What is MQTT?

MQTT, also known as MQ Telemetry Transport, is a data transmission protocol. IBM developed it in 1999 for transmitting information between low-power sensors. It is based on the publish/subscribe model.

## What is HTTP?

HTTP (Hyper Text Transfer Protocol) enables data retrieval on request. The protocol is a so-called “client-server” protocol. Thus, the HTTP protocol allows posting (“POST”) data to a server (storing data on the server), which any other client (transferring stored data from a server to the client) can also request (“GET”).

## Comparing HTTP vs MQTT

1 . MQTT is superior to HTTP if you have devices that communicate regularly. The MQTT protocol can keep a connection open for as long as possible, sending only a single data packet. Unlike HTTP communication, which requires you to open and close a connection (including TCP) for every data packet you want to send, you can significantly reduce CPU usage.

2. Also, an MQTTs payload does not need to be encrypted or decrypted to be sent. An HTTP document is always text-based; you must encrypt and decrypt any data format other than text.

3. An MQTT packet contains at least two bytes if a connection is already open. Otherwise, the MQTT CONNECT packet depends on its commands while HTTP packet contains more than eight bytes. Also, remember that HTTP relies on text. Base64 encodes and decodes any binary code. You are creating more workload for the CPU.

4. Each HTTP session (1. Open TCP/IP connection, 2. Send an HTTP request, 3. Receive a response, 4. Close connection) takes approximately 247-289 milliseconds (according to Google) while MQTT packets are transferred at around 191-207 milliseconds (according to Google).

5. MQTT shows its talent when more than one message is sent via one connection since it doesn’t need to rebuild connection over and over for each message.

6. A reliable protocol is a must whenever the client has to know whether or not the sent data was received (and acknowledged). MQTT deals with it using QoS (Quality of Service) –levels to achieve reliability, while you will need to implement add-ons for HTTP.

Conclusion

MQTT is superior to HTTP if you have devices that communicate regularly. The MQTT protocol can keep a connection open for as long as possible, sending only a single data packet and with it’s advantages of lightweight, efficiency, reliable messaging, massive connection support, secure bidirectional communication , and features that can’t be implemented in HTTP without add-ons it’s no wonder that MQTT is an industry go to.

Resources:

* https://cedalo.com/blog/http-vs-mqtt-for-iot/
* <https://cloud.google.com/blog/products/iot-devices/http-vs-mqtt-a-tale-of-two-iot-protocols>
* https://www.emqx.com/en/blog/what-is-the-mqtt-protocol