AP NOTE Ver.3

iGS01/iGS01S/iGS02E/iGS03 Connect to AWS loT

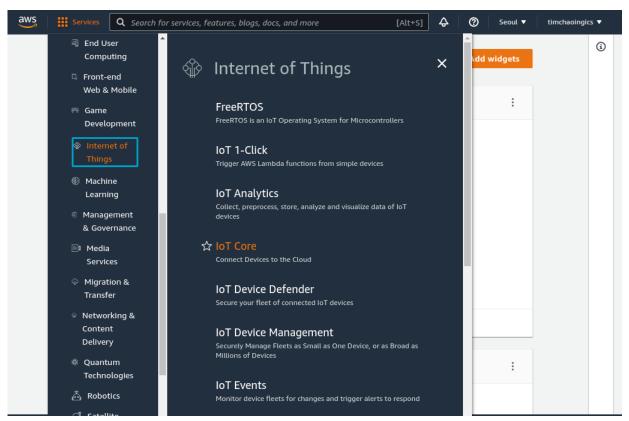
Overview

This document is the steps for configuring iGS01/iGS01S/iGS02E/iGS03 to connect to Amazon AWS IoT service. Below is an example by using iGS01.

Procedure

- 1. AWS-IoT Configuration
 - 1.1. Login AWS IoT console

Search IoT Core service.



1.2. Create certificate

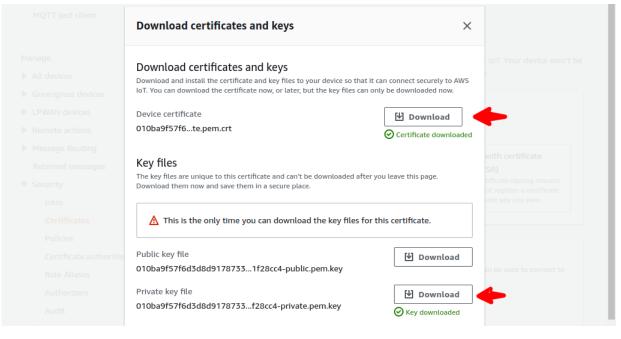
We need to create a certificate for the iGS device to publish messages. Choose Security -> Certificate, click Create Certificate.

Remote actions	
Message Routing	Certificates Info
Retained messages	X.509 certificates authenticate device and client connections. Certificates must be registered with AWS
Security	IoT and activated before a device or client can communicate with AWS IoT.
Intro	
Certificates	Certificates Certificates you've transferred
Policies	
Certificate authorities	Certificates (0)
Role Aliases	Create certificate
Authorizers	Q Find certificates Register certificates
Audit	(1)()
Detect	
▶ Fleet Hub	Certificate ID V Status
	No certificates
Device Software	You don't have any certificates in ap-northeast-2.
Billing groups	Create certificate
Settings	
Learn	

Use Auto-generate, and remember to activate the certificate after creating it.

≡	Create certificate Info Certificates authenticate devices and clients so that they can connect to AWS IoT. Your device won't be able to connect to AWS IoT without authentication and an appropriate policy.	
	Certificate	
	 Auto-generate new certificate (recommended) Generate a new certificate, public key, and private key using AWS IoTs certificate authority and register it with AWS IoT. Create certificate with certificate singing request (CSR) Upload your own certificate signing request (CSR) file to create and register a certificate that's based on a private key you own. 	
	Certificate status Assign the initial state of the new certificate. The certificate must be active before it can be used to connect to AWS IoT. You can change its status later in the certificate's detail page.	
	 Inactive A device won't be able to connect to AWS using this certificate until it's activated. Active A device will be able to connect to AWS using this certificate immediately after you create it. 	
	Cancel Create	

Download the certificate and private key for iGS device configuration. You can ignore the request to download root CA, the iGS device already built-in the AWS-IoT root CA for you.



1.3. Create Policy

We need to create a policy for the certificate, it tells the AWS what we can do using this certificate. Choose **Security** -> **Policies**, click **Create Policy**.

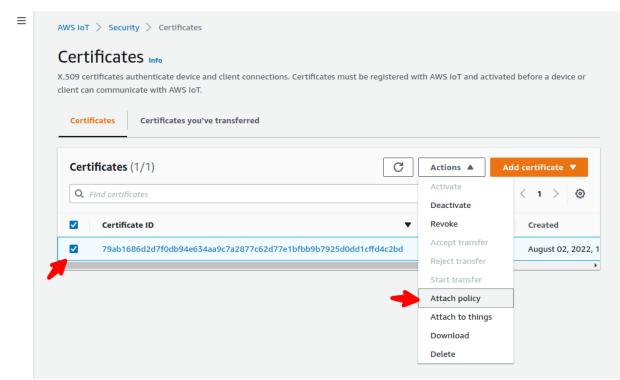
Manage	AWS IOT > Security > Policies			
All devices				
Things	AWS IoT policies (0) Info			
Thing groups	AWS IoT policies allow you to control access to the AWS IoT Core data plane operations. AWS IoT policies are separate and different from IAM policies. AWS IoT policies apply only to AWS IoT data plane operations.			
Thing types				
Fleet metrics	C Delete Create policy			
Greengrass devices	Q Find policies			
Remote actions	< 1 > @			
Message Routing				
Retained messages	Policy name 🔻			
Security				
Intro	No policies			
Certificates	You don't have any AWS IoT policies in ap-northeast-2.			
Policies	Create			
Certificate authorities				

For the iGS device, it requires **iot:Connect** and **iot:Publish** permission. For testing purpose, set target resource as *.

NS IoT Core policies a	allow you to manage access to the AWS IoT Core data plane operations.
Policy propert	ies s named policies so that many identities can reference the same policy document.
Policy name	
IgsPolicy	
A policy name is an alp characters, but no space	ohanumeric string that can also contain period (.), comma (,), hyphen(-), underscore (_), plus sign (+), equal sign (=), and at sig ces.
Tags - optional Policy statements	Policy examples
Policy statements Policy docume An AWS IoT policy cont by the resources.	
Policy statements Policy docume An AWS IoT policy cont by the resources.	Info tains one or more policy statements. Each policy statement contains actions, resources, and an effect that grants or denies t
Policy statements Policy docume An AWS IoT policy cont by the resources. Builder J	ent Info tains one or more policy statements. Each policy statement contains actions, resources, and an effect that grants or denies t
Policy statements Policy docume An AWS IoT policy cont by the resources. Builder J Policy effect	ent Info tains one or more policy statements. Each policy statement contains actions, resources, and an effect that grants or denies t ISON Policy action Policy resource

1.4. Attach policy to certificate

Choose **Secure** -> **Certificate**, click on the certificate we just created. Click **Actions** on the top-right corner, and select **Attach policy** on the popup menu.



Attach the policy we created in the previous step. Done.

Attach policies to the certificate × 79ab1686d2d7f0db94e634aa9c7a2877c62d77e1bfbb9b7925d 0dd1cffd4c2bd.	
Policies	
Choose policies to attach to this certificate. The certificate can have up to 10 policies attached to it. Choose AWS IoT policy C	
MyiotPolicy	
O ancel Attach policies	

1.5. Get the MQTT endpoint of your account

Choose Settings in the navigation pane.

Copy the endpoint string, we will use it to set up the iGS device.

Test	AWS IOT > Settings				
MQTT test client	Settings Info				
Manage ▶ All devices ▶ Greengrass devices	Device data endpoint Info Your devices can use your account's device data endpoint to connect to AWS.				
 Remote actions Message Routing Retained messages Security Fleet Hub 	Each of your things has a REST API available at this endpoint. MQTT clients and AWS IoT Device SDKs 🔀 also use this endpoint. Endpoint 🗇 a1e0stx4u2pa0a-ats.lot.ap-northeast-2.amazonaws.com				
Device Software Billing groups Settings	Domain configurations You can create domain configurations to simplify tasks such as migrating devices to AWS IoT Core, migrating application infrastructure to AWS IoT Core and maintaining brand identity. Actions Create domain configuration				
Learn Feature spotlight	Name Domain name Status Service type Date updated				

2. Setting AWS IoT on iGS01

2.1. Settings on Applications Page

BLE-WIFI Wi-Fi	Network Applications	Advance	ed System	Reboot	
Application					
Application	MQTT Client •				
Host/IP	a1e0stx4u2pa0a-ats.iot.ap	- 🗘	MQTT end	point	
Port	8883	\	AWS lot us	e port 8	3883
Publish Topic	testlab/igs01				
Client ID	BLE-WIFI_65_52				
Username	username				
Password	password				
MQTTS	Enable •				
Root CA	AWS-IoT		Select built	-in AWS	S-lot Root CA
Use Certificate	Enable •	-			
Request Interval (in secs)	0				
Drop reports while					

2.2. Upload Private Key & Certificate downloaded from AWS IoT in step 1.2

Device Key/Certificate Up	date	
Existing Brief	BEGIN CERTIFICATE MIIDWTCCAkGgAwIBAgIUU+JnkNp4ahkRBeg/W/fGebPQtO EwDQYJKoZIhvcNAQEL BQAwTTFLMEkGA1UECwxCQW1hem9uIFdIYi	
	選擇檔案 未選擇任何檔案	
Certificate	Upload Certificate Clear Certificate	
Existing Brief	BEGIN RSA PRIVATE KEY MIIEpAIBAAKCAQEAIX9MyE1Ezl6TPkH9Yw257l6IDPLeVRk DZ9KJqDWXMNHNaQeN qSLEh6DIZu/M+wLZshiw7QyzL4OrtQ	
ſ	避理增安 主選擇任何增安	

- 2.3. Reboot and done
- 3. Check messages with MQTT Client
 - 3.1. AWS console has a built-in client for testing. Choose Test -> MQTT test client
 - 3.2. Enter the topic we set in step 2.2
 - 3.3. Click **Subscribe**, you should see the messages published from the iGS device.,

Topic filter Info The topic filter describes the	e topic(s) to which you want to subscribe. The topic	: filter can include MQTT wildcard characters.
testlab/igs01		
Additional configuration	ation	
-		
Subscribe		
Subscriptions	testlab/igs01	Pause Clear Export E
	testlab/igs01	Pause Clear Export E
Subscriptions	testlab/igs01 testlab/igs01 	
	<pre>v testlab/lgs01 { "data": [</pre>	August 02, 2022, 13:35:13 (UTC+08
	<pre> testlab/lgs01 { "data": ["\$GPRP,13B333D16C39,F008D "\$08D "\$ "\$</pre>	August 02, 2022, 13:35:13 (UTC+08/
	<pre>v testlab/lgs01 { "data": [</pre>	August 02, 2022, 13:35:13 (UTC+080

Revision History

DATE	REVISION	CHANGES
Feb 11, 2019	1	Initial release
Oct 4, 2019	2	New AWS-IoT console & description
Aug 2, 2022	3	New AWS-lot console screenshot & description