

Cloud & ML : Assignment 2

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Introduction

In this assignment we are comparing the 2 different clouds - IBM, Google and Amazon based on our experience of training the MNIST dataset for number prediction.

1. IBM Cloud

Steps followed were from the lecture slides.

- Training the MNIST dataset using existing github code isn't as smooth and easy when compared to other clouds.
- The whole process, while following the steps from the slides took around 30-40 mins.
- 2 services/software - ML and Watson studio and 1 storage service was subscribed and the process was time taking in terms of fetching the api-keys and feeding then to the code etc.

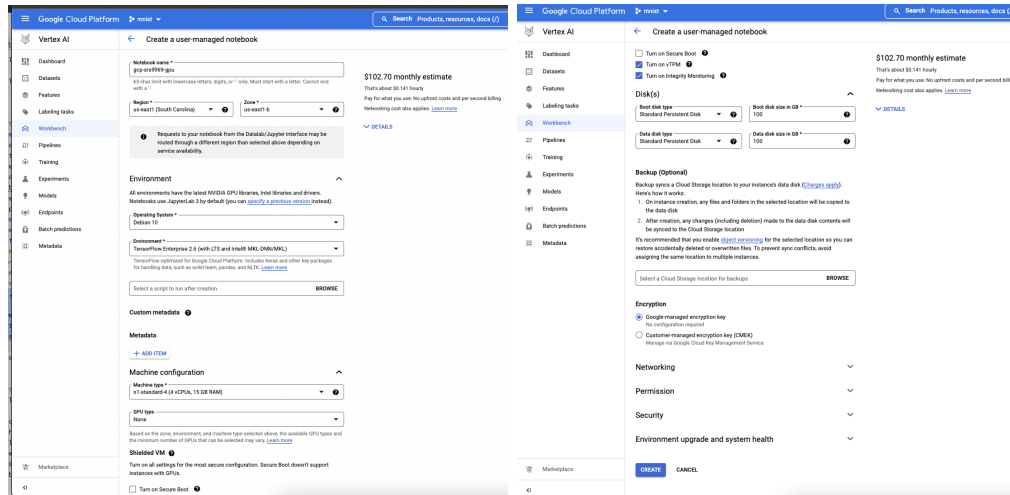
2. Google Cloud Platform Cloud

Google Cloud provides AI Platform which enables users to creating, training and deploying machine learning models. This further enables users to use the AI Platform Prediction service. I used a github code to train the model on 60k dataset.

- Using AI platform on GCP just asked me to create the Jupyter notebook and while creating that it asked the type of VM I wanted to spin up (I used Tensorflow 2.6 without GPUs).
- I then uploaded the ipynb file to the jupyterlab and was successfully able to train the model and get predictions.

- Whole process took less than 10mins.
- [link](#) referred

Moreover, I even tried training on ai-platform from GCP terminal, and that was smooth as well. I followed [this](#) tutorial here. This trains the dataset on 10k iterations in around 2-3 minutes.



3. AWS

Again a very friendly UI and the service Amazon Sagemaker which enables user to develop, train and deploy machine learning models.

- With the free initial credits I created `ml.t2.modermedium` machine to run my training code.
- I used Jupyter lab to write the code (*taken from official github repo of Amazon*)
- The tutorial I used was from the Amazon github page [this](#) and deployed the model using Sagemaker.

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Amazon SageMaker > Notebook Instances > Create notebook instance

Create notebook instance

Amazon SageMaker provides pre-built fully managed notebook instances that run Jupyter notebooks. The notebook instances include example code for common model training and hosting exercises. [Learn more](#)

Notebook instance settings

Notebook instance name
MNIST-srs9969
Maximum of 63 alphanumeric characters. Can include hyphens (-), but not spaces. Must be unique within your account in an AWS Region.

Notebook instance type
m1.m4.xlarge

Elastic Inference [Learn more](#)
none

Amazon SageMaker Notebook Instance is ending its standard support on Amazon Linux AMI (AL1). [Learn more](#)

Platform identifier [Learn more](#)
notebook-al1-v1

► Additional configuration

Conclusion : In my opinion both GCP and AWS beat IBM cloud by very high margins. IBM, after setting up 2 services and the storage space with all the hassles of generating api-key and space-id for space usage was slightly cumbersome and time consuming. Google on the other hand, in the lesser time than I what I gave to IBM, I was able to execute with UI and terminal both and the experience was good and seamless. With AWS Sagemaker I was able to develop, train and deploy the code fairly with ease as well.