GNU/Linux

By CyberPatriot Linux Division

What is GNU/Linux?

GNU/Linux or commonly referred to as Linux are an family of open source, free to use operating systems modeled based off an older operating system known as Unix.

Linux comes in many different **distributions**. Distributions also known as distros are different operating systems which are made from different software while utilizing GNU and the Linux kernel.

Differences between Windows and linux

Linux based Operating Systems

- Open source
- Package managers used to download software
- Command line centric
- More secure
- Stability
- Different distros

Windows

- Proprietary software
- Lack of package managers
- GUI cenetric

Introduction to the Shell

The shell is a program which directly translates input in the form of text from the user to execute different commands. While it is fine to use GUI applications, to truly have control over your system in linux a shell is essential.

There are many different shells such as Zsh and Fish. But for the purpose of our lesson we will be focusing on Bash.

Bash 101

Moving around

- pwd: prints the current directory
- cd [path]: changes directory to one specified
- ls: prints out a list of all items within a directory

Basic file/directory manipulation

- rmdir [paths] : deletes specified directory at path (only if empty)
- rm -f [files] : forcefully removes files
- rm -rf [directory] : deletes directory
- touch [files] : creates a file with names specified
- mkdir [directory] : creates a directory with the name specified
- cat [file] : outputs the contents of a file to the shell
- cp [file] [path] : copies file to location specified by path

Practice problems

1: Move to the /etc directory and output the file containing all the **passwords**

Commands: cd, ls, cat

2: Create multiple files with the .jpeg extension in a directory named “jpegs” in the pictures directory

Commands: cd, mkdir, touch

3: Create an homework folder at your home directory with multiple subdirectories for each of your classes

Commands: cd, mkdir

4: Create a directory named “USER_INFO” in your home directory and copy the files containing users hashed passwords and users public information

Commands: mkdir, cp, cd, ls

Hint: Google it