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# Trust Platform Demo Google IoT Core

## Account Setup Guide

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### 1. INTRODUCTION

This document mainly focusses on the how-to setup the google cloud account  
For connecting the trust platform devices to cloud.

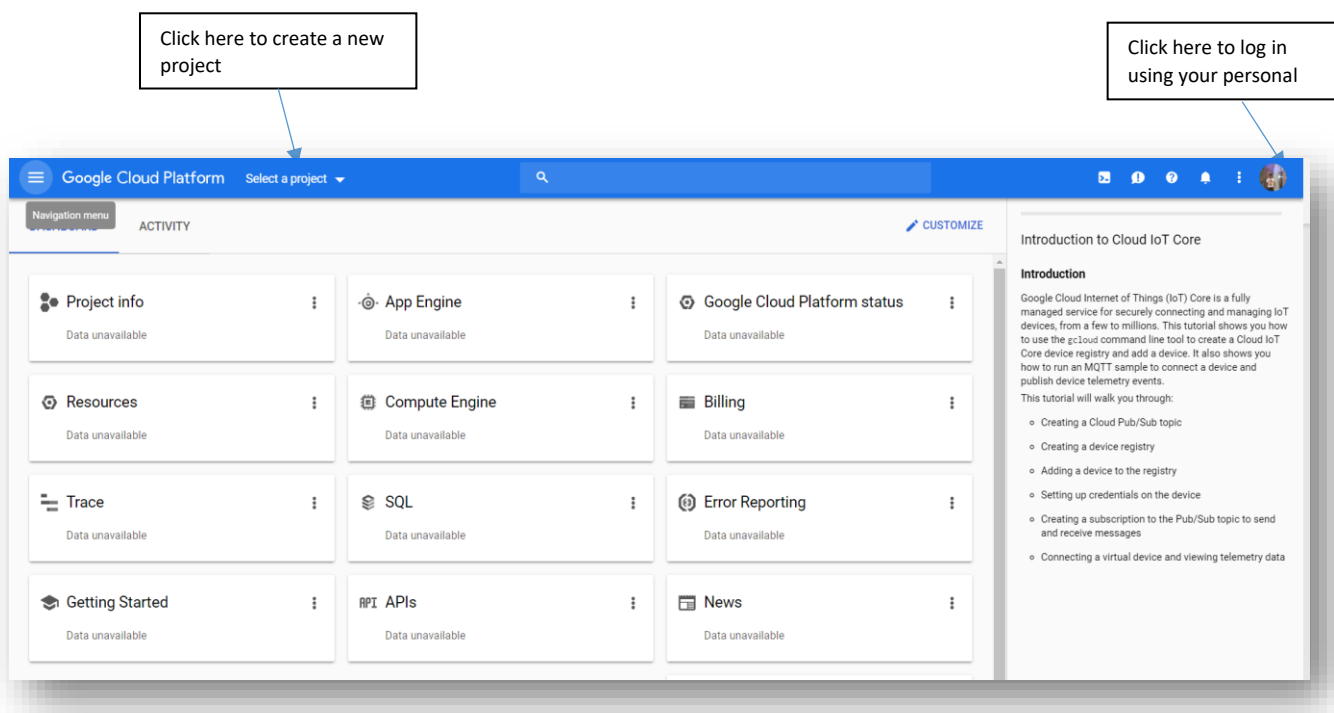
### 2. SETTING UP OF GOOGLE CLOUD

- Log into the console -  
[https://console.cloud.google.com/start?tutorial=iot\\_core\\_quickstart](https://console.cloud.google.com/start?tutorial=iot_core_quickstart)

- Use your personal Gmail account to log in. Select “Try for free”.

**Note:** If not, create a new email account from [HERE](#)

- Create a new Google cloud project with the name – gcp-trust-demo by clicking the **Select a project** and **NEW PROJECT**



# Trust Platform Demo GCP Setup

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Fig: Logging in and creating a project on the cloud

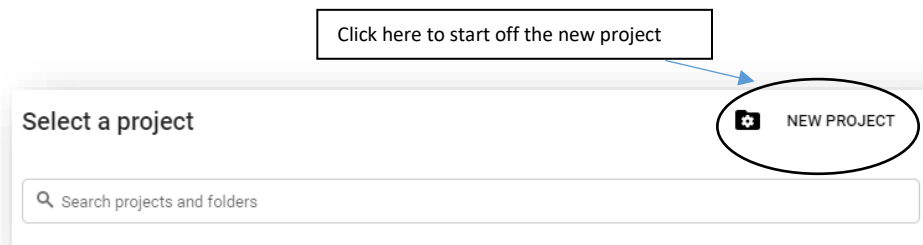


Fig: Creating a new project

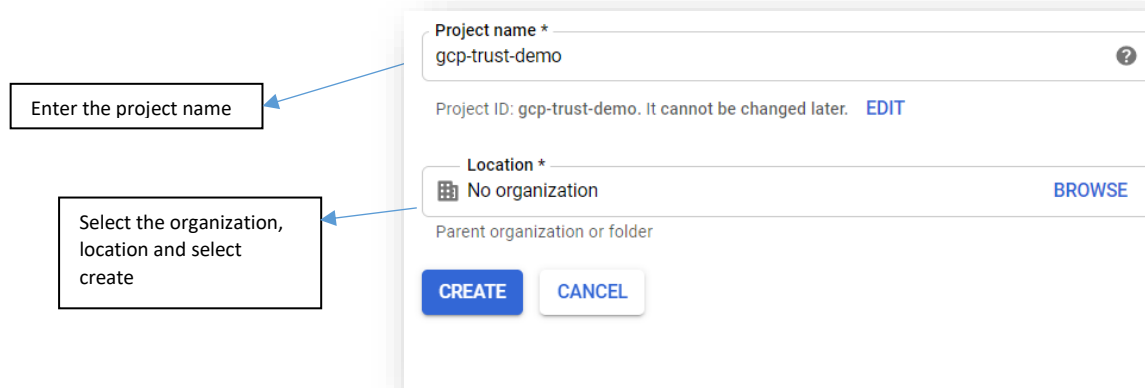


Fig: Entering the Project details

- Select organization if available or just select No organization.
- Once the project is created, the home page looks like the screen shot below.

**Note:** Note down the Project Id which will be used later.

# Trust Platform Demo GCP Setup

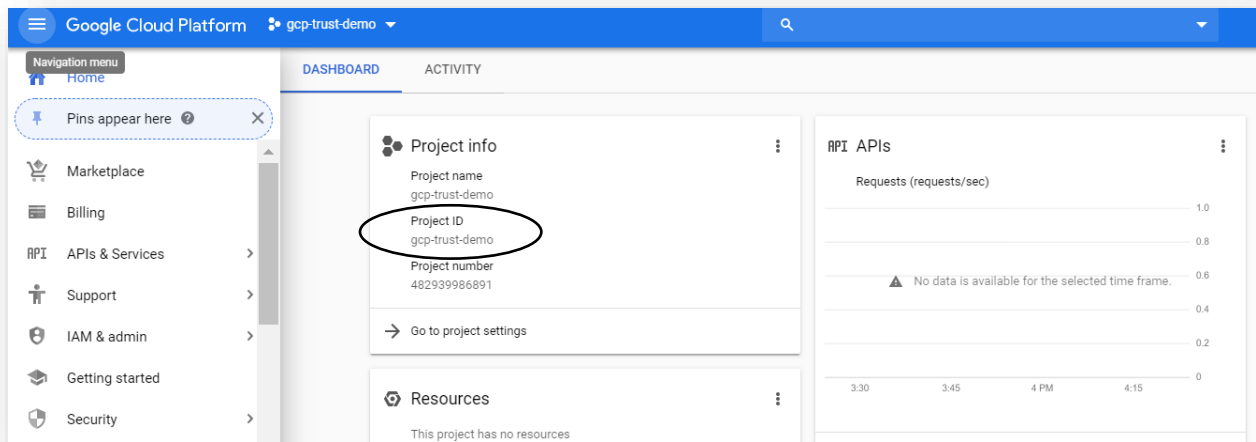
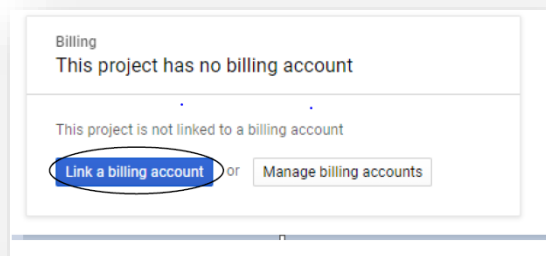
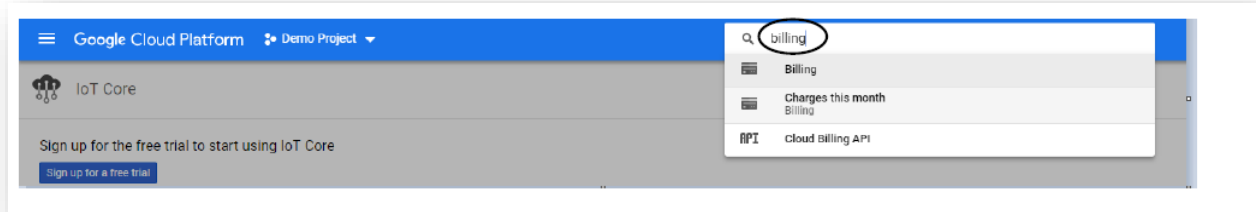


Fig: Project info page

- In the search bar, type “billing” to get to the billing page. It is necessary to do it during this step, as without credit card information, the IoT Core cannot be accessed. Click Link a billing account to add the credit card information. Follow the prompts to complete the billing information.



- In the cloud platform search bar type “**Pub/Sub API**” and click on “**Enable API**”.

## Trust Platform Demo GCP Setup

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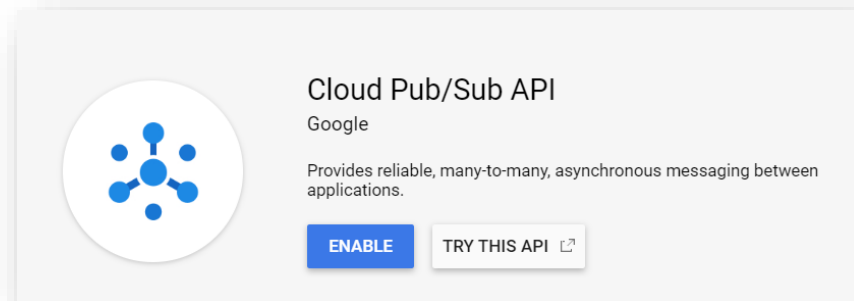


Fig: Enabling API

- Enter **“Google Cloud IoT API”** in the search bar. Once you select it, click **Enable**

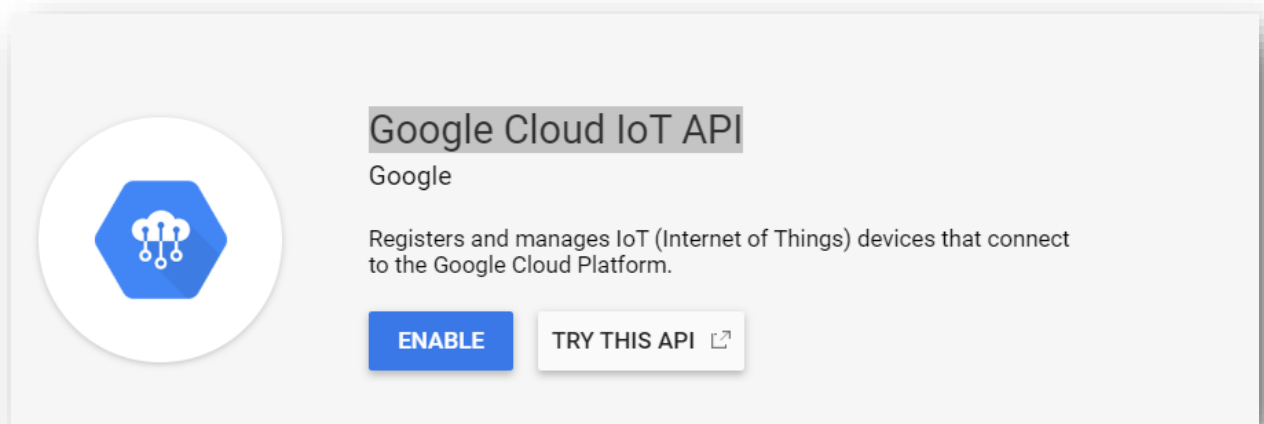
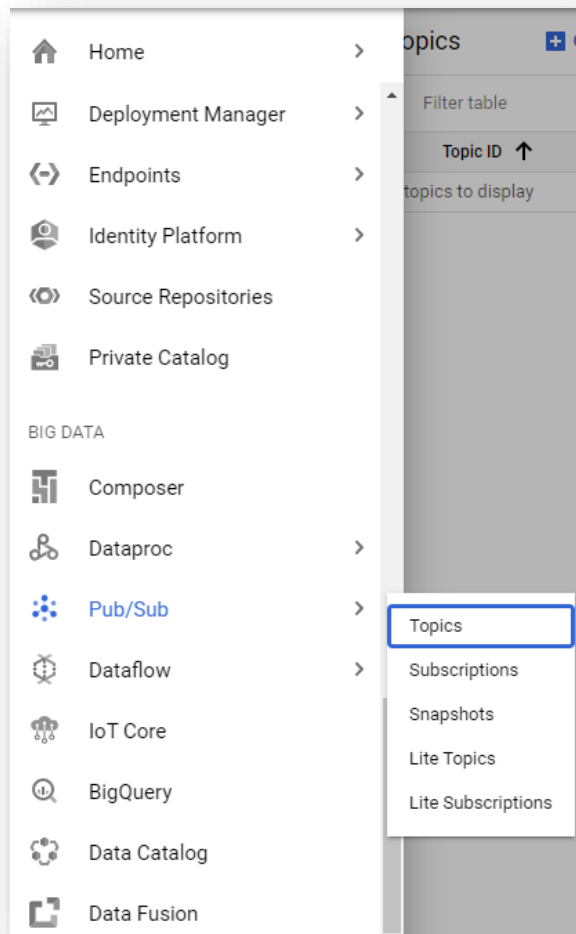


Fig: Enabling APIs for IoT Core

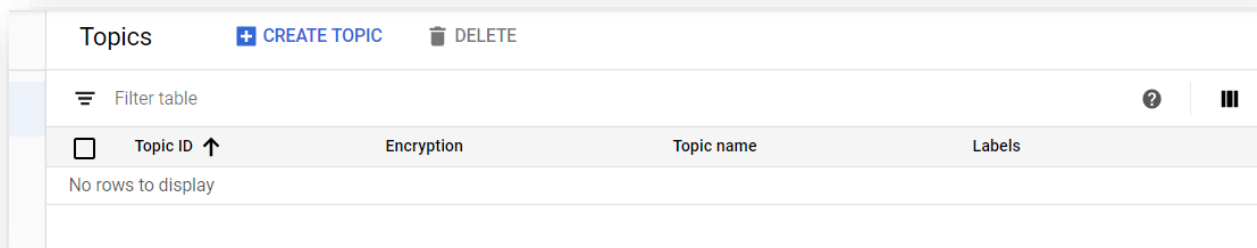
### Creating Topic:

- In the navigational pane, select **Pub/Sub -> Topics** as in the below figure

# Trust Platform Demo GCP Setup



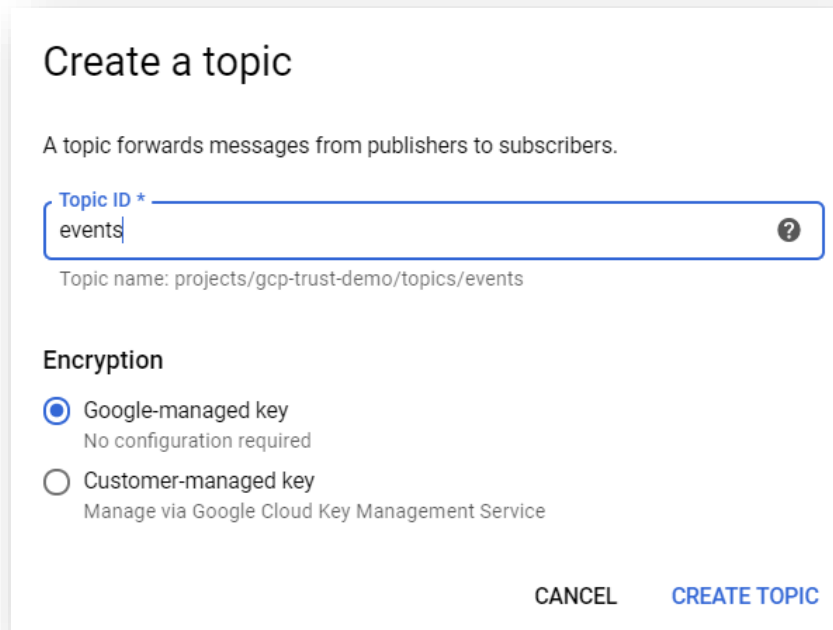
Click **Create Topic**



- Enter the name of topic as “**events**” and click “**Create Topic**”.

## Trust Platform Demo GCP Setup

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Create a topic

A topic forwards messages from publishers to subscribers.

Topic ID \*  ?

Topic name: projects/gcp-trust-demo/topics/events

Encryption

☒ Google-managed key  
No configuration required

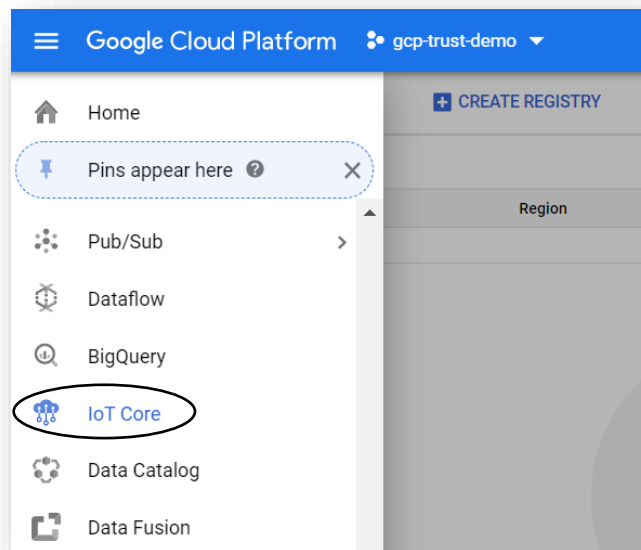
☐ Customer-managed key  
Manage via Google Cloud Key Management Service

CANCEL CREATE TOPIC

Fig: Creating a topic

### Creating Registry:

- In the navigational pane, select **IoT Core** as in the below figure



## Trust Platform Demo GCP Setup

- Once you are inside IoT core then click on “**CREATE REGISTRY**”

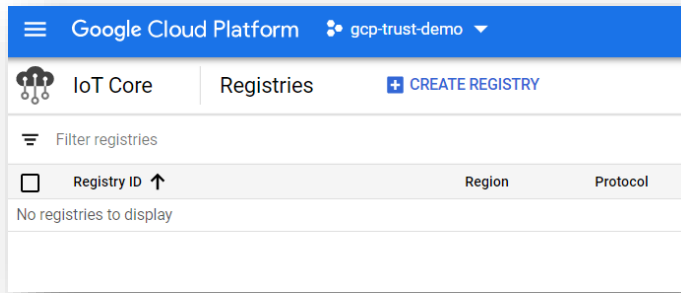


Fig: Creating device registries

- Enter the following details:
  - Registry Id – “Name of your choice”
  - Region – us-central1
  - Default telemetry topic – Select the pub/sub topic you have created in the previous step from the drop down.
  - Under SHOW ADVANCED OPTIONS
    - Device State Topic – optional
    - MQTT and HTTP are enabled
  - And then click “Create”

# Trust Platform Demo GCP Setup

**IoT Core** | Create a registry

Define how devices in this registry will send data to Cloud IoT Core. After you create your registry, you can start adding devices to it. [Learn more](#)

**Registry ID**  
Enter a permanent ID that starts with a lowercase letter. Must end in a letter or number. You can also include the following characters: + . % - \_ ~

trust\_reg\_id

**Region**  
Determines where data is stored for devices in this registry. Choice is permanent.

us-central1

**Protocol**  
Select the protocols your devices will use to connect to Cloud IoT Core. [Learn more](#)

☒ MQTT  
☒ HTTP

**Cloud Pub/Sub topics**  
Cloud IoT Core routes device messages to Cloud Pub/Sub for aggregation. You can route messages to different topics and subfolders in Cloud Pub/Sub based on the type of data in the messages. [Learn more](#)

**Default telemetry topic**  
Device telemetry events will be published to this topic by default. Add more topics if you want these events to be published to separate topics.

projects/gcp-trust-demo/topics/events

[Add more telemetry topics](#)

**Device state topic (Optional)**  
State events published by MQTT devices are stored in the registry by default. You can also select a Cloud Pub/Sub topic where these messages will be published on a best-effort basis. [Learn more](#)

Select a Cloud Pub/Sub topic

[Add CA certificate](#)

**Stackdriver Logging**  
Set the default logging for all devices in this registry. You can apply a different setting or debug at the device level. [Learn more](#)

☒ None ?  
☐ Error ?  
☐ Info ?  
☐ Debug ?

Create Cancel

Fig: Entering the details for the device registry

- Open the file GCP\_test\_account\_credentials.csv file from the docs folder of the trust platform design suite repository.
  - Enter the same Registry id entered in previous step,
  - region as us-central1 and save the file.

This file is used later in GCP connect example.

	A	B
1	Registry ID	Region
2		



## Creating Pub/Sub Service Account:

- Search for “IAM and admin” -> service accounts -> Create Service Account

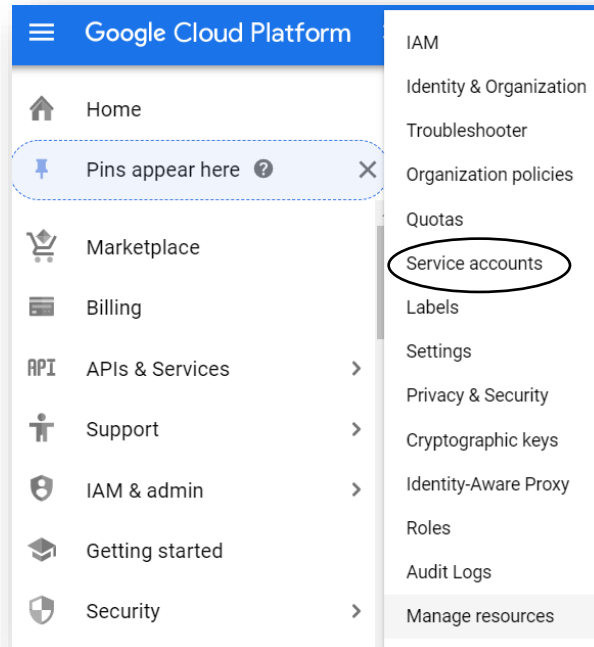
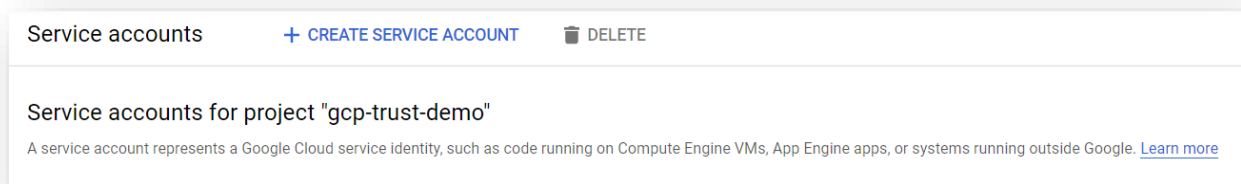


Fig: Navigating to IAM

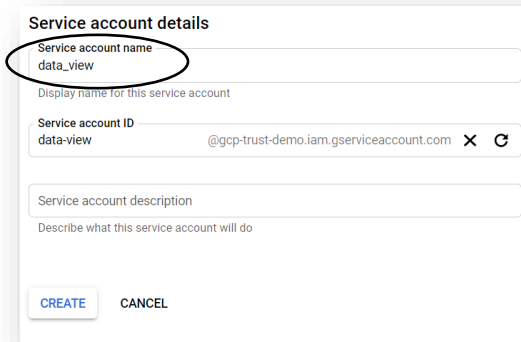
Click **Create Service Account** as in below figure



- Enter **data-view** in the service account name and click **CREATE**

# Trust Platform Demo GCP Setup

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**Service account details**

Service account name  
data\_view

Display name for this service account

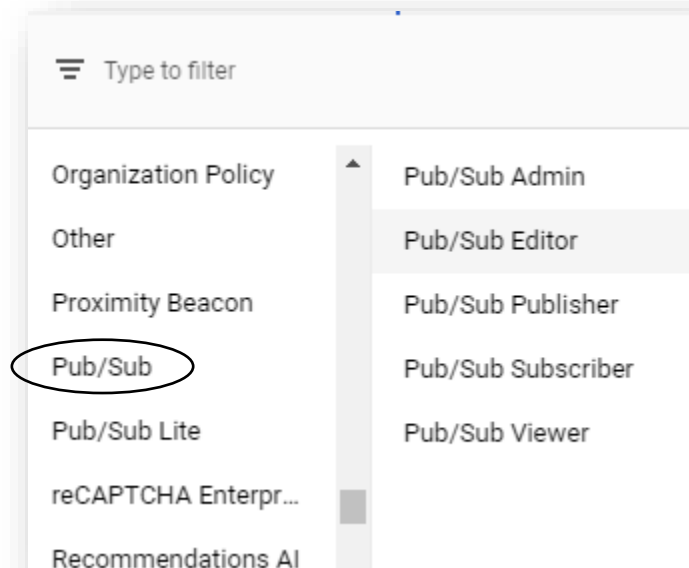
Service account ID  
data-view @gcp-trust-demo.iam.gserviceaccount.com

Service account description

Describe what this service account will do

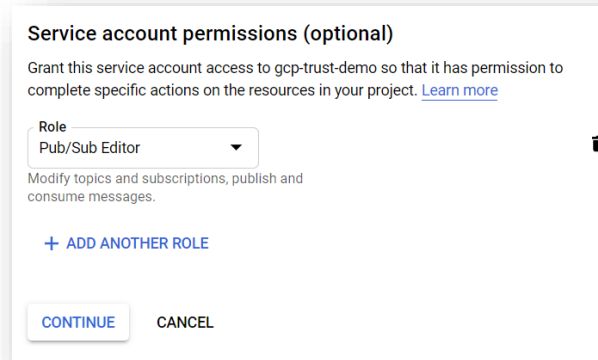
**CREATE** CANCEL

- In the next window select the role type from **Pub/Sub** as **Pub/Sub Editor** and Click **CONTINUE** as in below figures



Type to filter

Organization Policy	Pub/Sub Admin
Other	Pub/Sub Editor
Proximity Beacon	Pub/Sub Publisher
Pub/Sub	Pub/Sub Subscriber
Pub/Sub Lite	Pub/Sub Viewer
reCAPTCHA Enterpr...	
Recommendations AI	



**Service account permissions (optional)**

Grant this service account access to gcp-trust-demo so that it has permission to complete specific actions on the resources in your project. [Learn more](#)

Role  
Pub/Sub Editor

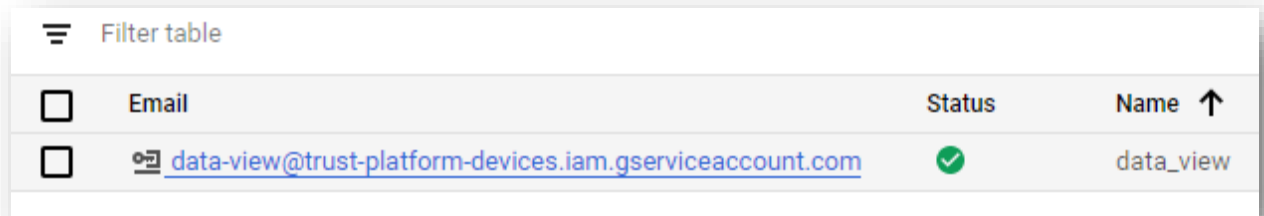
Modify topics and subscriptions, publish and consume messages.

[+ ADD ANOTHER ROLE](#)

**CONTINUE** CANCEL

## Trust Platform Demo GCP Setup

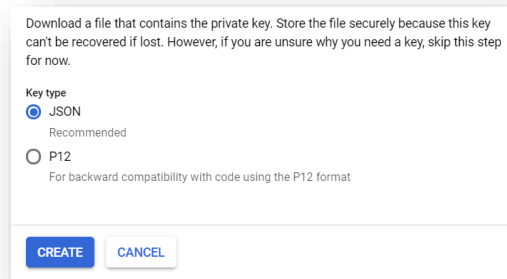
- Click **DONE** for **Grant users access to this service account (optional)**
- Click on Email link to create keys as in below



The screenshot shows a table with a 'Filter table' header. The table has three columns: 'Email', 'Status', and 'Name'. The first row shows an email address 'data-view@trust-platform-devices.iam.gserviceaccount.com' with a green checkmark in the 'Status' column and the name 'data\_view' in the 'Name' column.

	Email	Status	Name ↑
<input type="checkbox"/>	<a href="mailto:data-view@trust-platform-devices.iam.gserviceaccount.com">data-view@trust-platform-devices.iam.gserviceaccount.com</a>	✓	data_view

- Click on **ADD KEY** -> **Create new key** to create new one. In the next window make sure the JSON type is selected and Click **Create** and click **Close**



The dialog box shows instructions to download a private key file. It has two radio button options for 'Key type': 'JSON' (selected and marked 'Recommended') and 'P12' (marked 'For backward compatibility with code using the P12 format'). At the bottom are 'CREATE' and 'CANCEL' buttons.

Download a file that contains the private key. Store the file securely because this key can't be recovered if lost. However, if you are unsure why you need a key, skip this step for now.

Key type

☒ JSON  
Recommended

☐ P12  
For backward compatibility with code using the P12 format

CREATE CANCEL

Fig: Generating the json format key

A json file is downloaded, rename the json file as **data-view.json** and place it in the Docs folder of Trust Platform Design Suite cloned repository. Now we need to create another service account for the device registration through the manifest file.

### Creating Cloud IoT Service Account:

- Click '**CREATE SERVICE ACCOUNT**' as shown in the previous steps and enter the service account name as **iot-manifest** and click CREATE

# Trust Platform Demo GCP Setup

**Service account details**

Service account name  
iot-manifest

Display name for this service account

Service account ID  
iot-manifest @gcp-trust-demo.iam.gserviceaccount.com X ↺

Service account description  
Describe what this service account will do

**CREATE** **CANCEL**

- Select the role as **Cloud IoT Provisioner** from **Cloud IoT** and Click **CONTINUE**

**Service account permissions (optional)**

Grant this service account access to gcp-trust-demo so that it has permission to complete specific actions on the resources in your project. [Learn more](#)

Type to filter

Cloud Functions	Cloud IoT Admin
Cloud Healthcare	Cloud IoT Device Controller
Cloud IAP	Cloud IoT Editor
<b>Cloud IoT</b>	Cloud IoT Provisioner
Cloud KMS	Cloud IoT Viewer
Cloud Life Sciences	
Cloud Managed Ide...	
Cloud Migration	

- Click **DONE** for **Grant users access to this service account (optional)**
- Click on Email link to create keys as in below

<input type="checkbox"/>	Email	Status
<input type="checkbox"/>	<a href="#">data-view@trust-platform-devices.iam.gserviceaccount.com</a>	✓
<input type="checkbox"/>	<a href="#">iot-manifest@trust-platform-devices.iam.gserviceaccount.com</a>	✓

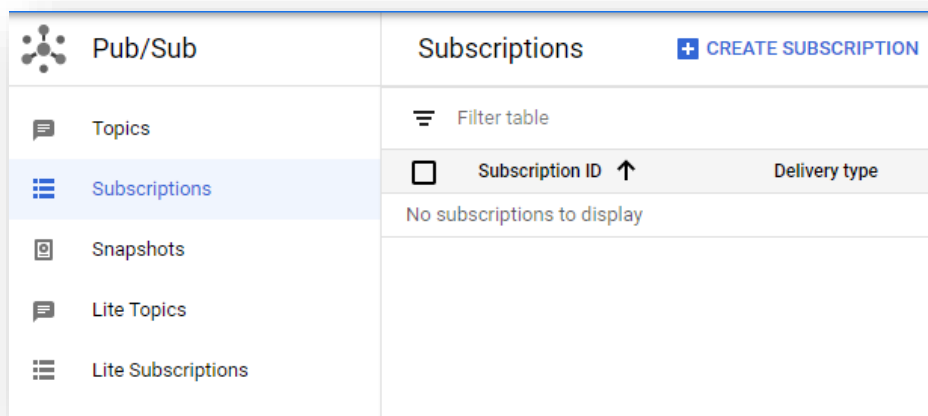
## Trust Platform Demo GCP Setup

- Click on **ADD KEY** -> **Create new key** to create new one. In the next window make sure the JSON type is selected and Click **Create** and click **Close**

A JSON file is downloaded and click **Done**. Rename the downloaded file as **iot-manifest.json** and place it in the Docs folder of Trust Platform Design Suite cloned repository.

### Creating Pub/Sub Subscription:

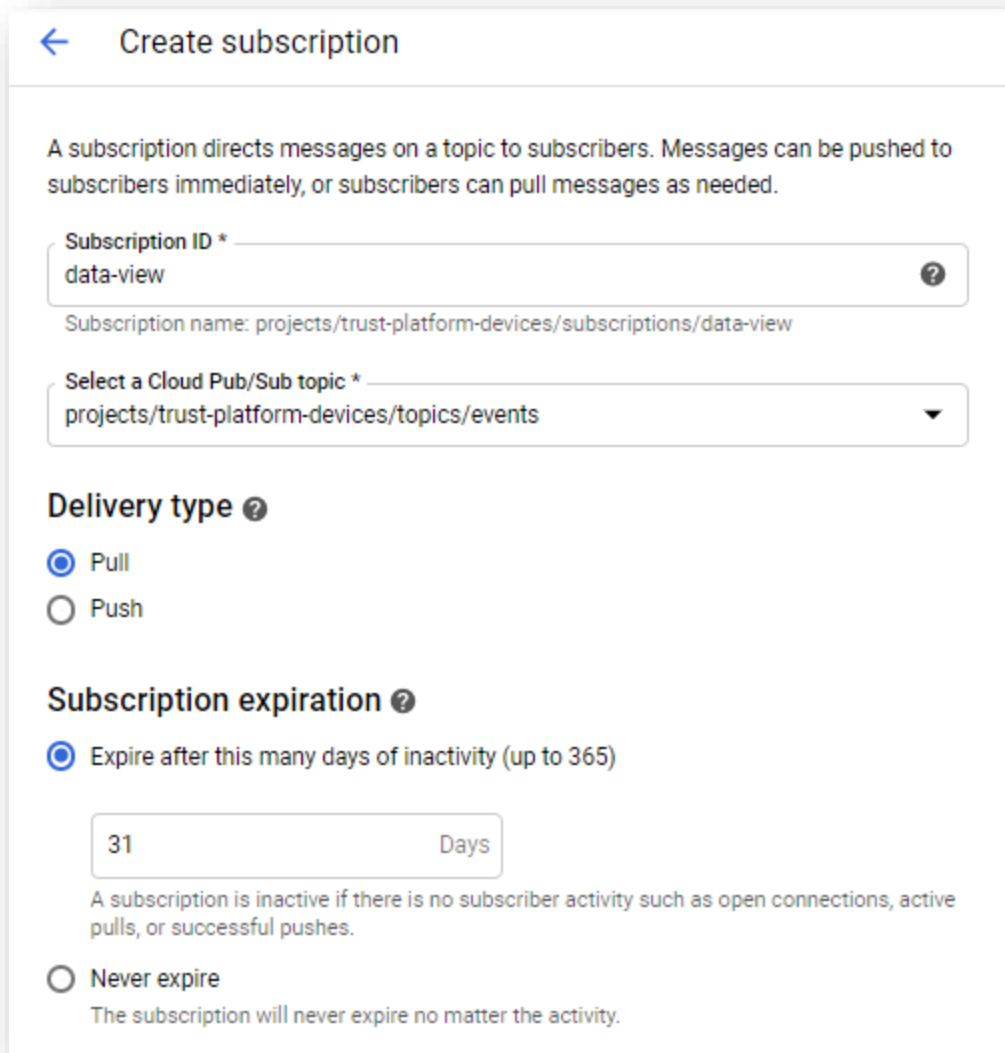
- Now search for **Pub/Sub** in the search bar and **Create Subscription**



- Give it the name **“data-view”**, select a **Cloud Pub/Sub topic** as events created in the previous sections and click **“CREATE”**

## Trust Platform Demo GCP Setup

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← Create subscription

A subscription directs messages on a topic to subscribers. Messages can be pushed to subscribers immediately, or subscribers can pull messages as needed.

Subscription ID \*  ?

Subscription name: projects/trust-platform-devices/subscriptions/data-view

Select a Cloud Pub/Sub topic \*  ▼

**Delivery type** ?

☒ Pull

☐ Push

**Subscription expiration** ?

☒ Expire after this many days of inactivity (up to 365)

Days

A subscription is inactive if there is no subscriber activity such as open connections, active pulls, or successful pushes.

☐ Never expire

The subscription will never expire no matter the activity.

Fig: Entering the name for the subscription

The GCP iot cloud account is setup for the device registration through the manifest file.

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- Local Sales Office
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- Technical Support

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- Microchip is willing to work with the customer who is concerned about the integrity of their code.

# Trust Platform Demo GCP Setup

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