. To login using sudo simply type the following command into a terminal and then enter the password that you chose in Chapter 3 — Installing Ubuntu:

Alternatively you can also use sudo with other commands, although it will still ask you for your password:

This is why you are normally not logged in as the root user when you open a new terminal.

Browsing The File System

Manipulating Files

Updating Ubuntu with the Terminal

Virtual Terminals

Useful Commands

Chapter 8

Security

Chapter 9

Troubleshooting

Chapter 10

Learning more about linux

Choosing a version

There are a number of different versions that you can choose, which one is right for you is up to you to decide:

- Ubuntu Desktop
- Kubuntu
- Ubuntu Server Edition
- Ubuntu Netbook Edition
- Kubuntu Netbook Edition
- Xubuntu

Ubuntu uses the Gnome (GNU Object Model Environment) desktop environment, while Kubuntu uses KDE and Xubuntu uses XFCE respectively. Gnome is the most common, and easiest to use — KDE provides more features, customization and settings, while XFCE is a lightweight desktop environment designed to run on older computers. This manual will focus on Ubuntu and Gnome.

The server edition doesn't come with a desktop environment, it is completely command line based.

The netbook editions are optimized for smaller screens.

32 bit or 64 bit?

Ubuntu is available in two flavors: 32-bit and 64-bit. This difference refers to the way computers process information, with 64-bit processing using a little bit of additional memory while gaining a little bit of additional performance.

Why should you choose one versus another? With Ubuntu, you will not see much difference for most common uses. The few times when you may want to be aware of the flavor that you choose are:

- If your computer is fairly old (made before 2007), you may want to install the 32-bit flavor
- If your computer has more than 4GB of memory (RAM), you may want to install the 64-bit flavor

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

10.1 Extra Applications

Ubuntu comes with many applications by default, but there are plenty more excellent applications available in the Software Center that do numerous tasks often better than the ones included by default. What follows is a short list of useful applications that we think you should try out.

Cheese Webcam

If you've got a webcam on your laptop or attached to your computer, and you'd like to take cheesy photos of yourself and your friends, then Cheese is the application for you. It supports a lot of hardware and has features such as:

- Numerous effects
- Video recording
- Self timer
- Different resolutions
- Burst mode

You can find it in the Software Center by searching for "Cheese."

<http://live.gnome.org/Cheese>

The GIMP Image Editor

The GIMP Image Editor is the premiere image manipulation and enhancement program for Ubuntu. Akin to Adobe Photoshop for Windows and Mac, the GIMP lets you do everything you've been able to do in Photoshop, on Ubuntu — without the hefty pricetag.

Features:

- Customizable interface allows you to set up the GIMP the way you want
- Powerful photo enhancement
- Digital retouching
- Excellent hardware support for things like drawing tablets
- Great file format support
- And it's available for Windows and Mac as well!

Grab it from the Software Center by searching for "GIMP."

<http://www.gimp.org/>

GNOME Do

Gnome Do allows you to get things done. You can quickly search for many items present on your desktop or the web, and perform useful actions on those items.

Features:

- Awesome plugins let you send emails, play music, search the internet and much more
- Swift and sleek interface integrates perfectly with your new desktop
- Support for different themes to truly customize your experience
- Also includes an optional Dock

Once again, available in the Software Center under “Gnome Do.”

<http://do.davebsd.com/>

Google Chrome

Jokosher Audio Editor

Pitivi Video Editor

Sun VirtualBox

VLC Media Player

VLC Media Player is an awesome open source media player that can handle almost anything you throw at it. You may be familiar with VLC already if you have used it on Windows, as it isn't solely developed for Linux systems. It can play almost all types of video codecs, as well as a tonne of audio codecs, and has support for lots of extra features such as DVD playback, recording, streaming music and lots more.

Install it from the Software Center by searching for “VLC.”

<http://www.videolan.org/>

WINE

WINE is an essential tool for Linux users who wish to run Windows applications on their machines without the need of running a virtual machine such as VirtualBox. Although not every program will work under WINE, a lot of Windows software will work just as if they were running under an installation of Windows XP such as Microsoft Office, World of Warcraft and Counter Strike. The name WINE itself is a recursive acronym standing for *WINE Is Not an Emulator*.

Install the version from the Software Center, or get the latest version from their website:

<http://www.winehq.org/>

Chapter 11

Credits

The Ubuntu Manual Team

This manual wouldn't have been possible without the efforts and contributions from the following people:

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