Date: 13/08/2024

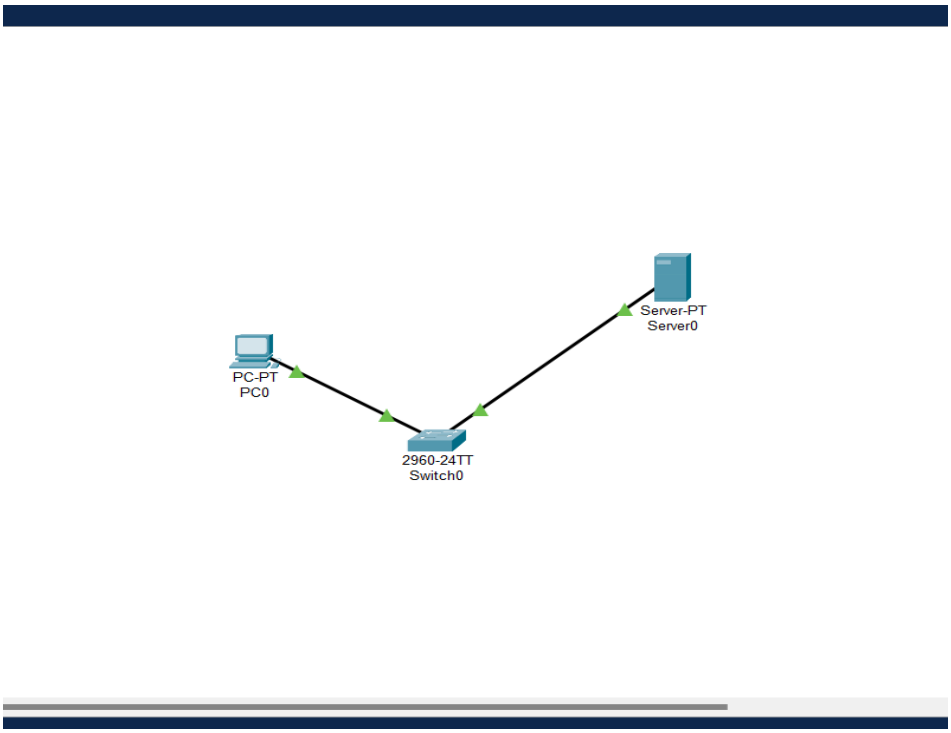
Lab Practical #06:

Study the application layer protocol DNS, DHCP, FTP.

Practical Assignment #06:

1. Implement the application layer protocol DNS, DHCP, and FTP. Also check connectivity between them using ping command or PDU utility.

1. **DNS:-**



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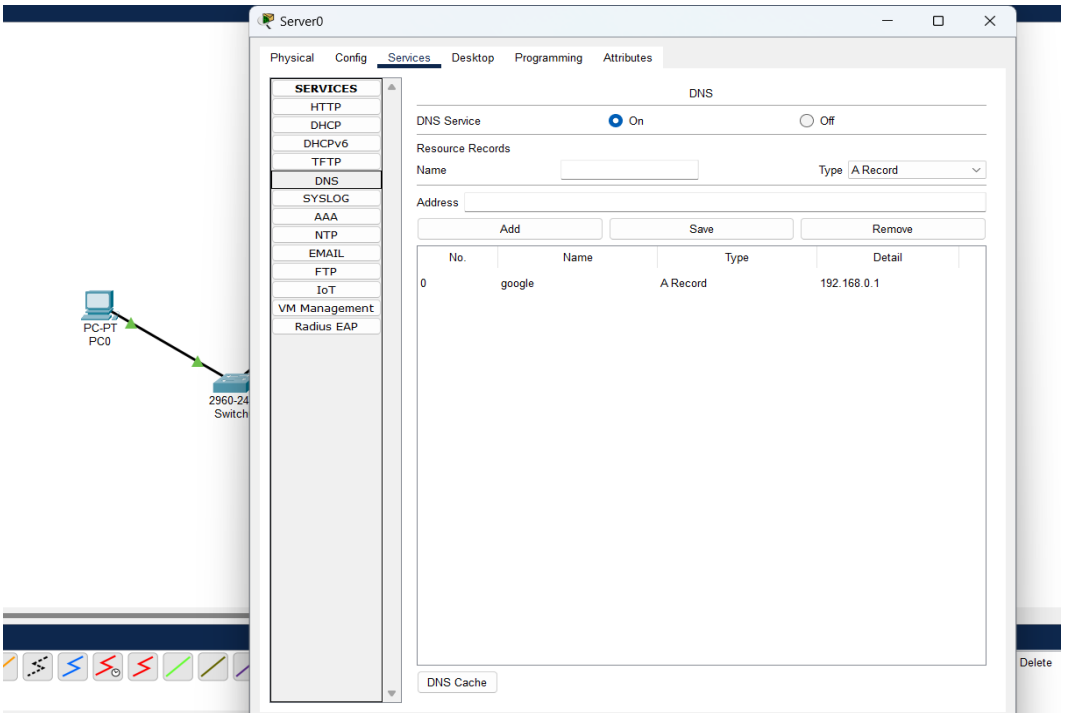

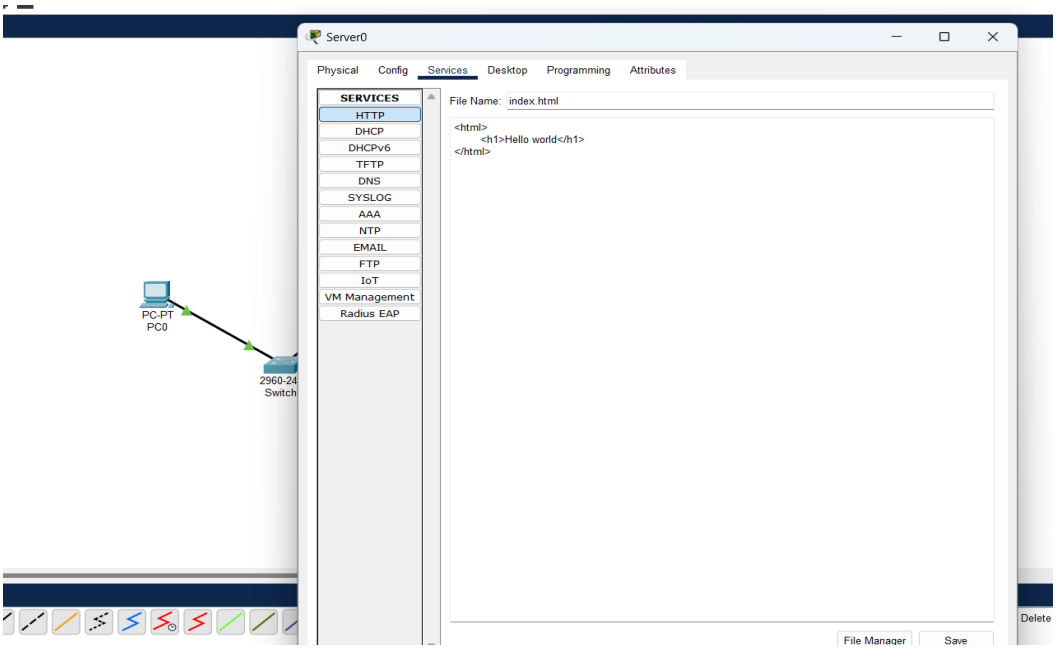

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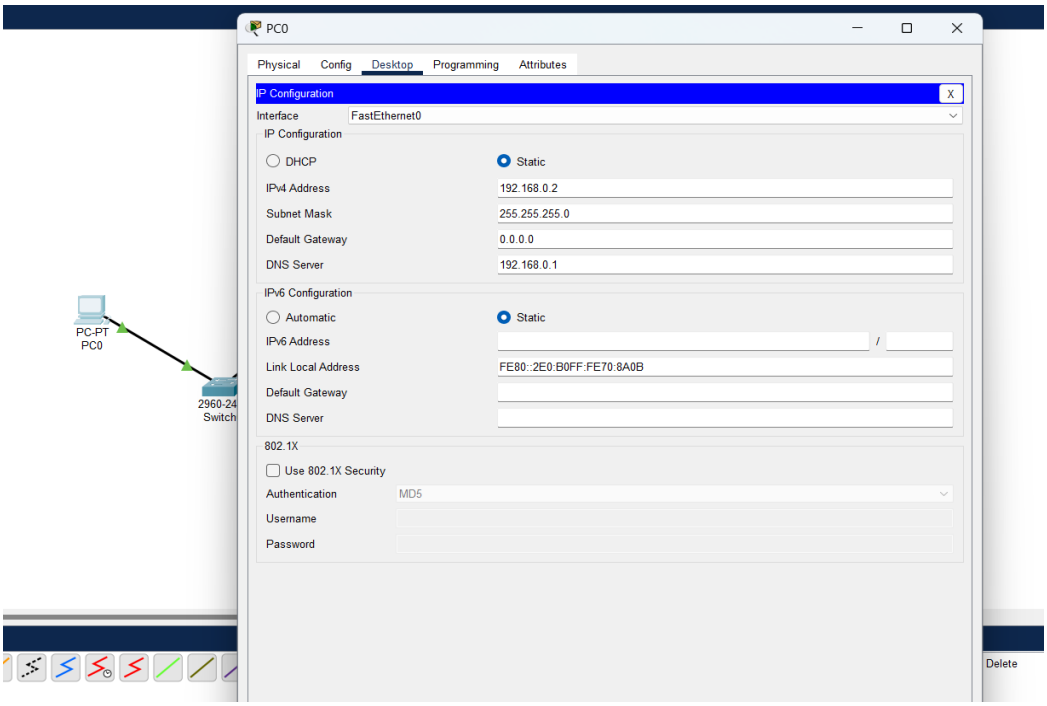

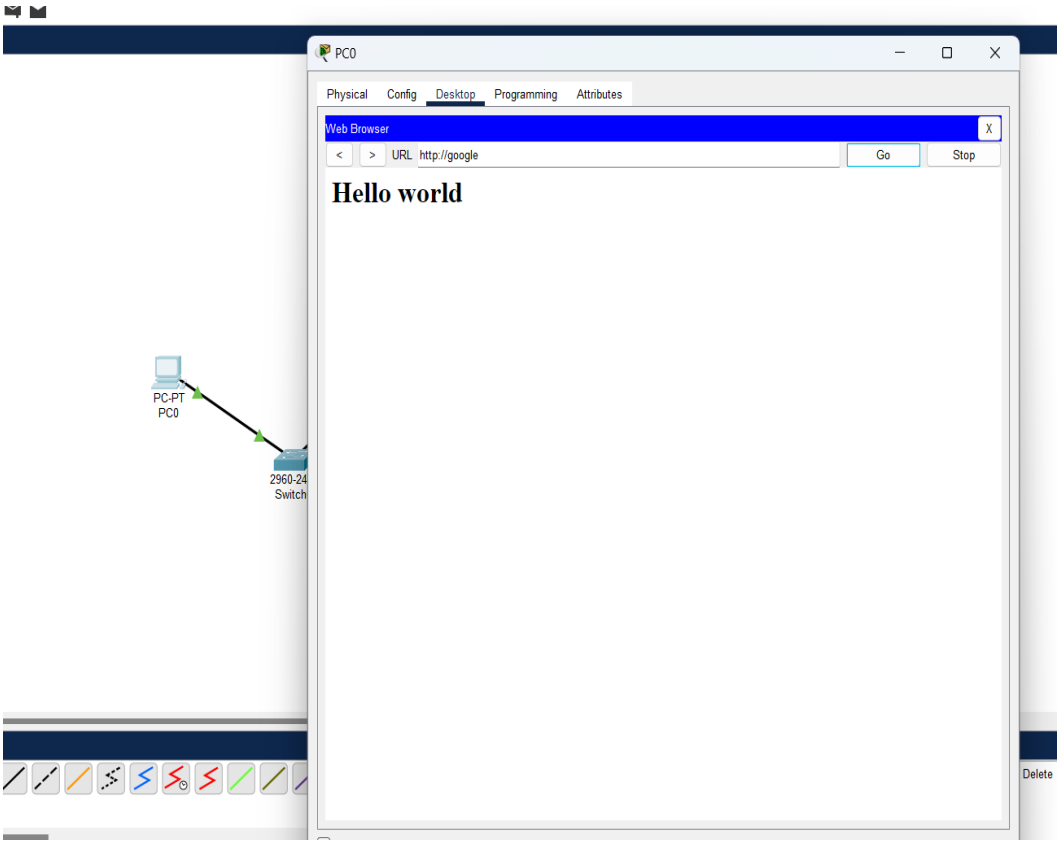

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Steps:-

- Drag and drop the following devices onto the workspace:
  - One DNS server and One Web Server.
  - One or more client PCs and Routers.
  - Switches to connect the devices if needed.
- Click on the DNS server icon to open its configuration panel. Go to the Config tab. Assign a static IP address (e.g., 192.168.0.3) and subnet mask (e.g., 255.255.255.0).
- Go to the Services tab. Select DNS from the list of services. Turn on the DNS service.
- Add DNS records for the domain names you want to resolve. For example:- Name: www.google.com Address: 192.168.0.1 (IP of the web server).
- Click on a client PC icon to open its configuration panel. Go to the Config tab. Assign a static IP address (e.g., 192.168.0.2) and subnet mask (e.g., 255.255.255.0).
- Set the default gateway to the IP address of the router (e.g., 192.168.0.1).
- Set the DNS server to the IP address of your DNS server (e.g., 192.168.0.1).
- Click on the router icon to open its configuration panel.
- Assign IP addresses to the router interfaces that connect to the different network segments.
- Go to the client PC and open the command prompt.
- Type ping www.google.com and press Enter.
- The command should resolve www.google.com to 192.168.0.1 and start pinging the web server.
- Open a web browser on the client PC. Enter www.google.com in the address bar. The browser should display the default web page served by the web server.

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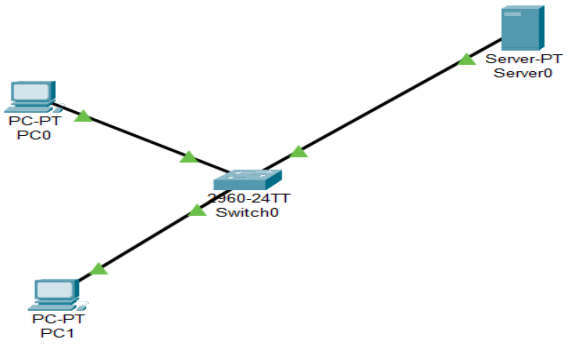
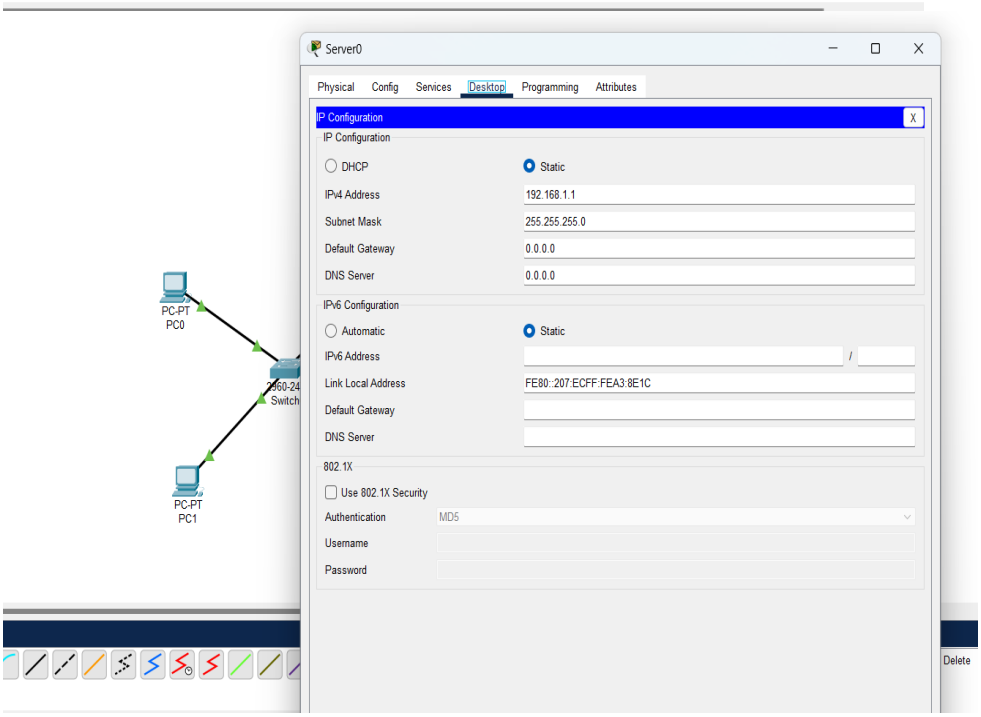
2. DHCP :-





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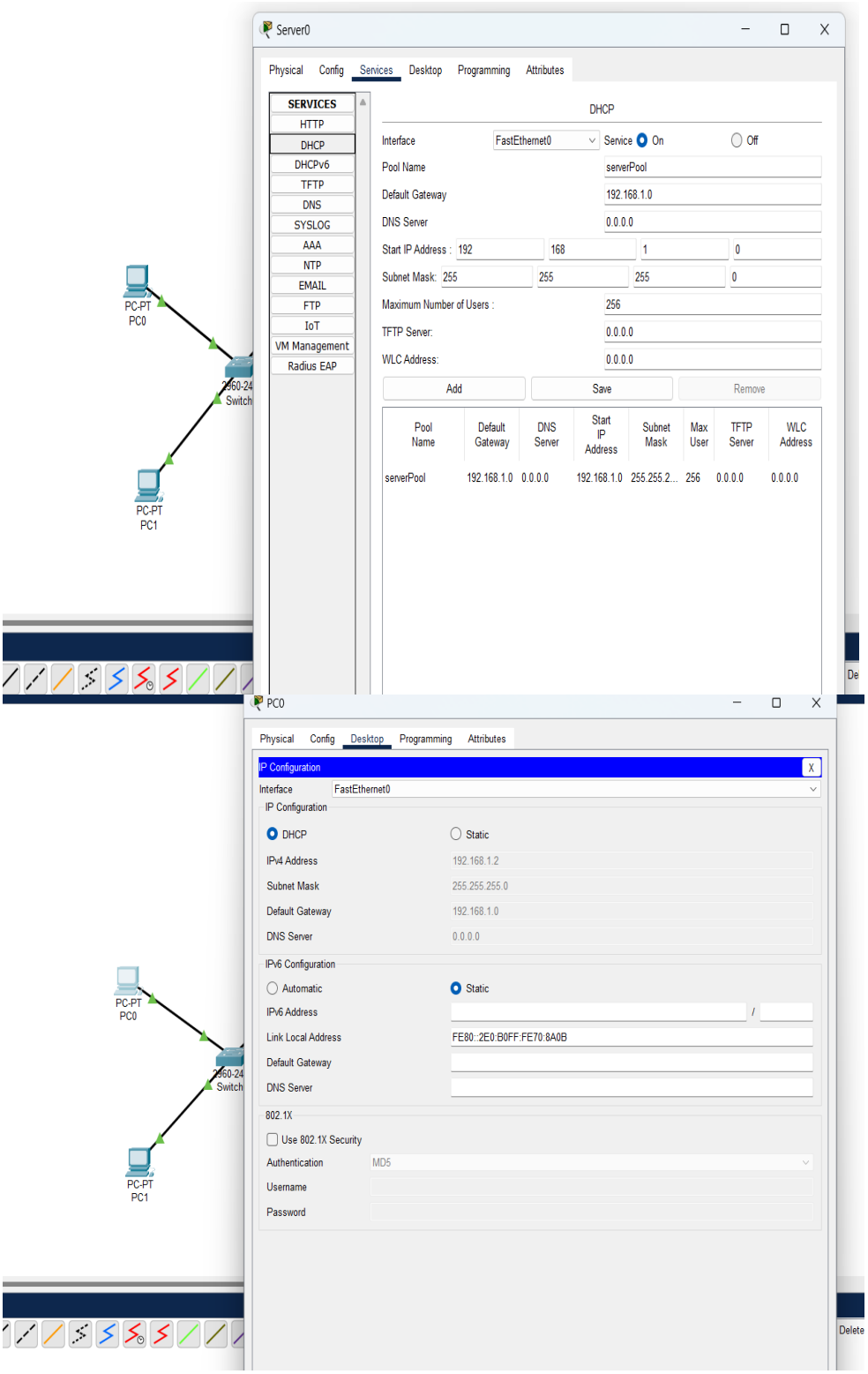

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Steps:-

- Drag and drop the following devices onto the workspace:
  - One Router and One Web Server.
  - One or more client PCs.
  - Switches to connect the devices if needed.
- Connect the devices using appropriate cables (use Copper Straight-Through cables to connect PCs to the switch and the switch to the router).
- Click on the server to open its IP configuration panel. Assign a static IP address (e.g., 192.168.1.1) and subnet mask (e.g., 255.255.255.0).
- Click on the DNS server icon to open its configuration panel. Go to the Config tab. Assign a static IP address (e.g., 192.168.1.0) and click Add button.
- Then go to PCs give IP configuration select DHPC.
- After selecting DHPC you can see the PCs automatic tack IP Address and Default Getway.

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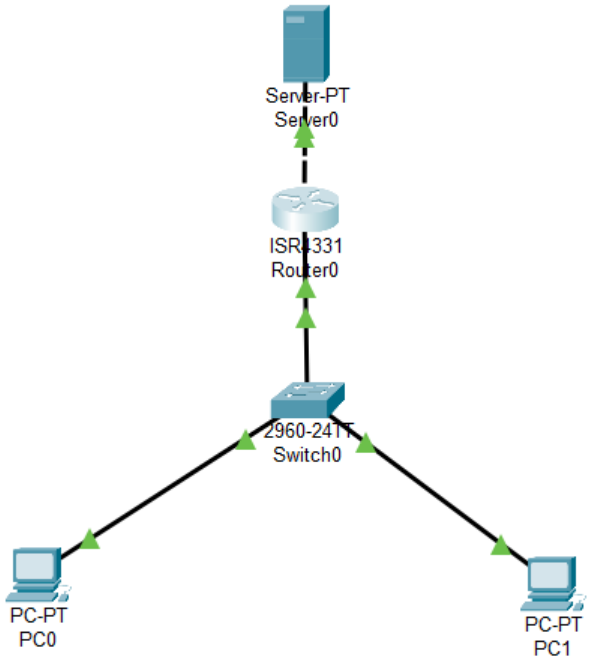
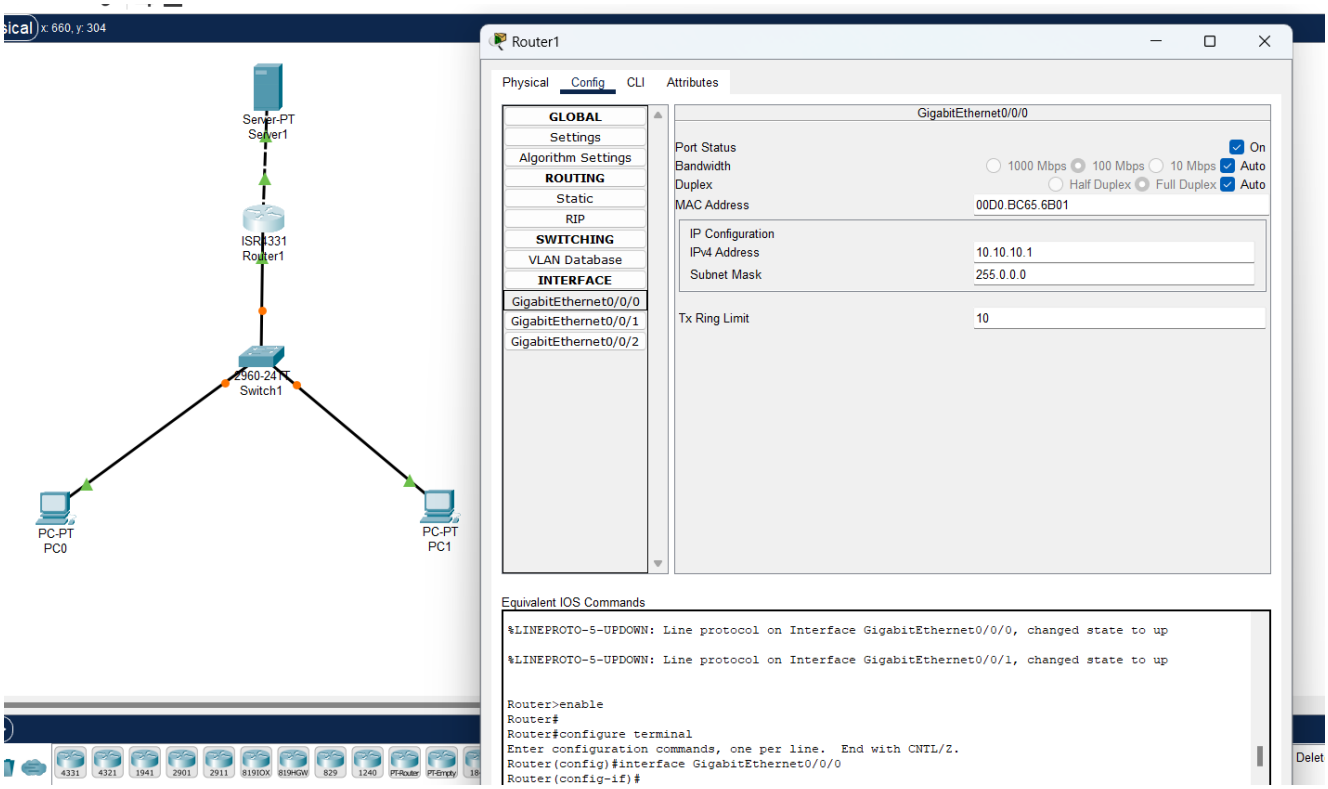
3. **FTP :-**





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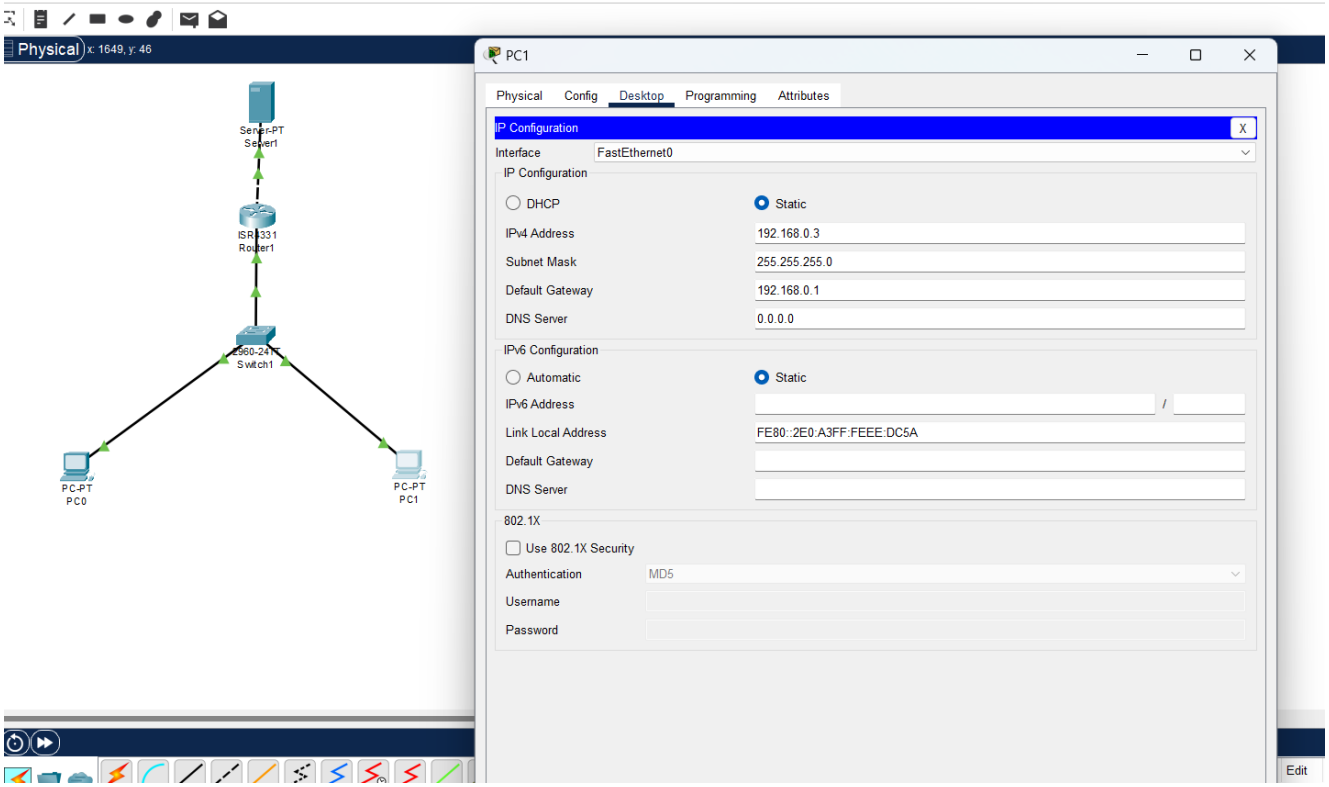

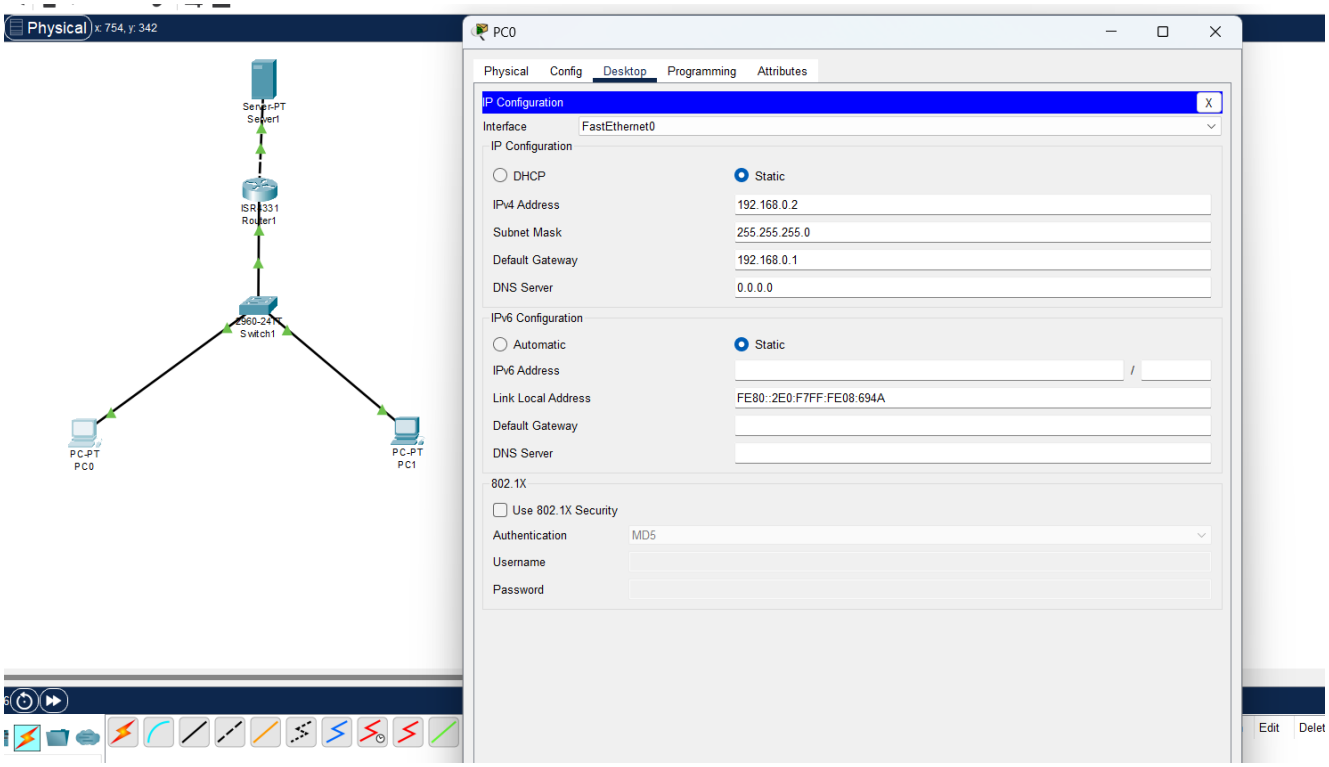

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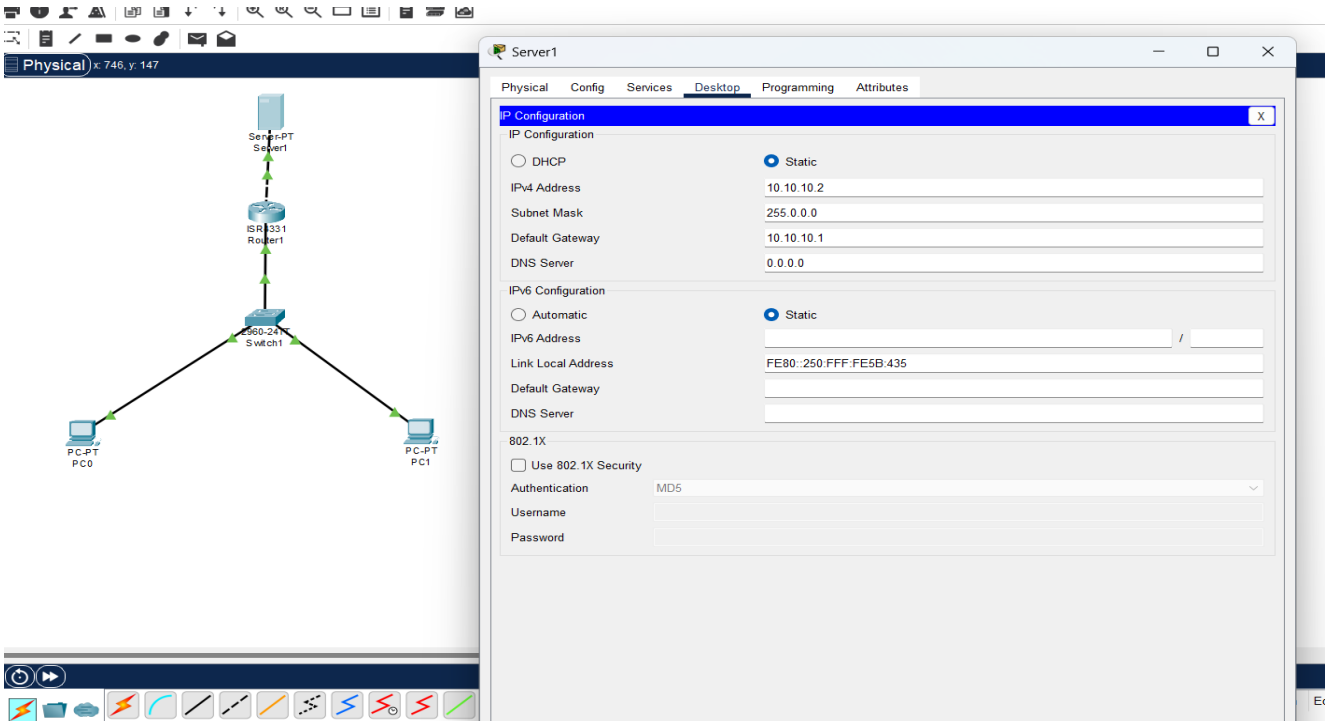

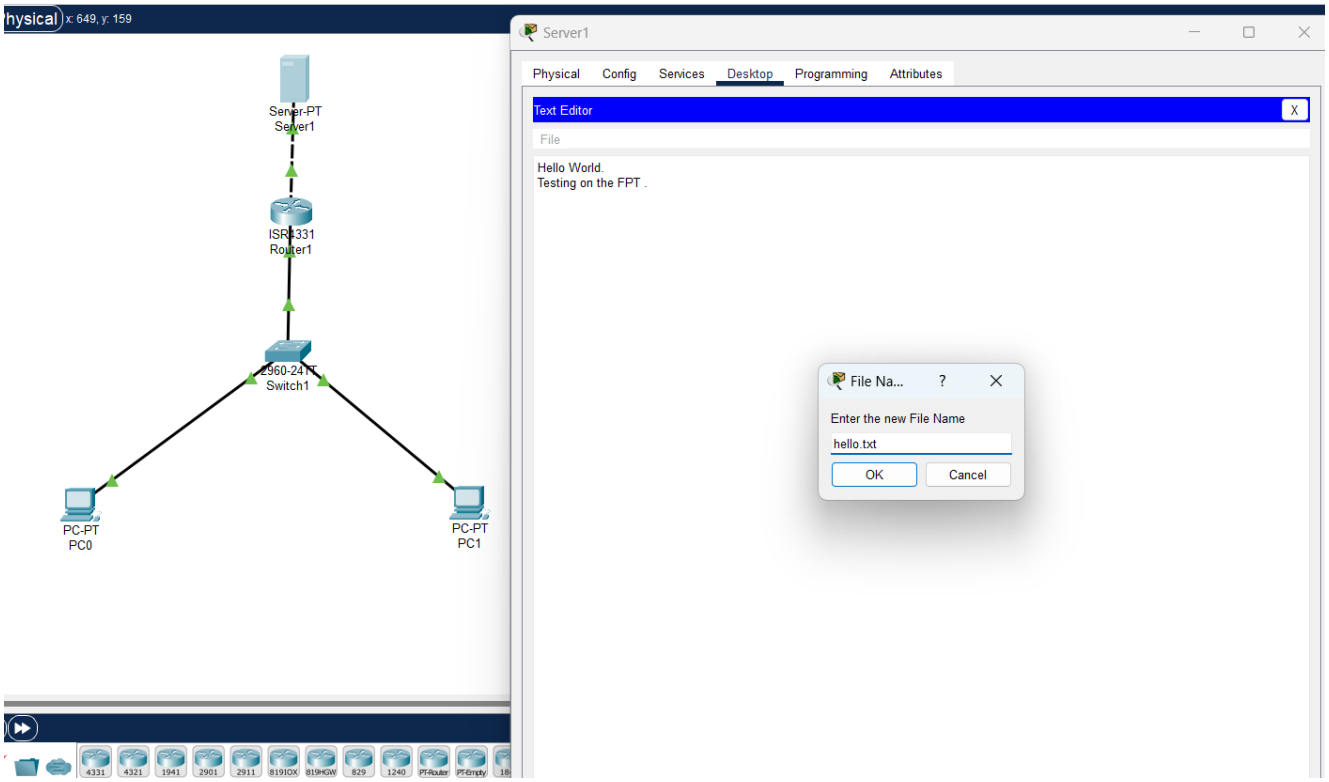

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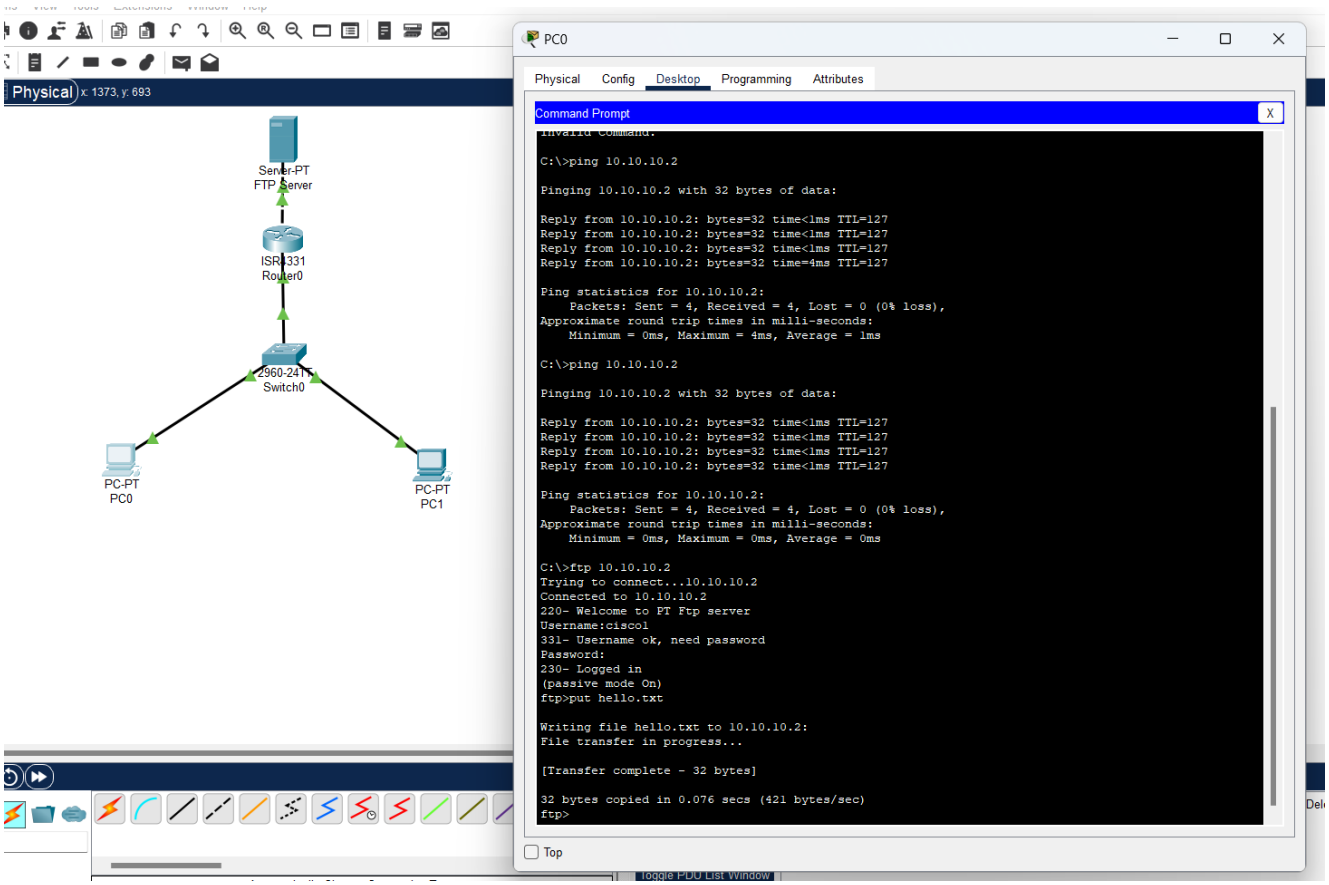

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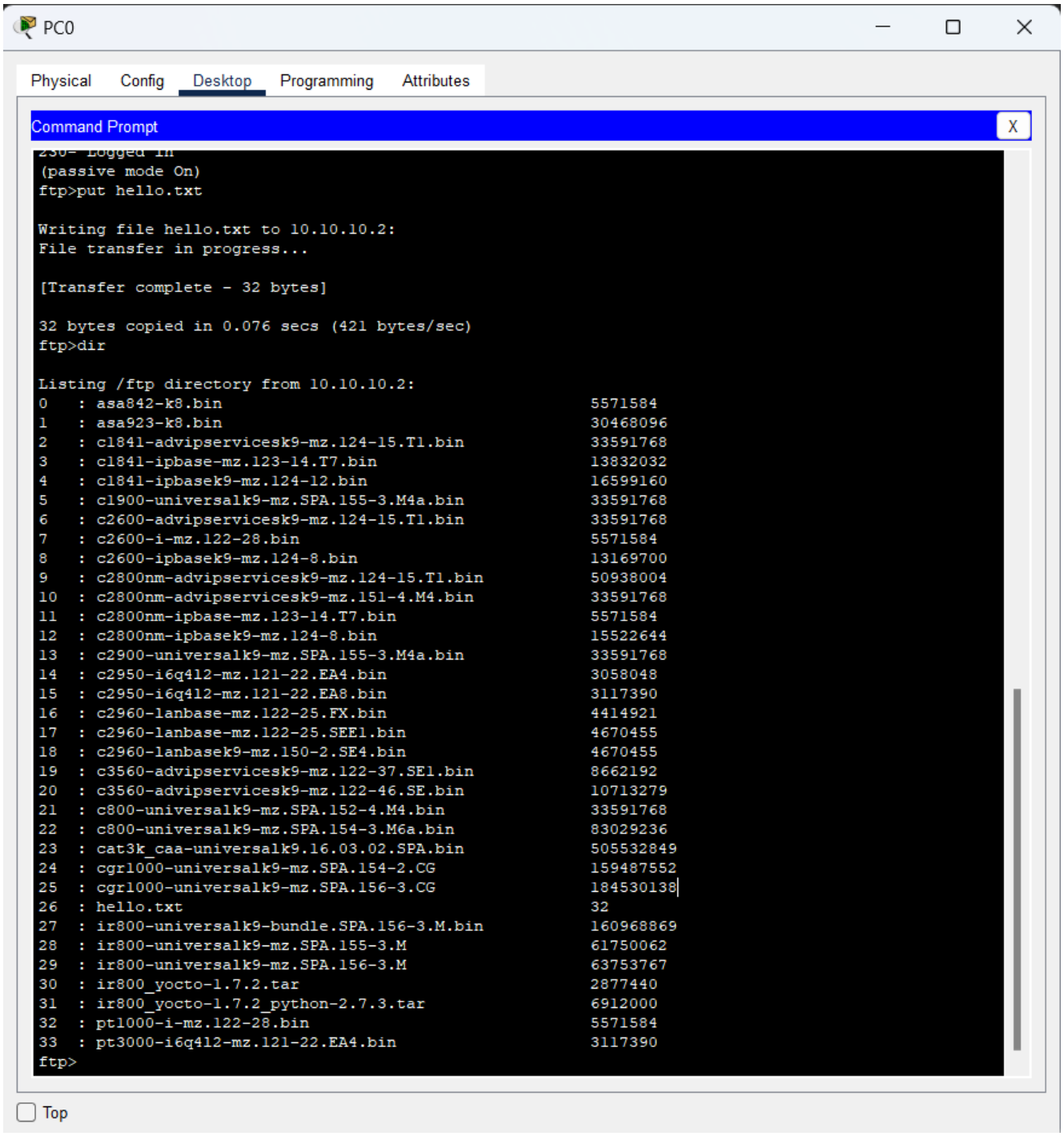

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Steps:-

- Drag and drop the following devices onto the workspace:
  - One Router and One Web Server.
  - One or more client PCs.
  - Switches to connect the devices if needed.
- Connect the devices using appropriate cables (use Copper Straight-Through cables to connect PCs to the switch and the switch to the router to server).
- In Router open config and give server-side IP (e.g., 10.10.10.1) and give Swich side IP (e.g., 192.168.0.1).
- Add check on the On in a Port Status.
- Now give PCs IP address (e.g., 192.168.0.2) and give Default Getway address as Switch (e.g., 192.168.0.1).
- Now give Server IP address (e.g., 10.10.10.2) and give Default Getway address as Switch (e.g., 10.10.10.1).
- In switch go to FTP tab and give new username and password.
- In server write text in Text Editor and save text as name (e.g., hello.txt).
- Open Command prompt in PCs and give command ping, server IP address and enter. After give ftp, server IP address and enter.
- Ater that it need username and password, after give Username and password we logged in. our server and PC are connected.
- Then write put command with txt file name (e.g., hello.txt) and enter.
- Now write dir command and enter, you can see PCs have server txt file (e.g., hello.txt) with number of bytes.