

MQTT

Starting and enabling Mosquitto by running edited Mosquitto.conf

```
pi@pi: ~  
File Edit Tabs Help  
Processing triggers for libc-bin (2.28-10+rpt2+rpil+deb10u2) ...  
pi@pi:~ $ sudo nano /etc/mosquitto/mosquitto.conf  
pi@pi:~ $ sudo mosquitto -c /etc/mosquitto/mosquitto.conf  
pi@pi:~ $ systemctl status mosquitto  
● mosquitto.service - Mosquitto MQTT v3.1/v3.1.1 Broker  
   Loaded: loaded (/lib/systemd/system/mosquitto.service; enabled; vendor preset  
   Active: active (running) since Thu 2025-03-06 04:07:01 GMT; 2min 53s ago  
     Docs: man:mosquitto.conf(5)  
           man:mosquitto(8)  
  Main PID: 1215 (mosquitto)  
    Tasks: 1 (limit: 2059)  
   CGroup: /system.slice/mosquitto.service  
           └─1215 /usr/sbin/mosquitto -c /etc/mosquitto/mosquitto.conf  
  
Mar 06 04:07:01 pi systemd[1]: Starting Mosquitto MQTT v3.1/v3.1.1 Broker...  
Mar 06 04:07:01 pi systemd[1]: Started Mosquitto MQTT v3.1/v3.1.1 Broker.  
  
pi@pi:~ $ sudo systemctl disable mosquitto  
Synchronizing state of mosquitto.service with SysV service script with /lib/syst  
emd/systemd-sysv-install.  
Executing: /lib/systemd/systemd-sysv-install disable mosquitto  
Removed /etc/systemd/system/multi-user.target.wants/mosquitto.service.  
pi@pi:~ $ sudo systemctl stop mosquitto  
pi@pi:~ $
```

MQTT Publisher

The screenshot shows a Raspberry Pi desktop environment. A window titled "INF2009T2.local (WayVNC) - RealVNC Viewer" is open. Inside, a terminal window shows the command `mqtt_publisher.py - /..`. The Geany IDE is open with the file `mqtt_publisher.py` in the `/home/INF2009T2` directory. The code in the IDE is as follows:

```
1 import paho.mqtt.client as mqtt
2 import time
3
4 client = mqtt.Client("Publisher")
5 client.connect("192.168.248.184", 1883)
6
7 while True:
8     client.publish("test/topic", "Hello, MQTT!")
9     time.sleep(5)
10
```

The left sidebar of Geany shows a "Symbols" pane with the following structure:

- Variables
 - client [4]
- Imports
 - mqtt [1]
 - mqtt [1]
 - paho [1]
 - time [2]

The terminal window shows the output of running the script:

```
File "/home/INF2009T2/myenv/lib/python3.11/site-packages/paho/mqtt/client.py",
line 1044, in reconnect
    sock = self._create_socket_connection()
File "/home/INF2009T2/myenv/lib/python3.11/site-packages/paho/mqtt/client.py",
line 3685, in _create_socket_connection
    return socket.create_connection(addr, timeout=self._connect_timeout, source_
address=source)
File "/usr/lib/python3.11/socket.py", line 851, in create_connection
    raise exceptions[0]
File "/usr/lib/python3.11/socket.py", line 836, in create_connection
    sock.connect(sa)
OSError: [Errno 113] No route to host
(myenv) INF2009T2@INF2009T2:~$ python3 mqtt_publisher.py
^C
Traceback (most recent call last):
  File "/home/INF2009T2/mqtt_publisher.py", line 9, in <module>
    time.sleep(5)
KeyboardInterrupt
(myenv) INF2009T2@INF2009T2:~$ python3 mqtt_publisher.py
```

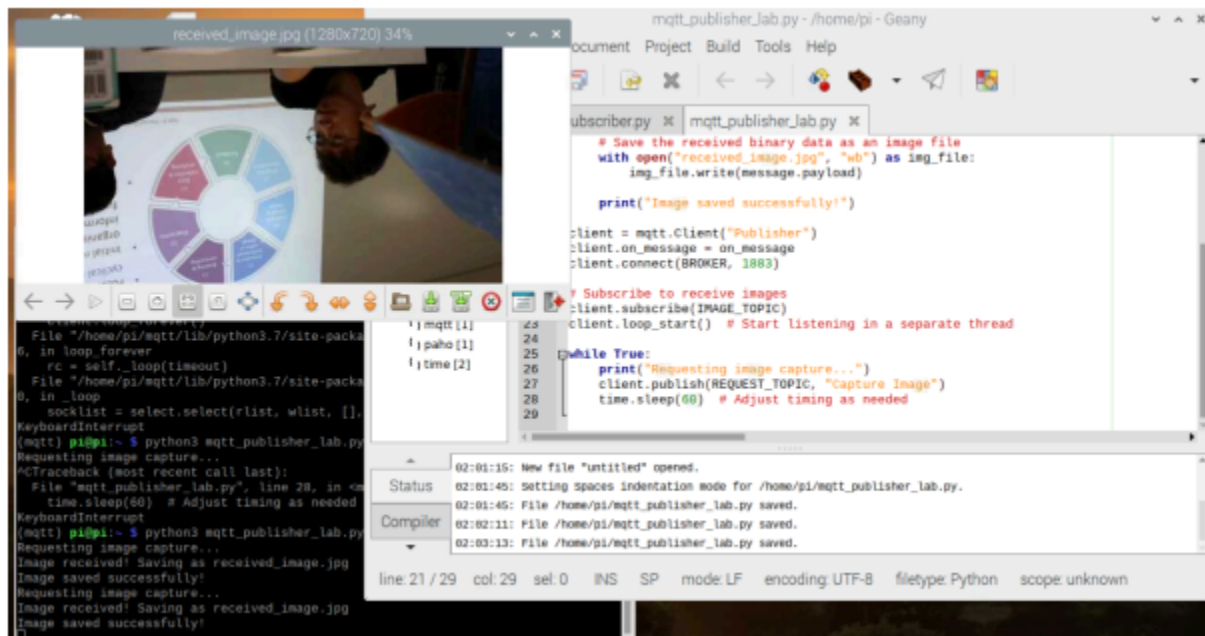
MQTT Subscriber

```

ERROR: [Errno 113] No route to host
(mqtt) pi@pi:~ $ python3 mqtt_subscriber.py
Received message 'Hello, MQTT!' on topic 'test/topic'
Received message 'Hello, MQTT!' on topic 'test/topic'
Received message 'Hello, MQTT!' on topic 'test/topic'
Received message 'Hello, MQTT!' on topic 'test/topic'
Received message 'Hello, MQTT!' on topic 'test/topic'
Received message 'Hello, MQTT!' on topic 'test/topic'

```

MQTT Publisher to send request to the subscriber to get image captured, and receive image from subscriber's webcam



MQTT Subscriber listening for request from Publisher to capture and send image

