

Set/Remove Permissions in Bash

This lesson will be covering the command that assists in setting or removing permissions.

chmod

Definition:

`chmod` command is short for “change mode”, is typically used to change the read/write permissions of files and directories. A mode can either be represented symbolically with unique alphabets or by the permutations of three numbers (octal numbers) as we discussed in the previous lesson. We can also add references in the command to indicate the users on which the specified permissions are being applied. Given below is the syntax to `chmod` command.

Syntax:

```
chmod [references] [options] [mode] [file_name]
```

Operators

Operator	Meaning
+	Adds the specified permissions on the files
-	Removes the specified permissions on the files
=	Add ONLY specified permissions on the file and remove the remaining permissions/modes

References

References are basically used to indicate the users on which the permissions are applied.

Reference	Meaning
u	User who owns the file(s)
g	Users in the file group
o	Users which are neither owner of the file nor in the file group
a	All users. Same as <code>ugo</code>

Options

Option	Meaning
-f	suppress error messages
-v	outputs the file being processed
-c	to output warnings before making any changes
-R	Means <i>Recursive</i> . This option is used to change directories recursively

Example:

1. You can set permissions by writing combination of three digit numbers where first digit is to set permission for the owner, second digit is to set

permissions for the file group members, and third is to set permissions for other users. OR you can explicitly write it as:

```
chmod u=rw,g=wx,o=r my_file.c
```

The numerical equivalent for this same command where owner can read and write the file, group members can write and execute the file and other users can only read the file:

```
chmod 634 my_file.c
```

2. To remove the permission of “execute” for a file for everyone:

```
chmod a-x my_file.txt
```

3. Allow other users to execute and read the file

```
chmod o+rx my_file.txt
```