

Profile Tensorflow using Tensorboard

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Overview

This guide will show our users how to use the TensorFlow Profiler to profile the execution of your TensorFlow code.

Code example

Copy and paste the following code into **tf-profile.py**.

```
from datetime import datetime
import os
import tensorflow

from tensorflow.keras.datasets import mnist
from tensorflow import keras
from tensorflow.keras import layers

(train_images, train_labels), (test_images, test_labels) = mnist.load_data()

model = keras.Sequential([
    layers.Dense(512, activation="relu"),
    layers.Dense(10, activation="softmax")
])

model.compile(optimizer="rmsprop",
              loss="sparse_categorical_crossentropy",
              metrics=["accuracy"])

train_images = train_images.reshape((60000, 28 * 28))
train_images = train_images.astype("float32") / 255
test_images = test_images.reshape((10000, 28 * 28))
test_images = test_images.astype("float32") / 255

# Create a TensorBoard callback
logs = "logs/" + datetime.now().strftime("%Y%m%d-%H%M%S")

tboard_callback = tensorflow.keras.callbacks.TensorBoard(log_dir = logs,
                                                         histogram_freq = 1,
                                                         profile_batch = '10,20')

model.fit(train_images,
          train_labels,
          epochs=10,
          batch_size=128,
          callbacks = [tboard_callback])
```

The **tensorflow.keras.callbacks.TensorBoard** command will create a **tensorboard callback** and **profile_batch** will pick batch number **10** to batch number **20**.

Local profiling on your own computer

1. Run the code with command

```
python tf-profile.py
```

2. Compress the **logs** folder

```
tar -zcvf ./logs.tar.gz ./logs
```

3. Download the tarball file with **sftp** and/or **hal-ondemand**.
4. Decompress the tarball file

```
tar -zxvf ./logs.tar.gz
```

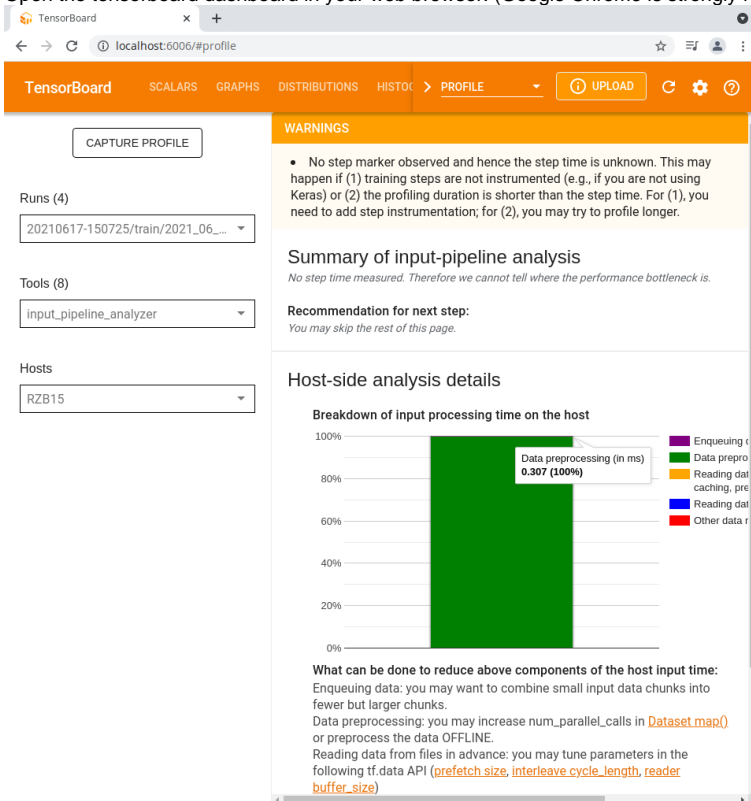
5. Install the tensorboard profile plugin in your python environment.

```
pip install tensorboard_plugin_profile
```

6. Launch the tensorboard with profiler installed.

```
tensorboard --logdir ./logs
```

7. Open the tensorboard dashboard in your web browser. (Google Chrome is strongly recommended)



Remote Profiling on HAL system

Coming soon...