**NX-414**
A. Marin Vargas

# Google Cloud guide

## What is Google Cloud?

The Google Cloud Platform (GCP) is a tool that facilitates convenient access to Google's cloud-based systems and various computing services. It offers a diverse selection of services applicable to different aspects of cloud computing, such as storage and application development, and can be utilized across various industries.

Google Cloud is a complex system comprised of both physical assets, such as computers and hard disk drives, and virtual resources like virtual machines (VMs). These assets are contained within Google's data centers located around the world. Each data center is situated in a specific region, with regions being available in Asia, Australia, Europe, North America, and South America. Within each region, there are several isolated zones, identified by a name that combines a letter identifier with the region's name. For example, the East Asia region has a zone named asia-east1-a. The strategic distribution of these resources offers numerous benefits, such as redundancy in case of system failure and reduced latency by placing resources closer to clients.

## Redeem your Google Cloud credits

You should have received a confirmation email with a voucher that can be used to redeem Google Cloud credit. In order to redeem the code, you should use your Google account (not the one with epfl domain).

- Go to the Google cloud console Google cloud console and create a new project with an optional name.
- Redeem your credits at this link using the voucher you received. Connect it to the project you created before.

Remember that you only have 50 $ of credits available and you won't receive additional credits in the case you finish them. Therefore, be careful at interrupting the session when you finish to work on it.

## Create a notebook in the GCP

Go to the Google cloud console Google cloud console. In the search bar, look for "Vertex AI" and enter it. Abilitate the AI vertex API and the suggested APIs. Now, you can go into the "workbench" section in the AI vertex (Fig. 1 A), go to user-managed notebooks and create a new notebook (Fig. 1 B). If you have any problem, check the FAQ section at the end.

**IMPORTANT**:

- REMEMBER TO INTERRUPT THE SESSION AT THE END!
  Make sure your notebook is interrupted otherwise your credits will decrease fast.
- SAVE YOUR NOTEBOOK LOCALLY OR IN A GITHUB REPOSITORY!
  It might happen that you might lose access to the notebook due to the unavailability of resources in the region.

Before creating the notebook, select "advanced option" where you need to select the following options:

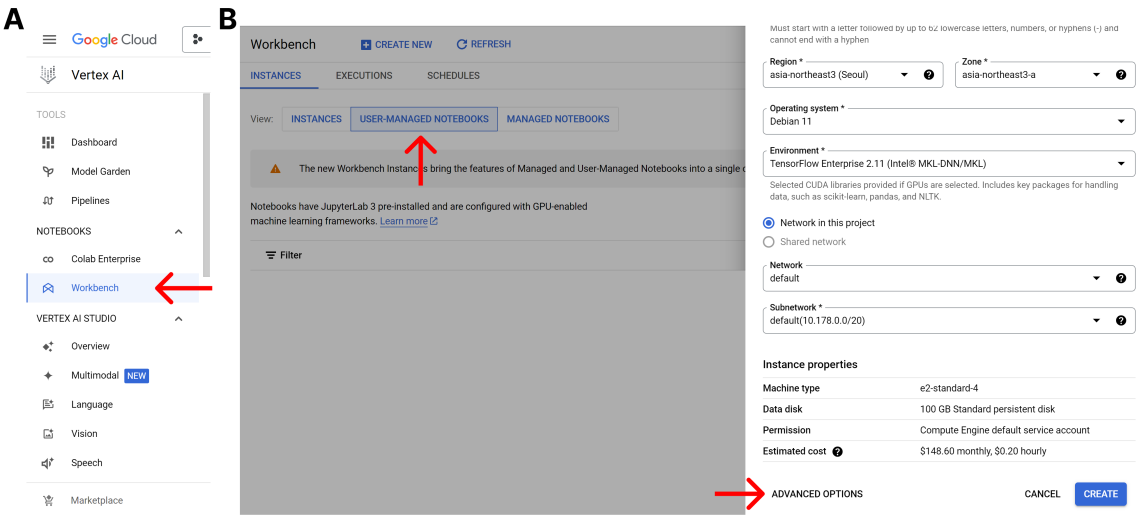


Figure 1: **A** Go to workbench section from the AI vertex. **B** Go to user-managed notebooks, create a new notebook and go to advanced options

- **Details**: name, region and zone. Careful that not all the regions have a GPU and workstation might already be busy sometimes. Therefore, you can try out different options. You can check all the regions at this link.
- **Environment**: Software (Debian 11) and environment (PyTorch 2.2 (with Intel® MKL-DNN/MKL)).
- **Machine type**: Machine type (n1-highmem-8 (8 vCPUs, 52 GB RAM)), GPU (NVidia T4). Here, check the ”Idle shutdown” box and select the number of minutes after which the machine will be stopped due to inactivity.

It should take some minutes before the node is created, if it is successful you should be able to open the jupyter lab and start to work on your project!
Otherwise, select another region and a different zone with the same options as before and retry. Again, remember to interrupt the session every time you want to stop working on it. Wait few minutes and make sure the session is interrupted.

## FAQ

- What should I do if I receive the error: ”Quota ’GPUS_ALL_REGIONS’ exceeded.”? Check the figure in the next page and follow the instructions below:
  - In the search bar, write ”IAM & Admin”, go to ”Quotas & System limits”. (Fig. 2 A)
  - In filter type, select ”metric” to be ”gpus_all_regions)” (if needed, set also the Location as ”Global”). (Fig. 2 B)
  - Click edit quotas and put the new quota limit to 1. In the description write ”Requesting notebook for Google Cloud Education credits”
  - You should receive a confirmation email in few minutes

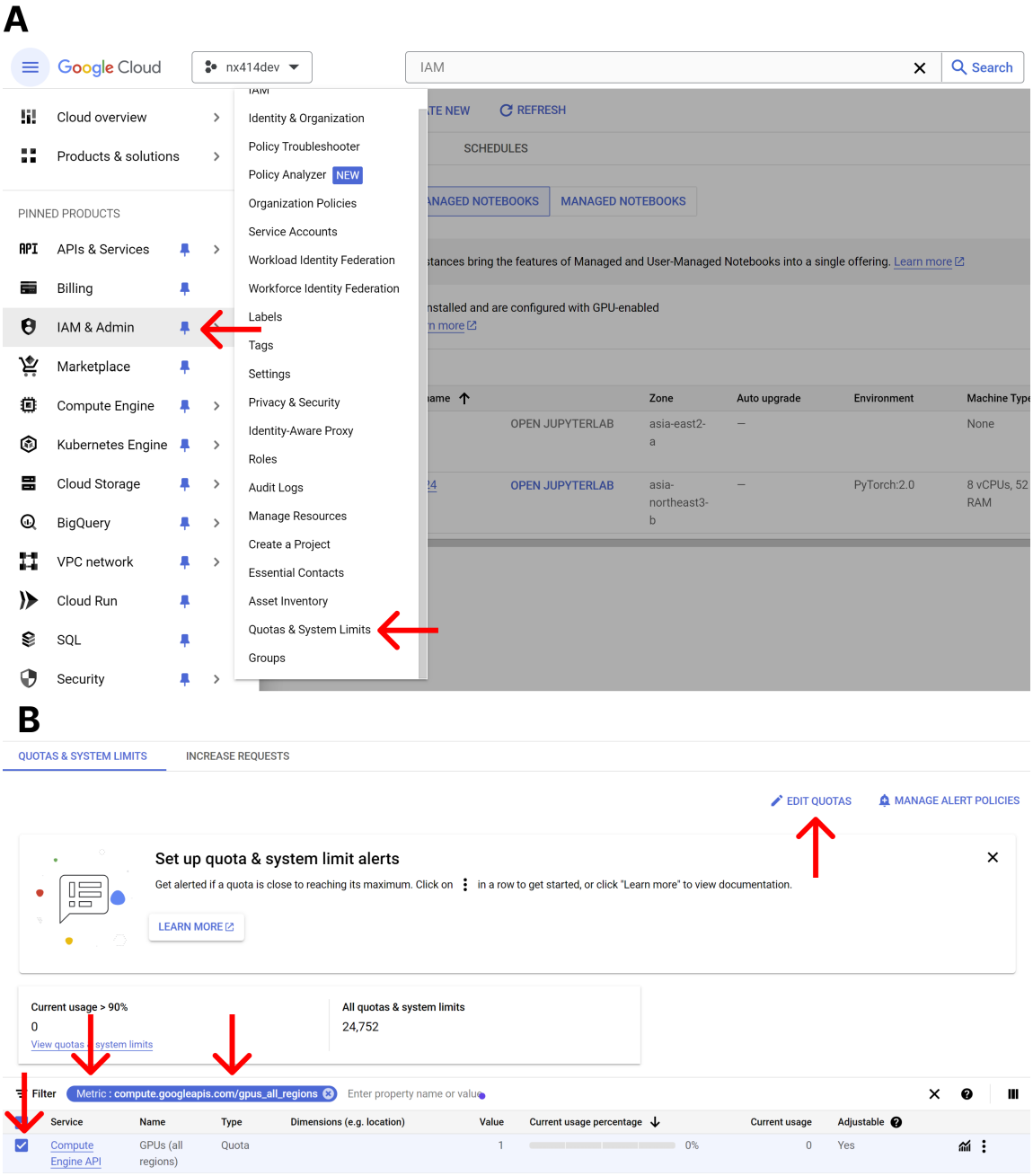


Figure 2: **A** Go to ”IAM & Admin” and ”Quotas & System limits”. **B** In filter type, select ”metric” to be ”gpus_all_regions)” and click edit quotas