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

SSH to Remote Virtual Machine Using GCLOUD SDK

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IMPORTANT NOTES:
--) It is assumed that the GCP deep learning virtual machine (VM) has been set up successfully as discussed in the document "HOWTO_GCP_setup_deep_learning_vm.pdf."
--) It is assumed that the GCLOUD SDK has been successfully installed in the user's local computer.

1. GCP Virtual Machine Based on GCP Deep Learning Image

Google Cloud Platform now provides machine learning images designed for deep learning practitioners. The users can conveniently set up GCP deep learning virtual machine based on these images.

The Google Deep Learning images are a set of prepackaged VM images with a deep learning framework ready to be run out of the box. Currently, there are images supporting TensorFlow, PyTorch, and generic high-performance computing, with versions for both CPU-only and GPU-enabled workflows.

IMPORTANT NOTES:
--) As discussed in the document "HOWTO_GCP_setup_deep_learning_vm.pdf," it is recommended that the user should use the CPU-ONLY version to avoid high cost of GPU-enabled ones.

All the GCP deep learning images are based on Debian, a popular Linux OS version.

All images come with **python 2.7/3.5** with pre-installed core packages:

- **numpy**
- **sklearn**
- **scipy**
- **pandas**

Additionally**, Jupyter Notebook** is also a built-in core package available in the images. It means that the user can run Jupyter Notebook server in the remote VM and connect to it from the local computer.

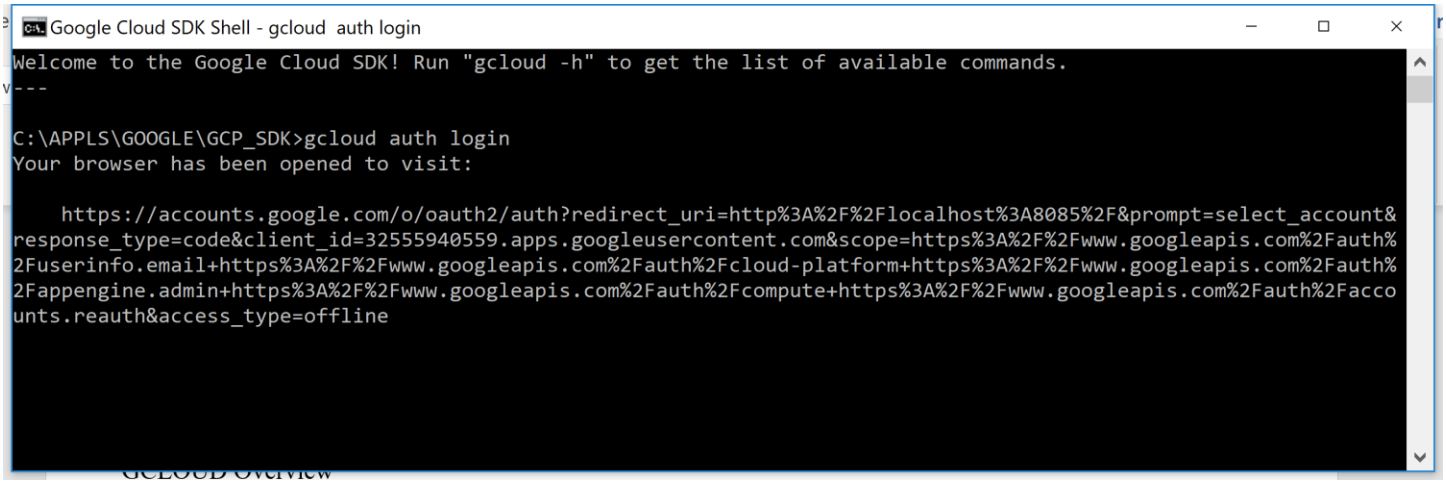
2. GCLOUD SDK: Authentication

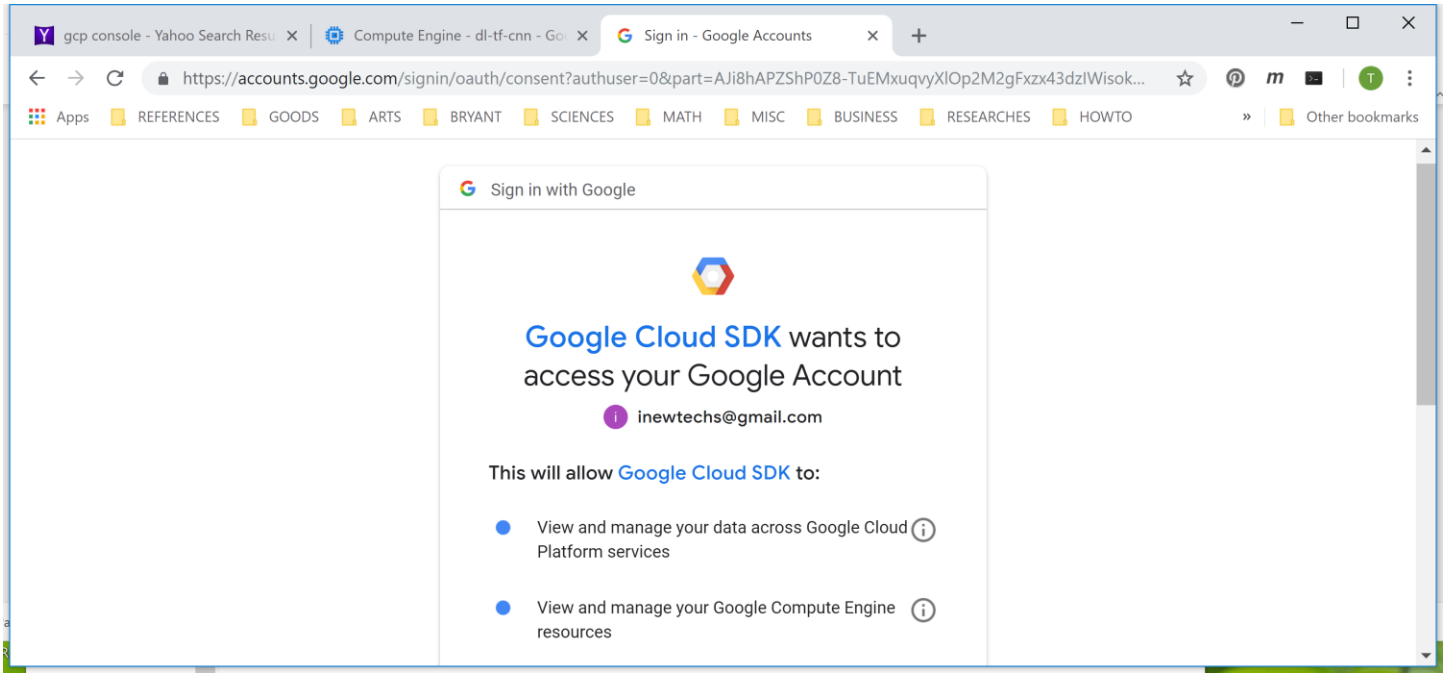
2.1 Authentication

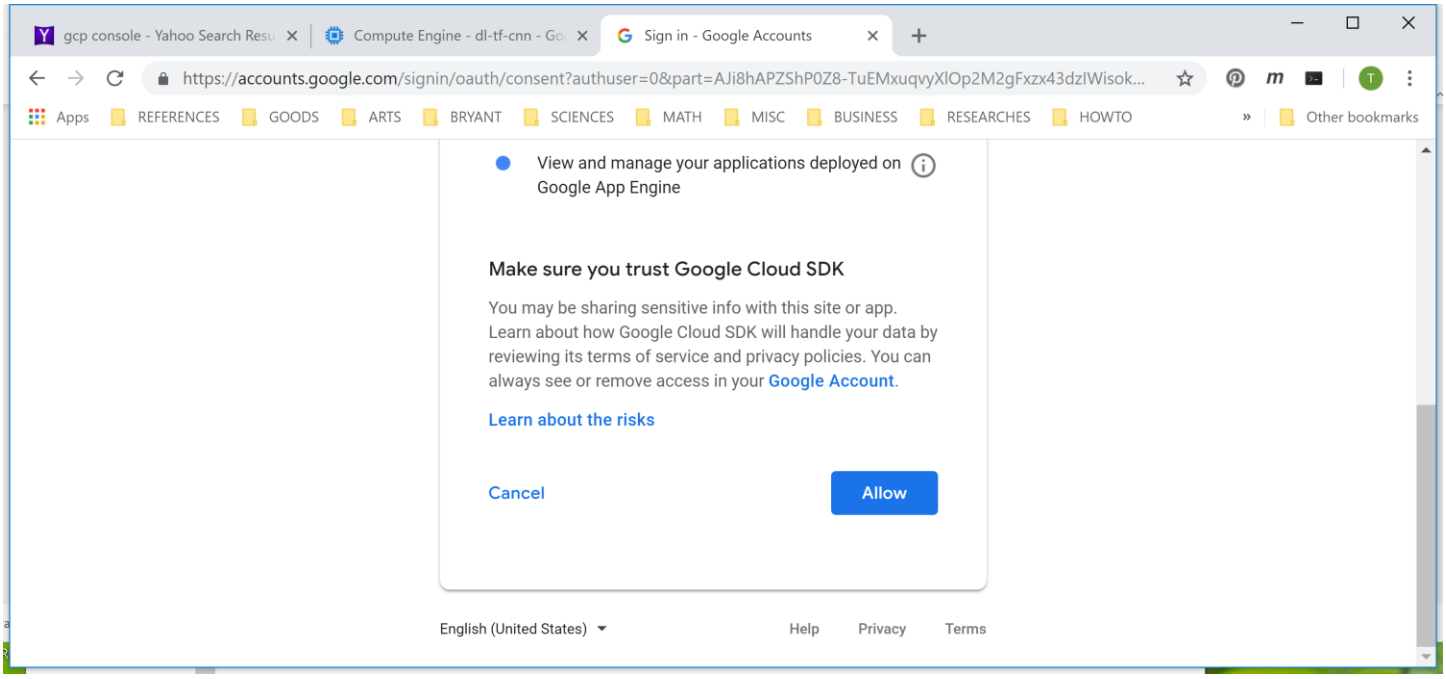
Before running command lines on GCLOUD SDK to work with some remote VM, the user needs to authenticate his/her Google account.

Start GCLOUD SDK and run this command line:

- > gcloud auth login






gcp console - Yahoo Search Resu
Compute Engine - dl-tf-cnn - Go
Sign in - Google Accounts
https://accounts.google.com/signin/oauth/consent?authuser=0&part=AJi8hAPZShP0Z8-TuEMxuqvyXlOp2M2gFxzx43dzlWisok...
Apps
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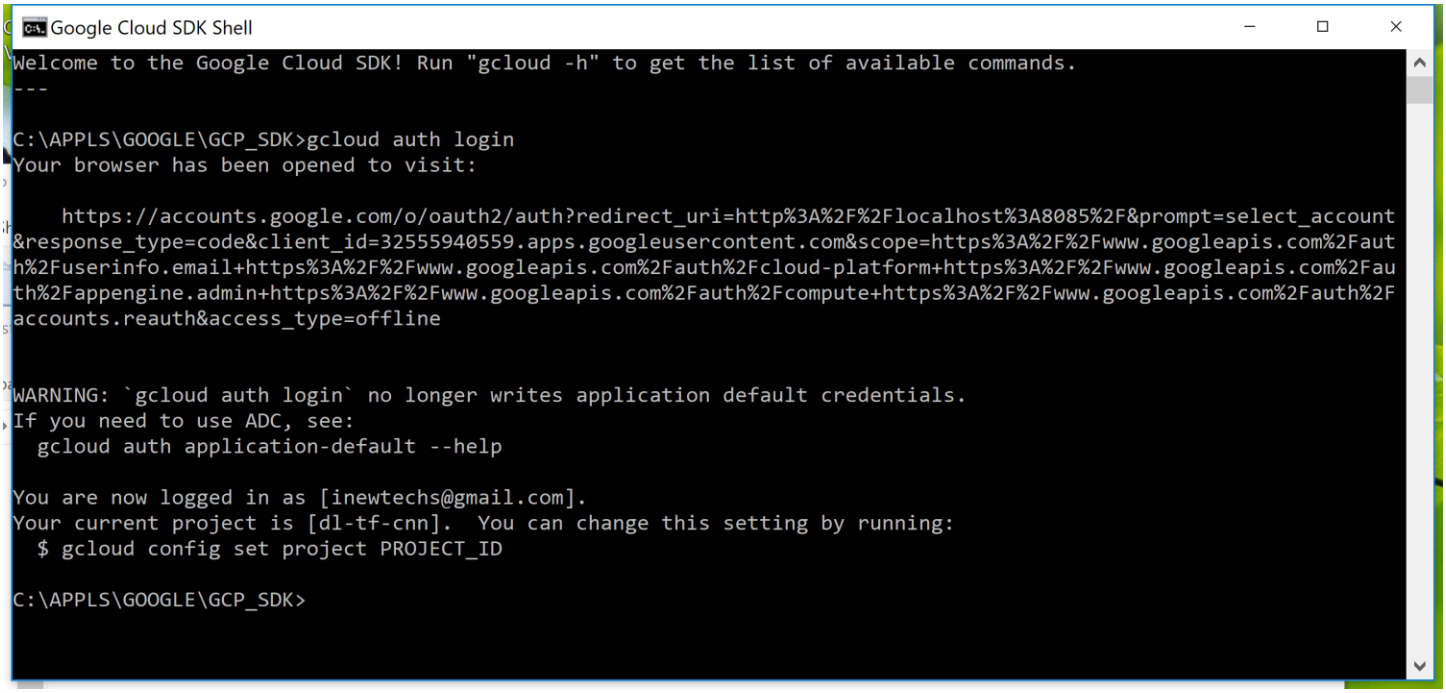
ARTS
BRYANT
SCIENCES
MATH
MISC
BUSINESS
RESEARCHES
HOWTO
Other bookmarks
View and manage your applications deployed on Google App Engine
Make sure you trust Google Cloud SDK
You may be sharing sensitive info with this site or app. Learn about how Google Cloud SDK will handle your data by reviewing its terms of service and privacy policies. You can always see or remove access in your Google Account.
Learn about the risks
Cancel
Allow
English (United States)
Help
Privacy
Terms

- Click Allow


Google Cloud SDK Shell
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available commands.

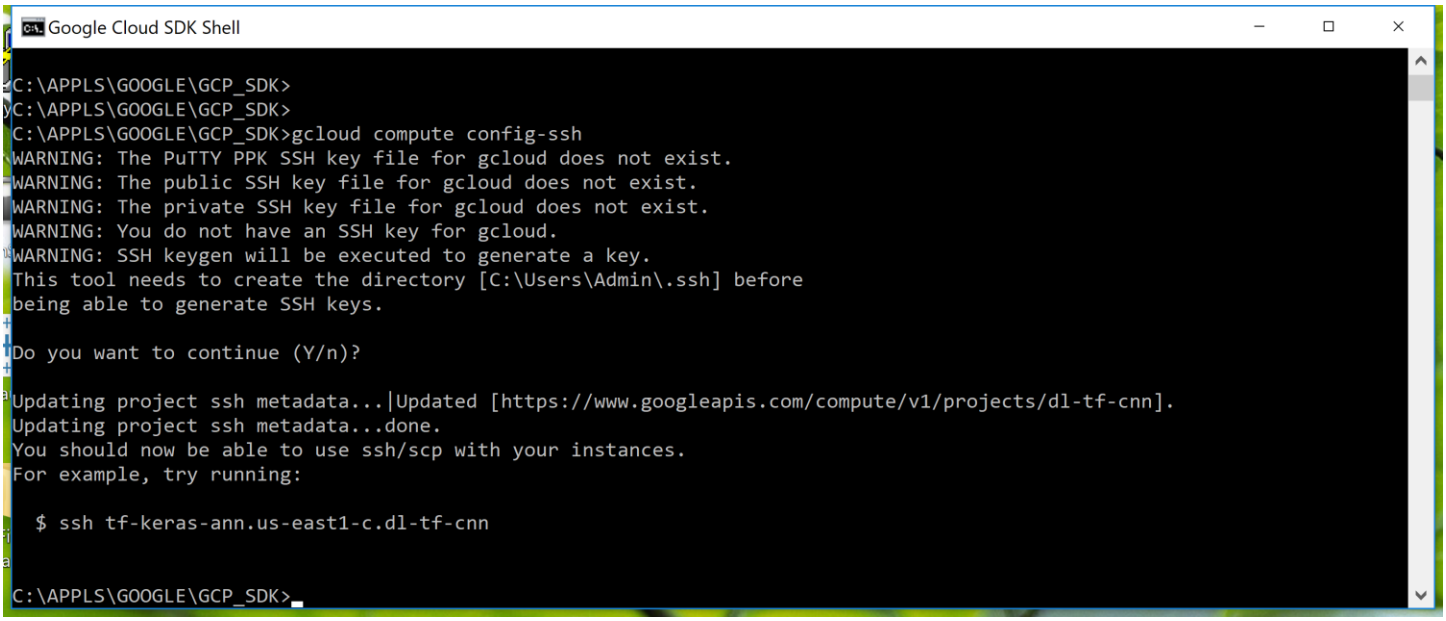
C:\APPLS\GOOGLE\GCP_SDK>gcloud auth login
Your browser has been opened to visit:
https://accounts.google.com/o/oauth2/auth?redirect_uri=http%3A%2F%2Flocalhost%3A8085%2F&prompt=select_account&response_type=code&client_id=32555940559.apps.googleusercontent.com&scope=https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fappengine.admin+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcompute+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Faccounts.reauth&access_type=offline
WARNING: `gcloud auth login` no longer writes application default credentials.
If you need to use ADC, see:
gcloud auth application-default --help
You are now logged in as [inewtechs@gmail.com].
Your current project is [dl-tf-cnn]. You can change this setting by running:
$ gcloud config set project PROJECT_ID
C:\APPLS\GOOGLE\GCP_SDK>

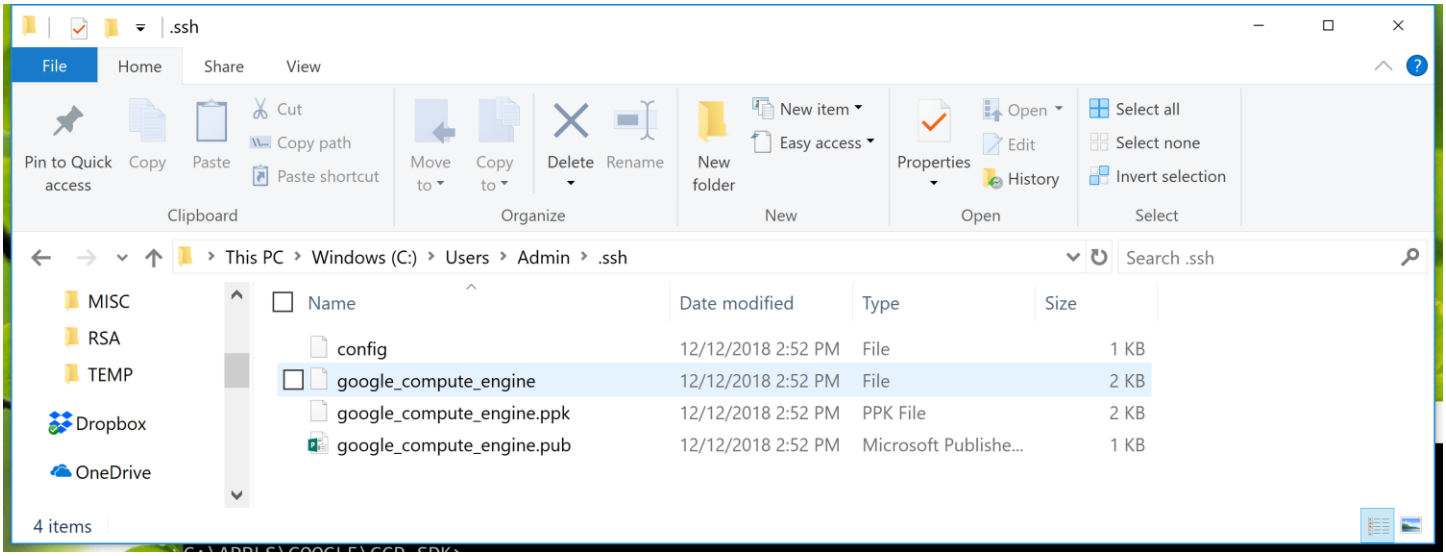
3. GCLOUD: Configure SSH (First Time Using GCLOUD SDK)

If the user starts using GCLOUD SDK for the first time, he/she needs to configure the SSH environment that will be used to connect to the remote GCP VM.

Run this command line:

- $ gcloud compute config-ssh





IMPORTANT NOTES:

--) Running the command:

- The directory .ssh is created
- Four files are created:
  - config
  - RSA key file: google_compute_engine
  - Default RSA private key file .ppk: google_compute_engine.ppk
  - Default RSA public key file .pub: google_compute_engine.pub

IMPORTANT NOTES:

--) GCP automatically creates these RSA kye files for the users when the command line is run.

4. GCLOUD: SSH Command

4.1 SSH: Specify a User of Remote Instance, i.e. /home/<some user>

- $ gcloud compute ssh USER@Instance_Name
  --project [PROJECT_ID]
  --zone [ZONE]

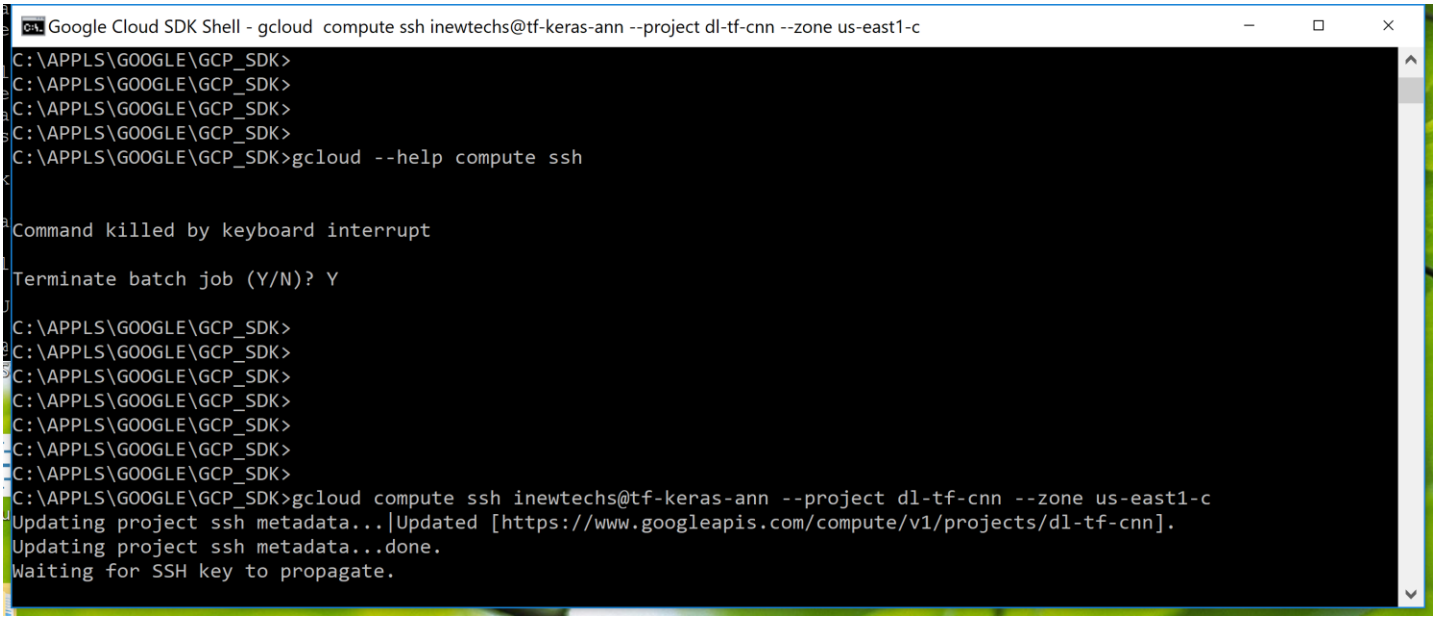
  - USER: User name of the google account or the gmail account
    - E.g.: john@gmail.com → john: USER
  - Instance_Name: The name of the instance
    - E.g.: gcpVM1 → john@gcpVM1
  - PROJECT_ID: The project name
  - ZONE: the region and zone

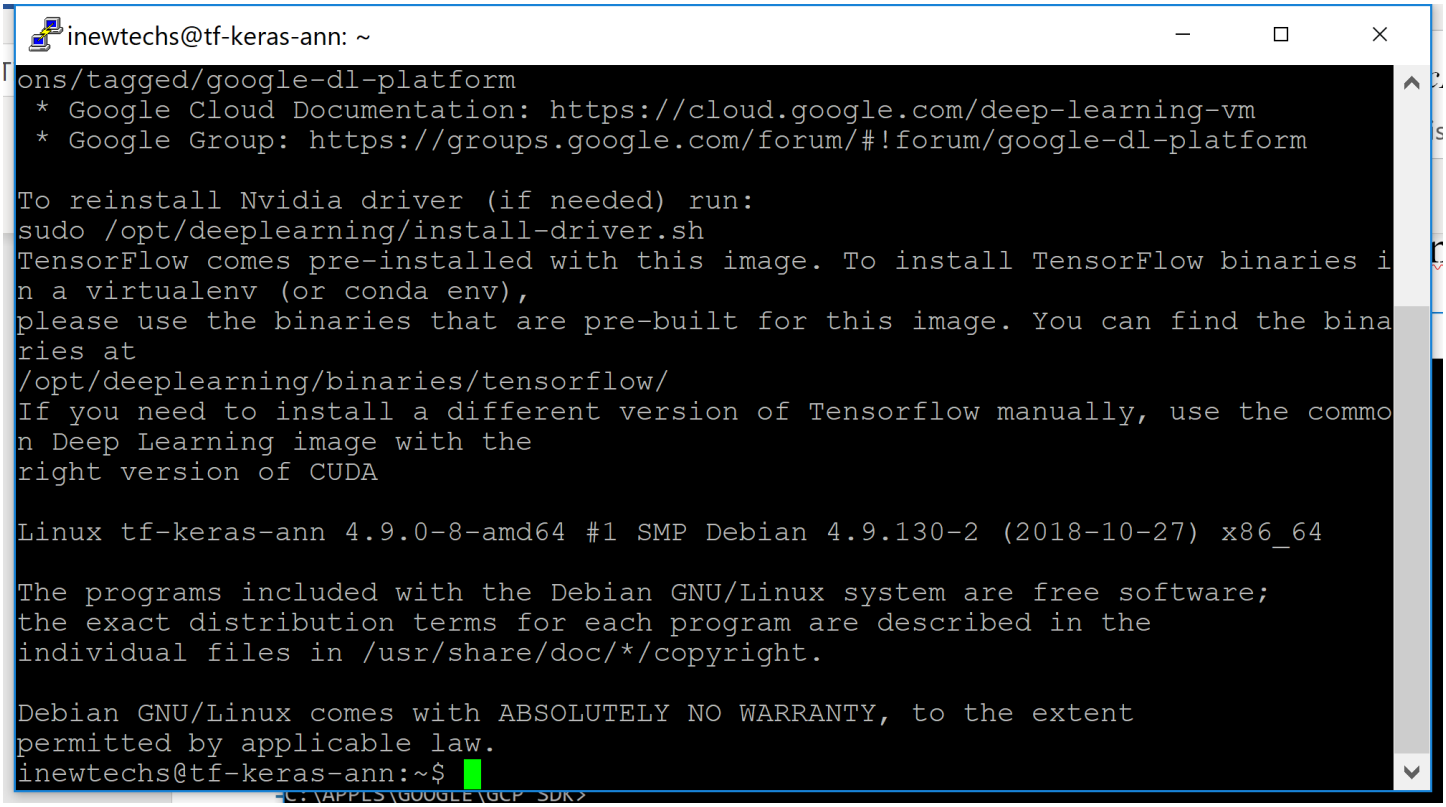
For example:

$ gcloud compute ssh **john**@gcpVM1 --project aProjName -- zone us-east1-c

IMPORTANT NOTES:

*--) The instance name (gcpVM1) is used only as an example. The student **must use the real name** of his/her instance in the command line: The same for project ID and zone ID.*





SUCCESSFULLY SSH TO THE INSTANCE!