computer networks

Lab No. 3

Objectives:

1. Peer to Peer Connection;
2. A Basic Routed WAN.

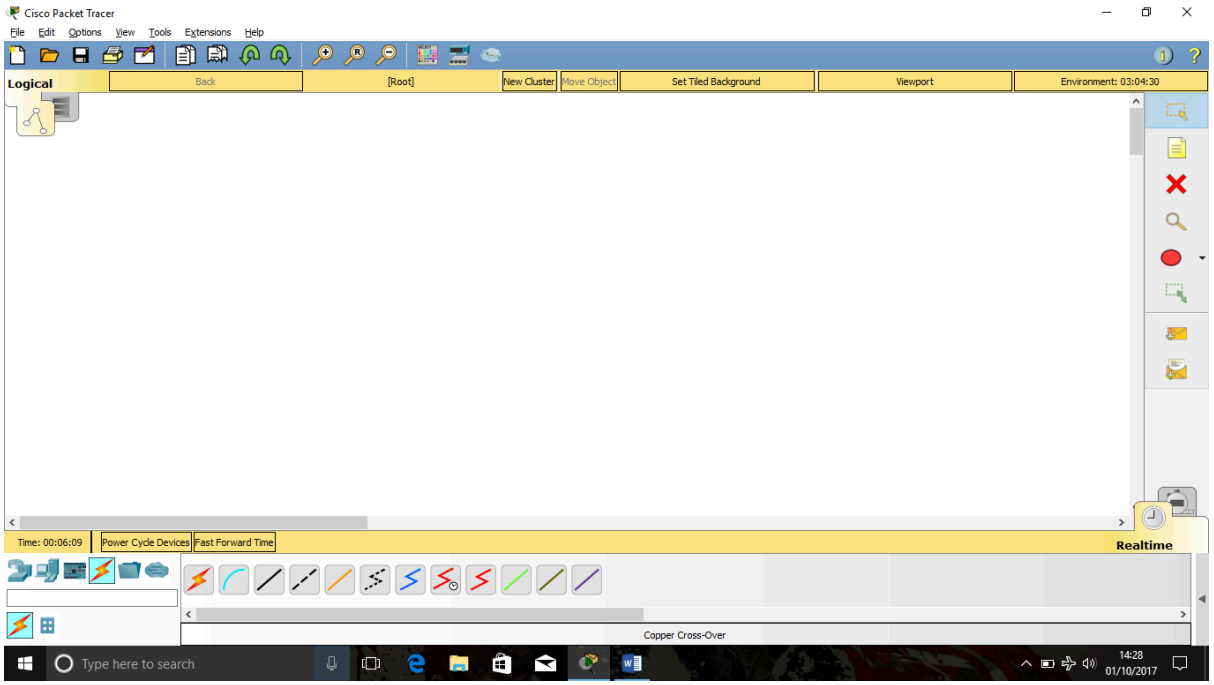
Software: Cisco Packet Tracer Student Version.

1. Peer to Peer Connection.

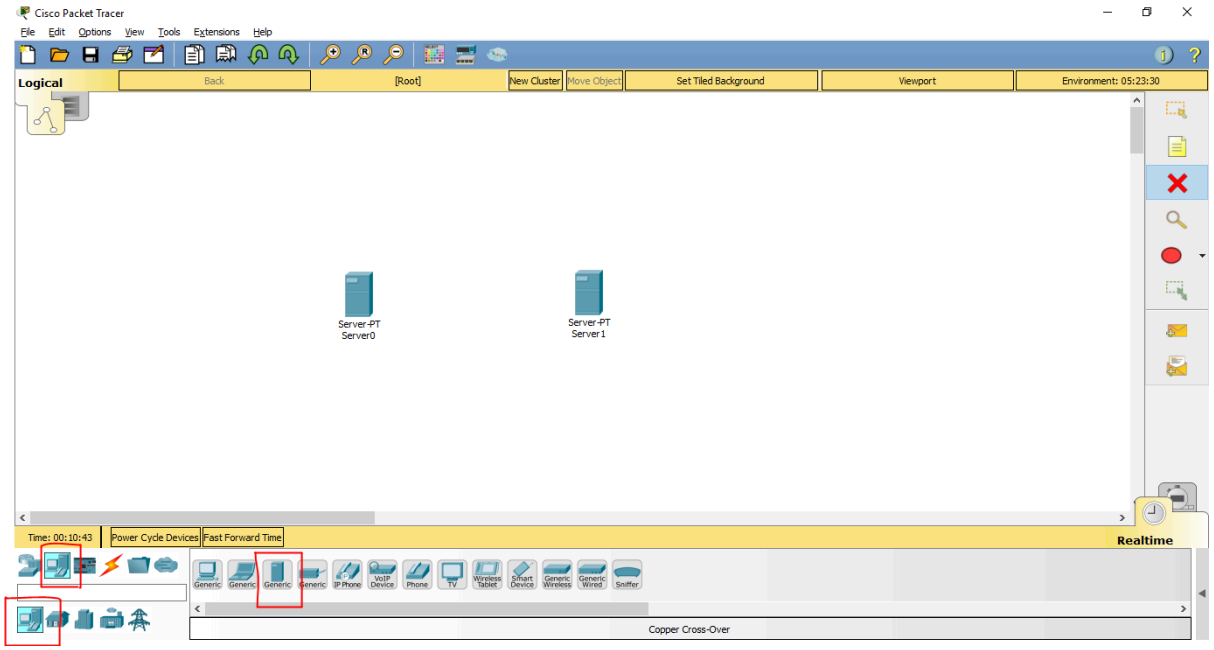
Required: 2 End Devices and a Cross-Over.

Procedure:

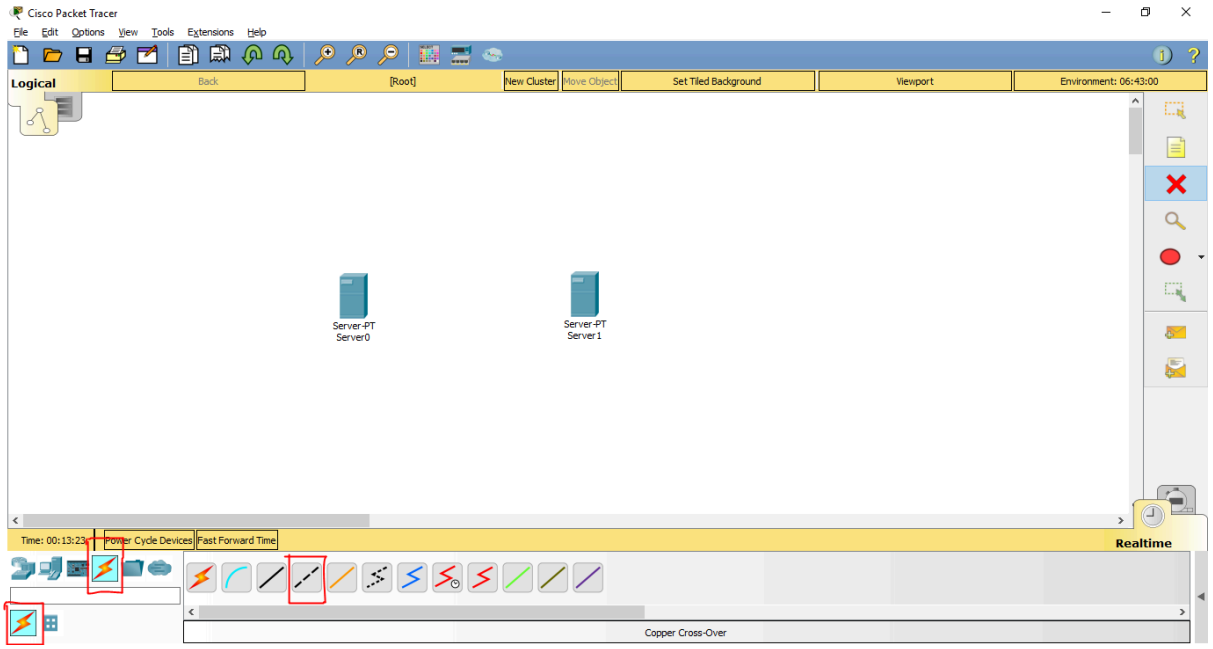
Step 1: Open Cisco packet Tracer from the desktop



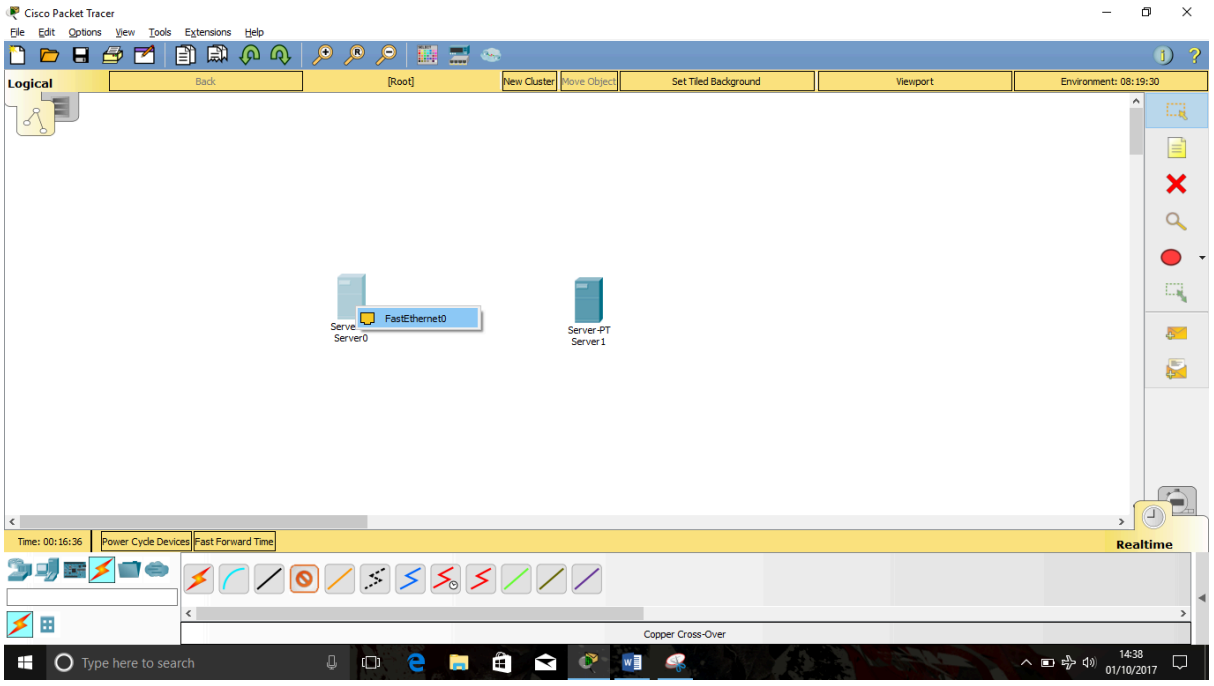
Step 2: Select two End Devices (Server-PT) respectively and drag them to the interface window.



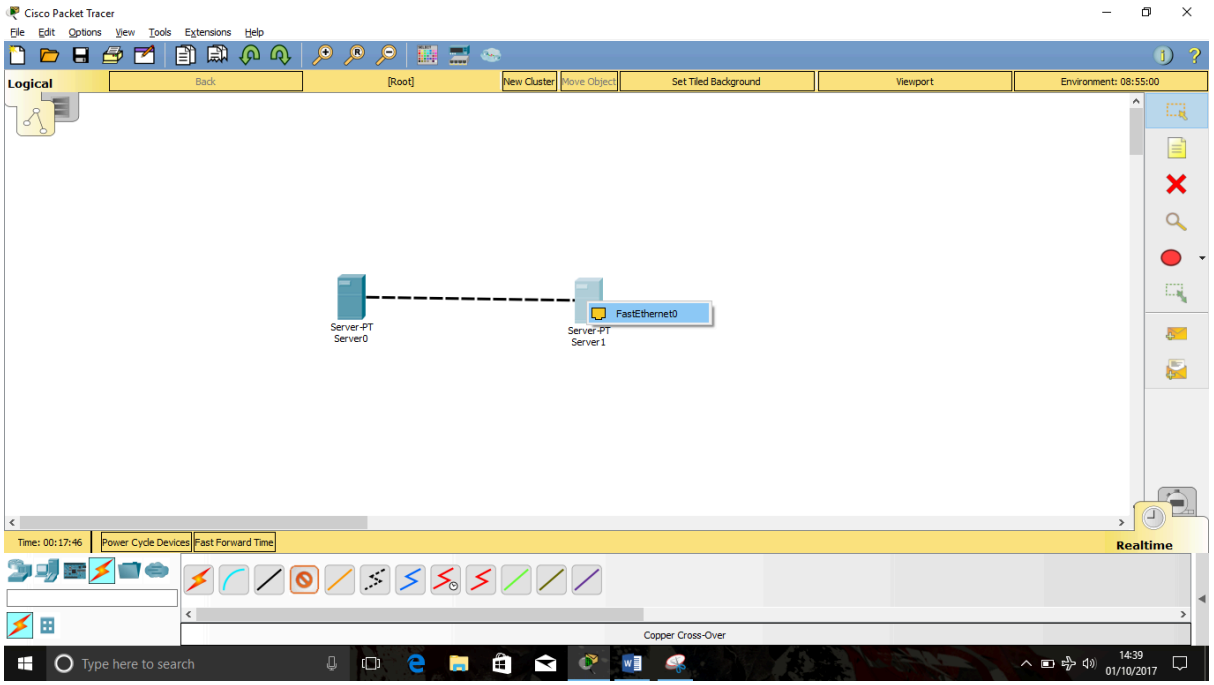
Step 3: Select cross wire (from bottom left) by selecting connections.



After Selection click on of the End Device the select it slot.

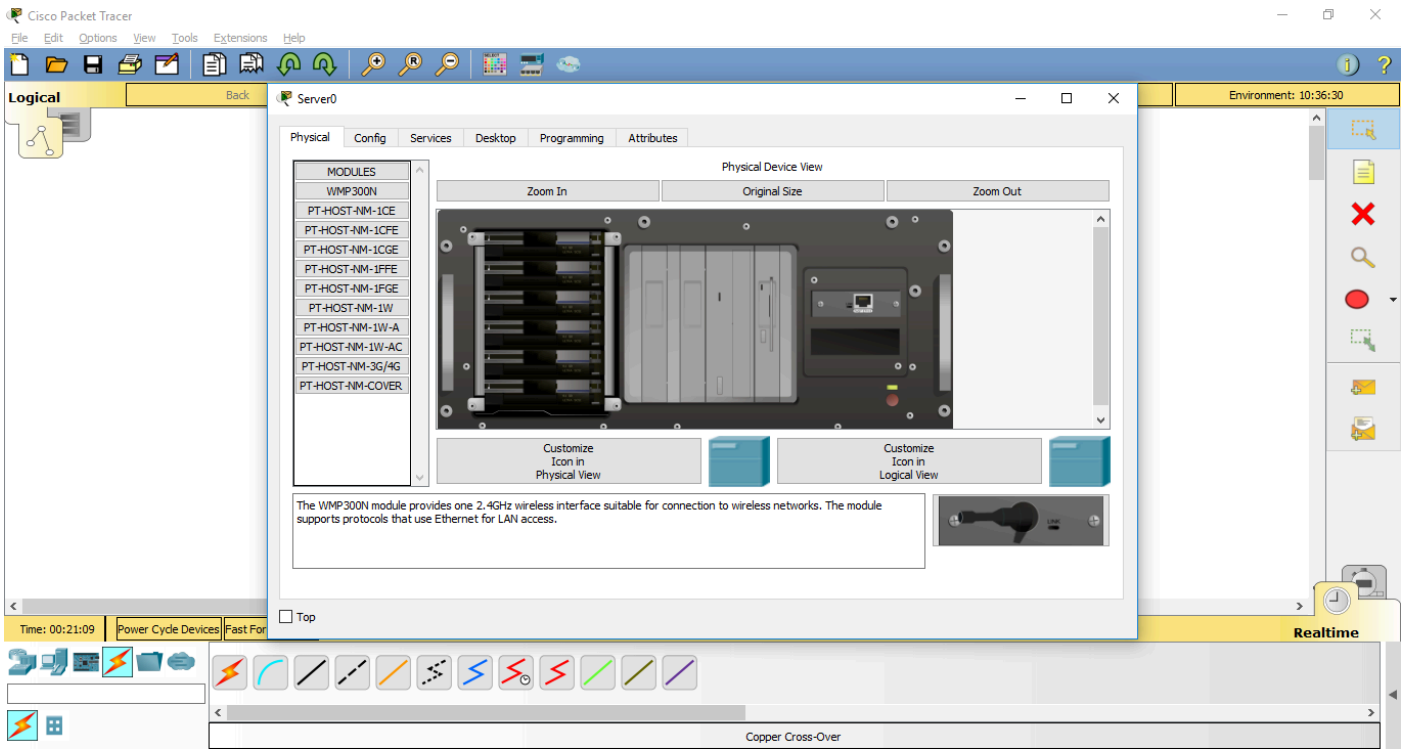


Then click second End Device to and select it slot to make connection.

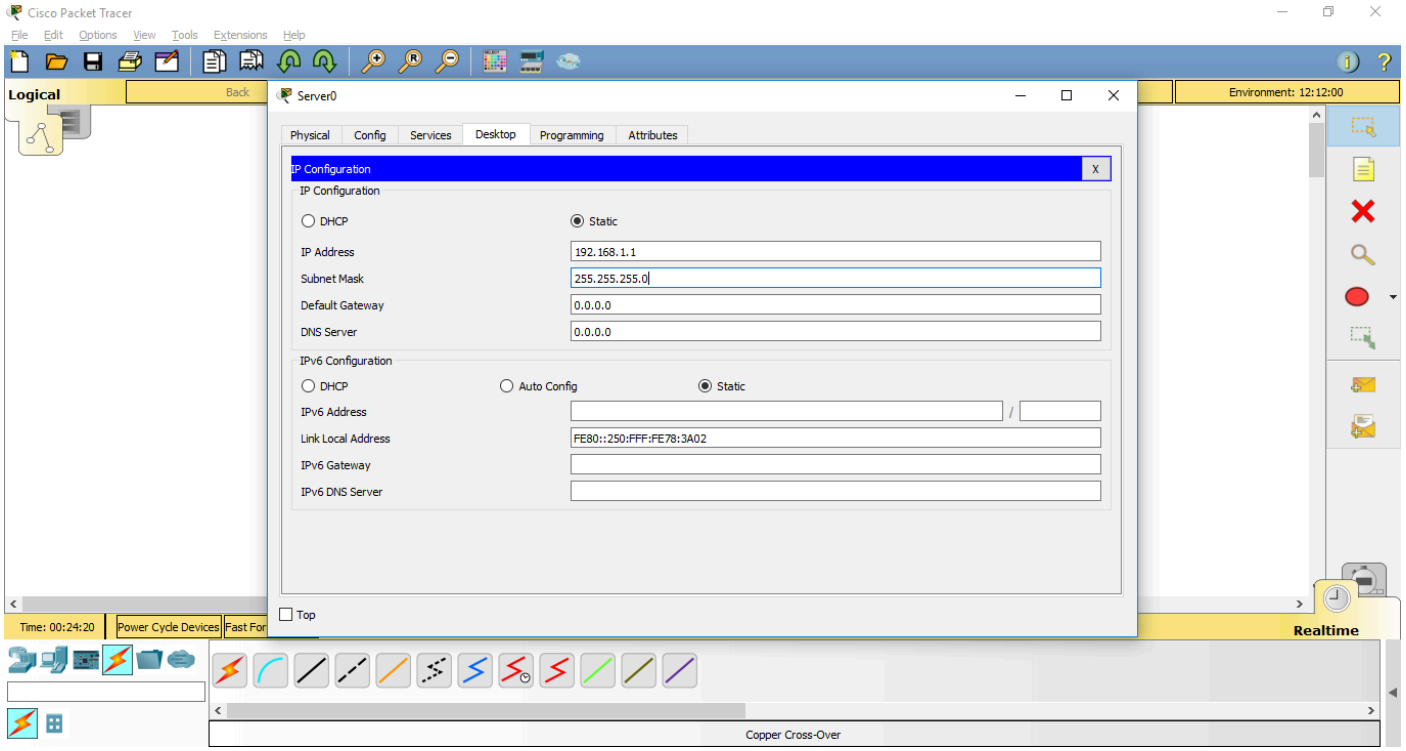


Step 4: Setting the IPs of End Device.

- Click the any Server to see the setting menu.

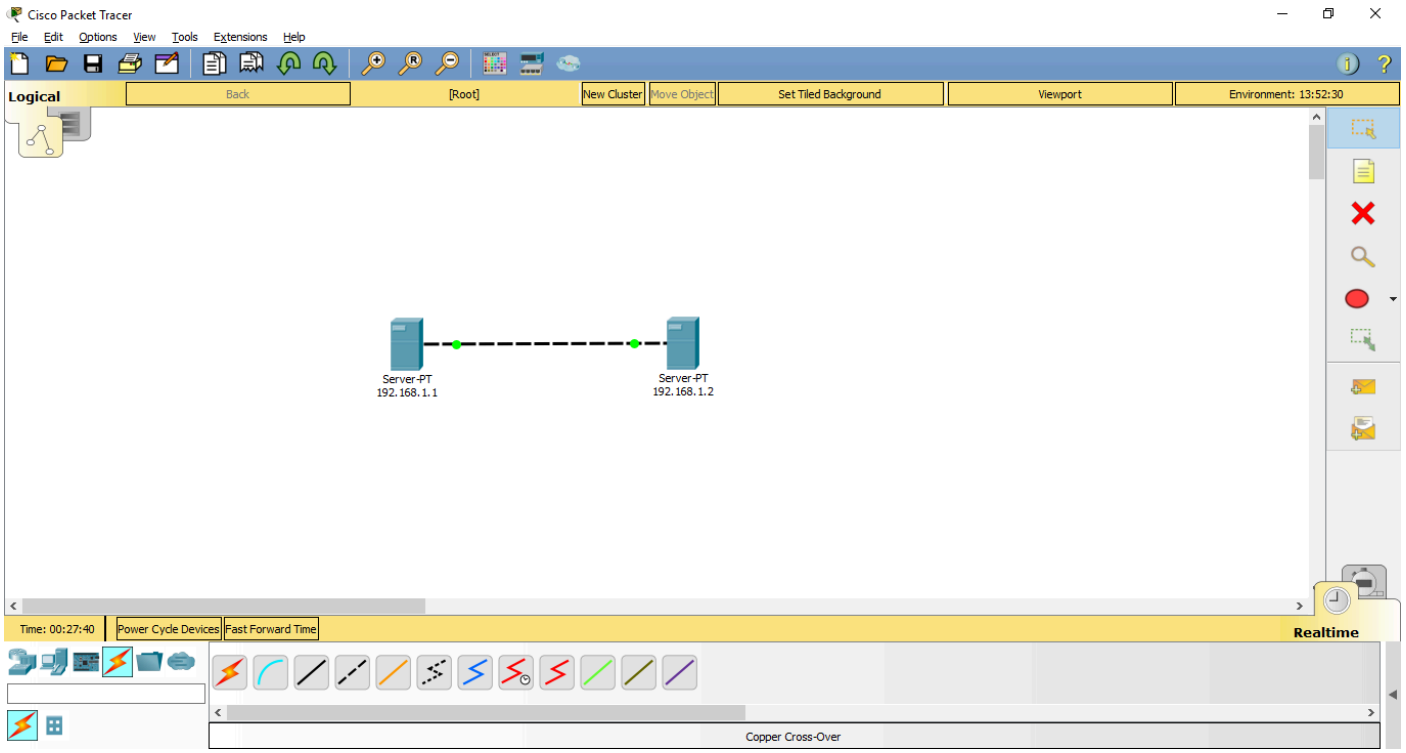


- Select Desktop tab then IP configuration and set the id and Subnet Mask.



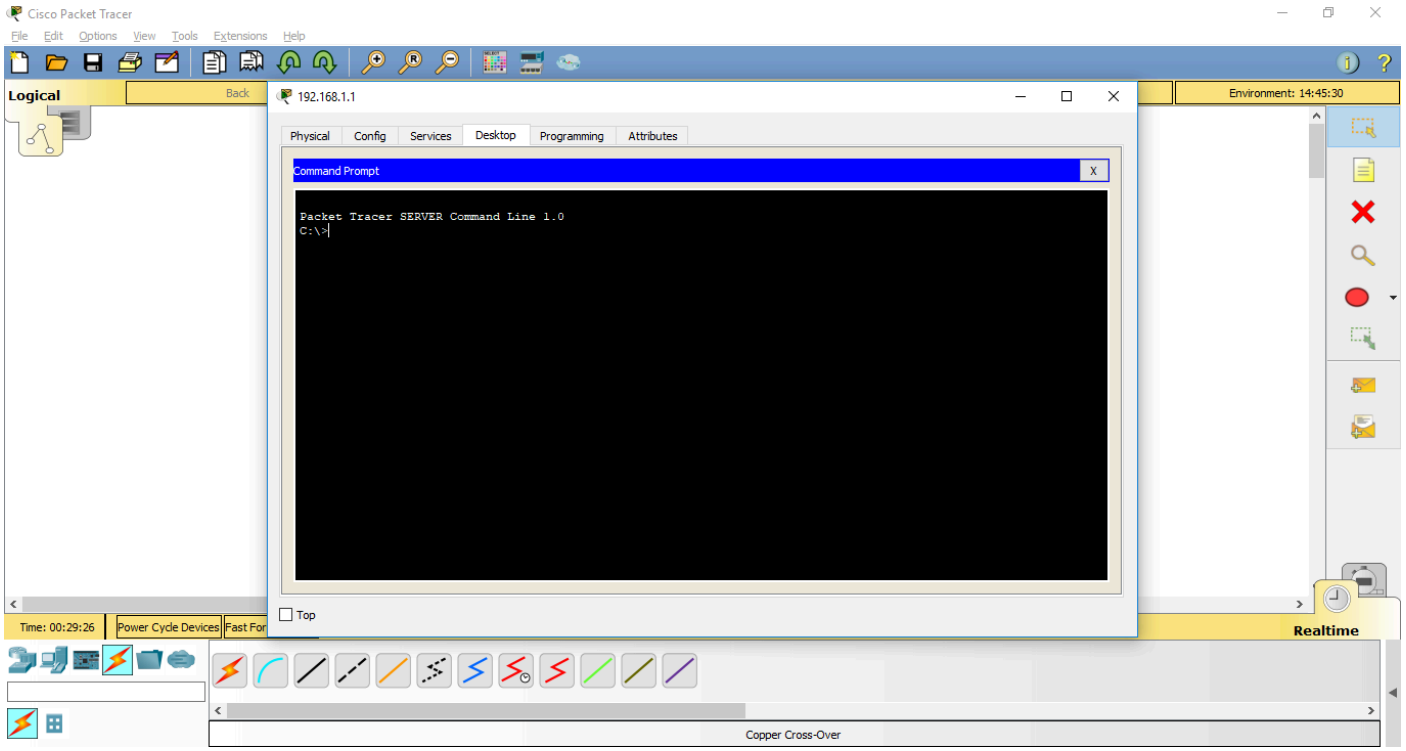
- Do the same for second Server device.

Step 5: Now rename all the End Devices to according to the IPs you have provided just click to the name plate to change it.

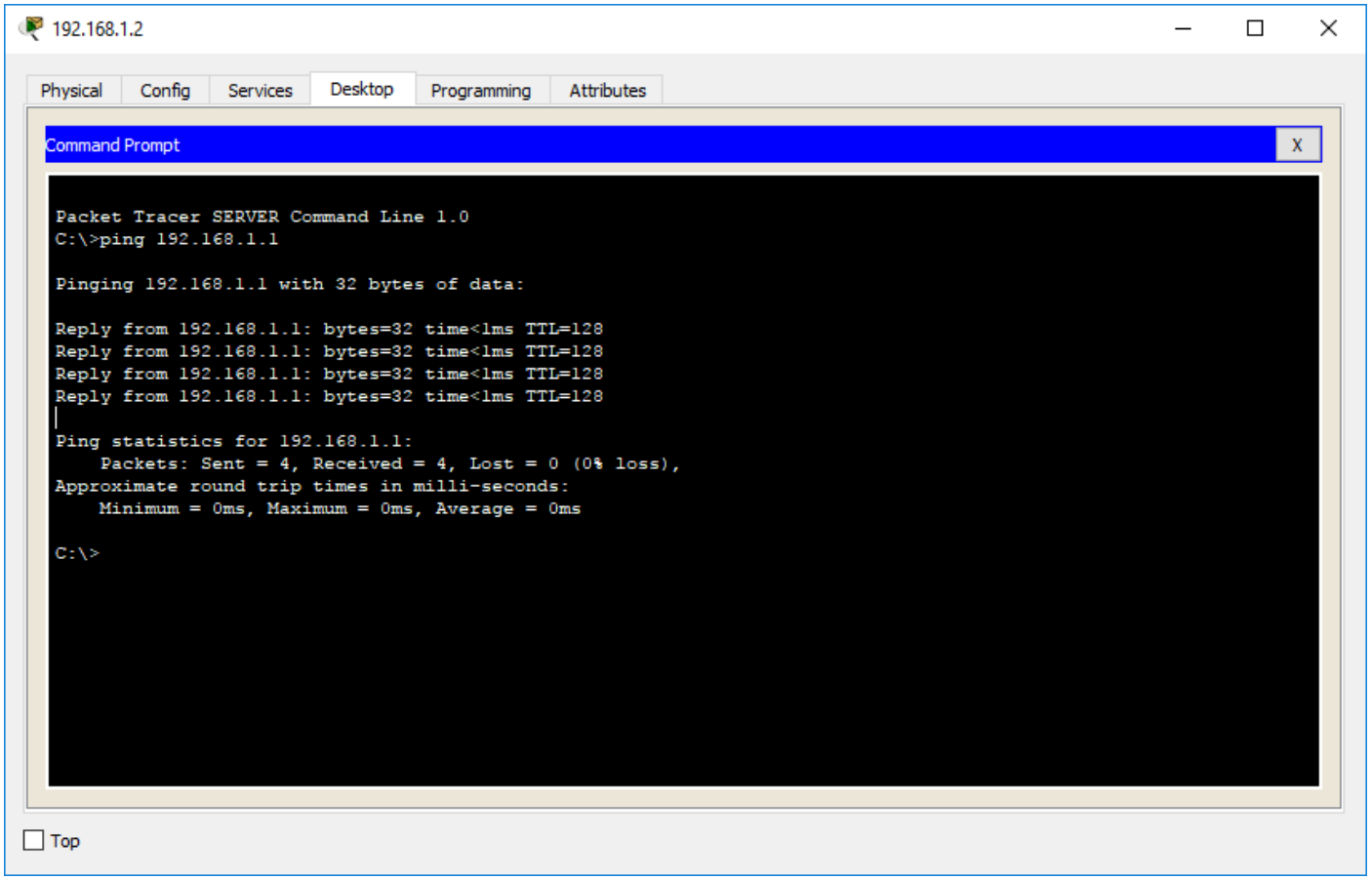


Step 6: Now check the connection of any two ends devices.

- Click a server device then at the desktop tab select run command.



- Type PING along with the IP of second Server Device to Check the connection.



The connect is OK between Devices.

prompt:

in networking and command-line interfaces, a prompt is a symbol or text that indicates the system is ready to accept a command. The prompt shows up in the command-line interface (CLI) of devices like routers, switches, and computers, and it changes depending on the mode you're in.

Types of Prompts in Cisco Devices

1. User EXEC Mode Prompt (>):
   - Appears as Router> or Switch>.
   - Indicates that the user is in User EXEC mode, where only basic commands are available.
2. Privileged EXEC Mode Prompt (#):
   - Appears as Router# or Switch#.
   - Indicates that the user is in Privileged EXEC mode, with access to advanced commands and configuration modes.
   - To access this mode, you typically enter the enable command from User EXEC mode.
3. Global Configuration Mode Prompt ((config)):
   - Appears as Router(config)#.
   - Indicates that the user is in Global Configuration mode, where configuration changes can be made.
   - You can enter this mode by typing configure terminal from Privileged EXEC mode.
4. Sub-Configuration Mode Prompts:

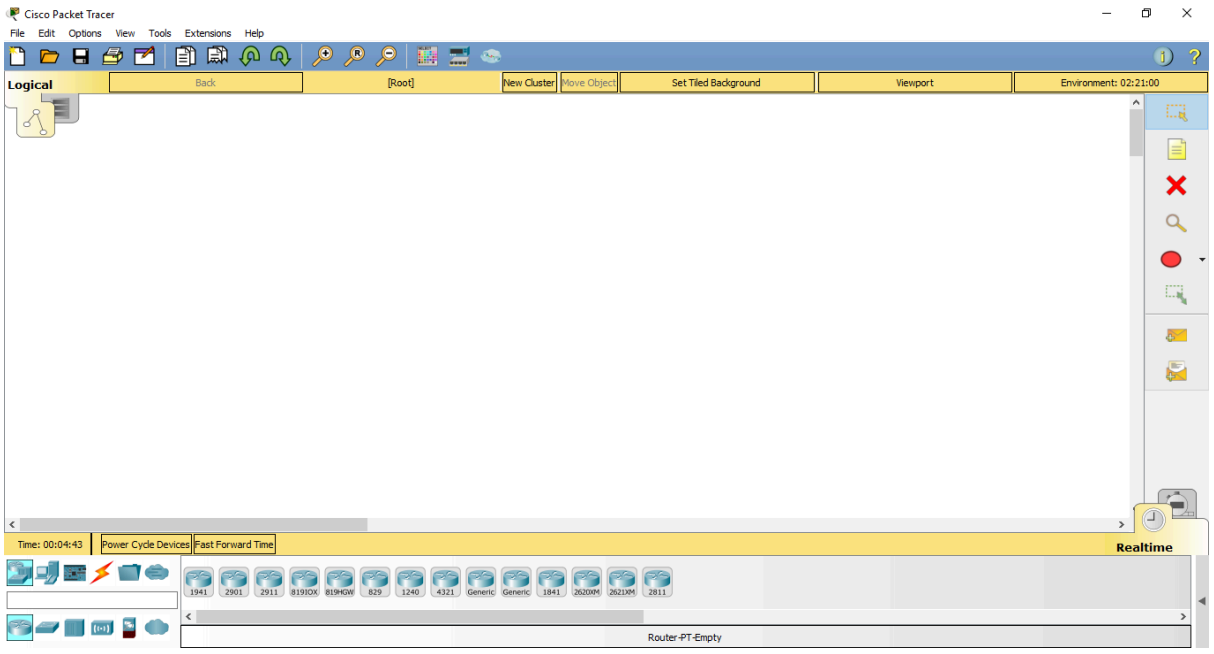
- Appear when configuring specific settings, like interfaces or routing protocols.
- Examples:
  - Router(config-if)# — Interface Configuration mode (entered with interface command).
  - Router(config-router)# — Router Configuration mode (entered with router command).

2. A Basic Routed WAN.

Required: 2 Switches, 2 Routers and End Devices.

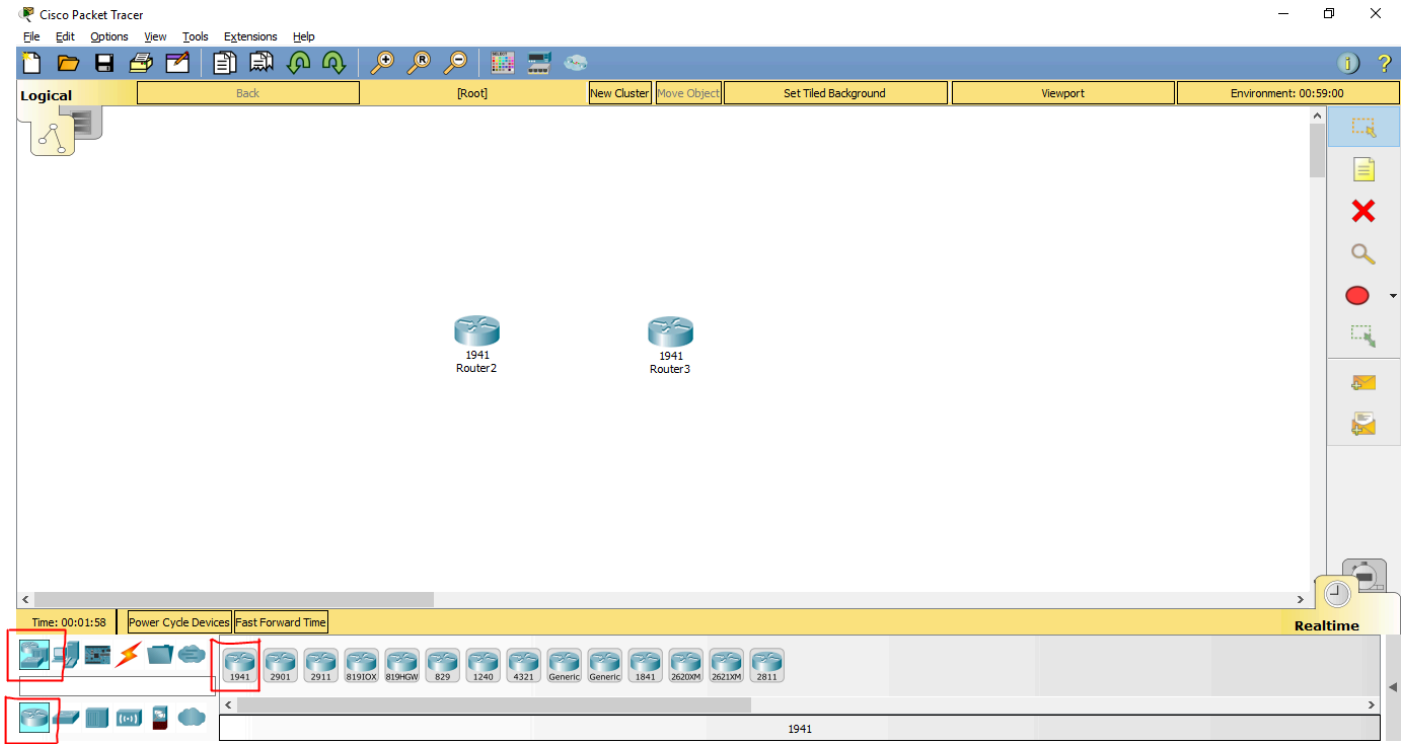
Procedure:

Step 1: Open Cisco Packet Tracer from desktop.



Step 2: Selecting Devices:

- Select Network Devices then Routers and select two Routers respectively and drag them at the interface window.



- Now Select switches in Network Devices and Select two switches respectively and drag them to the interface windows.
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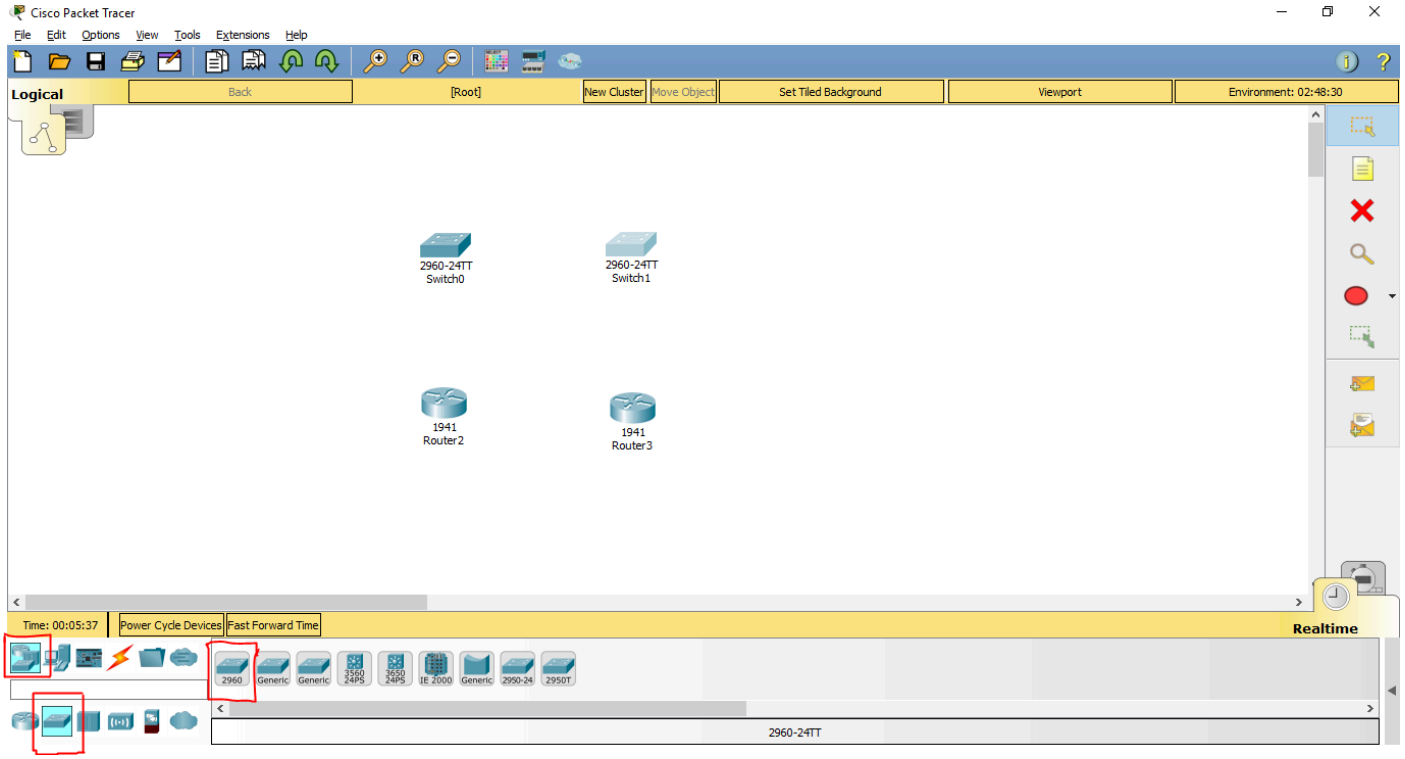
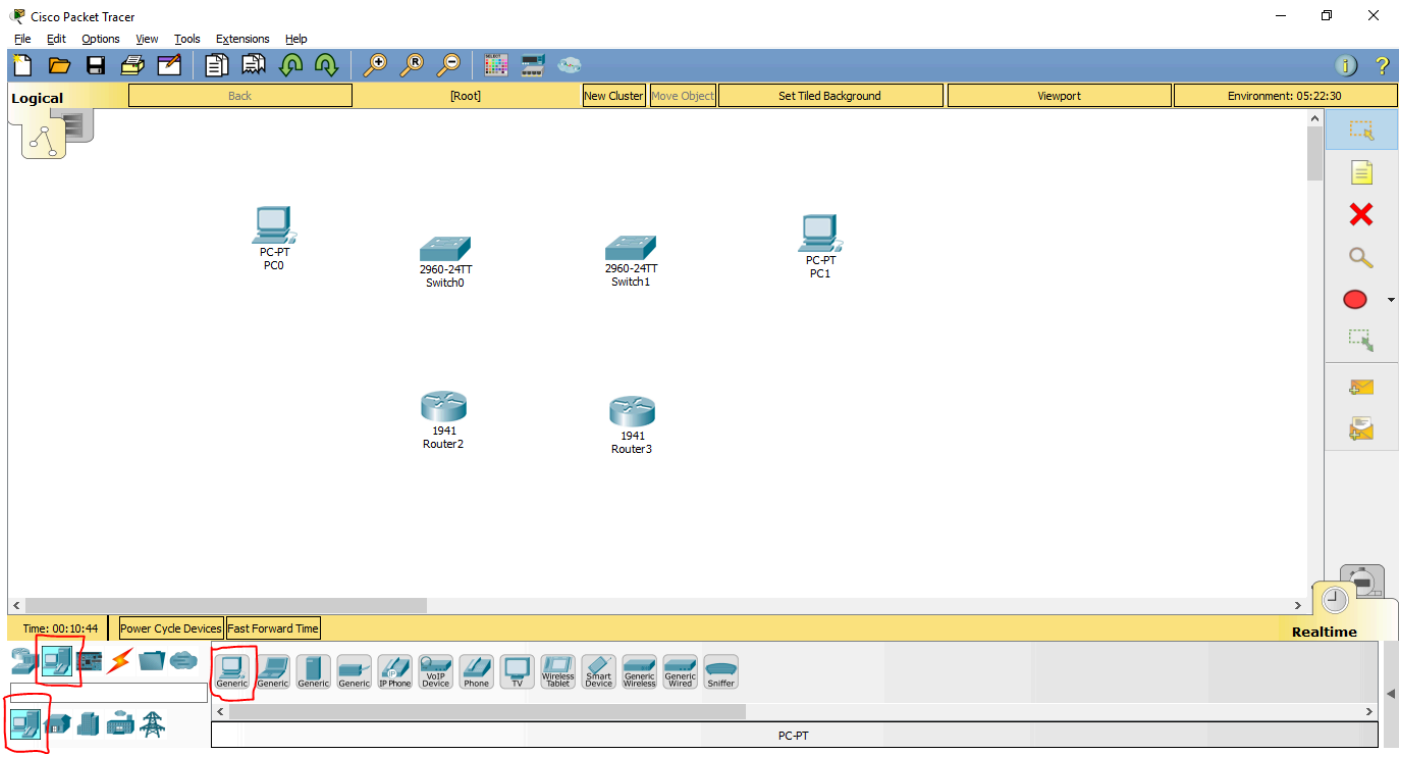
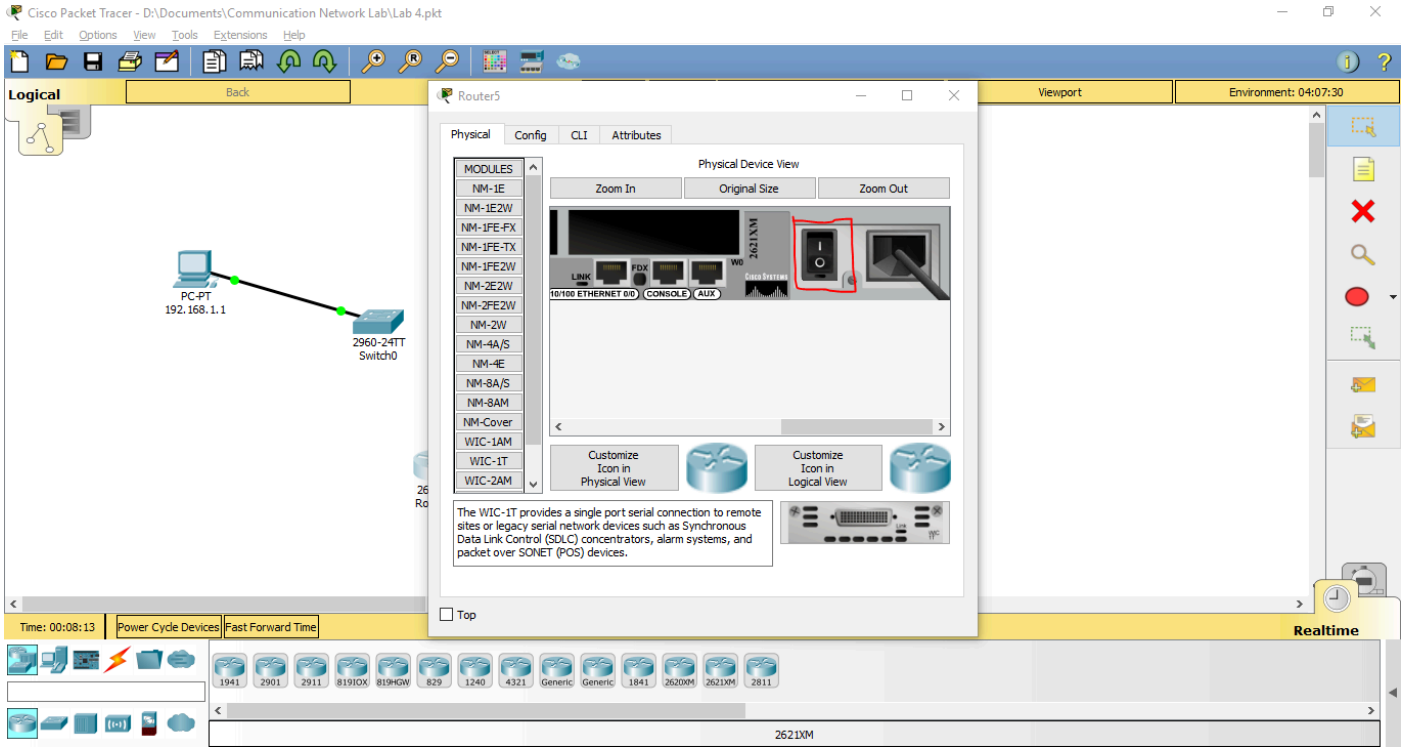


- Now Select End Device and Select Two PCs respectively and drag them to the interface windows.

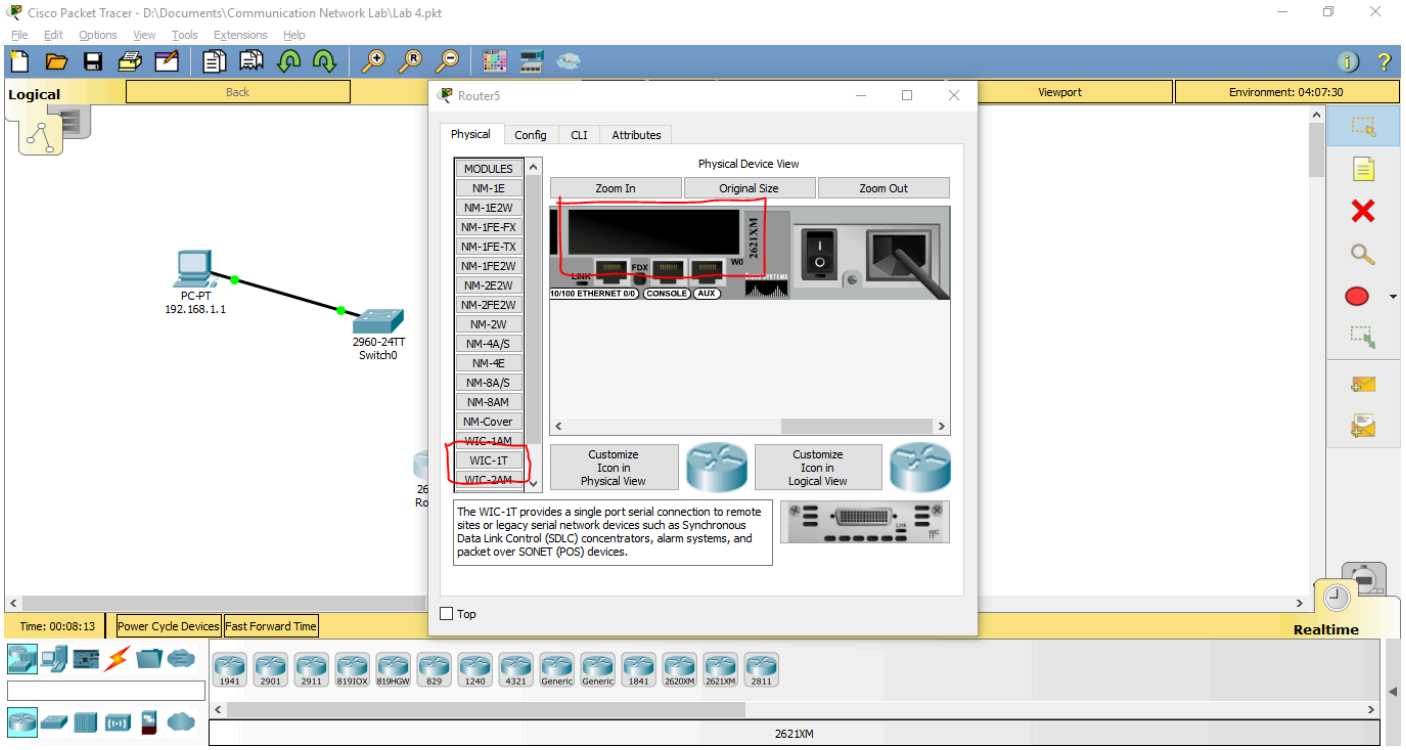


Step 3: Connecting Devices.

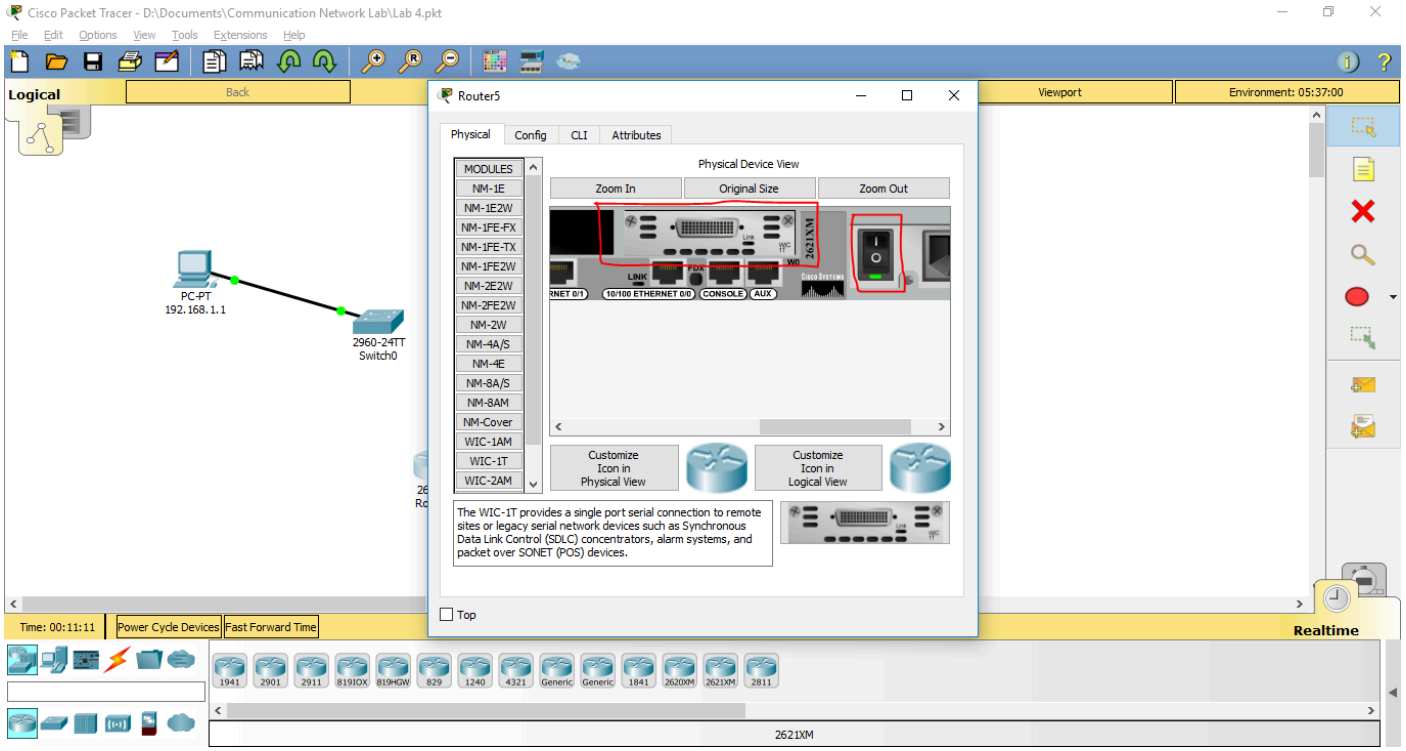
- Before connecting the routers click on router and at physical tab turn off the router at the physical device view window.



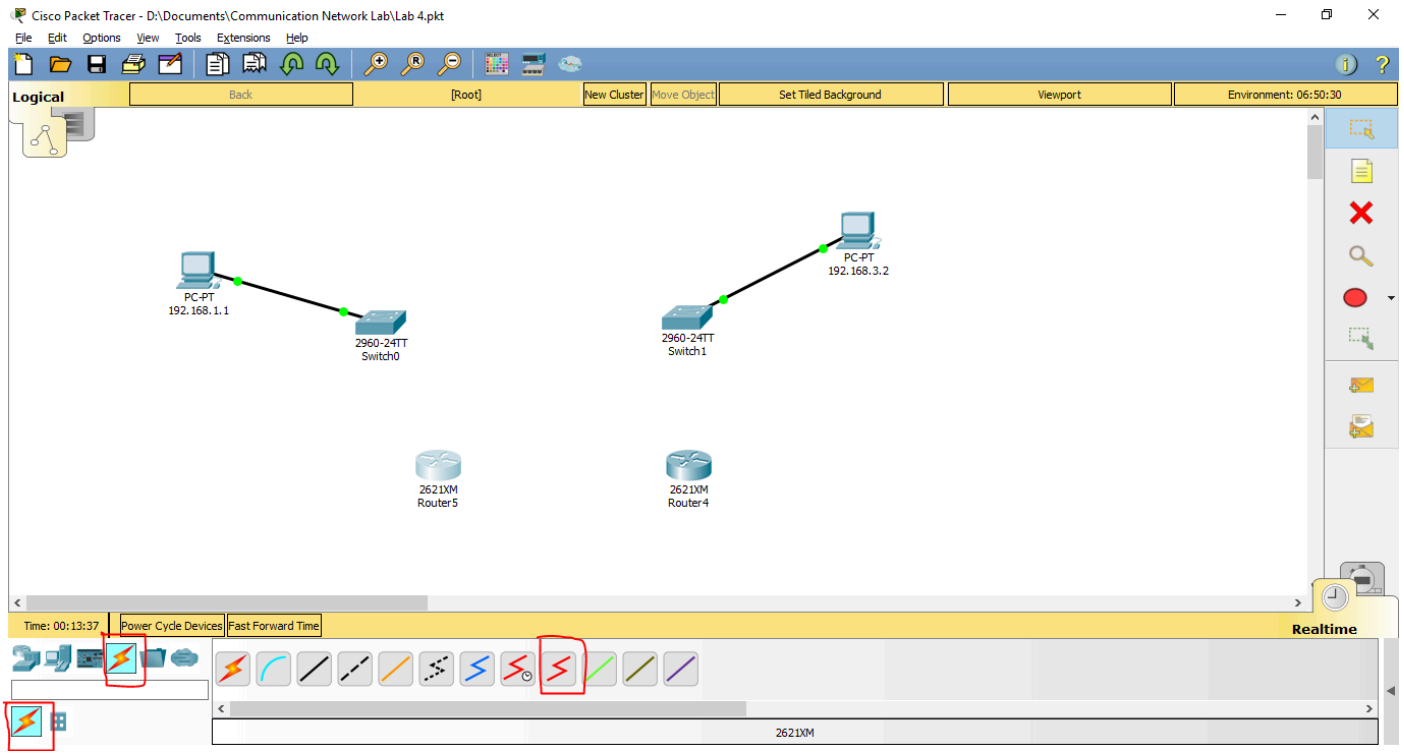
- After that Drag WIC-1T to the given slot.



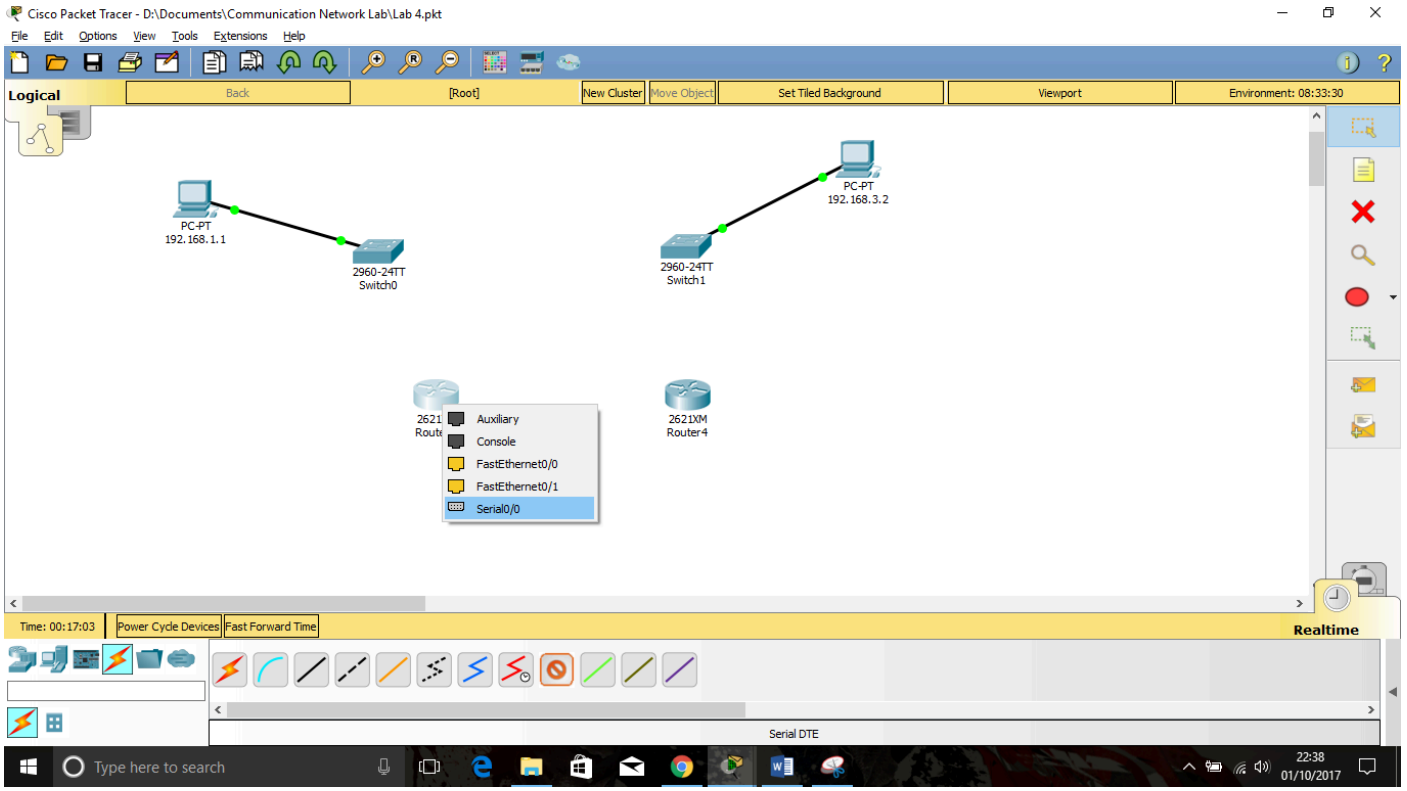
- After Dragging turn on the router again



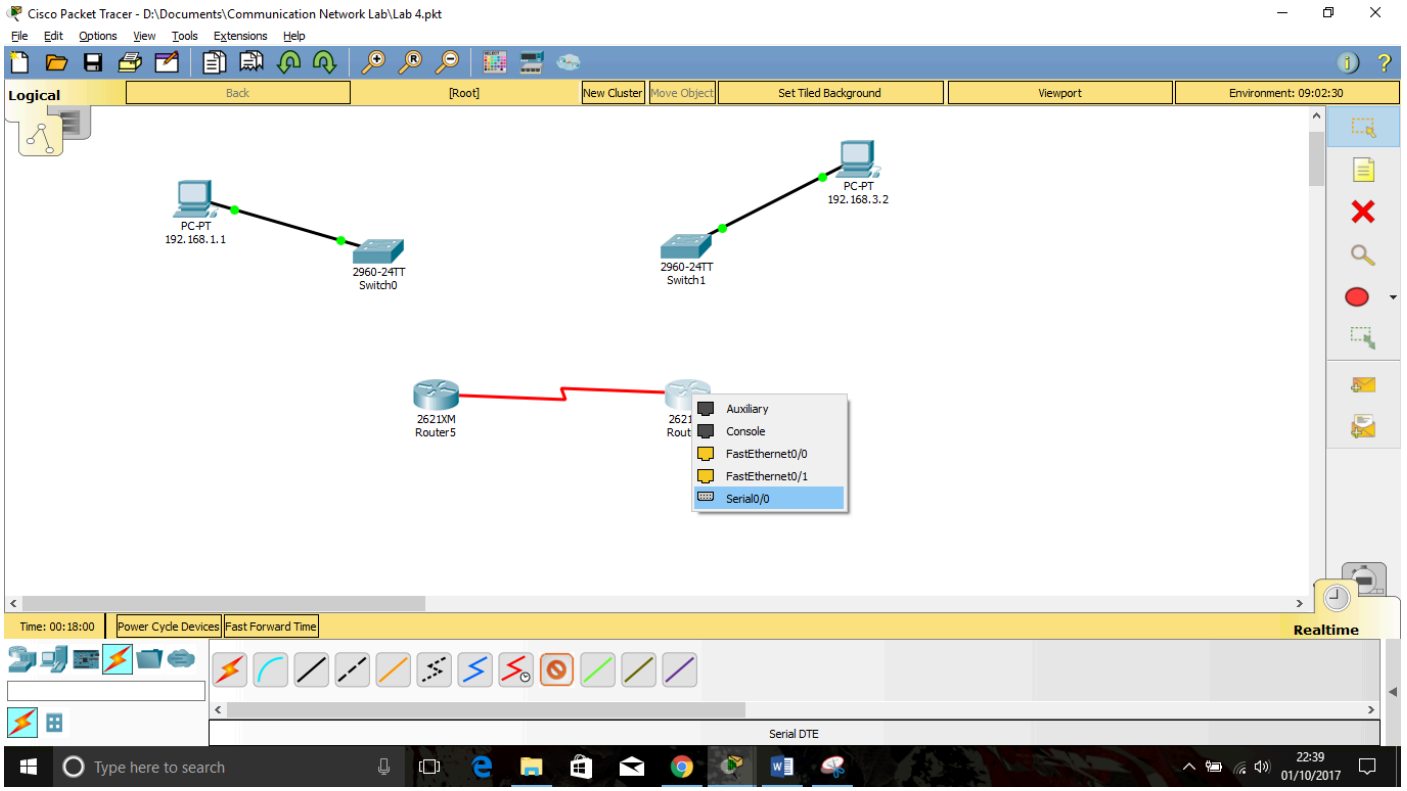
- Do the same for second router.
- Now select Serial DTE from connection (at bottom left).



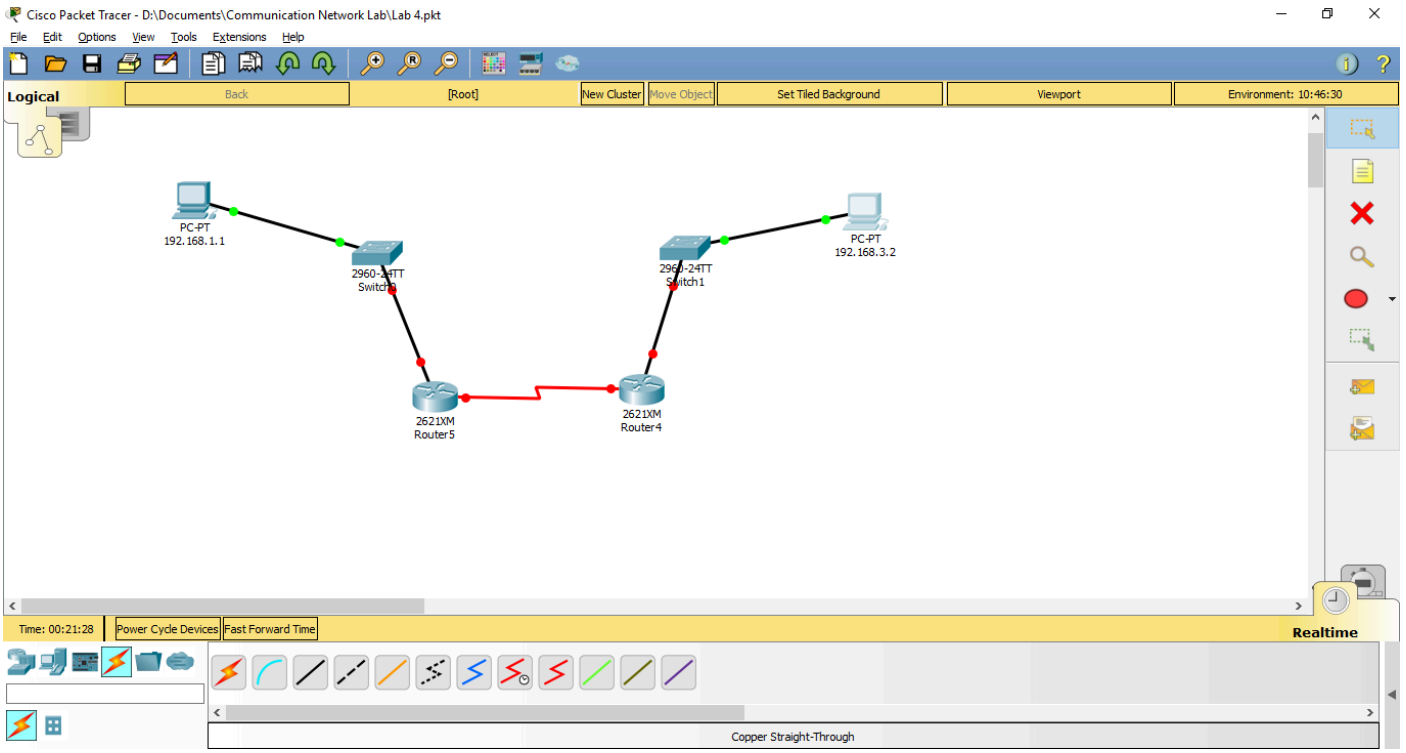
- After selecting serial now click on router and select Serial 0/0.



- Now click the second router and select Serial 0/0.

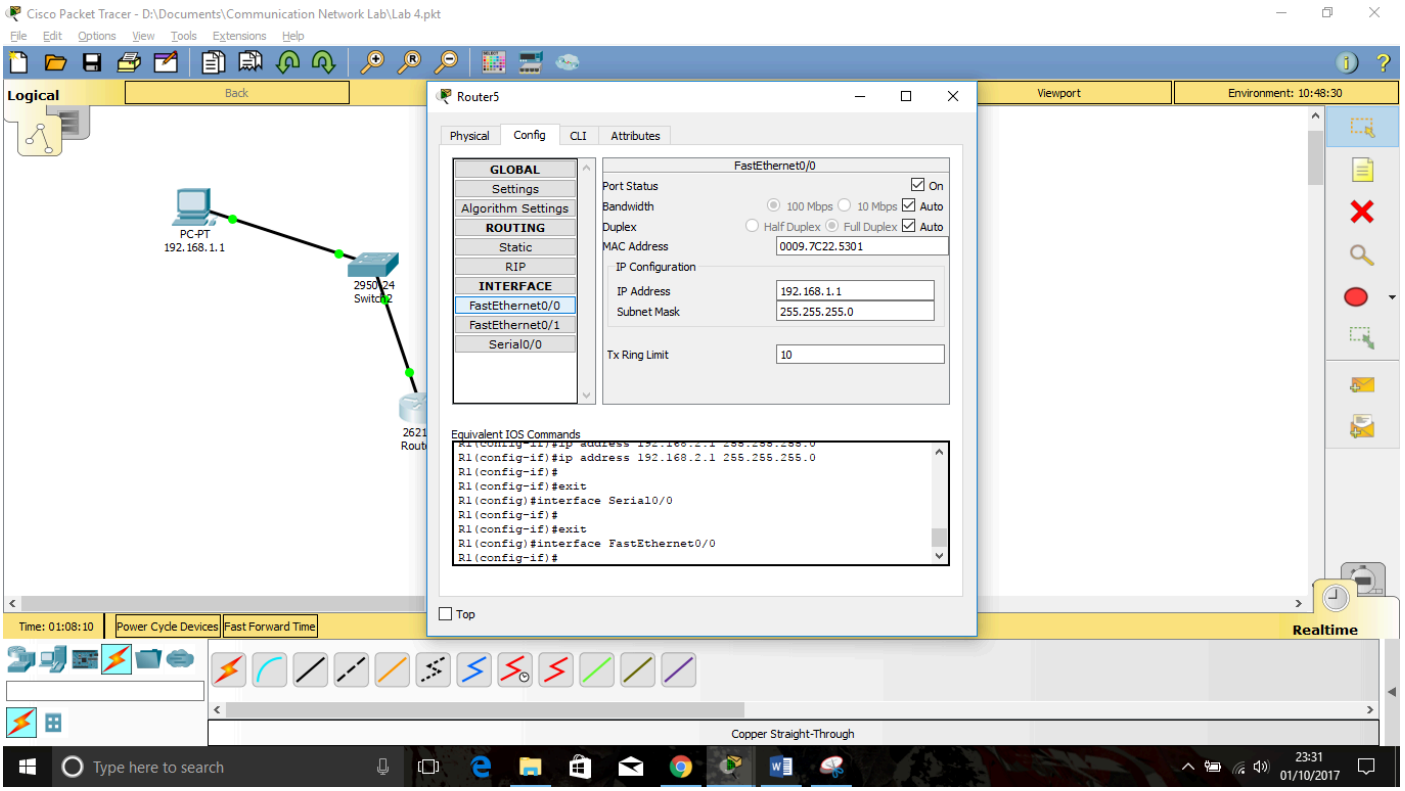


- Now connect the other devices from Straight-Through Wire from connections (at bottom left).

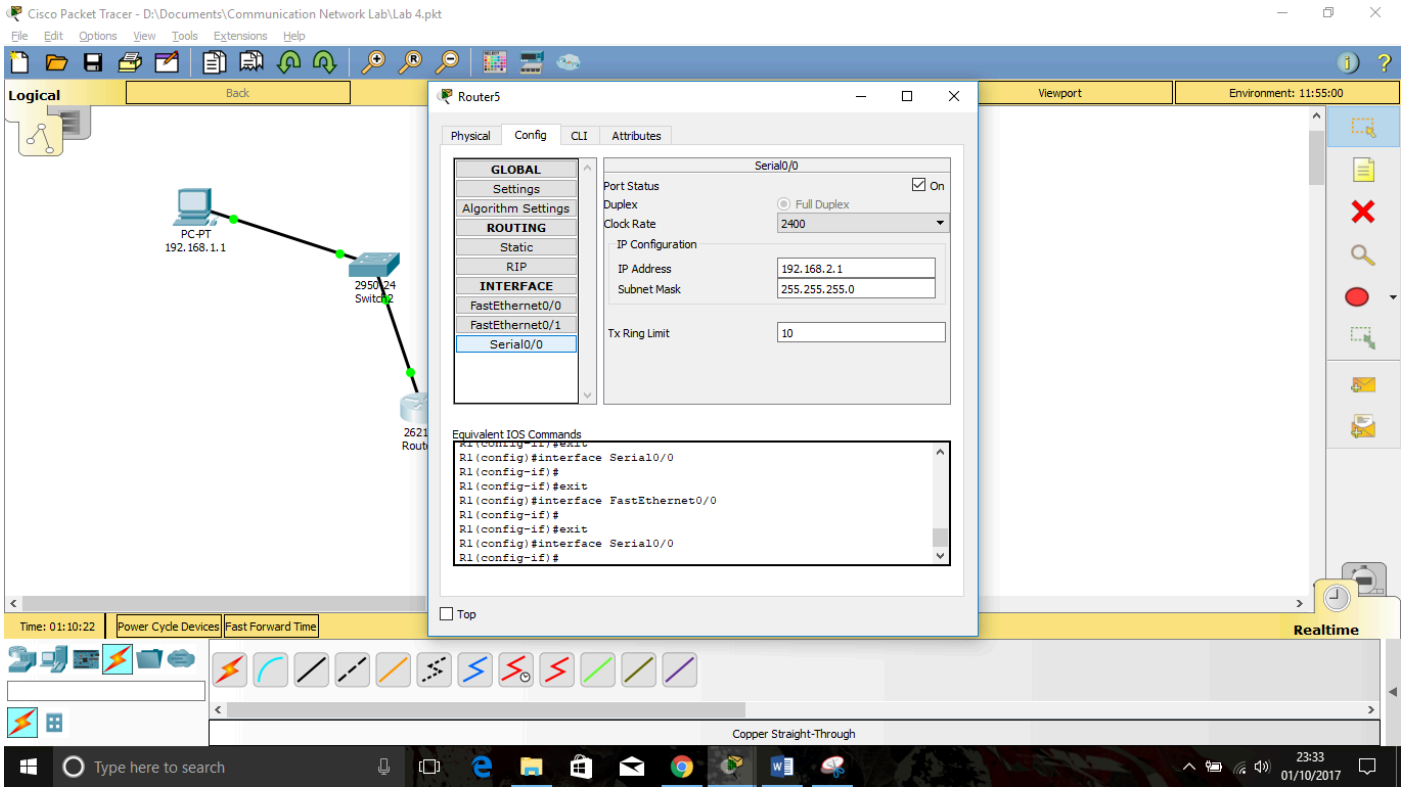


Step 4: Settings the IPs.

- Click first router then at the config tab click on Fastethernet0/0 and set the IP 192.168.1.1 and subnet mask 255.255.255.0 and Check the port status on.

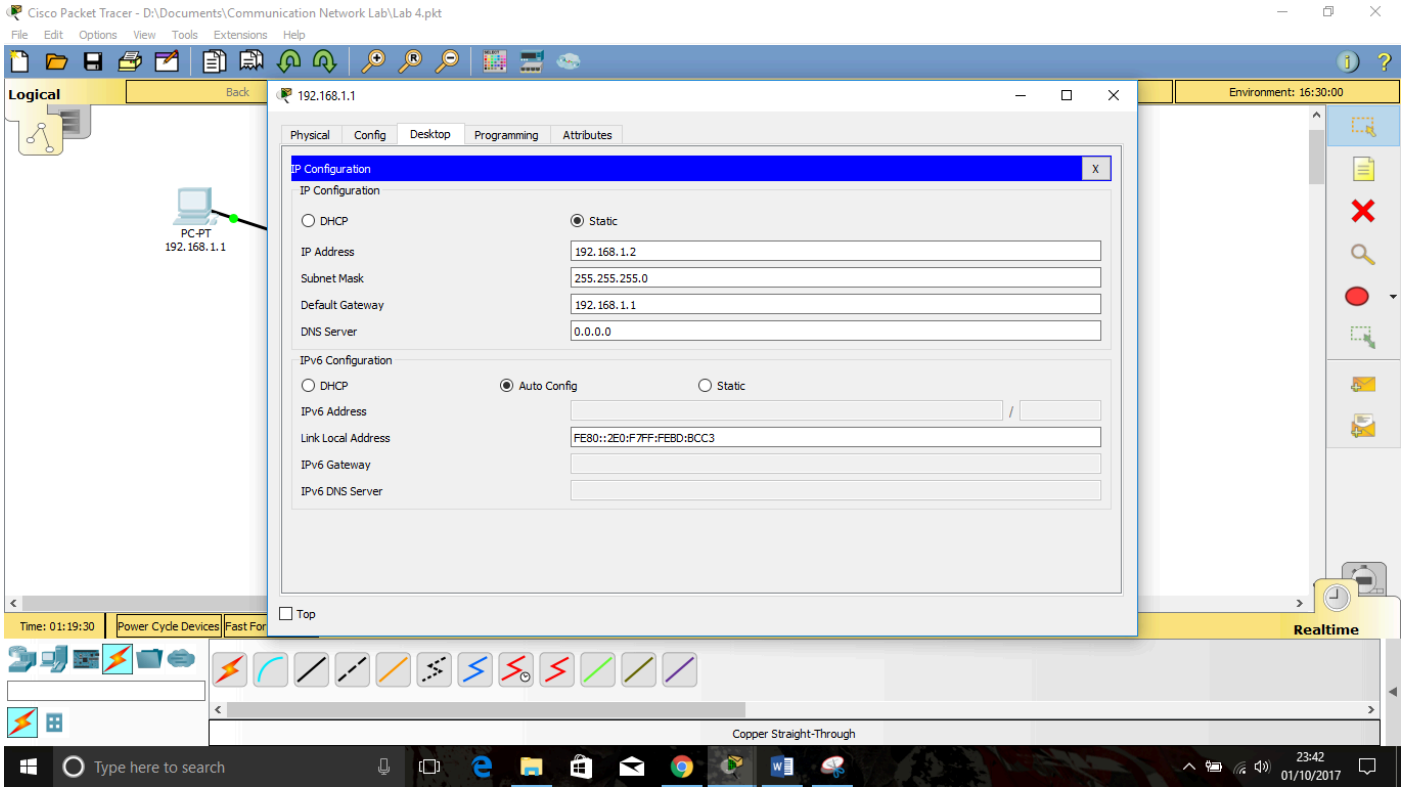


- Then click on Serial0/0 and set IP 192.168.2.1 and subnet mask 255.255.255.0 andCheck the port status on.

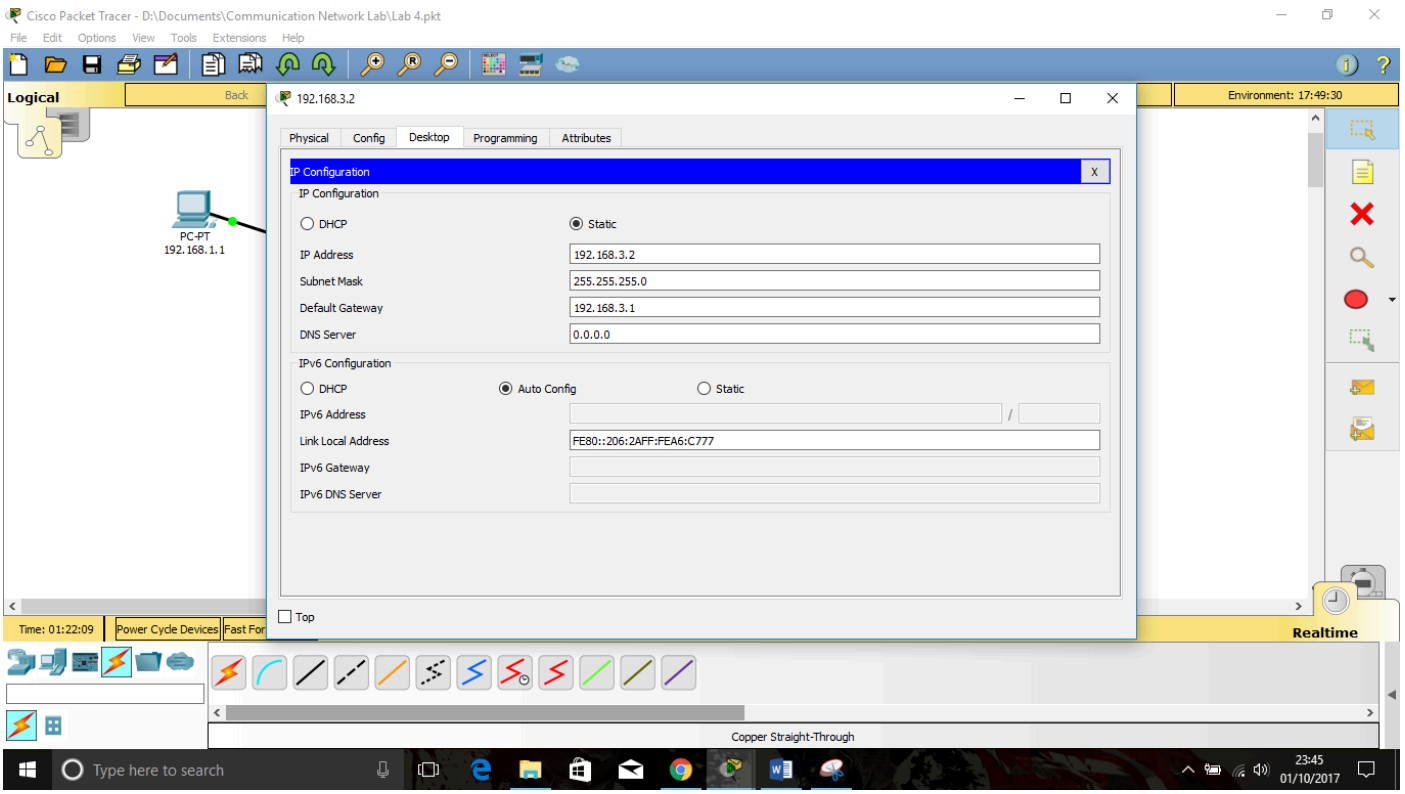


- Set the Second router's FastEthernet IP Address 192.168.3.1 and subnetmask 255.255.255.0 and check the port status on Serial0/0's IP 192.168.2.2 and subnetmask 255.255.255.0 and check the port status on.

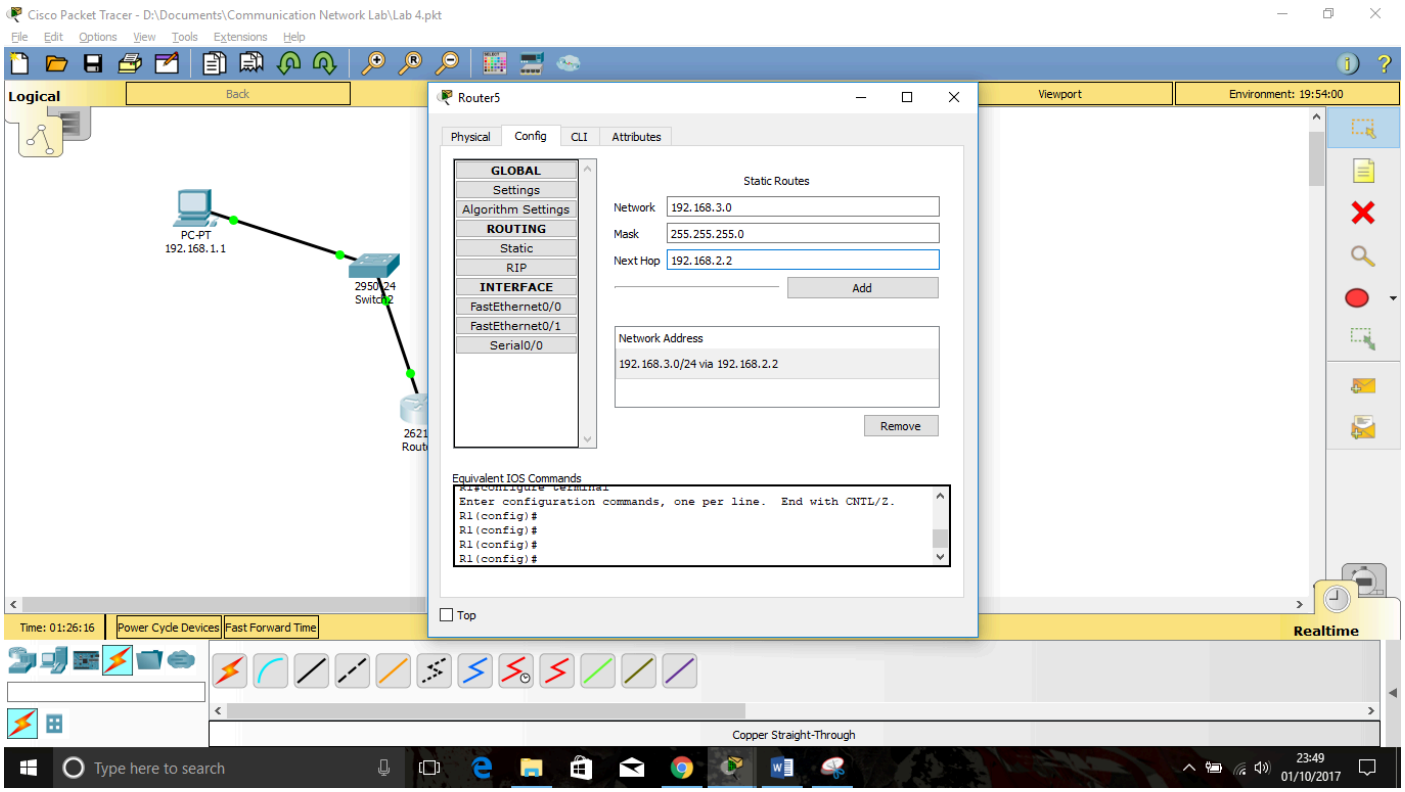
- Now click the PC1, at the desktop tab click IP configuration and set the IP 192.168.1.2, subnet mask 255.255.255.0 and Gateway 192.168.1.1.



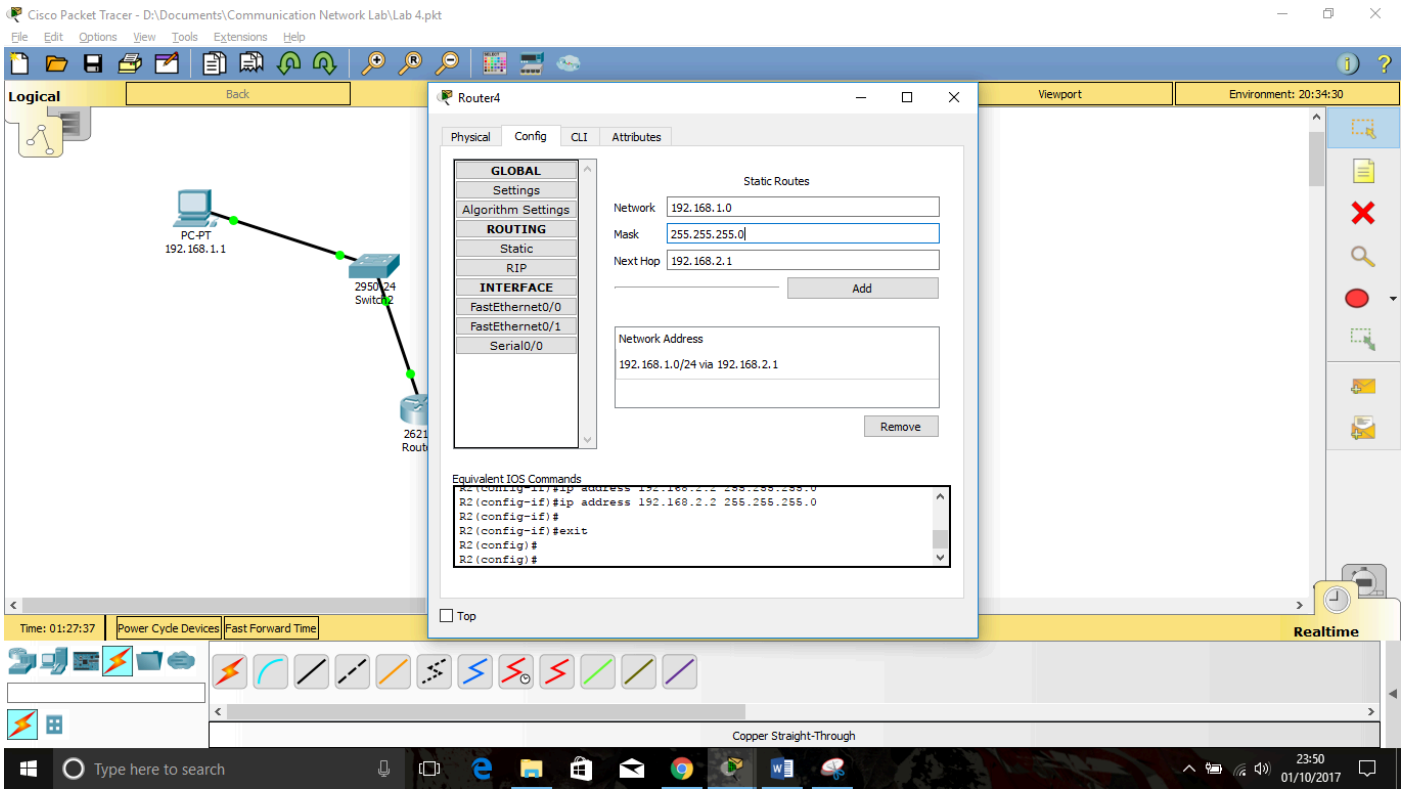
- For second PC set IP Address 192.168.3.2 subnet mask 255.255.255.0 and Gateway 192.168.3.1.



- Now click the router 1 go to config tab, select Static and set the following settings then click add button.

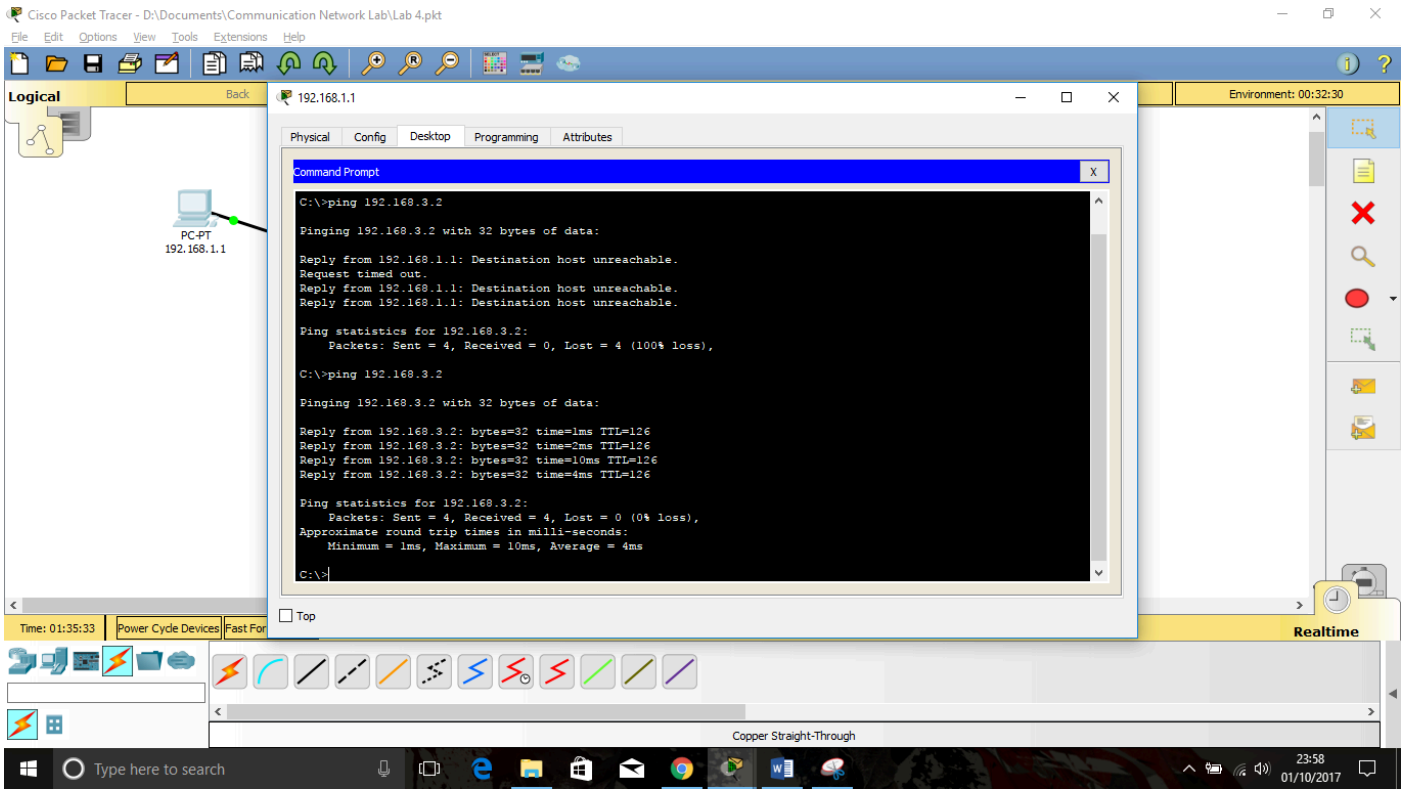


- Then For Second Router set the following settings and click add button.



Step 5: Checking the connecting.

- Select PC 1 and then go to desktop tab select command prompt and type ping 192.168.3.2 and check the connection.



The connection is established between 2 End Devices.

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show commands:

In Cisco Packet Tracer, the show commands are essential for viewing various configurations, status, and information on routers, switches, and other network devices. Here are some commonly used show commands in Packet Tracer:

1) show ip interface brief

Provides a summary of the interfaces, their IP addresses, and status (up/down).

Usage: show ip interface brief

2) show ip route

Displays the device's routing table, showing all known routes and their sources.

Usage: show ip route

3) show mac address-table(used for switch)

Shows the MAC address table, mapping MAC addresses to interfaces.

Usage: show mac address-table

4) show vlan brief(used for switch)

Provides a summary of VLANs configured on the switch, including VLAN IDs and associated ports.

Usage: show vlan brief

5) show arp

Displays the ARP (Address Resolution Protocol) table, which maps IP addresses to MAC addresses.

Usage: show arp