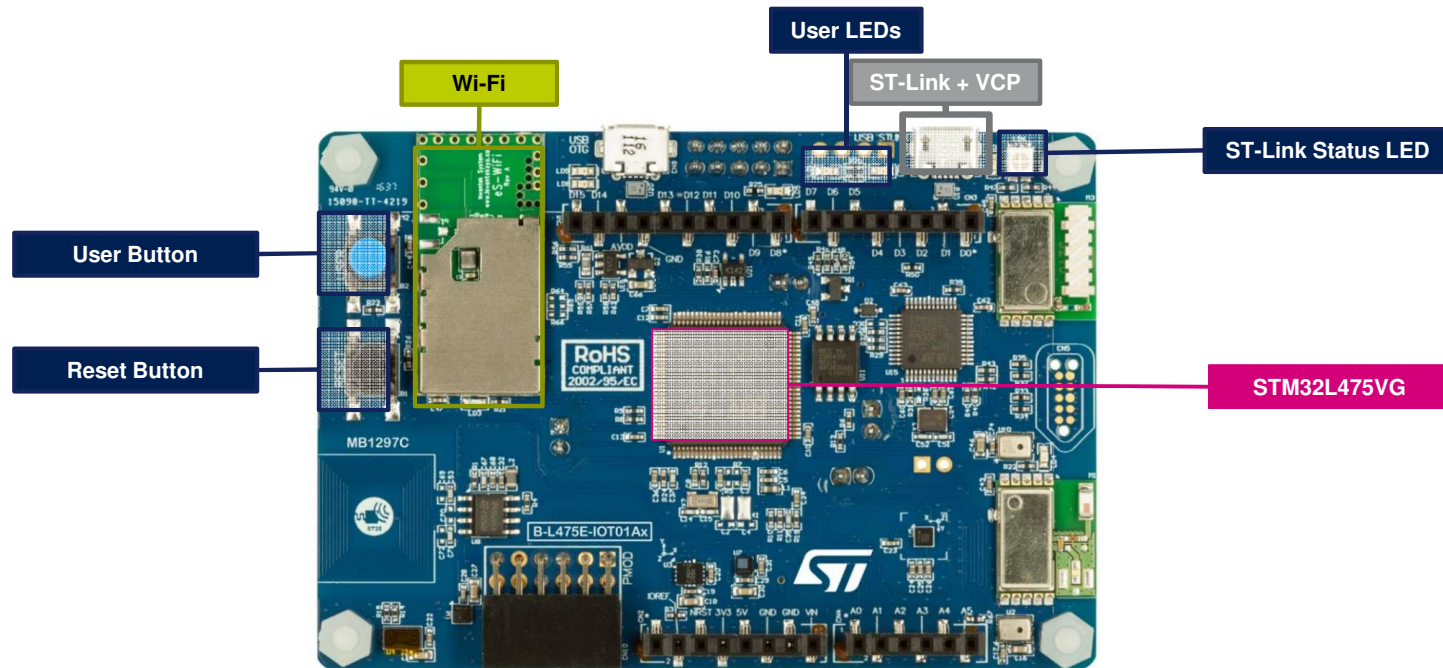# Lab 4: Connect to AWS IoT

STM32L475 Discovery IoT Node

# Tera Term Configuration

- First thing we need to configure Tera Term to communicate with ST-Link over the virtual com port. This will be used to configure the application and get debug information.

    1. Open Tera Term and Select the STMicroelectronics STLink Virtual COM Port and click OK,

    2. Open Setup->Serial port…,

    3. Set the Baud rate to 115200, 8 bit, Parity none, Stop 1 and Flow control none and click OK,

    4. Open Setup->Terminal…,

    5. Set New-Line Receive to AUTO,

    6. Set New-Line Transmit to LF,

    7. Enable Local echo,

    8. Click OK.
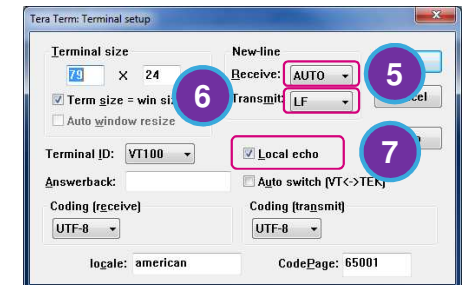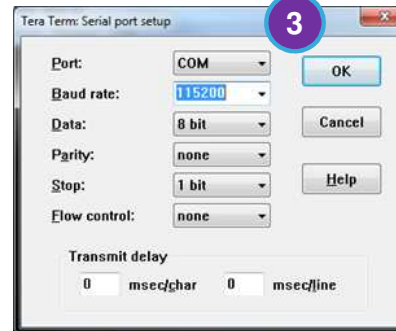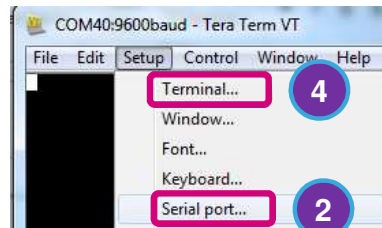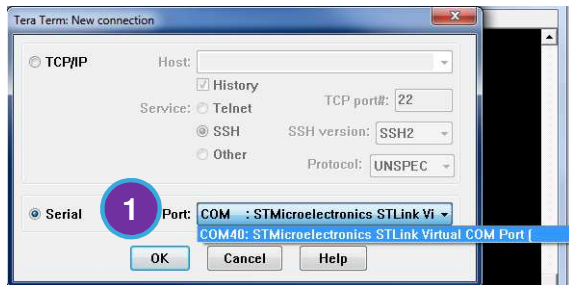
Open AWS_HandsOn Project

- Now we are going to configure the AWS firmware program to set the network SSID and password, set the AWS Certificates we just created and establish IoT MQTT connection.

1. Close the previous IAR project.

2. Double click on   Project.eww   file located under

    ```
    C:\STM32IoTDKCloudSeminar\Hands_On\BLE_and_Cloud\Projects\B-L475E-
    IOT01\Applications\Cloud\AWS\EWARM
    ```
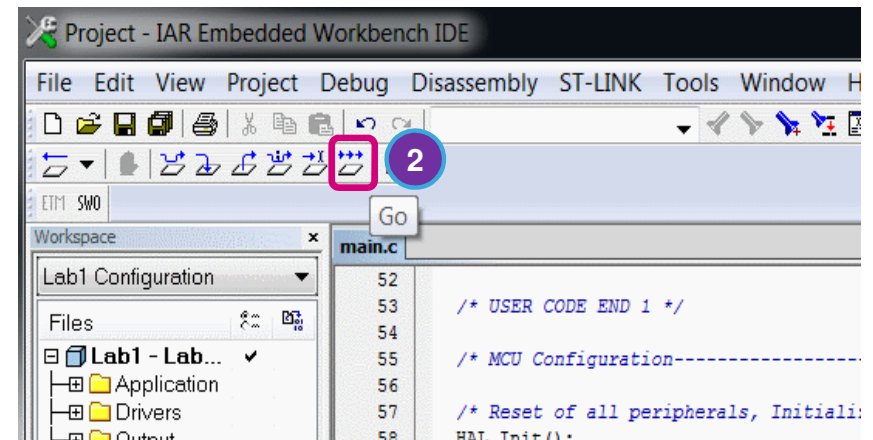
Load and Run

1. Click the GREEN ARROW to **Build** the Project, **Download** and start the **debugger**. (Ctrl + D),

2. Click the triple-arrow **GO** button! (F5),

3. Select the Tera-Term window,

Wi-Fi Configuration

1. Set your network SSID

2. Select your network security mode (Type 3 for the WPA2 Security mode)

3. Enter your network password

Set the Root-CA certificate

1. Open the `VeriSign-Class 3-Public-Primary-Certification-Authority-G5.pem` in a text editor,

2. Copy the certificate content (Ctrl + A, Ctrl + C),

3. Paste the certificate in Tera-Term (Click on the mouse right button. Do not use Ctrl + V) and click OK
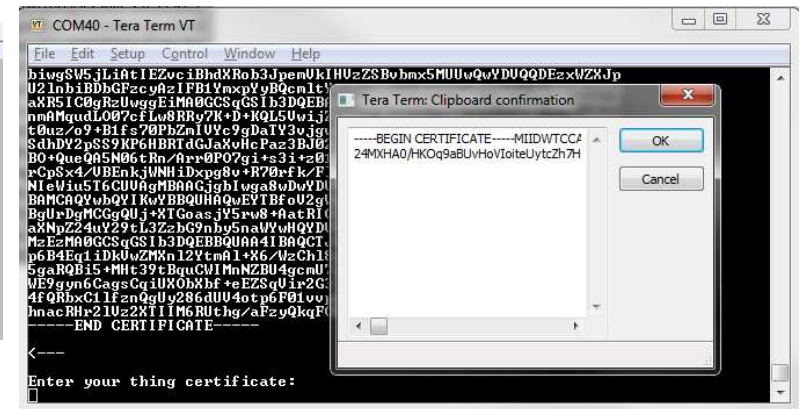
4. Click Enter.

Set the Thing Certificate

1. Open your `xxxx-certificate.pem.crt` in a text editor

2. Copy the certificate content (Ctrl +A, Ctrl + C),

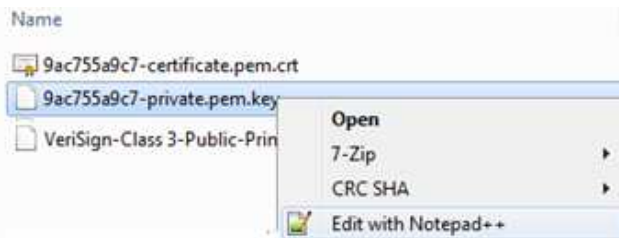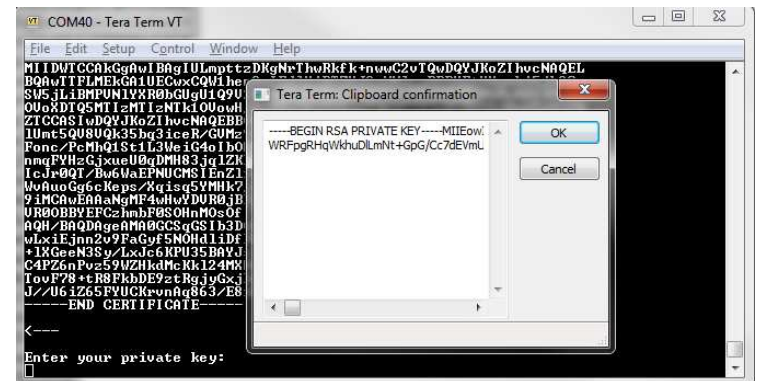3. Paste the certificate in Tera-Term (Click on the mouse right button. Do not use Ctrl + V) and click OK,

Set the Private Key

1. Open your `xxxx-private.pem.key` in a text editor

2. Copy the certificate content (Ctrl +A, Ctrl + C)

3. Paste the certificate in Tera-Term (Click on the mouse right button. Do not use Ctrl + V) and click OK
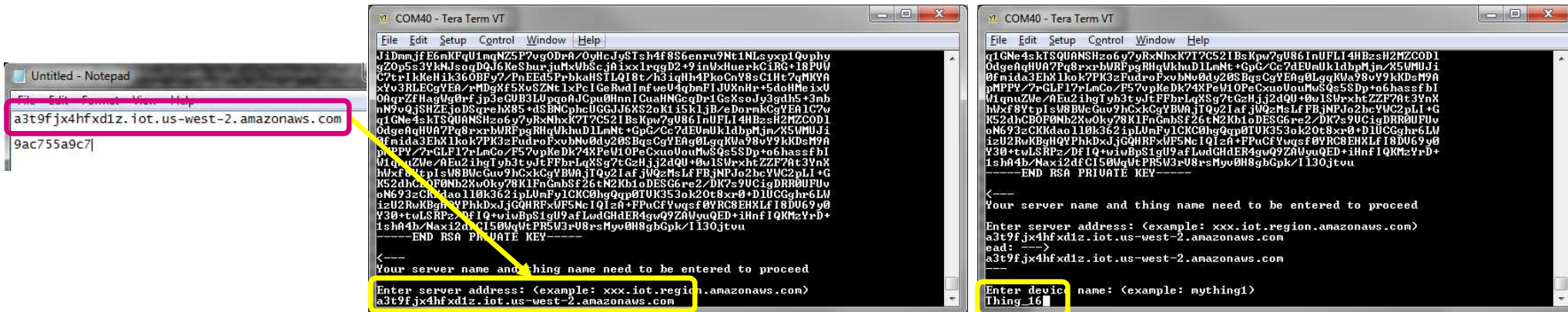
Set the Server and Thing names

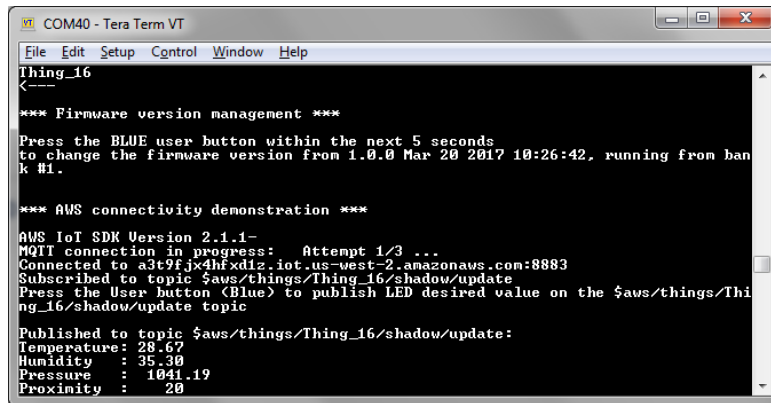1. Copy the server address from the text file and paste it to Tera-Term then press Enter

2. Set your device name (The same as in slide 6).

Send data to AWS

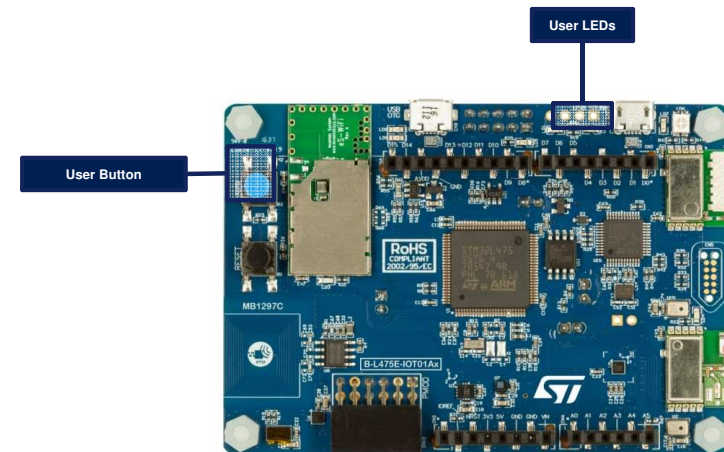- The board will start sending sensor date once it is connected to AWS (every 10s for 10mn).

- Press the user button (the blue button) and the board send/receive LED messages to/from AWS IoT.

- The LED on your board will toggle every time the LED message is received.

Monitor Your Thing Activity

1. Select the AWS Console on your browser,

2. Select Registry,

3. Select Things then select your Thing,

4. Click on Activity,

Interact With Your Thing

1. Select MQTT Client,

2. Under Publish type `$aws/things/<your thing name>/shadow/update` with `xx` being your participant number,

3. Clear any message and type `{"state":{"desired":{"LED_value":"On"}}}` as a message,

4. Click Publish to topic and watch your board's LED,

5. Change the JSON message to turn your board LED On and Off `{"state":{"desired":{"LED_value":"Off"}}}`
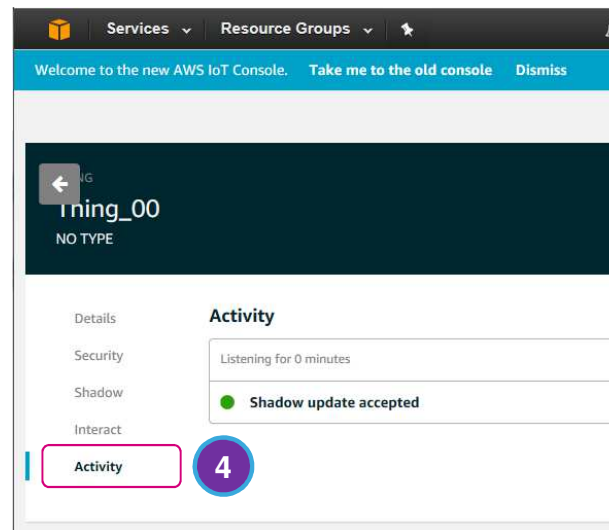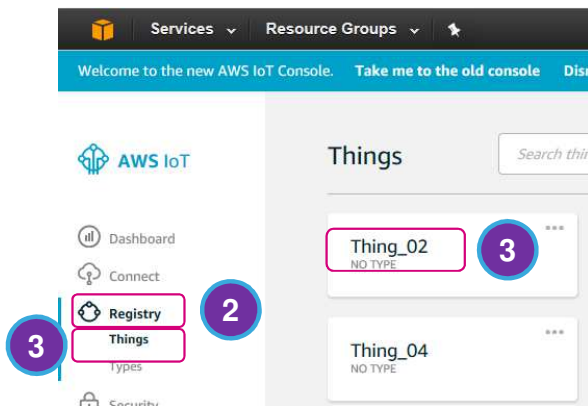
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