

## Lab 12: FTP Configuration and Implementation using Packet Tracer

### Theory

#### a. FTP (File Transfer Protocol):

FTP is a protocol used for transferring files between a client and server over a network. It allows users to upload or download files, making it essential for tasks like website management, data transfer, and backups.

#### b. Key Concepts of FTP

##### 1. FTP Server:

A server that hosts files and allows users to upload or download files through an FTP connection. It listens on TCP port 21 for incoming connections.

##### 2. FTP Client:

A client that connects to the FTP server to transfer files. It can authenticate using a username and password and access files or directories on the server.

##### 3. Active vs. Passive Mode:

In Active Mode, the server actively establishes the connection for file transfer. In Passive Mode, the client establishes both the control and data connections.

##### 4. Authentication:

FTP typically requires a username and password to authenticate users before they can access the server. Anonymous FTP access is sometimes allowed for public data.

#### c. Network Diagram

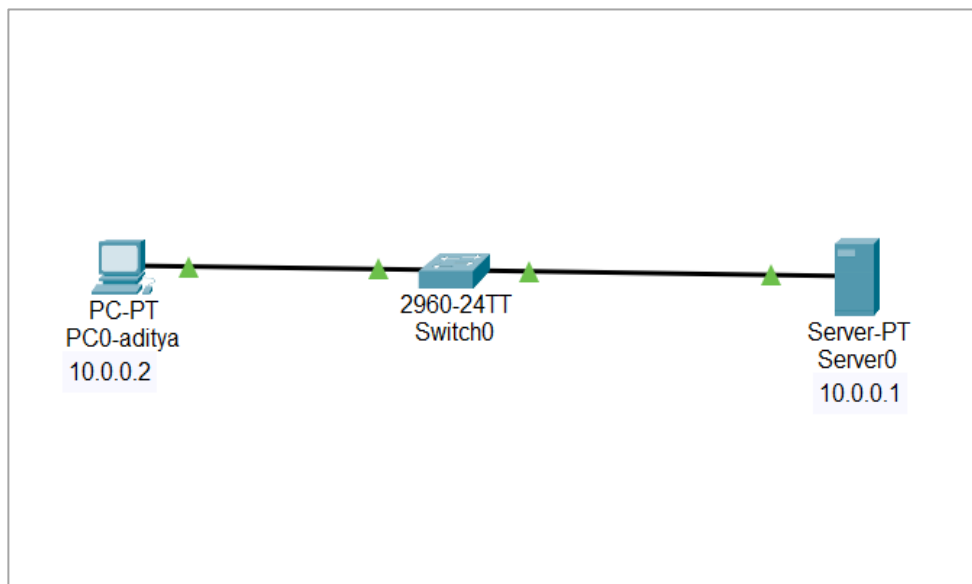


Fig: Network diagram

## Implementation Sequence

1. Open cisco packet tracer and make a network layout with devices available.

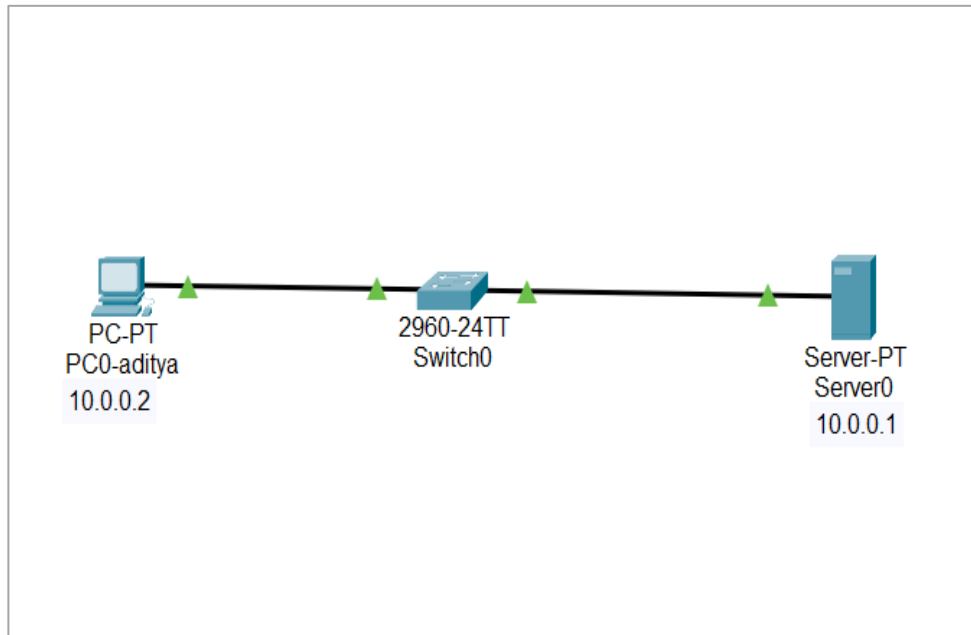


Fig: Network layout

2. Go to the PC and setup Ip and subnet mask.

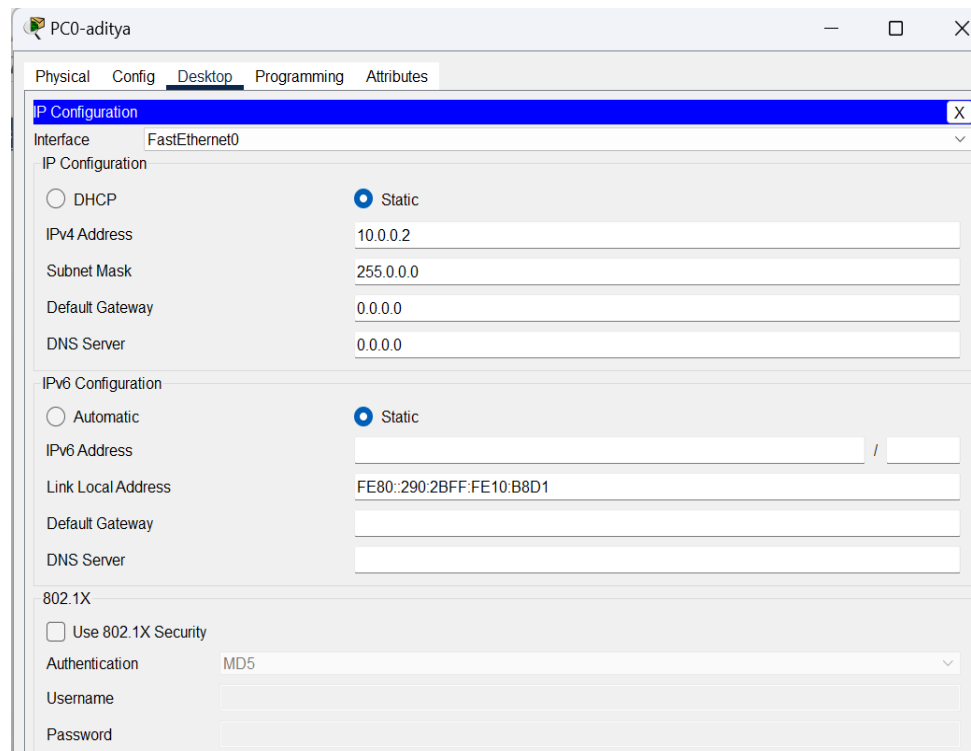


Fig: Ip configuration in PC

3. Go to the server and setup Ip and subnet mask to the server.

Server0

Physical Config Services **Desktop** Programming Attributes

**IP Configuration** X

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 10.0.0.1

Subnet Mask 255.0.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::210:11FF:FEB9:8136

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Fig: Ip configuration in server

4. Go to server and in service section turn on the FTP and set username, password and give required permissions.

Server0

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP**
- IoT
- VM Management
- Radius EAP

FTP

Service ☒ On ☐ Off

User Setup

Username Aditya Password shura1234

☒ Write ☒ Read ☒ Delete ☒ Rename ☒ List

	Username	Password	Permission	
1	Aditya	shura1234	RWDNL	Add

Save

Remove

Fig: Setting up user and permissions

5. Now go to desktop and open text editor, write something in the editor and save the txt file.

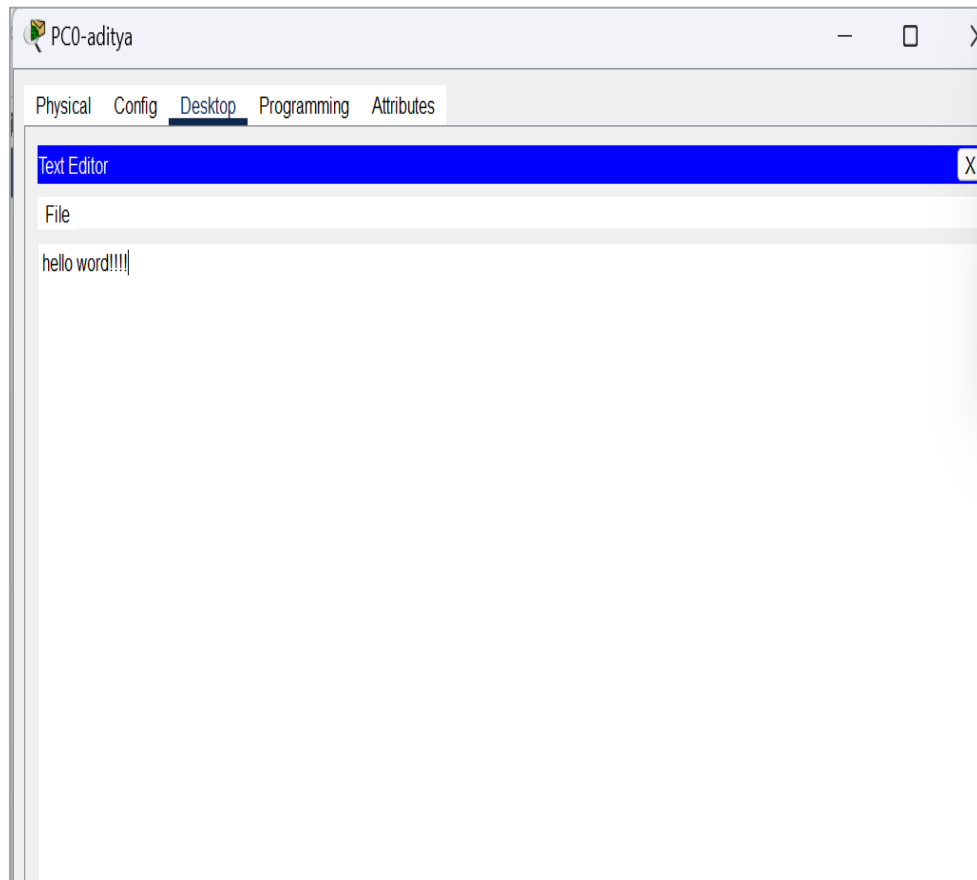


Fig: Saving a txt file

6. Now go to command prompt and type DIR to verify if the file is saved.

```
C:\>dir

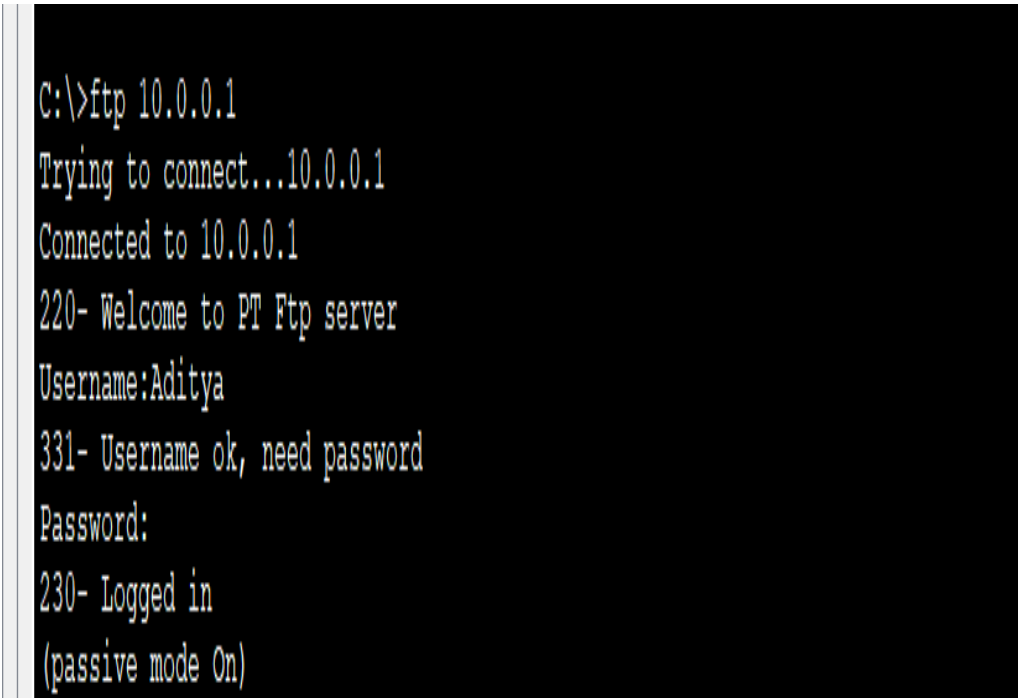
Volume in drive C has no label.
Volume Serial Number is 5E12-4AF3
Directory of C:\

1/1/1970   5:45 PM       12      hello.txt
1/1/1970   5:45 PM       26      sampleFile.txt
           38 bytes          2 File(s)
```

Fig: Checking saved file

**7. In command prompt type following commands:**

ftp 10.0.0.1

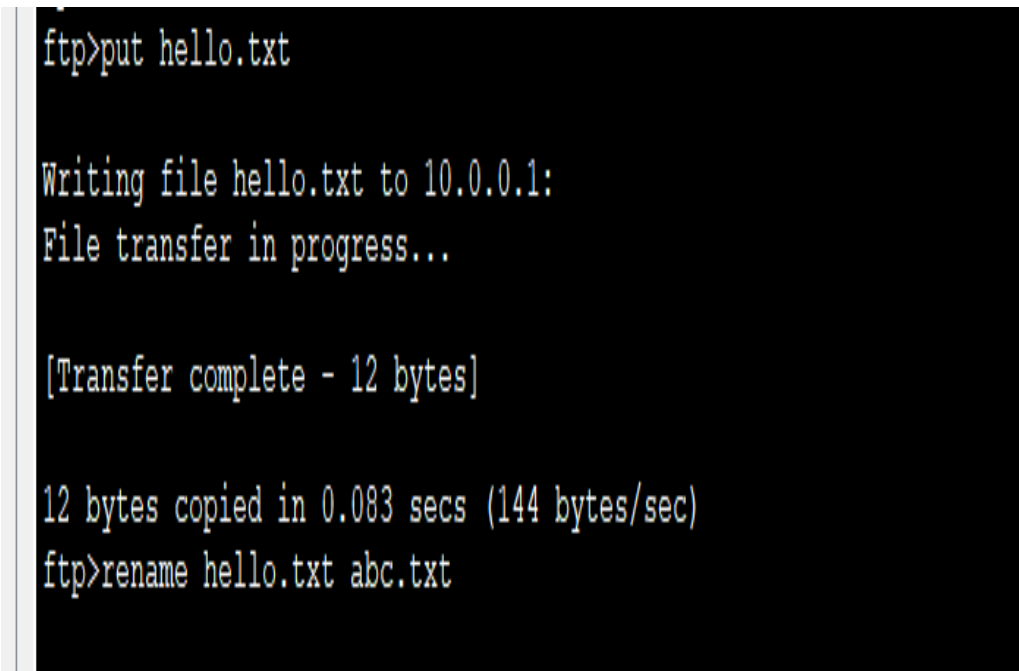


```
C:\>ftp 10.0.0.1
Trying to connect...10.0.0.1
Connected to 10.0.0.1
220- Welcome to PT Ftp server
Username:Aditya
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
```

Fig: Connecting to FTP server

Use put command to transfer files.

put hello.txt



```
ftp>put hello.txt

Writing file hello.txt to 10.0.0.1:
File transfer in progress...

[Transfer complete - 12 bytes]

12 bytes copied in 0.083 secs (144 bytes/sec)
ftp>rename hello.txt abc.txt
```

Fig: Transferring file using FTP

Use rename command to rename existing files.

rename hello.txt abc.txt

```
ftp>rename hello.txt abc.txt

Renaming hello.txt
ftp>
[OK Renamed file successfully from hello.txt to abc.txt]
```

Fig: Renaming file in server

Now to get the file and save a copy on our pc use,

get abc.txt

```
ftp>get abc.txt

Reading file abc.txt from 10.0.0.1:
File transfer in progress...

[Transfer complete - 12 bytes]

12 bytes copied in 0 secs
```

Fig: Saving a copy of file from server

Quit the ftp server after your transactions are complete using

quit ftp

```
ftp>quit ftp

221- Service closing control connection.
C:\>dir
```

Fig: Quitting ftp server

**8. Check the downloaded file in your pc using DIR.**

```
C:\>dir

Volume in drive C has no label.
Volume Serial Number is 5E12-4AF3
Directory of C:\

1/1/1970    5:45 PM           12      abc.txt
1/1/1970    5:45 PM           12      hello.txt
1/1/1970    5:45 PM          26      sampleFile.txt
               50 bytes           3 File(s)
```

Fig: Checking directory

As we can see that we have a copy of abc.txt file we copied to our pc using the get command.

**Conclusion**

This lab successfully demonstrated FTP server and client configuration in Packet Tracer. We established an FTP connection, allowing file transfers between the client and server. The lab highlighted the importance of proper configuration for smooth file transfers using FTP.