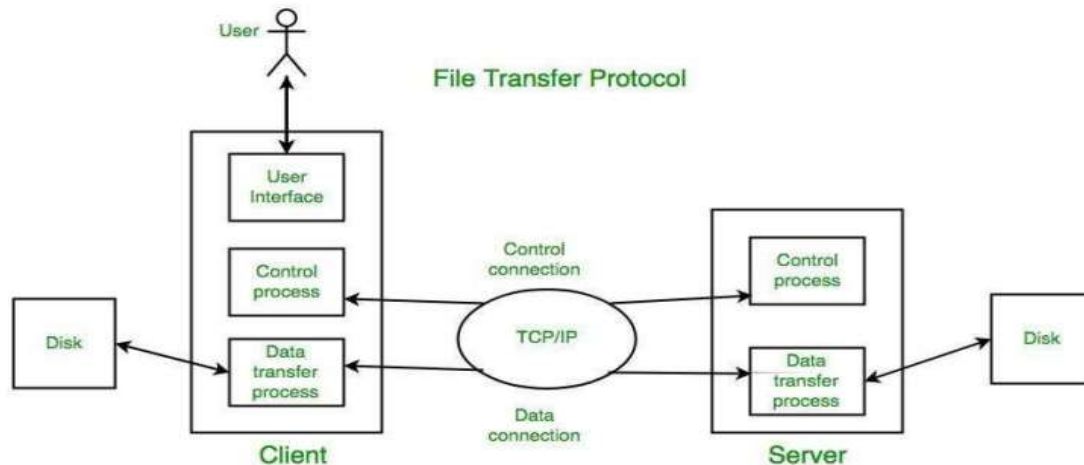## Experiment No 9

Aim: Perform File Transfer and access using FTP.

Theory:

File Transfer Protocol(FTP) is an application layer protocol which moves files between local and remote file systems. It runs on the top of TCP, like HTTP. To transfer a file, 2 TCP connections are used by FTP in parallel: control connection and data connection.

Objectives of FTP:

- It provides the sharing of files.
- It is used to encourage the use of remote computers. O

- It transfers the data more reliably and efficiently.

Advantages of FTP:

- 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.

Active and Passive mode:

In the active mode, the client starts listening on a random port for incoming data connections from the server (the client sends the FTP command PORT to inform the server on which port it is listening). Nowadays, it is typical that the client is behind a firewall (e.g. built-in Windows firewall) or NAT router

(e.g. ADSL modem), unable to accept incoming TCP connections.

In the passive mode, the client uses the control connection to send a PASV command to the server and then receives a server IP address and server port number from the server, which the client then uses to open a data connection to the server IP address and server port number received.

Output:
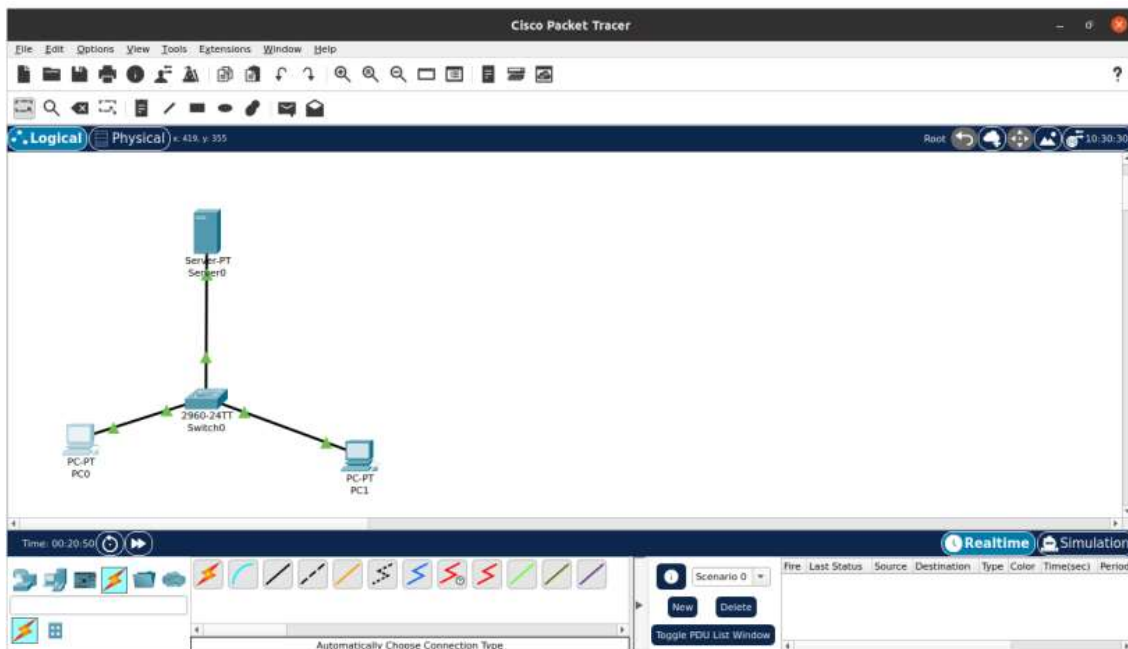

```
C:\>ftp 192.168.1.1
Trying to connect...192.168.1.1
Connected to 192.168.1.1
220- Welcome to PT Ftp server
Username:cisco
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
```

```
Listing /ftp directory from 192.168.1.1:
0   : asa842-k8.bin                              5571584
1   : asa923-k8.bin                              30468096
2   : c1841-advipservicesk9-mz.124-15.T1.bin     33591768
3   : c1841-ipbase-mz.123-14.T7.bin              13832032
4   : c1841-ipbasek9-mz.124-12.bin               16599160
5   : c1900-universalk9-mz.SPA.155-3.M4a.bin      33591768
6   : c2600-advipservicesk9-mz.124-15.T1.bin      33591768
7   : c2600-i-mz.122-28.bin                       5571584
8   : c2600-ipbasek9-mz.124-8.bin                 13169700
9   : c2800nm-advipservicesk9-mz.124-15.T1.bin    50938004
10  : c2800nm-advipservicesk9-mz.151-4.M4.bin     33591768
11  : c2800nm-ipbase-mz.123-14.T7.bin             5571584
12  : c2800nm-ipbasek9-mz.124-8.bin               15522644
13  : c2900-universalk9-mz.SPA.155-3.M4a.bin      33591768
14  : c2950-i6q4l2-mz.121-22.EA4.bin              3058048
15  : c2950-i6q4l2-mz.121-22.EA8.bin              3117390
16  : c2960-lanbase-mz.122-25.FX.bin              4414921
17  : c2960-lanbase-mz.122-25.SEE1.bin            4670455
18  : c2960-lanbasek9-mz.150-2.SE4.bin            4670455
19  : c3560-advipservicesk9-mz.122-37.SE1.bin     8662192
20  : c3560-advipservicesk9-mz.122-46.SE.bin      10713279
21  : c800-universalk9-mz.SPA.152-4.M4.bin        33591768
22  : c800-universalk9-mz.SPA.154-3.M6a.bin       83029236
23  : cat3k_caa-universalk9.16.03.02.SPA.bin      505532849
24  : cgr1000-universalk9-mz.SPA.154-2.CG         159487552
25  : cgr1000-universalk9-mz.SPA.156-3.CG         184530138
26  : ir800-universalk9-bundle.SPA.156-3.M.bin    160968869
27  : ir800-universalk9-mz.SPA.155-3.M            61750062
28  : ir800-universalk9-mz.SPA.156-3.M            63753767
29  : ir800_yocto-1.7.2.tar                       2877440
30  : ir800_yocto-1.7.2_python-2.7.3.tar          6912000
31  : pt1000-i-mz.122-28.bin                      5571584
32  : pt3000-i6q4l2-mz.121-22.EA4.bin             3117390
ftp>
```

Conclusion: In conclusion, our experience with accessing and transferring files using the File Transfer Protocol (FTP) has been insightful. We successfully established connections with remote servers and effectively moved files between local and remote directories. This hands-on practice has enhanced our understanding of FTP's functionality, its importance in data exchange, and its role in various networking applications. Furthermore, this exercise has equipped us with valuable skills for managing file transfers securely and efficiently in real-world scenarios. Overall, our exploration of FTP has been a valuable step toward becoming proficient in network file transfer protocols.