Ubuntu Fundamentals

Freedom is a choice

Course Objectives

- Gain sufficient skills to perform Ubuntu system administration tasks.

Course Prerequisites

- You don't need any experience with Linux to take this course
- You should have some familiarity with computers

Agenda

- Open Source philosophy
- History
- Why Ubuntu?
- Getting Started
- How to fish?
- Files and Directories

Open Source Philosophy

Open Source Philosophy

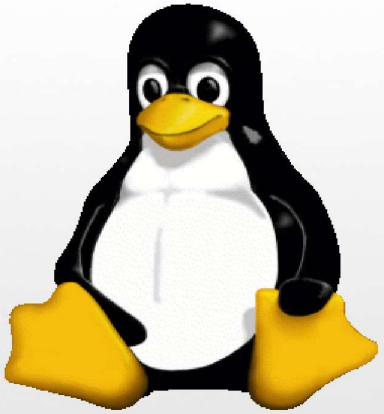
- Open Source Software (OSS) provides many freedoms, including the ability to:
  - View the source code used to compile programs
  - Make modifications
  - Distribute these modifications
- Where is the benefit ?
  - Customers are usually willing to pay for training, support and consultation

History

History

History

- 1991: The Linux kernel is publicly announced on 25 August by Linus Torvalds.
- 1992: The Linux kernel is re-licensed under the GNU GPL.
- 1993: Over 100 developers work on the Linux kernel.
- 1998: Many major companies such as IBM, Compaq and Oracle announce their support for Linux.
- 10-2017: Version 4.13 of the Linux kernel is released.



History

Linux Distribution
http://distrowatch.com

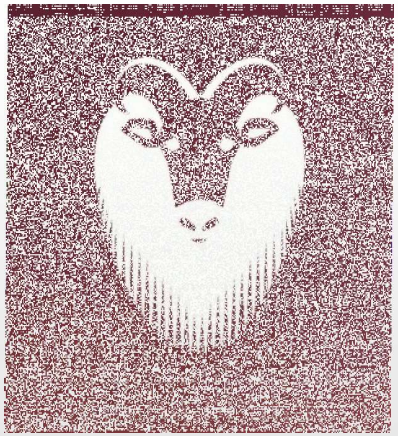
- 2016: Google's Linux-based Android claims 75% of the smart phone market share.

History

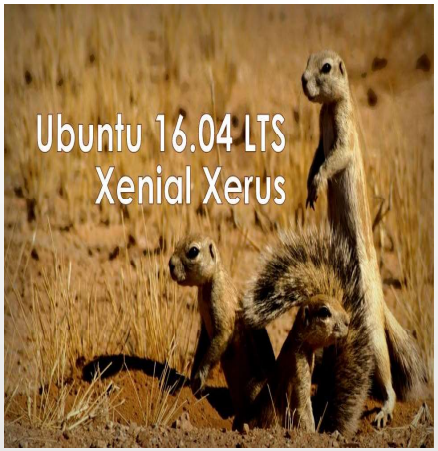
- Ubuntu based on Debian GNU/Linux distribution and distributed as free and open source software by Canonical Ltd UK.
- It is named after the Southern African philosophy of Ubuntu ("humanity towards others").
- Ubuntu is designed primarily for desktop usage, Web statistics suggest that Ubuntu's share of Linux desktop usage is about 50 percent, and upward trending usage as a web server.
- 2016: Ubuntu claims 30,000,000 users.

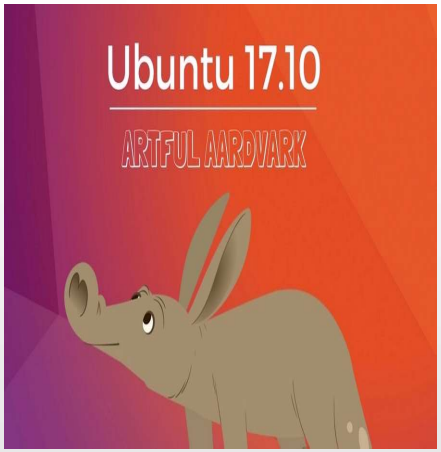
Ubuntu Releases

- The Ubuntu team broke new ground in committing to a program of scheduled releases on a predictable six-month basis. It was decided that every fourth release, issued on a two-year basis, would receive long-term support (LTS).
- LTS releases are typically used for large-scale deployments.



Ubuntu 14.04 LTS (Trusty Tahr)



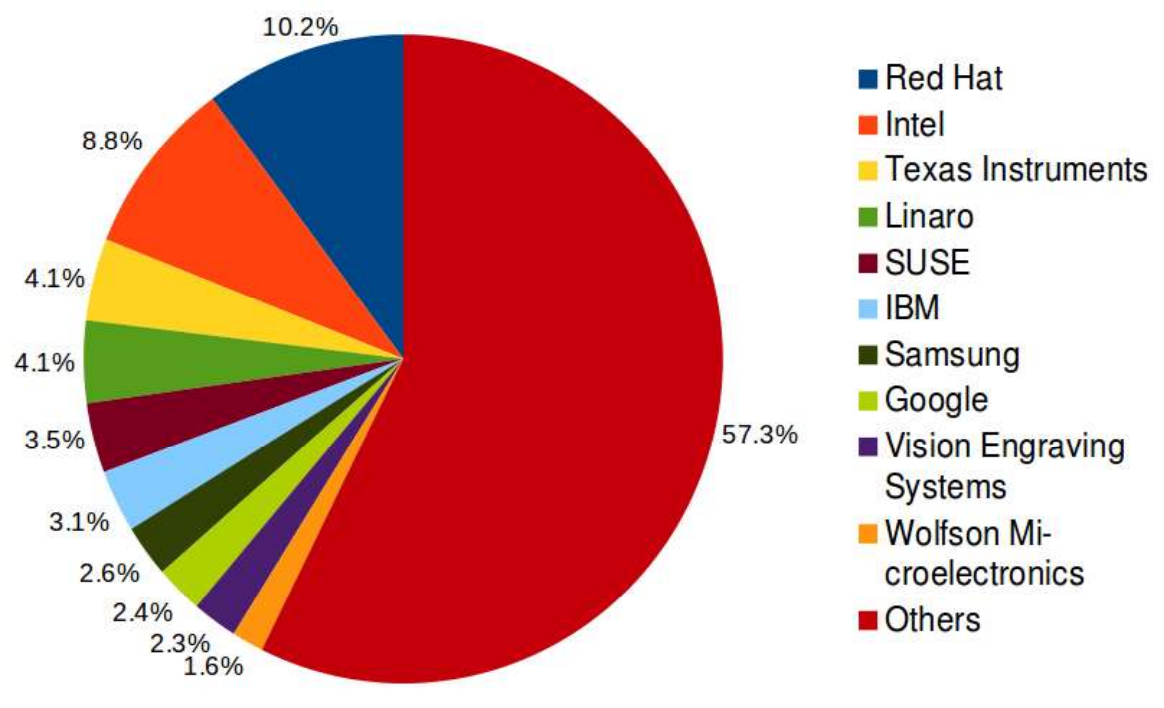


Why Linux?

Why Linux?

- **Why Linux ?**
  - It is Open source :)
  - Linux is everywhere: smart phones, tablets, T.Vs, Cars, space stations
  - Linux is present in highly critical applications such as Japan’s bullet trains, traffic control, Stock Exchange,many air traffic control systems or control of nuclear reactors.

Why Linux?



the top-10 corporate sponsors of Linux kernel development, in terms of total commit counts from their employees, as of year 2013
http://xmodulo.com/interesting-facts-linux.html

Getting Started

Installation

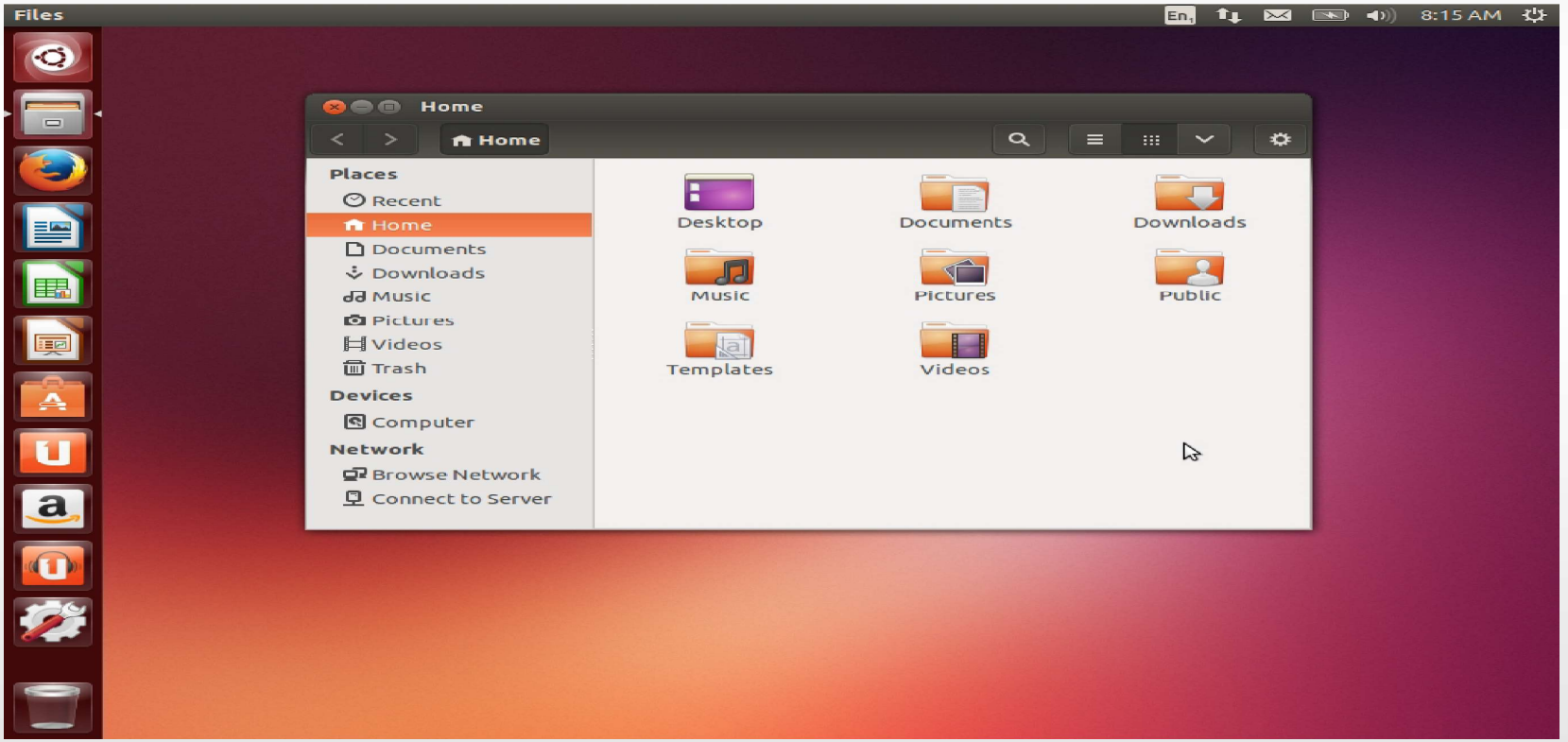
- Ubuntu Desktop Edition
  - 700 MHz processor
  - 512 MiB RAM
  - 5 GB of hard-drive space
  - VGA capable of 1024x768 screen resolution
- Ubuntu Server (CLI) Installation
  - 300 MHz x86 processor
  - 192 MiB of RAM
  - 1 GB of disk space
  - Graphics card capable of 640x480

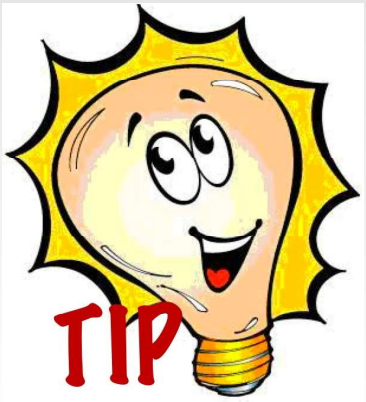
Types of Installation

- Graphical Installation
- Text Based Installation
- Kickstart Mode
  - Permits automated installation

Getting Started

Unity





If you truly wish to master a skill,
nothing beats hands-on experience

SOOOO :)
Let's Start !

Getting Started

- **The Launcher**
  - Area in the Unity Desktop where you have access to certain actions
  - One of the launcher's main functions is its search bar that you can find in the main menu and in the Applications and Files & Folders sections.
- **Applet**
  - A small interactive application that resides within the panel for example the volume control.
- **Workspace**
  - A discrete area in the Unity Desktop in which you can work.

If you truly wish to master a skill,
nothing beats hands-on experience

SOOOO :)
Let's Start !

Start with Terminal

Start with Terminal

- The command line is provides by a program called shell.
- Using the command line: Commands are entered in a terminal at the shell prompt.
  - The default prompt is the login name of the current user, the hostname, the current directory between square brackets, followed by $

    [msabagh@localhost Desktop]$
  - “$” is replaced by “#” in case of root

Start with Terminal

- Commands have the following syntax:

  command [options] [arguments]

  - Each item is separated by a space.
  - Options modify the command's behaviour.
  - Arguments are files name or other information needed by the command.

Start with Terminal

- Useful Bash Features:
  - Tab completion allow you to quickly complete commands and file names:

    [msabagh@localhost ~]$ pas<Tab>

    ```
    passwd    paste    pasuspender
    ```

  - **[msabagh@localhost ~]$ passwd**
- Separate commands with semicolon (;)
- “--help” option print a description about the command

Examples

uname

Linux

uname –n

host1

uname –a

Linux host1 ……

Examples

cal

September 2010

S M Tu W Th F S

1 2 3 4 5 6 7

8 9 10 11 12 13 14

15 16 17 18 19 20 21

22 23 24 25 26 27 28

29 30 31

Examples

Cal 5 2004

May 2004

S M Tu W Th F S

1 2 3 4 5 6 7

8 9 10 11 12 13 14

15 16 17 18 19 20 21

22 23 24 25 26 27 28

cal ;uname

Cal 5 2002; date; uname

How To Fish

How to fish?

- Google
- Ubuntu community

  http://community.ubuntu.com/
- Local documentation

How to fish?

Local documentation:

- Unity Help (a collection of graphical hypertext books). To access Unity Help Browser:
  - → Press 'F1' or select Applications → Documentation → Help
- Additional documents are stored in the /usr/share/doc directory
- Built-in Linux System Manual (man pages for commands, configuration files and programming calls) using command line type man

If you truly wish to master a skill,
nothing beats hands-on experience

SOOOO :)
Let's Start !

How to fish?

Manual page consists of:

- Name
  - The name of the command and a one-line description
- Synopsis
  - The syntax of the command
- Description
  - Explanation how the command works and what it does
- Files
  - The file used by the command

How to fish?

- Bugs
  - Known bugs and errors
- See also
  - Other commands related to this one

Manual Sections

1.User commands

2.System calls

3.C Library Functions

4.Devices

5.File formats and protocols

6.Games

7.Miscellanea

8.System Administration tools and Deamons

How to fish?

man –k keyword

Shows the commands that have manual pages that contains any of the given keywords.

whatis command

Shows the commands one line description

-help Option

Another way to get help about a command.