

COMPUTER NETWORKS LAB WEEK #7

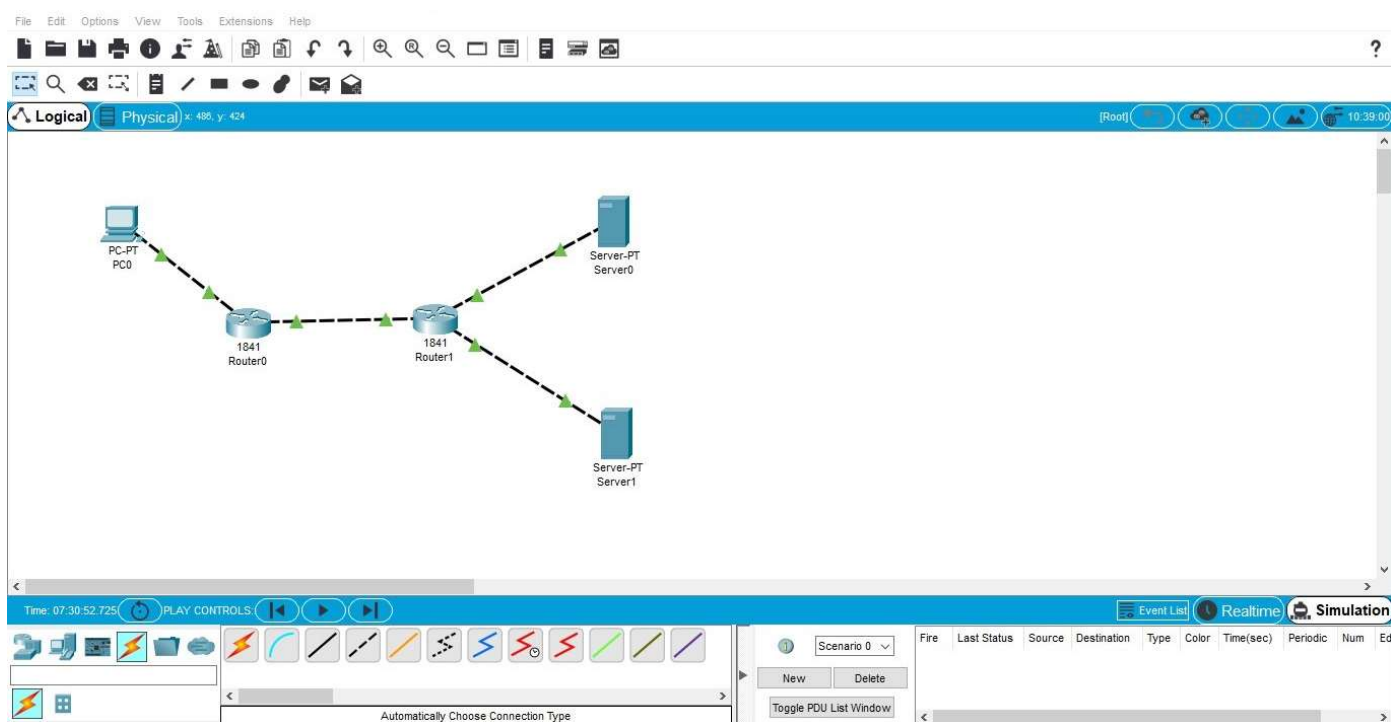
Using Cisco packet tracer understand the life of packet in internet.

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EXERCISE 1

Topology:



Configurations -:

HOST A : IP Address ---> 10.10.1.1

Gateway -----> 10.10.1.2

DNS Server ---> 192.168.1.2

ROUTER 1 : Incoming Interface IP --> 10.10.1.2 (Fast ethernet 0)

OUTgoing Interface IP --> 10.10.2.1 (Fast ethernet 1)

ROUTER 2 : Incoming Interface IP --> 10.10.2.2 (Fast ethernet 0)

Outgoing Interface1 IP --> 192.168.1.1 (Fast ethernet 1)

Outgoing Interface2 IP --> 192.168.2.1 (External added interface)

DNS Server : IP Address ----> 192.168.1.2

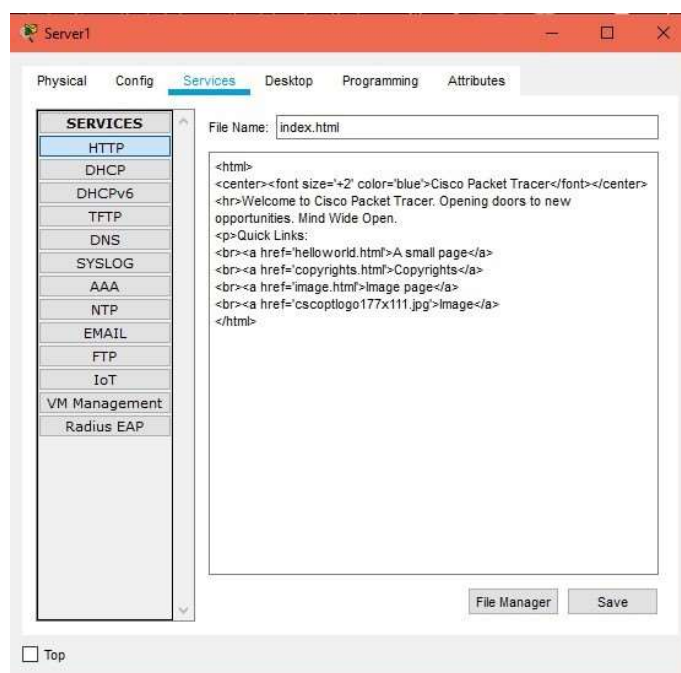
Default Gateway : 192.168.1.1

WEB Server : IP Address ----> 192.168.2.2

Default Gateway : 192.168.2.1

Routing Table Entries -:

Router name	Network	Gateway
Router 1	192.168.1.0	10.10.2.2
Router 1	192.168.2.0	10.10.2.2
Router 2	10.10.1.0	10.10.2.1



Simulation Mode:

First request:

The screenshot shows the Cisco Packet Tracer interface in Simulation Mode. The network topology consists of two routers, Router0 and Router1, connected by a serial link. Router0 is connected to PC0 (PC-PT), and Router1 is connected to two servers, Server0 and Server1 (both Server-PT). The Event List panel on the right shows a series of DNS and ARP requests. The simulation is running in Realtime mode, and the time is 02:55:27.289.

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	DNS
	0.000	--	PC0	ARP
	0.000	--	PC0	DNS
	0.000	--	PC0	ARP
	0.001	PC0	Router0	ARP
	0.002	Router0	PC0	ARP
	0.002	--	PC0	DNS
	0.002	--	PC0	DNS
	0.003	PC0	Router0	DNS
	0.003	--	Router0	DNS
	0.003	--	Router0	ARP

The screenshot shows the Cisco Packet Tracer interface in Simulation Mode at a later time. A web browser window is open on PC0, displaying the Cisco Packet Tracer welcome page. The Event List panel on the right shows a series of TCP requests. The simulation is running in Realtime mode, and the time is 21:28:40.601.

Vis.	Time(sec)	Last Device	At Device	Type
	30.323	--	PC0	TCP
	30.324	PC0	Router0	TCP
	30.325	Router0	Router1	TCP
	30.326	Router1	Server1	TCP
	30.327	Server1	Router1	TCP
	30.328	Router1	Router0	TCP
	30.329	Router0	PC0	TCP
	30.330	PC0	Router0	TCP
	30.331	Router0	Router1	TCP
Visible	30.332	Router1	Server1	TCP

Time: 30.332s

Second request:

The network diagram shows a topology with two routers, Router0 and Router1, connected by a link. Router0 is connected to PC0 (PC-PT) and Server0 (Server-PT). Router1 is connected to Server1 (Server-PT). The network is in the Physical view. The Simulation Panel on the right shows an Event List with DNS and TCP events.

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	DNS
	0.001	PC0	Router0	DNS
	0.002	Router0	Router1	DNS
	0.003	Router1	Server0	DNS
	0.004	Server0	Router1	DNS
	0.005	Router1	Router0	DNS
	0.006	Router0	PC0	DNS
	0.006	--	PC0	TCP
	0.007	PC0	Router0	TCP
	0.008	Router0	Router1	TCP
	0.009	Router1	Server1	TCP

The network diagram shows a topology with two servers, Server0 and Server1, connected by a link. The network is in the Physical view. The Simulation Panel on the right shows an Event List with TCP events. A Web Browser window is open on the PC0 device, displaying the Cisco Packet Tracer website.

Vis.	Time(sec)	Last Device	At Device	Type
	0.019	--	PC0	TCP
	0.020	PC0	Router0	TCP
	0.021	Router0	Router1	TCP
	0.022	Router1	Server1	TCP
	0.023	Server1	Router1	TCP
	0.024	Router1	Router0	TCP
	0.025	Router0	PC0	TCP
	0.026	PC0	Router0	TCP
	0.027	Router0	Router1	TCP
Visible	0.028	Router1	Server1	TCP

Time: 0.028s

Reason for such difference in time -:

The DNS name and IP address is cached by the DNS server on the first Web server – Client request (30.332s). The same cache is referred to on the next request; hence lesser time is taken in the next request (0.028s).

For the same reason, ARP requests aren't seen in the second webserver request.