

GNU/Linux

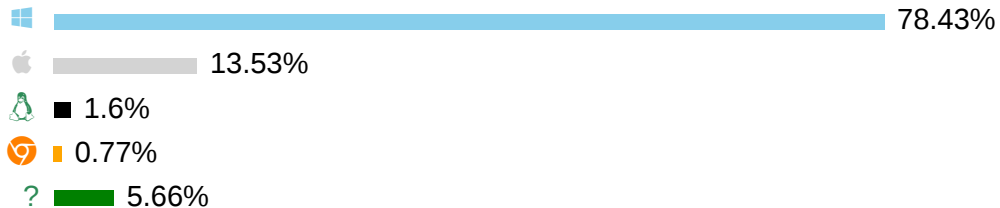
WANG Xiaolin

`wx672ster+linux@gmail.com`

August 24, 2020

Desktop Market Share

June 2019



<http://gs.statcounter.com>

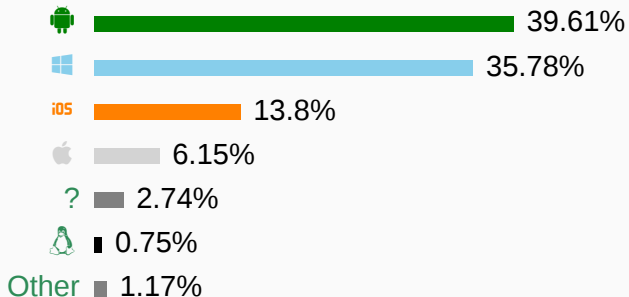
Why Linux?

OS Market Shares

June 2019

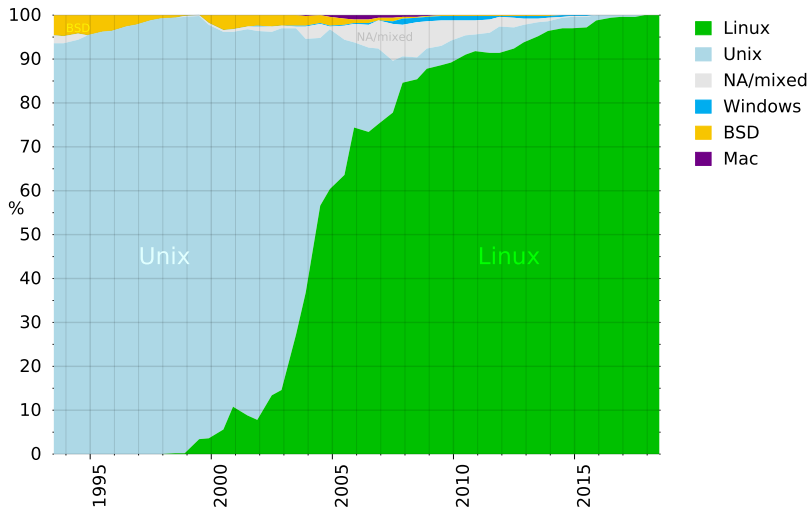
Everything is a computer

PCs, Servers, Smartphones, Tablets...



<http://gs.statcounter.com>


Supercomputer Top500




No Textbook


 Do you need a book to learn riding a ~~bike~~?


 Google

 "linux command line tutorial"

 "bash tutorial"

 "bash scripting tutorial"

 "linux programming tutorial"

 English

 <https://cs6.swfu.edu.cn/moodle>


 <https://cs6.swfu.edu.cn/calibre>

Homework

Weekly tech question

1. What was I trying to do?
2. How did I do it? (steps)
3. The expected output? The real output?
4. How did I try to solve it? (steps, books, web links)
5. How many hours did I struggle on it?

 <https://cs6.swfu.edu.cn/moodle/course/view.php?id=13>

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 Preferably in English

What's GNU/Linux?

GNU's Not Unix! — provides free apps

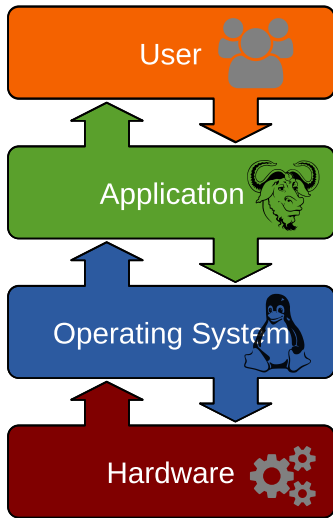


(GNU's Not Unix!) is a project that was headed by Richard Stallman, in 1984, that intended to develop a complete Unix-like operating system that is free software.

Linux — the kernel



was written by Linus Torvalds, a graduate student of the University of Helsinki in Finland, in early 1990s.



A Short History of GNU/Linux and Open Source

- 1972: Ritchie created C language. Unix version 2 written mostly by Thompson in C.
- 1984: RMS started the GNU project.
- 1985: FSF was founded by RMS, The GNU manifesto was published.
- 1991: Linux version 0.01 was released on the net.
- 1994: Linux version 1.0 was released.

Meet The Parents



Ritche



Thompson

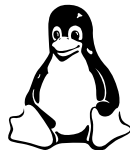


RMS



Linus

UNIX



How Is GNU/Linux?



What's Open Source?

OSI — Open Source Initiative

GPL — GNU General Public License, a free, *copyleft* license for software and other kinds of works

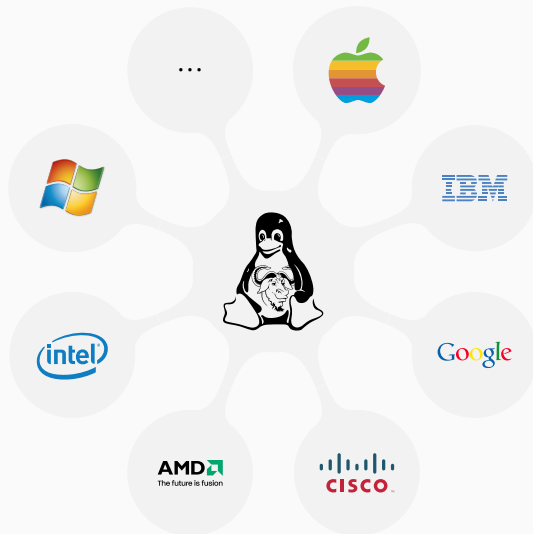
Share and share alike

“what you take from the community, you give back.”

- ▶ Free redistribution
- ▶ Source Code must be included when a modified version is released
- ▶ Derived works follows the same license as of the previous works

Are Companies Into Open Source?

Definitely!



The most active companies over the 3.19 to 4.7 development cycles

| Company | Changes | Percent | Company | Changes | Percent |
|---------------------|---------|---------|--------------------------|---------|---------|
| Intel | 14,384 | 12.9% | Outreachy | 1,524 | 1.4% |
| RedHat | 8,987 | 8.0% | Vision Engraving Systems | 1,456 | 1.3% |
| none | 8,571 | 7.7% | Free Electrons | 1,453 | 1.3% |
| unknown | 7,582 | 6.8% | NXP Semiconductors | 1,445 | 1.3% |
| Linaro | 4,515 | 4.0% | Mellanox | 1,404 | 1.3% |
| Samsung | 4,338 | 3.9% | Atmel | 1,362 | 1.2% |
| SUSE | 3,619 | 3.2% | Broadcom | 1,237 | 1.1% |
| IBM | 2,995 | 2.7% | NVidia | 1,146 | 1.0% |
| consultants | 2,938 | 2.6% | Code Aurora Forum | 1,033 | 0.9% |
| Renesas Electronics | 2,239 | 2.0% | Imagination Technologies | 963 | 0.9% |
| Google | 2,203 | 2.0% | Huawei Technologies | 937 | 0.8% |
| AMD | 2,100 | 1.9% | Facebook | 877 | 0.8% |
| Texas Instruments | 1,917 | 1.7% | Pengutronix | 790 | 0.7% |
| ARM | 1,617 | 1.4% | Cisco | 692 | 0.6% |
| Oracle | 1,528 | 1.4% | Qualcomm | 656 | 0.6% |

Linux Development Report 2015

By Linux foundation

- ▶ Nearly 12,000 developers from more than 1,200 companies have contributed to the Linux kernel since tracking began 10 years ago
- ▶ Just since the last report, more than 4,000 developers from 200 companies have contributed to the kernel, half of whom contributed for the first time
- ▶ The number of paid developers is on the rise, as companies aggressively recruit top Linux talent. More than 80% of kernel development is done by developers who are being paid for their work. Volunteer developers tend not to stay that way for long

Why Is It Popular?

GNU/Linux presents a *choice*, an alternative to the *closed approach* of companies.

It's popular among different groups

- ▶ geeks and hobbyists
- ▶ IT professionals
- ▶ Software developers
- ▶ System/Network administrators
- ▶ Internet/Network engineers

In a world without walls and fences, who needs Windows and Gates?

Is Open Source A Viable Solution?

Yes!

Apache: the leading web server in the world



(<http://W3Techs.com>, 5 July 2019)

MySQL, PostgreSQL: popular DBs used among websites

Perl, PHP, Python: very hot scripting language

Sendmail: the most popular MTA in the world

BIND: the most popular DNS server in the world

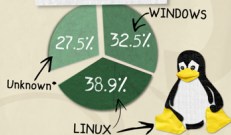
GCC: most popular C/C++ compiler in the world

2014

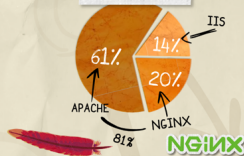
Open Source Owns the Web

#web25
edition

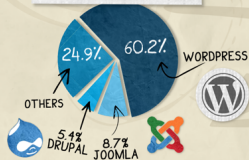
Operating Systems



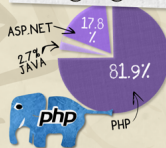
Web Servers



Content Management

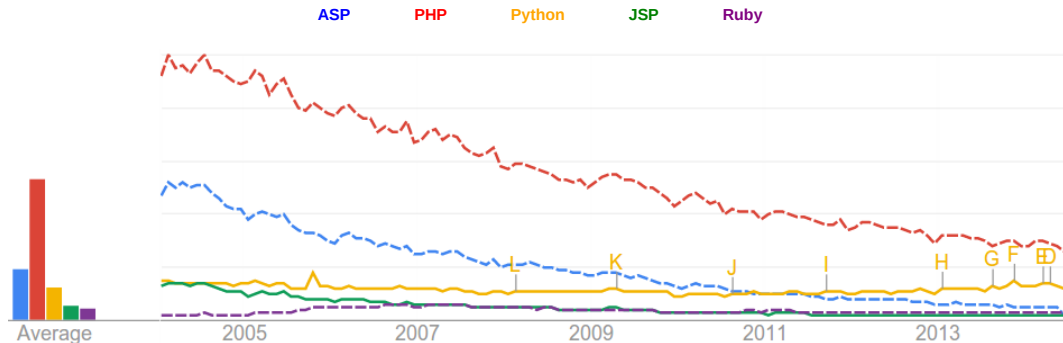


Server-Side Languages



More Facts

Popular Web Programming Tools

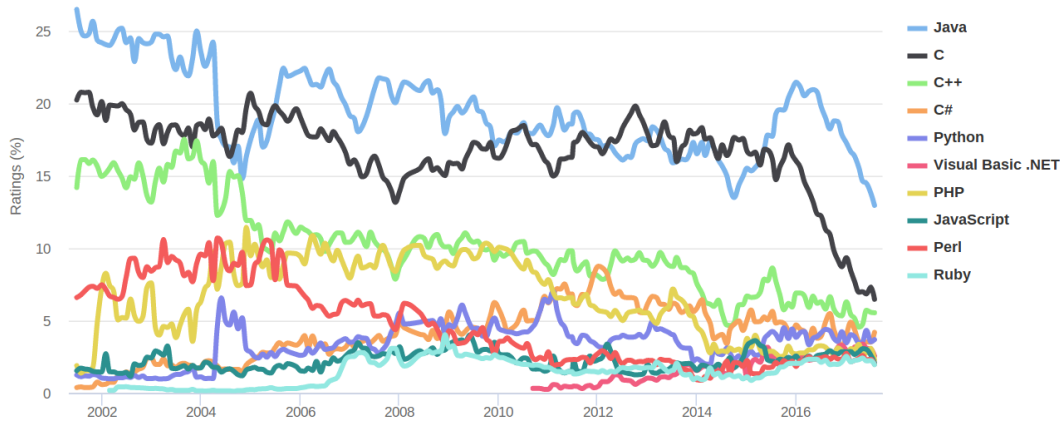


PHP, Python, JSP, Ruby are Linux friendly

<https://www.google.com/trends>

More Facts

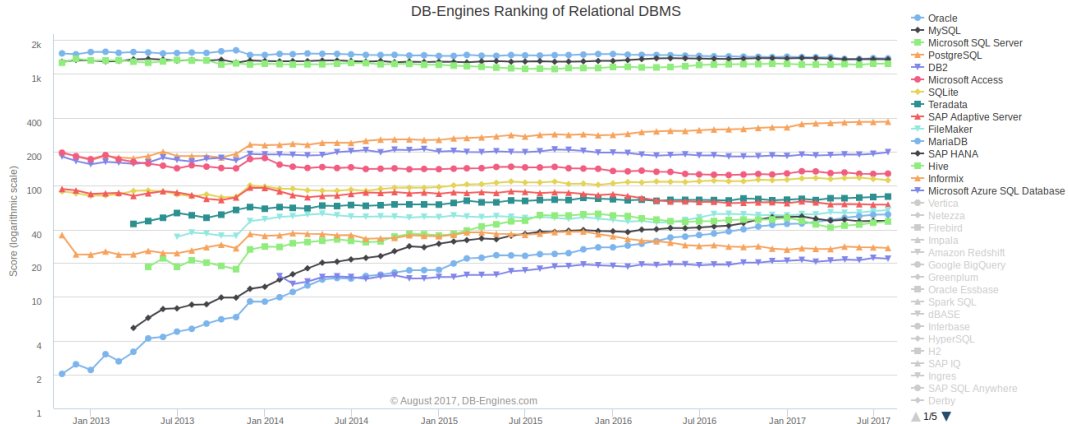
Top10 Programming Languages



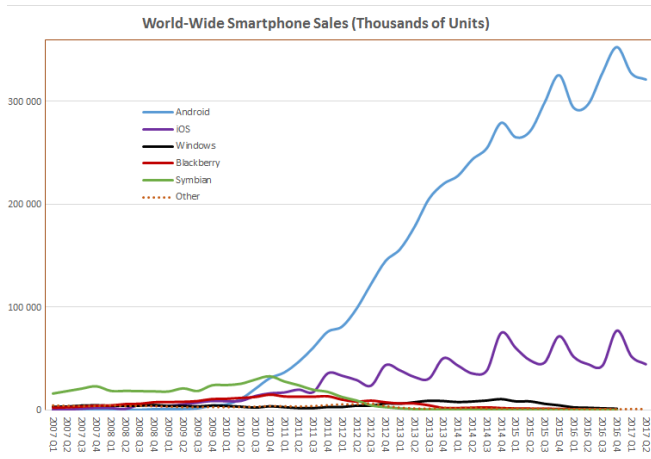
TIOBE Index for July 2017

More Facts

Databases



Smartphone Market Share



86.1%






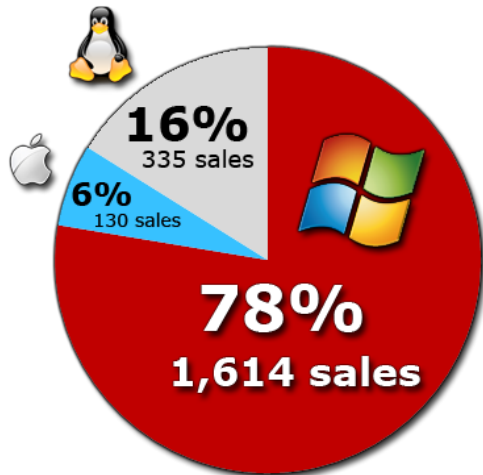
13.7%

Other | 0.2%

Games

Steam platform support



-  since 2002
-  since 2010
-  since July, 2012



Steam Linux Sale Results
DefendersQuest.com

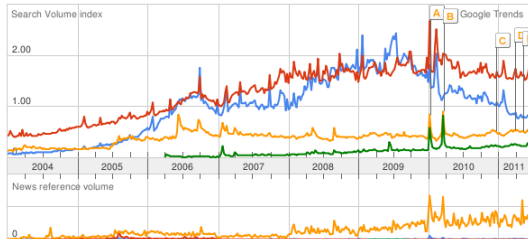
Use The Right Tools For The Right Jobs

I don't mean  is for everyone to do everything

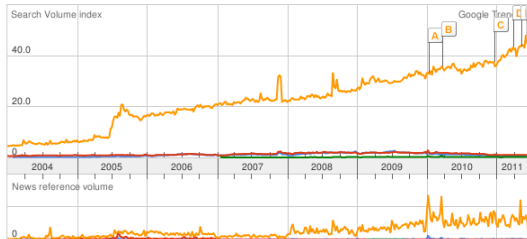
- ▶  is the platform of choice for audio enthusiasts and gamers
- ▶  are the choice for most graphics designers, desktop publishing firms, and video production houses
- ▶ SGI is king when it comes to 3D modelling/animation
- ▶ Solaris and other commercial Unices have there place in the world

The Distance

baidu 1.00 百度 1.28 google 0.38 谷歌 0.08






baidu 1.00 百度 1.40 google 22.6 谷歌 0



How To Learn GNU/Linux?

My advices

► Use  to do your daily work. Can you do...

- homework on  ?
- coding on  ?
- lab work on  ?

if **NO**
then Start **NOW!**

►  

- Google
- English

Which Distribution?

