CHAPTER 6

JupyterLab Notebooks

Google deep learning virtual machines (VMs) are a part of GCP AI Platform. It provisions a Compute Engine instance that comes pre-configured with the relevant software packages for carrying out analytics and modeling tasks. It also makes available high-performance computing TPU and GPU processing capabilities at a single click. These VMs expose a JupyterLab notebook environment for analyzing data and designing machine learning models.

In this chapter, we'll launch a JupyterLab notebook instance using the web-based console and the command line.

Provisioning a Notebook Instance

The following steps provide a walk-through for deploying a Notebook instance on a deep learning VM:

1. In the group named 'ARTIFICIAL INTELLIGENCE' on the GCP resources drawer, click the arrow beside 'AI Platform' and select 'Notebooks' as shown in Figure 6-1.

E. Bisong, *Building Machine Learning and Deep Learning Models on Google Cloud Platform*,
https://doi.org/10.1007/978-1-4842-4470-8_6

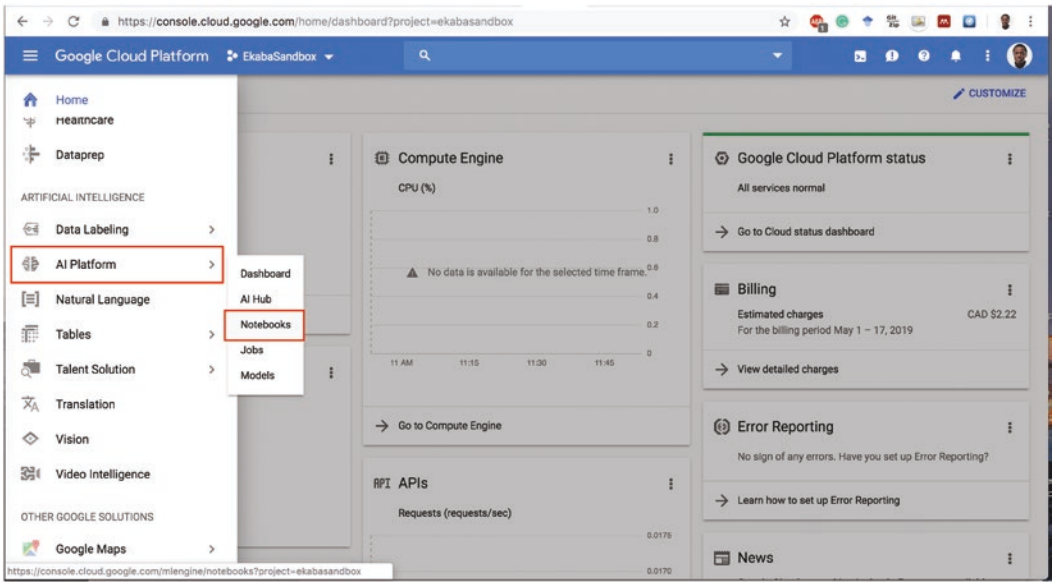

Figure 6-1. *Open Notebooks on GCP AI Platform*

2. Click 'NEW INSTANCE' to initiate a notebook instance as shown in Figure 6-2; there is an option to customize your instance or to use one of the pre-configured instances with TensorFlow, PyTorch, or RAPIDS XGBoost installed.

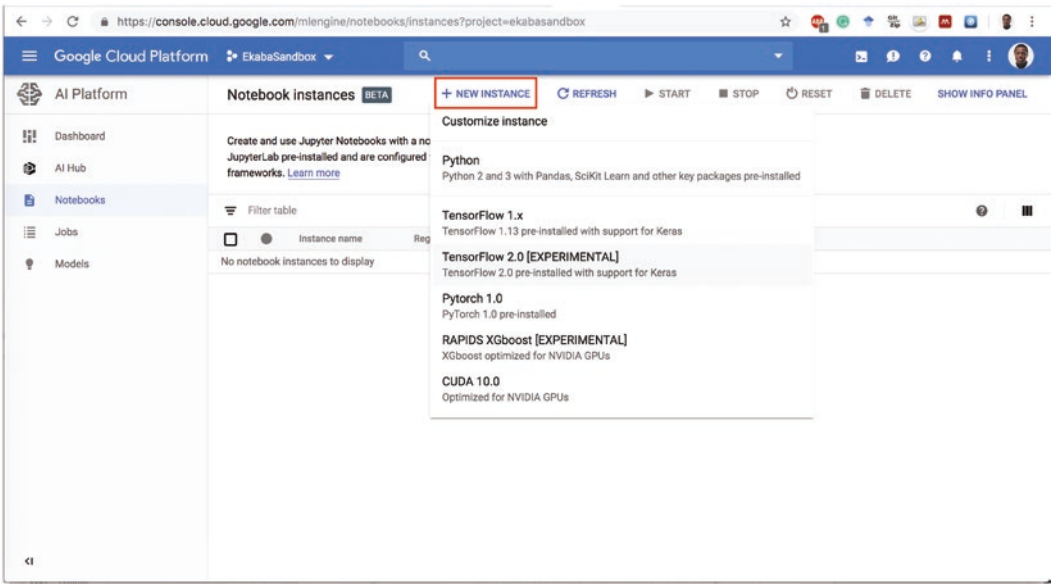

Figure 6-2. *Start a new Notebook instance*

3. For this example, we will create a Notebook instance pre-configured with TensorFlow 2.0 (see Figure 6-3).

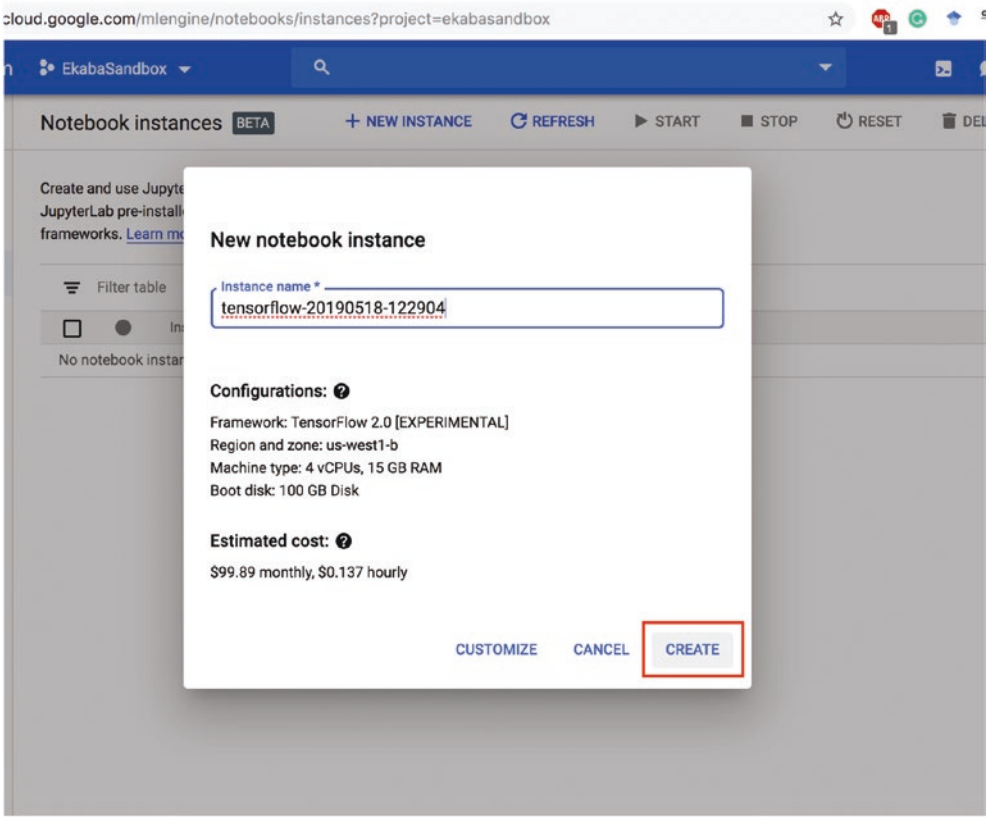

Figure 6-3. *Start a new Notebook instance*

4. Click 'OPEN JUPYTERLAB' to launch the JupyterLab notebook instance in a new window (see Figure 6-4).

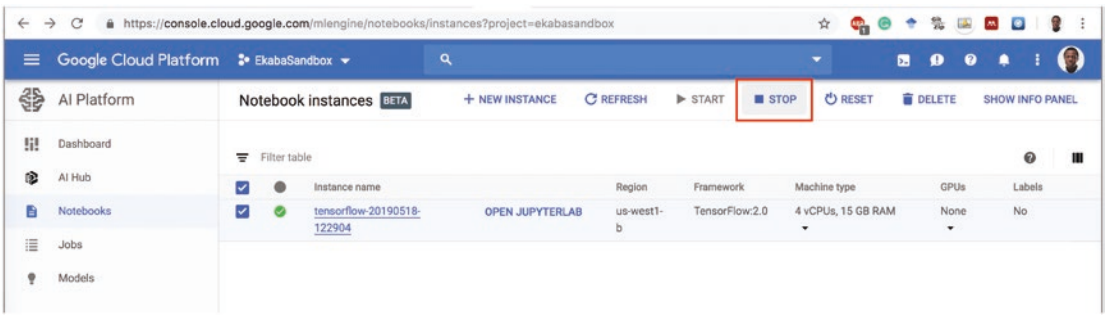

Figure 6-4. *Open JupyterLab*

5. From the JupyterLab Launcher in Figure 6-5, options exist to open a Python notebook, a Python interactive shell, a bash terminal, a text file, or a Tensorboard dashboard (more on Tensorboard in Part 6).

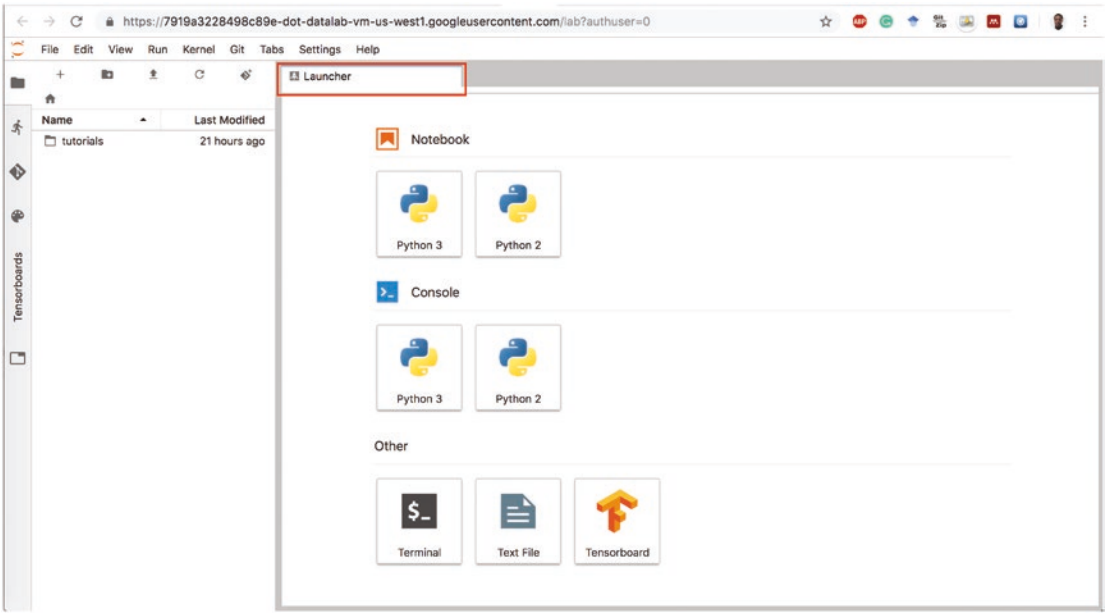

Figure 6-5. *JupyterLab Launcher*

6. Open a Python 3 Notebook (see Figure 6-6). We'll work with Python notebooks in later chapters to carry out data science tasks.

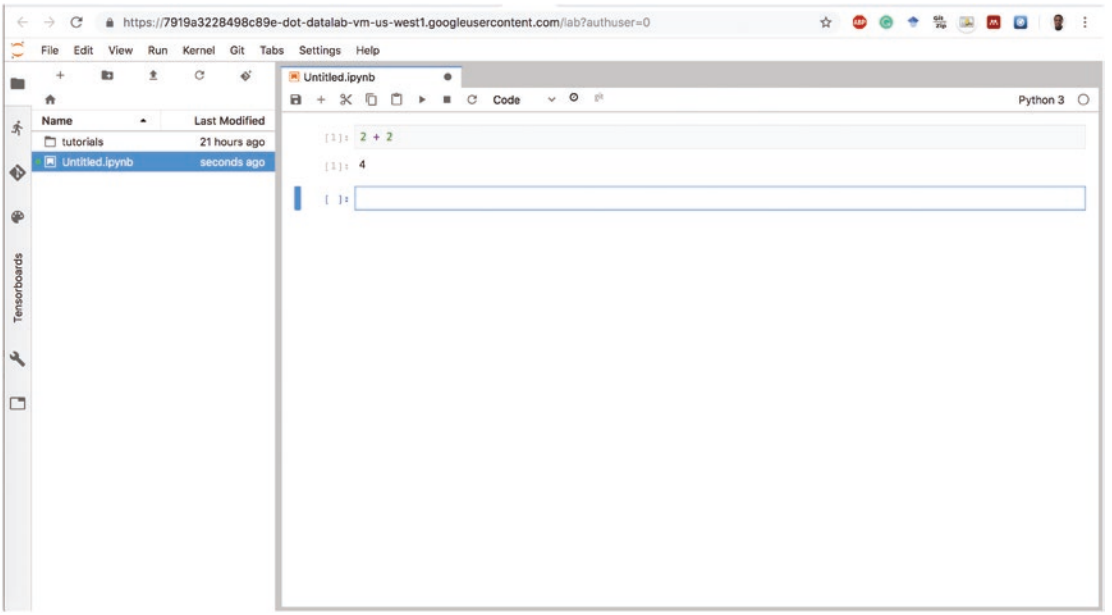

Figure 6-6. *Python 3 Notebook*

Shut Down/Delete a Notebook Instance

The following steps provide a walk-through for shutting down and deleting a Notebook instance:

1. From the 'Notebook instances' dashboard, click 'STOP' to shut down the instance when not in use so as to save compute costs on GCP (see Figure 6-7).

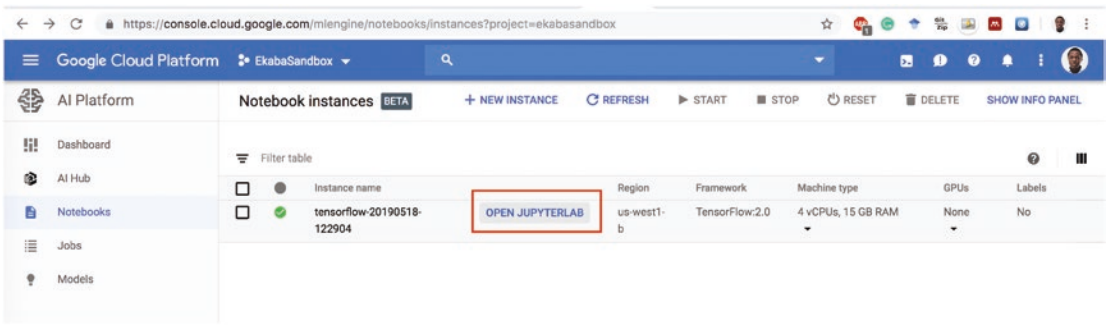

Figure 6-7. *Stop Notebook instance*