

**PES1UG20CS821**

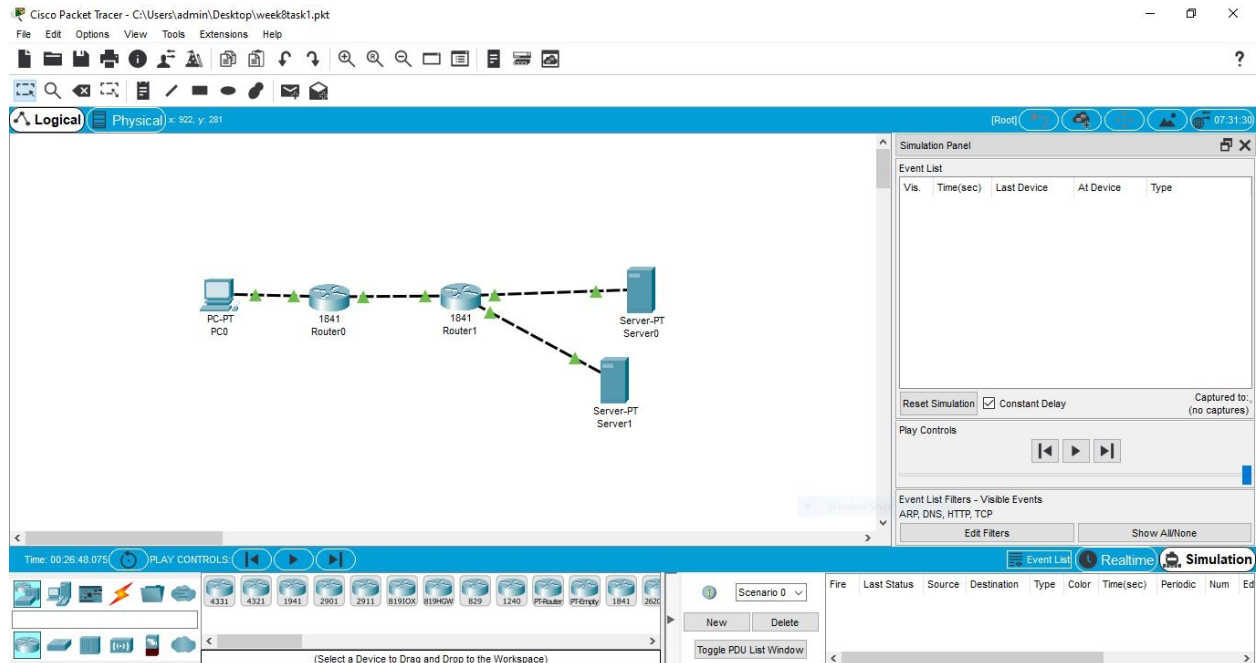
**NIKHIL T M**

**Week 9**

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

**Setup**

**1.1 Create a topology as shown in figure below in cisco packet tracer**



**1.2 Assign the following IP address for each device**

PC0 : IP Address ----> 10.10.1.1

Gateway -----> 10.10.1.2

DNS Server ---> 192.168.1.2

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

Outgoing Interface IP --> 10.10.2.1 (Fast Ethernet 1)

ROUTER 1 : 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)

Server 0(DNS Server) : IP Address -----> 192.168.1.2

Default Gateway : 192.168.1.1

Server 1(Web Server) : IP Address -----> 192.168.2.2

Default Gateway : 192.168.2.1

### Routing Table Entries

Router name	Network	Gateway
ROUTER 0	192.168.1.0	10.10.2.2
ROUTER 0	192.168.2.0	10.10.2.2
ROUTER 1	10.10.1.0	10.10.2.1

Add type-A record in DNS Server(Server 0)

Record-type : Type-A

Name : google.com

Address : IP address of web Server(Server 1) i.e. 192.168.2.2

## Execution

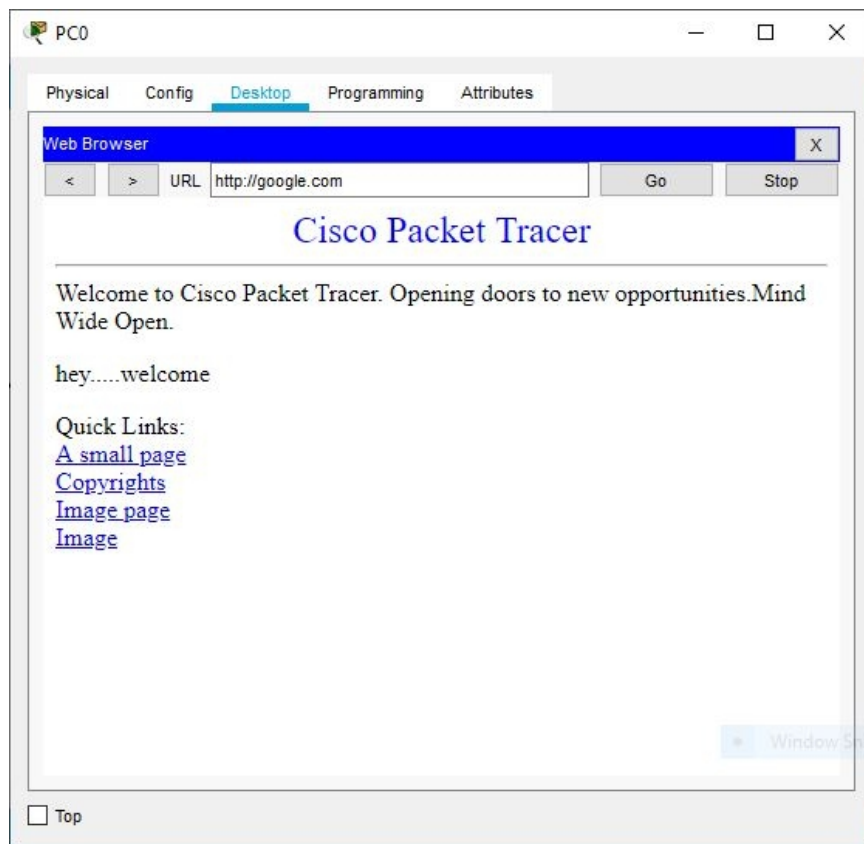
### 2.1

Step 1:Click on Host(PC0)

Step 2:Go to desktop

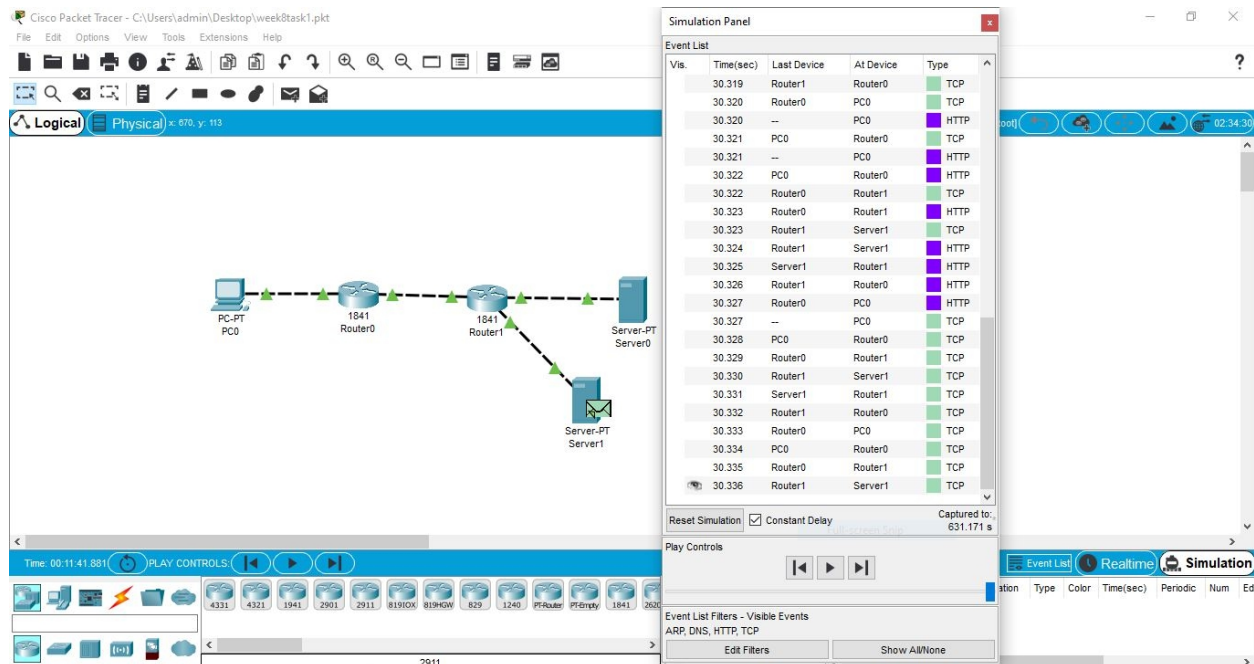
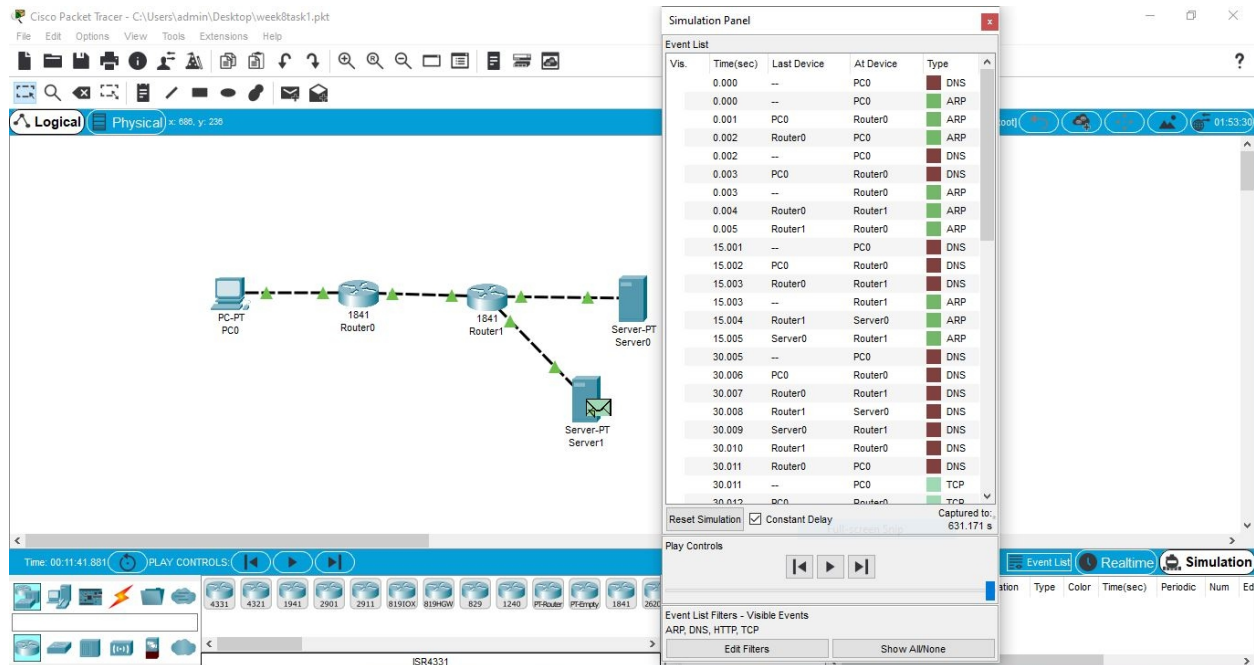
Step 3:Click on Web Browser

Step 4:In the URL section type the domain name(google.com) and click go



# Observation

## 3.1 1<sup>st</sup> Invocation



All the four packets(ARP,DNS,HTTP,TCP) can be seen  
Total time is 30.336

## 3.2 2<sup>nd</sup> Invocation

Simulation Panel

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
	0.010	Server1	Router1	TCP
	0.011	Router1	Router0	TCP
	0.012	Router0	PC0	TCP
	0.012	--	PC0	HTTP
	0.013	PC0	Router0	TCP
	0.013	--	PC0	HTTP
	0.014	PC0	Router0	HTTP
	0.014	Router0	Router1	TCP
	0.015	Router0	Router1	HTTP
	0.015	Router1	Server1	TCP
	0.016	Router1	Server1	HTTP
	0.017	Server1	Router1	HTTP
	0.018	Router1	Router0	HTTP

Time: 00:36:53.832

Simulation Panel

Vis.	Time(sec)	Last Device	At Device	Type
	0.011	Router1	Router0	TCP
	0.012	Router0	PC0	TCP
	0.012	--	PC0	HTTP
	0.013	PC0	Router0	TCP
	0.013	--	PC0	HTTP
	0.014	PC0	Router0	HTTP
	0.014	Router0	Router1	TCP
	0.015	Router0	Router1	HTTP
	0.015	Router1	Server1	TCP
	0.016	Router1	Server1	HTTP
	0.017	Server1	Router1	HTTP
	0.018	Router1	Router0	HTTP
	0.019	Router0	PC0	HTTP
	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
	0.028	Router1	Server1	TCP

Time: 00:36:53.832

There is no ARP packets present in 2<sup>nd</sup> request  
Total time taken is 0.028secs

## **Conclusion**

Does the number of packets traversed in the network change with second invocation of web request?

Ans: When the request for the domain "google.com" was made then because DNS server did not had the address in the cache the query took more time to resolve the page. but in the 2<sup>nd</sup> request total time is lesser than time of 1<sup>st</sup> request due to DNS cache. The ARP packets flowing were only seen in the first DNS request and not in the subsequent request as because of the DNS cache. All other packets i.e. TCP, HTTP and DNS were seen in both the web-server requests. so we can conclude that the number packets traversed in the network change with 2<sup>nd</sup> invocation which results in differ of time to fetch the page from the Web server also.