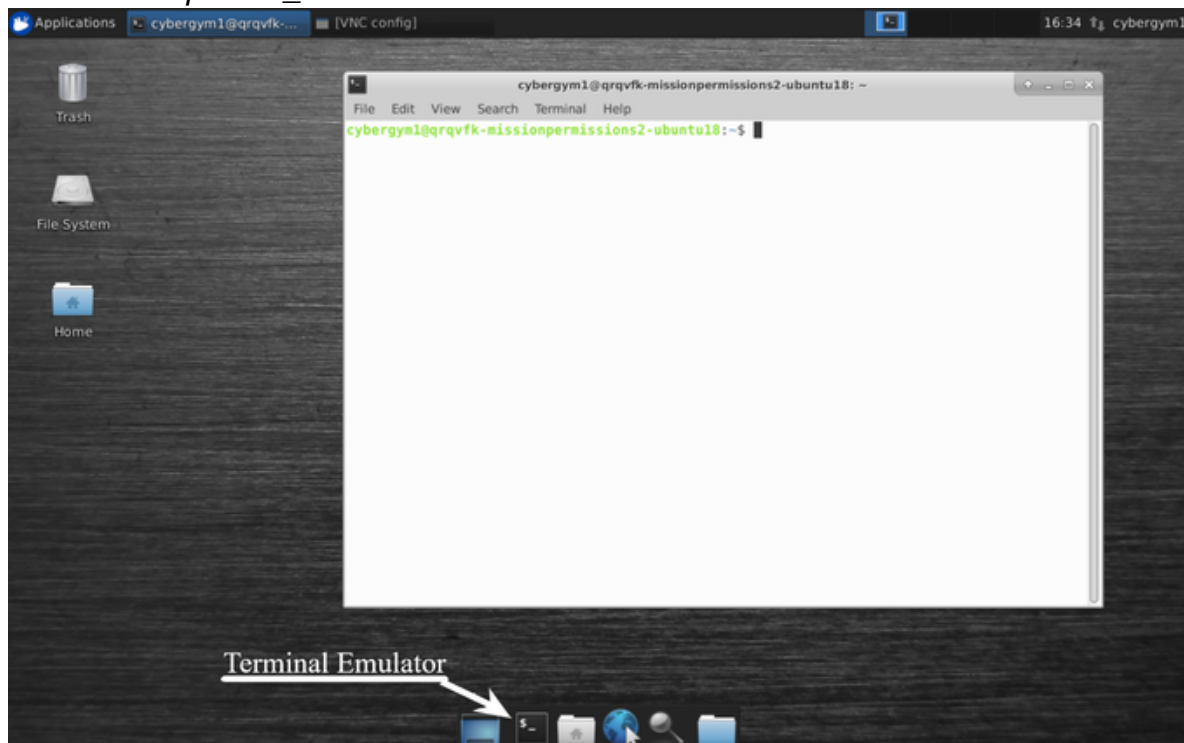# Mission: Permissions 2

Introduction:

For this workout, students will learn the basics of how to view and change file permissions on a Linux system. Two important commands students will need in order to complete the workout:

```
chmod
ls -la
```

Here is a website with a simple rundown on chmod and how it works. Note, while ls -l will show permissions on a specified file, using *-la* instead will show the permissions for the entire directory including hidden files.

The Mission:

Students will need to open the terminal and change the file permissions on the file */usr/local/etc/protect_me/vulnerable.txt*
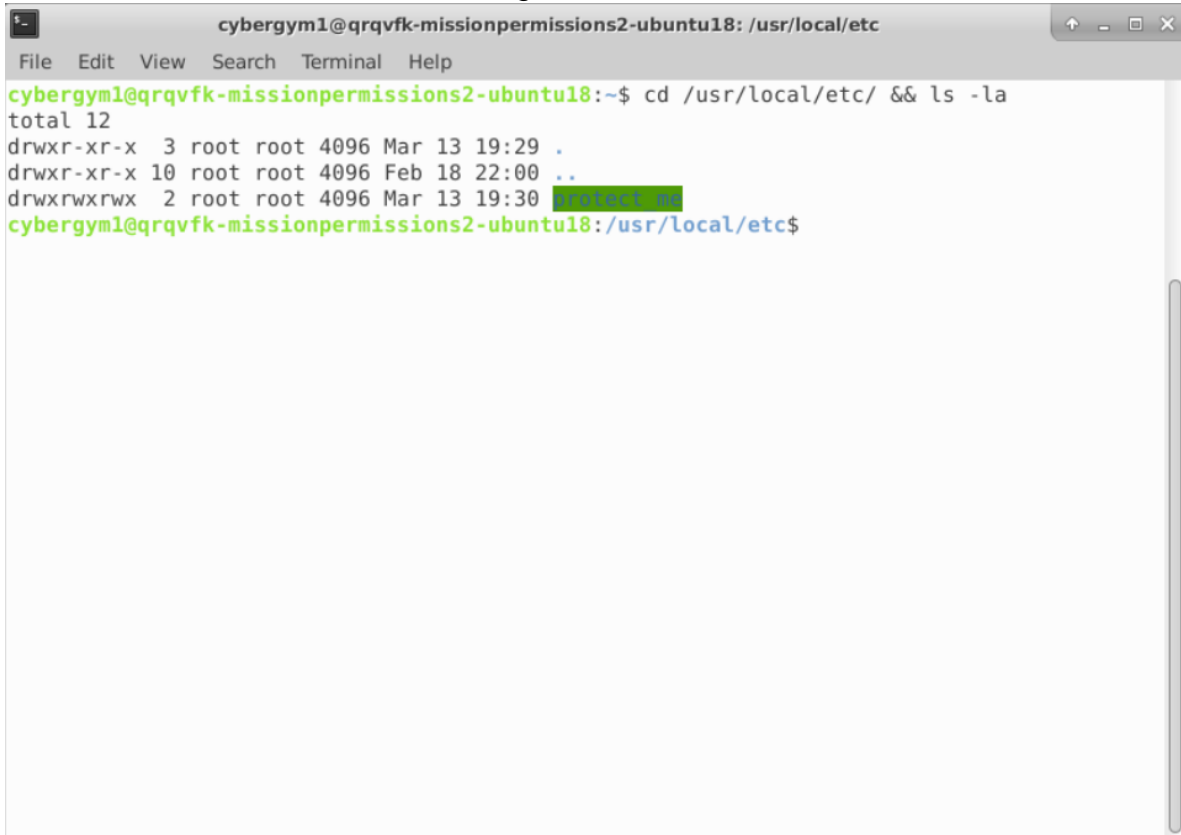

With the terminal open, you can change directories by typing *cd <directory name>* or in this case, the directory is */usr/local/etc/* . Once in the appropriate directory,

enter the command to list all files and their permissions, *ls -la*. You can enter them one at a time or you can combine both commands by typing && in between the commands like this:

```
cd /usr/local/etc/ && ls -la
```

The terminal should return something like this:

Students should try to find the numeric value of what permissions are given to the *p rotect_me* folder.

They should see that it is currently set to value *777*. Definitely not secure for folders containing critical information!

Now the students are instructed to change the file permissions to the following permissions:

- Owner needs to have read, write, and execute.
- Groups can read but not write or execute.
- Other users (the world) can't read, write, or execute.

The website provided above can be a quick reference for selecting the correct

numerical values to enter. If calculated correctly, students should get 740.

With that number, you can either move into the folder using the *cd* command and change the permissions of a single file with

```
sudo chmod <path to file>
```

Or they can recursively change the permissions for the entire folder by adding *-R* b efore the folder path name like such:

```
sudo chmod 740 -R ./protect_me
```

Quick tip: You can either write out the full path to the file or if you're in the same directory, you can simplify the path by typing *./<directory name>* . This can save a lot of time when dealing with paths that are longer or harder to remember.

Students can verify the permissions have been successfully changed by sending the following command again:

```
sudo ls -la
```

Here is what they should see:

Workout complete! If the page doesn't update right away, wait a couple of minutes and refresh and you should see a green check mark next to the completed workout.