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 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
```

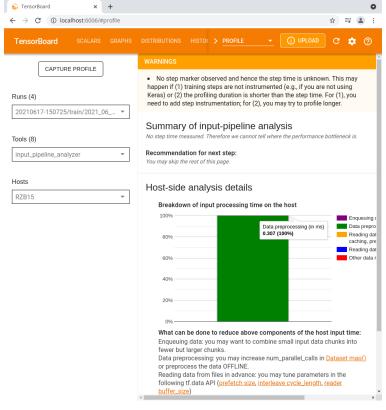
5. Install the tensorboard profile plugin in your python environment.

```
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...