

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
kali@kali: ~
File Actions Edit View Help
(kali@kali)-[~]
└─$ sudo apt install vsftpd
[sudo] password for kali:
Error: Unable to locate package vsftpd

(kali@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 [19.7 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [47.5 MB]
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [106 kB]
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [26 5 kB]
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [192 kB]
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [8 62 kB]
Get:8 http://kali.download/kali kali-rolling/non-free-firmware amd64 Packages [33.1 kB]
Get:9 http://kali.download/kali kali-rolling/non-free-firmware amd64 Contents (deb) [16.9 kB]
Fetched 68.7 MB in 35s (1,984 kB/s)
948 packages can be upgraded. Run 'apt list --upgradable' to see them.

(kali@kali)-[~]
└─$ sudo apt install vsftpd
Installing:
vsftpd

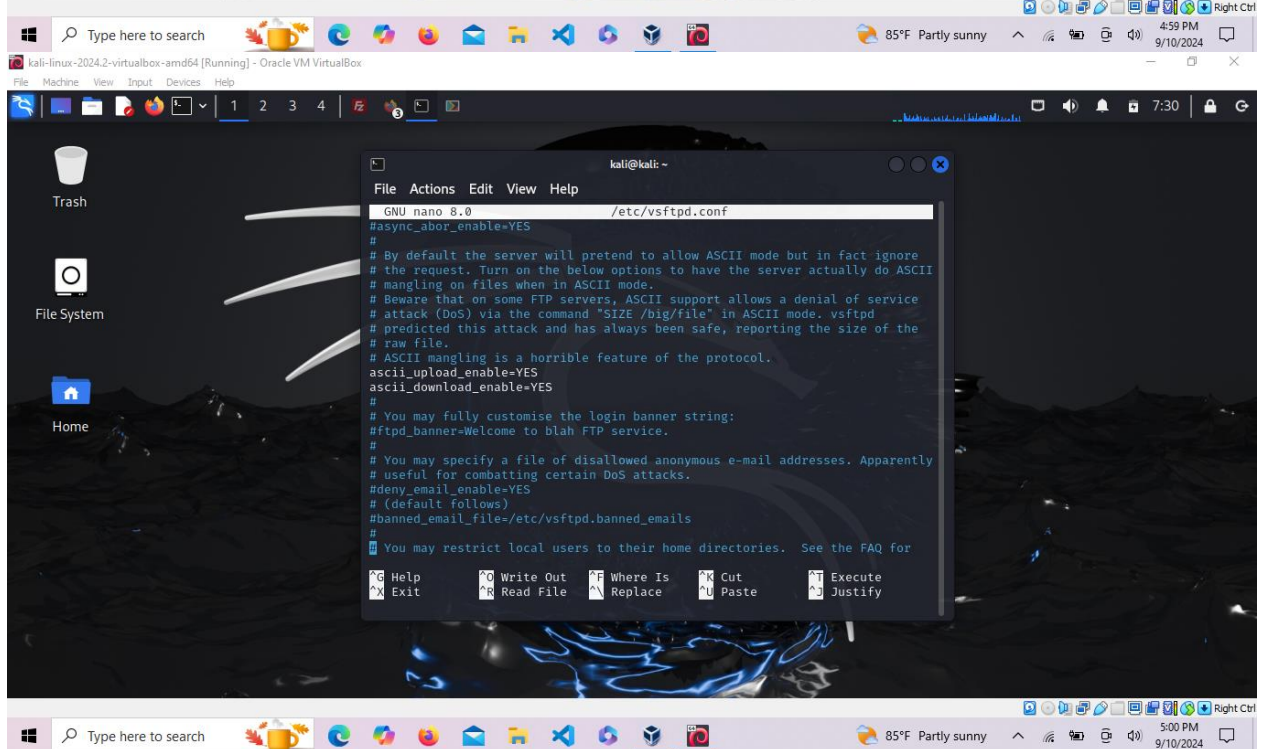
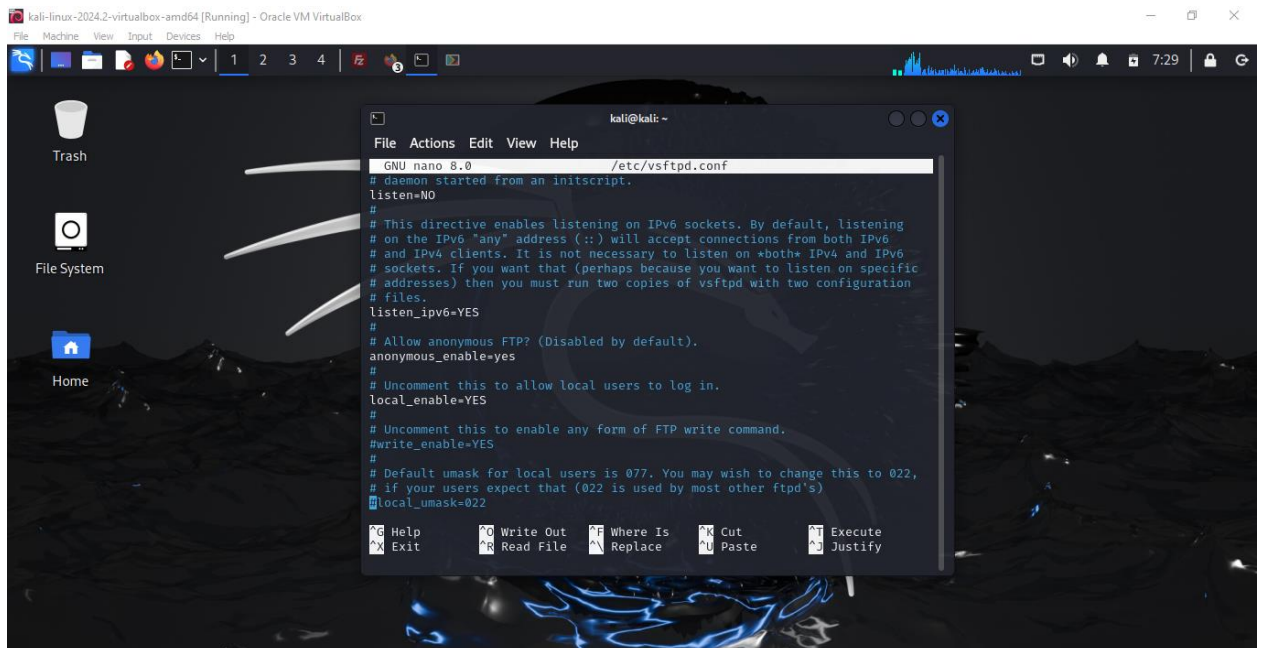
Summary:
Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 948
Download size: 142 kB
Space needed: 352 kB / 64.7 GB available

Get:1 http://kali.download/kali kali-rolling/main amd64 vsftpd amd64 3.0.3-13
inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute eth0
valid_lft 85814sec preferred_lft 85814sec
inet6 fe80::e800:635b:4538:3353/64 scope link noprefixroute
valid_lft forever preferred_lft forever

(kali@kali)-[~]
└─$ sudo nano /etc/vsftpd.conf
(kali@kali)-[~]
└─$ sudo nano /etc/vsftpd.conf
(kali@kali)-[~]
└─$ sudo mkdir -p /srv/file/ftp
(kali@kali)-[~]
└─$ sudo usermod -d /srv/file/ftp ftp
(kali@kali)-[~]
└─$ sudo systemctl status vsftpd
o vsftpd.service - vsftpd FTP server
Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; prese
Active: inactive (dead)
lines 1-3/3 (END)
zsh: suspended sudo systemctl status vsftpd

(kali@kali)-[~]
└─$ sudo 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.

(kali@kali)-[~]
└─$ sudo systemctl status vsftpd
```



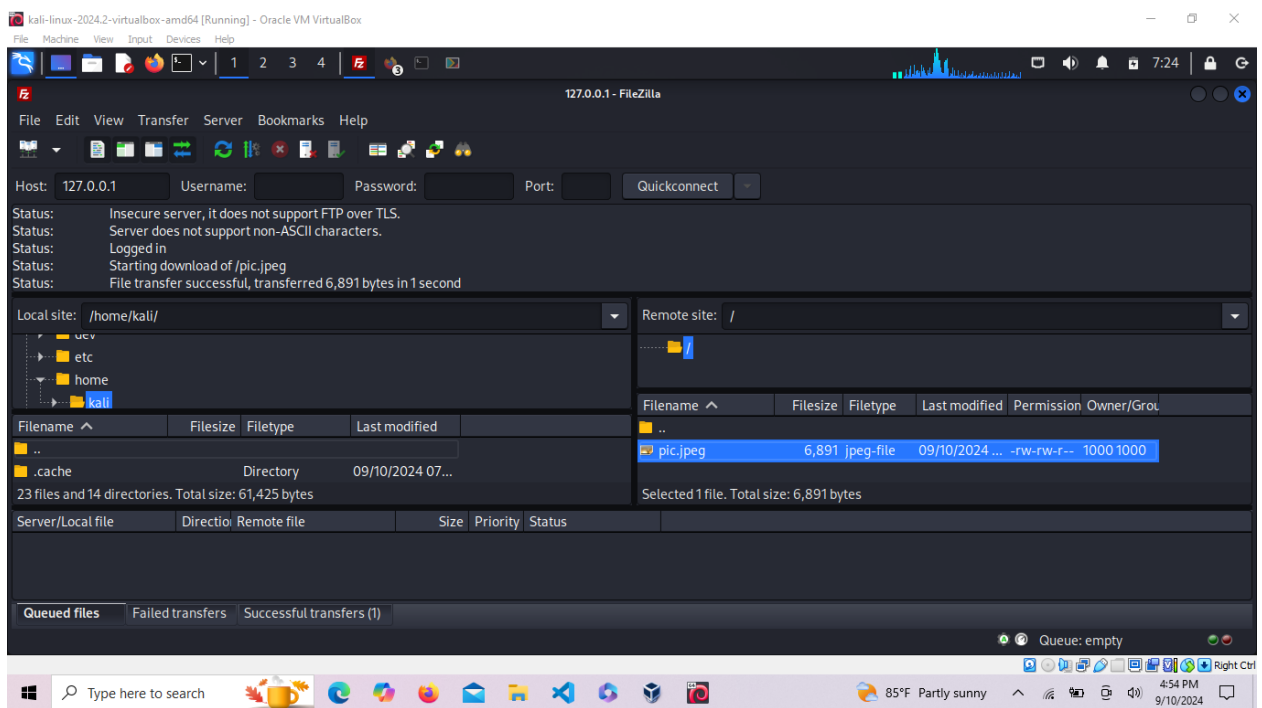
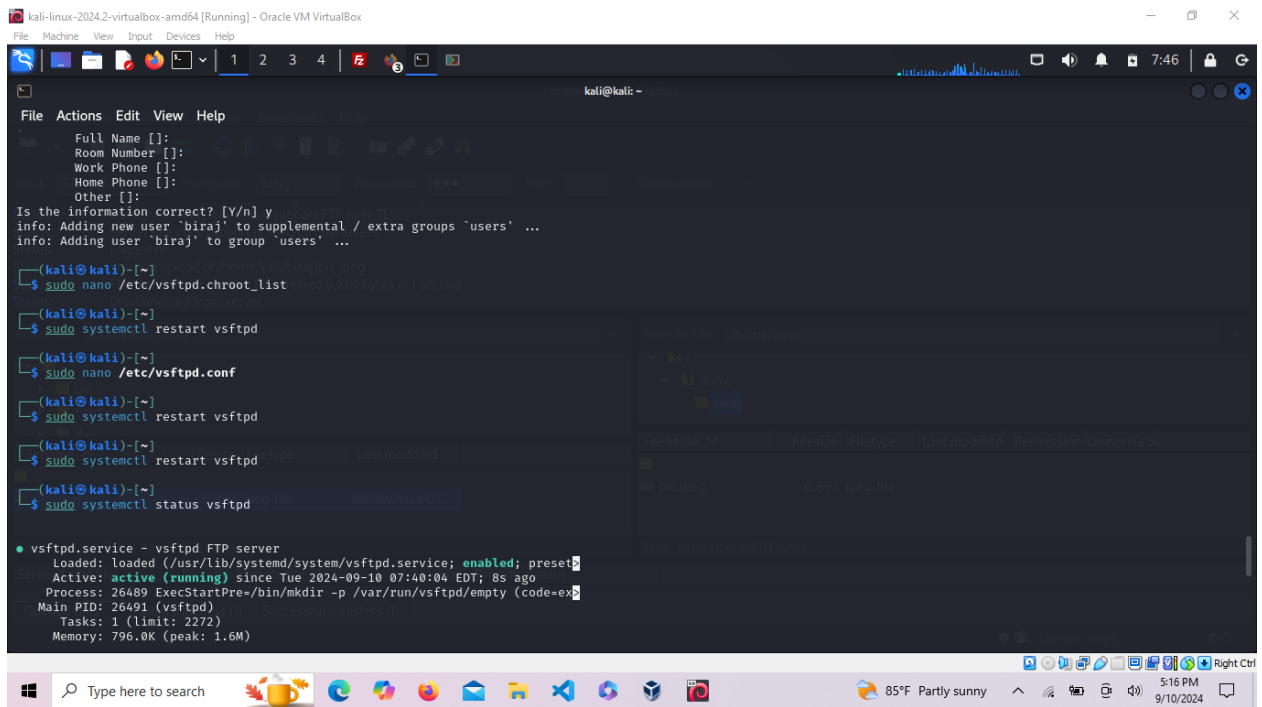
The image consists of two screenshots of a Kali Linux virtual machine running in Oracle VM VirtualBox. The top screenshot shows the `/etc/vsftpd.conf` file being edited in nano. The file contains various configuration options for vsftpd, including `ls_recurse_enable=YES`, `secure_chroot_dir=/var/run/vsftpd/empty`, and `ssl_enable=NO`. The bottom screenshot shows the terminal output of several commands: `systemctl status vsftpd` (showing it is suspended), `mv /home/kali/Downloads/pic.jpeg /srv/file/ftp`, `service restart vsftpd` (showing it is unrecognized), `systemctl restart vsftpd`, and `apt install filezilla`. The `apt install filezilla` command shows the installation of filezilla and its dependencies, including `gnutls-bin`, `libgnutls30t64`, `libnettle8t64`, `filezilla-common`, `libfilezilla45`, `libpugixml1v5`, `libwxgtk3.2-1t64`, `libfilezilla-common`, `libpcre2-32-0`, and `libwxbase3.2-1t64`. The summary shows that 5 packages are upgrading, 8 are installing, and 0 are removing, with a total download size of 13.9 MB and a space needed of 43.5 MB out of 64.6 GB available.

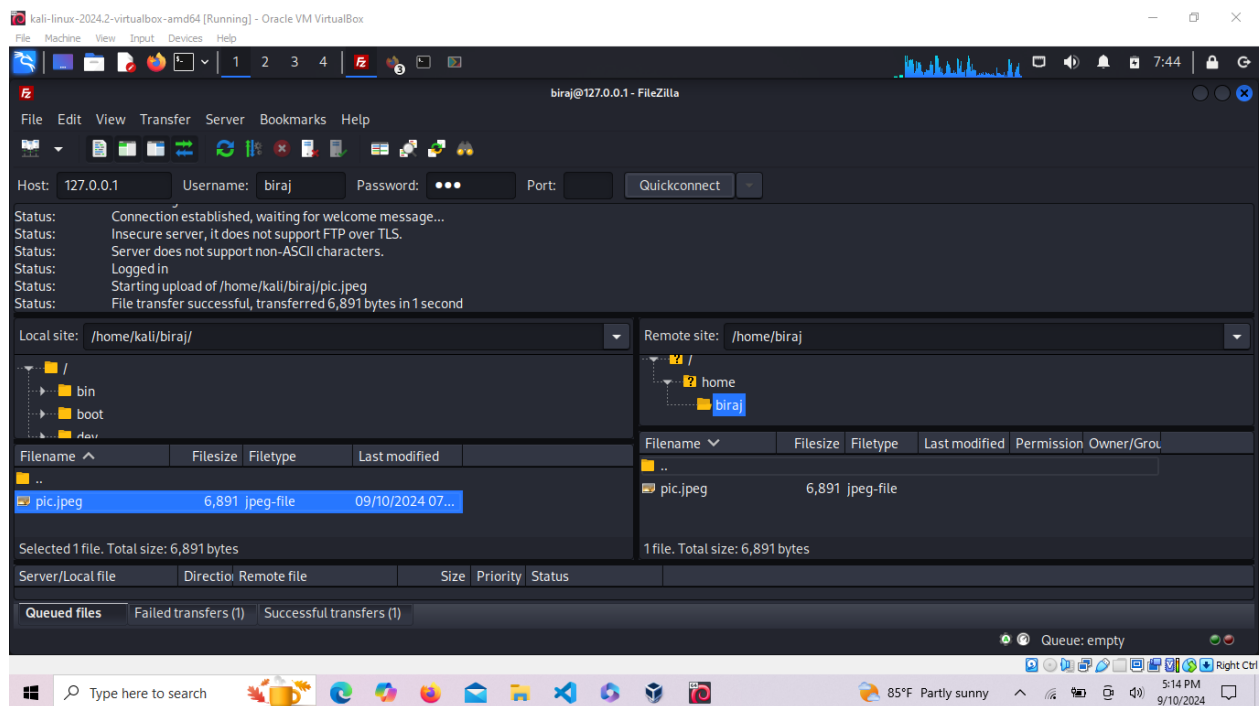
```
GNU nano 8.0 /etc/vsftpd.conf
# sites. However, some broken FTP clients such as "ncftp" and "mirror" assume
# the presence of the "-R" option, so there is a strong case for enabling it.
#ls_recurse_enable=YES
#
# Customization
# Some of vsftpd's settings don't fit the filesystem layout by
# default.
#
# This option should be the name of a directory which is empty. Also, the
# directory should not be writable by the ftp user. This directory is used
# as a secure chroot() jail at times vsftpd does not require filesystem
# access.
secure_chroot_dir=/var/run/vsftpd/empty
#
# This string is the name of the PAM service vsftpd will use.
pam_service_name=vsftpd
#
# This option specifies the location of the RSA certificate to use for SSL
# encrypted connections.
rsa_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
rsa_private_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
ssl_enable=NO
#
# Uncomment this to indicate that vsftpd use a utf8 filesystem.
#utf8_filesystem=YES
user_sub_token=$USER
local_root=/home/ftp/$USER
write_enable=YES

Help Exit Write Out Where Is Cut Execute Location M-U Undo M-A Set Mark M-T To Bracket M-B Previous
Read File Replace Paste Justify Go To Line Redo Copy Where Was Next

Type here to search 85°F Partly sunny 5:16 PM 9/10/2024

kali@kali:~$ zsh: suspended sudo systemctl status vsftpd
(kali@kali:~)$ sudo mv /home/kali/Downloads/pic.jpeg /srv/file/ftp
(kali@kali:~)$ sudo service restart vsftpd
restart: unrecognized service
(kali@kali:~)$ sudo systemctl restart vsftpd
(kali@kali:~)$ sudo apt install filezilla
Upgrading:
  gnutls-bin      libgnutls30t64 libnettle8t64
  libgnutls-dane0t64 libhogweed6t64
Installing:
  filezilla
Installing dependencies:
  filezilla-common libfilezilla45 libpugixml1v5 libwxgtk3.2-1t64
  libfilezilla-common libpcre2-32-0 libwxbase3.2-1t64
Summary:
  Upgrading: 5, Installing: 8, Removing: 0, Not Upgrading: 943
  Download size: 13.9 MB
  Space needed: 43.5 MB / 64.6 GB available
Continue? [Y/n] y
Get:2 http://kali.download/kali kali-rolling/main amd64 libhogweed6t64 amd64
3.10-1 [384 kB]
Get:1 http://mirrors.neusoft.edu.cn/kali kali-rolling/main amd64 libnettle8t64
4 amd64 3.10-1 [303 kB]
```





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