

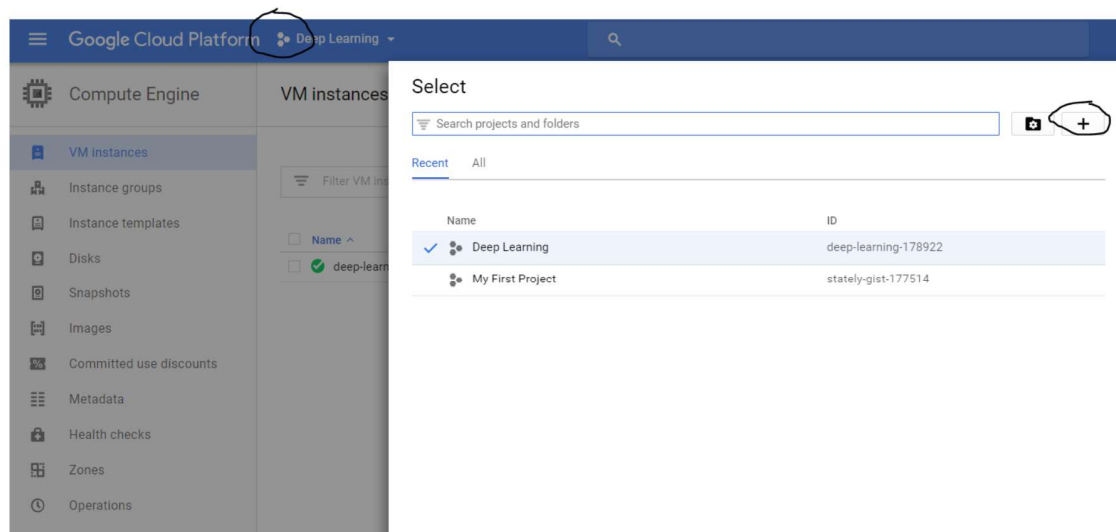
Running Jupyter Notebook on Google Cloud Platform

Step 1: Create a free account in Google Cloud

For this step, you will have to put your payment information and verify your account. You will get a free \$300 credit in your account.

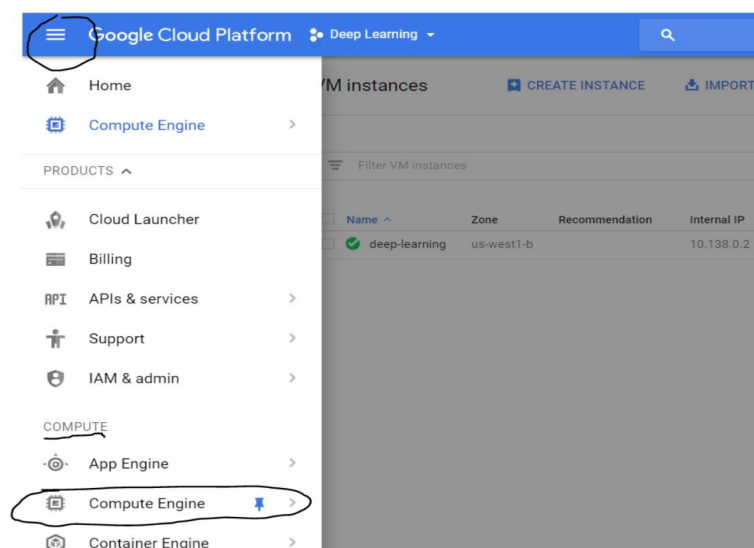
Step 2: Create a new project

Click on the three dots shown in the image below and then click on the + sign to create a new project.



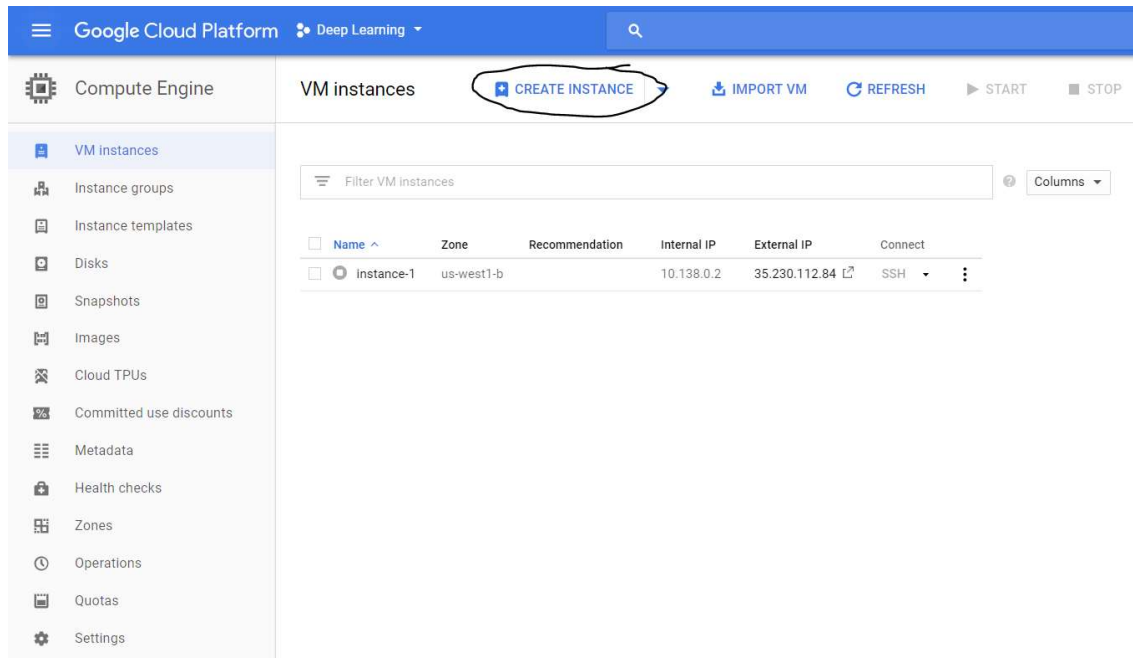
Step 3: Create a VM instance

Click on the three lines on the upper left corner, then on the compute option, click on 'Compute Engine' and then click on 'VM instances'.

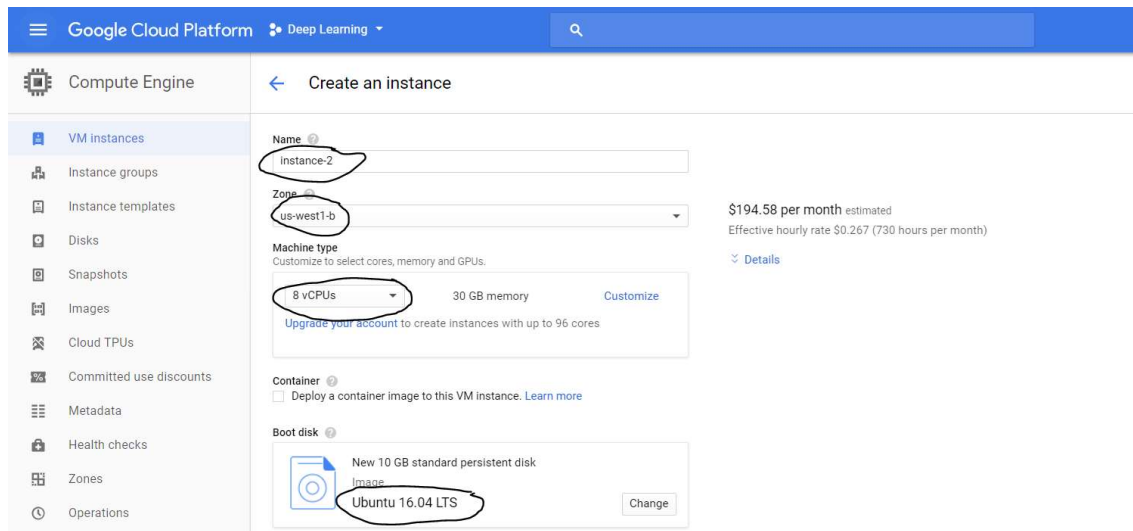


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Click on 'Create new instance'.

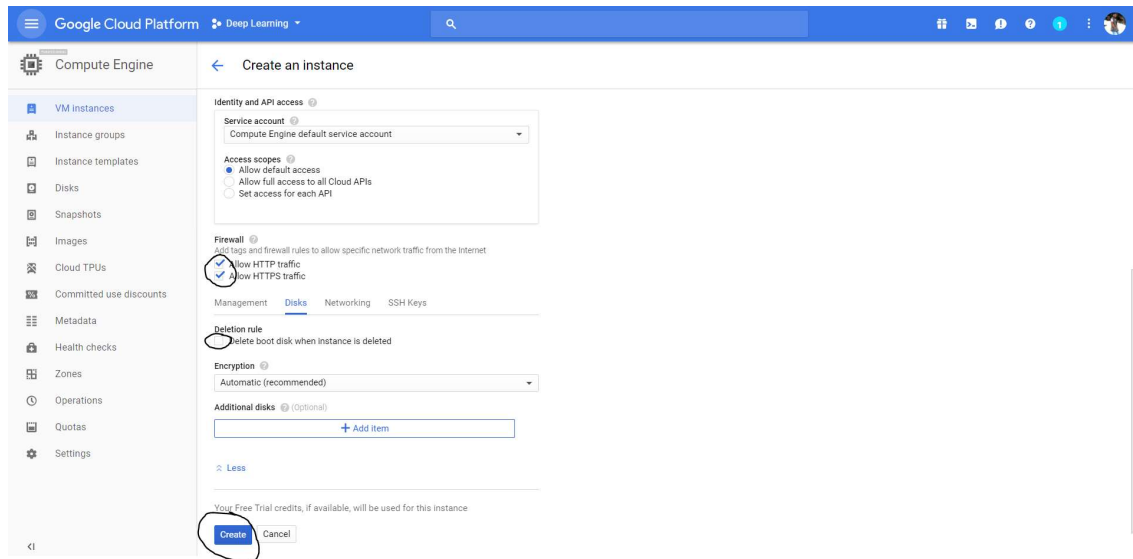


Name your instance (I named it as instance-2), select any zone (I selected as 'us-west1-b'). Choose your machine type (I chose 8v CPUs). Select your boot disk as 'Ubuntu 16.04 LTS'.

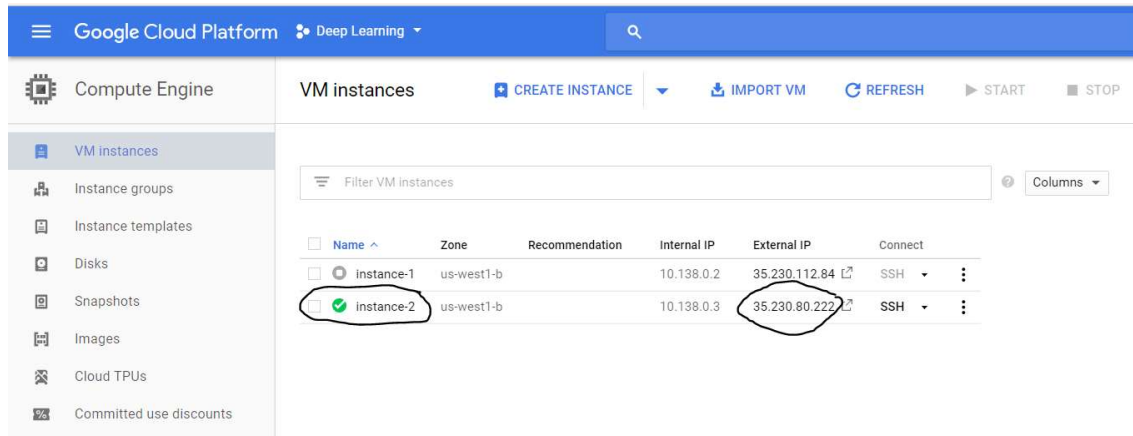


Under the firewall options allow both 'http' and 'https' traffic(very important). Then, choose the disk tab and untick 'Delete boot disk when instance is deleted' and then click on 'create'.

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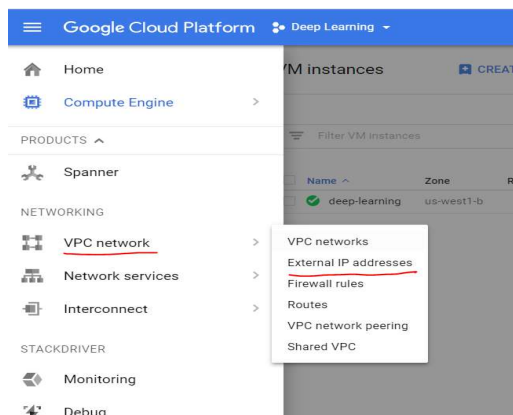


Your new VM instance should look something like this. Note down the External IP



Step 4: Make external IP address as static

By default, the external IP address is dynamic and we need to make it static. Click on the three horizontal lines on top left and then under networking, click on VPC network and then External IP addresses.



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Change the type from Ephemeral to Static.

35.230.80.222	us-west1	Ephemeral	IPv4	VM instance <u>instance-2</u> (Zone b)
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Step 5: Change the Firewall setting

Now, click on the 'Firewall rules' setting under Networking. Click on 'Create Firewall Rules' and refer the below image. Under protocols and ports, you can choose any port. I have chosen tcp:5000. Now click on the save button.

Firewall rule details

Description

Network: default

Priority: 1000

Direction: Ingress

Action on match: Allow

Targets: All instances in the network

Source filter: IP ranges

Source IP ranges: 0.0.0.0/0

Second source filter: None

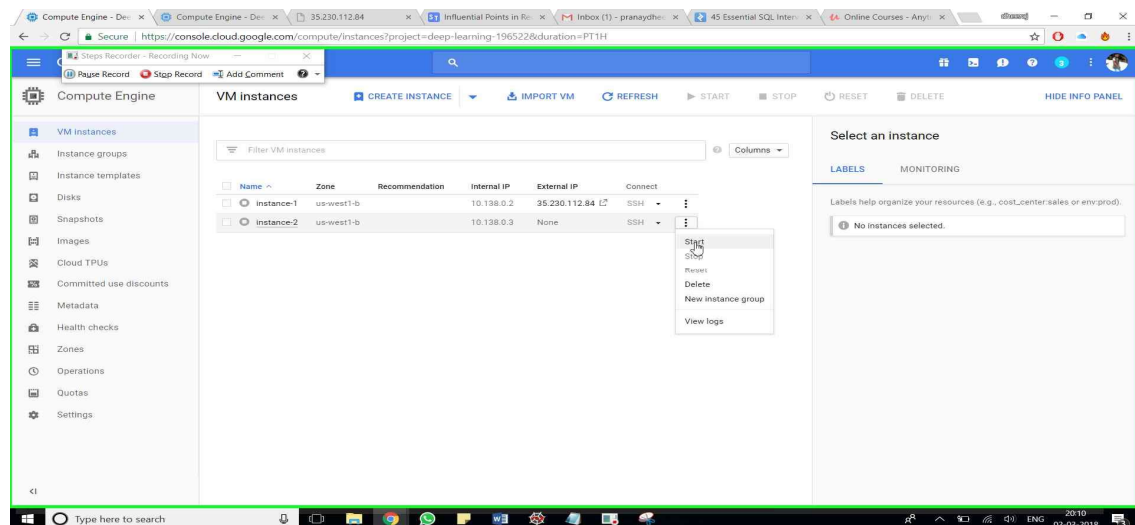
Protocols and ports: Allow all, Specified protocols and ports (selected)

tcp:5000

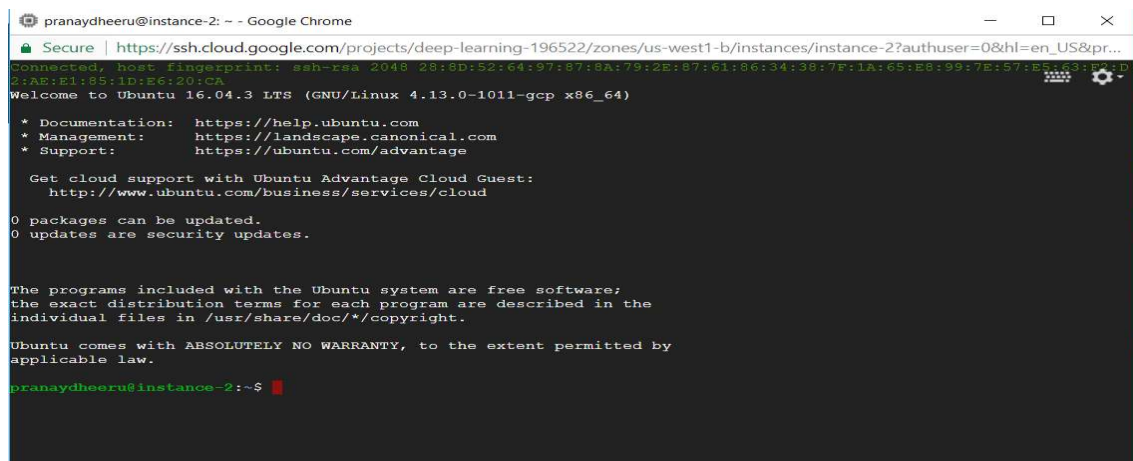
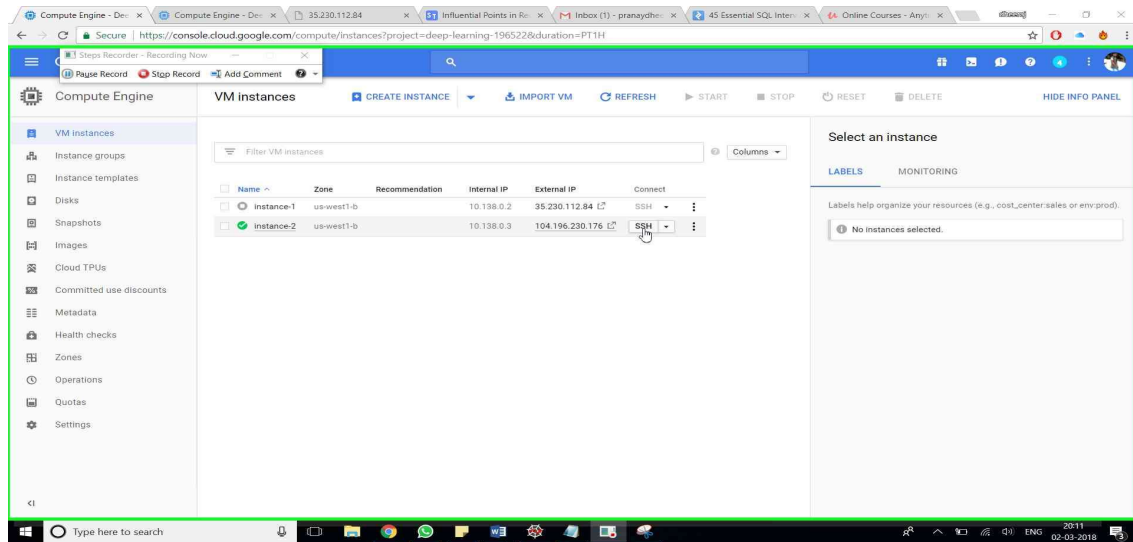
Save Cancel

Step 6: Start your VM instance

Now start your VM instance. When you see the green tick click on SSH. This will open a command window and now you are inside the VM.



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Step 7: Install Jupyter notebook

In your SSH terminal, give the following two commands separately:

```
wget http://repo.continuum.io/archive/Anaconda3-4.0.0-Linux-x86_64.sh
```

```
bash Anaconda3-4.0.0-Linux-x86_64.sh
```

and follow the on-screen instructions. The defaults usually work fine, but answer yes to the last question about prepending the install location to PATH:

Do you wish the installer to prepend the Anaconda3 install location to PATH in your /home/haroldsoh/.bashrc ?

```
[yes|no][no] >>> yes
```

To make use of Anaconda right away, source your bashrc by giving the following command:

```
source ~/.bashrc
```

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Step 8: Set up the VM server

Check if you have a Jupyter configuration file:

```
ls ~/.jupyter/jupyter_notebook_config.py
```

If it doesn't exist, create one using the below command:

```
jupyter notebook --generate-config
```

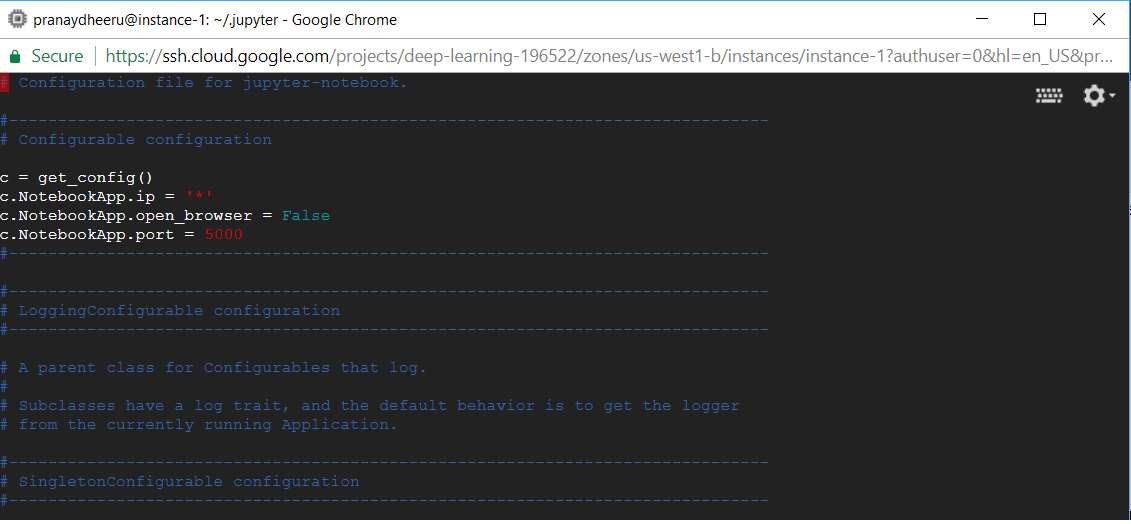
Now give the below command to reach the directory where the configuration file is present:

```
cd ~/.jupyter/
```

Now, we're going to add a few lines to your Jupyter configuration file. For editing the file use the command 'vim jupyter_notebook_config.py'. Press 'I' to change the mode to insert mode. Make sure you replace the port number (I replaced it to 5000) with the one you allowed firewall access to in step 5.

```
c = get_config()
c.NotebookApp.ip = '*'
c.NotebookApp.open_browser = False
c.NotebookApp.port = 5000
```

After giving the above code press esc and then type ':wq' and then press enter to write the changes to the file and quit from it.



The screenshot shows a terminal window titled 'pranaydheeru@instance-1: ~/.jupyter - Google Chrome'. The terminal displays the configuration file for Jupyter Notebook, with the following content:

```
Configuration file for jupyter-notebook.
#-----
# Configurable configuration
#-----
c = get_config()
c.NotebookApp.ip = '*'
c.NotebookApp.open_browser = False
c.NotebookApp.port = 5000
#-----
# LoggingConfigurable configuration
#-----
# A parent class for Configurables that log.
# Subclasses have a log trait, and the default behavior is to get the logger
# from the currently running Application.
#-----
# SingletonConfigurable configuration
#-----
```

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Step 9: Launching Jupyter Notebook

To run the jupyter notebook, just type the following command in the SSH window you are in:

```
jupyter-notebook --no-browser --port=5000
```

Once you run the command, it should show something like this:

```
manasi@manasi-learnin:~$ jupyter-notebook --no-browser --port=5000
[I 15:30:02.692 NotebookApp] Writing notebook server cookie secret to /run/user/1002/jupyter/notebook_cookie_secret
[W 15:30:02.761 NotebookApp] WARNING: The notebook server is listening on all IP addresses and not using encryption. This is not recommended.
[W 15:30:02.761 NotebookApp] WARNING: The notebook server is listening on all IP addresses and not using authentication. This is highly insecure and not recommended.
[I 15:30:02.789 NotebookApp] Serving notebooks from local directory: /home/bhutada_manasi
[I 15:30:02.789 NotebookApp] 0 active kernels
[I 15:30:02.789 NotebookApp] The Jupyter Notebook is running at: http://[all ip addresses on your system]:5000/
[I 15:30:02.789 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
```

Now to launch your jupyter notebook, just type the following in your browser:

<http://<External Static IP Address>:<Port Number>>

where, external ip address is the ip address which we made static and port number is the one which we allowed firewall access to which is 5000.



IMPORTANT: DON'T FORGET TO STOP YOUR GPU INSTANCE AFTER YOU ARE DONE BY CLICKING ON THE THREE DOTS ON THE IMAGE ABOVE AND SELECTING STOP. OTHERWISE GCP WILL KEEP CHARGING YOU ON AN HOURLY BASIS.