Linux Introduction:

History, Foundation, Requirements

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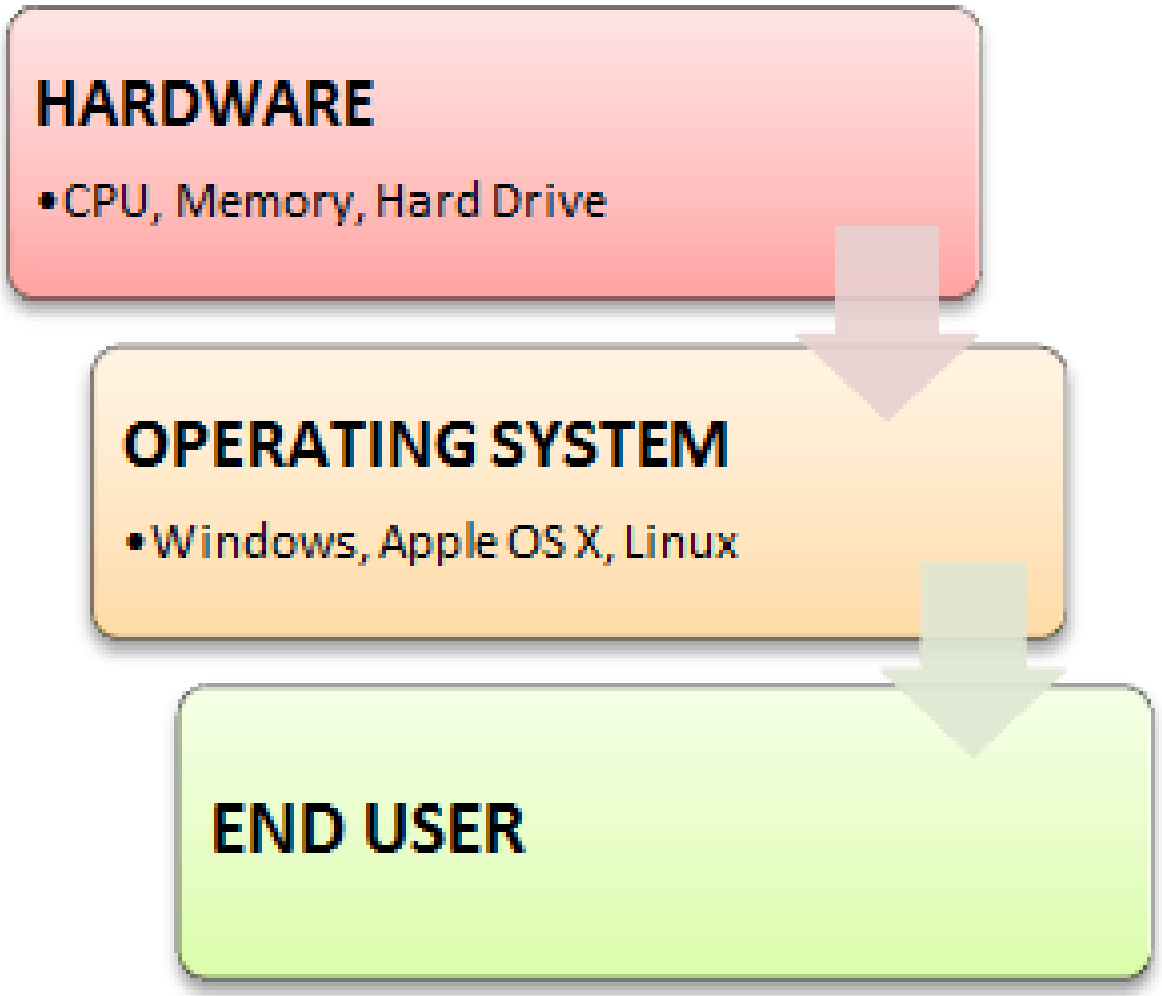
What is Linux?



- Linux is an open-source Unix-like OS based on the Linux Kernel. Linus Torvalds published it in 1991. It's free and open-source, thus the source code may be updated and distributed commercially or non commercially.
- Linux was first used on desktop computers, then on servers, mainframes, and supercomputers. Linux is utilized in routers, automation controls, TVs, DVRs, gaming consoles, wearables, etc. Android, built on Linux, runs on smartphones and tablets. Linux is the most installed general-purpose OS due to android. Linux is usually distributed.
- LINUX is an open-source OS/kernel. Its feature list resembles UNIX. The Linux kernel handles basics like hardware-software communication.

Why an OS?

- When you turn on your computer, you may write, surf the web, or view a movie. How does computer hardware work? How does your computer's CPU know to play an mp3? The OS or kernel performs this. You need an OS to use your computer (OS). You're using one right now on your computer. You may have used Windows or Apple OS X, but here we will learn about Linux, its merits, and how to utilize it.

Who created Linux?

- Linus Torvalds, a computer science student, conceived Linux while he was young. He worked on UNIX OS and believed it required upgrades. When his recommendations for UNIX were rejected, he thought of creating a user-modifiable OS.

History of Linux

- In 1991, Linus created Linux. File Manager, Document Editors, and Audio-Video apps are needed. An empty cone. He partnered with MIT programmers to create Linux apps. In 1991, a functional Linux OS with several apps was introduced, marking the beginning of one of the most popular open-source OS alternatives today.
- Programmers might utilize the Linux Kernel to create bespoke operating systems. With time, user-friendly OSs took over. Linux is a popular Kernel used by Debian, Knoppix, Ubuntu, and Fedora. There are dozens of Best Linux OS based on the Linux Kernel that provide a range of functionalities.

Linux Distribution

- Linux distribution is an operating system that is made up of a group of programs that are all based on the Linux kernel. You can also say that distribution is made up of the Linux kernel and software and libraries that help it work. And you can get a Linux-based operating system by downloading one of the Linux distributions. These distributions are available for different types of devices, such as embedded devices, personal computers, etc. There are more than 600 Linux distributions, and some of the most popular ones are:

Linux Distribution

- MX Linux
- Manjaro
- Linux Mint
- Elementary
- Ubuntu
- Debian
- Solus
- Fedora
- openSUSE
- Deepin.

Linux Distribution

- The best thing about Linux is that it is a free operating system that anyone can use. This means that everyone has easy access to the source code, and you can add to, change, and share the code with anyone without permission.
- Linux is more secure than any other operating system when it comes to safety. It doesn't mean that Linux is completely safe, since there is some malware for it, but it is less likely to be attacked than any other operating system. So, you don't need any anti-virus software to use it.

- Linux software updates are easy to do and happen often.
- There are different kinds of Linux distributions, so you can use them based on what you need or what you like.
- You can get and use Linux for free on the internet.
- It has a lot of support from the community and is very stable. It rarely gets slow or stops working, and you don't have to restart it after a short time.
- It keeps the user's privacy safe.

- The Linux system is much better than other operating systems when it comes to performance. It lets a lot of people work at the same time and does a good job of taking care of them.
- It can be used with a network.
- Linux has a lot of ways to be used. You don't have to install the whole Linux suite; you can just install the parts you need.

- Linux works with a lot of different file formats and is quick and easy to set up from the web. It can also be installed on any hardware, including your old computer.
- It does all tasks well even though it only has a small amount of space on the hard disk.
- Linux has some problems:
  - ✓ It's not easy to use. So, it might be hard for new users to figure out.
  - ✓ It has fewer drivers for peripheral hardware than Windows.

Does Linux differ from Ubuntu in any way?

- The right answer is yes. Linux is a family of open-source operating systems based on the Linux kernel. Ubuntu, on the other hand, is a free, open-source operating system and Linux distribution based on Debian. Or, to say it another way, Linux is the main system, and Ubuntu is how Linux is used. Linux is made by Linus Torvalds, and it came out in 1991. Ubuntu was made by Canonical Ltd. and came out in 2004.

Kernel Mode vs User Mode

- Kernel code runs in a special mode called "kernel mode" that gives it full access to all of the computer's resources. This code is very efficient and fast because it represents a single process, runs in a single address space, and doesn't need to switch contexts. The kernel runs each process and gives each process access to system services and hardware in a secure way.

Kernel Mode vs User Mode

- System Library is where support code that doesn't need to run in kernel mode is kept. User programs and other system programs run in User Mode, which has no access to the system hardware or kernel code. User programs and utilities use System libraries to get to Kernel functions and get low-level tasks from the system.

How things work

Here are a few of the most important things about the Linux Operating System.

- **Portable:** When software is portable, it can run the same way on different kinds of hardware. The Linux kernel and application programs can be installed on any kind of hardware.
- **Open Source:** Linux's source code is free to use, and it is built by a group of people working together. Several teams work together to make the Linux operating system better, and it is always getting better.

- **Multi-User:** Linux is a multiuser system, which means that more than one person can use system resources like memory, RAM, and application programs at the same time.
- Linux is a multiprogramming system, which means that more than one app can run at the same time.
- **Hierarchical File System:** Linux has a standard way to organize files, both system files, and user files.

- **Shell:** Linux has a special program called an interpreter that can be used to run operating system commands. It can be used to call application programs, do different kinds of operations, etc.
- **Security:** Linux keeps its users safe with authentication features like password protection, limited access to certain files, and data encryption.

Minimum System Requirements for Linux

Linux server system requirements

Hardware requirements

Ensure that the system onto which you install Discovery Studio meets these minimum requirements:

- **32-bit Intel-compatible processor running at 2 GHz or greater**
- **512 MB RAM**
- **Disk space: 2.5 GB for Pipeline Pilot server plus components**
- **A DVD-ROM drives**

Note: The hard disk space required for installation can vary between 300 MB and 2.6 GB (total), depending on the components selected for installation.

THANK YOU

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