File permissions in Linux

Project description

We are trying to update and check files authorization of files in FHS of linux

Check file and directory details

We are currently working on the Projects Directory to lisie the file and directory detail

`ls -la`

```
researcher2@a8032bd5923f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 11:45 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 12:29 ..
-rw--w---- 1 researcher2 research_team   46 Aug 25 11:45 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug 25 11:45 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Aug 25 11:45 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug 25 11:45 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_t.txt
researcher2@a8032bd5923f:~/projects$
```

Describe the permissions string

-rw-rw-rw- 1 researcher2 research_team 46 Aug 25 11:45 project_k.txt

The part in red tells what type is for example if it's a hyphen it means it's a file and if there is a d in place of the hyphen it means it's a directory.

The part in green indicates that that is the permission group for the group.. Currently the user has r(read) and w(write permission) and the third is hyphen because the user does not have execute permission.

The part in yellow indicates the permission for the other type of users and what they can access. The other group has r(Read) and w(write) permission.

Change file permissions

We will change the permissions for the file project_k.txt and we want to take the write permissions from other types of users. Command for that would be

`chmod o-w project_k.txt`

In this command chmod is a reserved keyword for changing permissions for directory and a file that stands for the user group other and mathematical operator - means we are removing + means we are adding. **-w** means that we are removing the write permission for the others group for the file project_k.txt

```
researcher2@a8032bd5923f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 11:45 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 12:29 ..
-rw--w---- 1 researcher2 research_team   46 Aug 25 11:45 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug 25 11:45 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug 25 11:45 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_t.txt
researcher2@a8032bd5923f:~/projects$
```

Now the others group of project_k.txt does not have write permission

Change file permissions on a hidden file

Now we will change the permissions for a hidden file to see the hidden files you need to use the command

`Ls-la`

```
researcher2@a8032bd5923f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 11:45 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 12:29 ..
-rw--w---- 1 researcher2 research_team   46 Aug 25 11:45 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug 25 11:45 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug 25 11:45 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_t.txt
researcher2@a8032bd5923f:~/projects$
```

Now the file project_x.txt has a “ . “ behind it which indicates its a hidden file. We will remove all permissions for the hidden file now. So nobody can access it. For that we will use the chmod command.

`cdmod u-rw,g-rw .project_x.txt`

We can change the permissions of two user group using a “ , “ between the 2 user groups used above. Now we have remove all permissions for the project_x.txt

```
researcher2@a8032bd5923f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 11:45 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug 25 12:29 ..
---------- 1 researcher2 research_team   46 Aug 25 11:45 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug 25 11:45 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug 25 11:45 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug 25 11:45 project_t.txt
researcher2@a8032bd5923f:~/projects$
```

The hyphen behind the project_x.txt denotes that all permissions have been removed.

Change directory permissions

Now we will change the permissions for the drafts directory.

```
researcher2@3c52679eb013:~$ ls -ld /home/researcher2/projects/drafts
drwx--x--- 2 researcher2 research_team 4096 Aug 25 13:08 /home/researcher2/projects/drafts
```

These are the permissions for drafts directory lets take the execution permissions from the group user.

```
chmod g-x /home/researcher2/projects/drafts
```

```
researcher2@3c52679eb013:~$ ls -ld /home/researcher2/projects/drafts
drwx------ 2 researcher2 research_team 4096 Aug 25 13:08 /home/researcher2/projects/drafts
```

And there are no execution permissions for group users for drafts directory.

Summary

In this document we represented how to check file permissions directory permissions how to change permissions for files and hidden files and change permissions for directories permissions