

LAB ASSIGNMENT-8

CSN-361 Computer Networks Laboratory

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Q-1

Problem Statement

Use the CISCO packet tracer to create a network topology as shown in Figure and configure the network with Open Shortest Path First (OSPF) protocol.

Structure

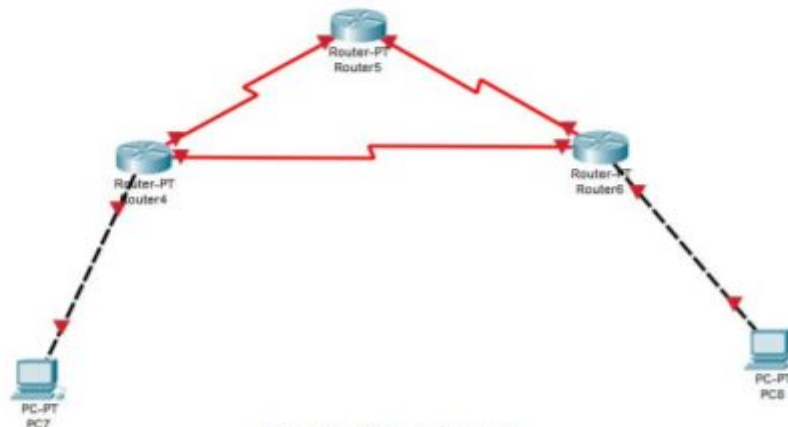


Fig. 1: Topology1

Simulation result (Overall)

Cisco Packet Tracer - C:\Users\Admin\Cisco Packet Tracer 7.2.2\saves\OSPF_Q1.pkt

File Edit Options View Tools Extensions Help

Logical Physical x 1104, y 308

[Root]

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.001	PC0	Router0	ICMP
	0.002	Router0	PC0	ICMP
	0.002	--	PC0	ICMP
	0.003	PC0	Router0	ICMP
	0.004	Router0	Router2	ICMP
	0.005	Router2	Router0	ICMP
	0.006	Router0	PC0	ICMP
	0.006	--	PC0	ICMP
	0.007	PC0	Router0	ICMP
	0.008	Router0	Router1	ICMP
	0.009	Router1	Router0	ICMP
	0.010	Router0	PC0	ICMP
	0.010	--	PC0	ICMP
	0.011	PC0	Router0	ICMP
	0.012	Router0	Router2	ICMP
	0.013	Router2	PC1	ICMP
	0.014	PC1	Router2	ICMP
	0.015	Router2	Router0	ICMP
	0.016	Router0	PC0	ICMP

Reset Simulation ☒ Constant Delay Captured to: 0.016 s

Play Controls

Event List Filters - Visible Events

ACL Filter, Bluetooth, CAPWAP, CDP, DHCPv6, DTP, EAPOL, EIGRPv6, FTP, H.323, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, IACF, LLDP, NDP, NETFLOW, NTP, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIPng, RTP, SCOP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 00:01:16.283 PLAY CONTROLS

Scenario 0

New Delete

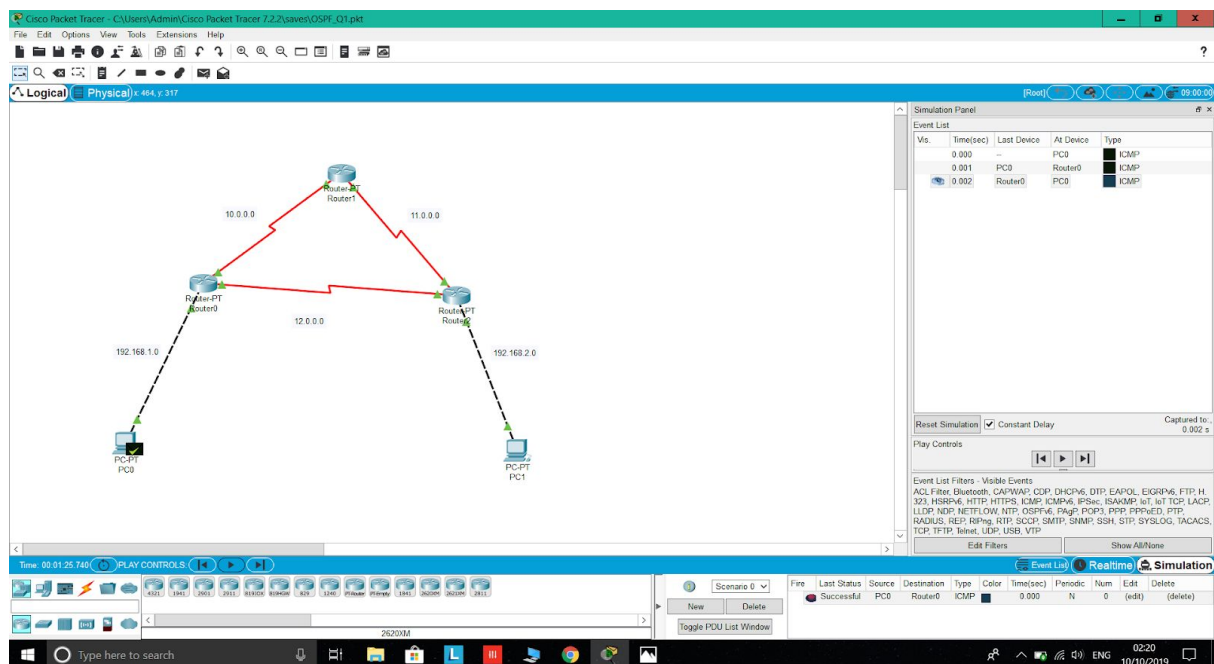
Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	Router0	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC0	Router2	ICMP		0.002	N	1	(edit)	(delete)
	Successful	PC0	Router1	ICMP		0.006	N	2	(edit)	(delete)
	Successful	PC0	PC1	ICMP		0.010	N	3	(edit)	(delete)

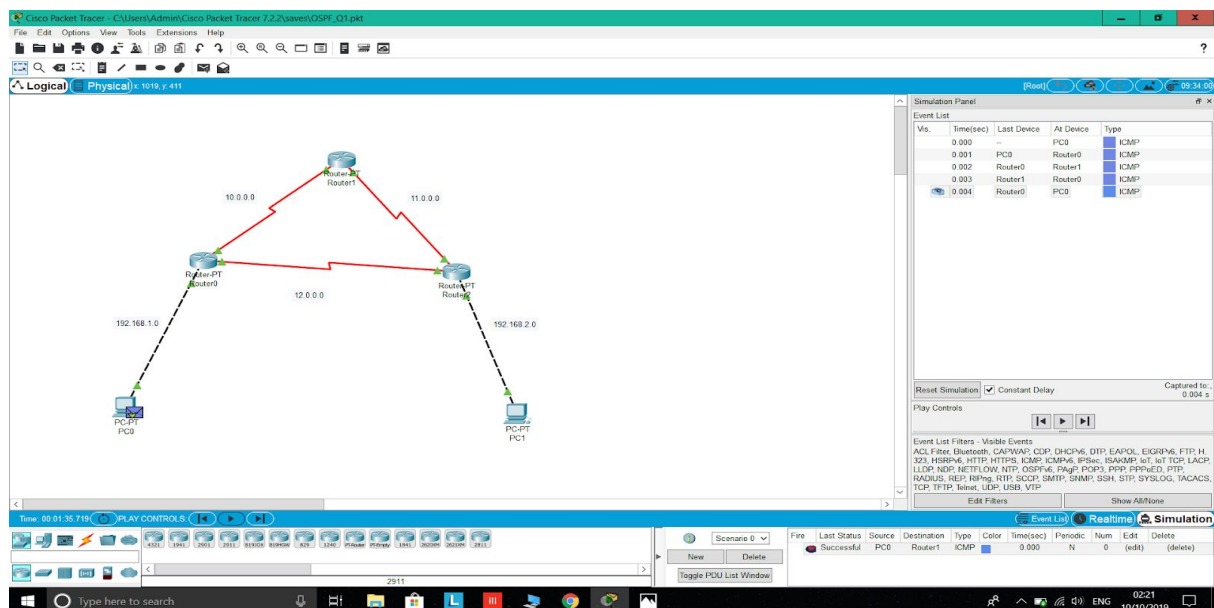
Explanation

- The packet transfer is successful from PC0 to Router0, Router1, Router2 and PC1, Which can be seen at the bottom right corner of the above screenshot.
- OSPF protocol has been used for this question.

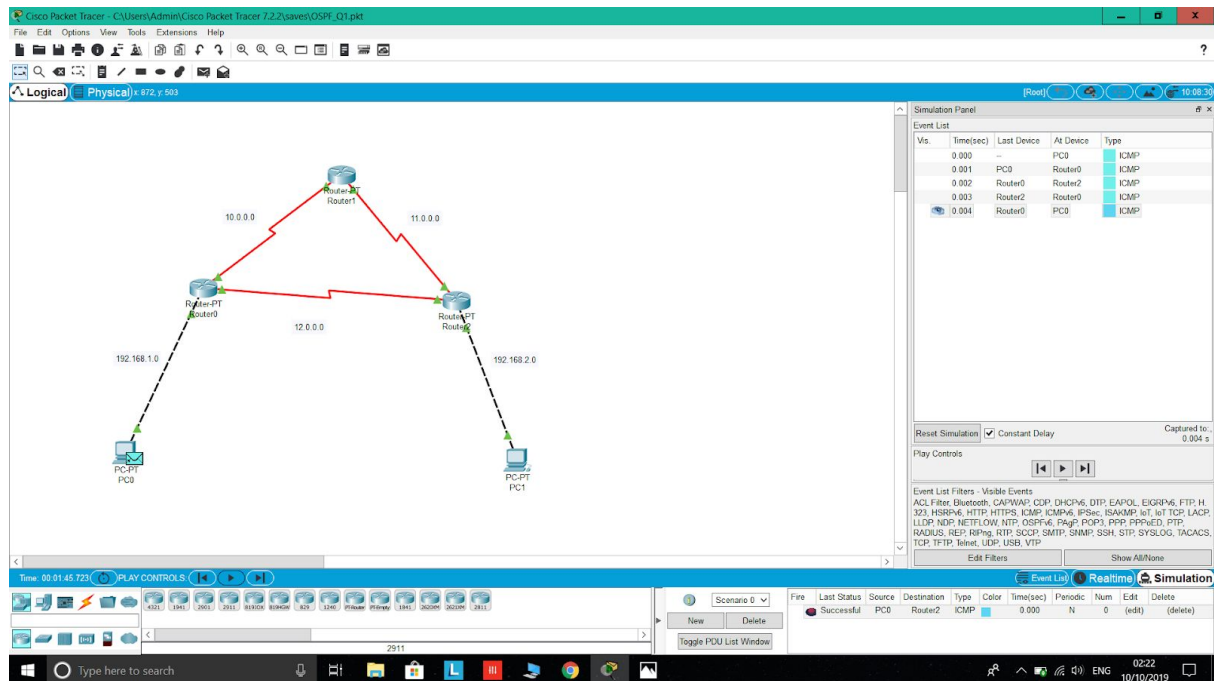
PC0 to Router0



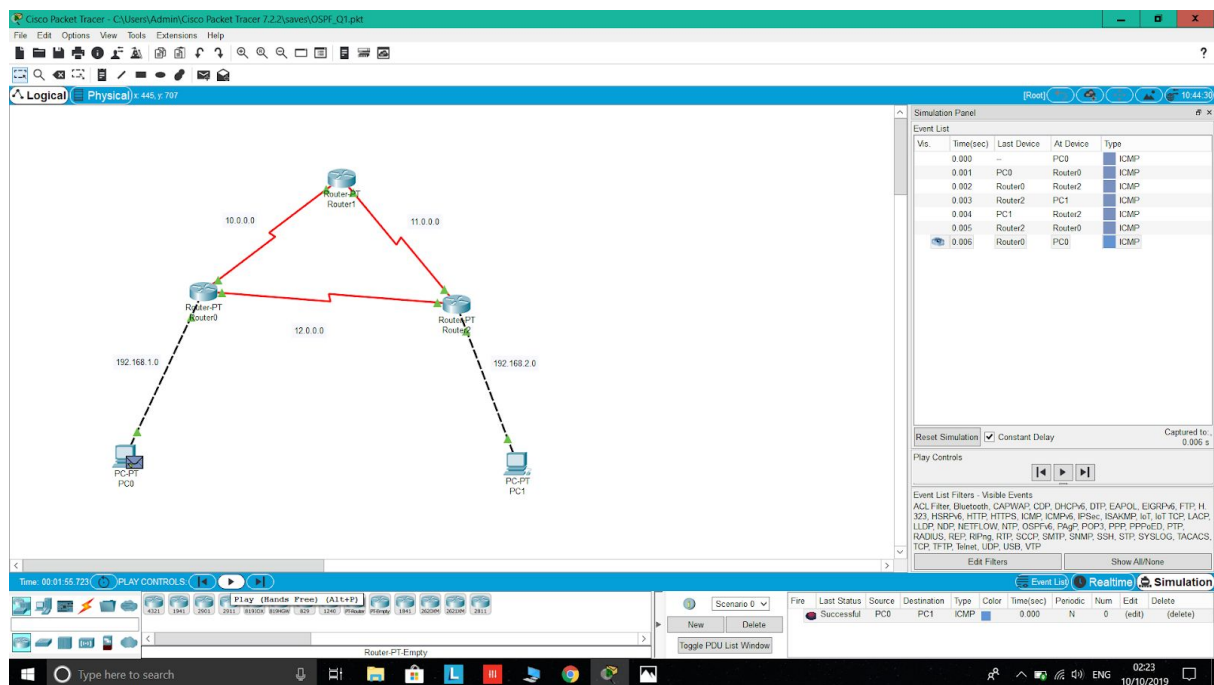
PC0 to Router1



PC0 to Router2



PC0 to PC1



Q-2

Problem Statement

Use CISCO packet tracer to demonstrate Address Resolution Protocol (ARP) in a ring topology as shown in Figure.

Structure

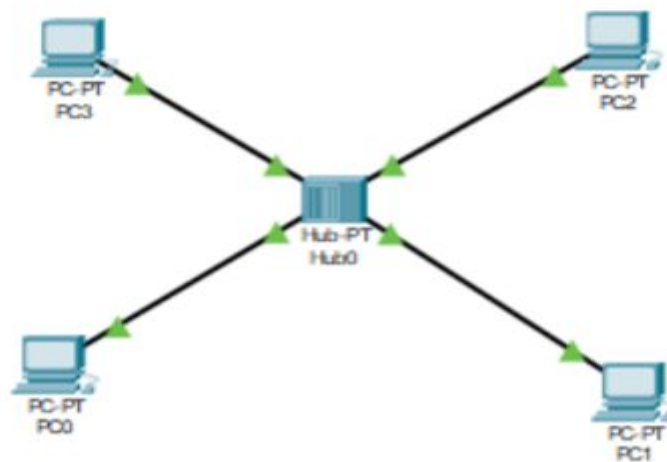


Fig. 2: Ring Topology

Explanation

PC0 is sending a packet to PC3 via the hub. Hub after receiving packet from PC0 sends it to PC1, PC2, and PC3 but only PC3 accepts it as the addresses match in that case. Then the same thing in a reverse manner happens while sending the acknowledgment from PC3 to PC0.

Simulation result

- ARP protocol has been used in this question.
- The packet transfer from PC0 to PC3 is successful and it can be seen at the bottom right corner of the below screenshot.

Cisco Packet Tracer - C:\Users\Admin\Cisco Packet Tracer 7.2.2\saves\ARP_Q2.pkt

File Edit Options View Tools Extensions Help

Logical

Physical

x: 1363, y: 205

PC-PT
PC1

PC-PT
PC2

PC-PT
PC0

PC-PT
PC3

Hub-PT
Hub0

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ARP
	0.001	PC0	Hub0	ARP
	0.002	Hub0	PC1	ARP
	0.002	Hub0	PC2	ARP
	0.002	Hub0	PC3	ARP
	0.003	PC3	Hub0	ARP
	0.004	Hub0	PC1	ARP
	0.004	Hub0	PC2	ARP
	0.004	Hub0	PC0	ARP

Reset Simulation

☒ Constant Delay

Capturing...

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, Bluetooth, CAPWAP, CDP, DHCPv6, DTP, EAPOL, EIGRPv6, FTP, H.323, HSRPv6, HTTP, HTTPS, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPFv6, PaGP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, USB, VTP

Edit Filters

Show All/None

Time: 00:13:09.012

PLAY CONTROLS

Router-PT

Scenario 0

New

Delete

Toggle PDU List Window

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

Type here to search

02:33
10/10/2019