Lab 4

RIP and OSPF using CISCO Packet Tracer

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Lab 4: Focus

- **Exp 1**: Configure RIP with Classful IPv4 Addresses
- **Exp 2**: Configure Static routes with CIDR IPv4 Addresses

Files shared:
Lab4_Exp1_RIP_shared.pkt
Lab4_Exp2_Static_shared.pkt

Python IDE used on Windows: Thonny

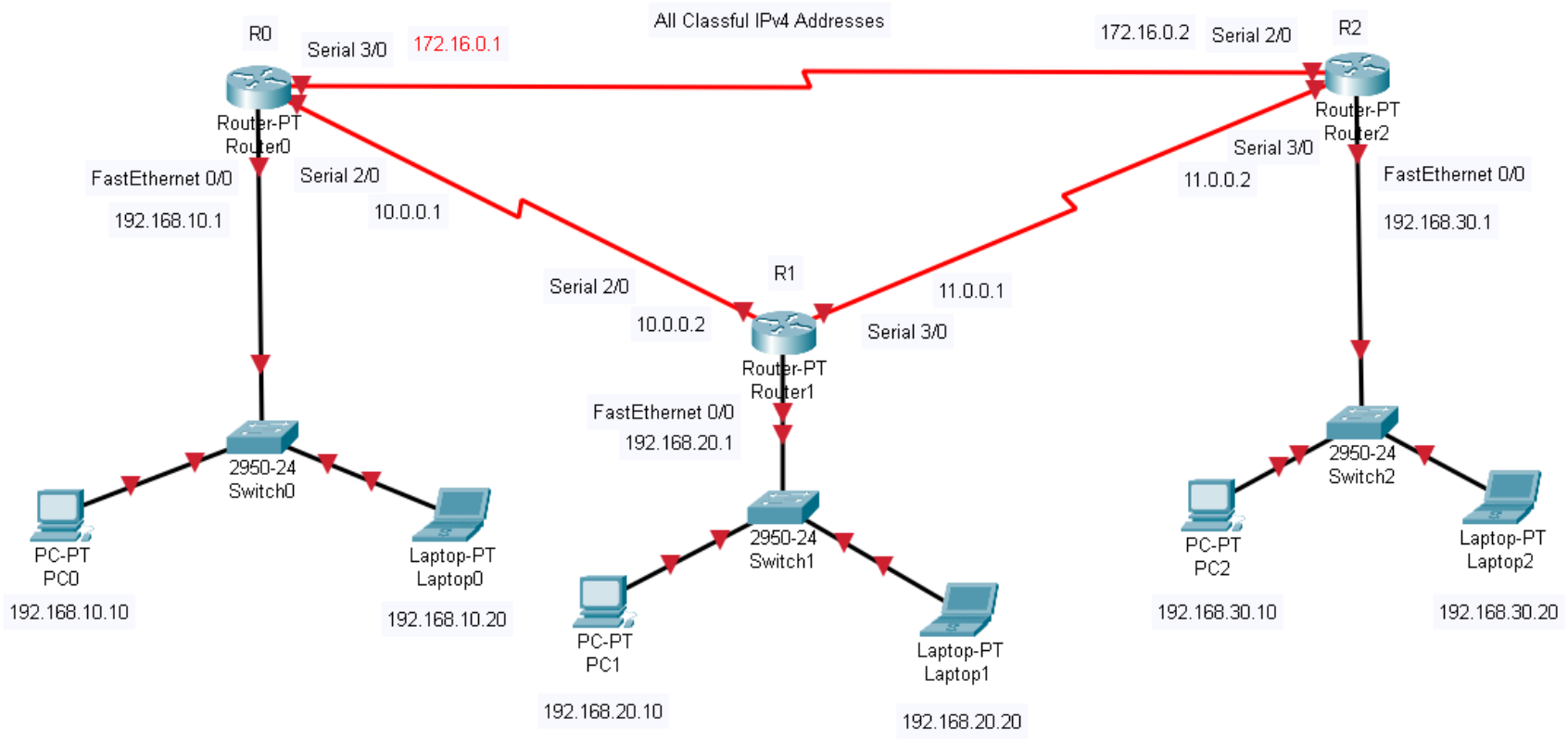
Course page where the course materials will be posted as the course progresses:

Exp 1: Understanding RIP with Classful Addresses (RIP)

Using:

Lab4_Exp1_RIP_shared.pkt

Exp 1: Configure RIP with Classful IPv4 Addresses (using Lab4_Exp1_RIP_shared.pkt)

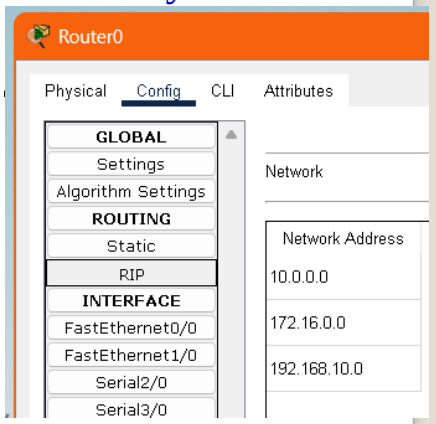


- Configure all the hosts and routers and make sure that you are able to ping all the hosts from each other, as per the configuration given above.
- Notice that before configuring and enabling the interfaces, their **link status indicators** are **red** in colour.

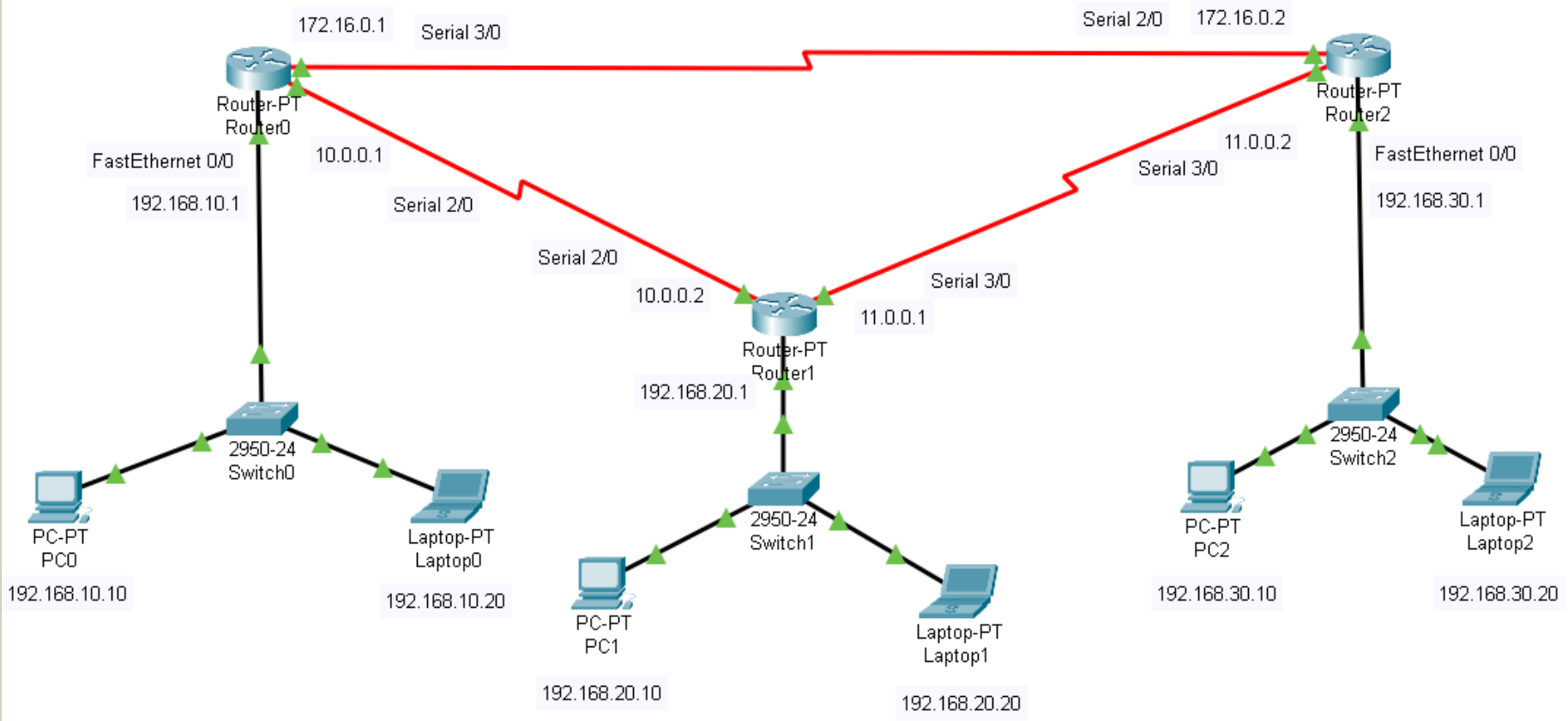
Exp 1: Steps involved
(File name: Lab4_Exp1_RIP.pkt)

1. Configure all the hosts with the Static IPv4 address, subnet mask (classful), DNS Server (8.8.8.8) and Default Gateway as per the IP addresses mentioned in the shared pkt file.
   - **Config → Settings → Static** and **Config → Fast Ethernet0 IP Configuration** **Note**: Remember to make I/F **Port Status On**
2. Check your configuration using the ***ipconfig*** command
   - **Desktop → Command Prompt**
3. Configure the chosen router's interfaces FastEthernet 0/0, Serial 1/0 and Serial 2/0 with the given IPv4 addresses and relevant classful subnet masks and make the **Port Status On**
   - **Config → INTERFACES → IP Configuration**
4. Configure all the routers by choosing RIP protocol and **add** the IPv4 network addresses assigned to all its directly connected interfaces
   - **Config → ROUTING → RIP**

Router 0: RIP
Directly connected i/f

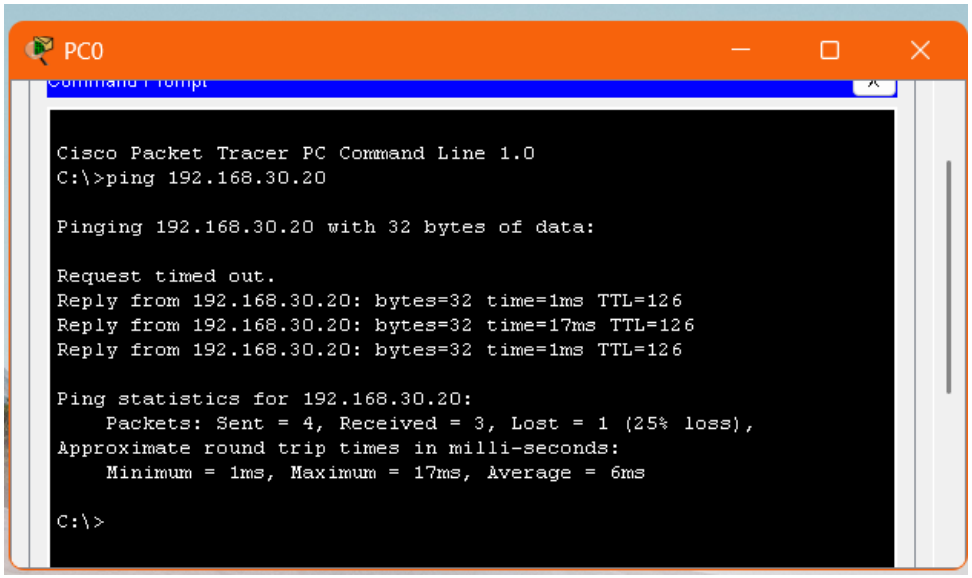


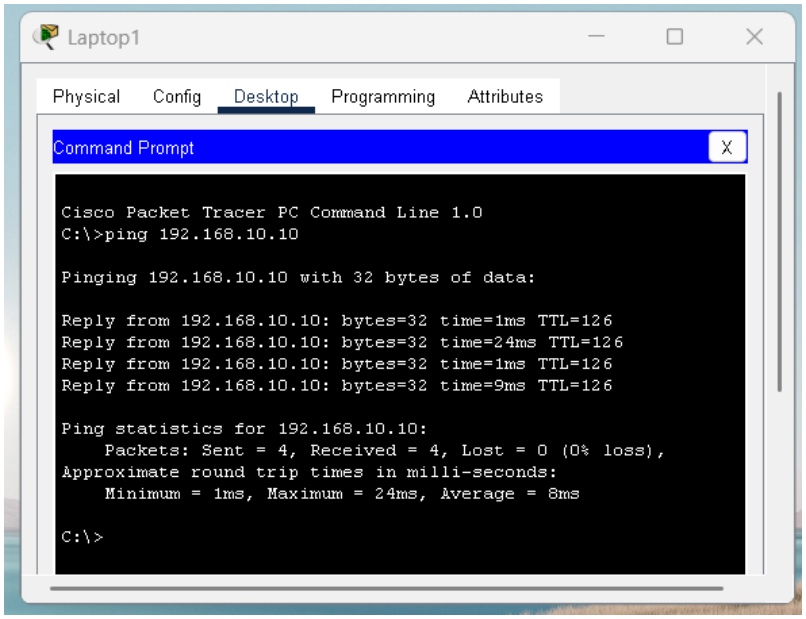
Exp 1: After Configuring them Fully



- Notice the **link status indicators are** becoming **green** on both ends of the links once their IP addresses are configured and they are enabled.

Exp 1: Verification - Samples (RIP)





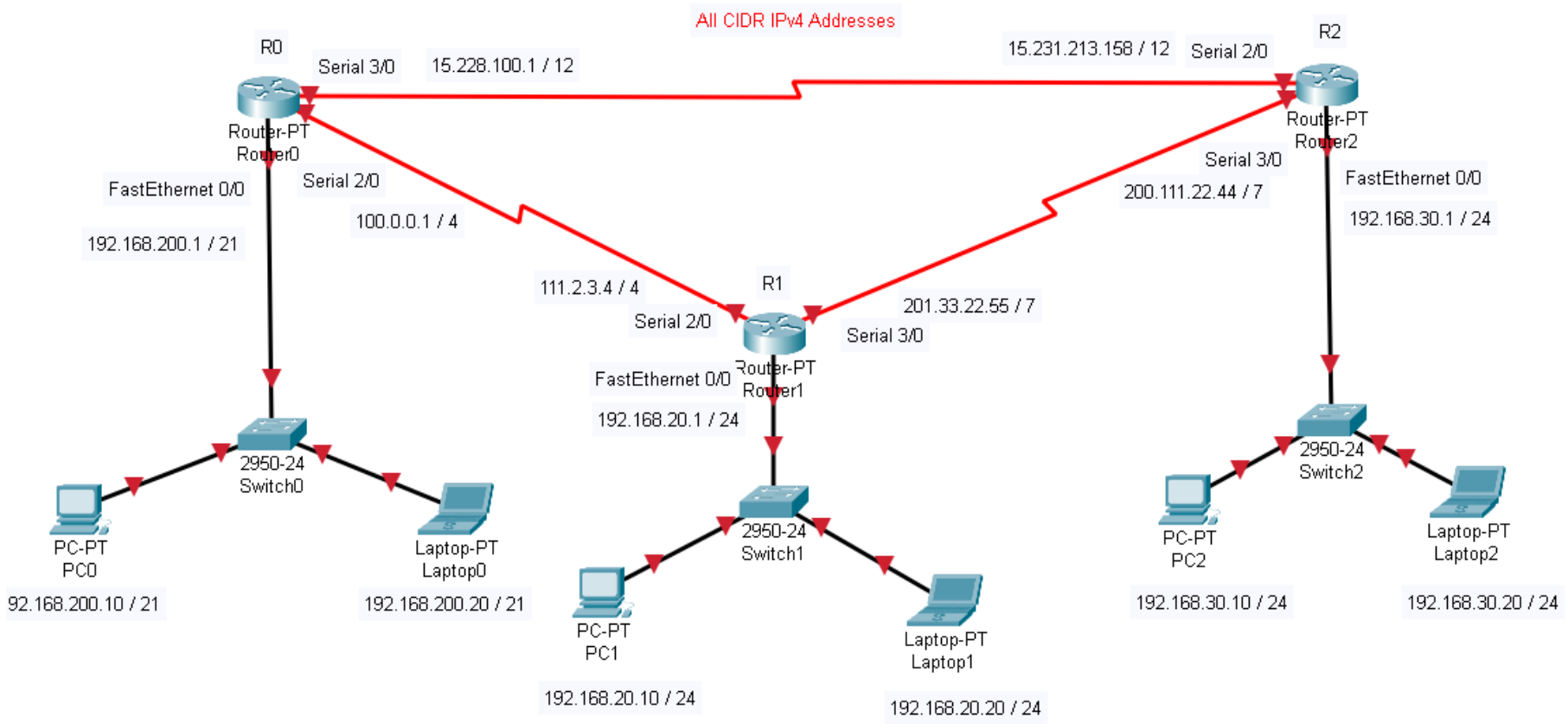
- Verify the network connections and router configurations between all the hosts by using the ***ping*** command from each host
  - **Desktop → Command Prompt**

Exp 2: Practice Static Routing with CIDR Addresses (Static Routing)

Using:

Lab4_Exp2_Static_shared.pkt

Exp 2: Configure Static Route with CIDR IPv4 Addresses (using Lab4_Exp2_Static_shared.pkt)

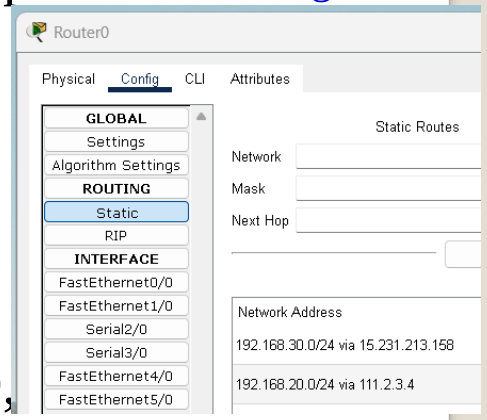


- Configure all the hosts and routers and make sure that you are able to ping all the hosts from each other, as per the configuration given above.
- Configure all the routers using **static routing**.

Exp 2: Steps involved
(File name: Lab4_Exp2_Static.pkt)

1. Configure all the hosts with the Static CIDR IPv4 address, subnet mask (classful), DNS Server (8.8.8.8) and Default Gateway as per the IP addresses mentioned in the shared pkt file. **Note**: Remember to make I/F **Port Status On**
   - **Config → Settings → Static** and **Config → FastEthernet0/0 → IP Configuration**
2. Check your configuration using the ***ipconfig*** command
   - **Desktop → Command Prompt**
3. Configure the chosen router's interfaces FastEthernet 0/0, Serial 1/0 and Serial 2/0 with the given IPv4 addresses and relevant classful subnet masks and make the **Port Status On**
   - **Config → INTERFACES → IP Configuration**
4. Configure all the routers by choosing Static routing and add entries giving the next-hop router's interface IP address
   - **Config → ROUTING → Static**

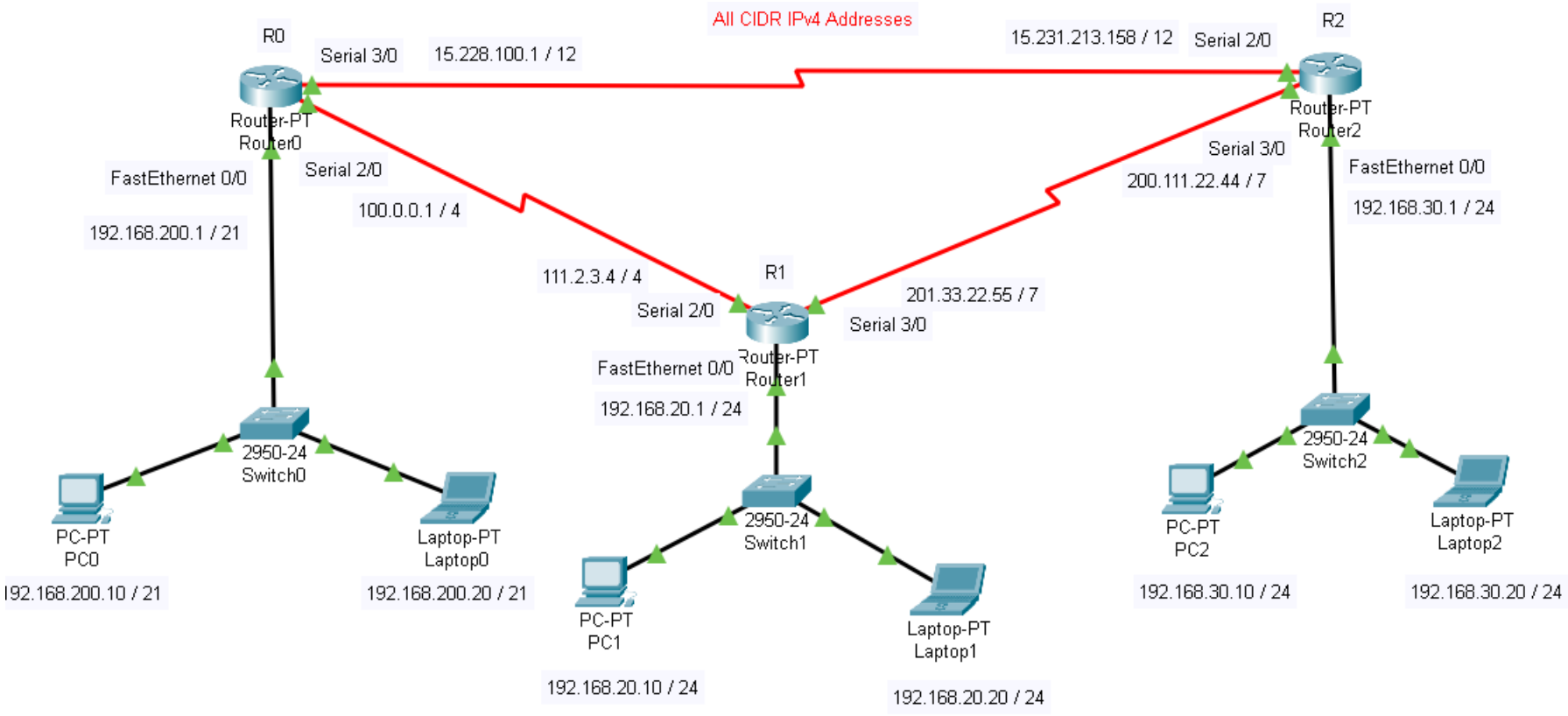
Router 0: Sample Static Routing entries



Note: If you want to identify the **link** on the picture **enable/disable** the **Port** based on **link status changes** you can **identify**

Note: Add one entry for every LAN connected to the other Routers. Ref, Router 0 entries.

Exp 2: After Configuring them Fully



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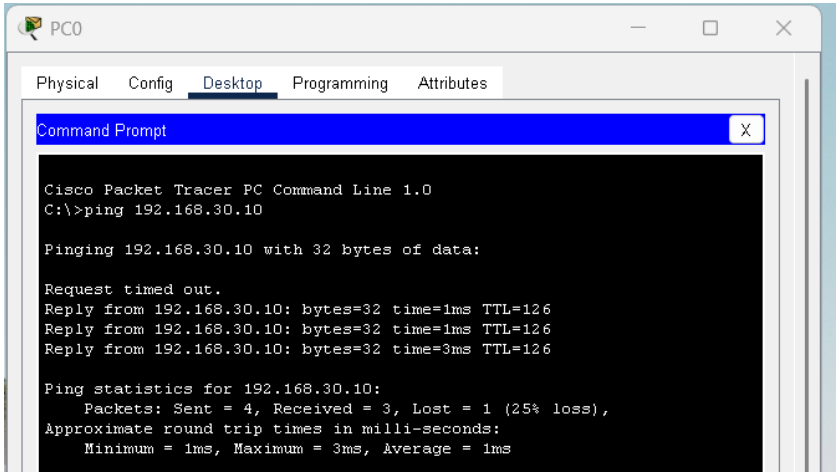
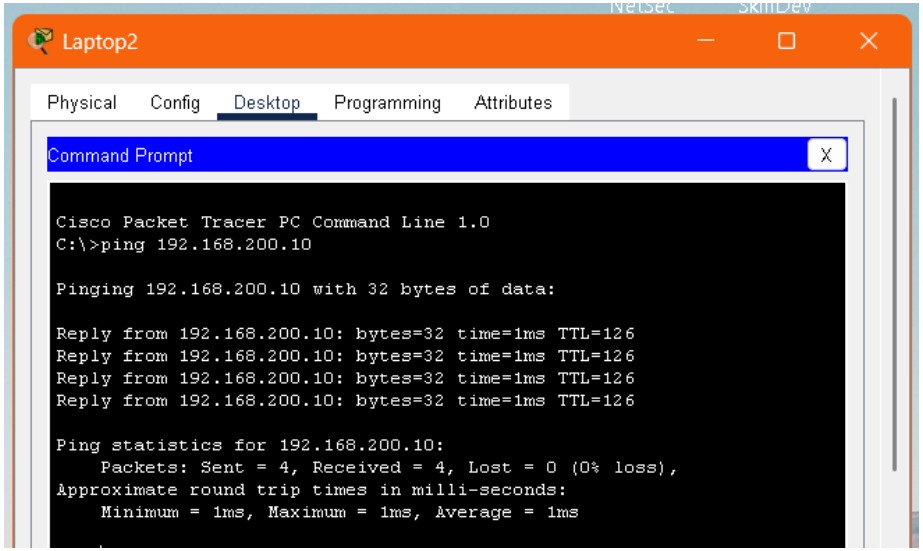
Exp 2: Verification - Samples (Static Routing)





- Verify the network connections and router configurations between all the hosts by using the ***ping*** command from each host
  - **Desktop → Command Prompt**

Lab 4: Summary

- **Exp 1**: Configure RIP with Classful IPv4 Addresses
- **Exp 2**: Configure Static routes with CIDR IPv4 Addresses

Files shared:

Lab4_Exp1_RIP_shared.pkt

Lab4_Exp2_Static_shared.pkt