



Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Summer, Year: 2025), B.Sc. in CSE (Day)

LAB REPORT NO # 04

Course Title : Computer Networking Lab
Course Code : CSE-318 Section : 231_D2

Student Details

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Lab Date : 10-08-25
Submission Date : 17-08-25
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[For Teachers use only: **Don't Write Anything inside this box**]

<u>Lab Report Status</u>	
Marks:	Signature:
Comments:	Date:

1.TITLE:

Configuration of Static and Dynamic Routing using Cisco Packet Tracer

2. OBJECTIVES/AIM:

- ❖ To understand the concept of **static routing** and **dynamic routing** in computer networks.
- ❖ To configure routers in **Cisco Packet Tracer** for establishing communication between different networks.
- ❖ To analyze the difference between static routing (manual) and dynamic routing (automatic updates).
- ❖ To verify successful data transmission across networks using **ping** and **traceroute** commands.

3. PROCEDURE/ANALYSIS/DESIGN

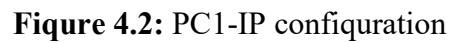
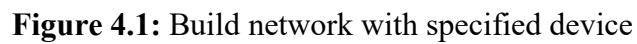
A. Static Routing

- 1.Open **Cisco Packet Tracer** and create a network topology with at least **2-3 routers** connected to different networks (LANs).
- 2.Assign **IP addresses** to PCs, switches, and routers.
- 3.Configure router interfaces using the `ip address` and `no shutdown` commands.
- 4.Set up **static routes** manually using the command
- 5.Test connectivity using the **ping** command between PCs in different networks.

B. Dynamic Routing (e.g., RIP or OSPF)

- 1.Use the same or a modified topology with **multiple routers**.
2. Assign IP addresses as before.
3. Enable a **dynamic routing protocol** on each router. Example with RIP
- 4.Verify routing tables using
- 5.Test connectivity using **ping** and **traceroute** commands.

STATIC ROUTING



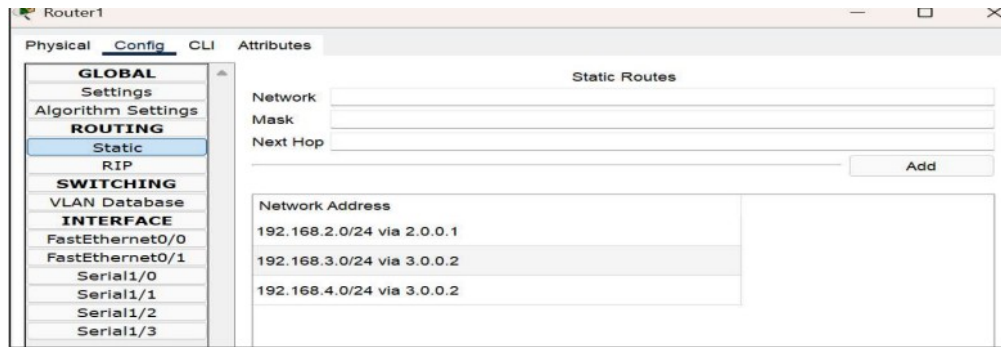


Figure 4.4: Router1 -config(Static)

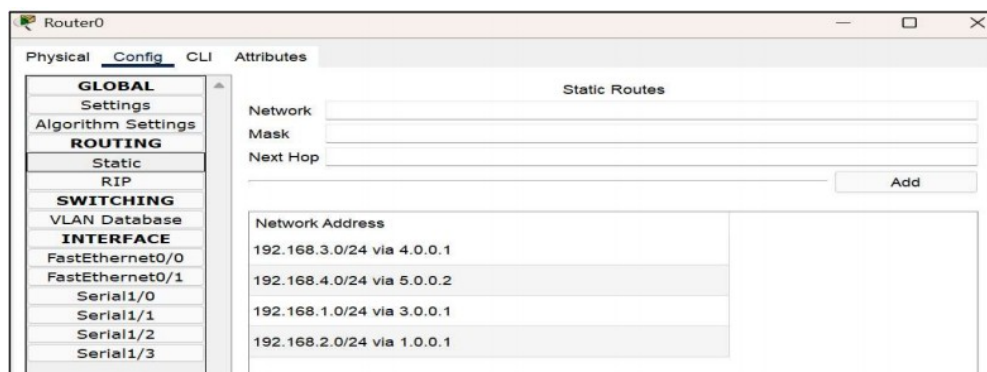


Figure 4.5: Router -config(Static)

DYNAMIC ROUTING:

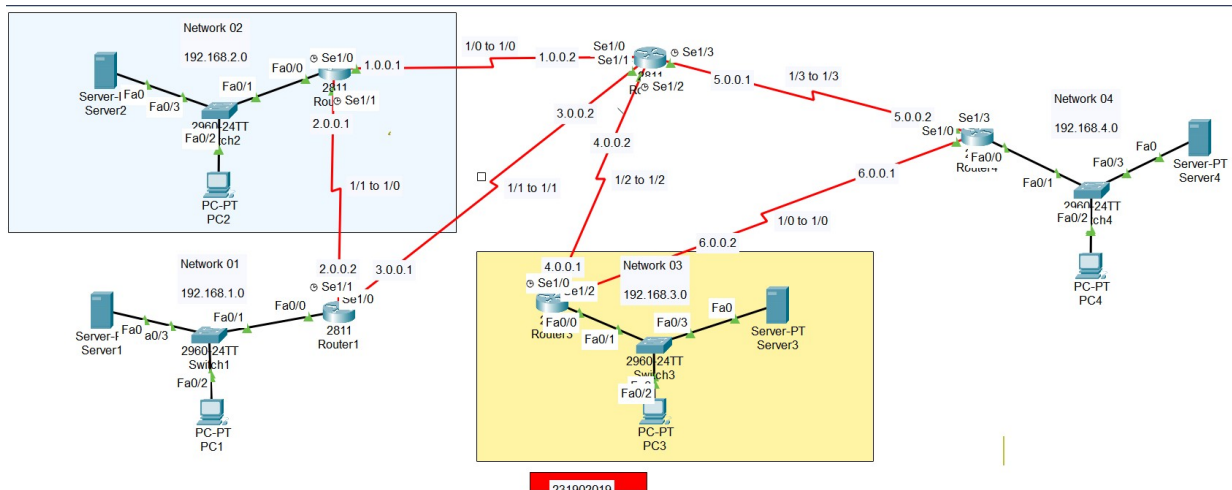


Figure 4.6: Build network with specified device

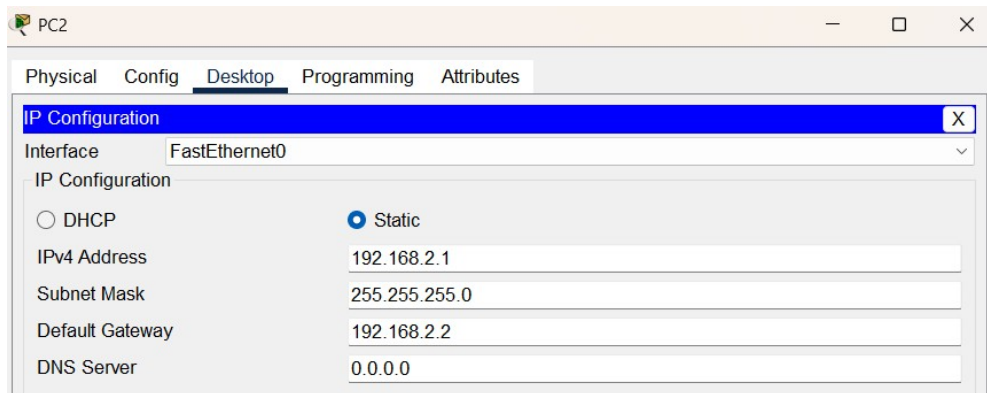


Figure 4.7: PC2-IP-configuration

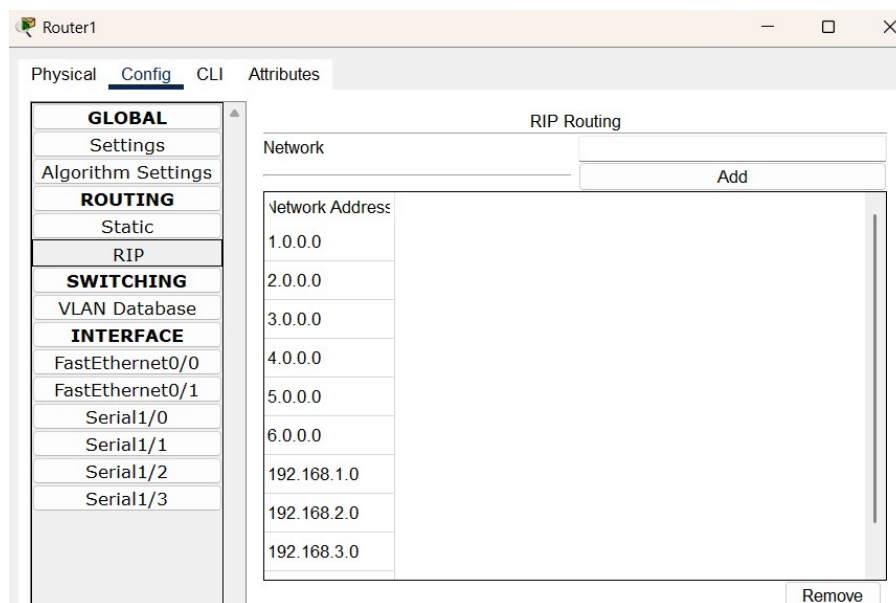


Figure 4.8: Router1-config(RIP)

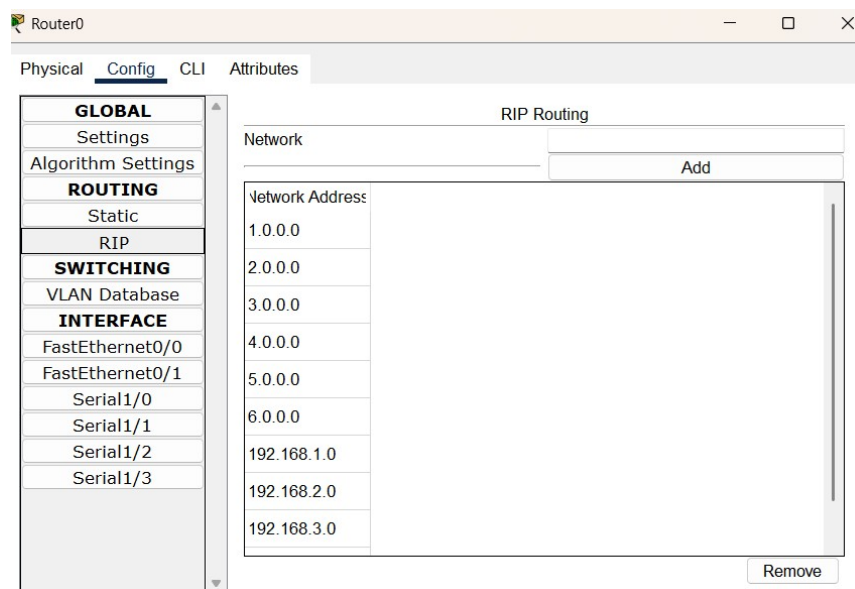


Figure 4.9: Router0-config(RIP)

5. OUTPUT

STATIC ROUTING

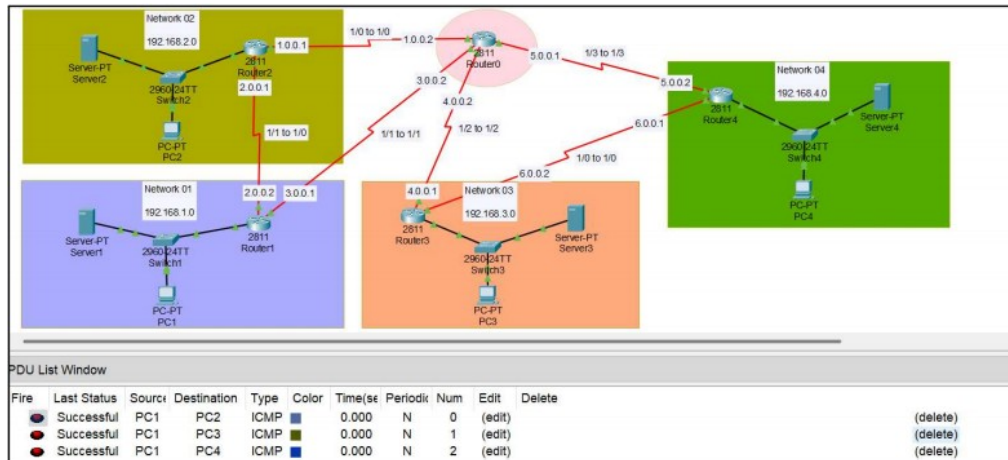


Figure 5.1: packet sent from PC1 to PC2 ,PC3 and PC4 successfully

DYNAMIC ROUTING

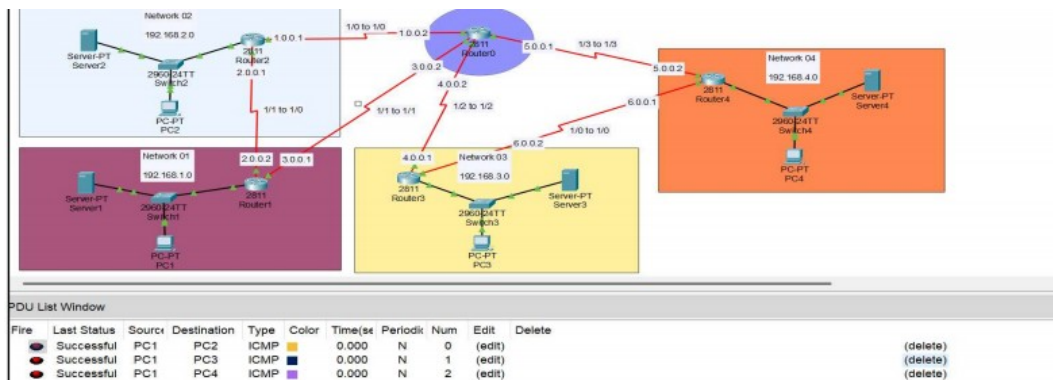


Figure 5.2: Packet sent from PC1 to PC2,PC3 and PC4 successfully

6. ANALYSIS AND DISCUSSION:

In the experiment, both **Static Routing** and **Dynamic Routing** were successfully implemented using Cisco Packet Tracer.

Static Routing:

Required manual entry of routes for each network. Worked well in the small-scale topology. However, it is **time-consuming** and prone to human error when the network size increases.

Dynamic Routing (RIP/OSPF):

Routers automatically exchanged routing information.Reduced configuration effort compared to static routing.Provided **flexibility and scalability** for larger networks.Allowed quick updates when network topology changed.

Comparison:

Static Routing is best for **simple and small networks** where routes rarely change.Dynamic Routing is better for **large and complex networks** where frequent changes occur.The use of **ping and traceroute** commands verified that communication was established between different LANs in both cases.

From this lab, it is clear that **dynamic routing protocols are more efficient**, while static routing is more secure but less adaptable.