Free Software and Celebrating 30 Years of the FSF

Definition: Free Software

- "Free software" means software that respects users' freedom and community. Roughly, it means that **the users have the freedom to run, copy, distribute, study, change and improve the software**. Thus, "free software" is a matter of liberty, not price. To understand the concept, you should think of "free" as in "free speech," not as in "free beer". We sometimes call it "libre software" to show we do not mean it is gratis.
- Common Terms: Free Open Source Software (**FOSS**), Free Libre Open Source Software (**FLOSS**)

https://www.gnu.org/philosophy/free-sw.html

Where does the idea come from?

- Recipes
- Engine patents at the in the early 20th century

Early Computing

- Most software was produced by researchers, and shared amongst each other, as is common in scientific fields
- Early mainframes from UNIVAC and IBM shipped with copies of their source code, and encouraged their customers to send back any improvements/changes
- Golden Era of free software

The end of the era

- Operating systems and compilers evolved, bringing significantly increased development costs
- UNIX initially given to government and university researchers at no cost, but no permission to modify and redistribute the software, and later began charging for updates
- Software licences and copyrights

Pre-Stallman software sharing

- DECUS tapes, tapes containing software that made users lives easier, like text editors, were commonly shared
- Early online sharing with Usenet and UUCPNet

The happening - MIT AI Lab 1980

- Stallman had previously modified the labs printer to make it more convenient for the user
- The lab members were unable to get the source code of their new xerox printer
- This event convinced Stallman that people need to be able to freely modify the software they use

Stallman in MIT AI Lab: High-tech prankster

Neal Menschel

The GNU Project

- Launched by RMS in 1983 , GNU was intended to create a fully free operating system
- In 1985, RMS published the GNU Manifesto, outlining his rationale and reason for the project
- The GNU project has created most components for the operating system, most notably being incomplete is the kernel...

BSD

- Started in 1977
- Influence Unix development and established standard network protocols, which windows networking was originally based on
- Spawned many derivatives

Linus Torvalds

- As a 21 year old student in Helsinki, Torvalds outlined his free operating system based on minix to a minix newsgroup on Usenet
- Initially intended to be called Freax, combining free, freak, and X for unix, but his friend who administered the server it was hosted on named the directory "Linux"

The famous message

Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat (same physical layout of the file-system (due to practical reasons) among other things).

I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)
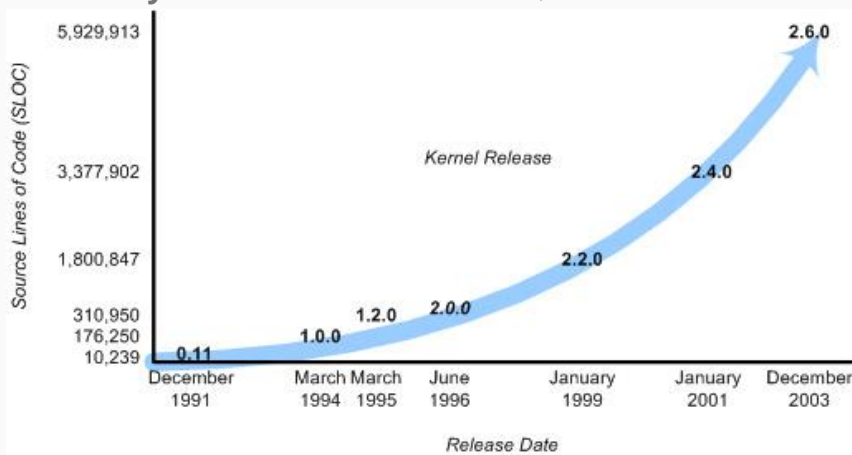
Linus (torvalds@kruuna.helsinki.fi)

PS. Yes – it's free of any minix code, and it has a multi-threaded fs. It is NOT portable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-(.
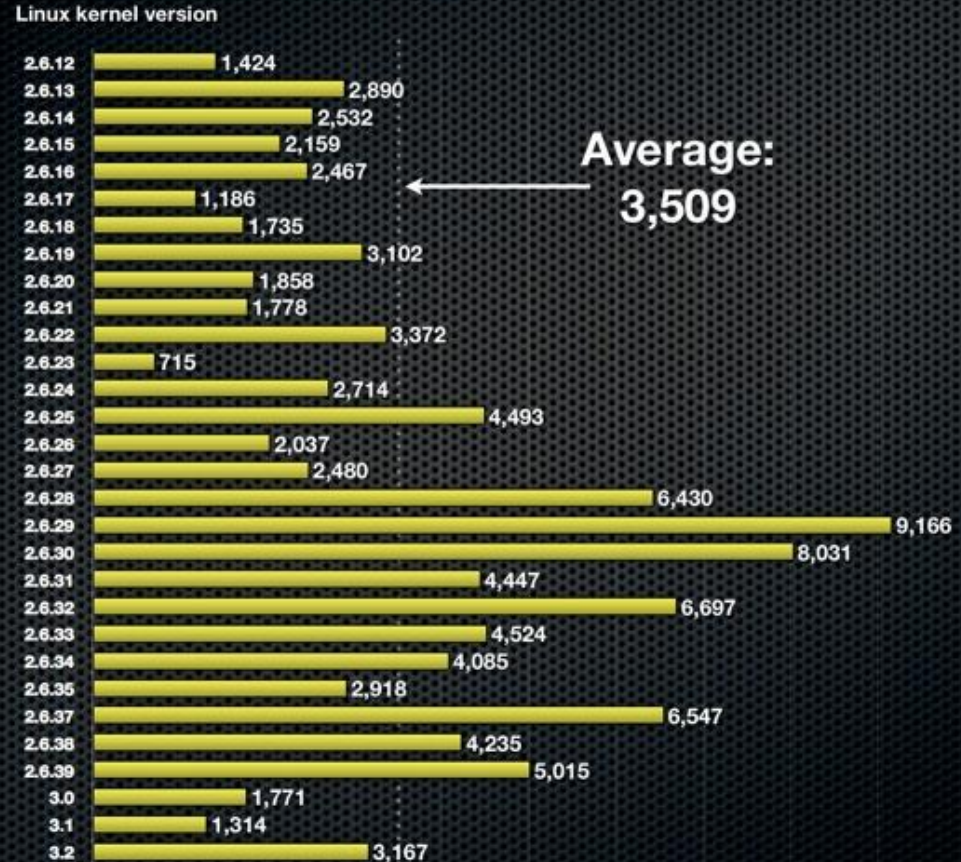
— Linus Torvalds[12]

Linux

- Linux kernel 0.01 launched September 1991 at 10,239 lines
- 1.00 was launched in March 1994 with 176,250 lines of code
- 1.20 launched a year later with 310,950 lines of code

Linux ignited open source

- Open source went from being a mostly hobbyist thing, to an industry changing platform

Number of lines of code added to the Linux kernel per each day of development

Linux kernel version

Version	Lines
2.6.12	1,424
2.6.13	2,890
2.6.14	2,532
2.6.15	2,159
2.6.16	2,467
2.6.17	1,186
2.6.18	1,735
2.6.19	3,102
2.6.20	1,858
2.6.21	1,778
2.6.22	3,372
2.6.23	715
2.6.24	2,714
2.6.25	4,493
2.6.26	2,037
2.6.27	2,480
2.6.28	6,430
2.6.29	9,166
2.6.30	8,031
2.6.31	4,447
2.6.32	6,697
2.6.33	4,524
2.6.34	4,085
2.6.35	2,918
2.6.37	6,547
2.6.38	4,235
2.6.39	5,015
3.0	1,771
3.1	1,314
3.2	3,167

Average: 3,509

Data sources: Linux Foundation and Pingdom

www.pingdom.com

Where is free software at right now?

- Around 1-2% of the operating systems in general use are running Linux
- Many common programs are free software: firefox, GCC, git, many IDEs, many programming languages

Free Software vs. Open Source Software

- Eric S. Raymond (ESR) publishes *The Cathedral and the Bazaar* which helps inspire Netscape to open source their internet suite, which Firefox and Thunderbird are built off of
- ESR attempts to make free software more attractive to corporate entities by relabeling it "open source"
- Still debated

How is Free Software maintained?

- By everyone!
- Special Licensing, such as the GPL which requires that all uses of GPL licensed software are themselves, GPL licensed.
- Free Software Foundation

So.... How is free software profitable?

- Great question, a lot of answers.
- DuckDuckGo
- Mozilla
- RedHat

Why should I use free software?

- Ever read 1984?
- Heard of the NSA?
- Have a knack for figuring out how things work?

How can I get involved?

- Github, sourceforge, bitbucket, savannah
- Hacktoberfest!
- Don't feel comfortable contributing code, but want to help?

Thanks for coming!