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**
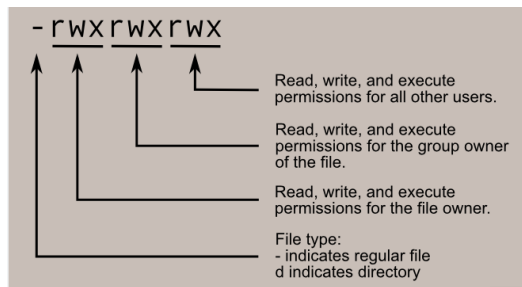
Change Directory – **cd dirname**

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 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:~$ _
```

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

2nd : rwx : Permissions to User/Owner

3rd : rwx : Group Permissions

4th: 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.

vi filename

```
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
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
"linux.txt" 18L, 137B
```

(: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

Rename – **mv oldfilename newfilename**

Remove Files and Directories

Files

Remove File – **rm filename**

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:~$ _
```
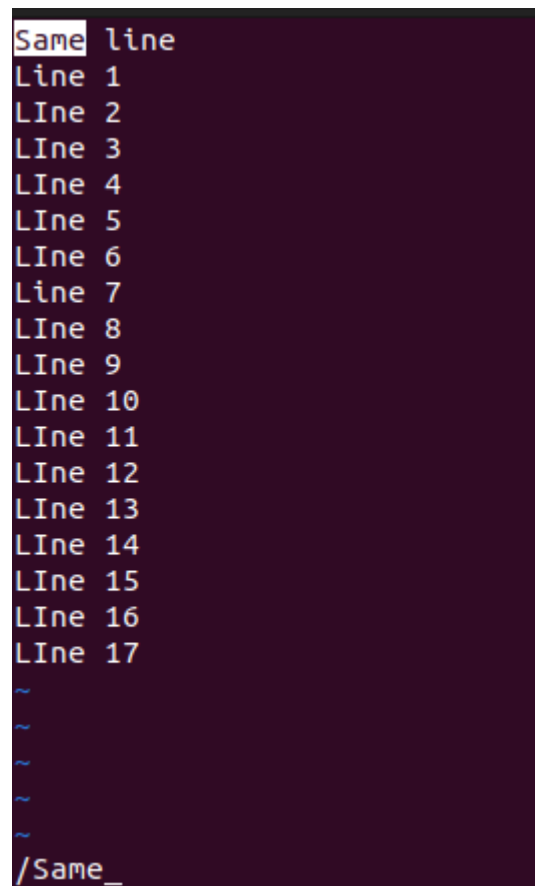
How I can get the path of working directory

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)