

**Sudo apt-get update** – Update the packages

**Sudo apt-get upgrade** – Install the updated packages

## Process Management

### PS

ps -f

→ Process running with full information

### KILL

kill pid

→ kill process with process id

### TOP

top

→ all information about process memory usage statistics

## Memory Usage Commands

free

/proc/meminfo

vmstat

top

## Free command

`free -m` -- is the most simple and easy to use command to check memory usage on linux.

## /proc/meminfo

`cat /proc/meminfo` -- virtual files that contain dynamic information about the kernel and the system.

## Vmstat

`vmstat -s` -- lays out memory information in statistics.

## Top command

`top` -- memory usage and cpu usage

## DF

Amount of disk space available on the file system.

## DU

Amount of disk space available on the file system.

`du -a -h -c *` -- print sizes in -a -> all files, -h -> human readable, -c -> with total size

## CHMOD command

Update permission to a file or directory.

**Command:**

**chmod [reference] [operator] [mode] file**

Reference	Operator	Mode
u – user	+ - add these mode	rwx
g – group	- - remove these modes	r- read
o – others	= - assign similar mode	w - write
a – all		x - execute

## Find Command

Command operations	<b>man find</b>
To find all files and directories under the current directory	<b>find .</b>
To find all directories and file below a directory	<b>find &lt;directory_name&gt;</b>
To find all directories and subdirectories in the current directory	<b>find . -type d</b>
To find all files under the current directory	<b>find . -type f</b>
To find a specific file under the current directory	<b>find . -type f -name "filename.txt"</b>

To find a file whose name is partially known	<b>find . type f -name "partiallyknownname*"</b>
case insensitive:	<b>find . type f -iname "partiallyknownname*"</b>
To find a files with certain extension	<b>find . type f -iname "*.txt"</b>
To find files that were modified minutes ago	<b>find . -type f -mmin -&lt;minutes&gt;</b>
to find files that were modified more than 10 mins ago	<b>find . -type f -mmin +10</b>
file modifies more than 1 min ago but less than 5 mins	<b>find . type f -mmin +1 -mmin -5</b>
to find files that were modified certain days ago	<b>find . type -f -mtime -20</b>
To find files over a certain memory Below 5MB	<b>find . -type f -size -5M      k-KB , G-GB</b>
To find all files that are empty	<b>find . -empty</b>
Find all files with certain permission To find files with all permissions	<b>find . -perm 777</b>

## GREP Command

Searches for a pattern and outputs all lines matching the pattern.

grep [options] pattern [files]

example:

grep "search\_string" <filename.txt> -- Results will be listed out, even if the search string is a substring

grep -w "search\_string" <filename.txt> -- Only exact words will be listed

grep -wi "search\_string" <filename.txt> -- Case insensitive

grep -n "search\_string" <filename.txt> -- Line numbers

grep -n -B4 "search\_string" <filename.txt> -- displays 4 lines before match. A for after

grep -irnw "search pattern" \* -- Searches for pattern recursively in directories and sub dir

grep -irnw -m1 "search patter" \* -- same as above, but checks only for 1<sup>st</sup> match in all files.

## Sed Command

sed -e 'nd' <filename> -- deletes nth line of the file.

sed -e 'a,bd' <filename> -- deletes over a file range from a to b

sed -e 'n,\$d' <filename> -- delete from nth line to last line of the file.

sed 's/text1/text2/g' filename -- searches for all occurrence of text1 and replaces with text2  
if special character there then add a \ before every special char  
if g not specified replaces only first occurrence. Nth occurrence  
can be mentioned instead of g.

sed '1,3 s/unix/linux/' <filename> -- replaces over 1 2 and 3<sup>rd</sup> line.

## LS command

List all files

ls -a | wc -l -- count of all files present

# WGET

To download a file from the internet

## Downloading by passing credentials

```
wget --user <username> --password <password> <URL including https>
```

## SSH command

```
ssh username@<ip-address> -i private_key
```

**without passphrase:** `ssh-keygen -f ubuntu -t rsa -N ''`

**with supplied passphrase:** `ssh-keygen -f ubuntu -t rsa -N '12345'`

## IFCONFIG

Check the ip address and configuration assigned to the system.

## Traceroute

Displays the routers the packet passes on its path to the destination.

## DIG command

Returns the answers returned by DNS records

```
jeevan@jeevan-VirtualBox:~$ dig google.com

; <<> DiG 9.9.5-3ubuntu0.18-Ubuntu <<> google.com
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 12259
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; QUESTION SECTION:
;google.com.                IN      A

;; ANSWER SECTION:
google.com.                42      IN      A      216.58.194.174

;; Query time: 40 msec
;; SERVER: 127.0.1.1#53(127.0.1.1)
;; WHEN: Mon Feb 04 13:23:54 PST 2019
;; MSG SIZE rcvd: 55
```

## Telnet

To check connectivity between two hosts.

telnet **hostname** **portno**

## NSLOOKUP

To find entries on the DNS servers

```
jeevan@jeevan-VirtualBox:~$ nslookup google.com
Server:          127.0.1.1
Address:         127.0.1.1#53

Non-authoritative answer:
Name:   google.com
Address: 172.217.6.78

jeevan@jeevan-VirtualBox:~$
```

## NETSTAT

Summary of all ports connected and their status

## W

Summary of current activity on the host

```
jeevan@jeevan-VirtualBox:~$ w
14:31:41 up 1:21, 2 users, load average: 0.20, 0.16, 0.11
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU      WHAT
jeevan    :0        :0             13:11       ?xdm?       9:03      0.90s    init --user
jeevan    pts/13    :0             13:12       5.00s       0.41s     0.02s    w
jeevan@jeevan-VirtualBox:~$
```

## NMAP

Checks the open ports on the server



```
jeevan@jeevan-VirtualBox:~$ nmap 10.0.0.246

Starting Nmap 6.40 ( http://nmap.org ) at 2019-02-04 14:47 PST
Nmap scan report for 10.0.0.246
Host is up (1.0s latency).
Not shown: 995 closed ports
PORT      STATE      SERVICE
25/tcp    filtered  smtp
110/tcp   filtered  pop3
135/tcp   open       msrpc
139/tcp   open       netbios-ssn
445/tcp   open       microsoft-ds

Nmap done: 1 IP address (1 host up) scanned in 25.38 seconds
jeevan@jeevan-VirtualBox:~$
```

<https://www.tecmint.com/nmap-command-examples/>

## IFUP / IFDOWN

To enable or disable a network interface.

Example

Ifup eth0

Ifdown eth0

## SCP

Secure copy files from other hosts in the network

## ARP command

ARP table on the host machine

```
jeevan@jeevan-VirtualBox:~$ arp
Address          HWtype  HWaddress      Flags Mask    Iface
10.0.2.2         ether   52:54:00:12:35:02 C              eth0
jeevan@jeevan-VirtualBox:~$
```

## Route Command

Routing table on the host machine

```
jeevan@jeevan-VirtualBox:~$ route
Kernel IP routing table
Destination      Gateway         Genmask         Flags Metric Ref    Use Iface
default          10.0.2.2       0.0.0.0         UG    0      0      0 eth0
10.0.2.0         *              255.255.255.0   U     1      0      0 eth0
jeevan@jeevan-VirtualBox:~$
```

Adding a default gateway

```
route add -net <ipaddress> gw <gateway ipaddress>
```

default gateway

```
route add default gw <gateway ip address>
```

## HOST Command

Name to ip and Ip to name

```
jeevan@jeevan-VirtualBox:~$ host www.google.com
www.google.com has address 216.58.194.196
www.google.com has IPv6 address 2607:f8b0:4005:804::2004
jeevan@jeevan-VirtualBox:~$
```

## Security commands

Checksum – used to validate integrity of our files

Command: `cksum <filename.txt>`

Output → checksum , size in bytes, filename