

# Linux Commands Practices

## Manipulating Files and Directories

### 1. Files

Create File – **touch filename**

```
helly@sf-cpu-383:~$ touch test.txt
helly@sf-cpu-383:~$ ls
3.txt  Documents  File1  hgg  musichardlink  Pictures  Templates  Videos
bhg    Downloads  Form  ls   new            Public   test2      模板
Desktop f          helly Music  OnTime_Logs  snap    test.txt
helly@sf-cpu-383:~$ _
```

Add Content to File – **cat >> filename, vi filename**

Read File – **cat filename, less filename, more filename**

```
helly@sf-cpu-383:~$ cat >> test.txt
Hello
Line 1
Line 2
Line 3
helly@sf-cpu-383:~$ cat test.txt
Hello
Line 1
Line 2
Line 3
```

Remove File – **rm filename**

```
helly@sf-cpu-383:~$ ls
3.txt  f      linux      OnTime_Logs  test2
bhg    File1  ls         Pictures      test.txt
Desktop  Form  Music     Public       Videos
Documents helly  musichardlink snap          ZipofDocuments.zip
Downloads hgg   new       Templates    模板
helly@sf-cpu-383:~$ rm test.txt
helly@sf-cpu-383:~$ ls
3.txt  f      linux      OnTime_Logs  test2
bhg    File1  ls         Pictures      Videos
Desktop  Form  Music     Public       ZipofDocuments.zip
Documents helly  musichardlink snap          模板
Downloads hgg   new       Templates
helly@sf-cpu-383:~$ _
```

Move File – **mv filename dirpath**

Rename File – **mv oldfile newfilename**

Copy File – **cp filename path**

## 2. Directories

Make Directory – **mkdir dirname**

Change Directory – **cd dirname**

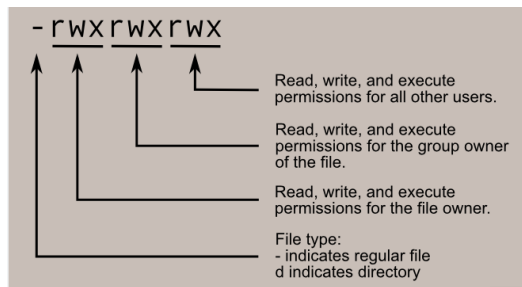
Remove Directory – **rmdir dirname**

```
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ mkdir test
helly@sf-cpu-383:~/linux$ ls
linux.txt  test
helly@sf-cpu-383:~/linux$ cd ..
helly@sf-cpu-383:~$ cd ./linux
helly@sf-cpu-383:~/linux$ ls
linux.txt  test
helly@sf-cpu-383:~/linux$ rmdir test
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ _
```

List all file permissions with example

**ls -l**

```
helly@sf-cpu-383:~$ ls -l
total 15972
-rwxrwxrwx 1 helly installation 23 Mar 24 10:31 3.txt
-rw-rw-r-- 1 helly installation 5 Mar 23 18:06 bhg
drwxr-sr-x 7 helly installation 4096 Mar 27 10:51 Desktop
drwxr-sr-x 3 helly installation 4096 Mar 23 14:19 Documents
drwxr-sr-x 5 helly installation 4096 Mar 27 11:27 Downloads
-rw-rw-r-- 1 helly installation 0 Mar 21 12:09 f
-rw-rw-r-- 1 helly installation 7 Mar 24 11:45 File1
drwxrwsr-x 3 helly installation 4096 Feb 27 10:01 Form
-rw-rw-r-- 1 helly installation 15 Mar 24 11:12 helly
-rw-rw-r-- 1 helly installation 0 Mar 23 18:08 hgg
drwxrwsr-x 2 helly installation 4096 Mar 27 12:12 linux
-rw-rw-r-- 1 helly installation 1234 Mar 24 10:59 ls
drwxr-sr-x 2 helly installation 4096 Mar 23 13:56 Music
lrwxrwxrwx 1 helly installation 5 Mar 23 13:52 musicardlink -> Music
-rw-rw-r-- 1 helly installation 22 Mar 23 18:21 new
drwxrwsr-x 34 helly installation 4096 Mar 27 09:59 OnTime_Logs
drwxr-sr-x 4 helly installation 4096 Feb 14 10:34 Pictures
drwxr-sr-x 2 helly installation 4096 Feb 5 19:37 Public
drwx----- 7 helly installation 4096 Feb 13 09:47 snap
drwxr-sr-x 2 helly installation 4096 Feb 5 19:37 Templates
drwxrwsr-x 4 helly installation 4096 Feb 10 12:15 test2
drwxr-sr-x 3 helly installation 4096 Mar 23 12:58 Videos
-rw-rw-r-- 1 helly installation 16269775 Mar 27 11:14 ZipofDocuments.zip
drwsrwsr-x 2 helly installation 4096 Feb 5 19:17 模板
helly@sf-cpu-383:~$ _
```



1<sup>st</sup> : -, d, l, c, b : [ - : Files, d – Directory, l – Symbolik link, c – Character Files, b - Block Files]

2<sup>nd</sup> : rwx : Permissions to User/Owner

3<sup>rd</sup> : rwx : Group Permissions

4<sup>th</sup>: rwx : Others/Public Permissions

## Change Permissions

**chmod u=rwx filename** (For owner(u), group(g), others(o), all(a))

chmod u-x filename / chmod u+x filename

## List all running process

### top / ps aux

```
top - 12:57:03 up 2:57, 1 user, load average: 0.96, 0.54, 0.33
Tasks: 321 total, 2 running, 319 sleeping, 0 stopped, 0 zombie
%Cpu(s): 8.7 us, 8.7 sy, 0.0 ni, 82.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 15849.9 total, 7920.0 free, 3422.6 used, 4507.3 buff/cache
MiB Swap: 1952.0 total, 1952.0 free, 0.0 used, 11456.6 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2248	helly	20	0	5621036	293348	109916	S	33.3	1.8	2:14.52	gnome-shell
2362	helly	20	0	2490652	107788	70396	S	33.3	0.7	0:05.35	xdg-desktop-por
1	root	20	0	168668	13892	8220	S	0.0	0.1	0:03.60	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_par_gp
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	slub_flushwq
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	netns
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0:0H-events_highpri
10	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_percpu_wq
11	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_kthread
12	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_rude_kthread
13	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_trace_kthread
14	root	20	0	0	0	0	S	0.0	0.0	0:00.12	ksoftirqd/0
15	root	20	0	0	0	0	I	0.0	0.0	0:05.62	rcu_preempt
16	root	rt	0	0	0	0	S	0.0	0.0	0:00.02	migration/0
17	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/0
19	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/0
20	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/1
21	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/1
22	root	rt	0	0	0	0	S	0.0	0.0	0:00.18	migration/1
23	root	20	0	0	0	0	S	0.0	0.0	0:00.08	ksoftirqd/1
25	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/1:0H-events_highpri
26	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/2
27	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/2
28	root	rt	0	0	0	0	S	0.0	0.0	0:00.19	migration/2
29	root	20	0	0	0	0	S	0.0	0.0	0:00.07	ksoftirqd/2
31	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/2:0H-events_highpri
32	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/3
33	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/3
34	root	rt	0	0	0	0	S	0.0	0.0	0:00.19	migration/3
35	root	20	0	0	0	0	S	0.0	0.0	0:00.13	ksoftirqd/3
37	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/3:0H-events_highpri
38	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/4
39	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/4
40	root	rt	0	0	0	0	S	0.0	0.0	0:00.19	migration/4
41	root	20	0	0	0	0	S	0.0	0.0	0:00.06	ksoftirqd/4
43	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/4:0H-events_highpri
44	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/5
45	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	idle_inject/5
46	root	rt	0	0	0	0	S	0.0	0.0	0:00.18	migration/5
47	root	20	0	0	0	0	S	0.0	0.0	0:08.51	ksoftirqd/5
49	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/5:0H-events_highpri
50	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/6

## Find particular process by it's name

### pidof processname

```
helly@sf-cpu-383:~$ pidof chrome
38006 37221 37165 33413 33398 33381 33364 33351 33332 33321 33295 33275 32973 11698 5653 5602 5557 5482 4391
helly@sf-cpu-383:~$ _
```

## How to kill any particular process

### kill pid\_of\_process

```
helly@sf-cpu-383:~$ pidof teams-for-linux
3715 3663 3589 3577 3563 3357 3356 3289
helly@sf-cpu-383:~$ kill 3289
helly@sf-cpu-383:~$ pidof teams-for-linux
helly@sf-cpu-383:~$ _
```

## Vi or Vim for file editing

Vi / Vim is a terminal based editor. It is lightweight and fast.

```
VIM - Vi Improved

version 8.2.4919
by Bram Moolenaar et al.
Modified by team+vim@tracker.debian.org
Vim is open source and freely distributable

Become a registered Vim user!

type  :help register<Enter>   for information

type  :q<Enter>               to exit
type  :help<Enter>  or  <F1>  for on-line help
type  :help version8<Enter>  for version info
```

**vi filename**

[illegible]

(:q! - Quit without changing, :wq/ZZ - Save and quit)

## Change file owner and group

**chown new\_owner filename**

```
helly@sf-cpu-383:~/linux$ sudo chown install linux.txt
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install installation 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ _
```

**chgrp new\_group filename**

```
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install installation 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ sudo chgrp helly linux.txt
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install helly 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ _
```

Change Owner and group with one command

**chown new\_owner:new\_group filename**

```
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install helly 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ sudo chown helly:installation linux.txt
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 helly installation 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ _
```

## Change group ownership

**chgrp new\_group filename**

```
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install installation 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ sudo chgrp helly linux.txt
helly@sf-cpu-383:~/linux$ ls -l
total 4
-rw-rw-r-- 1 install helly 137 Mar 27 11:31 linux.txt
helly@sf-cpu-383:~/linux$ _
```

## Moving and Renaming Files

### mv filename path

```
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ mv linux.txt ../Downloads
helly@sf-cpu-383:~/linux$ ls
helly@sf-cpu-383:~/linux$ cd ../Downloads
helly@sf-cpu-383:~/Downloads$ ls
beautiful-rain-forest-ang-ka-nature-trail-doi-inthanon-national-park-thai
bootstrap-3.3.7
file
font-awesome-4.7.0
Form.png
icon.png
img
img.zip
'(Intermediate + Answers) - Cambridge English Grammar In Use (1).rtf'
linux.txt
passbolt-recovery-kit.txt
shopping-cart.png
'The Linux Command Line.pdf'
helly@sf-cpu-383:~/Downloads$ _
```

### Rename – mv oldfilename newfilename

```
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ mv linux.txt renamed.txt
helly@sf-cpu-383:~/linux$ ls
renamed.txt
helly@sf-cpu-383:~/linux$ _
```

## Remove Files and Directories

### Files

#### Remove File – rm filename

```
helly@sf-cpu-383:~$ ls
3.txt      f      linux      OnTime_Logs  test2
bhg        File1   ls         Pictures     test.txt
Desktop    Form    Music      Public       Videos
Documents  helly   musichardlink snap         ZipofDocuments.zip
Downloads  hgg     new        Templates    模板
helly@sf-cpu-383:~$ rm test.txt
helly@sf-cpu-383:~$ ls
3.txt      f      linux      OnTime_Logs  test2
bhg        File1   ls         Pictures     Videos
Desktop    Form    Music      Public       ZipofDocuments.zip
Documents  helly   musichardlink snap         模板
Downloads  hgg     new        Templates
helly@sf-cpu-383:~$ _
```

## Directories

Remove Directory – `rmdir dirname / rm -r dirname`

```
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ mkdir test
helly@sf-cpu-383:~/linux$ ls
linux.txt  test
helly@sf-cpu-383:~/linux$ cd ..
helly@sf-cpu-383:~$ cd ./linux
helly@sf-cpu-383:~/linux$ ls
linux.txt  test
helly@sf-cpu-383:~/linux$ rmdir test
helly@sf-cpu-383:~/linux$ ls
linux.txt
helly@sf-cpu-383:~/linux$ _
```

## List the directory contents

`ls -l`

```
helly@sf-cpu-383:~$ ls -l
total 15972
-rwxrwxrwx  1 helly installation    23 Mar 24 10:31 3.txt
-rw-rw-r--  1 helly installation    5 Mar 23 18:06 bhg
drwxr-sr-x  7 helly installation  4096 Mar 27 10:51 Desktop
drwxr-sr-x  3 helly installation  4096 Mar 23 14:19 Documents
drwxr-sr-x  5 helly installation  4096 Mar 27 13:34 Downloads
-rw-rw-r--  1 helly installation    0 Mar 21 12:09 f
-rw-rw-r--  1 helly installation    7 Mar 24 11:45 File1
drwxrwsr-x  3 helly installation  4096 Feb 27 10:01 Form
-rw-rw-r--  1 helly installation   15 Mar 24 11:12 helly
-rw-rw-r--  1 helly installation    0 Mar 23 18:08 hgg
drwxrwsr-x  2 helly installation  4096 Mar 27 13:34 linux
-rw-rw-r--  1 helly installation  1234 Mar 24 10:59 ls
drwxr-sr-x  2 helly installation  4096 Mar 23 13:56 Music
lrwxrwxrwx  1 helly installation    5 Mar 23 13:52 musichardlink -> Music
-rw-rw-r--  1 helly installation   22 Mar 23 18:21 new
drwxrwsr-x 34 helly installation  4096 Mar 27 09:59 OnTime_Logs
drwxr-sr-x  4 helly installation  4096 Feb 14 10:34 Pictures
drwxr-sr-x  2 helly installation  4096 Feb  5 19:37 Public
drwx----- 7 helly installation  4096 Feb 13 09:47 snap
drwxr-sr-x  2 helly installation  4096 Feb  5 19:37 Templates
drwxrwsr-x  4 helly installation  4096 Feb 10 12:15 test2
drwxr-sr-x  3 helly installation  4096 Mar 23 12:58 Videos
-rw-rw-r--  1 helly installation 16269775 Mar 27 11:14 ZipofDocuments.zip
drwsrwsr-x  2 helly installation  4096 Feb  5 19:17 模板
helly@sf-cpu-383:~$ _
```



## How I can get the path of working directory

pwd

```
helly@sf-cpu-383:~$ pwd
/home/helly
helly@sf-cpu-383:~$ _
```

## How to Search in Vim/Vi

vi filename

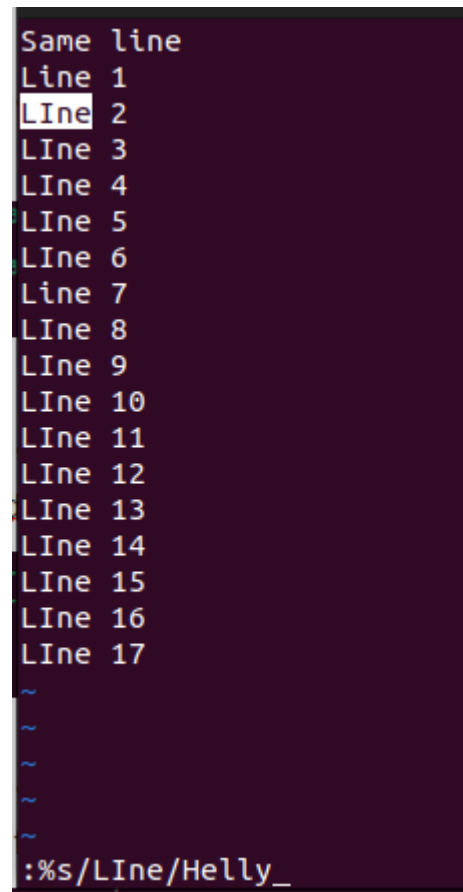
/value\_to\_search

```
Same line
Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8
Line 9
Line 10
Line 11
Line 12
Line 13
Line 14
Line 15
Line 16
Line 17
~
~
~
~
~
/Same_
```

## How Do You Do A Search And Replace in Vim/Vi

`%s/old_word/new_word`

**Before**



```
Same line
Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8
Line 9
Line 10
Line 11
Line 12
Line 13
Line 14
Line 15
Line 16
Line 17
~
~
~
~
~
~
:%s/Line/Helly_
```

**After**

```
Same line
Line 1
Helly 2
Helly 3
Helly 4
Helly 5
Helly 6
Line 7
Helly 8
Helly 9
Helly 10
Helly 11
Helly 12
Helly 13
Helly 14
Helly 15
Helly 16
Helly 17
~
~
~
~
~
15 substitutions on 15 li
```

How we can save and exit from Vim/Vi file

(:q! - Quit without changing, :wq / ZZ - Save and quit)