File permissions in Linux

Project description

You must examine and manage the permissions on the files in the /home/researcher2/projects directory for the researcher2 user.

The researcher2 user is part of the research_team group.

You must check the permissions for all files in the directory, including any hidden files, to make sure that permissions align with the authorization that should be given. When it doesn't, you must change the permissions.

> In this task, you must explore the permissions of the projects directory and the files it contains. The lab starts with /home/researcher2 as the current working directory. This is because you're changing permissions for files and directories belonging to the researcher2 user.

1. First we check with ls where we are.

```
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:16 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:57 ..
-rw--w---- 1 researcher2 research_team   46 Jun 25 15:16 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun 25 15:16 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Jun 25 15:16 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jun 25 15:16 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_t.txt
```

The Bash returns that there is one folder and 4 files – project_k.txt, project_m.txt, project_r.txt and project_t.txt, there are also hidden . – the current directory, .. – the parent directory, and .project_x.txt – hidden file.

2. Then we check the permissions.

a. draft folder
   - User = read, write, execute
   - Group = execute
   - Other = none

b. project_k.txt
   - User = read, write
   - Group = read, write
   - Other = read, write

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

d. project_r.txt
   - User = read, write
   - Group = read, write
   - Other = read

e. Project_t.txt
   - User = read, write
   - Group = read, write
   - Other = read

Hidden :

f. . -current directory
   - User = read, write, execute
   - Group = read, execute
   - Other = read, execute

g. .. – parent directory
   - User = read, write, execute
   - Group = read, execute
   - Other = read, execute

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

3. Change file permissions

a. Change the permissions of **project_k.txt** so that the **owner** type of other **doesn't have write** permissions.

With the command chmod o-w project_k.txt we remove the write permission of other

```
researcher2@7bb5764e754b:~/projects$ chmod o-w project_k.txt
researcher2@7bb5764e754b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:16 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:57 ..
-rw--w---- 1 researcher2 research_team   46 Jun 25 15:16 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun 25 15:16 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jun 25 15:16 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_t.txt
```

After that we check if the permission is changed.

b. Change permissions of the **project_m.txt** file so that the **group doesn't have read or write** permissions.

With the command chmod g-rw project_m.txt we remove the read and write permissions for group.

```
researcher2@7bb5764e754b:~/projects$ chmod g-rw project_m.txt
researcher2@7bb5764e754b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:16 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:57 ..
-rw--w---- 1 researcher2 research_team   46 Jun 25 15:16 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun 25 15:16 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_k.txt
-rw------- 1 researcher2 research_team   46 Jun 25 15:16 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_t.txt
```

After that we check if the permissions are changed.

c. Change the permissions of the file **.project_x.txt** so that both **the user and the group can read, but not write** to, the file.

With the command chmod u=r, g=r .project.txt we set the permissions for user and group to read for the hidden file .project_x.txt.

```
researcher2@7bb5764e754b:~/projects$ chmod u=r,g=r .project_x.txt
researcher2@7bb5764e754b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:16 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:57 ..
-r--r----- 1 researcher2 research_team   46 Jun 25 15:16 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun 25 15:16 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_k.txt
-rw------- 1 researcher2 research_team   46 Jun 25 15:16 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_t.txt
```

After that we check if the permissions are changed.

d. Remove the **execute permission for the group** from the **drafts** directory.

With the command chmod g-x drafts we remove the execute permission for group in the folder drafts.

```
researcher2@7bb5764e754b:~/projects$ chmod g-x drafts
researcher2@7bb5764e754b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:16 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun 25 15:57 ..
-r--r----- 1 researcher2 research_team   46 Jun 25 15:16 .project_x.txt
drwx------ 2 researcher2 research_team 4096 Jun 25 15:16 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_k.txt
-rw------- 1 researcher2 research_team   46 Jun 25 15:16 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun 25 15:16 project_t.txt
```

After that we check if the permissions are changed.

Summary

The assessment involved checking and modifying file and directory permissions in the /home/researcher2/projects directory for the researcher2 user, who is part of the research_team group.

Directory Contents:

- **Files:** project_k.txt, project_m.txt, project_r.txt, project_t.txt
- **Folder:** drafts
- **Hidden file:** .project_x.txt
- **System entries:** . (current directory), .. (parent directory)

Initial Permissions Overview:

- **drafts/**
  - **User:** read, write, execute
  - **Group:** execute
  - **Other:** none
- **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 & project_t.txt**
  - **User:** read, write
  - **Group:** read, write
  - **Other:** read
- **.project_x.txt (hidden)**
  - **User:** read, write
  - **Group:** write
  - **Other:** none

- **. (current directory) and .. (parent directory)**
    - **User:** read, write, execute
    - **Group:** read, execute
    - **Other:** read, execute

Permission Changes Performed:

1. **project_k.txt**
    - Removed write permission from 'other' using:
      chmod o-w project_k.txt
2. **project_m.txt**
    - Removed read and write permissions from 'group' using:
      chmod g-rw project_m.txt
3. **.project_x.txt**
    - Set 'user' and 'group' to read-only using:
      chmod u=r, g=r .project_x.txt
4. **drafts/ directory**
    - Removed execute permission from 'group' using:
      chmod g-x drafts

Each change was verified using ls -la to confirm that the permissions were successfully applied.