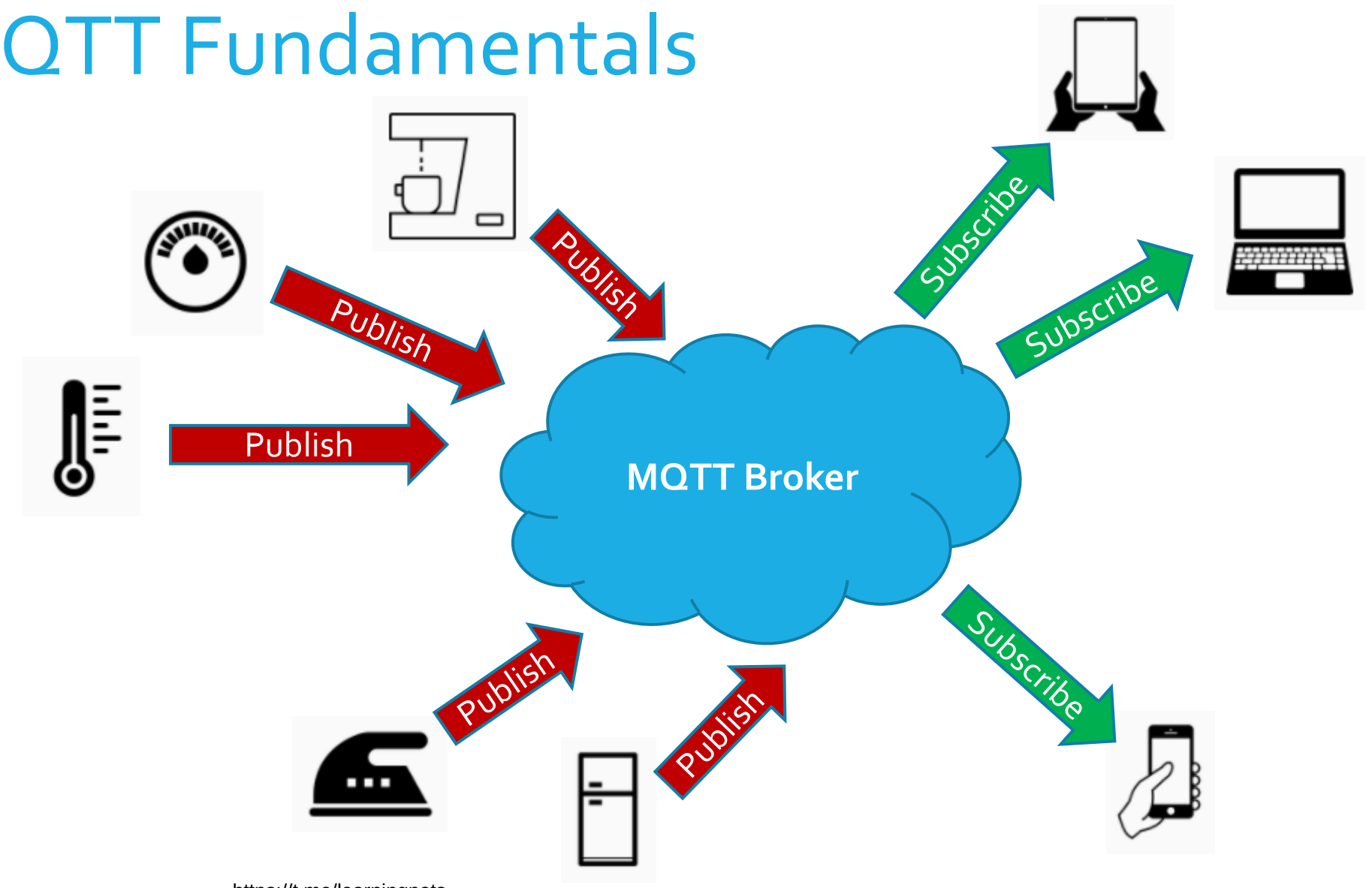
Analysing

MQTT (IOT)

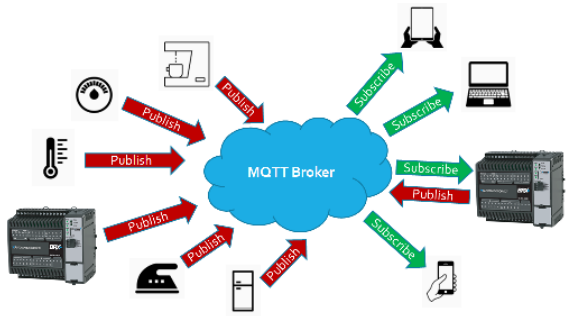
Message **Q**ueuing **T**elemetry **T**ransport

(**I**nternet **o**f **T**hings)

MQTT Fundamentals

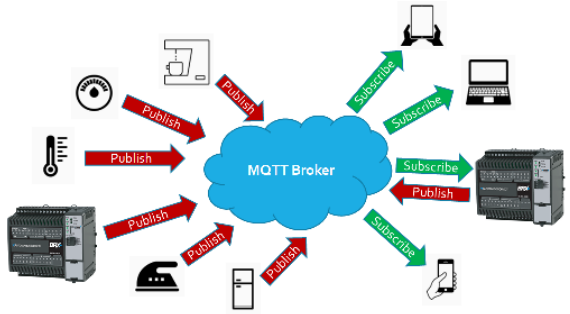


MQTT Terminology (1 of 2)



- **MQTT Broker**
  - Receives published topics
  - Distributes topics to subscribers
  - Keeps Client connections alive
  - Sends Last Will & Testament (LWT) to subscribers if a Client "ungracefully disconnects"
- **MQTT Client**
  - Can publish topic(s), keep-alive time, Retain bit, QoS, Last Will & Testament
  - Can subscribe to topic(s)
- **Topic**
  - Name of the data
- **Payload**
  - Actual data
- **Message**
  - Topic + Payload
- **QoS** *(Quality of Service)*
  - 0 = At most once : transmits message once (relies on TCP)
  - 1 = At least once : transmits message until it is acknowledged by receiver (may receive more than one)
  - 2 = Exactly once: transmits message, needs "received" message, asks if it can be "released," needs "complete" message

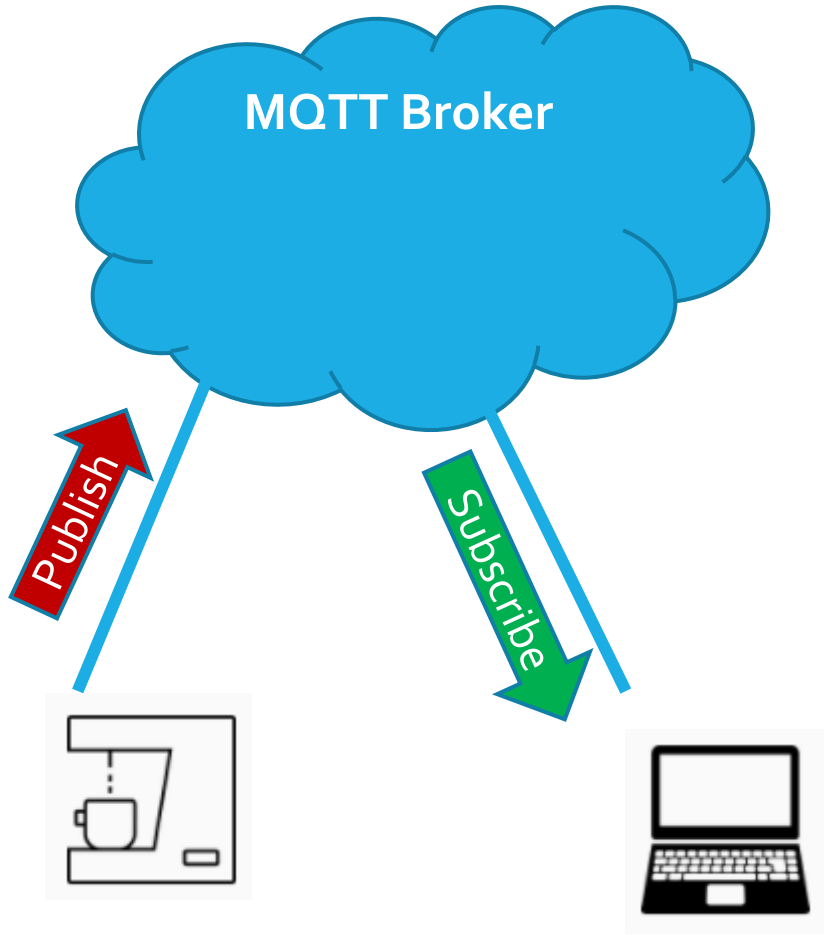
MQTT Terminology (2 of 2)



- **Publish**
  - To send a Topic w/Payload to MQTT Broker
- **Subscribe**
  - To request a Topic w/Payload update from MQTT Broker
- **Retain**
  - Asks MQTT Broker to save the Topic w/Payload even after sending it to all the subscribing Clients
- **Keep-alive Time**
  - How often Broker "pings" client to see if he's there
- **Last Will & Testament** *(LWT)*
  - Topic w/Payload initially sent by an MQTT Client to the MQTT Broker for the Broker to send to other Clients if he is "ungracefully disconnected"

MQTT Data Exchange

- Publishers are fundamentally separate from Subscribers
  - Publishers only care about getting data to Broker
  - Broker is fully responsible for getting data to Subscribers
- Clients connect to an MQTT Broker (TCP/IP, MQTT)
- Clients can publish data to topics, e.g.
  - host/office/greg/temp, 72.3
- Clients subscribe to topics, e.g.
  - host/office/greg/temp



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