

This is certify that

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for completing list of experiments of the s
System Administration laboratory
during academic year 2020-21

OCT 2020

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Installation of ubuntu

To install FTP server on Ubuntu

To install FTP server on Windows

Using commands upload download file on FTP

To install HTTP server on Ubuntu

To install HTTP server on Windows

To install SSH server on Ubuntu

To install Telnet server on Ubuntu

To install Samba server on Ubuntu

*click on bookmark



Aim - Installation of Ubuntu

Theory -

Ubuntu is open source operating system. and easy to operate. open source means freely accessible and free to download.

Requirements -

At least 25 GB storage and 5 GB for installations
2 GB RAM for Ubuntu is recommended.

create bootable USB of Ubuntu ISO

Plug in cub and restart your system

Then select the install ubuntu option. then select language type, keyboard layout and time zone

Then select prepare for install. select normal installation & select media update

Then select the
 → Erase disk and install
 ubuntu option
 click on install now
 After installation
 provide login details

Some time after that installation
 will be done

LVM ->

In LVM dynamic partitions
 are created means you can
 create / resize / delete LVM partitions
 they called logical volumes

1) If you have more than
 one hardware the logical
 partition can extend over more
 than one disk i.e. they are
 not limited by the size of
 one disk rather than total
 aggregate size

2) You can create a "striped"
 LVS so that I/O can be
 distributed to all LV in parallel

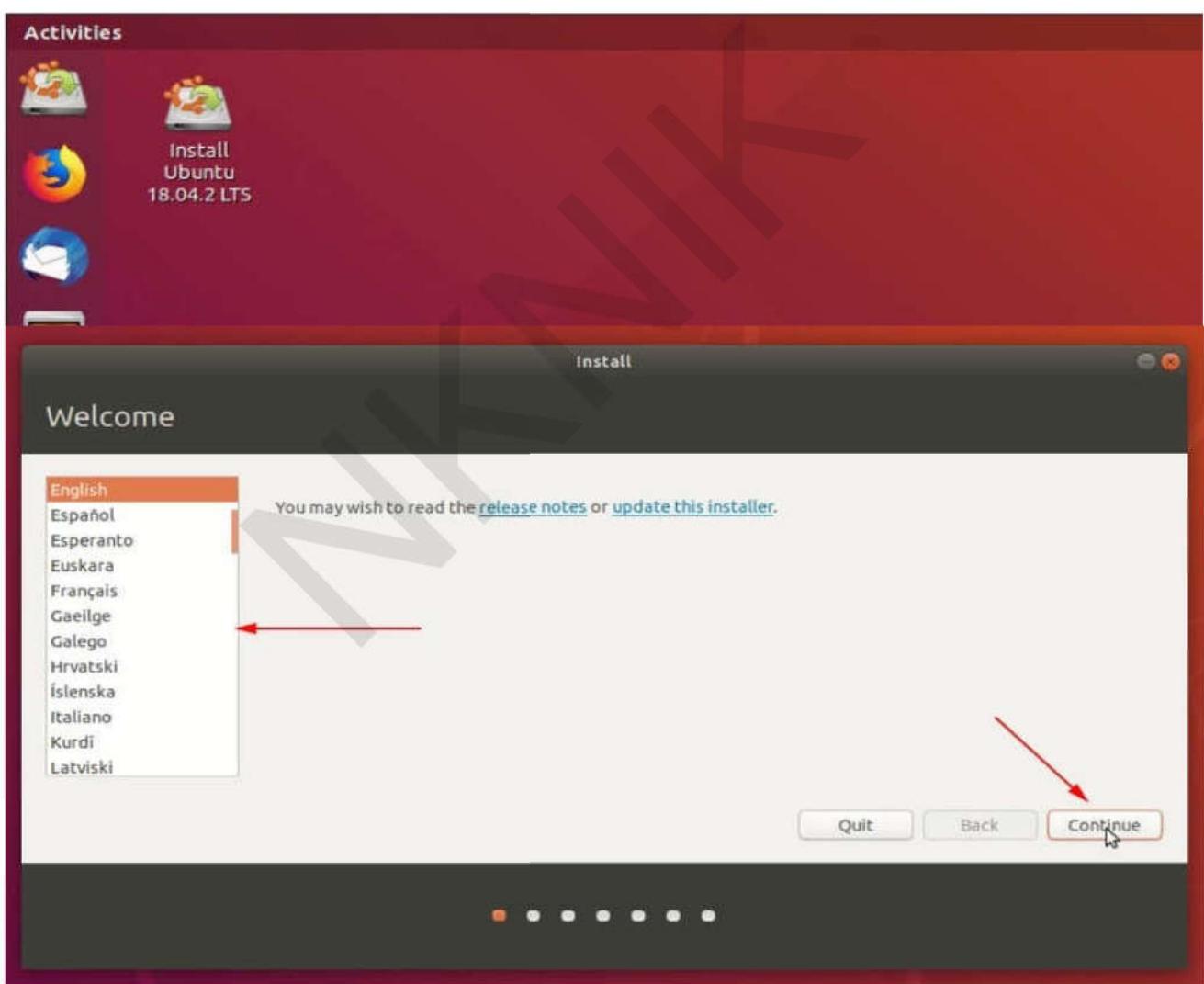
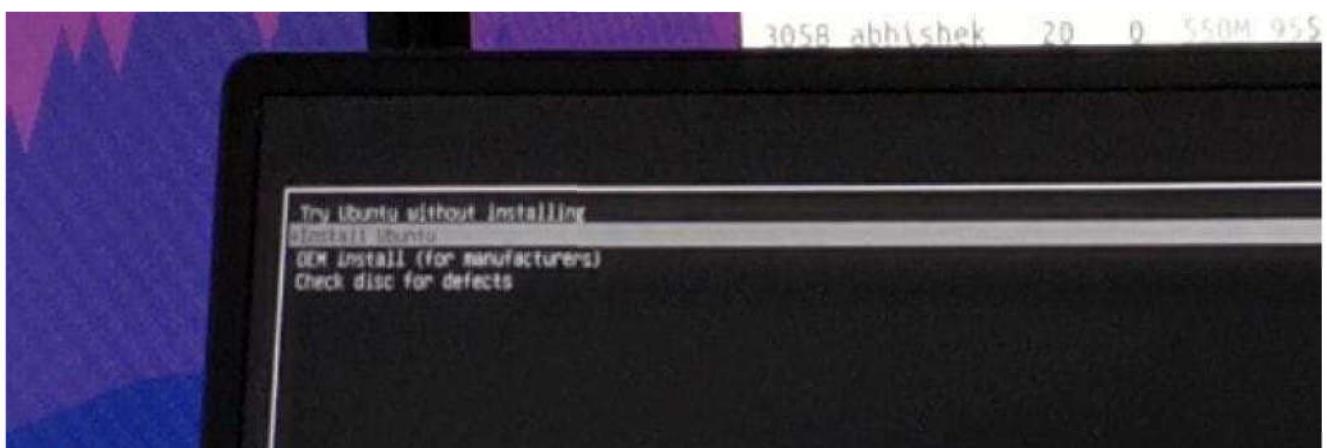
***** (PAVAN) *****

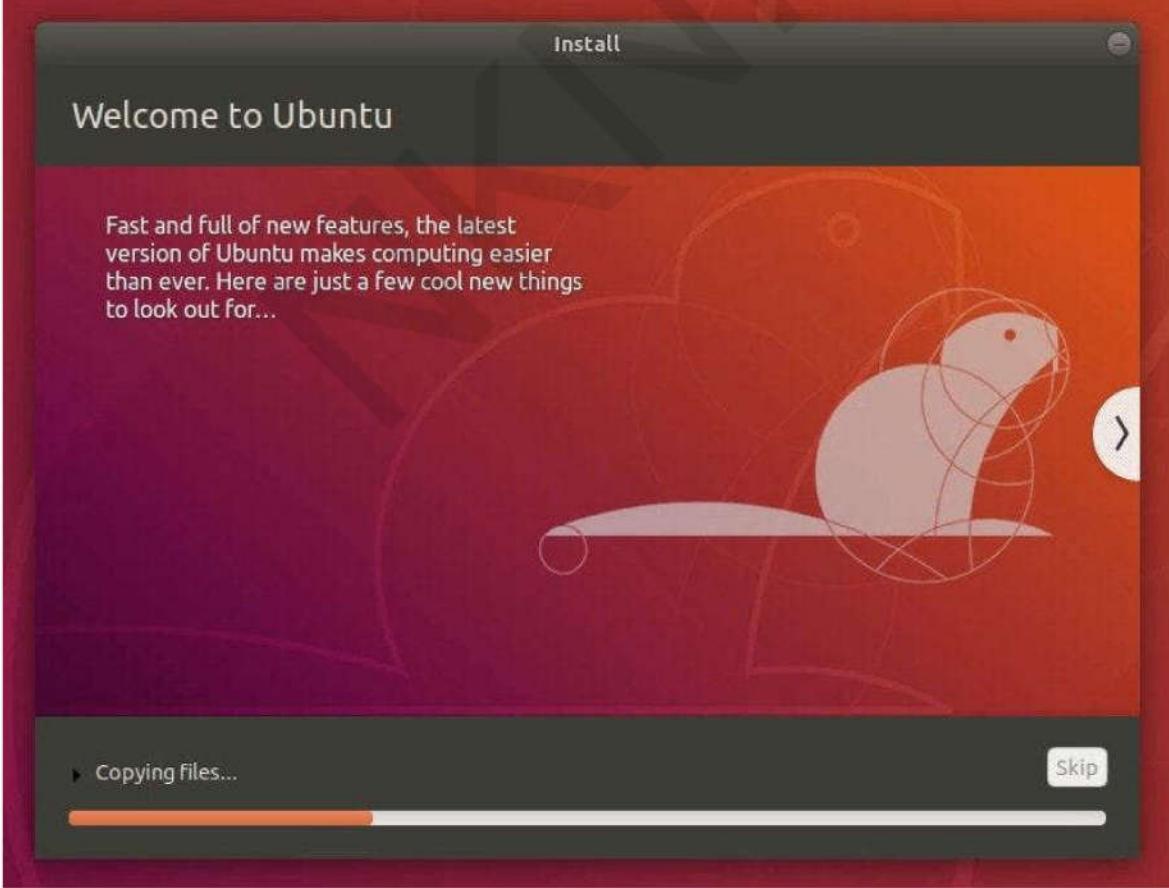
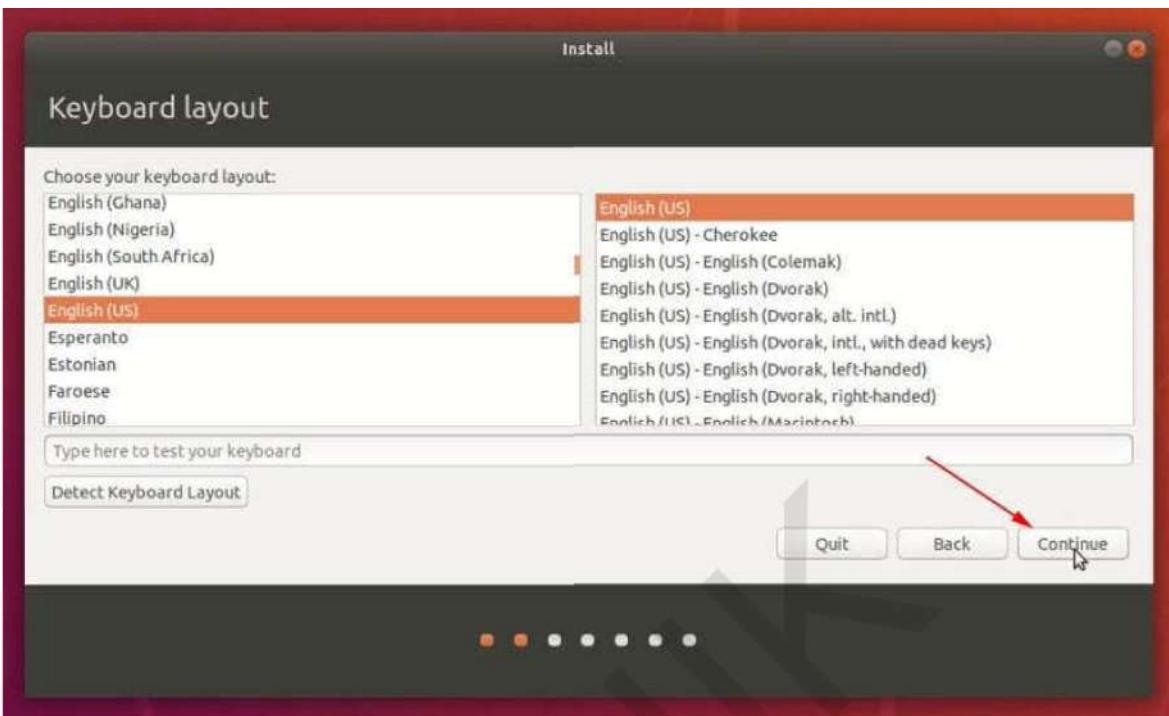
similar to raid-0 but easy
to set-up

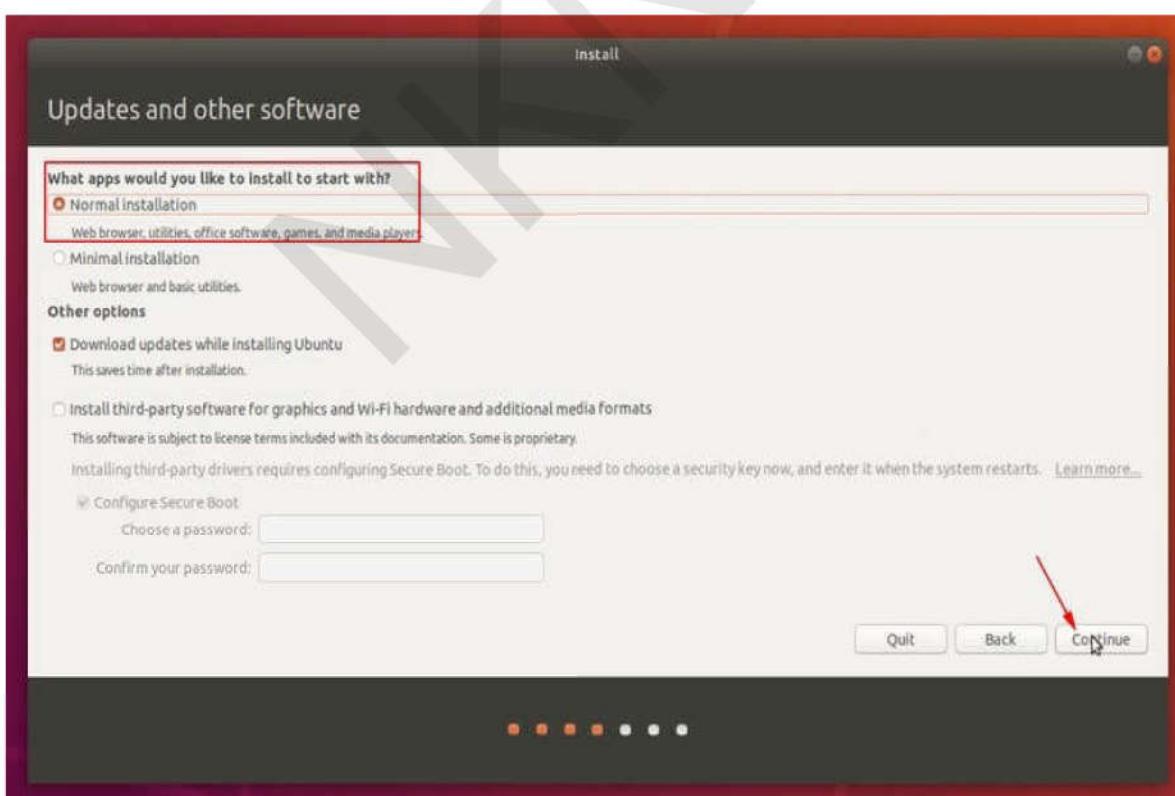
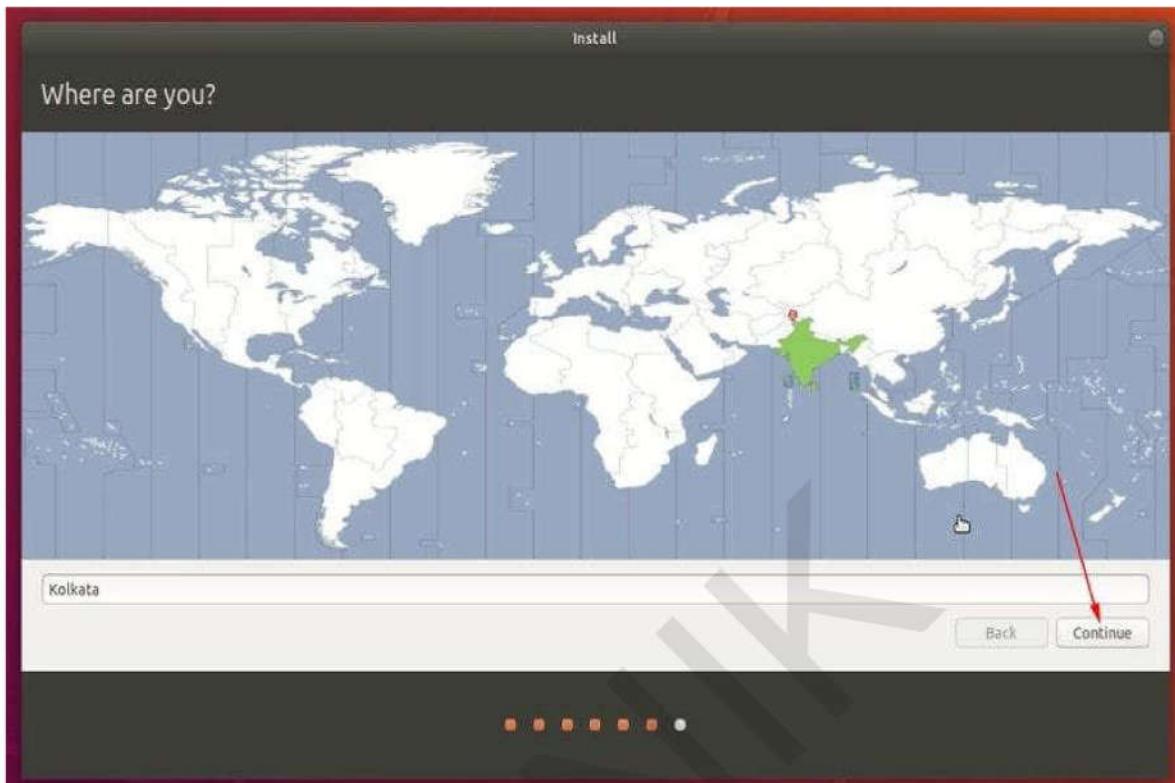
3) You can create read only
snapshot of LV. You can
update the snapshot at later
time if you need it. This
is handy for server backup
process for instance if you can
not stop all application for
write the you can create snap
shot and backup the snapshot
to LV.

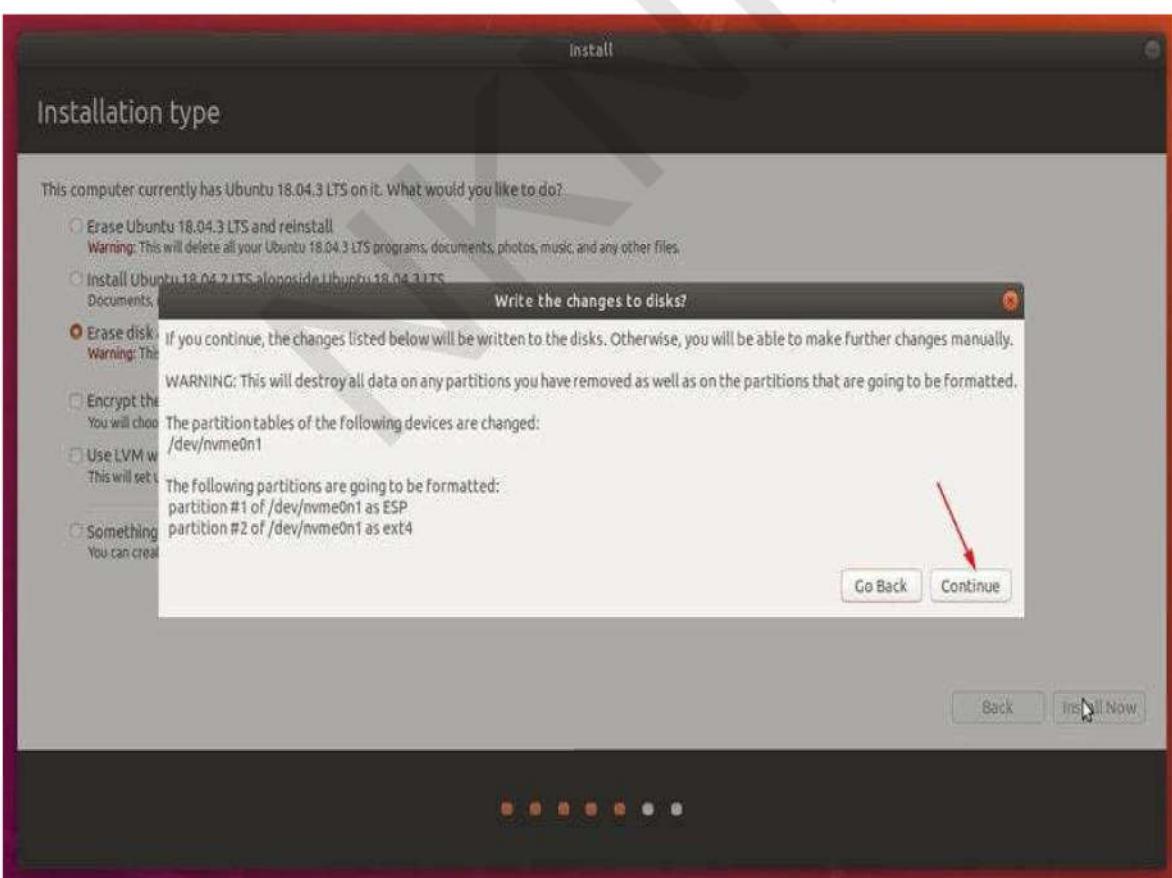
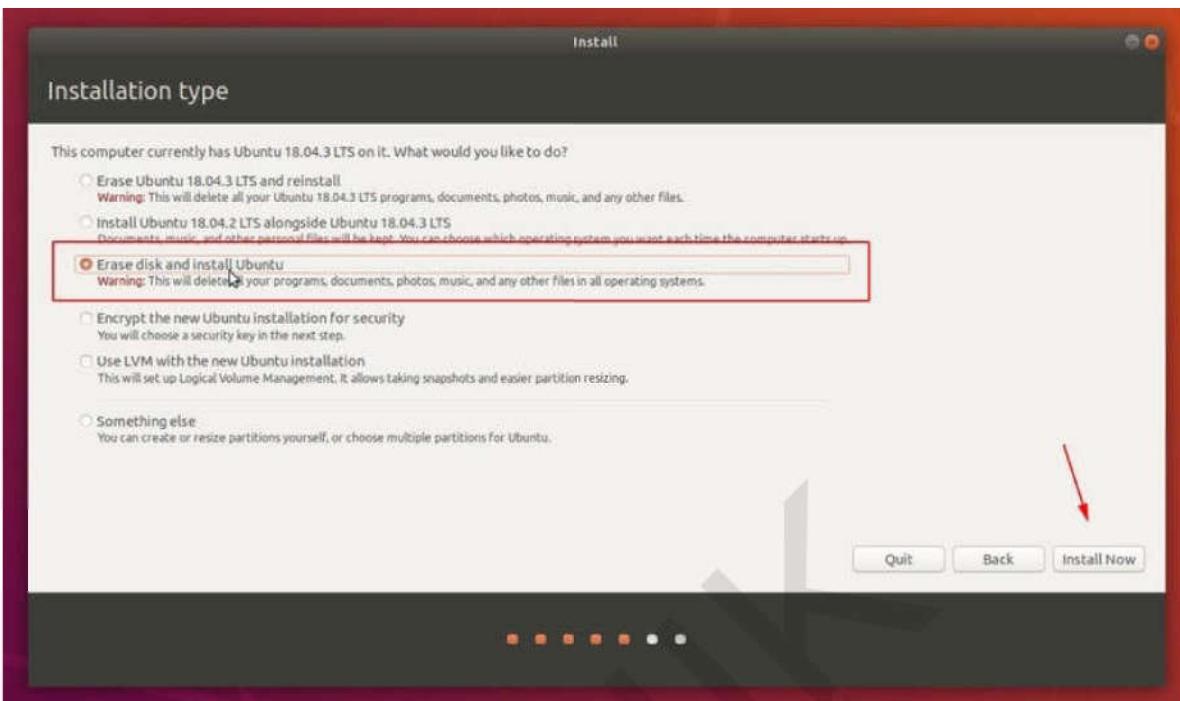
Conclusion -

Hence successfully installed
Ubuntu.









Install

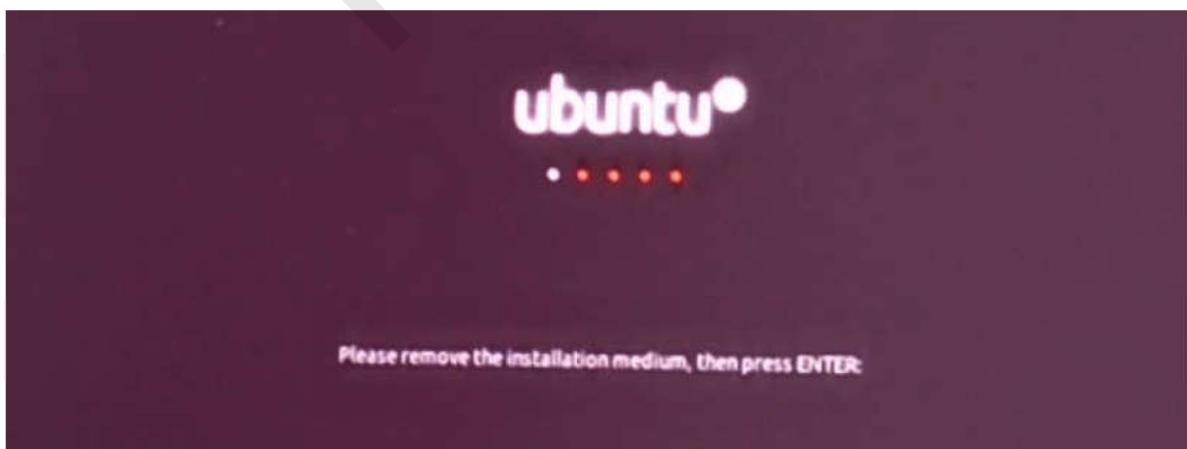
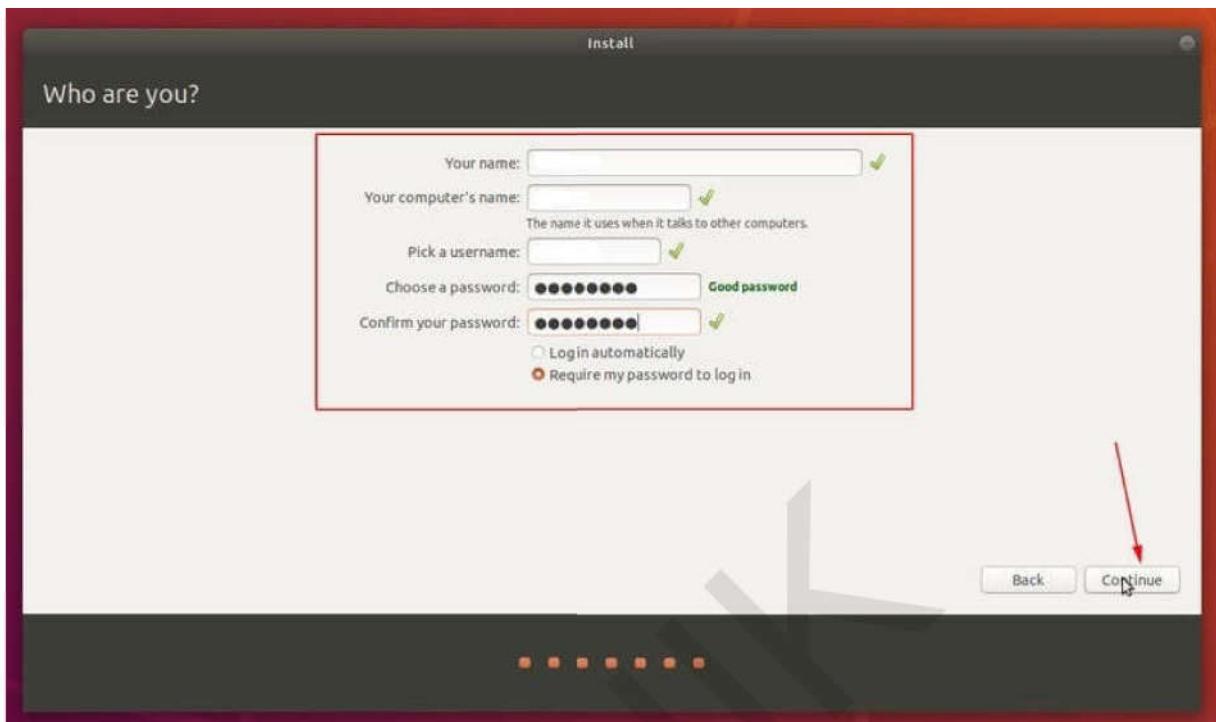
Welcome to Ubuntu

Fast and full of new features, the latest version of Ubuntu makes computing easier than ever. Here are just a few cool new things to look out for...



Copying files...

Skip



Aim - To Install FTP SERVER

Theory -

The file transfer protocol (FTP) is a standard network protocol used for the transfer of computer files between a client and server on a computer.

FTP build on client-server model architecture using separate control model and data connection between the client and the server.

FTP clients can authenticate themselves using clear-text protocol (signin) normally inform of username and password. and encrypt the content

FTP is often secured with SSL/TSL (FTPS) or replaced by SSH file transfer protocol (SFTP)

The first FTP client application were command-line program developed before

operating system had graphical user interface and are still shipped with most windows, UNIX and Linux operating systems.

Many FTP clients and encrypt automation abilities have since been developed for desktop, servers, mobile devices and hardware and FTP has been incorporated into productivity applications such as HTML editors.

Communication and Data transfers

FTP may run into active or passive mode, which determines how the data connection is established. In both cases the client creates a TCP connection from a random usually unprivileged port 'N' to FTP command port 21.

Active mode -

In Active mode the client starts listening for incoming data connection from server on port M. It sends the FTP command PORT M to inform the server on which port is listening. The server then initiates a data channel to the client from the port 20 to the FTP server data port.

In situations where the client behind a firewall and unable to accept incoming TCP connection passive mode may be used in this mode the client uses the Connection control connection to send a PASV command to the server and unable to accept incoming TCP connection.

Conclusion -

Hence installed FTP server

ubuntu [Running] - Oracle VM VirtualBox

Activities Firefox Web Browser Oct 28 12:48 nikhil@nikhil-pc: ~

```
nikhil@nikhil-pc:~$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [63
3 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [350
kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [363
kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [15
9 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [145
kB]
Get:10 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Meta
data [229 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metad
ata [10.8 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packa
ges [78.7 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted i386 Packag
es [12.0 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [79
.9 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted Translation
-en [12.5 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f
Metadata [549 kB]
```

Type here to search 0 12:51 PM 28-Oct-20

ubuntu [Running] - Oracle VM VirtualBox

Activities Terminal Oct 28 12:49 nikhil@nikhil-pc: ~

```
nikhil@nikhil-pc:~$ sudo apt install vsftpd
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  vsftpd
0 upgraded, 1 newly installed, 0 to remove and 397 not upgraded.
Need to get 115 kB of archives.
After this operation, 338 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu focal/main amd64 vsftpd amd64 3.0.3-1
2 [115 kB]
Fetched 115 kB in 1s (110 kB/s)
Preconfiguring packages ...
Selecting previously unselected package vsftpd.
(Reading database ... 145341 files and directories currently installed.)
Preparing to unpack .../vsftpd_3.0.3-12_amd64.deb ...
Unpacking vsftpd (3.0.3-12) ...
Setting up vsftpd (3.0.3-12) ...
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /l
ib/systemd/system/vsftpd.service.
vsftpd.conf:1: Line references path below legacy directory /var/run/, updating
/var/run/vsftpd/empty → /run/vsftpd/empty; please update the tmpfiles.d/ drop-i
n file accordingly.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3) ...
nikhil@nikhil-pc:~$
```

Type here to search 0 12:51 PM 28-Oct-20

Ubuntu 12.04 LTS - Oracle VM VirtualBox

Activities Terminal Oct 28 12:57

```
root@nikhil-pc:/home/nikhil
command 'alid' from deb lib-utils (4.6+git20120811-4ubuntu2)
command 'tdd' from deb devtodo (0.1.20-7build1)

Try: apt install <deb name>
root@nikhil-pc:/home/nikhil# adduser ftpuser
Adding user 'ftpuser' ...
Adding new group 'ftpuser' (1001) ...
Adding new user 'ftpuser' (1001) with group 'ftpuser' ...
Creating home directory '/home/ftpuser' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for ftpuser
Enter the new value, or press ENTER for the default
    Full Name []: nikkk
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
root@nikhil-pc:/home/nikhil# sudo gedit /etc/vsftpd.conf

(gedit:5086): Tepl-WARNING **: 12:57:00.765: GVfs metadata is not supported. Fallback to TeplMetadataManager. Either GVfs is not correctly installed or GVfs metadata are not supported on this platform. In the latter case, you should configure Tepl with --disable-gvfs-metadata.
root@nikhil-pc:/home/nikhil#
```

Type here to search Oct 28 12:56

Activities Text Editor * vsftpd.conf Oct 28 12:56

```
# This file contains settings up a vsftpd server. To make any changes, make sure you have root access.
# 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

# Uncomment this to enable any form of FTP write command.
write_enable=YES
```

Type here to search Plain Text Tab Width: 8 Ln 25, Col 21 INS

Activities Terminal Oct 28 13:00 root@nikhil-pc:/home/nikhil

```
valid_lft forever preferred_lft forever
inet6 ::1/128 scope host
    valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP qlen 1000
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.157/24 brd 192.168.0.255 scope global dynamic noprefixroute
        valid_lft 85402sec preferred_lft 85402sec
        inet6 fd01::54aa:bc70:dac1:211d/64 scope global temporary dynamic
            valid_lft 268sec preferred_lft 268sec
            inet6 fd01::bf04:b157:baf3:24c7/64 scope global dynamic mngtmpaddr noprefixroute
route
    valid_lft 268sec preferred_lft 268sec
    inet6 fe80::485c:37a1:adff:d419/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
root@nikhil-pc:/home/nikhil# ^C
root@nikhil-pc:/home/nikhil# ftp 192.168.0.157
Connected to 192.168.0.157.
220 (vsFTPd 3.0.3)
Name (192.168.0.157:nikhil): nikhil
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> by
221 Goodbye.
root@nikhil-pc:/home/nikhil#
```

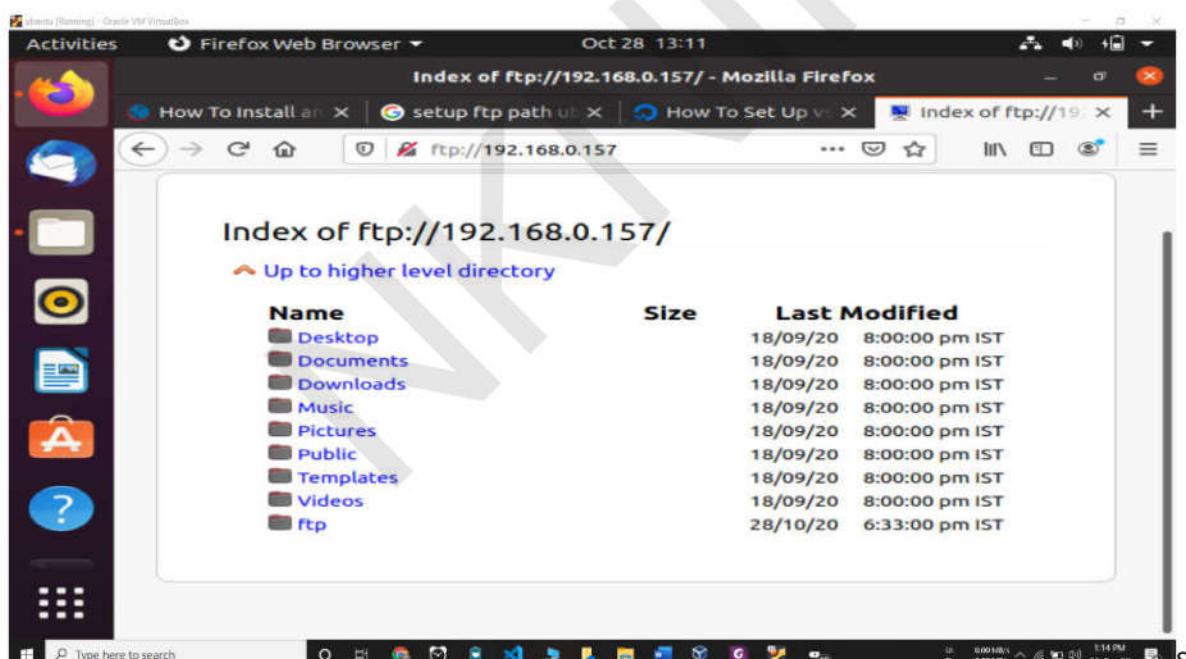
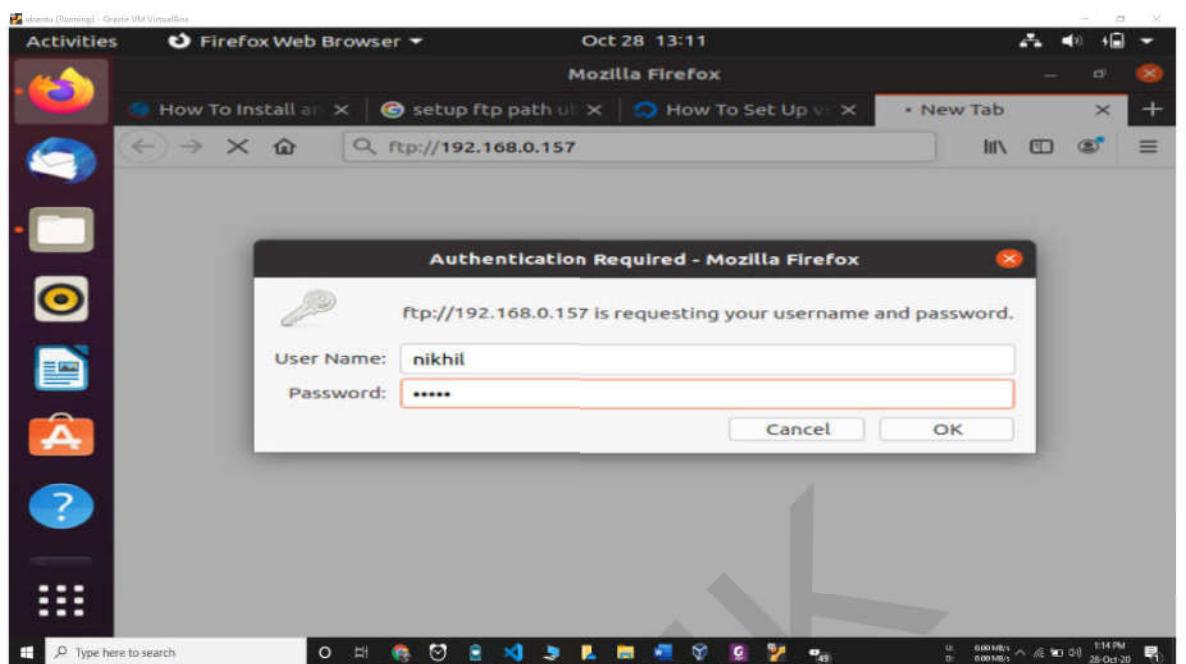
Activities Firefox Web Browser Oct 28 13:11 Index of ftp://192.168.0.157 - Mozilla Firefox

How To Install an X setup ftp path u How To Set Up v Index of ftp://192.168.0.157

Index of ftp://192.168.0.157/

Up to higher level directory

Name	Size	Last Modified
Desktop	18/09/20	8:00:00 pm IST
Documents	18/09/20	8:00:00 pm IST
Downloads	18/09/20	8:00:00 pm IST
Music	18/09/20	8:00:00 pm IST
Pictures	18/09/20	8:00:00 pm IST
Public	18/09/20	8:00:00 pm IST
Templates	18/09/20	8:00:00 pm IST
Videos	18/09/20	8:00:00 pm IST
ftp	28/10/20	6:33:00 pm IST



```
udo apt-get update
```

```
d apt-get install vsftpd
```

```
sudo ifconfig
```

```
sudo passwd
```

```
SU
```

```
adduser ftpuser
exit
cd /home/
sudo gedit /etc/vsftpd.conf
sudo systemctl restart vsftpd
sudo systemctl enable vsftpd
start
ftp 12.168.0.157
```

```
ftp>ls
get put
```

Aim - Installation and configuration of
FTP server on windows OS

Theory -

Building own FTP file transfer protocol) server can be one of the easiest and most convenient solution and restrictions typically found with most cloud storage services.

There are also many benefits running your FTP server.

For example

it's private and you have absolute control. It's fast depending upon internet connection speed and there is virtually no limit on the amount and type of data you can store.

Also, you don't have restrictions on the sizes either, which means that you can transfer something as small as a text file or a 100GB PC burnup, and you can store.

***** (PAVAN) *****

There are many benefits running your FTP server. For example, It's private and you have absolute control. It's fast depending on your internet connection speeds and there is virtually no limits on the amount and type of data you can store.

Also, you don't have restriction on file sizes either, which are 1000 GB or backup and you can even create multiple accounts to let friends and family access or store content separately too.

You will find many third-party software on the internet to build a file transfer server, but (Windows) include an FTP server feature that you can set up without the need to recourse to other situations. In this we will walk you through the steps on your PC to transfer files separately over the internet.

Very similar to previous version including the necessary component to run an FTP server. Follow the steps below to install an FTP.

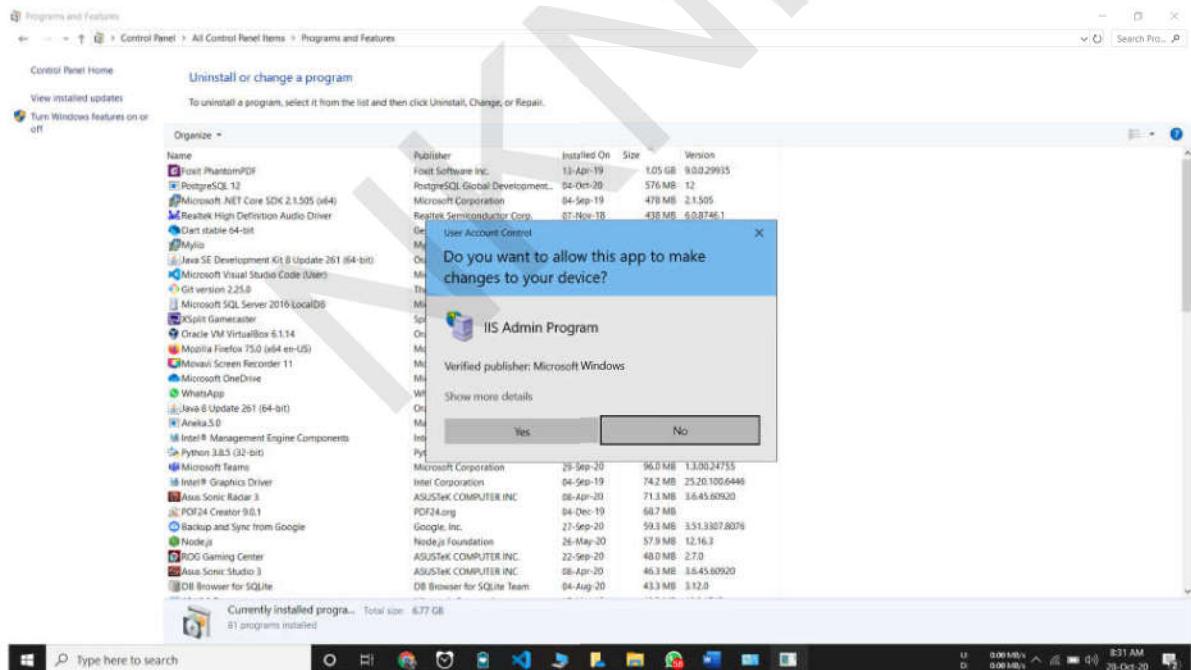
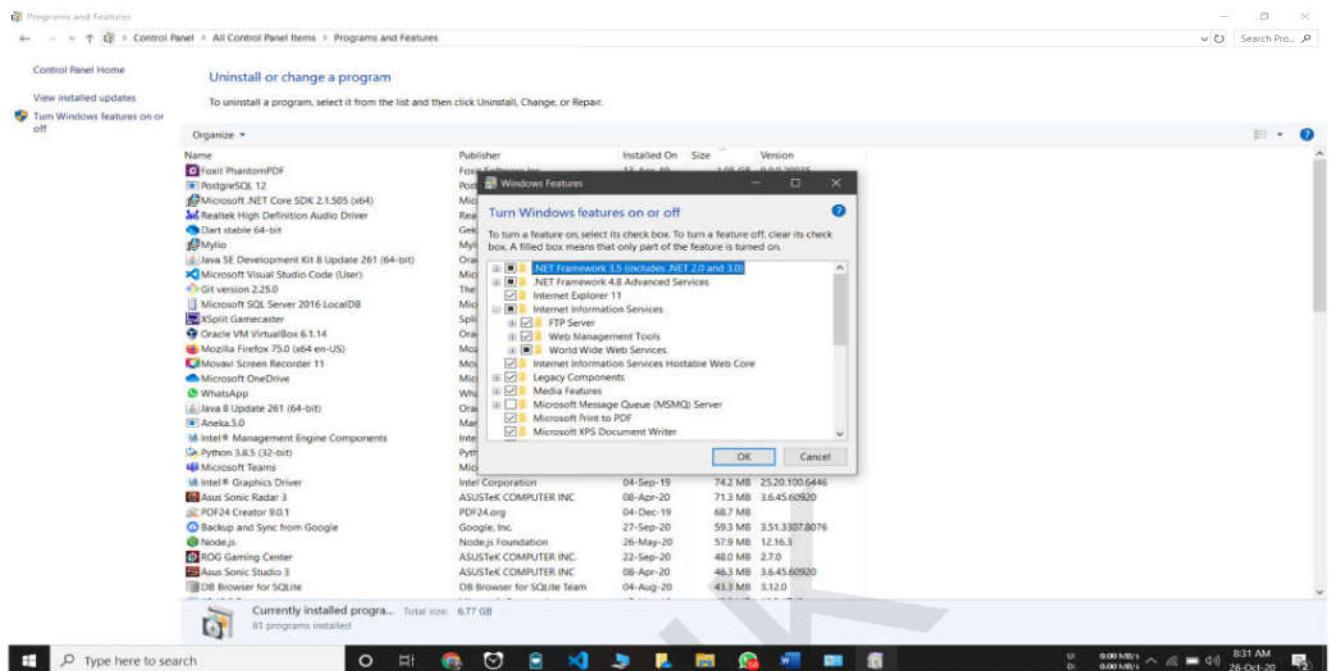
If you have windows firewall running security feature will block at the point you should be able to use newly create FTP server from your network.

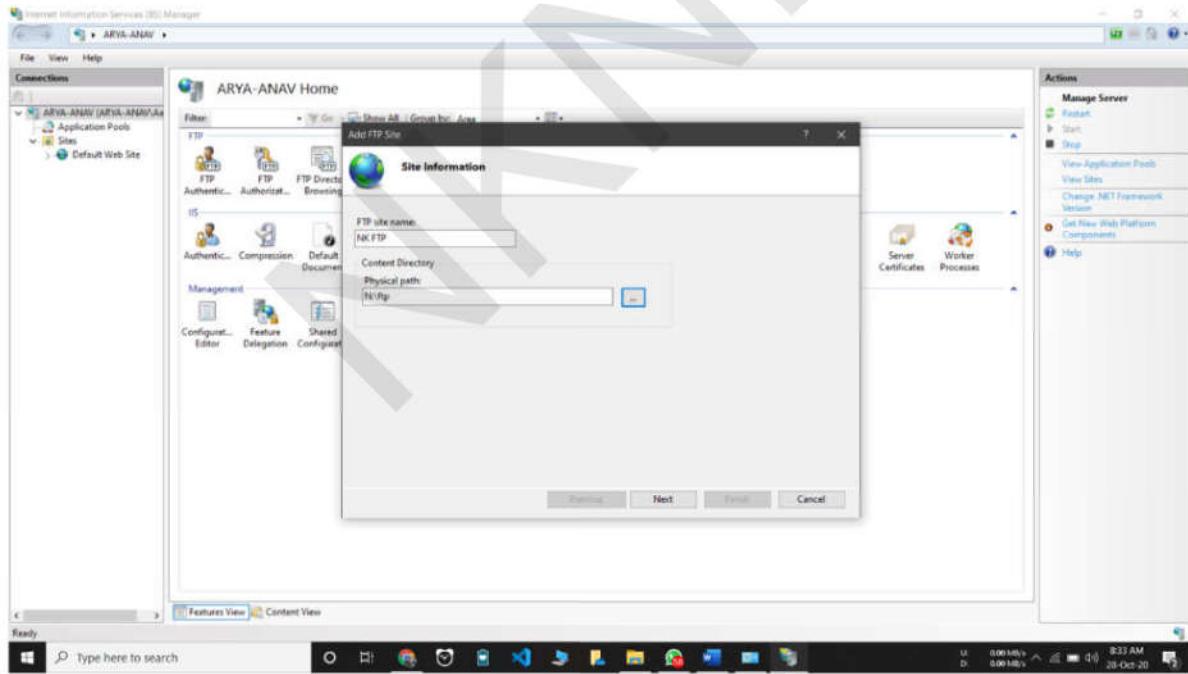
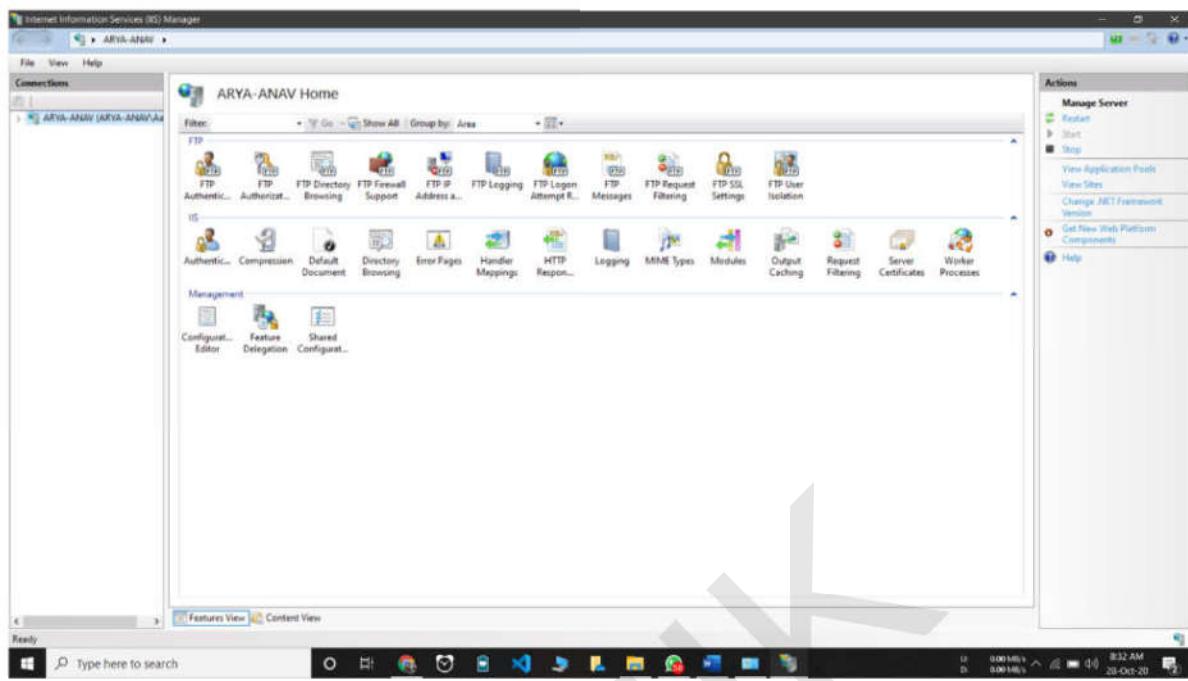
Make sure to check your software vendor support website for specific instruction to allow on FTP server. If you are using another security software other than the windows firewall for your FTP server to be reachable from the internet you need to configure your router to open TCP/ZIP port number 21 to allow connection to your PC.

The instruction to forward a port will vary from routers.

Conclusion -

Hence successfully installed
FTP server on windows





v

The screenshot displays two windows from the Internet Information Services (IIS) Manager on a Windows operating system.

Top Window: Shows the 'Select Command Prompt' interface. It lists network adapter details for 'ARYA-ANAV' including:

- Wireless LAN adapter Local Area Connection* 3:
 - Media State : Media disconnected
 - Connection-specific DNS Suffix . :
- Wireless LAN adapter Local Area Connection* 13:
 - Media State : Media disconnected
 - Connection-specific DNS Suffix . :
- Wireless LAN adapter Wi-Fi:
 - Connection-specific DNS Suffix . :
 - IPv6 Address : fe80::dce5:4703:4f0b:52c5
 - Temporary IPv6 Address : fe80::dce5:4703:4f0b:52c5%13
 - Link-local IPv6 Address : fe80::dce5:4703:4f0b:52c5%13
 - IPv4 Address : 192.168.0.152
 - Subnet Mask : 255.255.255.0
 - Default Gateway : fe80::e0f:9aff:feaa:5e5d%13
 - 192.168.0.1
- Ethernet adapter Bluetooth Network Connection:
 - Media State : Media disconnected
 - Connection-specific DNS Suffix . :

Bottom Window: Shows the 'ARYA-ANAV Home' page in IIS Manager. A modal dialog titled 'Binding and SSL Settings' is open, showing the following configuration:

- Binding:** IP Address: 192.168.0.152, Port: 21, Enable Virtual Host Names checked.
- SSL:** No SSL selected.
- SSL Certificate:** Not Selected.

The Actions pane on the right side of both windows includes options like Manage Server, Restart, Start, Stop, Advanced Settings, and Help.



Index of /

Name	Size	Date Modified
abc	0B	7/24/20, 7:15:00 PM



Aim - Using command) upload / download file from FTP
SFTP

Theory -

FTPS -

Explicit FTPS is an extension to the FTP standard that allows clients to request an FTP session to be encrypted. This is done by sending the AUTH TLS command. The server has the option of allowing or denying connection that do not request TLS. This protocol extension is defined in RFC 4217 implicit FTPS standard for FTP that requires to use SSL or TLS connection. This was required to use different port than plain FTP.

FTP over SSH .. the procedure of turning a normal FTP session over a secure shell connection. Because FTP use multiple

TCP connection. It is particularly difficult to tunnel over SSH with many SSH clients, attempting to set up tunnel for the control channel will protect only that channel. When data is tunneled the FTP software at either end sets up new TCP connection and thus have to compromise on confidentiality or integrity protection.

Otherwise it

is necessary for the SSH client software to have specific knowledge of FTP protocol to monitor and rewrite FTP control channel messages and automatically open new port for forwarding for FTP data channels.

The software

packages that support this mode include Total Connect Secure of SSH communication security software suit. Most common web browser can remove files hosted on FTP servers, although they may not support protocol.

extension such as FTP when
 FTP author HTTP - URL is
 supplied the accessible content
 on web browser remote servers
 are presented in manner that
 similar to that used on other
 web content.

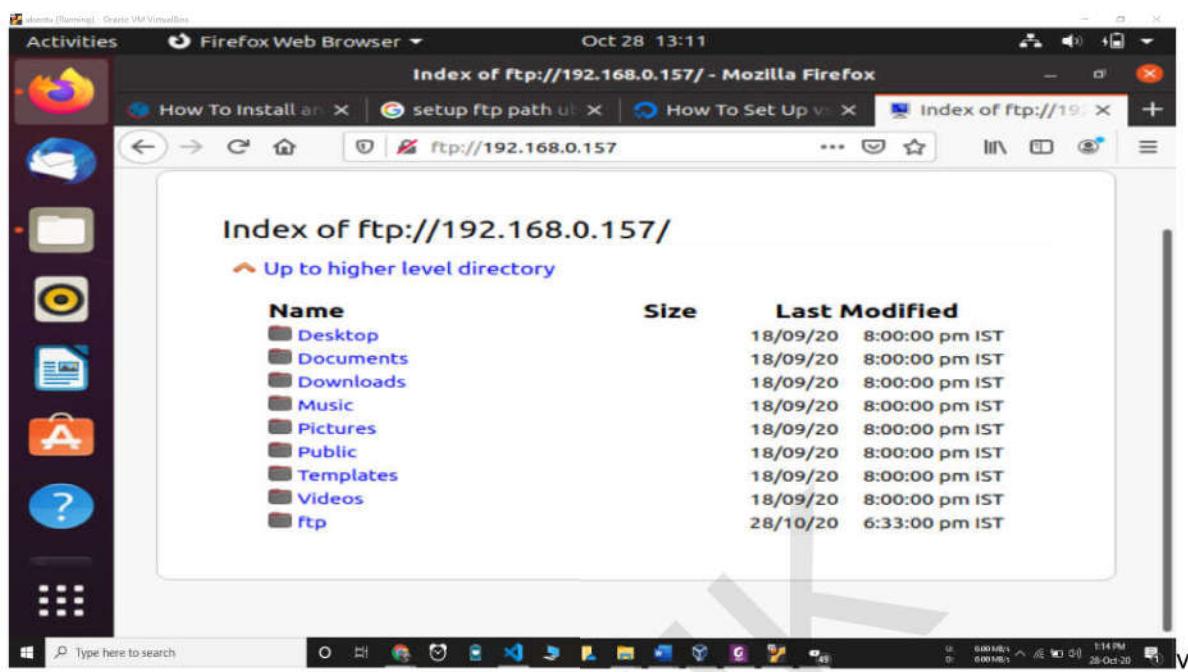
A full featured FTP
 client can run within browser
 in form of extension called
 FireFTP

More detail on specifying
 a username and password may
 be found in the browsers
 documentation by default most
 of browsers use passive
 mode which more easily traverse
 and - up firewall.

Some variant
 has existed in how different
 browsers treat path resolution
 in case where there is a
 non-root home directory of
 user.

Conclusion -

Hence uploaded & download -
 - files from FTP servers



The screenshot shows a terminal window with a dark theme. It displays an FTP session between a root user on a local machine and an FTP server at `192.168.0.157`. The session starts with password authentication issues, followed by a successful connection, directory listing, and file transfer commands.

```
331 Please specify the password.  
Password:  
530 Login incorrect.  
Login failed.  
ftp> by  
221 Goodbye.  
root@nikhil-pc:/home/nikhil# ftp 192.168.0.157  
Connected to 192.168.0.157.  
220 (vsFTPd 3.0.3)  
Name (192.168.0.157:nikhil): nikhil  
331 Please specify the password.  
Password:  
230 Login successful.  
Remote system type is UNIX.  
Using binary mode to transfer files.  
ftp> ls  
200 PORT command successful. Consider using PASV.  
150 Here comes the directory listing.  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Desktop  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Documents  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Downloads  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Music  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Pictures  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Public  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Templates  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Videos  
drwxrwxr-x 2 1000 1000 4096 Oct 28 13:03 ftp  
226 Directory send OK.  
ftp>
```

Aim - To install HTTP server
on ubuntu

Theory -

HTTP is a protocol which allows the fetching of resources such as HTML documents. It is the foundation of any data exchange on the web and it is client server protocol which means request are initiated by recipient. Usually the web browser fetches the complete document by connecting from different sub documents fetched for picture + text layout division image, video script and more.

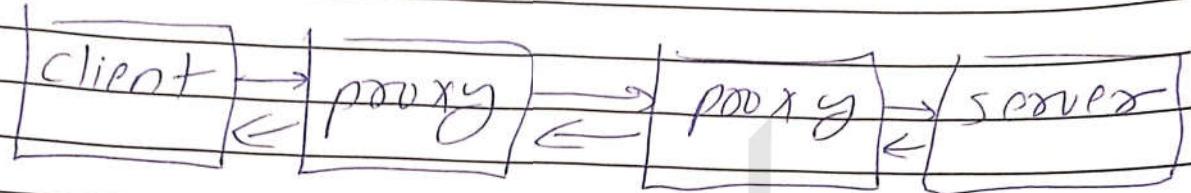
Client and server communicate by exchanging individual messages. The message sent by client usually a web browser are called request and the message sent by server as an answer are called response.

Designed in early 1990's HTTP is an extensible protocol which has evolved over time. This is an application layer protocol that is sent over TCP or over a TLS encryption TCP connection through reliable transmission protocol. Could theoretically be used. Due to its extensibility, it is used to not fetch only hyper text document but also images and video or to post content to server like HTML from results. HTTP can also be formed document to update web pages on demand.

HTTP is a client server protocol request are sent by one entity, the user agent. Most of the time the user agent is a web browser, but it can be anything, for example a robot that could the web to populate and maintain an search engine index.

Each individual request is sent to a server there are numerous entries collectively.

called proxies which perform different operations and act as gateway or cache.



there are more computers between a browser and servers handling the request there are routers, modems and more.

Thanks to the layered design of the web there are hidden in network and transport layers. HTTP is on top, at the application layer. Although important to diagnose network problem, the underlying layers are mostly irrelevant to the description of HTTP.

Conclusion

Hence implemented HTTP server on ubuntu.

V

Activities Terminal Oct 28 13:13 root@nikhil-pc: /home/nikhil

```
331 Please specify the password.  
Password:  
530 Login incorrect.  
Login failed.  
ftp> by  
221 Goodbye.  
root@nikhil-pc:/home/nikhil# ftp 192.168.0.157  
Connected to 192.168.0.157.  
220 (vsFTPd 3.0.3)  
Name (192.168.0.157:nikhil): nikhil  
331 Please specify the password.  
Password:  
230 Login successful.  
Remote system type is UNIX.  
Using binary mode to transfer files.  
ftp> ls  
200 PORT command successful. Consider using PASV.  
150 Here comes the directory listing.  
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drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Documents  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Downloads  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Music  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Pictures  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Public  
drwxr-xr-x 2 1000 1000 4096 Sep 18 14:30 Templates  
drwxrwxr-x 2 1000 1000 4096 Sep 18 14:30 Videos  
226 Directory send OK.  
ftp>
```

U: 0.00 MB/s D: 0.00 MB/s 11:56 PM 28-Oct-20

V

Activities Terminal Oct 28 13:53 nikhil@nikhil-pc: ~/Desktop

```
ntkhil@ntkhil-pc:~/Desktop$ sudo apt install apache2  
[sudo] password for nikhil:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
apache2-bin apache2-data apache2-utils libapr1 libaprutil1  
libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0  
Suggested packages:  
apache2-doc apache2-suexec-pristine | apache2-suexec-custom  
The following NEW packages will be installed:  
apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1  
libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0  
0 upgraded, 9 newly installed, 0 to remove and 397 not upgraded.  
Need to get 1,819 kB of archives.  
After this operation, 7,935 kB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libapr1 amd64 1.6.5-  
1ubuntu1 [91.4 kB]  
Get:2 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1 amd64 1.  
6.1-4ubuntu2 [84.7 kB]  
Get:3 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-dbd-sql  
ite3 amd64 1.6.1-4ubuntu2 [10.5 kB]  
Get:4 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-ldap amd  
64 1.6.1-4ubuntu2 [8,736 B]  
Get:5 http://in.archive.ubuntu.com/ubuntu focal/main amd64 liblua5.2-0 amd64 5.  
2.4-1.1build3 [106 kB]  
Get:6 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-bin  
amd64 2.4.41-4ubuntu3.1 [1,180 kB]
```

U: 0.00 MB/s D: 0.00 MB/s 11:56 PM 28-Oct-20

Activities Terminal Oct 28 13:55 nikhil@nikhil-pc: ~/Desktop

```
nikhil@nikhil-pc:~/Desktop$ sudo ufw app list
Available applications:
 Apache
 Apache Full
 Apache Secure
 CUPS
 OpenSSH
nikhil@nikhil-pc:~/Desktop$ sudo ufw allow 'Apache'
Rules updated
Rules updated (v6)
nikhil@nikhil-pc:~/Desktop$ sudo ufw status
Status: inactive
nikhil@nikhil-pc:~/Desktop$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor pres
   Active: active (running) since Wed 2020-10-28 13:53:46 IST; 1min 37s ago
     Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 7605 (apache2)
   Tasks: 55 (limit: 4657)
    Memory: 4.9M
      CGroup: /system.slice/apache2.service
              ├─7605 /usr/sbin/apache2 -k start
              ├─7607 /usr/sbin/apache2 -k start
              ├─7608 /usr/sbin/apache2 -k start
Oct 28 13:53:46 nikhil-pc systemd[1]: Starting The Apache HTTP Server...
Oct 28 13:53:46 nikhil-pc apachectl[7599]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 192.168.0.157.
Oct 28 13:53:46 nikhil-pc systemd[1]: Started The Apache HTTP Server.
lines 1-15/15 (END)
```

Activities Firefox Web Browser Oct 28 13:56 Apache2 Ubuntu Default Page: It works - Mozilla Firefox

How To Install an X | configure http < X | How To Install th < X | Apache2 Ubuntu De < X +

192.168.0.157

Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, which is split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manpage** for `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

Activities

Activities Terminal Oct 28 14:06 nikhil@nikhil-pc: ~/Desktop

```
Active: active (running) since Wed 2020-10-28 13:53:46 IST; 1min 37s ago
Docs: https://httpd.apache.org/docs/2.4/
Main PID: 7605 (apache2)
Tasks: 55 (limit: 4657)
Memory: 4.9M
CGroup: /system.slice/apache2.service
└─7605 /usr/sbin/apache2 -k start
   ├─7607 /usr/sbin/apache2 -k start
   └─7608 /usr/sbin/apache2 -k start

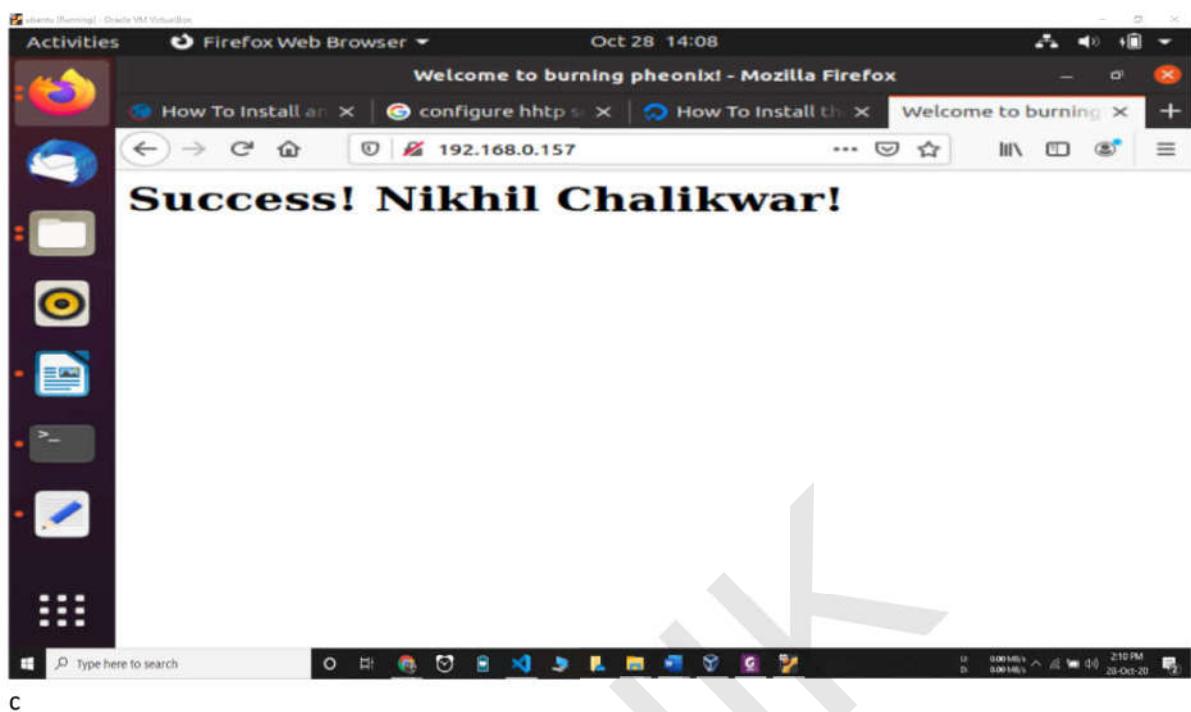
Oct 28 13:53:46 nikhil@nikhil-pc systemd[1]: Starting The Apache HTTP Server...
Oct 28 13:53:46 nikhil@nikhil-pc apachectl[7599]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Oct 28 13:53:46 nikhil@nikhil-pc systemd[1]: Started The Apache HTTP Server.

ntkhil@ntkhil-pc:~/Desktop$ sudo mkdir /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ sudo chown -R $USER:$USER /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ sudo chmod -R 755 /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ nano /var/www/nikhttp/index.html
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/your_domain.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/nikhhttp.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo a2ensite nikhhttp.conf
ERROR: Site nikhhttp does not exist!
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/nikhhttp.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo a2ensite nikhhttp.conf
Enabling site nikhhttp.
To activate the new configuration, you need to run:
    systemctl reload apache2
ntkhil@ntkhil-pc:~/Desktop$
```

C Activities Terminal Oct 28 14:06 nikhil@nikhil-pc: ~/Desktop

```
Oct 28 13:53:46 nikhil@nikhil-pc systemd[1]: Starting The Apache HTTP Server...
Oct 28 13:53:46 nikhil@nikhil-pc apachectl[7599]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Oct 28 13:53:46 nikhil@nikhil-pc systemd[1]: Started The Apache HTTP Server.

ntkhil@ntkhil-pc:~/Desktop$ sudo mkdir /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ sudo chown -R $USER:$USER /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ sudo chmod -R 755 /var/www/nikhttp
ntkhil@ntkhil-pc:~/Desktop$ nano /var/www/nikhttp/index.html
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/your_domain.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/nikhhttp.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo a2ensite nikhhttp.conf
ERROR: Site nikhhttp does not exist!
ntkhil@ntkhil-pc:~/Desktop$ sudo nano /etc/apache2/sites-available/nikhhttp.conf
ntkhil@ntkhil-pc:~/Desktop$ sudo a2ensite nikhhttp.conf
Enabling site nikhhttp.
To activate the new configuration, you need to run:
    systemctl reload apache2
ntkhil@ntkhil-pc:~/Desktop$ sudo a2disssite 000-default.conf
Site 000-default disabled.
To activate the new configuration, you need to run:
    systemctl reload apache2
ntkhil@ntkhil-pc:~/Desktop$ sudo apache2ctl configtest
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Syntax OK
ntkhil@ntkhil-pc:~/Desktop$
```



C

Aim - Installation and configuration
of HTTP server on ~~Windows~~
Windows OS

Theory -

In general, it's good to use unless you create ASP.NET application on Microsoft IIS, your host is likely to use Apache the most widespread and fully featured available. It's an open-source project, so it doesn't cost download and install.

The following instruction describe how to install Apache on windows. Mac OS comes with Apache and PHP most. Linux users will Apache preinstall.

There are some excellent all-in-windows distribution that contain Apache, PHP, MySQL and other application in a single install, it's configuration option.

Backing up, reinstall or moving the web server can be achieved in seconds.

You have more control over how and when apache starts.

You can install Apache anywhere such as a portable USB drive.

Apache listen for request on TCP/IP port 80.

We are

going to use the unofficial Apache distribution although I'm yet notice a significant difference. However it's provided as a host.

The

instruction to forward a port will vary from router-to-router but below you will find the steps to configure most routers.

For more specific instructions to forward TCP/IP port you should check your router's manufacturer support website.

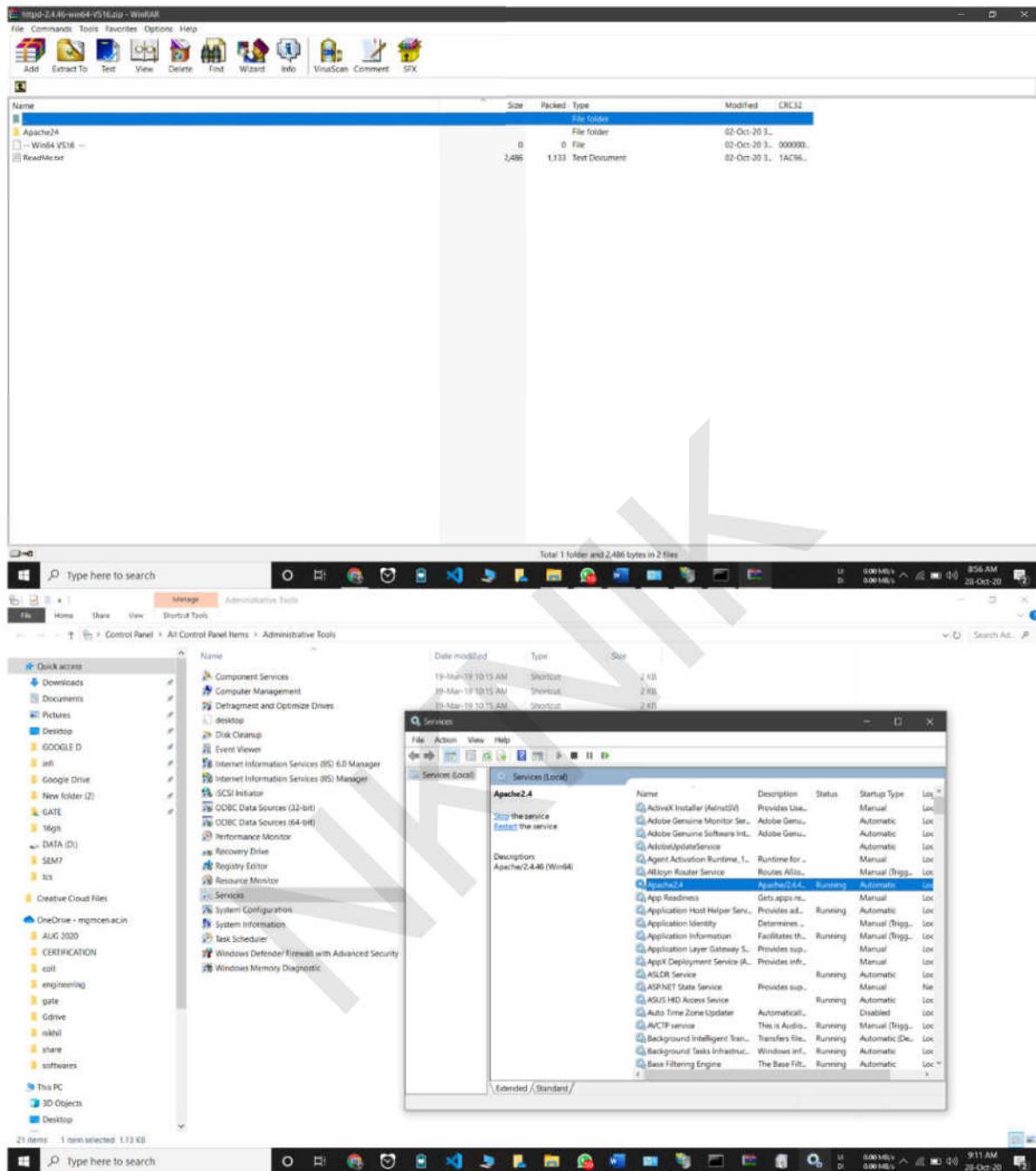
Here the quickest way to tune forward port 21 on your router

You are not limited to use only file explorer, you can use FTP client like acers you can create multiple account with specific permission to download and upload files.

To let other people access to your FTP server, you need to create a new windows account for each user, associate each account with the FTP server, you need to create a new windows account for let other people access to your need to create home directory associate each account with the FTP home directory and configure the appropriate settings follow the steps below to accomplish these tasks

Conclusion -

Hence installed HTTP server on windows os.



```
Index of /          X  how to install apache X  How to Install Apache X  Download - The X  Apache V516 beta X  Using Apache HTTP X  localhost X  Document X + Found sitepoint.com/how-to-install-apache-on-windows/
Apps  C Compiler  JS compiler  CodeChef  Meet  Coursera  IndyIQ  ESG  utemy  Prime  NPTL  LCO  FTP  inst  TCSION  Hiroku | Welcome L... Other bookmarks

Command Prompt
Wireless LAN adapter Wi-Fi:
Connection-specific DNS Suffix . :
IPv4 Address . . . . . : fe80::dcf5:4703:4f6b:52c5
Temporary IPv6 Address . . . . . : fe80::bf8:886d:47ea:607
Link-Local IPv6 Address . . . . . : fe80::dcf5:4703:4f6b:52c5%13
IPv4 Address . . . . . : 192.168.0.172
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : fe80::be0f:9aff:feea:5e5c%13
192.168.0.1

Ethernet adapter Bluetooth Network Connection:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :

C:\Users\Aarya>cd /Apache24/bin

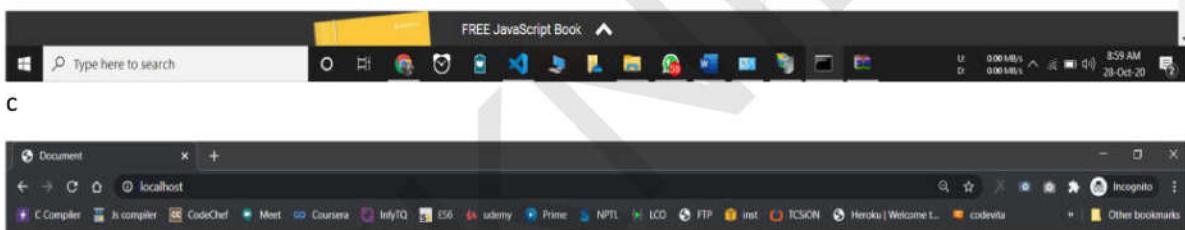
C:\Apache24\bin>httpd -t
AH00558: httpd: could not reliably determine the server's fully qualified domain name, using 192.168.56.1. Set the 'ServerName' directive globally to suppress this message
Syntax OK

C:\Apache24\bin>cd /Apache24/bin

C:\Apache24\bin>httpd -k install
Installing the 'Apache2.4' service
(05)Access is denied. : AH00369: Failed to open the Windows service manager, perhaps you forgot to log in as Administrator?

C:\Apache24\bin> httpd -k install
```

Open the Control Panel, Administrative Tools, then Services and double-click Apache2.4. Set the Startup type to "Automatic" to ensure Apache starts every time you boot your PC.



BURNING PHOENIX

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Hic alius ille, maxime consequatur dolorum nulla? Fuga enim nemo itaque reiparatur fugit facilis reprehenderit praesentium ex, accusantium doloribus recusandae laboriosam soluta reiciendi commodi rerum, quia corrupti aut magnam facere? Repudiandae libero incepit reiciendi eligendi. Sicutque placent tempora hanc enim fuga est.



Aim- SSH Server

Installation and configurations
of SSH server

Theory →

SSH is secure protocol used as primary means of connecting to Linux Server remotely. It provides text based interface by spawning a remote shell.

After connecting all commands you type in local terminal are sent to remote server and executed there.

Working →

When you connect through SSH, you will be dropped into shell session which is a text based interface where you can interact with your server. For the duration of your SSH session, any commands that you type into local terminal are encrypted and sent to an encrypted SSH tunnel and

and executed on the server. The SSH server implemented via using client server model mean the SSH server to be established, the remote machine should be running a piece of software called SSH daemon. This software listen on specific network port, authenticate connection requests, and spawn appropriate environment if user provide correct credential.

The user computer must have SSH client. This is a piece of software that know how to communicate using SSH protocol and can give information of remote host to connect to the username to use and credentials are passed to authenticate the client can also specify certain detail such that connection type that like to establish.

How SSH AUTHENTICATES USERS

Client generally authenticate using
passwords (less secure and not
recommended) or SSH keys are
which are very secure
password

Login are encrypted and easy to
understand for new users.

However automated bot,
and malicious users will repeatedly
try to authenticate account that
allow password based login
which can lead to security
compromises.

Hence SSH user
SSH key pair on local
computer to authenticate

Conclusion -

Hence we implemented SSH
server on Ubuntu.

clone of ubuntu [Running] - Oracle VM VirtualBox

You have the **Auto capture keyboard** option turned on. This will cause the Virtual Machine to automatically **capture** the keyboard every time the VM window is activated and make it available to other applications running on your host machine: when the keyboard is captured, all key presses (including system ones like Esc) will be sent to the guest OS.

The Virtual Machine reports that the guest OS supports **mouse pointer integration**. This means that you do not need to capture the mouse pointer to be able to use it in your guest OS – all mouse actions you perform when the mouse pointer is over the Virtual Machine's display are directly sent to the guest OS. If the mouse pointer is over the Virtual Machine's display, you can click the **VM** button in the title bar to deactivate the mouse pointer integration.

```
nikhil@nikhil-pc:~$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [318 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [108 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [55 8 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [295 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [69. 8 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metad ata [24.3 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metada ta [4,696 B]
Get:12 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packag es [59.2 kB]
Get:13 http://security.ubuntu.com/ubuntu focal-security/restricted i386 Package s [8,920 B]
Get:14 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [9,856 B]
Get:15 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [93.8 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/universe i386 Packages [55 2 kB]
```

Type here to search 0

U: 0.00 MB/s D: 0.00 MB/s 9:21 AM 06-Oct-20

clone of ubuntu [Running] - Oracle VM VirtualBox

You have the **Auto capture keyboard** option turned on. This will cause the Virtual Machine to automatically **capture** the keyboard every time the VM window is activated and make it available to other applications running on your host machine: when the keyboard is captured, all key presses (including system ones like Esc) will be sent to the guest OS.

The Virtual Machine reports that the guest OS supports **mouse pointer integration**. This means that you do not need to capture the mouse pointer to be able to use it in your guest OS – all mouse actions you perform when the mouse pointer is over the Virtual Machine's display are directly sent to the guest OS. If the mouse pointer is over the Virtual Machine's display, you can click the **VM** button in the title bar to deactivate the mouse pointer integration.

```
Get:29 http://in.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [138 kB]
Get:30 http://in.archive.ubuntu.com/ubuntu focal-updates/universe Translation-e n [94.2 kB]
Get:31 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [196 kB]
Get:32 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f M etadata [6,236 B]
Get:33 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse i386 Packag es [4,372 B]
Get:34 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packa ges [15.1 kB]
Get:35 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-1 1 Metadata [2,468 B]
Get:36 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packa ges [4,012 B]
Get:37 http://in.archive.ubuntu.com/ubuntu focal-backports/universe i386 Packag es [2,904 B]
Get:38 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-1 1 Metadata [1,768 B]
Fetched 3,174 kB in 23s (140 kB/s)
Reading package lists... Done
nikhil@nikhil-pc:~$ sudo apt-get install openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssh-server is already the newest version (1:8.2p1-4ubuntu0.1).
openssh-server set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 366 not upgraded.
```

Type here to search 0

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```
applicable law.

root@nikhil-pc:~# exit
logout
Connection to localhost closed.
nikhil@nikhil-pc:~$ sudo nano /etc/ssh/sshd_config
nikhil@nikhil-pc:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
    Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: >
    Active: active (running) since Tue 2020-10-06 09:32:43 IST; 18min ago
      Docs: man:sshd(8)
             man:sshd_config(5)
      Process: 3445 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
     Main PID: 3461 (sshd)
        Tasks: 1 (limit: 4657)
       Memory: 1.4M
      CGroup: /system.slice/ssh.service
              └─3461 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups

Oct 06 09:32:43 nikhil-pc systemd[1]: Starting OpenBSD Secure Shell server...
Oct 06 09:32:43 nikhil-pc sshd[3445]: /etc/ssh/sshd_config line 35: Deprecated>
Oct 06 09:32:43 nikhil-pc sshd[3461]: /etc/ssh/sshd_config line 35: Deprecated>
Oct 06 09:32:43 nikhil-pc sshd[3461]: Server listening on 0.0.0.0 port 22.
Oct 06 09:32:43 nikhil-pc sshd[3461]: Server listening on :: port 22.
Oct 06 09:32:43 nikhil-pc systemd[1]: Started OpenBSD Secure Shell server.
Oct 06 09:32:55 nikhil-pc sshd[3467]: reexec line 35: Deprecated option UseLogin
Oct 06 09:32:57 nikhil-pc sshd[3467]: Accepted password for root from 127.0.0.1
Oct 06 09:32:57 nikhil-pc sshd[3467]: pam_unix(sshd:session): session opened for user root
lines 1-21/21 (END)
```

```
GNU nano 4.8          /etc/ssh/sshd_config          Modified

# 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
PermitRootLogin yes
UseLogin yes
#PermitEmptyPasswords no

# Change to yes to enable challenge-response passwords (beware issues with
# some PAM modules and threads)
```

```
clone of ubuntu (Running) - Oracle VM VirtualBox
You have the Auto capture keyboard option turned off. This will cause the Virtual Machine to automatically capture the keyboard every time the VM window is activated and make it available to other applications running on your host machine; when the keyboard is captured, all keypresses (including system ones like Ctrl+Alt+Delete) will be sent directly to the guest OS. If the Allow full keyboard control checkbox is checked, you can manually capture the keyboard at any time by pressing Ctrl+Shift+F2.

The Virtual Machine reports that the guest OS supports mouse pointer integration. This means that you do not need to capture the mouse pointer to be able to use it in your guest OS - all mouse actions you perform when the mouse pointer is over the Virtual Machine's display are directly sent to the guest OS. If the Allow full mouse control checkbox is checked, you can manually capture the mouse at any time by pressing Ctrl+Shift+F3.

nikhil@nikhil-pc:~$ sudo nano /etc/ssh/sshd_config
nikhil@nikhil-pc:~$ sudo systemctl reload sshd
nikhil@nikhil-pc:~$ sudo service sshd restart
nikhil@nikhil-pc:~$ sudo ssh root@localhost
root@localhost's password:
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.4.0-26-generic x86_64)

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

 363 updates can be installed immediately.
 139 of these updates are security updates.
 To see these additional updates run: apt list --upgradable

 Your Hardware Enablement Stack (HWE) is supported until April 2025.

 The programs included with the Ubuntu system are free software;
 the exact distribution terms for each program are described in the
 individual files in /usr/share/doc/*/*copyright.

 Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
 applicable law.

root@nikhil-pc:~# exit
logout
Connection to localhost closed.
nikhil@nikhil-pc:~$ sudo nano /etc/ssh/sshd_config
nikhil@nikhil-pc:~$ 
```

sudo apt-get update

sudo apt-get install openssh-server

sudo systemctl status ssh

- If not running enable the ssh server and start it as follows by typing the systemctl command: sudo systemctl enable ssh and sudo systemctl start ssh

sudo nano /etc/ssh/sshd_config

add lines
PasswordAuthentication yes

PermitRootLogin yes

UserLogin yes

Sudo systemctl reload sshd

Sudo service sshd restart

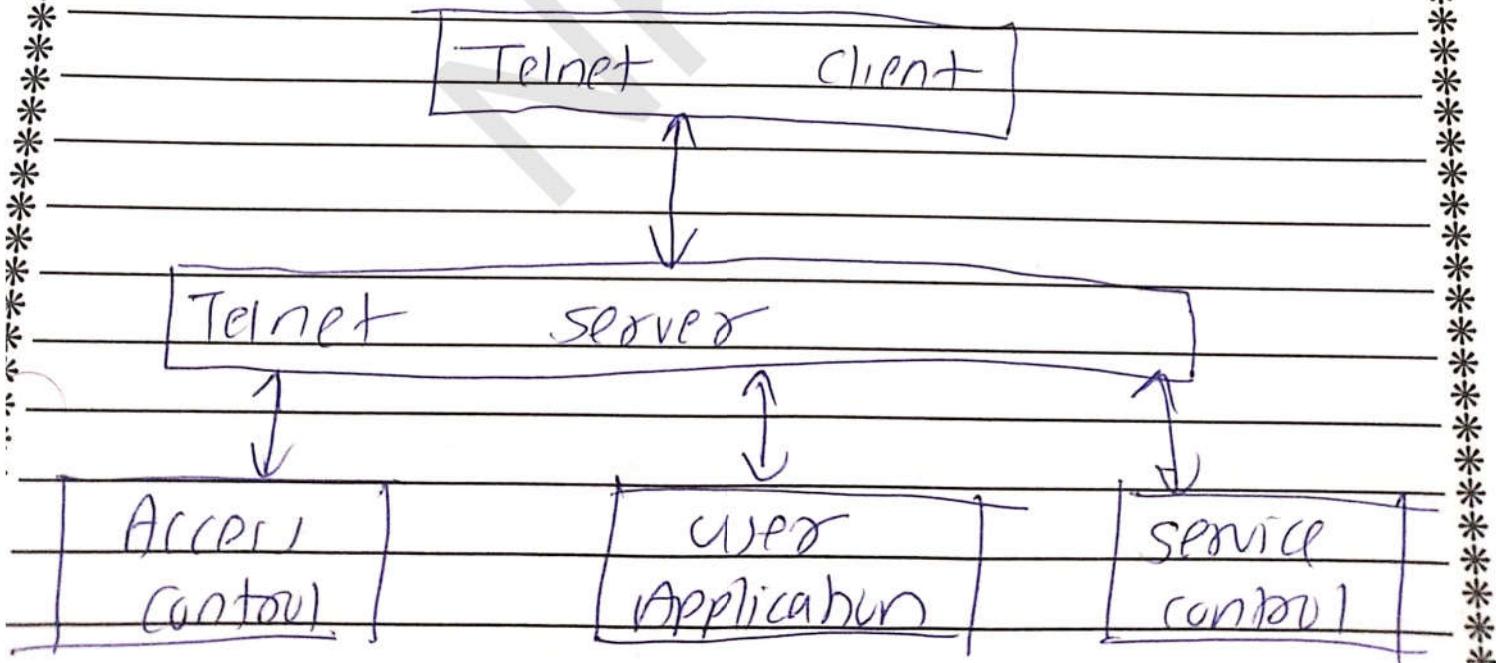
Sudo ssh root@localhost

Aim - To install telnet server

Theory -

Telnet server allows command line access to an embedd module over IP network

Telnet is a protocol used on a network to provide a two line command line interface (CLI) using a virtual terminal connection. User data and Telnet control information is transferred data on TCP connection



* central interface explains how to start/stop the Telnet server and manage built-in user accounts

* Access and multi-user interface shows how to logout hosts which are not allowed to connect to the Telnet server and how to add additional user accounts and to manage access rights to each user

* user callback sends notification about events in Telnet server to the user application

* configuration explains option Telnet server

Telnet is an unencrypted and insecure protocol. Telnet client and server in case your mail servers

In early 1969 during nine month of year ARPANET The development of Telnet (Teletype) network was practically completed But it was in 1973 that the protocol allowing access to the remote computer host received its final specification in RFC 495 (Request for comment) It was implemented by most platforms as the official channel of internet community task force (IETF). The internal protocol and basic working methods and extension are characterized in more efficient standards) RFC 854 and RFC 855.

Conclusion -

Hence we have implemented Telnet server

***** (PAVAN) *****

clone of ubuntu [Running] - Oracle VM VirtualBox

Activities Terminal Oct 10 08:17 nikhil@nikhil-pc ~

```
nikhil@nikhil-pc:~$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [58.8 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [347 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [150 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [208 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [10.3 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [666 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [501 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [124 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [200 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [12.0 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [2,468 B]
Get:16 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [51.750 kB]
```

Type here to search 0 80 AM 10-Oct-20

ip a

clone of ubuntu [Running] - Oracle VM VirtualBox

Activities Terminal Oct 10 08:18 nikhil@nikhil-pc ~

```
nikhil@nikhil-pc:~$ ta [5,000 B]
Get:22 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [506 kB]
Get:23 http://security.ubuntu.com/ubuntu focal-security/universe i386 Packages [405 kB]
Get:24 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [62.8 kB]
Get:25 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [55.6 kB]
Get:26 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [8,484 B]
Fetched 4,730 kB in 5s (1,045 kB/s)
Reading package lists... Done
nikhil@nikhil-pc:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host
                valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86397sec preferred_lft 86397sec
        inet6 fd01::4108:29b6:6ea7:175c/64 scope global temporary dynamic
            valid_lft 255sec preferred_lft 255sec
            inet6 fd01::bf04:b157:baf3:24c7/64 scope global dynamic mngtmpaddr noprefix
```

Type here to search 0 80 AM 10-Oct-20

Activities Terminal Oct 10 08:18 nikhil@nikhil-pc ~

```
Unpacking tcpd (7.6.q-30) ...
Selecting previously unselected package openbsd-inetd.
Preparing to unpack .../openbsd-inetd_0.20160825-4build1_amd64.deb ...
Unpacking openbsd-inetd (0.20160825-4build1) ...
Selecting previously unselected package telnetd.
Preparing to unpack .../telnetd_0.17-41.2build1_amd64.deb ...
Unpacking telnetd (0.17-41.2build1) ...
Setting up tcpd (7.6.q-30) ...
Setting up openbsd-inetd (0.20160825-4build1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/inetd.service → /lib/systemd/system/inetd.service.
Setting up telnetd (0.17-41.2build1) ...
Adding user telnetd to group utmp
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3) ...
nikhil@nikhil-pc:~$ sudo systemctl status inetd
● inetd.service - Internet superserver
    Loaded: loaded (/lib/systemd/system/inetd.service; enabled; vendor preset: active)
      Active: active (running) since Sat 2020-10-10 08:09:21 IST; 7min ago
        Docs: man:inetd(8)
       Main PID: 2565 (inetd)
          Tasks: 1 (limit: 4657)
         Memory: 772.0K
            CGroup: /system.slice/inetd.service
                      └─2565 /usr/sbin/inetd

Oct 10 08:09:21 nikhil-pc systemd[1]: Starting Internet superserver...
Oct 10 08:09:21 nikhil-pc systemd[1]: Started Internet superserver.
Lines 1-12/12 (END)
```

server is

active

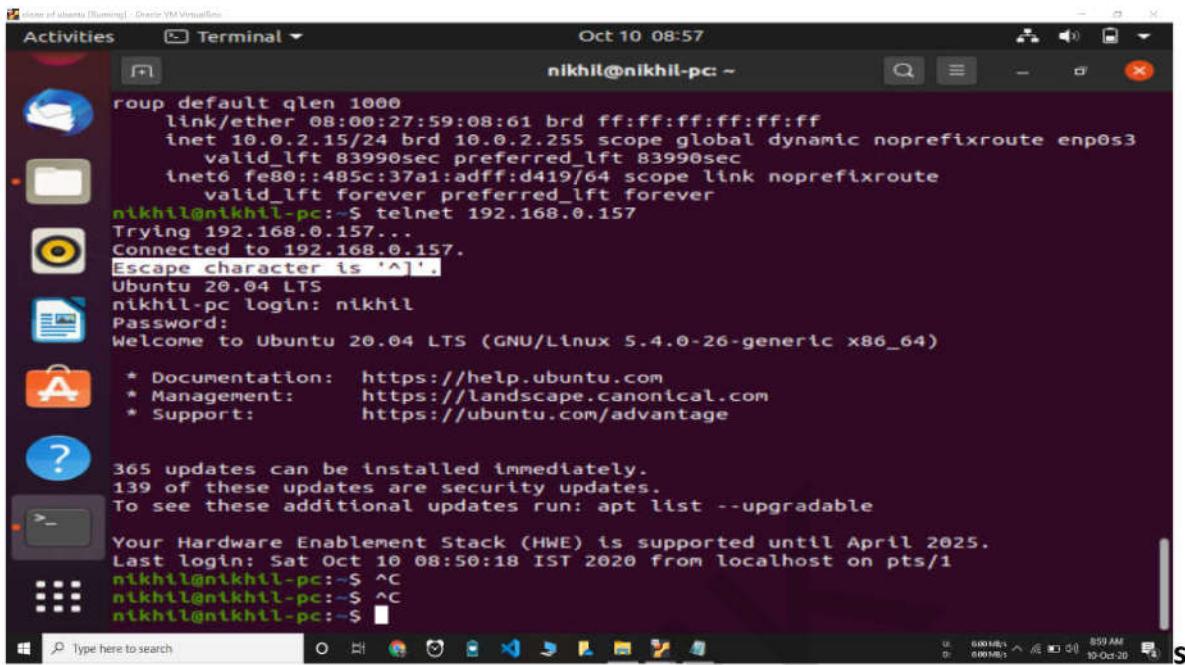
Activities Terminal Oct 10 08:56 nikhil@nikhil-pc ~

```
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

nikhil@nikhil-pc:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.157/24 brd 192.168.0.255 scope global dynamic noprefixroute
        valid_lft 86384sec preferred_lft 86384sec
        inet6 fe80::a8e0:9ad0:300c:5bb3/64 scope link noprefixroute
            valid_lft 289sec preferred_lft 289sec
            inet6 fd01::bf04:baf3:24c7/64 scope global dynamic mngtmpaddr noprefixroute
                valid_lft 289sec preferred_lft 289sec
                nikhil@nikhil-pc:~$
```

p a -on remote system



```
Activities Terminal Oct 10 08:57
nikhil@nikhil-pc: ~
rout default qlen 1000
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 83990sec preferred_lft 83990sec
    inet6 fe80::485c:37a1:adff:d419/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
nikhil@nikhil-pc:~$ telnet 192.168.0.157
Trying 192.168.0.157...
Connected to 192.168.0.157.
Escape character is '^].
Ubuntu 20.04 LTS
nikhil-pc login: nikhil
Password:
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.4.0-26-generic x86_64)

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

365 updates can be installed immediately.
139 of these updates are security updates.
To see these additional updates run: apt list --upgradable

Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Sat Oct 10 08:50:18 IST 2020 from localhost on pts/1
nikhil@nikhil-pc:~$ ^C
nikhil@nikhil-pc:~$ ^C
nikhil@nikhil-pc:~$
```

Sudo apt-get install telnetd -y

sudo systemctl status inetd

Test Telnet Connection from Remote System

Telnet server is now installed and listening on port 23. It's time to connect Telnet server from the remote system.

Now, log in to other Ubuntu system and run the following command:

telnet 192.168.0.100

clone of ubuntu [Running] - Oracle VM VirtualBox

Activities Terminal Oct 10 08:17 nikhil@nikhil-pc ~

```
nikhil@nikhil-pc:~$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [98.3 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [58.8 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [347 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [150 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [208 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [10.3 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [666 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [501 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [124 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [200 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [12.0 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [2,468 B]
Get:16 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [51.750 kB]
```

Type here to search 0 80 AM 10-Oct-20

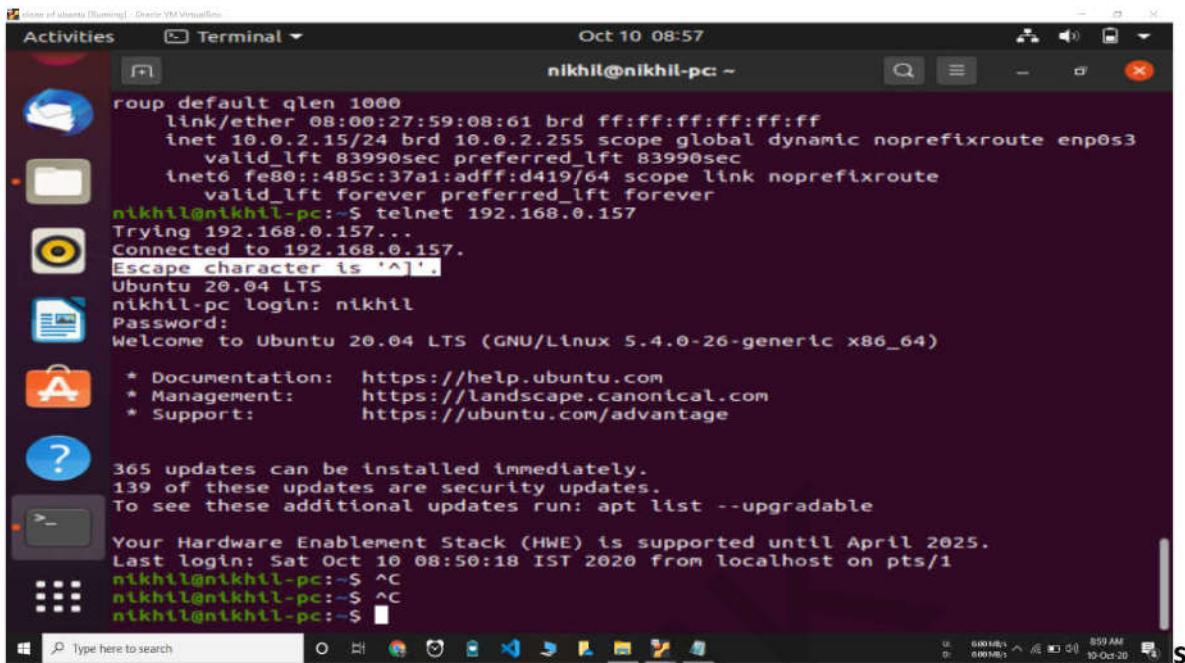
ip a

clone of ubuntu [Running] - Oracle VM VirtualBox

Activities Terminal Oct 10 08:18 nikhil@nikhil-pc ~

```
nikhil@nikhil-pc:~$ ta [5,000 B]
Get:22 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [506 kB]
Get:23 http://security.ubuntu.com/ubuntu focal-security/universe i386 Packages [405 kB]
Get:24 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [62.8 kB]
Get:25 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [55.6 kB]
Get:26 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [8,484 B]
Fetched 4,730 kB in 5s (1,045 kB/s)
Reading package lists... Done
nikhil@nikhil-pc:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host
                valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86397sec preferred_lft 86397sec
        inet6 fd01::4108:29b6:6ea7:175c/64 scope global temporary dynamic
            valid_lft 255sec preferred_lft 255sec
            inet6 fd01::bf04:b157:baf3:24c7/64 scope global dynamic mngtmpaddr noprefix
```

Type here to search 0 80 AM 10-Oct-20



A screenshot of an Ubuntu 20.04 LTS desktop environment. A terminal window is open, showing the output of a 'telnet' command. The terminal window title is 'Terminal' and the date is 'Oct 10 08:57'. The user is connected to a host at 192.168.0.157. The terminal shows the standard Ubuntu welcome message and documentation links. At the bottom of the terminal, there is a message about HWE support until April 2025.

```
nicolai@ubuntublue:~$ ifconfig
    ...
    roup default qlen 1000
        link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
        inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
            valid_lft 83990sec preferred_lft 83990sec
            inet6 fe80::485c:37a1:adff:d419/64 scope link noprefixroute
                valid_lft forever preferred_lft forever
nicolai@ubuntublue:~$ telnet 192.168.0.157...
Trying 192.168.0.157...
Connected to 192.168.0.157.
Escape character is '^].
Ubuntu 20.04 LTS
nikhil@nikhil-pc: login: nikhil
Password:
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.4.0-26-generic x86_64)

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

365 updates can be installed immediately.
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To see these additional updates run: apt list --upgradable

Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Sat Oct 10 08:50:18 IST 2020 from localhost on pts/1
nikhil@nikhil-pc:~$ ^C
nikhil@nikhil-pc:~$ ^C
nikhil@nikhil-pc:~$
```

sudo apt-get install telnetd -y

sudo systemctl status inetd

Test Telnet Connection from Remote System

Telnet server is now installed and listening on port 23. It's time to connect Telnet server from the remote system.

Now, log in to other Ubuntu system and run the following command:

telnet 192.168.0.100

Activities Terminal Oct 10 08:18 nikhil@nikhil-pc ~

```
Unpacking tcpd (7.6.q-30) ...
Selecting previously unselected package openbsd-inetd.
Preparing to unpack .../openbsd-inetd_0.20160825-4build1_amd64.deb ...
Unpacking openbsd-inetd (0.20160825-4build1) ...
Selecting previously unselected package telnetd.
Preparing to unpack .../telnetd_0.17-41.2build1_amd64.deb ...
Unpacking telnetd (0.17-41.2build1) ...
Setting up tcpd (7.6.q-30) ...
Setting up openbsd-inetd (0.20160825-4build1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/inetd.service → /lib/systemd/system/inetd.service.
Setting up telnetd (0.17-41.2build1) ...
Adding user telnetd to group utmp
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3) ...
nikhil@nikhil-pc:~$ sudo systemctl status inetd
● inetd.service - Internet superserver
    Loaded: loaded (/lib/systemd/system/inetd.service; enabled; vendor preset: active)
      Active: active (running) since Sat 2020-10-10 08:09:21 IST; 7min ago
        Docs: man:inetd(8)
       Main PID: 2565 (inetd)
          Tasks: 1 (limit: 4657)
         Memory: 772.0K
            CGroup: /system.slice/inetd.service
                      └─2565 /usr/sbin/inetd

Oct 10 08:09:21 nikhil-pc systemd[1]: Starting Internet superserver...
Oct 10 08:09:21 nikhil-pc systemd[1]: Started Internet superserver.
Lines 1-12/12 (END)
```

server is

active

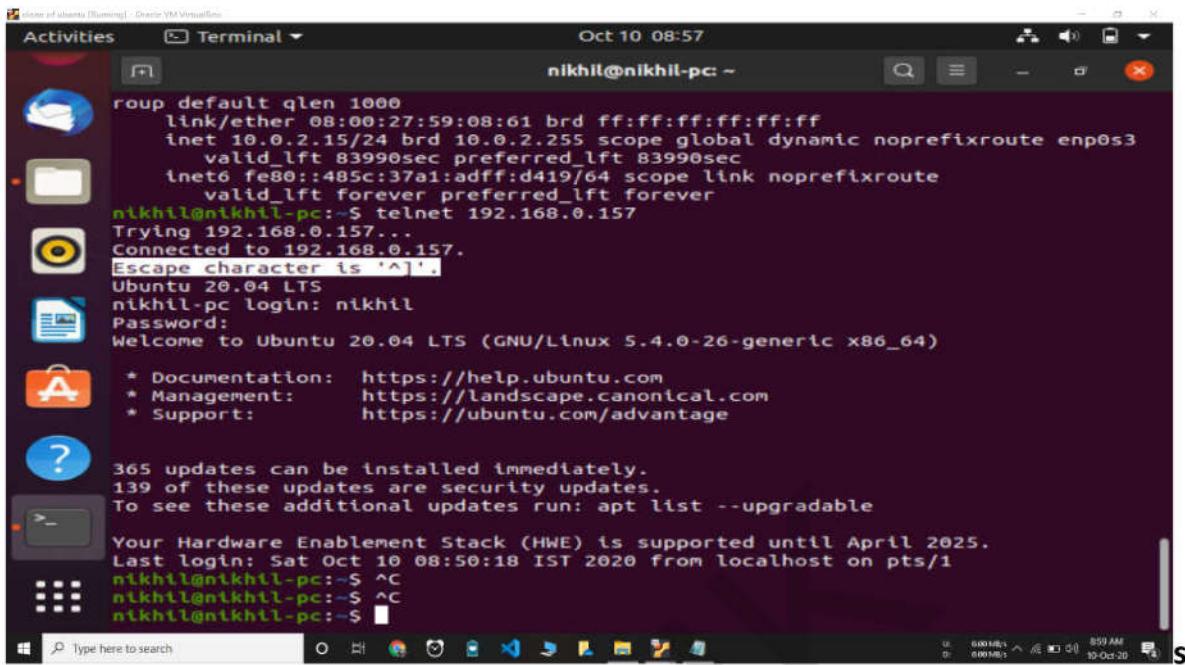
Activities Terminal Oct 10 08:56 nikhil@nikhil-pc ~

```
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

nikhil@nikhil-pc:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
    link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.157/24 brd 192.168.0.255 scope global dynamic noprefixroute
        valid_lft 86384sec preferred_lft 86384sec
        inet6 fe80::a8e0:9ad0:300c:5bb3/64 scope link noprefixroute
            valid_lft 289sec preferred_lft 289sec
            inet6 fd01::bf04:baf3:24c7/64 scope global dynamic mngtmpaddr noprefixroute
                valid_lft 289sec preferred_lft 289sec
                nikhil@nikhil-pc:~$
```

p a -on remote system



A screenshot of an Ubuntu 20.04 LTS desktop environment. A terminal window is open, showing the output of a 'telnet' command. The terminal window title is 'Terminal' and the date is 'Oct 10 08:57'. The user is connected to a host at 192.168.0.157. The terminal shows the standard Ubuntu welcome message and documentation links. At the bottom of the terminal, there is a message about HWE support until April 2025. The desktop interface includes a dock with icons for Home, Dash, Activities, AppIndicator, and a Dash search bar.

```
nicolai@ubuntublue:~$ ifconfig
    ...
    roup default qlen 1000
        link/ether 08:00:27:59:08:61 brd ff:ff:ff:ff:ff:ff
        inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
            valid_lft 83990sec preferred_lft 83990sec
            inet6 fe80::485c:37a1:adff:d419/64 scope link noprefixroute
                valid_lft forever preferred_lft forever
nicolai@ubuntublue:~$ telnet 192.168.0.157...
Trying 192.168.0.157...
Connected to 192.168.0.157.
Escape character is '^]'.
Ubuntu 20.04 LTS
nicolai@ubuntublue:~$ login: nicolai
Password:
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.4.0-26-generic x86_64)

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

365 updates can be installed immediately.
139 of these updates are security updates.
To see these additional updates run: apt list --upgradable

Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Sat Oct 10 08:50:18 IST 2020 from localhost on pts/1
nicolai@ubuntublue:~$ ^C
nicolai@ubuntublue:~$ ^C
nicolai@ubuntublue:~$
```

sudo apt-get install telnetd -y

sudo systemctl status inetd

Test Telnet Connection from Remote System

Telnet server is now installed and listening on port 23. It's time to connect Telnet server from the remote system.

Now, log in to other Ubuntu system and run the following command:

telnet 192.168.0.100

Aim - To install samba server

Theory -

Samba is an extremely useful networking tool for anyone who has both windows and unix machine on his network. Running on unix system it allows windows to share files and printer on unix host, and it also allows unix clients to access resources shared by windows system.

Although it might seem natural to use a windows server files and printers to a network containing windows clients there are good reasons for preferring a samba server for this duty. Samba is reliable software that runs on reliable unix operating system resolving informing problems and a low cost maintenance. Samba also offers better performance under heavy loads outperforming servers.

According to published third party benchmark, even common inexpensive third party PC hardware fails to meet the demand of huge client load, output moved to property "big iron" UNIX main frame which can outperform windows on PC many times. If all that wasn't enough, Samba has very nice cost advantage, the software is freely available but no client licence required and run on high quality operating system such as Linux and FreeBSD.

Samba is largely used by thousands of organizations.

Samba is a sort of UNIX application that speaks the server management block (SMB) protocol.

By supporting this protocol SAMBA enables the computers running UNIX to set up on arches.

Samba developed by Andrew Tridgell who currently heads the Samba development team. Andrew started project in 1991 while working with a digital equipment (DEC) software suite called Path Work created for connecting DEC VAX computers to computers made by other companies without knowing the significance of what he was doing. Andrew created a file server protocol for an odd protocol that was part of Pathwork that protocol later turn of SMB. After that SMB (Samba) made SMB distributed.

Conclusion -

Hence installed samba server on Ubuntu.

Activities Terminal Oct 28 14:23

```
nikhil@nikhil-pc:~/Desktop$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [24.3 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [56.5 kB]
Fetched 188 kB in 2s (76.2 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
attr libverbs-providers libcephfs2 libibverbs1 libl2db2 librados2 librdmacm1
libsmbclient libwbclient0 python3-crypto python3-dnspython python3-gpg
python3-ldb python3-markdown python3-packaging python3-pygments
python3-pyparsing python3-samba python3-tdb samba-common samba-common-bin
samba-dsdb-modules samba-libs samba-vfs-modules tdb-tools
Suggested packages:
python-markdown-doc python-pygments-doc ttf-bitstream-vera
python-pyparsing-doc bind9 bind9utils ctdb ldb-tools ntp | chrony
smbldap-tools winbind heimdal-clients
The following NEW packages will be installed:
attr libverbs-providers libcephfs2 libibverbs1 librados2 librdmacm1
python3-crypto python3-dnspython python3-gpg python3-ldb python3-markdown
python3-pyparsing
0 00:00 00:00 22:56PM 28-Oct-20
```

V Activities Terminal Oct 28 14:48

```
nikhil@nikhil-pc:~/Desktop$ Setting up samba-vfs-modules:amd64 (2:4.11.6+dfsg-0ubuntu1.5) ...
Setting up samba-common-bin (2:4.11.6+dfsg-0ubuntu1.5) ...
Checking smb.conf with testparm
Load smb config files from /etc/samba/smb.conf
Loaded services file OK.
Server role: ROLE_STANDALONE
Done.
Setting up samba (2:4.11.6+dfsg-0ubuntu1.5) ...
Samba is not being run as an AD Domain Controller: Masking samba-ad-dc.service
Please ignore the following error about deb-systemd-helper not finding those services.
(samba-ad-dc.service masked)
Created symlink /etc/systemd/system/multi-user.target.wants/nmbd.service → /lib
/systemd/system/nmbd.service.
Failed to preset unit: Unit file /etc/systemd/system/samba-ad-dc.service is masked.
/usr/bin/deb-systemd-helper: error: systemctl preset failed on samba-ad-dc.serv
ice: No such file or directory
Created symlink /etc/systemd/system/multi-user.target.wants/smbd.service → /lib
/systemd/system/smbd.service.
samba-ad-dc.service is a disabled or a static unit, not starting it.
Processing triggers for ufw (0.36-6) ...
Rules updated for profile 'Apache'

Processing triggers for systemd (245.4-4ubuntu3) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
nikhil@nikhil-pc:~/Desktop$
```

Activities Terminal Oct 28 14:50 nikhil@nikhil-pc: ~/Desktop

```
Load smb config files from /etc/samba/smb.conf
Loaded services file OK.
Server role: ROLE_STANDALONE

Done
Setting up samba (2:4.11.6+dfsg-0ubuntu1.5) ...
Samba is not being run as an AD Domain Controller: Masking samba-ad-dc.service
Please ignore the following error about deb-systemd-helper not finding those se
rvices.
(samba-ad-dc.service masked)
Created symlink /etc/systemd/system/multi-user.target.wants/nmbd.service → /lib
/systemd/system/nmbd.service.
Failed to preset unit: Unit file /etc/systemd/system/samba-ad-dc.service is mas
ked.
/usr/bin/deb-systemd-helper: error: systemctl preset failed on samba-ad-dc.serv
ice: No such file or directory
Created symlink /etc/systemd/system/multi-user.target.wants/smbd.service → /lib
/systemd/system/smbd.service.
samba-ad-dc.service is a disabled or a static unit, not starting it.
Processing triggers for ufw (0.36-6) ...
Rules updated for profile 'Apache'

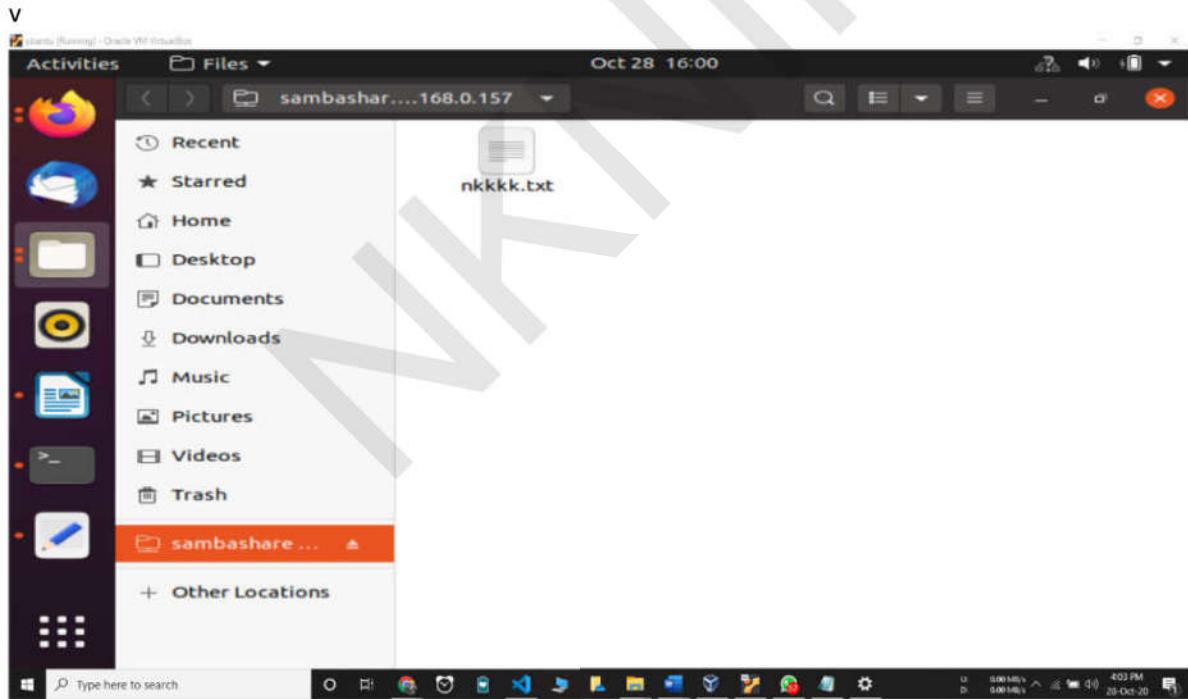
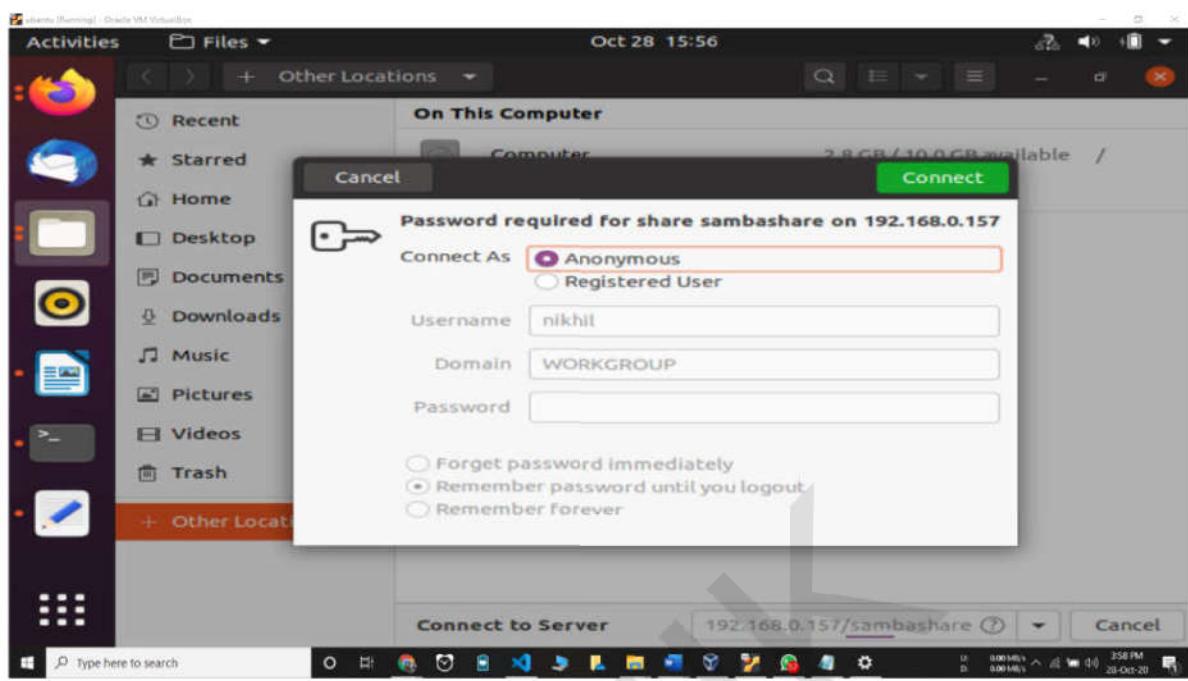
Processing triggers for systemd (245.4-4ubuntu3) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
ntkhil@ntkhil-pc:~/Desktop$ whereis samba
samba: /usr/sbin/samba /usr/lib/x86_64-linux-gnu/samba /etc/samba /usr/share/sa
mba /usr/share/man/man7/samba.7.gz /usr/share/man/man8/samba.8.gz
ntkhil@ntkhil-pc:~/Desktop$
```

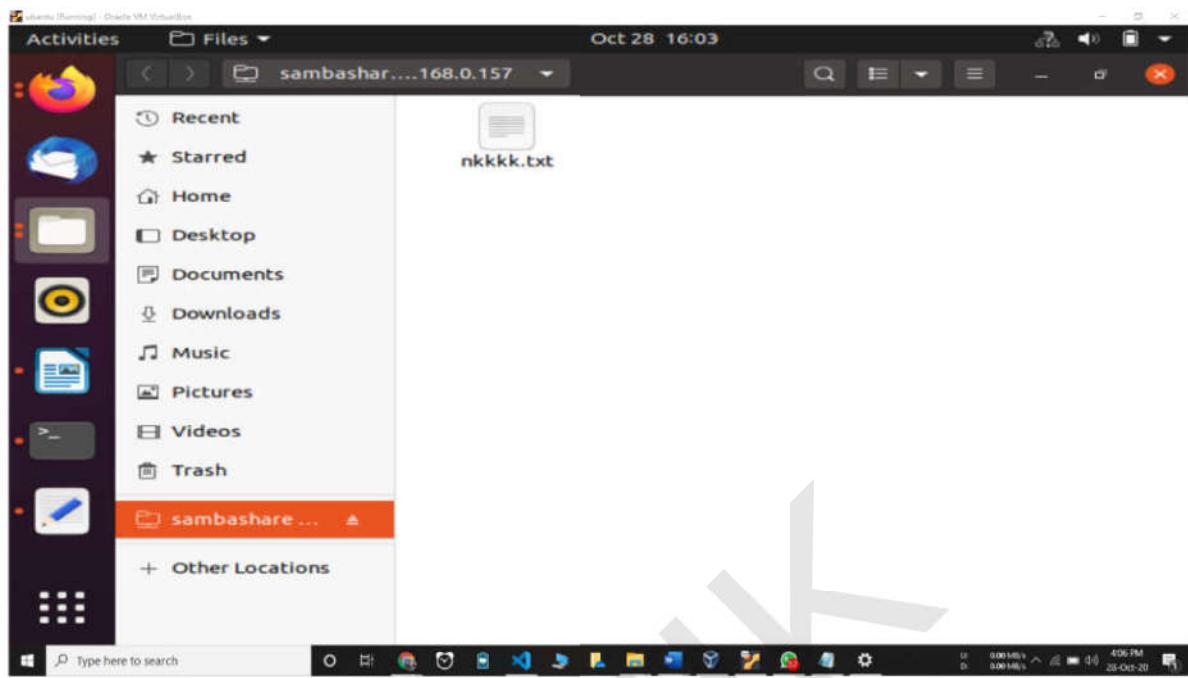
V Activities Terminal Oct 28 15:54 nikhil@nikhil-pc: ~/Desktop/sambashare

```
[sudo] password for nikhil:
ntkhil@ntkhil-pc:~/Desktop/sambashare$ sudo service smb restart
Failed to restart smb.service: Unit smb.service not found.
ntkhil@ntkhil-pc:~/Desktop/sambashare$ sudo service smbd restart
ntkhil@ntkhil-pc:~/Desktop/sambashare$ sudo systemctl status smb
Unknown operation smb.
ntkhil@ntkhil-pc:~/Desktop/sambashare$ sudo systemctl status smbd
Unit smbd.service could not be found.
ntkhil@ntkhil-pc:~/Desktop/sambashare$ sudo systemctl status smbd
● smbd.service - Samba SMB Daemon
   Loaded: loaded (/lib/systemd/system/smbd.service; enabled; vendor preset: en
   Active: active (running) since Wed 2020-10-28 15:52:27 IST; 2min 24s ago
     Docs: man:smbd(8)
           man:samba(7)
           man:smb.conf(5)
   Process: 13581 ExecStartPre=/usr/share/samba/update-apparmor-samba-profiles
   Main PID: 13609 (smbd)
   Status: "smbd: ready to serve connections..."
      Tasks: 4 (limit: 4657)
     Memory: 6.7M
    CGroup: /system.slice/smbd.service
            └─13609 /usr/sbin/smbd --foreground --no-process-group
                ├─13611 /usr/sbin/smbd --foreground --no-process-group
                ├─13612 /usr/sbin/smbd --foreground --no-process-group
                └─13613 /usr/sbin/smbd --foreground --no-process-group

Oct 28 15:52:27 ntkhil-pc systemd[1]: Starting Samba SMB Daemon...
Oct 28 15:52:27 ntkhil-pc systemd[1]: Started Samba SMB Daemon.
lines 1-19/19 (END)
```

vvv





```
nikhil-nk@nikhilnk:~$ sudo apt-get update
nikhil-nk@nikhilnk:~$ sudo apt-get install samba
nikhil-nk@nikhilnk:~$ sudo apt-get install samba
install samba
nikhil-nk@nikhilnk:~$ whereis samba
now get some files
nikhil-nk@nikhilnk:~$ pwd
current working directory
nikhil-nk@nikhilnk:~$ sudo mkdir sambashare
create file for samba
nikhil-nk@nikhilnk:~$ cd
go to root location
nikhil-nk@nikhilnk:~$ cd sambashare
nikhil-nk@nikhilnk:~/sambashare$ ls
nikhil-nk@nikhilnk:~/sambashare$ sudo touch aa.txt
nikhil-nk@nikhilnk:~/sambashare$ sudo touch bb.txt
addedsome files to sambashare folder
```

```
nikhil-nk@nikhilnk:~/sambashare$ cd  
nikhil-nk@nikhilnk:~$ pwd  
nikhil-nk@nikhilnk:~$ sudo nano /etc/samba/smb.conf  
nikhil-nk@nikhilnk:~$ sudo nano /etc/samba/smb.conf  
add to bottom of file  
[sambashare]  
    comment = samab server on ubantu comment for refernce only  
    path = /home/nikhil-nk/sambashare  
    read only = no #yes/no  
    browsable = yes  
    guest ok= no #yes/no  
nikhil-nk@nikhilnk:~$ sudo service smbd restart  
restart after configue  
nikhil-nk@nikhilnk:~$ sudo systemctl status smbd  
check status ACTIVE  
nikhil-nk@nikhilnk:~$ ip a  
get ip 192..... wala  
go in files  
click other location on side bar  
click on connect server  
type..  
smb://ip/sambashare  
nikhil-nk@nikhilnk:~$ sudo nano /etc/samba/smb.conf  
guest ok =no  
nikhil-nk@nikhilnk:~$ sudo service smbd restart  
nikhil-nk@nikhilnk:~$ sudo systemctl status smbd  
nikhil-nk@nikhilnk:~$ sudo smbpass -a nikhil-nk  
create plus set pass for user  
nikhil-nk@nikhilnk:~$ sudo smbpasswd -a nikhil-nk
```

click other location on side bar

click on connect server

type..

smb://ip/sambashare

nikhil-nk@nikhilnk:~\$ ^C

NikNik

******(

)*****

Aim - Configuration of DHCP server on Ubuntu

Theory -

A DHCP server is a network server that automatically provides and assigns IP addresses, default gateway and other network parameters to clients devices.

It relies on the standard protocol known as Dynamic Host configuration protocol or DHCP to respond to broadcast queries by clients.

A DHCP server automatically sends the required network parameters for clients to properly communicate over the network, without it the network parameters for clients to properly communicate on the network without it, the network administrator has to manually set up every client that joins the network, which can be cumbersome, especially

in large network parameters for clients to properly communicate on the network.

DHCP server usually provide each client with unique dynamic IP address, which changes when the client lease for that IP address has expired.

+ when to use a router/switch on your DHCP server

There are many companies who are still using DHCP for IPv4 on their routers/switches. This is typically done by the network administrator who needs the DHCP capabilities of and running quickly but does not have access to DHCP servers. Most of the routers and switches have the DHCP support.

→ A DHCP client and obtain an interface IPv4 address from an upstream DHCP service

- ***** (PAVAN) *****
- A DHCP relay and forward UDP DHCP messages from clients on LAN to and from DHCP server
 - A DHCP server whereby the router/switch as a DHCP server
 - Running a DHCP server on router/switch consumes resources on the network device. These DHCP packets are handled in software (not hardware accelerated forwarding). The resources required make this practice not suitable for a network with a large number (>100) of DHCP clients.
 - Does not support dynamic DNS. The router/switch DHCP server cannot create entry behalf of client board (IPv4 address) that leased to the client.

Conclusion-

Hence, successfully installed & configured DHCP Server on Ubuntu.

ubuntu [Running] - Oracle VM VirtualBox

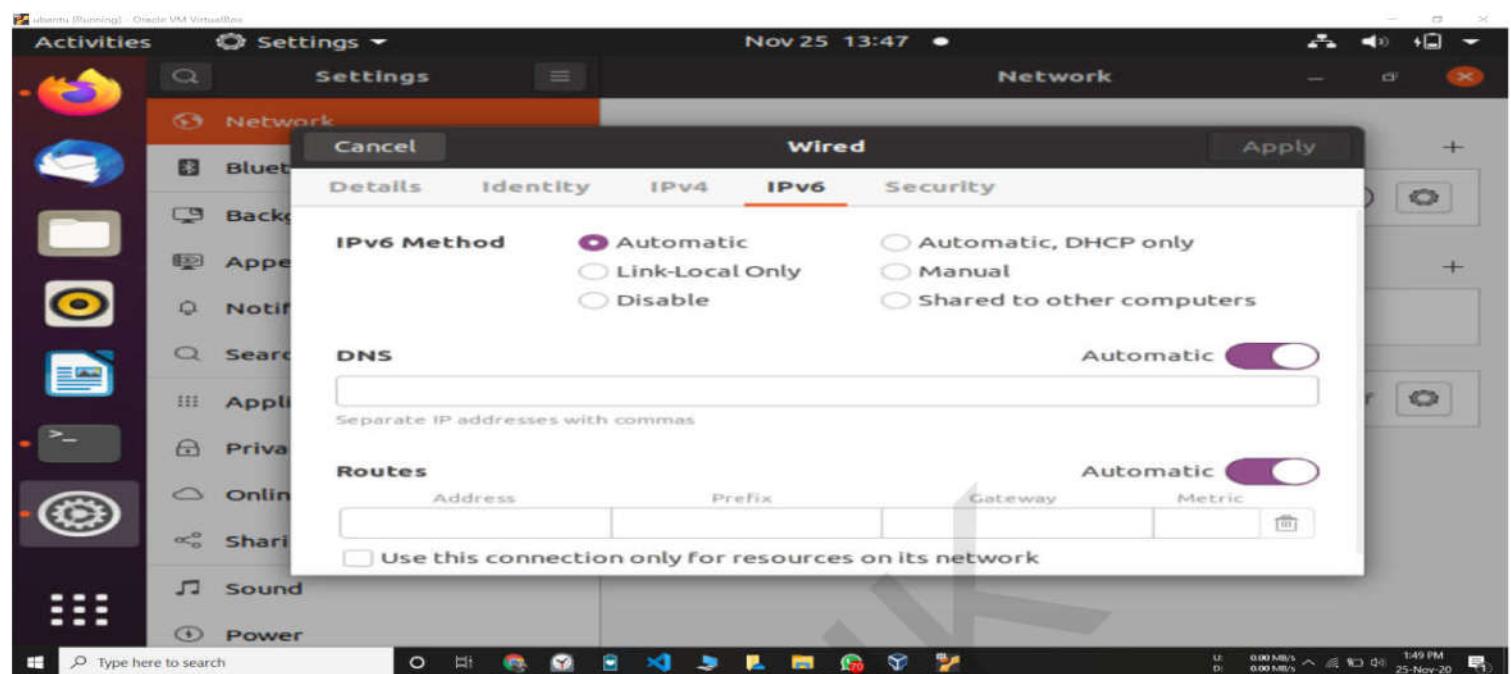
Activities Terminal Nov 25 13:40 nikhil@nikhil-pc: ~

```
nikhil@nikhil-pc:~$ sudo apt-get update
[sudo] password for nikhil:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [101 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [109 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [67
0 kB]
Err:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages
  Hash Sum mismatch
    Hashes of expected file:
      - Filesize:670096 [weak]
      - SHA256:e734f9ba2ada40b6ac37ac1aeea8b45def359fd9def21cd8a8362ccf1b2cfabe
      - SHA1:f77a1b58a232054267cc64baf0a795d385b7c4b3 [weak]
      - MD5Sum:379b7748d99007533c6ce59b26dcc409 [weak]
    Hashes of received file:
      - SHA256:e734f9ba2ada40b6ac37ac1aeea8b45def359fd9def21cd8a8362ccf1b2cfabe
      - SHA1:166e0e53dea074711aa264007d571c75bf1194cc [weak]
      - MD5Sum:379b7748d99007533c6ce59b26dcc409 [weak]
      - Filesize:670096 [weak]
  Last modification reported: Wed, 25 Nov 2020 01:07:53 +0000
  Release file created at: Wed, 25 Nov 2020 05:55:45 +0000
Get:6 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [378
kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [16
7 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metad
ata [236 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metada
```

Ubuntu [Bluemoon] - Oracle VM VirtualBox

Activities Terminal Nov 25 13:40 nikhil@nikhil-pc: ~

```
- Filesize:371664 [weak]
Last modification reported: Mon, 23 Nov 2020 15:47:24 +0000
Release file created at: Wed, 25 Nov 2020 05:55:34 +0000
E: Some index files failed to download. They have been ignored, or old ones use
d instead.
nikhil@nikhil-pc:~$ sudo apt install isc-dhcp-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libirs-export161 libiscfg-export163
Suggested packages:
  isc-dhcp-server-ldap policycoreutils
The following NEW packages will be installed:
  isc-dhcp-server libirs-export161 libiscfg-export163
0 upgraded, 3 newly installed, 0 to remove and 393 not upgraded.
Need to get 518 kB of archives.
After this operation, 1,863 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libiscfg-ex
port163 amd64 1:9.11.16+dfsg-3~ubuntu1 [45.9 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libirs-expo
rt161 amd64 1:9.11.16+dfsg-3~ubuntu1 [18.6 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal/main amd64 isc-dhcp-server amd6
4 4.4.1-2.iubuntu5 [453 kB]
Err:3 http://in.archive.ubuntu.com/ubuntu focal/main amd64 isc-dhcp-server amd6
4 4.4.1-2.iubuntu5
  Hash Sum mismatch
    Hashes of expected file:
```



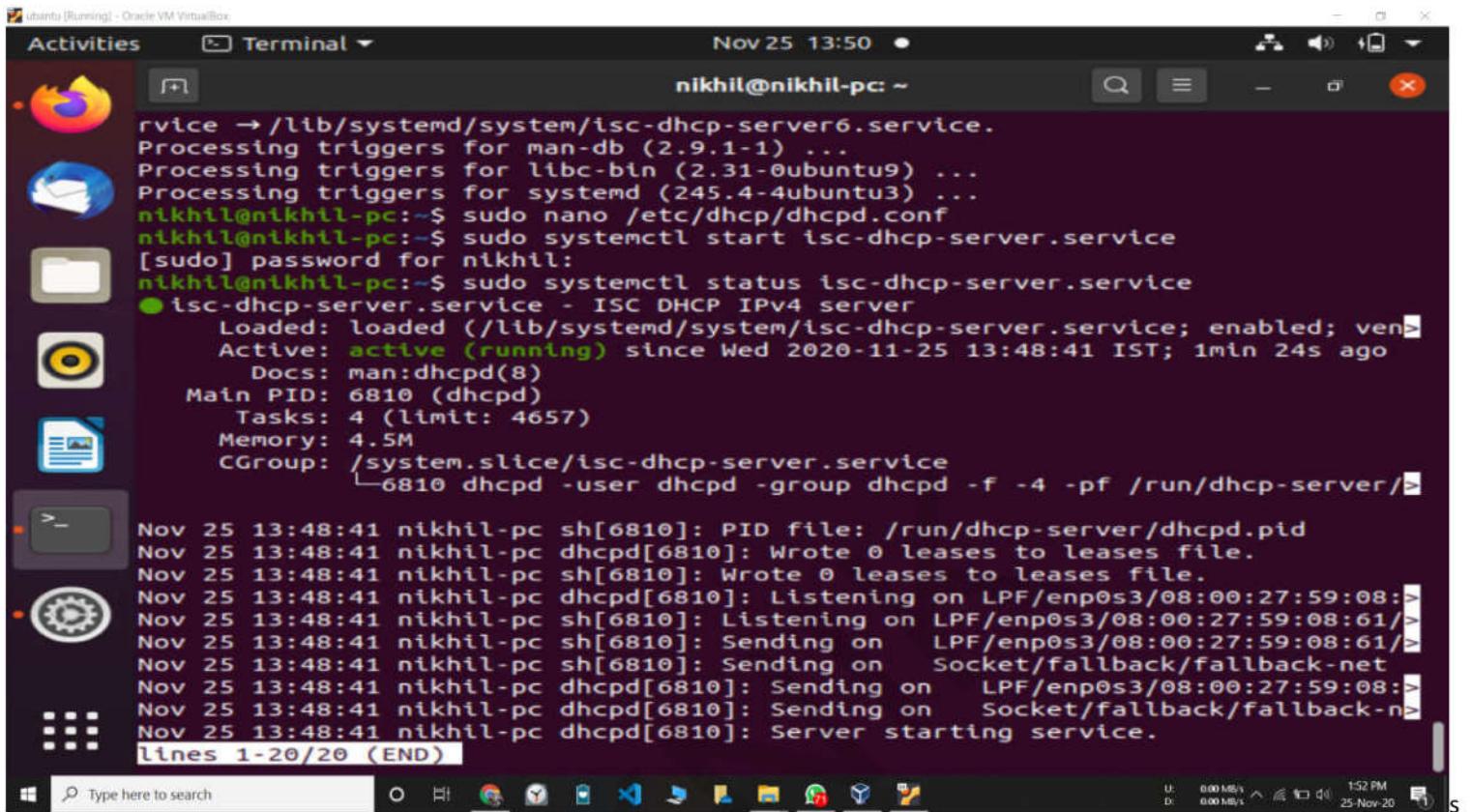
The screenshot shows a terminal window titled "Terminal" with the command "nikhil@nikhil-pc: ~" and the file "/etc/dhcp/dhcpd.conf" open. The terminal displays the configuration for a DHCP server. It includes sections for subnet 10.254.239.32 and 192.168.0.0, and a host declaration for "passacaglia". The terminal has a status bar at the bottom showing network activity and system time.

```
GNU nano 4.8 /etc/dhcp/dhcpd.conf Modified
#subnet 10.254.239.32 netmask 255.255.255.224 {
#  range dynamic-bootp 10.254.239.40 10.254.239.60;
#  option broadcast-address 10.254.239.31;
#  option routers rtr-239-32-1.example.org;
#}

# A slightly different configuration for an internal subnet.
subnet 192.168.0.0 netmask 255.255.255.0 {
    range 192.168.0.51 192.168.0.200;
    #  option domain-name-servers ns1.internal.example.org;
    #  option domain-name "internal.example.org";
    #  option subnet-mask 255.255.255.224;
    #  option routers 10.5.5.1;
    option broadcast-address 192.168.0.255;
    #  default-lease-time 600;
    #  max-lease-time 7200;
}

# Hosts which require special configuration options can be listed in
# host statements. If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

host passacaglia {
    hardware ethernet 0:e:c0:5d:bd:95;
```



```
ubuntu [Running] - Oracle VM VirtualBox
Activities Terminal Nov 25 13:50 nikhil@nikhil-pc: ~
rvice → /lib/systemd/system/isc-dhcp-server6.service.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
Processing triggers for systemd (245.4-4ubuntu3) ...
nikhil@nikhil-pc:~$ sudo nano /etc/dhcp/dhcpd.conf
nikhil@nikhil-pc:~$ sudo systemctl start isc-dhcp-server.service
[sudo] password for nikhil:
nikhil@nikhil-pc:~$ sudo systemctl status isc-dhcp-server.service
● isc-dhcp-server.service - ISC DHCP IPv4 server
    Loaded: loaded (/lib/systemd/system/isc-dhcp-server.service; enabled; vendor=)
      Active: active (running) since Wed 2020-11-25 13:48:41 IST; 1min 24s ago
        Docs: man:dhcpd(8)
       Main PID: 6810 (dhcpd)
          Tasks: 4 (limit: 4657)
            Memory: 4.5M
           CGroup: /system.slice/isc-dhcp-server.service
                   └─6810 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid

Nov 25 13:48:41 nikhil-pc sh[6810]: PID file: /run/dhcp-server/dhcpd.pid
Nov 25 13:48:41 nikhil-pc dhcpd[6810]: Wrote 0 leases to leases file.
Nov 25 13:48:41 nikhil-pc sh[6810]: Wrote 0 leases to leases file.
Nov 25 13:48:41 nikhil-pc dhcpd[6810]: Listening on LPF/enp0s3/08:00:27:59:08:61/eth0
Nov 25 13:48:41 nikhil-pc sh[6810]: Listening on LPF/enp0s3/08:00:27:59:08:61/eth0
Nov 25 13:48:41 nikhil-pc sh[6810]: Sending on   LPF/enp0s3/08:00:27:59:08:61/eth0
Nov 25 13:48:41 nikhil-pc sh[6810]: Sending on   Socket/fallback/fallback-net
Nov 25 13:48:41 nikhil-pc dhcpd[6810]: Sending on   LPF/enp0s3/08:00:27:59:08:61/eth0
Nov 25 13:48:41 nikhil-pc dhcpd[6810]: Sending on   Socket/fallback/fallback-net
Nov 25 13:48:41 nikhil-pc dhcpd[6810]: Server starting service.
lines 1-20/20 (END)
```

sudo apt-get update

Sudo apt-get install isc-dhcp-server

**Goto network setting>ipv4>turn setting auto to
manua>add 192.168.0.1 ||255.255.255.0 ||keep
blank**

Sudo systemctl status isc-dhcp-server.service

Aim - configuration of proxy server on ubuntu.

Theory -

A proxy server acts as a gateway between you and the internet. It's an intermediary server separating end users from the website they browse. They browse varying levels of functionality and security, privacy depending on we care need or company policy.

If you're using a proxy server, internet traffic flows through the proxy server on its way to the address you requested. The request then back through that same proxy server and then the proxy server forward the data received from the website to you.

Modern proxy servers do much more than forwarding web requests all in the name of data security and network performance. Proxy servers act as a firewall and web filter, providing shared network connection and cache data to speed up common requests. A good proxy server keeps users and the internal network protected from the bad stuff that lives out in the wild internet. Lastly proxy servers can provide a high level of privacy.

Every computer on the internet needs to have a unique Internet Protocol (IP) address. Think of this IP address as your computer's street address. Just as the post office knows to deliver your mail to your street address, the internet knows how to send the correct data to the correct computer.

street address). Just as the post office knows to deliver mail to your street address, the internet knows how to send the correct data to the correct computer by the IP address).

A proxy server is a basically a computer on the internet with its own IP address. Your request goes to proxy server then proxy server collects the response from the web server and forward it to you. The web page data you send and still get information that you expect to see. A proxy server can change your IP address so the web server don't know it.

Conclusion -

Hence implemented proxy server on ubuntu.

```
copy (running) - Oracle VM VirtualBox
Activities Terminal Nov 28 13:24
nikhil@nikhil-VirtualBox: ~
nikhil@nikhil-VirtualBox:~$ sudo apt-get install squid
[sudo] password for nikhil:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libdbi-perl libecap3 squid-common squid-langpack
Suggested packages:
  libclone-perl libmldb-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 267 not upgraded.
Need to get 3,666 kB of archives.
After this operation, 15.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libecap3 amd64 1.0.1-3.2ubuntu1 [17.4 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu focal/main amd64 squid-langpack all 2 0191103-1 [167 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 squid-common all 4.10-1ubuntu1.2 [194 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libdbi-perl amd64 1.643-1 [730 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 squid amd64 4.10-1ubuntu1.2 [2,558 kB]
Fetched 3,666 kB in 8s (485 kB/s)
Selecting previously unselected package libecap3:amd64.
(Reading database ... 180369 files and directories currently installed.)
Preconfiguring packages ...
libecap3:amd64
libdbi-perl
libecap3
squid-common
squid-langpack
squid
Reading database ... 180369 files and directories currently installed.
```

copy (Running) - Oracle VM VirtualBox

Activities Terminal Nov 28 13:31 nikhil@nikhil-VirtualBox: ~

```
GNU nano 4.8 /etc/squid/squid.conf
# Adapt to list your (internal) IP networks from where browsing
# should be allowed
acl localnet src 0.0.0.1-0.255.255.255 # RFC 1122 "this" network (LAN)
acl localnet src 10.0.0.0/8 # RFC 1918 local private network (LAN)
acl localnet src 100.64.0.0/10 # RFC 6598 shared address space (CGN)
acl localnet src 169.254.0.0/16 # RFC 3927 link-local (directly plugged)
acl localnet src 172.16.0.0/12 # RFC 1918 local private network (LAN)
acl localnet src 192.168.0.0/16 # RFC 1918 local private network (LAN)
acl localnet src fc00::/7 # RFC 4193 local private network range
acl localnet src fe80::/10 # RFC 4291 link-local (directly plugged)

acl SSL_ports port 443
acl Safe_ports port 80 # http
acl Safe_ports port 21 # ftp
acl Safe_ports port 443 # https
acl Safe_ports port 70 # gopher
acl Safe_ports port 210 # wais
acl Safe_ports port 1025-65535 # unregistered ports
acl Safe_ports port 280 # http-mgmt
acl Safe_ports port 488 # gss-http
acl Safe_ports port 591 # filemaker
acl Safe_ports port 777 # multiling http
acl CONNECT method CONNECT

# TAG: proxy_protocol_access
```

Get Help Write Out Where Is Cut Text Justify
Exit Read File Replace Paste Text To Spell

Type here to search

sudo apt-get update

sudo apt-get install squid

sudo nano /etc/squid/squid.conf

copy (Running) - Oracle VM VirtualBox

Activities Terminal Nov 28 13:33 nikhil@nikhil-VirtualBox: ~ Modified

```
GNU nano 4.8 /etc/squid/squid.conf
# Deny requests to certain unsafe ports
http_access deny !Safe_ports
=====
http_access allow safe_ports
=====new line added=====
# 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

# We strongly recommend the following be uncommented to protect innocent
# web applications running on the proxy server who think the only
# one who can access services on "localhost" is a local user
#http_access deny to_localhost

#
# INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
#
include /etc/squid/conf.d/*

# Example rule allowing access from your local networks.
# Adapt localnet in the ACL section to list your (internal) IP networks
# from where browsing should be allowed
```

Get Help Write Out Where Is Cut Text Justify
Exit Read File Replace ^U Paste Text ^T To Spell

Type here to search

copy (Running) - Oracle VM VirtualBox

Activities Terminal Nov 28 13:35 nikhil@nikhil-VirtualBox: ~ Modified

```
GNU nano 4.8 /etc/squid/squid.conf
# Adapt localnet in the ACL section to list your (internal) IP networks
# from where browsing should be allowed
#http_access allow localnet
http_access allow localhost

# And finally deny all other access to this proxy
http_access allow all

# TAG: adapted_http_access
#     Allowing or Denying access based on defined access lists
#
#     Essentially identical to http_access, but runs after redirectors
#     and ICAP/eCAP adaptation. Allowing access control based on their
#     output.
#
#     If not set then only http_access is used.
#Default:
# Allow, unless rules exist in squid.conf.

# TAG: http_reply_access
#     Allow replies to client requests. This is complementary to http_access.
#
#     http_reply_access allow|deny [!] aclname ...
#
#     NOTE: if there are no access lines present, the default is to allow
```

Get Help Write Out Where Is Cut Text Justify
Exit Read File Replace ^U Paste Text ^T To Spell

Type here to search

http_access allow all

copy (Running) - Oracle VM VirtualBox

Activities Terminal Nov 28 13:37

nikhil@nikhil-VirtualBox: ~

GNU nano 4.8 /etc/squid/squid.conf Modified

```
# require-proxy-header
#           Require PROXY protocol version 1 or 2 connections.
#           The proxy_protocol_access is required to whitelist
#           downstream proxies which can be trusted.
#
#           If you run Squid on a dual-homed machine with an internal
#           and an external interface we recommend you to specify the
#           internal address:port in http_port. This way Squid will only be
#           visible on the internal address.
#
#
# Squid normally listens to port 3128
http_port 4444 transparent
=====http 3128 to this new
#
# TAG: https_port
# Usage: [ip:]port [mode] tls-cert=certificate.pem [options]
#
#           The socket address where Squid will listen for client requests made
#           over TLS or SSL connections. Commonly referred to as HTTPS.
#
#           This is most useful for situations where you are running squid in
#           accelerator mode and you want to do the TLS work at the accelerator
#           level.
```

Get Help Write Out Where Is Cut Text Justify
Exit Read File Replace Cut Text Paste Text To Spell

Type here to search

copy (Running) - Oracle VM VirtualBox

Activities Terminal Nov 28 13:46

nikhil@nikhil-VirtualBox: ~

GNU nano 4.8 /etc/squid/squid.conf Modified

```
#           the connection before seeing that risky request, the user gets an error
#           from Squid. In most cases, that error response will be HTTP 502 (Bad Gateway)
#           with ERR_ZERO_SIZE_OBJECT or ERR_WRITE_ERROR (peer connection reset) etc.
#
#           If an allow rule matches, Squid reuses an available idle persistent connection
#           (if any) for the request that Squid cannot retry. If a deny rule matches, Squid
#           opens a new connection for the request that Squid cannot retry.
#
#           This option does not affect requests that Squid can retry. They will reuse
#           persistent connections (if any).
#
#           This clause only supports fast acl types.
#           See http://wiki.squid-cache.org/SquidFAQ/SquidAcl for details.
#
#           Example:
#           acl SpeedIsWorthTheRisk method POST
#           server_pconn_for_nonretryable allow SpeedIsWorthTheRisk
#
#           Default:
#           Open new connections for forwarding requests Squid cannot retry safely.
#           add new lines to last
acl localnet src 192.168.0.0/24
acl localnet src 10.0.2.15
acl safe_ports port 4444
acl bad_urls dstdomain "/etc/squid/block_sites.acl"
http_access deny bad_urls
```

Get Help Write Out Where Is Cut Text Justify
Exit Read File Replace Cut Text Paste Text To Spell

Type here to search

http_port 4444 transparent

add lines according to ss at last of squid.conf located in /etc/squid

A screenshot of an Ubuntu desktop environment. The terminal window shows the command 'nano /etc/squid/block_sites.acl' being run, and the file contains the following content:

```
GNU nano 4.8
www.facebook.com
www.instagram.com
www.mgmcen.ac.in
```

A screenshot of an Ubuntu desktop environment. The terminal window shows the output of a package installation command, likely 'sudo apt-get install squid'. The output includes:

```
Unpacking libdbi-perl:amd64 (1.643-1) ...
Selecting previously unselected package squid.
Preparing to unpack .../squid_4.10-1ubuntu1.2_amd64.deb ...
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
Unpacking squid (4.10-1ubuntu1.2) ...
Setting up squid-langpack (20191103-1) ...
Setting up libdbi-perl:amd64 (1.643-1) ...
Setting up libecap3:amd64 (1.0.1-3.2ubuntu1) ...
Setting up squid-common (4.10-1ubuntu1.2) ...
Setting up squid (4.10-1ubuntu1.2) ...
Setcap worked! /usr/lib/squid/pinger is not suid!
Skipping profile in /etc/apparmor.d/disable: usr.sbin.squid
Created symlink /etc/systemd/system/multi-user.target.wants/squid.service → /lib/systemd/system/squid.service.
Processing triggers for ufw (0.36-6) ...
Processing triggers for systemd (245.4-4ubuntu3.2) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
nikhil@nikhil-VirtualBox:~$ sudo nano /etc/squid/squid.conf
nikhil@nikhil-VirtualBox:~$ sudo gedit /etc/squid/squid.conf

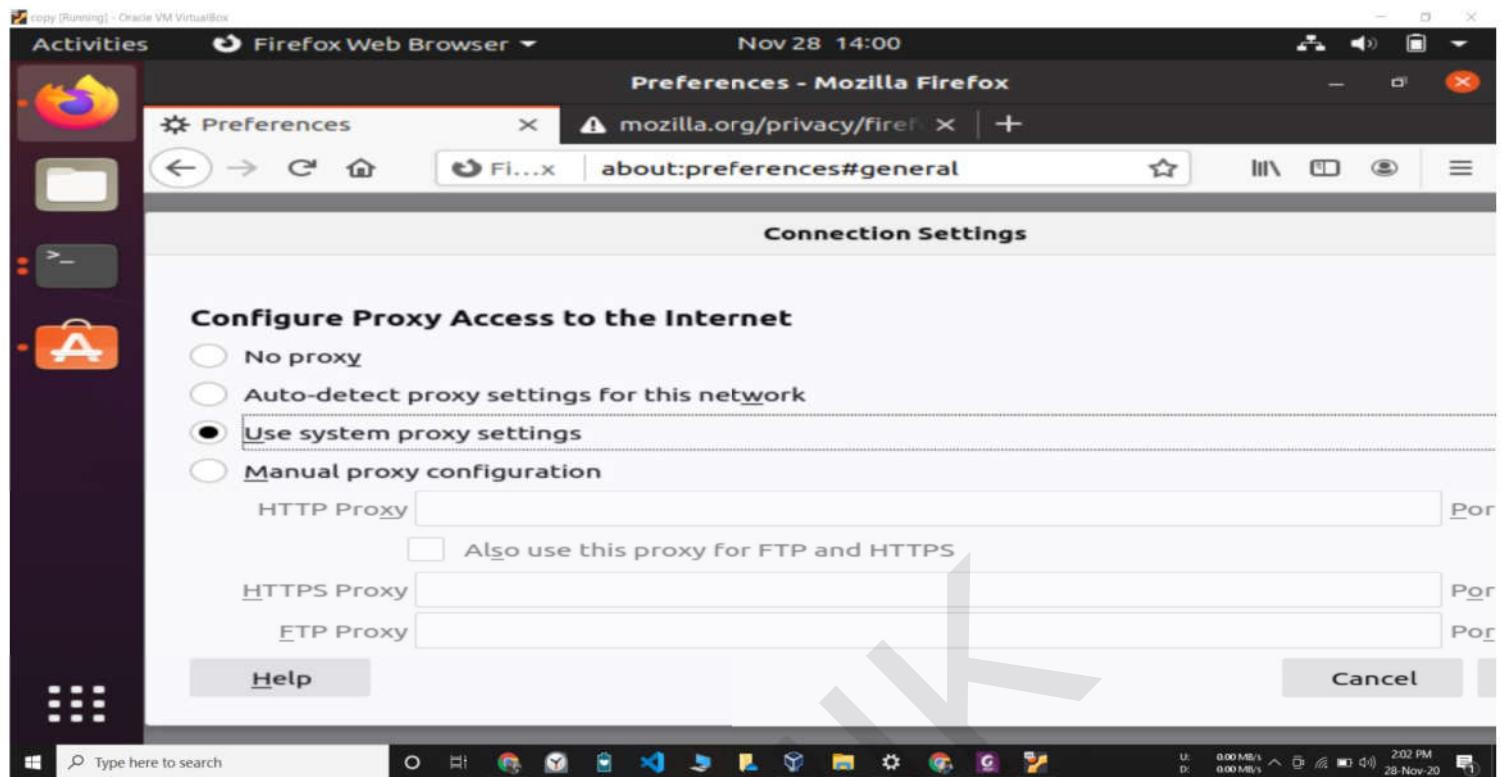
(gedit:3701): Tepl-WARNING **: 13:30:12.194: GVfs metadata is not supported. Fallback to TeplMetadataManager. Either GVfs is not correctly installed or GVfs metadata are not supported on this platform. In the latter case, you should configure Tepl with --disable-gvfs-metadata.
nikhil@nikhil-VirtualBox:~$ sudo nano /etc/squid/squid.conf
nikhil@nikhil-VirtualBox:~$ sudo nano /etc/squid/block_sites.acl
[sudo] password for nikhil:
nikhil@nikhil-VirtualBox:~$
```

Create block_sites.acl

Add block sites list

Sudo systemctl restart squid

Sudo systemctl status squid



```
Processing triggers for systemd (237-3ubuntu10.42) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ufw (0.36-0ubuntu0.18.04.1) ...
Processing triggers for ureadahead (0.100.0-21) ...
Processing triggers for libc-bin (2.27-3ubuntu1.2) ...
nikhil@nikhil-VirtualBox:~$ sudo systemctl start squid
nikhil@nikhil-VirtualBox:~$ sudo systemctl enable squid
squid.service is not a native service, redirecting to systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable squid
nikhil@nikhil-VirtualBox:~$ sudo systemctl status squid
● squid.service - LSB: Squid HTTP Proxy version 3.x
  Loaded: loaded (/etc/init.d/squid; generated)
  Active: active (running) since Sat 2020-11-28 15:55:11 IST; 2min 3s ago
    Docs: man:systemd-sysv-generator(8)
   Tasks: 4 (limit: 4046)
  CGroup: /system.slice/squid.service
          └─2891 /usr/sbin/squid -YC -f /etc/squid/squid.conf
              ├─2896 (squid-1) -YC -f /etc/squid/squid.conf
              ├─2897 (logfile-daemon) /var/log/squid/access.log
              └─2902 (pinger)

Nov 28 15:55:11 nikhil-VirtualBox systemd[1]: Starting LSB: Squid HTTP Proxy ve
Nov 28 15:55:11 nikhil-VirtualBox squid[2850]: * Starting Squid HTTP Proxy squ
Nov 28 15:55:11 nikhil-VirtualBox squid[2850]: ...done.
Nov 28 15:55:11 nikhil-VirtualBox systemd[1]: Started LSB: Squid HTTP Proxy ver
Nov 28 15:55:11 nikhil-VirtualBox squid[2891]: Squid Parent: will start 1 kids
Nov 28 15:55:11 nikhil-VirtualBox squid[2891]: Squid Parent: (squid-1) process
lines 1-17/17 (END)
```

