

Title:

Interpreting Ping and Traceroute Output.

Objective:

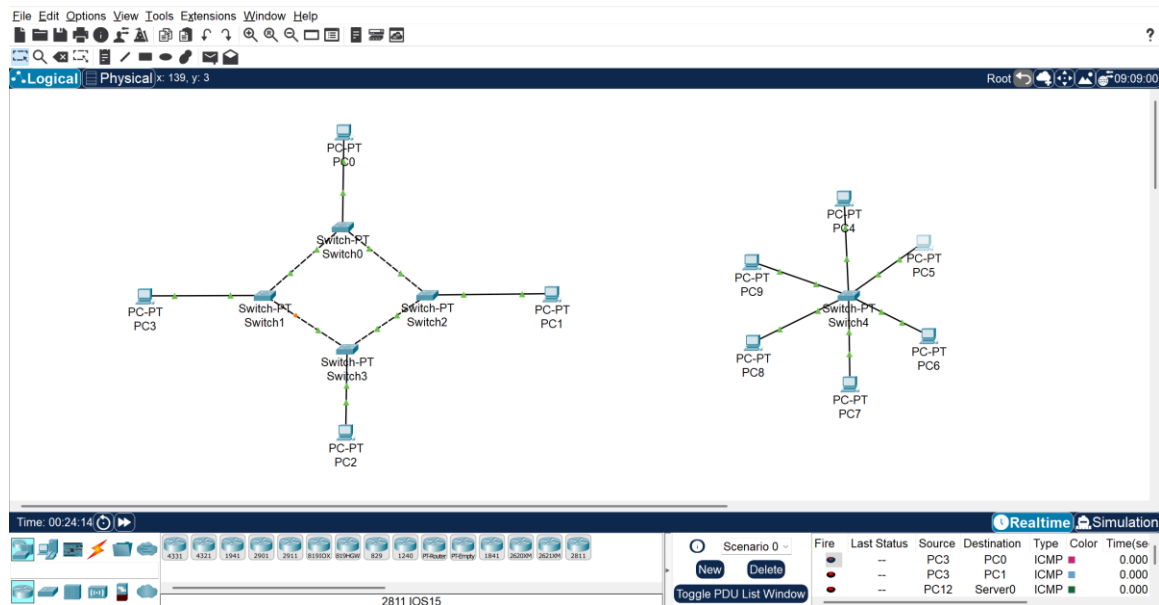
Distinguish the difference between successful and unsuccessful ping attempts.

Distinguish the difference between successful and unsuccessful traceroute attempts.

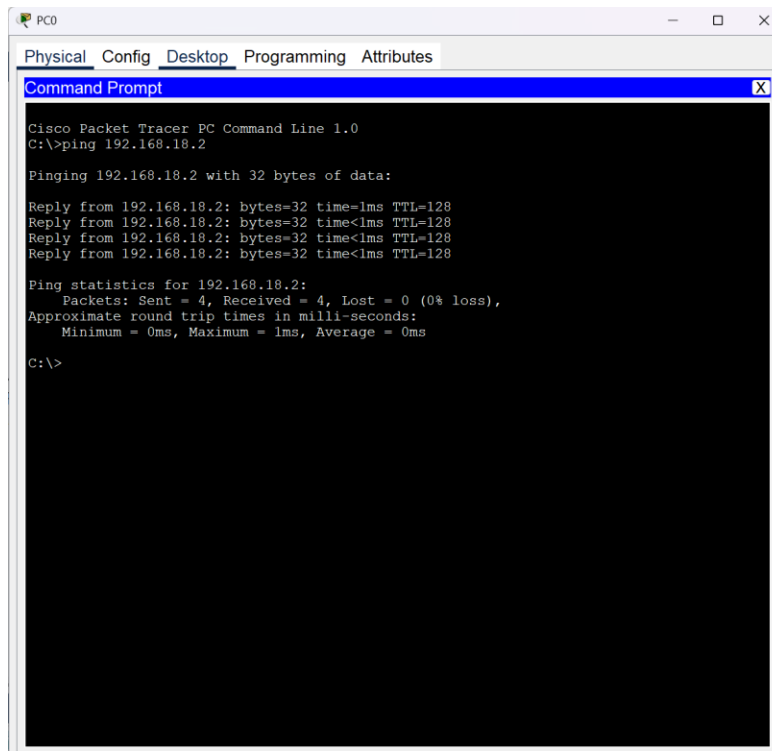
To explore Traceroute, which helps in tracing the path that packets take from the source to the destination. To analyze network performance, identify issues like latency or packet loss, and determine the network route.

To interpret the output from both Ping and Traceroute commands and understand the meaning of each part of the result.

Network Diagram Snippets:



Ring and Star Topology



PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.18.2

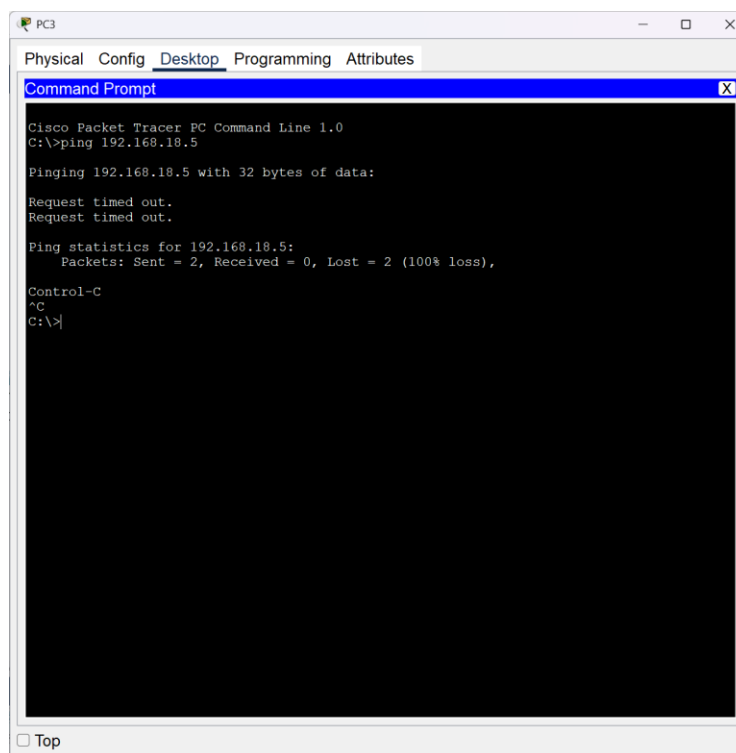
Pinging 192.168.18.2 with 32 bytes of data:

Reply from 192.168.18.2: bytes=32 time=1ms TTL=128
Reply from 192.168.18.2: bytes=32 time<1ms TTL=128
Reply from 192.168.18.2: bytes=32 time<1ms TTL=128
Reply from 192.168.18.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.18.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

Ping Success



PC3

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.18.5

Pinging 192.168.18.5 with 32 bytes of data:

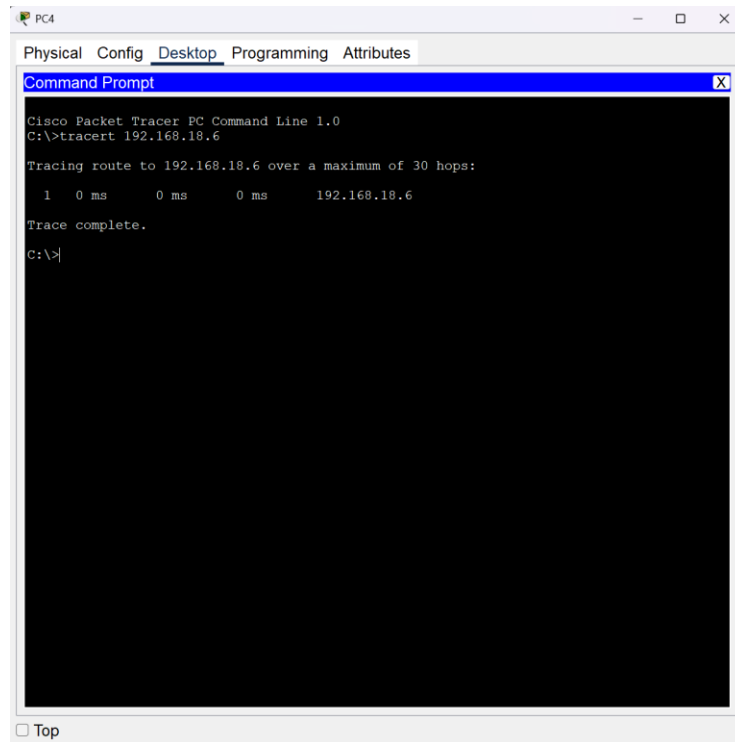
Request timed out.
Request timed out.

Ping statistics for 192.168.18.5:
    Packets: Sent = 2, Received = 0, Lost = 2 (100% loss),

Control-C
^C
C:\>
```

☐ Top

Ping Fail



PC4

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>tracert 192.168.18.6

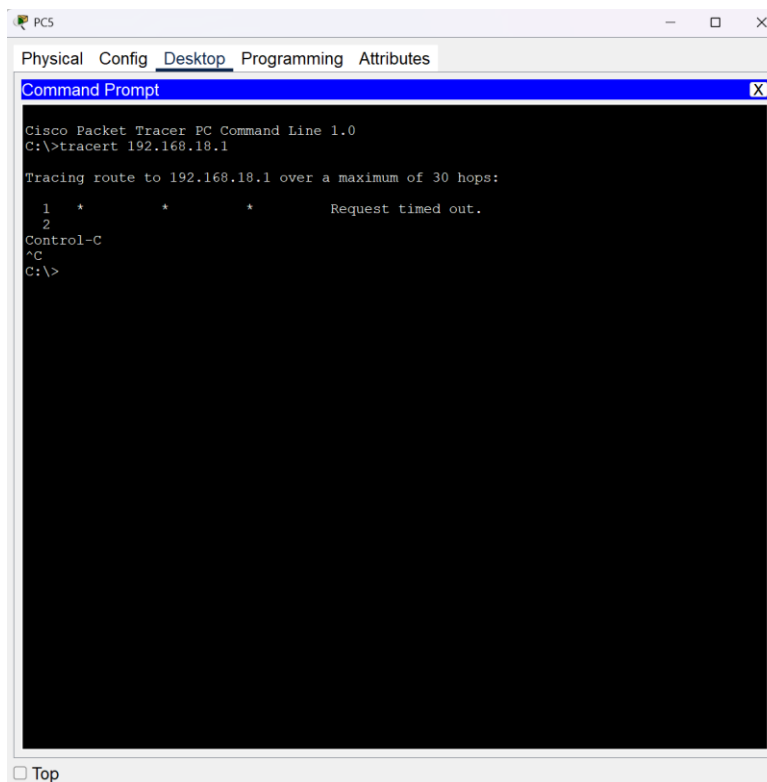
Tracing route to 192.168.18.6 over a maximum of 30 hops:

  1  0 ms    0 ms    0 ms    192.168.18.6

Trace complete.
C:\>
```

☐ Top

Traceout success



PCS

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>tracert 192.168.18.1

Tracing route to 192.168.18.1 over a maximum of 30 hops:

  1  *        *        *        Request timed out.
  2
Control-C
^C
C:\>
```

☐ Top

Traceout fail

Components Table:

Component	Quantity	Purpose
PC	10	End device for user access and connectivity testing.
Switch	5	The switch forwards HTTP packets between the client and server, ensuring efficient data transmission.

IP Address Assignment Table:

Device Name	Interface	IP Address	Subnet Mask
PC0	FastEthernet0	192.168.18.1	255.255.255.0
PC1	FastEthernet0	192.168.18.2	255.255.255.0
PC2	FastEthernet0	192.168.18.3	255.255.255.0
PC3	FastEthernet0	192.168.18.4	255.255.255.0

PC4	FastEthernet0	192.168.18.5	255.255.255.0
PC5	FastEthernet0	192.168.18.6	255.255.255.0
PC6	FastEthernet0	192.168.18.7	255.255.255.0
PC7	FastEthernet0	192.168.18.8	255.255.255.0
PC8	FastEthernet0	192.168.18.9	255.255.255.0
PC9	FastEthernet0	192.168.18.10	255.255.255.0

Conclusion:

This experiment demonstrated the use of **ping** and **traceroute** commands to test network connectivity and troubleshoot issues. By analysing successful and unsuccessful attempts, we observed how **ping** verifies end-to-end communication, while **traceroute** identifies the path taken by packets and detects potential network failures. The results highlighted differences in connectivity between ring and star topologies, emphasizing the importance of network diagnostics in maintaining efficient communication.