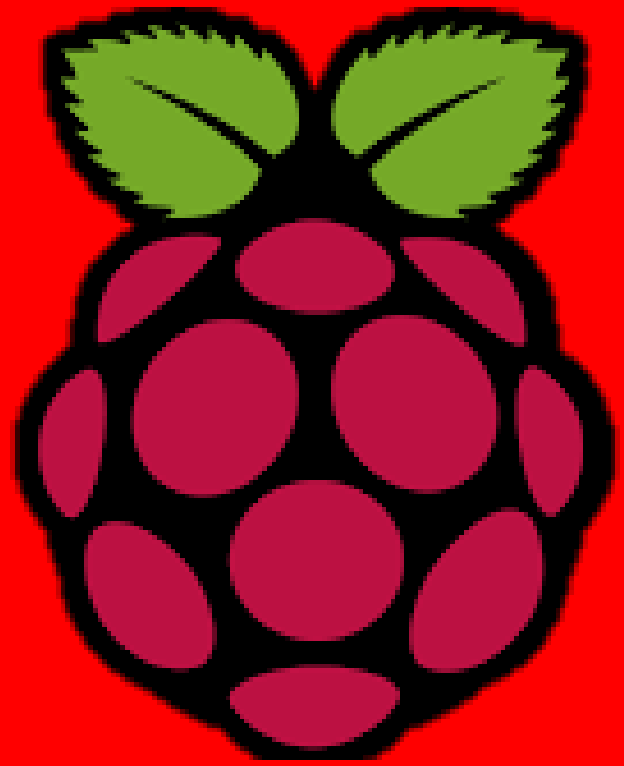
# MQTT

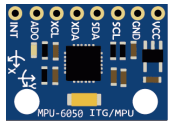


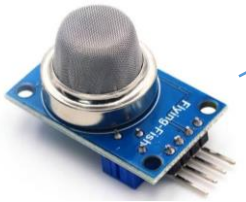
## Via Raspberry pi

LINE@

Mr.Surawut Sukkum

# Raspberry pi via NodeMCU by MQTT



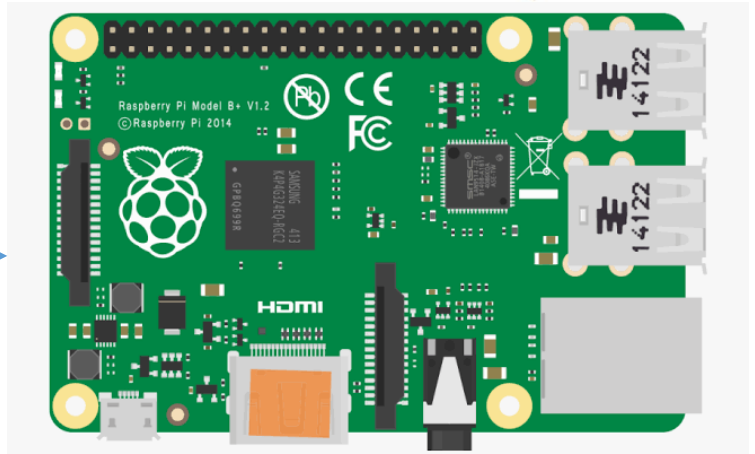



Client

MQTT

Server

mosquitto



# กำหนดค่า repository ของ mosquitto โดยพิมพ์คำสั่ง

- sudo wget http://repo.mosquitto.org/debian/mosquitto-repo.gpg.key
  sudo apt-key add mosquitto-repo.gpg.key
  cd /etc/apt/sources.list.d/
  sudo wget http://repo.mosquitto.org/debian/mosquitto-stretch.list

```
pi@raspberrypi:~ $ sudo wget http://repo.mosquitto.org/debian/mosquitto-repo.gpg.key
```

```
pi@raspberrypi:~ $ sudo apt-key add mosquitto-repo.gpg.key
```

```
pi@raspberrypi:~ $ cd /etc/apt/sources.list.d/
```

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo wget http://repo.mosquitto.org/debian/mosquitto-stretch.list
```

# ทำการ update ระบบ

- sudo apt-get update
  sudo apt-get upgrade

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo apt-get update
```

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo apt-get upgrade
```

# ตรวจสอบว่าพบ mosquitto package ไหม

- sudo apt-cache search mosquitto

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo apt-cache search mosquitto
```

# ติดตั้ง mosquitto

- sudo apt-get install mosquitto
  sudo apt-get install mosquitto-clients

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo apt-get install mosquitto
```

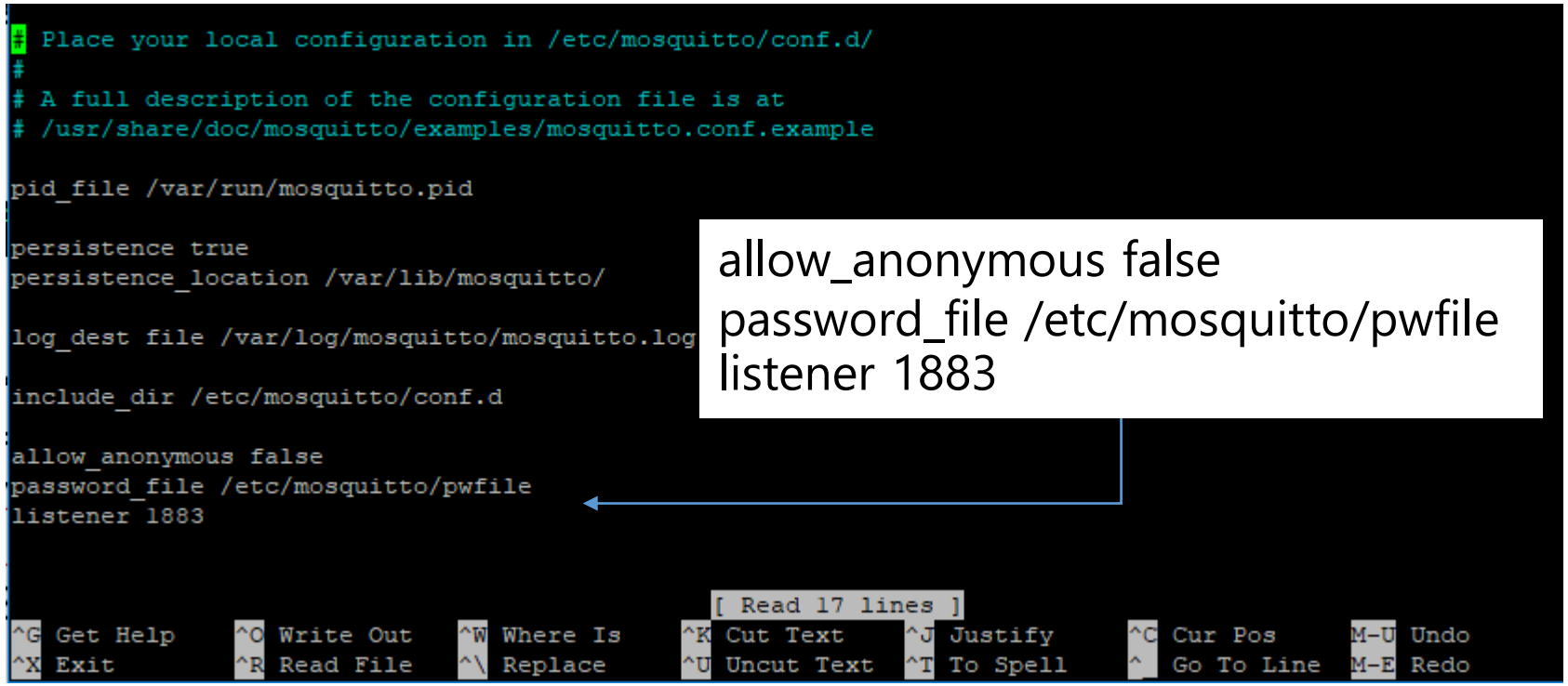
```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo apt-get install mosquitto-clients
```

# แก้ไขไฟล์คอนฟิกเกอเรชั่น โดยพิมพ์

- sudo nano /etc/mosquitto/mosquitto.conf

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo nano /etc/mosquitto/mosquitto.conf
```

เลื่อนลงไปอยู่บรรทัดสุดท้ายในไฟล์ แล้ว**ลบบรรทัดสุดท้ายทิ้งไป (include config.d)** แล้ว**ป้อนบรรทัดใหม่** 3 บรรทัดดังนี้




allow_anonymous false
password_file /etc/mosquitto/pwfile
listener 1883

Ctrl+O > Enter > Ctrl+ X

# สร้างยูสเซอร์ชื่อ mymqtt และกำหนดพาสเวิร์ดเป็น myraspi หรือพาสเวิร์ดอื่นๆ เก็บไว้ใน pwfile โดยป้อนคำสั่ง

- sudo mosquitto_passwd -c /etc/mosquitto/pwfile mymqtt
- Password: 12345678
- Reenter password: 12345678

ตั้งชื่อ User name

```
pi@raspberrypi:/etc/apt/sources.list.d $ sudo mosquitto_passwd -c /etc/mosquitto/pwfile mymqtt
```

ติดตั้ง Mosquitto เสร็จเรียบร้อยแล้ว แต่จะต้องบูทเครื่องใหม่ เพื่อให้ Mosquitto เริ่มทำงาน โดยป้อนคำสั่ง

- sudo reboot

# Terminal หน้าต่างแรก ใช้เป็น Subscribe ที่รอรับข้อมูล Topic ชื่อ mynew/test

- mosquitto_sub -d -u mymqtt -P myraspi -t outTopic/

User name

Password

Topic Name

```
pi@raspberrypi:/etc/apt/sources.list.d $ mosquitto_sub -d -u mymqtt -P 12345678 -t outTopic/
```

# Arduino IDE

- // Update these with values suitable for your network.
- const char* ssid = “[WiFi_SSID]”;
- const char* password = “[WiFi_Password]”;
- const char* mqtt_server = “192.168.x.xxx”; //IP Address Raspberry pi

```
// Update these with values suitable for your network.

const char* ssid = "                          ";
const char* password = "          ';
const char* mqtt_server = "                    ";
```

# Code ที่ใช้เชื่อมต่อกับ Broker

```
void reconnect() {
  // Loop until we're reconnected
  while (!client.connected()) {
    Serial.print("Attempting MQTT co
    // Create a random client ID
    String clientId = "clientId-surawut
    clientId += String(random(0xffff), HEX);
    // Attempt to connect
    if (client.connect("clientId-MaPfWM0voQ","mymqtt","12345678")) {
      Serial.println("connected");
      // Once connected, publish an announcement...
      client.publish("outTopic", "hello world");
      // ... and resubscribe
      client.subscribe("inTopic");
    } else {
      Serial.print("failed, rc=");
      Serial.print(client.state());
      Serial.println(" try again in 5 seconds");
      // Wait 5 seconds before retrying
      delay(5000);
    }
  }
}
```

User name

Password

# Code ที่ใช้ส่งข้อมูล

```
void loop() {

  accelgyro.getMotion6(&ax, &ay, &az, &gx, &gy, &gz);
  if (!client.connected()) {
    reconnect();
  }
  client.loop();
    snprintf (msg, 75, "Gyro ax=%ld ay=%ld az=%ld gx=%ld gy=%ld gz=%ld ", ax/1000,ay/1000,az/1000,gx/1000,gy/1000,gz/1000);
    Serial.print("Publish message: ");
    Serial.println(msg);
    client.publish("outTopic/", msg);
  delay(100);
}
```

Topic Name

# reference

- https://medium.com/@choonewza/%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B8%95%E0%B8%B4%E0%B8%94%E0%B8%95%E0%B8%B1%E0%B9%89%E0%B8%87-mosquitto-%E0%B9%83%E0%B8%AB%E0%B9%89%E0%B8%81%E0%B8%B1%E0%B8%9A-raspberry-pi-d6c8ea57b441

# Remote VNC viewer error

- **sudo apt-get update**
- sudo apt-get install realvnc-vnc-server realvnc-vnc-viewer

- sudo raspi-config
- Advance > resolution >select resolution