

Intelligent Cloud Connect QSG

The Intelligent Cloud Connect smart terminal enables you to simply, easily and securely connect your *thing* to Amazon Web Services (AWS) from anywhere in the world over cellular networks. This enables you to remotely extract data from your thing for a variety of industrial and commercial applications, such as metering, monitoring, transportation, security, and so on.

Getting Started

Before you can use the Intelligent Cloud Connect smart terminal, refer to the [AnyNet IRIS Quick Start Guide \(PDF\)](#) to complete the following steps:

1. Create an Amazon Web Services (AWS) account.
2. Subscribe to AnyNet Cellular Connectivity for AWS IoT in the AWS Marketplace.
3. Create a mandatory, dedicated AWS IAM user with specific permissions.
4. Install and configure AnyNet IRIS.

Creating a thing in AWS IoT Core



Do not create things until you have verified the advisory and alert email addresses that you supplied during AnyNet IRIS configuration. Receiving a verification link may take up to 30 minutes. If you have not received an email, contact Eseye Support: support@eseye.com.

Before you begin

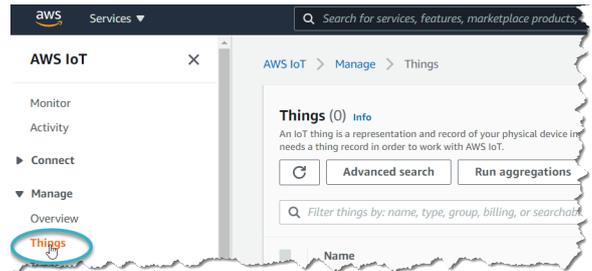
- Ensure that the AnyNet Secure Cellular Connectivity configuration process is complete on your AWS account.
- Eseye connects your thing to AWS over a cellular network. To purchase the requisite SIM cards, search for [AnyNet SIM on Amazon.com](#).
- You need a AnyNet Secure SIM number, which is the unique serial number printed on the back of the SIM card.



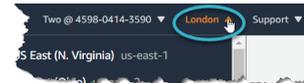
To create a thing in AWS IoT Core:

1. Sign in to the AWS Management Console: aws.amazon.com/console
2. In the *AWS Services* section, find the **IoT Core** service.

3. In the left-hand *AWS IoT* menu, select **Manage > Things**.



4. In the top right corner, select the correct **AWS Region** you want to use.



5. In the *Things* section, select **Create things**.

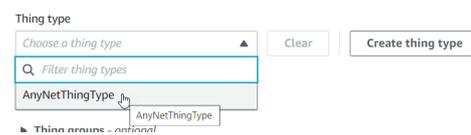
The Create things page appears.

6. Select **Create single thing**, then select **Next**.

The Specify thing properties page appears.

7. Type a **Thing name**.

8. In the **Thing Type** drop-down box, select **AnyNetThingType**.



9. In the *Searchable attribute* section, leave the **ActionRequest Value** field blank.

10. In the **Simid Value** field, type the SIM number (described above).



11. If required, add the thing to a group.

12. In the *Device Shadow* section, select **Unnamed shadow (classic)**.

13. Select **Next**.

The Configure device certificate – optional page appears. Eseye manages the certificate process so you don't have to.

14. Select **Skip creating a certificate at this time**.

15. Select **Create thing**.



When you use AWS IoT in your AWS account for the first time, an AWS error may appear because Device Gateway endpoint provisioning is not complete on your account. If this occurs, allow AWS services 5-10 minutes to complete, and try again.

The new thing appears on the Things page.

Establishing a cellular connection

Ensure you have connected the terminal antenna to the **Antenna** connection.

To power on and establish your cellular connection:

1. Fully insert the SIM card into the Intelligent Cloud Connect.



You can see how to insert the SIM on the underside of the terminal. The socket is a push-to-insert, push-to-release type socket. When the SIM is properly inserted, it clicks into place and sits flush with the edge of the SIM slot.



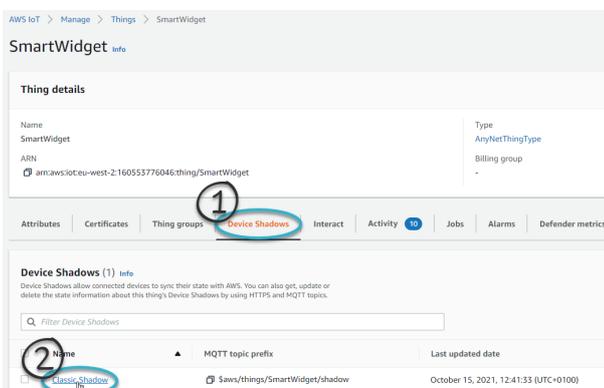
2. Turn on the Intelligent Cloud Connect.

The Intelligent Cloud Connect connects to a cellular network using the Cinterion® PLS62-W Wireless Module, and is now ready to receive security and identity information from AWS.

Provisioning the Cinterion® PLS62-W Wireless Module

Eseye automatically provisions the AnyNet Secure SIM. During this process, the security and identity information is downloaded and programmed into the SIM card. You can observe the provisioning progress in the device shadow. You can access the shadow using Lambda functions, programatically, or through the *AWS IoT Console*.

1. Using the *AWS IoT Console*, select the thing you created with the matching SIM number.
2. On the **Device Shadows** tab, select **Classic Shadow** to view the *Device Shadow document*.



Use the **Device Shadow state** pane to view the certificate delivery progress. The certificate is delivered after the status changes from Pending to Provisioned. You can also view smart terminal message consumption and location information.



Provisioning normally takes 5-10 minutes to complete, although the process may take up to an hour. If your Cinterion® PLS62-W Wireless Module has not connected in 24 hours, contact Support: support@eseye.com.

During provisioning, the Cinterion® PLS62-W Wireless Module will reset four times. Use a terminal emulator to observe this process.



For information about setting up a terminal emulator, see [Attaching to the Intelligent Cloud Connect](#).

When the device is ready, it sends the following URC:

```
+EMT : EMQRDY
```



You must wait until you receive the +EMT : EMQRDY URC before you can use the device to send and receive commands.

If you are using the Intelligent Cloud Connect, and the device is not connecting, check the LEDs:

- A green LED indicates power on.
- A flashing orange LED indicates network registration status. Regular half second blinking indicates that the Cinterion® PLS62-W Wireless Module is searching for a network. A brief flash every four seconds indicates that the device has registered to a network and there is no data transfer.



For more information about the LEDs, refer to the Thales AT Command documentation.

Sending data from your thing to the cloud

Before you begin

- Using a terminal emulator, send an `AT<return>` command to ensure that the smart terminal can receive AT commands.



For information about connecting a terminal emulator to the modem, see [Attaching to the Intelligent Cloud Connect](#).

- Send an `AT+ETMINFO=version<return>` command to verify that the version number is 2.0.20 or higher.
- Ensure you know the thing name that you set up in AWS.

To test that your thing can publish information to AWS:

1. Create two publish topics in the Cinterion® PLS62-W Wireless Module.
 - a. Using a terminal emulator, type:


```
at+emqpubopen=0, "PublishToCloud0"<return>
at+emqpubopen=1, "PublishToCloud1"<return>
```
 - b. Check that the first two index numbers are assigned a topic each. Type:

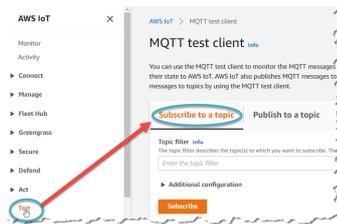

```
at+emqpubopen?<return>
```

A list of index numbers and their assigned topics appears.

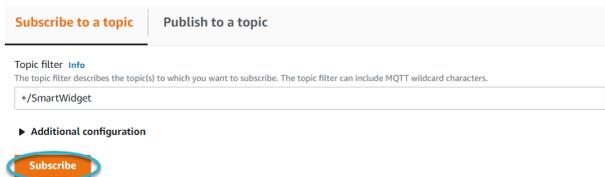
```

COM7 - Tera Term VT
File Edit Setup Control Window Help
at+emqpubopen=0,"PublishToCloud0"
OK
+EMQPUBOPEN: 0,0
at+emqpubopen=1,"PublishToCloud1"
OK
+EMQPUBOPEN: 1,0
at+emqpubopen?
OK
+EMQPUBOPEN topics:
0 PublishToCloud0/SmartWidget
1 PublishToCloud1/SmartWidget
2 null
3 null
4 null
5 null
6 null
7 null
  
```

2. Subscribe to the newly created publish topics in AWS.
 - a. Using *AWS IoT*, in the left hand menu, select **Test** to open the *MQTT test client*, then ensure you are on the **Subscribe to a topic** tab.



- b. In the **Topic filter** box, type: `+/<ThingName>`
This subscribes AWS to all topics related to your thing.
 - c. Select **Subscribe**.



A subscription appears, listed in the Subscriptions panel.

3. Publish information to the topics you created in the Cinterion® PLS62-W Wireless Module.



You can send a maximum payload of 1000 characters to AWS.

- a. Using the terminal emulator, type:


```

at+emqpublish=0,1,"{\"Temperature\":24}"<return>
at+emqpublish=1,1,"{\"BatteryPower\": \"Low\"}"<return>
      
```

 The `emqpublish` command uses the following syntax:


```

at+emqpublish=IndexNumber,QoS,
"{"PublishDataInJSON}"
      
```

```

COM7 - Tera Term VT
File Edit Setup Control Window Help
at+emqpublish=0,1,"{\"Temperature\":24}"
OK
SEND OK
at+emqpublish=1,1,"{\"BatteryPower\": \"Low\"}"
OK
SEND OK
  
```

These messages instantly appear in AWS.

4. View the published information in AWS.
 - a. In the *Subscriptions* panel, select **+/<ThingName>** to view all published messages.



If you can see the messages in AWS, then your thing can successfully publish data into the cloud through the Cinterion® PLS62-W Wireless Module.

Next, test that the cloud can publish messages to your thing.

Sending data from the cloud to your thing

Before you begin

Ensure your thing can send information to the cloud.

For more information, see *Sending data from your thing to the cloud* on the previous page.

To test that AWS can publish information to your thing:

1. Create two subscribe topics in the Cinterion® PLS62-W Wireless Module.
 - a. Using a terminal emulator, type:


```

at+emqsubopen=0,"SubscribeFromCloud0"<return>
at+emqsubopen=1,"SubscribeFromCloud1"<return>
          
```
 - b. Check that the first two index numbers are assigned a topic each. Type:


```

at+emqsubopen?<return>
          
```

 A list of index numbers and their assigned topics appears.

```

COM7 - Tera Term VT
File Edit Setup Control Window Help
at+emqsubopen=0,"SubscribeFromCloud0"
OK
+EMQSUBOPEN: 0,0
at+emqsubopen=1,"SubscribeFromCloud1"
OK
+EMQSUBOPEN: 1,0
  
```

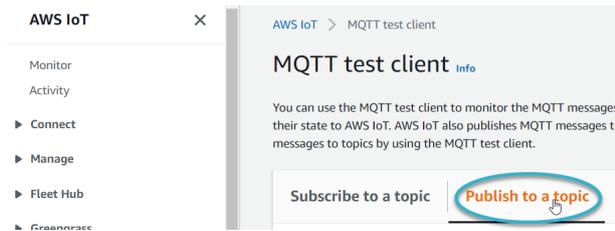
A list of index numbers and their assigned topics appears.

```

COM7 - Tera Term VT
File Edit Setup Control Window Help
at+emqsubopen?
OK
+EMQSUBOPEN topics:
0 SubscribeFromCloud0/SmartWidget
1 SubscribeFromCloud1/SmartWidget
2 null
3 null
4 null
5 null
6 null
7 null
  
```

2. Use AWS to publish a message to each topic.

- a. Using the AWS IoT *MQTT test client*, select the **Publish to a topic** tab.

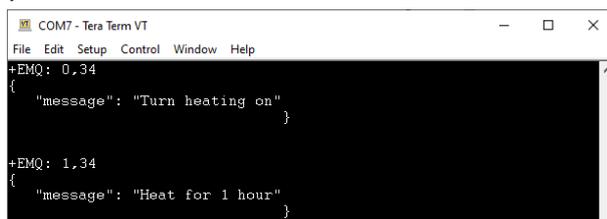


- b. In the **Topic name** box, type:
SubscribeFromCloud0/*ThingName*
- c. In the coding window, replace
Hello from AWS IoT console with
Turn heating on
- d. Select **Publish**.



- e. In the **Publish** box, type:
SubscribeFromCloud1/*ThingName*
- f. In the coding window, replace
Turn heating on with
Heat for 1 hour
- g. Select **Publish**.
View the AWS messages in the terminal emulator, in the following format:

```
+EMQ: <indexnumber>, <messagelength>
{
  "message": "<messagetext>"
}
```



If you can see the messages in the terminal emulator, then AWS can successfully publish data to your thing through the Cinterion® PLS62-W Wireless Module.

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