Institute of Computer Technology

B. Tech Computer Science and Engineering

Sub: Computer Networks

Course Code:-2CSE502

Sem-V(CS)

Class:-A

Practical:5

Aim:

To configure and utilize Telnet (teletype network), SSH (Secure Socket Shell) and FTP (File Transfer Protocol) in a network.

Scenario:

Design the network of an organization having 3 different departments. Make sure the below mentioned requirements must be fulfilled.

1) Create 3 users which will be able to get the access of the router using Telnet.

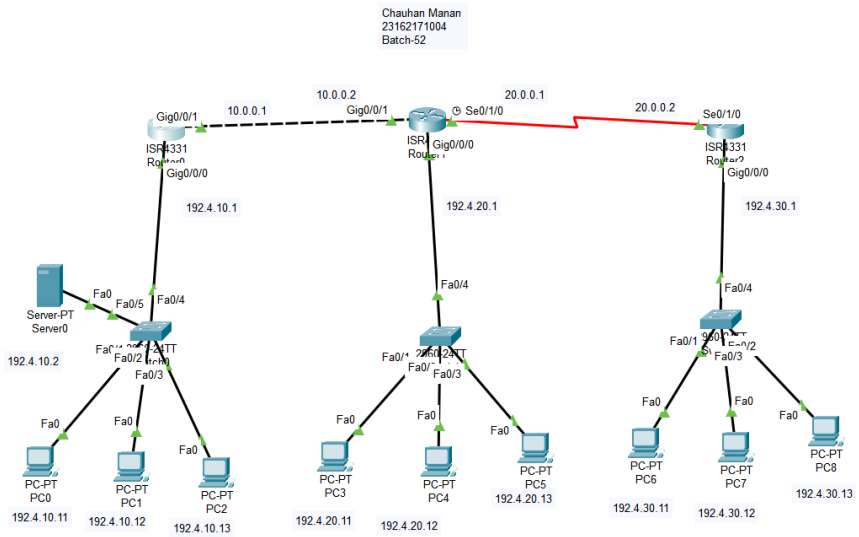
2) Create a single password to get the access of the router using Telnet. Configure in such a way at a time 2 users can access router at a time.

3) Create 3 users which will be able to get the access of the router using SSH. Configure in such a way at a time 2 users can access router at a time.

4) Create FTP server and perform the operation to upload and download a file from one department to other department.

Procedure:

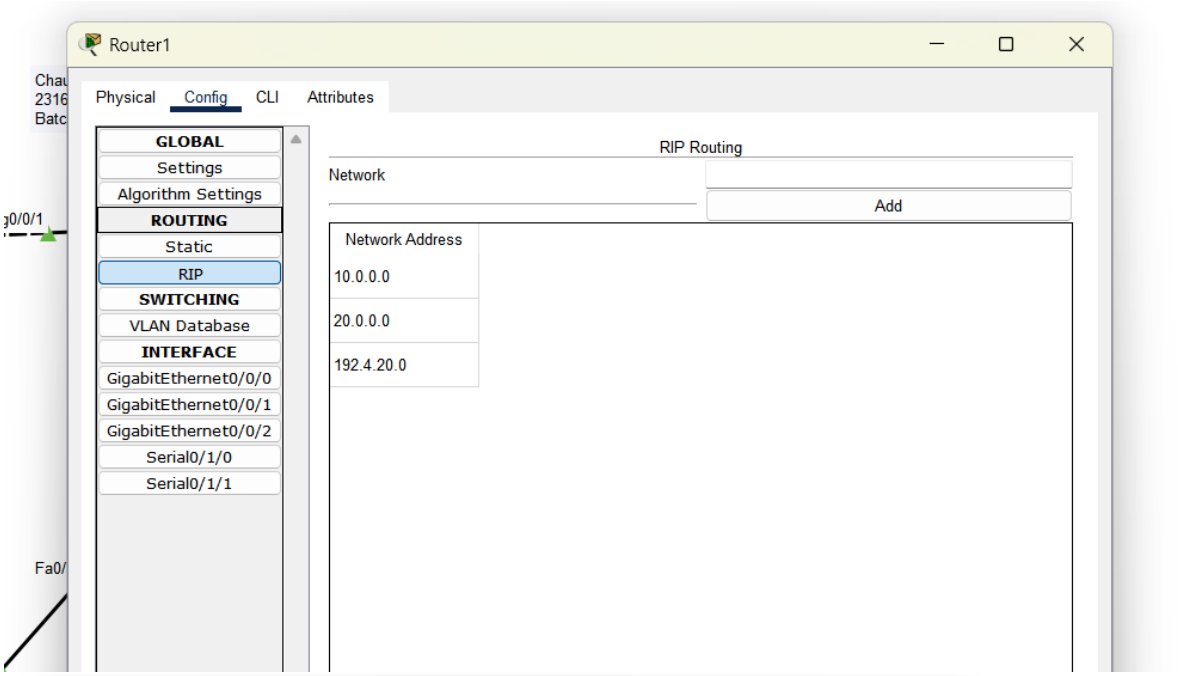
1) Create network as given below:

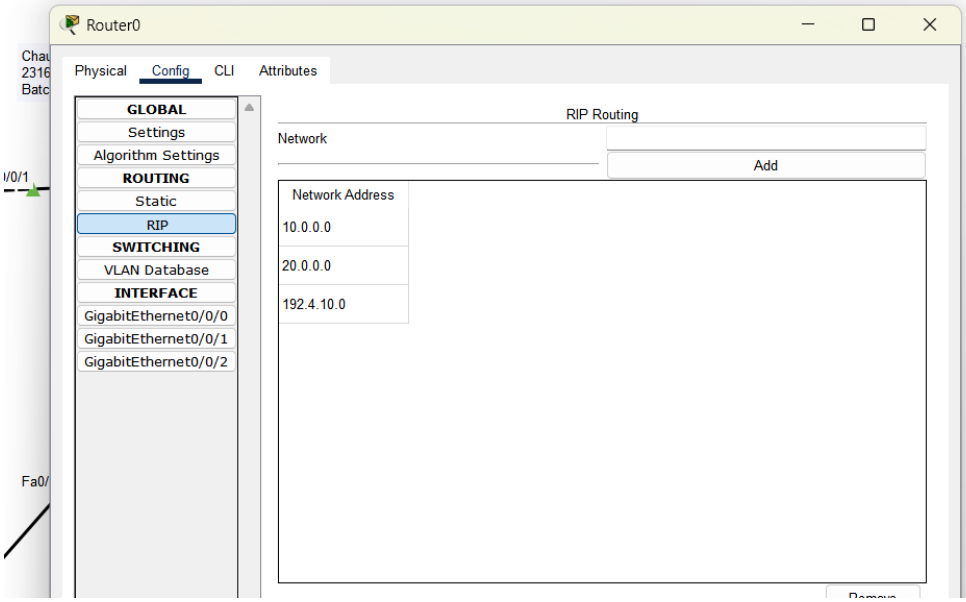


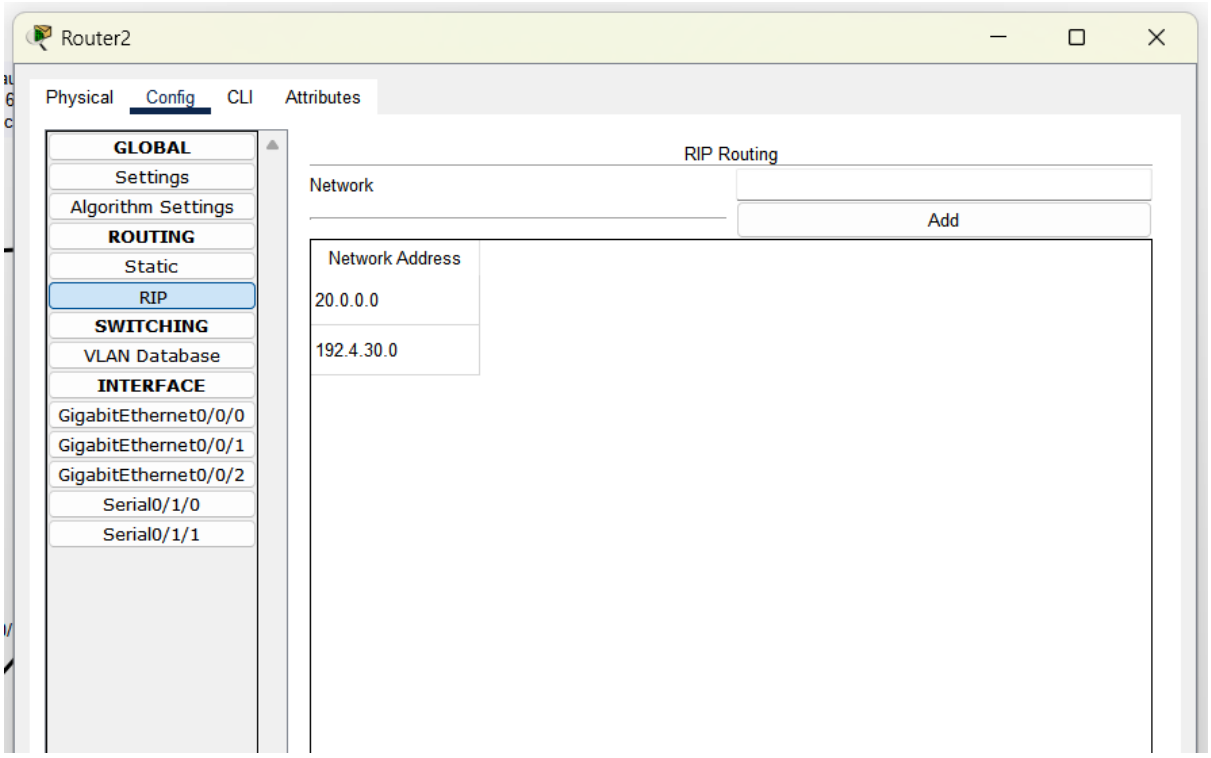
IP Address of devices(PC, Router and Server)

Department	Device / Router Interface	IP Address	Subnet Mask	Default Gateway
Dept. 1	Server (Fa0)	192.4.10.2	255.255.255.0	192.4.10.1
	PC0	192.4.10.11	255.255.255.0	192.4.10.1
	PC1	192.4.10.12	255.255.255.0	192.4.10.1
	PC2	192.4.10.13	255.255.255.0	192.4.10.1
	Router0 G0/0/0 (LAN)	192.4.10.1	255.255.255.0	—
	Router0 G0/0/1 (WAN)	10.0.0.1	255.0.0.0	—
Dept. 2	PC3	192.4.20.11	255.255.255.0	192.4.20.1
	PC4	192.4.20.12	255.255.255.0	192.4.20.1
	PC5	192.4.20.13	255.255.255.0	192.4.20.1
	Router1 G0/0/0 (LAN)	192.4.20.1	255.255.255.0	—
	Router1 G0/0/1 (WAN)	10.0.0.2	255.0.0.0	—
	Router1 S0/1/0 (WAN)	20.0.0.1	255.0.0.0	—
Dept. 3	PC6	192.4.30.11	255.255.255.0	192.4.30.1
	PC7	192.4.30.12	255.255.255.0	192.4.30.1
	PC8	192.4.30.13	255.255.255.0	192.4.30.1
	Router2 G0/0/0 (LAN)	192.4.30.1	255.255.255.0	—
	Router2 S0/1/0 (WAN)	20.0.0.2	255.0.0.0	—

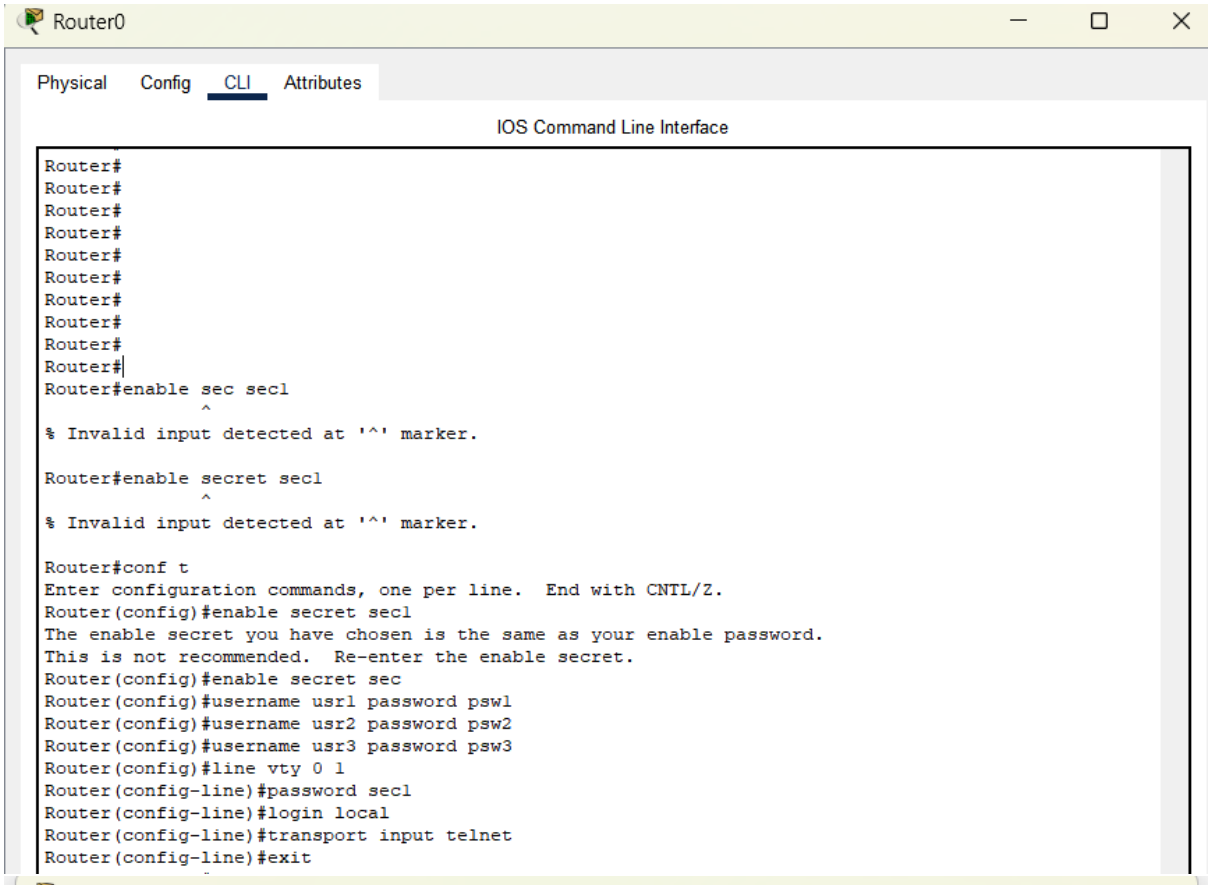
3) Configure dynamic routing table (RIP in routers):

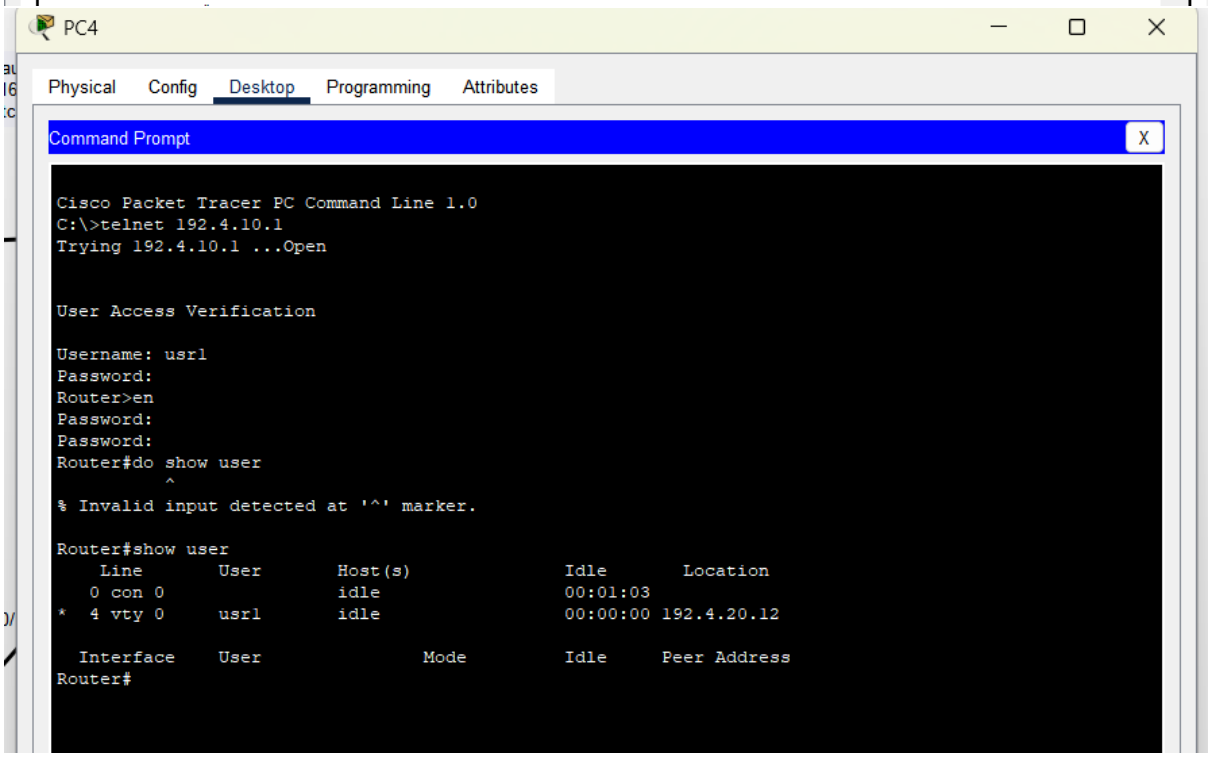





Router2
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
Serial0/1/0
Serial0/1/1
RIP Routing
Network
Add
Network Address
20.0.0.0
192.4.30.0

4) Configure TELNET on Router0:





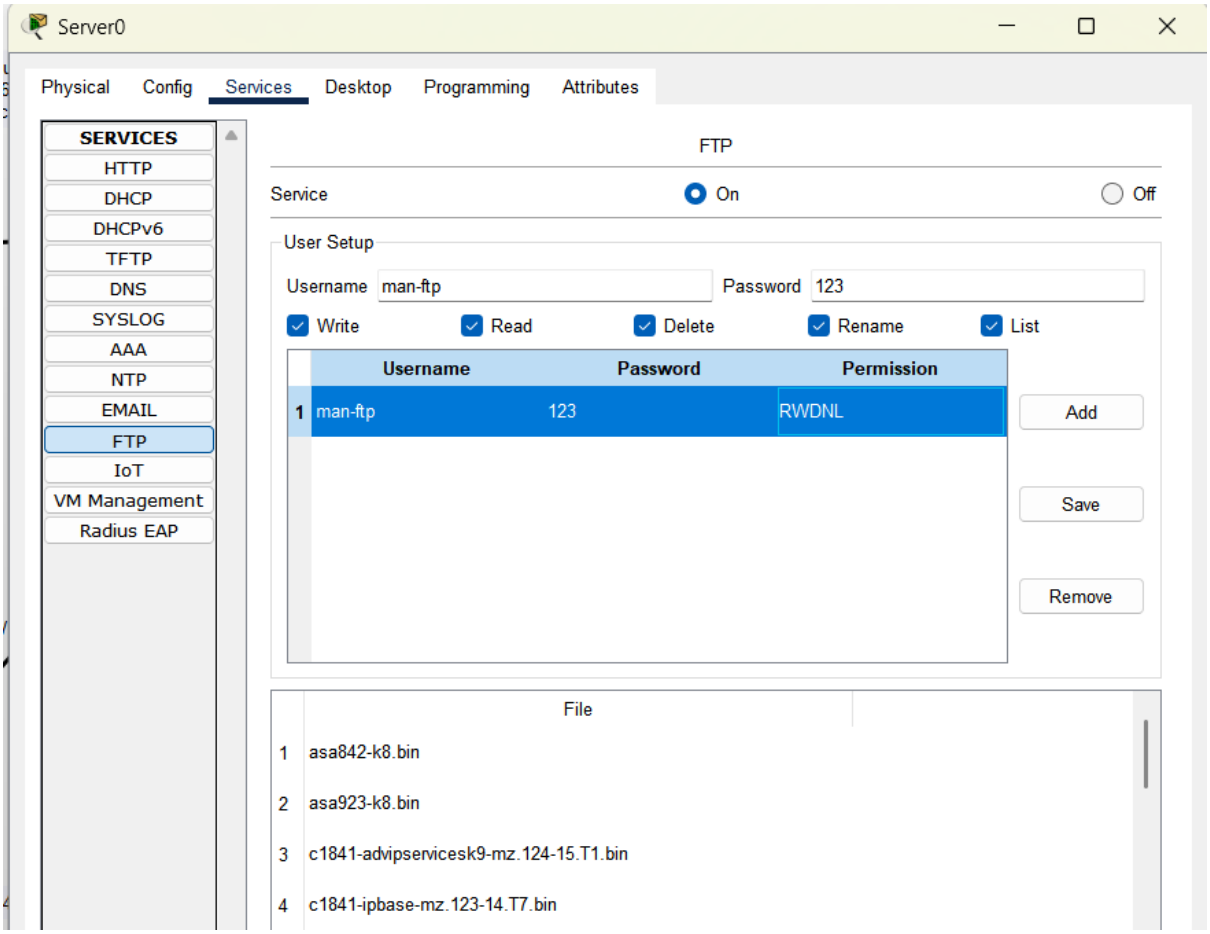
5) Configure SSH on Router1

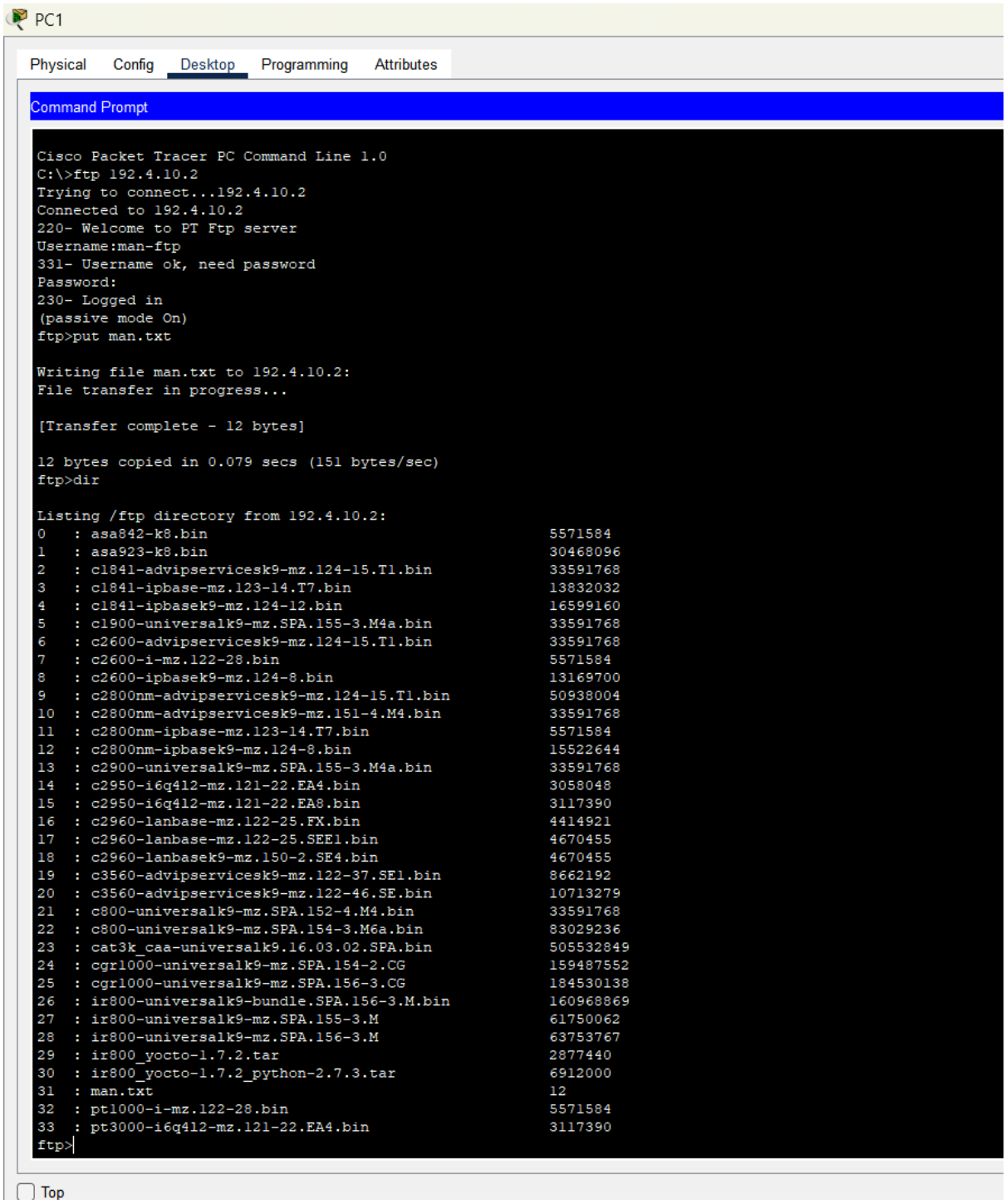
```
R1>
R1>en
Password:
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#hostname Man
Man(config)#enable secret man
Man(config)#ip domain name ma
Man(config)#crypto key generate rsa
% You already have RSA keys defined named R1.man .
% Do you really want to replace them? [yes/no]: y
The name for the keys will be: Man.ma
Choose the size of the key modulus in the range of 360 to 4096 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Man(config)#ip ssh version 2
*Mar 1 3:37:51.912: %SSH-5-ENABLED: SSH 2 has been enabled
Man(config)#line vty 0 1
Man(config-line)#transport input ssh
Man(config-line)#login local
Man(config-line)#exit
Man(config)#
```

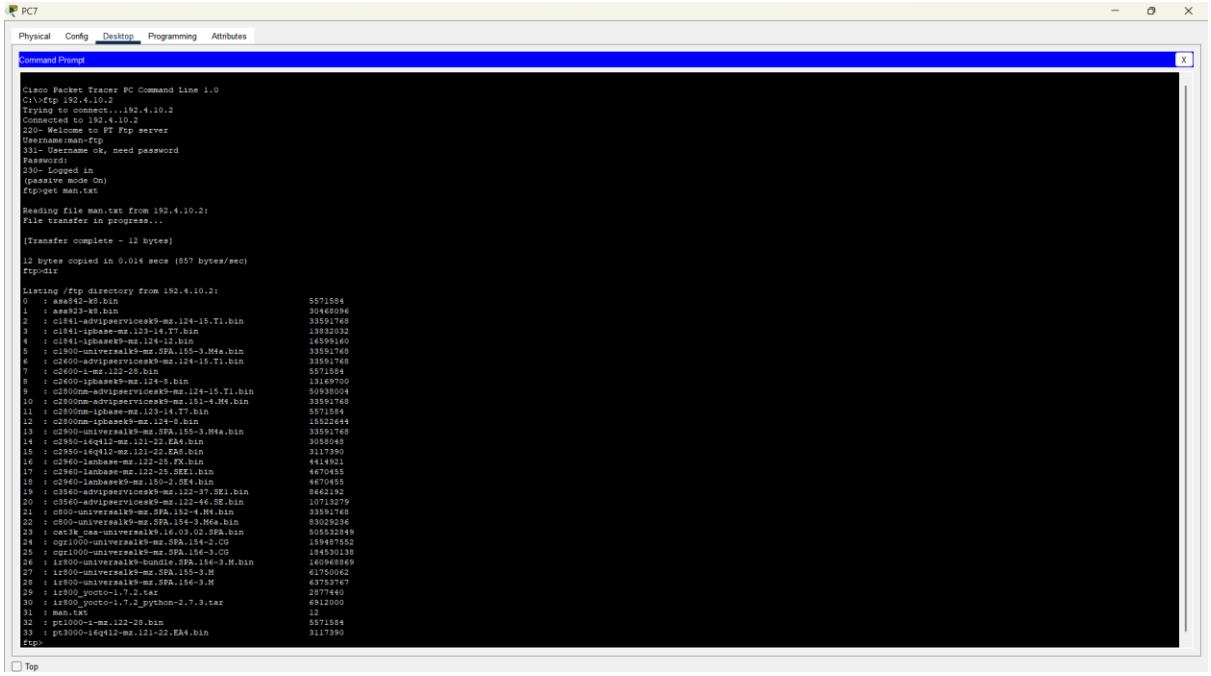
Copy Paste

```
C:\>ssh -l usr1 192.4.20.1

Password:



Man>en
Password:
Man#
```

6) Configure FTP on Server




PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.4.10.2
Trying to connect...192.4.10.2
Connected to 192.4.10.2
220- Welcome to PT Ftp server
Username:man-ftp
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put man.txt
Writing file man.txt to 192.4.10.2:
File transfer in progress...
[Transfer complete - 12 bytes]
12 bytes copied in 0.079 secs (151 bytes/sec)
ftp>dir
Listing /ftp directory from 192.4.10.2:
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-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 : man.txt 12
32 : pt1000-i-mz.122-28.bin 5571584
33 : pt3000-i6q4l2-mz.121-22.EA4.bin 3117390
ftp>
Top



Conclusion:

In this practical, we successfully configured and verified Telnet, SSH, and FTP services in a network with three departments.

- Telnet was implemented with three users and a common password, allowing a maximum of two simultaneous sessions.
- SSH was configured with three secure users, ensuring encrypted remote access with a limit of two concurrent sessions.
- FTP server was set up in Dept. 1, and file upload/download between different departments was tested successfully.

Thus, the organization’s network was able to achieve remote router access (Telnet & SSH) and secure file sharing (FTP) while meeting all given requirements.