

TensorFlow on Google Cloud

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Training at Scale with Vertex AI Training Service

2 hours Free

Overview

Duration is 1 min

In this notebook we'll make the jump from training locally, to do training in the cloud. We'll take advantage of [Google Cloud's Vertex AI Training Service](#).

Objectives

In this lab, you will:

- Learn how to organize your training code into a Python package.
- Train your model using cloud infrastructure via Google Cloud Training Service.
- (optional) Learn how to run your training package using Docker containers and push training Docker images on a Docker registry.

Setup and requirements

For each lab, you get a new Google Cloud project and set of resources for a fixed time at no cost.

1. Sign in to Qwiklabs using an **incognito window**.
2. Note the lab's access time (for example, 1:15:00), and make sure you can finish within that time. There is no pause feature. You can restart if needed, but you have to start at the beginning.
3. When ready, click **Start lab**.
4. Note your lab credentials (**Username** and **Password**). You will use them to sign in to the Google Cloud Console.
5. Click **Open Google Console**.
6. Click **Use another account** and copy/paste credentials for **this** lab into the prompts. If you use other credentials, you'll receive errors or **incur charges**.
7. Accept the terms and skip the recovery resource page.

Note: Do not click **End Lab** unless you have finished the lab or want to restart it. This clears your work and removes the project.

Task 1. Enable APIs

Ensure that the API is enabled

1. Click the **Navigation menu** > **APIs & Services** > **Library**.

2. Search for **AI Platform Training & Prediction API** in the search box. Click on the result generated.
3. If the API is not already enabled, click **Enable** to enable the API.

Enable the Vertex AI API

- In the Google Cloud Console, expand the **Navigation menu** > **Vertex AI** and click **Enable All Recommended API** to enable the required APIs.

Task 2. Create a Cloud Storage bucket

Create a bucket using the Google Cloud console:

1. In your Cloud Console, click on the **Navigation menu** (≡), and select **Cloud Storage**.
2. Click on + **Create** and choose a Regional bucket.
3. Set a unique name (use your project ID because it is unique).
4. Click **Create**.

If prompted **Public access will be prevented** click **Confirm**.

Task 3. Launch a Vertex AI Notebooks instance

1. In the Google Cloud Console, on the **Navigation menu**, click **Vertex AI** > **Workbench**.
2. On the Notebook instances page, select the **User-Managed Notebooks** view.
3. Click + **Create New**.
4. In the **Create instance** dialog, use the default name or enter a unique name for the Vertex AI Notebook instance. Set the region to and zone to and leave the rest of the settings as default.
5. Click **Create**.
6. Click **Open JupyterLab**.

Task 4. Clone a course repo within your Vertex AI Notebooks instance

To clone the training-data-analyst notebook in your JupyterLab instance:

1. In JupyterLab, to open a new terminal, click the **Terminal** icon.
2. At the command-line prompt, run the following command:

```
git clone https://github.com/GoogleCloudPlatform/training-data-analyst
```

3. To confirm that you have cloned the repository, double-click on the training-data-analyst directory and ensure that you can see its contents.
The files for all the Jupyter notebook-based labs throughout this course are available in this directory.

Task 5. Training at scale with Vertex AI Training Service

Duration is 60 min

1. In the notebook interface, navigate to **training-data-analyst** > **courses** > **machine_learning** > **deeprived2** > **introduction_to_tensorflow** > **labs** > **1_training_at_scale_vertex.ipynb**.

2. In the notebook interface, click on **Edit > Clear All Outputs**.
3. Carefully read through the notebook instructions and fill in lines marked with #TODO where you need to complete the code.

Tip: To run the current cell you can click the cell and hit **SHIFT+ENTER**. Other cell commands are found in the notebook UI under **Run**.

- Hints may also be provided for the tasks to guide you. Highlight the text to read the hints which are in white text.
- To view the complete solution, navigate to **training-data-analyst > courses > machine_learning > deeplive2 > introduction_to_tensorflow > solutions** and opening **1_training_at_scale_vertex.ipynb**.

!pip install tensorflow==2.9.3(older version required for lab)

!pip install tensorflow-gpu

End your lab

When you have completed your lab, click **End Lab**. Google Cloud Skills Boost removes the resources you've used and cleans the account for you.

You will be given an opportunity to rate the lab experience. Select the applicable number of stars, type a comment, and then click **Submit**.

The number of stars indicates the following:

- 1 star = Very dissatisfied
- 2 stars = Dissatisfied
- 3 stars = Neutral
- 4 stars = Satisfied
- 5 stars = Very satisfied

You can close the dialog box if you don't want to provide feedback.

For feedback, suggestions, or corrections, please use the **Support** tab.

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