

MQTT 5.0 – CONNECT Packet (Test Sample)

| Field | Length / Encoding | Description |
|------------------|-------------------|---|
| Packet Type | 1 byte | MQTT Control Packet type (CONNECT=0x10 high nibble) |
| Flags | 1 byte | Must be 0 for CONNECT |
| Remaining Length | VBI | Length of Variable Header + Payload (Variable Byte Integer) |

Variable Header

| Field | Length / Encoding | Description |
|----------------|-------------------|--|
| Protocol Name | UTF-8 string | Must be 'MQTT' |
| Protocol Level | 1 byte | Level 5 |
| Connect Flags | 1 byte | Clean Start / Will / Username / Password flags |
| Keep Alive | 2 bytes | Keep Alive in seconds |

Properties (MQTT 5.0)

| Property | ID | Length / Encoding | Presence/Notes |
|-------------------------|-----------|-------------------|----------------|
| Session Expiry Interval | 0x11 (17) | 4 bytes, UINT | Optional |
| Receive Maximum | 0x21 (33) | 2 bytes, UINT | Optional |
| Maximum Packet Size | 0x27 (39) | 4 bytes, UINT | Optional |

Payload

| Field | Length / Encoding | Presence/Notes |
|-----------------|-------------------|--------------------|
| Client ID | UTF-8 string | Required |
| Will Properties | VBI + fields | If Will Flag=1 |
| Will Topic | UTF-8 string | If Will Flag=1 |
| Will Payload | VAR-BYTES | If Will Flag=1 |
| Username | UTF-8 string | If Username Flag=1 |
| Password | VAR-BYTES | If Password Flag=1 |