IOT PROTOCOL EFFICIENCY

COMPARING LWM2M AND MQTT

Building IoT solutions requires lots of choices. Organizations need to understand the devices, connectivity, and supporting technologies needed to build, not just a solution, but the most cost-effective solution. MachNation recently published *Comparing the efficiency of LwM2M and MQTT: hands-on test results of two technology clients on a typical IoT device, April 2020,* looking at LwM2M and MQTT, two protocols used to build IoT solutions. Here is a brief summary of the report.

HIGH-LEVEL FINDINGS

MachNation found LwM2M is *preferable* for solutions that require:

- **Conserving battery life**
- **Operating on constrained networks (e.g., LTE Cat-M1 and NB-IoT) or where network traffic is metered**
- **Devices to remain dormant for long periods**

MachNation recommends that embedded developers implementing a LwM2M-powered solution seek a productized (rather than open source) LwM2M client upon which to build due to support needs.

LWM2M ADVANTAGES:

72% Less data transfer during the initial device-to-platform connection and after a device reboot.

31% Less data transfer during the ongoing steady state of a device connection.

88% Less data transfer during device observations at 2 updates per minute

17% Less data transfer during a single platform-to-device message push

33% Less power consumption than a similarly-equipped MQTT device irrespective of update interval.*

*May be due to in part to SDK.

+ LwM2M yields important, long-term technical advantages, but more forethought required for implementation during the design and development process.

IOTEROP'S OPINION

⭐ MachNation's report is well-concieved and detailed.

✓ We agree LwM2M manages battery-life and communications more efficiently in most cases.

🔑 While both protocols address communication, LwM2M also addresses device management, security & NIDD.

+ The scope of the report did not address how device management capabilities reduce operational costs.

🛡 LwM2M provides greater end-to-end security capabilities: encryption, authentication, & OSCORE.

❓ Finally, we suggest different commercial LwM2M instances perform differently.

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