

School of Computer Science Engineering and Technology

Course- B. Tech	Type- Core
Course Code- CSET207	Course Name- COMPUTER NETWORKS
Year- 2024	Semester- Even
Date- 9/02/2024	Batch- 2022-2025

CO-Mapping

	CO1	CO2	CO3
Q1	✓		
Q2	✓		
Q3	✓		
Q4	✓	✓	

Objectives

1. Students will be able to learn how the routers to exchange network topology information.
2. Students will be able to learn how the packet will be routed from the source to the destination using optimal routing.
3. Students will be able to learn routing table updating on the network layer.

LAB 5- Routing Information Protocol (RIP)

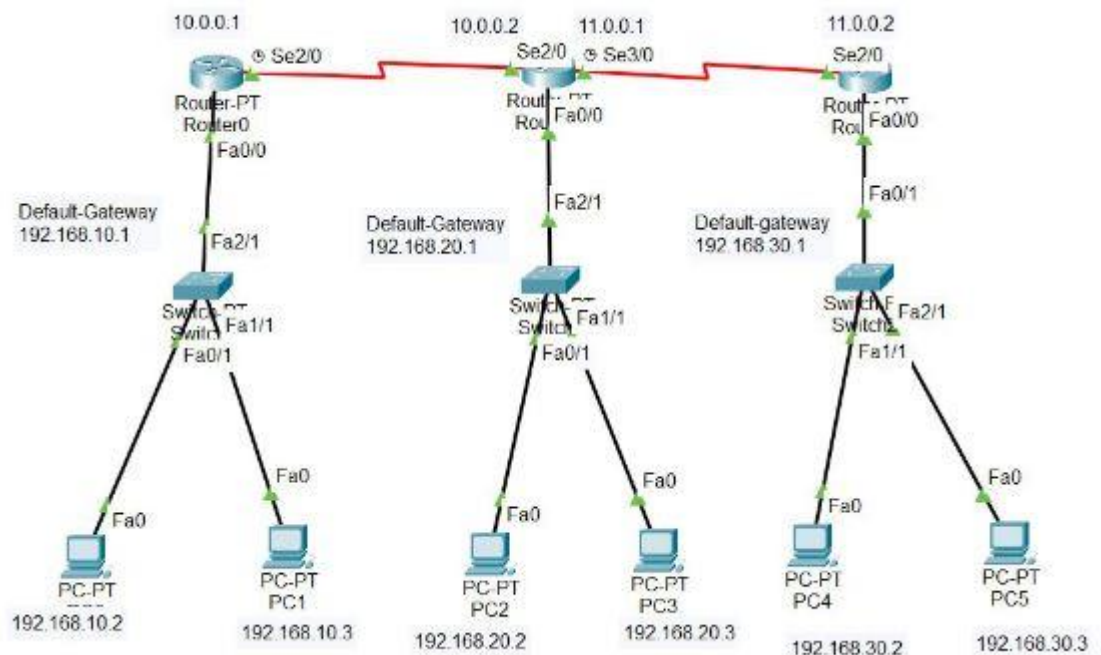
Consider a situation where the network administrator of IBM organization wants to improve the network scalability and performance related to the routing path. The network administrator aims to setup where the network learns about a router crash or broken network connection when the affected router stops delivering updates to its neighbors or ceases sending and receiving updates across the broken connection. A RIP router will remove a particular route and notify the rest of the network of the issue through its own periodic updates if the routing database for that route isn't updated six times in a row (or for 180 seconds). RIP uses hop count as the metric to determine the best path to a destination network. Each router maintains a routing table containing entries for reachable networks and the number of hops required to reach them. Routers periodically broadcast their routing tables to neighbouring routers, allowing them to update their own tables accordingly. This process continues until convergence is achieved, meaning all routers have learned the complete network topology.

Choose the best distance vector routing information protocol from the source to the destination.

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Task 1: Configure and Verify Three Router Connections in Cisco Packet Tracer using RIP Routing. [15 minutes]

S.NO	Device	Model Name	Qty.
1.	PC	PC	6
2.	Switch	PT-Switch	3
3.	Router	PT-router	3



Task 2: Configure the PCs (hosts) with IPv4 address and Subnet Mask. [15 minutes]

Task 3: Configure router interfaces with IP address and setup and configure Routing Information Protocol work on metric hop count after that is transferred the packet from source to destination which communicates to one router to another router. It updates after 30sec send his routing table to another router. [15 minutes]

Task 4: Check connectivity (ping) and assign protocol data unit first from source to Router 1, source to Router 2, source to Router 3, and finally check from source device to destination device. [15 minutes]

Task 5: Understand and explore PDUs and simulation scenarios statistics of the PDU to check whether each router is maintaining the routing table and updating to the other router. [15 minutes]

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Submission Guidelines:

- a)** The assignment must be verified by the instructor during the lab (Submission on LMS will only be considered once the working topology on Packet Tracer is verified). Submit the .cpt file along with the details in word/pdf in zipped format on LMS within 4 days.
- b)** Zipped file must be saved as per the format RollNo_Lab# (Example: E21CSE632_Lab5).
- c)** Write name and enrolment number inside the assignment file. Without it, your submission will not be considered for evaluation.
- d)** Provide labels for IP addresses, cabling and devices.
- e)** Submit the assignment in your respective batch's submission link in LMS. Submission in other batch's submission portal will not be checked.
- f)** Late submission will lead to penalty.
- g)** Plagiarism will lead to negative grading.