AP NOTE 011
Ver.1

iGS02E Google Cloud IoT Core Guide

Introduction

This application note provides a guide to connect Google Cloud IoT Core with IGS02E via mqtt bridge.

Get Started

The first step is ensuring that you have a Google Cloud IoT Core account set up with IoT core.

Follow the IoT Core Quick start to create a Cloud IoT Core device registry and register a device.

After following the instructions in Quickstart guide, you should have PROJECT_ID, REGION, REGISTRY_ID and DEVICE_ID settings. These settings will be used to config iGS02E.
We suggest users to test your configurations on PC first to confirm your settings are correct.

Below shows the gcloud commands for publish and subscribe to verify your settings:
(Your pub/sub topics may be different from the example, please use your settings accordingly)

Publish some data to projects/igs01s-214703/topics/pub
$ gcloud pubsub topics publish projects/igs01s-214703/topics/pub --message="TEST1"

Then check if you can receive the published data
$ gcloud pubsub subscriptions pull --auto-ack projects/igs01s-214703/subscriptions/igs01s --limit=100

Configurations on iGS02E

The Google Cloud IoT Core uses JSON Web Tokens (JWT) for authentication.
The device uses a private key to sign a JSON Web Token (JWT) for authentication so the user must **upload Private key** to the device. In additional, the JWT requires **enable NTP** setting to get correct expired time.

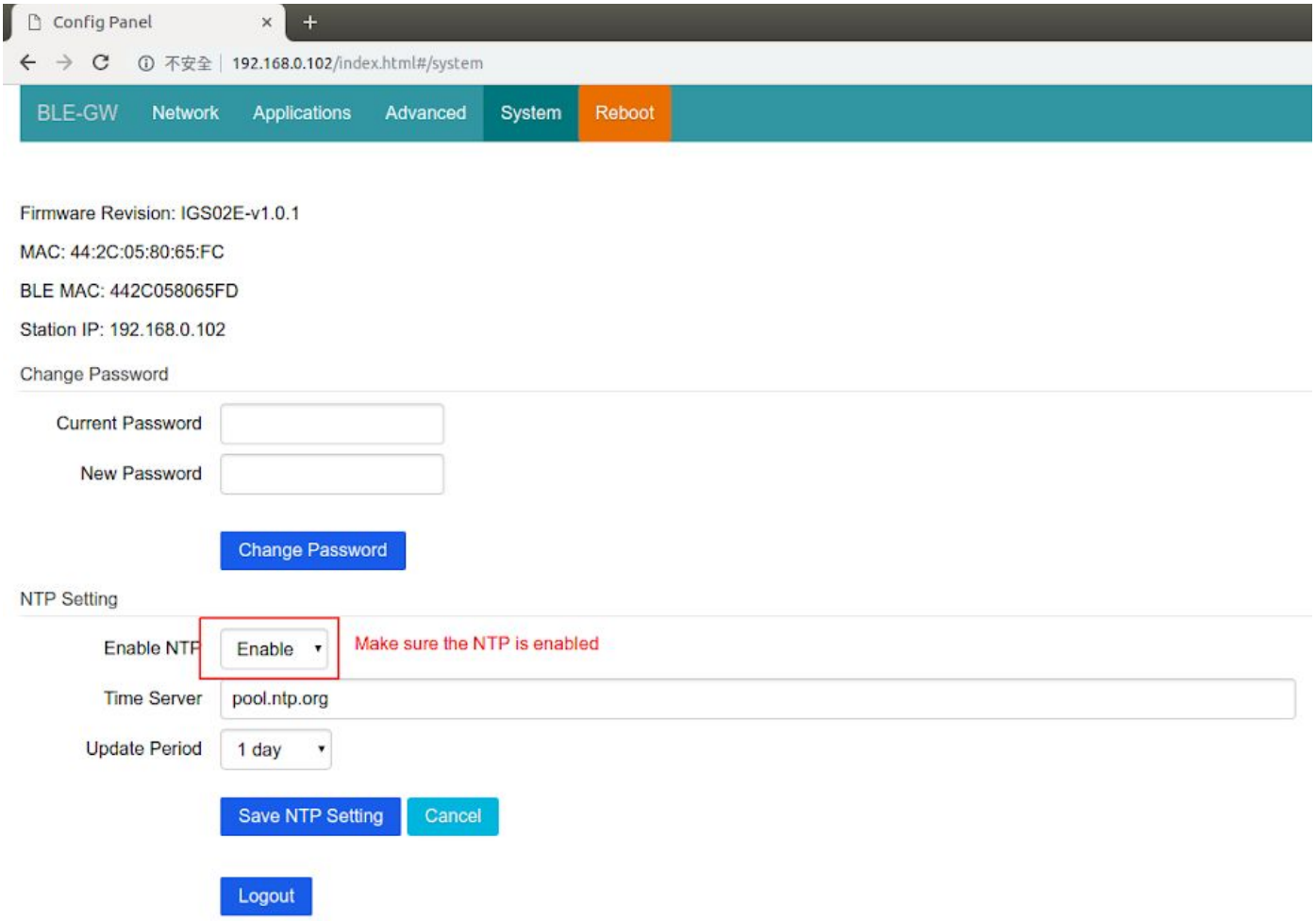
Below shows the steps to config IGS02E to publish data to Google Cloud IoT Core.

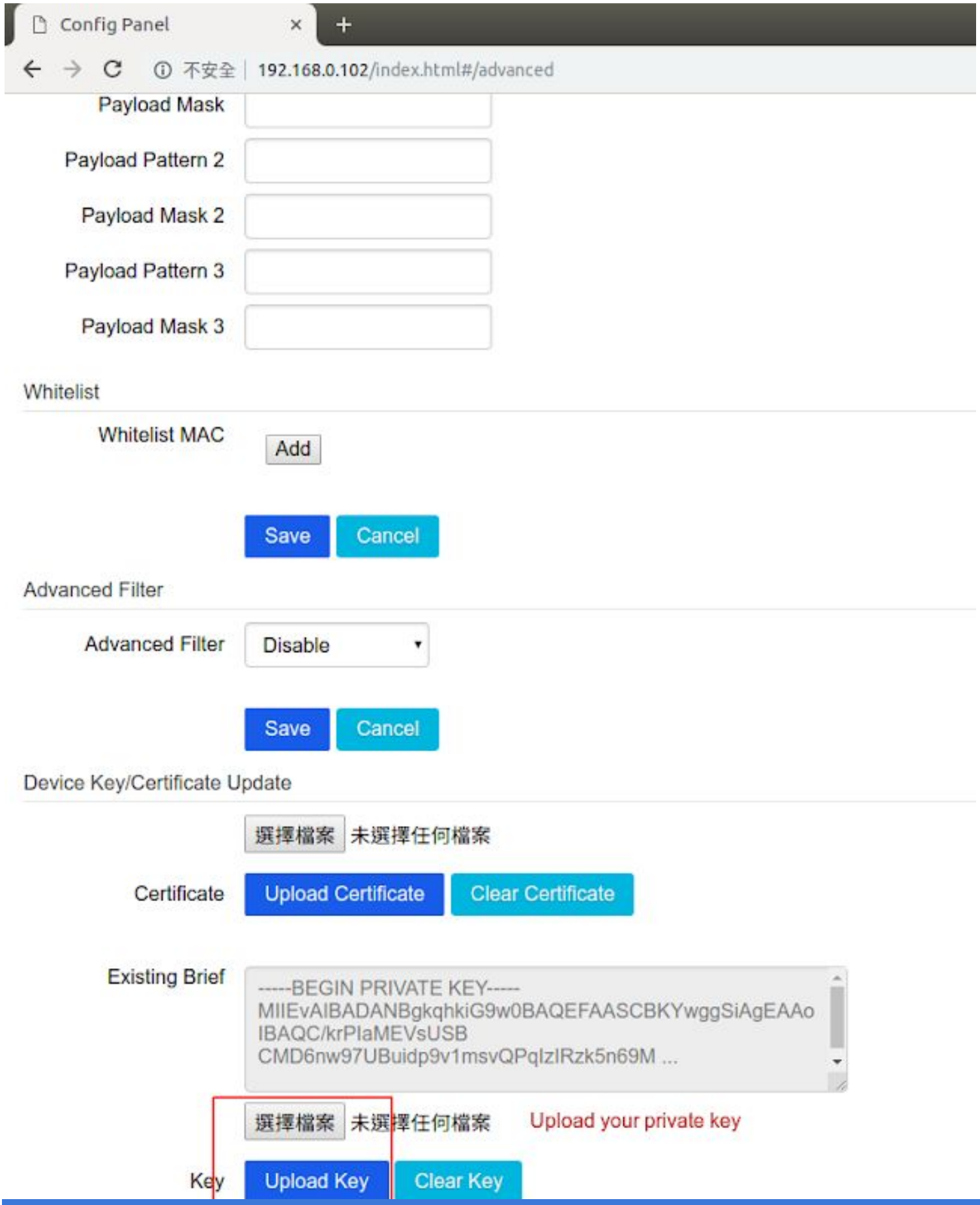
1. Enable NTP via system tab of webUI.
2. Upload private key via advanced table of webUI
3. Configure the device as MQTT client with below settings:

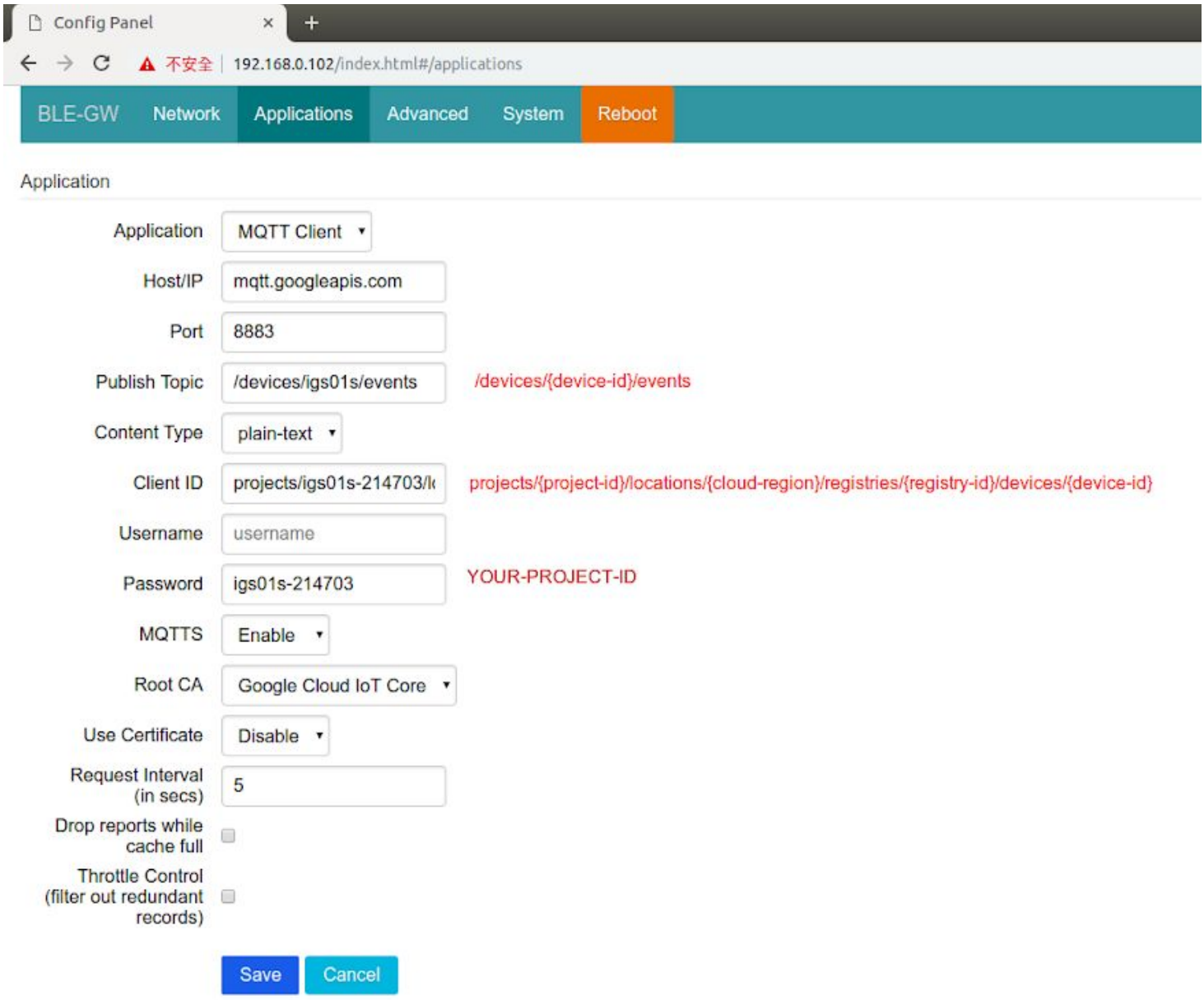
    - MQTT HOST mqtt.googleapis.com
    - MQTT PORT 8883
    - MQTT PUBTOPIC /devices/{device-id}/events
    - MQTT CLIENTID projects/{project-id}/locations/{cloud-region}/registries/{registry-id}/devices/{device-id}
    - MQTT USERNAME unused
    - MQTT PASSWORD YOUR-PROJECT-ID
    - Enable MQTTS
    - Select Google-Cloud-IoT-Core RootCA
    - Disable use certificate

Note, the standard authenticate method is using JWT in mqtt password field. Due to very short expired time of the JWT, we support runtime generate the JWT. So users need to set “project-id” in the password field then the gateway will automatically generate the JWT as password for connecting server.

Below shows the screenshot of IGS02E settings:




Config Panel
不安全
192.168.0.102/index.html#/advanced
Payload Mask
Payload Pattern 2
Payload Mask 2
Payload Pattern 3
Payload Mask 3
Whitelist
Whitelist MAC
Add
Save
Cancel
Advanced Filter
Advanced Filter
Disable
Save
Cancel
Device Key/Certificate Update
選擇檔案 未選擇任何檔案
Certificate
Upload Certificate
Clear Certificate
Existing Brief
-----BEGIN PRIVATE KEY-----
MIIEvAIBADANBgkqhkiG9w0BAQEFAASCBKYwggSiAgEAAo
IBAQC/krPlaMEVsUSB
CMD6nw97UBuidp9v1msvQPqlzIRzk5n69M ...
選擇檔案 未選擇任何檔案
Upload your private key
Key
Upload Key
Clear Key


Config Panel
不安全 | 192.168.0.102/index.html#/applications
BLE-GW
Network
Applications
Advanced
System
Reboot
Application
Application
MQTT Client
Host/IP
mqtt.googleapis.com
Port
8883
Publish Topic
/devices/igs01s/events
/devices/{device-id}/events
Content Type
plain-text
Client ID
projects/igs01s-214703/l
projects/{project-id}/locations/{cloud-region}/registries/{registry-id}/devices/{device-id}
Username
username
Password
igs01s-214703
YOUR-PROJECT-ID
MQTTS
Enable
Root CA
Google Cloud IoT Core
Use Certificate
Disable
Request Interval (in secs)
5
Drop reports while cache full
Throttle Control (filter out redundant records)
Save
Cancel

Revision History

DATE	REVISION	CHANGES
Apr 8, 2019	1	Initial release