



Sagar Institute of Research & Technology, Bhopal
Department of Information Technology

Experiment No. 4

Aim: Study & use of the Command for changing file permissions.

Solution:

There are 2 ways to use the command -

1. **Absolute mode**
2. **Symbolic mode**

Absolute (Numeric) Mode

In this mode, file **permissions are not represented as characters but a three-digit octal number.**

The table below gives numbers for all for permissions types.

Number	Permission Type	Symbol
0	No Permission	---
1	Execute	--X
2	Write	-W-
3	Execute + Write	-WX
4	Read	r--
5	Read + Execute	r-X
6	Read + Write	rw-
7	Read + Write +Execute	rwX

Symbolic Mode

In the Absolute mode, you change permissions for all 3 owners. In the symbolic mode, you can modify permissions of a specific owner. It makes use of mathematical symbols to modify the file permissions.



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Operator	Description
+	Adds a permission to a file or directory
-	Removes the permission
=	Sets the permission and overrides the permissions set earlier.

The various owners are represented as –

User Denotations	
u	user/owner
g	group
o	other
a	all

Example: Symbolic Mode

```
$ls -l testfile
```

```
-rwxrwxr-- 1amrood users 1024 Nov 2 00:10 testfile
```

```
$chmodo+wxtestfile
```

```
$ls -l testfile
```

```
-rwxrwxrwx 1amrood users 1024 Nov 2 00:10 testfile
```

```
$chmod u-x testfile
```

```
$ls -l testfile
```

```
-rw-rwxrwx 1amrood users 1024 Nov 2 00:10 testfile
```



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```
$chmod g = rxtestfile
```

```
$ls -l testfile
```

```
-rw-r-xrwx 1amrood users 1024 Nov 2 00:10 testfile
```

```
$chmodo+wx,u-x,g = rxtestfile
```

```
$ls -l testfile
```

```
-rw-r-xrwx 1amrood users 1024 Nov 2 00:10 testfile
```

Absolute Permissions

```
$ls -l testfile
```

```
-rwxrwxr-- 1amrood users 1024 Nov 2 00:10 testfile
```

```
$ chmod 755 testfile
```

```
$ls -l testfile
```

```
-rwxr-xr-x 1amrood users 1024 Nov 2 00:10 testfile
```

```
$chmod 743 testfile
```

```
$ls -l testfile
```

```
-rwxr---wx 1amrood users 1024 Nov 2 00:10 testfile
```

```
$chmod 043 testfile
```

```
$ls -l testfile
```

```
----r---wx 1amrood users 1024 Nov 2 00:10 testfile
```