

Wireshark Experiment – 03

IEEE 802.11 WiFi Protocol

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IEEE 802.11 WiFi Protocol

The 802.11 protocol is a set of standards developed by the Institute of Electrical and Electronics Engineers (IEEE) for wireless local area networking (WLAN). It defines how wireless devices, such as laptops, smartphones, and other equipment, communicate over a wireless network using radio waves. This protocol operates primarily in the 2.4 GHz and 5 GHz frequency bands, although newer versions also use 6 GHz, providing different speeds, ranges, and capabilities.

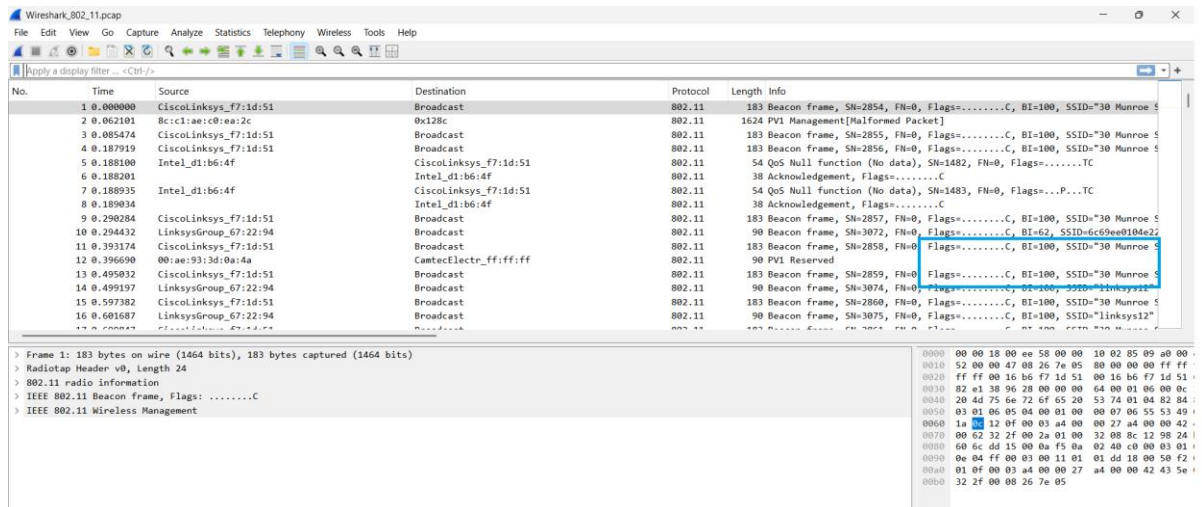
Definition

802.11 refers to a family of specifications for wireless networking, more commonly known as Wi-Fi. It defines the medium access control (MAC) and physical layer (PHY) protocols to enable reliable and efficient wireless communication. Different versions of the protocol, such as 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, and 802.11ax, offer various levels of performance and are backward compatible.

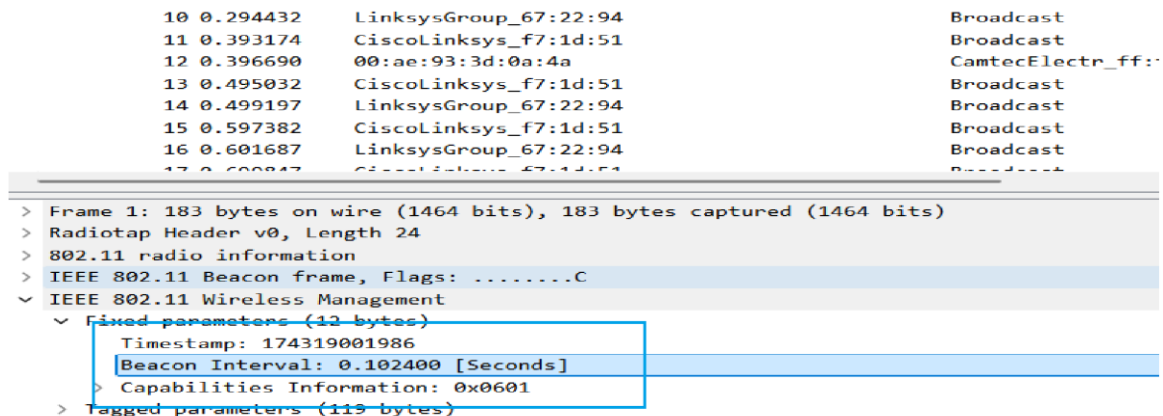
802.11 Protocol Versions

- 802.11a: Operates at 5 GHz with data rates up to 54 Mbps.
- 802.11b: Operates at 2.4 GHz with data rates up to 11 Mbps.
- 802.11g: Operates at 2.4 GHz with data rates up to 54 Mbps.
- 802.11n: Operates at both 2.4 GHz and 5 GHz with data rates up to 600 Mbps using multiple input multiple output (MIMO) technology.
- 802.11ac: Operates at 5 GHz with data rates up to 1.3 Gbps and uses wider channels and MIMO.
- 802.11ax (Wi-Fi 6): Operates in 2.4, 5, and 6 GHz bands with data rates up to 9.6 Gbps, offering better performance in dense environments through technologies like Orthogonal Frequency-Division Multiple Access (OFDMA).

1. What are the SSIDs of the two access points that are issuing most of the beacon frames in this trace? The two access points that are issuing most of the beacon frames have an SSID of “30 Munroe St” and “linsys_SES_24086”



- What are the intervals of time between the transmissions of the beacon frames the linksys_ses_24086 access point? From the 30 Munroe St. access point?
The beacon interval for both access points is reported in the Beacon Interval of the 802.11 wireless LAN Management frame as .1024 seconds (i.e., just over 100 milliseconds).



- What (in hexadecimal notation) is the source MAC address on the beacon frame from 30 Munroe St? Recall from Figure 6.13 in the text that the source, destination, and BSS are three addresses used in an 802.11 frame. For a detailed discussion of the 802.11 frame structure, see section 7 in the IEEE 802.11 standards document (cited above).

Ans : The source MAC address on the 30 Munroe St, beacon frame is 00:16:b6:f7:1d:51

14	0.499197	LinksysGroup_67:22:94	Broadcast
15	0.597382	CiscoLinksys_f7:1d:51	Broadcast
16	0.601687	LinksysGroup_67:22:94	Broadcast
17	0.600847	CiscoLinksys_f7:1d:51	Broadcast

```

> Frame 1: 183 bytes on wire (1464 bits), 183 bytes captured (1464 bits)
> Radiotap Header v0, Length 24
> 802.11 radio information
√ IEEE 802.11 Beacon frame, Flags: .....C
  Type/Subtype: Beacon frame (0x0008)
  > Frame Control Field: 0x8000
    .000 0000 0000 0000 = Duration: 0 microseconds
  > Receiver address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Destination address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Transmitter address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > Source address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > BSS Id: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
    .... .... 0000 = Fragment number: 0
    1011 0010 0110 .... = Sequence number: 2854
    Frame check sequence: 0x057e2608 [unverified]
    [FCS Status: Unverified]
    [WLAN Flags: .....C]
> IEEE 802.11 Wireless Management

```

4. What (in hexadecimal notation) is the destination MAC address on the beacon frame from 30 Munroe St?

Ans : The destination MAC address on the 30 Munroe St, beacon frame is ff:ff:ff:ff:ff:ff, i.e., the Ethernet broadcast address.

12	0.550000	00:0E:3D:30:08:48	CompleteList_11:11:11
13	0.495032	CiscoLinksys_f7:1d:51	Broadcast
14	0.499197	LinksysGroup_67:22:94	Broadcast
15	0.597382	CiscoLinksys_f7:1d:51	Broadcast
16	0.601687	LinksysGroup_67:22:94	Broadcast
17	0.600847	CiscoLinksys_f7:1d:51	Broadcast

```

> Frame 1: 183 bytes on wire (1464 bits), 183 bytes captured (1464 bits)
> Radiotap Header v0, Length 24
> 802.11 radio information
√ IEEE 802.11 Beacon frame, Flags: .....C
  Type/Subtype: Beacon frame (0x0008)
  > Frame Control Field: 0x8000
    .000 0000 0000 0000 = Duration: 0 microseconds
  > Receiver address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Destination address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Transmitter address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > Source address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > BSS Id: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
    .... .... 0000 = Fragment number: 0
    1011 0010 0110 .... = Sequence number: 2854
    Frame check sequence: 0x057e2608 [unverified]
    [FCS Status: Unverified]
    [WLAN Flags: .....C]
> IEEE 802.11 Wireless Management

```

5. What (in hexadecimal notation) is the MAC BSS IS on the beacon frame from 30 Munroe St?

Ans : The MAC BSS ID address on the 30 Munroe St, beacon frame is 00:16:b6:f7:1d:51.

```

17 0.600847 CiscoLinksys_f7:1d:51 Broadcast
> Frame 1: 183 bytes on wire (1464 bits), 183 bytes captured (1464 bits)
> Radiotap Header v0, Length 24
> 802.11 radio information
v IEEE 802.11 Beacon frame, Flags: .....C
  Type/Subtype: Beacon frame (0x0008)
  > Frame Control Field: 0x8000
    .000 0000 0000 0000 = Duration: 0 microseconds
  > Receiver address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Destination address: Broadcast (ff:ff:ff:ff:ff:ff)
  > Transmitter address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > Source address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
  > BSS Id: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
    .... 0000 = Fragment number: 0
    1011 0010 0110 .... = Sequence number: 2854
    Frame check sequence: 0x057e2608 [unverified]
    [FCS Status: Unverified]
    [WLAN Flags: .....C]
  > IEEE 802.11 Wireless Management

```

6. The beacon frames from the 30 Munroe St access point advertise that the access point can support four data rates and eight additional “extended supported rates.” What are these rates?

Ans : The support rates are 1.0, 2.0, 5.5, 11.0 Mbps. The extended rates are 6.0, 9.0, 12.0, 18.0, 24.0, 36.0, 48.0 and 54.0 Mbps

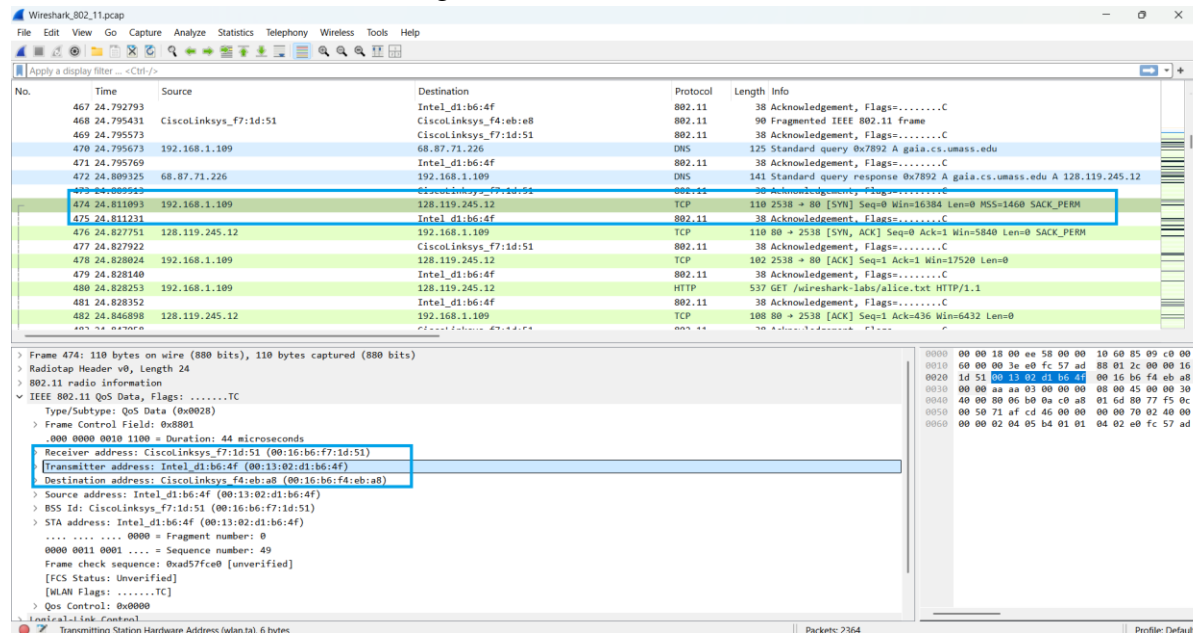
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13 0.499052 CiscoLinksys_f7:1d:51 Broadcast
14 0.499197 LinksysGroup_67:22:94 Broadcast
15 0.597382 CiscoLinksys_f7:1d:51 Broadcast
16 0.601687 LinksysGroup_67:22:94 Broadcast
17 0.600847 CiscoLinksys_f7:1d:51 Broadcast
> Radiotap Header v0, Length 24
> 802.11 radio information
> IEEE 802.11 Beacon frame, Flags: .....C
v IEEE 802.11 Wireless Management
  v Fixed parameters (12 bytes)
    Timestamp: 174319001986
    Beacon Interval: 0.102400 [Seconds]
  > Capabilities Information: 0x0601
  v Tagged parameters (119 bytes)
    > Tag: SSID parameter set: "30 Munroe St"
    v Tag: Supported Rates 1(B), 2(B), 5.5(B), 11(B), [Mbit/sec]
      Tag Number: Supported Rates (1)
      Tag length: 4
      Supported Rates: 1(B) (0x82)
      Supported Rates: 2(B) (0x84)
      Supported Rates: 5.5(B) (0x8b)
      Supported Rates: 11(B) (0x96)
    > Tag: DS Parameter set: Current Channel: 6
    > Tag: Traffic Indication Map (TIM): DTIM 0 of 1 bitmap
    > Tag: Country Information: Country Code US Environment Indoor

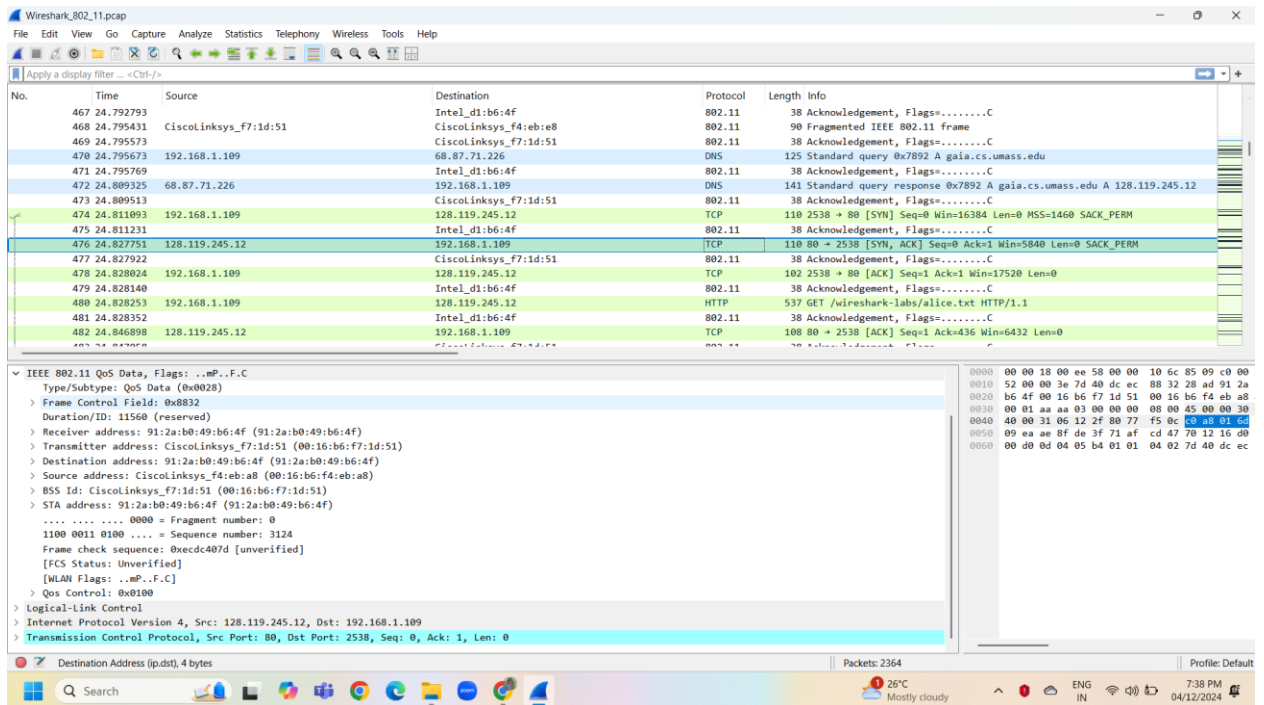
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- Find the 802.11 frame containing the SYN TCP segment for this first TCP session (that downloads alice.txt). What are three MAC address fields in the 802.11 frame? Which MAC address in this frame corresponds to the wireless host (give the hexadecimal representation of the MAC address for the host)? To the access point? To the first-hop router? What is the IP address of the wireless host sending this TCP segment? What is the destination IP address? Does this destination IP address correspond to the host, access point, first-hop router, or some other network-attached device?

Ans : the TCP SYN is sent at $t = 24.811093$ seconds into the trace. The MAC address for the host sending the TCP SYN is 00:13:02:d1:b6:4f. The MAC address for the BSS is 00:16:b6:f7:1d:51. The IP address of the host sending the TCP SYN is 192.168.1.109.

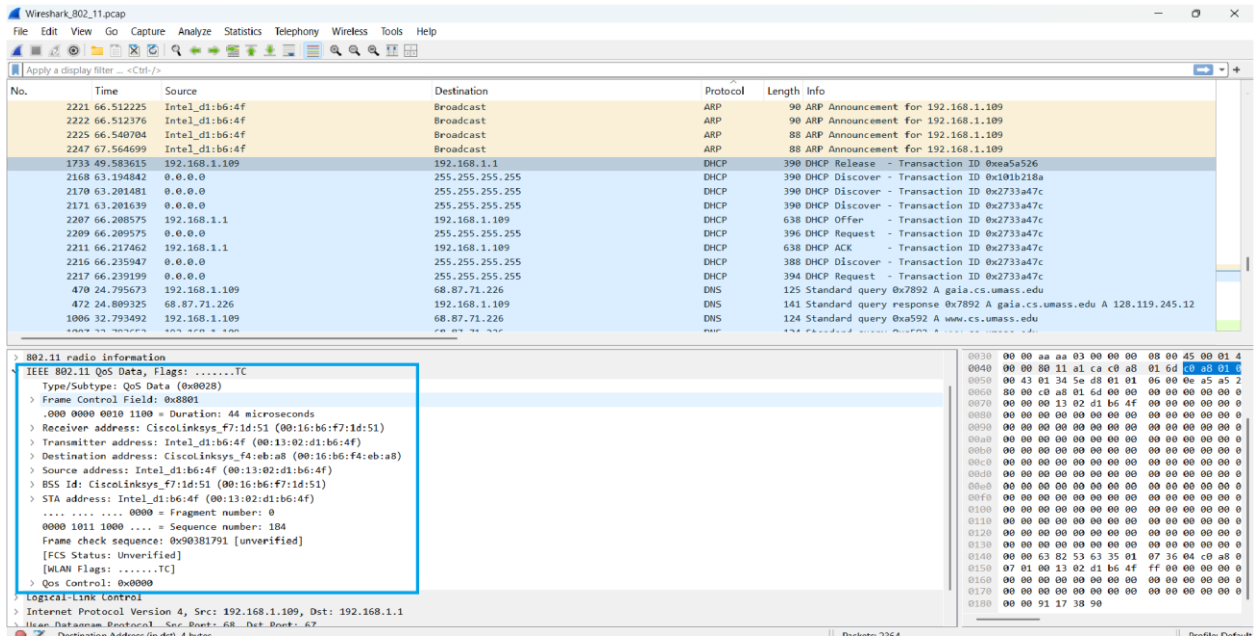


- Find the 802.11 frame containing the SYNACK segment for this TCP session. What are three MAC address fields in the 802.11 frame? Which MAC address in this frame corresponds to the host? To the access point? To the first-hop router? Does the sender MAC address in the frame correspond to the IP address of the device that sent the TCP segment encapsulated within this datagram



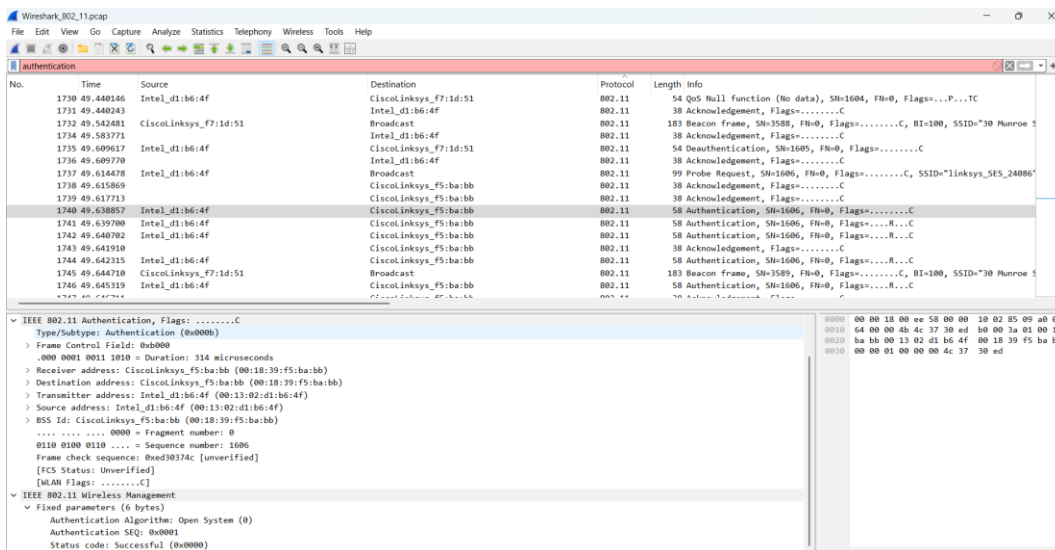
9. What two actions are taken (i.e., frames are sent) by the host in the trace just after $t=49$, to end the association with the 30 Munroe St AP that was initially in place when trace collection began

Ans: At $t = 49.583615$ a DHCP release is sent by the host to the DHCP server (whose IP address is 192.168.1.1) in the network that the host is leaving. At $t = 49.609617$, the host sends a DEAUTHENTICATION frame (Frametype = 00 [Management], subframe type = 12[Deauthentication]).



10. Examine the trace file and look for AUTHENTICATION frames sent from the host to an AP and vice versa. How many AUTHENTICATION messages are sent from the wireless host to the linksys_ses_24086 AP (which has a MAC address of Cisco_Li_f5:ba:bb) starting at around t=49?

Ans : The first AUTHENTICATION from the host to the AP is at t = 49.638857.



11. Does the host want the authentication to require a key or be open?

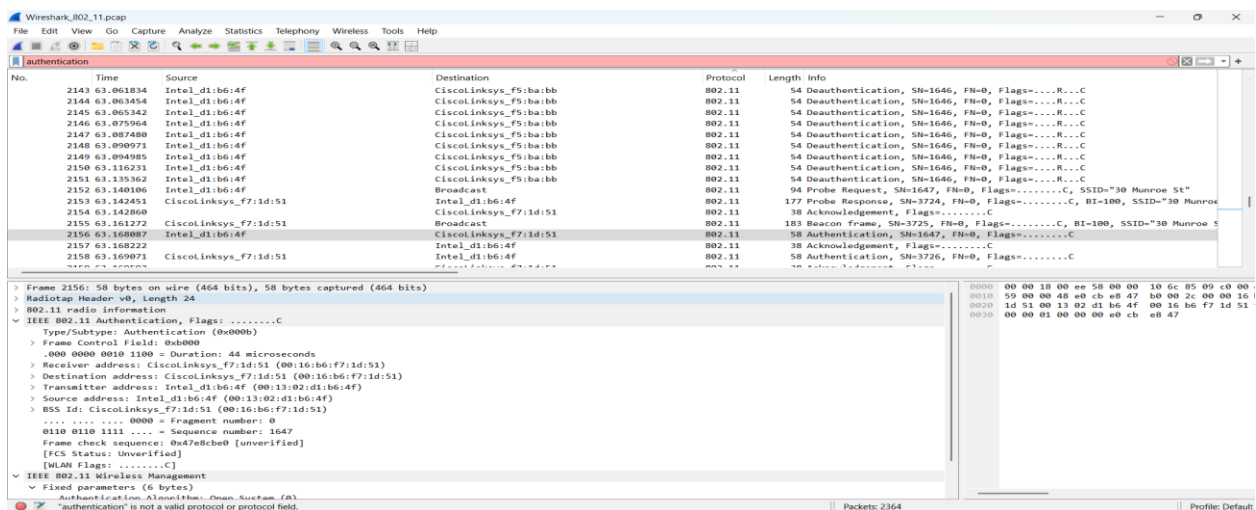
Ans : The host is requesting that the association be open .

12. Do you see a reply AUTHENTICATION from the linksys_ses_24086 AP in the trace?

Ans : I can't find any reply from the AP. This is probably because the AP is configured to require a key when associating with that AP, so the AP is likely ignoring (i.e., not responding to) requests for open access.

13. Now let's consider what happens as the host gives up trying to associate with the linksys_ses_24086 AP and now tries to associate with the 30 Munroe St AP. Look for AUTHENTICATION frames sent from the host to and AP and vice versa. At what times are there an AUTHENTICATION frame from the host to the 30 Munroe St. AP, and when is there a reply AUTHENTICATION sent from that AP to the host in reply.

Ans :



No.	Time	Source	Destination	Protocol	Length	Info
2143	63.061834	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2144	63.063454	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2145	63.065342	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2146	63.073964	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2147	63.087480	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2148	63.090971	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2149	63.094985	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2150	63.116231	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2151	63.135362	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=...R...C
2152	63.140106	Intel_d1:b6:4f	Broadcast	802.11	177	Probe Response, SN=3724, FN=0, Flags=...C, BI=100, SSID="30 Munroe St"
2153	63.142451	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=...C
2154	63.142860	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=3725, FN=0, Flags=...C, BI=100, SSID="30 Munroe St"
2155	63.162172	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	58	Authentication, SN=1647, FN=0, Flags=...C
2156	63.168087	Intel_d1:b6:4f	Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=...C
2157	63.168222	Intel_d1:b6:4f	Intel_d1:b6:4f	802.11	58	Authentication, SN=3726, FN=0, Flags=...C
2158	63.169071	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	58	Authentication, SN=3726, FN=0, Flags=...C

Frame 2156: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface 0
RadioTap Header v0, Length 24
802.11 radio information
IEEE 802.11 Authentication, Flags=...C
Type/Subtype: Authentication (0x0000)
Frame Control Field: 0x0000
Duration: 44 microseconds
Receiver address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
Destination address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
Transmitter address: Intel_d1:b6:4f (00:13:02:d1:b6:4f)
Source address: Intel_d1:b6:4f (00:13:02:d1:b6:4f)
BSS Id: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
Sequence number: 0
Sequence number: 1647
Frame check sequence: 0x478cbe0 [unverified]
FCS Status: Unverified
[WLAN Flags: ...C]
IEEE 802.11 Wireless Management
Fixed parameters (6 bytes)
Authentication: Allowed (0x00, 0x00, 0x00, 0x00, 0x00, 0x00)
Authentication: Not a valid protocol or protocol field

At t = 63.168087 there is a AUTHENTICATION frame sent from 00:13:02: d1:b6:4f (the wireless host) to 00:16:b7:f7:1d:51 (the BSS). At t = 63.169071 there is an AUTHENTICATION from sent in the reverse direction from the BSS to the wireless host

14. An ASSOCIATE REQUEST from host to AP, and a corresponding ASSOCIATE RESPONSE frame from AP to host are used for the host to associated with an AP. At what time is there an ASSOCIATE REQUEST from host to the 30 Munroe St AP? When is the corresponding ASSOCIATE REPLY sent?

Ans : At t = 63.169910 there is a ASSOCIATE REQUEST frame sent from 00:13:02:d1:b6:4f (the wireless host) to 00:16:b7:f7:1d:51 (the BSS). At t = 63.192101 there is an ASSOCIATE RESPONSE from sent in the reverse direction from the BSS to the wireless host

The image shows a Wireshark capture of an 802.11 authentication sequence. The main window displays a list of frames, and the bottom pane shows the detailed view of frame 2162, which is an IEEE 802.11 Association Request.

No.	Time	Source	Destination	Protocol	Length	Info
2150	63.116231	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=.....R...
2151	63.135362	Intel_d1:b6:4f	CiscoLinksys_f5:ba:bb	802.11	54	Deauthentication, SN=1646, FN=0, Flags=.....R...
2152	63.140106	Intel_d1:b6:4f	Broadcast	802.11	94	Probe Request, SN=1647, FN=0, Flags=.....C, SSID="30 Munroe St"
2153	63.142451	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	177	Probe Response, SN=3724, FN=0, Flags=.....C, BI=100, SSID="30 Munroe St"
2154	63.142860		CiscoLinksys_f7:1d:51	802.11	38	Acknowledgement, Flags=.....C
2155	63.161272	CiscoLinksys_f7:1d:51	CiscoLinksys_f7:1d:51	802.11	183	Beacon frame, SN=3725, FN=0, Flags=.....C, BI=100, SSID="30 Munroe St"
2156	63.168887	Intel_d1:b6:4f	CiscoLinksys_f7:1d:51	802.11	58	Authentication, SN=1647, FN=0, Flags=.....C
2157	63.168222		Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=.....C
2158	63.169871	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	58	Authentication, SN=3726, FN=0, Flags=.....C
2159	63.169592		CiscoLinksys_f7:1d:51	802.11	38	Acknowledgement, Flags=.....C
2160	63.169707	Intel_d1:b6:4f	CiscoLinksys_f7:1d:51	802.11	58	Authentication, SN=1647, FN=0, Flags=.....C
2161	63.169814		Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=.....C
2162	63.169910	Intel_d1:b6:4f	CiscoLinksys_f7:1d:51	802.11	89	Association Request, SN=1648, FN=0, Flags=.....C, SSID="30 Munroe St"
2163	63.170008		Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=.....C
2164	63.170692	CiscoLinksys_f7:1d:51	Intel_d1:b6:4f	802.11	58	Authentication, SN=3727, FN=0, Flags=.....C
2165	63.171000		CiscoLinksys_f7:1d:51	802.11	38	Acknowledgement, Flags=.....C

Frame 2162: 89 bytes on wire (712 bits), 89 bytes captured (712 bits)

- Radiotap Header v0, Length 24
- 802.11 radio information
 - IEEE 802.11 Association Request, Flags:C
 - Type/Subtype: Association Request (0x0000)
 - Frame Control Field: 0x0000
 - Duration: 44 microseconds
 - Receiver address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
 - Destination address: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
 - Transmitter address: Intel_d1:b6:4f (00:13:02:d1:b6:4f)
 - Source address: Intel_d1:b6:4f (00:13:02:d1:b6:4f)
 - BSS Id: CiscoLinksys_f7:1d:51 (00:16:b6:f7:1d:51)
 - Fragment number: 0
 - Sequence number: 1648
 - Frame check sequence: 0xfe3badc6 [unverified]
 - [FCS Status: Unverified]
 - [WLAN Flags:C]
 - IEEE 802.11 Wireless Management
 - Fixed parameters (4 bytes)
 - Capabilities Information: 0x0001

15. What transmission rates is the host willing to use? The AP? To answer this question, you will need to look into the parameters fields of the 802.11 wireless LAN management frame.

Ans : In the ASSOCIATION REQUEST frame the supported rates are advertised as 1, 2, 5.5, 11, 6, 9, 12, 18, 24, 32, 48, and 54 Mbps. The same rates are advertised in the ASSOCIATION RESPONSE

16. . What are the sender, receiver and BSS ID MAC addresses in these frames? What is the purpose of these two types of frames?

Ans : At $t = 2.297613$ there is a PROBE REQUEST sent with source 00:12:f0:1f:57:13, destination: ff:ff:ff:ff:ff:ff, and a BSSID of ff:ff:ff:ff:ff:ff. At $t = 2.300697$ there is a PROBE RESPONSE sent with source: 00:16:b6:f7:1d:51, destination and a BSSID of 00:16:b6:f7:1d:51

Wireshark_802.11.pcap

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter: <Ctrl-F>

No.	Time	Source	Destination	Protocol	Length	Info
37	1.724031	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2872, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
38	1.826193	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2873, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
39	1.928599	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2874, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
40	2.030907	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2875, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
41	2.035064	LinksysGroup_67:22:94	Broadcast	802.11	90	Beacon frame, SN=3089, FN=0, Flags=.....C, BI=100, SSID="Linksys12"
42	2.133342	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2876, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
43	2.137566	LinksysGroup_67:22:94	Broadcast	802.11	90	Beacon frame, SN=3090, FN=0, Flags=.....C, BI=100, SSID="Linksys12"
44	2.235695	CiscoLinksys_f7:1d:51	Broadcast	802.11	183	Beacon frame, SN=2877, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
46	2.236634	Intel_d1:b6:4f	CiscoLinksys_f7:1d:51	802.11	54	QoS Null function (No data), SN=1486, FN=0, Flags=.....TC
47	2.236730	Intel_d1:b6:4f	Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=.....C
48	2.237689	Intel_d1:b6:4f	CiscoLinksys_f7:1d:51	802.11	54	QoS Null function (No data), SN=1487, FN=0, Flags=...P...TC
49	2.237786	Intel_d1:b6:4f	Intel_d1:b6:4f	802.11	38	Acknowledgement, Flags=.....C
50	2.297613	Intel_1f:57:13	Broadcast	802.11	79	Probe Request, SN=576, FN=0, Flags=.....C, SSID="Home WIFI"
51	2.300697	CiscoLinksys_f7:1d:51	Intel_1f:57:13	802.11	177	Probe Response, SN=2878, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
52	2.302191	CiscoLinksys_f7:1d:51	Intel_1f:57:13	802.11	177	Probe Response, SN=2878, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S
53	2.304063	CiscoLinksys_f7:1d:51	Intel_1f:57:13	802.11	177	Probe Response, SN=2878, FN=0, Flags=.....C, BI=100, SSID="30 Munroe S

> Frame 50: 79 bytes on wire (632 bits), 79 bytes captured (632 bits)

> Radiotap Header v0, Length 24

> 802.11 radio information

IEEE 802.11 Probe Request, Flags:C

Type/Subtype: Probe Request (0x0004)

Frame Control Field: 0x4000

Duration: 0 microseconds

Receiver address: Broadcast (ff:ff:ff:ff:ff:ff)

Destination address: Broadcast (ff:ff:ff:ff:ff:ff)

Transmitter address: Intel_1f:57:13 (00:12:f0:1f:57:13)

Source address: Intel_1f:57:13 (00:12:f0:1f:57:13)

BSS Id: Broadcast (ff:ff:ff:ff:ff:ff)

Fragment number: 0

Sequence number: 576

Frame check sequence: 0xa373c5ff [unverified]

[FCS Status: Unverified]

[WLAN Flags:C]

IEEE 802.11 Wireless Management

Tagged parameters (27 bytes)

Tag: SSID, parameter set: "Home WIFI"

0000 00 00 18 00 ee 58 00 00 10 02 85 09 a0 00
0010 5e 00 00 0e ff c5 73 a3 40 00 00 00 ff ff
0020 ff ff 00 12 f0 1f 57 13 ff ff ff ff ff ff
0030 00 09 48 6f 6d 65 20 57 49 46 49 01 08 82
0040 16 0c 12 18 24 32 04 30 48 60 6c ff c5 73