

A History of Linux



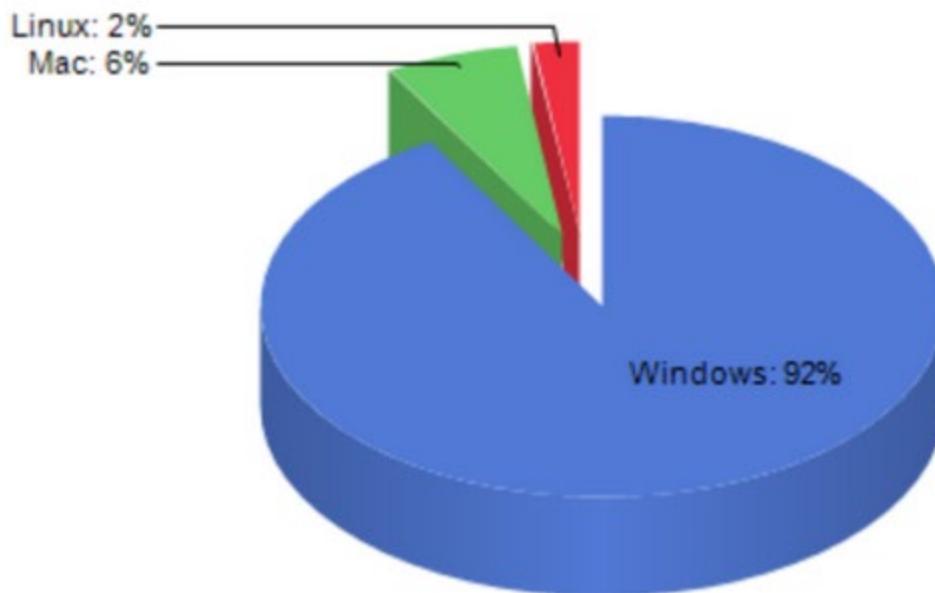
Agenda

- ❑ Linux Market share
- ❑ Brief History of Linux
- ❑ Description of Open Source Software & GNU
- ❑ Linux Distributions
- ❑ Linux Desktop Environments

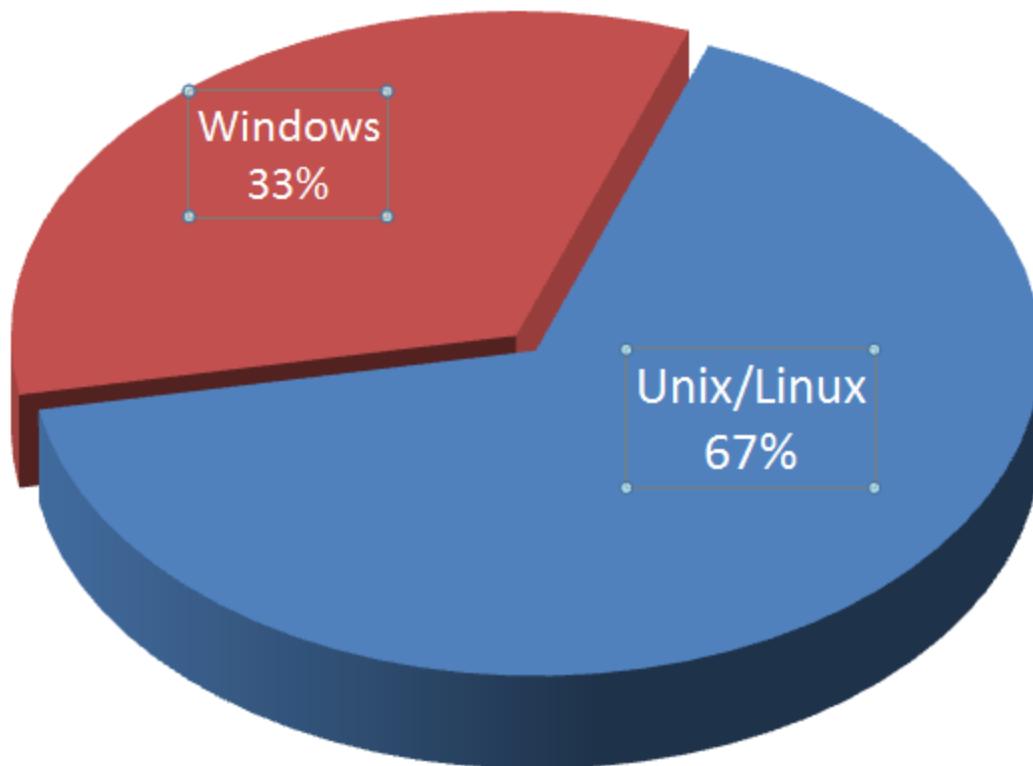
Desktop Operating System Market Share

January, 2017 to April, 2017

Total Market Share



Web server OS



Prehistory of Linux

- The *Unix* operating system was developed by Ken Thompson and Dennis Ritchie of AT&T Bell Laboratories in 1969 and first released in 1970.



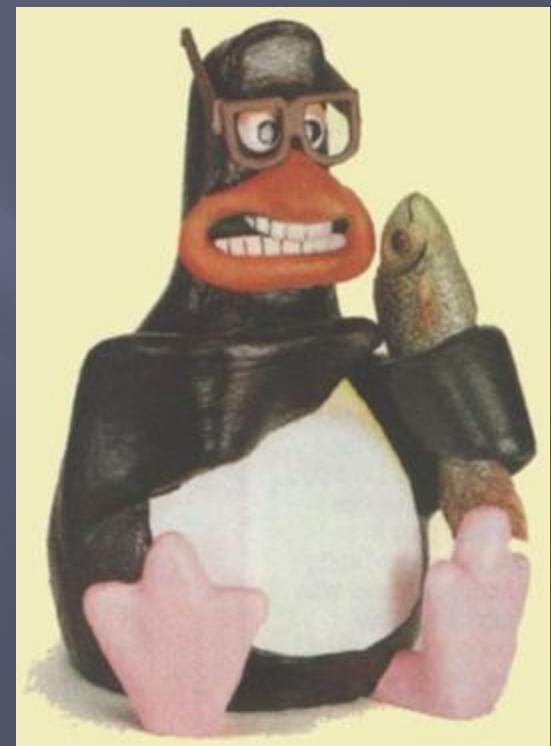
Linus Benedict Torvalds

- Born: December 28, 1969 (age 45)
- Born in Helsinki, Finland
- Chief developer on the Linux kernel
- Created the revision control system Git
- 2014 IEEE Computer Society Computer Pioneer Award



Linux

- Torvalds made the code of Linux freely available to everyone on the internet, and therefore lots of people created their own versions of Linux.



Linux - Open Source

- Linux is an example of Open-source software
 - The copyright holder provides the rights to study, change and distribute the software to anyone and for any purpose.
 - Open-source software is often developed in a public, collaborative manner.

Open Source Software

- Open Source Software (OSS) generally refers to software for which the source code is available and which the licensing scheme permits the user to modify it and redistribute it in modified or unmodified form.

A program is free software if the program's users have the four essential freedoms¹

<i>Freedom 0</i>	<ul style="list-style-type: none">• The freedom to run the program as you wish, for any purpose
<i>Freedom 1</i>	<ul style="list-style-type: none">• The freedom to study how the program works, and change it so it does your computing as you wish.<ul style="list-style-type: none">• Access to the source code is a precondition for this.
<i>Freedom 2</i>	<ul style="list-style-type: none">• The freedom to redistribute copies so you can help your neighbor
<i>Freedom 3</i>	<ul style="list-style-type: none">• The freedom to distribute copies of your modified versions to others. By doing this you can give the whole community a chance to benefit from your changes.<ul style="list-style-type: none">• Access to the source code is a precondition for this.

¹- <http://www.gnu.org/philosophy/free-sw.html>

*What *really* is Linux*

- Strictly speaking Linux refers to the kernel
- GNU/Linux more accurately describes the Operating System.
Linux Kernel combined with GNU utilities and libraries
- Distribution – GNU/Linux bundled with other applications.
 - Examples Red Hat Linux, Debian, Ubuntu, Suse, Knoppix, etc.
- www.distrowatch.com for more information



What is GNU

- GNU (GNU's Not Unix) is a Unix-like operating system entirely composed of free software and no Unix code.
 - a collection of many programs: applications, libraries, developer tools, even games.
 - GNU's own kernel, The Hurd, was started in 1990 (before Linux was started)
- Pronounced g'noo
- Informally, many operating systems using the Linux kernel are all called the Linux operating system.
- Politically, Richard Stallman, founder of GNU and the Free Software Foundation (FSF), insists that the Linux operating system must be called GNU/Linux.
- Nobody outside GNU and the FSF cares.

What are the GNU Utilities?

- More importantly, The GNU Core Utilities are the basic file, shell and text manipulation utilities of the GNU operating system.
- These are the core utilities which are expected to exist on every operating system.

chown	Changes file ownership
chmod	Changes the permissions of a file or directory
cp	Copies a file or directory
dd	Copies and converts a file
df	Shows disk free space on file systems
dircolors	Set up color for ls
ln	Creates a link to a file
ls	Lists the files in a directory
mkdir	Creates a directory
uniq	Removes duplicate lines from a sorted file

Linux Distributions

- Unix is not a single operating system.
- It offers many modern "flavors"
 - variants, types, distributions or implementations—branching from its origin in early 1970s mainframe computing.
- Although based on a core set of Unix commands, different distributions have their own unique commands and features and are designed to work with different types of hardware.

Many Versions of Linux

- Since the kernel was open-source, it quickly became used to customize distributions or *flavors* of Linux.
- There are thousands of distributions of Linux
 - some die from lack of maintenance
 - some fork off to other distributions and get another life.
- We can never know the real number of distributions, as someone can create one for their specific need & no-one will know of its existence

