

Packet Tracer - Examine the ARP Table

Part 1: Examine an ARP Request

The top screenshot shows the initial state of the network. The PC (10.10.10.2) is sending an ARP request to the switch (172.16.31.2). The switch's ARP table is empty. The event list shows the ARP request being sent from the PC to the switch at 0.001s.

Vis.	Time(sec)	Last Device	At Device
	0.000		172.16.31.2
	0.000		172.16.31.2
	0.001	172.16.31.2	Switch1

The bottom screenshot shows the packet being received by the switch. The switch's ARP table is updated with the PC's IP address (10.10.10.2) and MAC address (08:00:27:00:00:00). The event list shows the ARP request being received by the switch at 0.002s.

Vis.	Time(sec)	Last Device	At Device
	0.000		172.16.31.2
	0.000		172.16.31.2
	0.001	172.16.31.2	Switch1
	0.002	Switch1	172.16.31.3
	0.002	Switch1	172.16.31.4
	0.002	Switch1	Router1

IP address of the device that accepted the PDU? 172.16.31.3

Source became destination, FFFF.FFFF.FFFF turned into MAC address of 172.16.31.3

1 copy

Step 2: Examine the ARP table

The screenshot shows the Cisco Packet Tracer interface. The network topology includes Router0, Router1, Switch0, Switch1, and a PC. The Event List panel is open, showing a list of events. The first event is at 0.000 seconds, showing a packet from 172.16.31.2 to 172.16.31.2. The second event is at 0.001 seconds, showing a packet from 172.16.31.2 to Switch1. The third event is at 0.002 seconds, showing a packet from Switch1 to 172.16.31.3. The fourth event is at 0.002 seconds, showing a packet from Switch1 to 172.16.31.4. The fifth event is at 0.003 seconds, showing a packet from Router1 to Switch1. The sixth event is at 0.004 seconds, showing a packet from Switch1 to 172.16.31.2. The seventh event is at 0.004 seconds, showing a packet from 172.16.31.2 to 172.16.31.2.

Vis.	Time(sec)	Last Device	At Device
0.000	—	—	172.16.31.2
0.000	—	—	172.16.31.2
0.001	172.16.31.2	Switch1	Switch1
0.002	Switch1	Switch1	172.16.31.3
0.002	Switch1	Switch1	172.16.31.4
0.002	Switch1	Router1	Router1
0.003	Router1	Switch1	Switch1
0.004	Switch1	172.16.31.2	172.16.31.2
0.004	—	—	172.16.31.2

The screenshot shows the Cisco Packet Tracer interface. The network topology is the same as in the previous screenshot. A Command Prompt window is open, showing the output of a ping command. The output indicates that 4 packets were sent and 4 were received, with a round trip time of approximately 25ms to 53ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.10.10.3

Pinging 10.10.10.3 with 32 bytes of data:

Reply from 10.10.10.3: bytes=32 time=53ms TTL=128
Reply from 10.10.10.3: bytes=32 time=49ms TTL=128
Reply from 10.10.10.3: bytes=32 time=29ms TTL=128
Reply from 10.10.10.3: bytes=32 time=53ms TTL=128

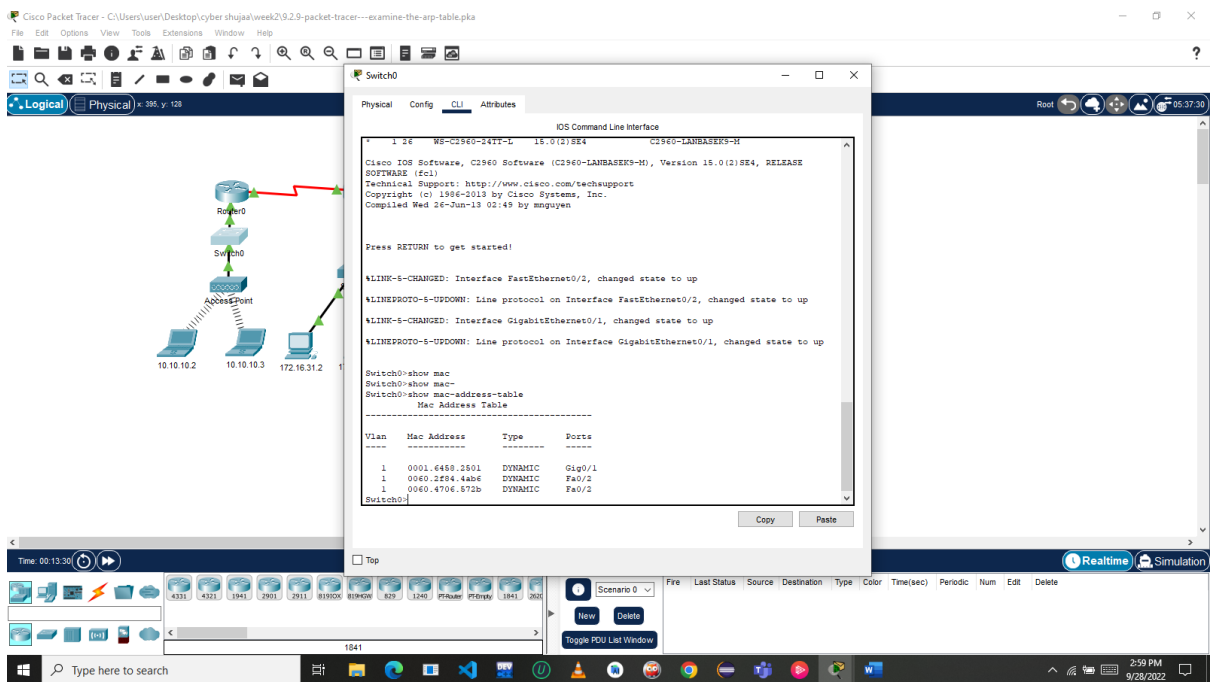
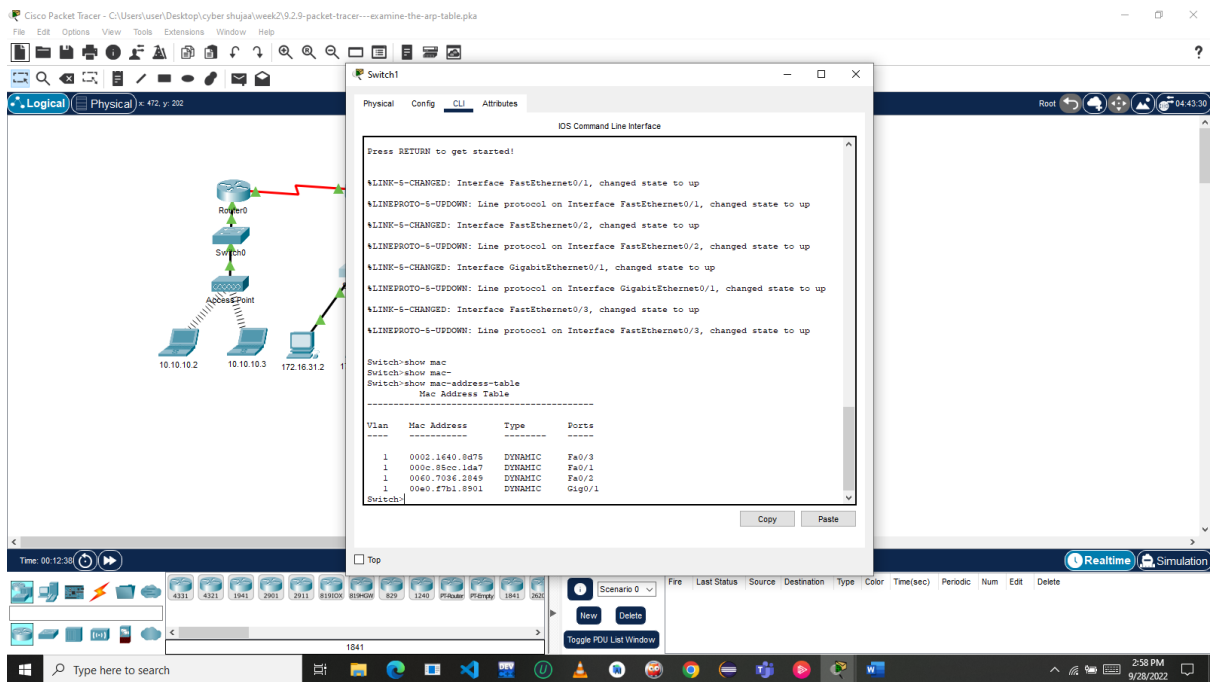
Ping statistics for 10.10.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 29ms, Maximum = 53ms, Average = 46ms

C:\>
```

4 sent, 4 received.

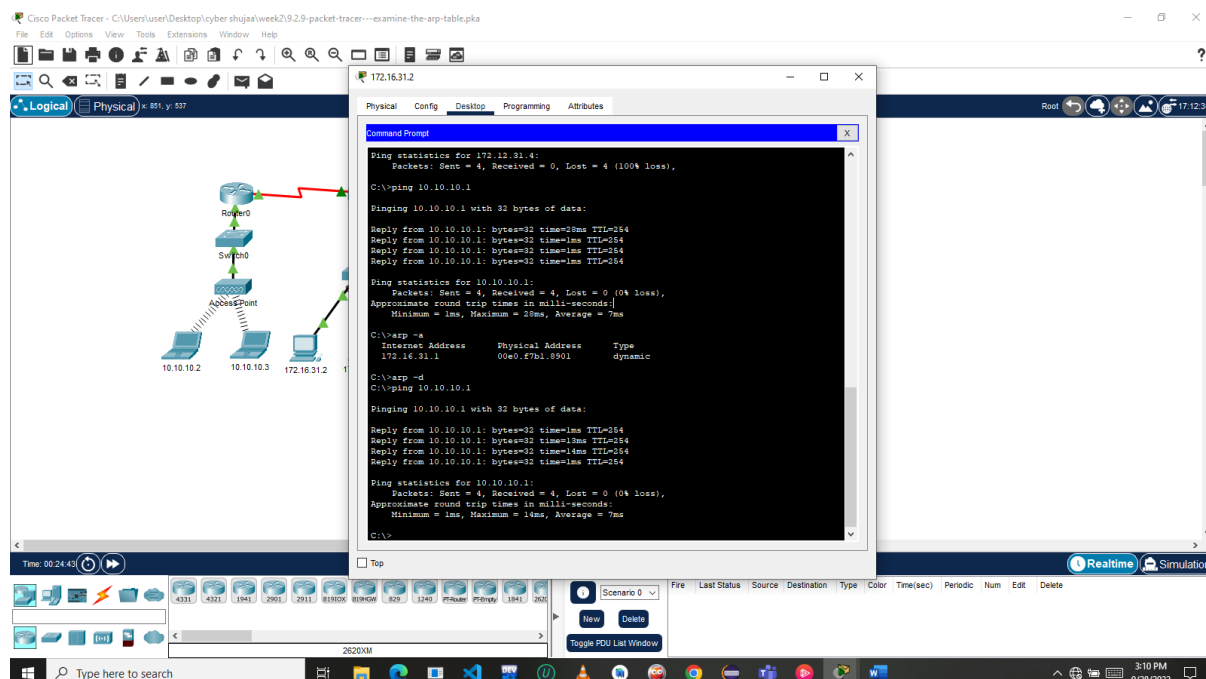
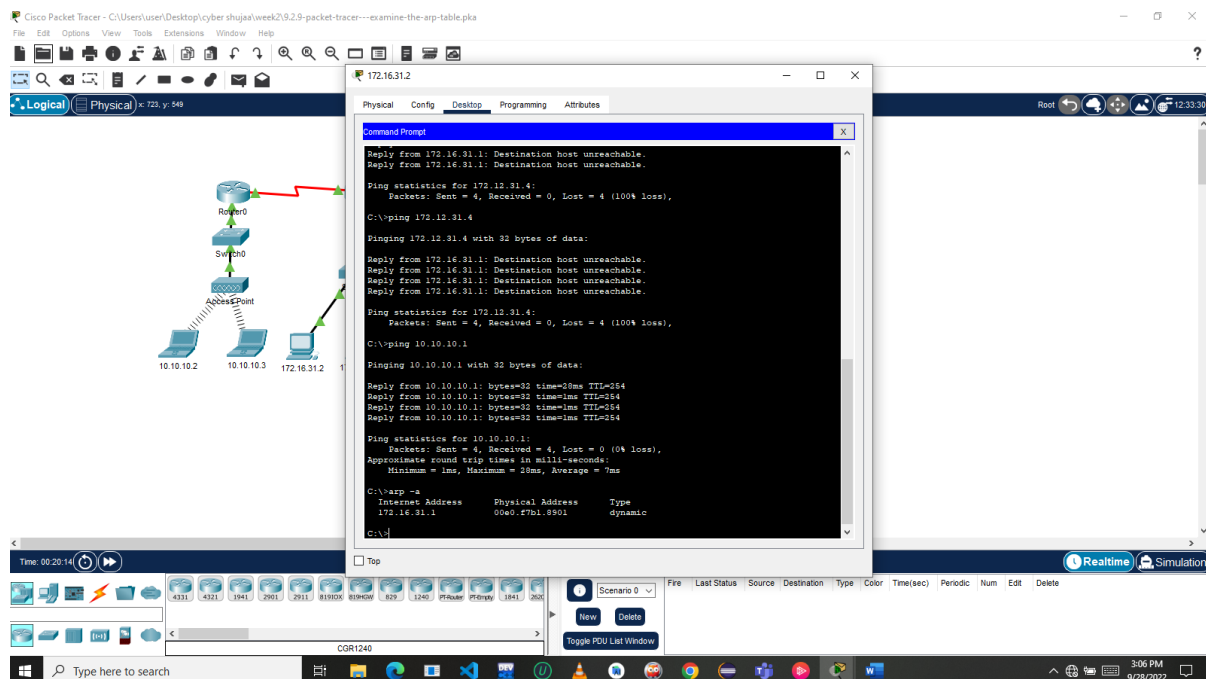
Step 2: Examine the MAC address table on the switches

entries correspond to those in the table



Both switch0 and switch1 the entries correspond to those in the table above
Because both devices connect to one port through the Access Point.

Part 3: Examine the ARP Process in Remote Communication



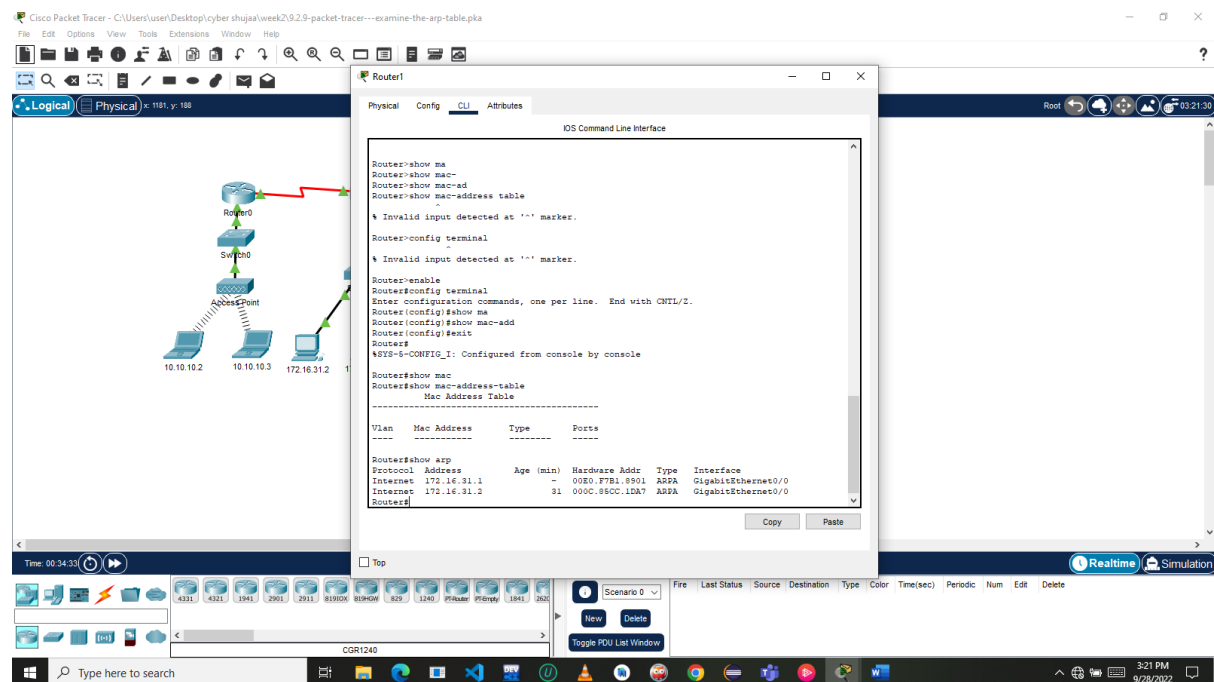
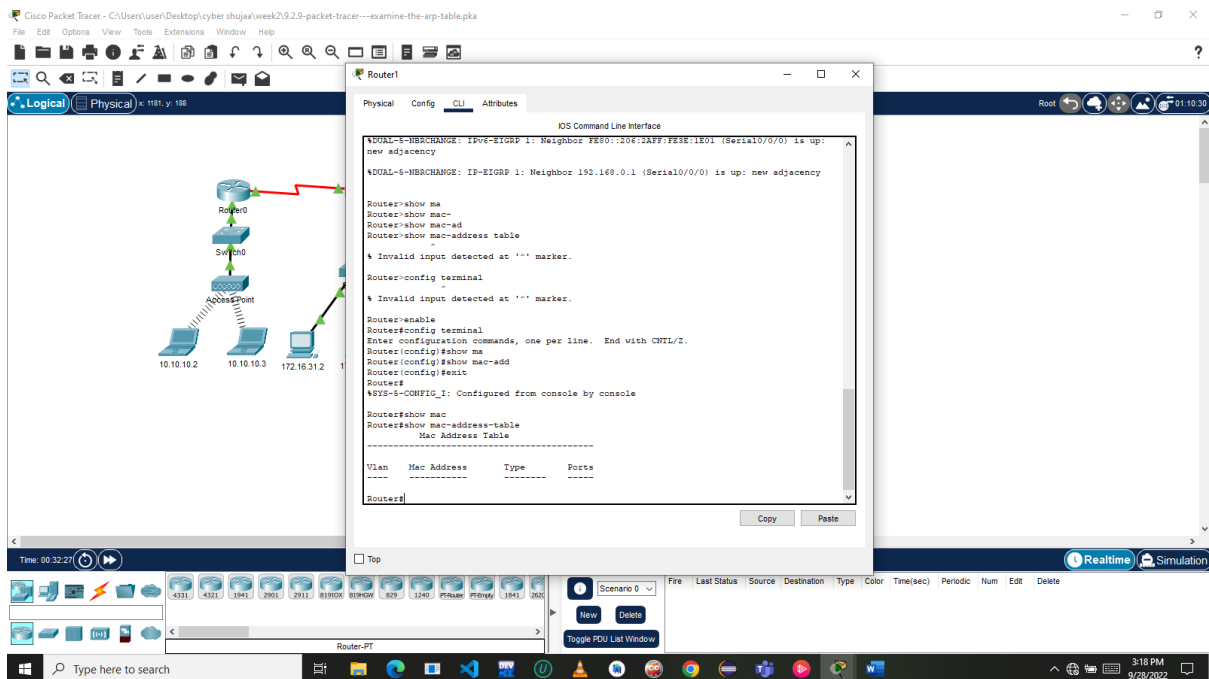
IP address of the new ARP table entry 172.16.31.1

2 PDU appear

target destination IP destination address of the ARP request is 172.16.31.1

The gateway address of the router interface is stored in the IPv4 configuration of the hosts. If the receiving host is not on the same network, the source uses the ARP process to determine a MAC address for the router interface serving as the gateway.

Step 2: Examine the ARP table on Router1



Zero, this command means something completely different than the switch command `show mac address-table`.

There is an entry for **172.16.31.2**