File permissions in Linux

Project description

To ensure that all files and directories are secure and only accessible to those with the right authorization, I will be using the linux BASH command line to ensure that the company adheres to the “principle of least privilege’. The main commands we will be using are:

1$chmod(change mode)

This command will change the access permissions of the file and directory

2$cd(Change Directory)

This command is used to move from one directory to another.

3$ls -la(list(everything with permissions))

This command is how we see what files and directories(including hidden files)are in the current directory, what permission the files have, and the owner/group.

Check file and directory details

Project_k.txt

-rw-rw-rw-

Project_m.txt

-rw-r-----

Project_r.txt

-rw-rw-r--

Project_t.txt

-rw-rw-r--

.Project_x.txt

-rw--w----

/home/researcher2/projects/drafts

Drwx--x---

Describe the permissions string

First character of the string says what type of object it is

-A dash(-) means its a file

-a ‘d’ means it’s a directory

These are on character (1)

Every three characters afterward is the permissions for the:

-User (u) ->(2-4)

-Group (g) ->(5-7)

-Other (o) ->(8-10)

These permission character are:

-Read = r

-Write = w

-Execute = x

So a persimmon setup where the user has full access to a file, group can read and execute, other can read looks like: -rwxr-xr--

Change file permissions

To change the permissions of a file or directory, the chmod command must be used.
For example, let's say you need to make it so that the 'Other' group can read and execute the project_m.txt that will look something like this:

$chmod o+r,o+x project_m.txt

If you wanted to undo the execute command, this is all you need to do

$chmod o-x project_m.txt

Change file permissions on a hidden file

To change a hidden file all you have to do is ensure that the period (.) is before the filename.
For example lets say that project_x.txt should not have write permission but the user and group can read, it should look like this:

$chmod o-r,g-w,g+r .project_x.txt

Change directory permissions

Changing a directories permissions is just like changing the permissions of a file. For example, we need to make sure that the "drafts" directory is only accessible to the user, this is what the command should look like:

$chmod g-rw,o-wr /drafts/

Summary

This project was made to display my understanding of the linux file permissions, since this is a integral part of the linux file management