



Computer Engineering Department
Engineering Department

Academic Year: 2021-2022

Class: S.Y.B.Tech Sem.: 4 Course: CCN

Name	Pratik Pujari		
UID no.	2020300054	Class:	Comps C Batch
Experiment No.	6		

AIM:	To implement a FTP Server on Ubuntu Machine
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THEORY:	<p>What Does FTP Server Mean?</p> <p>The primary purpose of an FTP server is to allow users to upload and download files. An FTP server is a computer that has a file transfer protocol (FTP) address and is dedicated to receiving an FTP connection. FTP is a protocol used to transfer files via the internet between a server (sender) and a client (receiver). An FTP server is a computer that offers files available for download via an FTP protocol, and it is a common solution used to facilitate remote data sharing between computers.</p> <ul style="list-style-type: none">○ FTP stands for File transfer protocol.○ FTP is a standard internet protocol provided by TCP/IP used for transmitting the files from one host to another.○ It is mainly used for transferring the web page files from their creator to the computer that acts as a server for other computers on the internet.○ It is also used for downloading the files to computer from other servers. <p>Role of the FTP Server</p> <p>The FTP server allows the downloading and uploading of files. The FTP server's administrator can restrict access for downloading different files and from different folders residing in the FTP server. Files residing in FTP servers can be retrieved by common web browsers, but they may not support protocol extensions like FTPS. With an FTP</p>
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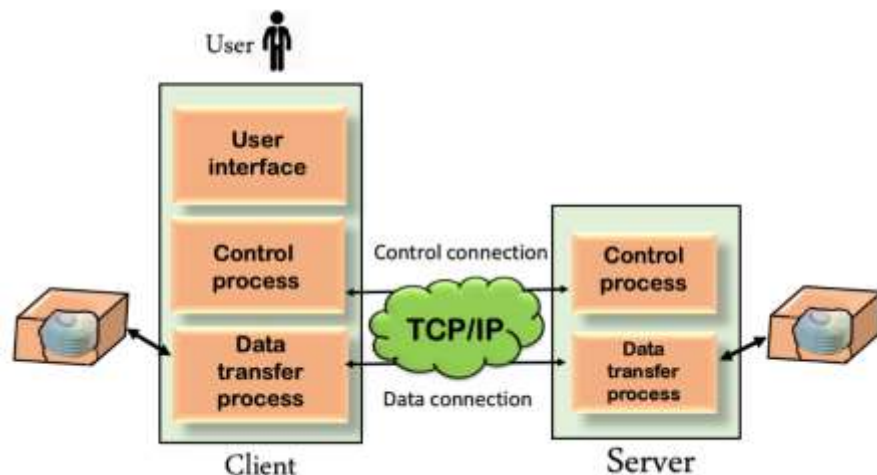
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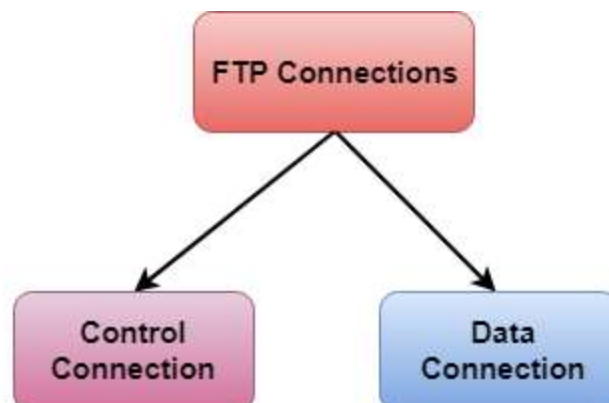
connection, it is possible to resume an interrupted download that was not successfully completed; in other words, checkpoint restart support is provided.

Mechanism of FTP



The above figure shows the basic model of the FTP. The FTP client has three components: the user interface, control process, and data transfer process. The server has two components: the server control process and the server data transfer process.

There are two types of connections in FTP:





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	<ul style="list-style-type: none">○ Control Connection: The control connection uses very simple rules for communication. Through control connection, we can transfer a line of command or line of response at a time. The control connection is made between the control processes. The control connection remains connected during the entire interactive FTP session.○ Data Connection: The Data Connection uses very complex rules as data types may vary. The data connection is made between data transfer processes. The data connection opens when a command comes for transferring the files and closes when the file is transferred. <p>Advantages of FTP:</p> <ul style="list-style-type: none">○ Speed: One of the biggest advantages of FTP is speed. The FTP is one of the fastest way to transfer the files from one computer to another computer.○ Efficient: It is more efficient as we do not need to complete all the operations to get the entire file.○ Security: To access the FTP server, we need to login with the username and password. Therefore, we can say that FTP is more secure. <p>Disadvantages of FTP:</p> <ul style="list-style-type: none">○ The standard requirement of the industry is that all the FTP transmissions should be encrypted. However, not all the FTP providers are equal and not all the providers offer encryption. So, we will have to look out for the FTP providers that provides encryption.○ FTP serves two operations, i.e., to send and receive large files on a network. However, the size limit of the file is 2GB that can be sent. It also doesn't allow you to run simultaneous transfers to multiple receivers.○ It is not compatible with every system.
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Public FTP Server

PROCEDURE:

- You can quickly install vsftpd on your virtual private server in the command line

```
[03/17/22]seed@VM:~$ sudo apt-get install vsftpd
Reading package lists... Done
Building dependency tree
Reading state information... Done
vsftpd is already the newest version (3.0.3-3ubuntu2).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
[03/17/22]seed@VM:~$
```

- Change the directory to etc\

```
[03/17/22]seed@VM:~$ cd /etc
[03/17/22]seed@VM:/etc$
```

- Once vsftpd is installed, you can adjust the configuration. Open up the configuration file:

```
[03/17/22]seed@VM:/etc$ sudo gedit vsftpd.conf
```

- The biggest change you need to make is to switch the Anonymous_enable from YES to NO

```
# 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=NO
#
# 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
#
# Default umask for local users is 077. You may wish to change this to 022,
# if your users 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=YES
#
```



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- Creating a new user who can access the file:

```
[03/19/22]seed@VM:/etc$ sudo adduser pratik
```

- Entering user details: Username: pratik Pwd: *****

```
Adding user `pratik' ...
Adding new group `pratik' (1001) ...
Adding new user `pratik' (1001) with group `pratik' ...
Creating home directory `/home/pratik' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for pratik
Enter the new value, or press ENTER for the default
    Full Name []: Pratik Pujari
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] Y
[03/19/22]seed@VM:/etc$
```

- Navigate back to the root directory and changing the current directory to home directory:

```
[03/19/22]seed@VM:/home$ ls
pratik  seed
```

- Changing current directory to user directory:

```
[03/19/22]seed@VM:/home$ cd pratik
[03/19/22]seed@VM:~/pratik$ sudo mkdir myfiles
```

- Making a new directory myfiles that will contain our text file that needs to be transferred:

```
[03/19/22]seed@VM:~$ cd /home/pratik/
[03/19/22]seed@VM:~/pratik$ ls
examples.desktop  myfiles
```

- Creating a new text file sample.txt:



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```
[03/19/22]seed@VM:~/myfiles$ sudo gedit sample.txt
```



- Creating vsftpd.chroot_list within the etc directory where we will add the user's name to the list:

```
[03/19/22]seed@VM:~/myfiles$ cd ~  
[03/19/22]seed@VM:~$ sudo gedit /etc/vsftpd.chroot_list
```



- Change the present directory to myfiles and change the ownership of that file to sample



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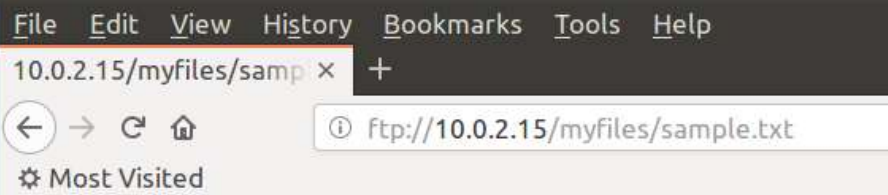
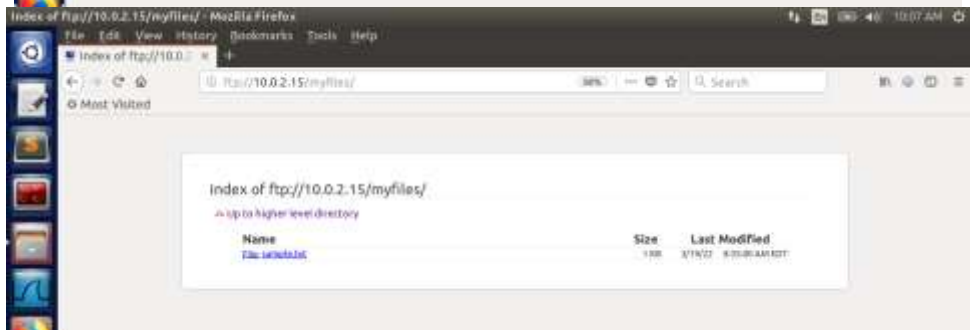
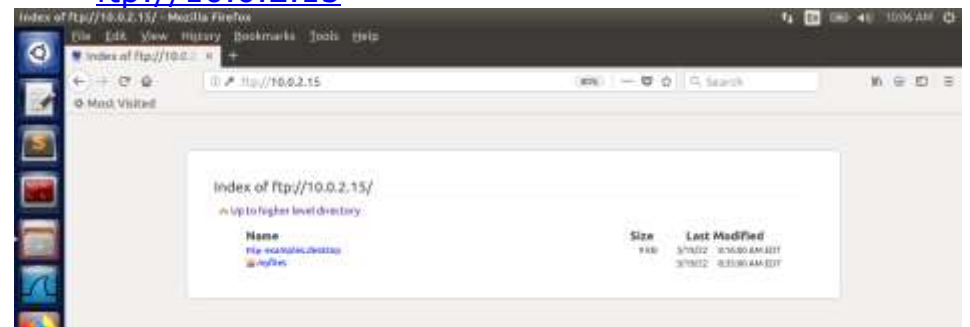
```
[03/19/22]seed@VM:~/pratik$ cd ~  
[03/19/22]seed@VM:~$ sudo chown pratik:pratik /home/pratik/myfiles/sample.txt  
[03/19/22]seed@VM:~$
```

- Restarting after making upgradation in the vsftpd:

```
[03/19/22]seed@VM:~/myfiles$ sudo systemctl restart vsftpd
```

- Open browser and enter the following url:

<ftp://10.0.2.15>



This is a Example for FTP Server
File to be exchange sample.txt

-Pratik Pujari



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	<ul style="list-style-type: none">Open the myfiles folder and to access the same, we need to enter our username and password that were created while adding the new user 
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Private FTP Server

PROCEDURE:

1) You can quickly install vsftpd on your virtual private server in the command line:

```
[03/17/22]seed@VM:~$ sudo apt-get install vsftpd
Reading package lists... Done
Building dependency tree
Reading state information... Done
vsftpd is already the newest version (3.0.3-3ubuntu2).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
[03/17/22]seed@VM:~$
```

2) Once vsftpd is installed, you can adjust the configuration. Open up the configuration file:

```
# 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.
```

The biggest change you need to make is to switch the Anonymous_enable from NO to YES:



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3) Switching to FTP directory and Create a text file sample..txt that will be transferred:

```
[03/17/22]seed@VM: ~/etc$ cd /srv/ftp
[03/17/22]seed@VM: .../ftp$ sudo gedit sample.txt
(gedit:2736): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided by any .service files
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
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** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
```

4) Restarting vsftpd after upgradation:

```
[03/17/22]seed@VM: .../ftp$ sudo systemctl restart vsftpd
[03/17/22]seed@VM: .../ftp$
```

5) Opening browser and entering the following url:
ftp://10.0.2.15



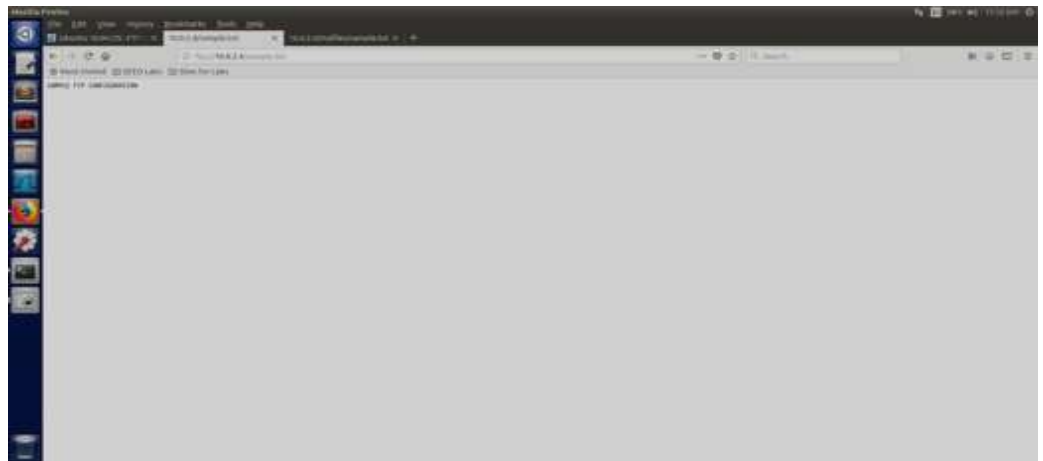
9) Opening the sample.txt file, we obtain:



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10) You can quickly install vsftpd on your virtual private server in the command line:

```
[03/17/22]seed@VM:~$ sudo apt-get install vsftpd
Reading package lists... Done
Building dependency tree
Reading state information... Done
vsftpd is already the newest version (3.0.3-3ubuntu2).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
[03/17/22]seed@VM:~$
```

11) Once vsftpd is installed, you can adjust the configuration. Open up the configuration file:

```
# on the ipvo "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=NO
#
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
```

The biggest change you need to make is to switch the Anonymous_enable from NO to YES:

12) Switching to FTP directory and Create a text file sample..txt that will be transferred:



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```
[03/17/22]seed@VM:~/etc$ cd /srv/ftp
[03/17/22]seed@VM:~/ftp$ sudo gedit sample.txt
(gedit:2736): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was
not provided by any .service files
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
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** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
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** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:2736): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
```

13) Restarting vsftpd after upgradation:

```
[03/17/22]seed@VM:~/ftp$ sudo systemctl restart vsftpd
[03/17/22]seed@VM:~/ftp$
```

14) Opening browser and entering the following url:
ftp://10.0.2.15



15) Opening the sample.txt file, we obtain:

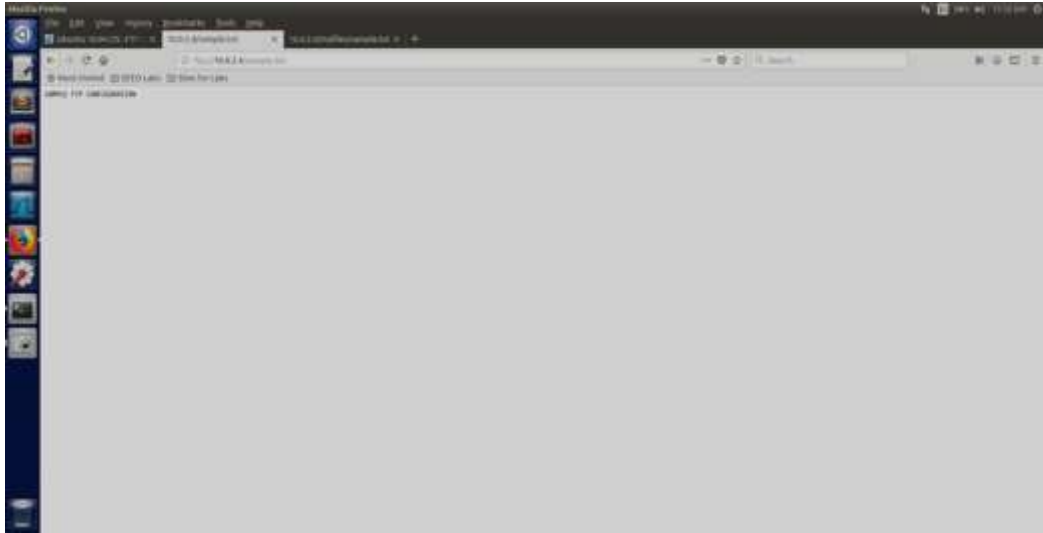


Bharatiya Vidya Bhavan's
Sardar Patel Institute of Technology
Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous College Affiliated to University of Mumbai)

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<p>RESULT: Implement the FTP server through private user and public server. Learnt how to deploy a private and public ftp server using the VSFTPD package in ubuntu.</p>	