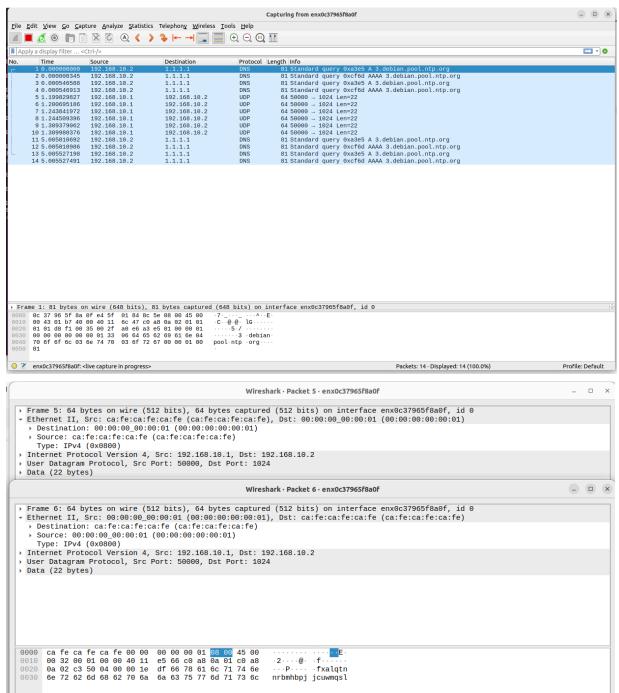
From Lecture 5

Final slide: Send packets to P4Pi and see they are reflected

Command run is:

table_add MyIngress.src_mac_drop MyIngress.swap_mac_addresses

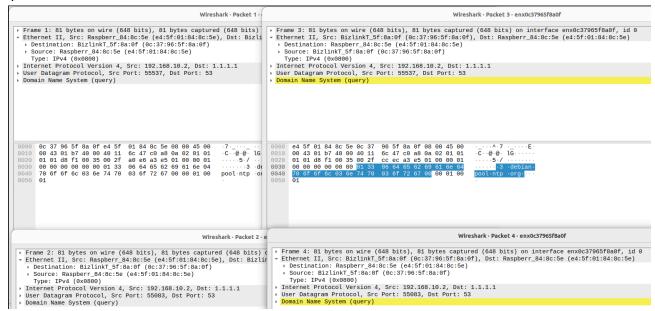
CA:FE:CA:FE:CA:FE =>



A total of 3 packets were sent from the lab machine (192.168.10.1) to the Pi (192.168.10.2). I learned that while the source and destination of the packets are still fixed to 192.168.10.1 and 192.168.10.2 respectively (therefore giving the impression that it was not reflected), when I

investigated each packet, it did actually get reflected because the MAC addresses did swap (shown examples from Packet 5 and its reflected counterpart Packet 6). This is also supported by the fact that there is about a 1ms delay between an incident packet and its reflected counterpart which is a probable delay due to propagation time.

Additionally, because the default action is to swap, we should check that the DNS standard queries are also reflected:

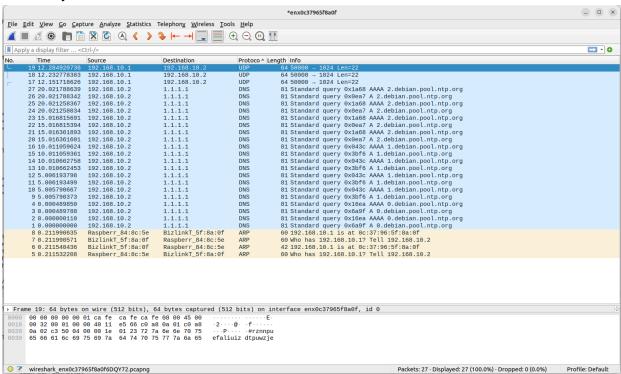


We can see that packet 3 is a reflection of packet 1, and packet 4 is a reflection of packet 2, because we see the destination and source addresses are swapped, and from the timestamps in the first picture we can reason which packet is a reflection of which packet.

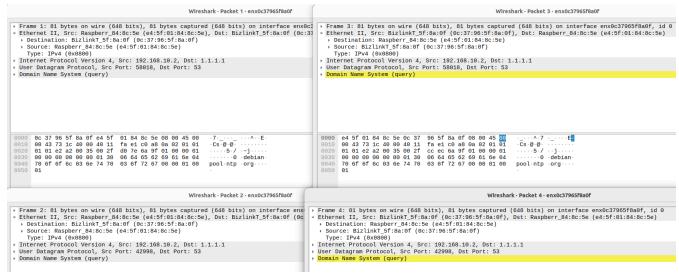
Add table rule to see that the packets are dropped Command run is

table_delete MyIngress.src_mac_drop 0 // handle of the above entry was 0

table_add MyIngress.src_mac_drop MyIngress.drop CA:FE:CA:FE:CA:FE => //
table entry for this one was 16777216



As seen, we only get the 3 incident packets showing up, so the sent packets are dropped. Meanwhile because the default action of reflector.p4 is to swap mac addresses, the DNS standard queries and ARP requests are still reflected. An example of checking that this is the case is done with the DNS packets 1-4:



We can see that packet 3 is a reflection of packet 1, and packet 4 is a reflection of packet 2, because we see the destination and source addresses are swapped, and from the timestamps in the previous picture we can reason which packet is a reflection of which packet. A similar case will happen with the ARP packets.