AI Deep Learning with TensorFlow & Keras on Google Cloud Platform (GCP)

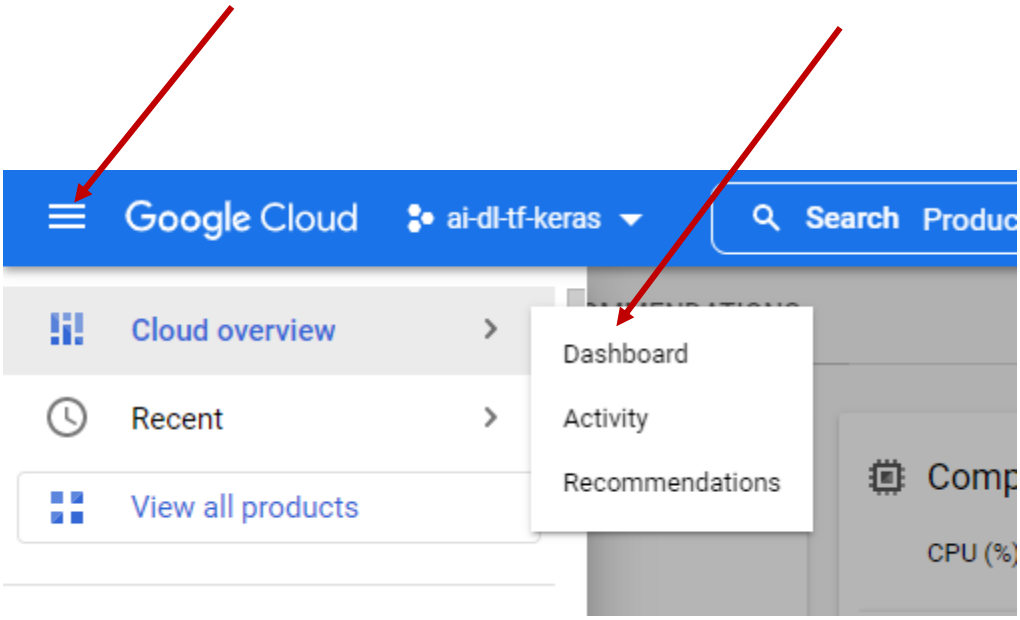
Set Up Natural Language API

Thuan L Nguyen, Ph.D.

1. Overview

Before using the Natural Language API to run Natural Language Processing (NLP) applications, the user must complete the process to set up the API.

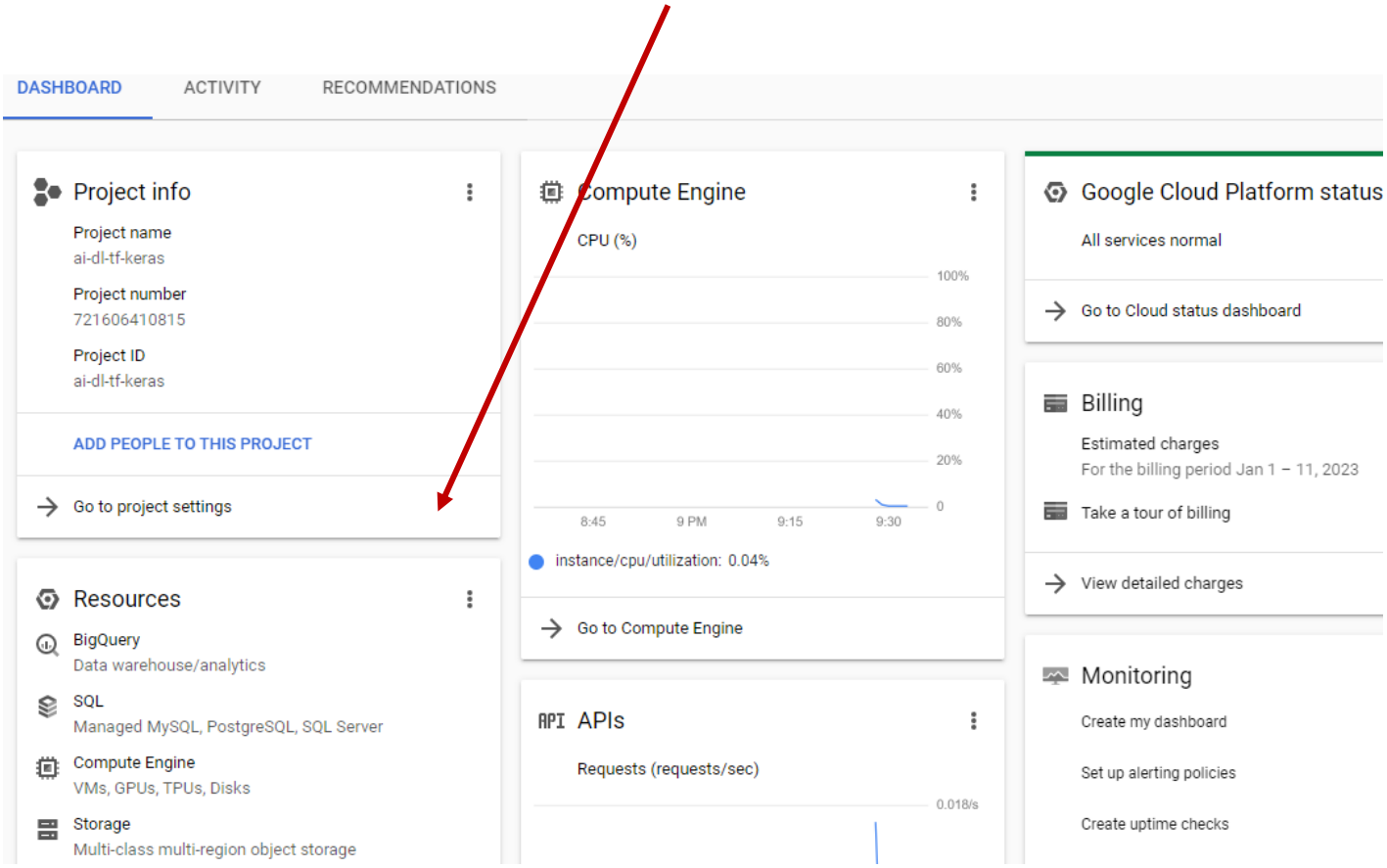
2. Access GCP Project Dashboard



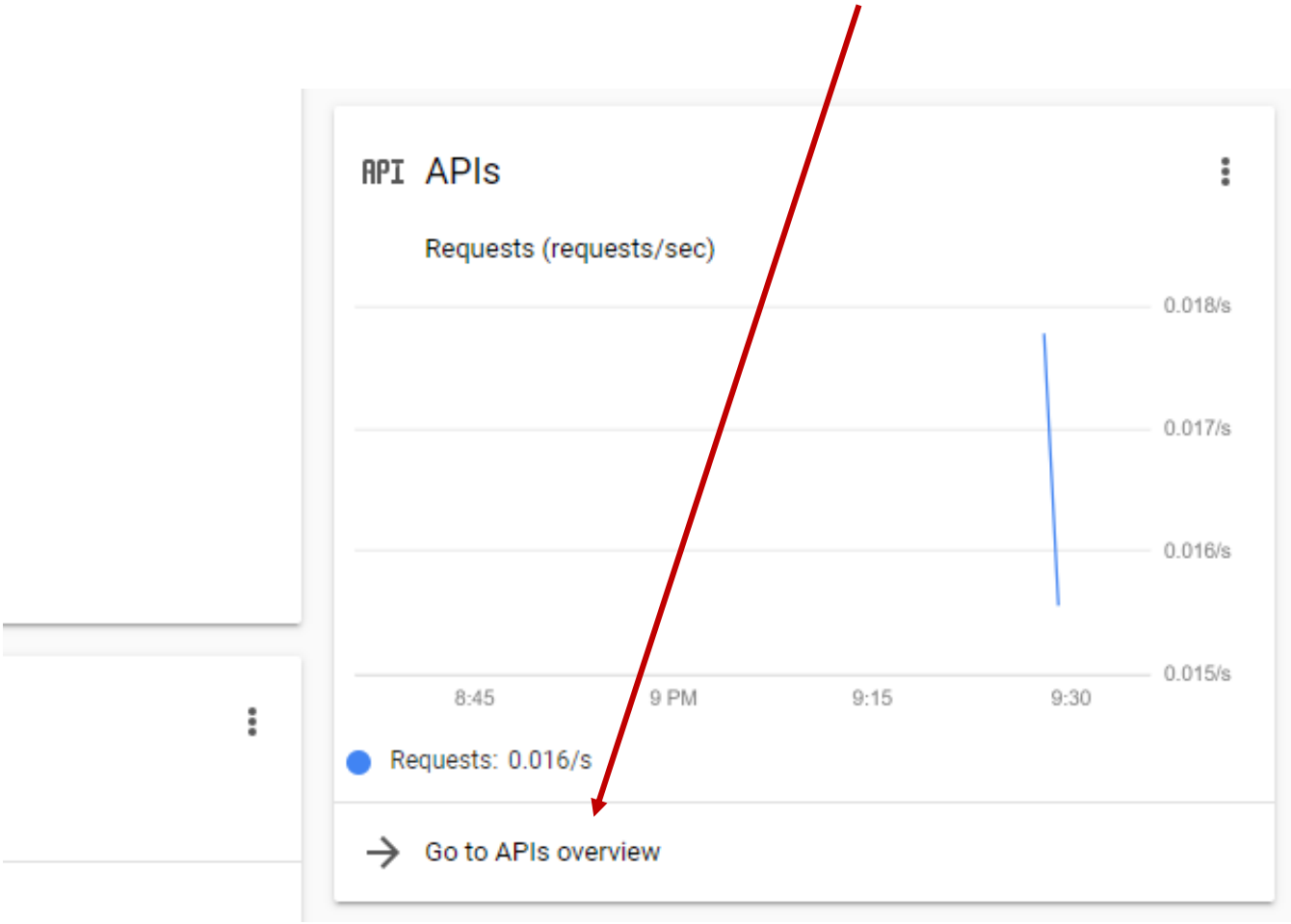
Click Products and Services icon (top-left corner)

Hover the mouse over Cloud Overview → Drop-down menu

Click Dashboard

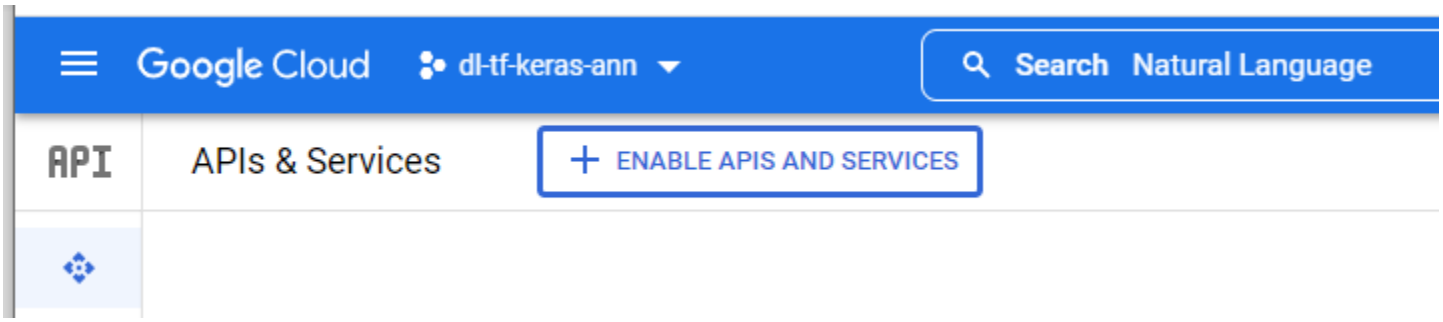


Look for **APIs**

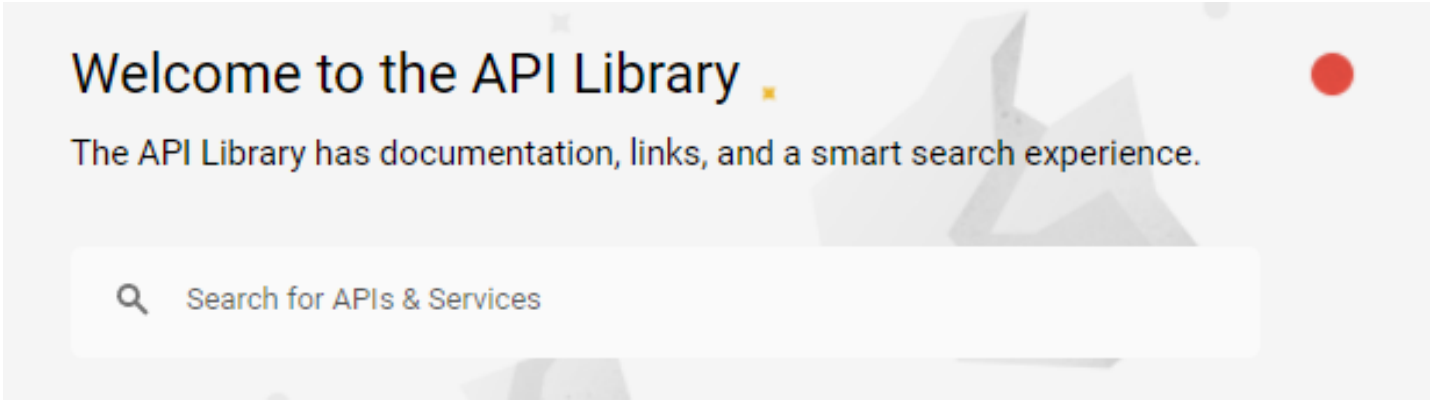


Click **Go to APIs overview** (to open the API page)

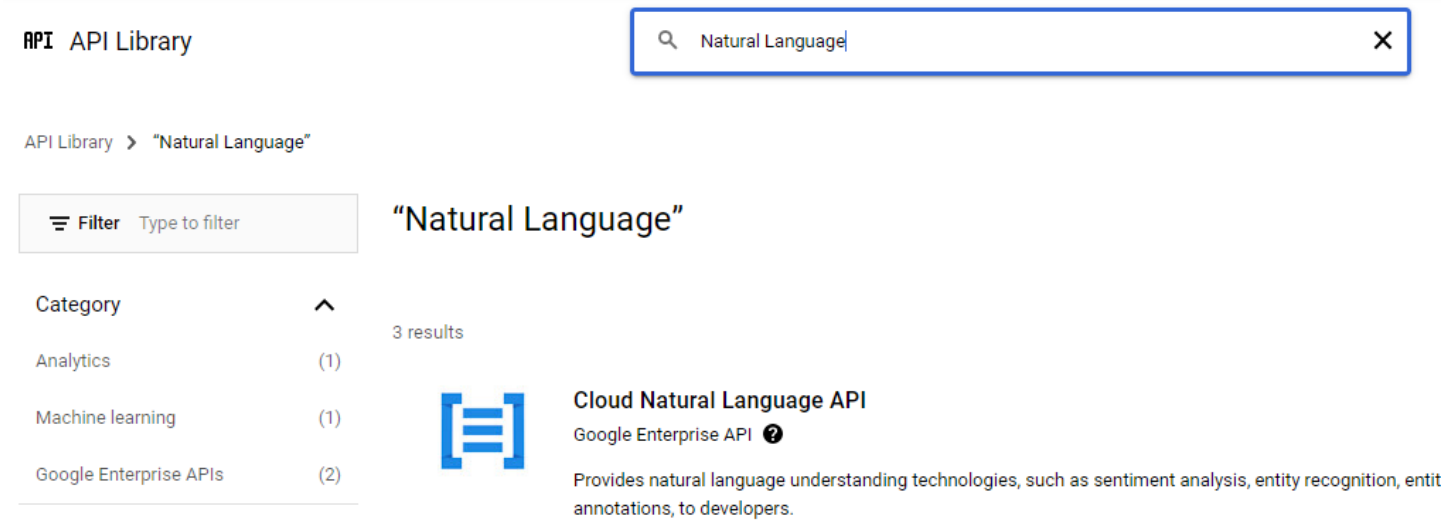
3. Set Up Natural Language API: Enable API



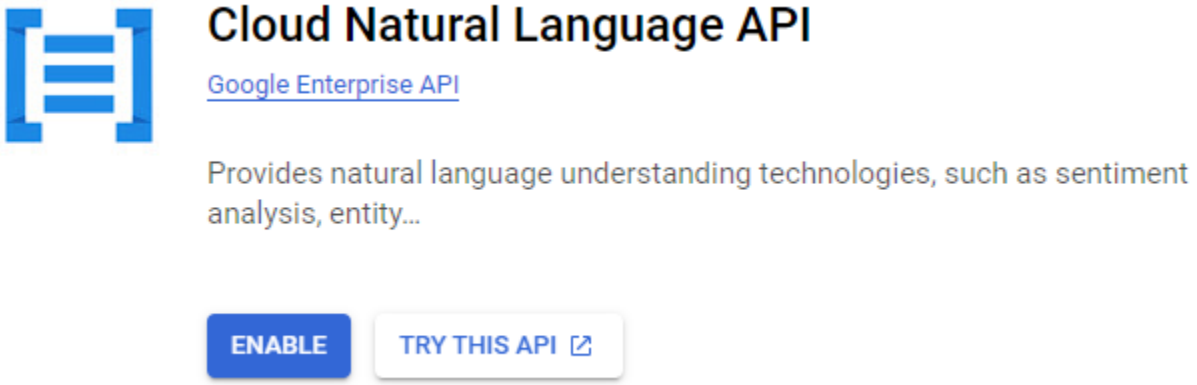
Click **+ ENABLE APIS AND SERVICES**



Enter to search for **"Natural Language"**



Click to select: **Cloud Natural Language API**



Click to activate: **ENABLE**

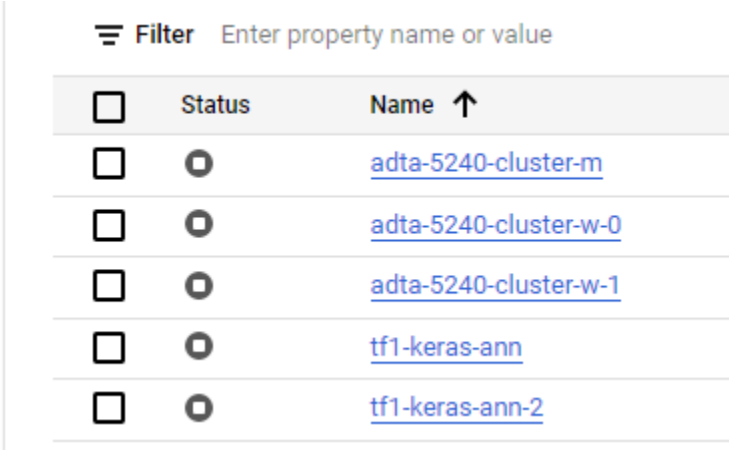
4. Create Service Account for Project (If not yet done)

See the file: gcp_howto_create_service_account_for_project.pdf

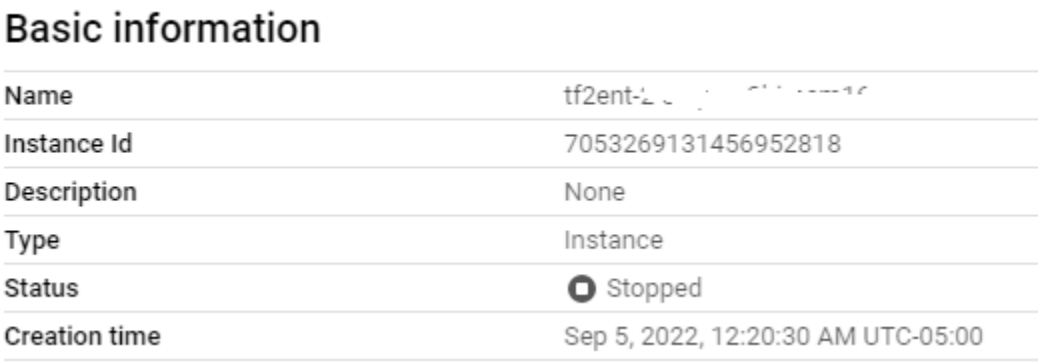
5. Set Up Service Account of VM Instance

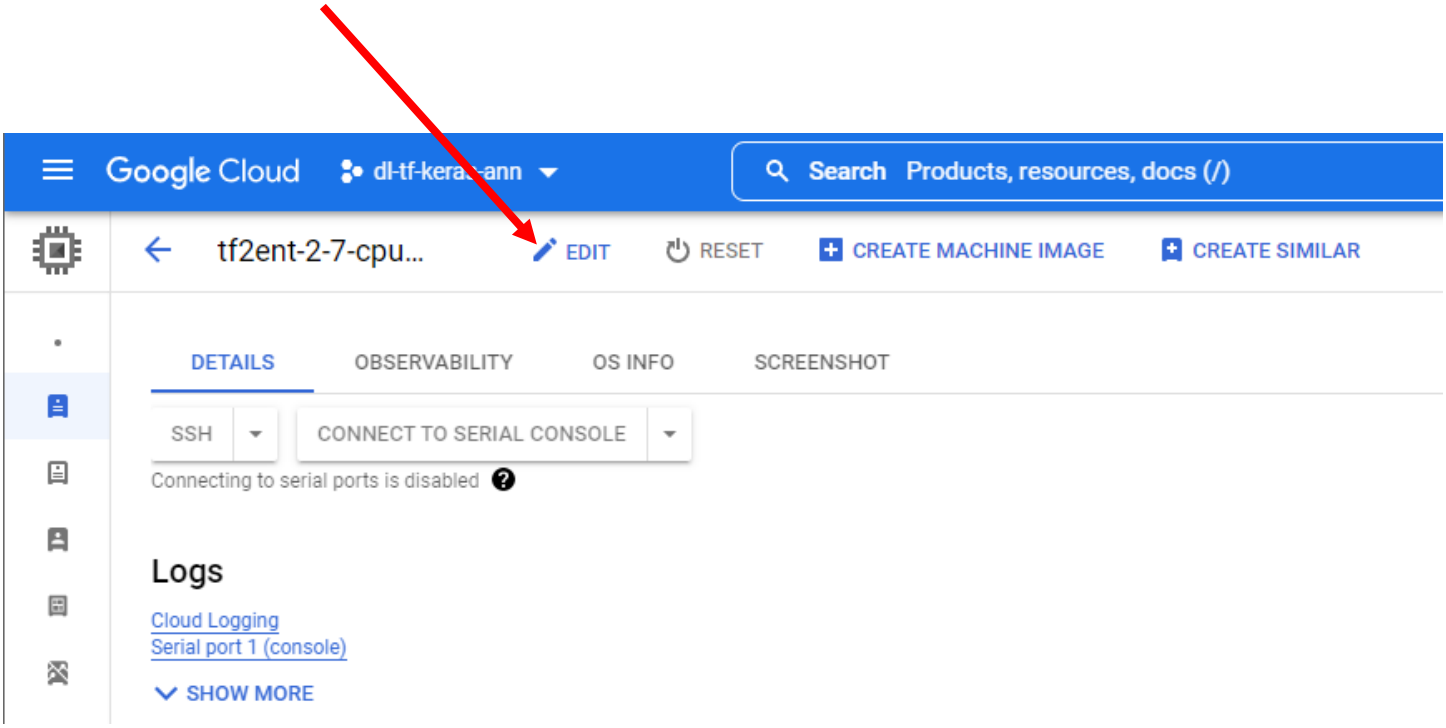
STOP Remote deep learning server (VM instance)

Click: Name of VM instance (to open Information Page)



NOTES:
--) Information page of the VM instance is opened.

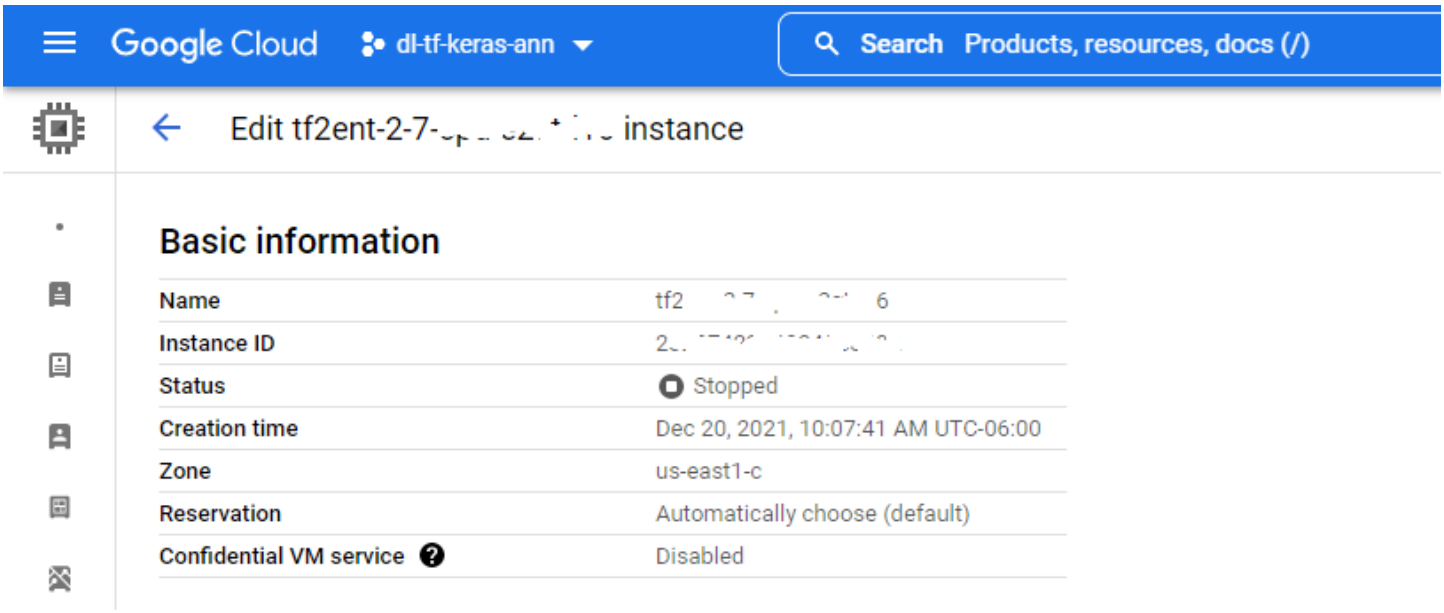




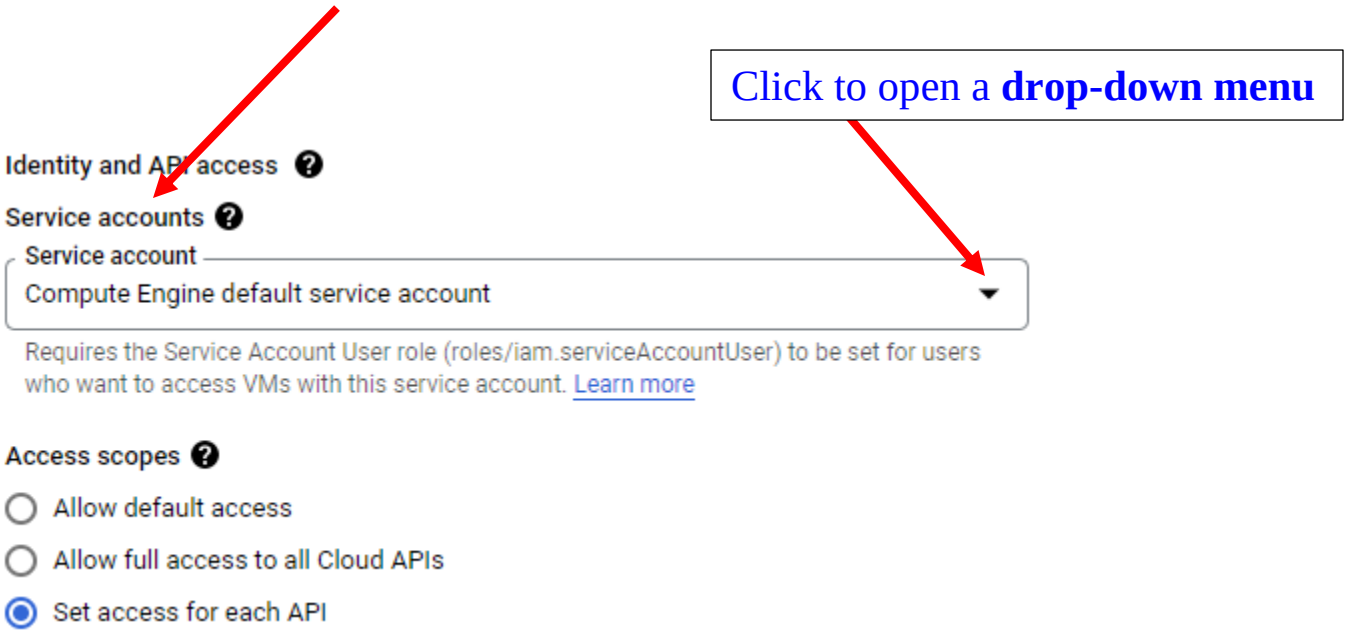
Click to open: **Edit** (on the top menu bar)

NOTES:

- *The configuration page of the remote deep learning server is opened.*

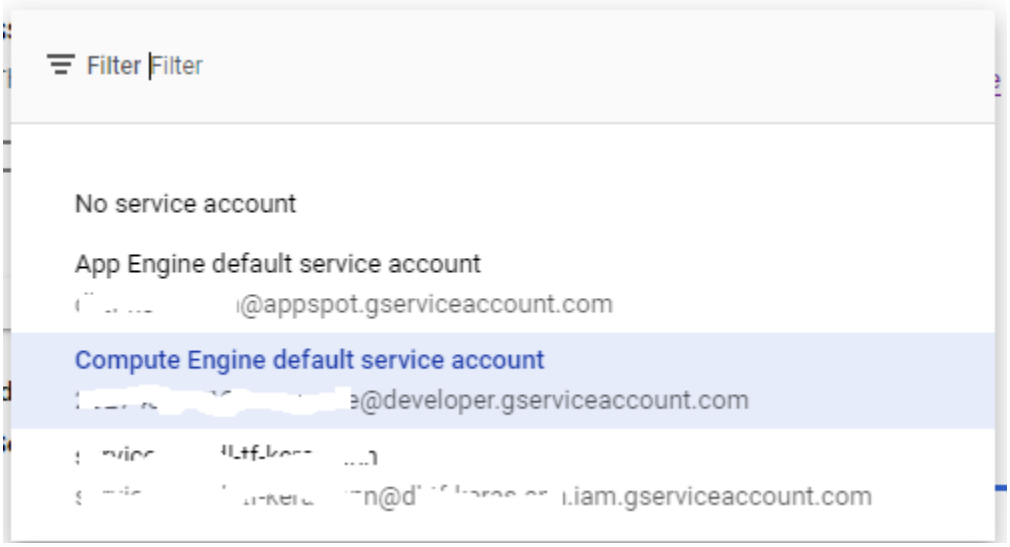


Scroll down to look for: **Service Accounts**



NOTES:

- *A drop-down menu of a list of **service accounts** pops up.*



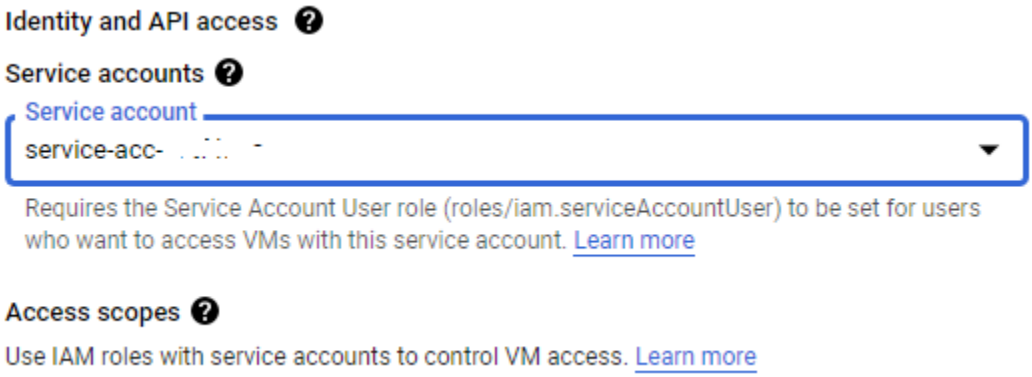
Click to select: **Service Account** (created in Section 4 above).

NOTES:

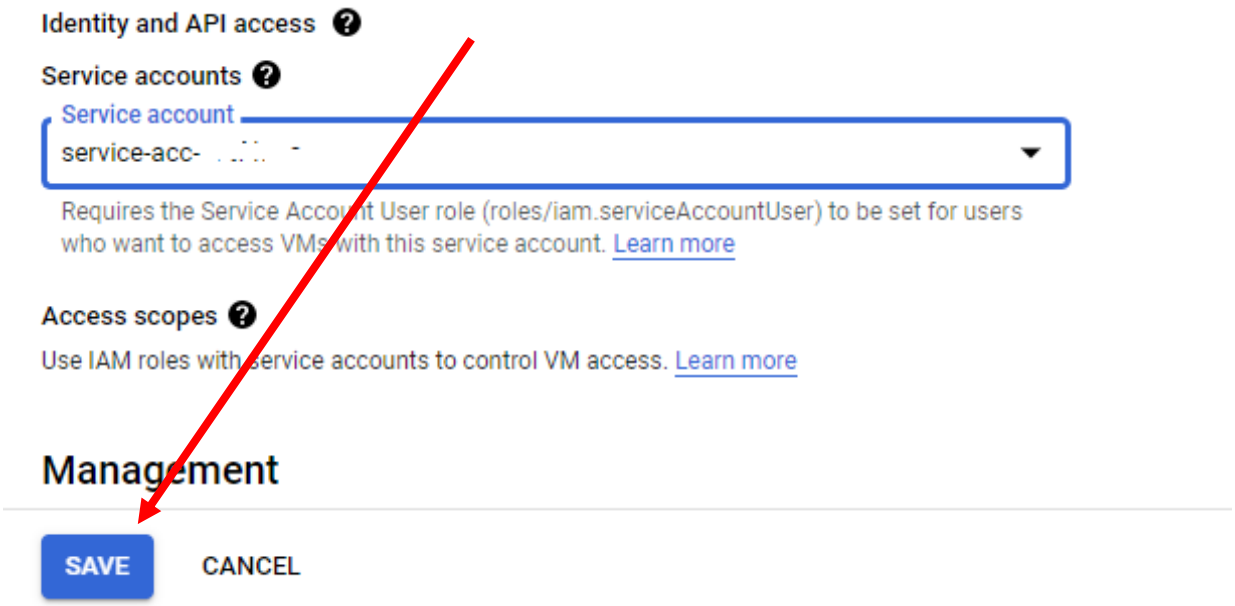
- *A service account can be created and used for multiple GCP APIs or services.*

IMPORTANT NOTES:

- *The selected service account shows up in the section*



Click to save the updated configuration: **SAVE** ***(DON'T** MISS THIS STEP)*



IMPORTANT NOTES:

- *SAVE button is located at the bottom of the page*

Open an **SSH terminal** (using Gcloud SDK)

```
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$ ls -l
total 0
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$ mkdir JP_NTBK
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$ ls -l
total 4
drwxr-xr-x 2 inewtechs inewtechs 4096 Sep  6 15:53 JP_NTBK
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
inewtechs@tf2ent-2-8-cpu-e2himem16-c:~$
```

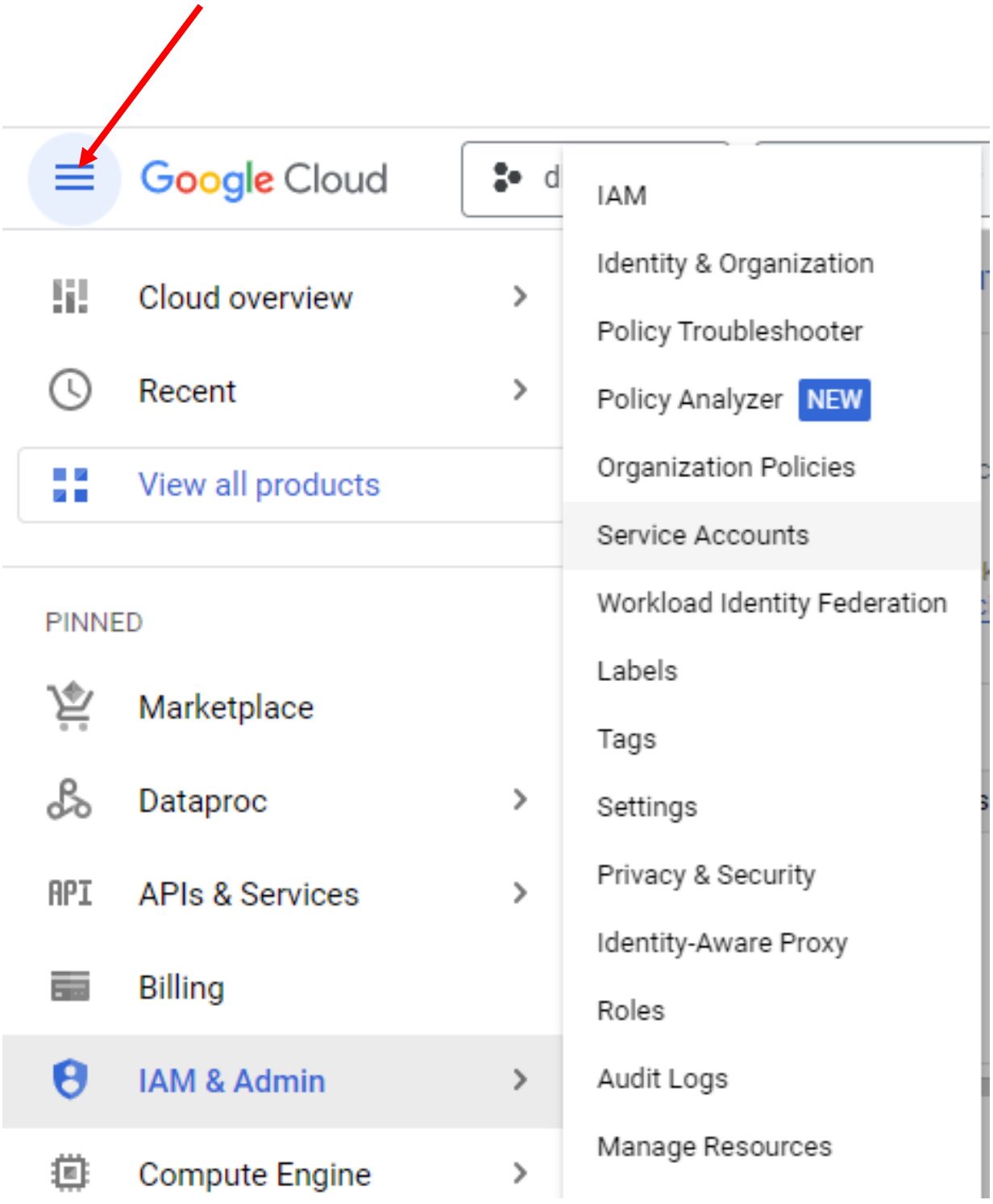
NOTES:

*--) **No key file** JSON in the home directory*

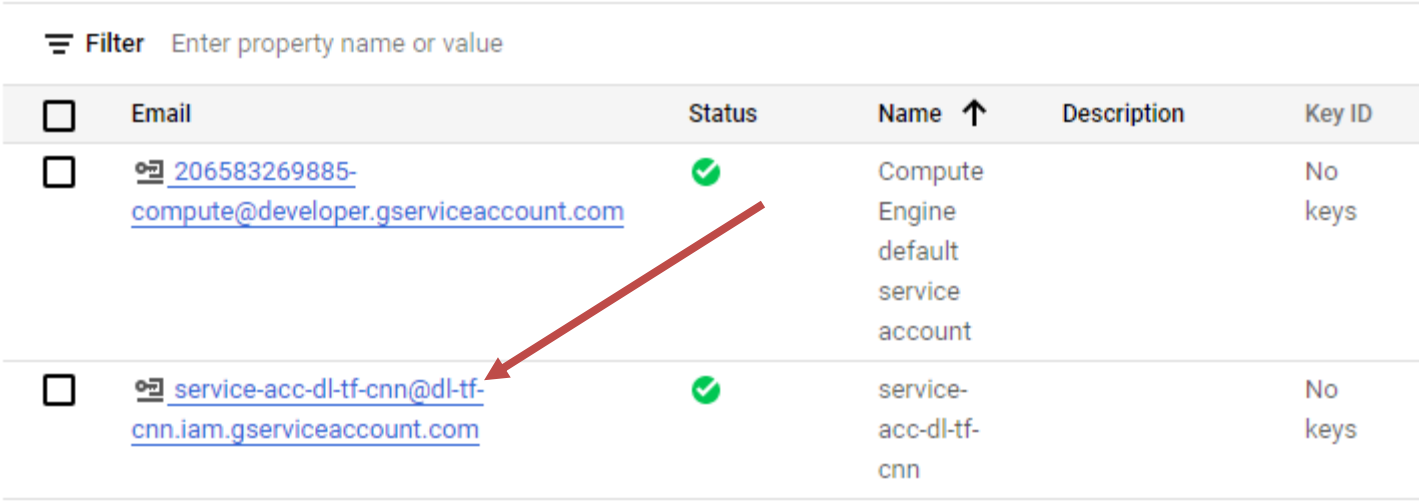
6. Get credentials of service account

Open **IAM & Admin: Service Accounts** page

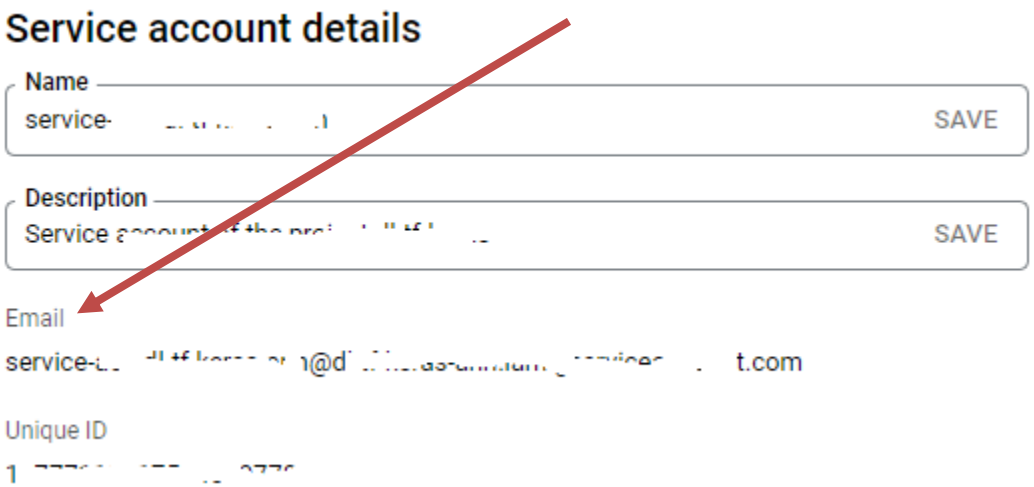
- Click Product and Services icon → Open a drop-down menu
- Click IAM & Admin → Open a drop-down menu



Click to open: **Service Accounts**



Click the **email** of the **Service Account (**created in Section 4) to open its page



Copy "**Email**" of the service account to a Notepad file

7. Create Key File JSON of Service Account

- Open an **SSH** connection to the remote deep learning server
- **Run** command line **at the prompt** (in Home Directory)
- Command line:
  - **gcloud** iam service-accounts keys create ~/key.json --iam-account <email of service account>

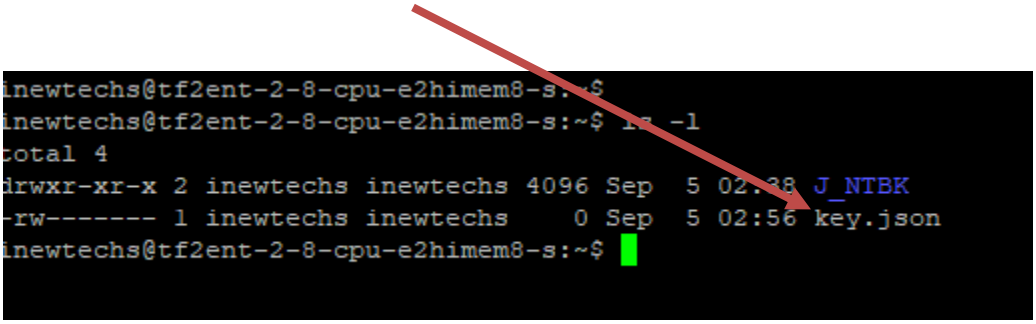
For example:
gcloud iam service-accounts keys create ~/key.json --iam-account service-acc-xyz@project-id-123.iam.gserviceaccount.com

```
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$ ls -l
total 4
drwxr-xr-x 2 inewtechs inewtechs 4096 Sep  6 15:53 JP_NTBK
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$ gcloud iam service-accounts keys create ~/key.json --iam-account service-acc-dl-tf-keras-ann@dl-tf-keras-ann.iam.gserviceaccount.com
created key [b6781f2cf9329fa65173fe309fd88a6c1581ae7c] of type [json] as [/home/inewtechs/key.json] for [service-acc-dl-tf-keras-ann@dl-tf-keras-ann.iam.gserviceaccount.com]
inewtechs@tf2ent-2-8-cpu-e2himeml6-c:~$
```

```
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$ ls -l
total 4
drwxr-xr-x 2 inewtechs inewtechs 4096 Aug 24 14:07 JP_NTBK
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$ gcloud iam service-accounts keys create ~/key.json --iam-account  service-acc-dl-tf-keras-ann@dl-tf-keras-ann.iam.gservic
API [iam.googleapis.com] not enabled on project [232743561122]. Would you like to enable and retry (this will take a few minutes)? (y/N)?  y

Enabling service [iam.googleapis.com] on project [232743561122]...
Operation "operations/acat.p2-232743561122-7d8cb53e-541e-434e-9f69-1af538f86f05" finished successfully.
created key [2fed313d3af1779la98a54f796b6a0ade50c6944] of type [json] as [/home/inewtechs/key.json] for [service-acc-dl-tf-keras-ann@dl-tf-keras-ann.iam.gserv
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$ ls -l
total 8
drwxr-xr-x 2 inewtechs inewtechs 4096 Aug 24 14:07 JP_NTBK
-rw------- 1 inewtechs inewtechs 2358 Aug 24 14:25 key.json
inewtechs@tf2ent-2-8-cpu-e2std8-s:~$
```

IMPORTANT NOTES:
Check: **Key file (key.json)** is found in the **home directory** of the VM instance



IMPORTANT NOTES:

--) The key file is found in the home directory of the remote deep learning service.

--) GCP Natural Languages API uses this key file to perform the authentication with GCP systems.

IT'S DONE!

GCP NATURAL LANGUAGE API HAS BEEN SUCCESSFULLY SET UP.