



BRAINWARE UNIVERSITY

BNCSC202

CLASS NOTES

Linux System Administration-I

Module I: Introduction to Linux Operating System

Part I

Basic concept of open source software:

Open source software is software that has a source code that is freely available for anyone to use, modify, and distribute. This allows for collaboration and community development, as well as the ability for users to customize and improve the software to suit their needs. Open source software is often developed by a community of volunteers and is distributed under a license that allows for free use, modification, and distribution. Some examples of open source software include Linux, Apache, and Mozilla Firefox.

What is Linux?

Linux is a free and open-source operating system, based on Unix. It was initially developed by Linus Torvalds in 1991. Linux is commonly used in servers, supercomputers, and mobile devices, and it has a reputation for being reliable, secure, and highly customizable. Linux is not a single operating system, but rather a family of operating systems that are based on the Linux kernel. These operating systems are known as distributions, and some popular examples include Ubuntu, Fedora, and Debian. Linux is known for its stability, performance, and flexibility, which make it a popular choice for use in enterprise environments, web servers, and scientific computing.

Brief History of Linux and Unix:

Unix is a multi-user, multi-tasking operating system that was first developed by AT&T's Bell Labs in the late 1960s and early 1970s. It was designed to be portable, meaning that it could be used on different types of computers. Unix was widely used in academia and research, and it was also used as the basis for many commercial operating systems.

In 1991, Linus Torvalds, a computer science student at the University of Helsinki, began working on an operating system that would be similar to Unix but would be free and open-source. He called this operating system Linux, and he released the first version of the Linux kernel, version 0.01, on the Internet in 1991. Over the next few years, Linux quickly gained popularity among programmers and developers, who began contributing to its development and creating their own versions of the operating system, known as distributions.

Today, Linux is one of the most widely used operating systems in the world, with a significant market share in servers, supercomputers, and mobile devices. Linux is known for its stability, performance, and flexibility, and it is used in a wide range of applications, from enterprise environments to web servers to scientific computing.

Unix is still widely used, mostly on servers and in enterprise environments. However, the Unix operating system and its derivatives are proprietary and are not open-source.

Difference between Linux and other Operating Systems:

Linux is different from other operating systems in several key ways:

1. **Open-source:** Linux is open-source software, which means that its source code is freely available for anyone to use, modify, and distribute. This allows for collaboration and community development, as well as the ability for users to customize and improve the software to suit their needs.
2. **Unix-based:** Linux is based on the Unix operating system and shares many of its features and design principles. This includes a hierarchical file system, a command-line interface, and support for multi-tasking and multi-user environments.



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3. High degree of customizability: Linux is known for its flexibility and customizability. Users can modify and configure the operating system to suit their specific needs, and there are many different distributions of Linux available, each with its own set of features and tools.
4. Large community of developers: Linux has a large and active community of developers who contribute to its development, maintenance, and improvement. This has led to a wide variety of software and tools being developed for Linux, including many open-source alternatives to proprietary software.
5. Security and stability: Linux is known for its security and stability, making it a popular choice for servers, supercomputers, and other systems that require high uptime and reliability.

In comparison, most other operating systems are proprietary, meaning their source code is not available for users to modify, and they are developed and maintained by companies or organizations. Windows and macOS are examples of proprietary operating systems.