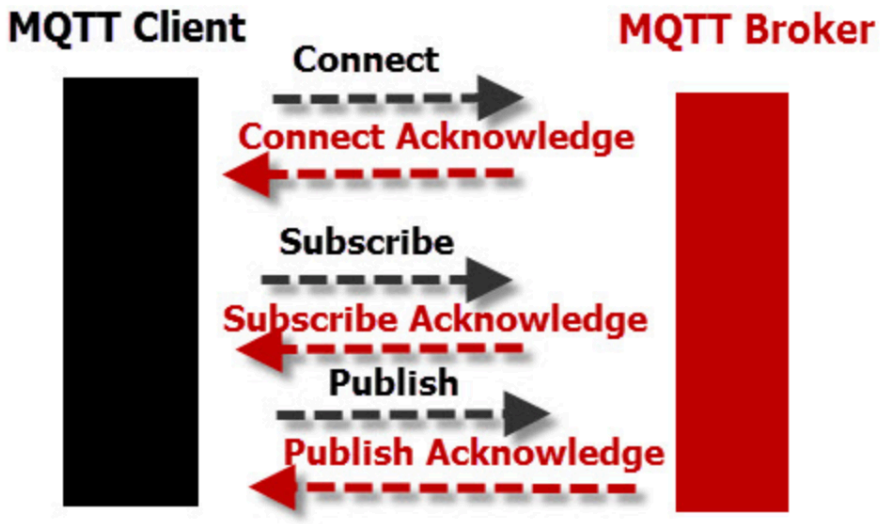
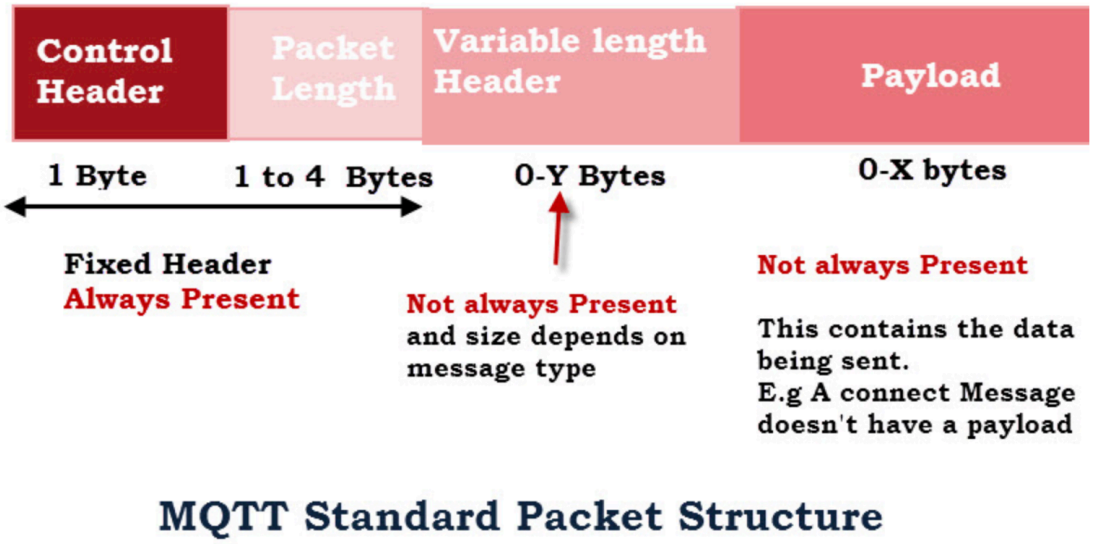
MQTT Protocol Packet Structure



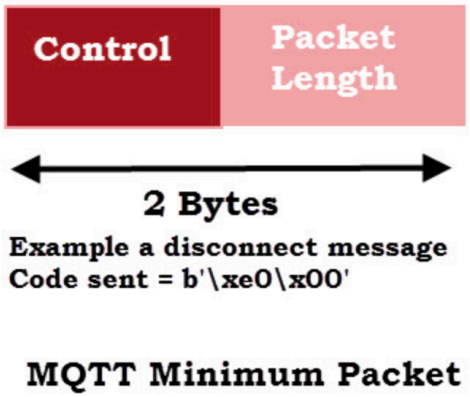
MQTT Client To Broker Protocol

2 byte fixed header (always present) **+ Variable-header** (not always present)**+ payload** (not always present)



MQTT Standard Packet Structure

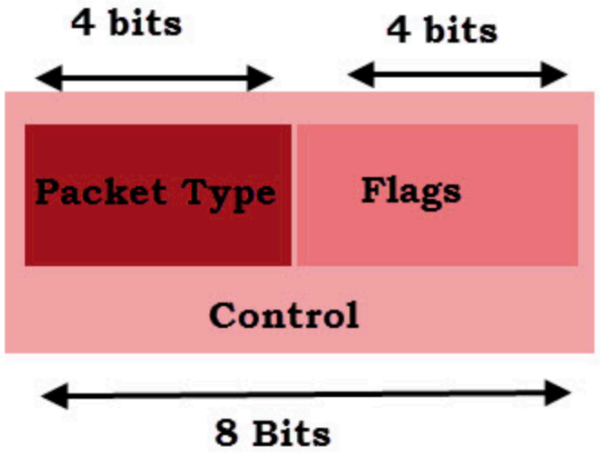
The **minimum packet size** is just **2 bytes** (Ex. **disconnect message** is only 2 bytes)
1) a **single byte control field** and
2) a **single byte packet length field**



MQTT Minimum Packet

Control field:

The first **4 Most significant bits** are the command or **message type field** and the other 4 bits are used as **control flags**.



Packet Type Examples:

Connect =0001 =1
Connack=0010 =2

Disconnect=1110=14

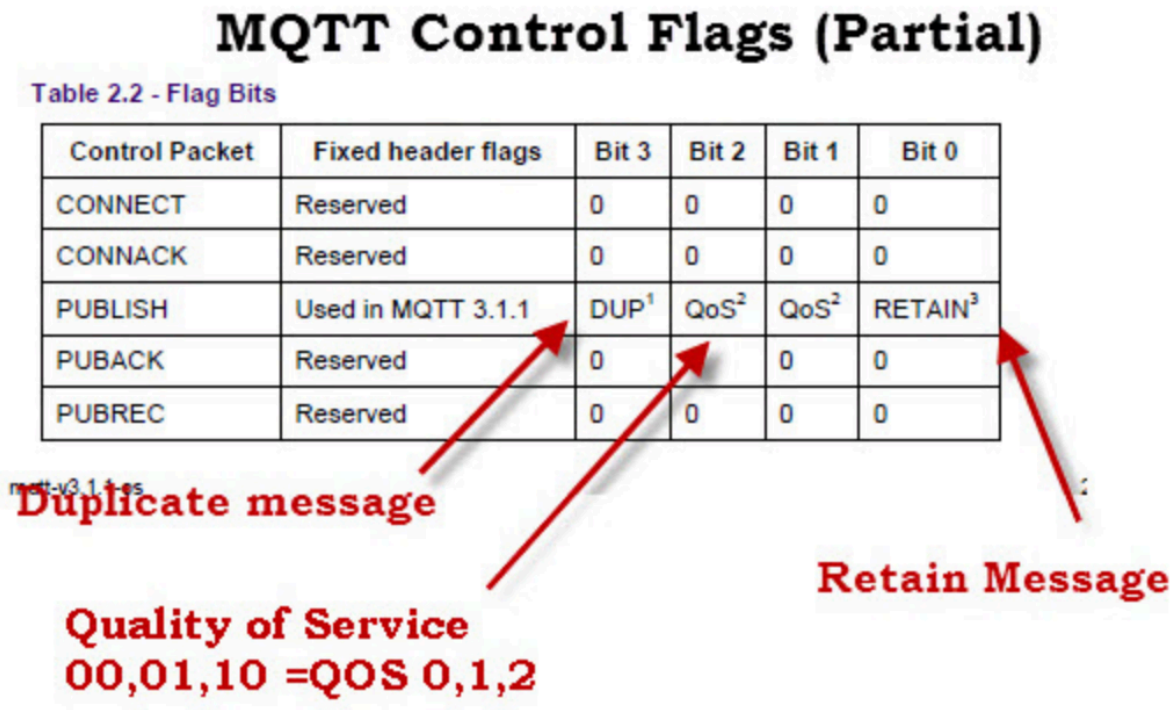
MQTT Control Field Structure

packet type:

Message Type	Value	Flow	Description
CONNECT	1	Client to server	Request to connect
CONNACK	2	Server to client	Connect acknowledgement
PUBLISH	3	Client to server Server to client	Publish message
PUBACK	4	Client to server Server to client	Publish acknowledgement
PUBREC	5	Client to server Server to client	Publish received
PUBREL	6	Client to server Server to client	Publish release
PUBCOMP	7	Client to server Server to client	Publish complete
SUBSCRIBE	8	Client to server	Subscribe request
SUBACK	9	Server to client	Subscribe acknowledgement
UNSUBSCRIBE	10	Client to server	Unsubscribe request
UNSUBACK	11	Server to client	Unsubscribe acknowledgement
PINGREQ	12	Client to server	Ping request
PINGRESP	13	Server to client	Ping response
DISCONNECT	14	Client to server	Client disconnecting

Flags:

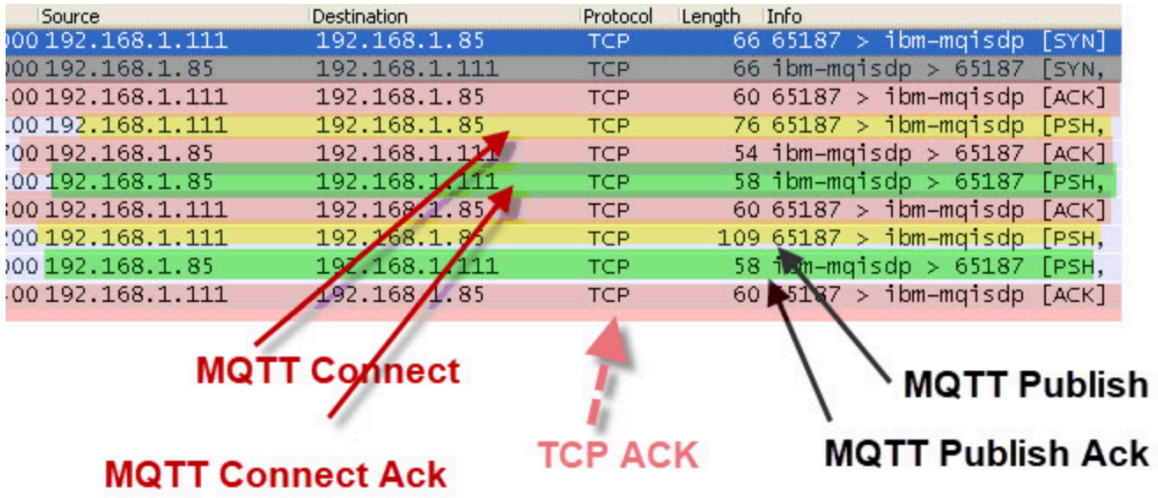
The **publish message** makes the most use of these flags as shown in the table below:



Note: taken from the OASIS MQTT 3.1.1 specification document

Remaining Length

The remaining length is the number of bytes following the length field, includes variable length header and payload .



Wireshark Packet Capture- MQTT