Getting started with MQTT on eWON Flexy

This document describes how to setup your Flexy to be an MQTT Client.
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1. Introduction : What is MQTT ?

MQTT stands for Message Queue Transport Protocol.

MQTT is a lightweight communication protocol based on TCP/IP used by IOT platforms to receive or send messages from smart devices like meters, sensors, ...

When using MQTT, the network topology is composed of multiple clients connected to a single server, which is called the “Broker”.

The connection is always initiated by the client to the broker using the port 1883 (non-encrypted) or 8883 (encrypted). This allows the use of simple internet connections with no specific settings on the client side.

The broker is usually publicly accessible on Internet and acts as a communication bridge between the different clients. Its main goal is to bufferize the messages sent by the clients and forward them to one or multiple clients.

For each messages generated by the client, the subject of the message must be defined. This subject called “topic”. For each topic used, a queue is created in the broker. Each client can then publish messages to topic’s queues but also subscribe to messages of specific topics. Usually, the format used for the topic is similar to an URI (Ex: /belgium/topic1). The clients which subscribe to one or multiple topics will receive all messages published to these topics by other clients.

Regarding the content of the messages, the MQTT standard does not specify anything. It is up to the clients and the broker to agree on a message content format. It can be CSV, JSON, XML, binary...
Chapter 1
Introduction: What is MQTT?

Example:

1. The MQTT client #3 and #4 sends a subscription message to the broker to subscribe to the topic “/nivelles/temperature”.

   ![Diagram of MQTT client subscribing to topic](image)

2. The MQTT Client #1 publishes then a message \{temperature: 21,3\} to the same topic “/nivelles/temperature”. The client #3 and #4 will therefore receive the message generated by the client #1.

   ![Diagram of MQTT client publishing message](image)
2. How to use MQTT with an eWON Flexy

The Flexy can act as a MQTT Client.

To be able to connect the Flexy to any MQTT brokers, the Flexy exposes several BASIC and JAVA functions that allow you to program your own MQTT communication.

```plaintext
Init Section

SETSYS INF, "LOAD"
SerNum$ = GETSYS INF, "SERNUM"

MQTT "OPEN", SerNum$, "ewonsupport.biz"
MQTT "SETPARAM", "PORT", "1883"
MQTT "SUBSCRIBE", "/cmd/flexy", 2
MQTT "CONNECT"

TSET 1,5
ONTIMER 1, "GOTO T1"
ONMQTT "GOTO MqttRx"
END

T1:
ConnStatus$ = MQTT "STATUS"
IF ConnStatus$ = 5 THEN
    MQTT "PUBLISH", "/topic/flexy", "Hello From Flexy " + SerNum$, 0,0
    PRINT "Message published to the MQTT broker"
END
```

You then have the possibility to easily compute your own messages with live Tag values, use your own topics and send the messages to any IOT platforms that feature a MQTT broker. The topic and the message format is often specified by the IOT platform.


If you want to get started, please visit our techforum: https://techforum.ewon.biz
If you wish to start using BASIC, go to https://techforum.ewon.biz/thread-473.html
If you wish to start using JAVA, go to https://techforum.ewon.biz/thread-586.html
If you want to connect well-known IOT platforms such as AWS IOT or Azure IOT Hub, you'll also find program examples as well as ready-to-use programs on the techforum, in the BASIC or JAVA section.
Revision Information

Revision

Revision History

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