

File permissions in Linux

Project description

I'm going to access the current Access and check whether the Authorization given to Employees is correct or not . If not , then I'm going to modify them , to make the system safe.

Check file and directory details

In the /home/researcher2/projects directory, there are five files with the following names and permissions:

Here is the screenshot for checking the permissions:

```
researcher2@0eb20fee9e3f:~$ pwd
/home/researcher2
researcher2@0eb20fee9e3f:~$ ls
projects
researcher2@0eb20fee9e3f:~$ cd projects
researcher2@0eb20fee9e3f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 04:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 06:17 ..
-rw--w---- 1 researcher2 research_team  46 Jul 22 04:50 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul 22 04:50 drafts
-rw-rw-rw- 1 researcher2 research_team  46 Jul 22 04:50 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 22 04:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_t.txt
researcher2@0eb20fee9e3f:~/projects$
```

The permissions given for each files and subdirectories included in /home/researcher2/projects directory are:

- project_k.txt
 - User = read, write,
 - Group = read, write
 - Other = read, write
- project_m.txt
 - User = read, write
 - Group = read
 - Other = none
- project_r.txt

- User= read, write
- Group = read, write
- Other = read
- project_t.txt
- User = read, write
- Group = read, write
- Other = read
- .project_x.txt
- User = read, write
- Group = write
- Other = none

There is also one subdirectory inside the projects directory named drafts. The permissions on drafts are:

- User = read, write, execute
- Group = execute
- Other = none

Describe the permissions string

To work with granting or removing permissions , we use 10 words string which is —

drwxrwxrwx

- Here **d** represents the directory ; if its regular file then there will be hyphen(-) used.
- First **r** represents that the *user* has the Read permission , if the user did not have the read permission their will be - used.
- First **w** represents that the *user* has the write permission , if the user lacks this permission their will be - used.
- First **x** represents that the *user* has the execute permission , if the user lacks permission their will be - used.
- Second **r** represents that the *Group* has the Read permission , but if the group lacks the read permission their will be - used.
- Second **w** represents that the *group* has the Write permission , but if the Group lacks the write permission their will be - used
- Second **x** represents the *Group* has the execute permission , but if the Group did not have permission their will be - used
- Third **r** represents that the *Others* have the Read permission , if they didn't their will be - used
- Third **w** represents that the *others* have the Write permission , but if the other lacks this permission their will be - used.

- Third **x** represents that the *others* have the *execute* permission but if they lack this permission they will be - used instead of x

Change file permissions

The command I use is :

chmod o-w projects-k.txt

Here is the screenshot of changing the file permission so that others will not have the write permission:

```
researcher2@0eb20fee9e3f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 04:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 06:17 ..
-rw--w---- 1 researcher2 research_team  46 Jul 22 04:50 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul 22 04:50 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 22 04:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_t.txt
researcher2@0eb20fee9e3f:~/projects$
```

Change file permissions on a hidden file

Using this command to change file permissions on a hidden file:

chmod u-w,g-w,g+r .project_x.txt

So that the user and group doesn't have the write permission, they only read the file.

Here's the screenshot:

```
researcher2@0eb20fee9e3f:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@0eb20fee9e3f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 04:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 06:17 ..
-r--r----- 1 researcher2 research_team  46 Jul 22 04:50 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul 22 04:50 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 22 04:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_t.txt
researcher2@0eb20fee9e3f:~/projects$
```

Change directory permissions

Using this command to change the directory permissions:

chmod g-w drafts

So that only researcher2 who's the user , only access the drafts file .

Here's the screenshot:-

```
researcher2@0eb20fee9e3f:~/projects$ chmod g-x drafts
researcher2@0eb20fee9e3f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 04:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 22 06:17 ..
-r--r----- 1 researcher2 research_team  46 Jul 22 04:50 .project_x.txt
drwx----- 2 researcher2 research_team 4096 Jul 22 04:50 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 22 04:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 22 04:50 project_t.txt
```

Summary

Checking the current permissions in the projects directory , and by using chmod (change mode) command we changes the permissions regarding their jobs and tasks