### **1. AWS IoT Core Setup**

I started by:

* I created the IoT thing named raspberry\_thing in AWS IoT Core to represent the Raspberry Pi.
* I downloaded the necessary security credentials, which include:
  + The **device certificate** (raspberry\_thing.cert.pem)
  + The **private key** (raspberry\_thing.private.key)
  + The **public key** (raspberry\_thing.public.key)
  + The **policy** (raspberry\_thing-Policy), which defines the actions my Raspberry Pi is allowed to perform in AWS IoT (like connecting, publishing, and subscribing to topics).

I downloaded the **Amazon Root CA certificate**, for TLS authentication between my Raspberry Pi and AWS IoT Core.

### **2. Installing Required Libraries**

On my Raspberry Pi, I installed the following:

* I used a Python library (AWS IoT SDK) to handle MQTT communication with AWS IoT.

### **3. Configuring MQTT Connection**

Next, I configured the MQTT connection by:

* **Setting the AWS IoT Endpoint**: I used the AWS IoT endpoint URL (a33ngcpde4nm4d-ats.iot.eu-north-1.amazonaws.com) to connect the Raspberry Pi to the AWS IoT MQTT broker.
* **I configured** the MQTT client to use:
  + My **device certificate** and **private key** for authentication.
  + The **Amazon Root CA certificate** to authenticate AWS IoT Core’s endpoint.

### **4. Publishing and Subscribing to MQTT Topics**

To send and receive messages, I:

* **Published a Message**: I configured the Raspberry Pi to publish messages to a topic (raspberry/thing/message).
* **Subscribed to a Topic**: I set the Raspberry Pi to subscribe to the same or a different topic (raspberry/thing/message) to listen for incoming messages from AWS IoT Core.

### **5. Serial Monitor Integration**

I integrated the **serial monitor** into my setup so that:

* The **callback function** would send any incoming MQTT messages to the serial port.
* I could **display these messages** on the monitor, giving me real-time feedback and helping me troubleshoot or confirm that messages were being received from AWS IoT Core**.**