

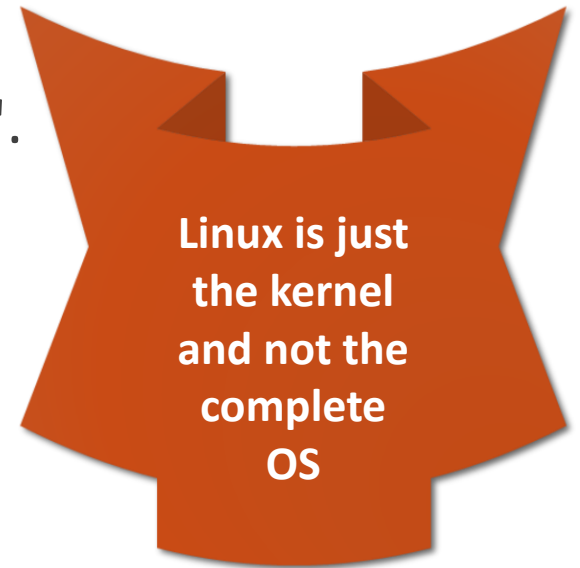
Start your journey in Linux

WITH
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Linux is an Operating System?

- The central part of an Unix based/Like OS is the **Linux kernel**. (latest versions are available at kernel.org)
- It is originally written by Linus Torvalds who named it "Linux".
- **GNU/Linux** refers to Operating System.

Linux is a part of the operating system



What is GNU?

- “GNU's Not Unix”.
- A Unix-like operating system includes a kernel, compilers, editors, text formatters, mail software, graphical interfaces, libraries, games and many other things.
- Writing a whole operating system is a very large job. The Free Software Foundation was founded in October 1985, initially to raise funds to help develop GNU.

GNU Continued

- By 1990, either found or written all the major components except one—the kernel.
- Linux, a Unix-like kernel, was developed by Linus Torvalds in 1991 and made free software in 1992. Combining Linux with the almost-complete GNU system resulted in a complete operating system: the GNU/Linux system.
- A Graphical desktop (called GNOME) to help beginners use the GNU system is also developed under GNU project.

What is Unix?

- Unix is a family of multitasking, portable, multi-user computer operating systems, which also have time-sharing configurations.
- Unix systems use a centralized OS kernel which is responsible for managing the entire system.

Cont....

The programming interface, file abstraction, built-in networking and persistent background processing called daemons are the other features and capabilities that are supported by a Unix OS.

**Linux and other UNIX-like
operating systems is that
“everything is a file**

What is daemon?

A daemon (also known as background processes) is a Linux or UNIX program that runs in the background. Almost all daemons have names that end with the letter "d".

Linux often start daemons at boot time

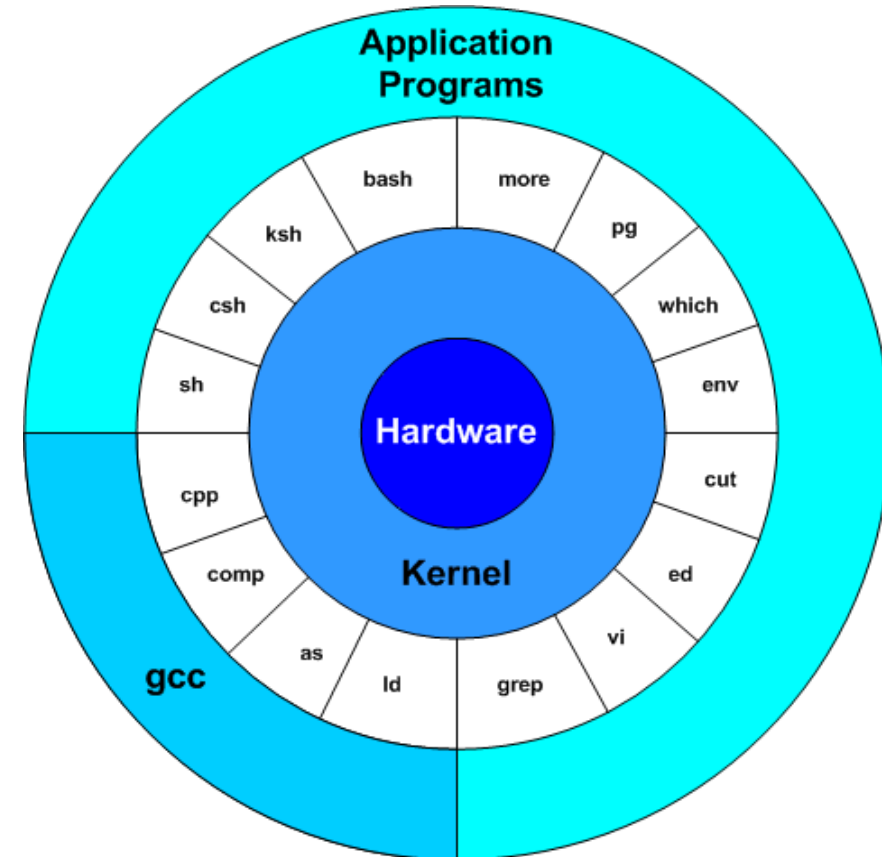
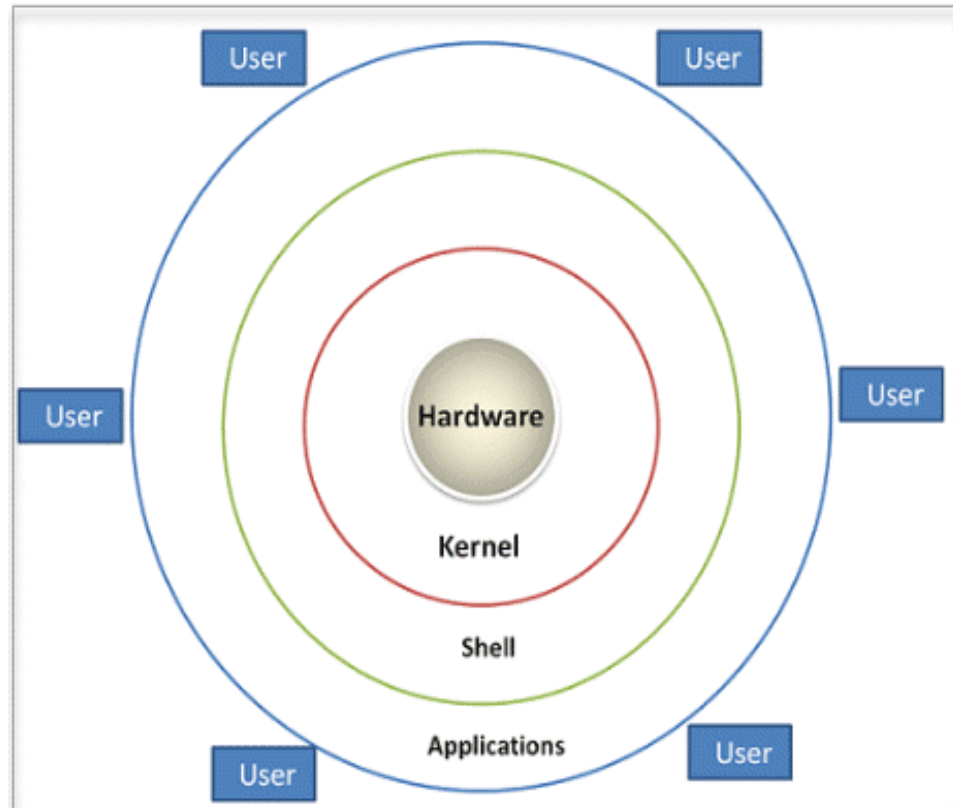
Examples
httpd the daemon that handles the Apache server,
or
sshd which handles SSH remote access connections.

What is the philosophy behind Linux Treats “Everything is/as a file”

Many things on Linux appear in your file system, but they aren't actually files. They're special files that represent hardware devices, system information, and other things — including a random number generator.

These special files may be located in pseudo or virtual file systems such as `/dev`, which contains special files that represent devices, and `/proc`, which contains special files that represent system and process information.

Linux Architecture



What is Linux distributions?


- A **Linux distribution** (often abbreviated as **distro**) is an operating system made from a software collection that is based upon the Linux kernel and, often, a package management system.

A typical Linux distribution comprises a Linux kernel, GNU tools and libraries, additional software, documentation.

What is Kernel?

- A Kernel is a computer program that is the heart and core of an Operating System.
- It acts as a glue/bridge between software and Hardware.
- The Kernel also has control over everything in the system.
- Whenever a system starts, the Kernel is the first program that is loaded after the bootloader as the Kernel has to handle the rest of the thing of the system for the Operating System

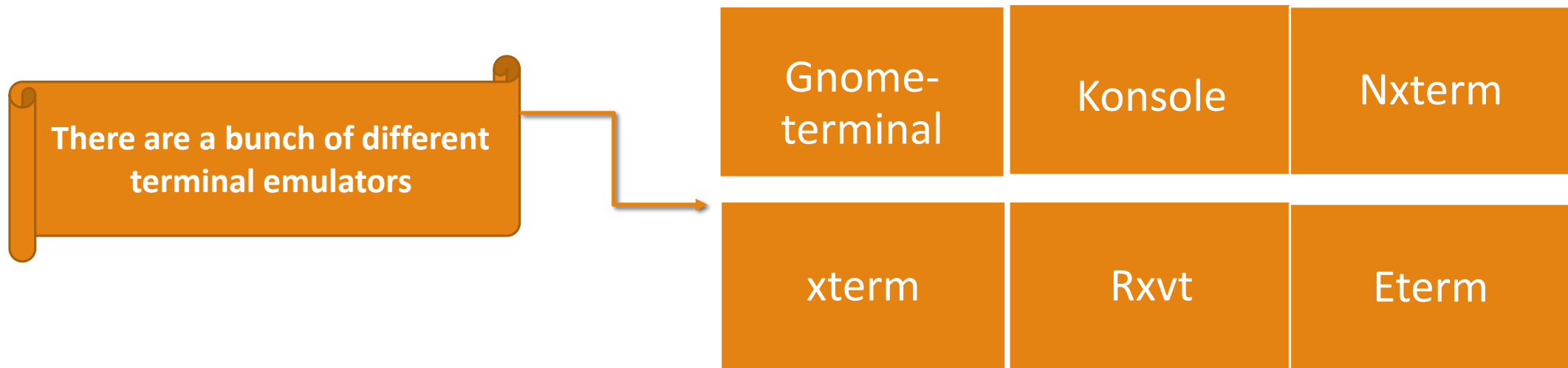
Functions of a Kernel



Process Management	<ul style="list-style-type: none">• Allocating resources to a process e.g. CPU and memory• Synchronization among processes
Memory Management	<ul style="list-style-type: none">• Allocating and deallocating memory to programs/process
Device Management	<ul style="list-style-type: none">• Controlling several devices attached to the system e.g. Keyboard, mouse, external hard drives.
Storage Management	<ul style="list-style-type: none">• Disk Management• Disk Scheduling

What is Terminal ?

- It's a program called a terminal emulator.
- This is a program that opens a window and lets you interact with the shell.



What is Shell?

- The shell is a program that takes keyboard commands and passes them to the operating system to carry out operations and gives an output.
- It is also called as Command Line Interpreter.
- It starts whenever a user logged in or terminal is opened.

What is Shell?

- Almost all Linux distributions supply a shell program from the GNU Project called bash. The name “bash” is an acronym for “Bourne Again Shell”,
- A reference to the fact bash is an enhanced replacement for **sh**, the original Unix shell program written by Steve Bourne.

Check Running shell at your host machine?

- Open the terminal - Ctrl + Alt + T
- Type below command
- `echo $SHELL`
- In case you don't have setup with Linux you can use below link for running command and shell programs

Ubuntu Playground : <https://www.katacoda.com/courses/ubuntu/playground>

Happiness is



Some Popular Distributions



Thank you for your Attention !!

