Google Cloud guide

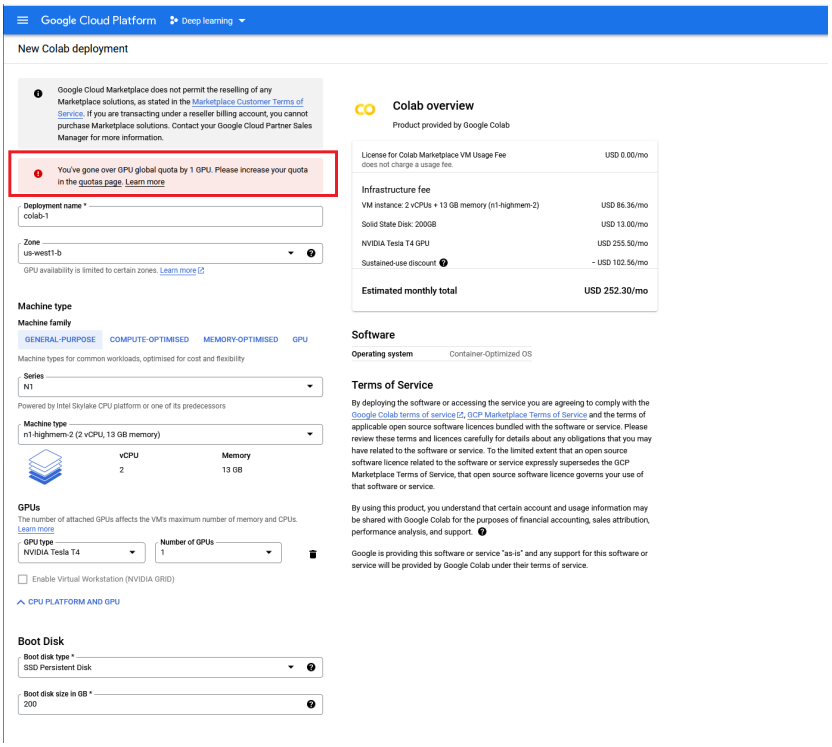
1 Step-by-step guide for setting up (GPU) notebook environments in Google cloud

1.1 Coupon

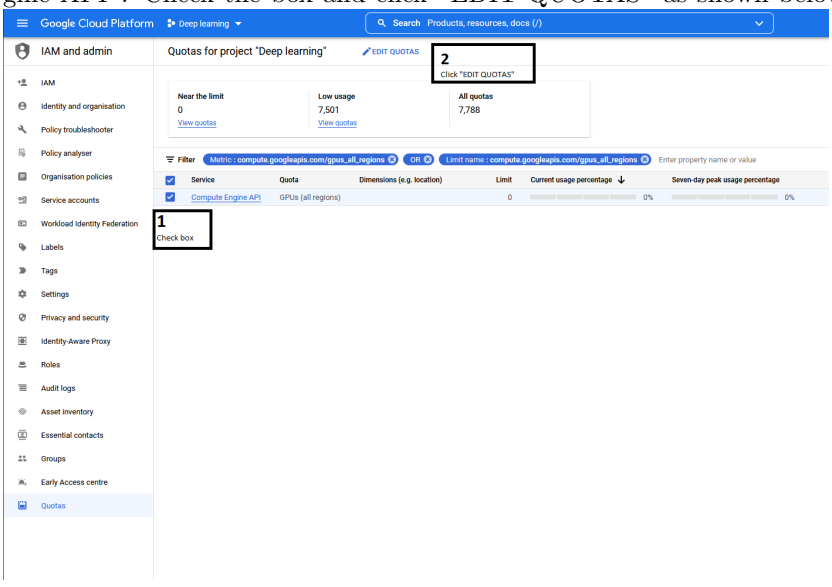
1. Follow link for student Coupon retrieval found on BlackBoard.
2. Fill out your information and submit.
3. You should retrieve an email for verification shortly, followed by a coupon and a link to how you can redeem it.
4. (Optionally) Create a new Google account to redeem your coupon if you do not have one already.

1.2 Enabling APIs and increasing GPU quota

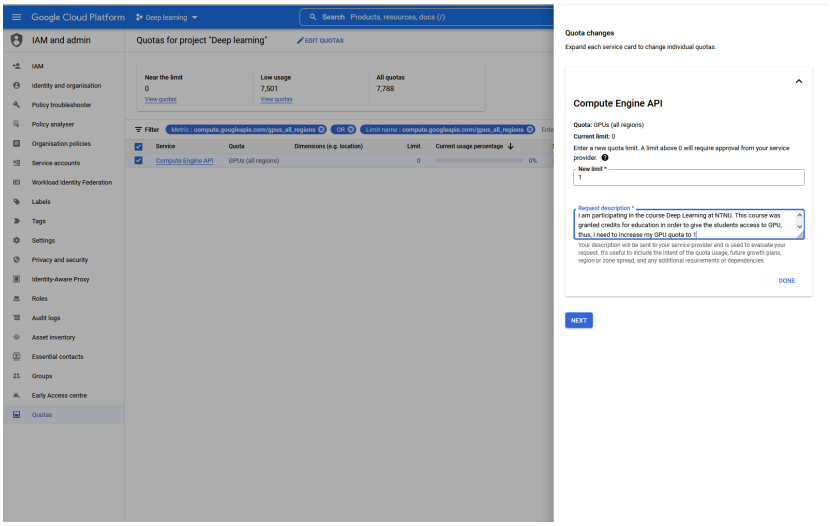
1. After redeeming the coupon, you may be prompted to create a new Project, follow on-screen commands.
2. The first thing we need to do is to enable some APIs and increase your GPU quota from 0 to 1. The easiest way I have found is to use the upper search bar and search for "Google Colab".
3. When attempting to launch a Colab instance, you have to accept enabling of said APIs. (Do not worry, you will not be launching anything that may drain your credits yet)
4. After Enabling the APIs you will be presented the following screen, however, our first interest is the warning stating that we are exceeding our GPU quota:



5. After clicking the link we are presented with a different view, and hopefully a Quota named "GPUs(all regions)" from the service "Compute Engine API". Check the box and click "EDIT QUOTAS" as shown below:

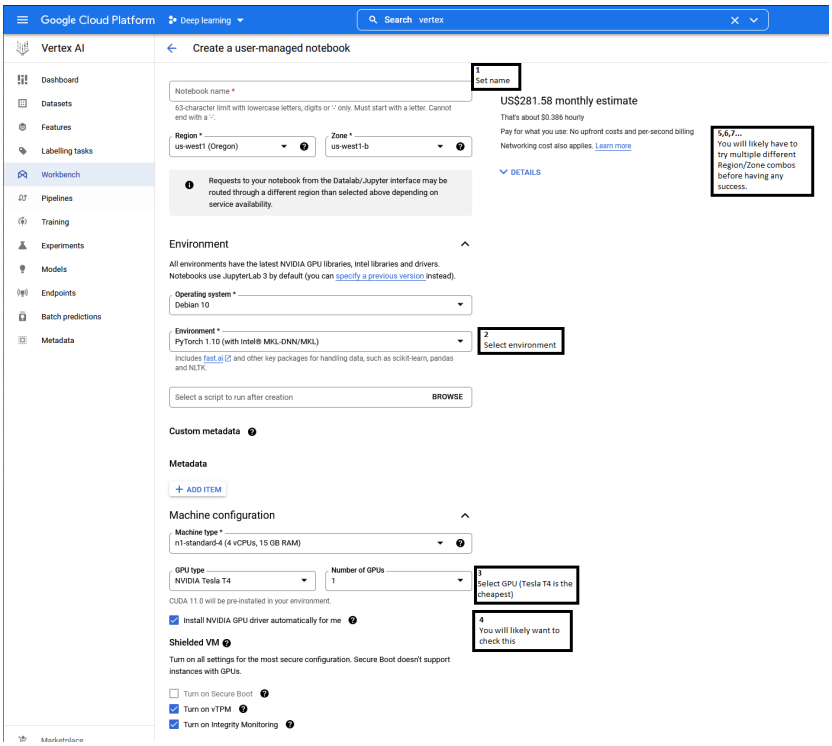


6. You will be presented with a new screen where you are asked what you want to set the quota to and to justify why you need the increase. Set the quota to 1 and consider using the text in the screen capture below. (Disclaimer: I do not know who/what process these applications, but I have had two different trial users accepted in 1-2 minutes. However, Google have their own disclaimer which states that the process may take up to 2 business days.)

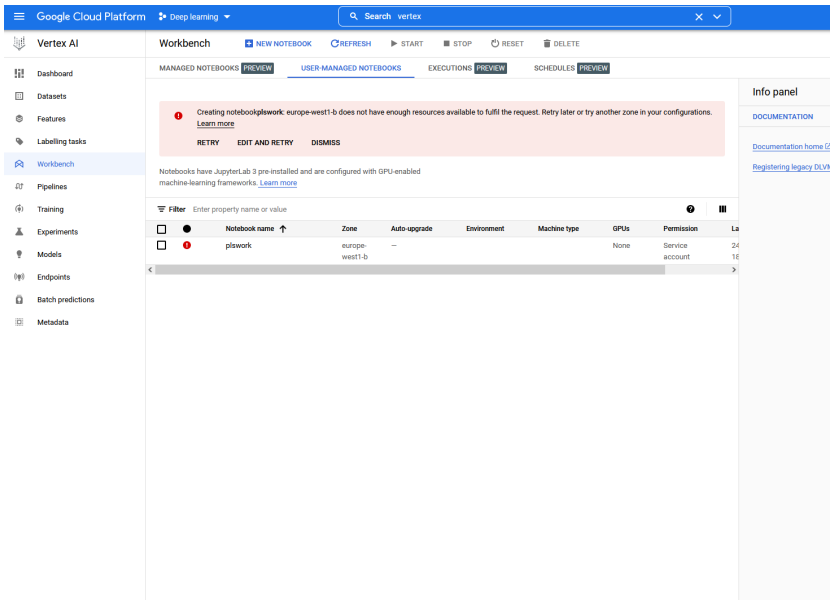


1.2.1 Launching notebooks using Vertex AI

1. Use the upper search bar and search for "Vertex AI".
2. You may be prompted to enable another API, of so, accept.
3. Within Vertex AI, there are vertical tabs to the left, click "Workbench"
4. You can now start to **attempt** to initialize notebooks.
5. Look at the image below for the different settings you may care about:



6. More often than not, you will get the error shown below, and you must attempt again after editing. Note that you often have to revisit the settings you selected when clicking "EDIT AND RETRY". GPU is usually removed for instance. I have had some success by switching the region and zone. For instance, try the different zones available in Europe-west(Belgia).



7. If you get it to work, you will finally have a notebook environment in which you can upload files and use GPU. I advise you to stop the notebook from the Vertex AI workbench menu between developing sessions. Happy coding!

8. **NB: Remember to keep your changes safe:** Make sure your code is backed up (ideally through version control like git) in case you should be very unlucky and delete your managed notebook by mistake etc.

1.3 Google Colab VM?

As alluded to in the steps for enabling APIs and increasing GPU quota, there is an option for launching Google Colab VMs. This should in theory allow you to use said VM from Google Colab, thus guaranteeing compute. However, I had some problems getting this to work(the automatic hyperlink did not properly set the correct runtime, and manually setting it did not seem to work either). I believe using managed notebooks through Vertex AI to be a simpler option, but feel free to try if you want to.