

Linux 101

Getting Started with Linux



WHAT IS LINUX?

It's an **open source** operating system that comes in many varieties. Think of it as a free alternative to Windows or Mac OS X.

WHY WOULD I WANT TO USE LINUX?

- Open Source
- Customizability
- Stability
- Compatibility

OPEN SOURCE

Open source means that the details and design of something (whether it's a program or an object) is made available to anyone who would like to use it, change it, or improve it, as long as you agree to share your changes and improvements with everyone else.

Distributions

There isn't just one Linux operating system (**OS**)—in fact, there are hundreds! These are called **distros**, which is short for “distributions.” Distros determine the OS's desktop appearance, file system and management, terminal/command-line, software support, and a whole bunch of other features. Some popular distros include:

Ubuntu: The most widely used Linux OS, Ubuntu comes pre-installed with a large selection of free software, including an office suite called Libre Office. Ubuntu offers a wide-range of apps as well as a cloud service, and additional software can be easily downloaded and installed.

Mint: Linux Mint is an Ubuntu-based distribution whose goal is to provide a more complete out-of-the-box experience by including browser plugins, media codecs, support for DVD playback, Java and other components. It also adds a custom desktop and menus, several unique configuration tools, and a web-based package installation interface.

Zorin OS: Zorin is an Ubuntu-based Linux distribution designed for newcomers to Linux. It has a Windows-like graphical user interface (**GUI**) and many programs similar to those found in Windows. Zorin also comes with an application that lets users run many Windows programs.

PCLinuxOS: PCLinuxOS is a user-friendly Linux distribution with out-of-the-box support for many popular graphics and sound cards, as well as other peripheral devices. It is a Linux distribution that can be operated very easily just like Windows and includes all the essential software for everyday people. The default desktop and core programs differ from Ubuntu-based OSes.

THINGS TO CONSIDER WHEN CHOOSING A DISTRO

- Interface & desktop environment
- Usability
- Stability
- Software selection
- Updates & upgrades

Distrowatch.com is a great place to start your research, as it gives basic information on every major distro.

Distrowatch.com: Ubuntu

Ubuntu

Last Update: Friday 7 February 2014 21:20 GMT

- OS Type: [Linux](#)
- Based on: [Debian](#), [Ubuntu](#)
- Origin: [Isle of Man](#)
- Architecture: [armhf](#), [i686](#), [powerpc](#), [x86_64](#)
- Desktop: [Unity](#)
- Category: [Beginners](#), [Desktop](#), [Server](#), [Live](#)

[Medium](#)

- Status: [Active](#)
- Popularity: [2 \(1,950 hits per day\)](#)

Ubuntu is a complete desktop Linux operating system, freely available with both community and professional support. The Ubuntu community is built on the ideas enshrined in the Ubuntu Manifesto: that software should be available free of charge, that software tools should be usable by people in their local language and despite any disabilities, and that people should have the freedom to customise and alter their software in whatever way they see fit. "Ubuntu" is an ancient African word, meaning "humanity to others". The Ubuntu distribution brings the spirit of Ubuntu to the software world.

[Popularity \(hits per day\):](#) 12 months: 2 (1,947), 6 months: 2 (1,950), 3 months: 2 (1,833), 4 weeks: 2 (2,057), 1 week: 3 (2,531)

Page Hit Ranking

Data span:

Rank	Distribution	H.P.D*
1	Mint	3647▲
2	Ubuntu	1933▲
3	Debian	1903▼
4	Mageia	1596▲
5	Fedora	1419▲
6	openSUSE	1355▲
7	PCLinuxOS	1094▲
8	Manjaro	976▼
9	Arch	964▲
10	elementary	939▲

Distrowatch ranks the distros by page hits...

What's an .iso file?

An .iso file contains a copy of an entire OS. We can use it to make a DVD to boot from and install our new OS.

Feature	snapshot trusty	13.10 saucy	13.04 raring	12.10 quantal
Release Date	2014/02/07	2013/10/17	2013/04/25	2012/10/18
Price (US\$)	Free	Free	Free	Free
CDs	1 DVD	1 DVD	1 DVD	1 DVD
Free Download	ISO	ISO	ISO	ISO
Installation	Graphical	Graphical	Graphical	Graphical
Default Desktop	Unity	Unity	Unity	Unity
Package Management	DEB	DEB	DEB	DEB
Office Suite	LibreOffice	LibreOffice	LibreOffice	LibreOffice

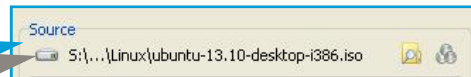
...and has links to the .iso files to try/install different OSes.

Trial & Installation

Once you've downloaded the .iso file, you'll need to use a program like ImgBurn to create a bootable disk. Follow these steps:

1 Open ImgBurn.

2 Select your .iso file.



3 Click **Write image file to disc.**

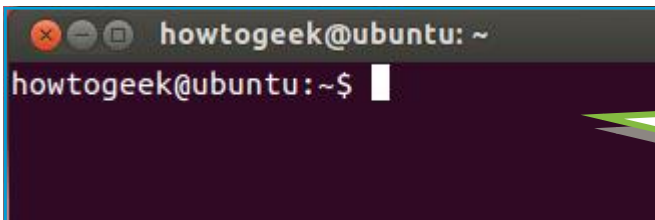
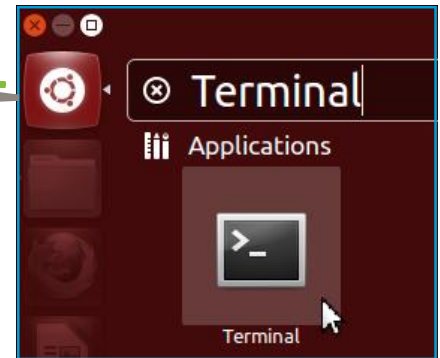


4 Insert a blank DVD.

Using the Terminal

Most of the major Linux distros have a user-friendly **GUI** with windows, icons, and menus. You can also run programs and utilities by typing into a command prompt. For Debian-based distros, like Ubuntu, the command prompt is called the **Terminal**.

To launch the Terminal in Ubuntu, type **Ctrl-Alt-T**, or click on the **Search** button in the dashboard and type **Terminal**.



This is the Terminal. **Type a command** and **hit enter** to execute an action.

Some Easy & Useful Terminal Commands

- Run a program: simply type the **name of the program**
- Open a webpage in a browser: **browser name website address**
- Get today's date and current time: **date**
- List files in an open folder: **ls**
- Find out which user is logged in: **whoami**
- Access a list of basic command keys : **info (enter) h**
- Access information for a specific command: **info command name**
- Access the manual on a given topic: **man topic name**
- Exit the terminal: **exit**
- Reboot your computer: **sudo reboot**

SUPER & ROOT USERS

Many commands are restricted to special users (like the **administrator** role in Windows). In Linux these roles are often called **super user** and/or **root user**. The super/root user can do things an ordinary user cannot, such as installing software and changing the ownership of files. Root user credentials are usually configured during the installation process.

To execute commands as a root user in the Terminal:

1. Type **su**
2. Hit **enter**
3. Type your root user **password**
4. Hit **enter**

All following commands will then be executed as the root user.

Updating & Upgrading Software

Many Linux distros will prompt you when software updates are available, but you can check for updates at any time using the Terminal. To update a specific program type:

sudo apt-get update program name

To check for updates system-wide, type:

sudo apt-get update

Software upgrades work similarly. Type:

sudo apt-get upgrade (*program name*)

If an update is available, but not an upgrade, you will be prompted to update.

Package Handlers

apt-get is the tool Debian-based distros use to manage software packages. Depending on the distro, apt-get (and other commands mentioned in this handout) may not work.

Updating & Upgrading Your Operating System

For Linux Operating System packages, there are two models of updating/upgrading:

Standard

A “fresh” installation is required, which means wiping out the old version and replacing it with the new one.

Rolling

The OS is continually updated and does not require a “fresh” install of the new OS.

Most distros operate under a standard OS upgrade model, which means that, for every new version, you will need to back-up all of your data, install the new OS version, and then restore your data. There are many guides online to help you through this process, but the update/upgrade model is definitely something to consider when choosing a distro.

A few Linux OS packages do offer rolling releases, notably those based on the **Arch** distro.

The good news is, unlike Windows and OS X, Linux OS upgrades are far less necessary, as there are fewer security threats and software programs tend to work across a wider range of OS versions. Many distros also offer **long term support** (LTS) OS versions, which means that, even as new OS versions become available, the LTS version will remain stable and supported.

WHERE TO GET MORE HELP:

- **Distrowatch.com:** Stay up-to-date with all the latest Linux news.
- **Distro webpages:** Every major distro has its own webpage with information, downloads, and forums where you can ask questions.
- **edX.org:** LinuxFoundationX offers an online class on Linux that can be audited or completed for a certificate.
- **The CTC:** you can come to the desk and ask for help, schedule a 1-on-1 tutoring lesson, come to more classes on open-source computing, or attend one of our open labs to learn more.