**Chapter 12**

Packt Free Learning

<https://www.packtpub.com/free-learning>

<https://www.techtarget.com/searchnetworking/definition/big-endian-and-little-endian#:~:text=Big%2Dendian%20is%20an%20order,the%20sequence)%20is%20stored%20first>**.**

Linux has its roots in Unix, which was developed in the 1970s. Despite the significant changes and advancements that Linux has undergone since its inception in 1991, its core command-line experience is still quite similar to the Unix of the 1970s [[1](https://www.redhat.com/sysadmin/unix-linux-history)].

Interestingly, the development of Linux was partially inspired by MINIX, an operating system developed by Andrew Tanenbaum. Tanenbaum was a proponent of using a microkernel in place of a monolithic kernel, which was the design choice made by Linux creator Linus Torvalds [[2](https://frontpagelinux.com/articles/guide-through-history-of-unix-linux-everything-you-need-to-know/)]. Despite their disagreements, Torvalds went ahead with his design choice and the resulting Linux kernel has seen constant growth throughout its history [[3](https://en.wikipedia.org/wiki/History_of_Linux)].

Overall, Linux has an interesting history intertwined with that of Unix and other operating systems like MINIX. Its development has been marked by both innovation and tradition, with the kernel continuing to evolve and grow in popularity to this day.

**Ranking Linux Distributions for 2023: not your average tier list!**

<https://www.youtube.com/watch?v=d7-EhGIeGUs>

**Andrew S. Tanenbaum: The Impact of MINIX**

# <https://www.youtube.com/watch?v=86_BkFsb4eI>

**Lessons Learned from 30 Years of MINIX**

# <https://cacm.acm.org/magazines/2016/3/198874-lessons-learned-from-30-years-of-minix/fulltext>

**Introduction to AMOEBA**

<https://www.youtube.com/watch?v=5Y5NLn9tssU>

**NGINX Explained in 100 Seconds**

<https://www.youtube.com/watch?v=JKxlsvZXG7c>

(ChatGPT) Here are a few notable Linux distributions released or gaining popularity after 2018:

1. EndeavourOS: Launched in 2019, EndeavourOS is a user-friendly Arch Linux-based distribution. It aims to provide a simpler and more streamlined experience compared to vanilla Arch Linux.
2. Regolith Linux: Released in 2019, Regolith Linux is based on Ubuntu and features the i3 tiling window manager. It combines the simplicity of i3 with the familiarity and robustness of the Ubuntu ecosystem.
3. Feren OS: Although Feren OS was initially released in 2015, it has gained significant popularity since its 2018 snapshot. This distribution is based on Ubuntu and features the KDE Plasma desktop environment. It is designed to be user-friendly and visually appealing.
4. Garuda Linux: Introduced in 2020, Garuda Linux is an Arch-based distribution that focuses on performance, user-friendliness, and aesthetics. It features a customized KDE Plasma desktop and various optimizations for gaming and other resource-intensive tasks.

Please note that this is not an exhaustive list, and there might be other Linux distributions released after 2018 that have not been mentioned here. The Linux ecosystem is vast, and new distributions are continually being developed and released.

There is no exact number of Linux distributions currently available since new ones are constantly being developed and some may have become outdated or merged with others. However, according to the [[1](https://en.wikipedia.org/wiki/List_of_Linux_distributions)], there are over 600 Linux distributions. This includes both active and discontinued distributions, as well as those that are still in development.

One popular Linux distribution is Linux Mint, which is built on top of Ubuntu and offers a user-friendly interface suitable for beginners. Linux Mint is known for its Cinnamon desktop environment, which resembles the layout of Windows and has features that some users may find more appealing than Ubuntu [[3](https://itsfoss.com/best-linux-distributions/)].

Another popular distribution is Red Hat Linux, which was one of the first major distributions to use the .rpm file format and is now divided into a community-supported distribution called Fedora and a commercially-supported distribution called Red Hat Enterprise Linux [[1](https://en.wikipedia.org/wiki/List_of_Linux_distributions)].

Overall, the large number of Linux distributions available allows users to choose one that best suits their needs and preferences.

Predicting the future of operating systems is difficult, but there are a few trends that may give us some insight into what to expect.

Firstly, there is likely to be continued growth in cloud-based operating systems, which allow users to access software and data through the internet rather than storing it on their local device. This approach offers numerous advantages, such as easier software updates, increased security, and reduced hardware requirements, and is already being adopted by companies like Google, Microsoft, and Amazon.

Another trend is the increasing importance of open-source software, which allows users to access and modify the source code of their operating system. Open-source software has already gained significant momentum in the tech industry, with Linux being one of the most prominent examples. Open-source operating systems offer numerous advantages over proprietary systems, such as increased security, flexibility, and cost-effectiveness, and are likely to continue gaining popularity.

Additionally, there may be an increasing focus on privacy and security, with operating systems incorporating more advanced security features and giving users greater control over their data. This could include features such as encrypted storage, multi-factor authentication, and privacy-focused browsing.

Overall, the future of operating systems is likely to be shaped by a combination of cloud computing, open-source software, and increased security and privacy. As technology continues to evolve, it is difficult to predict exactly how these trends will develop, but they are likely to play an increasingly important role in the operating systems of the future.

how about Cloud-based operating system?

Cloud-based operating systems, also known as cloud operating systems or web operating systems, are a type of operating system that allows users to access their software, applications, and data through the internet rather than running them locally on their devices.

One of the main advantages of cloud-based operating systems is their ability to reduce hardware requirements and costs for users, as the heavy lifting of running applications and processing data is offloaded to remote servers. This also allows for easier software updates and maintenance, as the system can be updated on the server-side rather than requiring each individual device to be updated.

Another advantage is the ability to access data and applications from anywhere with an internet connection, making it easier to work remotely or collaborate with others. Cloud-based operating systems also offer enhanced security, as the data is stored remotely and can be accessed using encrypted connections, reducing the risk of data loss or theft.

However, there are also some potential drawbacks to cloud-based operating systems. They require a reliable internet connection to work effectively, and the performance can be affected by network latency and bandwidth limitations. Users may also have concerns about data privacy and security when using a cloud-based system, as their data is being stored and processed on remote servers that may be outside of their control.

Despite these potential drawbacks, cloud-based operating systems are expected to continue growing in popularity, particularly in enterprise environments where they can offer cost savings and increased flexibility for businesses. Major tech companies such as Google, Microsoft, and Amazon already offer cloud-based operating systems, and it is likely that more will follow suit in the future.

How about open source software? any examples?

Open-source software refers to software that is developed collaboratively and can be freely accessed, modified, and distributed by anyone. This type of software is typically developed in a transparent and collaborative manner, with the source code being publicly available for anyone to view and modify.

One of the most well-known examples of open-source software is the Linux operating system, which is developed collaboratively by a community of developers around the world. Linux has gained widespread popularity due to its stability, flexibility, and security, and is used in a variety of applications, from web servers to smartphones.

Another example of open-source software is the web browser Mozilla Firefox, which is developed by the Mozilla Foundation and is available for free on multiple platforms. Firefox is known for its speed, security, and customizability, and is a popular alternative to proprietary web browsers like Google Chrome and Microsoft Edge.

The Apache web server is another prominent example of open-source software, which is widely used to serve web content on the internet. Apache is known for its reliability and flexibility, and is used by many large organizations and websites.

Other examples of open-source software include the LibreOffice productivity suite, the WordPress content management system, and the PostgreSQL relational database management system. Open-source software has gained significant momentum in recent years, and is increasingly being used by businesses, governments, and individuals around the world.