M.E.S.Wadia College of Engineering, Pune

Subject: Computer Networks	
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Examined by:	

EXPERIMENT NO. B4

AIM.: To install & configure File Transfer Protocol (FTP) server on LAN

THEORY :

FTP (File Transfer Protocol)

FTP (File Transfer Protocol) is a protocol for transferring files to or from one host to other. It may be noted that there are actually a number of various other ways also for transferring of files. Some such applications are Symantec's PC Anywhere, Go2myPC. Microsoft's NetMeeting, Remote Desktop, or even more advanced setups like Virtual Private Networks (VPNs). But FTP is the simplest way to exchange files between computers on the Internet.

HTTP and FTP are both file transfer protocols. And have many common characteristics; for example, they both run on top of TCP. However, these two application-layer protocols have some important differences. The most striking difference is that FTP uses two parallel TCP connections to transfer a file; a control connection and a data connection. The first is used for sending control information between the two hosts (e.g. user identification, password, commands to change remote directory, and commands to "put' and 'get' files, etc. The data connection is used to actually send a file. Because FTP uses a separate control connection.

When a user starts an FTP session with a remote host, FTP first sets up a control TCP connection on server port number 21. The client side of FTP sends the user identification and password over this control connection. When the user requests a file transfer (either to, or from, the remote host), FTP opens a TCP data connection on server port number 20. FTP sends exactly one file over the data connection and then closes the data connection. If, during the same session, the user wants to transfer another file, FTP opens another data connection.

Thus, with FTP, the control connection remains open throughout the duration of the user session, but a new data connection is created for each file transferred within a session (that is, the data connection are non-persistent). The client side of FTP also sends, over the control connection, commands to change the remote directory.

Throughout a session, the FTP server must maintain state about the user. In particular, the server must associate the control connection with a specific user account, and the server must keep track of the user's current directory of interest as the user wanders about the remote directory tree. Keeping track of this state information for each ongoing user session significantly constrains the total number of sessions that FTP can maintain simultaneously. (HTTP,on the other hand, is stateless - it does not have to keep track of any user state.)

FTP Commands and Replies

The commands, from client to server, and replies, from server to client, are sent across the control connection in ASCII format, with carriage return and linefeed after each command (and reply). Each command consists of four uppercase ASCII characters, some with optional arguments.

Summary of Characteristics of FTP

FTP is a method of transferring data over a network or the Internet. As far as basic operations are concerned, it's very similar to HTTP or Hypertext Transfer Protocol. It requires a server to serve the information, and the client computers must connect to the server at the correct port, provide the correct credentials and be using software that can understand the data to be transferred.

In the case of HTTP, you use Internet Explorer, or an alternative Web Browser as client. Windows XP contains a built in FTP client, used through Internet Explorer, which you can use to access FTP sites as if they were, directories on your computer. To do this, you simply need to enter the address of the FTP server into the address bar in Internet Explorer and it makes the contents of the server appear like just another folder on your system. Essentially, FTP addresses can be entered into the IE address bar just as you would WWW addresses, the only change being that in place of putting http://, you must put the ftp:// before the rest of the address.

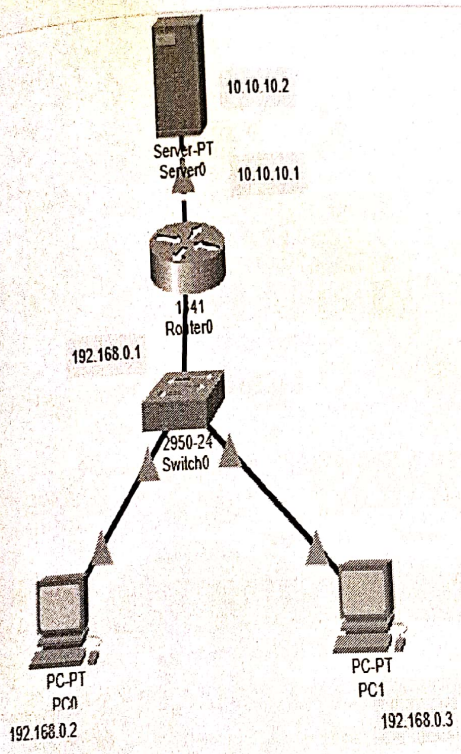
FTP is the backbone of file transfers on the Internet. Most businesses that have a need to transfer files maintain an FTP server, and most Web Hosting businesses use FTP to allow their clients to upload the web pages to their servers. But unlike HTTP, the FTP provides a

means of allowing clients to download files as well as well as to upload them.

Once you have connected to the FTP site, you are presented with a directory window of its contents, which you can manipulate as if it was a directory on your local computer (subject to the permissions you have in the FTP site). You can open files, copy and paste them into your other directories, and copy from your computer to the FTP site if you have write permission.

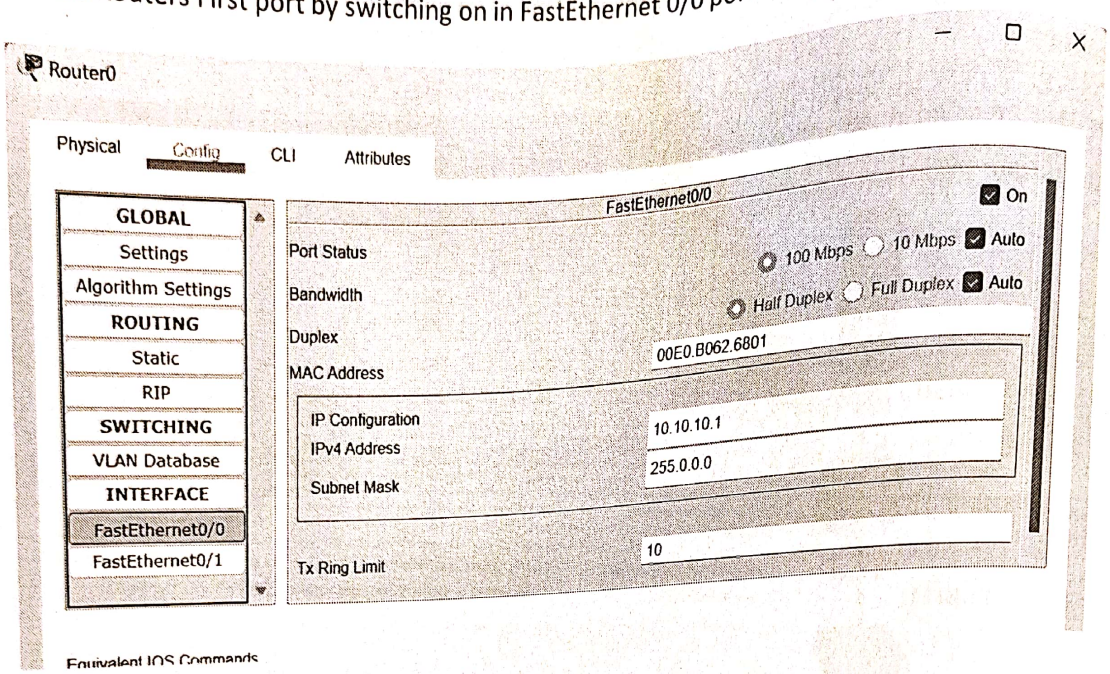
Procedure :

1 CONNECT PCS to Server through Router



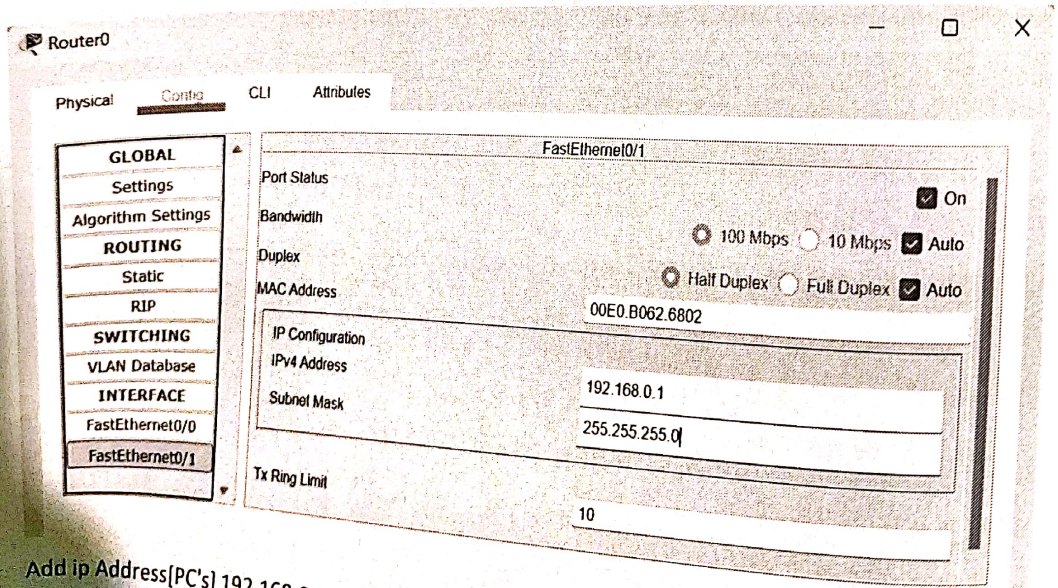
2. Assign ip addresses to router

Enable Routers First port by switching on in FastEthernet 0/0 port



Add Address[Server] 10.10.10.1

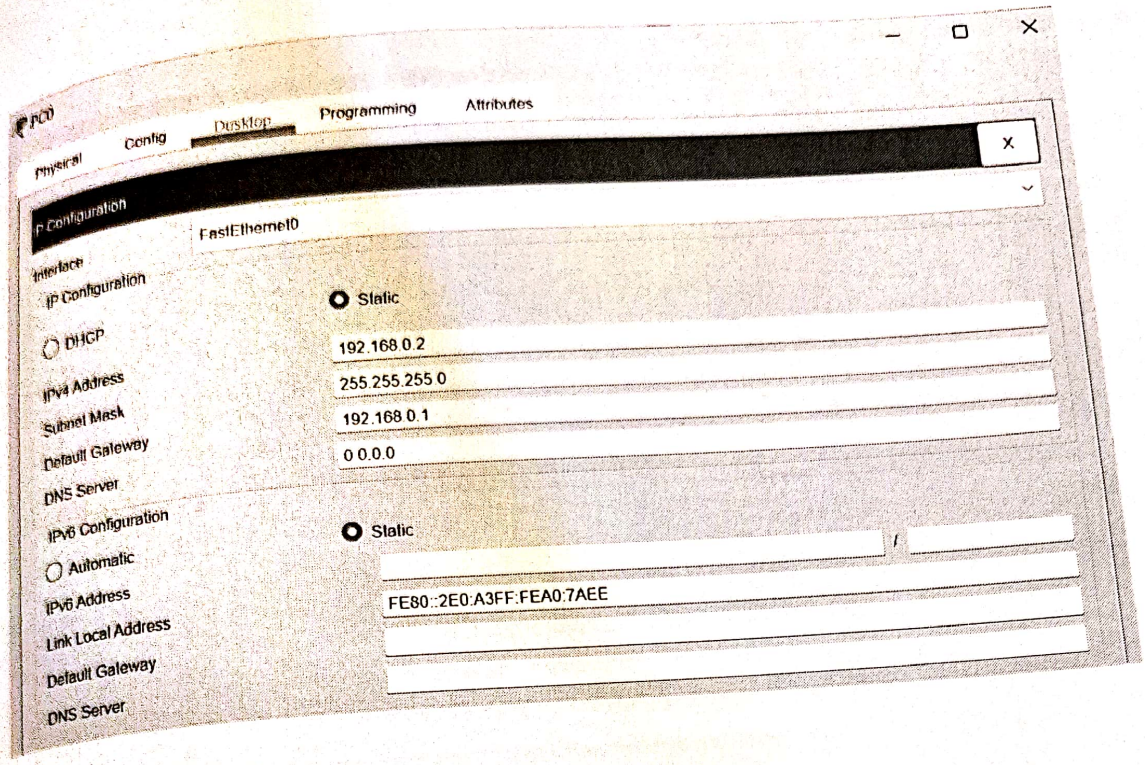
Enable Routers second port For FastEthernet 0/1



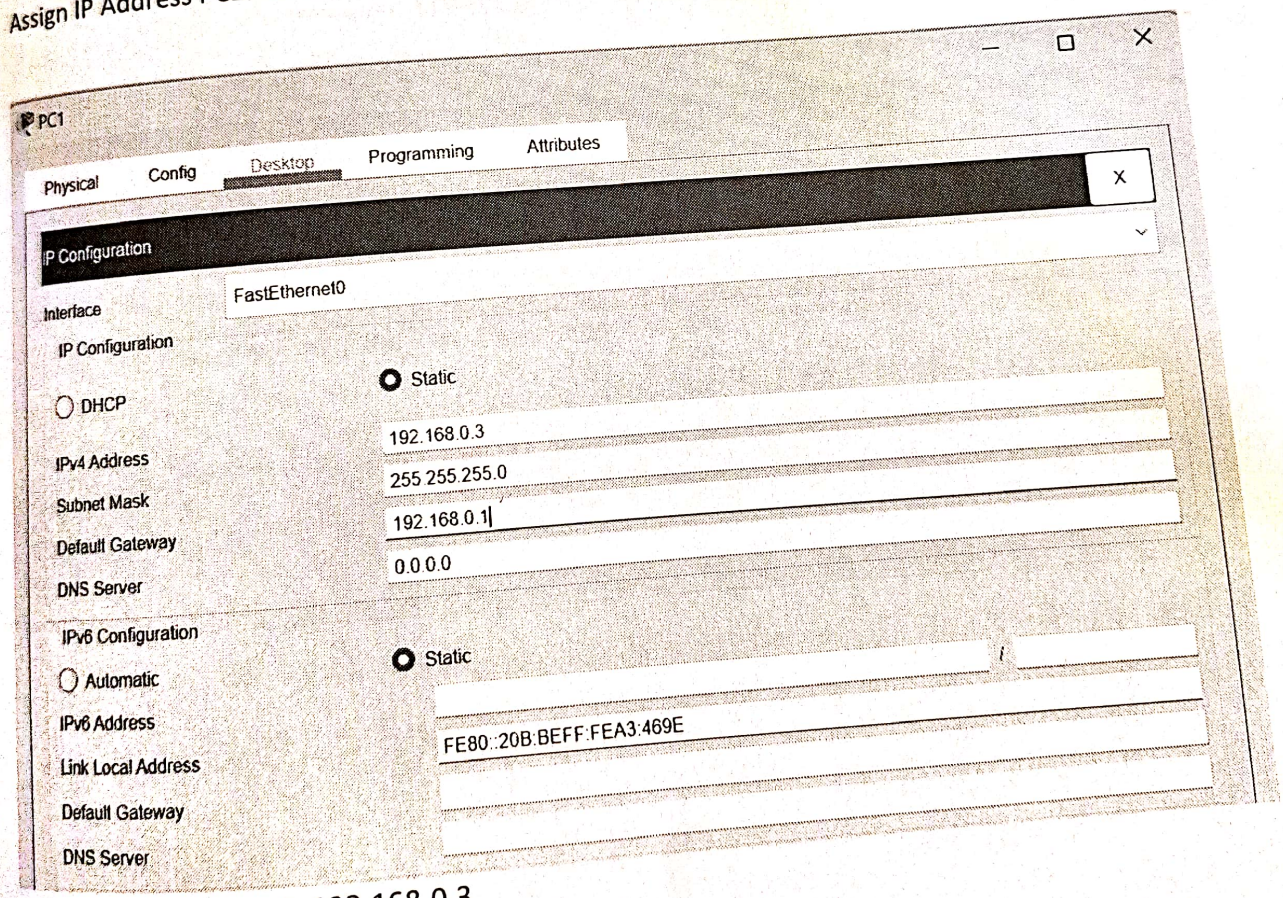
Add ip Address[PC's] 192.168.0.1

3. ASSIGN IP ADDRESSES TO PCs

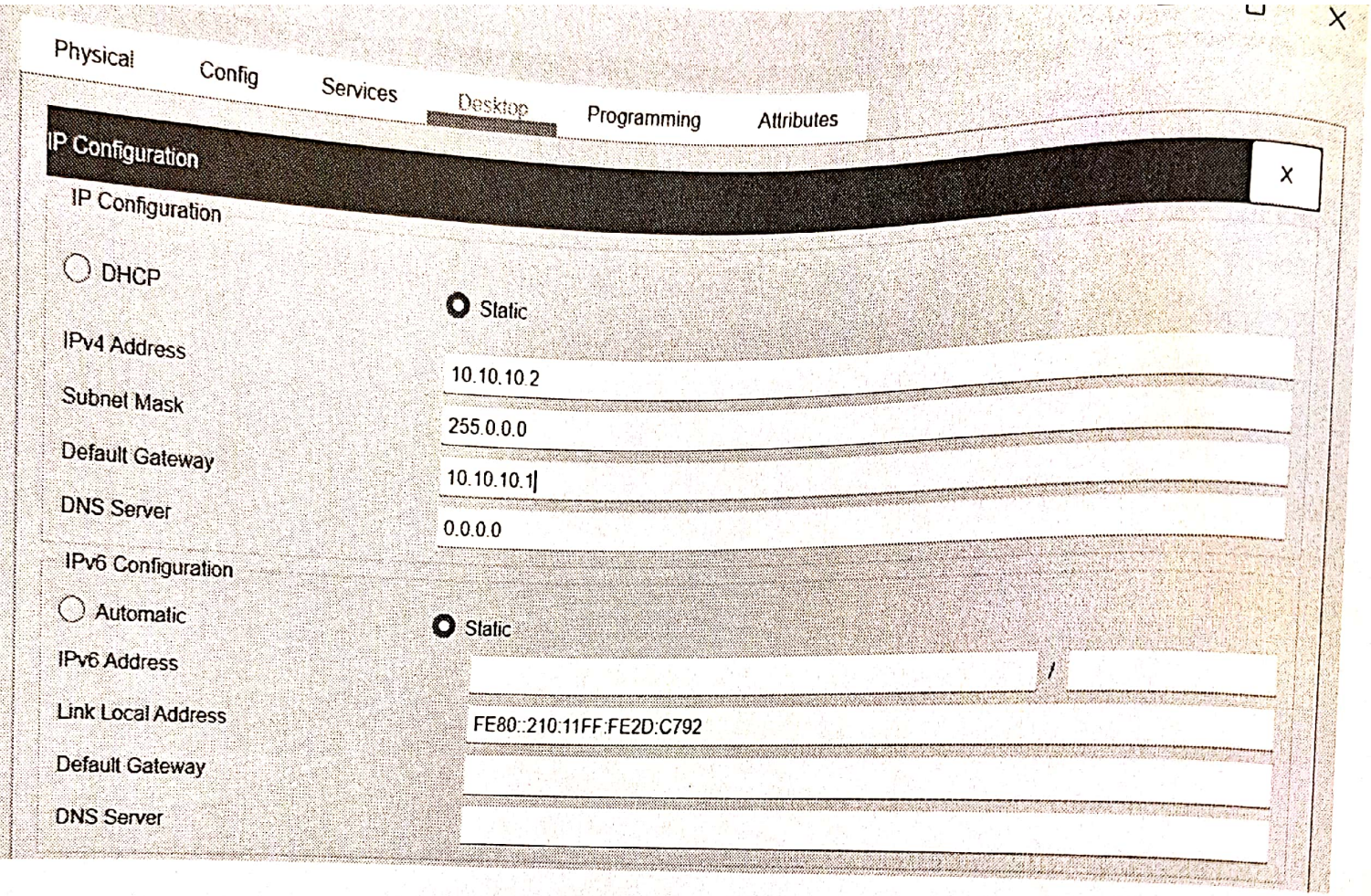
PC0 192.168.0.1



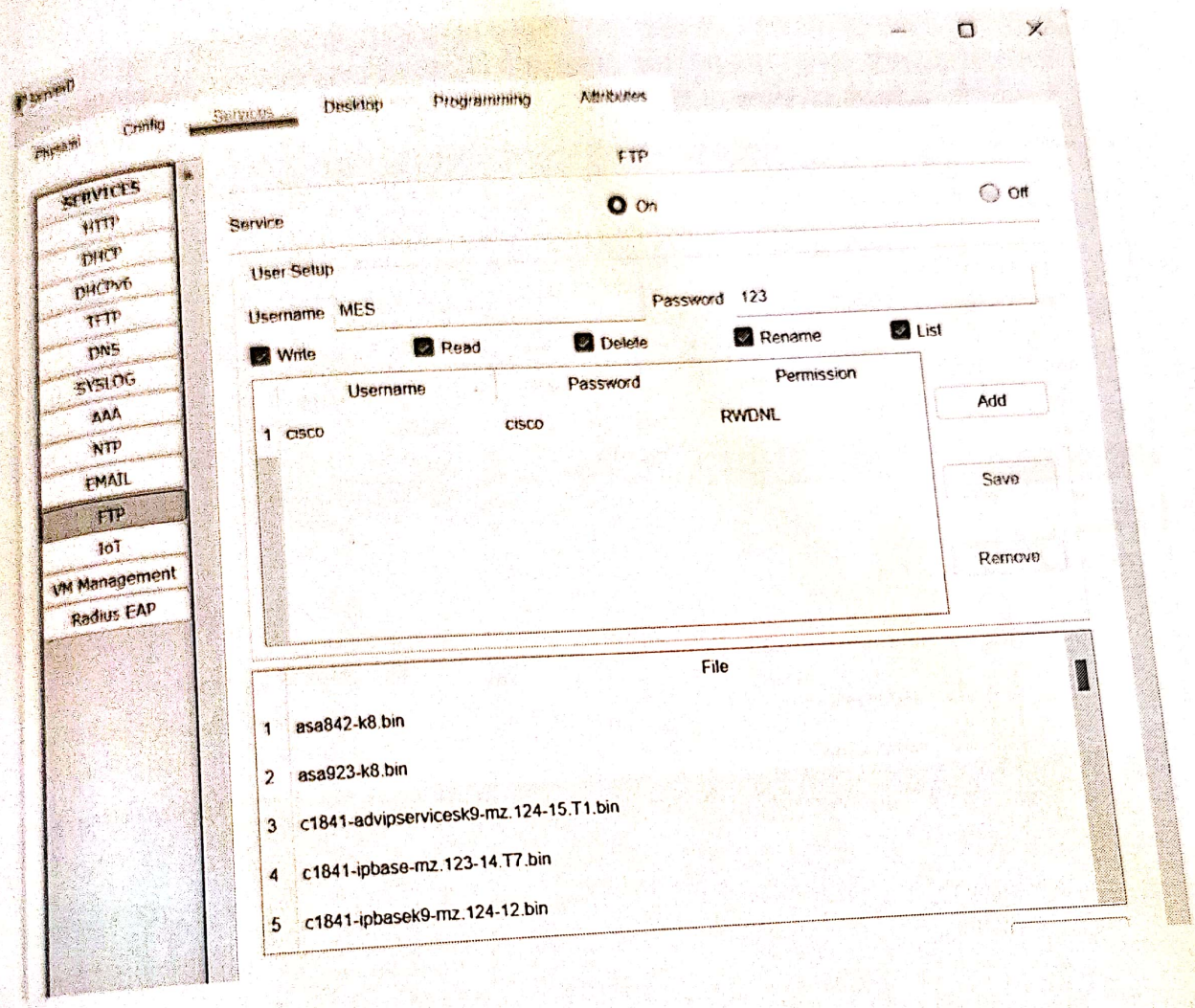
Assign IP Address PC1 192.168.0.2



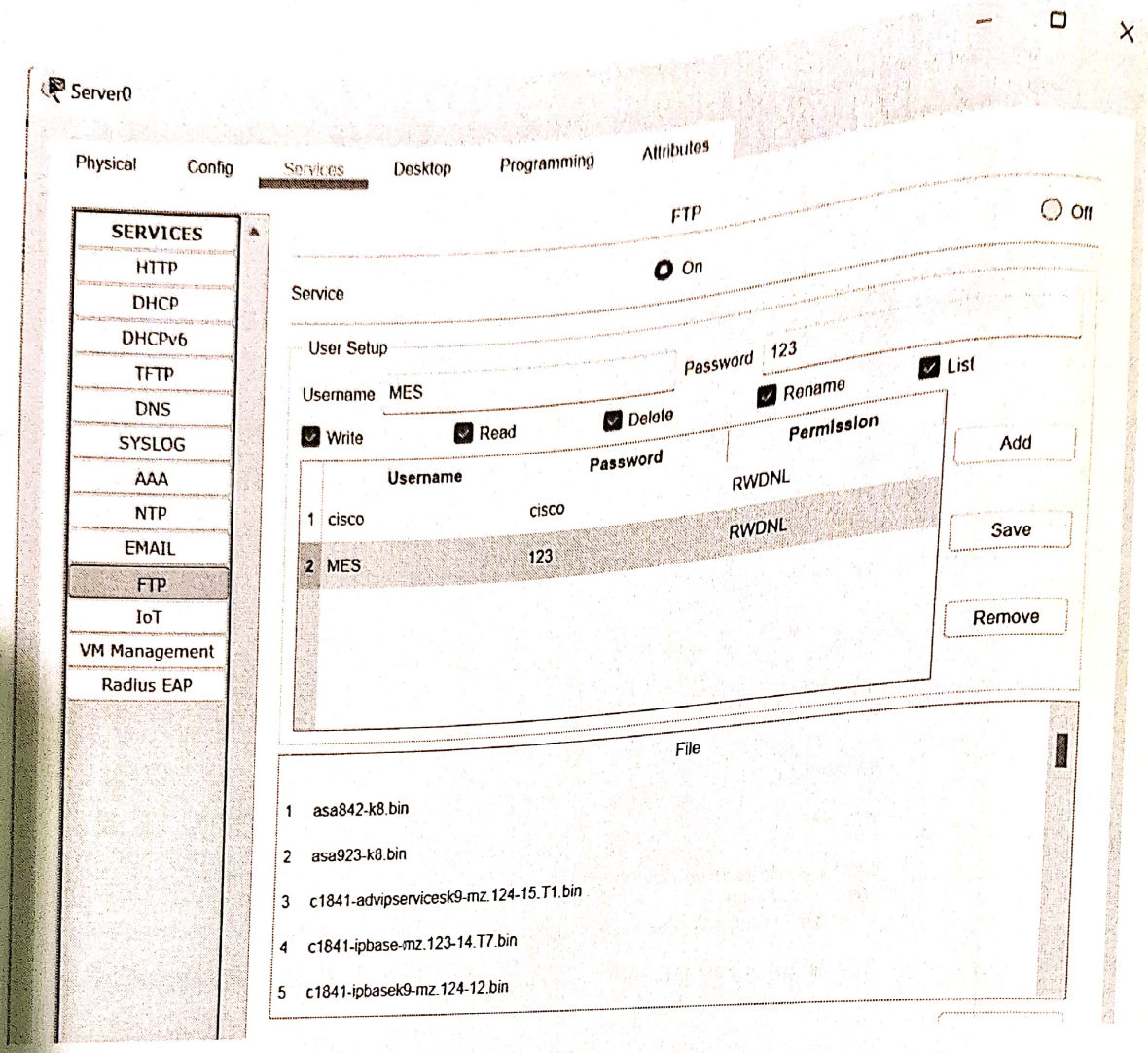
Assigned ip address pc2 192.168.0.3



. Configure server to act as ftp

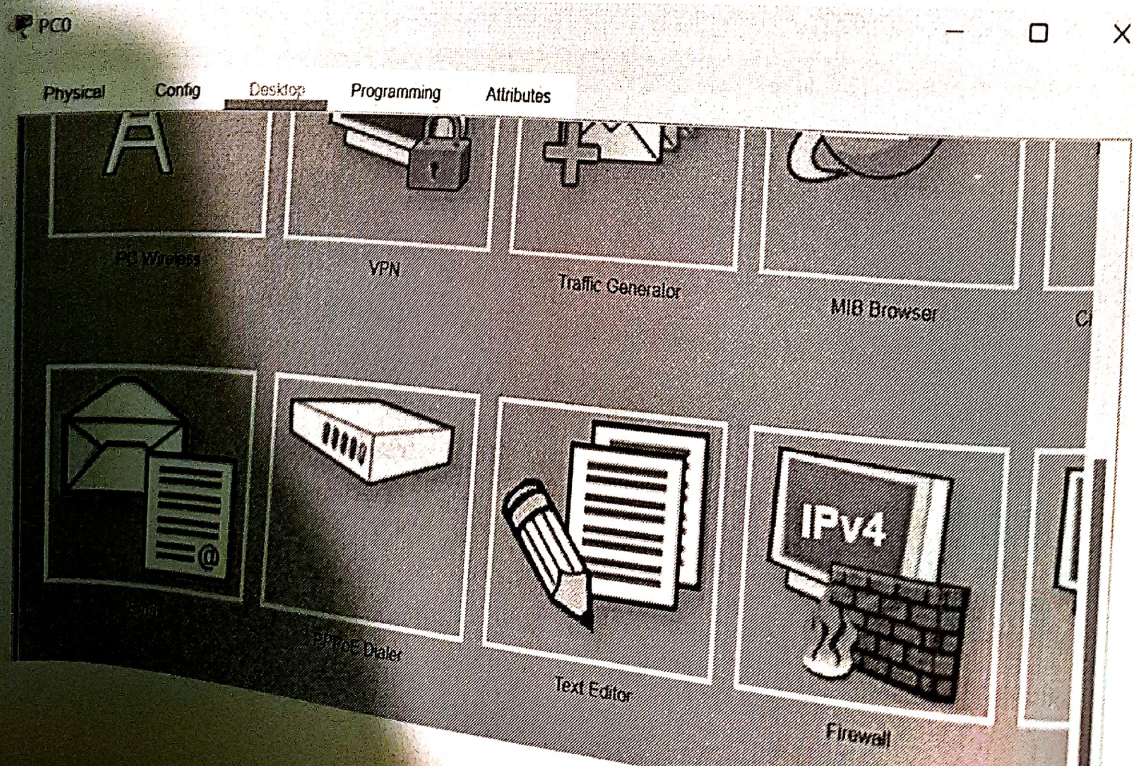


In services - FTP add another ftp and add

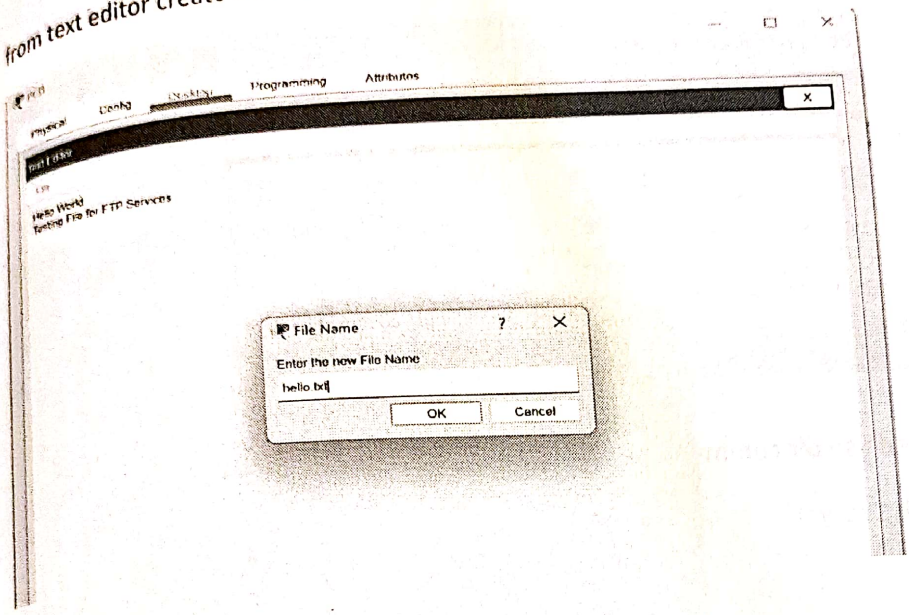


4.To check ftp services

create a file in pc0 upload a file in server



from text editor create a file with random message



make sure to save the file with .txt
now in command prompt
use ping to check the connection

```
C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time=1ms TTL=127
Reply from 10.10.10.2: bytes=32 time<1ms TTL=127
Reply from 10.10.10.2: bytes=32 time<1ms TTL=127
Reply from 10.10.10.2: bytes=32 time=1ms TTL=127

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

now access FTP

write username and password that you have created

```
C:\>ftp 10.10.10.2
Trying to connect...10.10.10.2
Connected to 10.10.10.2
220- Welcome to PT Ftp server
Username:MES
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
```

To acess the file name.txt that you have created e.g. hello.txt
use put command

```
ftp>put hello.txt

Writing file hello.txt to 10.10.10.2:
File transfer in progress...

[Transfer complete - 42 bytes]

42 bytes copied in 0.075 secs (560 bytes/sec)
ftp>
```

to check the file transferred use **dir** command

dir displays all the files in ftp server

```
ftp> dir

Listing /ftp directory from 10.10.10.2:
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-i6q412-mz.121-22.EA4.bin                   3058048
15   : c2950-i6q412-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   : hello.txt                                        42
27   : ir800-universalk9-bundle.SPA.156-3.M.bin         160968869
28   : ir800-universalk9-mz.SPA.155-3.M                 61750062
29   : ir800-universalk9-mz.SPA.156-3.M                 63753767
30   : ir800_yocto-1.7.2.tar                            2877440
31   : ir800_yocto-1.7.2_python-2.7.3.tar               6912000
32   : pt1000-i-mz.122-28.bin                           5571584
33   : pt3000-i6q412-mz.121-22.EA4.bin                  3117390
ftp>
```

in 26 th line we are able to see our created file i.e. hello.txt

eg:-

To access file from servers

PC1

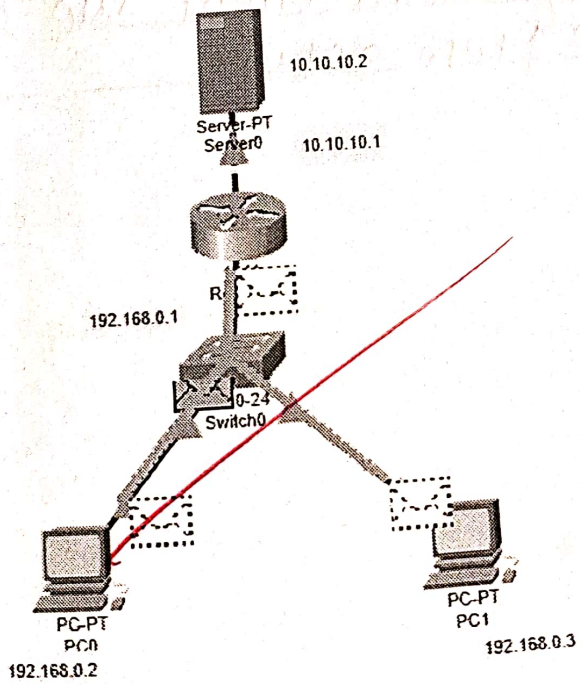
On command prompt write get filename.txt, e.g. get hello .txt

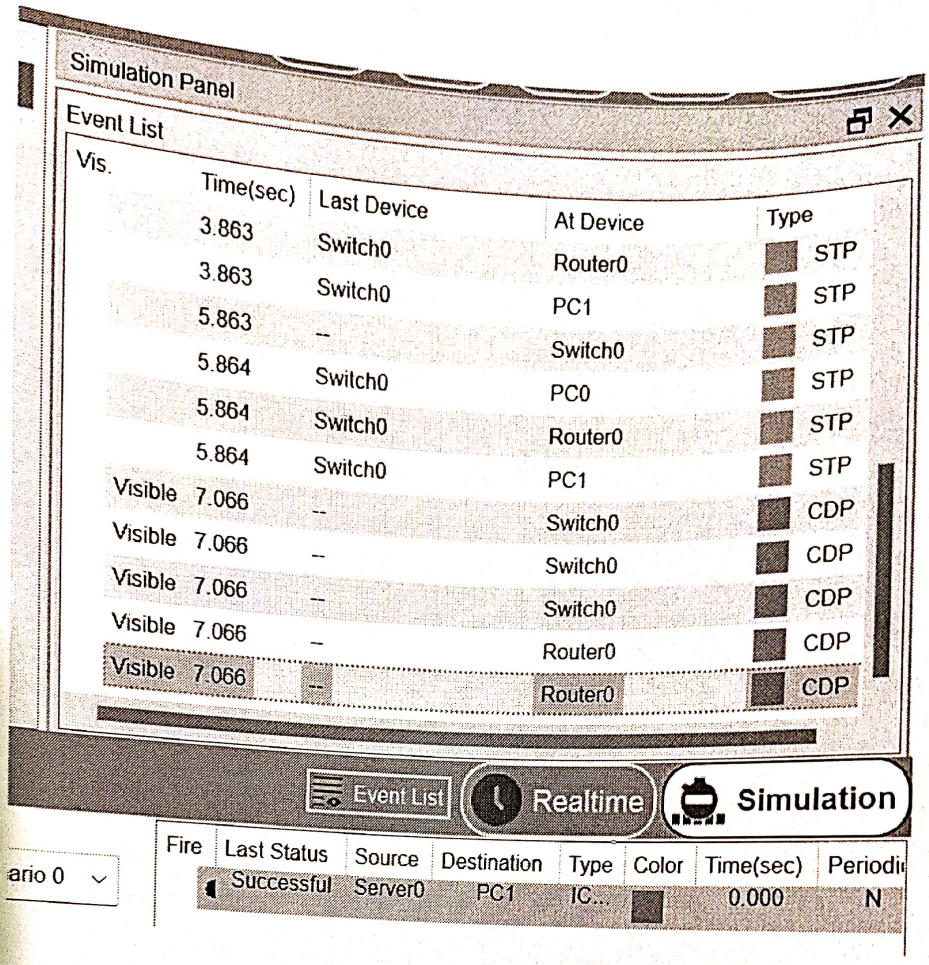
```
Packet Tracer PC Command Line 1.0
C:\>FTP 10.10.10.2
Trying to connect...10.10.10.2
Connected to 10.10.10.2
220- Welcome to PT Ftp server
Username:MES
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get hello.txt

Reading file hello.txt from 10.10.10.2:
File transfer in progress...

[Transfer complete - 42 bytes]

42 bytes copied in 0 secs
ftp>
```

by using get command

To access .txt file from server into pc1

To demonstrate using simulation





Conclusion:

File transfer protocol is protocol file from one host to another host ftp server provide file access remotely from client we can remotely upload file from server.