**[9.2.9 - Packet Tracer - Examine the ARP Table](https://contenthub.netacad.com/itn" \l "9.2.9" \t "_blank)**

## Part 1: Examine an ARP Request

### Step 1: Generate ARP requests by pinging 172.16.31.3 from 172.16.31.2.

1. Open the PDU and record the destination MAC address. Is this address listed in the table above?

Answer: No

1. ow many copies of the PDU did **Switch1** make?

Answer: 3

1. What is the IP address of the device that accepted the PDU?

Answer: 172.16.31.3

1. Open the PDU and examine Layer 2. What happened to the source and destination MAC addresses?

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

1. How many copies of the PDU did the switch make during the ARP reply?

Answer: 1

### Step 2: Examine the ARP table.

1.Do the MAC addresses of the source and destination align with their IP addresses?

Answer: Yes

1. To what IP address does the MAC address entry correspond?

Answer: 172.16.31.3

1. In general, when does an end device issue an ARP request?

Answer: When it does not know the receiver’s MAC address.

## Part 2: Examine a Switch MAC Address Table

### Step 1: Generate additional traffic to populate the switch MAC address table.

* 1. Enter the ping 10.10.10.3 command. How many replies were sent and received?

Answer: 4 sent, 4 received.

### Step 2: Examine the MAC address table on the switches.

1. Do the entries correspond to those in the table above

Answer: Yes

1. Why are two MAC addresses associated with one port?

Answer: Because both devices connect to one port through the Access Point.

## Part 3: Examine the ARP Process in Remote Communications

### Step 1: Generate traffic to produce ARP traffic.

* 1. What is the IP address of the new ARP table entry?

Answer: 172.16.31.1

* 1. How many PDU appear?

ANSWER: 2

* 1. What is the target destination IP destination address of the ARP request?

Answer: 172.16.31.1

* 1. The destination IP address is not 10.10.10.1. Why?

Answer: 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.

1. How many MAC addresses are in the table? Why?

ANSWER: Zero, This command means something completely different than the switch command show mac address-table.

1. Is there an entry for **172.16.31.2**?

Answer: Yes

1. What happens to the first ping in a situation where the router responds to the ARP request?

Answer: It times out.