

# Linus Torvalds

## Early Life

Linus Torvalds was born in Helsinki, Finland, on 28 December 1969 to lower class journalist parents, Anne and Nils Torvalds. His interest for Mathematics and Physics started in his first Swedish-Language school where he excelled at both whilst his weak point was physical education.

His interest in computers began at the age of 11, when he initially started programming in the language basic. He went on to study computer science at the University of Helsinki in 1980 before graduating with a Masters in Computer Science in 1996. During his days in college, he worked on his own assembly language and editor created a new game based on Pacman and even his very own operating system.

His first computer was the Commodore VIC-20, predecessor to the widely successful Commodore 64. Eventually, Linus outgrew the Commodore machines and bought a Sinclair QL. His interest in operating systems and low-level systems programming started an early stage. When purchasing a floppy drive to replace the Sinclair-exclusive looping tape drive, he decided that the provided driver was so poorly written that he should create his own.

## Linux

Linux, an OS that sacrifices a friendly user interface for a greater look. Needing far less resources to run, Linux operating systems are unmatched in performance. Its extremely high compatibility and open source nature make it free and easy for the world to edit and customize into many recognizable operating systems we know today. But that's now how it was initially.

In 1991, while studying computer science at University of Helsinki, Linus Torvalds began a project that later became the Linux kernel. He wrote the program specifically for the hardware he was using and independent of an operating system because he wanted to use the functions of his new PC with an 80386 processor. Development was done on MINIX using the GNU C Compiler. Initially a project intended to dial the university modem and read the news became the Linux kernel.

As much as the next operating system, Linux is mostly used by a niche and very dedicated user base, the Linux kernel is the basis of other, more widespread and mainstream products

which runs the vast majority of the world and enables production of cheap operating systems, allowing people from developing countries to get connected with the west.

The 1.0 release of Linux was made at Torvalds' university and made Finnish national TV. Version 0.01 featured around 10,000 lines of code, 1.0 contained approximately 180,000. Version 2.6, released in 2003, had over 8 million. The current release of Linux, as of January 2020 has 27.8 million lines of code in the kernel, 1.3 million in systemd. Over 90% of web servers on the Internet run Linux. As of June 2019, every single one of the TOP500 supercomputers run Linux. Because of Android, 76% of mobile devices run Linux and less than 5% of desktop computers run Linux.

## Open Source Linux

In 1991, Linus did something that would ultimately change the course of Linux. He posted his source code to a MINIX forum. What started as gauging opinions on his code led to Linux being open source. A change that changed the course of Linux and Open Source software forever.

“I did not start Linux as a collaborative project,” Torvalds said. “I started it as one in a series of many projects I had done at the time for myself, partly because I needed the end result, but even more because I just enjoyed programming.”

Torvalds said that open source wasn't really on his radar at all. As Linux grew, it became something he wanted to show off to people and he made it publicly available. It wasn't even open source at that point, which was mainly called “free software” back then. He had no intention of using open source to improve his project. He simply invited comments on his project and, to his amazement, people took interest in the code and started contributing ideas.

As the Linux project grew, thousands of people wanted to contribute. Torvalds said that it reached a breaking point where he knew he couldn't scale it to work with that many people without having some kind of version control system in place, so he created git, his second innovative project.

“So git is my second project, which was only created for me to maintain my first project,” he said. “And this is literally how I work. I do code for fun, but I want to code for something meaningful. Every single project that I've ever done has been for something I needed.”

## Impact

The impact that Linus Torvalds had on software development extended far beyond Linux. His innovative step to make Linux open source was the main reason for the success of Linux but also the success of open source as well as the power of open source. Today we can view the entire Linux directory on his github where you could interact with the large community of software developers that contribute hundreds of thousands of lines of code each year to further improve on Linux.

Today, you can't imagine the internet without Linux, or Linus. It's hard to describe how "omnipresent" the Linux kernel is at Google, says Chris DiBona, Google's director of open source. "Google uses a ton of open source software but no single project has had the impact that the kernel has," he said in an email interview. "Since our first days at Stanford, it has run on every server and most of our internal infrastructure. If you look back to the earliest days of Android, there was never really a question as to which kernel would be best for our use." Which is further testament to the power of Linux and impact of Linus on the world.

## Final Remark

I think it's fair to say that Linus Torvalds has had a very significant impact on computing, from creating an operating system that is used to run the majority of the internet to a version control system that is the backbone of software engineers. His software has impacted and influenced open source in a positive way that makes Linus Torvalds a key software engineer for me and role model to look up to.

## Sources

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