Experiment 3.1

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Subject Name: Computer Networks **Subject Code: 22-CSH-312**

1. **Aim:** To establish resource sharing between two connected nodes using the File Transfer Protocol (FTP) in Packet Tracer, while gaining an understanding of configuring IP addresses on a server and client devices..

2. **Requirements(Hardware/Software):**

S/W Requirement :- Packet Tracer
H/W Requirement :-
• Processor – Any suitable Processor e.g. Celeron
• Main Memory - 128 MB RAM
•Hard Disk – minimum 20 GB IDE Hard Disk
• Removable Drives–1.44 MB Floppy Disk Drive
–52X IDE CD-ROM Drive
•PS/2 HCL Keyboard and Mouse

3. **Theory:**

The File Transfer Protocol (FTP) is a standard network protocol used for transferring files between a client and server on a computer network. It operates over a TCP/IP-based network (like the Internet) and is commonly used to:

Share files between users or systems.
Manage file uploads and downloads to a server.
Provide controlled access through username and password authentication.

Key Concepts:

FTP Service: The server runs an FTP service that allows client devices to connect and transfer files upon authentication.
IP Address Configuration: For devices to communicate in a network, each device must have a unique IP address within the same subnet.
Ping Command: A network utility used to test connectivity between devices by sending packets of data to another IP address and measuring response times.
This experiment simulates a simple network where two PCs are connected to a server via a router and switch. Once connected, each PC can upload or download files to and from the FTP server using FTP commands.

4. Procedure:

1. Setup Devices: Place two PCs, a server, a router, and a switch in Packet Tracer.
2. Connect Devices: Use Copper Straight-Through cables to connect PCs, server, and router to the switch.
3. Assign IPs: Set unique IP addresses within the same subnet on all devices.
4. Enable FTP: On the server, enable FTP in the Services tab and create a user account with credentials.
5. Ping Test: From both PCs, ping the server's IP to verify connectivity.
6. FTP Access: On PC1, open the Command Prompt, connect using `ftp [server IP]`, and log in with credentials.
7. Upload/Download: Use `put filename.txt` to upload and `get filename.txt` to download files.
8. Repeat on PC2: Follow the same FTP steps on PC2 to confirm access.

5. Output:

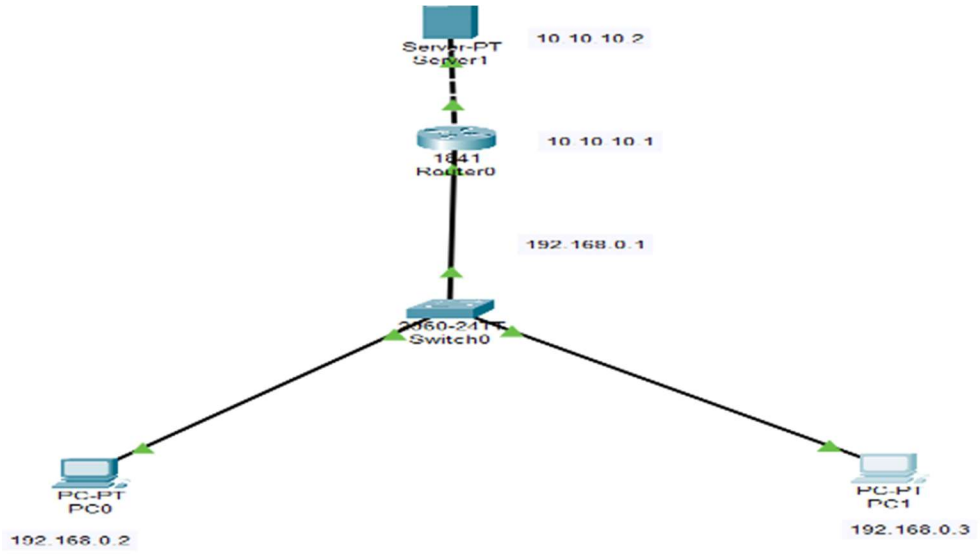

Fig 1: Connections of system

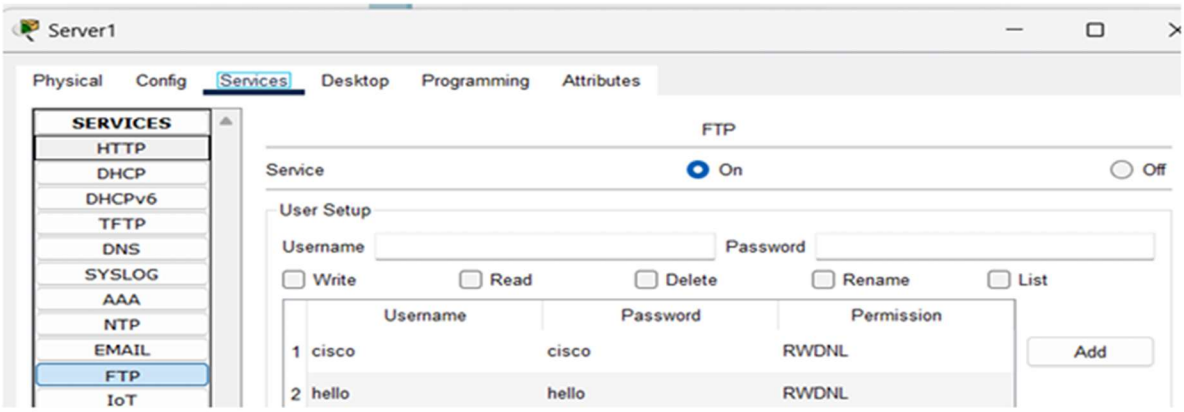

Fig 2: creating username and password

6. Learning Outcome:

1. Gain practical experience in setting up and configuring network devices in Packet Tracer.
2. Understand the basics of static IP addressing within a subnet for network communication.
3. Learn how the FTP protocol supports resource sharing and file management.
4. Practice using FTP commands to upload and download files.
5. Develop troubleshooting skills to diagnose and resolve connectivity issues using commands like ping.