

Worksheet- 2.3

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Subject Code: 21CSH-256

Subject Name: Computer Networks

- 1. Aim:** Configure a network using Distance Vector routing Protocol using Packet Tracer or NS2.
- 2. Software required :-** Cisco Packet Tracer.

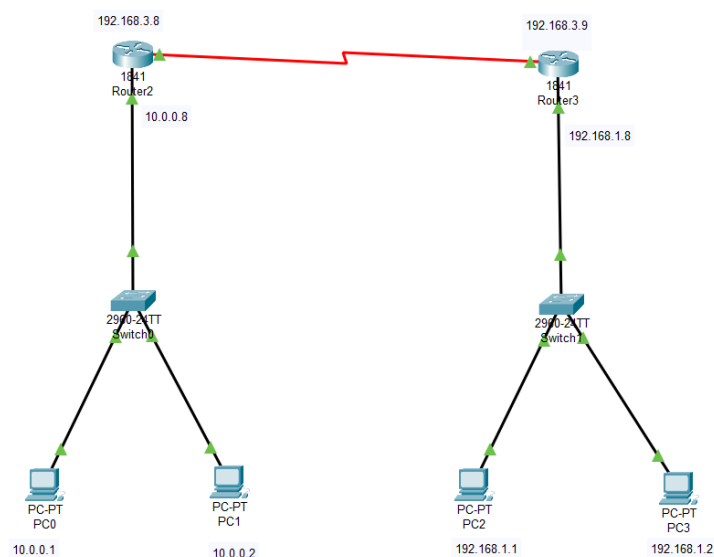
Procedure: -

- Attach PC, PT router & Switch in the packet tracer software.
- Use Serial DCE wires to connect router to router.
- Connect all the end devices to each other.
- Assign IP address to devices.
- Select source and destination and drop packet from source to destination.
- Go to Simulation mode and click capture/Play.
- Simulation will start and packet will only be accepted by destination.

Theory: -

A). Distance-vector routing (DVR): The term distance vector refers to the fact that the protocol manipulates vectors (arrays) of distances to other nodes in the network. It is a protocol requires that a router inform its neighbors of topology changes periodically Historically known as the old ARPANET routing algorithm (or known as Bellman-Ford algorithm).

Input Screenshot:





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PC0 IP Configuration window showing settings for FastEthernet0. The IP Configuration section is set to Static with IP Address 10.0.0.1, Subnet Mask 255.0.0.0, Default Gateway 10.0.0.8, and DNS Server 0.0.0.0. The IPv6 Configuration section is also set to Static with Link Local Address FE80::260:5CFF:FE16:B6B4. The 802.1X section is unchecked.

Pc 0 IP

Router2 RIP Configuration window showing settings for FastEthernet0. The RIP Routing section is set to Static with Network Address 10.0.0.0 and Subnet Mask 255.0.0.0. The Equivalent IOS Commands section shows the following commands:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#
```

Router 2 RIP

Router3 RIP Configuration window showing settings for FastEthernet0. The RIP Routing section is set to Static with Network Address 192.168.1.0 and Subnet Mask 255.255.255.0. The Equivalent IOS Commands section shows the following commands:

```
Press RETURN to get started!

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

Router 3 RIP

PC2 IP Configuration window showing settings for FastEthernet0. The IP Configuration section is set to Static with IP Address 192.168.1.1, Subnet Mask 255.255.255.0, Default Gateway 192.168.1.8, and DNS Server 0.0.0.0. The IPv6 Configuration section is also set to Static with Link Local Address FE80::201:C7FF:FE70:290C. The 802.1X section is unchecked.

Pc 2 IP

Router2 Serial0/1/0 Configuration window showing settings for Serial0/1/0. The Port Status section is set to Full Duplex and On. The Clock Rate is set to 2000000. The IP Configuration section is set to Static with IP Address 192.168.3.8 and Subnet Mask 255.255.255.0. The Tx Ring Limit is set to 10.

Router 2 IP

Router3 Serial0/1/0 Configuration window showing settings for Serial0/1/0. The Port Status section is set to Full Duplex and On. The Clock Rate is set to 1200. The IP Configuration section is set to Static with IP Address 192.168.3.9 and Subnet Mask 255.255.255.0. The Tx Ring Limit is set to 10.

Router 3 IP

Output Screenshot:

Realtime Simulation										
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Edit	Num	Delete
	Failed	PC0	Router2	ICMP		0.000	N	(edit)	0	(delete)
	Successful	PC0	Router2	ICMP		0.000	N	(edit)	1	(delete)
	Successful	PC0	Router3	ICMP		0.000	N	(edit)	2	(delete)
	Failed	PC0	PC2	ICMP		0.000	N	(edit)	3	(delete)

Realtime Simulation										
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Edit	Num	Delete
	Successful	PC0	PC2	ICMP		0.000	N	(edit)	4	(delete)
	Failed	PC0	PC3	ICMP		0.000	N	(edit)	5	(delete)
	Successful	PC0	PC3	ICMP		0.000	N	(edit)	6	(delete)
	Failed	PC2	PC1	ICMP		0.000	N	(edit)	7	(delete)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Edit	Num	Delete
	Successful	PC2	PC1	ICMP		0.000	N	(edit)	8	(delete)
	Successful	PC3	PC1	ICMP		0.000	N	(edit)	9	(delete)
	Successful	PC3	PC0	ICMP		0.000	N	(edit)	10	(delete)

Learning Outcomes:

- 1.) In this experiment, we have used different wire i.e Serial DCE wire to connect router.
- 2.) We learned about clock rate, serial2/0, serial3/0 and Distance-vector routing (DVR).
- 3.) We have fined the different distances from nodes with the help of packet tracer.