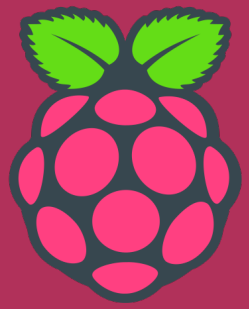
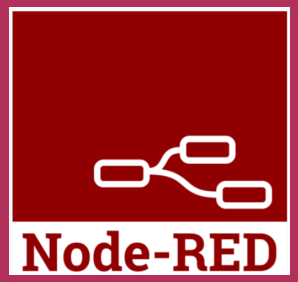
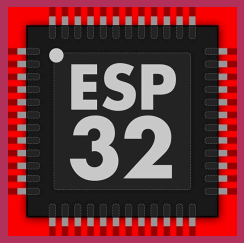
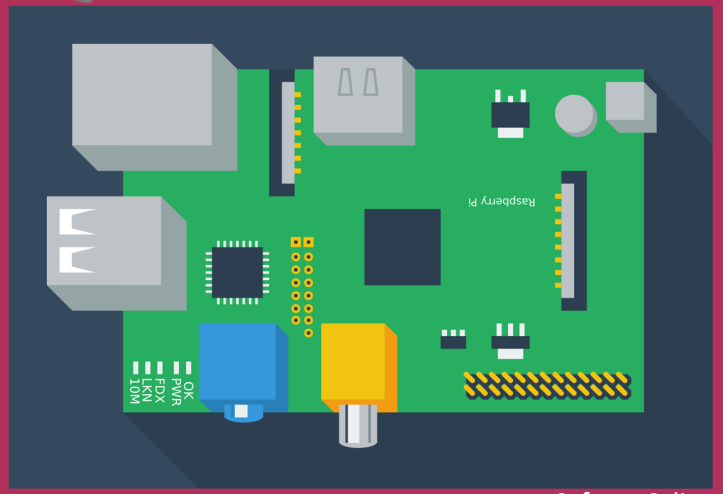


MQTT on Pi

OCT 2021







Safyzan Salim
scriptworkz ent

Prerequisites

Hardware:

- Raspberry Pi board with:
  - -Raspberry Pi OS
  - -16 GB class 10 microSD
  - -5V 2.5A power supply
- ESP32 with Temperature & Humidity Sensor, DHT11

Software:

- Node-RED
- Arduino IDE
- Arduino Client for MQTT library
- Mosquito MQTT
- InfluxDB
- Grafana

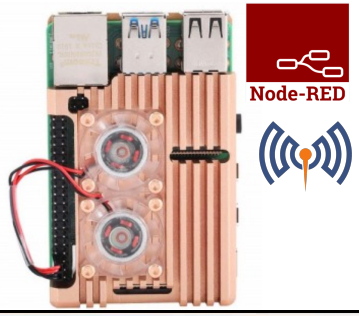
Schematic Diagram

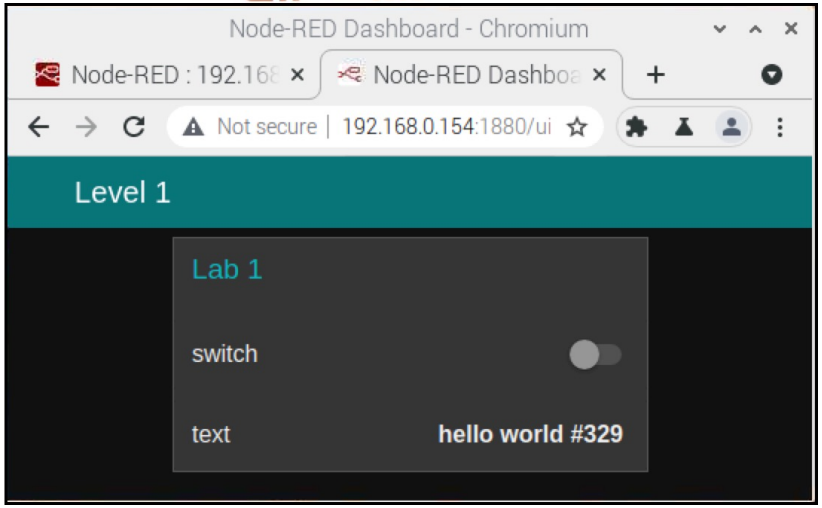
Client IP:192.168.0.20
Broker IP: 192.168.0.154

```
client.publish("outTopic", "hello world");
client.subscribe("inTopic");
```

192.168.0.1
ssid: sworkz
Password: 11112222

Broker
192.168.0.154





i. Install Mosquitto Broker

- Open Raspberry Pi terminal window and type the following syntax:

```
pi@raspberry:~ $ mosquitto -v
```

- Next, type the following syntax:

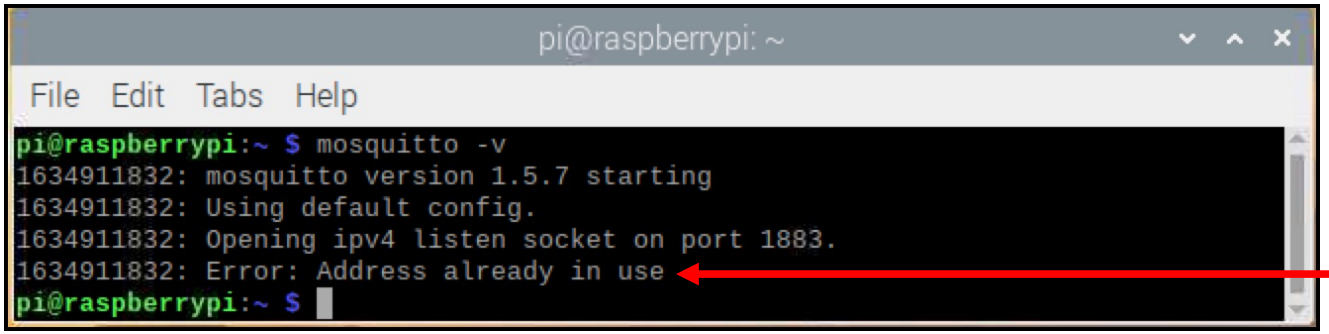
```
pi@raspberry:~ $ sudo apt update
pi@raspberry:~ $ sudo apt install -y mosquitto mosquitto-clients
```

- This syntax will allow Mosquitto Broker to auto start its service upon booting your Rpi:

```
pi@raspberry:~ $ sudo systemctl enable mosquitto.service
```

- Test installation by typing the following command:

```
pi@raspberry:~ $ mosquitto -v
```



This indicates that your Mosquitto Broker is already executed.

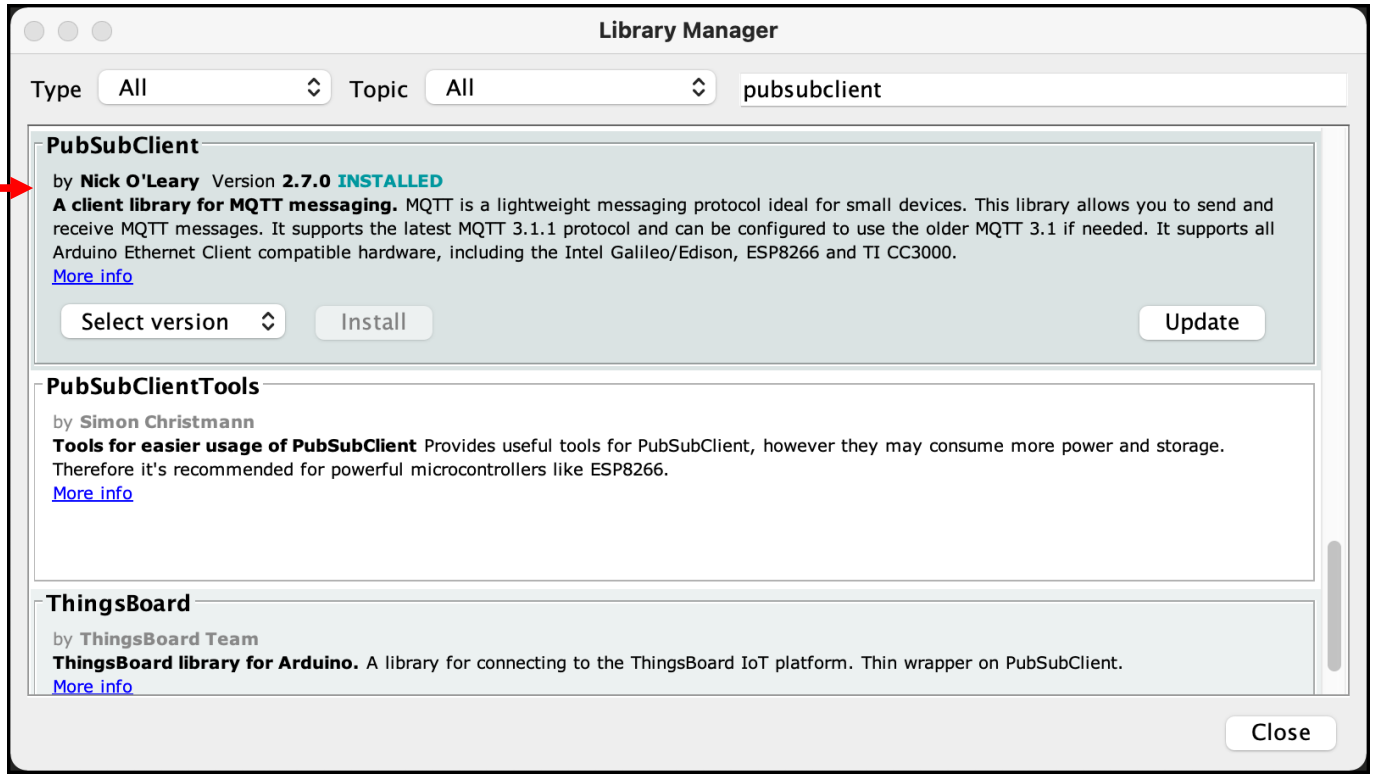
https://randomnerdtutorials.com/how-to-install-mosquitto-broker-on-raspberry-pi/

ii. Download Arduino Client MQTT Library

- Install New Library by opening **Library Manager** and search for **pubsubclient** by **Nick O'Leary – ver 2.7.0**.

Sketch > Include Library > Manage Libraries

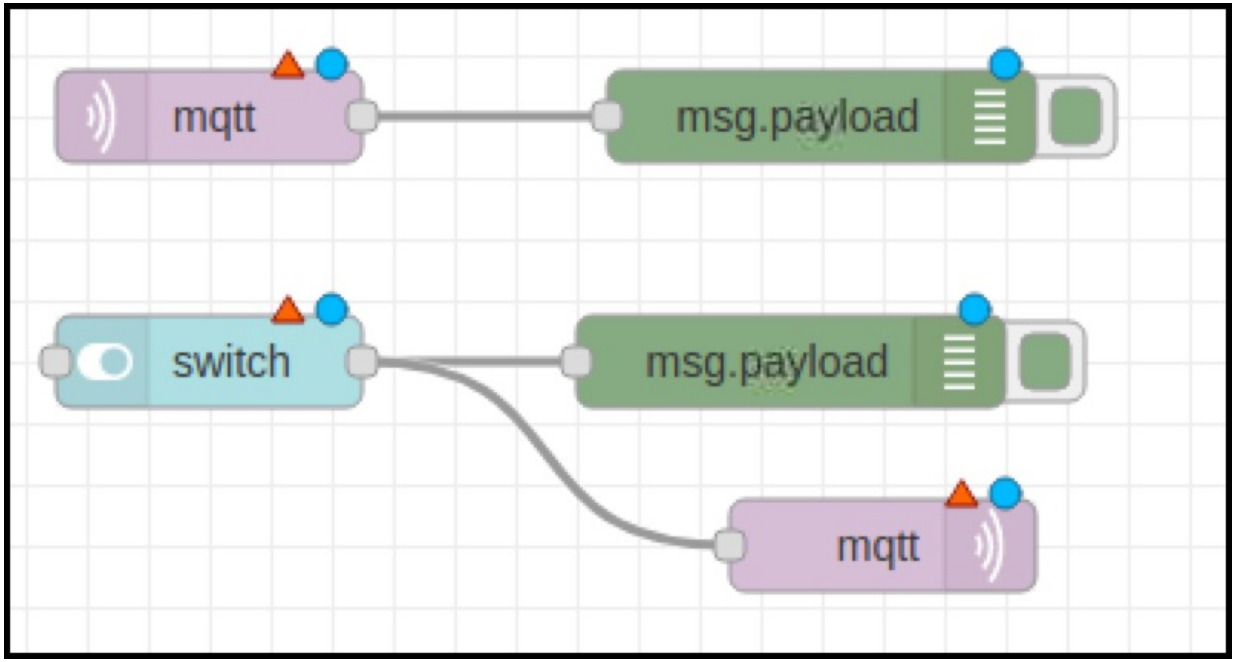
PubSubClient
Nick O'Leary

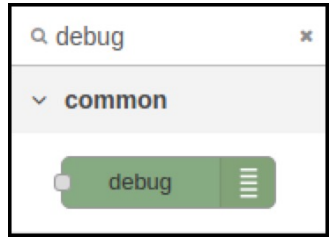


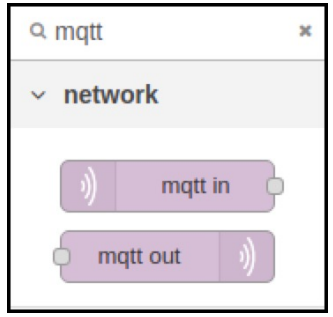
https://randomnerdtutorials.com/how-to-install-mosquitto-broker-on-raspberry-pi/

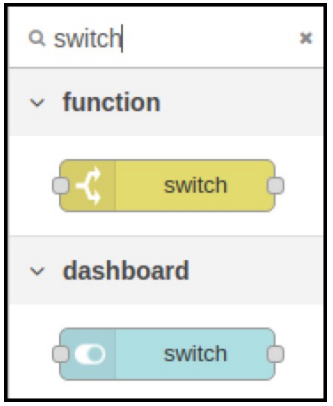
iii. Node-RED MQTT on RPi

- Run Node-RED service.
- Create new **flow.**
- Add the following nodes: **mqtt in**, **mqtt out**, **msg payload** and **switch** dashboard.
- Connect as in the diagram.







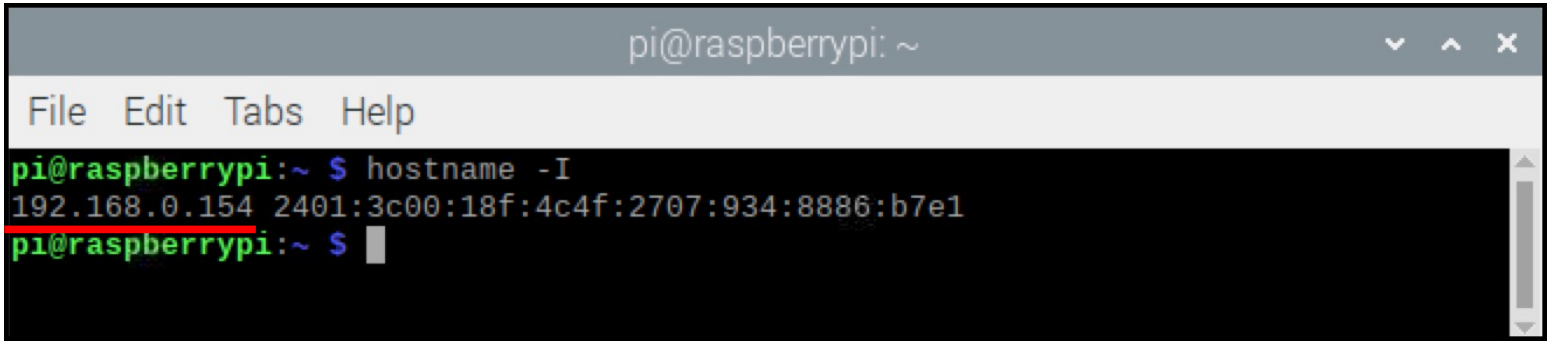


https://randomnerdtutorials.com/how-to-install-mosquitto-broker-on-raspberry-pi/

iv. Edit Nodes Properties

- To find Raspberry Pi's IP address, type **hostname -I** at its terminal.

```
pi@raspberry:~ $ hostname -I
```



- To find Raspberry Pi's IP address, type **hostname -I** at its terminal.

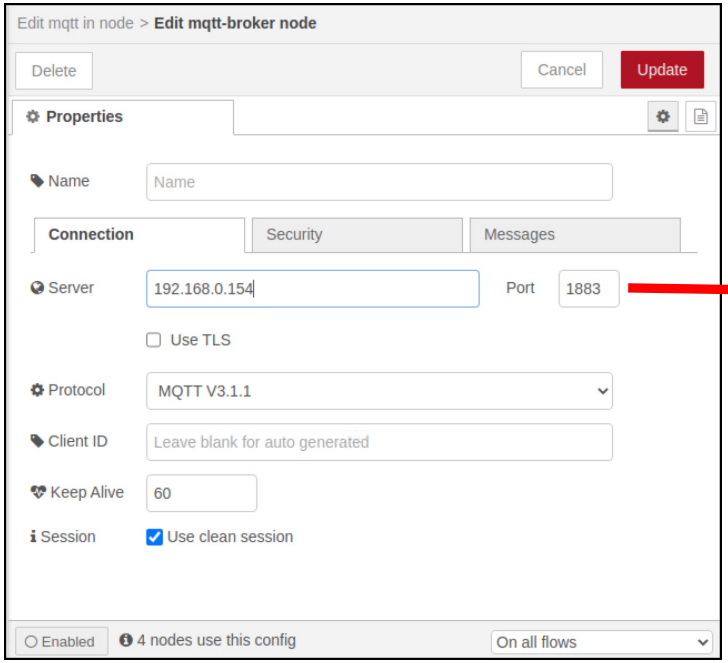
https://randomnerdtutorials.com/how-to-install-mosquitto-broker-on-raspberry-pi/

iv. Edit Nodes Properties

- We need to set up 3 important properties in Node-Red; i.e., Server, Topic and QoS. To do that, double click the **mqtt in** node 

.
- To key in the server's IP add, single click **pencil** icon .

- Key in the IP address of Raspberry Pi at **Server** textbox.



QUESTIONS

END