



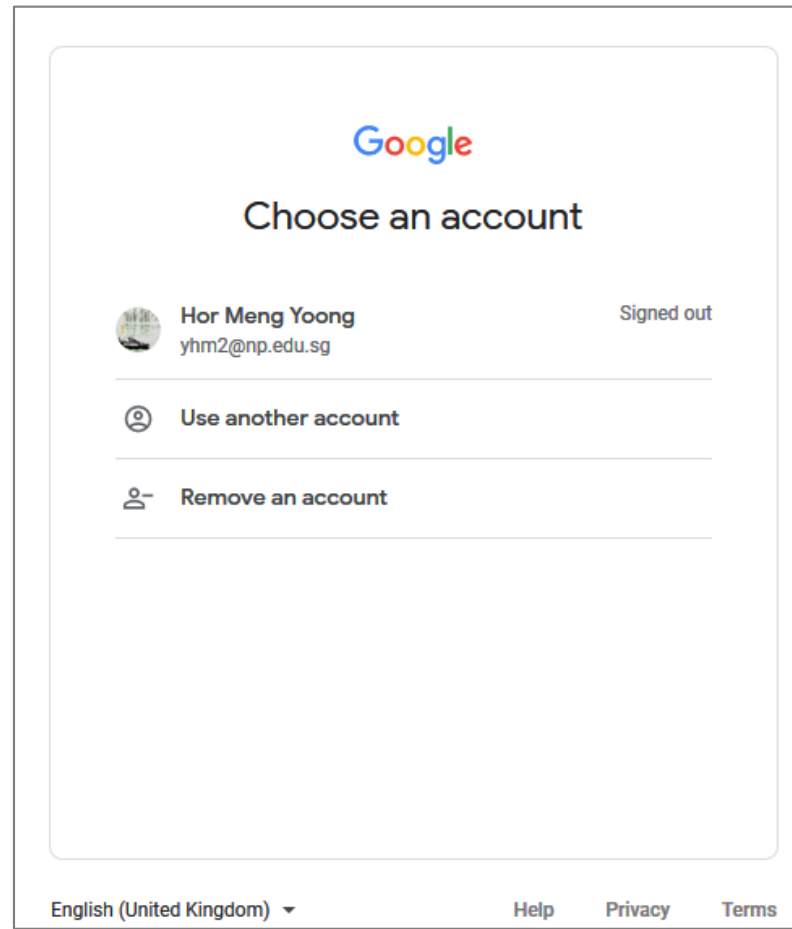
NGEE ANN
SCHOOL OF ENGINEERING

Generate Voice Annotated PowerPoint Slides


Select or create a Cloud Platform project

- ❑ Create a Cloud Platform project via <https://console.cloud.google.com/project>
- ❑ You could use your existing or a new Gmail account

Select or create a Cloud Platform project



Select or create a Cloud Platform project

 Google Cloud Platform

Welcome Hor Meng!
Create and manage your Google Cloud Platform instances, disks, networks, and other resources in one place.

Country

Singapore ▼

Terms of Service
☒ I agree to the [Google Cloud Platform Terms of Service](#), and the terms of service of [any applicable services and APIs](#).

Email updates
☒ I would like to receive periodic emails on news, product updates and special offers from Google Cloud and Google Cloud Partners.

[AGREE AND CONTINUE](#)

Select or create a Cloud Platform project

The screenshot shows the Google Cloud Platform console interface. At the top, there's a navigation bar with the Google Cloud Platform logo and a search bar. Below this, the 'Manage resources' section is visible. In this section, the 'CREATE PROJECT' button is highlighted with a red circle. Other buttons like 'MIGRATE' and 'DELETE' are also present. Below the buttons, there's a table with columns: Name, ID, Status, Charges, Labels, and Actions. The table currently shows one entry: 'No organization' with ID '0'. At the bottom, there's a section titled 'RESOURCES PENDING DELETION'.

Manage resources – Google Cloud

https://console.cloud.google.com/cloud-resource-manager

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) **DISMISS** **ACTIVATE**

Google Cloud Platform

Manage resources **+ CREATE PROJECT** **MIGRATE** **DELETE** **SHOW INFO PANEL**

NO ORGANIZATION Filter tree

<input type="checkbox"/>	Name	ID	Status	Charges	Labels	Actions
<input type="checkbox"/>	No organization	0				

RESOURCES PENDING DELETION

Select or create a Cloud Platform project

Google Cloud Platform

New Project

You have 12 projects remaining in your quota. Request an increase or delete projects. [Learn more](#)

[MANAGE QUOTAS](#)

Project name *
PPTX-TTS

Project ID: pptx-tts. It cannot be changed later. [EDIT](#)

Organization *
np.edu.sg

Select an organization to attach it to a project. This selection can't be changed later.

Location *
np.edu.sg [BROWSE](#)

Parent organization or folder

[CREATE](#) [CANCEL](#)

Select or create a Cloud Platform project

The screenshot displays the Google Cloud Platform console interface. At the top, a banner promotes a free trial with \$300 credit. The main navigation bar includes the 'Google Cloud Platform' logo, a search bar, and user profile information. Below the navigation bar, the 'Manage resources' section is active, showing a '+ CREATE PROJECT' button and a 'MIGRATE' button. A notification panel on the right indicates the successful creation of a project named 'PPTX-TTS' 'Just now'. In the bottom right corner, a dark overlay box prompts the user to 'Refresh to view newly created Resources', with the 'REFRESH' button circled in red.

Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#) **DISMISS** **ACTIVATE**

Google Cloud Platform

Manage resources **+ CREATE PROJECT** **MIGRATE**

NO ORGANIZATION **Filter tree**

<input type="checkbox"/>	Name	ID	Status	Charges	Labels	Actions
<input type="checkbox"/>	No organization	0				

RESOURCES PENDING DELETION

Refresh to view newly created Resources **REFRESH**

Notifications

Create Project: PPTX-TTS Just now

Select or create a Cloud Platform project

The screenshot displays the Google Cloud Platform (GCP) dashboard interface. The top navigation bar is blue and contains the 'Google Cloud Platform' logo, a dropdown menu for 'PPTX-TTS', a search bar, and icons for help, notifications, and user profile. The left sidebar lists various GCP services: Home, Marketplace, Billing, APIs & Services, Support, IAM & Admin, Getting started, Security, and a 'COMPUTE' section with App Engine and Compute Engine. The main content area is divided into 'DASHBOARD' and 'ACTIVITY' tabs. The 'DASHBOARD' tab is active, showing a 'APIs' widget with a line graph titled 'Requests (requests/sec)'. The graph shows a flat line at zero, with a message: 'No data is available for the selected time frame.' Below the graph is a 'Go to APIs overview' link. To the right of the 'APIs' widget is a 'Google Cloud Platform' status widget showing 'All services normal' and a 'Go to Cloud status dashboard' link. Below that is an 'Error Reporting' widget showing 'No sign of any errors' and a 'Learn how to set up' link. At the bottom right is a 'News' widget with the headline 'Google Cloud named Forrester Wave for P'.

Google Cloud Platform PPTX-TTS

Home Marketplace Billing APIs & Services Support IAM & Admin Getting started Security

COMPUTE App Engine Compute Engine

DASHBOARD ACTIVITY CUSTOMIZE

API APIs

Requests (requests/sec)

No data is available for the selected time frame.

7 AM 7:30

Go to APIs overview

Google Cloud Platform

All services normal

Go to Cloud status dashboard

Error Reporting

No sign of any errors Error Reporting?

Learn how to set up

News

Google Cloud named Forrester Wave for P

Enable billing for your project

The screenshot displays the Google Cloud Platform (GCP) console interface. The top navigation bar is blue and contains the 'Google Cloud Platform' logo, a project selector set to 'PPTX-TTS', a search bar, and utility icons for notifications, help, and user profile. On the left, a vertical sidebar lists various GCP services: Home, Marketplace, Billing (highlighted with a red circle), APIs & Services, Support, IAM & Admin, Getting started, Security, and a 'COMPUTE' section with App Engine and Compute Engine. The main content area is divided into 'DASHBOARD' and 'ACTIVITY' tabs. The 'DASHBOARD' tab is active and shows a 'APIs' widget with a line chart for 'Requests (requests/sec)'. The chart displays a message: 'No data is available for the selected time frame.' Below the chart is a 'Go to APIs overview' link. To the right of the dashboard, there are three informational widgets: 'Google Cloud Platform' status (All services normal), 'Error Reporting' (No sign of any errors), and 'News' (Google Cloud named Forrester Wave for PaaS).

Enable billing for your project



Your free trial is waiting: activate now to get \$300 credit to explore Google Cloud products. [Learn more](#)

DISMISS

ACTIVATE

Enable billing for your project

Try Google Cloud Platform for free

Step 1 of 2

Country

Singapore ▼

Terms of Service

☒ I have read and agree to the [Google Cloud Platform Free Trial Terms of Service.](#)

Required to continue

CONTINUE

[Privacy policy](#) | [FAQs](#)

Access to all Cloud Platform Products

Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

\$300 credit for free

Sign up and get \$300 to spend on Google Cloud Platform over the next 12 months.

No autocharge after free trial ends


We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.


Enable billing for your project


Try Google Cloud Platform for free

Step 2 of 2

Customer info

 Account type ⓘ
Individual

 Tax information ✎
Tax status: Individual

 Name and address ⓘ
Name
Hor Meng Yoong
Address line 1

Access to all Cloud Platform Products

Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

\$300 credit for free

Sign up and get \$300 to spend on Google Cloud Platform over the next 12 months.

No autocharge after free trial ends

We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.

Enable billing for your project

Payment method ⓘ

Card number

#

MM / YY CVC

/

Cardholder name

Hor Meng Yoong

☒ Credit or debit card address is same as above

The personal information you provide here will be added to your payments profile. It will be stored securely and treated in accordance with the [Google Privacy Policy](#).

START MY FREE TRIAL

Access to all Cloud Platform Products

Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

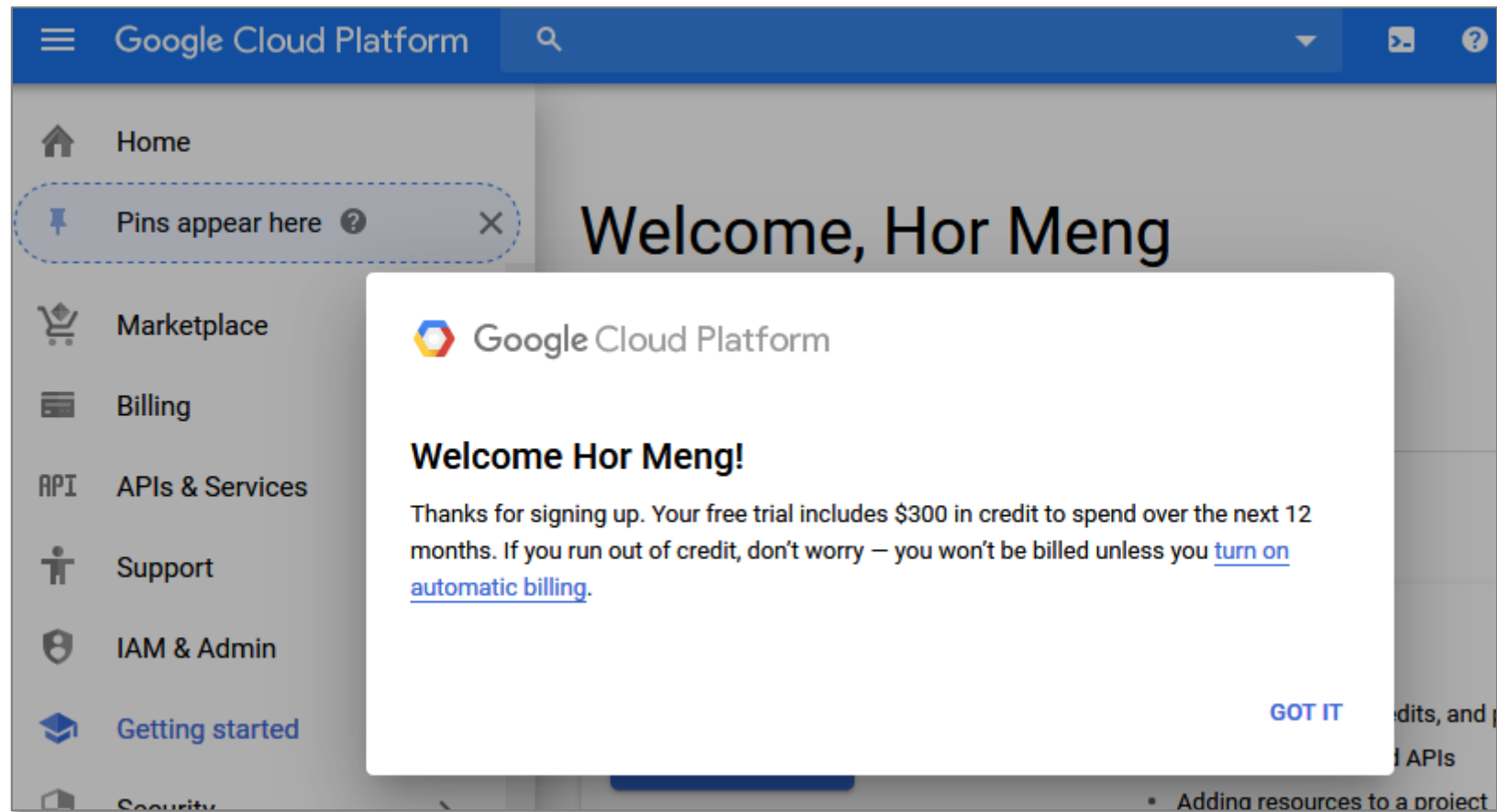
\$300 credit for free

Sign up and get \$300 to spend on Google Cloud Platform over the next 12 months.

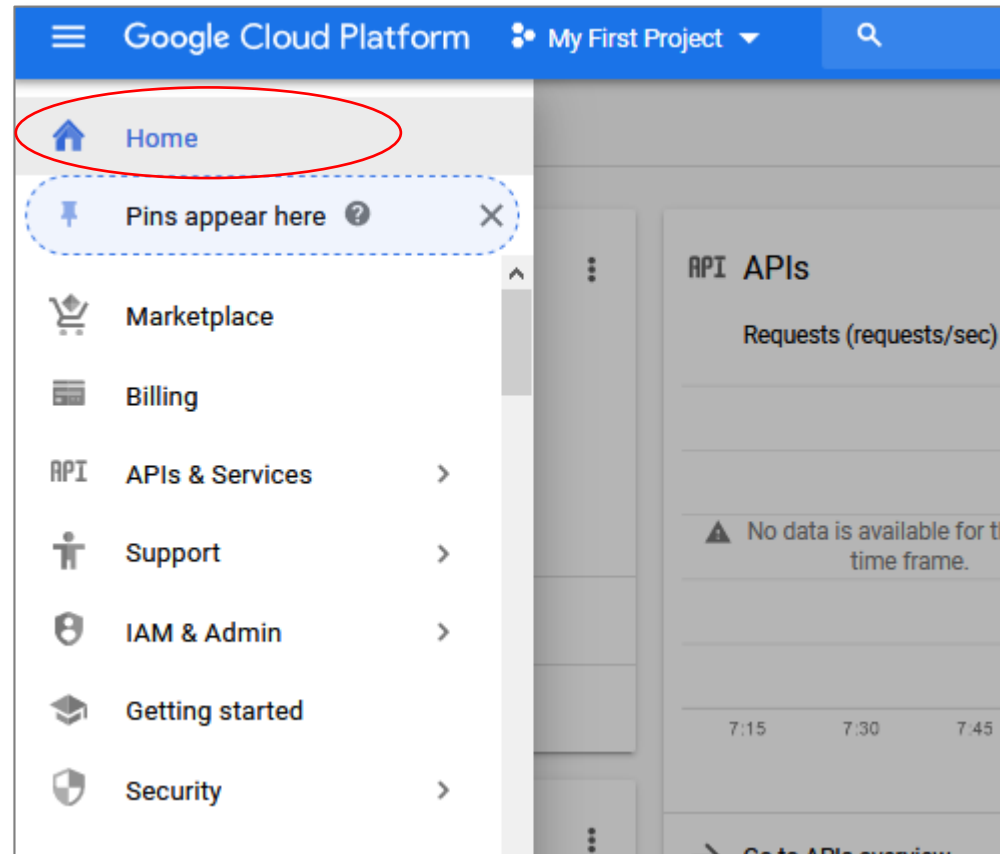
No autocharge after free trial ends

We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.

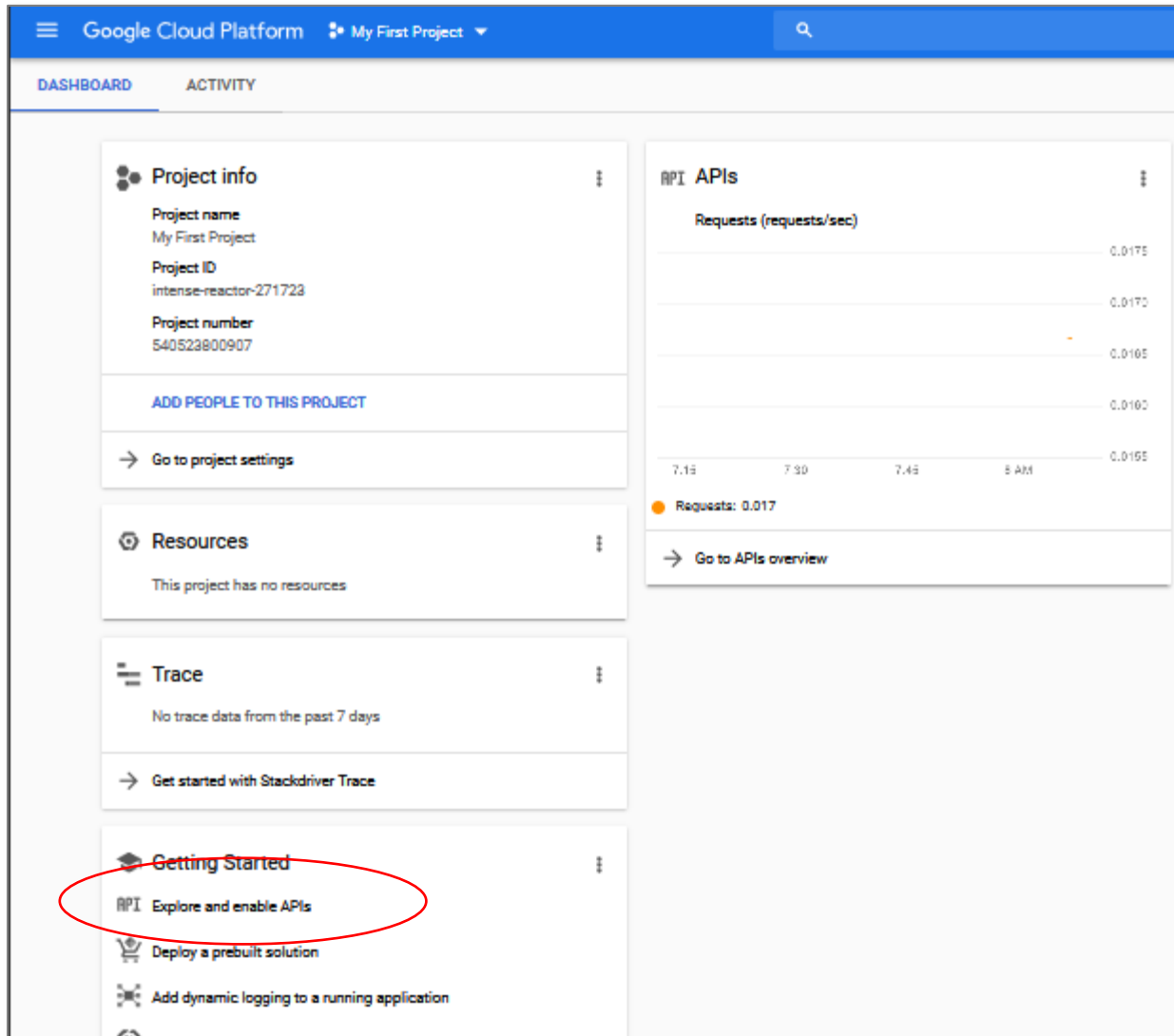
Enable billing for your project



Enable the Cloud Text-to-Speech API



Enable the Cloud Text-to-Speech API



The screenshot displays the Google Cloud Platform console for a project named 'My First Project'. The interface is divided into two main columns. The left column contains a sidebar with sections: 'Project info' (showing project name, ID, and number), 'Resources' (indicating no resources are present), 'Trace' (showing no trace data), and 'Getting Started'. The 'Getting Started' section is highlighted with a red circle and contains three items: 'API Explore and enable APIs', 'Deploy a prebuilt solution', and 'Add dynamic logging to a running application'. The right column features an 'API APIs' section with a line chart showing 'Requests (requests/sec)' over time, with a current value of 0.017. Below the chart is a 'Go to APIs overview' link.

Google Cloud Platform My First Project

DASHBOARD ACTIVITY

Project info

Project name
My First Project

Project ID
intense-reactor-271723

Project number
540523800907

[ADD PEOPLE TO THIS PROJECT](#)

[Go to project settings](#)

Resources

This project has no resources

Trace

No trace data from the past 7 days

[Get started with Stackdriver Trace](#)

Getting Started

API Explore and enable APIs

Deploy a prebuilt solution

Add dynamic logging to a running application

API APIs

Requests (requests/sec)

0.0175

0.0170

0.0165

0.0160

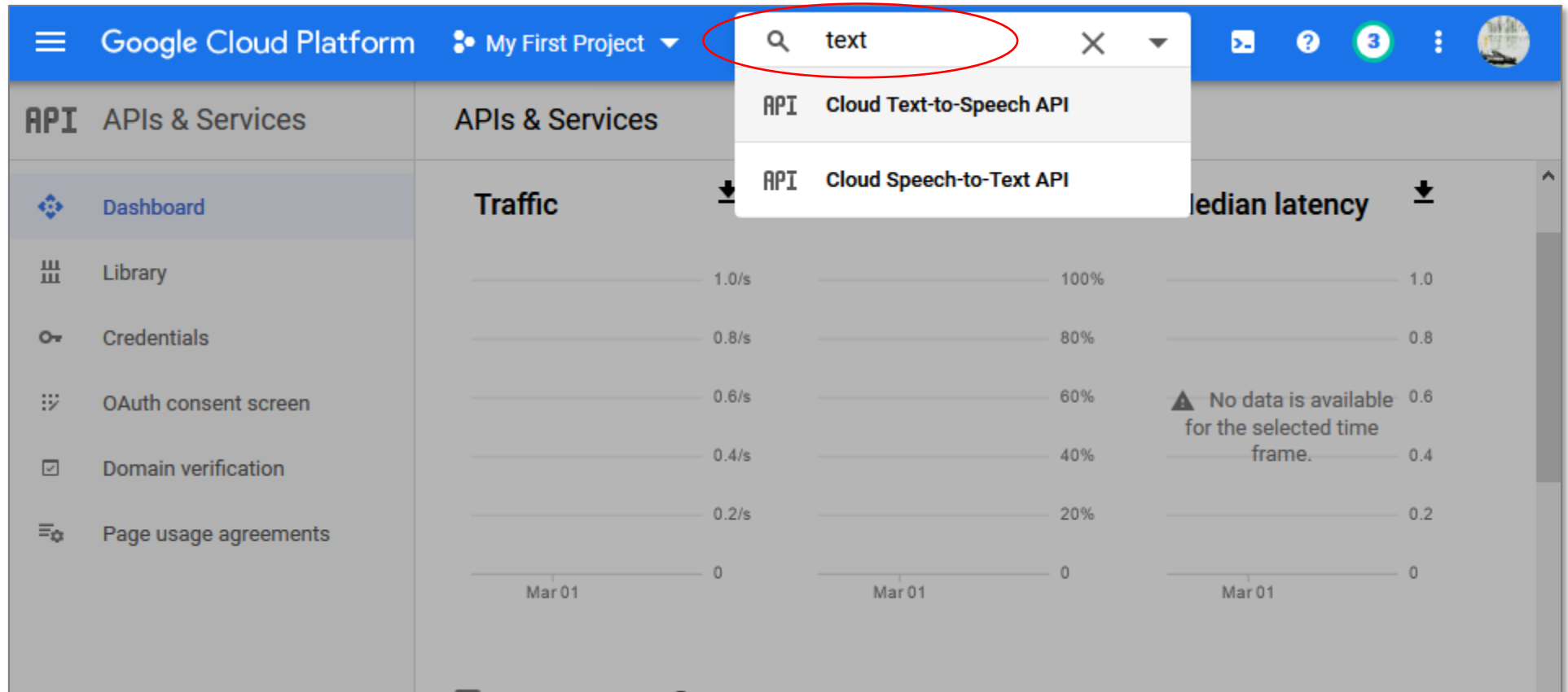
0.0155

7:15 7:30 7:45 8 AM

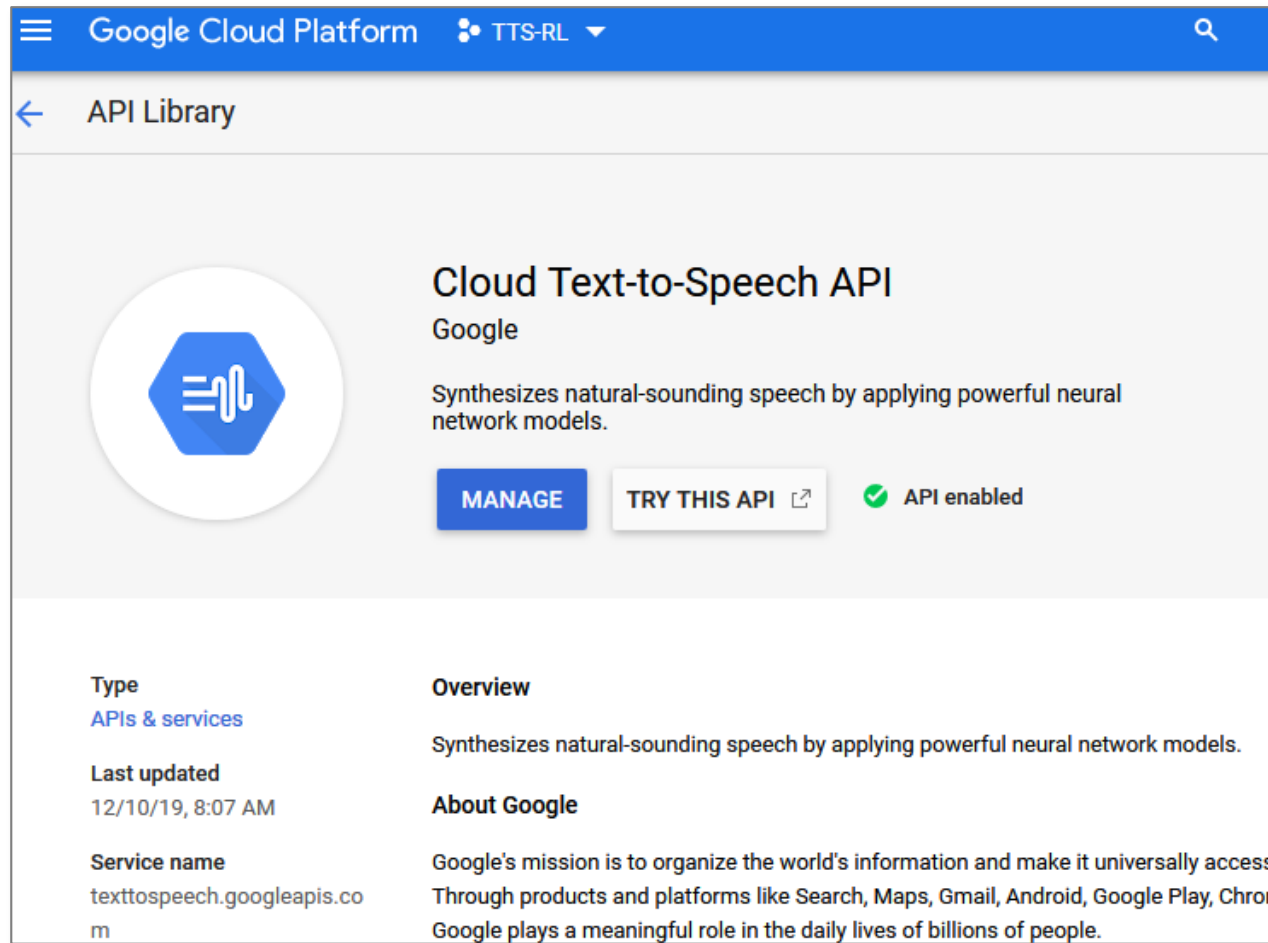
Requests: 0.017

[Go to APIs overview](#)

Enable the Cloud Text-to-Speech API




Enable the Cloud Text-to-Speech API




The screenshot shows the Google Cloud Platform API Library interface. At the top, there's a blue header with the Google Cloud Platform logo, a user profile icon labeled 'TTS-RL', and a search icon. Below the header, a breadcrumb trail shows 'API Library'. The main content area features the Cloud Text-to-Speech API card. On the left is a circular icon with a blue hexagon containing a white waveform. To the right of the icon, the title 'Cloud Text-to-Speech API' is displayed, followed by 'Google'. A description states: 'Synthesizes natural-sounding speech by applying powerful neural network models.' Below this, there are three buttons: a blue 'MANAGE' button, a white 'TRY THIS API' button with an external link icon, and a green checkmark followed by the text 'API enabled'. Below the main card, there's a section with two columns. The left column contains metadata: 'Type' (APIs & services), 'Last updated' (12/10/19, 8:07 AM), and 'Service name' (texttospeech.googleapis.com). The right column contains an 'Overview' section with the same description as above, and an 'About Google' section with text about Google's mission.

Google Cloud Platform TTS-RL

API Library

 **Cloud Text-to-Speech API**
Google

Synthesizes natural-sounding speech by applying powerful neural network models.

[MANAGE](#) [TRY THIS API](#)  API enabled

Type
[APIs & services](#)

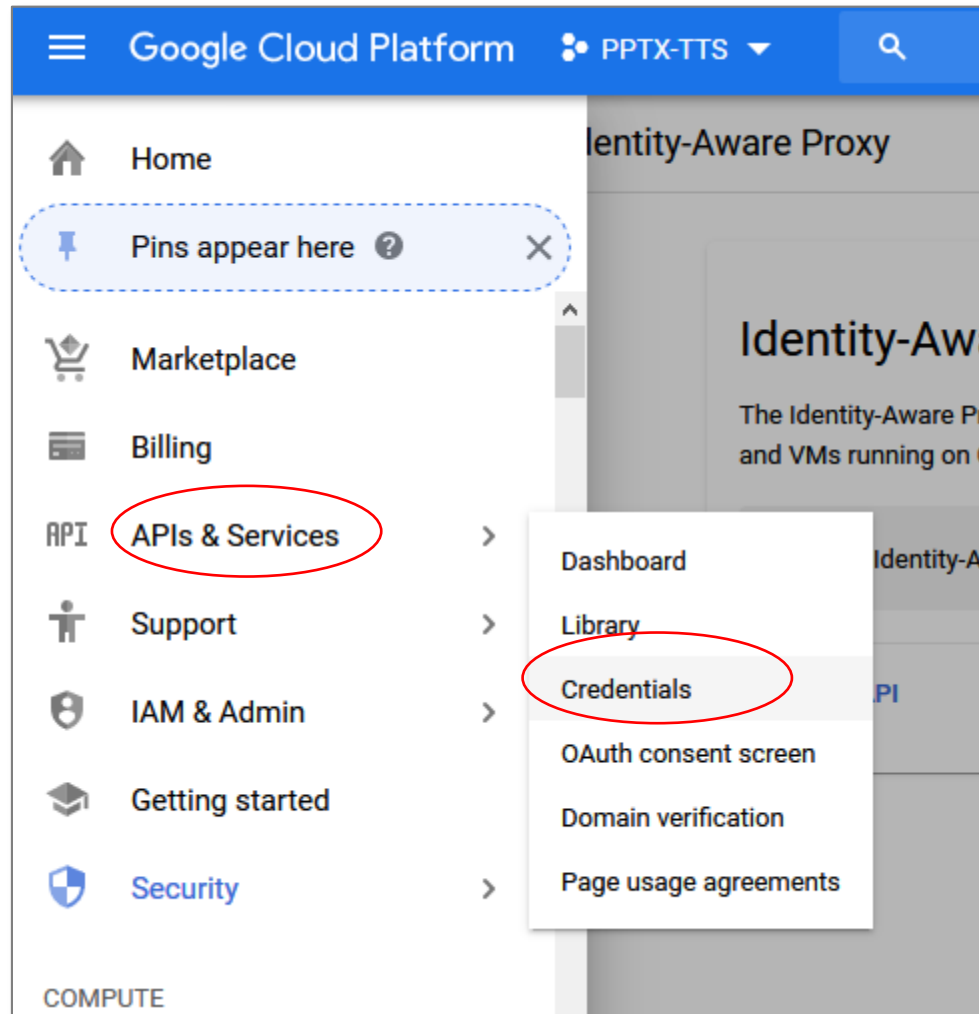
Last updated
12/10/19, 8:07 AM

Service name
texttospeech.googleapis.com

Overview
Synthesizes natural-sounding speech by applying powerful neural network models.

About Google
Google's mission is to organize the world's information and make it universally access
Through products and platforms like Search, Maps, Gmail, Android, Google Play, Chron
Google plays a meaningful role in the daily lives of billions of people.

Setup Authentication



Setup Authentication

The screenshot shows the Google Cloud Platform interface. The top navigation bar includes the Google Cloud Platform logo, the project name 'PPTX-TTS', a search bar, and notification icons. The left sidebar shows the 'APIs & Services' menu with options like Dashboard, Library, Credentials (selected), OAuth consent screen, Domain verification, and Page usage agreements. The main content area is titled 'Credentials' and features a '+ CREATE CREDENTIALS' button (circled in red) and a 'DELETE' button. A dropdown menu is open from the '+ CREATE CREDENTIALS' button, listing four options: 'API key' (Identifies your project using a simple API key to check quota and access), 'OAuth client ID' (Requests user consent so your app can access the user's data), 'Service account' (Enables server-to-server, app-level authentication using robot accounts, circled in red), and 'Help me choose' (Asks a few questions to help you decide which type of credential to use). Below the dropdown, the 'API Keys' section is partially visible, showing a table with a 'Name' column.

Google Cloud Platform PPTX-TTS

APIs & Services

Dashboard

Library

Credentials

OAuth consent screen

Domain verification

Page usage agreements

Credentials

+ CREATE CREDENTIALS DELETE

Create credentials to access Google APIs

Remember to

CONFIGURE

API key
Identifies your project using a simple API key to check quota and access

OAuth client ID
Requests user consent so your app can access the user's data

Service account
Enables server-to-server, app-level authentication using robot accounts

Help me choose
Asks a few questions to help you decide which type of credential to use

API Keys

☐ Name

with all services (last 30 days)

Setup Authentication

Google Cloud Platform PPTX-TTS

IAM & Admin

Service Accounts

Create service account

- 1 Service account details
- 2 Grant this service account access to project (optional)
- 3 Grant users access to this service account (optional)

Service account details

Service account name
TTS-RL

Display name for this service account

Service account ID
tts-rl @pptx-tts.iam.gserviceaccount.com

Service account description
Convert text to speech for RL

Describe what this service account will do

CREATE CANCEL

Setup Authentication

The screenshot displays the Google Cloud Platform (GCP) IAM & Admin console. The top navigation bar shows 'Google Cloud Platform', the project 'PPTX-TTS', and a search icon. The left sidebar lists various IAM & Admin services, with 'Service Accounts' highlighted. The main content area is titled 'Create service account' and shows a three-step wizard: 1. Service account details (checked), 2. Grant this service account access to project (optional) (active), and 3. Grant users access to this service account (optional). Under the active step, the 'Service account permissions (optional)' section is shown, with instructions to grant the service account access to PPTX-TTS. A dropdown menu for 'Select a role' is present, along with a 'Condition' section and an 'Add condition' link. At the bottom, the 'CONTINUE' button is circled in red, and a 'CANCEL' button is also visible.

Google Cloud Platform PPTX-TTS

IAM & Admin

IAM

Identity & Organization

Policy Troubleshooter

Organization Policies

Quotas

Service Accounts

Labels

Settings

Privacy & Security

Cryptographic Keys

Create service account

✓ Service account details — 2 Grant this service account access to project (optional) —

3 Grant users access to this service account (optional)

Service account permissions (optional)

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

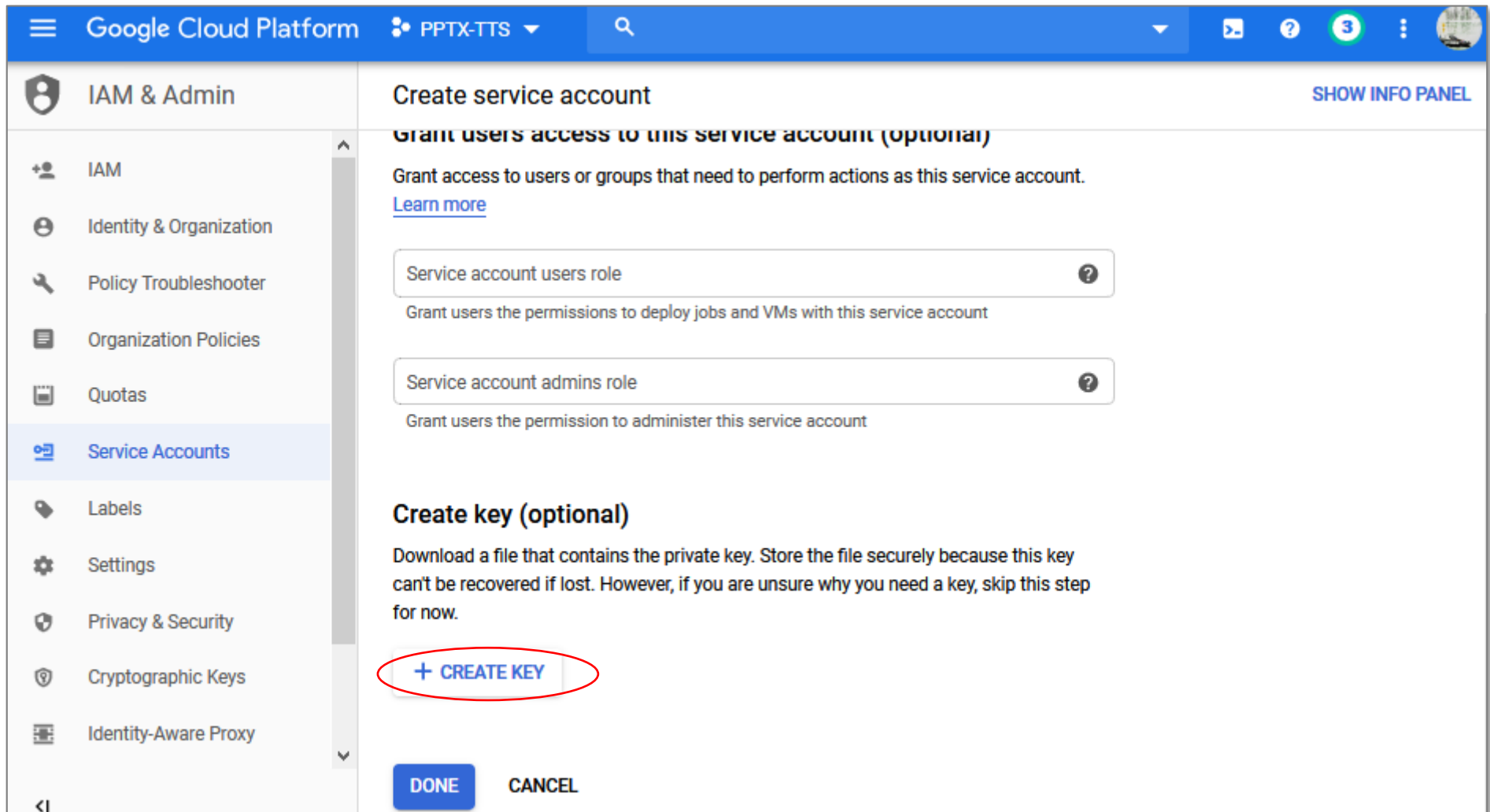
Select a role

Condition [Add condition](#)

+ ADD ANOTHER ROLE

CONTINUE CANCEL

Setup Authentication



The screenshot displays the Google Cloud Platform (GCP) IAM & Admin console. The top navigation bar includes the Google Cloud Platform logo, the project name 'PPTX-TTS', and a search icon. The left sidebar shows the 'IAM & Admin' section with various sub-menus; 'Service Accounts' is currently selected and highlighted. The main content area is titled 'Create service account' and includes a 'SHOW INFO PANEL' link. Under the heading 'Grant users access to this service account (optional)', there is a description and a 'Learn more' link. Below this, two dropdown menus are provided: 'Service account users role' (with a description: 'Grant users the permissions to deploy jobs and VMs with this service account') and 'Service account admins role' (with a description: 'Grant users the permission to administer this service account'). Further down, the 'Create key (optional)' section explains the purpose of the key and provides instructions. At the bottom of this section, the '+ CREATE KEY' button is circled in red. At the very bottom of the console, there are 'DONE' and 'CANCEL' buttons.

Setup Authentication

The screenshot shows the 'Create key (optional)' dialog in the Azure portal. The dialog is titled 'Create key (optional)' and contains the following text: '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.' Below this text, there are two radio buttons under the heading 'Key type'. The first radio button is selected and is labeled 'JSON', with the word 'Recommended' underneath it. The second radio button is labeled 'P12' and has the text 'For backward compatibility with code using the P12 format' underneath it. At the bottom of the dialog, there are two buttons: 'CREATE' and 'CANCEL'. Both the 'JSON' radio button and the 'CREATE' button are circled in red. In the background, a sidebar is visible with the heading 'Create service account' and a section titled 'Grant users access to this...' with a 'Learn more' link. Below this, there are two sections: 'Service account users role' and 'Service account admins role', each with a description of the permissions granted.

form PPTX-TTS

Create service account

Grant users access to this

Grant access to users or groups that

[Learn more](#)

Service account users role

Grant users the permissions to deploy j

Service account admins role

Grant users the permission to administ

Create key (optional)

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.

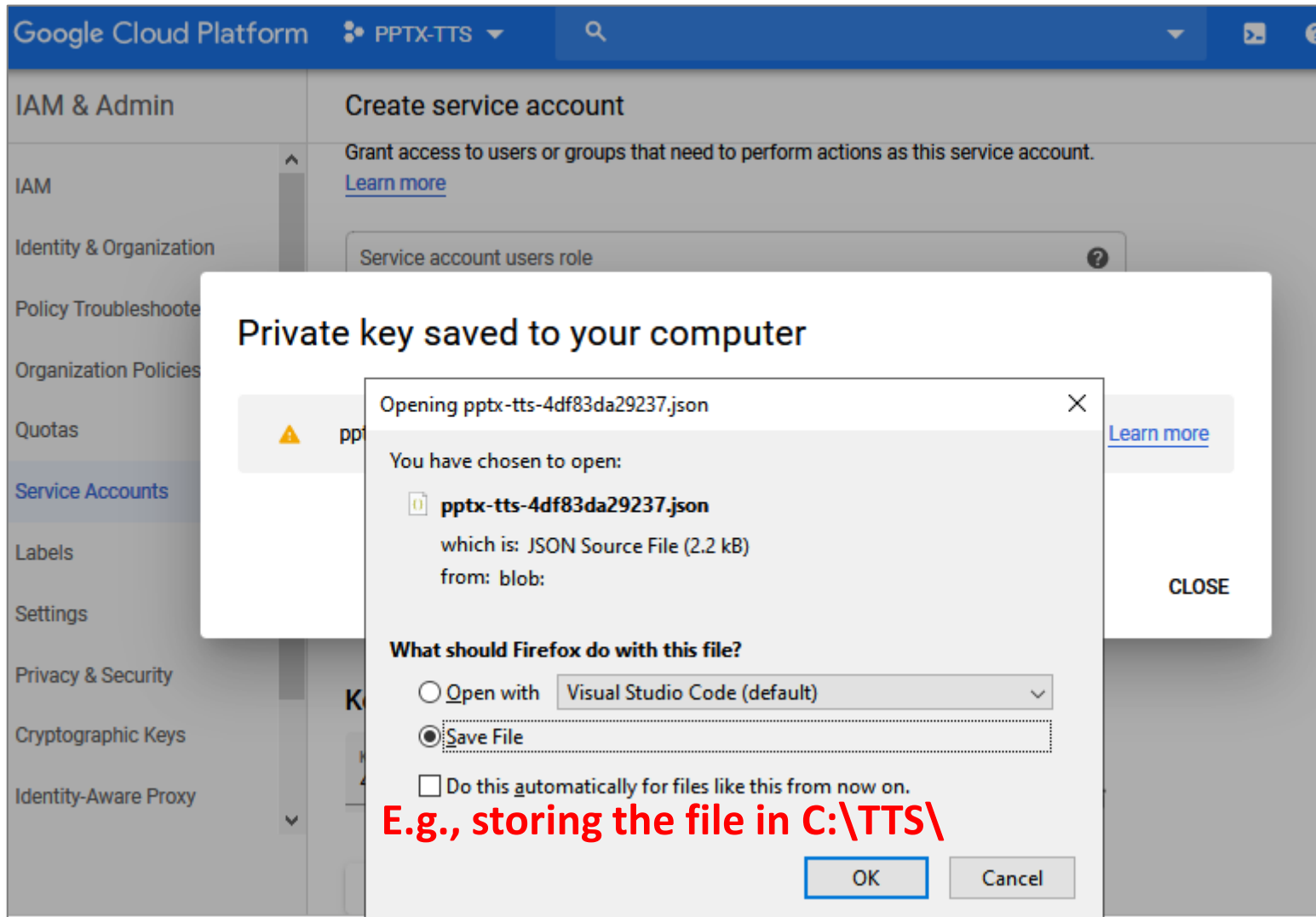
Key type

☒ JSON
Recommended

☐ P12
For backward compatibility with code using the P12 format

CREATE CANCEL

Setup Authentication



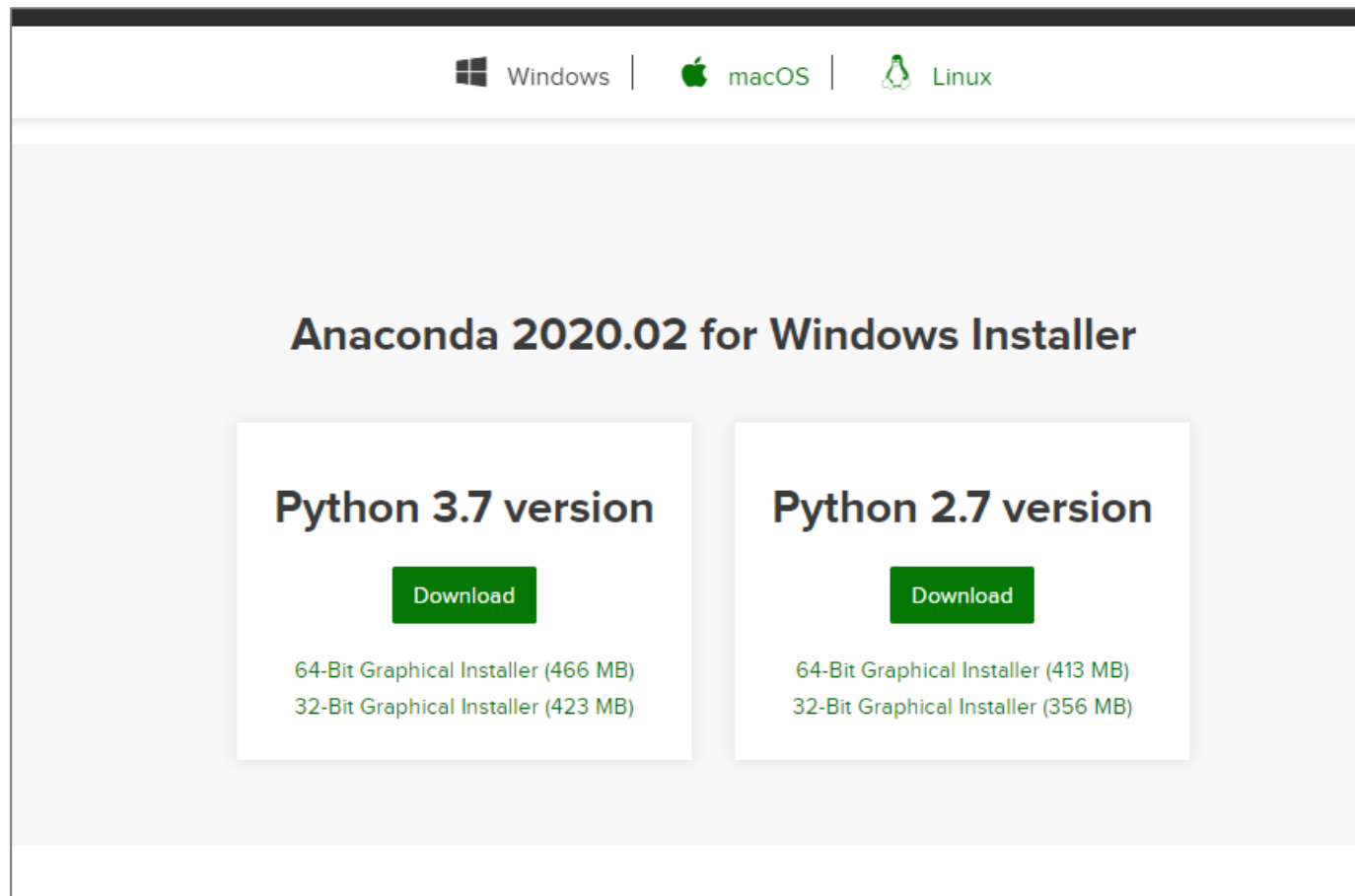
Setup Authentication

- ❑ From a command prompt, set this

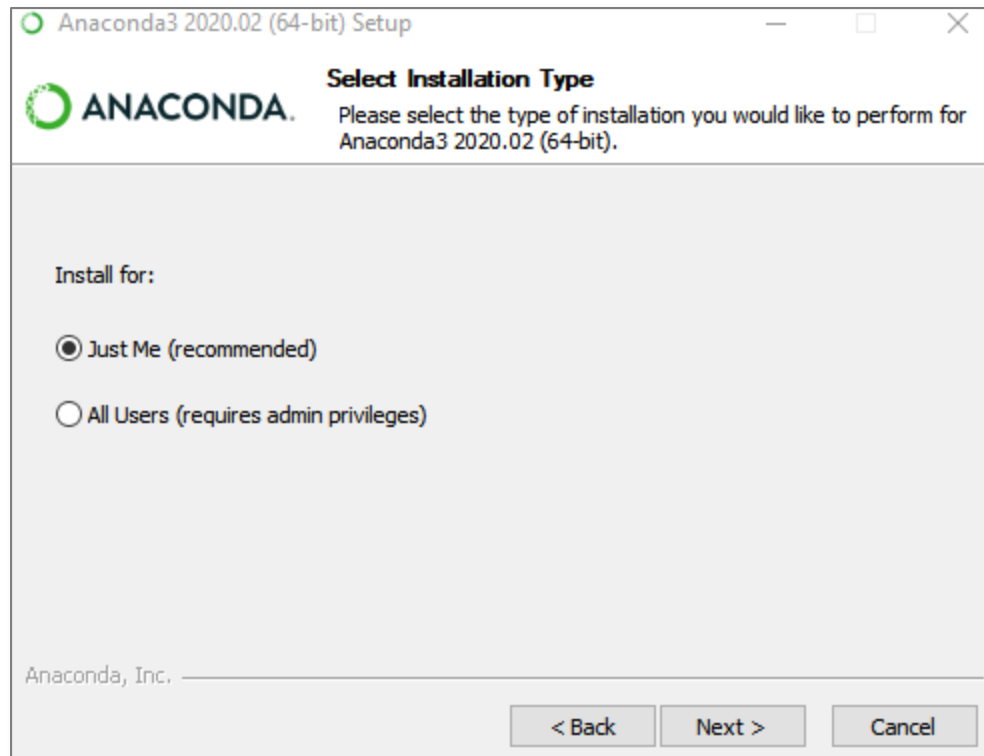
```
setx GOOGLE_APPLICATION_CREDENTIALS C:\TTS\pptx-tts-4df83da29237.json
```

Install Anaconda

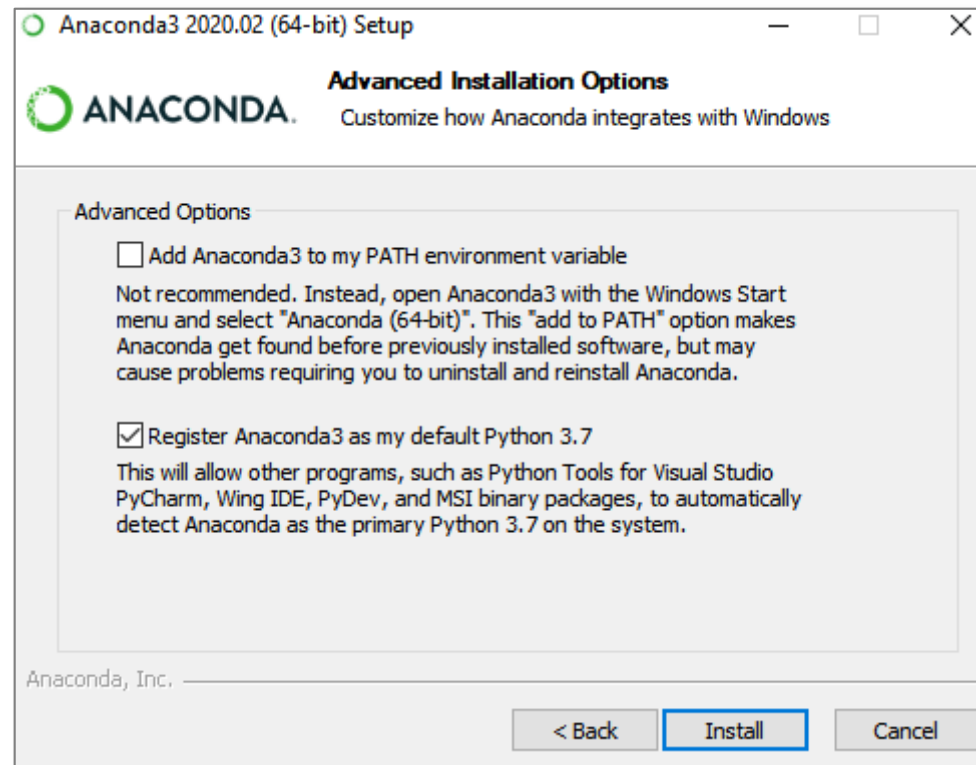
<https://www.anaconda.com/distribution/#download-section>



Install Anaconda

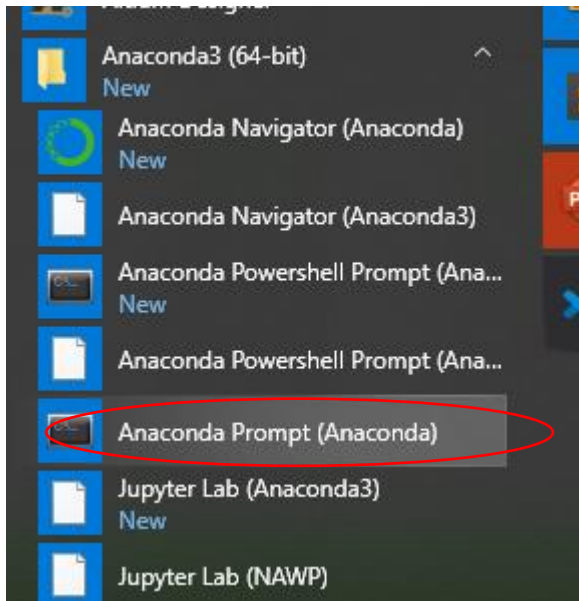


Install Anaconda



Install Python Libraries

- ❑ Open a command prompt via "Anaconda Prompt (Anaconda)" and type



```
pip install google-cloud-texttospeech python-pptx
```

Python Script and Documentation

<https://github.com/yoonghm/AnnotatePptx>

Command

- ❑ Zero-to-Python.pptx has 3 slides with speaker notes. Let's add voice annotation to it and save it to Zero-to-Python-1.pptx
- ```
python AnnotatePptx.py Zero-to-Python.pptx Zero-to-Python-1.pptx
```