What is significant about the contents of the destination address field?

Every host on LAN receives the broadcast, the host with the searched for IP will send a reply

Why does the PC send out a broadcast ARP prior to sending the first ping request?

Needs to determine the destination MAC before it can request the ping. The ARP broadcast is used to request the MAC address

What is the MAC address of the source in the first frame?

F0:1F:AF:50:FD:C8

What is the Vendor ID (OUI) of the Source NIC in the ARP reply?

Dell

What portion of the MAC address is the OUI?

First 3 Octets

What is the NIC serial number of the source?

99:C5:72

What is the IP address of the PC default gateway?

172.16.176.250

Step 6

What is the MAC address of the PC NIC?

D8:5E:D3:84:65:2D

What is the default gateways MAC address?

24:E9:B3:CB:5F:7F

What type of frame is displayed?

0x0001

What is the source IP address?

172.16.176.134

What is the destination IP address?

172.16.176.250

What do the last two highlighted octets spell?

FF?

What device and MAC address is displayed as the destination address?

Cisco_cb:5f:7f (24:E9:B3:CB:5F:7F)

Step 7

In the first echo(ping) request frae, what are the source and destination MAC address?

Source: D8:5E:D3:84:65:2D

Destination: 24:E9:B3:CB:5F:7F

Compare these addresses to the addresses you received in Step 6. The only address that changed is the destination IP address. Why has the destination IP address changed, while the destination MAC address remained the same?

Layer 2 frames never leave the LAN. Source uses default gateway MAC. Gateway receives packet, removes layer 2, and then creates new frame with the MAC address of the next one. Continues until packet reaches the destination

Wireshark does not display the preamble field of a frame header. What does the preamble contain?

Contains 7 octets that are in binary