

FTP

Experiment : 3

Aim : To create and configure FTP Server

Description :

FTP Server

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

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

Port No: 21

Package name: vsftpd

Configuration file: /etc/vsftpd.conf

Procedure:

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

```
$sudo apt install vsftpd
```

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

```
$anonymous_enable=YES
```

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

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

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

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

4. After making the change restart vsftpd:

```
$ sudo service vsftpd restart
```

5. User Authenticated FTP Configuration

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

```
$write_enable=YES
```

6. Now restart vsftpd:

```
$ sudo service vsftpd restart
```

7. Securing FTP

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

```
$chroot_local_user=YES
```

```
$chroot_list_enable=YES  
S
```

```
$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

Result:

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@kali:~/vfileftp

root@kali:~# sudo apt install vsftpd
Installing:
vsftpd

Summary:
Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 910
Download size: 142 kB
Space needed: 352 kB / 62.7 GB available

Get:1 http://kali.download/kali kali-rolling/main amd64 vsftpd amd64 3.0.3-13.1 [142 kB]
Fetched 142 kB in 1s (123 kB/s)
Preconfiguring packages ...
Selecting previously unselected package vsftpd.
(Reading database ... 204398 files and directories currently installed.)
Preparing to unpack .../vsftpd_3.0.3-13.1_amd64.deb ...
Unpacking vsftpd (3.0.3-13.1) ...
Setting up vsftpd (3.0.3-13.1) ...
vsftpd user (ftp) already exists, doing nothing.
update-rc.d: We have no instructions for the vsftpd init script.
update-rc.d: It looks like a network service, we disable it.
Processing triggers for man-db (2.12.1-1) ...
Processing triggers for kali-menu (2023.4.7) ...

root@kali:~# sudo apt update
Get:1 http://kali.download/kali kali-rolling InRelease [41.5 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [10.7 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [47.5 MB]
Get:4 http://kali.download/kali kali-rolling/non-free amd64 Packages [192 kB]
Get:5 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [862 kB]
Fetched 68.3 MB in 1min 7s (1,019 kB/s)
917 packages can be upgraded. Run 'apt list --upgradable' to see them.

root@kali:~# ifconfig
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:02:26:79 brd ff:ff:ff:ff:ff:ff
    inet 10.10.10.1/24 brd 10.10.10.255 scope global dynamic noprefixroute eth0
        valid_lft 85755sec preferred_lft 85755sec
    inet6 fe80::2726:79ff:fe00:0000/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
```

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@kali:~/vfileftp

root@kali:~# nano /etc/apt/sources.list
root@kali:~# nano /etc/vsftpd.conf
root@kali:~# systemctl restart vsftpd

root@kali:~# systemctl status vsftpd
vsftpd.service - vsftpd FTP server
Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; preset: disabled)
Active: active (running) since Tue 2024-09-10 01:04:45 EDT; 14s ago
Process: 25638 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
Main PID: 25638 (vsftpd)
Tasks: 1 (limit: 2272)
Memory: 788.8K (peak: 1.5M)
CPU: 33ms
CGroup: /system.slice/vsftpd.service
        └─25638 /usr/sbin/vsftpd /etc/vsftpd.conf

Sep 10 01:04:45 kali systemd[1]: Starting vsftpd.service - vsftpd FTP server...
Sep 10 01:04:45 kali systemd[1]: Started vsftpd.service - vsftpd FTP server.

root@kali:~# systemctl enable vsftpd
Synchronizing state of vsftpd.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable vsftpd
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /usr/lib/systemd/system/vsftpd.service.

root@kali:~# systemctl status vsftpd
vsftpd.service - vsftpd FTP server
Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: disabled)
Active: active (running) since Tue 2024-09-10 01:04:45 EDT; 38s ago
Main PID: 25638 (vsftpd)
Tasks: 1 (limit: 2272)
Memory: 788.8K (peak: 1.5M)
CPU: 33ms
CGroup: /system.slice/vsftpd.service
        └─25638 /usr/sbin/vsftpd /etc/vsftpd.conf

Sep 10 01:04:45 kali systemd[1]: Starting vsftpd.service - vsftpd FTP server...
Sep 10 01:04:45 kali systemd[1]: Started vsftpd.service - vsftpd FTP server.

root@kali:~# nano /etc/vsftpd.conf
root@kali:~# systemctl restart vsftpd
```

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4 5 6
root@kali:/usr/local/etc# cat /etc/vsftpd.conf
# This is a sample configuration file for vsftpd. See the
# vsftpd.conf.5 manual page for all available 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=YES
# 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? (Disabling by default).
anonymous_enable=NO
# Uncomment this to allow local users to log in.
local_enable=YES
# Uncomment this to enable any form of FTP command.
write_enable=YES
# Default umask for local users is 022. You may wish to change this to 022,
# if you want expect that (022 is used by most other ftpd's)
local_umask=022
# Uncomment this to allow the anonymous FTP user to upload files. This only
# has an effect if the above global write enable is activated. Also, you will
# obviously need to create a directory writable by the FTP user.
anon_upload_enable=NO
# Uncomment this if you want the Anonymous FTP user to be able to create
# new directories.
anon_mkdir_write_enable=NO
# Activate directory messages - messages given to remote users when they
# go into a certain directory.
dirmessage_enable=NO
# Help
# Exit
# Write Out
# Read File
# Where Is
# Replace
# Cut
# Paste
# Execute
# Justify
# Location
# Go To Line
# Undo
# Redo
# Set Mark
# Copy
# To Bracket
# Where Was
# Previous
# Next
# Back
# Forward
# Prev Word
# Next Word
# Home
# End
```

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4 5 6
root@kali:/usr/local/etc# cat /etc/vsftpd.conf
# This is a sample configuration file for vsftpd. See the
# vsftpd.conf.5 manual page for all available 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=YES
# 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? (Disabling by default).
anonymous_enable=NO
# Uncomment this to allow local users to log in.
local_enable=YES
# Uncomment this to enable any form of FTP command.
write_enable=YES
# Default umask for local users is 022. You may wish to change this to 022,
# if you want expect that (022 is used by most other ftpd's)
local_umask=022
# Uncomment this to allow the anonymous FTP user to upload files. This only
# has an effect if the above global write enable is activated. Also, you will
# obviously need to create a directory writable by the FTP user.
anon_upload_enable=NO
# Uncomment this if you want the Anonymous FTP user to be able to create
# new directories.
anon_mkdir_write_enable=NO
# Activate directory messages - messages given to remote users when they
# go into a certain directory.
dirmessage_enable=NO
# Enable this and the server will recognise asynchronous ABOR requests. Not
# recommended for security (the code is non-trivial). Not enabling it,
# however, may confuse older FTP clients.
async_abor_enable=NO
# By default the server will pretend to allow ASCII mode but in fact ignore
# the request. Turn on the below options to have the server actually do ASCII
# mangling on files when in ASCII mode.
# Beware that on some FTP servers, ASCII support allows a denial of service
# attack (DoS) via the command "SIZE /big/file" in ASCII mode. vsftpd
# predicted this attack and has always been safe, reporting the size of the
# raw file.
# ASCII mangling is a horrible feature of the protocol.
ascii_upload_enable=NO
ascii_download_enable=NO
# You may fully customise the login banner string:
ftpd_banner=Welcome to blah FTP service.
# You may specify a file of disallowed anonymous e-mail addresses. Apparently
# useful for combatting certain DoS attacks.
# (default follows)
banned_email_file=/etc/vsftpd.banned_emails
# You may restrict local users to their home directories. See the FAQ for
# the possible risks in this before using chroot_local_user or
# chroot_list_enable below.
chroot_local_user=NO
# You may specify an explicit list of local users to chroot() to their home
# directory. If chroot_local_user is YES, then this list becomes a list of
# users to NOT chroot().
# (Warning: chroot'ing can be very dangerous. If using chroot, make sure that
# the user does not have write access to the top level directory within the
# chroot.)
chroot_local_user=NO
chroot_list_enable=NO
chroot_list_file=/etc/vsftpd.chroot_list
# 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=NO
# Help
# Exit
# Write Out
# Read File
# Where Is
# Replace
# Cut
# Paste
# Execute
# Justify
# Location
# Go To Line
# Undo
# Redo
# Set Mark
# Copy
# To Bracket
# Where Was
# Previous
# Next
# Back
# Forward
# Prev Word
# Next Word
# Home
# End
```

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4
root@kali: /usr/sbin/vsftpd

File Actions Edit View Help
Active: active (running) since Tue 2024-09-10 01:04:45 EDT; 38s ago
Main PID: 25638 (vsftpd)
Tasks: 1 (limit: 2072)
Memory: 788.8K (peak: 1.5M)
CPU: 33ms
CGroup: /system.slice/vsftpd.service
└─25638 /usr/sbin/vsftpd /etc/vsftpd.conf

Sep 10 01:04:45 kali systemd[1]: Starting vsftpd.service - vsftpd FTP server...
Sep 10 01:04:45 kali systemd[1]: Started vsftpd.service - vsftpd FTP server.

root@kali: /home/kali
# nano /etc/vsftpd.conf
root@kali: /home/kali
# systemctl restart vsftpd
root@kali: /home/kali
# service vsftpd restart
root@kali: /home/kali
# mkdir -p /srv/file/ftp
root@kali: /home/kali
# usermod -d /srv/file/ftp ftp
root@kali: /home/kali
# service vsftpd restart
root@kali: /home/kali
# mkdir -p /srv/file/ftp
root@kali: /home/kali
# usermod -d /srv/file/ftp ftp
root@kali: /home/kali
# cd /srv/file/ftp
root@kali: /srv/file/ftp
# mkdir emmuz
root@kali: /srv/file/ftp
# service vsftpd restart
root@kali: /srv/file/ftp
# mv /home/kali/Desktop/emmanuel22ubca7320/22ubca7320.txt /srv/file/ftp
root@kali: /srv/file/ftp
# service vsftpd restart
root@kali: /srv/file/ftp
```

```
kali-linux-2024.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4
root@kali: /usr/sbin/vsftpd /etc/v
└─25638 /usr/sbin/vsftpd /etc/v

File Actions Edit View Help
127.0.0.1 - FileZilla
Host: 127.0.0.1 Username: Password: Port: Quickconnect
Status: Logged in
Status: Retrieving directory listing...
Status: Calculating timezone offset of server...
Status: Timezone offset of server is 0 seconds.
Status: Directory listing of "/" successful

Local site: /home/kali/Desktop/emmanuel22ubca7320/ Remote site: /

bin
boot
dev
drv
etc

Filename Filesize Filetype Lastmodified Permission Owner/Group
.
emmuz Directory 09/09/2024... drwxr-xr-x 0 0
22ubca7320.txt 0 txt-file 09/09/2024... -rw-rw-r-- 1000 1000

Empty directory. 1 file and 1 directory. Total size: 0 bytes

Server/Local file Directory Remote file Size Priority Status

Queued files Failed transfers Successful transfers
Queue: empty
```



