Exercise 1:

Vagrant file:

# config.vm.box\_check\_update = false

# Create a forwarded port mapping which allows access to a specific port

# within the machine from a port on the host machine and only allow access

# via 127.0.0.1 to disable public access

# config.vm.network "forwarded\_port", guest: 80, host: 8080, host\_ip: "127.0.0.1"

# Create a private network, which allows host-only access to the machine

# using a specific IP.

# config.vm.network "private\_network", ip: "dhcp"

# Create a public network, which generally matched to bridged network.

# Bridged networks make the machine appear as another physical device on

# your network.

# config.vm.network "public\_network"

# Share an additional folder to the guest VM. The first argument is

# the path on the host to the actual folder. The second argument is

# the path on the guest to mount the folder. And the optional third

# argument is a set of non-required options.

# config.vm.synced\_folder "../data", "/vagrant\_data"

# Provider-specific configuration so you can fine-tune various

# backing providers for Vagrant. These expose provider-specific options.

# Example for VirtualBox:

#

# config.vm.provider "virtualbox" do |vb|

# # Display the VirtualBox GUI when booting the machine

# vb.gui = true

#

# # Customize the amount of memory on the VM:

# vb.memory = "1024"

# end

#

# View the documentation for the provider you are using for more

# information on available options.

# Enable provisioning with a shell script. Additional provisioners such as

# Ansible, Chef, Docker, Puppet and Salt are also available. Please see the

# documentation for more information about their specific syntax and use.

# config.vm.provision "shell", inline: <<-SHELL

# apt-get update

# apt-get install -y apache2

# SHELL

end

**Output of “ifconfig”:**

vagrant@ubuntu-focal:~$ ifconfig

enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500

inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255

inet6 fe80::90:6fff:fecb:7095 prefixlen 64 scopeid 0x20<link>

ether 02:90:6f:cb:70:95 txqueuelen 1000 (Ethernet)

RX packets 33465 bytes 47539389 (47.5 MB)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 5977 bytes 474486 (474.4 KB)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536

inet 127.0.0.1 netmask 255.0.0.0

inet6 ::1 prefixlen 128 scopeid 0x10<host>

loop txqueuelen 1000 (Local Loopback)

RX packets 54 bytes 5232 (5.2 KB)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 54 bytes 5232 (5.2 KB)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

Exercise 2

| Linux command | Function | Screenshots |
| --- | --- | --- |
| *Apt -get* | Command used to install and update packages |  |
| *history* | Gives a list of all past commands typed in the current terminal session |  |
| *Pr -n* | Denotes the file with Line Numbers |  |
| *Pr -h* | Assigns a header to the file |  |
| *Pr -x* | Divides the file into x columns |  |
| *Lp -nc* | Prints “c” copies of the File |  |
| *Lp -d* | Specifies name of the printer |  |
| *Mail -s ‘subject’* | Command to send email |  |
| *env* | Displays all environment variables |  |

Exercise 3

**Cat /etc/passwd:**

vagrant@ubuntu-focal:~$ cat /etc/passwd

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

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

bin:x:2:2:bin:/bin:/usr/sbin/nologin

sys:x:3:3:sys:/dev:/usr/sbin/nologin

sync:x:4:65534:sync:/bin:/bin/sync

games:x:5:60:games:/usr/games:/usr/sbin/nologin

man:x:6:12:man:/var/cache/man:/usr/sbin/nologin

lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin

mail:x:8:8:mail:/var/mail:/usr/sbin/nologin

news:x:9:9:news:/var/spool/news:/usr/sbin/nologin

uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin

proxy:x:13:13:proxy:/bin:/usr/sbin/nologin

www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin

backup:x:34:34:backup:/var/backups:/usr/sbin/nologin

list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin

irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin

gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin

nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin

systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin

systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin

systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin

messagebus:x:103:106::/nonexistent:/usr/sbin/nologin

syslog:x:104:110::/home/syslog:/usr/sbin/nologin

\_apt:x:105:65534::/nonexistent:/usr/sbin/nologin

tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false

uuidd:x:107:112::/run/uuidd:/usr/sbin/nologin

tcpdump:x:108:113::/nonexistent:/usr/sbin/nologin

sshd:x:109:65534::/run/sshd:/usr/sbin/nologin

landscape:x:110:115::/var/lib/landscape:/usr/sbin/nologin

pollinate:x:111:1::/var/cache/pollinate:/bin/false

vagrant:x:1000:1000:,,,:/home/vagrant:/bin/bash

systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin

ubuntu:x:1001:1001:Ubuntu:/home/ubuntu:/bin/bash

lxd:x:998:100::/var/snap/lxd/common/lxd:/bin/false

adminuser:x:1002:1002::/home/adminuser:/bin/sh

engruser:x:1003:1003::/home/engruser:/bin/sh

spptuser:x:1004:1004::/home/spptuser:/bin/sh

**Cat /etc/group:**

vagrant@ubuntu-focal:~$ cat /etc/group

root:x:0:

daemon:x:1:

bin:x:2:

sys:x:3:

adm:x:4:syslog,ubuntu

tty:x:5:syslog

disk:x:6:

lp:x:7:

mail:x:8:

news:x:9:

uucp:x:10:

man:x:12:

proxy:x:13:

kmem:x:15:

dialout:x:20:ubuntu

fax:x:21:

voice:x:22:

cdrom:x:24:ubuntu

floppy:x:25:ubuntu

tape:x:26:

sudo:x:27:ubuntu,vagrant,adminuser

audio:x:29:ubuntu

dip:x:30:ubuntu

www-data:x:33:

backup:x:34:

operator:x:37:

list:x:38:

irc:x:39:

src:x:40:

gnats:x:41:

shadow:x:42:

utmp:x:43:

video:x:44:ubuntu

sasl:x:45:

plugdev:x:46:ubuntu

staff:x:50:

games:x:60:

users:x:100:

nogroup:x:65534:

systemd-journal:x:101:

systemd-network:x:102:

systemd-resolve:x:103:

systemd-timesync:x:104:

crontab:x:105:

messagebus:x:106:

input:x:107:

kvm:x:108:

render:x:109:

syslog:x:110:

tss:x:111:

uuidd:x:112:

tcpdump:x:113:

ssh:x:114:

landscape:x:115:

admin:x:116:

netdev:x:117:ubuntu

lxd:x:118:ubuntu

vboxsf:x:119:

vagrant:x:1000:

systemd-coredump:x:999:

ubuntu:x:1001:

adminuser:x:1002:

engruser:x:1003:

spptuser:x:1004:

adminn:x:1005:

engineering:x:1006:engruser

support:x:1007:spptuser

**Cat /etc/sudoers:**

Exercise

**Output of /etc/apt/sources.list:**

vagrant@ubuntu-focal:/etc/apt/sources.list.d$ ls -al

total 8

drwxr-xr-x 2 root root 4096 Apr 9 2020 .

drwxr-xr-x 7 root root 4096 Sep 27 17:38 ..

vagrant@ubuntu-focal:/etc/apt/sources.list.d$

**Output of php -v**:

vagrant@ubuntu-focal:~$ php -v

PHP 7.4.3 (cli) (built: Aug 17 2022 13:29:56) ( NTS )

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