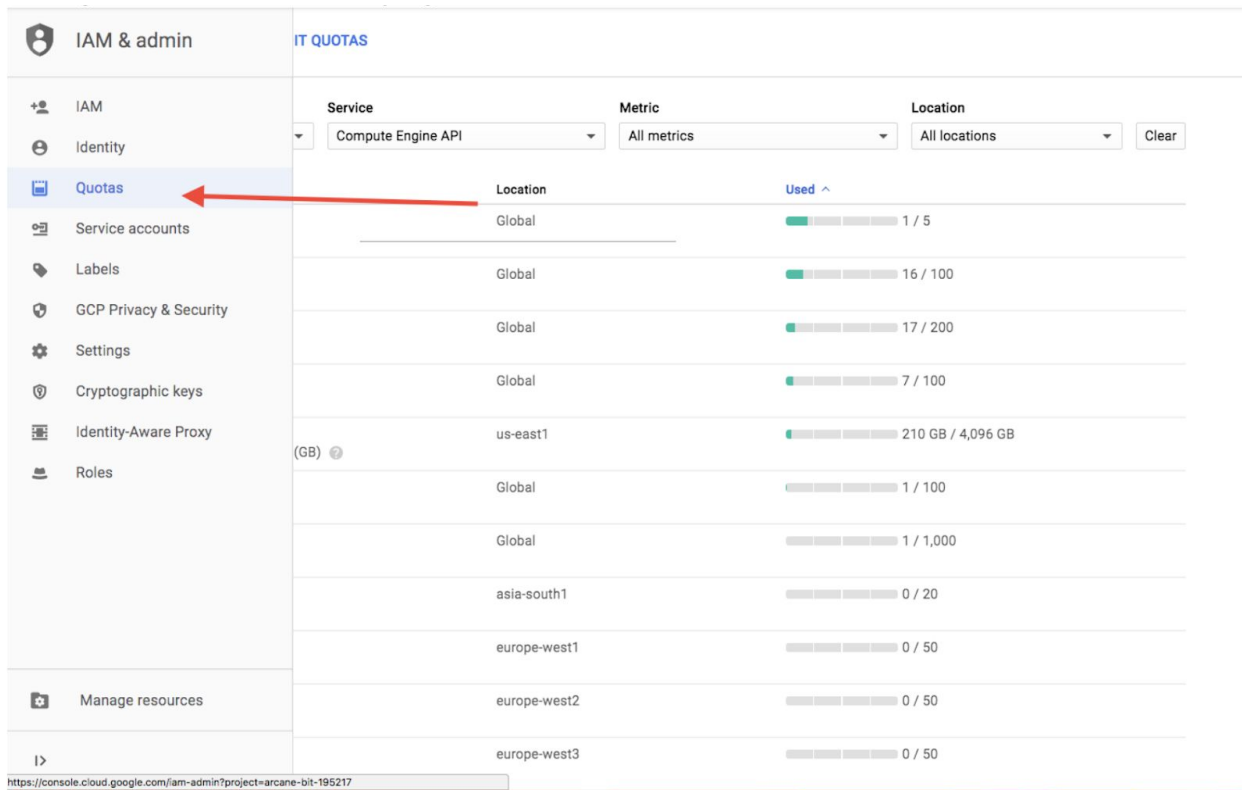


Requesting GPU Resources on Google Cloud Platform

1. Navigate to the **Quotas** page under **IAM & Admin** section.

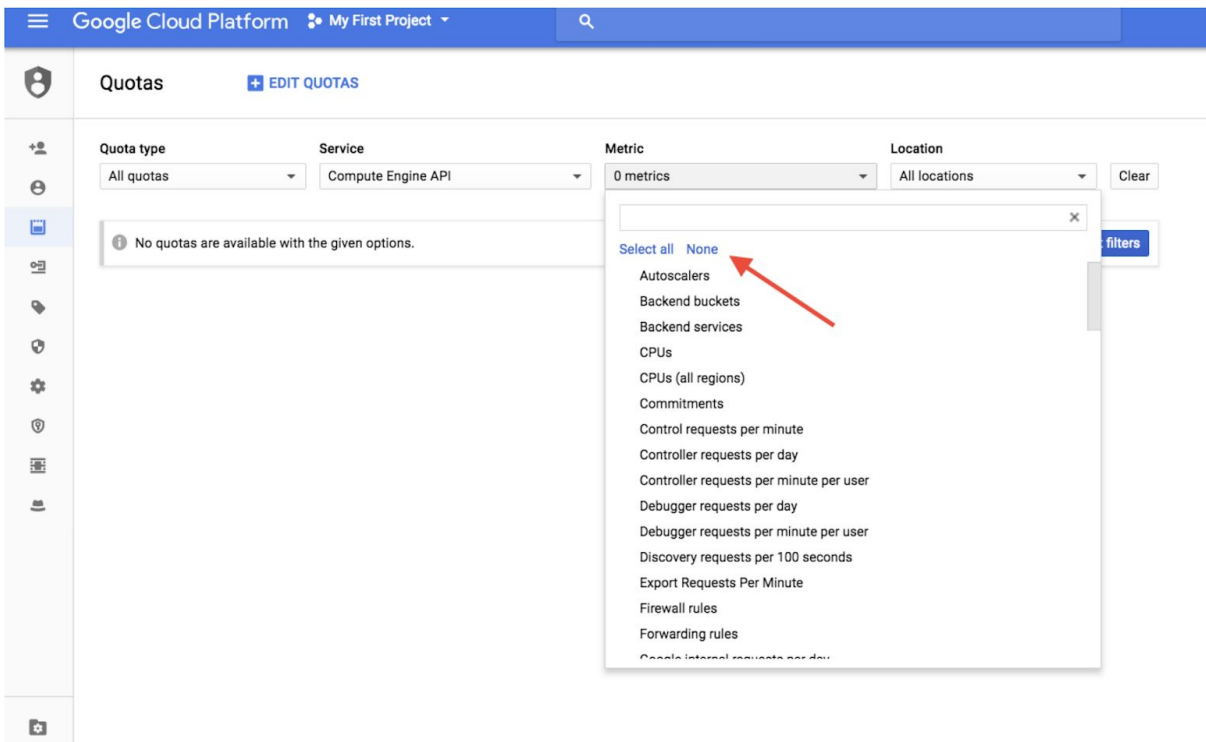


The screenshot shows the Google Cloud Platform IAM & Admin Quotas page. The left sidebar lists the 'IAM & admin' section with 'Quotas' highlighted. A red arrow points from the 'Quotas' link to the table. The table displays quotas for 'Compute Engine API' across various locations. The 'Used' column shows progress bars and usage limits.

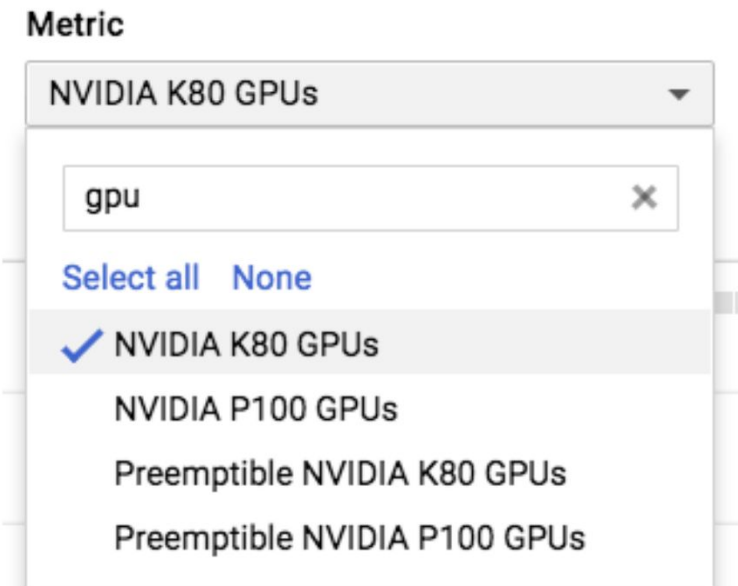
Service	Metric	Location	Used
Compute Engine API	All metrics	Global	1 / 5
		Global	16 / 100
		Global	17 / 200
		Global	7 / 100
		us-east1	210 GB / 4,096 GB
		Global	1 / 100
		Global	1 / 1,000
		asia-south1	0 / 20
		europa-west1	0 / 50
		europa-west2	0 / 50

The URL at the bottom is <https://console.cloud.google.com/iam-admin?project=arcane-bit-195217>.

2. Under the **Metric** window, select None.



3. Type 'gpu' into the search box and select **NVIDIA K80 GPUs** with location **us-east-1**.



4. Select **Edit Quotas**

Quotas [+ EDIT QUOTAS](#)

Quota type: All quotas Service: Compute Engine API Metric: NVIDIA K80 GPUs Location: All locations Clear

Service	Location	Used
<input checked="" type="checkbox"/> Compute Engine API NVIDIA K80 GPUs	us-east1	0 / 1

5. Fill in your name, email and phone number, then fill in the following form:

Compute Engine API

Quota: NVIDIA K80 GPUs - us-east1

New quota limit

Enter a new quota limit. Your request will be sent to your service producer for approval.

?

1

Request description

Required

?

Harvard BMI Course

Done

Cancel

Submit request

Back

6. Wait ~5-10 minutes for approval.
7. When creating a VM, ensure the Zone is set to **us-east1-c** and that a **GPU** is selected. Only certain zones can run a GPU.

Zone ?

us-east1-c ▼

Machine type

Customize to select cores, memory and GPUs.

Cores

4 vCPU 1 - 96

Memory

16 GB 3.6 - 26

☐ Extend memory ?

CPU platform ?

Automatic ▼

GPUs

The number of GPU dies is linked to the number of CPU cores and memory selected for this instance. For this machine type, you can select no fewer than 1 GPU die.
[Learn more](#)

Number of GPUs

1 ▼

GPU type

NVIDIA Tesla K80 ▼

Machines with GPUs can't migrate on host maintenance

[^ Less](#)

[Choosing a machine type](#)

8. Under **Boot Options**, select the following options:

Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk

OS images

Application images

Custom images

Snapshots

Existing disks

- ☐ **Debian GNU/Linux 8 (jessie)**
amd64 built on 20180401
- ☐ **Debian GNU/Linux 9 (stretch)**
amd64 built on 20180401
- ☐ **CentOS 6**
x86_64 built on 20180401
- ☐ **CentOS 7**
x86_64 built on 20180401
- ☐ **CoreOS alpha 1745.0.0**
amd64-usr published on 2018-04-12
- ☐ **CoreOS beta 1722.2.0**
amd64-usr published on 2018-03-30
- ☐ **CoreOS stable 1688.5.3**
amd64-usr published on 2018-04-03
- ☐ **Ubuntu 14.04 LTS**
amd64 trusty image built on 2018-04-04
- ☒ **Ubuntu 16.04 LTS**
amd64 xenial image built on 2018-04-18
- ☐ **Ubuntu 17.10**
amd64 artful image built on 2018-04-05
- ☐ **Container-Optimized OS 66-10452.68.0 beta**
Kernel: ChromiumOS-4.14.22 Kubernetes: 1.9.3 Docker: 17.03.2
- ☐ **Container-Optimized OS 67-10575.8.0 dev**
Kernel: ChromiumOS-4.14.33 Kubernetes: 1.10.0 Docker: 17.03.2
- ☐ **Container-Optimized OS 65-10323.75.0 stable**
Kernel: ChromiumOS-4.4.111 Kubernetes: 1.8.7 Docker: 17.03.2

Can't find what you're looking for? Explore hundreds of VM solutions in [Cloud Launcher](#)

Boot disk type ?

Size (GB) ?

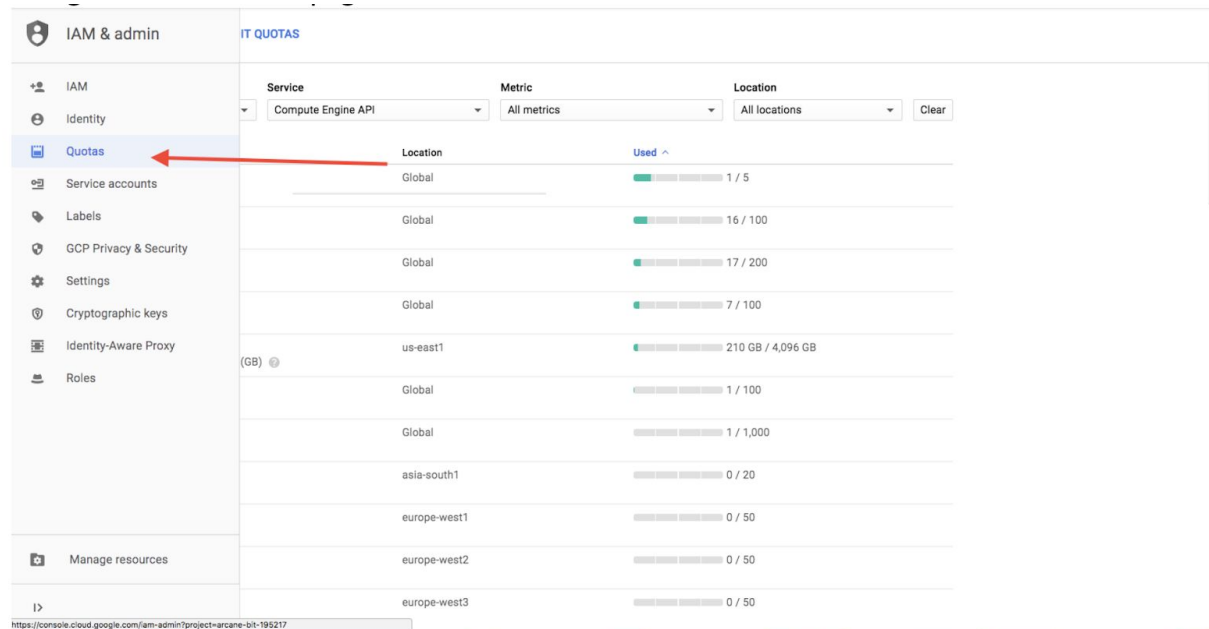
Standard persistent disk

100

Select

Cancel

9. Select **Allow HTTP** and **Allow HTTPS Traffic**.



The screenshot shows the Google Cloud IAM & admin console. The left sidebar has a menu with 'IAM & admin' at the top, followed by 'IAM', 'Identity', 'Quotas' (highlighted with a red arrow), 'Service accounts', 'Labels', 'GCP Privacy & Security', 'Settings', 'Cryptographic keys', 'Identity-Aware Proxy', and 'Roles'. Below this is a 'Manage resources' section. The main panel is titled 'IT QUOTAS' and shows a table of quotas for the 'Compute Engine API' service. The table has columns for 'Service', 'Metric', 'Location', and 'Used'. The 'Used' column shows progress bars and usage values.

Service	Metric	Location	Used
Compute Engine API	All metrics	Global	1 / 5
		Global	16 / 100
		Global	17 / 200
		Global	7 / 100
		us-east1	210 GB / 4,096 GB
		Global	1 / 100
		Global	1 / 1,000
		asia-south1	0 / 20
		europa-west1	0 / 50
		europa-west2	0 / 50

10. Create and launch your instance.

11. Run the following script, waiting for it to complete before proceeding.

```
curl -O http://developer.download.nvidia.com/compute/cuda/repos/ubuntu1604/x86\_64/cuda-repo-ubuntu1604\_8.0.61-1\_amd64.deb
```

```
sudo dpkg -i ./cuda-repo-ubuntu1604_8.0.61-1_amd64.deb
sudo apt-get update
sudo apt-get -y install cuda-8-0
```

12. Run the following script:

```
sudo nvidia-smi -pm 1
echo 'export CUDA_HOME=/usr/local/cuda' >> ~/.bashrc
echo 'export PATH=$PATH:$CUDA_HOME/bin' >> ~/.bashrc
echo 'export LD_LIBRARY_PATH=$CUDA_HOME/lib64' >> ~/.bashrc
source ~/.bashrc
```

```
wget https://www.dropbox.com/s/44q4pacpv1otp7c/cudnn-8.0-linux-x64-v5.1.tgz
tar xzvf cudnn-8.0-linux-x64-v5.1.tgz
sudo cp cuda/lib64/* /usr/local/cuda/lib64/
sudo cp cuda/include/cudnn.h /usr/local/cuda/include/
sudo apt-get install python-dev python-pip libcupti-dev
```

```
curl https://bootstrap.pypa.io/get-pip.py
```

```
sudo pip install --upgrade https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.2.0-cp27-none-linux_x86_64.whl
```

```
sudo pip3 install tensorflow
```

```
sudo pip3 install keras
```

```
sudo jupyter notebook --ip 0.0.0.0 --port 8888 --allow-root
```

13. Proceed like in the other GCP tutorial.