**9.1.3 Packet Tracer – Identify MAC and IP Addresses**

## Part 1:  Gather PDU Information for Local Network Communication

### Step 1:  Gather PDU information as a packet travels from 172.16.31.5 to 172.16.31.2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| At Device | Dest.Mac | Src Mac | Src IPv41 | Dest IPv4 |
| 172.16.31.3 | 000C.85CC.1DA7 |  | 172.16.31.3 | 172.16.31.2 |
| Hub |  |  |  |  |
| 172.16.31.2 | 0060.7036.28.49 | 000C.85CC.1DA7 | 172.16.31.2 | 172.16.31.3 |
|  |  |  |  |  |

What device has the destination MAC that is shown?

Answer: the router

## Reflection Questions

1. Were there different types of cables/media used to connect devices?

Answer: Yes: copper, fiber, and wireless

1. Did the cables change the handling of the PDU in any way?

Answer: No

1. Did the **Hub** lose any of the information that it received

Answer: No

1. What does the **Hub** do with MAC addresses and IP addresses?

Answer: Nothing

1. Did the wireless **Access Point** do anything with the information given to it?

Answer: Yes. It repackaged it as wireless 802.11 frames.

1. Was any MAC or IP address lost during the wireless transfer?

Answer: No

1. What was the highest OSI layer that the **Hub** and **Access Point** used?

Answer: Layer 1

1. Did the **Hub** or **Access Point** ever replicate a PDU that was rejected with a red “X”?

Answer: Yes

1. When examining the **PDU Details** tab, which MAC address appeared first, the source or the destination?

Answer: Destination

1. Why would the MAC addresses appear in this order?

Answer: A switch can begin forwarding a frame to a known MAC address more quickly if the destination is listed first

1. Was there a pattern to the MAC addressing in the simulation?

Answer: No

1. Did the switches ever replicate a PDU that was rejected with a red “X”?

Answer: No

1. Every time that the PDU was sent between the 10 network and the 172 network, there was a point where the MAC addresses suddenly changed.  Where did that occur?

Answer: It occurred at the router

1. Which device uses MAC addresses that start with 00D0:BA?

Answer: The router

1. What devices did the other MAC addresses belong to?

Answer: To the sender and receiver

1. Did the sending and receiving IPv4 addresses change fields in any of the PDUs?

Answer: No

1. When you follow the reply to a ping, sometimes called a *pong*, do you see the sending and receiving IPv4 addresses switch?

Answer: Yes

1. What is the pattern to the IPv4 addressing used in this simulation

Answer: Each port of a router requires a set of non-overlapping addresses

1. Why do different IP networks need to be assigned to different ports of a router?

Answer: The function of a router is to inter-connect different IP networks.

1. If this simulation was configured with IPv6 instead of IPv4, what would be different?

Answer: The IPv4 addresses would be replaced with IPv6 addresses, but everything else would be the same.