

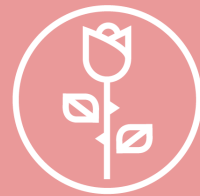
Intro to Linux

Presented by Cyber@UCR



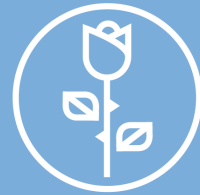
“Nothing wrong with not
knowing, there is

something wrong with not
trying.”



- IDK, but I
will be
happy to
take credit

“You don’t need to be an expert, you just need to know enough to do a good job!”



- Me, Anthony Hallak

AGENDA



#1

Introduction

What is?

Common Misconceptions

#3

Examples

Live Demo / Walkthrough

#2

Topic

Basic Overview

Common Practices

#4

Questions

Audience Participation

Q/A

What is a linux?

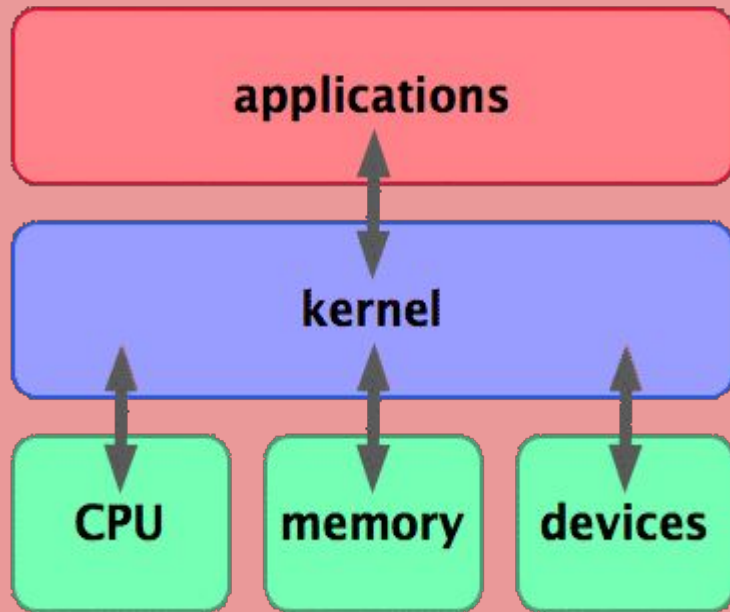


Linux is a *kernel*, but we are lazy and don't care too much so we refer to the whole system as a "linux" system (Should be referred to as GNU/Linux). For this reason, when people are using "Bash" or another shell, it is often just dubbed "Linux" but this is not 100% correct. (MacOS has a terminal and its BSD based)

Kernel? Like the popcorn?



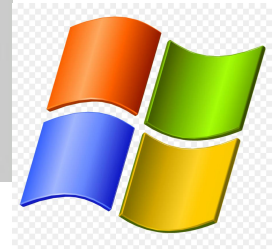
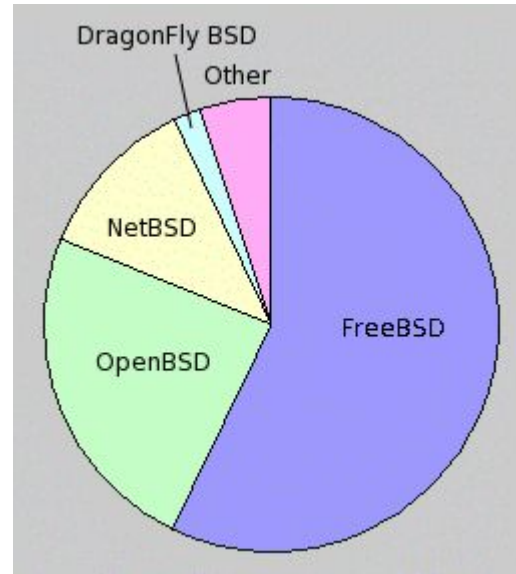
- Serves as the middleman for the OS
- Is one of the first things to boot up
- Comes in two Flavors
 - Monolithic kernels, like one big stone
 - Micro kernels, think a bunch of Legos combined
 - (There are hybrids and other types ...)
- There are a lot of different versions / types

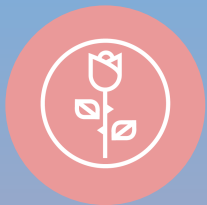


3 Main Kernels



- Linux : developed by Linus Torvalds
- Windows : developed by Microsoft
- BSD : Berkeley-Software-Distribution
 - Yes, UC-Berkeley.





What we will be doing then?

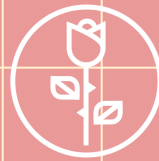
- We will be learning how to use the Shell! Transferable knowledge that you can use on most systems with very little change.
- A terminal is the window you use to interact with, the **shell** is the **interpreter** the computer uses to take in user input, **interpret** what you want, execute the proper commands, and give you the output. Repeat until exit is called.
- What you will learn, you can use on Ubuntu, CentOS, MacOS, Fedora, Arch, Windows, ... basically any system that you can put Bash on.



Overview

- Movement and control in the CLI
- Filesystem where typical stuff goes
- System monitoring (featuring logs!)
- Confused? Me too, so don't forget to RTFM when you forget!
- Also, keep track of what has been done and what has not. If you get lost or distracted go back to the list.

Commands Used



- ls, cd, pwd, whoami, cat, echo, touch, file, grep, locate, which
- top, ps, lsof, netstat, ifconfig, ping, kill, w, ss, ip addr
- man
- lsattr, chattr, (Not on all systems)
- chmod
- su, sudo



- Great way to gather or view lots of information in a quick manner.
- Through the terminal, you have lots of control over the machine through commands rather than clicking through a GUI.
- Often a lot faster than going through the GUI.
- Also you look like a **l33t h4ck3r**



File System (only the ones we talk about are here)



Start at the root

- /

- bin
- boot
- dev
- etc
- home
- proc
- usr
- sbin
- tmp
- var

- bin holds binaries to use on the system
- boot holds the files for booting
- dev is where devices are
- etc is for configuration
- home is where users are
- proc are where currently running things are

- usr is for read-only data that is used globally
- sbin is like bin but the s is for system
- tmp is for temporary things
- var is for “variable” as in “variable in size” so mainly log files.

NOTE



Remember those quotes!

- You don't have to be an expert, just know enough to do a good job
- There is nothing wrong with not knowing, there is something wrong with not trying

Also: ***IT IS ALWAYS OKAY TO ASK QUESTIONS!***

IT'S TIME!



Ready for the demo!

Quiz Time!



- What is /proc for? /etc? /var/log? /dev? /bin? /sbin?
- How do you find what processes are running?
- What is the difference between su and sudo?
- What do you do if you get lost, don't know, or forget?
- How do I see where what directory I am in?

Thanks !



- More resources
- <https://ucrcyber.org>
- <https://ucrcyber.slack.com>
- <https://bash.cyberciti.biz/>
- <https://overthewire.org/wargames/bandit/>
- Download Oracle VirtualBox + Ubuntu image
- Just play around!