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Linus Torvalds

Early Life

Linus Torvalds is a famous software engineer credited with the creation of the Linux kernel. He was born on the 28th December 1969 in Helsinki. He was named after Linus Pauling, a Nobel Prize winning chemist. Many of his family members were journalists including both his father and mother. His interests in computers began at the age of 11 when his grandfather, Leo Toerngvist, gifted him with a Commodore VIC-20. He first gained experience programming using the BASIC language to create more programs for his VIC-20. Later he bought himself a Sinclair QL. The QL was one of the first 32-bit home computers and it was a big step up from the Commodore. He modified the the QL and its operating system. He also wrote his own editor and assembler for the QL as it was very difficult to get software in Finland at the time. Torvalds attended the University of Helsinki from 1988 to 1996 and graduated with a Masters in Computer Science. He took his first programming class in C, which would become the language he used to write the Linux Kernel.

Linux

Torvalds purchased an IBM computer with an Intel 386 processor and a massive 4MB memory (for the time). Torvalds was enamoured with his new machine was unhappy that the MS-DOS operating system that came with the machine could not take full advantage of the vastly improved capabilities of the new 386 chip. He had a strong preference for the more powerful UNIX based computers that he had been using in the university.

He tried to get a version of UNIX for his new computer but it was too significant a cost for him to afford. He considered MINIX, which is a small clone of UNIX that was more capable than MS-DOS. MINIX had disadvantages though compared to UNIX. It lacked the performance and some features from Linux, had a hefty licensing fee and not all of the source code was made public. Thus Torvalds decided to create an operating system based on UNIX and MINIX.

On October 5, 1991, he announced the first official version of Linux (version 0.02). He uploaded the source code to a public network to be shared and refined by others at the encouragement of a friend, Ari Lemmke. Torvalds released Linux under a GNU General Public Licence (GNU) which is a free software licence that allowed anyone to study, use, modify, extend and redistribute the software as long as the source code for the modified versions are also made freely available. As a result of this many programmers began to work on the project and help improve Linux. Torvalds focused his efforts on further developing the Linux kernel while others worked on the other components that are needed to make a usable operating system.

Linux continued to improve as more and more individuals and corporate businesses contributed their skills to the project. By 1997, there was rough estimates of 3 million computers running Linux. By 1999 this figure was 7 million computers.

Impact of Linux

Today, there is a widespread adoption of the Linux operating system for a wide variety of uses by households, organisations and governments. Linux has had a massive impact on the IT industry due to its open and robust nature.

One of the most prominent use of Linux is the Android operating system for smartphones and tablets. Android is based on the Linux kernel and is the dominant operating system for smartphones. As of 2016, 87.6% off smartphone sales were Android phones. This dominance of the smartphone space means that Linux has the largest install base of all general-purpose operating systems. Linux is also the base operating system for many smart device operating systems. Samsung uses TizenOS for their smart TVs and smart watches and LG uses the Linux based WebOS for their smart TVs.

Another prominent use of Linux is that it is the go to operating system for web servers due to its open source nature and Linux being more secure than other platforms. Linux distributions are the cornerstone of the LAMP server-software combination which is very popular with developers and is a very common platform for web hosting. Linux distributions are the de facto operating systems for the world's supercomputers. Over 99% of the world's Top 500 Supercomputers run some variant of Linux.

Linux distributions can also be used as the operating system for desktops and laptops instead of Windows or MacOS. However, the adoption of Linux-based computers are not as widespread as their Android counterpart. Less than 3% of desktop computers are powered by Linux as users prefer MacOS and Windows. Google introduced Chromebooks to the world in 2011. These are cheap, lightweight laptops that runs the Linux kernel-based Chrome OS. Chromebooks dominates the K-12 market due to their low costs but still giving decent performance due to the low resource nature of Linux. Chromebooks represents 20% of the sub $300 notebook sales in the US.

Awards and Recognition

Linus Torvalds has been honoured for his role in the creation and adoption of the Linux platform. He was awarded 17th place in the "Time 100: The Most Important People of the Century". Time magazine also recognised him as one of the most influential people in the world in 2004.

He is the recipient of the 2012 Millennium Technology Prize by the Technology Academy Finland and the 2014 IEEE Computer Society Computer Pioneer Award.

Torvalds is currently working full time on further improving the Linux kernel under the sponsorship of the Linux Foundation which allows Torvalds to remain independent.

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