1. Checking existing users and groups

ubuntu@ubuntu:~$ getent passwd

root:x:0:0:root:/root:/bin/bash

daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin

ubuntu@ubuntu:~$ getent group

root:x:0:

daemon:x:1:

$ for user in $(awk -F: '{print $1}' /etc/passwd); do groups $user; done

root : root

daemon : daemon

bin : bin

sys : sys

2) Adding new user and setting password for users in Linux

ubuntu@ubuntu:~$ sudo useradd temp1

[sudo] password for ubuntu:

ubuntu@ubuntu:~$ passwd temp1

passwd: You may not view or modify password information for temp1.

ubuntu@ubuntu:~$ sudo passwd temp1

Enter new UNIX password:

Retype new UNIX password:

passwd: password updated successfully

ubuntu@ubuntu:~$ su temp1

Password:

3) Check IP address for the VM/physical machine

$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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 08:00:27:51:25:11 brd ff:ff:ff:ff:ff:ff

inet 192.168.3.110/24 brd 192.168.3.255 scope global enp0s3

valid\_lft forever preferred\_lft forever

inet6 fe80::a00:27ff:fe51:2511/64 scope link

valid\_lft forever preferred\_lft forever

ubuntu@ubuntu:~$ ifconfig

enp0s3 Link encap:Ethernet HWaddr 08:00:27:51:25:11

inet addr:192.168.3.110 Bcast:192.168.3.255 Mask:255.255.255.0

inet6 addr: fe80::a00:27ff:fe51:2511/64 Scope:Link

UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1

RX packets:528563 errors:0 dropped:0 overruns:0 frame:0

TX packets:166029 errors:0 dropped:0 overruns:0 carrier:0

collisions:0 txqueuelen:1000

RX bytes:284292874 (284.2 MB) TX bytes:15606038 (15.6 MB)

4) Assigning Static IP address

ubuntu@ubuntu:~$ cat /etc/network/interfaces

# This file describes the network interfaces available on your system

# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/\*

# The loopback network interface

auto lo

iface lo inet loopback

# The primary network interface

auto enp0s3

iface enp0s3 inet static

address 192.168.3.110

netmask 255.255.255.0

network 192.168.3.0

broadcast 192.168.3.255

gateway 192.168.3.1

# dns-\* options are implemented by the resolvconf package, if installed

dns-nameservers 192.168.3.1

5 ) Assigning Dynamic IP address

$ dhclient enp0s3

6) Reporting Current processes

$ ps aux

ubuntu@ubuntu:~$ ps aux | grep ssh

root 1072 0.0 0.1 65508 6500 ? Ss Aug27 0:00 /usr/sbin/sshd -D

root 2931 0.0 0.1 111288 7540 ? Ss 14:40 0:00 sshd: ubuntu [priv]

ubuntu 2988 0.0 0.0 111288 3632 ? S 14:40 0:00 sshd: ubuntu@pts/2

ubuntu 3077 0.0 0.0 12944 1016 pts/2 S+ 14:51 0:00 grep --color=auto ssh

root 4397 0.0 0.1 65508 5328 ? Ss Aug27 0:00 /usr/sbin/sshd -D

root 4659 0.0 0.1 65508 5476 ? Ss Aug27 0:00 /usr/sbin/sshd -D

ubuntu@ubuntu:~$ top

top - 14:57:25 up 3 days, 23:38, 2 users, load average: 0.00, 0.02, 0.00

Tasks: 127 total, 1 running, 126 sleeping, 0 stopped, 0 zombie

%Cpu(s): 0.0 us, 0.3 sy, 0.0 ni, 99.7 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st

KiB Mem : 4046524 total, 1377592 free, 89920 used, 2579012 buff/cache

KiB Swap: 997884 total, 997884 free, 0 used. 3605096 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND

1096 root 10 -10 5720 3524 2440 S 0.3 0.1 1:00.91 iscsid

3296 ubuntu 20 0 40504 3640 3064 R 0.3 0.1 0:00.05 top

6 a) Killing a process

$ sudo kill -9 <pid>

7) Reporting the network statistics

ubuntu@ubuntu:~$ netstat -tulpn

(Not all processes could be identified, non-owned process info

will not be shown, you would have to be root to see it all.)

Active Internet connections (only servers)

Proto Recv-Q Send-Q Local Address Foreign Address State PID/Program name

tcp 0 0 0.0.0.0:22 0.0.0.0:\* LISTEN -

tcp6 0 0 :::22 :::\* LISTEN -

8) Updating Package Repos on ubuntu and installing new packages

ubuntu@ubuntu:~$ sudo apt-get update

Hit:1 http://us.archive.ubuntu.com/ubuntu xenial InRelease

Get:2 http://us.archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]

Get:3 http://security.ubuntu.com/ubuntu xenial-security InRelease [107 kB]

Hit:4 http://us.archive.ubuntu.com/ubuntu xenial-backports InRelease

$ sudo apt-get install <package-name>

$ sudo yum update

$ sudo yum install <package-name> - Fedora/Redhat

9) Checking nameserver

ubuntu@ubuntu:~$ cat /etc/resolv.conf

# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)

nameserver 8.8.8.8

# DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN

10) Routing table entries

ubuntu@ubuntu:~$ ip route show

default via 192.168.3.1 dev enp0s3

192.168.3.0/24 dev enp0s3 proto kernel scope link src 192.168.3.110

11) Adding and deleting routing table entries

ubuntu@ubuntu:~$ ip route show

default via 192.168.3.1 dev enp0s3

192.168.3.0/24 dev enp0s3 proto kernel scope link src 192.168.3.110

ubuntu@ubuntu:~$ sudo route del default

ubuntu@ubuntu:~$ ip route show

192.168.3.0/24 dev enp0s3 proto kernel scope link src 192.168.3.110

ubuntu@ubuntu:~$ sudo route add default gw 192.168.3.1

ubuntu@ubuntu:~$ ip route show

default via 192.168.3.1 dev enp0s3

192.168.3.0/24 dev enp0s3 proto kernel scope link src 192.168.3.110

12) Present working directory, switching directories, listing directory contents

ubuntu@ubuntu:~$ pwd

/home/ubuntu

ubuntu@ubuntu:~$ cd /home

ubuntu@ubuntu:/home$ ls

ubuntu

ubuntu@ubuntu:/home$ ls -la

total 16

drwxr-xr-x 4 root root 4096 Aug 27 13:59 .

drwxr-xr-x 23 root root 4096 Aug 27 13:58 ..

drwxr-xr-x 3 root root 4096 Aug 27 13:59 .ecryptfs

drwx------ 7 ubuntu ubuntu 4096 Aug 29 14:29 ubuntu

13) Creating files and folders in Linux

Read: <https://www.digitalocean.com/community/tutorials/basic-linux-navigation-and-file-management>

14) Linux File Permissions

Read:

<https://www.linux.com/learn/understanding-linux-file-permissions>

15) Checking the “raw” traffic on a particular interface

$sudo tcpdump -i enp0s3

44, options [nop,nop,TS val 1667394421 ecr 86154320], length 0

15:07:35.262991 IP ubuntu.ssh > 192.168.3.1.50209: Flags [P.], seq 602224:602568, ack 401, win 325, options [nop,nop,TS val 86154320 ecr 1667394421], length 344

15:07:35.263077 IP 192.168.3.1.50209 > ubuntu.ssh: Flags [P.], seq 401:441, ack 602224, win 1444, options [nop,nop,TS val 1667394421 ecr 86154320], length 40