1. The Pre Historic Times (1970 - 1983)

Before there was Linux, there was GNU, and before that there was Unix. Both centric to what makes Linux what it is today.

1.1. The Unix Operating System

Released in 1970 by AT&T, Unix was a widely adopted operating system that featured the novel use of small, efficient and modular programs to achieve complex tasks.

This practice of splitting functionality between programs and letting the user combine them has come to be known as the Unix Philosophy and is now a core part of the Linux experience.

1.2. The Gnu Project

As great as Unix was, it was proprietary software. Most manufacturers at the time began to use restrictive copyright to limit access to source code. This posed a problem for people who closely depended on such software; it meant if there was a problem, bug or missing feature they could no longer fix it themselves. this resulted in much frustration in hacker and engineer circles.

Enter Richard Stallman: in 1983, a hacker in MIT's AI laboratory and an operating systems developper, announces his start on the GNU project; a unix like operating system that features many of the same tools completely rewritten from scratch, but as free software. Along with his work on GNU, Stallman created the GNU Genreal Public License (GPL) to release it with. A copyleft Licence that protects the right to distribute and modify free software.

2. Birth (1991 - 1992)

By the early 1990, most of the GNU operating system was complete. That is, save for one important piece that was left to the end: its kernel!

2.1. Linux

With the GNU kernel - Hurd - still being incomplete and the lack of a widely adopted free kernel to drive his new 80386 processor PC, computer science student Linus Torvalds began the work of his own kernel at the age of 25.

The first publicly released Linux was version **0.01** in 1991, described as a free minix-like kernel for the intel 386 architecture for personal computers.

Minix (mini Unix) is another Unix-like system, created by Andrew S. Tanenbaum for educational purposes. However, despite the source code being available, it restricted modification and distribution. It was also the operating system that Linus used to create the first release of Linux.

0.01 is considered a historical release today, but at the time it only supported a subset of hardware features, namley: the harddisk, screen, keyboard and serial lines. as well as missing some systemcall implementations, mount and umount for example.

> The guiding line when implementing linux was: get it working fast. I wanted the kernel simple, yet powerful enough to run most unix software. - Linus
>
> — Linus Torvalds - Linux 0.01 Release Notes

2.2. GNU/Linux

> Sadly, a kernel by itself gets you nowhere. To get a working system you need a shell, compilers, a library etc. These are separate parts and may be under a stricter (or even looser) copyright. Most of the tools used with linux are GNU software and are under the GNU copyleft. These tools aren't in the distribution - ask me (or GNU) for more info.
>
> — Linus Torvalds - Linux 0.01 Release Notes

Since it's inception, Linux has made use of the GNU suite of tools to achieve functionality. This led the two projects to grow in tandem as each side seeked to create a fully functional operating system, this time with focus on Linux as the kernel.

in 1992, Torvalds licensed his **0.12** version of the kernel under GNU GPL. And as of today, Linux still uses the same license, albeit the newer version GPLv2.

3. Growth And Future (1992 - current day)

Despite the young age of the kernel and it's limited functionality, developers around the world recognized it's potential and joined in on hacking the project and contributing to it.Some of these first contributors include the people at the GNU project and some developers from the Minix community.

3.1. The X Window System

By 1992, the only way to use Linux was through the shell and command line, it lacked the graphical support to compete with other OSes on the market. That is until a port of the **X Window System** was ported to Linux by Orest Zborowski in the spring of the same year. This was a major break for Linux as it finally meant having GUI support.

3.2. Distributions

In 1993, Linux gets some of it's first distros that are still used and maintained to this day, Slackware and Debian. Both of these became the basis of many other future distributions. With Debian being developped openly and distributed freely, it was sponsored for a year by the Free Software Foundation, founded by Richard Stallman to support it's development. The Debian project later founded it's own nonprofit organizatin, Software In Public Interest to continue finanicially supporting development.

3.3. First Stable Release

In 1994, the first stable version of the Linux kernel, **1.0** was released. It comprised of 176,250 lines of code.

3.4. Tux

After version **1.3** of the kernel, Linus deemed it evolved enough to increase the version number to **2.0**. Released in 1996, it saw the announcement of the official Linux mascot, Tux. Created by Larry Ewing following Torvald's description of when he was bit by a penguin at a Zoo.

3.5. Major Tech Companies adoption

1998 marked the adoption of Linux by many big names in tech. IBM, Oracle and Netscape helped push Linux as a competitor to proprietary operating systems by adopting it for their enterprise solutions. IBM further invested $1 billion dollars in Linux development in the year 2000

3.6. Desktop Environments

Linux being a kernel, it was up to the users or distribution creators to decide how they want their operating system to be presented, if they wanted to move past a command line interface.

The first iterations of user interfaces for the GNU/Linux system were not too dissimilar to those of Windows 2.0-3.0, such as FVWM that came shippped with the Softlanding Linux System (SLS) distro from 1993. They were mostly knows as Window Managers, and while they did their job, they were soon outshined by the new gui concepts brought by Windows 95.

The lack of a graphical environment that felt integrated like Windows was felt by Mattias Ettrich, pushing him to creation of the K Desktop Enviroment (KDE). And in 1998, KDE 1.0 was

already a big step for the Linux Desktop. The design featured the now classic desktop with a set of default icons, a taskbar with application shortcuts and a small display for various information. There was a catch however, as the library KDE was built on was not compatible with GPL. This led to the creation of another desktop - GNOME. This time it's creators Miguel de Lcaza and Fererico Mena used the GTK toolkit, initially developped for the GIMP image editor, that was also licencsed under GPL. GNOME 1.0 released in 1999. Later in the year 2000, KDE was now GPL compliant as well thanks to the QT toolkit it used re-releasing under the GPLv2 licencse. Many other Desktop Environments, as well as Window Managers were created, but KDE and GNOME remain the most widely used.

3.7. The Linux Foundation

Despite Linux being free software, this didn't mean the developers working on it were doing it out of their own pockets. Formerly known as The Open Source Development Lab in 2000, The Linux Foundation has Linus Torvalds working full-time on their behalf developping the kernel. Various companies realised the value in Linux and cashed in with a significant resources to advance the kernel. According to the Linux Foundation, in February 2015 over 80% of Linux kernel developers were paid. Other forms of investment by companies are in the form of cash donations to support developers and hardware donations to facilitate driver development.

3.8. Ubuntu

2004 saw the first release of Ubuntu, one of most popular Linux distributions. Many users first exposure to Linux is through Ubuntu due to it's ease of use and strong community support.

3.9. Android

In 2005, Google acquired Android Inc. They later introduced the first Android phone with HTC Dream in 2008.

3.10. Microsoft

As Linux gained more support from bigger companies such as IBM, Dell, Hewlett-Packard, Compaq, Oracle and Red Hat, As well as seeing wider use and adoption in general, some parties at Microsoft felt threatened. In an internal Microsoft memo that was leaked in 1998, and later confirmed authentic by Microsoft, it discussed ways of competing with open source software. The memo suggests that one way in which open projects have seen wide adoption in the server market is through the use of standarized protocols, such protocols allow portability and freedom to chose or create different implementations of the same functionality. Vinod Valloppillil, the program manager at Microsoft who authored the memo suggests that open source software's flexibility in this domain can be combatted through extending the protocols, adding new protocols and lastly de-commoditizing said protocols and applications. Internally this policy has been nicked "Embrace, Extend, Extinguish" In 2009, Linux contributor Stephen Hemminger discovered GPL-Licensed open source bits of code used in breach of the GPL Licence by Microsoft in their Hyper-V network driver. Miscrosoft later contributed the code to the kernel after being compelled by Stephen to avoid legal action.

3.11. Currently

Linux was originally intended for desktop use. In reality, it thrives in almost every other domain but the desktop. One area where it shines today is the mobile device market, with Android making up 79% of the total mobile OS share by 2013.

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