To confirm if a led turn on/off signal from a publisher has successfully been acted upon by a subscriber.

To confirm if an LED is on or off using MQTT, you can set up a system where the MQTT client publishes messages indicating the LED's state and subscribes to messages to update the LED's status. This involves creating a callback function that responds to incoming MQTT messages and controls the LED accordingly. The client can then publish messages like "on" or "off" to a specific topic, and the callback function will respond by turning the LED on or off based on the message received.

Here's a more detailed breakdown:

1. **1. Set up MQTT Client and Broker:**

Establish an MQTT client (e.g., using ESP8266 or ESP32 with an Arduino IDE) and configure it to connect to an MQTT broker.

2. **2. Define Topics:**

Create specific MQTT topics for publishing and subscribing. For example, you could use a topic like /led/status for publishing the LED's current state and /led/command for sending commands (e.g., "on" or "off").

3. **3. Implement Callback Function:**

Create a callback function that gets triggered whenever the MQTT client receives a message on a subscribed topic.

4. **4. Process Messages:**

Inside the callback function, check the received message and take action accordingly. If the message is "on", turn the LED on. If the message is "off", turn the LED off.

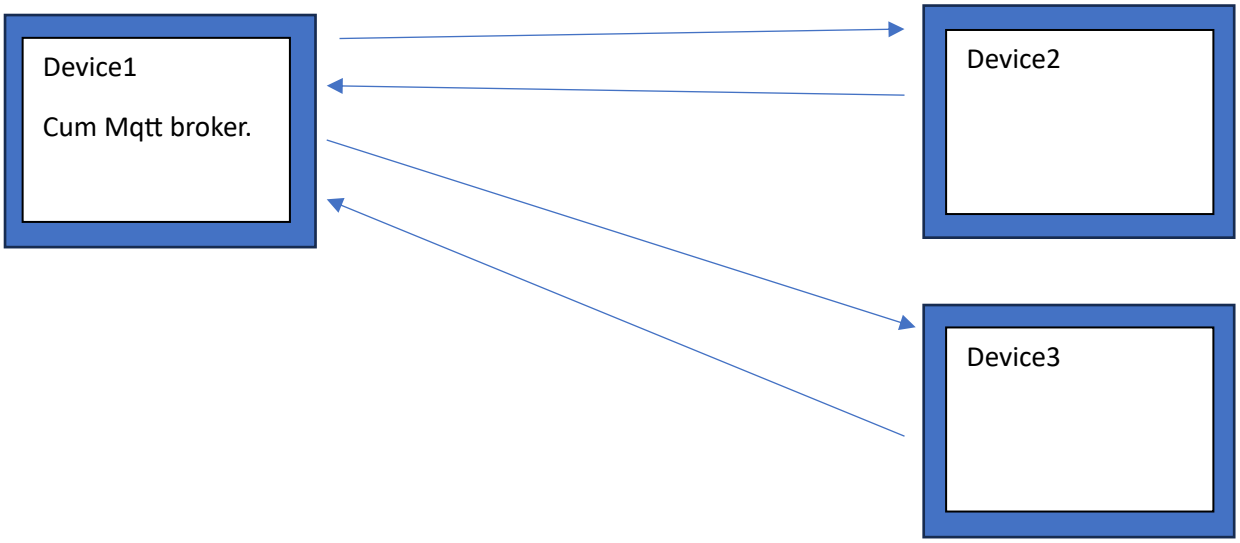
5. **5. Publish State Changes:**

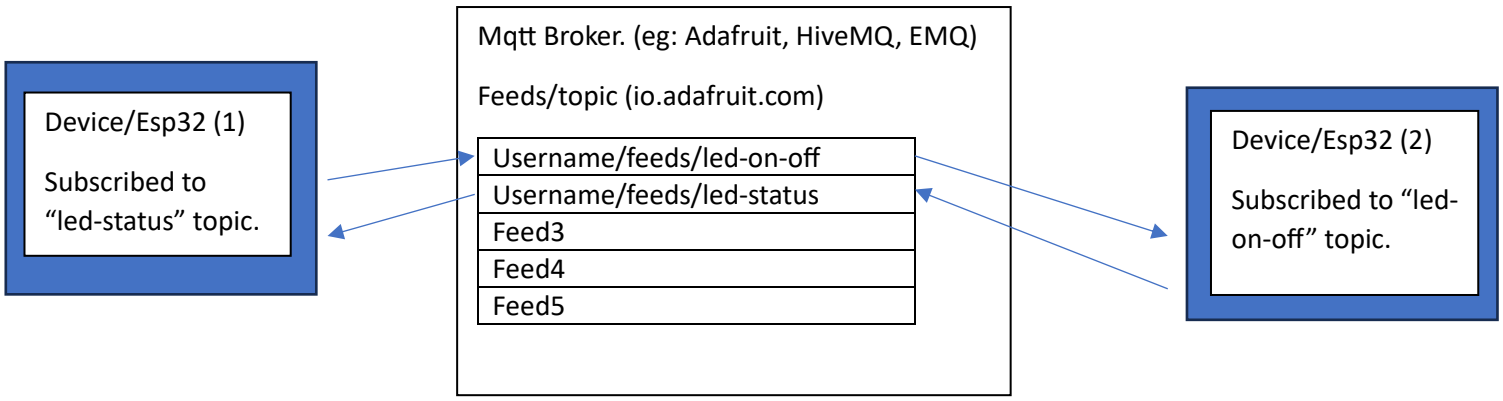
When the LED's state changes, publish a message on the /led/status topic to indicate the current state (e.g., "on" or "off").

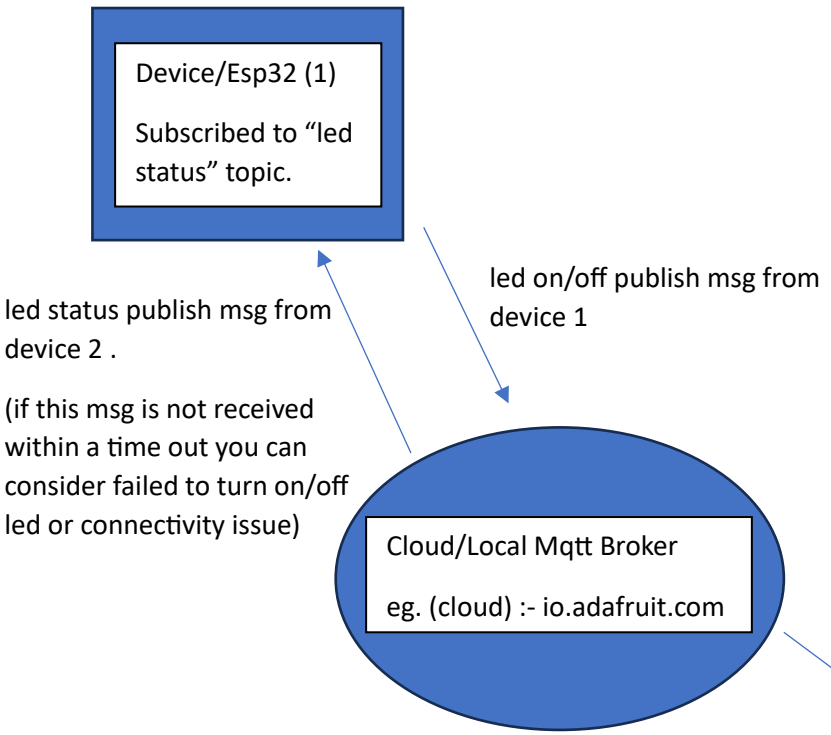
6. **6. Test and Verify:**

Test your system by sending commands (e.g., "on" or "off") using the MQTT client and observe that the LED responds accordingly. Verify that the /led/status topic publishes the correct state after each command.

Any device in the mqtt network can also serve as the server (eg: Mosquito Broker server) if it has the capability to do so, eg if the device is a computer/laptop. (picoMqtt for esp32).




Mqtt Broker. (eg: Adafruit, HiveMQ, EMQ)
Feeds/topic (io.adafruit.com)
Username/feeds/led-on-off
Username/feeds/led-status
Feed3
Feed4
Feed5
Device/Esp32 (1)
Subscribed to "led-status" topic.
Device/Esp32 (2)
Subscribed to "led-on-off" topic.


Device/Esp32 (1)
Subscribed to "led status" topic.
led on/off publish msg from device 1
led status publish msg from device 2 .
(if this msg is not received within a time out you can consider failed to turn on/off led or connectivity issue)
Cloud/Local Mqtt Broker
eg. (cloud) :- io.adafruit.com
led on/off publish msg from device 1
led status publish msg from device 2
Device/Esp32 (2)
Subscribed to "led on/off" topic.