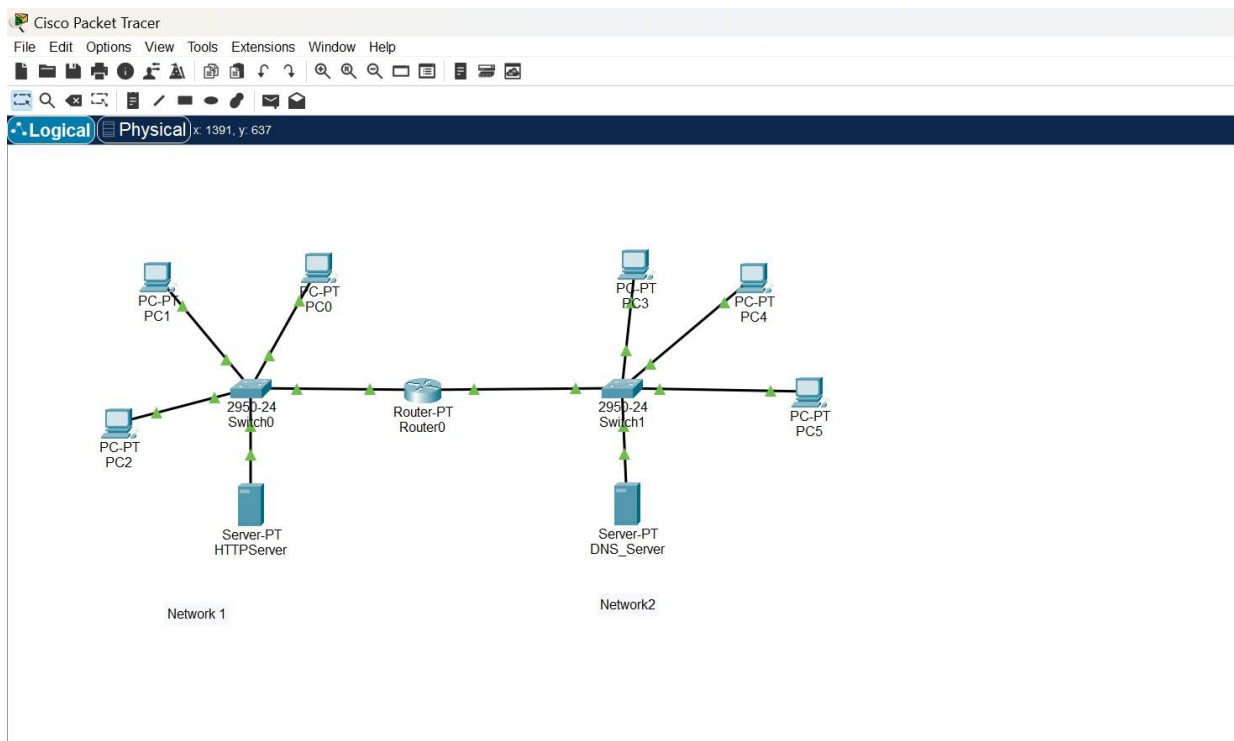


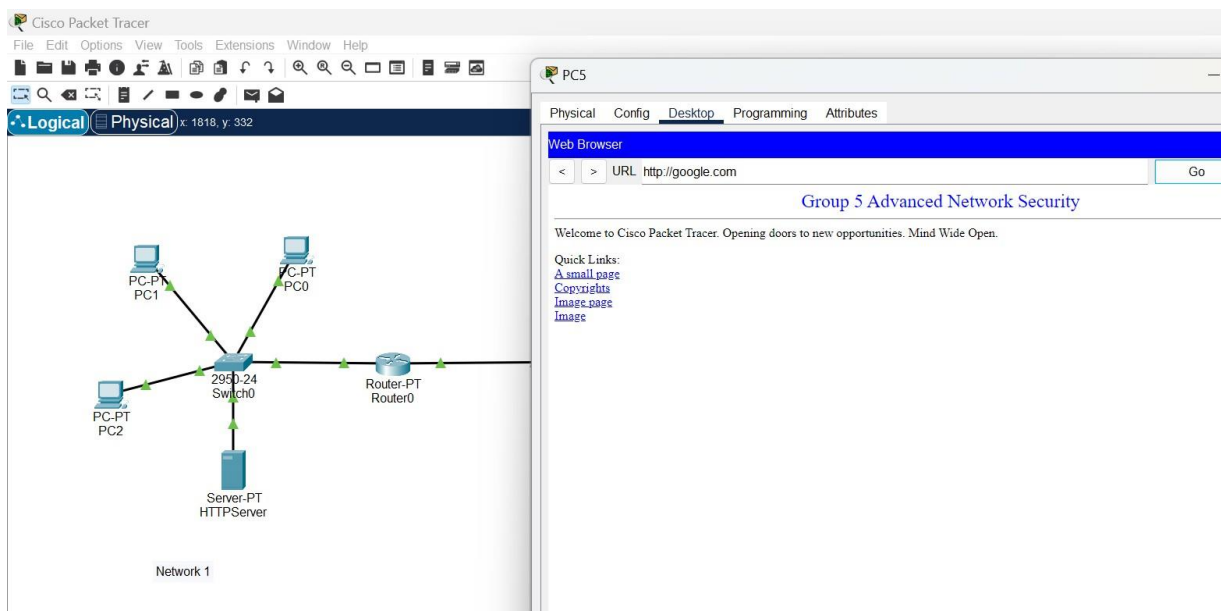
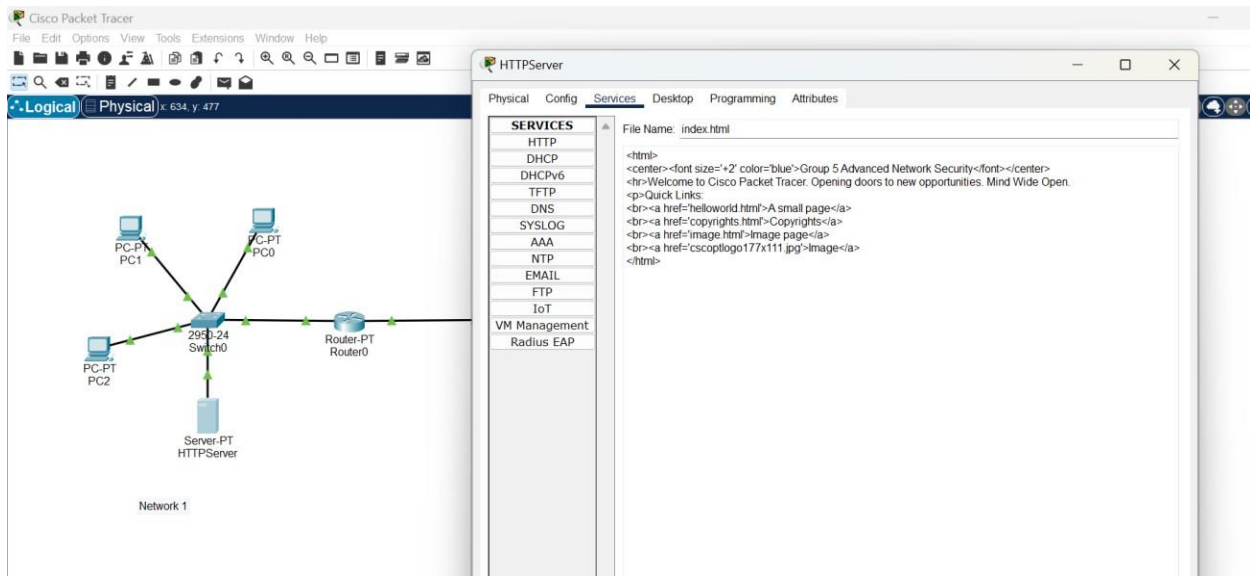
GROUP 5 ADVANCED NETWORK SECURITY:

SIMULATION & VERIFICATION OF HTTP & DNS SERVICES IN A SECURED ENVIRONMENT

BRIEF PROJECT DESCRIPTION:

We have developed our previous model topology by including new routers and servers for HTTP and DNS and configured all the pcs and servers and routers respectively. Also we have verified that DNS and HTTPS services are working and verified through the simulation we have done and screenshots below displays the topology diagram connections also configurations are done for all pcs by assigning ip addresses for all and results are shown with the message travelling images and verified image as well. Initially when requested from the pc it first goes to the http server and comes back to pc after been verified. All time taken travelling through switches and router path is shown in the last screenshot image as well. Also we have defined some firewall rules in command line interface through the access control list commands and configured below are the some of the screenshots showing the results of our topology. Our key accomplishments includes the implementation of HTTPS with the TLS encryption, DNS used for domain resolution, and access control lists ACLs to regulate traffic. We had faced Challenges in service configuration and efficient routing were addressed through systematic testing and troubleshooting.





Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 284, y 773

Network 1

Network 2

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
0.000	-	-
Visible 0.001	-	PC5

Reset Simulation ☒ Constant Delay Captured to: 0.001 s

Play Controls

Event List Filters - Visible Events
DNS, HTTP, HTTPS

Edit Filters Show All/None

Time: 00:28:57.412 PLAY CONTROLS

Scenario 0

New Delete

Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 699, y 770

Network 1

Network 2

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
0.000	-	-
0.001	-	PC5
0.002	-	Switch1
0.003	-	Router0
Visible 0.004	-	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.004 s

Play Controls

Event List Filters - Visible Events
DNS, HTTP, HTTPS

Edit Filters Show All/None

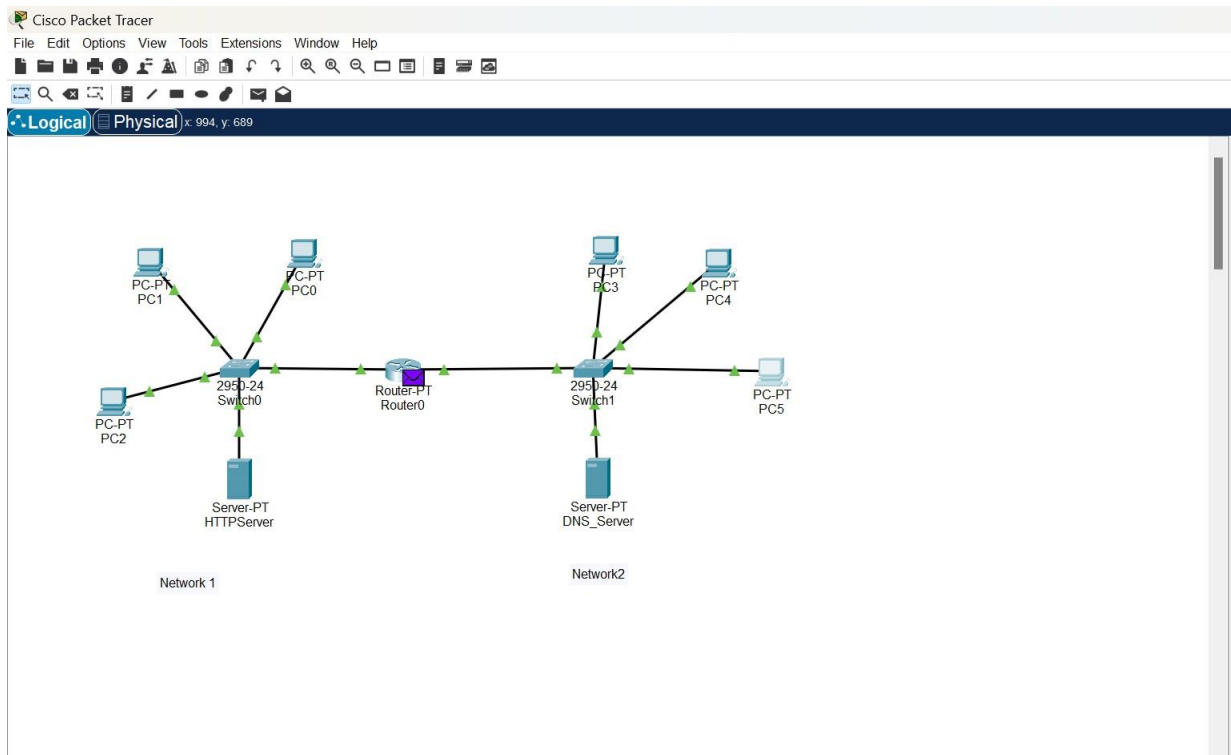
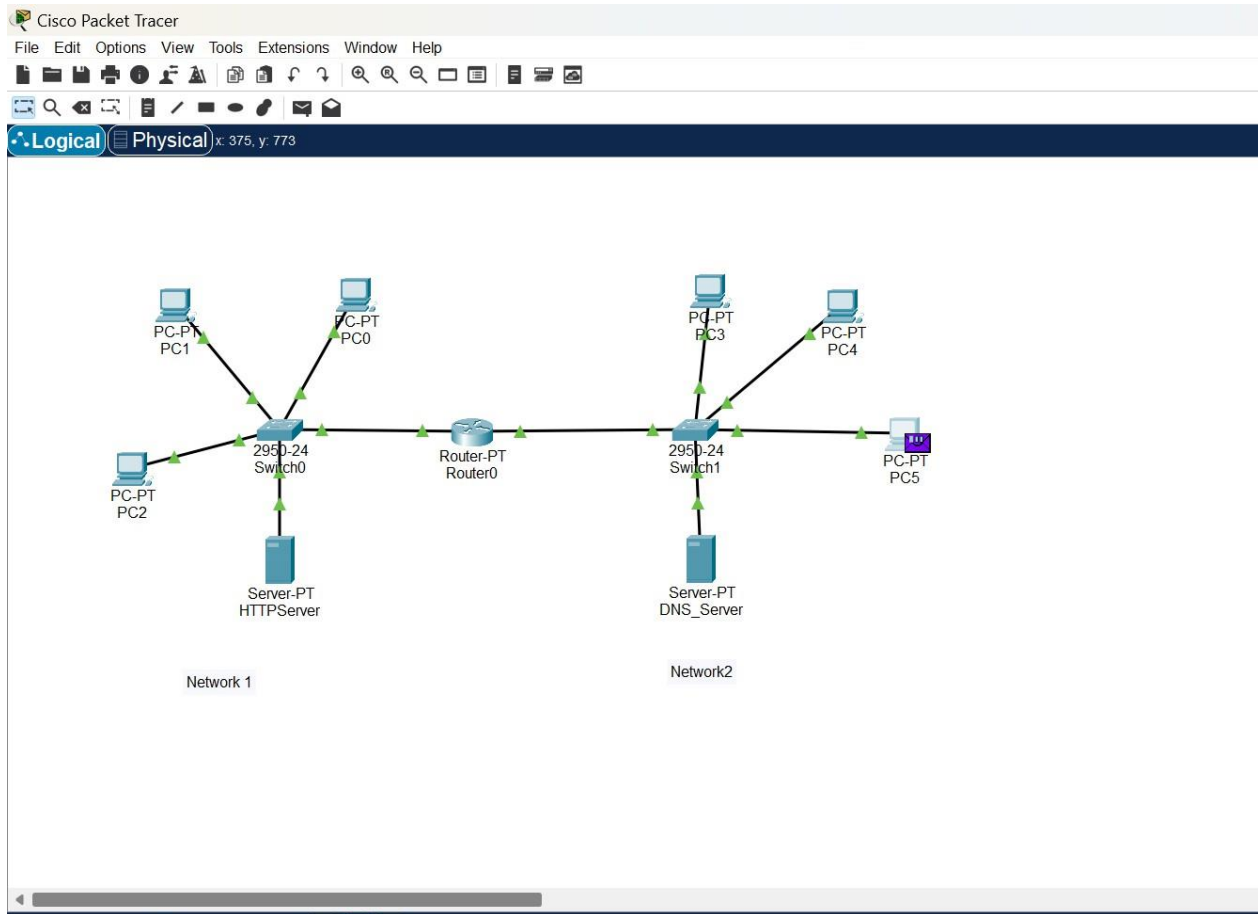
Time: 00:28:57.415 PLAY CONTROLS

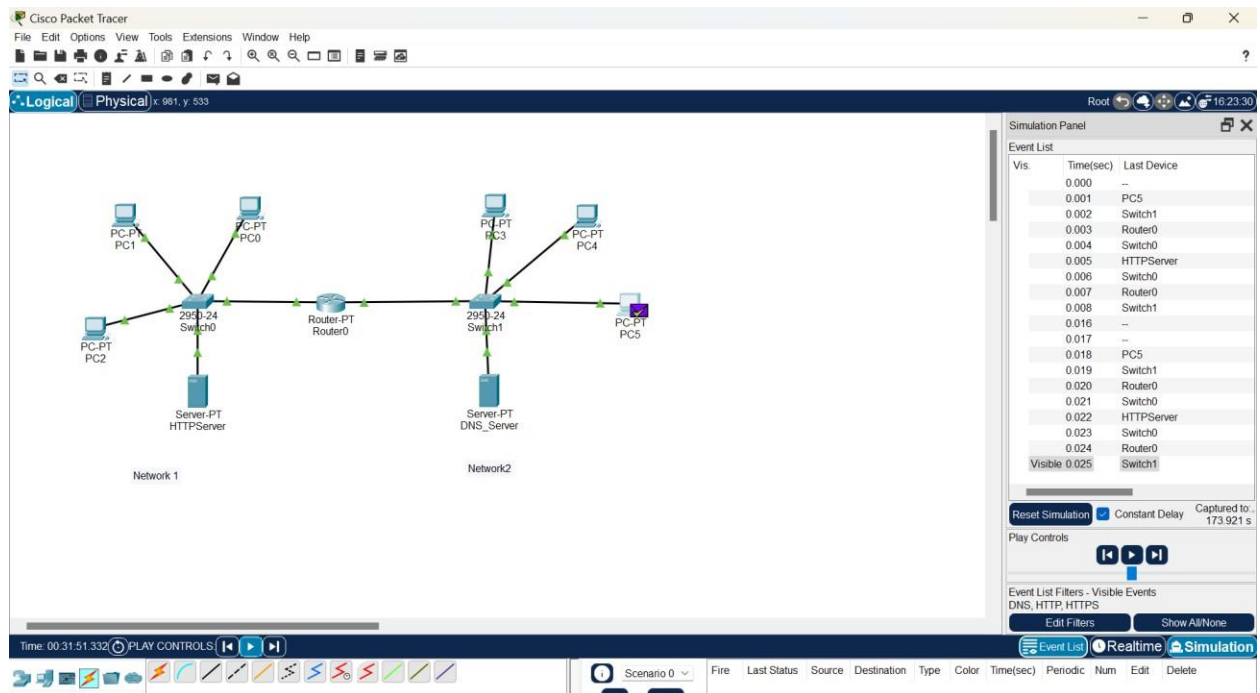
Scenario 0

New Delete

Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete





The above screenshot shows the message being verified and the simulation panel shows the path where the message has been travelled.