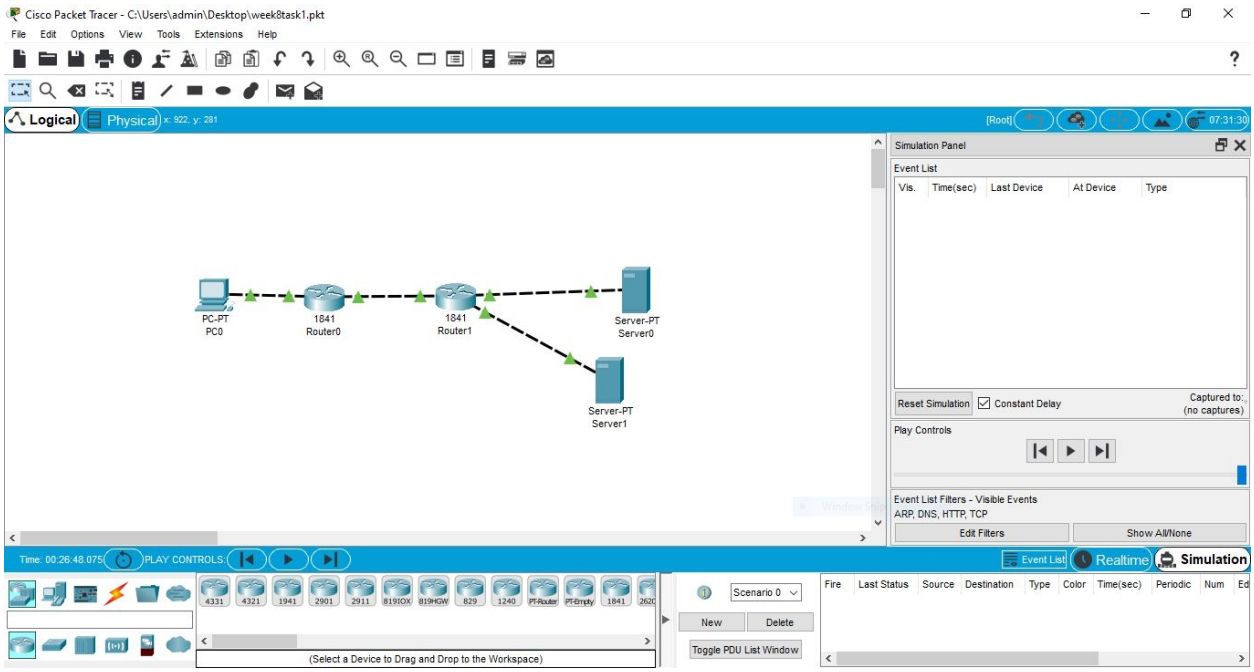
PES1UG20CS821
NIKHIL T M
Week 9

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

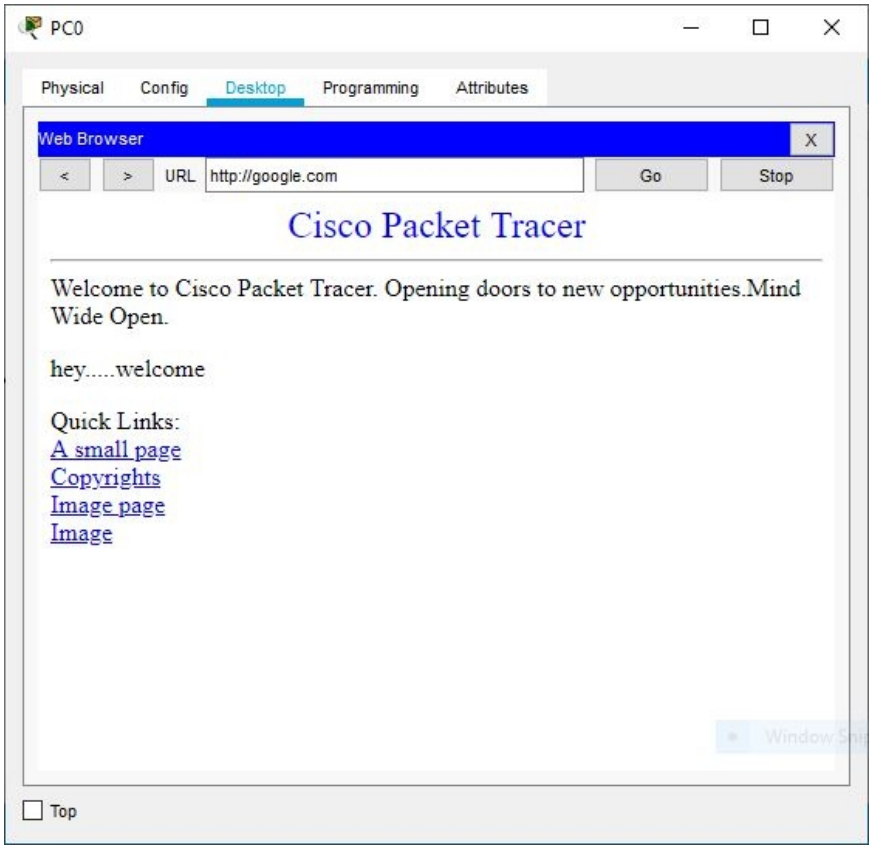
Router name	Network	Gateway
ROUTER 0	192.168.1.0	10.10.2.2
ROUTER 0	192.168.2.0	10.10.2.2
ROUTER 1	10.10.1.0	10.10.2.1

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

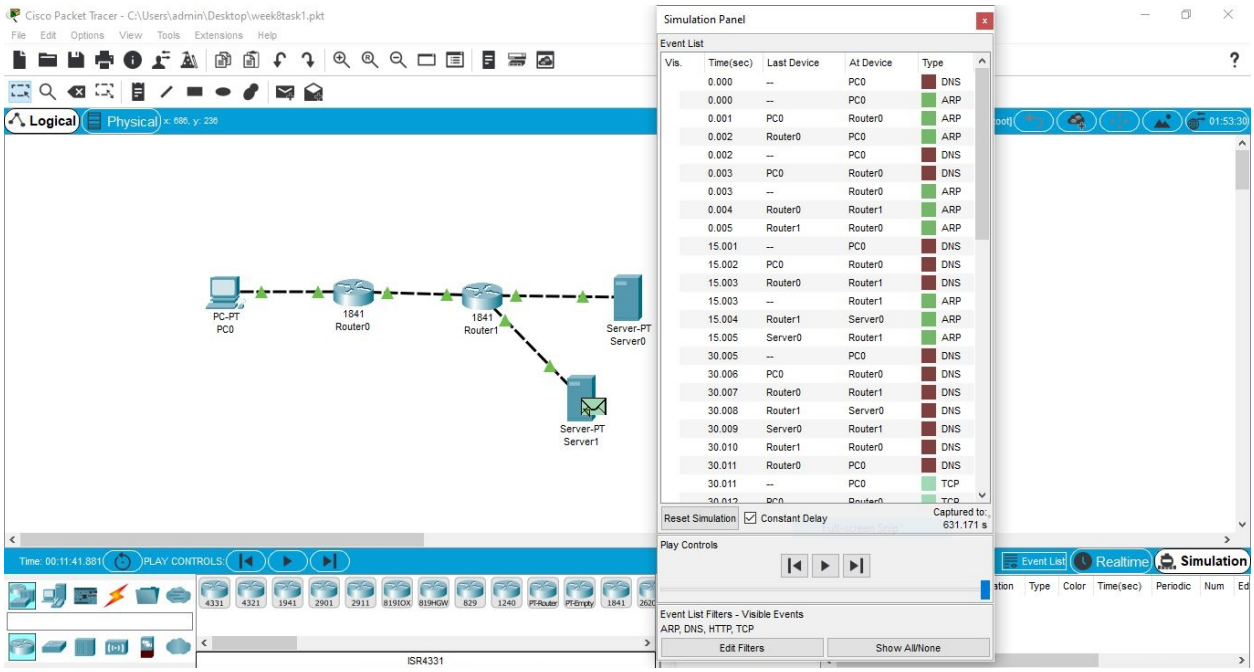
2.1

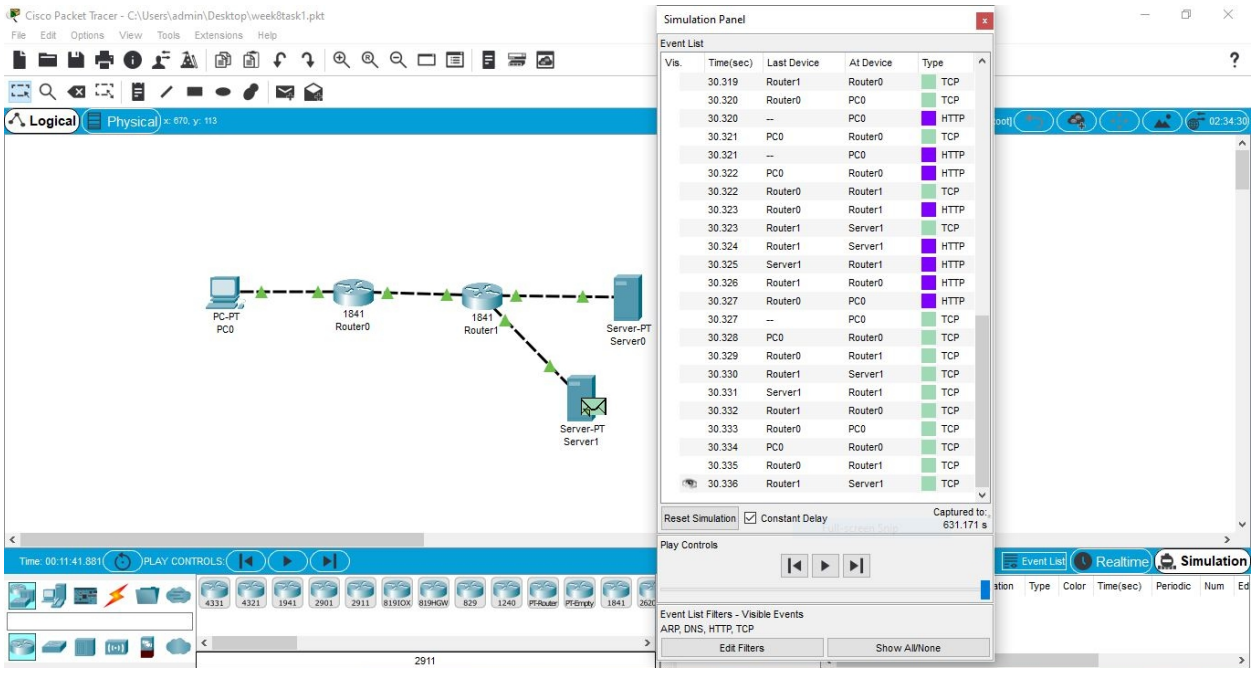
Step 1:Click on Host(PC0)
Step 2:Go to desktop
Step 3:Click on Web Browser
Step 4:In the URL section type the domain name(google.com) and click go



Observation

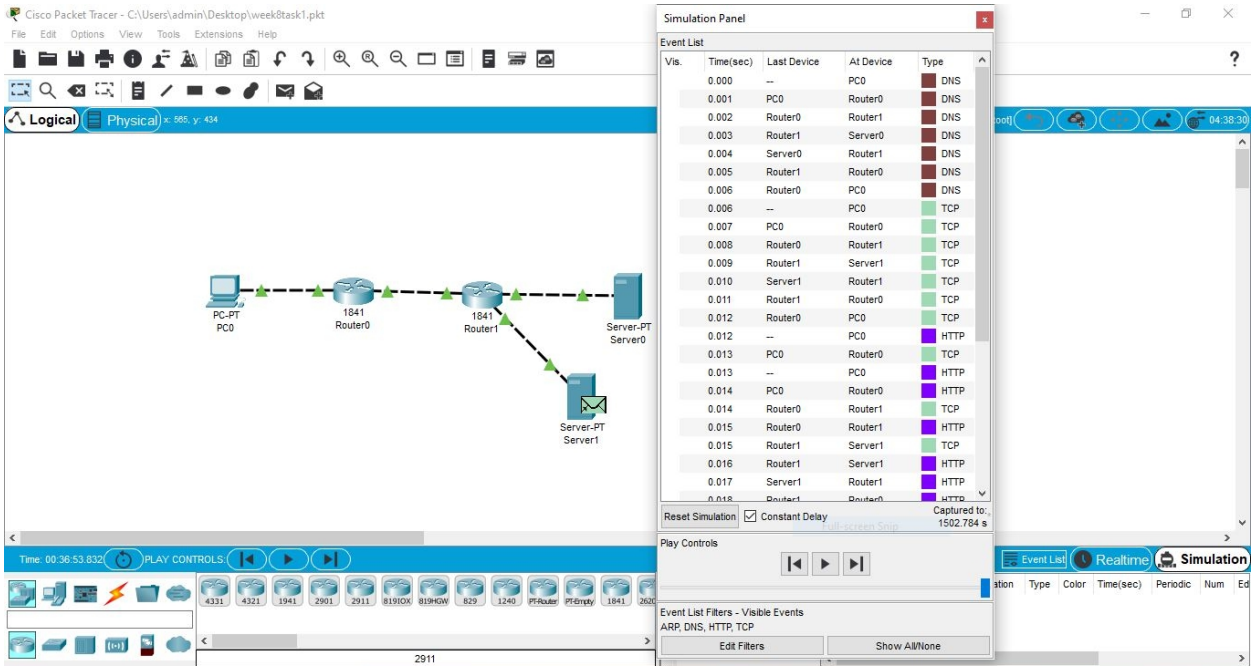
3.1 1st Invocation

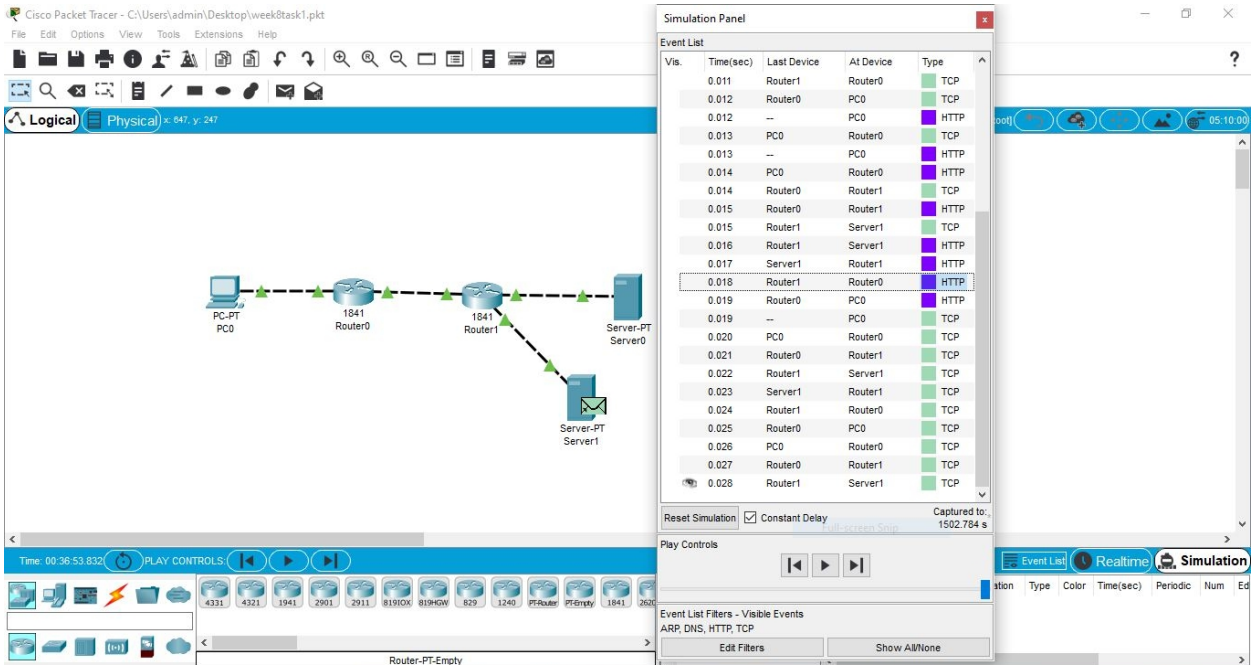




All the four packets(ARP,DNS,HTTP,TCP) can be seen
Total time is 30.336

3.2 2nd Invocation





There is no ARP packets present in 2nd 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 2nd request total time is lesser than time of 1st 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 2nd invocation which results in differ of time to fetch the page from the Web server also.