PAHO MQTT

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Paho MQTT

- Paho MQTT is a Python client library which implements versions 3.1 and **3.1.1** of the MQTT protocol.

- Provides a client class to connect to an MQTT broker to publish messages, subscribe to topics and receive published messages.

- Complete documentation available at
  https://pypi.org/project/paho-mqtt/

- Paho MQTT is composed by:
  - Client
  - Publish
  - Subscribe

Client

Paho MQTT

Client

- The Client class is the main class used for communicating with an MQTT broker.

- General usage flow:
  - Instantiate a Client object
  - Connect to the broker
  - Maintain network traffic flow with the broker
  - [subscribe/publish] to a topic
  - disconnect from the broker

Client

- To maintain the network connection there are multiple ways:
  - **loop**
  - **loop_start/loop_stop**
  - **loop_forever**

Client

- **loop(timeout=1.0)** call regularly to process network events. This call waits for the network socket to be available for read/write, then handles the incoming/outgoing data.
  This function blocks for up to *timeout* seconds (timeout must be lower than the *keep_alive* specified in the *connect* function, otherwise the broker disconnects the client).

Client

- **loop_start()/loop_stop()** functions implements a threaded interface to the network loop. Calling loop_start() frees the main thread for other work that may be blocking (example: multiple publish on different topics made in loops). loop_stops stops the background thread.

Client

- **loop_forever()** is a blocking form of the network loop and will not return until the client calls *disconnect()*. It automatically handles reconnecting.

Publish

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Publish

Module used for allow straight forwarding publishing of messages in a one-shot manner.

Two different types of publish provided:

- single()
- multiple()

see full docs at https://pypi.org/project/paho-mqtt/#id2

Subscribe

Paho MQTT

Subscribe

Module that provides some helper functions to allow straight forwarding subscribing and processing of messages.

Two functions are provided:

- simple()
- callback()

see full docs at https://pypi.org/project/paho-mqtt/#id3

Client, Publish or Subscribe?

These 3 modules of the Paho MQTT library exposes the same functionalities.
Choosing one between Client, Publish or Subscribe is a developer choice, but some good habits can be:

- Use **Client** when a persistent client connection is required;

- Use **Publish** when the client only needs to send messages when triggered, without requiring to maintain a network connection;

- Use **Subscribe** when the client only needs to read a certain amout of messages and then proceed with its operations.

For more details, read the full doc at https://pypi.org/project/paho-mqtt/