

# File permissions in Linux

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## Project description

This project illustrates usage of the CLI to locate, identify, and modify file and folder permissions.

## Check file and directory details

`ls -al` (lists files and directories, including hidden, with their permissions )

## Describe the permissions string

The permissions string is a ten (10) character string, wherein each character defines a specific piece of information about a file or folder and which users and groups have which types of permissions to read, write, or execute that specific file or folder (and any other files on folder which it may contain).

The first character will either be 'd' (denoting a directory), or '-' (denoting a file).

Each sequence of three characters thereafter defines the permissions for (in order of appearance): 'users', 'groups', and 'others.'

The permissions always appear in the following order for each sequence of three characters: 'r' (for read permission), 'w' (for write permission), and 'x' (for executable/execution permission).

These characters may also be substituted with a '-' (hyphen/dash), signifying that the particular permission at this character's place in the sequence is disallowed.

Example 1 (directory with all permissions): `drwxrwxrwx`

Example 2 (file with no permissions): `-----`

Example 3 (file with read permission only for user, group, and others): `-r--r--r--`

## Change file permissions

The following command removes write permissions from users, groups, and others from an example file named 'fiel.txt':

```
chmod u-w,g-w,o-w file.txt
```

## Change file permissions on a hidden file

The following command removes all other permissions, and adds read permission only for users, and groups, to the following *hidden* example file named '.project\_x.txt':

```
chmod u=r,g=r,o= .project_x.txt
```

## Change directory permissions

The following command provides access to the 'drafts' directory and its contents to one specific user (the current owner ('researcher2')), and removes all other permissions:

```
chmod u=rwx,g=,o= drafts
```

## Summary

The above examples demonstrate a functional understanding of file and folder permissions modification using the symbolic method.