
بسم الله الرحمن الرحيم

LINUX COMMANDS

Feel free

Description of some Linux commands – Part IV
OS Laboratory – Exercise 4

Collected and Written by Mostafa Fazli

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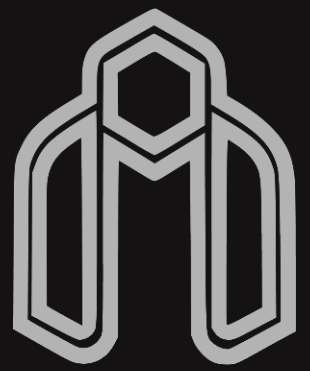


chmod

chwon

chgrp

tar

chmod

chmod is stands for CHange MODe , This command modifies Linux file permissions.

Structure :

chmod [REFRENCE][OPERATOR][MODE] FILE_NAME

* This command can be used in different ways.

For getting to know this command first we need to see permissions.

In Linux, who can do what to a file or directory is controlled through sets of permissions. There are three sets of permissions. One set for the owner of the file, another set for the members of the file's group, and a final set for everyone else.

You can see the permissions with "ls –l" command.

For example :

-rw-r--r-- 1 king knight 14 Oct 18 13:24 a.txt

chmod

1. The first three characters show the permissions for the user who owns the file (*user permissions*).
2. The middle three characters show the permissions for members of the file's group (*group permissions*).
3. The last three characters show the permissions for anyone not in the first two categories (*other permissions*).

- *r*: Read permissions. The file can be opened, and its content viewed. => 4 for binary
- *w*: Write permissions. The file can be edited, modified, and deleted. => 2 for binary
- *x*: Execute permissions. If the file is a script or a program, it can be run (executed). => 1 for binary

- --- means no permissions have been granted at all.
- rwx means full permissions have been granted. The read, write, and execute indicators are all present.

chmod

for next mission you should know about users, groups and others:

u: User, meaning the owner of the file.

g: Group, meaning members of the group the file belongs to.

o: Others, meaning people not governed by the u and g permissions.

a: All, meaning all of the above.

And operatorions are:

–Minus sign. Removes the permission.

+ Plus sign. Grants the permission. The permission is added to the existing permissions. If you want to have this permission and only this permission set, use the = option, described below.

= Equals sign. Set a permission and remove others.

chmod

Example command:

- chmod u=rw,og=r a.txt

This command set user permission readable and writable, others and groups permission are just readable for a.txt file

- chmod o-r *.jpg

This command set others permission minus readable for all files that have ‘. jpg’ extension.

- chmod 472 a.txt

This command set user permission just readable, group permission readable, writable and executable and others just writable.

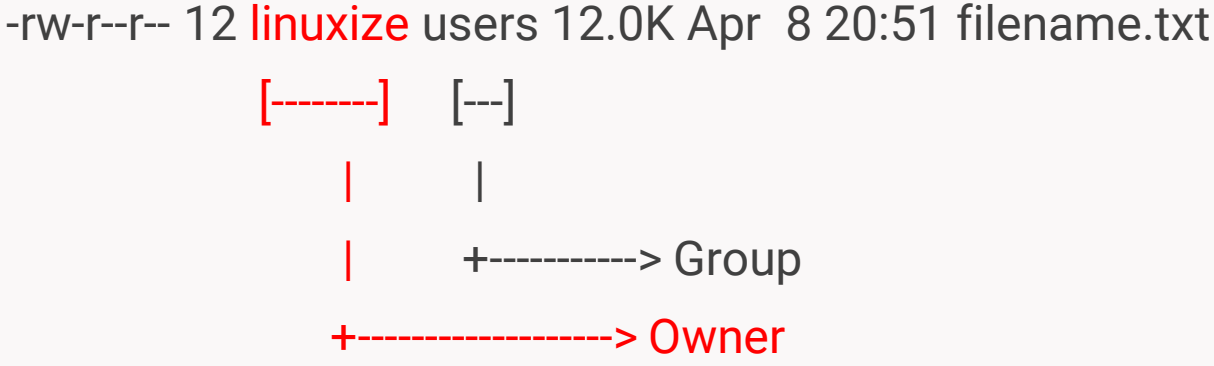
```
┌──(knight㉿kali)-[~/Documents]
└─$ ls -l
total 4
drwxr-xr-x 3 knight knight 4096 Oct 18 13:25 test

┌──(knight㉿kali)-[~/Documents]
└─$ cd test

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 knight knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ chmod g+rwx a.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-rwxr-- 1 knight knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ chmod g-wx a.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 knight knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$
```

chown

chwon stands for CHange OWNer, The chown command allows you to change the user and/or group ownership of a given file, directory, or symbolic link.

Structure:

chown [OPTIONS] USER[:GROUP] FILE(s)



chown

Options:

-R => Recursively Change the File Ownership

-v => show the verbose information for peocessed

-c => show reports

Example:

sudo chwon king a.txt

*This command usually works at sudo mode or in root user.

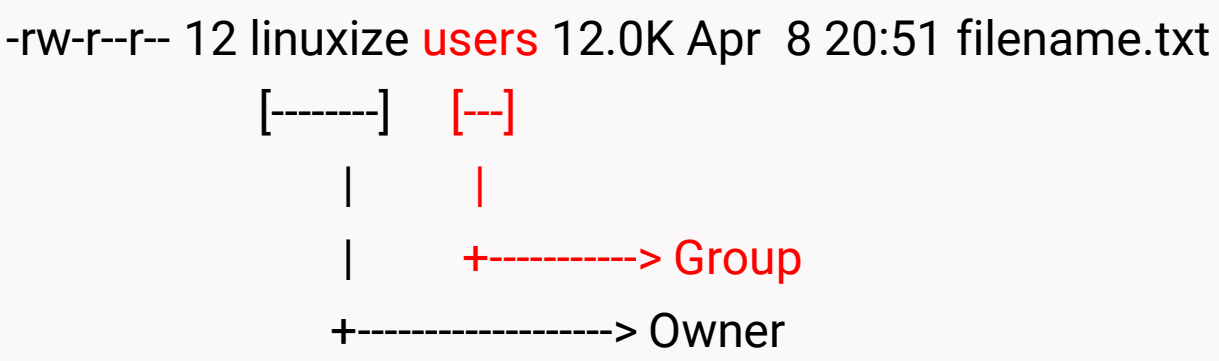
chgrp

chgrp stands for CHange GRouP, chgrp command in Linux is used to change the group ownership of a file or directory.

All files in Linux belong to an owner and a group, you can set owner with “chown” and group with “chgrp” command.

Structure:

chgrp [OPTION]... GROUP FILE...



chgrp

Options:

-R => Recursively Change the File Ownership

-v => show the verbose information for peocessed

-c => show reports

Example:

sudo chgrp king a.txt

*This command like “chown” command usually works at sudo mode or in root user.

```
a.txt  b.txt  new

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 knight knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ chown king a.txt
chown: changing ownership of 'a.txt': Operation not permitted

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chown king a.txt                                                    1 ×
[sudo] password for knight:

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chgrp king b.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king     14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ chmod 647 a.txt
chmod: changing permissions of 'a.txt': Operation not permitted

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chmod 647 a.txt                                                     1 ×

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--rwx 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king     14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$
```

tar

For getting to know tar command first better to know what are tar files ?

The Linux “tar” stands for tape archive, which is used by a large number of Linux/Unix system administrators to deal with tape drives backup.

The tar command is used to rip a collection of files and directories into a highly compressed archive file commonly called tarball or tar, gzip and bzip in Linux.

Structure:

tar [OPTIONS] [TAR_FILE_NAME] [FILE_NAME OR FILES_NAME]

tar

Options:

-c : Creates Archive

-x : Extract the archive

-f : creates archive with given filename

-t : displays or lists files in archived file

-v : Displays Verbose Information

-z : zip, tells tar command that creates tar file using gzip

tar

Examples:

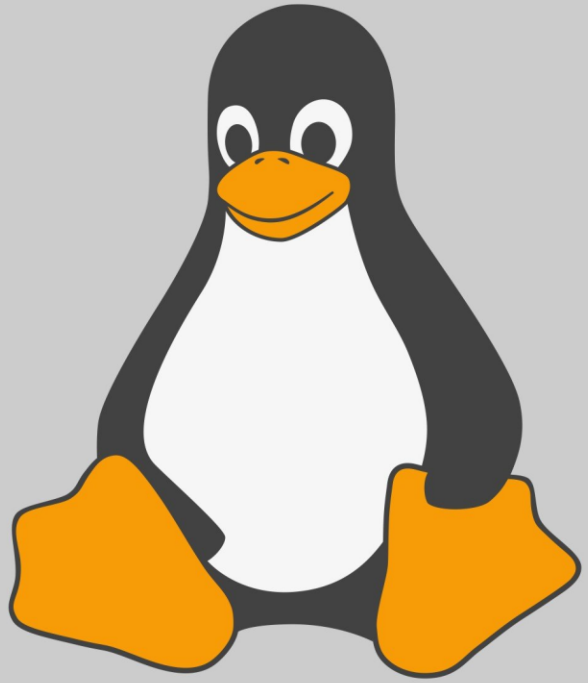
- tar cvf test.tar *.c

This command creates a tar file with test.tar name which the archive of all ”.c” (C programmable files) in current directory.

- Tar cf test2.tar.gz a.txt

This command creates a tar.gz file with test2.tar.gz name which archive just a.txt file.

```
-rw-r--r-- 1 knight knight   14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chgrp king b.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king     14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ chmod 647 a.txt
chmod: changing permissions of 'a.txt': Operation not permitted

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chmod 647 a.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--rwx 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king     14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ sudo chmod 644 a.txt

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 12
-rw-r--r-- 1 king   knight   14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king     14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight 4096 Oct 18 13:25 new

┌──(knight㉿kali)-[~/Documents/test]
└─$ tar cf test.tar.gz *

┌──(knight㉿kali)-[~/Documents/test]
└─$ ls -l
total 24
-rw-r--r-- 1 king   knight    14 Oct 18 13:24 a.txt
-rw-r--r-- 1 knight king      14 Oct 18 13:25 b.txt
drwxr-xr-x 2 knight knight  4096 Oct 18 13:25 new
-rw-r--r-- 1 knight knight 10240 Nov 16 03:08 test.tar.gz

┌──(knight㉿kali)-[~/Documents/test]
└─$
```



LINUX