

Linux Administration 1



Freedom is a choice

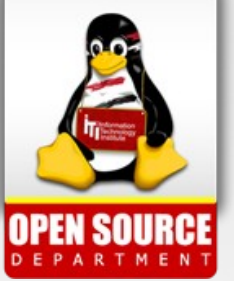


Course Objectives



- Gain sufficient skills to perform Linux system administration tasks.

Course Prerequisites

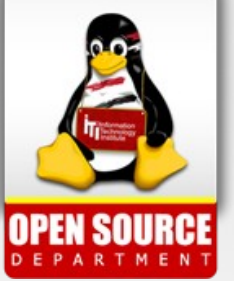


- You don't need any experience with Linux to take this course
- You should have some familiarity with computers

Agenda

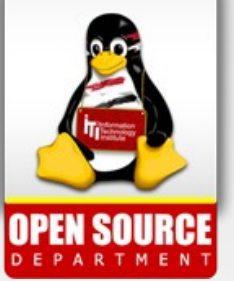


- Open Source philosophy
- History
- Why Linux?
- Getting Started
- How to fish?
- Files and Directories



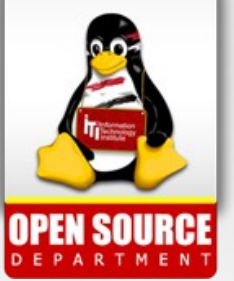
Open Source Philosophy

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

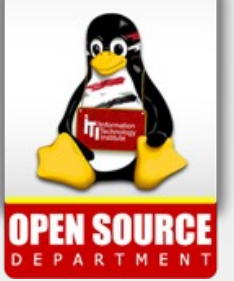
History



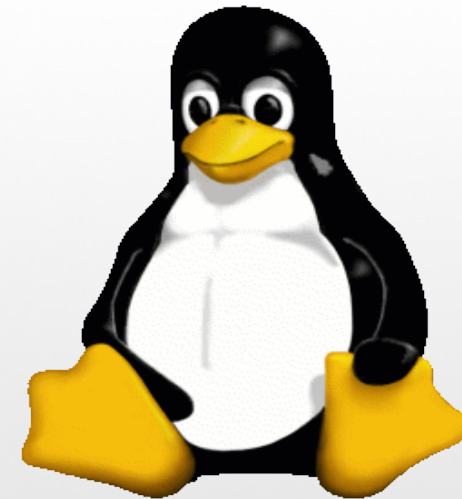
History



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.
- 2015: Version 4.0 of the Linux kernel is released.

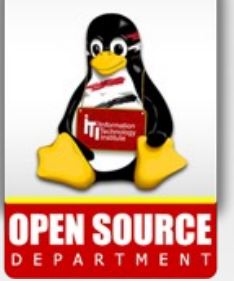


History



Linux Distribution
<http://distrowatch.com>

- 2018: Google's Linux-based Android claims 75% of the smart phone market share.



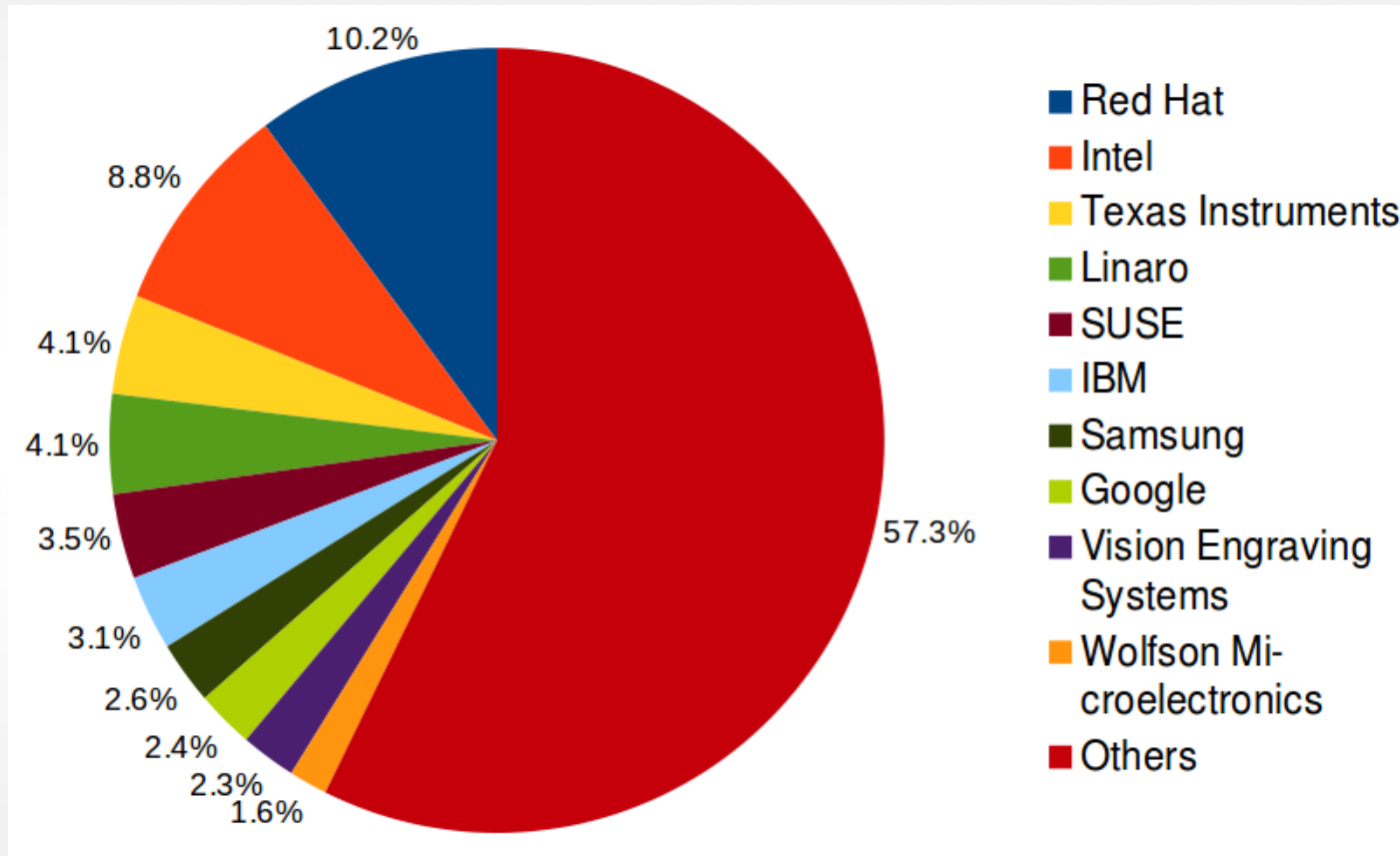
Why Linux?

Why Linux?



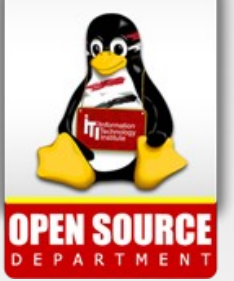
- Why Linux ?
 - It is Open source :)
 - Linux is everywhere: smart phones, tablets, T.Vs, Cars, space stations
 - Linux is present in highly critical applications such as Japan's bullet trains, traffic control, Stock Exchange, many air traffic control systems or control of nuclear reactors.

Why Linux?



the top-10 corporate sponsors of Linux kernel development, in terms of total commit counts from their employees

<http://xmodulo.com/interesting-facts-linux.html>



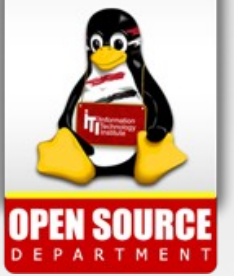
Getting Started

Installation



- **Desktop Edition**
 - 700 MHz processor
 - 512 MiB RAM
 - 5 GB of hard-drive space
 - VGA capable of 1024x768 screen resolution

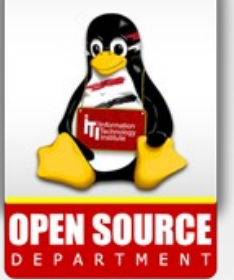
Installation



- **Server (CLI) Installation**
 - 300 MHz x86 processor
 - 192 MiB of RAM
 - 1 GB of disk space
 - Graphics card and monitor capable of 640x480

Types of Installation

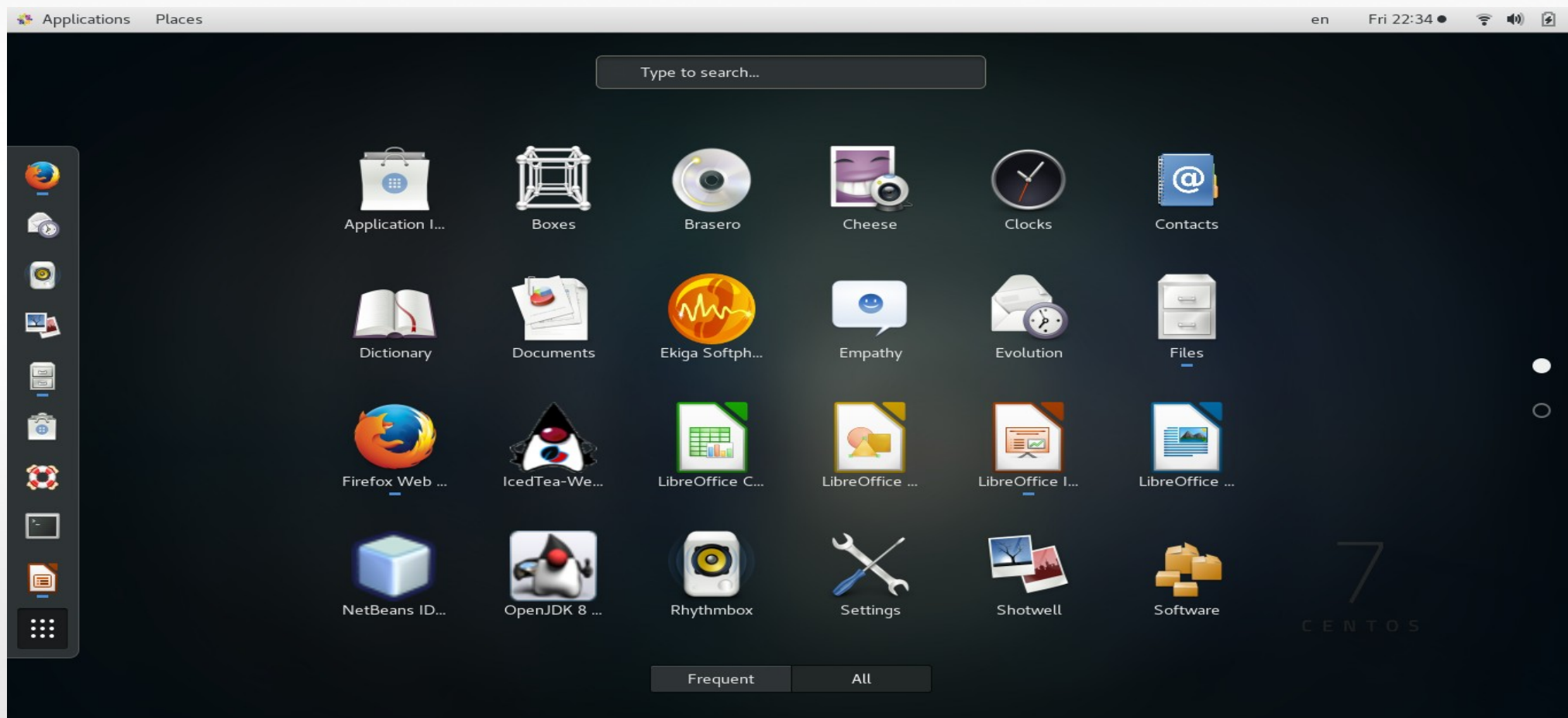
- Graphical Installation
- Text Based Installation
- Kickstart Mode
 - Permits automated installation

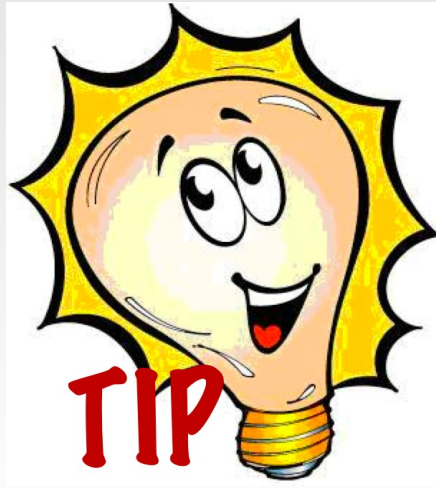


Getting Started



Gnome





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

SOOOO :)

Let's Start !

Getting Started



- **The Launcher**
 - Area in the 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.

Getting Started



- Unity contains many new features, including tricks and advanced functionality.
- **Application Switcher**
 - Use Alt+Tab to switch between applications.
 - You can use the mouse to click on the application or window that you want.
 - You can also navigate the Application Switcher using the arrow keys.

Screenshots

- The PrintScn key will take a screenshot, and will automatically save the image in your Pictures folder.

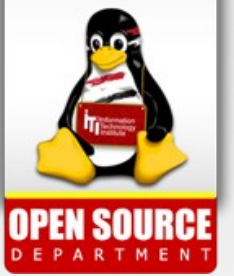
Getting Started



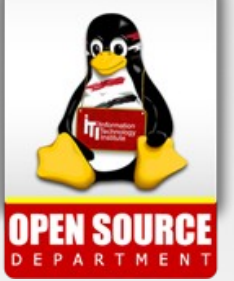
- **Nautilus** is the file manager that comes with the GNOME desktop.
- Using Nautilus you can:
 - Explore the file-system
 - Create folders
 - View file properties
 - And manipulate files (copy, delete, move, cut, paste, etc...)



Getting Started



- Icon view is the default in Nautilus, select the List Icon to change the display to List .
Select Arrange Items menu item. To list files by name, size, time, date, ..etc.
- Files names beginning with '.' are hidden files. To show hidden files select :
 - Press <Ctrl>+H
 - From view options > Show Hidden Files.



Start with Terminal

Start with Terminal



- The command line is provided 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

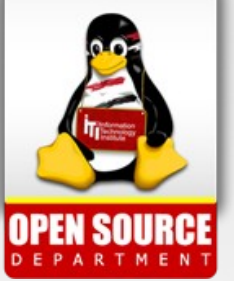
uname -n

host1

uname -a

Linux host1

Examples



cal

September 2010

S M Tu W Th F S

1 2 3 4 5 6 7

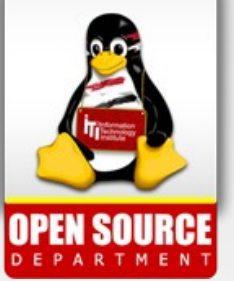
8 9 10 11 12 13 14

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

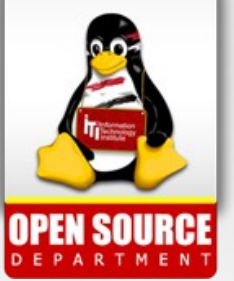
15 16 17 18 19 20 21

22 23 24 25 26 27 28

cal ;uname

Cal 5 2002; date; uname

How To Fish

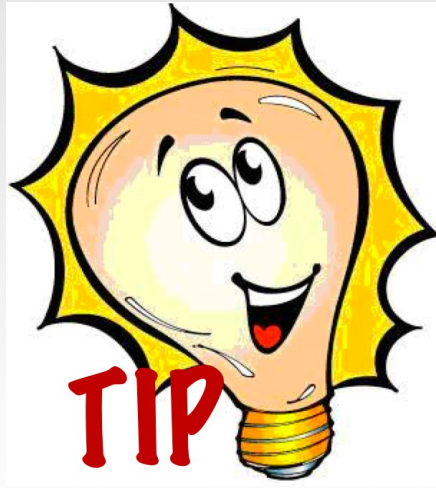


How to fish?



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

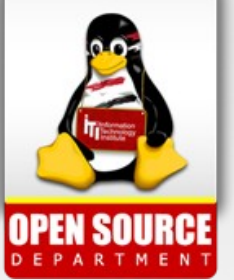
4.Devices

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.



Thank You

Eng. Mohamed Elsabagh