

## **Lab 7 Report**

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#### Exercise 1

1. The 48-bit Ethernet address of the source host of this packet is 00:d0:59:a9:3d:68.
2. The 48-bit destination address in the Ethernet frame is 00:06:25:da:af:73. This is not the Ethernet address of gaia.cs.umass.edu.au, rather of the Linksys router used to get out of the subnet.
3. The hexadecimal value for the two-byte frame type field is 0x0800.
4. The G in “GET” appears after 54 bytes in the Ethernet frame. The preamble is omitted, meaning the frame header is 14 bytes. While the IP header is 20 bytes and the TCP header is 20 bytes.
5. The value of the Ethernet source address is 00:06:25:da:af:73. This is the address of the host that send the GET HTTP request.
6. The destination address in the Ethernet frame is 00:d0:59:a9:3d:68. This is also the same address as the source host that send the earlier GET HTTP request.
7. The O in “OK” appears after 13 bytes in the Ethernet frame.

#### Exercise 2

1. The value for the source address is 00:d0:59:a9:3d:68 and the destination address is ff:ff:ff:ff:ff:ff. The destination address is the broadcast address which allows all devices connected to a multiple-access communications network are enabled to receive datagrams.
2. The hexadecimal value for the two-byte Ethernet Frame type field is 0x0806,
3. The ARP opcode begins 20 bytes from the beginning of the Ethernet frame.
4. The value of the opcode field is 1.
5. Yes the ARP message contains the IP address of the sender which is 192.168.1.105.
6. The Target MAC address field is 00:00:00:00:00:00. This means that the ARP request is questioning the IP address for which mapping is being requested.
7. The ARP opcode begins 20 bytes from the beginning of the Ethernet frame.
8. The value of the opcode field is 2.
9. the ARP message shows the answer to the earlier ARP request in the Sender MAC address which is 00:d0:59:da:af:73.
10. The value for the source address is 00:06:25:da:af:73 and the destination address is 00:d0:59:a9:3d:68.

#### Exercise 3

1. The two access points that are issuing most of the beacon frames are “linksys12” and “30 Munroe St”.
2. The beacon interval for both access points are 0.1024 seconds.
3. The source MAC address on the beacon frame from 30 Munroe St is 00:16:b6:f7:1d:51.
4. The destination MAC address on the beacon frame from 30 Munroe St is ff:ff:ff:ff:ff:ff.
5. The MAC BSS id on the beacon frame from 30 Munroe St is 00:16:b6:f7:1d:51.
6. The supported data rates for 30 Munroe St are 1.0, 2.0, 5.5, 11 Mbps. The extended rates are 6, 9, 12, 18, 24, 36, 48, 54 Mbps.
7. The TCP SYN is sent at 24.811093 seconds.
8. The MAC address for the wireless host is 00:13:02:d1:b6:4f, the MAC address for the first hop router is 00:16:b6:f4:eb:a8 and the MAC address for the access point is

00:16:b6:f7:1d:51.

9. The IP address of the wireless host sending the TCP segment is 192.168.1.109. The destination address is 128.119.245.12. The destination address doesn't correspond to the first-hop router as none of the adapters on the subnet would pass the IP datagram up to its network-layer, since the frame's destination address would not match the MAC address of any adapters on the subnet.
10. The TCP SYNACK is received at 24.827751 seconds.
11. The three MAC address fields in the 802.11 frame that encapsulates the SYNACK include the sender, 00:16:b6:f4:eb:a8, the destination, 91:2a:b0:49:b6:4f and the BSS ID, 00:16:b6:f7:1d:51. The sender MAC address corresponds to the first hop router and the BSS ID MAC address corresponds to the access point.
12. The IP address of the sender of the TCP SYNACK is 128.119.245.12 which is gaia.cs.umass.edu.au, This corresponds to the MAC address of the sender of the TCP SYNACK. This is evident in packet 507.