SACRED HEART COLLEGETHEVARA

SERVER OPERATING SYSTEM

19U5VCBCA04

BCA (Mobile Applications and Cloud Technology)

PRACTICAL RECORD

By

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Certificate

This is to certify that it is a bonafied record of practical work done by ***AMAYA A*** *bearing the Roll No.* ***22UBCA7341*** *of* 5th *Semester BCA(Mobile Applications and Cloud Technology) in the Server Operating System laboratory during the academic under our supervisor.*

Signature of Internal Examiner

Signature of External Examiner

Date: 11/09/2024

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BASIC COMMANDS

Experiment: 1

Aim: Understand basic commands

- IPCONFIG

  COMMAND

  To see the IP address

  Syntax: ipconfig

- PING COMMAND

  To see the existing the IP

  Syntax: ping 192.168.87.1

- TO UPDATE

  Sudo apt update

- TO INSTALL

  Sudo apt install openSSH.server

- TO PRINT THE SSH SERVER STATUS

  Sudo systemctl status ssh

- TO EDIT SETTINGS

  Sudo nano /etc/ssh/sshd-config

- TO RESTART

  Suso service ssh restart

- TO TEST

  ssh localhost

- UPTIME COMMAND

  In Linux uptime command shows since how long your system is running and the number of users are currently logged in and also displays load average for 1,5- and 15-minutes intervals.

  Syntax: uptime

- W COMMAND

  It will display users currently logged in and their process along-with shows load averages. Also shows the login name, tty name, remote host, login time, idle time, JCPU, PCPU, command and processes.

  Syntax: w

- USERS COMMAND

  Users command displays currently logged in users. This command don't have other parameters other than help and version.

  Syntax: users

- WHO COMMAND

  who command simply return user name, date, time and host information who command is similar to w command. Unlike w command who doesn't print what usersare doing. Let's illustrate and see the different between who and w commands.

  Syntax: who

- WHOAMI COMMAND

  whoami command print the name of current user. You can also use "who am i" command to display the current user. If you are logged in as a root using sudo command "whoami" command return root as current user. Use "who am i" command if you want to know the exact user logged in.

  Syntax: whoami

- LS COMMAND

  ls command display list of files in human readable format.

  Syntax: ls -l

- CRONTAB COMMAND

  List schedule jobs for current user with crontab command and -l option.

  Syntax: crontab -l

- LESS COMMAND

  less command allows quickly view file. You can page up and down. Press 'q' to quit from less window.

  Syntax: less install.log

- MORE COMMAND

  more command allows quickly view file and shows details in percentage. You can page up and down. Press ‘q ‘to quit out from more window.

  Syntax: more install.log
- CP COMMAND

  Copy file from source to destination preserving same mode.

  Syntax: cp -p fileA fileB
- MV COMMAND

  Rename fileA to fileB. -i options prompt before overwrite. Ask for confirmation if exist already.

  Syntax: mv -i fileA fileB
- CAT COMMAND

  cat command used to view multiple file at the same time.

  Syntax: cat fileA fileB
- CD COMMAND (CHANGE DIRECTORY)

  with cd command (change directory) it will goes to fileA directory.

  Syntax: cd /fileA

Result:

All the commands have been executed and the output has been obtained successful

SAMBA SHARE

Experiment: 2

Aim: Installation and configuration of Samba share.

Description:

SAMBA

One of the most common ways to network Ubuntu and Windows computers is to configure Samba as a File Server. This section covers setting up a Samba server to share files with Windows clients.
The server will be configured to share files with any client on the network without prompting for a password. If your environment requires stricter Access Controls see Share Access Control
Port No: 139
Package name: samba
Configuration file: /etc/samba/smb.conf.

Procedure:

1. To install Samba, we can run:
$sudo apt update
$sudo apt install samba
2. We can check if the installation was successful by running:
$whereis samba
3.Now that Samba is installed, we need to create a directory for it to share:
$mkdir /home/<username>/sambashare/
The command above creates a new folder samba share in our home directory which we will share later.The configuration file for Samba is located at /etc/samba/smb.conf. To add the new directory as a share,we edit the file by running:
$sudo nano /etc/samba/smb.conf
At the bottom of the file, add the following lines:

[sambashare]
comment = Samba on Ubuntu
path = /home/username/sambashareread only =
no
browsable = yes
4. Then press Ctrl-O to save and Ctrl-X to exit from the nano text editor.
5. Now that we have our new share configured, save it and restart Samba for it to take effect:
$sudo service smbd restart
6.Update the firewall rules to allow Samba traffic:
$sudo ufw allow samba

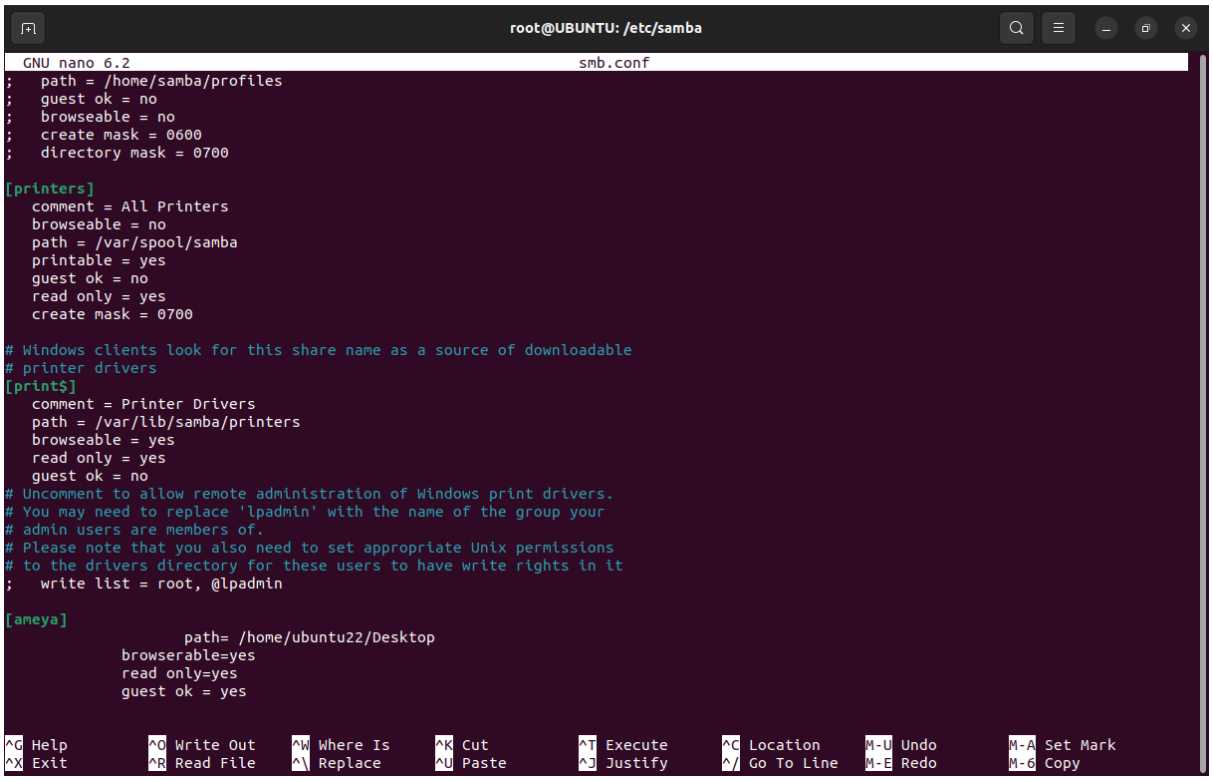
SETTING UP USER ACCOUNTS AND CONNECTING TO SHARE

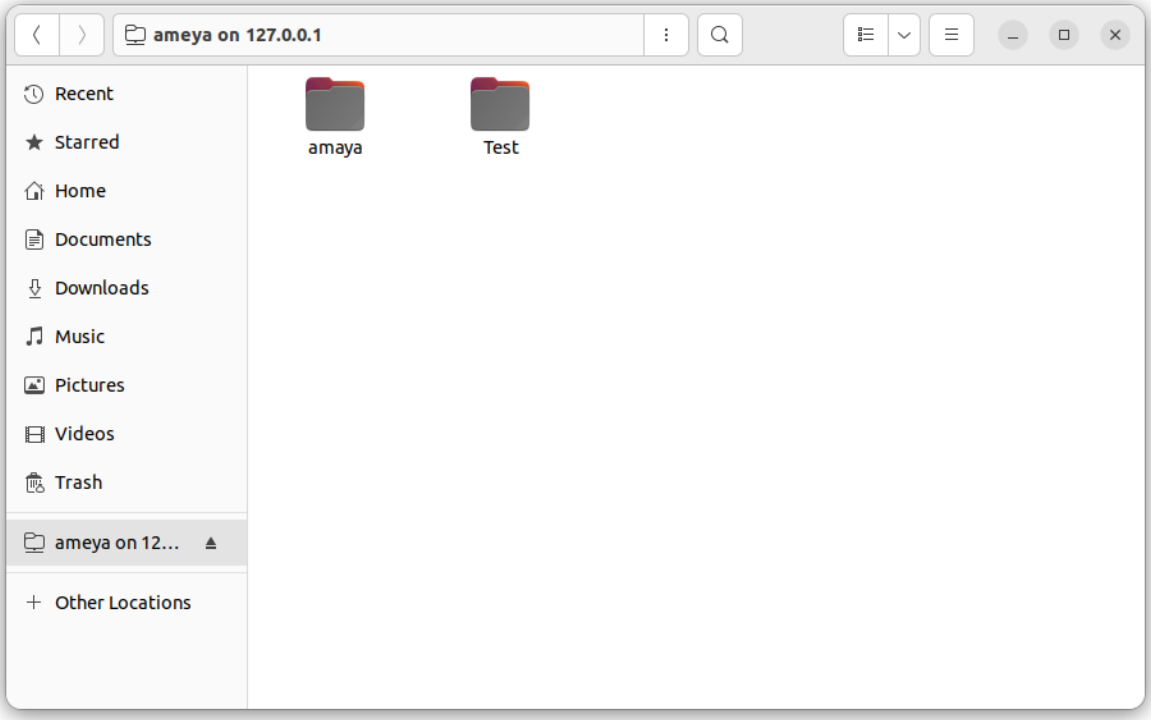
7.Since Samba doesn't use the system account password, we need to set up a Samba password for our user account:
$sudo smbpasswd -a username

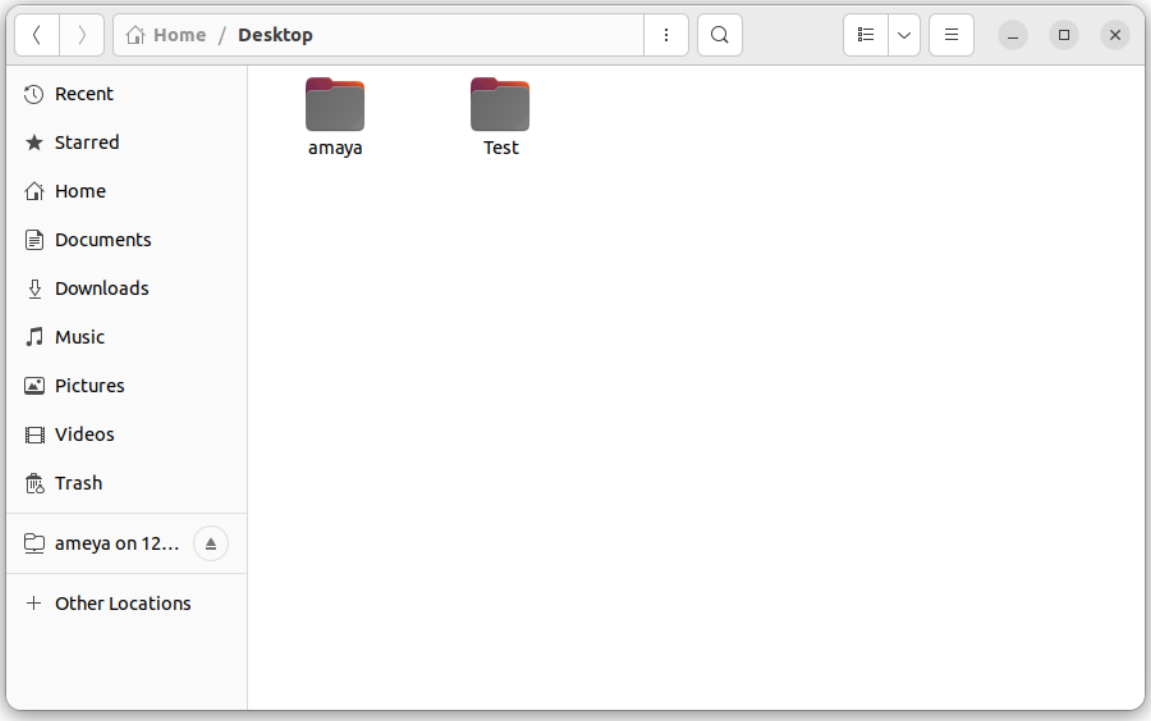
CONNECTING TO SHARE

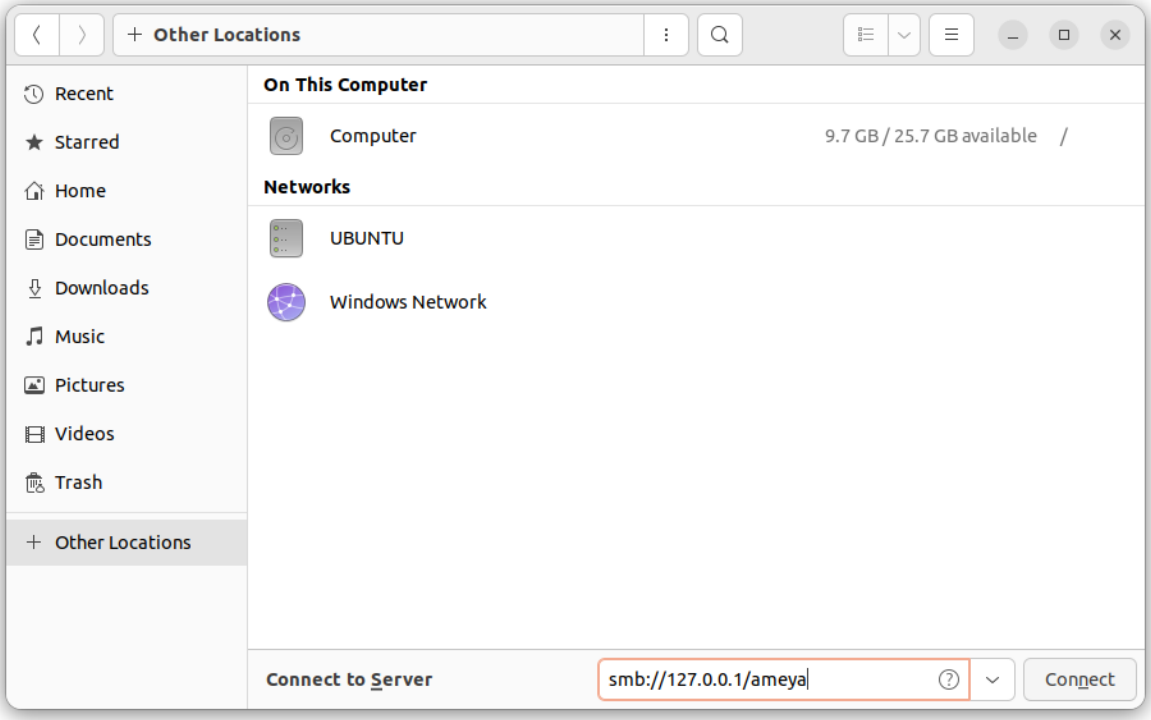
8. On Ubuntu: Open up the default file manager and click Connect to Server then enter: Connecting to samba via smb://127.0.0.1/sambashare
Note: ip-address is the Samba server IP address and sambashare is the name of the share. You'll be prompted for your credentials. Enter them to connect

Result:




ameya on 127.0.0.1
Recent
Starred
Home
Documents
Downloads
Music
Pictures
Videos
Trash
ameya on 12...
Other Locations
amaya
Test


Home / Desktop
Recent
Starred
Home
Documents
Downloads
Music
Pictures
Videos
Trash
ameya on 12...
Other Locations
amaya
Test



All the commands have been executed and the output has been obtained successfully.

DNS

Experiment: 2

Aim: To create and configure DNS Server

Description:

DNS Server

A DNS server is a computer server that contains a database of public IP addresses and their associated hostnames, and in most cases, serves to resolve, or translate, those common names to IP addresses as requested.

Port No: 53
Package name: bind9
Configuration file: /etc/bind/named.conf. (Primary configuration file),/etc/bind/db.root (root nameservers)

Procedure:

CASHING NAMESERVER

When configured as a caching nameserver BIND9 will find the answer to name queries and
remember the answer when the domain is queried again.

1. Install bind9 by typing

$sudo apt install bind9
$sudo apt install dnsutils

2.The default configuration is set up to act as a caching server. All that is required is simply
adding the IP Addresses of your ISP's DNS servers. Simply uncomment and edit the following in /etc/bind/named.conf.options:

3.Restart it by typing
$sudo systemctl restart bind9.service

PRIMARY MASTER

As a primary master server BIND9 reads the data for a zone from a file on it's host and is authoritative for that zone.

Forward zone file

To add a DNS zone to BIND9, turning BIND9 into a Primary Master server, the firststep is to edit /etc/bind/named.conf.local:

$sudo cp /etc/bind/db.local /etc/bind/db.example.com
$sudo systemctl restart bind9.service

Reverse Zone File

Now that the zone is set up and resolving names to IP Addresses, a *Reverse zone* needs to be added to allows DNS to resolve an address to a name.

1. Edit /etc/bind/named.conf.local
2. Now create the /etc/bind/db.192 file:
   $sudo cp /etc/bind/db.127 /etc/bind/db.192

3. edit /etc/bind/db.192changing the basically the same options as /etc/bind/db.example.com:

4.After creating the reverse zone file restart BIND9:
   $sudo systemctl restart bind9.service
5.Check the status
   $Sudo service bind9 status
6.Check if nslookup can resolve

$nslookup ftp.example.com
$nslookup ubuntu.example.com

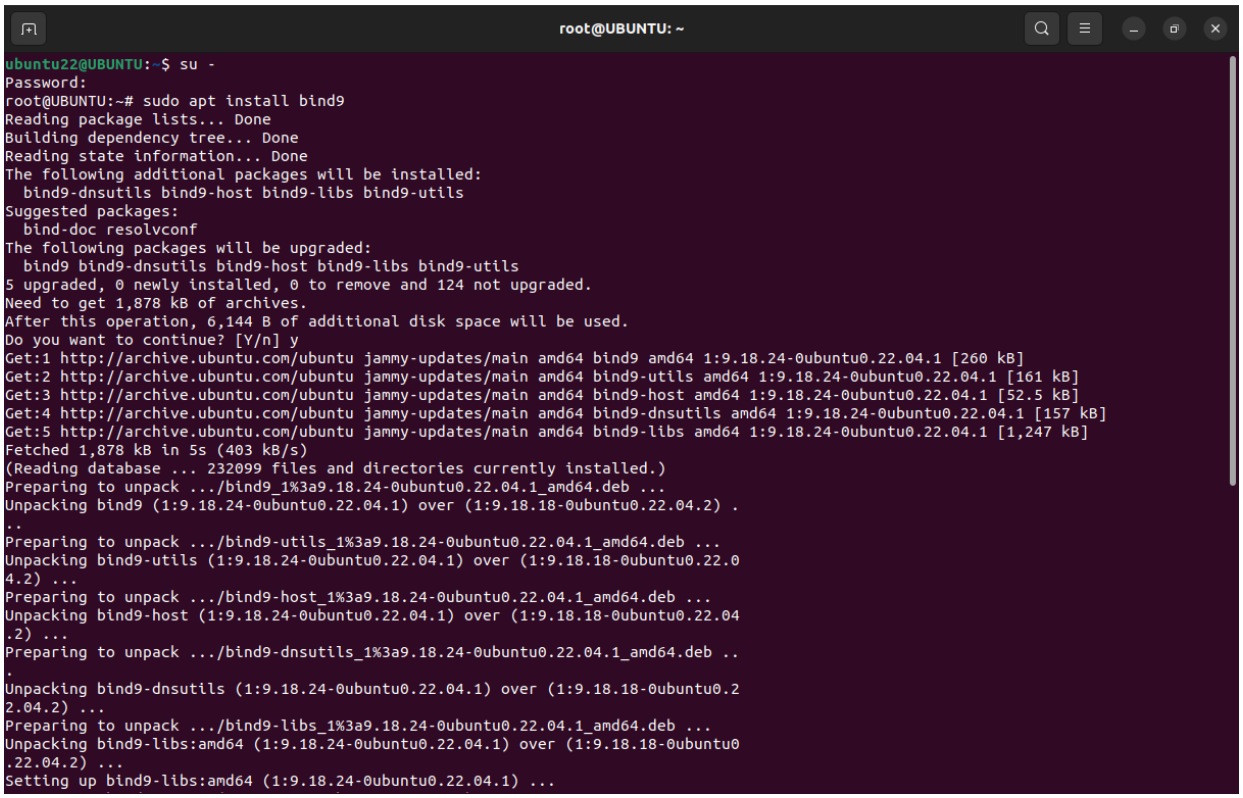
7.Gather information about your DNS server

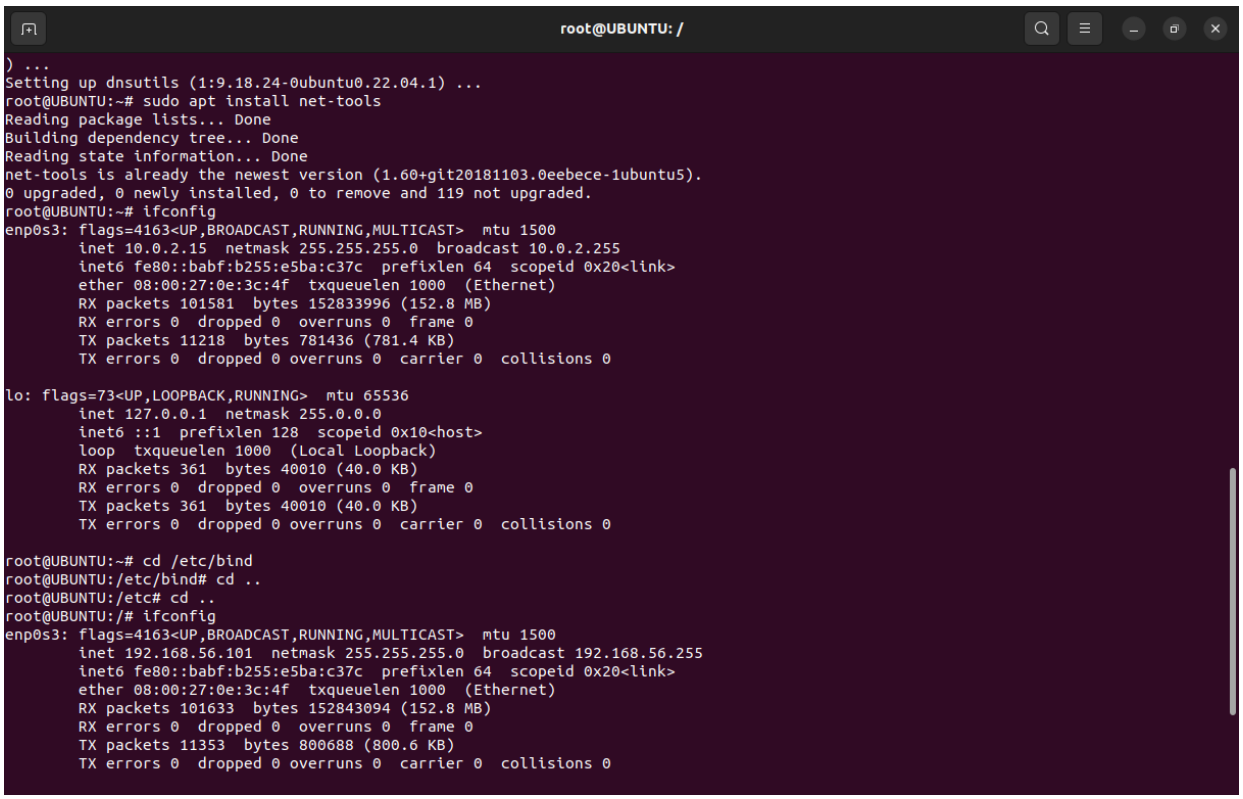
$dig ubuntu.example.com

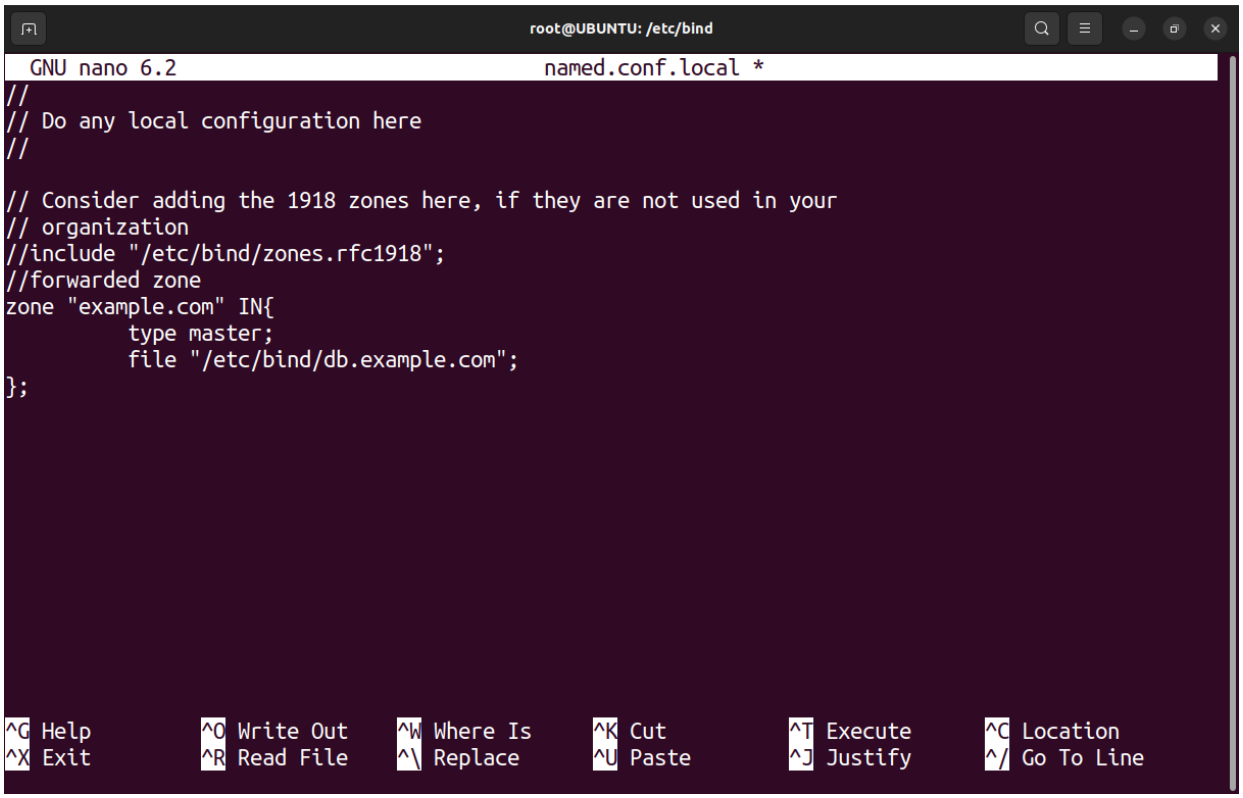
$dig www.example.com

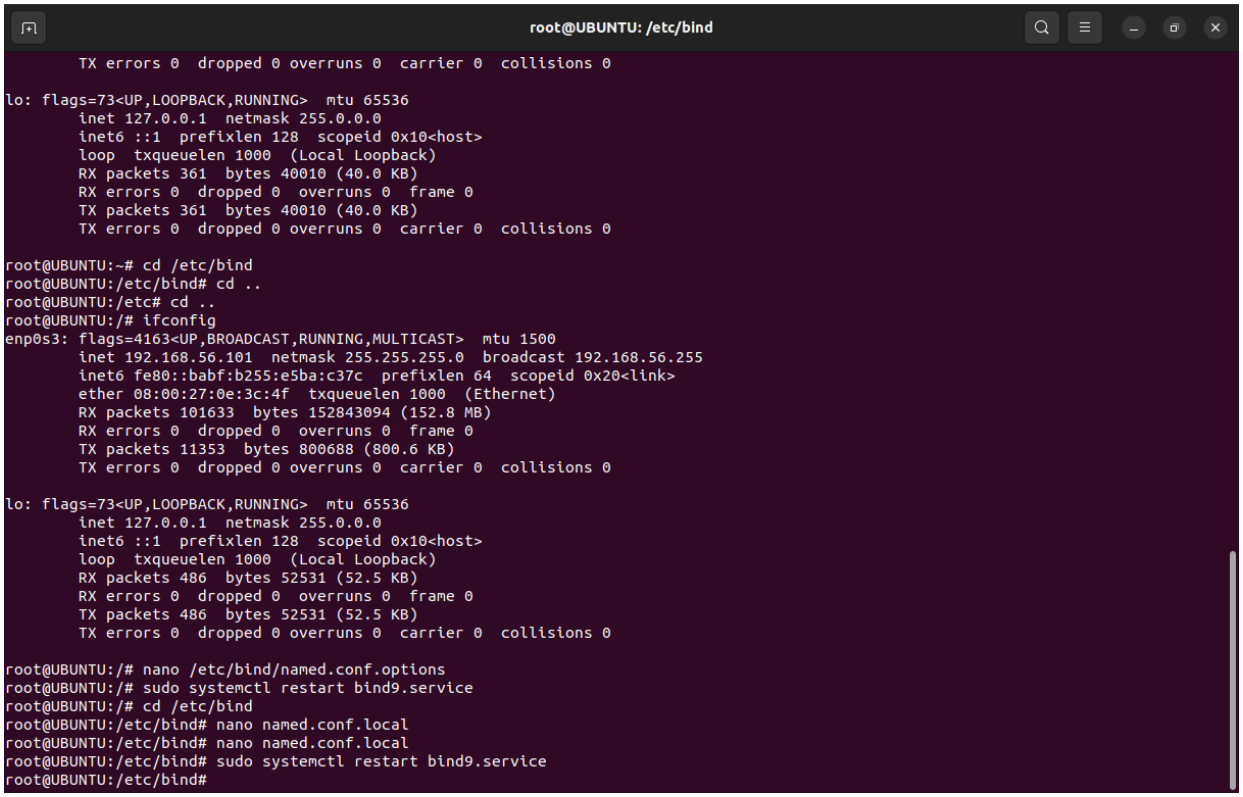
$dig ftp.example.com

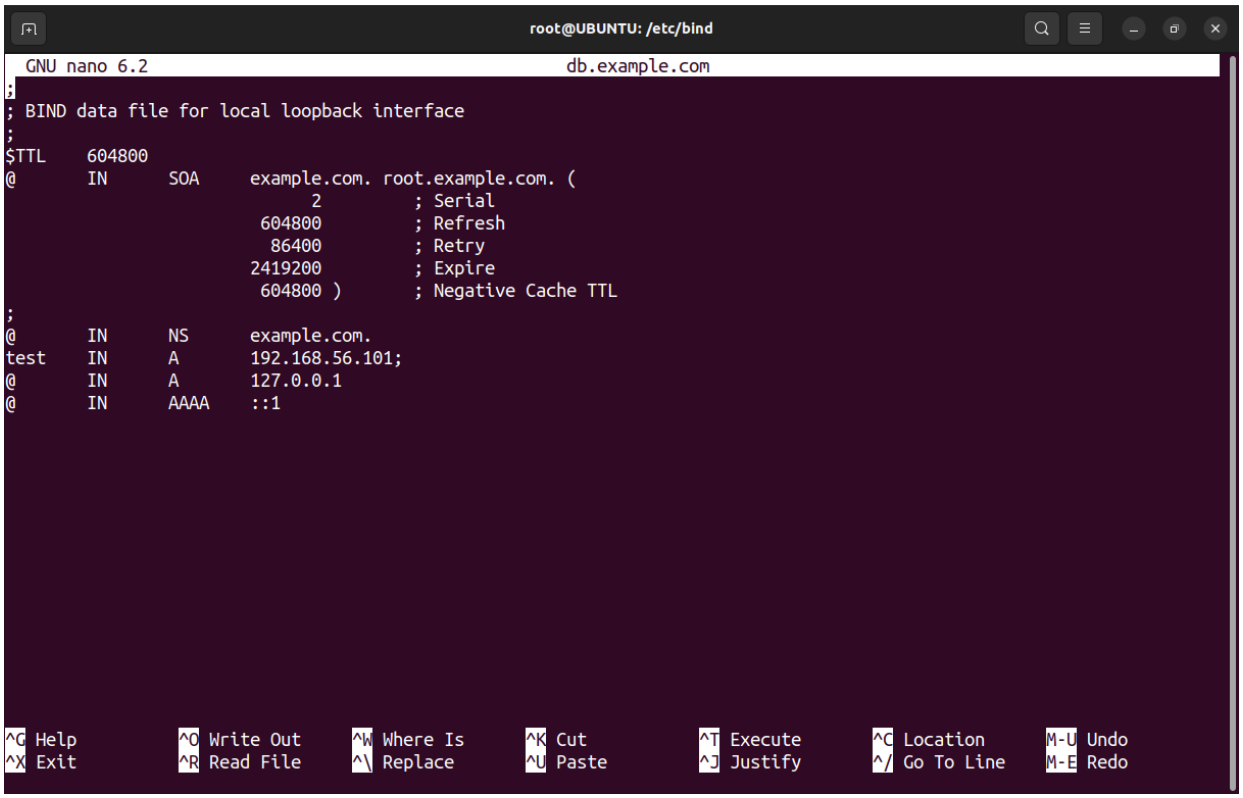
Result:

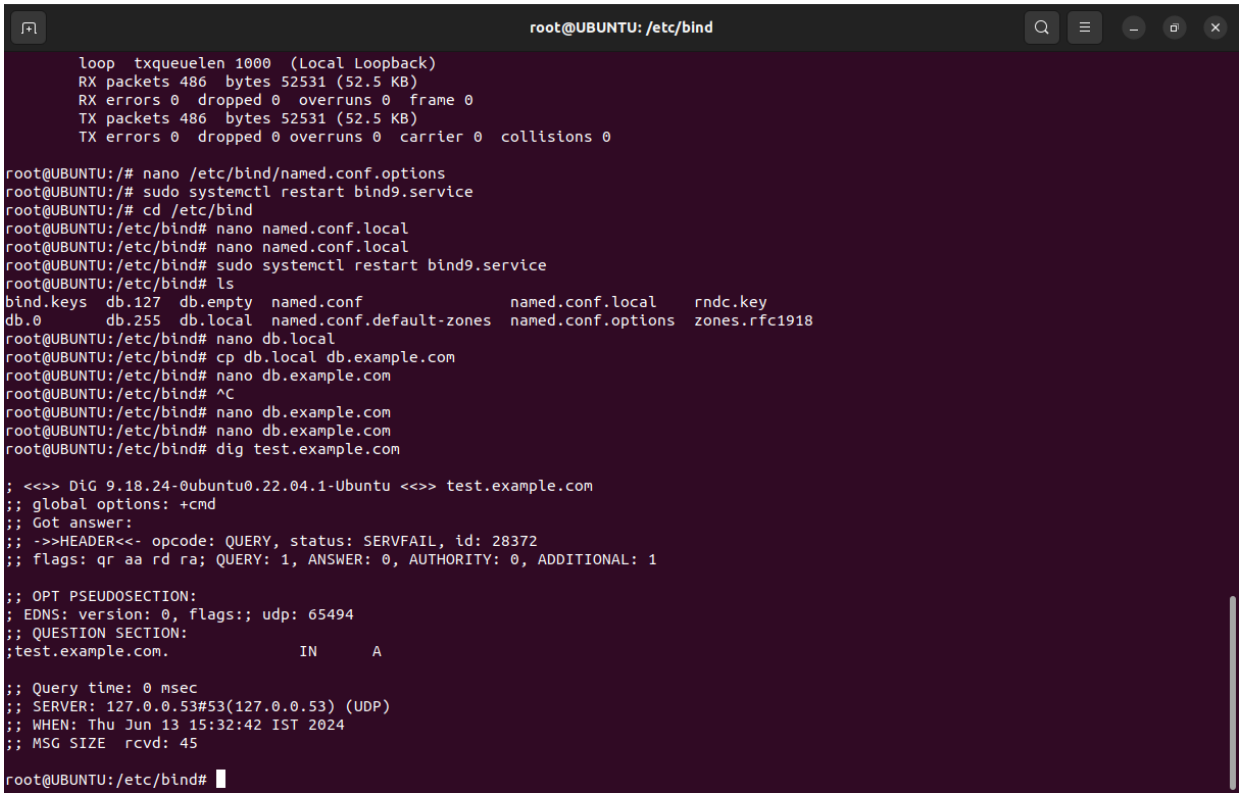

root@UBUNTU: ~
ubuntu22@UBUNTU:~$ su -
Password:
root@UBUNTU:~# sudo apt install bind9
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
bind9-dnsutils bind9-host bind9-libs bind9-utils
Suggested packages:
bind-doc resolvconf
The following packages will be upgraded:
bind9 bind9-dnsutils bind9-host bind9-libs bind9-utils
5 upgraded, 0 newly installed, 0 to remove and 124 not upgraded.
Need to get 1,878 kB of archives.
After this operation, 6,144 B of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9 amd64 1:9.18.24-0ubuntu0.22.04.1 [260 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-utils amd64 1:9.18.24-0ubuntu0.22.04.1 [161 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-host amd64 1:9.18.24-0ubuntu0.22.04.1 [52.5 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-dnsutils amd64 1:9.18.24-0ubuntu0.22.04.1 [157 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-libs amd64 1:9.18.24-0ubuntu0.22.04.1 [1,247 kB]
Fetched 1,878 kB in 5s (403 kB/s)
(Reading database ... 232099 files and directories currently installed.)
Preparing to unpack .../bind9_1%3a9.18.24-0ubuntu0.22.04.1_amd64.deb ...
Unpacking bind9 (1:9.18.24-0ubuntu0.22.04.1) over (1:9.18.18-0ubuntu0.22.04.2) .
..
Preparing to unpack .../bind9-utils_1%3a9.18.24-0ubuntu0.22.04.1_amd64.deb ...
Unpacking bind9-utils (1:9.18.24-0ubuntu0.22.04.1) over (1:9.18.18-0ubuntu0.22.0
4.2) ...
Preparing to unpack .../bind9-host_1%3a9.18.24-0ubuntu0.22.04.1_amd64.deb ...
Unpacking bind9-host (1:9.18.24-0ubuntu0.22.04.1) over (1:9.18.18-0ubuntu0.22.04
.2) ...
Preparing to unpack .../bind9-dnsutils_1%3a9.18.24-0ubuntu0.22.04.1_amd64.deb ..
.
Unpacking bind9-dnsutils (1:9.18.24-0ubuntu0.22.04.1) over (1:9.18.18-0ubuntu0.2
2.04.2) ...
Preparing to unpack .../bind9-libs_1%3a9.18.24-0ubuntu0.22.04.1_amd64.deb ...
Unpacking bind9-libs:amd64 (1:9.18.24-0ubuntu0.22.04.1) over (1:9.18.18-0ubuntu0
.22.04.2) ...
Setting up bind9-libs:amd64 (1:9.18.24-0ubuntu0.22.04.1) ...

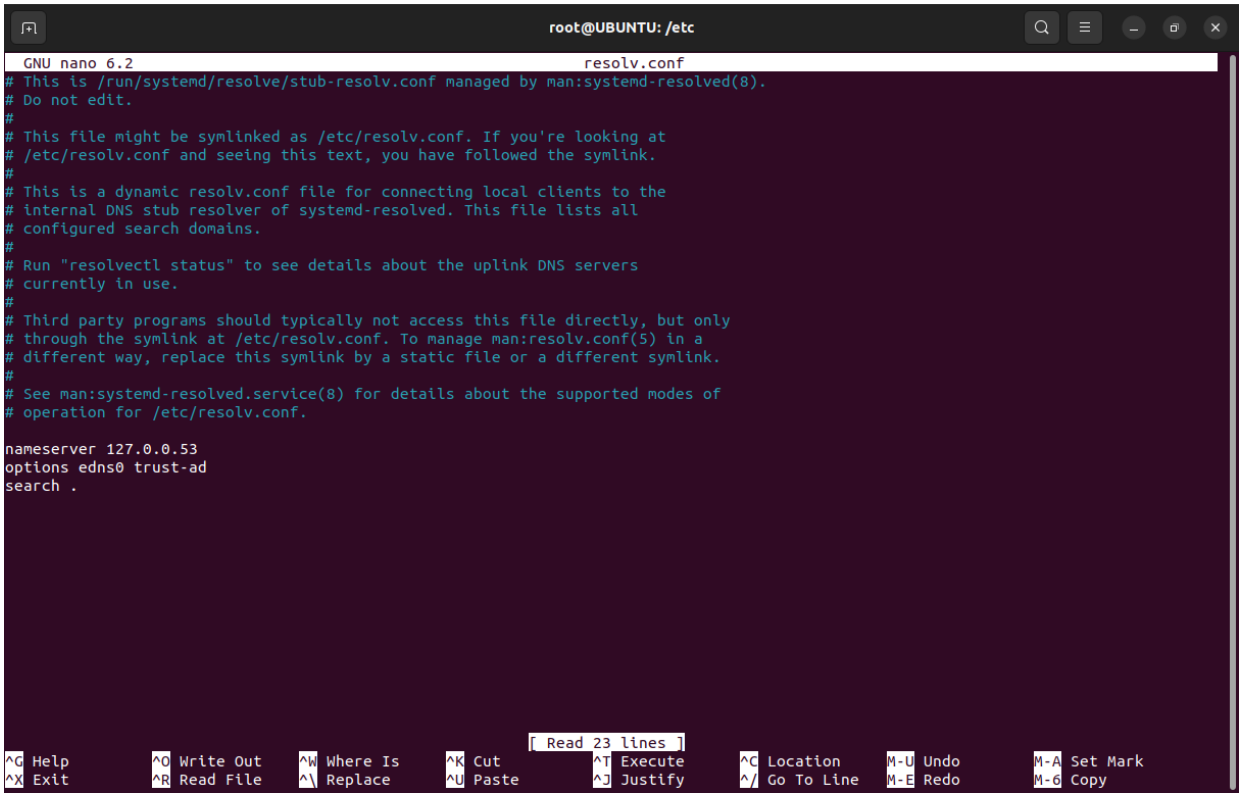

root@UBUNTU: /
) ...
Setting up dnsutils (1:9.18.24-0ubuntu0.22.04.1) ...
root@UBUNTU:~# sudo apt install net-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
net-tools is already the newest version (1.60+git20181103.0eebece-1ubuntu5).
0 upgraded, 0 newly installed, 0 to remove and 119 not upgraded.
root@UBUNTU:~# 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::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 101581 bytes 152833996 (152.8 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 11218 bytes 781436 (781.4 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 361 bytes 40010 (40.0 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 361 bytes 40010 (40.0 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:~# cd /etc/bind
root@UBUNTU:/etc/bind# cd ..
root@UBUNTU:/etc# cd ..
root@UBUNTU:/# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.101 netmask 255.255.255.0 broadcast 192.168.56.255
inet6 fe80::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 101633 bytes 152843094 (152.8 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 11353 bytes 800688 (800.6 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

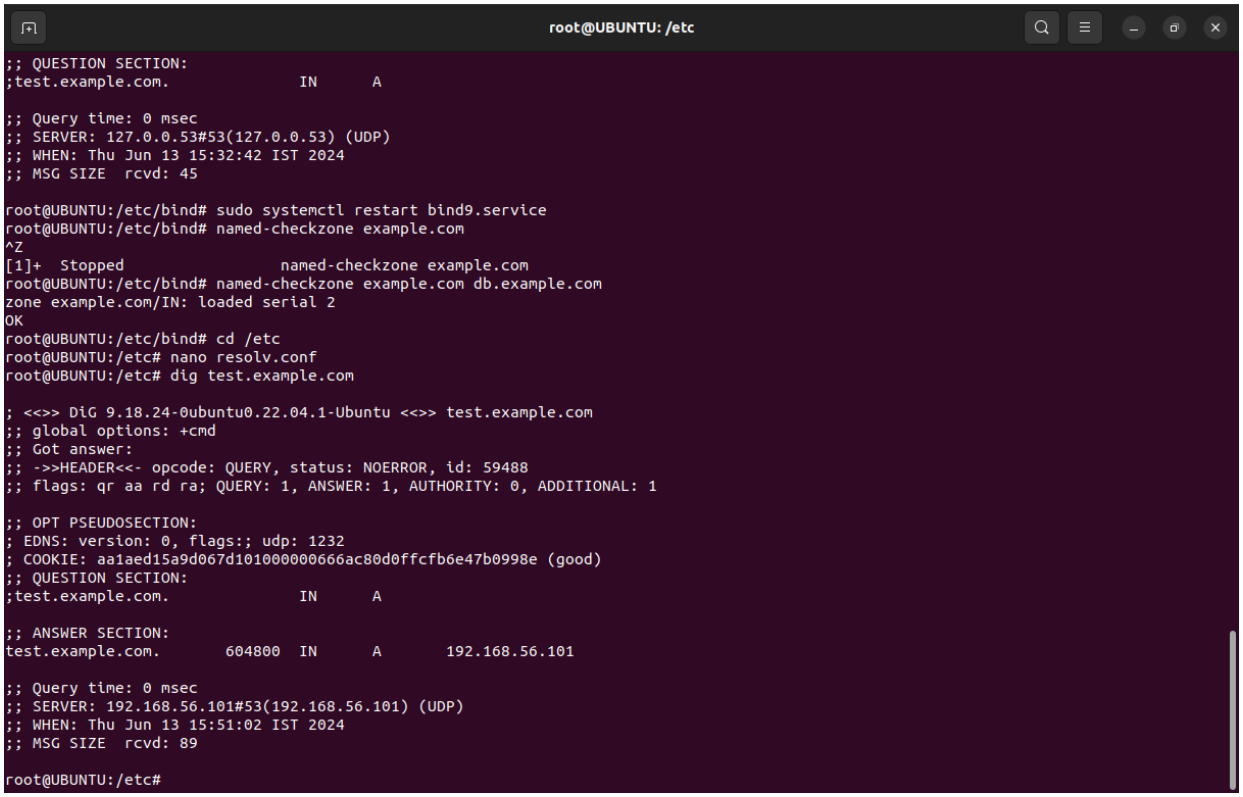

root@UBUNTU: /etc/bind
GNU nano 6.2 named.conf.local *
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";
//forwarded zone
zone "example.com" IN{
type master;
file "/etc/bind/db.example.com";
};
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line

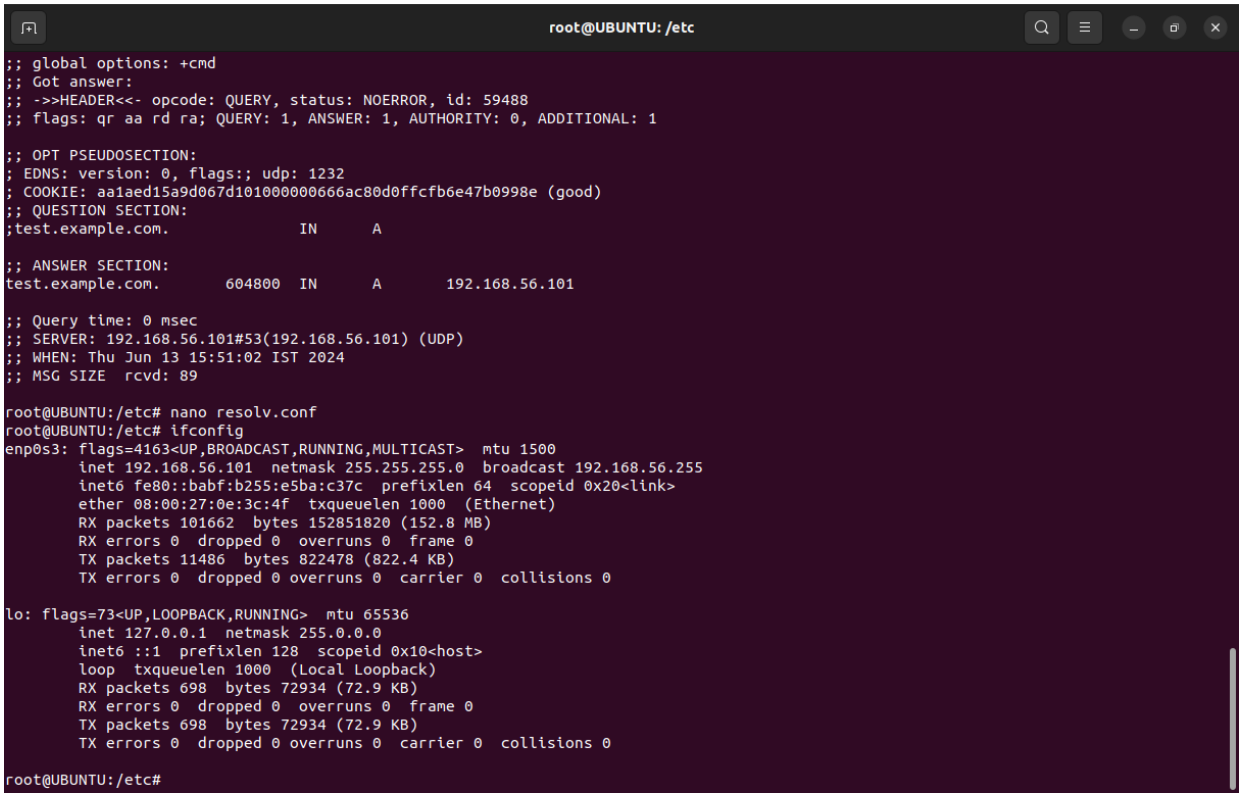

root@UBUNTU: /etc/bind
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 361 bytes 40010 (40.0 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 361 bytes 40010 (40.0 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:~# cd /etc/bind
root@UBUNTU:/etc/bind# cd ..
root@UBUNTU:/etc# cd ..
root@UBUNTU:/# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.101 netmask 255.255.255.0 broadcast 192.168.56.255
inet6 fe80::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 101633 bytes 152843094 (152.8 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 11353 bytes 800688 (800.6 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 486 bytes 52531 (52.5 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 486 bytes 52531 (52.5 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/# nano /etc/bind/named.conf.options
root@UBUNTU:/# sudo systemctl restart bind9.service
root@UBUNTU:/# cd /etc/bind
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind#

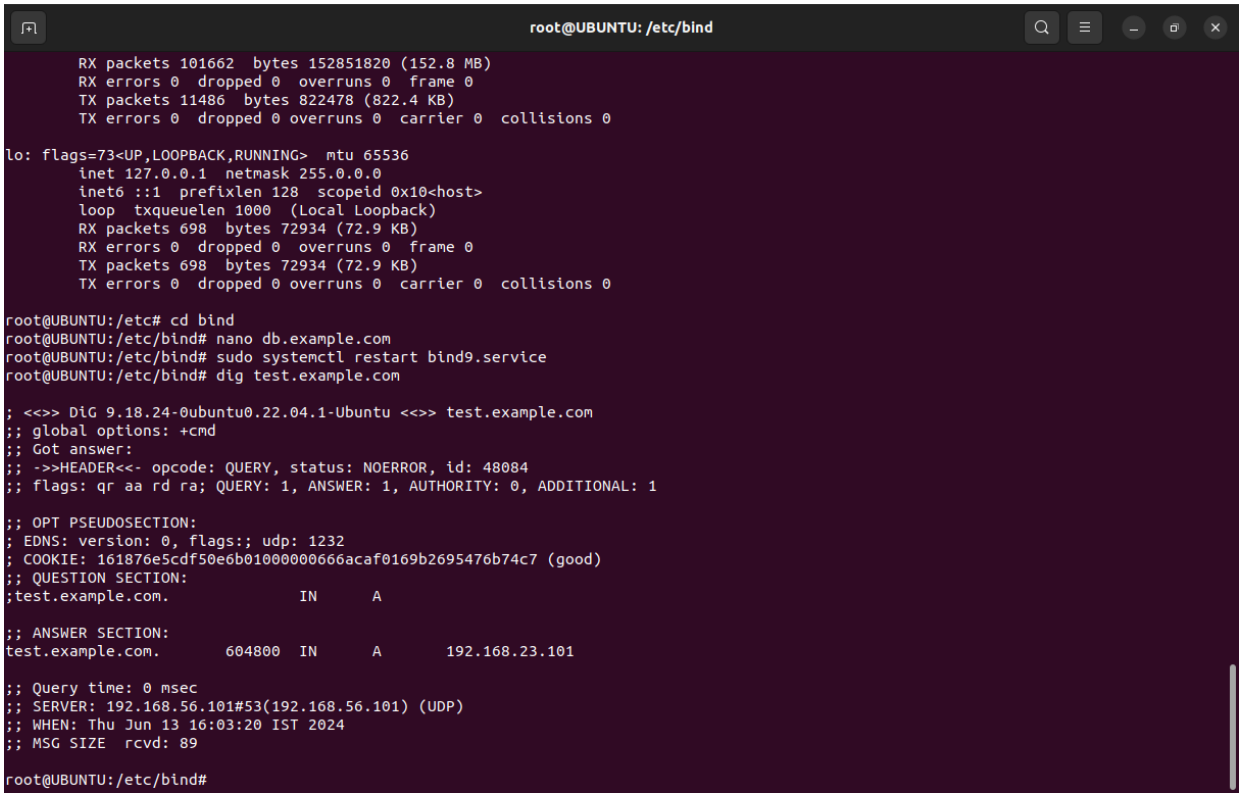

root@UBUNTU: /etc/bind
GNU nano 6.2 db.example.com
;
; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA example.com. root.example.com. (
2 ; Serial
604800 ; Refresh
86400 ; Retry
2419200 ; Expire
604800) ; Negative Cache TTL
;
@ IN NS example.com.
test IN A 192.168.56.101;
@ IN A 127.0.0.1
@ IN AAAA ::1
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo

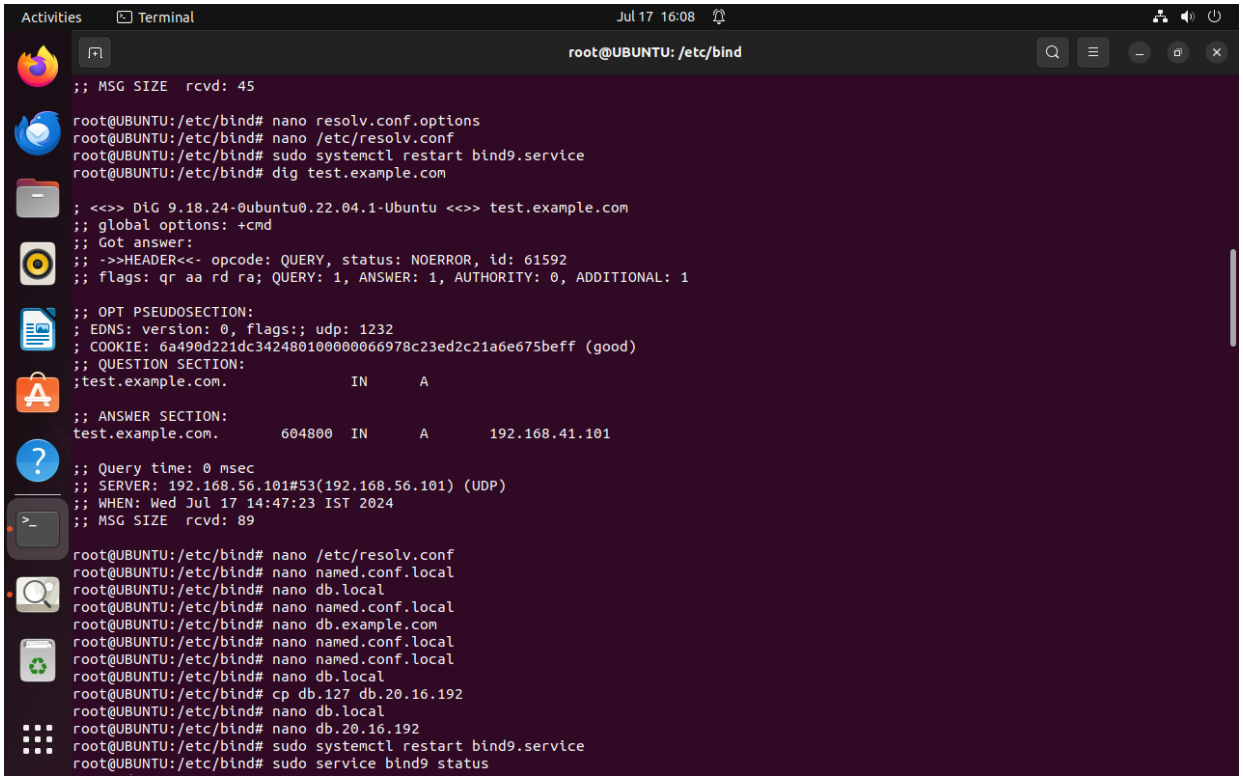

root@UBUNTU: /etc/bind
loop txqueuelen 1000 (Local Loopback)
RX packets 486 bytes 52531 (52.5 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 486 bytes 52531 (52.5 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/# nano /etc/bind/named.conf.options
root@UBUNTU:/# sudo systemctl restart bind9.service
root@UBUNTU:/# cd /etc/bind
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# ls
bind.keys db.127 db.empty named.conf named.conf.local rndc.key
db.0 db.255 db.local named.conf.default-zones named.conf.options zones.rfc1918
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# cp db.local db.example.com
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# ^C
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# dig test.example.com
; <<>> DiG 9.18.24-0ubuntu0.22.04.1-Ubuntu <<>> test.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: SERVFAIL, id: 28372
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;test.example.com. IN A
;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Thu Jun 13 15:32:42 IST 2024
;; MSG SIZE rcvd: 45
root@UBUNTU:/etc/bind#

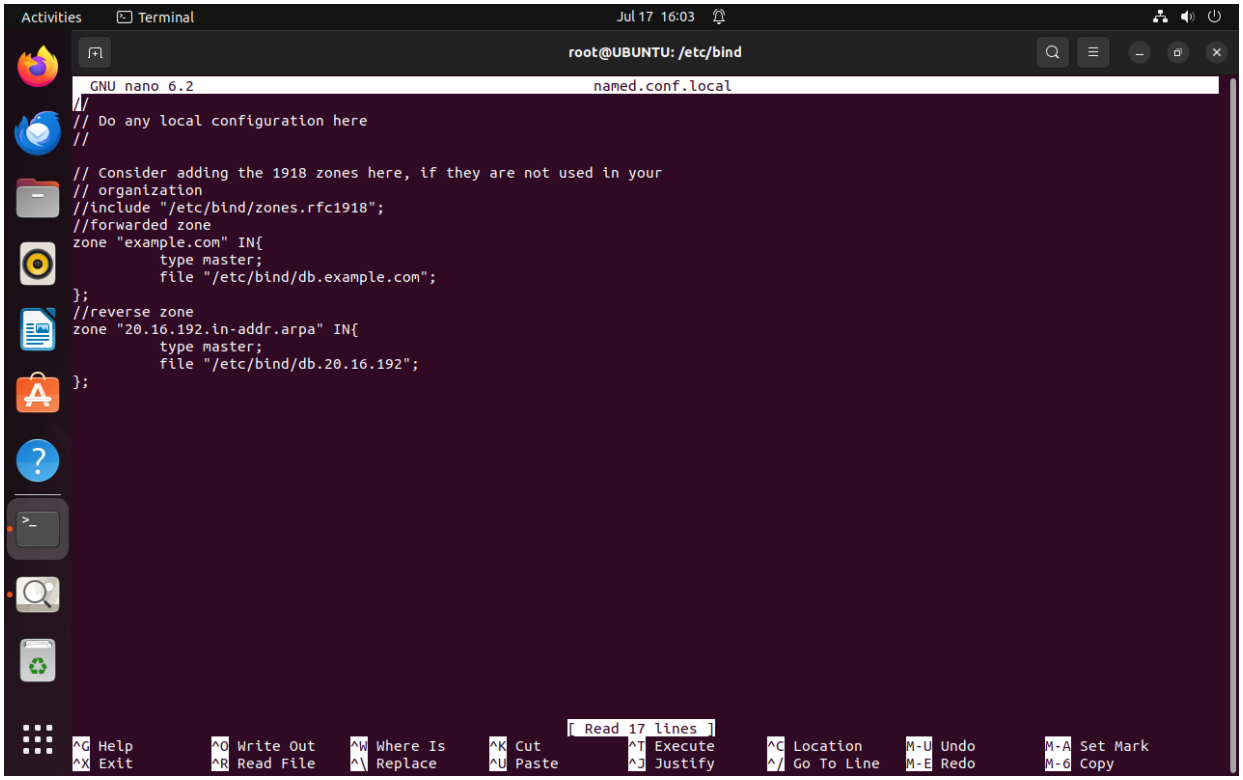

root@UBUNTU: /etc
GNU nano 6.2 resolv.conf
This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
Do not edit.
#
This file might be symlinked as /etc/resolv.conf. If you're looking at
/etc/resolv.conf and seeing this text, you have followed the symlink.
#
This is a dynamic resolv.conf file for connecting local clients to the
internal DNS stub resolver of systemd-resolved. This file lists all
configured search domains.
#
Run "resolvectl status" to see details about the uplink DNS servers
currently in use.
#
Third party programs should typically not access this file directly, but only
through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
different way, replace this symlink by a static file or a different symlink.
#
See man:systemd-resolved.service(8) for details about the supported modes of
operation for /etc/resolv.conf.
nameserver 127.0.0.53
options edns0 trust-ad
search .
[Read 23 lines]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-6 Copy

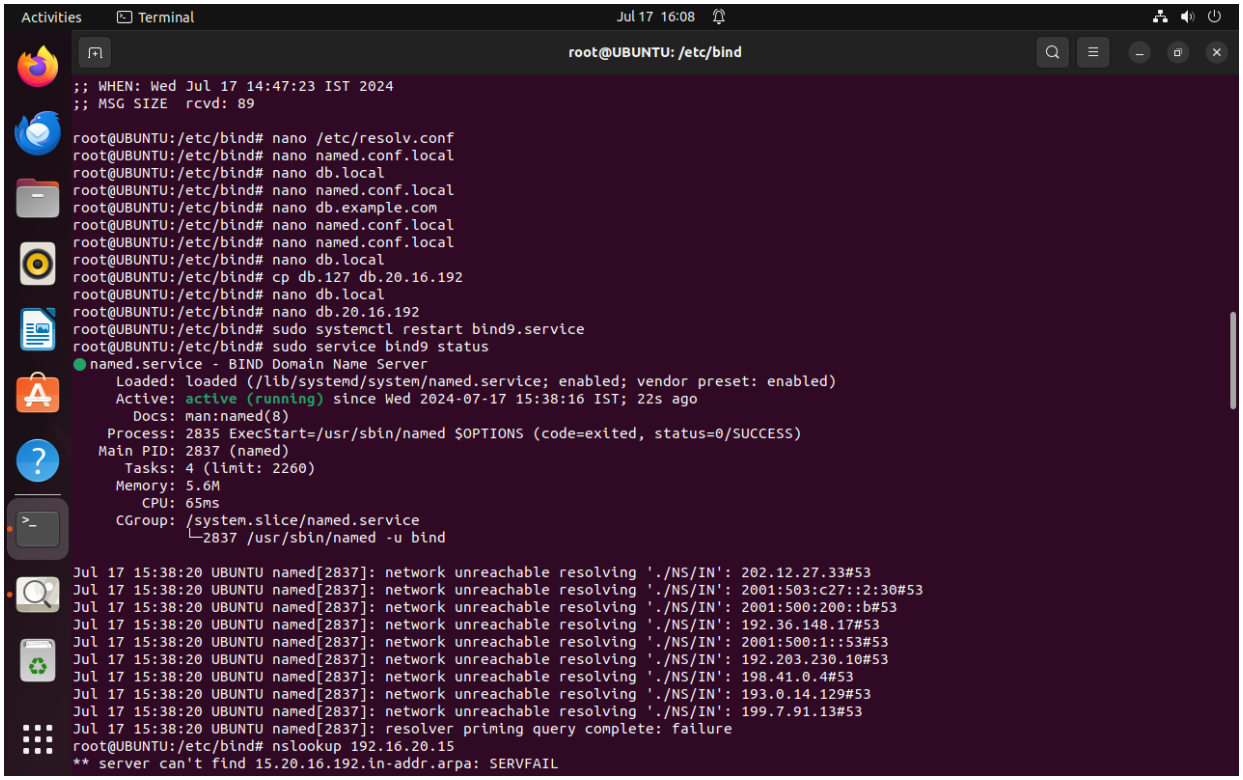

root@UBUNTU: /etc
;; QUESTION SECTION:
;test.example.com. IN A
;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Thu Jun 13 15:32:42 IST 2024
;; MSG SIZE rcvd: 45
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# named-checkzone example.com
^Z
[1]+ Stopped named-checkzone example.com
root@UBUNTU:/etc/bind# named-checkzone example.com db.example.com
zone example.com/IN: loaded serial 2
OK
root@UBUNTU:/etc/bind# cd /etc
root@UBUNTU:/etc# nano resolv.conf
root@UBUNTU:/etc# dig test.example.com
; <<>> DiG 9.18.24-0ubuntu0.22.04.1-Ubuntu <<>> test.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59488
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: aa1aed15a9d067d101000000666ac80d0ffcfb6e47b0998e (good)
;; QUESTION SECTION:
;test.example.com. IN A
;; ANSWER SECTION:
test.example.com. 604800 IN A 192.168.56.101
;; Query time: 0 msec
;; SERVER: 192.168.56.101#53(192.168.56.101) (UDP)
;; WHEN: Thu Jun 13 15:51:02 IST 2024
;; MSG SIZE rcvd: 89
root@UBUNTU:/etc#

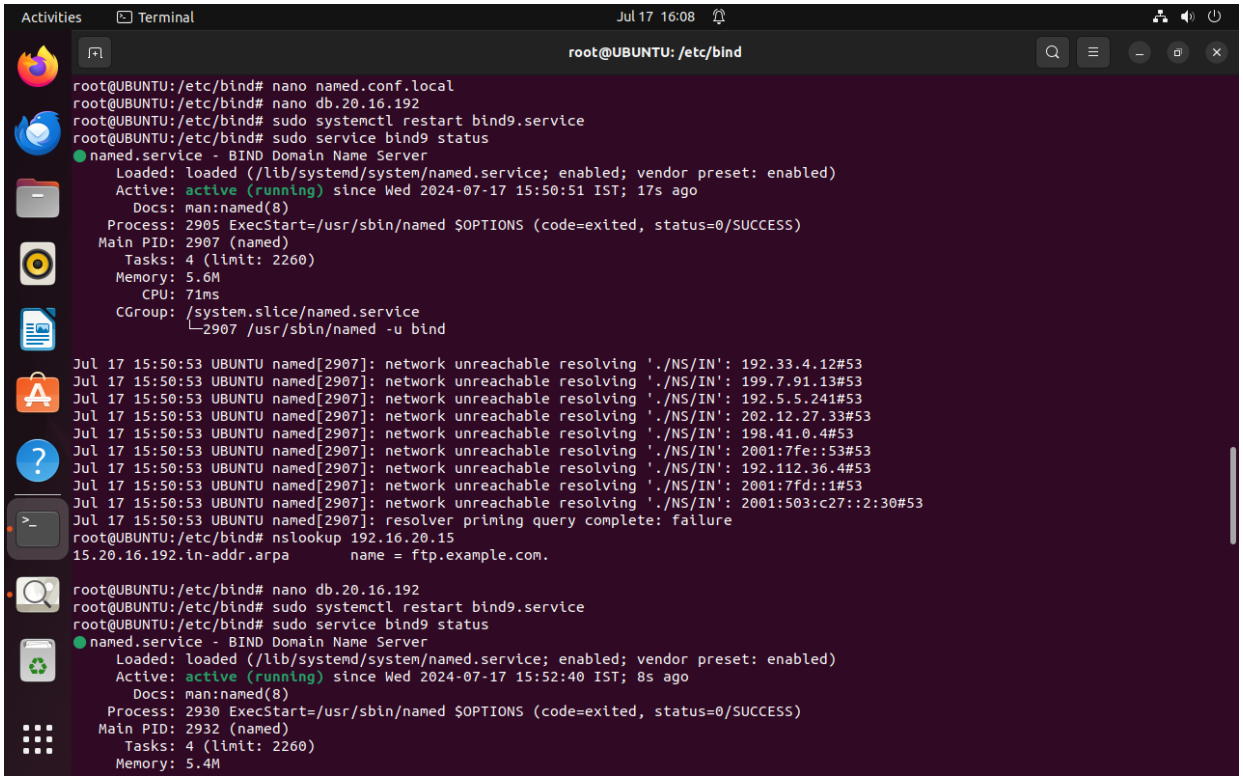

root@UBUNTU: /etc
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59488
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: aa1aed15a9d067d101000000666ac80d0ffcfb6e47b0998e (good)
;; QUESTION SECTION:
;test.example.com. IN A
;; ANSWER SECTION:
test.example.com. 604800 IN A 192.168.56.101
;; Query time: 0 msec
;; SERVER: 192.168.56.101#53(192.168.56.101) (UDP)
;; WHEN: Thu Jun 13 15:51:02 IST 2024
;; MSG SIZE rcvd: 89
root@UBUNTU:/etc# nano resolv.conf
root@UBUNTU:/etc# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.101 netmask 255.255.255.0 broadcast 192.168.56.255
inet6 fe80::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 101662 bytes 152851820 (152.8 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 11486 bytes 822478 (822.4 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 698 bytes 72934 (72.9 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 698 bytes 72934 (72.9 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/etc#

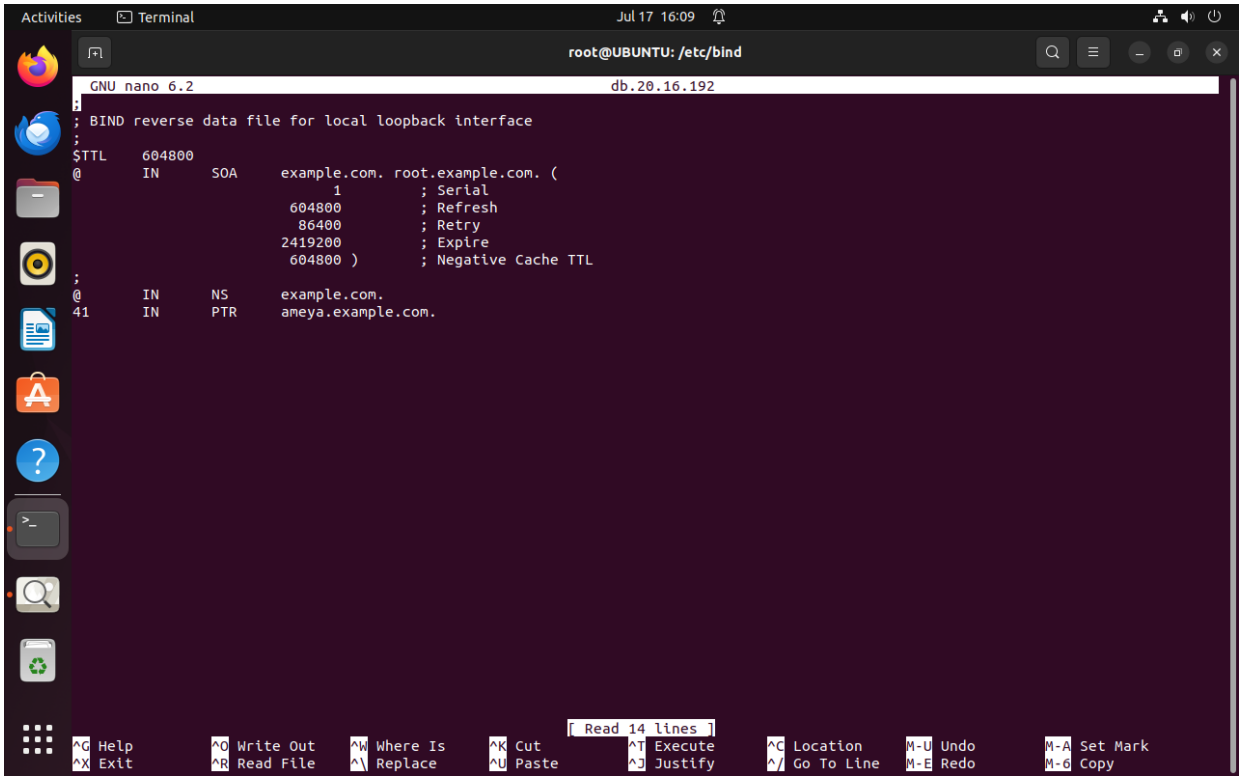

root@UBUNTU: /etc/bind
RX packets 101662 bytes 152851820 (152.8 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 11486 bytes 822478 (822.4 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 698 bytes 72934 (72.9 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 698 bytes 72934 (72.9 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/etc# cd bind
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# dig test.example.com
; <<>> DiG 9.18.24-0ubuntu0.22.04.1-Ubuntu <<>> test.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 48084
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 161876e5cdf50e6b01000000666acaf0169b2695476b74c7 (good)
;; QUESTION SECTION:
;test.example.com. IN A
;; ANSWER SECTION:
test.example.com. 604800 IN A 192.168.23.101
;; Query time: 0 msec
;; SERVER: 192.168.56.101#53(192.168.56.101) (UDP)
;; WHEN: Thu Jun 13 16:03:20 IST 2024
;; MSG SIZE rcvd: 89
root@UBUNTU:/etc/bind#

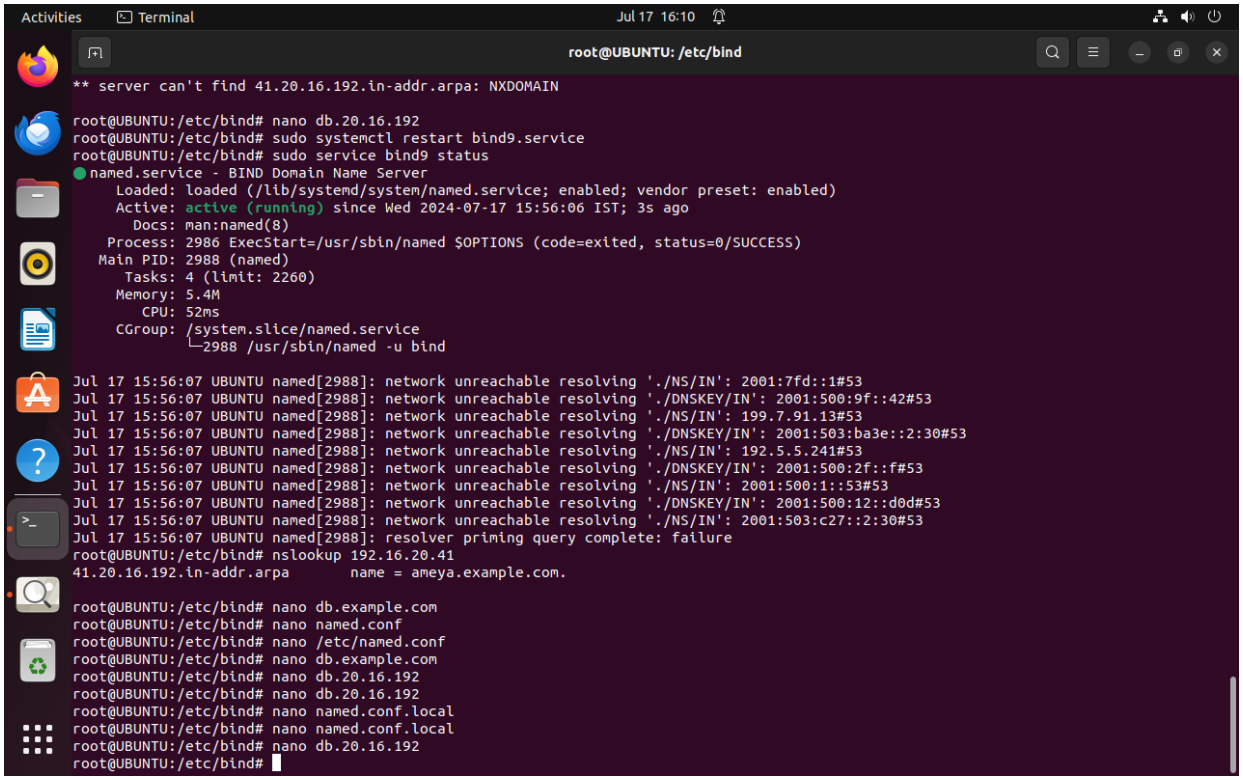

Activities
Terminal
Jul 17 16:08
root@UBUNTU: /etc/bind
;; MSG SIZE rcvd: 45
root@UBUNTU:/etc/bind# nano resolv.conf.options
root@UBUNTU:/etc/bind# nano /etc/resolv.conf
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# dig test.example.com
; <<>> DiG 9.18.24-0ubuntu0.22.04.1-Ubuntu <<>> test.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 61592
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 6a490d221dc342480100000066978c23ed2c21a6e675beff (good)
;; QUESTION SECTION:
;test.example.com.   IN   A
;; ANSWER SECTION:
test.example.com.   604800 IN   A   192.168.41.101
;; Query time: 0 msec
;; SERVER: 192.168.56.101#53(192.168.56.101) (UDP)
;; WHEN: Wed Jul 17 14:47:23 IST 2024
;; MSG SIZE rcvd: 89
root@UBUNTU:/etc/bind# nano /etc/resolv.conf
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# cp db.127 db.20.16.192
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# sudo service bind9 status


Activities
Terminal
Jul 17 16:03
root@UBUNTU: /etc/bind
GNU nano 6.2
named.conf.local
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";
//forwarded zone
zone "example.com" IN{
type master;
file "/etc/bind/db.example.com";
};
//reverse zone
zone "20.16.192.in-addr.arpa" IN{
type master;
file "/etc/bind/db.20.16.192";
};
[Read 17 lines]
^G Help
^X Exit
^O Write Out
^R Read File
^W Where Is
^\ Replace
^K Cut
^U Paste
^T Execute
^J Justify
^C Location
^/ Go To Line
M-U Undo
M-E Redo
M-A Set Mark
M-6 Copy


Activities
Terminal
Jul 17 16:08
root@UBUNTU: /etc/bind
;; WHEN: Wed Jul 17 14:47:23 IST 2024
;; MSG SIZE rcvd: 89
root@UBUNTU:/etc/bind# nano /etc/resolv.conf
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.example.com
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# cp db.127 db.20.16.192
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# sudo service bind9 status
named.service - BIND Domain Name Server
Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-07-17 15:38:16 IST; 22s ago
Docs: man:named(8)
Process: 2835 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
Main PID: 2837 (named)
Tasks: 4 (limit: 2260)
Memory: 5.6M
CPU: 65ms
CGroup: /system.slice/named.service
└─2837 /usr/sbin/named -u bind
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 202.12.27.33#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 2001:503:c27::2:30#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 2001:500:200::b#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 192.36.148.17#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 2001:500:1::53#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 192.203.230.10#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 198.41.0.4#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 193.0.14.129#53
Jul 17 15:38:20 UBUNTU named[2837]: network unreachable resolving './NS/IN': 199.7.91.13#53
Jul 17 15:38:20 UBUNTU named[2837]: resolver priming query complete: failure
root@UBUNTU:/etc/bind# nslookup 192.16.20.15
** server can't find 15.20.16.192.in-addr.arpa: SERVFAIL


Activities
Terminal
Jul 17 16:08
root@UBUNTU: /etc/bind
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# sudo service bind9 status
named.service - BIND Domain Name Server
Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-07-17 15:50:51 IST; 17s ago
Docs: man:named(8)
Process: 2905 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
Main PID: 2907 (named)
Tasks: 4 (limit: 2260)
Memory: 5.6M
CPU: 71ms
CGroup: /system.slice/named.service
└─2907 /usr/sbin/named -u bind
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 192.33.4.12#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 199.7.91.13#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 192.5.5.241#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 202.12.27.33#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 198.41.0.4#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 2001:7fe::53#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 192.112.36.4#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 2001:7fd::1#53
Jul 17 15:50:53 UBUNTU named[2907]: network unreachable resolving './NS/IN': 2001:503:c27::2:30#53
Jul 17 15:50:53 UBUNTU named[2907]: resolver priming query complete: failure
root@UBUNTU:/etc/bind# nslookup 192.16.20.15
15.20.16.192.in-addr.arpa name = ftp.example.com.
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# sudo service bind9 status
named.service - BIND Domain Name Server
Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-07-17 15:52:40 IST; 8s ago
Docs: man:named(8)
Process: 2930 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
Main PID: 2932 (named)
Tasks: 4 (limit: 2260)
Memory: 5.4M





All the commands have been executed and the output has been obtained successfully.

FTP

Experiment : 3

Aim : To create and configure FTP Server

Description :

FTP Server

File Transfer Protocol (FTP) is a TCP protocol for downloading files between computers. In the past, it has also been used for uploading but, as that method does not use encryption, user credentials as well as data transferred in the clear and are easily intercepted. So if you are here looking for a way to upload and download files securely,

FTP works on a client/server model. The server component is called an *FTP daemon*. It continuously listens for FTP requests from remote clients. When a request is received, it manages the login and sets up the connection. For the duration of the session it executes any of commands sent by the FTP client

Port No: 21
Package name: vsftpd
Configuration file: /etc/vsftpd.conf

Procedure:

1. Install the vsftpd - FTP Server Installation in the ubuntu operating system

$sudo apt install vsftpd

2. By default vsftpd is *not* configured to allow anonymous download. If you wish to enable anonymous download edit /etc/vsftpd.conf by changing:

$anonymous_enable=YES

3. During installation a *ftp* user is created with a home directory of /srv/ftp. This is the default FTP directory.

If you wish to change this location, to /srv/files/ftp for example, simply create a directory in another location and change the *ftp* user's home directory:

$sudo mkdir -p /srv/files/ftp

$sudo usermod -d /srv/files/ftp ftp

4. After making the change restart vsftpd:

$ sudo service vsftpd restart

5. User Authenticated FTP Configuration

By default vsftpd is configured to authenticate system users and allow them to download files. If you want users to be able to upload files, edit /etc/vsftpd.conf

$write_enable=YES

6. Now restart vsftpd:

$ sudo service vsftpd restart

7. Securing FTP

There are options in /etc/vsftpd.conf to help make vsftpd more secure.

$chroot_local_user=YES

$chroot_list_enable=YES

$chroot_list_file=/etc/vsftpd.chroot_list

8. After uncommenting the above options, create a /etc/vsftpd.chroot_list containing a list of users one per line.

9. Then restart vsftpd:

$sudo service vsftpd restart

10. To configure *FTPS*, edit /etc/vsftpd.conf and at the bottom add:

$ssl_enable=YES

11. Then check the vsftpd status

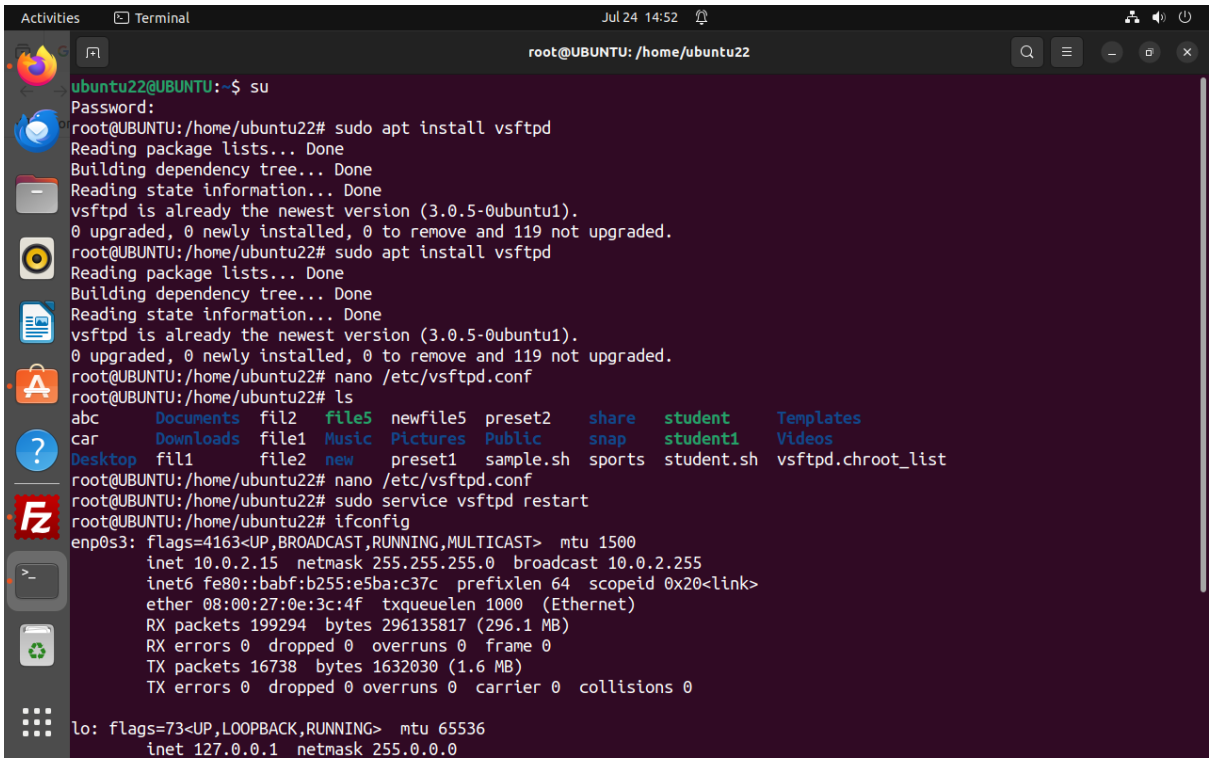
$sudo service vsftpd status

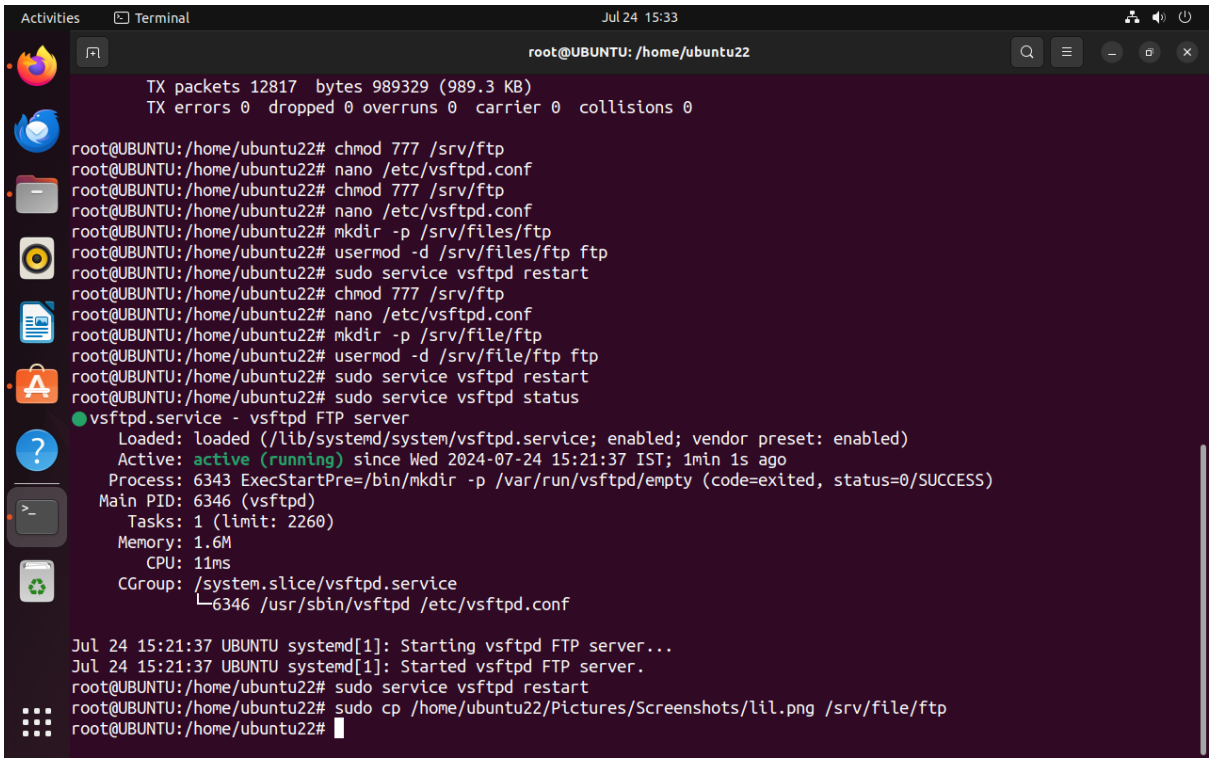
12. Now connect to ftp by the command

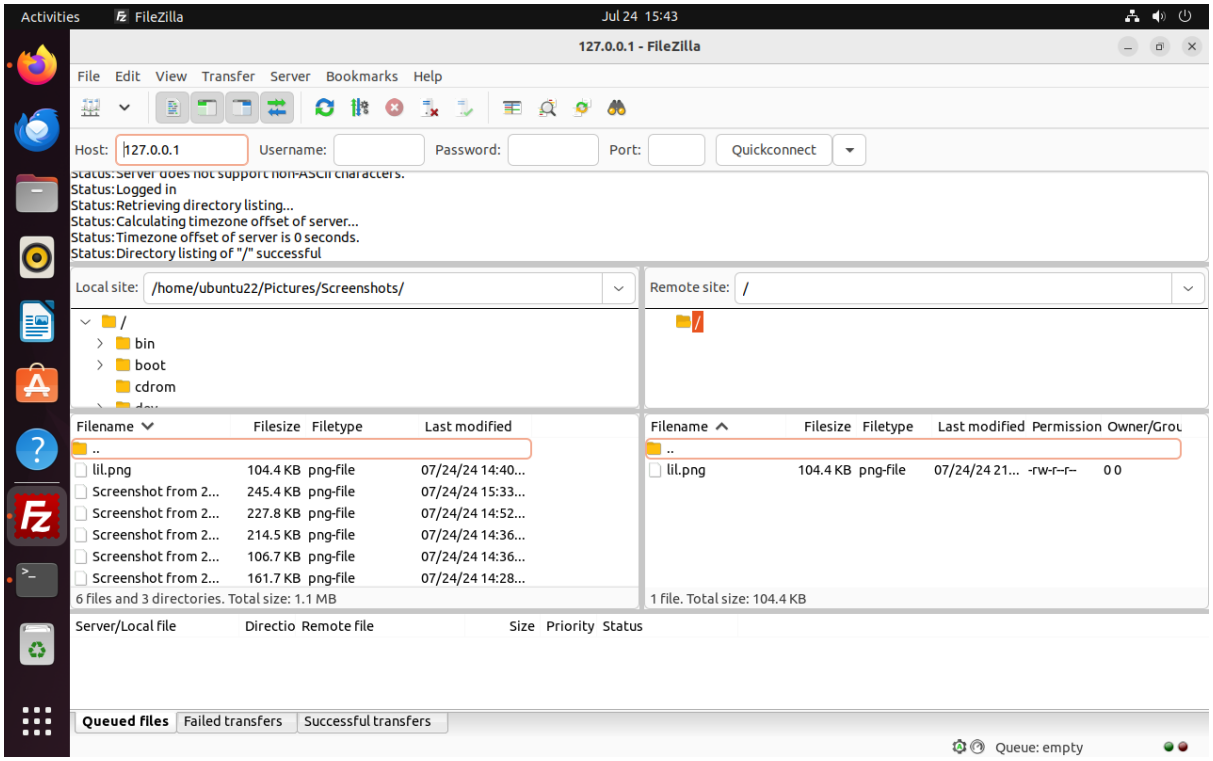
$ftp -p 192.168.234.128

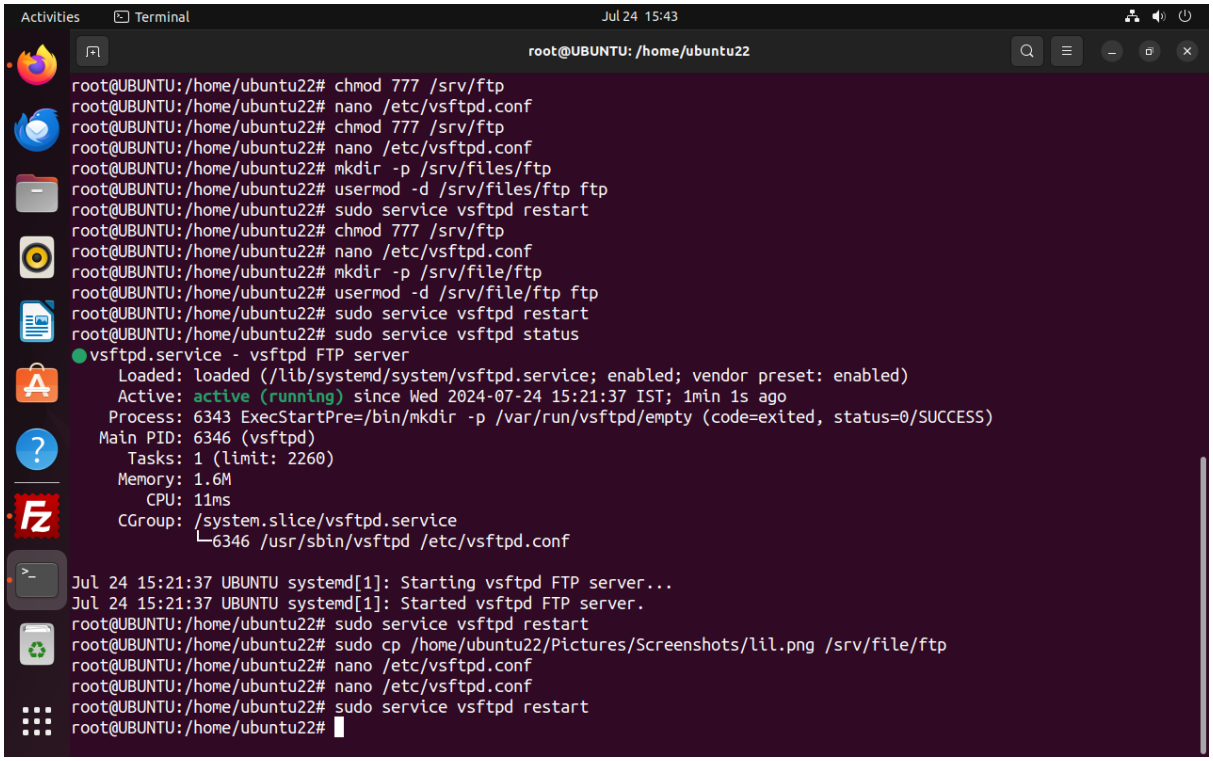
13. Now install filezilla in ubuntu and open the filezilla and specify the ip addressand port number of the ftp server then click connect

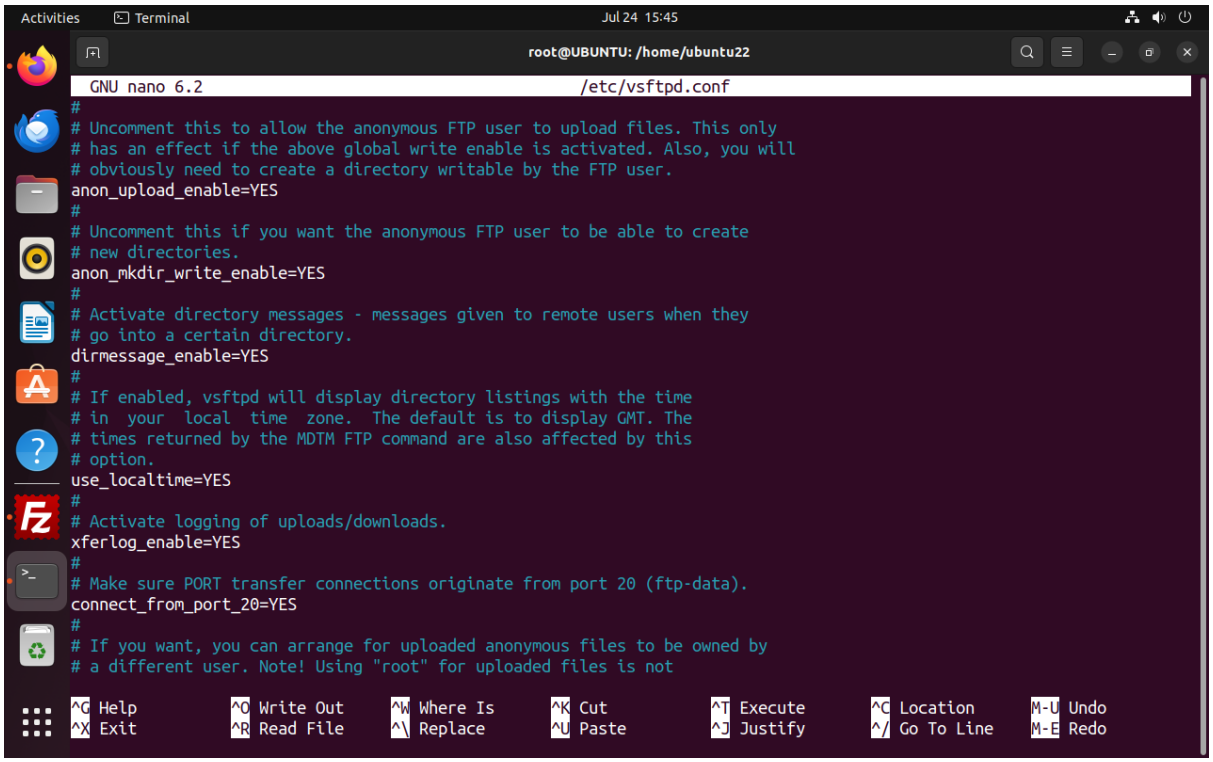
Result:

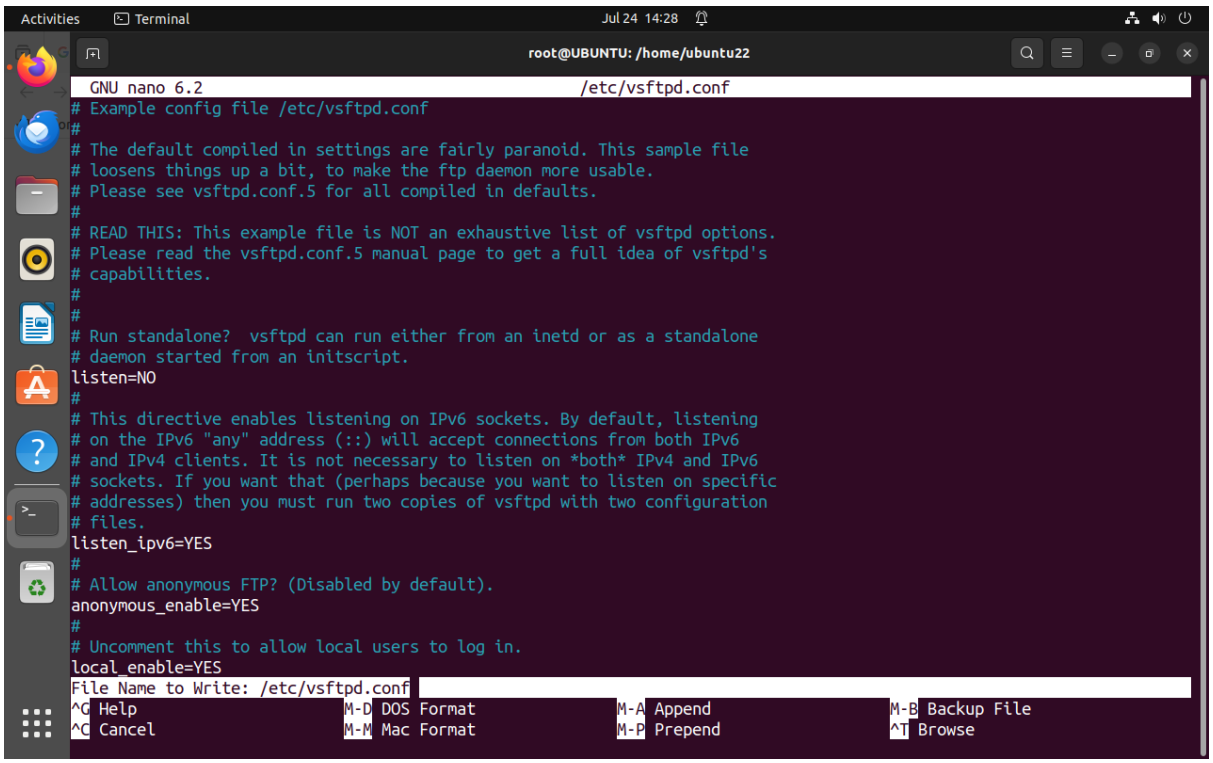

Activities
Terminal
Jul 24 14:52
root@UBUNTU: /home/ubuntu22
ubuntu22@UBUNTU:~$ su
Password:
root@UBUNTU:/home/ubuntu22# sudo apt install vsftpd
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
vsftpd is already the newest version (3.0.5-0ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 119 not upgraded.
root@UBUNTU:/home/ubuntu22# sudo apt install vsftpd
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
vsftpd is already the newest version (3.0.5-0ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 119 not upgraded.
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# ls
abc Documents fil2 file5 newfile5 preset2 share student Templates
car Downloads file1 Music Pictures Public snap student1 Videos
Desktop fil1 file2 new preset1 sample.sh sports student.sh vsftpd.chroot_list
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# 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::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 199294 bytes 296135817 (296.1 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 16738 bytes 1632030 (1.6 MB)
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

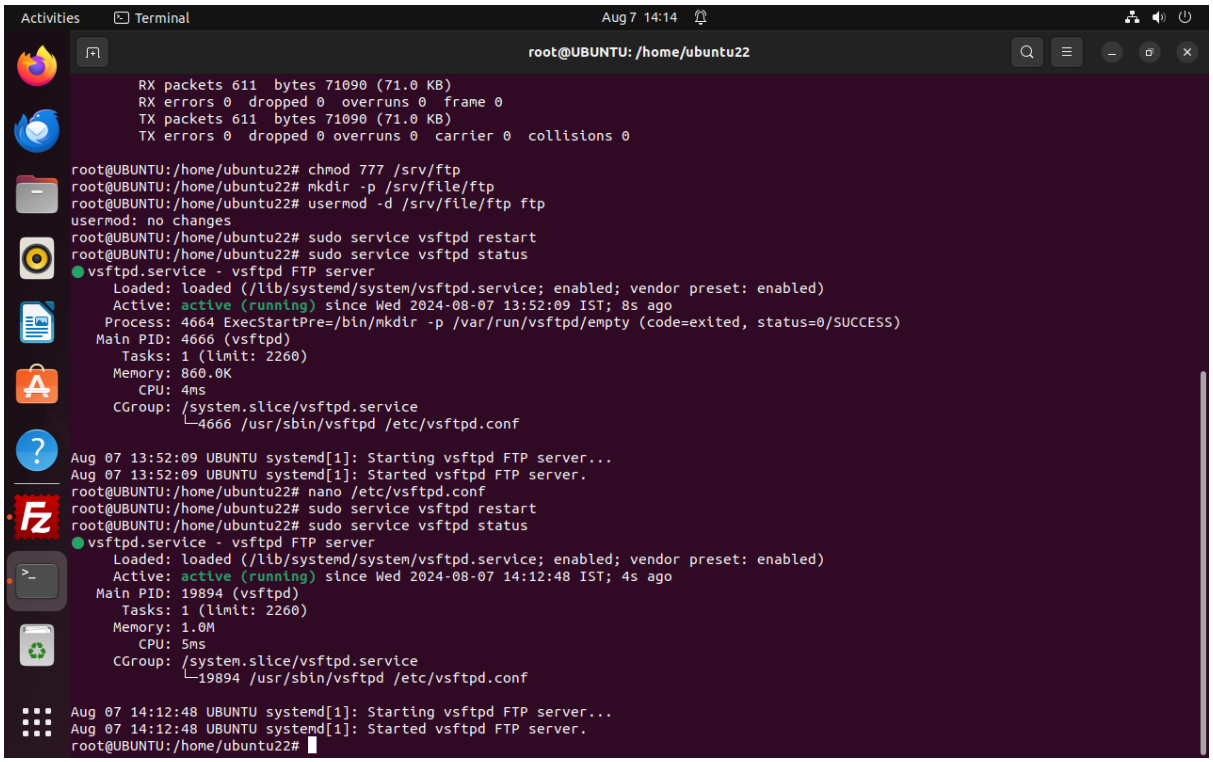

Activities
Terminal
Jul 24 15:33
root@UBUNTU: /home/ubuntu22
TX packets 12817 bytes 989329 (989.3 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# mkdir -p /srv/files/ftp
root@UBUNTU:/home/ubuntu22# usermod -d /srv/files/ftp ftp
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# mkdir -p /srv/file/ftp
root@UBUNTU:/home/ubuntu22# usermod -d /srv/file/ftp ftp
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo service vsftpd status
vsftpd.service - vsftpd FTP server
Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-07-24 15:21:37 IST; 1min 1s ago
Process: 6343 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
Main PID: 6346 (vsftpd)
Tasks: 1 (limit: 2260)
Memory: 1.6M
CPU: 11ms
CGroup: /system.slice/vsftpd.service
└6346 /usr/sbin/vsftpd /etc/vsftpd.conf
Jul 24 15:21:37 UBUNTU systemd[1]: Starting vsftpd FTP server...
Jul 24 15:21:37 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo cp /home/ubuntu22/Pictures/Screenshots/lil.png /srv/file/ftp
root@UBUNTU:/home/ubuntu22#

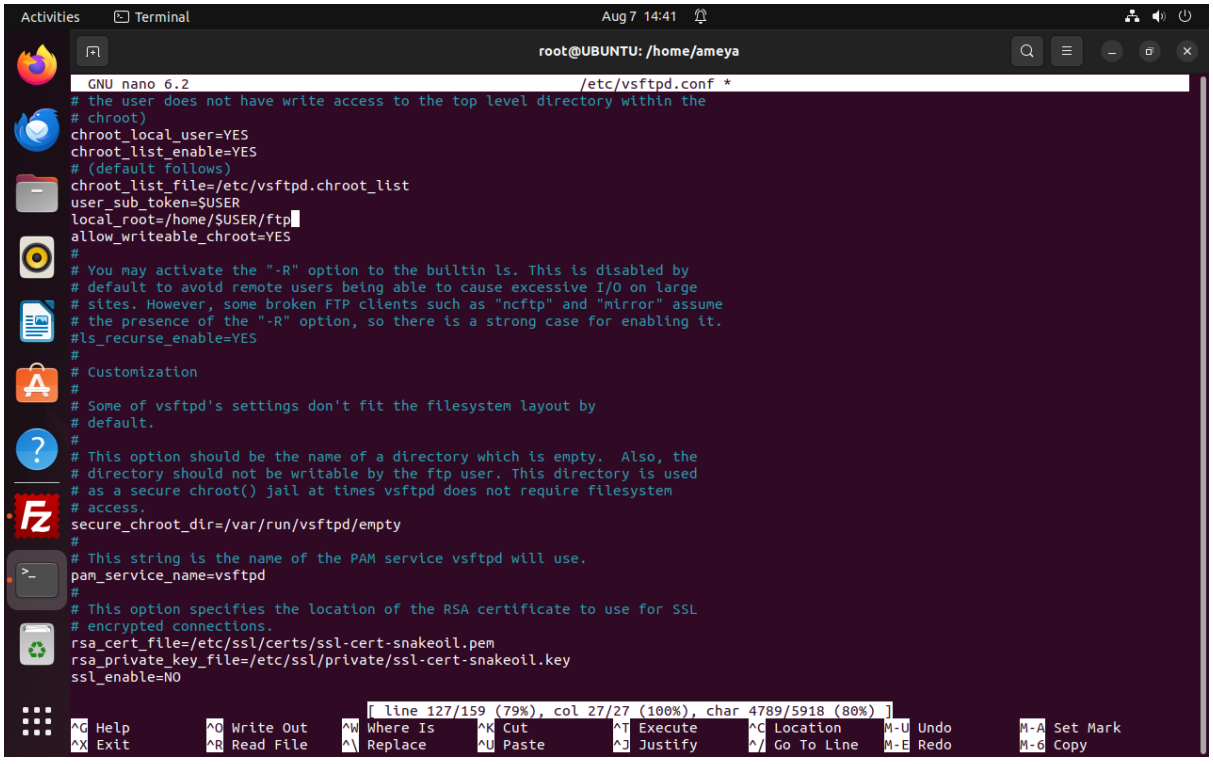

Activities
FileZilla
Jul 24 15:43
127.0.0.1 - FileZilla
File Edit View Transfer Server Bookmarks Help
Host: 127.0.0.1 Username: Password: Port: Quickconnect
Status: Logged in
Status: Retrieving directory listing...
Status: Calculating timezone offset of server...
Status: Timezone offset of server is 0 seconds.
Status: Directory listing of "/" successful
Local site: /home/ubuntu22/Pictures/Screenshots/
Remote site: /
bin
boot
cdrom
Filename Filesize Filetype Last modified
lil.png 104.4 KB png-file 07/24/24 14:40...
Screenshot from 2... 245.4 KB png-file 07/24/24 15:33...
Screenshot from 2... 227.8 KB png-file 07/24/24 14:52...
Screenshot from 2... 214.5 KB png-file 07/24/24 14:36...
Screenshot from 2... 106.7 KB png-file 07/24/24 14:36...
Screenshot from 2... 161.7 KB png-file 07/24/24 14:28...
6 files and 3 directories. Total size: 1.1 MB
Filename Filesize Filetype Last modified Permission Owner/Grou
lil.png 104.4 KB png-file 07/24/24 21... -rw-r--r-- 0 0
1 file. Total size: 104.4 KB
Server/Local file Directio Remote file Size Priority Status
Queued files Failed transfers Successful transfers
Queue: empty

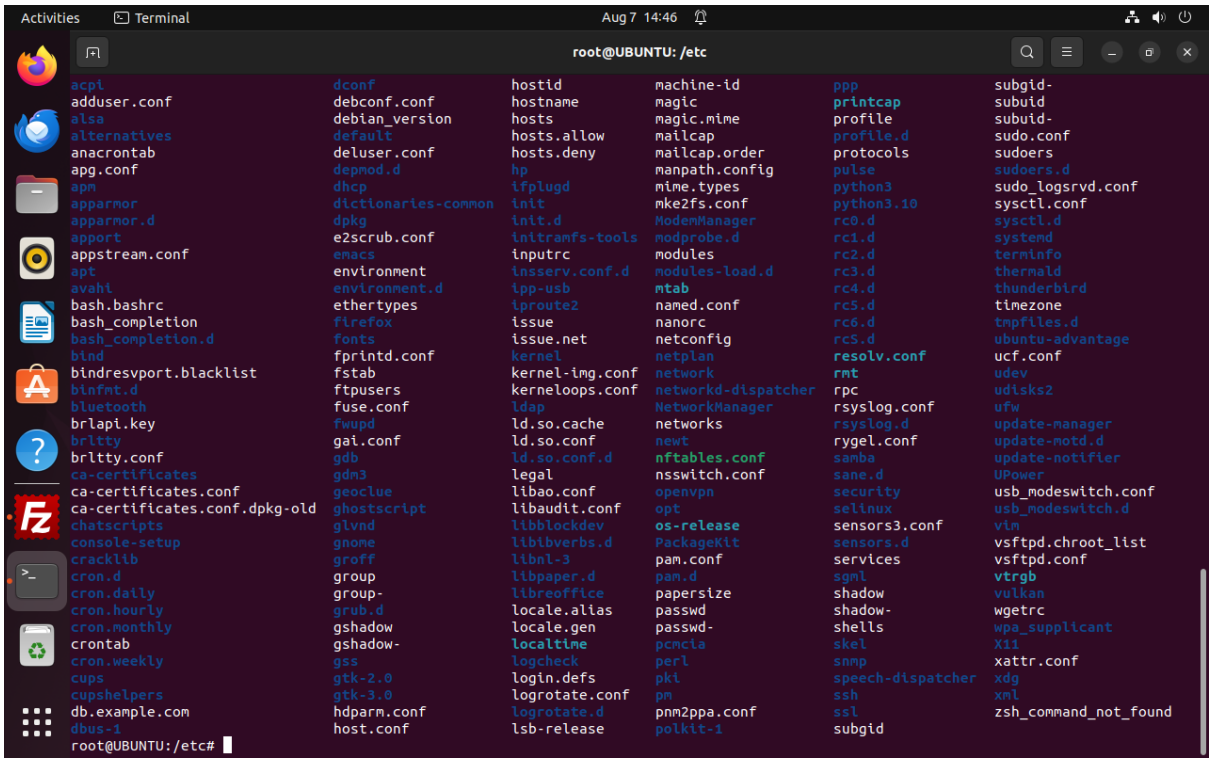

Activities
Terminal
Jul 24 15:43
root@UBUNTU: /home/ubuntu22
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# mkdir -p /srv/files/ftp
root@UBUNTU:/home/ubuntu22# usermod -d /srv/files/ftp ftp
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# mkdir -p /srv/file/ftp
root@UBUNTU:/home/ubuntu22# usermod -d /srv/file/ftp ftp
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo service vsftpd status
vsftpd.service - vsftpd FTP server
Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-07-24 15:21:37 IST; 1min 1s ago
Process: 6343 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
Main PID: 6346 (vsftpd)
Tasks: 1 (limit: 2260)
Memory: 1.6M
CPU: 11ms
CGroup: /system.slice/vsftpd.service
└6346 /usr/sbin/vsftpd /etc/vsftpd.conf
Jul 24 15:21:37 UBUNTU systemd[1]: Starting vsftpd FTP server...
Jul 24 15:21:37 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo cp /home/ubuntu22/Pictures/Screenshots/lil.png /srv/file/ftp
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22#

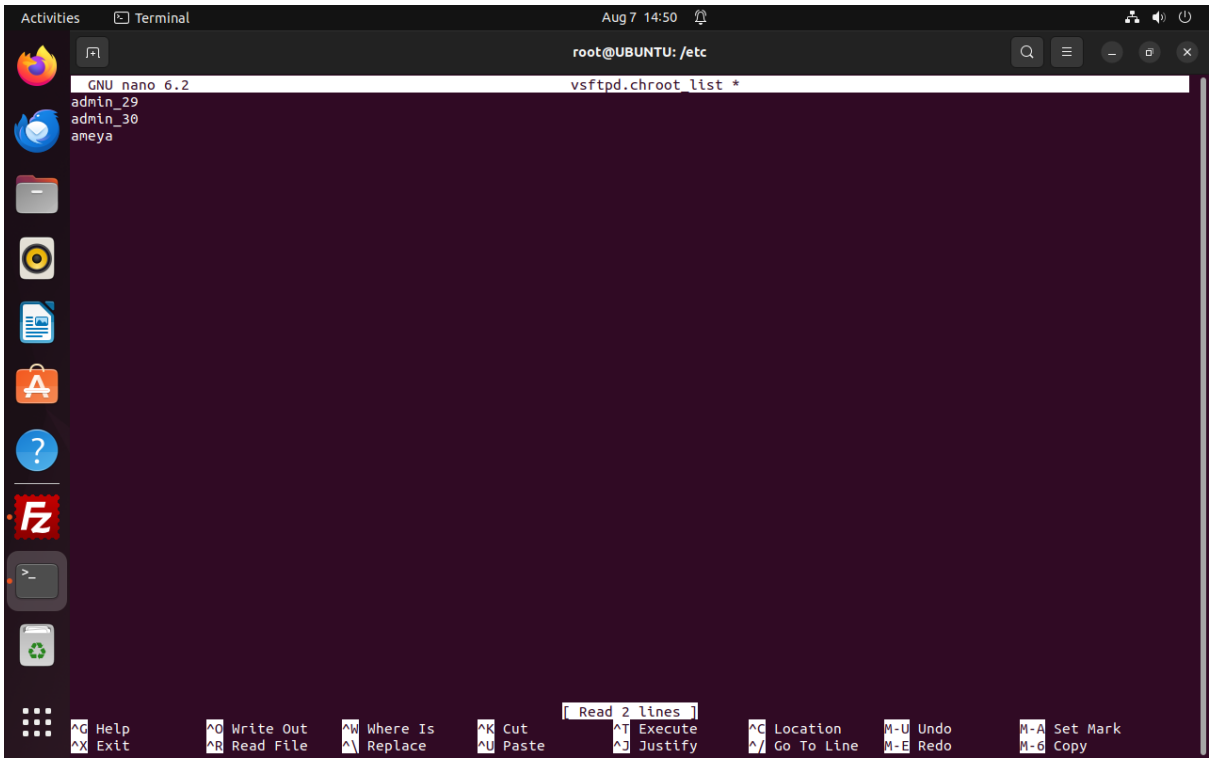

Activities
Terminal
Jul 24 15:45
root@UBUNTU: /home/ubuntu22
GNU nano 6.2 /etc/vsftpd.conf
#
# Uncomment this to allow the anonymous FTP user to upload files. This only
# has an effect if the above global write enable is activated. Also, you will
# obviously need to create a directory writable by the FTP user.
anon_upload_enable=YES
#
# Uncomment this if you want the anonymous FTP user to be able to create
# new directories.
anon_mkdir_write_enable=YES
#
# Activate directory messages - messages given to remote users when they
# go into a certain directory.
dirmessage_enable=YES
#
# If enabled, vsftpd will display directory listings with the time
# in your local time zone. The default is to display GMT. The
# times returned by the MDTM FTP command are also affected by this
# option.
use_localtime=YES
#
# Activate logging of uploads/downloads.
xferlog_enable=YES
#
# Make sure PORT transfer connections originate from port 20 (ftp-data).
connect_from_port_20=YES
#
If you want, you can arrange for uploaded anonymous files to be owned by
a different user. Note! Using "root" for uploaded files is not
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo

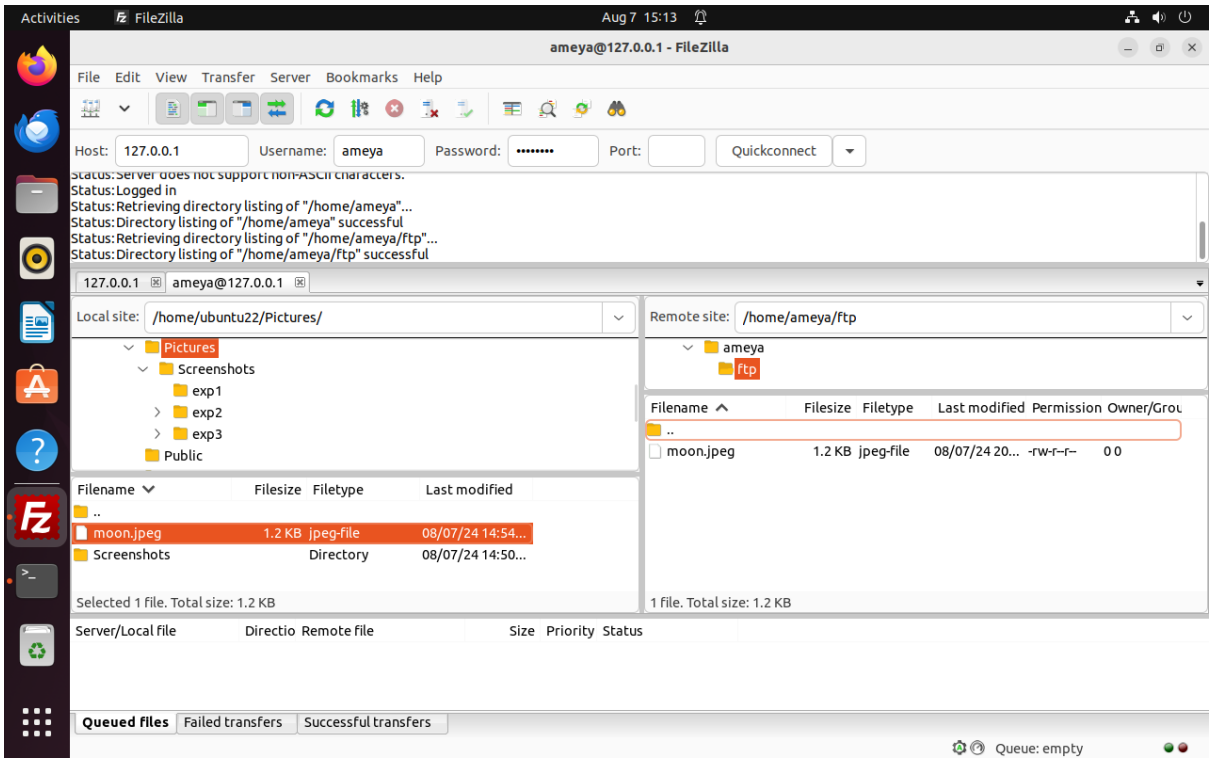

Activities
Terminal
Jul 24 14:28
root@UBUNTU: /home/ubuntu22
GNU nano 6.2 /etc/vsftpd.conf
Example config file /etc/vsftpd.conf
#
The default compiled in settings are fairly paranoid. This sample file
loosens things up a bit, to make the ftp daemon more usable.
Please see vsftpd.conf.5 for all compiled in defaults.
#
READ THIS: This example file is NOT an exhaustive list of vsftpd options.
Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
capabilities.
#
#
# Run standalone? vsftpd can run either from an inetd or as a standalone
# daemon started from an initscript.
listen=NO
#
# This directive enables listening on IPv6 sockets. By default, listening
# on the IPv6 "any" address (::) will accept connections from both IPv6
# and IPv4 clients. It is not necessary to listen on *both* IPv4 and IPv6
# sockets. If you want that (perhaps because you want to listen on specific
# addresses) then you must run two copies of vsftpd with two configuration
# files.
listen_ipv6=YES
#
# Allow anonymous FTP? (Disabled by default).
anonymous_enable=YES
#
# Uncomment this to allow local users to log in.
local_enable=YES
File Name to Write: /etc/vsftpd.conf
^G Help M-D DOS Format M-A Append M-B Backup File
^C Cancel M-M Mac Format M-P Prepend ^T Browse

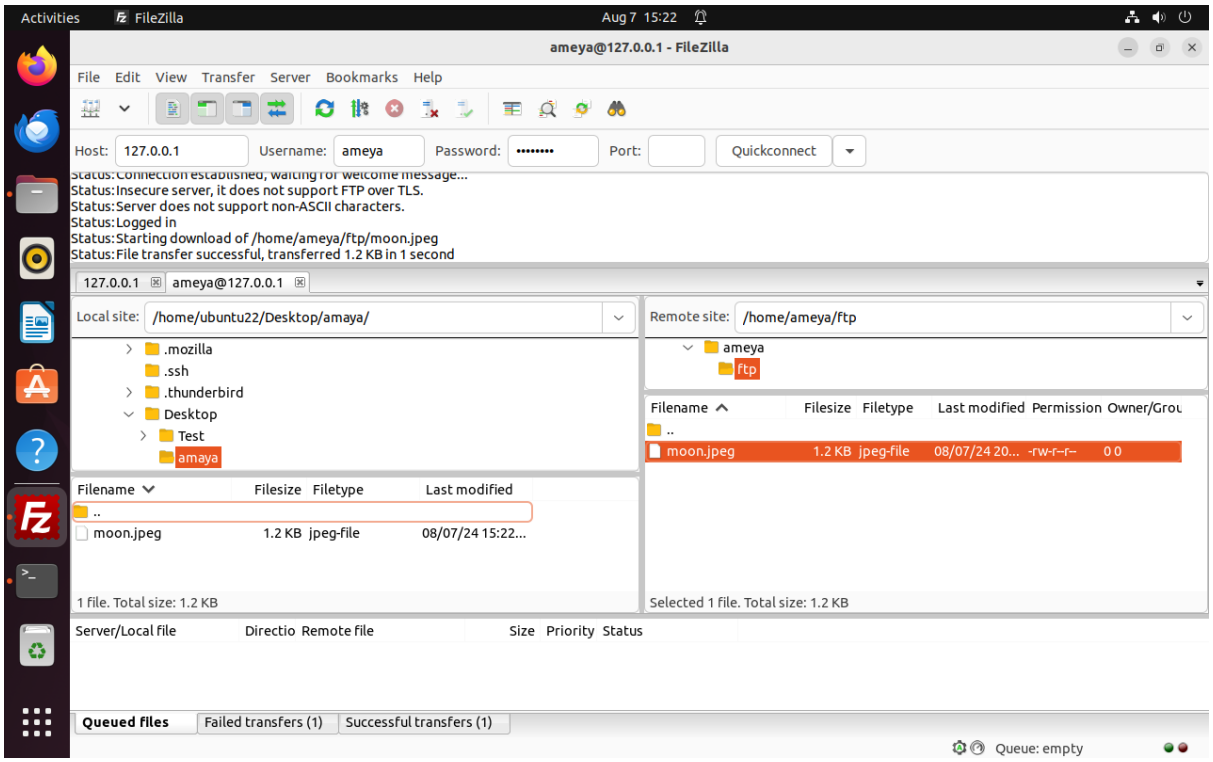

Activities
Terminal
Aug 7 14:14
root@UBUNTU: /home/ubuntu22
RX packets 611 bytes 71090 (71.0 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 611 bytes 71090 (71.0 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/home/ubuntu22# chmod 777 /srv/ftp
root@UBUNTU:/home/ubuntu22# mkdir -p /srv/file/ftp
root@UBUNTU:/home/ubuntu22# usermod -d /srv/file/ftp ftp
usermod: no changes
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo service vsftpd status
vsftpd.service - vsftpd FTP server
Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-08-07 13:52:09 IST; 8s ago
Process: 4664 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
Main PID: 4666 (vsftpd)
Tasks: 1 (limit: 2260)
Memory: 860.0K
CPU: 4ms
CGroup: /system.slice/vsftpd.service
└4666 /usr/sbin/vsftpd /etc/vsftpd.conf
Aug 07 13:52:09 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 13:52:09 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU:/home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU:/home/ubuntu22# sudo service vsftpd restart
root@UBUNTU:/home/ubuntu22# sudo service vsftpd status
vsftpd.service - vsftpd FTP server
Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2024-08-07 14:12:48 IST; 4s ago
Main PID: 19894 (vsftpd)
Tasks: 1 (limit: 2260)
Memory: 1.0M
CPU: 5ms
CGroup: /system.slice/vsftpd.service
└19894 /usr/sbin/vsftpd /etc/vsftpd.conf
Aug 07 14:12:48 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 14:12:48 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU:/home/ubuntu22#

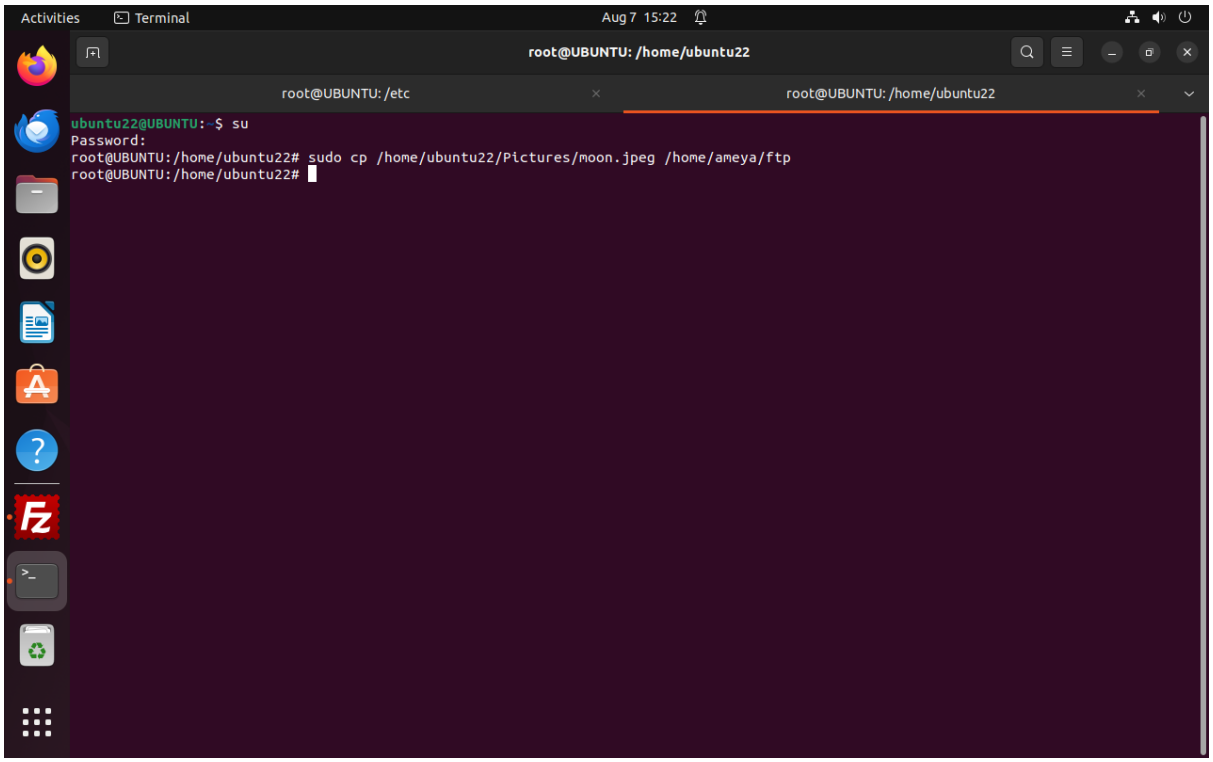

Activities
Terminal
Aug 7 14:41
root@UBUNTU: /home/ameya
GNU nano 6.2 /etc/vsftpd.conf *
# the user does not have write access to the top level directory within the
# chroot)
chroot_local_user=YES
chroot_list_enable=YES
# (default follows)
chroot_list_file=/etc/vsftpd.chroot_list
user_sub_token=$USER
local_root=/home/$USER/ftp
allow_writeable_chroot=YES
#
You may activate the "-R" option to the builtin ls. This is disabled by
default to avoid remote users being able to cause excessive I/O on large
sites. However, some broken FTP clients such as "ncftp" and "mirror" assume
the presence of the "-R" option, so there is a strong case for enabling it.
#ls_recurse_enable=YES
#
Customization
#
Some of vsftpd's settings don't fit the filesystem layout by
default.
#
# This option should be the name of a directory which is empty. Also, the
# directory should not be writable by the ftp user. This directory is used
# as a secure chroot() jail at times vsftpd does not require filesystem
# access.
secure_chroot_dir=/var/run/vsftpd/empty
#
# This string is the name of the PAM service vsftpd will use.
pam_service_name=vsftpd
#
# This option specifies the location of the RSA certificate to use for SSL
# encrypted connections.
rsa_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
rsa_private_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
ssl_enable=NO
[line 127/159 (79%), col 27/27 (100%), char 4789/5918 (80%)]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-6 Copy

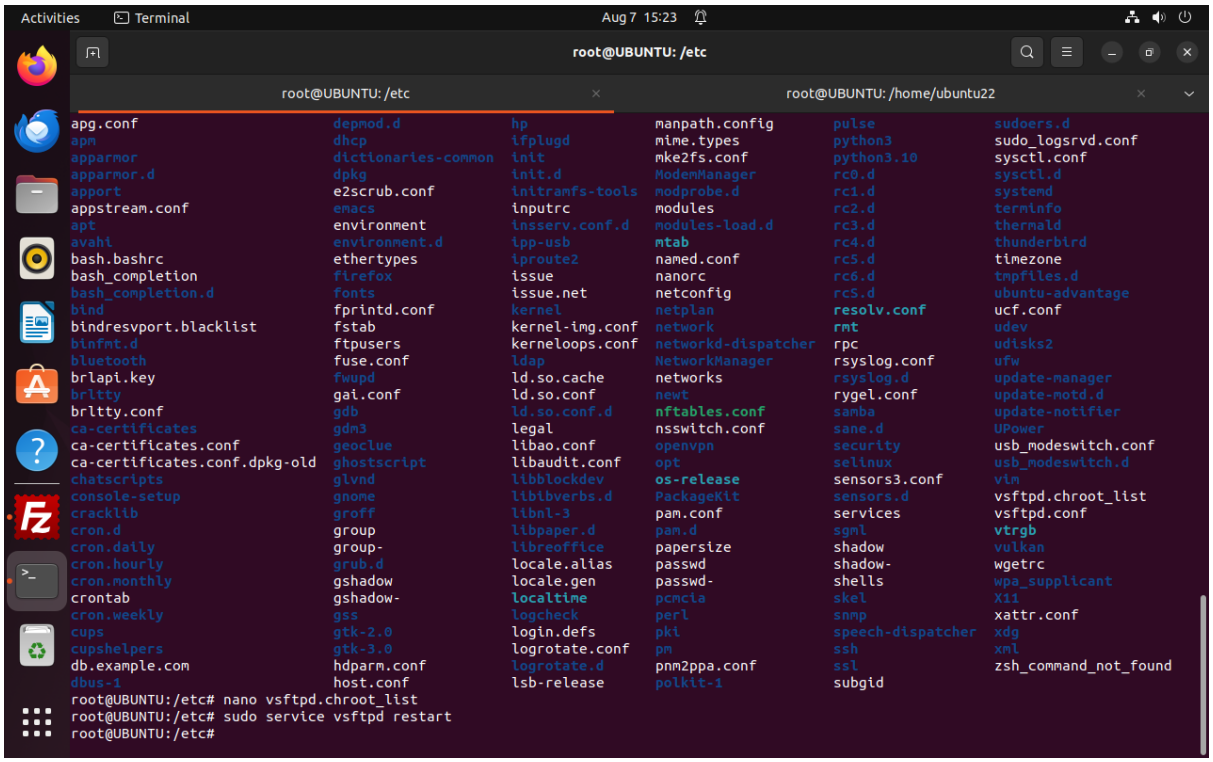

Activities
Terminal
Aug 7 14:46
root@UBUNTU: /etc
acpi
adduser.conf
alsa
alternatives
anacrontab
apg.conf
apm
apparmor
apparmor.d
apport
appstream.conf
apt
avahi
bash.bashrc
bash_completion
bash_completion.d
bind
bindresvport.blacklist
binfmt.d
bluetooth
brlapi.key
brltty
brltty.conf
ca-certificates
ca-certificates.conf
ca-certificates.conf.dpkg-old
chatscripts
console-setup
cracklib
cron.d
cron.daily
cron.hourly
cron.monthly
crontab
cron.weekly
cups
cupshelpers
db.example.com
dbus-1
dconf
debconf.conf
debian_version
default
deluser.conf
depmod.d
dhcp
dictionaries-common
dpkg
e2scrub.conf
emacs
environment
environment.d
ethertypes
firefox
fonts
fprintd.conf
fstab
ftpusers
fuse.conf
fwupd
gai.conf
gdb
gdm3
geoclue
ghostscript
glvnd
gnome
groff
group
group-
grub.d
gshadow
gshadow-
gss
gtk-2.0
gtk-3.0
hdparm.conf
host.conf
hostid
hostname
hosts
hosts.allow
hosts.deny
hp
ifplugd
init
init.d
initramfs-tools
inputrc
insserv.conf.d
ipp-usb
iproute2
issue
issue.net
kernel
kernel-img.conf
kerneloops.conf
ldap
ld.so.cache
ld.so.conf
ld.so.conf.d
legal
libao.conf
libaudit.conf
libblockdev
libibverbs.d
libnl-3
libpaper.d
libreoffice
locale.alias
locale.gen
localtime
logcheck
login.defs
logrotate.conf
logrotate.d
lsb-release
machine-id
magic
magic.mime
mailcap
mailcap.order
manpath.config
mime.types
mke2fs.conf
ModemManager
modprobe.d
modules
modules-load.d
mtab
named.conf
nanorc
netconfig
netplan
network
networkd-dispatcher
NetworkManager
networks
newt
nftables.conf
nsswitch.conf
openvpn
opt
os-release
PackageKit
pam.conf
pam.d
papersize
passwd
passwd-
pcmcia
perl
pki
pm
pnm2ppa.conf
polkit-1
ppp
printcap
profile
profile.d
protocols
pulse
python3
python3.10
rc0.d
rc1.d
rc2.d
rc3.d
rc4.d
rc5.d
rc6.d
rcS.d
resolv.conf
rmt
rpc
rsyslog.conf
rsyslog.d
rygel.conf
samba
sane.d
security
selinux
sensors3.conf
sensors.d
services
sgml
shadow
shadow-
shells
skel
snmp
speech-dispatcher
ssh
ssl
subgid
subgid-
subuid
subuid-
sudo.conf
sudoers
sudoers.d
sudo_logsrvd.conf
sysctl.conf
sysctl.d
systemd
terminfo
thermald
thunderbird
timezone
tmpfiles.d
ubuntu-advantage
ucf.conf
udev
udisks2
ufw
update-manager
update-motd.d
update-notifier
UPower
usb_modeswitch.conf
usb_modeswitch.d
vim
vsftpd.chroot_list
vsftpd.conf
vtrgb
vulkan
wgetrc
wpa_supplicant
X11
xattr.conf
xdg
xml
zsh_command_not_found
root@UBUNTU:/etc#


Activities
Terminal
Aug 7 14:50
root@UBUNTU: /etc
GNU nano 6.2
vsftpd.chroot_list *
admin_29
admin_30
ameya
[Read 2 lines]
^G Help
^X Exit
^O Write Out
^R Read File
^W Where Is
^\ Replace
^K Cut
^U Paste
^T Execute
^J Justify
^C Location
^/ Go To Line
M-U Undo
M-E Redo
M-A Set Mark
M-6 Copy


Activities
FileZilla
Aug 7 15:13
ameya@127.0.0.1 - FileZilla
File Edit View Transfer Server Bookmarks Help
Host: 127.0.0.1 Username: ameya Password: •••••••• Port: Quickconnect
Status: Server does not support non-ASCII characters.
Status: Logged in
Status: Retrieving directory listing of "/home/ameya"...
Status: Directory listing of "/home/ameya" successful
Status: Retrieving directory listing of "/home/ameya/ftp"...
Status: Directory listing of "/home/ameya/ftp" successful
127.0.0.1
ameya@127.0.0.1
Local site: /home/ubuntu22/Pictures/
Pictures
Screenshots
exp1
exp2
exp3
Public
Filename Filesize Filetype Last modified
..
moon.jpeg 1.2 KB jpeg-file 08/07/24 14:54...
Screenshots Directory 08/07/24 14:50...
Selected 1 file. Total size: 1.2 KB
Remote site: /home/ameya/ftp
ameya
ftp
Filename Filesize Filetype Last modified Permission Owner/Grou
..
moon.jpeg 1.2 KB jpeg-file 08/07/24 20... -rw-r--r-- 0 0
1 file. Total size: 1.2 KB
Server/Local file Directio Remote file Size Priority Status
Queued files Failed transfers Successful transfers
Queue: empty


Activities
FileZilla
Aug 7 15:22
ameya@127.0.0.1 - FileZilla
File Edit View Transfer Server Bookmarks Help
Host: 127.0.0.1 Username: ameya Password: •••••••• Port: Quickconnect
Status: Insecure server, it does not support FTP over TLS.
Status: Server does not support non-ASCII characters.
Status: Logged in
Status: Starting download of /home/ameya/ftp/moon.jpeg
Status: File transfer successful, transferred 1.2 KB in 1 second
127.0.0.1
ameya@127.0.0.1
Local site: /home/ubuntu22/Desktop/amaya/
.mozilla
.ssh
.thunderbird
Desktop
Test
amaya
Filename Filesize Filetype Last modified
..
moon.jpeg 1.2 KB jpeg-file 08/07/24 15:22...
1 file. Total size: 1.2 KB
Remote site: /home/ameya/ftp
ameya
ftp
Filename Filesize Filetype Last modified Permission Owner/Grou
..
moon.jpeg 1.2 KB jpeg-file 08/07/24 20... -rw-r--r-- 0 0
Selected 1 file. Total size: 1.2 KB
Server/Local file Directio Remote file Size Priority Status
Queued files Failed transfers (1) Successful transfers (1)
Queue: empty





All the commands have been executed and the output has been obtained successfully.

SQUID

Experiment: 4

Aim: To create and configure Squid -proxy server

Description:

SQUID – PROXY SERVER

Squid is a full-featured web proxy cache server application which provides proxy and cache services for HyperText Transport Protocol (HTTP), File Transfer Protocol (FTP),and other popular network protocols. Squid can implement caching and proxying of Secure Sockets Layer (SSL) requests and caching of Domain Name Server (DNS) lookups, and perform transparent caching. Squid also supports a wide variety of caching protocols, such as Internet Cache Protocol (ICP), the HyperText Caching Protocol (HTCP), the Cache Array Routing Protocol (CARP), and the Web Cache Coordination Protocol (WCCP).
The Squid proxy cache server is an excellent solution to various proxy and caching server needs, and scales from the branch office to enterprise-level networks while providing extensive, granular access control mechanisms, and monitoring of critical parameters via the Simple Network Management Protocol (SNMP). When selecting a computer system for use as a dedicated Squid caching proxy server for many users ensure it is configured with a large amount of physical memory as Squid maintains an in-memory cache for increased performance.

Port No: 3128
Package name: squid
Configuration file: /etc/squid/squid.conf

Procedure:

1. At a terminal prompt, enter the following command to install the Squid server:

   $sudo apt install squid

2. Squid is configured by editing the directives contained within the /etc/squid/squid.conf configuration file.
3. Change the access as shown below:

acl localnet src 192.168.234.139(your ip address)

acl blocksite dstdomain "/etc/squid/blocksite"

http_access deny blocksite

http_access allow localnet

#http_access deny all

http_access allow all

4. To block access to the website we must configure using "/etc/squid/blocksite”

   we edit the file by running:

   $cd /etc/squid

   $sudo gedit blocksite

5. Add the websites to block:

   in this case, I am blocking youtube, facebook, google

6. To check the actual functioning of the proxy server go to the browser and click settings, search proxy in connection settings.

7. To configure Proxy access to the internet
8. Select Manual Proxy configuration

9. Type your HTTP Proxy(IP Address) and Port number as 3128.

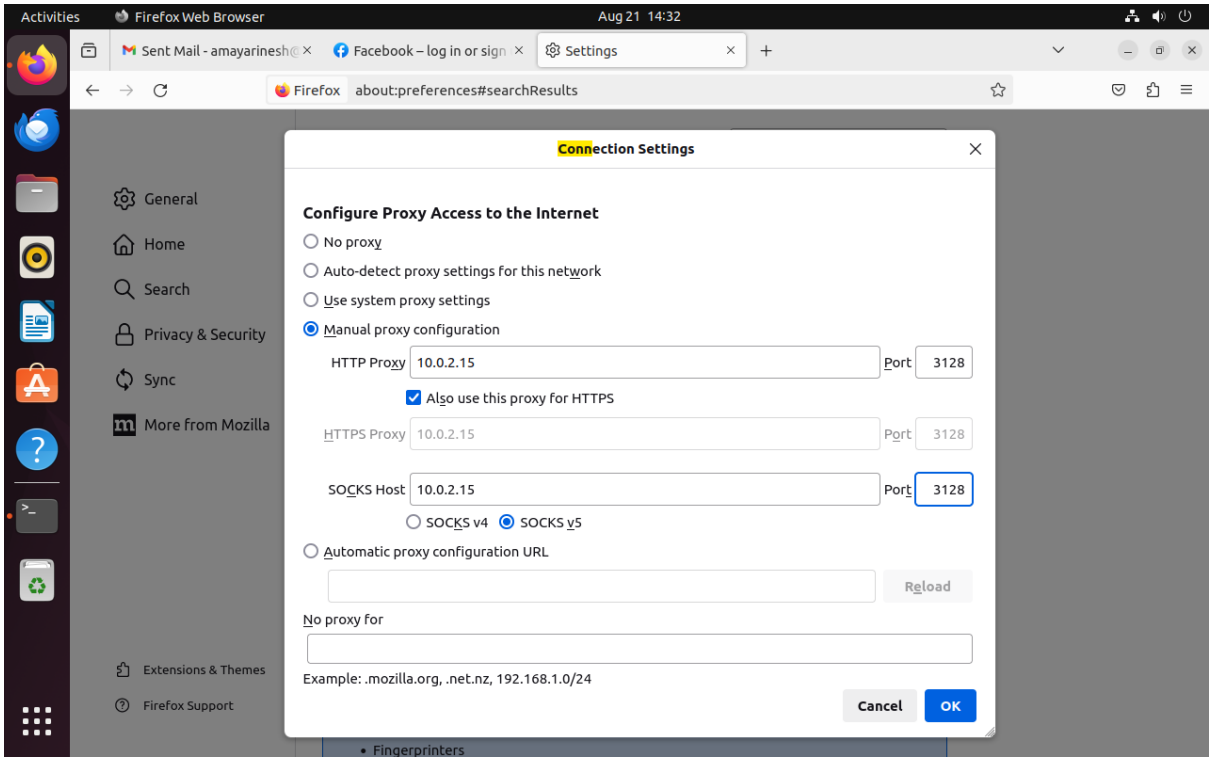
10. Select SOCKS v5

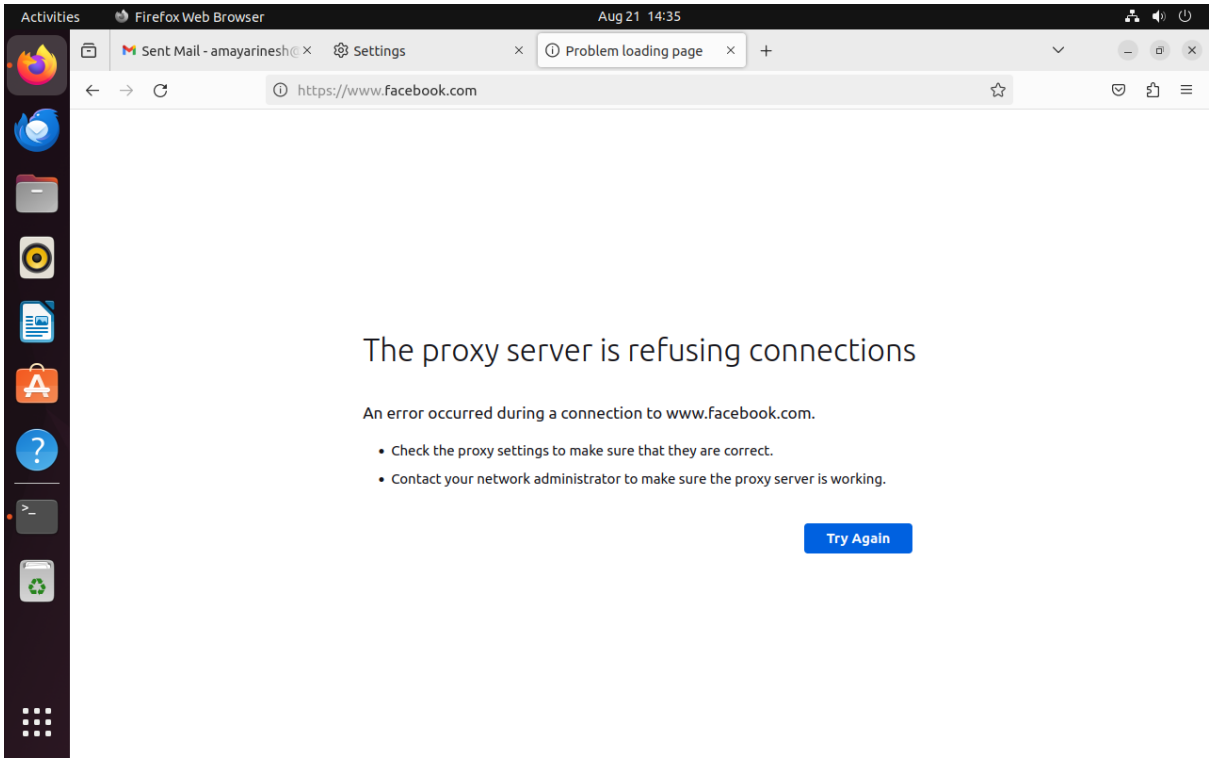
CONNECTING TO WEBSITE

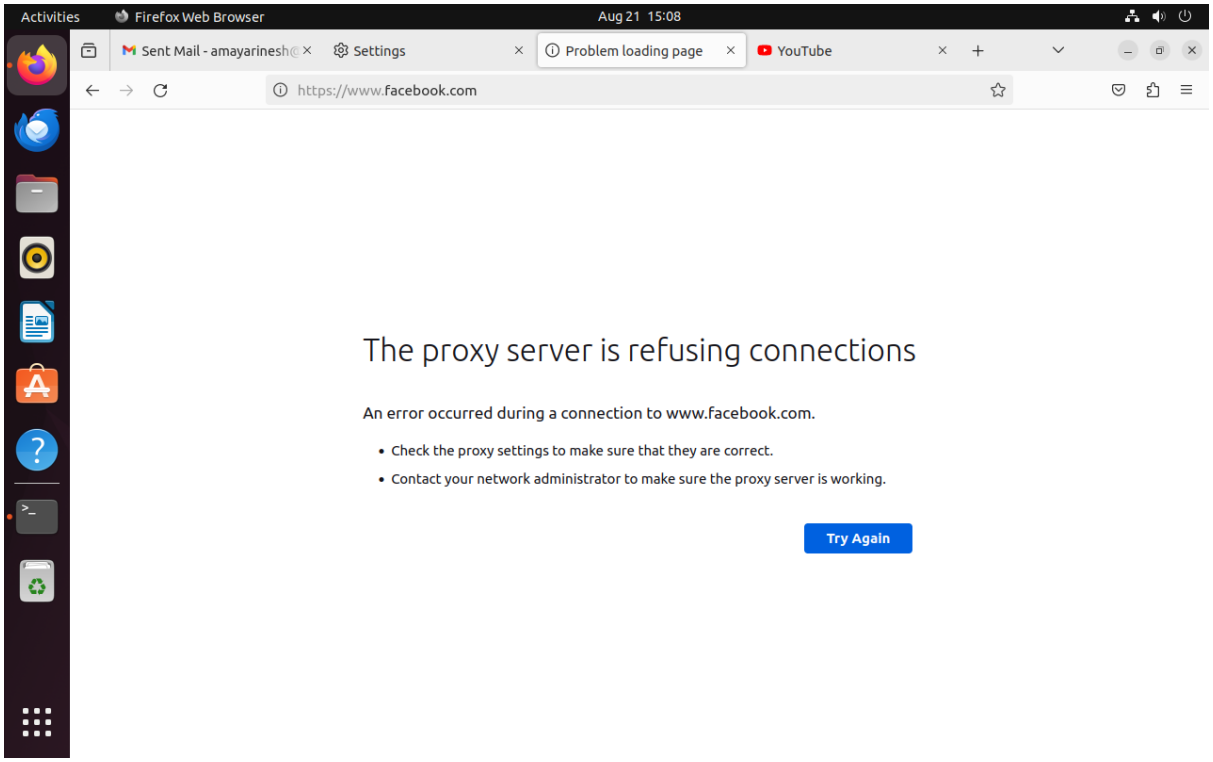
11. Search for the blocked websites

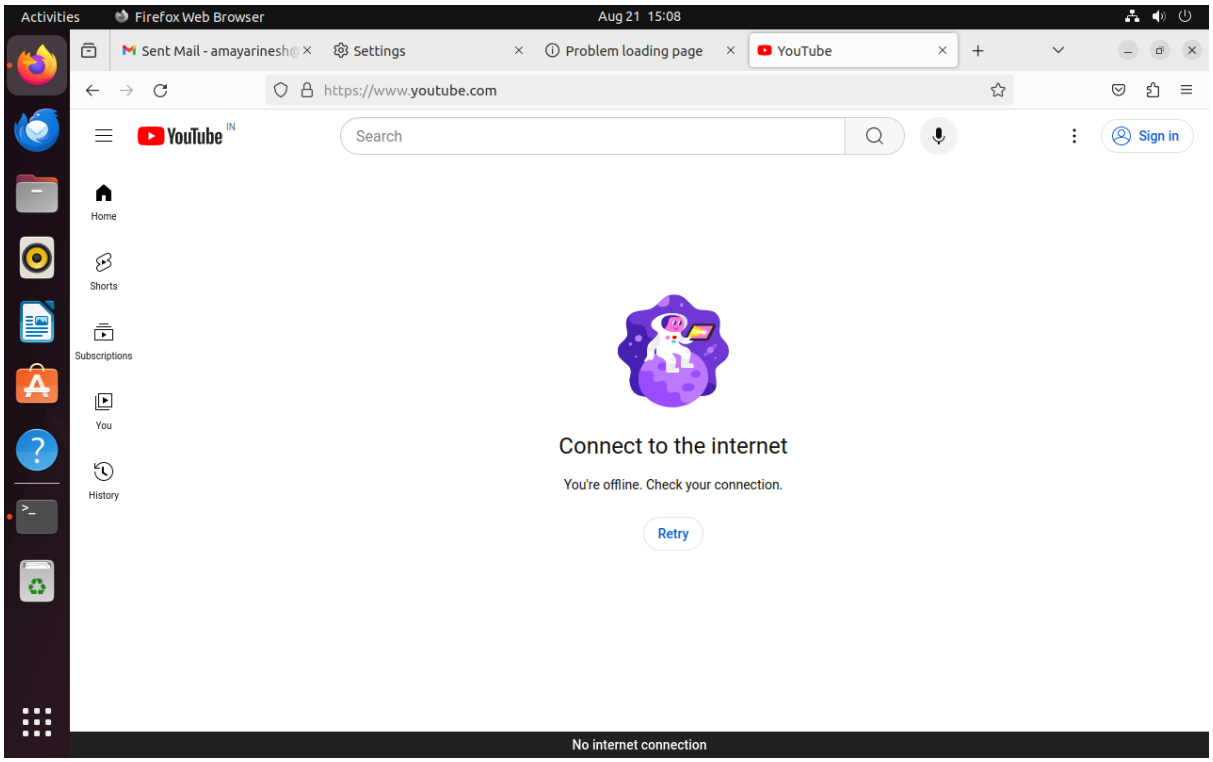
12. Access is denied to the above website

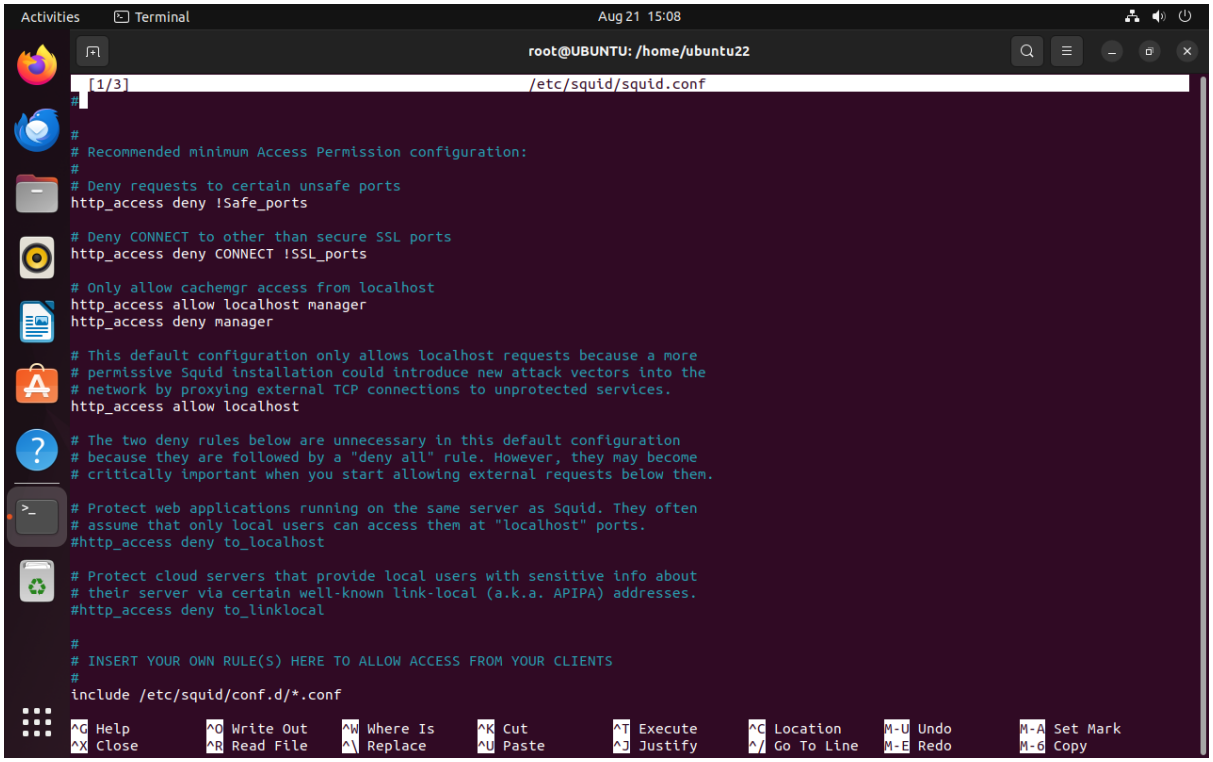
Result:

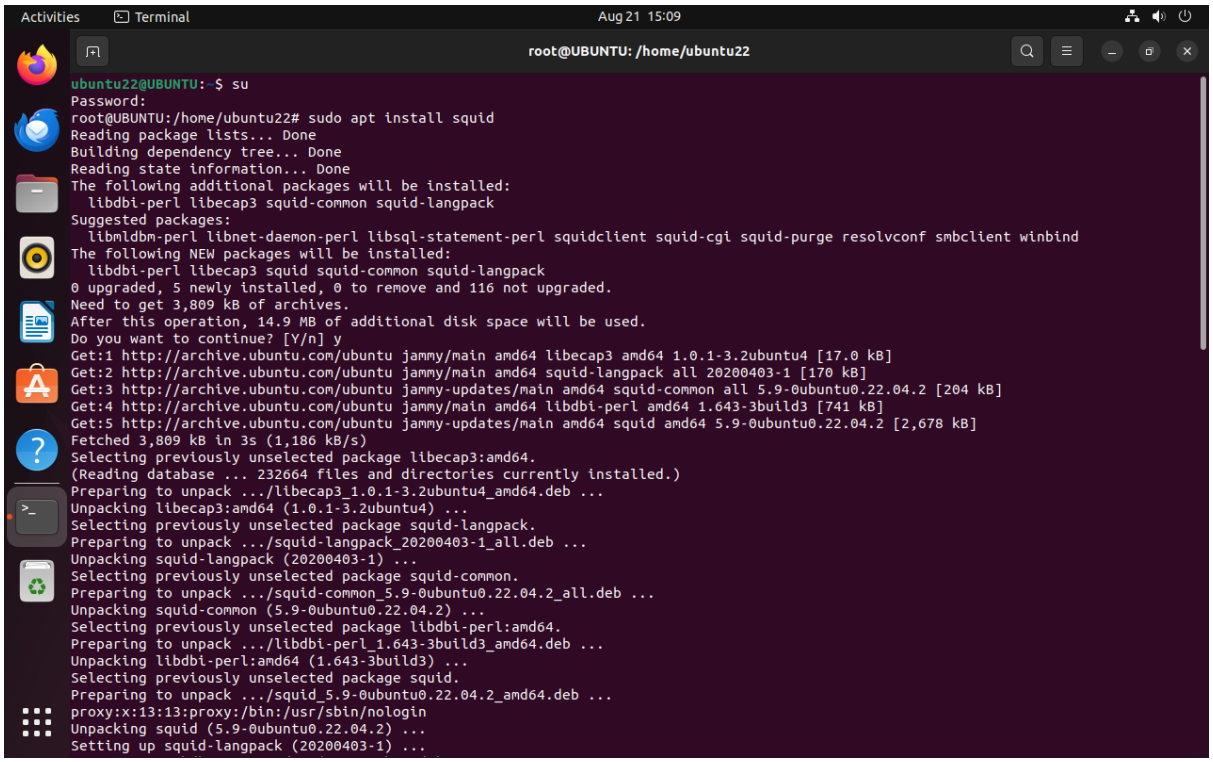

Activities
Firefox Web Browser
Aug 21 14:32
Sent Mail - amayarinesh@
Facebook – log in or sign
Settings
Firefox
about:preferences#searchResults
General
Home
Search
Privacy & Security
Sync
More from Mozilla
Extensions & Themes
Firefox Support
Connection Settings
Configure Proxy Access to the Internet
No proxy
Auto-detect proxy settings for this network
Use system proxy settings
Manual proxy configuration
HTTP Proxy
10.0.2.15
Port
3128
Also use this proxy for HTTPS
HTTPS Proxy
10.0.2.15
Port
3128
SOCKS Host
10.0.2.15
Port
3128
SOCKS v4
SOCKS v5
Automatic proxy configuration URL
Reload
No proxy for
Example: .mozilla.org, .net.nz, 192.168.1.0/24
Cancel
OK
Fingerprinters

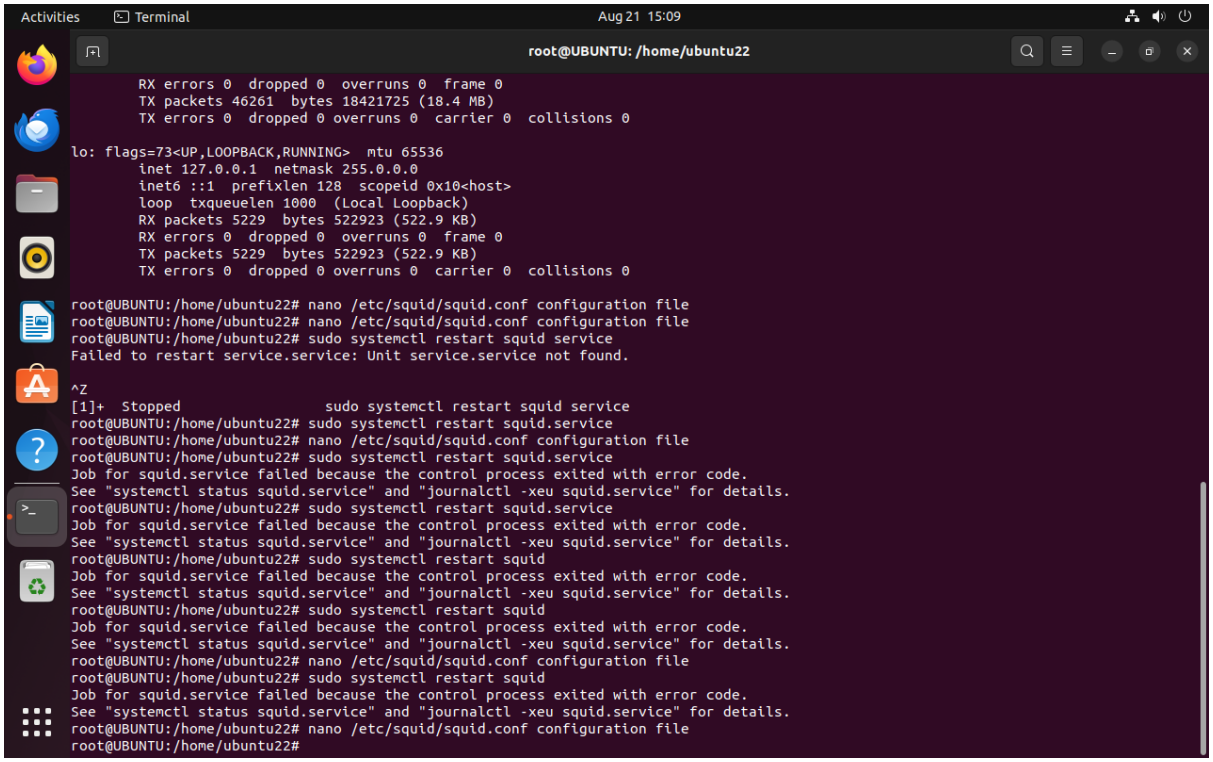

Activities
Firefox Web Browser
Aug 21 14:35
Sent Mail - amayarinesh@
Settings
Problem loading page
https://www.facebook.com
The proxy server is refusing connections
An error occurred during a connection to www.facebook.com.
Check the proxy settings to make sure that they are correct.
Contact your network administrator to make sure the proxy server is working.
Try Again

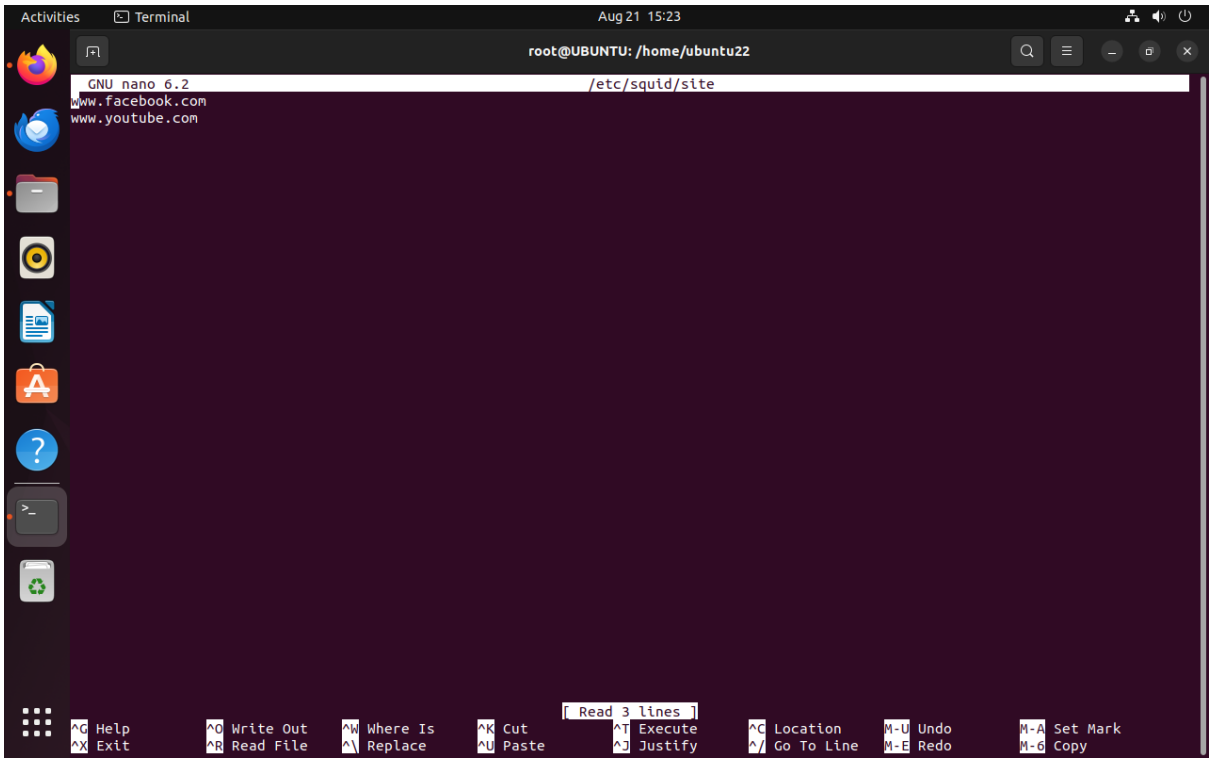

Activities
Firefox Web Browser
Aug 21 15:08
Sent Mail - amayaresh@
Settings
Problem loading page
YouTube
https://www.facebook.com
The proxy server is refusing connections
An error occurred during a connection to www.facebook.com.
Check the proxy settings to make sure that they are correct.
Contact your network administrator to make sure the proxy server is working.
Try Again


Activities
Firefox Web Browser
Aug 21 15:08
Sent Mail - amayaresh@
Settings
Problem loading page
YouTube
https://www.youtube.com
YouTube IN
Search
Sign in
Home
Shorts
Subscriptions
You
History
Connect to the internet
You're offline. Check your connection.
Retry
No internet connection


Activities
Terminal
Aug 21 15:08
root@UBUNTU: /home/ubuntu22
[1/3] /etc/squid/squid.conf
#
#
Recommended minimum Access Permission configuration:
#
Deny requests to certain unsafe ports
http_access deny !Safe_ports
Deny CONNECT to other than secure SSL ports
http_access deny CONNECT !SSL_ports
Only allow cachemgr access from localhost
http_access allow localhost manager
http_access deny manager
This default configuration only allows localhost requests because a more
permissive Squid installation could introduce new attack vectors into the
network by proxying external TCP connections to unprotected services.
http_access allow localhost
The two deny rules below are unnecessary in this default configuration
because they are followed by a "deny all" rule. However, they may become
critically important when you start allowing external requests below them.
Protect web applications running on the same server as Squid. They often
assume that only local users can access them at "localhost" ports.
#http_access deny to_localhost
Protect cloud servers that provide local users with sensitive info about
their server via certain well-known link-local (a.k.a. APIPA) addresses.
#http_access deny to_linklocal
#
INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
#
include /etc/squid/conf.d/*.conf
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Close ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-6 Copy


Activities
Terminal
Aug 21 15:09
root@UBUNTU: /home/ubuntu22
ubuntu22@UBUNTU:~$ su
Password:
root@UBUNTU:/home/ubuntu22# sudo apt install squid
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libdbi-perl libecap3 squid-common squid-langpack
Suggested packages:
libmldbm-perl libnet-daemon-perl libsql-statement-perl squidclient squid-cgi squid-purge resolvconf smbclient winbind
The following NEW packages will be installed:
libdbi-perl libecap3 squid squid-common squid-langpack
0 upgraded, 5 newly installed, 0 to remove and 116 not upgraded.
Need to get 3,809 kB of archives.
After this operation, 14.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libecap3 amd64 1.0.1-3.2ubuntu4 [17.0 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 squid-langpack all 20200403-1 [170 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 squid-common all 5.9-0ubuntu0.22.04.2 [204 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/main amd64 libdbi-perl amd64 1.643-3build3 [741 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 squid amd64 5.9-0ubuntu0.22.04.2 [2,678 kB]
Fetched 3,809 kB in 3s (1,186 kB/s)
Selecting previously unselected package libecap3:amd64.
(Reading database ... 232664 files and directories currently installed.)
Preparing to unpack .../libecap3_1.0.1-3.2ubuntu4_amd64.deb ...
Unpacking libecap3:amd64 (1.0.1-3.2ubuntu4) ...
Selecting previously unselected package squid-langpack.
Preparing to unpack .../squid-langpack_20200403-1_all.deb ...
Unpacking squid-langpack (20200403-1) ...
Selecting previously unselected package squid-common.
Preparing to unpack .../squid-common_5.9-0ubuntu0.22.04.2_all.deb ...
Unpacking squid-common (5.9-0ubuntu0.22.04.2) ...
Selecting previously unselected package libdbi-perl:amd64.
Preparing to unpack .../libdbi-perl_1.643-3build3_amd64.deb ...
Unpacking libdbi-perl:amd64 (1.643-3build3) ...
Selecting previously unselected package squid.
Preparing to unpack .../squid_5.9-0ubuntu0.22.04.2_amd64.deb ...
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
Unpacking squid (5.9-0ubuntu0.22.04.2) ...
Setting up squid-langpack (20200403-1) ...





All the commands have been executed and the output has been obtained successfully.

SSH

Experiment: 5

Aim: Installation of Open SSH between two ubuntu machines.

Description:

Remote File Sharing using SSH

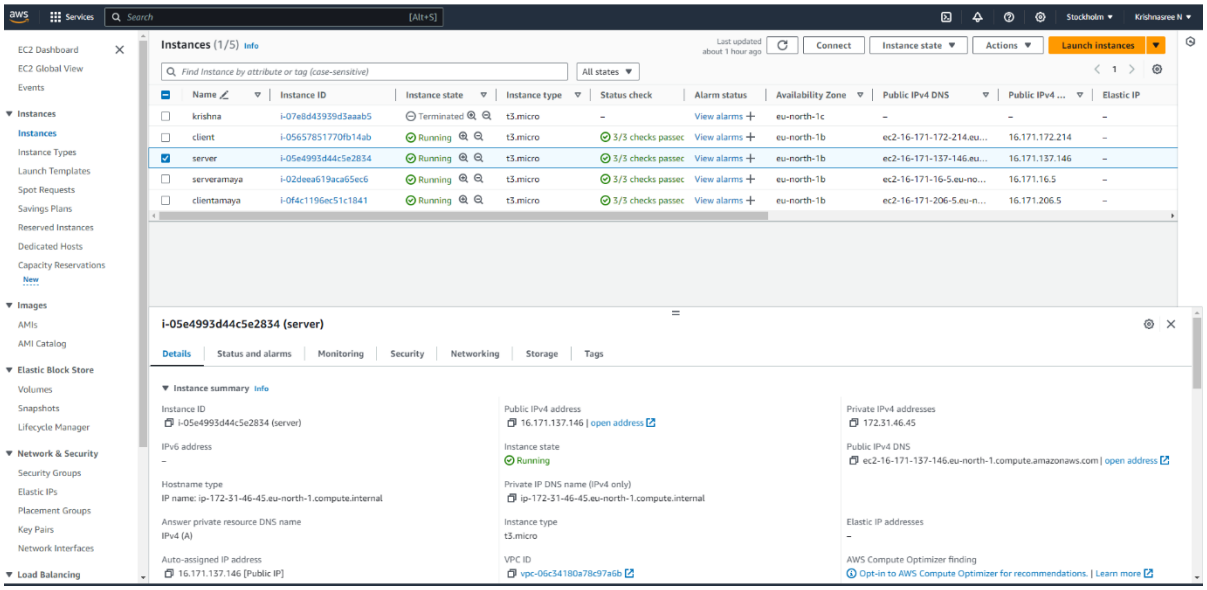
OpenSSH is a powerful collection of tools for the remote control of, and transfer of data between, networked computers. You will also learn about some of the configuration settings possible with the OpenSSH server application and how to change them on your Ubuntu system.
OpenSSH is a freely available version of the Secure Shell (SSH) protocol family of tools for remotely controlling, or transferring files between computers. Traditional tools used to accomplish these functions, such as telnet or rcp, are insecure and transmit the user's password in cleartext when used. OpenSSH provides a server daemon and client tools to facilitate secure, encrypted remote control and file transfer operations, effectively replacing the legacy tools.

Port No: 22
Package name: openssh-client
Configuration file: /etc/ssh/sshd_config

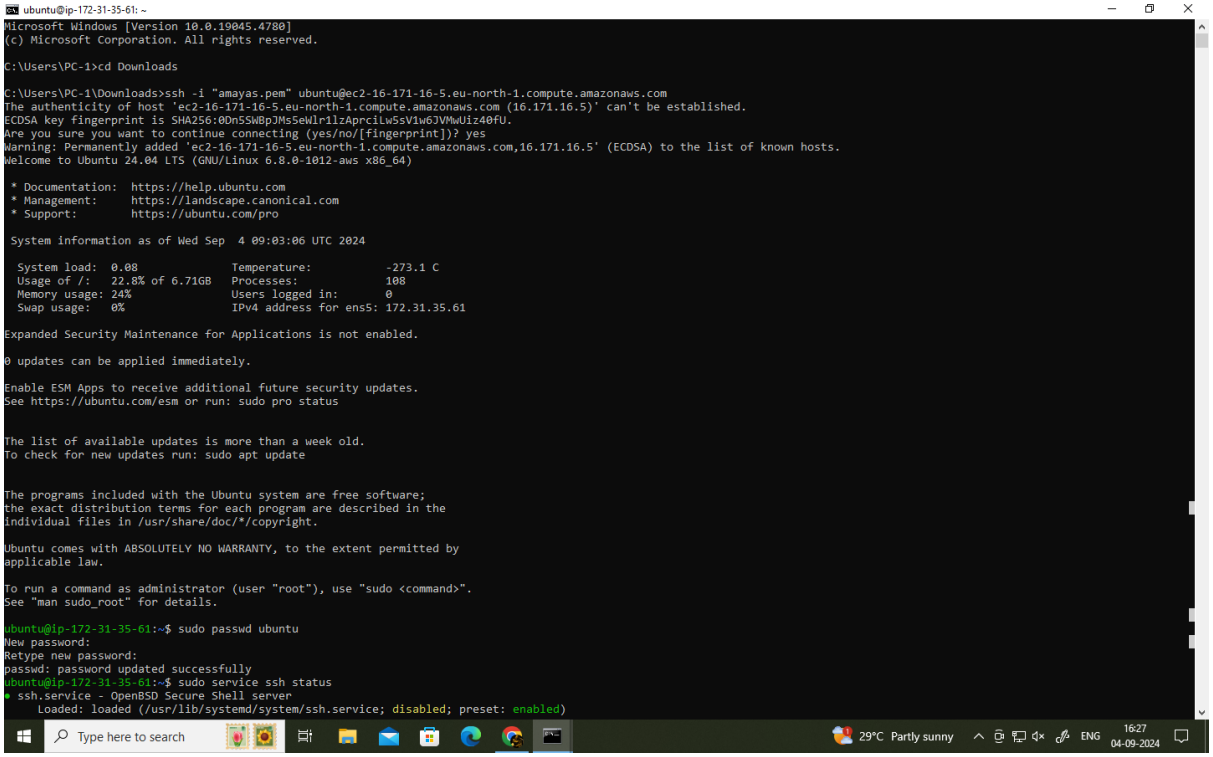
Procedure:

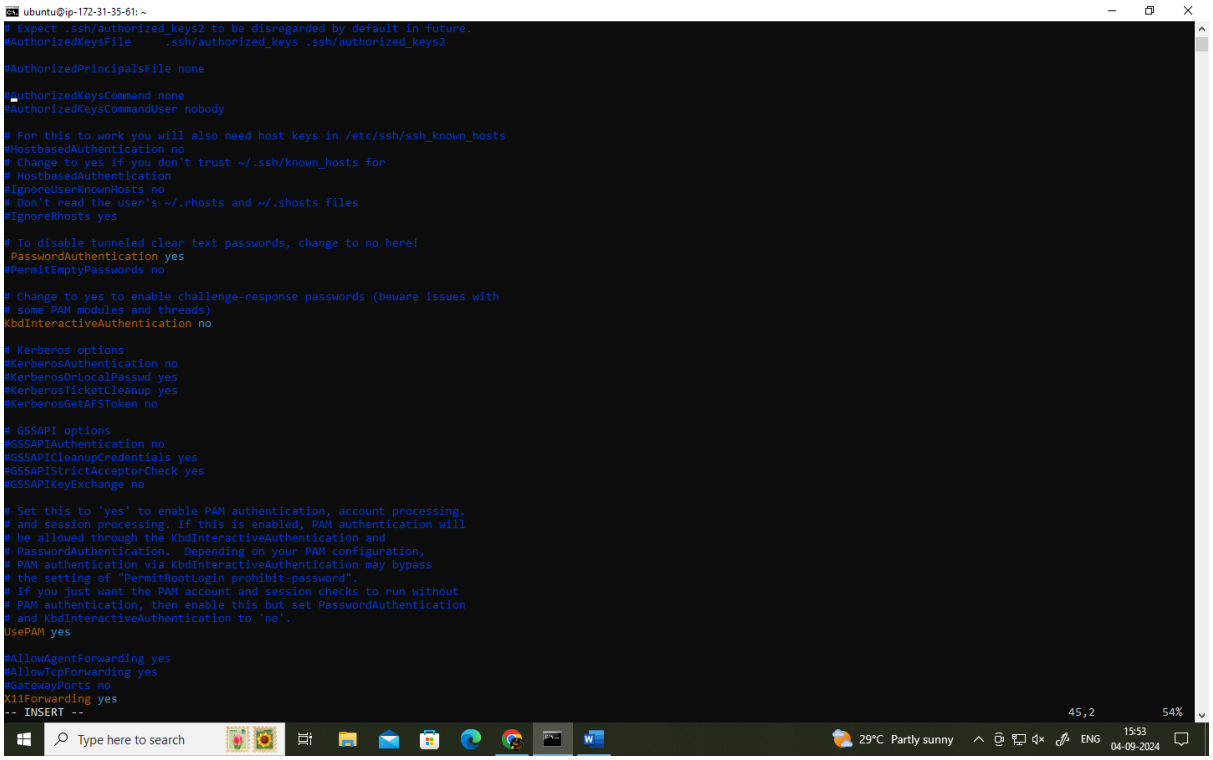
1. create two EC2 instance of ubuntu ssh client and ssh server
2. Create the password for the instance of ssh server by $sudo passwd ubuntu
3. Now check whether the ssh server is running by the command $sudo servicessh status
4. configure the sshd_config file by the following command $sudo vim /etc/ssh/sshd_config and include the following changes PasswordAuthentication yes , KbdInteractiveAuthenticationno ,KerberosGetAFSToken no
5. Now check the status of the ssh server by the command $sudo service sshstatus
6. Now create a text file by the command $touch text.txt
7. Now log in to the ssh_client and create a ssh_keygen by the command $ssh_keygen
8. Now copy the ssh_keygen form the ssh_client $ssh-copy-id ubuntu@privateip
9. Now restart the client machine
10. Then connect to the ssh_server by ssh_client
11. then type ls you will be prompted with the screen with your text file which you have create

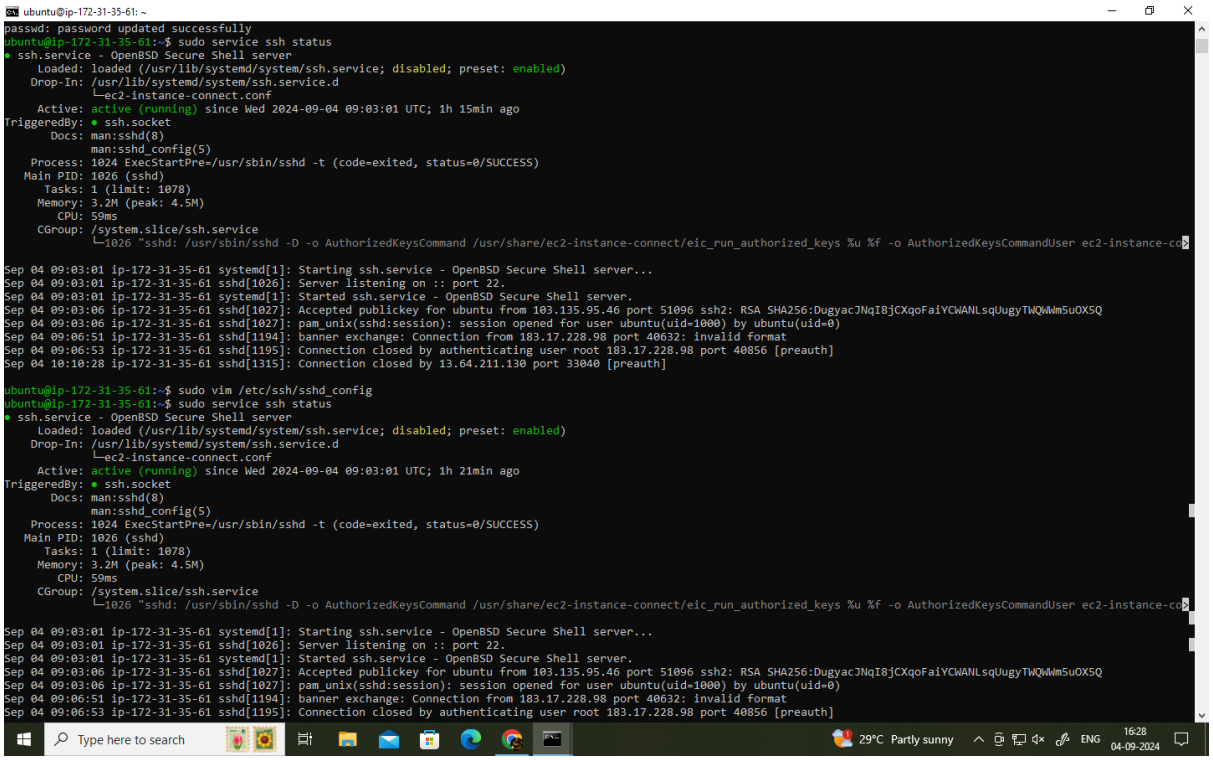
Result:



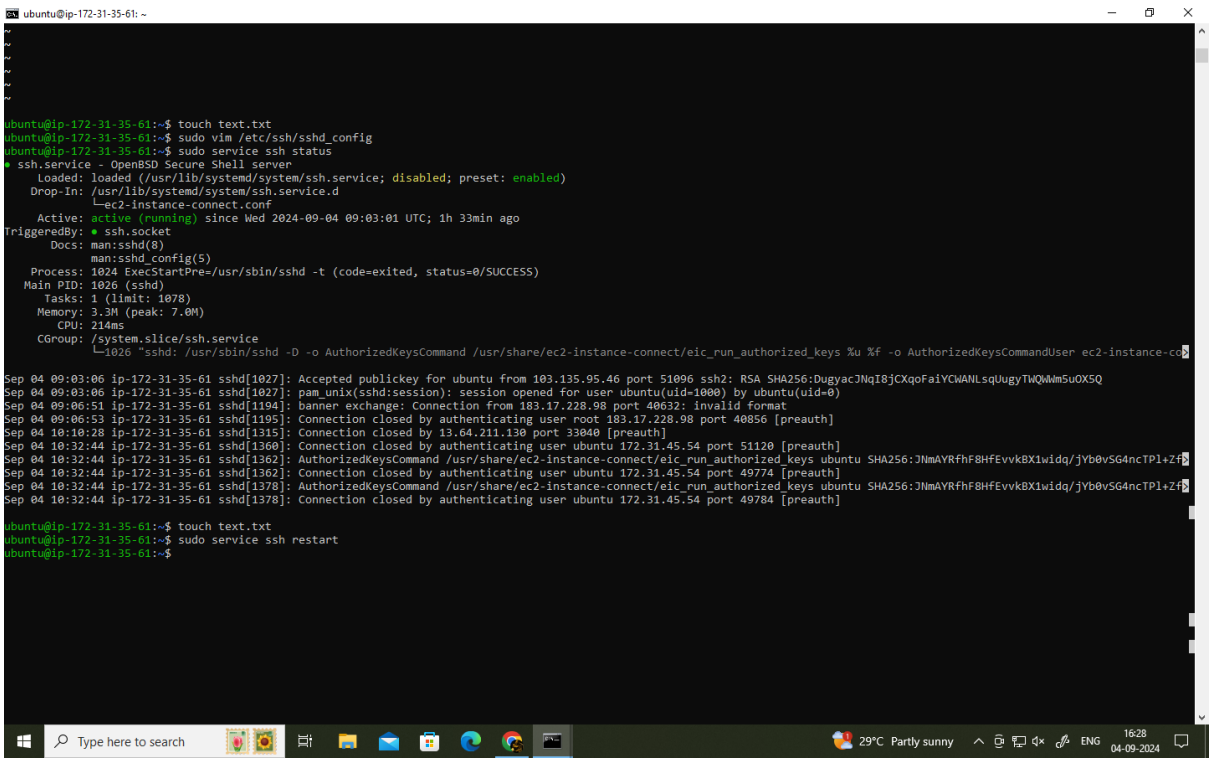
Server



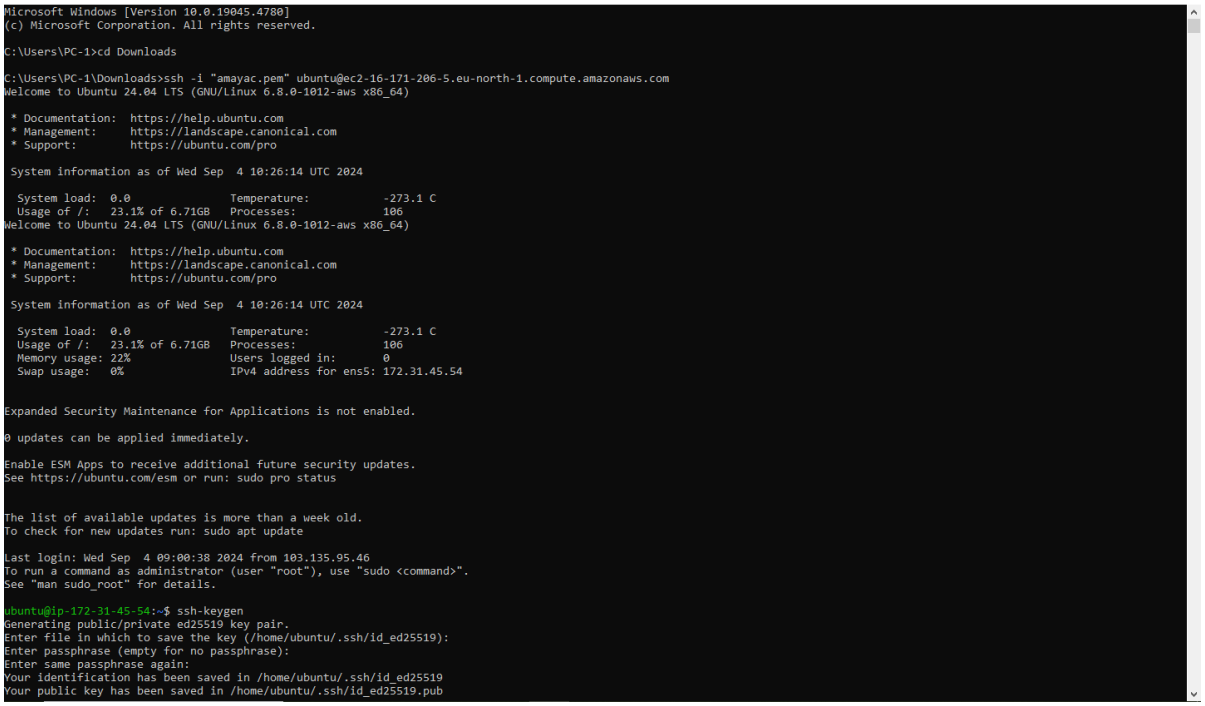

ubuntu@ip-172-31-35-61: ~
Expect .ssh/authorized_keys2 to be disregarded by default in future.
#AuthorizedKeysFile	.ssh/authorized_keys .ssh/authorized_keys2
#AuthorizedPrincipalsFile none
#AuthorizedKeysCommand none
#AuthorizedKeysCommandUser nobody
For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
Change to yes if you don't trust ~/.ssh/known_hosts for
HostbasedAuthentication
#IgnoreUserKnownHosts no
Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
To disable tunneled clear text passwords, change to no here!
PasswordAuthentication yes
#PermitEmptyPasswords no
Change to yes to enable challenge-response passwords (beware issues with
some PAM modules and threads)
KbdInteractiveAuthentication no
Kerberos options
#KerberosAuthentication no
#KerberosOrLocalPasswd yes
#KerberosTicketCleanup yes
#KerberosGetAFSToken no
GSSAPI options
#GSSAPIAuthentication no
#GSSAPICleanupCredentials yes
#GSSAPIStrictAcceptorCheck yes
#GSSAPIKeyExchange no
Set this to 'yes' to enable PAM authentication, account processing,
and session processing. If this is enabled, PAM authentication will
be allowed through the KbdInteractiveAuthentication and
PasswordAuthentication. Depending on your PAM configuration,
PAM authentication via KbdInteractiveAuthentication may bypass
the setting of "PermitRootLogin prohibit-password".
If you just want the PAM account and session checks to run without
PAM authentication, then enable this but set PasswordAuthentication
and KbdInteractiveAuthentication to 'no'.
UsePAM yes
#AllowAgentForwarding yes
#AllowTcpForwarding yes
#GatewayPorts no
X11Forwarding yes
-- INSERT --
45,2 54%
Type here to search
29°C Partly sunny
ENG
15:53
04-09-2024


ubuntu@ip-172-31-35-61: ~
passwd: password updated successfully
ubuntu@ip-172-31-35-61:~$ sudo service ssh status
● ssh.service - OpenBSD Secure Shell server
Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
Drop-In: /usr/lib/systemd/system/ssh.service.d
└─ec2-instance-connect.conf
Active: active (running) since Wed 2024-09-04 09:03:01 UTC; 1h 15min ago
TriggeredBy: ● ssh.socket
Docs: man:sshd(8)
man:sshd_config(5)
Process: 1024 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
Main PID: 1026 (sshd)
Tasks: 1 (limit: 1078)
Memory: 3.2M (peak: 4.5M)
CPU: 59ms
CGroup: /system.slice/ssh.service
└─1026 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-co
Sep 04 09:03:01 ip-172-31-35-61 systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Sep 04 09:03:01 ip-172-31-35-61 sshd[1026]: Server listening on :: port 22.
Sep 04 09:03:01 ip-172-31-35-61 systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: Accepted publickey for ubuntu from 103.135.95.46 port 51096 ssh2: RSA SHA256:DugyacJNqI8jCXqoFaiYCWANLsqUugyTWQWWm5uOX5Q
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
Sep 04 09:06:51 ip-172-31-35-61 sshd[1194]: banner exchange: Connection from 183.17.228.98 port 40632: invalid format
Sep 04 09:06:53 ip-172-31-35-61 sshd[1195]: Connection closed by authenticating user root 183.17.228.98 port 40856 [preauth]
Sep 04 10:10:28 ip-172-31-35-61 sshd[1315]: Connection closed by 13.64.211.130 port 33040 [preauth]
ubuntu@ip-172-31-35-61:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-35-61:~$ sudo service ssh status
● ssh.service - OpenBSD Secure Shell server
Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
Drop-In: /usr/lib/systemd/system/ssh.service.d
└─ec2-instance-connect.conf
Active: active (running) since Wed 2024-09-04 09:03:01 UTC; 1h 21min ago
TriggeredBy: ● ssh.socket
Docs: man:sshd(8)
man:sshd_config(5)
Process: 1024 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
Main PID: 1026 (sshd)
Tasks: 1 (limit: 1078)
Memory: 3.2M (peak: 4.5M)
CPU: 59ms
CGroup: /system.slice/ssh.service
└─1026 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-co
Sep 04 09:03:01 ip-172-31-35-61 systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Sep 04 09:03:01 ip-172-31-35-61 sshd[1026]: Server listening on :: port 22.
Sep 04 09:03:01 ip-172-31-35-61 systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: Accepted publickey for ubuntu from 103.135.95.46 port 51096 ssh2: RSA SHA256:DugyacJNqI8jCXqoFaiYCWANLsqUugyTWQWWm5uOX5Q
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
Sep 04 09:06:51 ip-172-31-35-61 sshd[1194]: banner exchange: Connection from 183.17.228.98 port 40632: invalid format
Sep 04 09:06:53 ip-172-31-35-61 sshd[1195]: Connection closed by authenticating user root 183.17.228.98 port 40856 [preauth]
Type here to search
29°C Partly sunny
ENG
16:28
04-09-2024

•


ubuntu@ip-172-31-35-61: ~
ubuntu@ip-172-31-35-61:~$ touch text.txt
ubuntu@ip-172-31-35-61:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-35-61:~$ sudo service ssh status
● ssh.service - OpenBSD Secure Shell server
Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
Drop-In: /usr/lib/systemd/system/ssh.service.d
└─ec2-instance-connect.conf
Active: active (running) since Wed 2024-09-04 09:03:01 UTC; 1h 33min ago
TriggeredBy: ● ssh.socket
Docs: man:sshd(8)
man:sshd_config(5)
Process: 1024 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
Main PID: 1026 (sshd)
Tasks: 1 (limit: 1078)
Memory: 3.3M (peak: 7.0M)
CPU: 214ms
CGroup: /system.slice/ssh.service
└─1026 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-co
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: Accepted publickey for ubuntu from 103.135.95.46 port 51096 ssh2: RSA SHA256:DugyacJNqI8jCXqoFaiYCWANLsqUugyTWQWWm5uOX5Q
Sep 04 09:03:06 ip-172-31-35-61 sshd[1027]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
Sep 04 09:06:51 ip-172-31-35-61 sshd[1194]: banner exchange: Connection from 183.17.228.98 port 40632: invalid format
Sep 04 09:06:53 ip-172-31-35-61 sshd[1195]: Connection closed by authenticating user root 183.17.228.98 port 40856 [preauth]
Sep 04 10:10:28 ip-172-31-35-61 sshd[1315]: Connection closed by 13.64.211.130 port 33040 [preauth]
Sep 04 10:32:44 ip-172-31-35-61 sshd[1360]: Connection closed by authenticating user ubuntu 172.31.45.54 port 51120 [preauth]
Sep 04 10:32:44 ip-172-31-35-61 sshd[1362]: AuthorizedKeysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys ubuntu SHA256:JNmAYRfhF8HfEvvkBX1widq/jYb0vSG4ncTPl+Zf
Sep 04 10:32:44 ip-172-31-35-61 sshd[1362]: Connection closed by authenticating user ubuntu 172.31.45.54 port 49774 [preauth]
Sep 04 10:32:44 ip-172-31-35-61 sshd[1378]: AuthorizedKeysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys ubuntu SHA256:JNmAYRfhF8HfEvvkBX1widq/jYb0vSG4ncTPl+Zf
Sep 04 10:32:44 ip-172-31-35-61 sshd[1378]: Connection closed by authenticating user ubuntu 172.31.45.54 port 49784 [preauth]
ubuntu@ip-172-31-35-61:~$ touch text.txt
ubuntu@ip-172-31-35-61:~$ sudo service ssh restart
ubuntu@ip-172-31-35-61:~$
Type here to search
29°C Partly sunny
ENG
16:28
04-09-2024

Client


Microsoft Windows [Version 10.0.19045.4780]
(c) Microsoft Corporation. All rights reserved.
C:\Users\PC-1>cd Downloads
C:\Users\PC-1\Downloads>ssh -i "amayac.pem" ubuntu@ec2-16-171-206-5.eu-north-1.compute.amazonaws.com
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Wed Sep 4 10:26:14 UTC 2024
System load: 0.0 Temperature: -273.1 C
Usage of /: 23.1% of 6.71GB Processes: 106
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Wed Sep 4 10:26:14 UTC 2024
System load: 0.0 Temperature: -273.1 C
Usage of /: 23.1% of 6.71GB Processes: 106
Memory usage: 22% Users logged in: 0
Swap usage: 0% IPv4 address for ens5: 172.31.45.54
Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
Last login: Wed Sep 4 09:00:38 2024 from 103.135.95.46
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-45-54:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_ed25519
Your public key has been saved in /home/ubuntu/.ssh/id_ed25519.pub

```
ubuntu@ip-172-31-45-54:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_ed25519
Your public key has been saved in /home/ubuntu/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:JNmAYRfhF8HfEvvkBX1widq/jYb0vSG4ncTPl+Zf64o ubuntu@ip-172-31-45-54
The key's randomart image is:
+--[ED25519 256]--+
|    oo=+o.   .o.o|
|   ..o +... ...o.|
|      + +. +o. . |
|       +  +.o..  |
|        S  = ..  |
|           *  . .|
|          o * +=|
|           * O+B|
|          E ==B=|
+----[SHA256]-----+
ubuntu@ip-172-31-45-54:~$ ssh-copy-id ubuntu@172.31.35.61
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
The authenticity of host '172.31.35.61 (172.31.35.61)' can't be established.
ED25519 key fingerprint is SHA256:vUDXDExs3mxzO4rI/OR2zL67aj2HXPlv3TWBvI91A7A.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ubuntu@172.31.35.61: Permission denied (publickey).
ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.35.61
^C
ubuntu@ip-172-31-45-54:~$ ssh-copy-id ubuntu@172.31.35.61
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ubuntu@172.31.35.61: Permission denied (publickey).
ubuntu@ip-172-31-45-54:~$ ssh-copy-id ubuntu@172.31.35.61
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
(ubuntu@172.31.35.61) Password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'ubuntu@172.31.35.61'"
and check to make sure that only the key(s) you wanted were added.

ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.61
ssh: connect to host 172.31.0.61 port 22: Connection timed out
ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.61
ssh: connect to host 172.31.0.61 port 22: Connection timed out
```

```
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ubuntu@172.31.35.61: Permission denied (publickey).
ubuntu@ip-172-31-45-54:~$ ssh-copy-id ubuntu@172.31.35.61
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
(ubuntu@172.31.35.61) Password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'ubuntu@172.31.35.61'"
and check to make sure that only the key(s) you wanted were added.

ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.61
ssh: connect to host 172.31.0.61 port 22: Connection timed out
ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.61
ssh: connect to host 172.31.0.61 port 22: Connection timed out
ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.61
^C
ubuntu@ip-172-31-45-54:~$ ssh ubuntu@172.31.35.61
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Wed Sep  4 10:44:55 UTC 2024

  System load:  0.0               Temperature:           -273.1 C
  Usage of /:   23.1% of 6.71GB   Processes:             112
  Memory usage: 24%               Users logged in:       1
  Swap usage:   0%                IPv4 address for ens5: 172.31.35.61


Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Wed Sep  4 09:03:10 2024 from 103.135.95.46
ubuntu@ip-172-31-35-61:~$ ls
text.txt
ubuntu@ip-172-31-35-61:~$
```

All the commands have been executed and the output has been obtained successfully