COMP3331 Lab7 Report

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Exercise 1:

Q1: The 48-bit Ethernet address of the source host of this packet is 00:d0:59:a9:3d:68.

Q2: The 48-bit destination address is 00:06:25:da:af:73. It is not the Ethernet address of *gaia.cs.umass.edu*. It is the address of interface of Linksys router, which is the link used to get off the subnet.

Q3: 0x0800

Q4: 54 bytes. Also it doesn't include preamble bytes and are omitted from the capture. Among them, the frame header is 14 bytes, and IP header is 20 bytes and TCP header is 20 bytes.

Q5: The Ethernet source address is 00:06:25:da:af:73. NO, that is neither the address of host that sent HTTP GET request nor the address of *gaia.cs.umass.edu*. It is the address of interface of Linksys router, which is the link used to get off the subnet.

Q6: The Ethernet destination address is 00:d0:59:a9:3d:68. This is the Ethernet address of the source host that sent the earlier GET HTTP request.

Q7: There are 67 bytes.

Exercise 2:

Q1: For the first ARP request at time=0(No.1), the Ethernet source address is 00:d0:59:a9:3d:68 and the destination address is ff:ff:ff:ff:ff:ff, which's a broadcast address. For the second ARP request at time=13.542974(No.6), the Ethernet source address is 00:80:ad:73:8d:ce and the destination address is ff:ff:ff:ff:ff:ff, which's a broadcast address. As the sender didn't know the destination MAC address in the first place, it uses the broadcast address for the destination address to find the MAC address that the sender wants to send to.

Q2: 0x0806

Q3: The ARP *opcode* field begins 20 bytes from the very beginning of the Ethernet frame.

Q4: The value of *opcode* is 0x0001 for request.

Q5: Yes, it contains the IP address of the sender.

Q6: The field “Target MAC address” is set to 00:00:00:00:00:00 to question the machine whose corresponding IP address (192.168.1.1) is being requested

Q7: The ARP *opcode* field begins 20 bytes from the very beginning of the Ethernet frame.

Q8: The value of *opcode* is 0x0002 for reply.

Q9: The field “sender MAC address” is set to 00:06:25:da:af:73 to answer the machine whose corresponding IP address (192.168.1.1) is being queried.

Q10: The Ethernet source address is 00:06:25:da:af:73 and its destination address is 00:d0:59:a9:3d:68.

Exercise 3:

Q1: The SSIDs of 2 access points that are issuing most of the beacon frames are 30 Munroe St and linksys12.

Q2: Both are 0.102400 seconds

Q3: The source MAC address is 00:16:b6:f7:1d:51.

Q4: The destination MAC address is ff:ff:ff:ff:ff:ff.

Q5: BSSID is 00:16:b6:f7:1d:51.

Q6: The support rates(4) are 1.0, 2.0, 5.5, 11.0 Mbps. The extended rates(8) are 6.0, 9.0, 12.0, 18.0, 24.0, 36.0, 48.0 and 54.0 Mbps.

Q7: The TCP SYN is sent at t = 24.811093

Q8: 3 address fields are transmitter address, receiver address and destination address. The MAC address for the host sending is 00:13:02:d1:b6:4f. For the access point, it’s 00:16:b6:f7:1d:51. For the first-hop router, it’s 00:16:b6:f4:eb:a8.

Q9: The IP address of host sending this TCP segment is 192.168.1.109. The destination IP address is 128.119.245.12. This corresponds to the server *gaia.cs.umass.edu*.

Q10: The time is t = 24.827751.

Q11: 3 address fields are transmitter address, source address and destination address. The source address which is 00:16:b6:f4:eb:a8 corresponds to the first-hop router. The

destination address which is 91:2a:b0:49:b6:4f corresponds to the host. The transmitter address is 00:16:b6:f7:1d:51 corresponds to the access pointer.

Q12: The sender MAC address does not correspond to the IP address which sends the TCP segments. The IP address of sending TCP segments is the server(*gaia.cs.umass.edu*) IP address which is 128.119.245.12. And the destination IP address is 192.168.1.109.