

Syntax

Example

Change files and directories recursively

The `chmod` command stands for "change mode"

Permissions:

777

rwXrwXrwX

User	Group	Other
...

Read ☒ ☒ ☒

Write ☒ ☒ ☒

Execute

Chmod Generator allows you to quickly and visually generate permissions in numerical and symbolic.

Readable by owner only

500 r-x-----

Avoid Changing

600 rw-----

Changeable by user

644 rw-r--r--

Read and change by user

660 rw-rw---

Changeable by user and group

```
700  rwx-----
```

Only user has full access

755 rwxr-xr-x

Only changeable by user

775 **rw**xrwxr-

Sharing mode for a group

777 rwxrwxrw

Everybody can do everything

```
$ ls -l
-rw-r--r-- 1 root root 3 Jun 29 15:35 a.l
drwxr-xr-x 2 root root 2 Jun 30 18:06 dir
```

Permission analysis of "dir"

```
d   rwx  r-x  r-x
|   |    |    |
|   |    |    +--- 4. Other | 5 (4+0+1)
|   |    +-----+
|   +-----+
| +-----+
+-----+
1. File Type | directory
```

Permission	Description	Octal	Decimal
---	No Permission	000	0 (0+0+0)
--X	Execute	001	1 (0+0+1)
-W-	Write	010	2 (0+2+0)
-WX	Execute and Write	011	3 (0+2+1)
r--	Read	100	4 (4+0+0)
r-X	Read and Execute	101	5 (4+0+1)
rW-	Read and Write	110	6 (4+2+0)
rWX	Read, Write and Execute	111	7 (4+2+1)

Who (abbr.)	Meaning
u	User
g	Group
o	Others
a	All, same as ugo

Abbreviation	Permission	Value
r	Read	4
w	Write	2
x	Execute	1
—	No permission	0

Abbreviation	File Type
d	Directory
-	Regular file
l	Symbolic Link

Operators

+	Add
-	Remove
=	Set

```
$ chmod 600 example.txt
$ chmod u=rw,g=,o= example.txt
$ chmod a+rwx,u-x,g-rwx,o-rwx example.txt
```

```
$ chmod 664 example.txt
$ chmod u=rw,g=rw,o=r example.txt
$ chmod a+rw,x,u-x,g-x,o-wx example.txt
```

```
$ chmod 777 example.txt
$ chmod u=rwx,g=rwx,o=rwx example.txt
$ chmod a=rwx example.txt
```

```
Deny execute permission to everyone.
```

```
$ chmod a-x chmodExampleFile.txt
```

```
Allow read permission to everyone.
```

```
$ chmod a+r chmodExampleFile.txt
```

In order to remove read write permissions given to a file, use the following syntax:

```
$ chmod o-rw example.txt
```

For our file example.txt, we can remove read write permissions using chmod for group by running the following command:

Executable

```
$ chmod +x ~/example.py
$ chmod u+x ~/example.py
$ chmod a+x ~/example.py
```

Make a file readable and writable by the group and others.

```
$ chmod go+rw chmodExampleFile.txt
```

Make a shell script executable by the user/owner.

```
$ chmod u+x chmodExampleScript.sh
```

Allow everyone to read, write, and execute the file and turn on the set group-ID.

```
$ chmod =rx,g+s chmodExampleScript.sh
```

following command:

```
$ chmod g-rx example.txt
```

To remove chmod read write permissions from the group while adding read write permission to public/others, we can use the following command:

```
$ chmod g-rx, o+rx example.txt
```

But, if you wish to remove all permissions for group and others, you can do so using the go= instead:

```
$ chmod go= example.txt
```

chmod 754

```
$ chmod 754 foo.sh
$ chmod u=rwx,g=rx,o=r foo.sh
```

Chmod Practices

SSH Permissions

```
$ chmod 700 ~/.ssh
$ chmod 600 ~/.ssh/authorized_keys
$ chmod 600 ~/.ssh/id_rsa
$ chmod 600 ~/.ssh/id_rsa.pub
$ chmod 400 /path/to/access_key.pem
```

Web Permissions

```
$ chmod -R 644 /var/www/html/
$ chmod 644 .htaccess
$ chmod 644 robots.txt
$ chmod 755 /var/www/uploads/
$ find /var/www/html -type d -exec chmod 7
```

Batch Change

```
$ chmod -R 644 /your_path
$ find /path -type d -exec chmod 755 {} \;
$ find /path -type f -exec chmod 644 {} \;
```

See: Command Substitution

Also see

Modify File Permissions with chmod (linode.com)

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