Software Biography – Linus Torvalds

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Linus Torvalds was born on December 28, 1969 in Helsinki, Finland. He is the son of journalists Anna and Nils Torvalds. He enrolled at the University of Helsinki in 1988, graduating with a master's degree in computer science. Torvalds is credited as the creator of Linux and GIT.

Linux is a family of open source operating systems based on the Linux kernel first created by Torvalds in 1991. As Linux is freely redistributable, anyone may create their own distribution for any purpose. Although Linux currently is used by 2.3% of desktop computers, it has the largest install base of all operating systems due to the dominance of Android phones which used a descendant of Torvalds original kernel. he Linux kernel is the core of the operating system. It also represents the key difference between Linux and MINIX. Whereas MINIX is based on a microkernel that contains the bare minimum amount of code necessary to run an operating system, Linux has a monolithic kernel, which means that functions like the file system, virtual memory, and various system calls all take place in privileged kernel space.

One of the advantages of this — which is also one of the key advantages of Linux as a whole — is that, while the internal workings of the OS can evolve over time, the interface between the kernel and user space — the part of the system where individual user's applications execute — remains very stable, which means upgrading Linux won't force you to upgrade your programs. This stable interface is what’s designed by Torvalds. One disadvantage of some Linux distributions would be that it’s not very intuitive to anyone who has predominantly using Windows or similar operating systems.

Linux also runs on devices whose operating system is built into the firmware. These are called embedded systems. Some of these embedded systems include routers, automation, automotive computers, such as those in use by Tesla, Audi and Mercedes among many. Linux is present in this form across many other sectors like digital video recorders, games consoles, smart watches and are even used by SpaceX in the Falcon 9 and Dragon 2’s avionics. Roughly 90% of cloud infrastructure also runs Linux. Countless industries rely heavily on cloud computing like the healthcare and finance industries.

But why has Linus Torvalds operating system become so popular in the corporate world?

Well, firstly Linux is adaptable, with different distributions porting it to just about any computing platform you could name. And second, Linux is cheap. It wasn't the free kind of Linux that businesses were interested in but low-cost commercial Linux with support available was hard to pass up. And perhaps even more importantly, Linux could run on commodity hardware, like the cheap x86 PC boxes most companies already had in abundance.

With flexibility and price at the forefront of most companies’ minds it’s no mystery that Linux has become the largest open sources software project in the world. Professional and hobbyist programmers from around the world contribute to the Linux kernel, adding features, finding and fixing bugs and security flaws, and providing new ideas—all while sharing their contributions back to the community. The constant progressive nature of Linux means that stagnating is not an option and will reinforce Linux as an industry giant for years to come. It’s clear that Linus Torvalds’ operating system is having and will have a colossal effect on many industries for years to come.

Another of Torvalds’ great projects is GIT. GIT is the most widely used version control system in the world today. It is a constantly maintained open source project developed by Torvalds in 2005. It is clear that Torvalds whole-heartedly believes in the philosophy of open source. All sorts of projects rely on GIT for version control from commercial to open source and from small to very large projects.

GIT is unmatched in speed and efficiency with also a tiny footprint making it easy to run and not demanding on even the most basic computers. GIT is easy to learn which, again, makes it accessible to everyone for whatever project the user has in mind. All these factors have increased availability and incentive to work in groups which has greatly benefitted the industry as a whole.

What makes GIT so unique and powerful is its branching model. Git allows and encourages you to have multiple local branches that can be entirely independent of each other. The creation, merging, and deletion of those lines of development takes seconds. This allows for processes such as role-based coding and disposable experimentation. Role-based coding is the process whereby different members of the team can work on different aspects of the code simultaneously. Disposable experimentation is the process where a team member can create a branch and download the code, experiment and play with the code without risk of ruining the main branch.

Over the past few years Linus Torvalds has received many awards and accolades throughout the years. In 2000 he was awarded the Lovelace medal from the British Computer Society, in 2014 the Institute of Electrical and Electronics Engineers named him as the recipient of their Computer Pioneer Award to name but a few. It is said that in 2003, the naming of the asteroid moon Linus was motivated in part by the fact that the discoverer was an enthusiastic Linux user despite different reasons stated in the naming proposal.

It’s abundantly clear that Linus Torvalds has had a huge impact and influence in the world of computing as a software engineer. His original creation, Linux, has enabled countless people and companies the ability to customize and utilize adaptable operating systems. His version control system, GIT, has been crucial in many projects getting done with its intuitive controls and unique processes. Both of which are constantly evolving and adapting due to Torvalds belief in open-source development, leading to a better and more convenient industry for us all.