

Course code → BCSL-063

Course title → operating system Networking
Management Lab

Assignment Number → BCA(B)L-063 / Assignment 1
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Ans 1(a)

(1) Ping.

VirtualBox in\$ Ping www.google.com

Ping www.google.com (172.20.217.166) 56(84) bytes
64 bytes from del03s13-int4-1e100.net (172.217.166.196): icmp seq=1 ttl=51
time=220.2 ms

64 bytes from del03s13-int4-1e100.net (172.217.166.196): icmp seq=2 ttl=51
time=101 ms

64 bytes from del03s13-int4-1e100.net (172.217.166.196): icmp seq=3 ttl=51
time=244 ms

64 bytes from del03s13-int4-1e100.net (172.217.166.196): icmp seq=4 ttl=51
time=142 ms

64 bytes from del03s13-int4-1e100.net (172.217.166.196): icmp seq=5
ttl=51 time=242 ms

64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=13 ttl=51 time=167 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=14 ttl=51 time=307 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=15 ttl=51 time=91.6 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=16 ttl=51 time=86.6 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=17 ttl=51 time=62.6 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=18 ttl=51 time=88.1 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=19 ttl=51 time=903 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=20 ttl=51 time=84.1 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=21 ttl=51 time=83.5 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=22 ttl=51 time=63.5 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=23 ttl=51 time=83.6 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=29 ttl=51 time=81.7 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=30 ttl=51 time=119 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=31 ttl=51 time=117 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=32 ttl=51 time=108 ms
 64 bytes from del03s13-in-f4.1e100.net (172.217.166.196): icmp_seq=33 ttl=51 time=125 ms

Ans (ii) arp

VirtualBox: ~ \$ arp

Address	Hwtype	Hwaddress	Flags	Mask	Interface
gateway	ether	52:54:00:12:35:02	C		enp0s3

Ans (iii) finger

VirtualBox: ~ \$ finger

Login	Name	Tty	Idle	Login Time	Office	Office Phone
rahul	Rahul	*:0		Sep 14 09:57	(:0)	

Ans (v) rcp

VirtualBox: ~\$ rcp

usage: scp [-346BCpqrv] [-c cipher] [-F ssh.config] [-i identify-file]
 [-l limit] [-o ssh.option] [-P port] [-S program]
 [[user@]host1:] file1 ... [[user@]host2:] file2

Ans 1. (b)

Ans (i) /bin

VirtualBox: ~\$ cd /bin

VirtualBox: /bin \$ ls

bash	fuser	networkctl	static.sh
brlitty	fusermount	nisdmainname	stty
bunzip2	getfacl	ntfs-3g	su
busybox	grep	ntfs-3g-probe	sync
bzcmp	gzexe	ntfsccluster	systemd
bzcat	gunzip	ntfscat	systemctl
bzdiff	hiconfig	ntfsallocate	systemfescape
bzegrep	hostname	ntfsfix	systemt-hwdb
bzexe	ip	ntfsinfo	systemt-inhibit
bzfgrep	journalctl	ntfsls	systemt-machine-id-setup
bzgrep	kbd-mode	ntfsmove	system-notify
bzip2	kill	ntfsrecover	systemd-sysusers
bzip2recover	Kmod	ntfssecaudit	systemd-tmpfiles
bzless	less	ntfstruncate	systemd-tty-ask-pass-agent
bzmore	lssecho	ntfsusermap	tar

chac1	lessfile	ntfswipe	tempfile
chgrp	lesskey	open	touch
chmod	lesspipe	openut	true
chown	ln	pidof	udevadm
chvt	loadkeys	ping	unlockmgr_server
cp	login	ping4	unmount
cpio	loginctl	ping6	uname
dash	lowntfs-3g	plymouth	uncompress
date	ls	ps	unicode_start
dd	lsblk	pwd	wdir
df	lsmod	rbash	wcctl
dir	mkdir	readlink	which
dmesg	mknod	red	whiptail
domainname	mktemp	rm	ypdomainname
domainname	more	rmdir	zcat
dumpkeys	mount	rmrno	zcmp
echo	mountpoint	run-parts	zdiff
ed	mt	sed	zgrep
efibootdump	mt-gnu	setfacl	zfgrep
efibootmgr	mv	setfont	zforce
egrep	nano	setupcon	zgrep
false	nc	sh	zless
fgconsole	nc-openbsd	sh-distrib	zmore
fgrep	netcat	sleep	znew
findmnt	netstat	ss	

Ans (ii) /usr/bin

VirtualBox: /home \$ cd /usr/bin

VirtualBox: /usr/bin \$ ls

'l'	identify	ppmtocmyuv
4l1toppm	identify-im6-q16	ppmtogif
aa-enabled	ieset	ppmtocr
aa-exes	ijs-pxlr	ppmtoilbm
acconnect	ilbmtoppm	ppmtjpeg
acpi_listen	identify-im6	ppmtolcaf
add-apt-repository	imagetops	ppmtolj
addpart	im-config	ppmtomap
addr2line	imgtoppm	ppmtomitsu
alsabat	im-launch	ppmtompeg
alsaloop	import	ppmtoneo
alsamixer	import-im6	ppmtopex
alsatplg	import-im6-q16	ppmtopgm
alsaucm	info	ppmtopi1
amidi	infobrowser	ppmtopict
amixer	infocmp	ppmtopj
amuFormat.sh	infotocap	ppmtopuzz
animate	inputattach	ppmtorgb3
animate-im6	install	ppmtosixel
animate-im6-q16	install-info	ppmtotga
anytoppm	install-printerdriver	ppmtouil
apg	instanodsh	ppmtouicon
apgbfm	intel-virtual-output	ppmtexpm
aplay	interdiff	ppmtayuv

aplaymidi	ionice	ppmtouyuvsplit
apport-bug	ipcmk	ppmtv
apport-cli	iperm	pr
apport-collect	ipes	precat
apport-unpack	ipod-read-sysinfo-extended	preconv
appres	ipod-time-sync	preunzip
appstreamcli	ippfind	prezip
aptropas	iptool	prezip-bin
apt	iptables-xm	print
apt-add-repository	ischroot	printafm
apt-cache	isdu4-serial-debugger	printenv
apt-cdrom	isdu4-serial-inputattach	printerbanner

Ans (iii) /sbin

```
VirtualBox: ~$ ls -l /sbin/ifconfig /sbin/fdisk /sbin/mkfs.ext4
-rwxr-xr-x 1 root root 105444 Apr 16 21:37 /sbin/fdisk
-rwxr-xr-x 1 root root 69484 Dec 8 2013 /sbin/ifconfig
lrwxrwxrwx 1 root root 6 Jun 20 11:30 /sbin/mkfs.ext4->mkfs
```

Ans (iv) /tmp

```
VirtualBox: ~$ cd /tmp
VirtualBox: /tmp$ ls
config-err-lsIQiB
ssh-2mVcA6HKZbs7
```


systemd-private-c01687a5208248faa1fab4d47-bolt.service-w26Zhp
 systemd-private-c01687a5208248faa1fab4d47-colored.service-WYu6AO
 systemd-private-c01687a5208248faa1fab4d47-fwupd.service-Cqwnpe
 systemd-private-c01687a5208248faa1fab4d47-ModemManager.service-Tk6Chi
 systemd-private-c01687a5208248faa1fab4d47-rkit-daemon.service-ySV8yV
 systemd-private-c01687a5208248faa1fab4d47-systemd-resolved.service-h0TwCJ

Ans (v) /boot

VirtualBox: /home \$ cd /boot

VirtualBox: /boot \$ ls

config-5.0.0-23-generic	memtest86+.elf
config-5.0.0-27-generic	memtest86+ multiboot.bin
grub	system.map-5.0.0-23-generic
initrd.img-5.0.0-23-generic	system.map-5.0.0-27-generic
initrd.img-5.0.0-27-generic	vmlinuz-5.0.0-23-generic
memtest86+.bin	vmlinuz-5.0.0-27-generic

Ans 2(a) Creating a file with the following text and save it as script.sh

```
#!/bin/bash
if [ -e x.txt ]
then
    echo "File exists"
else
    echo "File does not exist"
fi
```

Save and execute the script:

```
$ chmod +x script.sh
$ ./script.sh
```

Ans (b) #!/bin/sh

```
df -H | grep -vE '^Filesystem|tmpfs|cdrom' | awk '{print $5 " " $1}' |
while read output;
do
    echo $output
    usep=$(echo $output | awk '{print $1}' | cut -d% -f1)
    partition=$(echo $output | awk '{print $2}')
    if [ $usep -ge 90 ]; then
        echo "Running out of space('$partition ($usep%)\n' on
            $(hostname) as on $(date)" | mail -s "Alert: Almost
            out of disk space $usep%" you@somewhere.com"
    fi
done
```

Output:

```
VirtualBox: ~$ cd Desktop
VirtualBox: ~/Desktop$ sudo ./disk.sh
[sudo] password for rahul:
0% udev
28% /dev/sda1
100% /dev/loop1
./disk.sh: 9: ./disk.sh: mail: not found
100% /dev/loop2
```


./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop0

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop3

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop4

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop7

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop8

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop5

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop6

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop9

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop10

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop11

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop12

./disk.sh: 9: ./disk.sh: mail: not found

100% /dev/loop13

./disk.sh: 9: ./disk.sh: mail: not found

Ans 3. (a) rahul@dev-db\$ crontab -l

@yearly /home/rahul/annual-maintenance

00 11.13 * * * /home/rahul/bin/incremental-backup

Explanation:

00-0th Minute (Top of the hour)

11,13-11 AM and 01 PM

* - Every day

* - Every Month

* - Every day of the week

Ans (b) Adding User

useradd (username)

password (username)

Changing password for user (username).

New LINUX password:

Retype new LINUX password:

password: all authentication token updated successfully.

→ programme@test:~\$ sudo useradd mark -m -s /bin/bash -g users
-c "my comment"

[sudo] password for programme:

programme@test:~\$ sudo password mark

Enter new UNIX password:

Retype new UNIX password:

password: password updated successfully

Adding Group

sudo groupadd nurses

sudo usermod -a -G nurses mom

⇒ bucky@ubuntu:~\$ sudo groupadd nurses
 [sudo] password for bucky:
 bucky@ubuntu:~\$ sudo usermod -a -G nurses moom

Ans (c) Setting Permissions for a File or Folder

1. To set the permissions for a file or folder
2. Use Windows Explorer to locate the file or folder for which you want to edit the permissions.
3. Right-click the folder, and then click Properties.
4. Click the Security tab.
5. To add a new access control setting to the folder, click Add.
6. Select the users, computers, or groups that this access control setting is applied to, click Add and then click OK.
7. To remove an access control setting ~~to the folder~~ click Remove.
8. Click OK to accept the settings, click Cancel to cancel any changes you have made, or click Apply to apply the changes without closing the file or folder properties.

Ans (e) VirtualBox: ~\$ route -n Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
0.0.0.0	10.0.2.2	0.0.0.0	UG	100	0	0	enp0s3
10.0.2.0	0.0.0.0	255.255.255.0	U	100	0	0	enp0s3
169.254.0.0	0.0.0.0	255.255.0.0	U	1000	0	0	enp0s3

x