

FTP

Experiment : 6

Aim : To create and configure FTP Server

Description :

FTP Server

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

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

Port No: 21

Package name: vsftpd

Configuration file: /etc/vsftpd.conf

Procedure:

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

```
$sudo apt install vsftpd
```

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

```
$anonymous_enable=YES
```

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

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

```
$sudo mkdir -p /srv/files/ftp
```

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

4. After making the change restart vsftpd:

```
$ sudo service vsftpd restart
```

5. User Authenticated FTP Configuration

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

```
$write_enable=YES
```

6. Now restart vsftpd:

```
$ sudo service vsftpd restart
```

7. Securing FTP

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

```
$chroot_local_user=YES
```

```
$chroot_list_enable=YES
```

```
$chroot_list_file=/etc/vsftpd.chroot_list
```

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

9. Then restart vsftpd:

```
$sudo service vsftpd restart
```

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

```
$ssl_enable=YES
```

11. Then check the vsftpd status

```
$sudo service vsftpd status
```

12. Now connect to ftp by the command

```
$ftp -p 192.168.234.128
```

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

A screenshot of a terminal window on a Linux system. The terminal title bar shows 'root@UBUNTU: /home/ubuntu22'. The terminal content displays the configuration file /etc/vsftpd.conf being edited with nano. The configuration includes comments about default settings, a warning to read the manual, and directives for listening on IPv6, anonymous FTP, local users, and write permissions. The user has edited the file using nano, and the terminal shows the current state of the configuration. The terminal window is part of a desktop environment with a taskbar at the bottom showing various application icons and system status information like '30°C Cloudy' and '07-08-2024'.

The screenshot shows a Linux desktop environment with a terminal window open. The terminal displays the following commands and output:

```

root@UBUNTU: /home/ubuntu22

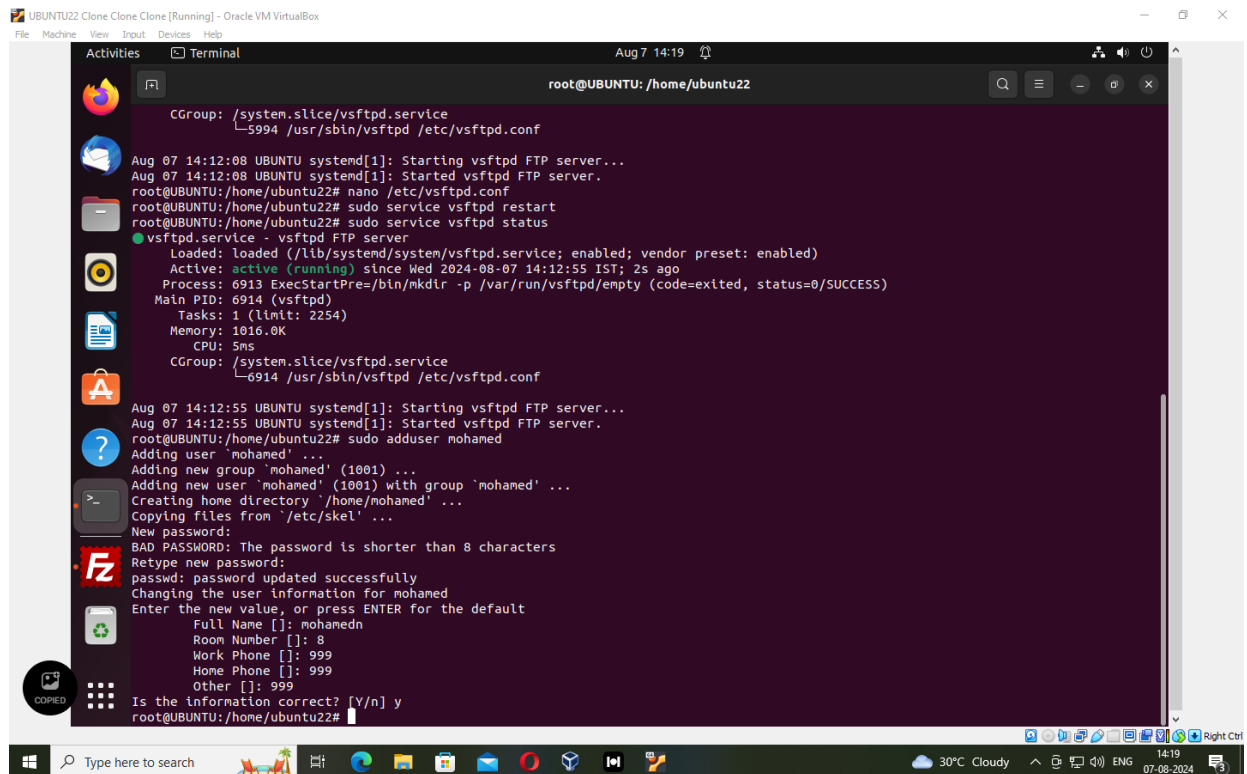
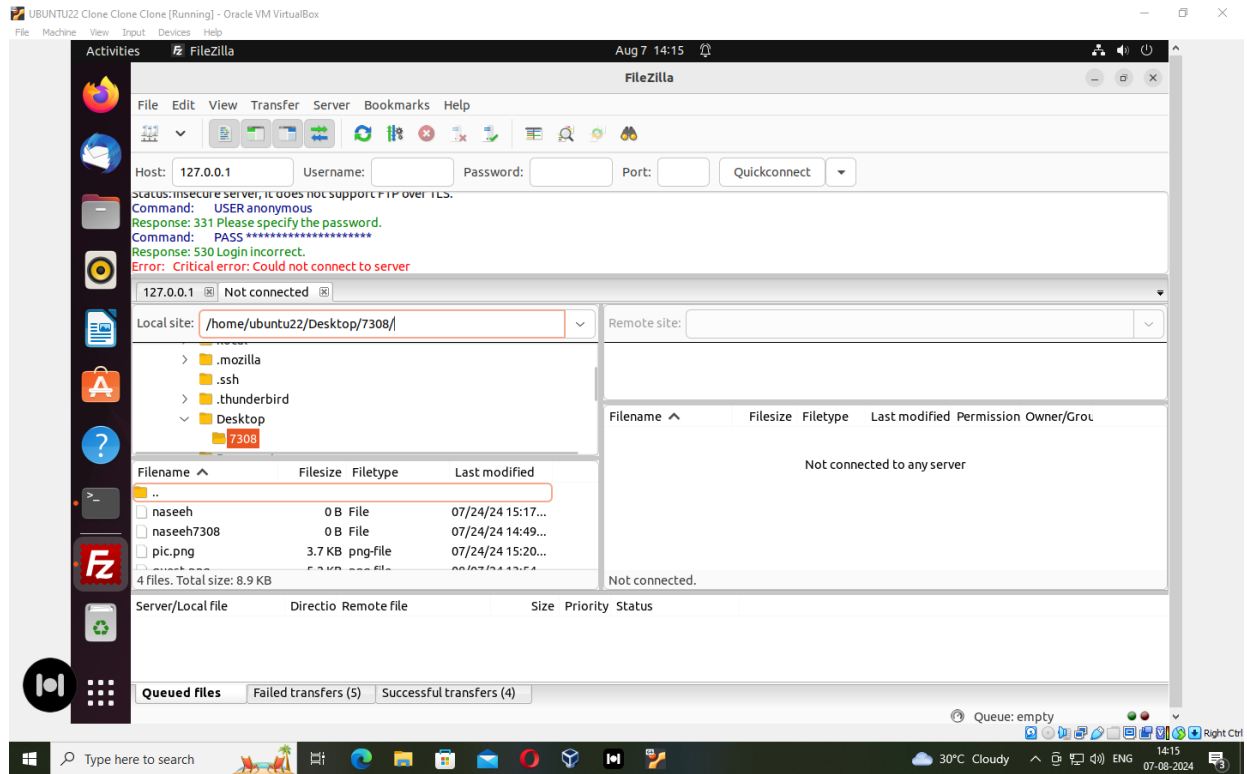
CGroup: /system.slice/vsftpd.service
├─ 628 /usr/sbin/vsftpd /etc/vsftpd.conf
├─ 3442 /usr/sbin/vsftpd /etc/vsftpd.conf
└─ 3444 /usr/sbin/vsftpd /etc/vsftpd.conf

Aug 07 13:43:09 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 13:43:09 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU: /home/ubuntu22# sudo cp /home/ubuntu22/Desktop/7308/quest.png /srv/file/ftp
root@UBUNTU: /home/ubuntu22# sudo service vsftpd restart
root@UBUNTU: /home/ubuntu22# sudo service vsftpd status
● vsftpd.service - vsftpd FTP server
   Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2024-08-07 14:12:08 IST; 3s ago
   Process: 5993 ExecStartPre=bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
   Main PID: 5994 (vsftpd)
   Tasks: 1 (limit: 2254)
   Memory: 936.0K
   CPU: 5ms
   CGroup: /system.slice/vsftpd.service
           └─ 5994 /usr/sbin/vsftpd /etc/vsftpd.conf

Aug 07 14:12:08 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 14:12:08 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU: /home/ubuntu22# nano /etc/vsftpd.conf
root@UBUNTU: /home/ubuntu22# sudo service vsftpd restart
root@UBUNTU: /home/ubuntu22# sudo service vsftpd status
● vsftpd.service - vsftpd FTP server
   Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2024-08-07 14:12:55 IST; 2s ago
   Process: 6913 ExecStartPre=bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
   Main PID: 6914 (vsftpd)
   Tasks: 1 (limit: 2254)
   Memory: 1016.0K
   CPU: 5ms
   CGroup: /system.slice/vsftpd.service
           └─ 6914 /usr/sbin/vsftpd /etc/vsftpd.conf

Aug 07 14:12:55 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 14:12:55 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU: /home/ubuntu22#
  
```

The desktop environment includes a sidebar with application icons (Firefox, Files, LibreOffice Writer, LibreOffice Calc, LibreOffice Impress, LibreOffice Draw, LibreOffice Base, LibreOffice Template Gallery, and a question mark icon) and a top bar showing the date and time as 'Aug 7 14:13'.



```
UBUNTU22 Clone Clone Clone [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 7 14:27

root@UBUNTU: /home/mohamed

Active: active (running) since Wed 2024-08-07 14:12:55 IST; 2s ago
Process: 6913 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
Main PID: 6914 (vsftpd)
Tasks: 1 (limit: 2254)
Memory: 1016.0K
CPU: 5ms
CGroup: /system.slice/vsftpd.service
└─6914 /usr/sbin/vsftpd /etc/vsftpd.conf

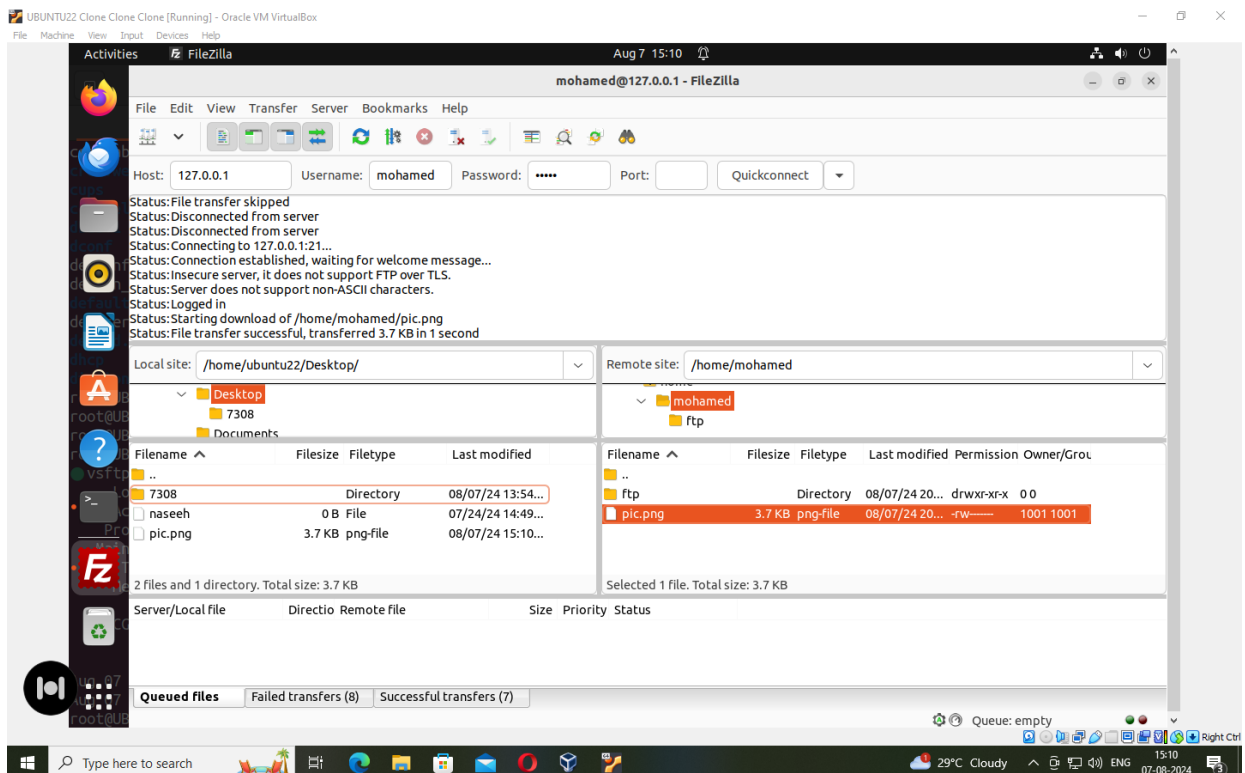
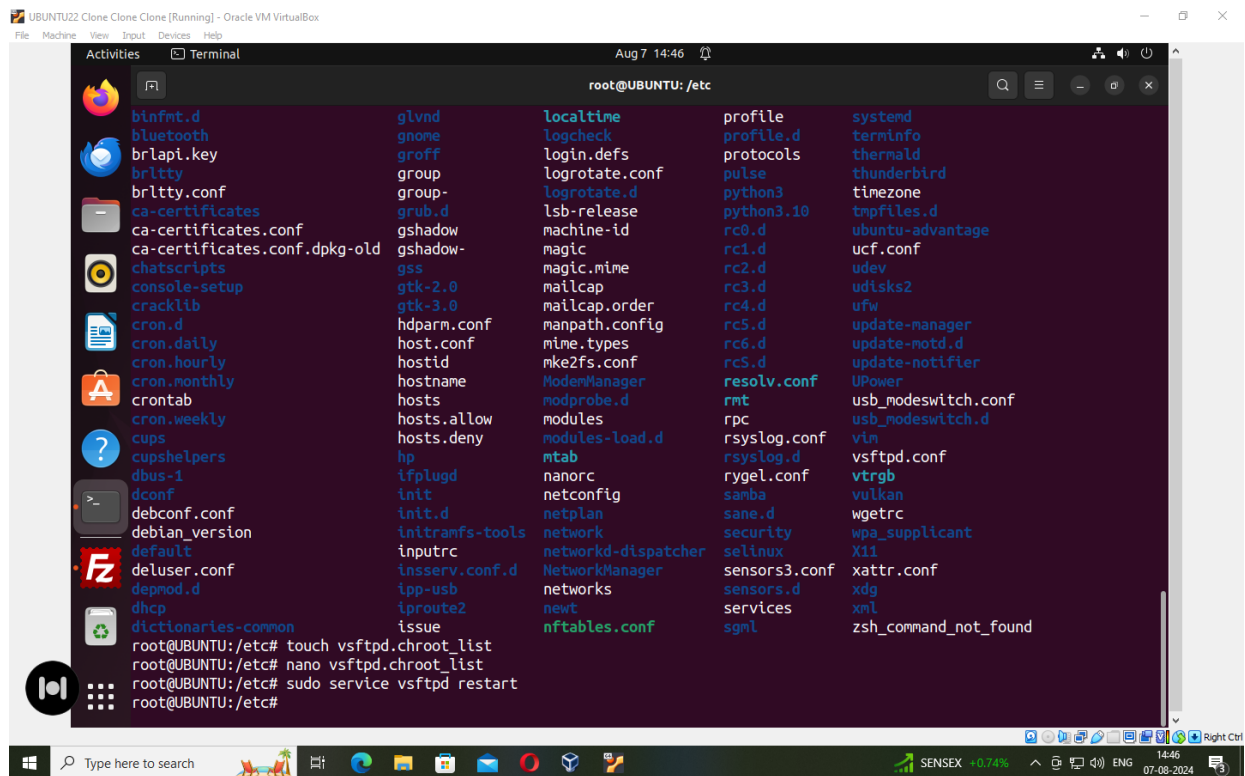
Aug 07 14:12:55 UBUNTU systemd[1]: Starting vsftpd FTP server...
Aug 07 14:12:55 UBUNTU systemd[1]: Started vsftpd FTP server.
root@UBUNTU: /home/ubuntu22# sudo adduser mohamed
Adding user 'mohamed' ...
Adding new group 'mohamed' (1001) ...
Adding new user 'mohamed' (1001) with group 'mohamed' ...
Creating home directory '/home/mohamed' ...
Copying files from '/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for mohamed
Enter the new value, or press ENTER for the default
Full Name []: mohamedn
Room Number []: 8
Work Phone []: 999
Home Phone []: 999
Other []: 999
Is the information correct? [Y/n] y
root@UBUNTU: /home/ubuntu22# cd ..
root@UBUNTU: /home# ls
mohamed ubuntu22
root@UBUNTU: /home# cd mohamed
root@UBUNTU: /home/mohamed# ls
root@UBUNTU: /home/mohamed# ls
root@UBUNTU: /home/mohamed# mkdir ftp
root@UBUNTU: /home/mohamed# ls
ftp
root@UBUNTU: /home/mohamed#
```

```
UBUNTU22 Clone Clone Clone [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 7 14:40

root@UBUNTU: /home/mohamed

GNU nano 6.2 /etc/vsftpd.conf *
# chroot
chroot_local_user=YES
chroot_list_enable=YES
# (default follows)
chroot_list_file=/etc/vsftpd.chroot_list
user_sub_token=$USER
local_root=/home/$USER/ftp
allow_writeable_chroot=YES
#
# You may activate the "-R" option to the builtin ls. This is disabled by
# default to avoid remote users being able to cause excessive I/O on large
# sites. However, some broken FTP clients such as "ncftp" and "mirror" assume
# the presence of the "-R" option, so there is a strong case for enabling it.
#ls_recurse_enable=YES
#
# Customization
#
# Some of vsftpd's settings don't fit the filesystem layout by
# default.
#
# This option should be the name of a directory which is empty. Also, the
# directory should not be writable by the ftp user. This directory is used
# as a secure chroot() jail at times vsftpd does not require filesystem
# access.
secure_chroot_dir=/var/run/vsftpd/empty
#
# This string is the name of the PAM service vsftpd will use.
pam_service_name=vsftpd

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^J Execute    ^C Location   ^M-U Undo
^X Exit      ^R Read File  ^R Replace    ^P Paste      ^_ Justify    ^G Go To Line ^M-E Redo
```



Conclusion:

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