EXPERIMENT-8

AIM: To connect two or more local area networks and explore various sub-netting options.

DESCRIPTION:

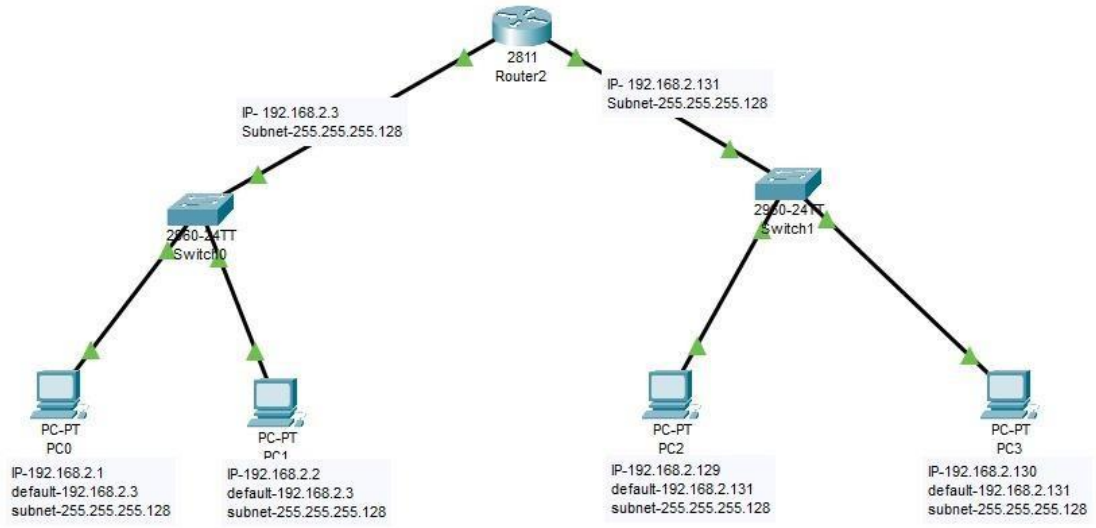
Subnetting is the process of creating a subnetwork (also known as a subnet) within a network. Network interfaces and devices within a subnet can communicate with each other directly. Routers facilitate communication between different subnets.

- By removing the need for extra routers, subnetting makes network traffic simpler. This makes sure the data being transmitted can get to its destination as fast as possible, eliminating or avoiding any potential diversions that may slow it down.
- By isolating or removing vulnerable network regions and making it harder for intruders to move through a company's network, subnetting helps the network managers in reducing network-wide risks.
- The main network is divided into smaller subnets through the process of subnetting, and the goal of these smaller, linked networks is to split the large network into a collection of smaller, less-busy networks. Subnets reduce the need for traffic to use unnecessary routes, which speeds up the network.

PROCEDURE:

- Open Cisco Packet Tracer and create a network topology with at least two LANs using router.
- Place devices (PCs, switch and router) onto the workspace and connect them using appropriate cables.
- Assign unique IP addresses to devices within each LAN. Ensure that devices in the same LAN share the same subnet.
- In LAN 2, assign IP addresses like 192.168.2.1, 192.168.2.2 to PCs, default gateway as 192.168.2.3 and subnet as 255.255.255.128
- In LAN 3, assign IP addresses like 192.168.2.129, 192.168.2.130, PCs and default gateway as 192.168.2.131 and subnet as 255.255.255.128 ○ Click on the router to open its configuration window.
- Configure IP addresses on the router interfaces that connect to each LAN. Use IP addresses from the respective subnets.
- On the interface connected to LAN 2, set the IP address to 192.168.2.3, and on the interface connected to LAN 3, set it to 165.125.2.131 and subnet as 255.255.255.128.

DIAGRAM:



OUTPUT:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1	PC3	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1	PC2	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC0	PC2	ICMP		0.000	N	2	(edit)	(delete)

EXPERIMENT -9

AIM: To configure Static routing.

DESCRIPTION:

Static routing is a routing protocol that helps to keep your network organized and to optimize routing performance. It enables the router to assign a specific path to each network segment and to keep track of network changes. This helps to improve network stability and continuity. This adds security because a single administrator can only authorize routing to particular networks.

PROCEDURE:

- Open Cisco Packet Tracer and create a network topology with at least two LANs connected by a router.
- Place devices (PCs, routers, and switches) onto the workspace and connect them using appropriate cables.
- Assign unique IP addresses to devices within each LAN. Ensure that devices in the same LAN share the same subnet.
- In LAN 1, assign IP addresses like 192.168.1.1, 192.168.1.2 to PCs and default gateway 192.168.1.3
- In LAN 2, assign IP addresses like 165.125.2.1, 165.125.2.2 to PCs and default gateway 165.125.2.3
- Click on the router to open its configuration window.
- Go to config➐static and enter the network, mask and next hop addresses

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Sheet No.:

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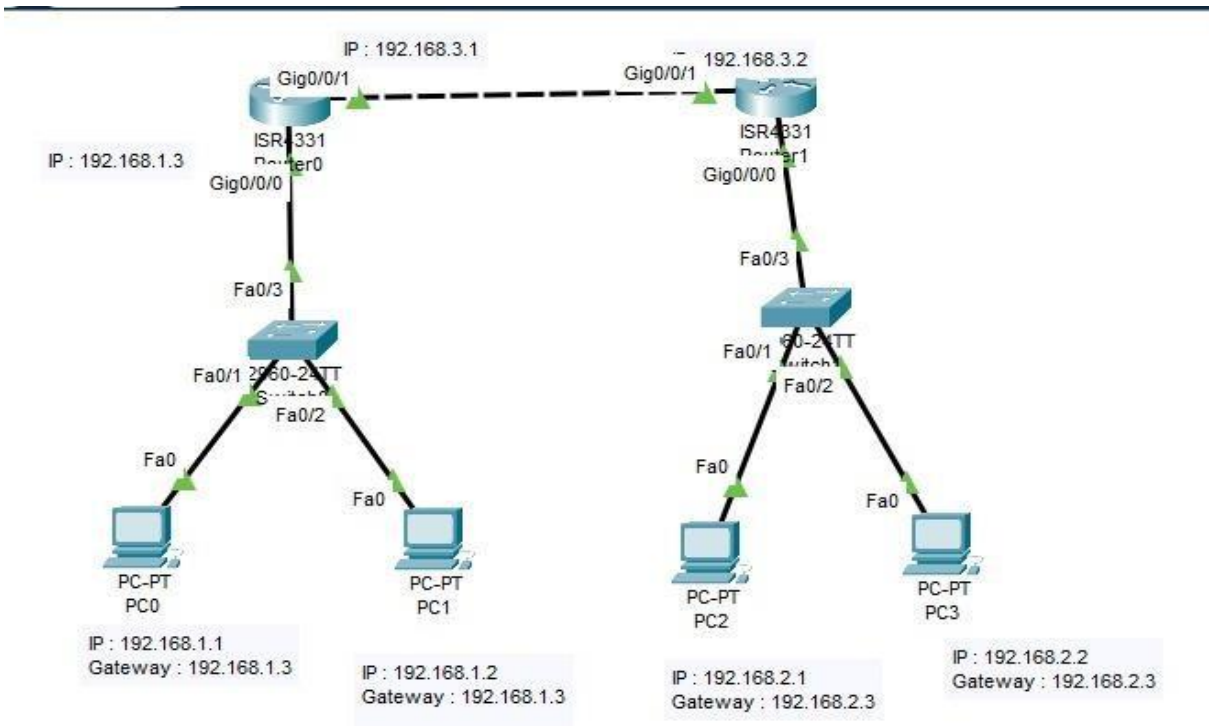
DIAGRAM:



OUTPUT:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC2	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1	PC3	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC0	PC2	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC1	PC3	ICMP		0.000	N	3	(edit)	(delete)

Laboratory Record

Of: COMPUTER NETWORKS

Roll No.: 160121749044

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