

Cisco Packet Tracer - C:\Users\MAHI\Cisco Packet Tracer 8.2.2\saves\star topology.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical x 1198, y 339

Root 00:01:39

```

graph TD
    Hub0[Hub0] --- PC0[PC0]
    Hub0 --- PC1[PC1]
    Hub0 --- PC2[PC2]
    Hub0 --- PC3[PC3]
    Hub0 --- PC4[PC4]
    Hub0 --- PC5[PC5]
  
```

Time: 00:00:00

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	--	PC0	PC1	ICMP		0.000	N	0	(edit)	(delete)
	--	PC5	PC2	ICMP		0.000	N	1	(edit)	(delete)
	--	PC4	PC5	ICMP		0.000	N	2	(edit)	(delete)
	--	PC5	PC3	ICMP		0.000	N	3	(edit)	(delete)

(Select a Device to Drag and Drop to the Workspace)

Search

ENG IN 14:47 04-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x:697, y:550

Root 04:28:30

Time: 00:08:49

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC2	PC4	ICMP		0.000	N	3	(edit)	(delete)	
Successful	PC0	PC4	ICMP		0.000	N	4	(edit)	(delete)	
Successful	PC1	PC4	ICMP		0.000	N	5	(edit)	(delete)	

Automatically Choose Connection Type

Search

ENG IN 12:35 04-10-2024

Cisco Packet Tracer - C:\Users\MAHI\Cisco Packet Tracer 8.2.2\saves\ring topology.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical x 2356, y 262 Root 03:01:00

Time: 00:05:56

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC1	ICMP	0.000	N	0	(edit)	(delete)		
Successful	PC0	PC2	ICMP	0.000	N	1	(edit)	(delete)		
Successful	PC1	PC3	ICMP	0.000	N	2	(edit)	(delete)		
Successful	PC1	PC2	ICMP	0.000	N	3	(edit)	(delete)		

Automatically Choose Connection Type

Search

ENG IN 13:03 04-10-2024

Cisco Packet Tracer - C:\Users\MAHI\Cisco Packet Tracer 8.2.2\saves\mesh topology.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical x 449, y 500

Root 03:44:00

Time: 00:07:22

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC2	ICMP	0.000	N	0	(edit)	(delete)		
Successful	PC0	PC1	ICMP	0.000	N	1	(edit)	(delete)		
Successful	PC0	PC3	ICMP	0.000	N	2	(edit)	(delete)		
Successful	PC1	PC3	ICMP	0.000	N	3	(edit)	(delete)		

Automatically Choose Connection Type

Search

ENG IN 13:11 04-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 737, y 272

Root 04:48:30

Time: 00:09:16

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC2	ICMP	0.000	N	0	(edit)	(delete)		
Successful	PC0	PC1	ICMP	0.000	N	1	(edit)	(delete)		
Successful	PC0	PC7	ICMP	0.000	N	2	(edit)	(delete)		
Successful	PC0	PC5	ICMP	0.000	N	3	(edit)	(delete)		

Automatically Choose Connection Type

Search

ENG IN 13:27 04-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 100%, y 608

Root 09:50:30

Time: 00:20:16

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC2	ICMP	0.000	N	0	(edit)	(delete)		
Successful	PC0	PC3	ICMP	0.000	N	1	(edit)	(delete)		
Successful	PC1	PC4	ICMP	0.000	N	2	(edit)	(delete)		
Successful	PC1	PC3	ICMP	0.000	N	3	(edit)	(delete)		

Automatically Choose Connection Type

Search

ENG IN 13:48 04-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1083, y 206

Root 00:53:00

2901 Router2

2950-24TT Switch0

2950-24TT Switch1

PC-PT PC4

PC-PT PC5

PC-PT PC6

PC-PT PC7

Time: 00:48:57

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC4	PC6	ICMP		0.000	N	0	(edit)	(delete)
Successful		PC5	PC7	ICMP		0.000	N	1	(edit)	(delete)

USD/CNY -0.31%

Search

ENG IN

22:34 18-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 427, y 115

Root 02:32:30

```

graph TD
    Hub[Hub-RT Hub] --- PC0[PC-PT PC0]
    Hub --- PC1[PC-PT PC1]
    Hub --- PC2[PC-PT PC2]
    Hub --- PC3[PC-PT PC3]
    Hub --- PC4[PC-PT PC4]
  
```

Time: 00:12:11

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Failed	PC1	PC3	ICMP	0.000	N	1	(edit)	(delete)		
Successful	PC0	PC4	ICMP	0.000	N	2	(edit)	(delete)		
Successful	PC1	PC3	ICMP	0.000	N	3	(edit)	(delete)		

Automatically Choose Connection Type

Search

ENG IN 21:23 18-10-2024



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1579, y 464

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/2, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/2, changed state to up

Switch>en
Switch#conf t
Enter configuration commands, one per line. End with
CTRL/Z.
Switch(config)#no cdp run
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#conf t
Enter configuration commands, one per line. End with
CTRL/Z.
Switch(config)#lldp run
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show lldp nei
Capability codes:
(R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS
Cable Device
(W) WLAN Access Point, (P) Repeater, (S) Station,
(O) Other
Device ID      Local Intf  Hold-time
Capability     Port ID
Switch         Fa0/1      120       B
Fa0/1
Router         Fa0/2      120       R
Gig0/0/0
Total entries displayed: 2
Switch#

```

Copy Paste

Time: 00:06:05

Scenario 0

New Delete

Toggle PDU List Window

Automatically Choose Connection Type

Realtime Simulation

ENG IN 21:44 18-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical 1:160, y:3589

Router0 Router1

Switch0 Switch1

PC-PT PC0 PC-PT PC1 PC-PT PC2 PC-PT PC3

Time: 00:13:35

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC0	PC1	ICMP	Green	0.000	N	0	(edit)	(delete)
Successful		PC2	PC3	ICMP	Pink	0.000	N	1	(edit)	(delete)

27°C Mostly cloudy 13:01 14-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical 1:160, y:3589

Router0 Router1

Switch0 Switch1

PC-PT PC0 PC-PT PC1 PC-PT PC2 PC-PT PC3

Time: 00:13:35

Realtime Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC0	PC1	ICMP	Green	0.000	N	0	(edit)	(delete)
Successful		PC2	PC3	ICMP	Pink	0.000	N	1	(edit)	(delete)

27°C Mostly cloudy 13:01 14-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 544, y 330

```

graph TD
    Router0[1941 Router0] --- Switch0[2950-24 Switch0]
    Switch0 --- PC0[PC-PT PC0]
    Switch0 --- Server0[Server-PT Server0]
  
```

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device

Reset Simulation ☒ Constant Delay Captured to: 150.016 s

Play Controls

Event List Filters - Visible Events

TCP

Edit Filters Show All/None

Event List Realtime Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	Server0	ICMP	Green	0.000	N	0	(edit)	(delete)
	Successful	Router0	Server0	ICMP	Red	0.000	N	1	(edit)	(delete)
	Failed	Switch0	Server0	ICMP	Pink	0.000	N	2	(edit)	(delete)
	Successful	Router0	PC0	ICMP	Green	0.000	N	3	(edit)	(delete)

Scenario 0

New Delete

Toggle PDU List Window

Automatically Choose Connection Type

Windows taskbar: 27°C Mostly cloudy 13:20 14-10-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1263 y 137

Root

```

graph TD
    Switch[2503 Switch0] --- Server0[Server-PT Server0]
    Switch --- PC0[PC-PT PC0]
    Switch --- PC1[PC-PT PC1]
    Switch --- PC2[PC-PT PC2]
    Switch --- PC3[PC-PT PC3]
  
```

Time: 00:11:27

Realtime Simulation

Scenario 0

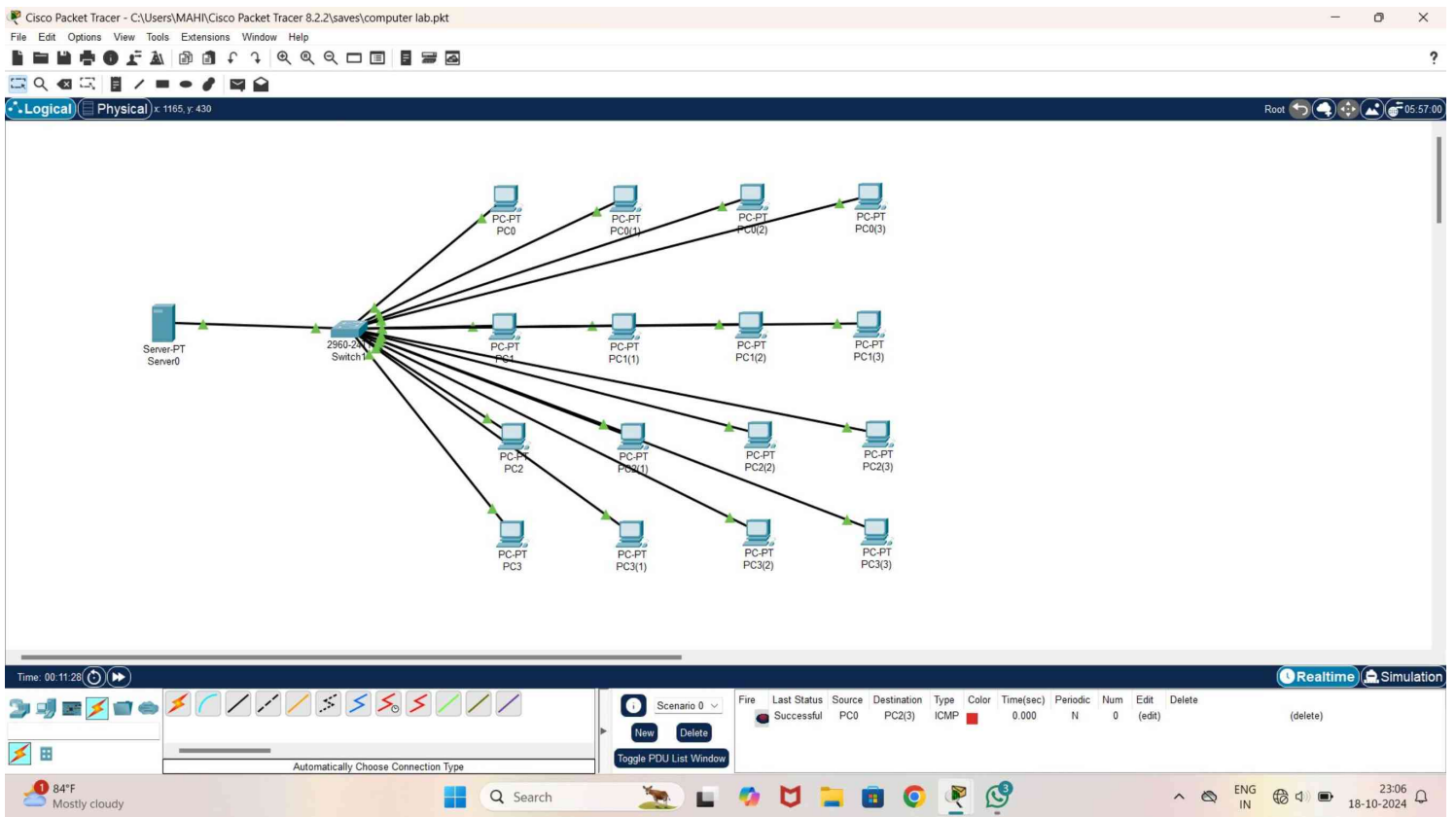
New Delete

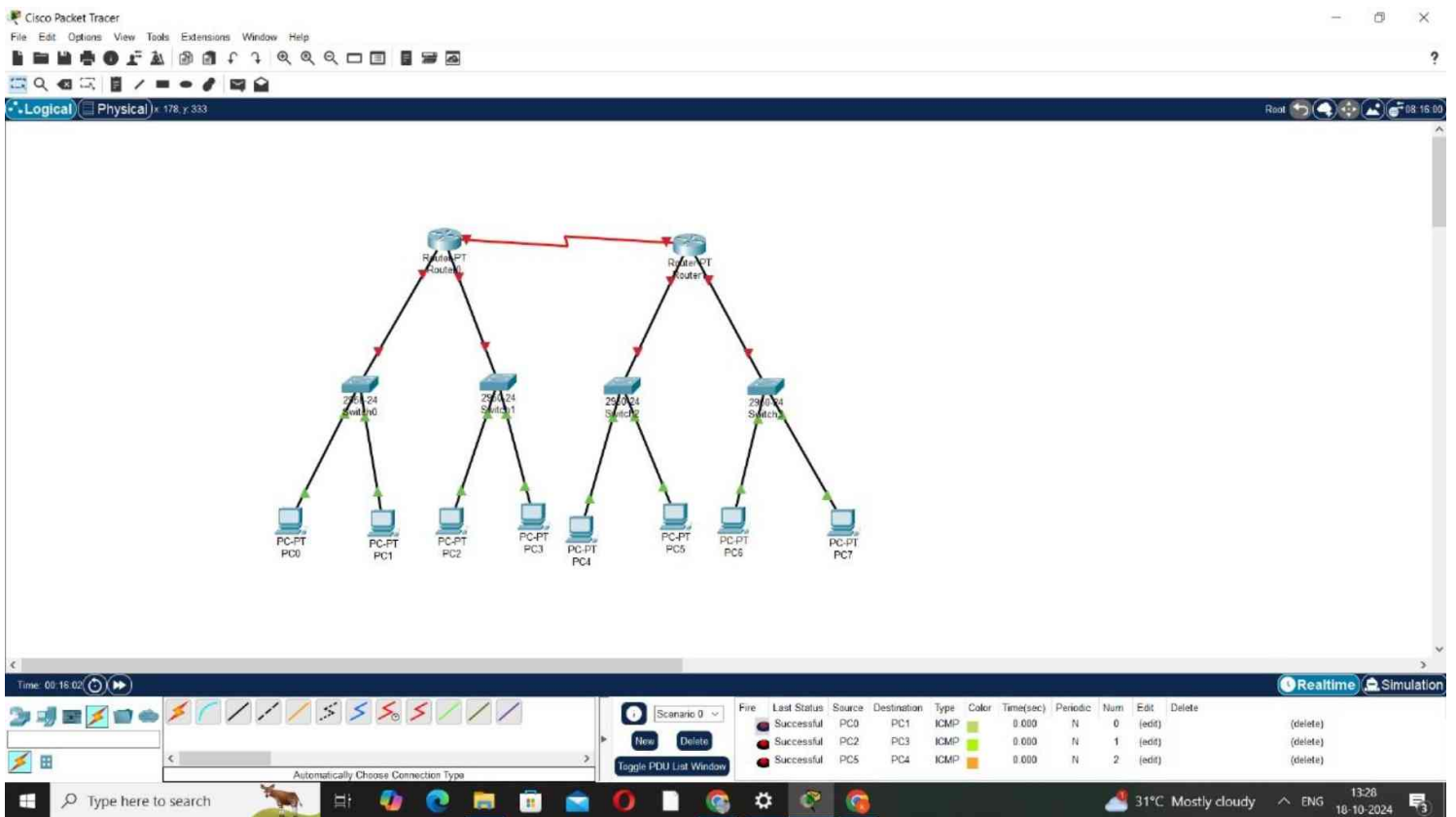
Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC1	ICMP	0.000	N	0	(edit)	(delete)		
Successful	PC2	PC3	ICMP	0.000	N	1	(edit)	(delete)		
Successful	Server0	PC0	ICMP	0.000	N	2	(edit)	(delete)		

Lightning nearby

ENG 12:37 18-10-2024





Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1476, y 560

Root 04:03:00

Time: 00:07:57

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	Successful	Laptop0	Laptop1	ICMP	Blue	0.000	N	0	(edit)	(delete)
Successful	Successful	Laptop1	Laptop0	ICMP	Brown	0.000	N	1	(edit)	(delete)

Cooper Straight-Through

31°C Mostly cloudy 13:37 18-10-2024



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 983, y 563 Root 09:39:30

```

graph TD
    Router0[2411 Router0] --- Switch[2950-XTT Switch]
    Switch --- PC0[PC-PT PC0]
    Switch --- PC1[PC-PT PC1]
  
```

Time 00:19:10

Realtime Simulation

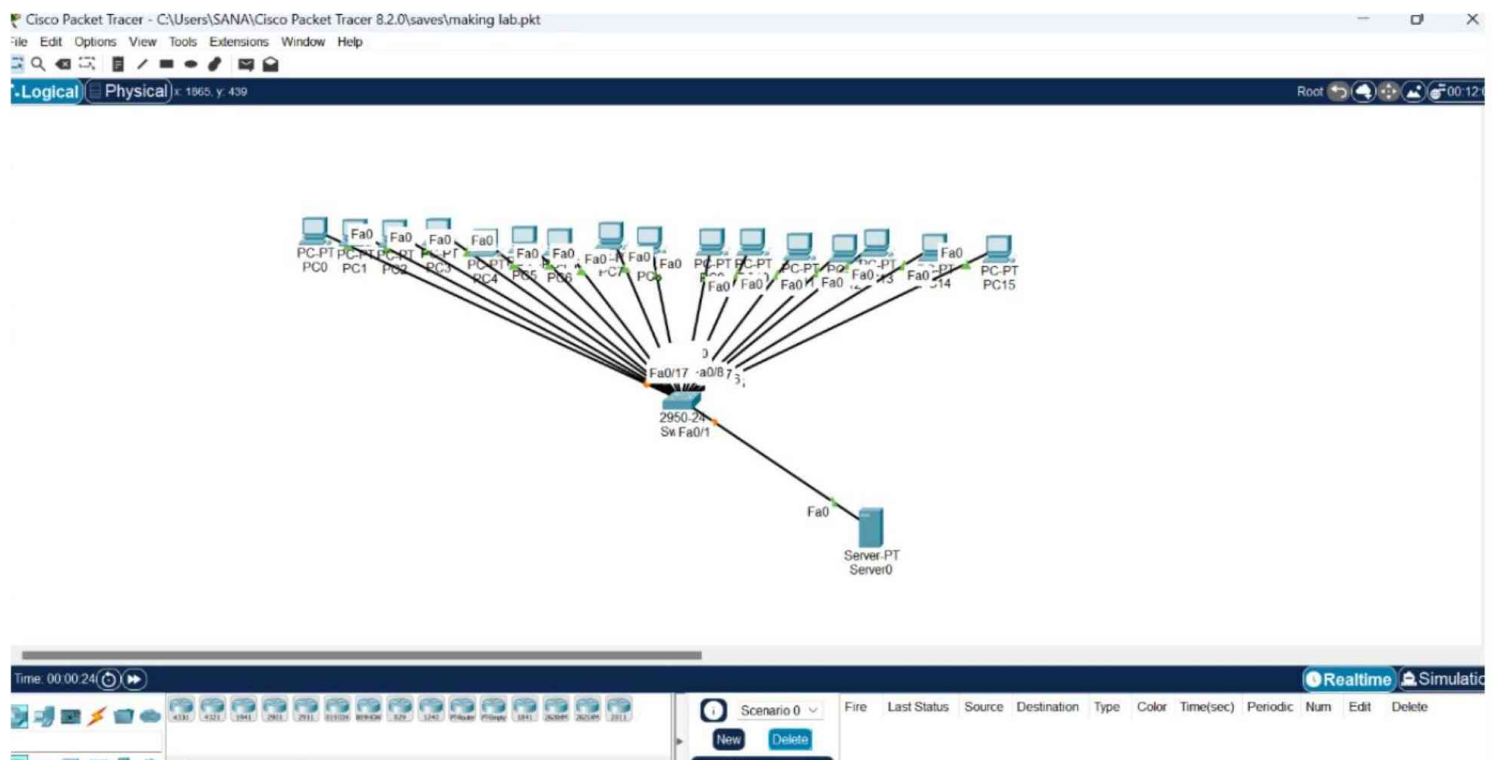
Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Failed	Failed	PC0	PC1	ICMP		0.000	N	0	(edit)	(delete)
Failed	Failed	PC1	PC0	ICMP		0.000	N	1	(edit)	(delete)
Failed	Failed	PC0	PC1	ICMP		0.000	N	2	(edit)	(delete)
Failed	Failed	PC1	PC0	ICMP		0.000	N	3	(edit)	(delete)

14:23 17-10-2024



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical

Physical

Root 06:53:00

```
graph TD; Switch0[Switch0] --- host1[PC-PT host1]; Switch0 --- Printer0[Printer-PT Printer0]; Switch0 --- PC1[PC-PT PC1]; Switch0 --- PC2[PC-PT PC2];
```

Time: 01:26:09

Realtime Simulation

Copper Straight-Through

ULB

host1

Physical Config Desktop Programming Attributes

Command Prompt

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

ping 172.16.0.2

Pinging 172.16.0.2 with 32 bytes of data:

Reply from 172.16.0.2: bytes=32 time<1ms TTL=128
Reply from 172.16.0.2: bytes=32 time<1ms TTL=128
Reply from 172.16.0.2: bytes=32 time<1ms TTL=128
Reply from 172.16.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 172.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 1ms

C:\>ping 172.16.0.1

Pinging 172.16.0.1 with 32 bytes of data:

Reply from 172.16.0.1: bytes=32 time=3ms TTL=128
Reply from 172.16.0.1: bytes=32 time=3ms TTL=128
Reply from 172.16.0.1: bytes=32 time=3ms TTL=128
Reply from 172.16.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 172.16.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 6ms, Average = 3ms

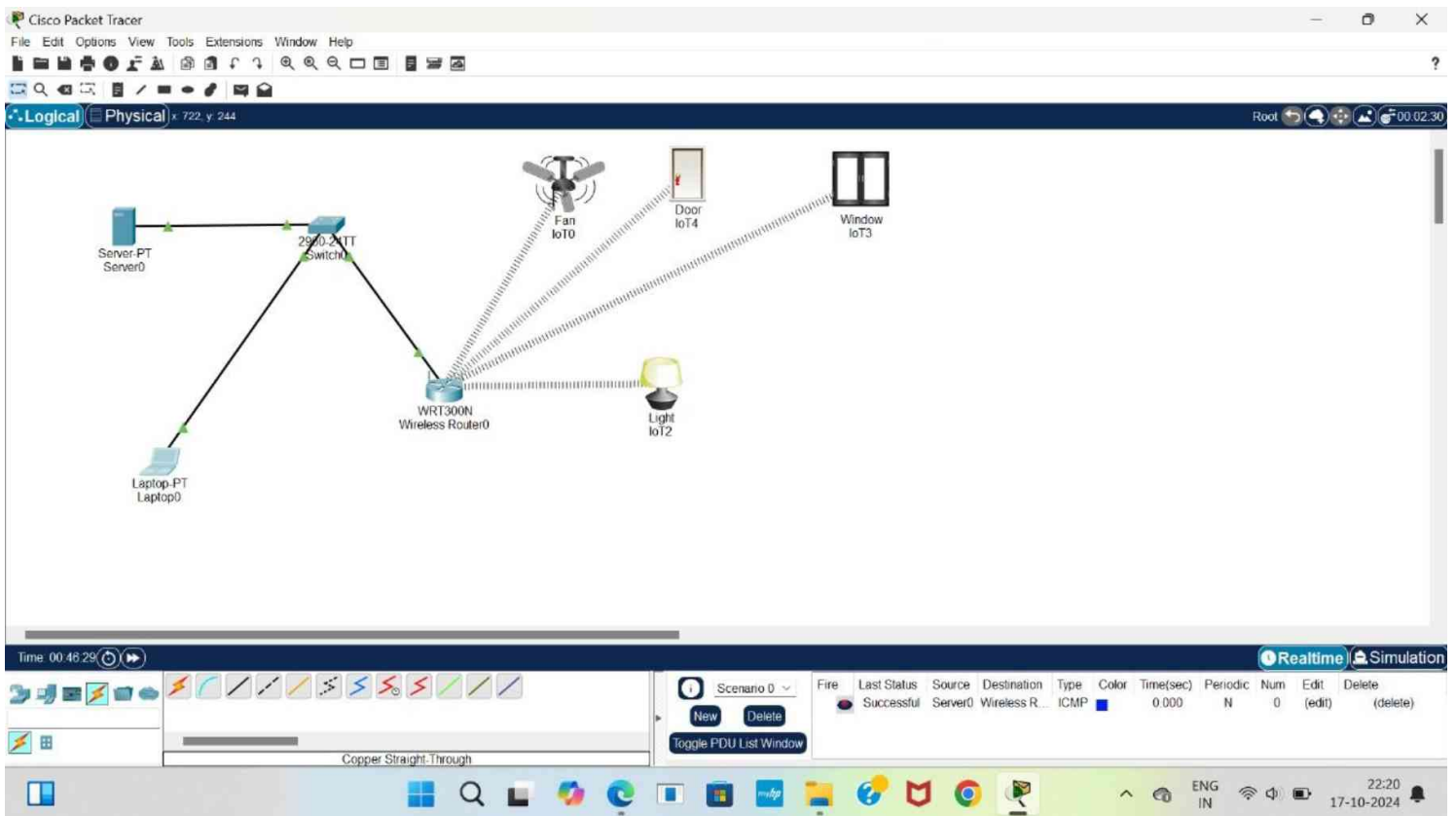
C:\>ping 172.16.0.3

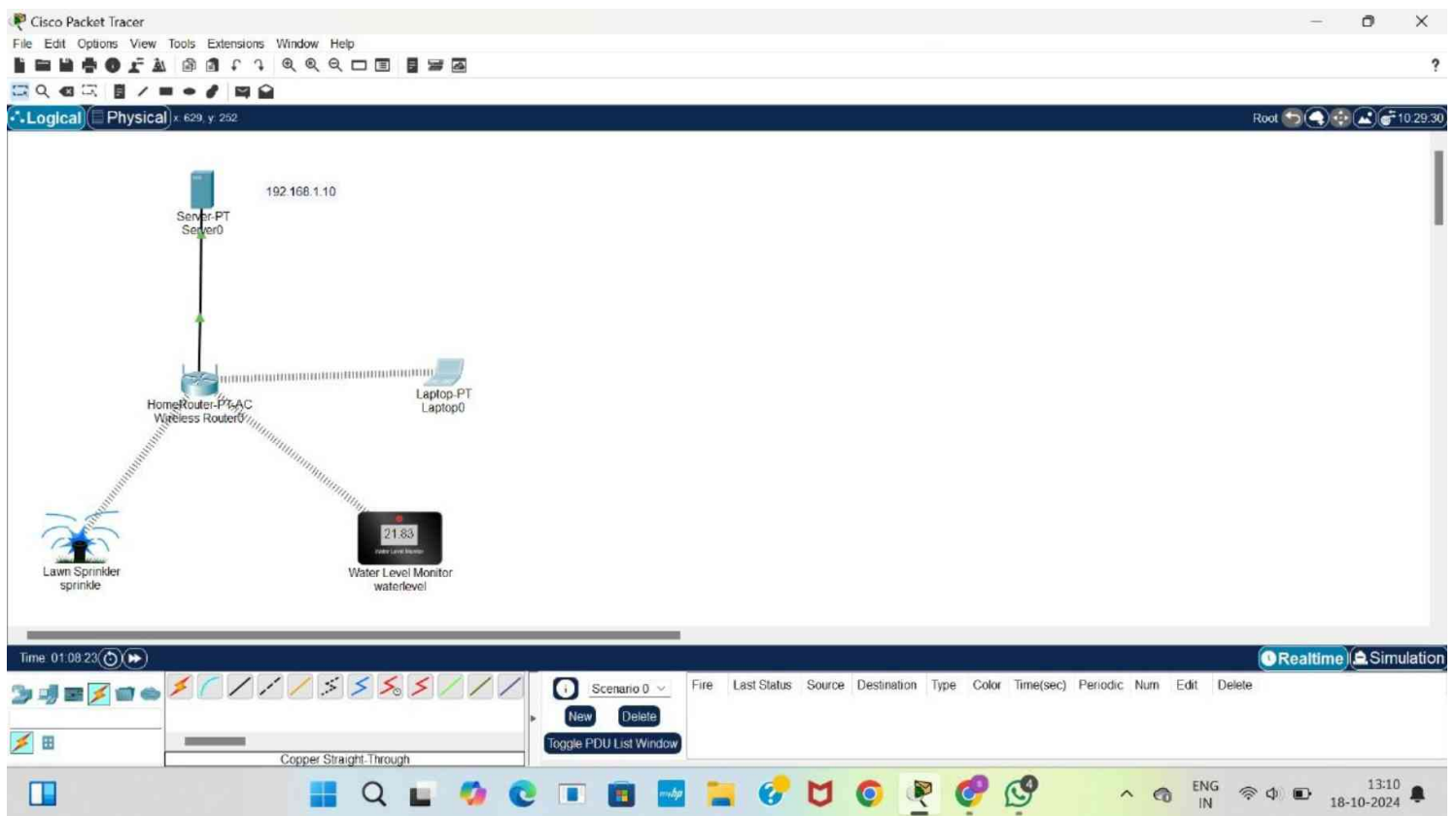
Pinging 172.16.0.3 with 32 bytes of data:

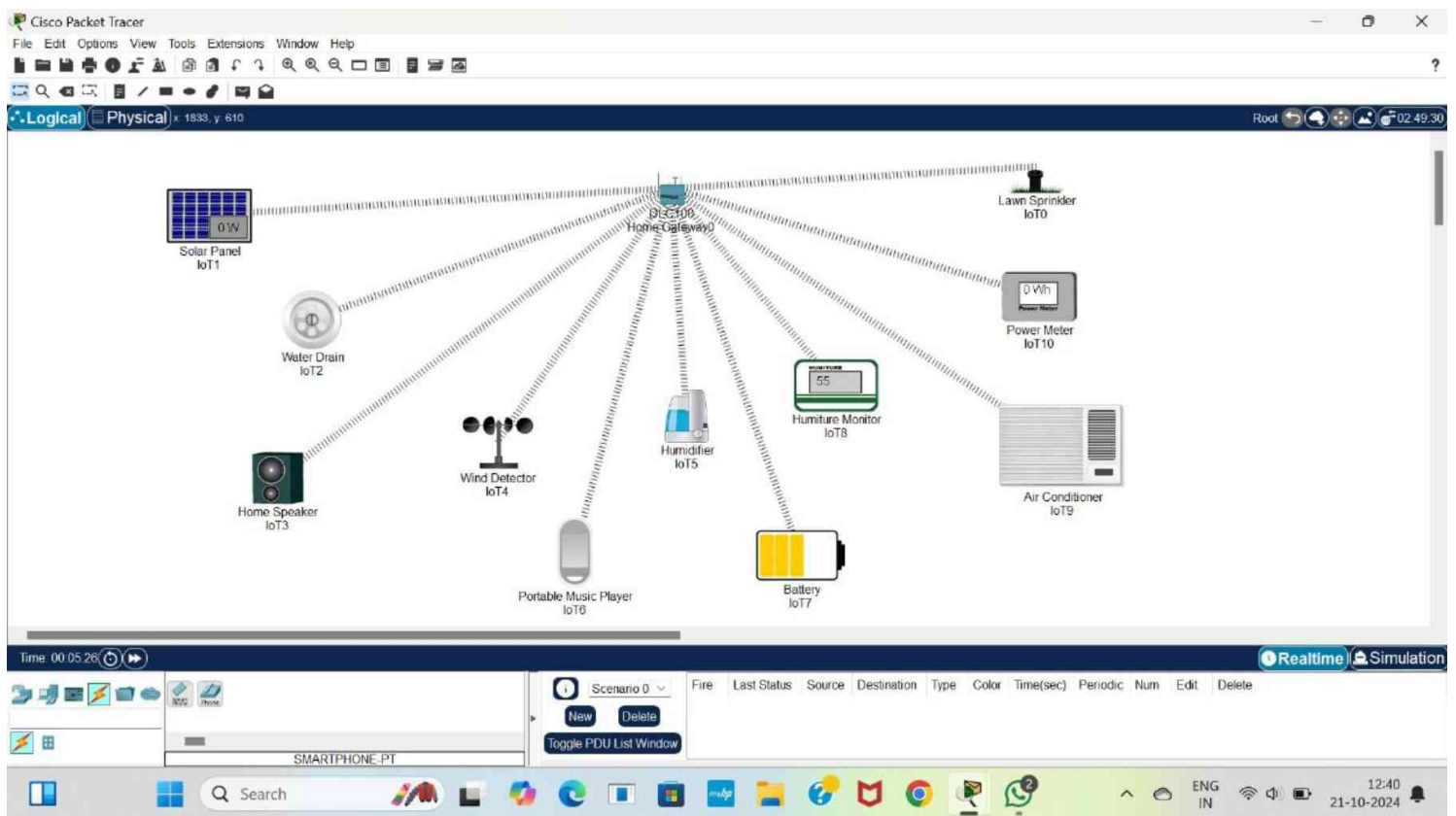
Reply from 172.16.0.3: bytes=32 time<1ms TTL=128
Reply from 172.16.0.3: bytes=32 time<1ms TTL=128
Reply from 172.16.0.3: bytes=32 time<1ms TTL=128
Reply from 172.16.0.3: bytes=32 time<1ms TTL=128

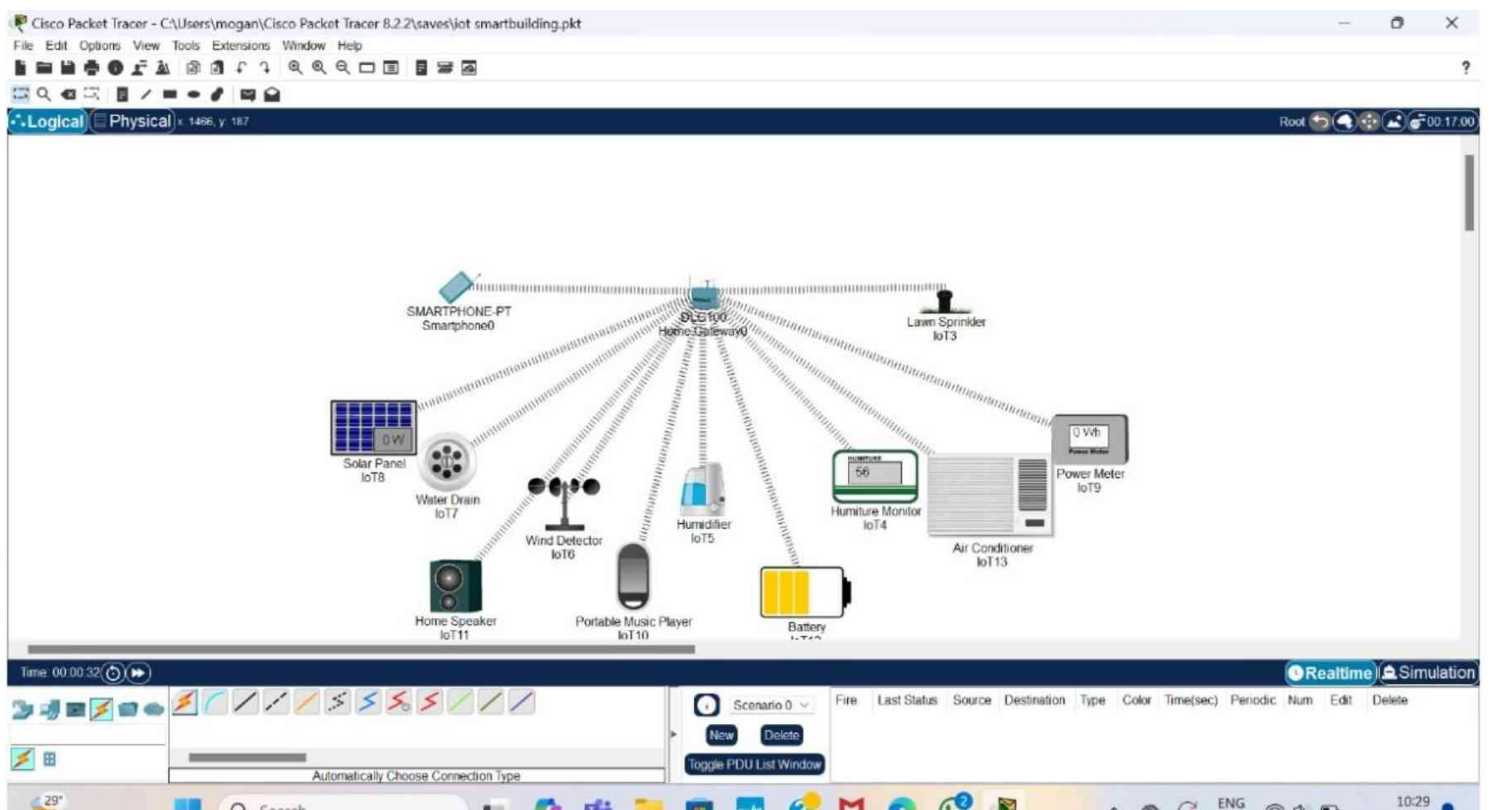
Ping statistics for 172.16.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

Top
```









Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp

No.	Time	Source	Destination	Protocol	Length	Info
245	321.626686	2603:1040:a06:6::1	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 60080 [ACK] Seq=170 Ack=100 Win=7241 Len=0 SLE=99 SRE=100
8	12.031037	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
20	57.884081	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
54	103.355087	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
71	149.668441	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
78	195.318720	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
90	240.831711	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
221	286.999835	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
352	332.210500	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
553	378.512829	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
605	424.291203	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
724	469.748937	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
616	425.538188	2620:1ec:21::16	2409:40f4:2a:bb3d:4...	TCP	86	443 → 53378 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1300 WS=256 SACK_PERM
621	425.995706	2620:1ec:21::16	2409:40f4:2a:bb3d:4...	TCP	74	443 → 53378 [ACK] Seq=1 Ack=1828 Win=4195072 Len=0

Frame 54: 86 bytes on wire (688 bits), 86 bytes captured (688 bits) on interface \Device\NPF...

Ethernet II, Src: 7a:95:2a:78:b3:57 (7a:95:2a:78:b3:57), Dst: CloudNetwork\_7e:5a:bf...

Internet Protocol Version 6, Src: 2603:1046:c06:8a0::2, Dst: 2409:40f4:2a:bb3d:4e8::...

Transmission Control Protocol, Src Port: 443, Dst Port: 53310, Seq: 1, Ack: 2, Len: 0

Source Port: 443  
Destination Port: 53310  
[Stream index: 1]  
[Stream Packet Number: 6]  
[Conversation completeness: Incomplete (12)]  
[TCP Segment Len: 0]  
Sequence Number: 1 (relative sequence number)  
Sequence Number (raw): 359222437  
[Next Sequence Number: 1 (relative sequence number)]  
Acknowledgment Number: 2 (relative ack number)

0000 cc 5e f8 7e 5a bf 7a 95 2a 78 b3 57 86 dd 60 00 ...Z z \*X-W...  
0010 c2 ca 00 20 06 6e 26 03 10 46 0c 06 08 a0 00 00 ...n& F...  
0020 00 00 00 00 00 02 24 09 40 f4 00 2a bb 3d 04 e8 ...\$ @...  
0030 7e 56 37 0a 4a 14 01 bb 00 3e 15 69 4c a5 9c 6d ~V7J...>il..m  
0040 d4 53 80 10 3f fe 43 c1 00 00 01 01 05 0a 9c 6d S...?C...m  
0050 d4 52 9c 6d d4 53 R.m+S

Transmission Control Protocol (tcp), 32 bytes

Packets: 831 · Displayed: 752 (90.5%)

Profile: Default

22:41  
22-10-2024



Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp

No.	Time	Source	Destination	Protocol	Length	Info
245	321.626686	2603:1040:a06:6::1	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 60080 [ACK] Seq=170 Ack=100 Win=7241 Len=0 SLE=99 SRE=100
8	12.031037	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
20	57.884081	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
54	103.355087	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
71	149.668441	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
78	195.318720	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
90	240.831711	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
221	286.999835	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
352	332.210500	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
553	378.512829	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
605	424.291203	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
724	469.748937	2603:1046:c06:8a0::2	2409:40f4:2a:bb3d:4...	TCP	86	[TCP Keep-Alive ACK] 443 → 53310 [ACK] Seq=1 Ack=2 Win=16382 Len=0 SLE=1 SRE=2
616	425.538188	2620:1ec:21::16	2409:40f4:2a:bb3d:4...	TCP	86	443 → 53378 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1300 WS=256 SACK_PERM
621	425.995706	2620:1ec:21::16	2409:40f4:2a:bb3d:4...	TCP	74	443 → 53378 [ACK] Seq=1 Ack=1828 Win=4195072 Len=0

> Frame 54: 86 bytes on wire (688 bits), 86 bytes captured (688 bits) on interface \Device\NPF...  
> Ethernet II, Src: 7a:95:2a:78:b3:57 (7a:95:2a:78:b3:57), Dst: CloudNetwork\_7e:5a:bf...  
> Internet Protocol Version 6, Src: 2603:1046:c06:8a0::2, Dst: 2409:40f4:2a:bb3d:4e8:...  
✓ Transmission Control Protocol, Src Port: 443, Dst Port: 53310, Seq: 1, Ack: 2, Len: 0  
Source Port: 443  
Destination Port: 53310  
[Stream index: 1]  
[Stream Packet Number: 6]  
> [Conversation completeness: Incomplete (12)]  
[TCP Segment Len: 0]  
Sequence Number: 1 (relative sequence number)  
Sequence Number (raw): 359222437  
[Next Sequence Number: 1 (relative sequence number)]  
Acknowledgment Number: 2 (relative ack number)

0000 cc 5e f8 7e 5a bf 7a 95 2a 78 b3 57 86 dd 60 00 ...Z z \*X-W...  
0010 c2 ca 00 20 06 6e 26 03 10 46 0c 06 08 a0 00 00 ...n& F...  
0020 00 00 00 00 00 02 24 09 40 f4 00 2a bb 3d 04 e8 ...\$ @...  
0030 7e 56 37 0a 4a 14 01 bb 00 3e 15 69 4c a5 9c 6d ~V7J...>il..m  
0040 d4 53 80 10 3f fe 43 c1 00 00 01 01 05 0a 9c 6d S...?C...m  
0050 d4 52 9c 6d d4 53 R..m+S

Transmission Control Protocol (tcp), 32 bytes Packets: 831 · Displayed: 752 (90.5%) Profile: Default

22:41 22-10-2024

207 KB

Wi-Fi

File Edit View Go

tcp.stream eq 32

No.	Time
1049	23.252767
1053	23.499914
1056	23.500376
1084	24.736442
1085	24.777062

> Frame 1084: 148 bytes

> Ethernet II, Src: [redacted]

> Internet Protocol Version 4, Src: [redacted], Dst: [redacted]

> Transmission Control Protocol, Src Port: [redacted], Dst Port: [redacted], Seq: [redacted], Win: [redacted], Len: [redacted], Ecn: [redacted], Flags: [redacted]

> Simple Mail Transfer Protocol

0000 e8 fb 1c 49 57

0010 43 3f 00 5e 06

0020 00 00 00 00 00

0030 ae 84 7f 7d 4f

0040 5c 48 50 18 01

0050 74 70 2e 67 6d

0060 54 50 20 39 38

0070 2d 32 65 30 35

0080 33 30 36 33 30

Wireshark · Follow TCP Stream (tcp.stream eq 32) · Wi-Fi

```
220 smtp.gmail.com ESMTP 98e67ed59e1d1-2e058a090ccsm1430630a91.0 - gsmtphello
502-5.5.1 Unrecognized command. For more information, go to
502 5.5.1 https://support.google.com/a/answer/3221692
98e67ed59e1d1-2e058a090ccsm1430630a91.0 - gsmtphello
501-5.5.4 Empty HELO/EHLO argument not allowed, closing connection.
501 5.5.4 https://support.google.com/mail/?p=helo
98e67ed59e1d1-2e058a090ccsm1430630a91.0 - gsmtphello
```

10 client pkts, 3 server pkts, 4 turns.

Entire conversation (421 bytes) Show data as ASCII Stream 32

Find: Find Next

29°

10:12 AM 25-09-2024

Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/>

No.	Time	Source	Destination	Protocol	Length	Info
383	5.2...	::	ff02::1:f...	ICMPv6	78	Neighbor Solicitation for fe80::d686:cdf3:656a:f1b4
14...	19...	::	ff02::1:f...	ICMPv6	78	Neighbor Solicitation for fe80::d686:cdf3:656a:f1b4
249	3.3...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 7e:83:fe:59:18:9c
384	5.2...	fe80::...	ff02::2	ICMPv6	62	Router Solicitation
442	6.1...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 58:ce:2a:ff:2b:0c
551	7.3...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 58:ce:2a:ff:2b:0c
606	8.4...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from bc:5e:33:79:05:51
11...	15...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from bc:5e:33:79:05:61
12...	17...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 2a:3d:7e:9b:5e:21
14...	19...	fe80::...	ff02::2	ICMPv6	62	Router Solicitation
15...	20...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 58:ce:2a:ff:2b:0c
16...	21...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 58:ce:2a:ff:2b:0c
19...	24...	fe80::...	ff02::2	ICMPv6	70	Router Solicitation from 4a:05:e5:db:b8:63

> Frame 442: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on interface \Dev  
 > Ethernet II, Src: Intel\_ff:2b:0c (58:ce:2a:ff:2b:0c), Dst: IPv6mcast\_02 (33:33:00:00:00:02)  
 > Internet Protocol Version 6, Src: fe80::d686:cdf3:656a:f1b4, Dst: ff02::2  
 > Internet Control Message Protocol v6

```

0000 33 33 00 00 00 02 58 ce 2a ff 2b 0c 86 dd 60 00 33 -X- *+...
0010 00 00 00 10 3a ff fe 80 00 00 00 00 00 00 d6 86 .....
0020 cd f3 65 6a f1 b4 ff 02 00 00 00 00 00 00 00 00 ..ej.....
0030 00 00 00 00 00 02 85 00 d1 ba 00 00 00 00 01 01 .....
0040 58 ce 2a ff 2b 0c X-...
  
```

Internet Control Message Protocol v6 (icmpv6), 16 bytes

Packets: 6898

Profile: Default

13:23  
25-10-2024

Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

arp

No.	Time	Source	Destination	Protocol	Length	Info
5	3.820292	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
25	67.096033	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
50	86.275976	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
68	144.463218	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
132	249.327724	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
200	276.443927	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
251	326.181786	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
559	386.707815	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
597	415.500432	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
675	441.491995	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
821	504.892459	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
841	551.878027	7a:95:2a:78:b3:57	CloudNetwork_7e:5a:...	ARP	42	Who has 192.168.78.185? Tell 192.168.78.8
6	3.820332	CloudNetwork_7e:5a:...	7a:95:2a:78:b3:57	ARP	42	192.168.78.185 is at cc:5e:f8:7e:5a:bf
26	67.096059	CloudNetwork_7e:5a:...	7a:95:2a:78:b3:57	ARP	42	192.168.78.185 is at cc:5e:f8:7e:5a:bf

> Frame 132: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface \Device\NPF...

> Ethernet II, Src: 7a:95:2a:78:b3:57 (7a:95:2a:78:b3:57), Dst: CloudNetwork\_7e:5a:bf (c...

> Address Resolution Protocol (request)

0000 cc 5e f8 7e 5a bf 7a 95 2a 78 b3 57 08 06 00 01 ..^..Z.z.\*X-W..

0010 08 00 06 04 00 01 7a 95 2a 78 b3 57 c0 a8 4e 08 .....z.\*X-W..N

0020 00 00 00 00 00 00 c0 a8 4e b9 .....N

Address Resolution Protocol (arp), 28 bytes

Packets: 866 · Displayed: 24 (2.8%)

Profile: Default

22:42 22-10-2024

Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Destination	Protocol	Length	Info
240	321.151618	192.168.78.185	49.44.116.231	HTTP	178	GET /ncsi.txt HTTP/1.1
243	321.626686	49.44.116.231	192.168.78.185	HTTP	233	HTTP/1.1 200 OK (text/plain)

> Frame 240: 178 bytes on wire (1424 bits), 178 bytes captured (1424 bits) on interface  
 > Ethernet II, Src: CloudNetwork\_7e:5a:bf (cc:5e:f8:7e:5a:bf), Dst: 7a:95:2a:78:b3:57  
 > Internet Protocol Version 4, Src: 192.168.78.185, Dst: 49.44.116.231  
 > Transmission Control Protocol, Src Port: 53363, Dst Port: 80, Seq: 1, Ack: 1, Len: 124  
 > Hypertext Transfer Protocol

```

0000 7a 95 2a 78 b3 57 cc 5e f8 7e 5a bf 08 00 45 00 z.*x.W.^~Z...E
0010 00 a4 16 01 40 00 80 06 2e de c0 a8 4e b9 31 2c ...@...N:1,
0020 74 e7 d0 73 00 50 dc 71 d7 64 b8 9c cf fb 50 18 t...P.q.d...P
0030 01 02 ee ae 00 00 47 45 54 20 2f 6e 63 73 69 2e ...GE T /ncsi.
0040 74 78 74 20 48 54 54 50 2f 31 2e 31 0d 0a 48 6f txt HTTP /1.1..Ho
0050 73 74 3a 20 77 77 77 2e 6d 73 66 74 6e 63 73 69 st: www.msftncsi
0060 2e 63 6f 6d 0d 0a 55 73 65 72 2d 41 67 65 6e 74 .com..Us er-Agent
0070 3a 20 47 6f 2d 68 74 74 70 2d 63 6c 69 65 6e 74 : Go-htt p-client
0080 2f 31 2e 31 0d 0a 41 63 63 65 70 74 2d 45 6e 63 /1.1..Ac cept-Enc
0090 6f 64 69 6e 67 3a 20 67 7a 69 70 0d 0a 43 6f 6e oding: g zip..Con
00a0 6e 65 63 74 69 6f 6e 3a 20 63 6c 6f 73 65 0d 0a nection: close..
00b0 0d 0a
  
```

Hypertext Transfer Protocol (http), 124 bytes

Packets: 1149 - Displayed: 2 (0.2%)

Profile: Default

22:45 22-10-2024

Browser tabs: NW LAB 1, Basics of Socket Pro, Online C Compiler - Programiz, ChatGPT

Address bar: programiz.com/c-programming/online-compiler/

Programiz C Online Compiler

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Programiz PRO

```
main.c
1 #include <stdio.h>
2 #include <stdint.h>
3
4 unsigned short checksum(unsigned short *buf, int mwords) {
5     unsigned long sum = 0;
6
7     for(int i = 0; i < mwords; i++) {
8         sum += *buf++;
9     }
10
11     // Fold 32-bit sum to 16 bits
12     while (sum >> 16) {
13         sum = (sum & 0xFFFF) + (sum >> 16);
14     }
15
16     return (unsigned short)(~sum);
17 }
18
19 int main() {
20     // Example data (e.g., IP header or TCP/UDP packet)
21     unsigned short data[] = {0x4500, 0x003c, 0x1c46, 0x4000, 0x4006, 0xb1e6, 0xc0a8, 0x0001,
22                             0xc0a8, 0x00c7};
23     int mwords = sizeof(data) / 2;
24
25     unsigned short result = checksum(data, mwords);
26     printf("Checksum: 0x%04x\n", result);
27
28     return 0;
29 }
```

Output

```
/tmp/TwI60CIBHFL.o
Checksum: 0xea76

--- Code Execution Successful ---
```

Windows taskbar: 13:05, 25-10-2024





Browser tabs: NW LAB 1, Basics of Socket Pro, Online C Compiler - Programiz, ChatGPT

Address bar: programiz.com/c-programming/online-compiler/

Programiz C Online Compiler

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Programiz PRO

```
main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <string.h>
4 #include <unistd.h>
5 #include <arpa/inet.h>
6
7 #define PORT 8080
8 #define BUFFER_SIZE 1024
9
10 int main() {
11     int server_fd, new_socket;
12     struct sockaddr_in address;
13     int addrlen = sizeof(address);
14     char buffer[BUFFER_SIZE] = {0};
15     const char *hello = "Hello from server";
16
17     // Creating socket file descriptor
18     if ((server_fd = socket(AF_INET, SOCK_STREAM, 0)) == 0) {
19         perror("Socket failed");
20         exit(EXIT_FAILURE);
21     }
22
23     // Setting up the server address structure
24     address.sin_family = AF_INET; // IPv4
25     address.sin_addr.s_addr = INADDR_ANY; // Bind to any available interface
26     address.sin_port = htons(PORT); // Convert port number to network byte order
27
28     // Binding socket to the address and port
29     if (bind(server_fd, (struct sockaddr *)&address, sizeof(address)) < 0) {
30         perror("Bind failed");
31         close(server_fd);
32         exit(EXIT_FAILURE);
33     }
```

Output

```
- /tmp/pfw9T7shn5.o
Server listening on port 8080
```

Windows taskbar: 13:09 25-10-2024



Browser tabs: NW LAB 1. Basics of Socket Pro, Online C Compiler - Programiz, ChatGPT

Address bar: programiz.com/c-programming/online-compiler/

Programiz C Online Compiler

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Programiz PRO

```
main.c
34
35 // Listening for incoming connections (with a backlog of 3)
36 if (listen(server_fd, 3) < 0) {
37     perror("listen failed");
38     close(server_fd);
39     exit(EXIT_FAILURE);
40 }
41
42 printf("Server listening on port %d\n", PORT);
43
44 // Accepting a connection
45 if ((new_socket = accept(server_fd, (struct sockaddr *)&address, (socklen_t *)&addrlen)) < 0) {
46     perror("Accept failed");
47     close(server_fd);
48     exit(EXIT_FAILURE);
49 }
50
51 // Reading data from client
52 int valread = read(new_socket, buffer, BUFFER_SIZE);
53 printf("Received: %s\n", buffer);
54
55 // Sending a response back to the client
56 send(new_socket, hello, strlen(hello), 0);
57 printf("Hello message sent\n");
58
59 // Closing the socket
60 close(new_socket);
61 close(server_fd);
62
63 return 0;
64 }
65
```

Output

```
Server listening on port 8080
```

Taskbar: Windows Start, Search, File Explorer, Edge, VS Code, Mail, Chrome, Task View, System Tray (Network, Volume, Power), Date/Time: 13:09 25-10-2024

