



GNU/Linux

WANG Xiaolin

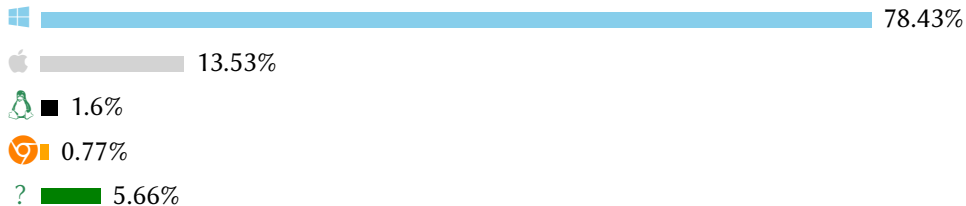
`wx672ster+linux@gmail.com`

August 15, 2023



Desktop Market Share

June 2019



Why Linux?

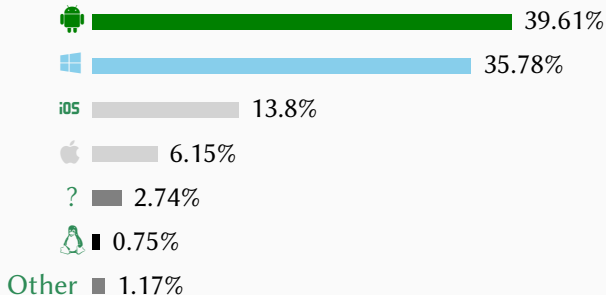
<http://gs.statcounter.com>

OS Market Shares

June 2019

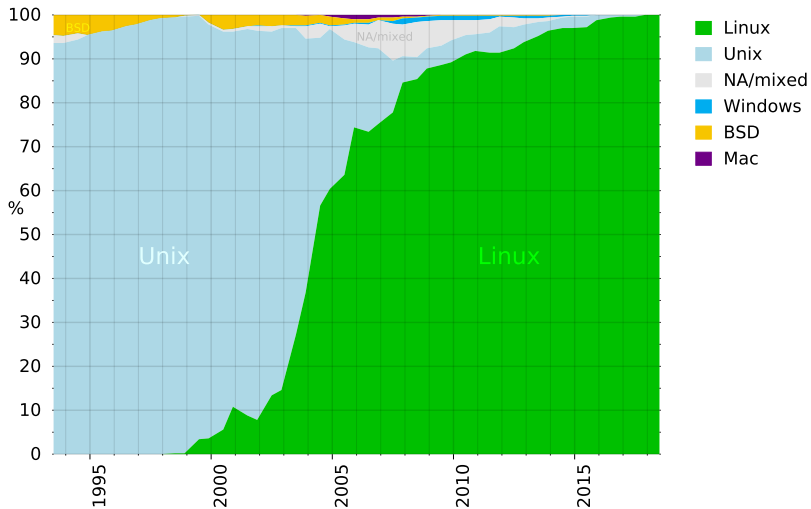
Everything is a computer

PCs, Servers, Smartphones, Tablets...



<http://gs.statcounter.com>

Supercomputer Top500

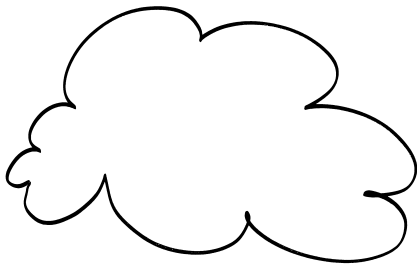


What are clouds made of?

Dad, what
are clouds
made of?



Linux Servers,
mostly.



No Textbook



🚲 Do you need a book to learn riding a 🚲?

G Google

G "linux command line tutorial"

G "bash tutorial"

G "bash scripting tutorial"

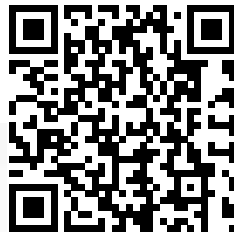
G "linux programming tutorial"

E English

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

📖 <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/mod/forum/view.php?id=251>

 wx672ster+linux@gmail.com

 Preferably in English

What's GNU/Linux?


GNU's Not Unix! — provides free apps

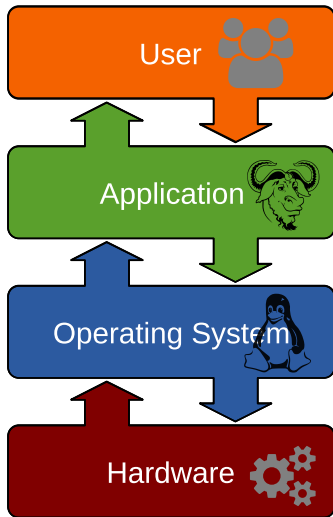


(GNU's Not Unix!) is a project that was headed by Richard Stallman, in 1984, that intended to develop a complete Unix-like operating system that is free software.

Linux — the kernel



was written by Linus Torvalds, a graduate student of the University of Helsinki in , 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



Ritchie



Thompson

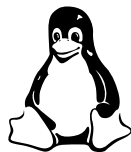


RMS



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

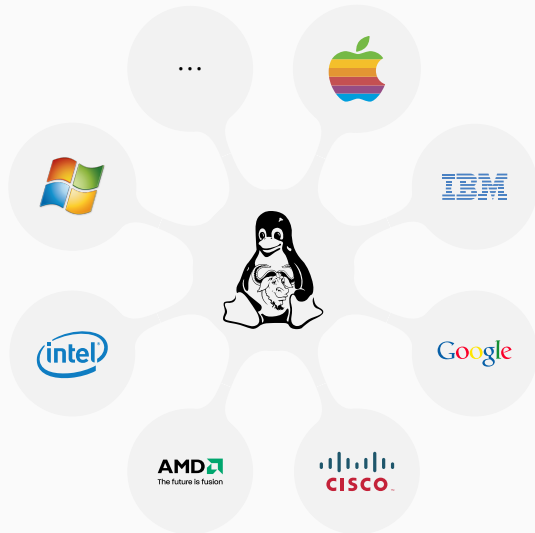
Share and share alike

``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

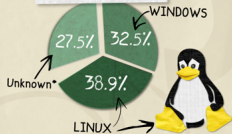
GCC: most popular C/C++ compiler in the world

2014

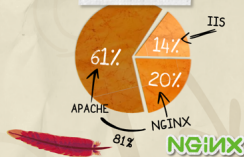
Open Source Owns the Web

#web25
edition

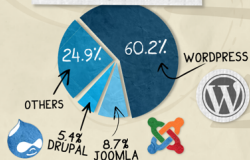
Operating Systems



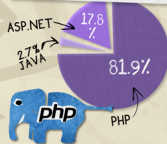
Web Servers



Content Management

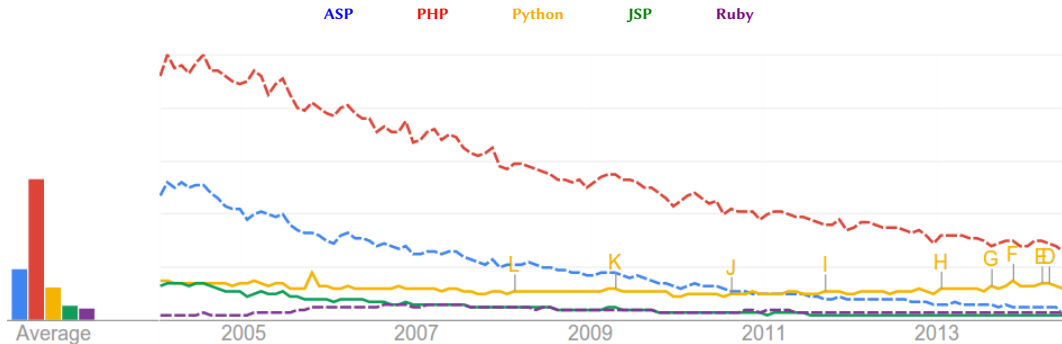


Server-Side Languages



More Facts

Popular Web Programming Tools



PHP, Python, JSP, Ruby are Linux friendly

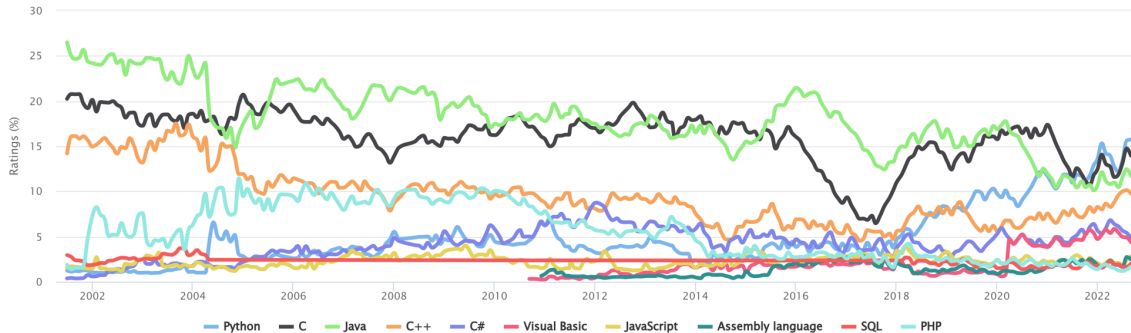
<https://www.google.com/trends>

More Facts

Top 10 Programming Languages

TIOBE Programming Community Index

Source: www.tiobe.com

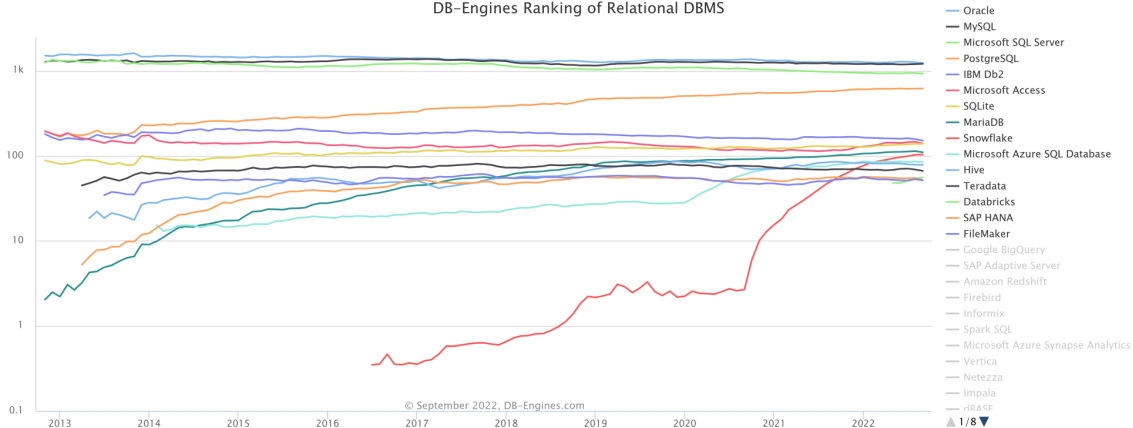


TIOBE Index for September 2022

More Facts

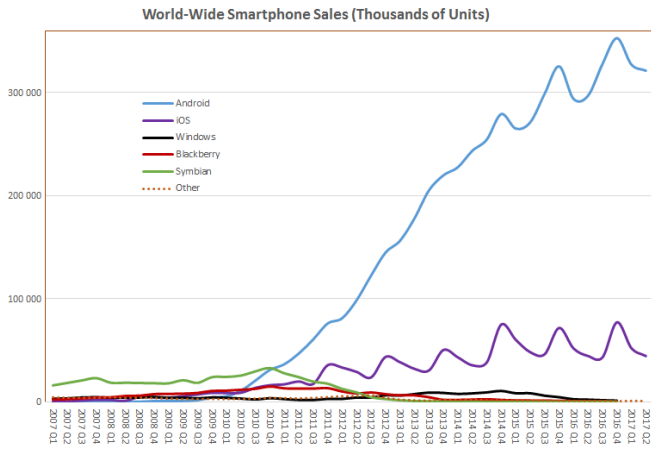
Databases

DB-Engines Ranking of Relational DBMS



DB-Engines Ranking — Trend of Relational DBMS Popularity

Smartphone Market Share



86.1%



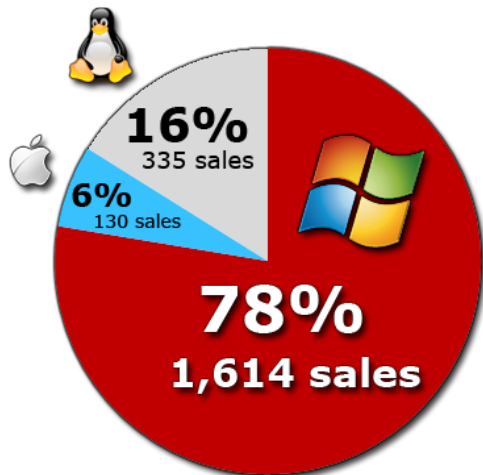
13.7%

Other | 0.2%

Games

Steam platform support



-  since 2002
-  since 2010
-  since July, 2012



Steam Linux Sale Results
DefendersQuest.com

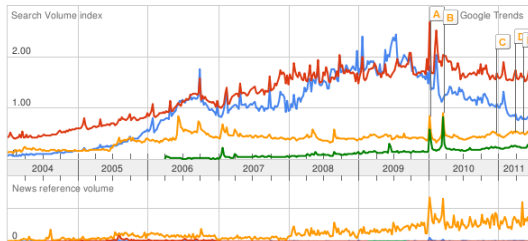
Use The Right Tools For The Right Jobs

I don't mean  is for everyone to do everything

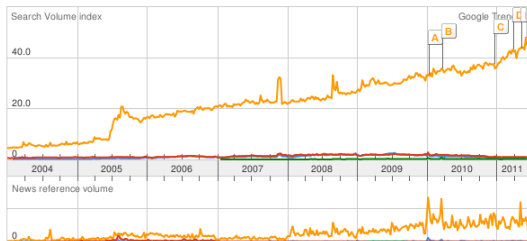
- ▶  is the platform of choice for audio enthusiasts and gamers
- ▶  are the choice for most graphics designers, desktop publishing firms, and video production houses
- ▶ SGI is king when it comes to 3D modelling/animation
- ▶ Solaris and other commercial Unices have there place in the world

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 it **NOW!**

►  

- Google
- English

Which Distribution?

