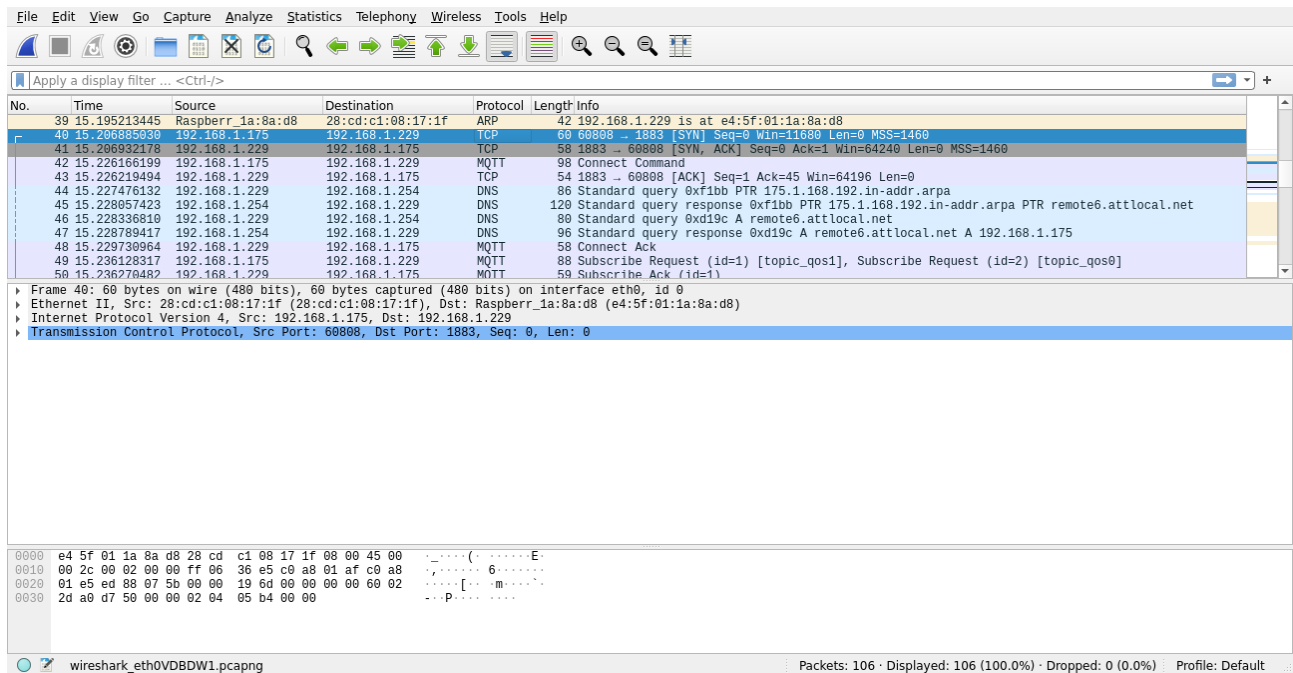


This test required change the pico_w port to 1883.

A mosquitto client on pi4-38 a 2nd Raspberry Pi 4B and a pico_w remote6 now can connect to MQTT mosquitto running on pi4-27.

“mosquitto_sub -h pi4-27 -p 1883 -t ‘update/memo’ -u ‘testuser’ -P ‘password123’ “
1669925497: New connection from 192.168.1.175:60808 on port 1883.
1669925497: New client connected from 192.168.1.175:60808 as remote6 (p2, c1, k100, u'testuser').

pico_w remote6 192.168.1.175 begin a seq.

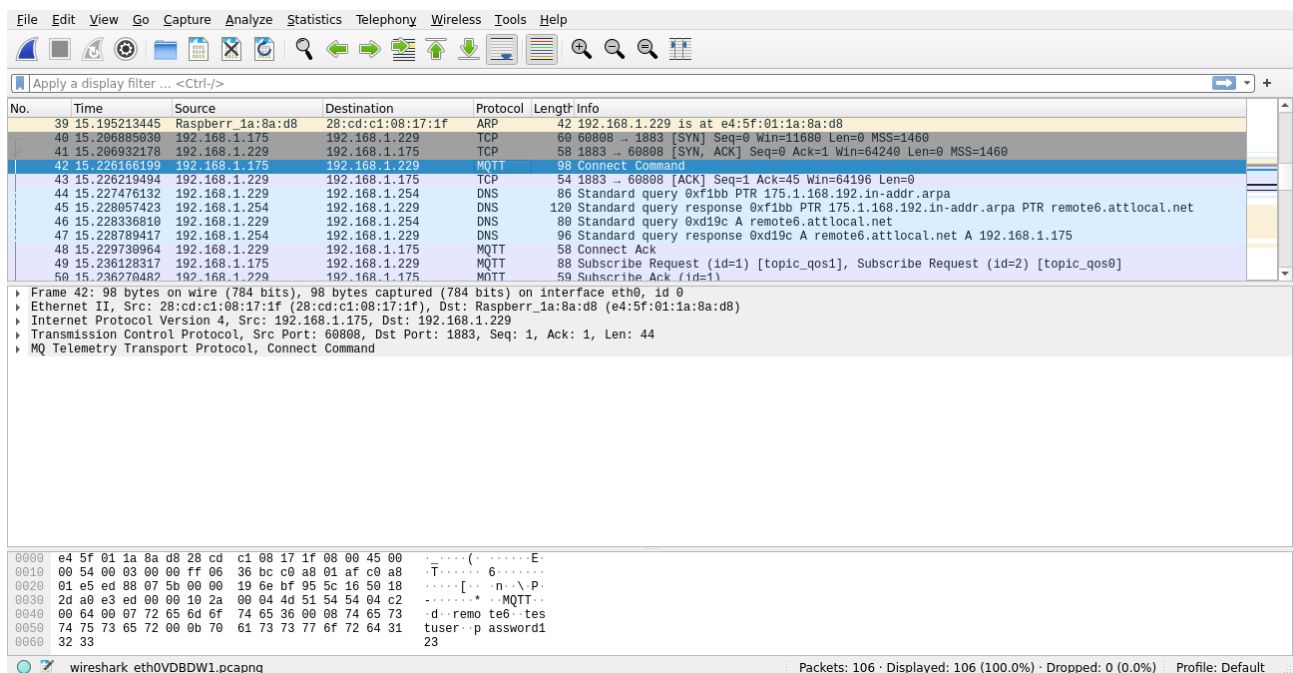


The screenshot shows a Wireshark capture of network traffic on interface eth0. The packet list displays several packets, with packet 40 selected. The packet details pane shows the structure of the selected packet: Ethernet II, Internet Protocol Version 4, and Transmission Control Protocol. The packet bytes pane shows the raw data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
39	15.195213445	Raspberr_1a:8a:d8	28:cd:c1:08:17:1f	ARP	42	192.168.1.229 is at e4:5f:01:1a:8a:d8
40	15.206885030	192.168.1.175	192.168.1.229	TCP	60	60808 → 1883 [SYN] Seq=0 Win=11680 Len=0 MSS=1460
41	15.206932178	192.168.1.229	192.168.1.175	TCP	58	1883 → 60808 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460
42	15.226166199	192.168.1.175	192.168.1.229	MQTT	98	Connect Command
43	15.226219494	192.168.1.229	192.168.1.175	TCP	54	1883 → 60808 [ACK] Seq=1 Ack=45 Win=64196 Len=0
44	15.227476132	192.168.1.229	192.168.1.254	DNS	86	Standard query 0xf1bb PTR 175.1.168.192.in-addr.arpa
45	15.228057423	192.168.1.254	192.168.1.229	DNS	120	Standard query response 0xf1bb PTR 175.1.168.192.in-addr.arpa PTR remote6.attlocal.net
46	15.228336810	192.168.1.229	192.168.1.254	DNS	80	Standard query 0xd19c A remote6.attlocal.net
47	15.228789417	192.168.1.254	192.168.1.229	DNS	96	Standard query response 0xd19c A remote6.attlocal.net A 192.168.1.175
48	15.229730964	192.168.1.229	192.168.1.175	MQTT	58	Connect Ack
49	15.236128317	192.168.1.175	192.168.1.229	MQTT	88	Subscribe Request (id=1) [topic_qos1], Subscribe Request (id=2) [topic_qos0]
50	15.236270482	192.168.1.229	192.168.1.175	MQTT	58	Subscribe Ack (id=1)

Frame 40: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface eth0, id 0
Ethernet II, Src: 28:cd:c1:08:17:1f (28:cd:c1:08:17:1f), Dst: Raspberr_1a:8a:d8 (e4:5f:01:1a:8a:d8)
Internet Protocol Version 4, Src: 192.168.1.175, Dst: 192.168.1.229
Transmission Control Protocol, Src Port: 60808, Dst Port: 1883, Seq: 0, Len: 0

pico_w requests a connection



The screenshot shows a Wireshark capture of network traffic on interface eth0. The packet list displays several packets, with packet 42 selected. The packet details pane shows the structure of the selected packet: Ethernet II, Internet Protocol Version 4, and MQ Telemetry Transport Protocol. The packet bytes pane shows the raw data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
39	15.195213445	Raspberr_1a:8a:d8	28:cd:c1:08:17:1f	ARP	42	192.168.1.229 is at e4:5f:01:1a:8a:d8
40	15.206885030	192.168.1.175	192.168.1.229	TCP	60	60808 → 1883 [SYN] Seq=0 Win=11680 Len=0 MSS=1460
41	15.206932178	192.168.1.229	192.168.1.175	TCP	58	1883 → 60808 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460
42	15.226166199	192.168.1.229	192.168.1.175	MQTT	98	Connect Command
43	15.226219494	192.168.1.229	192.168.1.175	TCP	54	1883 → 60808 [ACK] Seq=1 Ack=45 Win=64196 Len=0
44	15.227476132	192.168.1.229	192.168.1.254	DNS	86	Standard query 0xf1bb PTR 175.1.168.192.in-addr.arpa
45	15.228057423	192.168.1.254	192.168.1.229	DNS	120	Standard query response 0xf1bb PTR 175.1.168.192.in-addr.arpa PTR remote6.attlocal.net
46	15.228336810	192.168.1.229	192.168.1.254	DNS	80	Standard query 0xd19c A remote6.attlocal.net
47	15.228789417	192.168.1.254	192.168.1.229	DNS	96	Standard query response 0xd19c A remote6.attlocal.net A 192.168.1.175
48	15.229730964	192.168.1.229	192.168.1.175	MQTT	58	Connect Ack
49	15.236128317	192.168.1.175	192.168.1.229	MQTT	88	Subscribe Request (id=1) [topic_qos1], Subscribe Request (id=2) [topic_qos0]
50	15.236270482	192.168.1.229	192.168.1.175	MQTT	58	Subscribe Ack (id=1)

Frame 42: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface eth0, id 0
Ethernet II, Src: 28:cd:c1:08:17:1f (28:cd:c1:08:17:1f), Dst: Raspberr_1a:8a:d8 (e4:5f:01:1a:8a:d8)
Internet Protocol Version 4, Src: 192.168.1.175, Dst: 192.168.1.229
Transmission Control Protocol, Src Port: 60808, Dst Port: 1883, Seq: 1, Ack: 1, Len: 44
MQ Telemetry Transport Protocol, Connect Command

mosquitto sends Ack

The screenshot shows a Wireshark capture of network traffic. The packet list pane displays several packets, with packet 48 selected. The packet details pane shows the structure of the selected packet, which is a Connect Ack. The packet bytes pane shows the raw data of the selected packet.

No.	Time	Source	Destination	Protocol	Length	Info
39	15.195213445	Raspberr_1a:8a:d8	28:cd:c1:08:17:1f	ARP	42	192.168.1.229 is at e4:5f:01:1a:8a:d8
40	15.206885930	192.168.1.175	192.168.1.229	TCP	60	60808 → 1883 [SYN] Seq=0 Win=11680 Len=0 MSS=1460
41	15.206932178	192.168.1.229	192.168.1.175	TCP	58	1883 → 60808 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460
42	15.226166199	192.168.1.175	192.168.1.229	MQTT	98	Connect Command
43	15.226219494	192.168.1.229	192.168.1.175	TCP	54	1883 → 60808 [ACK] Seq=1 Ack=45 Win=64196 Len=0
44	15.227476132	192.168.1.229	192.168.1.254	DNS	86	Standard query 0xf1bb PTR 175.1.168.192.in-addr.arpa
45	15.228057423	192.168.1.254	192.168.1.229	DNS	120	Standard query response 0xf1bb PTR 175.1.168.192.in-addr.arpa PTR remote6.attlocal.net
46	15.228336810	192.168.1.229	192.168.1.254	DNS	80	Standard query 0xd19c A remote6.attlocal.net
47	15.228789417	192.168.1.254	192.168.1.229	DNS	96	Standard query response 0xd19c A remote6.attlocal.net A 192.168.1.175
48	15.229730964	192.168.1.229	192.168.1.175	MQTT	58	Connect Ack
49	15.236128317	192.168.1.175	192.168.1.229	MQTT	88	Subscribe Request (id=1) [topic_qos1], Subscribe Request (id=2) [topic_qos0]
50	15.236270482	192.168.1.229	192.168.1.175	MQTT	58	Subscribe Ack (id=1)

Frame 48: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface eth0, id 0
Ethernet II, Src: Raspberr_1a:8a:d8 (e4:5f:01:1a:8a:d8), Dst: 28:cd:c1:08:17:1f (28:cd:c1:08:17:1f)
Internet Protocol Version 4, Src: 192.168.1.229, Dst: 192.168.1.175
Transmission Control Protocol, Src Port: 1883, Dst Port: 60808, Seq: 1, Ack: 45, Len: 4
MQ Telemetry Transport Protocol, Connect Ack

0000 28 cd c1 08 17 1f e4 5f 01 1a 8a d8 08 00 45 00 (.....E-
0010 00 2c e9 12 40 00 00 06 cc d4 c0 a8 01 e5 c0 a8 .,0.0
0020 01 af 07 5b ed 88 bf 95 5c 16 00 00 19 9a 50 18 ...[.....\p
0030 fa c4 85 03 00 00 20 02 00 00P

wireshark_eth0VDBDW1.pcapng Packets: 106 · Displayed: 106 (100.0%) · Dropped: 0 (0.0%) · Profile: Default

pico_w sub 'topic_qos0' & 'topic_qos1'

The screenshot shows a Wireshark capture of network traffic. The packet list pane displays several packets, with packet 49 selected. The packet details pane shows the structure of the selected packet, which is a Subscribe Request. The packet bytes pane shows the raw data of the selected packet.

No.	Time	Source	Destination	Protocol	Length	Info
39	15.195213445	Raspberr_1a:8a:d8	28:cd:c1:08:17:1f	ARP	42	192.168.1.229 is at e4:5f:01:1a:8a:d8
40	15.206885930	192.168.1.175	192.168.1.229	TCP	60	60808 → 1883 [SYN] Seq=0 Win=11680 Len=0 MSS=1460
41	15.206932178	192.168.1.229	192.168.1.175	TCP	58	1883 → 60808 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460
42	15.226166199	192.168.1.175	192.168.1.229	MQTT	98	Connect Command
43	15.226219494	192.168.1.229	192.168.1.175	TCP	54	1883 → 60808 [ACK] Seq=1 Ack=45 Win=64196 Len=0
44	15.227476132	192.168.1.229	192.168.1.254	DNS	86	Standard query 0xf1bb PTR 175.1.168.192.in-addr.arpa
45	15.228057423	192.168.1.254	192.168.1.229	DNS	120	Standard query response 0xf1bb PTR 175.1.168.192.in-addr.arpa PTR remote6.attlocal.net
46	15.228336810	192.168.1.229	192.168.1.254	DNS	80	Standard query 0xd19c A remote6.attlocal.net
47	15.228789417	192.168.1.254	192.168.1.229	DNS	96	Standard query response 0xd19c A remote6.attlocal.net A 192.168.1.175
48	15.229730964	192.168.1.229	192.168.1.175	MQTT	58	Connect Ack
49	15.236128317	192.168.1.175	192.168.1.229	MQTT	88	Subscribe Request (id=1) [topic_qos1], Subscribe Request (id=2) [topic_qos0]
50	15.236270482	192.168.1.229	192.168.1.175	MQTT	58	Subscribe Ack (id=1)

Frame 49: 88 bytes on wire (704 bits), 88 bytes captured (704 bits) on interface eth0, id 0
Ethernet II, Src: 28:cd:c1:08:17:1f (28:cd:c1:08:17:1f), Dst: Raspberr_1a:8a:d8 (e4:5f:01:1a:8a:d8)
Internet Protocol Version 4, Src: 192.168.1.175, Dst: 192.168.1.229
Transmission Control Protocol, Src Port: 60808, Dst Port: 1883, Seq: 45, Ack: 5, Len: 34
MQ Telemetry Transport Protocol, Subscribe Request
MQ Telemetry Transport Protocol, Subscribe Request

0000 e4 5f 01 1a 8a d8 28 cd c1 08 17 1f 08 00 45 00E-
0010 00 4a 00 04 00 00 ff 06 36 c5 c0 a8 01 af c0 a8 .J.....6
0020 01 e5 ed 88 07 5b 00 00 19 9a bf 95 5c 1a 50 18[.....\p
0030 2d 9c 2f 59 00 00 02 0f 00 01 00 0a 74 6f 70 69 --/Y.....topi
0040 63 5f 71 6f 73 31 01 82 0f 00 02 00 0a 74 6f 70 c_qos1.....top
0050 69 63 5f 71 6f 73 30 00ic_qos0

wireshark_eth0VDBDW1.pcapng Packets: 106 · Displayed: 106 (100.0%) · Dropped: 0 (0.0%) · Profile: Default

mosquitto sends Ack

No.	Time	Source	Destination	Protocol	Length	Info
39	15.195213445	Raspberr_1a:8a:d8	28:cd:c1:08:17:1f	ARP	42	192.168.1.229 is at e4:5f:01:1a:8a:d8
40	15.206885030	192.168.1.175	192.168.1.229	TCP	60	60808 → 1883 [SYN] Seq=0 Win=11680 Len=0 MSS=1460
41	15.206932178	192.168.1.229	192.168.1.175	TCP	58	1883 → 60808 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460
42	15.226166199	192.168.1.175	192.168.1.229	MQTT	98	Connect Command
43	15.226219494	192.168.1.229	192.168.1.175	TCP	54	1883 → 60808 [ACK] Seq=1 Ack=45 Win=64196 Len=0
44	15.227476132	192.168.1.229	192.168.1.254	DNS	86	Standard query 0xf1bb PTR 175.1.168.192.in-addr.arpa
45	15.228057423	192.168.1.254	192.168.1.229	DNS	120	Standard query response 0xf1bb PTR 175.1.168.192.in-addr.arpa PTR remote6.attlocal.net
46	15.228336810	192.168.1.229	192.168.1.254	DNS	80	Standard query 0xd19c A remote6.attlocal.net
47	15.228789417	192.168.1.254	192.168.1.229	DNS	96	Standard query response 0xd19c A remote6.attlocal.net A 192.168.1.175
48	15.229730964	192.168.1.229	192.168.1.175	MQTT	58	Connect Ack
49	15.236128317	192.168.1.175	192.168.1.229	MQTT	88	Subscribe Request (id=1) [topic_qos1], Subscribe Request (id=2) [topic_qos0]

▶ Frame 50: 59 bytes on wire (472 bits), 59 bytes captured (472 bits) on interface eth0, id 0
 ▶ Ethernet II, Src: Raspberr_1a:8a:d8 (e4:5f:01:1a:8a:d8), Dst: 28:cd:c1:08:17:1f (28:cd:c1:08:17:1f)
 ▶ Internet Protocol Version 4, Src: 192.168.1.229, Dst: 192.168.1.175
 ▶ Transmission Control Protocol, Src Port: 1883, Dst Port: 60808, Seq: 5, Ack: 79, Len: 5
 ▶ MQ Telemetry Transport Protocol, Subscribe Ack

```

0000  28 cd c1 08 17 1f e4 5f 01 1a 8a d8 08 00 45 00  (.....E-
0010  00 2d e9 13 40 00 40 06 cc d2 c0 a8 01 e5 c0 a8  ...0.0.....
0020  01 af 07 5b ed 88 bf 95 5c 1a 00 00 19 bc 50 18  ...[\.....P-
0030  fa a2 85 04 00 00 00 03 00 01 01                .....
  
```

wireshark_eth0VDBDW1.pcapng Packets: 106 · Displayed: 106 (100.0%) · Dropped: 0 (0.0%) · Profile: Default

remote6

12/01/22

Uart connected to pi4-28 using port 1883

pico_w remote6 connects with mosquitto pi4-27

adding gpio support to the program

Back from buildCRCTable

0xd3 0x1 0x2e

Starting FreeRTOS on core 0:

Connecting to WiFi...

Connected.

mqtt_port = 1883 &mqtt_port 0x200005a4

mqtt_ip = 0xe501a8c0 &mqtt_ip = 0x200005a0

IPADDR_LOOPBACK = 0x7f000001

mqtt_client 0x20021f50 &mqtt_client 0x20000f5c

mqtt_set_inpub_callback 0x10001359

mqtt_client_connect 0x10001371

gpio_task starts

mqtt_task starts

Ready, running iperf server at 192.168.1.175

blink_task starts

MQTT client "remote6" connection cb: status 0

MQTT client "remote6" request cb: err 0

MQTT client "remote6" request cb: err 0

MQTT client "remote6" publish cb: topic topic_qos1, len 20

MQTT client "remote6" data cb: len 20, flags 1

MQTT client "remote6" publish cb: topic topic_qos1, len 20

MQTT client "remote6" data cb: len 20, flags 1

MQTT client "remote6" publish cb: topic topic_qos1, len 20

MQTT client "remote6" data cb: len 20, flags 1

MQTT client "remote6" connection cb: status 256

```
devel@pi4-27:~ $ mosquitto_pub -t 'topic_qos1' -u 'testuser' -P 'password123' -m 'hello from  
mosquitto'
```

```
devel@pi4-27:~ $ mosquitto_pub -t 'topic_qos1' -u 'testuser' -P 'password123' -m 'hello from  
mosquitto'
```

```
devel@pi4-27:~ $ mosquitto_pub -t 'topic_qos1' -u 'testuser' -P 'password123' -m 'hello from  
mosquitto'
```

```
devel@pi4-27:~ $ mosquitto_pub -t 'topic_qos1' -u 'testuser' -P 'password123' -m 'hello from  
mosquitto'
```

new conect

MQTT client "remote6" publish cb: topic topic_qos0, len 41

MQTT client "remote6" data cb: len 41, flags 1

```
mosquitto_pub -t 'topic_qos0' -u 'testuser' -P 'password123' -m 'hello from mosquitto hello from  
mosquitto'
```