documentation

1. initialized a basic networking setup

PC (fast ethernet) - router fastgigabit0/0

server (fast ethernet) - router fastgigabit0/1

2. open router cli and type

```
enable
configure terminal

interface gigabitEthernet0/0
no shutdown
exit

interface gigabitEthernet0/1
no shutdown
exit
```

3. assigned ip addresses to each end device

4. performed communication between the 2
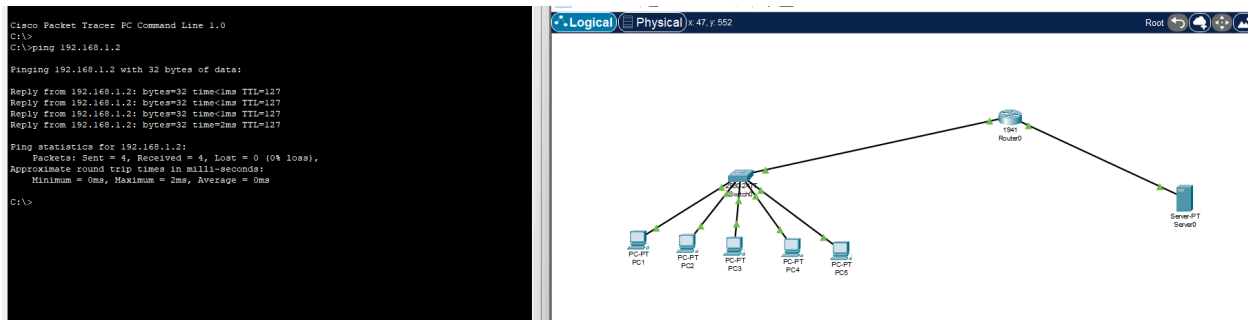
```
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time=1ms TTL=127
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

5. multiple end devices were connected to simulate an access network
   switch - aggregates the user traffic
   central router - msc
   successful end-to-end delivery


```
Cisco Packet Tracer PC Command Line 1.0
C:\>
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>
```

6. I enabled http service the server and opened the web browser of pc3 and searched up the dns
   `http://192.168.1.2` and this was the result
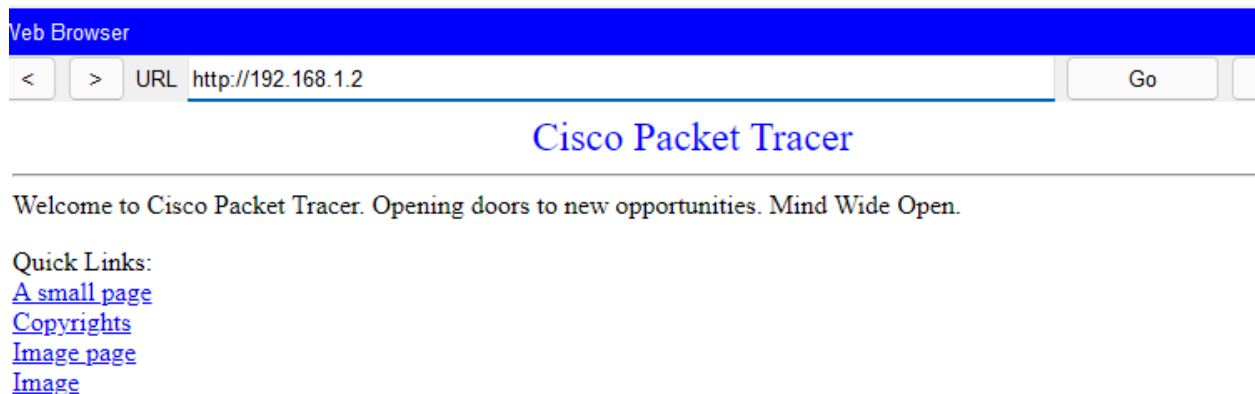
7. normal traffic is generated

   • very few PCs (1)

   • single http request

   • no congestion

   • no packet drops

   • low delay

checkpoint:
- pinging : network layer connectivity works
- http: transport layer and application layer connectivity works

8. started making the dataset

9. dataset structure

- scenario_id

- active_pcs

- traffic_type

- traffic_intensity

- avg_delay

- packet_loss

- throughput

- label

10. the dataset is created by observing packet behavior in simulation mode

Example- this is the simulation for the 1st scenario (pc3 - http - server)

- there hasn't been any packet loss since the data goes from pc3-router- server and server-router-pcs

- and due to the constant time we can also see that there is no delay