

# File permissions in Linux

## Project description

Through Linux commands, I was able to check file and directory details, change file permissions on both visible and hidden files, and change directory permissions.

## Check file and directory details

The command to check file and directory details is the `ls-l` command. The output is shown below.

```
total 20
drwx--x--- 2 researcher2 research_team 4096 Jul 28 18:08 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Jul 28 18:08 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jul 28 18:08 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jul 28 18:08 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jul 28 18:08 project_t.txt
```

## Describe the permissions string

For this portion of the activity I will describe the 10 string `-rw-rw-rw-`

This string describes the permissions for users, group, and others. For example, all three of these are able to read and write, or edit, the file as indicated by the `r` and `w`

## Change file permissions

Below, we can see that the write permission, typed as `o-w`, is being removed from other in the file `project_k.txt`

```
researcher2@72c5ca72bbd0:~/projects$ chmod o-w project_k.txt
```

## Change file permissions on a hidden file

The command `ls -la` is used to display file permissions on a hidden file. To change the permissions of `.project_x.txt`, we use the following command `chmod u-w,g-w,g+r .project_x.txt`

This removes the user the ability to write and group is now able to read, but no longer write.

```
researcher2@72c5ca72bbd0:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jul 28 18:08 .
drwxr-xr-x 3 researcher2 research_team 4096 Jul 28 18:19 ..
-rw--w---- 1 researcher2 research_team  46 Jul 28 18:08 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jul 28 18:08 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Jul 28 18:08 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Jul 28 18:08 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 28 18:08 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Jul 28 18:08 project_t.txt
```

## Change directory permissions

An example of changing directory permissions is shown below with the command `chmod g-x drafts`

This removes the execute permission.

```
researcher2@72c5ca72bbd0:~/projects$ chmod g-x drafts
```