Preparing for Training and Serving on Cloud MLE

In this contrived example, we'll use the famous Iris dataset to train and serve a TensorFlow model using the Estimator API on Cloud MLE. To begin, let's walk through the following steps:

1. Create a bucket on GCS by running the gsutil mb command on the cloud terminal. Replace it with unique bucket name.

   ```
   export bucket_name=iris-dataset'
   gsutil mb gs://$bucket_name
   ```

2. Transfer training and test data from the code repository to the GCP bucket.

3. Move the train data.

   ```
   gsutil cp train_data.csv gs://$bucket_name
   ```

4. Move the train data.

   ```
   gsutil cp test_data.csv gs://$bucket_name
   ```

5. Move the hold-out data for batch predictions.

   ```
   gsutil cp hold_out_test.csv gs://$bucket_name
   ```

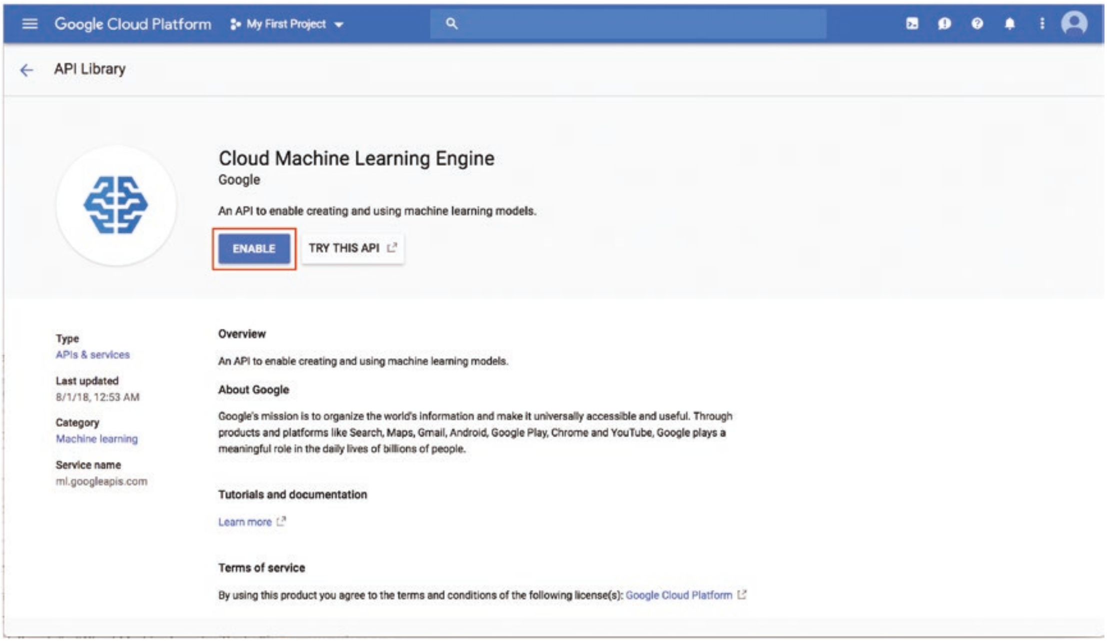
6. Enable the Cloud Machine Learning API to be able to create and use machine learning models on GCP Cloud MLE:

   a. Go to APIs & Services.

   b. Click "Enable APIs & Services".

   c. Search for "Cloud Machine Learning Engine".

   d. Click ENABLE API as shown in Figure 41-2.



Cloud Machine Learning Engine

Google

An API to enable creating and using machine learning models.

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Category
Machine learning

Service name
ml.googleapis.com

Overview

An API to enable creating and using machine learning models.

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Figure 41-2. *Enable Cloud Machine Learning APIs*

Packaging the Code for Training on Cloud MLE

The code for training on Cloud MLE must be prepared as a python package. The recommended project structure is explained as follows:

IrisCloudML: [project name as parent folder]

- Trainer: [folder containing the model and execution code]
  - __init__.py: [an empty special python file indicating that the containing folder is a Python package]
  - model.py: [script contains the logic of the model written in TensorFlow, Keras, etc.]
  - task.py: [script contains the application that orchestrates or manages the training job]
- scripts: [folder containing scripts to execute jobs on Cloud MLE]
  - distributed-training.sh: [script to run a distributed training job on Cloud MLE]