

File permissions in Linux

Project description

This project is a task to examine existing permissions on the organization file system. To determine if the permissions match the authorization that should be given. If they do not match, i'll have to modify the permissions to authorize the appropriate users and remove any unauthorized access.

Check file and directory details

```
researcher2@95ecade3f80f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 7 21:07 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 7 21:31 ..
-rw--w---- 1 researcher2 research_team  46 Jul 7 21:07 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul 7 21:07 drafts
-rw-rw-rw- 1 researcher2 research_team  46 Jul 7 21:07 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 7 21:07 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 7 21:07 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 7 21:07 project_t.txt
```

Describe the permissions string

Drwxrwxrwx - Here are the meaning of the string:

D -directory

R - read permissions on users

W - write permissions on users

X - execute permission on users

R - read permissions on group

W - write permissions on group

X - execute permissions on group

R - read permissions on other users

W - write permissions on other users

X - execute permissions on other users

Change file permissions

```
researcher2@95ecade3f80f:~/projects$ chmod o-w project_k.txt
researcher2@95ecade3f80f:~/projects$ chmod g-r project_m.txt
researcher2@95ecade3f80f:~/projects$ chmod u-w,g-w,g+r project_x.txt
```

Change file permissions on a hidden file

```
researcher2@95ecade3f80f:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@95ecade3f80f:~/projects$ cd draft
```

Change directory permissions

```
researcher2@95ecade3f80f:~/projects/drafts$ ls -la
total 8
drwx--x--- 2 researcher2 research_team 4096 Jul  7 21:07 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul  7 21:07 ..
researcher2@95ecade3f80f:~/projects/drafts$ chmod g-x .
researcher2@95ecade3f80f:~/projects/drafts$ chmod g-x ..
```

Summary

I accomplished the required requirements to limit access to files and directories in order to prevent any future breach.

Maintained least privilege access to only authorized users, groups and other users

```
researcher2@95ecade3f80f:~$ pwd
/home/researcher2
researcher2@95ecade3f80f:~$ cd projects
researcher2@95ecade3f80f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul  7 21:07 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul  7 21:31 ..
-rw--w---- 1 researcher2 research_team  46 Jul  7 21:07 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul  7 21:07 drafts
-rw-rw-rw- 1 researcher2 research_team  46 Jul  7 21:07 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul  7 21:07 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul  7 21:07 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul  7 21:07 project_t.txt
researcher2@95ecade3f80f:~/projects$ ^C
researcher2@95ecade3f80f:~/projects$ ^C
researcher2@95ecade3f80f:~/projects$ chmod o-w project_k.txt
researcher2@95ecade3f80f:~/projects$ chmod g-r project_m.txt
researcher2@95ecade3f80f:~/projects$ chmod u-w,g-w,g+r project_x.txt
chmod: cannot access 'project_x.txt': No such file or directory
researcher2@95ecade3f80f:~/projects$ pwd
/home/researcher2/projects
researcher2@95ecade3f80f:~/projects$ cd proj_x.txt
-bash: cd: proj_x.txt: No such file or directory
researcher2@95ecade3f80f:~/projects$ cd project_x.txt
-bash: cd: project_x.txt: No such file or directory
researcher2@95ecade3f80f:~/projects$ cd .project_x.txt
-bash: cd: .project_x.txt: Not a directory
researcher2@95ecade3f80f:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@95ecade3f80f:~/projects$ cd draft
-bash: cd: draft: No such file or directory
researcher2@95ecade3f80f:~/projects$ cd /draft
-bash: cd: /draft: No such file or directory
researcher2@95ecade3f80f:~/projects$ cd /home/researcher2/projects/draft
-bash: cd: /home/researcher2/projects/draft: No such file or directory
researcher2@95ecade3f80f:~/projects$ cd /home/researcher2/projects/drafts
researcher2@95ecade3f80f:~/projects/drafts$ ls -la
total 8
drwx--x--- 2 researcher2 research_team 4096 Jul  7 21:07 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul  7 21:07 ..
researcher2@95ecade3f80f:~/projects/drafts$ chmod g-x drafts
chmod: cannot access 'drafts': No such file or directory
researcher2@95ecade3f80f:~/projects/drafts$ chmod g-x
```