

What is MQTT?

Message Querying Telemetry Transport (MQTT) is a prevalent publish/subscribe messaging protocol used in network communications. Recognized versions by both the OASIS and ISO community attest to the wide implementation of MQTT. [1] [2]

Invented in 1999 by Dr. Andy Stanford-Clark and Arlen Nipper, it was originally aimed to be the first open-source SCADA protocol. Initially to solve a communication problem for gas pipelines, and today surpassing HTTP as the most used protocol for IoT devices on the internet. [3]

TCP/IP ports 1883 and 8883 are reserved with IANA for use with MQTT, the latter for using the protocol over SSL. Many products support this protocol, including the following:

- Major Cloud Platforms (Azure, AWS, IBM Cloud)
- Facebook Messenger
- Eclipse Mosquitto
- Sparkplug
- Ignition

An arguably over-simplified architecture includes one or more clients and a broker. The broker acts as the server, which receives information from publishing clients then distributes to subscribing ones. Clients specify a topic to the broker to distinguish relevant messages. One can consider a wide-range of applications to implement this protocol in. From home automation projects to advanced SCADA applications, the options are endless.

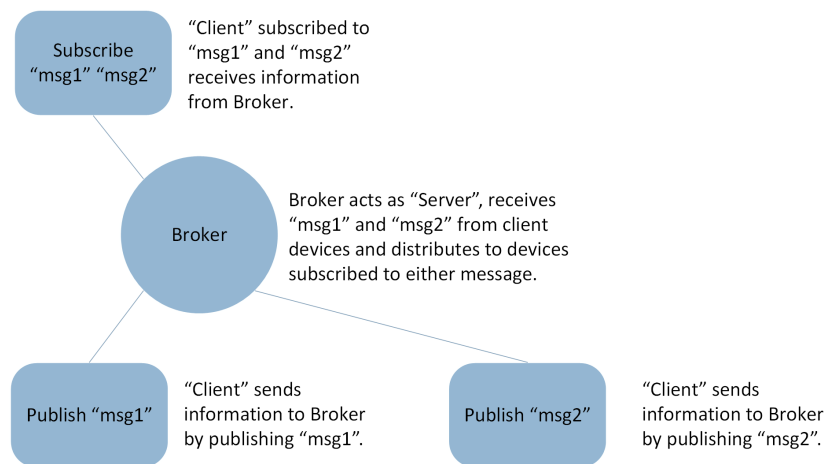


Figure 1: Simplified MQTT Architecture

Do you want to get started with using MQTT? I'll plan on providing a few simple demonstrations to help familiarize the topic.

References

- [1] “MQTT Specification,” MQTT.org. [Online]. Available: <https://mqtt.org/mqtt-specification/>. [Accessed: 20-Oct-2022].
- [2] “ISO/IEC 20922:2016 Information technology — Message Queuing Telemetry Transport (MQTT) v3.1.1,” ISO.org. [Online]. Available: <https://www.iso.org/standard/69466.html>. [Accessed: 20-Oct-2022].
- [3] D. Pearson and A. Stanford-Clark, “The Co-Inventor of MQTT: Andy Stanford-Clark from IBM,” Inductive Automation, 25-Jun-2019.