

Linux Commands

1.Date command

date command prints the current date time.

```
student@student-Pegatron:~$ date  
Wed May 25 17:42:25 IST 2022
```

2.cal command

cal command is used to display a calendar in your shell, by default it will display the current month.

```
student@student-Pegatron:~$ cal  
May 2022  
Su Mo Tu We Th Fr Sa  
1 2 3 4 5 6 7  
8 9 10 11 12 13 14  
15 16 17 18 19 20 21  
22 23 24 25 26 27 28  
29 30 31
```

3.whoami command

whoami command will tell you which user account you are using in this system.

```
student@student-Pegatron:~$ whoami  
student
```

4.id command

id prints real user id, and various other details related to the account.

```
student@student-Pegatron:~$ id  
uid=1000(student) gid=1000(student)  
groups=1000(student),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),113(lpadmin),128(sambashare)
```

5. pwd command

pwd command, short for print working directory, will help you to find out the absolute path of the current directory.

```
student@student-Pegatron:~$ pwd  
/home/student
```

6.cd command

short for change directory. This command will help you to change your current directory.

```
student@student-Pegatron:~$ cd Desktop  
student@student-Pegatron:~/Desktop$ cd ..  
student@student-Pegatron:~$
```

7. ls command

ls command to list the files and directories inside any given directory.

```
student@student-Pegatron:~$ ls  
cat      emp.dat      first.sh  salary.sh  Templates  
Desktop  examples.desktop  Music    sks        test.sh  
Documents fileOperations.sh Pictures  SKS        to  
Downloads filePermissions.sh Public   table.sh  Videos
```

```

student@student-Pegatron:~$ ls -l
total 88
-rw-rw-r-- 1 student student 18 May 25 17:02 cat
drwxr-xr-x 5 student student 4096 May 18 19:26 Desktop
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Documents
drwxr-xr-x 2 student student 4096 May 25 17:38 Downloads
-rw-rw-r-- 1 student student 193 May 25 17:02 emp.dat
-rw-r--r-- 1 student student 8980 Oct 29 2021 examples.desktop
-rwxrwxr-x 1 student student 1034 May 25 16:54 fileOperations.sh
-rwxrwxr-x 1 student student 631 May 25 16:30 filePermissions.sh
-rwxrwxr-x 1 student student 116 Apr 29 21:10 first.sh
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Music
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Pictures
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Public
-rwxrwxr-x 1 student student 824 May 25 17:24 salary.sh
drwxrwxr-x 2 student student 4096 May 25 16:33 sks
drwxrwxr-x 2 student student 4096 Apr 22 19:44 SKS
-rwxrwxr-x 1 student student 181 May 25 17:42 table.sh
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Templates
-rw-rw-r-- 1 student student 15 May 25 16:38 test.sh
drwxrwxr-x 2 student student 4096 Apr 22 19:40 to
drwxr-xr-x 2 student student 4096 Feb 16 17:06 Videos

```

8. mkdir command

create new directories using mkdir command.

```

student@student-Pegatron:~$ mkdir myFolder
student@student-Pegatron:~$ dir
cat      emp.dat      first.sh  Public   table.sh  Videos
Desktop  examples.desktop  Music    salary.sh Templates
Documents fileOperations.sh  myFolder  sks      test.sh
Downloads filePermissions.sh Pictures  SKS      to

```

9. rm command

rm command is used to remove a file, or directory. The -r option is being used to remove in a recursive way. With -f you force the removal, ignoring errors and never prompt.

```

student@student-Pegatron:~$ rm first.sh

```

10. Copying a file using cp command

cp command to copy a file in the Linux shell.

```

hello.txt to hello2.txt.
$ cp hello.txt hello2.txt

```

11. Renaming or moving a file

The mv command is used to rename or move a file or directory.

```

student@student-OptiPlex-3050:~$ mv fact.c factNew.c

```

12. tree command

tree command prints the directory structure in a nice visual tree design way.

13. Using > to redirect output to a file

to redirect the output of one command to a file, if the file exists this will remove the old content and only

keep the input. We can use >> to append to a file, means it will keep all the old content, and it will add the new input to the end of the file.

```
student@student-OptiPlex-3050:~$ ls > test1
```

```
student@student-OptiPlex-3050:~$ cat test1
```

```
student@student-OptiPlex-3050:~$ cat test1
```

```
abc.c
```

```
addfun.sh
```

```
a.out
```

```
Desktop
```

```
Documents
```

```
Downloads
```

```
examples.desktop
```

```
factNew.c
```

```
fibnocci.c
```

```
fibnocci.cpp
```

```
first n .c
```

```
fs.cpp
```

```
function.sh
```

```
funNew.sh
```

```
fun.sh
```

```
gracemark.sh
```

```
mul.cpp
```

```
Music
```

```
n.cpp
```

```
parameter.sh
```

```
Pictures
```

```
prime.cpp
```

```
Public
```

```
SKS
```

```
Templates
```

```
test1
```

```
Untitled Document
```

```
Videos
```

```
student@student-OptiPlex-3050:~$ date >> test1
```

```
student@student-OptiPlex-3050:~$ cat test1
```

```
abc.c
```

```
addfun.sh
```

```
a.out
```

```
Desktop
```

```
Documents
```

Downloads
examples.desktop
factNew.c
fibnocci.c
fibnocci.cpp
first n .c
fs.cpp
function.sh
funNew.sh
fun.sh
gracemark.sh
mul.cpp
Music
n.cpp
parameter.sh
Pictures
prime.cpp
Public
SKS
Templates
test1
Untitled Document
Videos
Wed May 25 20:06:11 IST 2022

14. man pages

man shows the system's manual pages. This is the command we use to view the help document (manual page) for any command.
The general syntax is man section command

```
student@student-OptiPlex-3050:~$ man ls
LS(1)                                User Commands                                LS(1)
```

NAME

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILES (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.

-a, --all
do not ignore entries starting with .

-A, --almost-all
do not list implied . and ..

- author
with -l, print the author of each file
- b, --escape
print C-style escapes for nongraphic characters
- block-size=SIZE
scale sizes by SIZE before printing them; e.g., '--block-size=M'
prints sizes in units of 1,048,576 bytes; see SIZE format below
- B, --ignore-backups
do not list implied entries ending with ~
- c with -lt: sort by, and show, ctime (time of last modification of
file status information); with -l: show ctime and sort by name;
otherwise: sort by ctime, newest first
- C list entries by columns
- color[=WHEN]
colorize the output; WHEN can be 'always' (default if omitted),
'auto', or 'never'; more info below
- d, --directory
list directories themselves, not their contents

15. Open File Using cat Command

cat<file name>

```
student@student-OptiPlex-3050:~$ cat prime.cpp
```

16. tar command

Syntax:

tar [options] [archive-file] [file or directory to be archived]

Creating an uncompressed tar Archive using option -cvf

```
student@student-OptiPlex-3050:~$ tar cvf myFile.tar *.c
abc.c
factNew.c
fibnocci.c
first n .c
```

Extracting files from Archive using option -xvf

```
student@student-OptiPlex-3050:~$ tar xvf myFile.tar
abc.c
factNew.c
fibnocci.c
```

first n .c

17. Grep Command

The grep command is a filter that is used to search for lines matching a specified pattern and print the matching lines to standard output.

grep without pipe

grep<searchWord><filename>

student@student-OptiPlex-3050:~\$ **chmod** - To change access permissions, change mode.
student@student-OptiPlex-3050:~\$ grep .c test1

abc.c
Documents
factNew.c
fibnocci.c
fibnocci.cpp
first n .c
fs.cpp
function.sh
gracemark.sh
mul.cpp
Music
n.cpp
Pictures
prime.cpp
Public
Untitled Document

grep with pipe

command | grep<searchWord>

student@student-OptiPlex-3050:~\$ cat fun.sh | grep echo
echo "Result is: " \$((\$num1 + \$num2))
echo "The Sum of \$num1 and \$num2 is `expr \$num1 + \$num2`"
echo "Enter the First Number"
echo "Enter the Second Number"
echo "Select a Option"

18. chmod - To change access permissions, change mode.

Linux File Permissions

Before going further, let's explain the basic Linux permissions model.

In Linux, each file is associated with an owner and a group and assigned with permission access rights for three different classes of users:

- The file owner.
- The group members.
- Others (everybody else).

EXAMPLES

Read by owner only

```
$ chmod 400 sample.txt
```

Read by group only

```
$ chmod 040 sample.txt
```

Read by anyone

```
$ chmod 004 sample.txt
```

Write by owner only

```
$ chmod 200 sample.txt
```

Write by group only

```
$ chmod 020 sample.txt
```

Write by anyone

```
$ chmod 002 sample.txt
```

Execute by owner only

```
$ chmod 100 sample.txt
```

Execute by group only

```
$ chmod 010 sample.txt
```

Execute by anyone

```
$ chmod 001 sample.txt
```

Allow read permission to owner and group and anyone.

```
$ chmod 444 sample.txt
```

Allow everyone to read, write, and execute file.

```
$ chmod 777 sample.txt
```

Networking commands

19. Finding the IP address

```
student@student-OptiPlex-3050:~$ ip addr show
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group  
default qlen 1
```

```
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
```

```
    inet 127.0.0.1/8 scope host lo
```

```
        valid_lft forever preferred_lft forever
```

```
    inet6 ::1/128 scope host
```

```
        valid_lft forever preferred_lft forever
```

```
2: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state
UP group default qlen 1000
    link/ether 8c:ec:4b:69:6a:01 brd ff:ff:ff:ff:ff:ff
    inet 10.0.66.2/8 brd 10.255.255.255 scope global enp1s0
        valid_lft forever preferred_lft forever
    inet6 fe80::bd2:6390:8223:9804/64 scope link
        valid_lft forever preferred_lft forever
```

20. ping command

ping is simple way to find out if you are connected to the Internet or not.

```
student@student-OptiPlex-3050:~$ ping google.com
PING google.com (142.250.182.78) 56(84) bytes of data.
64 bytes from maa05s20-in-f14.1e100.net (142.250.182.78): icmp_seq=1 ttl=117 time=308
ms
64 bytes from maa05s20-in-f14.1e100.net (142.250.182.78): icmp_seq=2 ttl=117 time=310
ms
64 bytes from maa05s20-in-f14.1e100.net (142.250.182.78): icmp_seq=3 ttl=117 time=310
ms
```