Practical No. 1

Aim: Install Linux server and analyze networking features of Linux.

Theory: Linux is the foundation of open source operating system assigned to replace windows and MacOS. This is free to download and install on any computer. There are variety of different versions.

* How to install Linux:

1. Download the linux of your choice

Linux are typically available for free to download in .ISO format. This format need to be burned to a CD or USB stick before installation. Install image burning program.

2. Boot to live CD and live USB

Start rebooting computer and enter the key used to enter the boot menu.

3. Try out the linux before installation

Most time CD's and USB's can launch live environment to test it before making the switch.

4. Start installation process

If you want to try out distro you can start installation from desktop, otherwise it will be better to start form boot menu.

5. Create a username and password.

You will need to create login information to install, to perform administrative tasks.

6. Set up the application

A portion of hard drive for that operating system. you can skip if you are dual booting.

7 Boot into Linux

Once the installation finished, your computer will reboot and you will see GNU GRUB which is a boot loader.

8 Start using Linux

Once your installation completes and after booting, you are good to go with it and you can download many file repos as you wanted.

Conclusion :- Hence, we have performed this practical successfully

Practical No. 2

Aim :- Install and configure DNS on Linux.

Theory :- following are the steps required for installation and to configure DNS on linux.

1) Update System

Before starting installation process, ensure that your system is updated by executing following commands

```
sudo apt-get update
sudo apt-get upgrade
```

2) Install DNS package

use the following command for installation

```
sudo apt-get install bind9
```

3) Install DNS Utilities

For troubshooting and testing this package will be very helpfull to you

```
sudo apt-get install dnsutils
```

4) DNS Configuration

you need to edit configuration files stored in /etc/bind directory

```
sudo vi /etc/bind/named.conf.options
```

After editing the file, you will need to restart DNS service to enable it.

sudo systemctl restart bind9

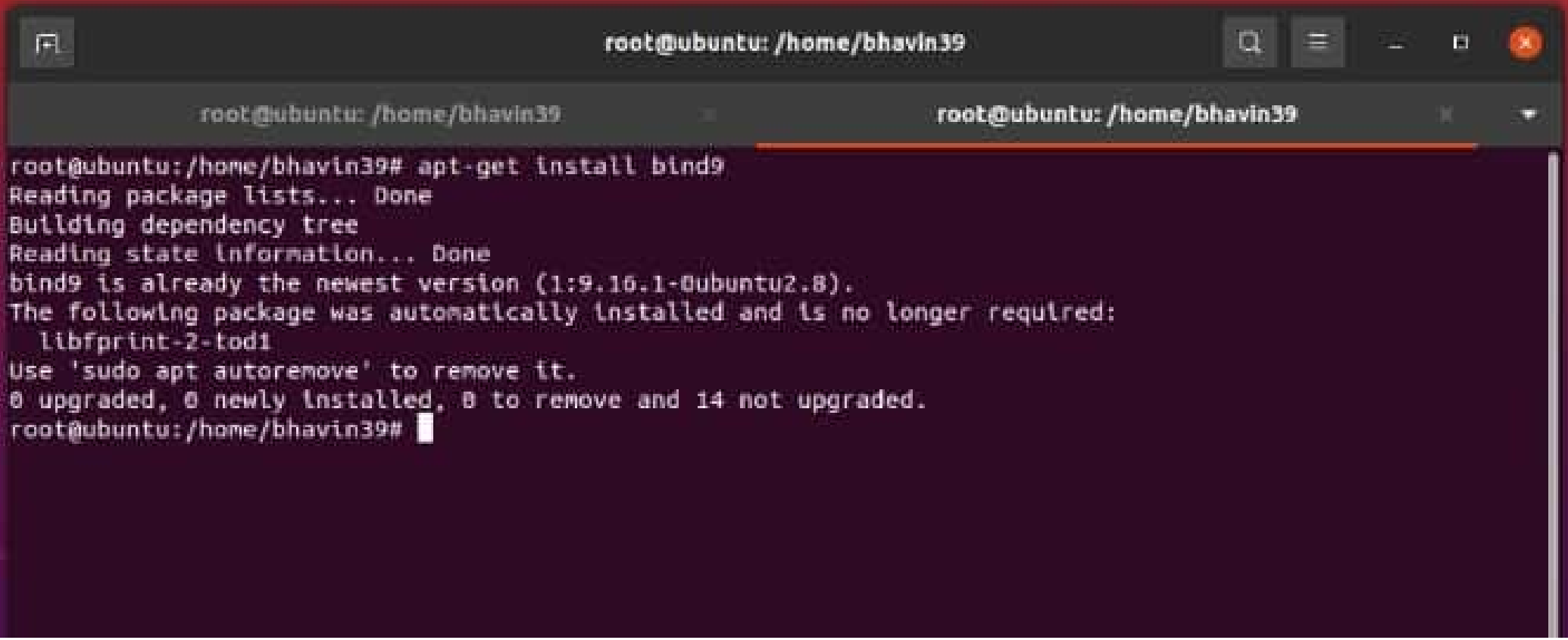
To test queries, you can use the dig command which is installed by the dnsutils package

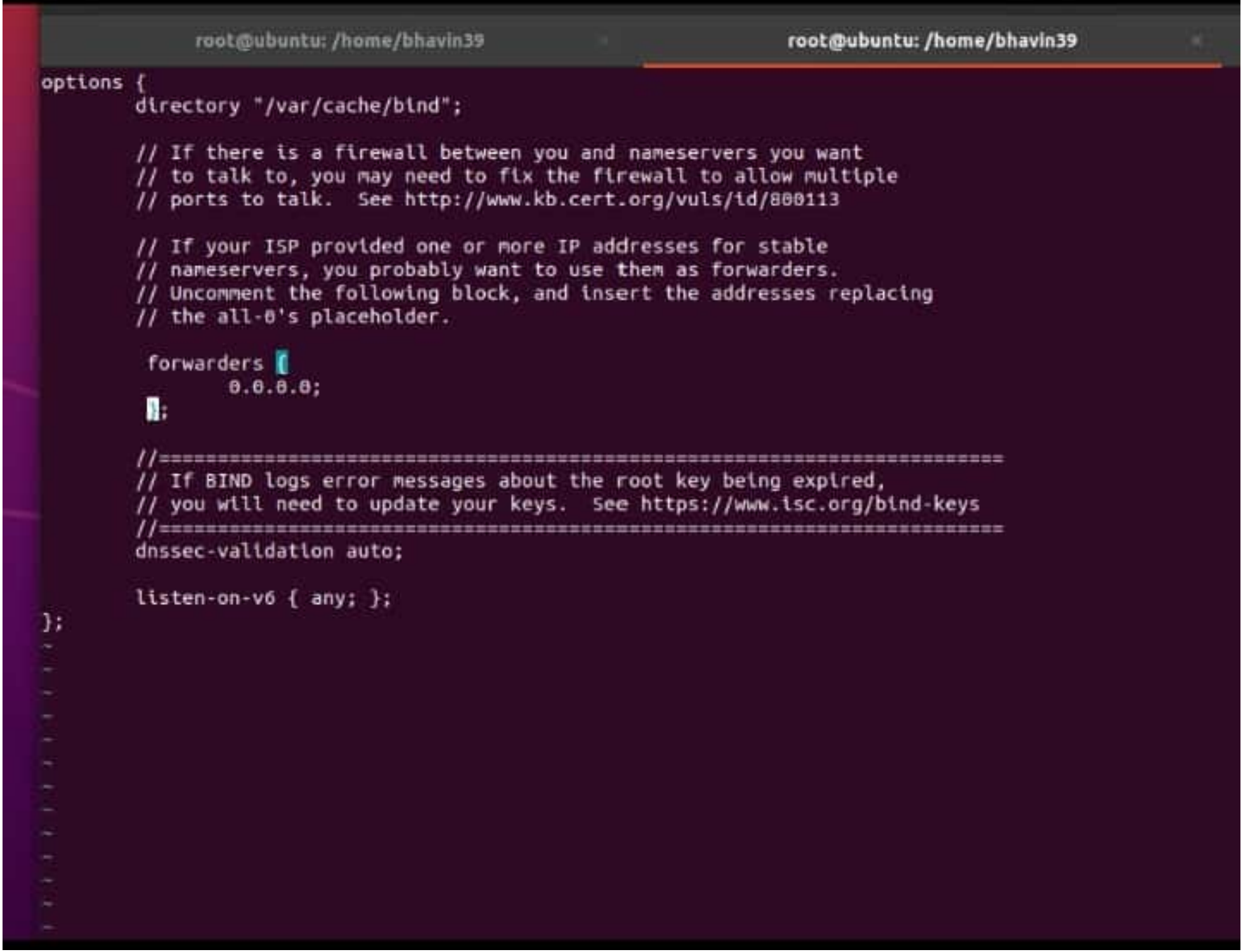
e.g: dig google.com

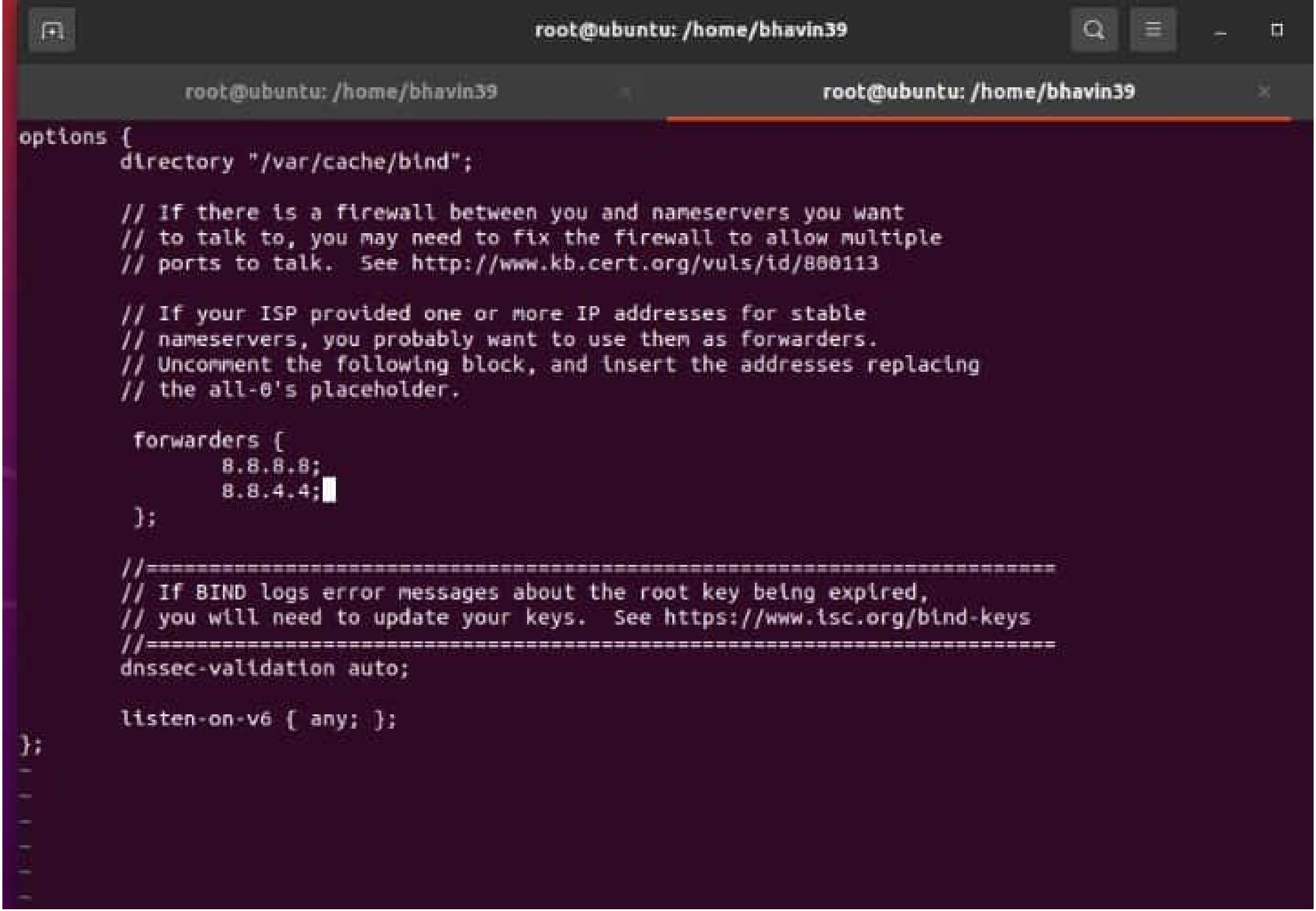
~~c) Primary Master~~

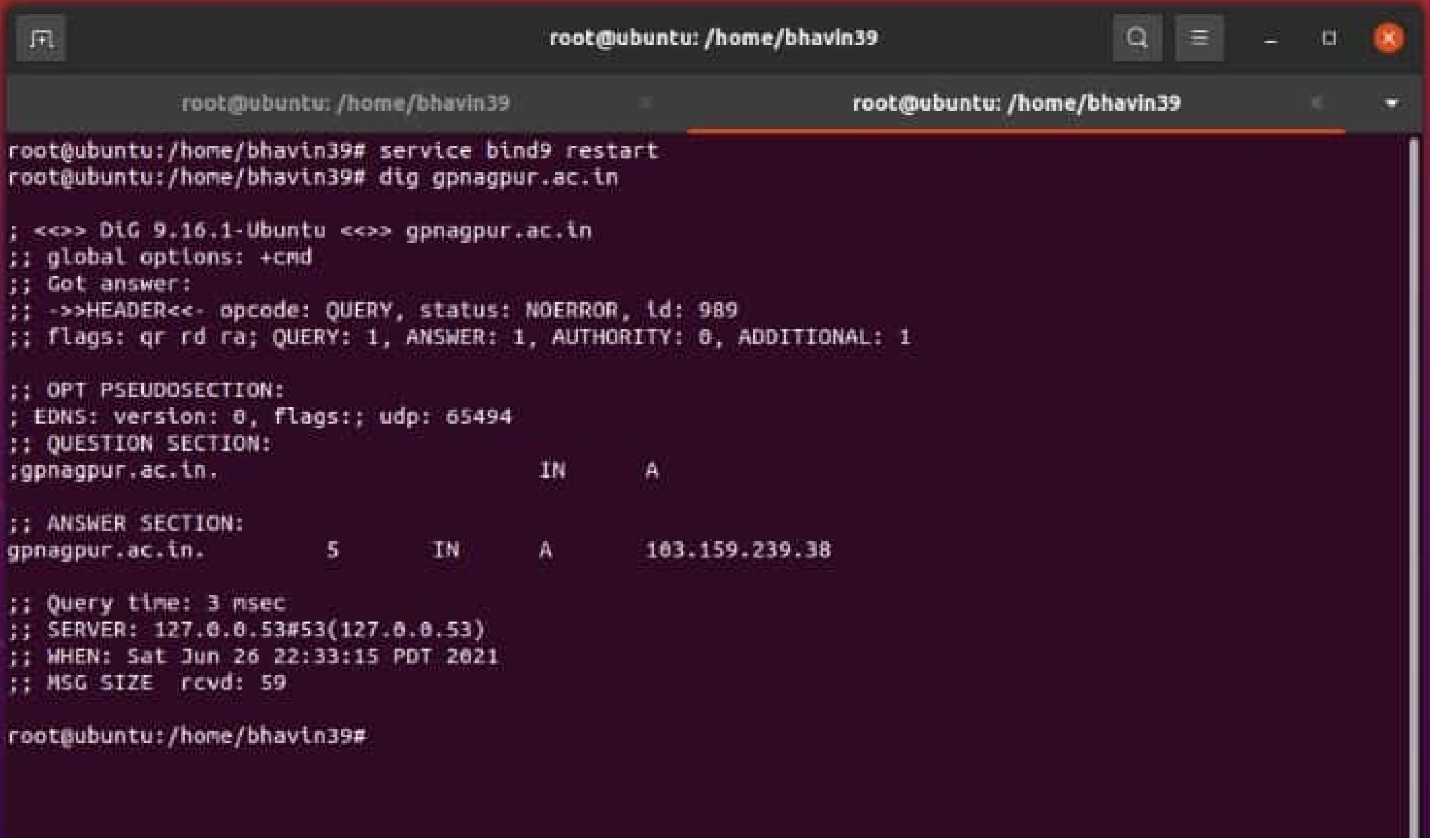
Finally we have installed and configured the DNS server on linux.

Conclusion:- Hence, we performed this practical successfully









Practical No. 3

Aim :- Perform access control work on Linux.

Theory :- Access Control List provides an additional, more flexible permission mechanisms for file system. It is designed to assist with UNIX file permissions. ACL allows you to give permissions for any use or groups to any disc resource.

setfacl and getfacl are used for setting up ACL and showing ACL

For example :

getfacl test/declaration.h

- List of commands for setting ACL

i to add permissions for users

$ setfacl -m "u:user permission" /path/to/file

ii to add permission for a group

setfacl -m "g:group:permission" /path/to/file.

iii to remove a specific entry

setfacl -x "entry" /path/to/file

- Setting up an ACL

Syntax :- setfacl [option][action/specificatio] file

you will see a default ACL info for that directory, which you are going to perform

If you want to give a ~~user~~ new user ability to see what files are in the specific directory and we want his to able to execute new files

syntax: setfacl -m username: rwx / directoryname

Conclusion: Hence, we have performed this practical successfully

Practical No. 4

Aim:- Configuration of Firewalls on Linux.

Theory:-

1. List the current rules of iptable

sudo iptables -L

Target - defines what action need to be done
prot - defines the protocol of the packet (TCP, IP)
source - tells the source address
destination - defines the destination address

2. Clear the rules

sudo iptables -F

3. Changing the default policy of chains:

sudo iptables -P Chain name Action to be taken

For eg.

sudo iptables -P FORWARD DROP

if you want to block/drop connections for a particular IP address, then:

sudo iptables -A INPUT -s 10.10.10.10 -j DROP

where 10.10.10.10 will be drop and block

If you want to block/drop connection to a specific port, run:

sudo iptables -A INPUT -p tcp --dport ssh -j DROP

4. Saving your Configuration

If you are on a server, then to prevent from corrupting the system, you need to save configuration that you have made.

you need to download iptables-persistent package.

sudo apt-get install iptables-persistent

then run the following command.

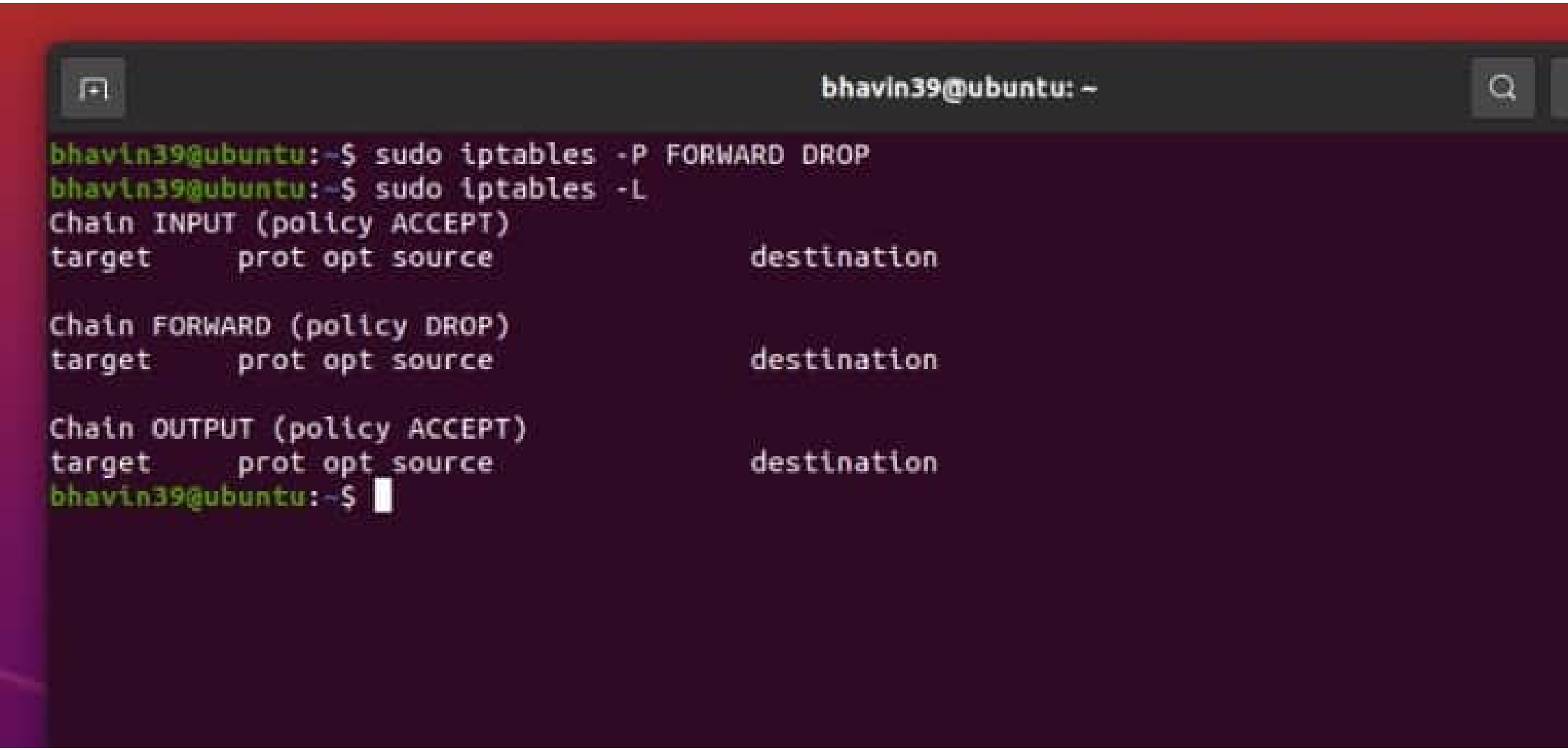
sudo invoke-rc.d iptables-persistent save

5. Appending Rule.

To append the rule at the end of the chain use - sudo iptables -A chain name rule number

To append the rule at the start, all you need to do is change -A to -I option.

Conclusion :- Hence, we have successfully perform configuration of Firewall on Linux.



```
bhavin39@ubuntu:~$ sudo iptables -A INPUT -s 192.168.1.3 -j DROP
bhavin39@ubuntu:~$ sudo iptables -L
Chain INPUT (policy ACCEPT)
target     prot opt source               destination
DROP       all  --  192.168.1.3          anywhere

Chain FORWARD (policy DROP)
target     prot opt source               destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source               destination
bhavin39@ubuntu:~$
```

```
bhavin39@ubuntu:~$ sudo iptables -A INPUT -s 192.168.1.3 -p tcp --dport 22 -j ACCEPT
bhavin39@ubuntu:~$ sudo iptables -L
Chain INPUT (policy ACCEPT)
target     prot opt source               destination
DROP       all  --  192.168.1.3          anywhere
ACCEPT     tcp  --  192.168.1.3          anywhere             tcp dpt:ssh

Chain FORWARD (policy DROP)
target     prot opt source               destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source               destination
bhavin39@ubuntu:~$
```

```
bhavin39@ubuntu:~$ sudo iptables -F
bhavin39@ubuntu:~$ sudo iptables -L
Chain INPUT (policy ACCEPT)
target     prot opt source               destination

Chain FORWARD (policy DROP)
target     prot opt source               destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source               destination
bhavin39@ubuntu:~$
```

Practical No. 5

Aim: Install Windows 2003 Server and note its important features

Theory: Windows 2003 server is an operating system designed for users who want to create a network made up of multiple computers can access. ~~If you want to~~

Steps to Installation:

1) Put Windows 2003 server CD into CD drive and wait as the windows setup screen loads

2) Creat partitions using arrow keys and hit enter to reboot after setup completes

3) Enter name and organization on the screen and click on next

4) Setup a administration password and click on next

5) Configure your network setting by clicking custom setting for Network Setting.

Features of Windows 2003 Server

i New Server Manager: Create, manage server groups

ii Better edition with SKU selection

iii. A command line first
iv. Hyper -V Replication
v. Expandable Powershell
vi. Storage Spaces
vii. Direct Access and a VPN without pair of it
viii Out of the Box IP addr Management.

Conclusion :- Hence, I installed windows 2003 server and noted it's important features successfully.

Practical No. 6

Aim :- Write the steps for creating AD object and perform it on Window 2003

Theory :-

1) Insert the Window Server 2003 CD-ROM into your computer's CD-ROM
2) Click start, click Run and then type dcpromo
3) Click OK to start the Active Directory Installation Wizard, and click Next
4) Click Domain Controller for new domain + Click next
5) Click Domain in a new forest, then click Next
6) Specify the name for DNS for new domain
7) Accept the default domain NetBIOS name and Click Next
8) Set database and log file locations
9) set Sysvol folder location to defult setting
10) Click Install and configure the DNS server
11) Click on Permission compatible only with Windows Server 2003 and click next
12) Review and confirm the options, then click next
13) The Instruction of Active Directory proceeds and when you are prompted, restart the computer.

For Adding User to AD

1) Go to Administration tools, then click Active Directory Users and Computers

ii) Click the domain name you created
iii) Right click on Users and click on New
iv) Type first and last name and username for new user and click next
v) Create a new password and click next
vi) After creating user, give user account membership in a group that user to perform administration task
vii) The final step will be adding member server to the domain and after that restart the computer.

Conclusion :- Hence, we have perform this practical successfully.

Practical No. 7

Aim :- Creat New Users in Windows 2003 server and assign different privileges to them

Theory :-

1) Type lusrmgr.msc into the Run

2) Click on the new user in opened window

3) In new user dialog, Fill the neccessory fields and right click on new user

4) Properties for new users will open, go to members of tab and ~~press add~~ press on add

5) Choose Administrators and click on OK and click on the OK of Local Users and Groups dialog

6) This will be a secondary Administratory Account with administrater privileges.

Conclusion :- Hence, we have successfully performed the practical.

Practical No. 8

Aim :- Create Windows 2003 Server Boot Disk required for the installations

Theory :-

1). Start the burning application, from file, select new.

2) Select CD-ROM (Boot) from CD type options.

3) Select the Boot tab and click on Image file and locate the boot seleder image file

4) select the label tab and enter the volume label of the original CD-ROM (e.g. NRMSFPP_EN for Windows 2003 Server)

5) Under BurnCD button, select the finalize CD option and click on new.

6) Drag all the file with SP1 folder to the CD project.

7) From the Recorder menu, select the compilation option

8) At the ~~last~~ bottom of dialog, click on the Burn and wait for it's completion

9) The application will creates your SP1- integrated bootable windows 2003 Server CD-ROM.

Conclusion :- Hence, I performed this practical successfully.