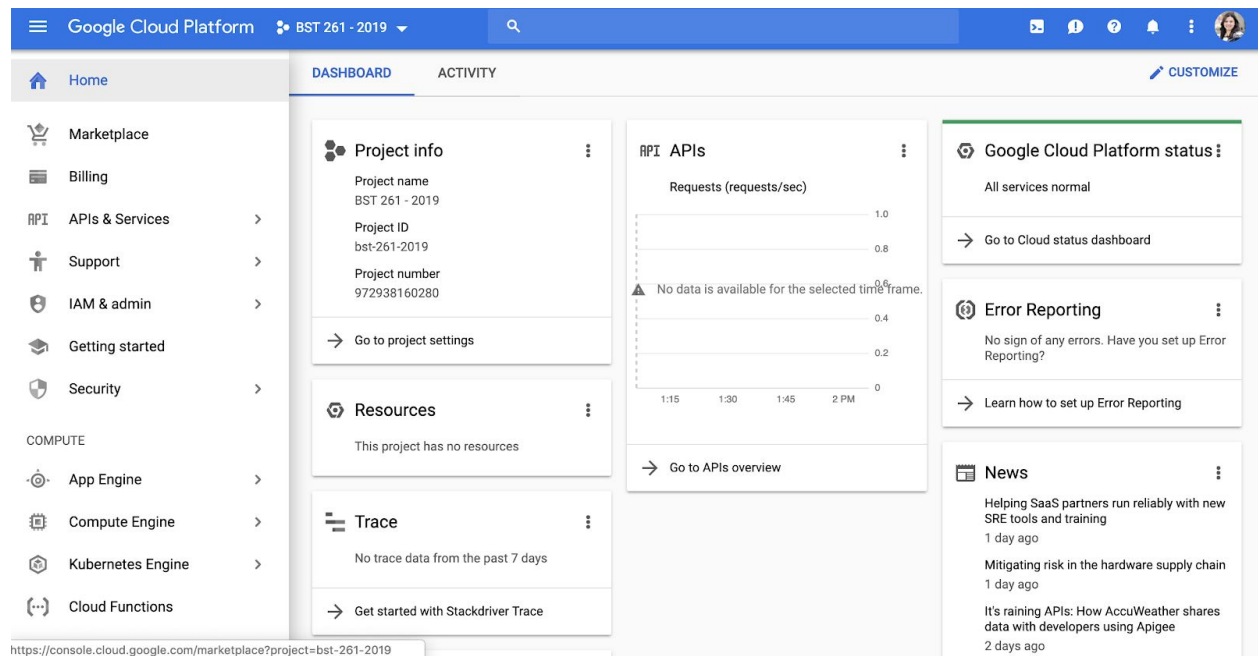
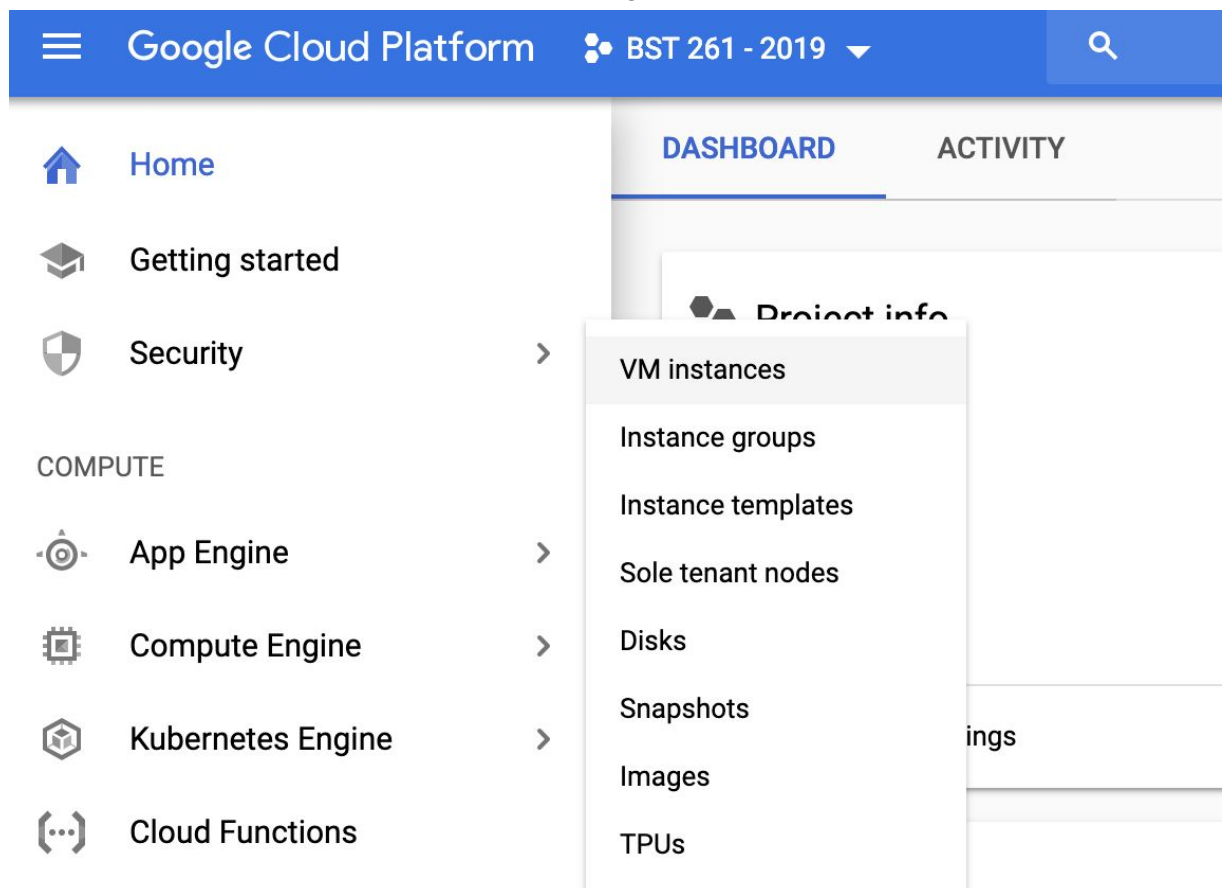


1. Go to console.cloud.google.com.



2. On the left side menu, mouse over Compute Engine, and select VM instances.



3. Select Create Instance.

Google Cloud Platform

BST 261 - 2019

Compute Engine

VM instances

VM instances

Instance groups

Instance templates

Sole tenant nodes

Disks

Snapshots

Images

TPUs

Committed use discounts

Compute Engine

VM instances

Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian, Windows, or other standard images. Create your first VM instance, import it using a migration service, or try the quickstart to build a sample app.

Create or Import or Take the quickstart


4. Complete the form according to the following configuration. Substitute an instance name of your choice. Select Create.

Name ?
instance-name-here

Zone ?
us-east1-b

Machine type
Customize to select cores, memory and GPUs.
1 vCPU 3.75 GB memory [Customize](#)

Container ?
☐ Deploy a container image to this VM instance. [Learn more](#)

Boot disk ?
 New 50 GB standard persistent disk
Image
Ubuntu 16.04 LTS [Change](#)

Identity and API access ?
Service account ?
Compute Engine default service account
Access scopes ?
☒ Allow default access
☐ Allow full access to all Cloud APIs
☐ Set access for each API

Firewall ?
Add tags and firewall rules to allow specific network traffic from the Internet
☒ Allow HTTP traffic
☒ Allow HTTPS traffic

Management, disks, networking, SSH keys

5. Boot Disk: click on the Change button. Select Ubuntu 16.04 LTS and type in 50 GB at the bottom.

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 v20180206
- ☐ Debian GNU/Linux 9 (stretch)
amd64 built on v20180206
- ☐ CentOS 6
x86_64 built on v20180205
- ☐ CentOS 7
x86_64 built on v20180129
- ☐ CoreOS alpha 1675.0.1
amd64-usr published on 2018-02-02
- ☐ CoreOS beta 1662.1.0
amd64-usr published on 2018-02-02
- ☐ CoreOS stable 1632.2.1
amd64-usr published on 2018-02-02
- ☐ Ubuntu 14.04 LTS
amd64 trusty image built on 2018-01-22
- ☒ **Ubuntu 16.04 LTS**
amd64 xenial image built on 2018-01-26
- ☐ Ubuntu 17.10
amd64 artful image built on 2018-01-26
- ☐ Container-Optimized OS 65-10323.23.0 beta
Kernel: ChromiumOS-4.4.111 Kubernetes: 1.8.7 Docker: 17.03.2
- ☐ Container-Optimized OS 66-10385.0.0 dev
Kernel: ChromiumOS-4.4.114 Kubernetes: 1.8.7 Docker: 17.03.2
- ☐ Container-Optimized OS 64-10176.62.0 stable
Kernel: ChromiumOS-4.4.96 Kubernetes: 1.8.7 Docker: 17.03.2
- ☐ Red Hat Enterprise Linux 6
x86_64 built on v20180205
- ☐ Red Hat Enterprise Linux 7
x86_64 built on v20180129
- ☐ SUSE Linux Enterprise Server 11 SP4
x86_64 built on 2018-01-04
- ☐ SUSE Linux Enterprise Server 12 SP3
x86_64 built on 2018-02-14
- ☐ SUSE Linux Enterprise Server 12 SP3 For SAP HANA
x86_64 built on 2018-02-14

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

Boot disk type ?

Standard persistent disk

Size (GB) ?

50

6. You will return to the VM instance list, and an icon will be on the left of the instance name that you created. Wait for a green checkmark to appear. Click on your instance.

VM instances

★ CREATE INSTANCE

📁 IMPORT VM

↻ REFRESH

▶ START

■ STOP

⏮ RESET

Filter VM instances

Columns

<input type="checkbox"/>	Name	Zone	Recommendation	Internal IP	External IP	Connect
<input checked="" type="checkbox"/>	instance-name-here	us-east1-b		10.142.0.4	35.227.71.189 ↗	SSH ▾ ⋮
<input type="checkbox"/>	template-instance	us-east1-c		10.142.0.2	None	SSH ▾ ⋮
<input type="checkbox"/>	ubuntu1604	us-east1-b		10.142.0.3	None	SSH ▾ ⋮

7. In the VM instance detail, scroll to the Network interfaces entry, and select default, under the Network column.

←

VM instance details

EDIT

RESET

CREATE SIMILAR

START

DELETE

Details

Monitoring

○

instance-1

Remote access

SSH

Connect to serial console

☐ Enable connecting to serial ports

?

Logs

Stackdriver Logging

Serial port 1 (console)

⌵

More

Instance Id

2163231405471864617

Machine type

n1-standard-16 (16 vCPUs, 60 GB memory)

CPU platform

Unknown CPU Platform

Display device

Turn on a display device if you want to use screen capturing and recording tools.

☐ Turn on display device

Zone

us-east1-b

Labels

None

Creation time

Apr 14, 2019, 8:38:31 AM

Network interfaces

Name	Network	Subnetwork	Primary internal IP	Alias IP ranges	External IP	Network Tier	IP forwarding	Network details
nic0	default	default	10.142.0.3	—	Ephemeral	Premium	Off	View details

8. In the VPC network details screen, first select the Firewall Rules tab, and then select the Add firewall rule tab.

[←](#) VPC network details [EDIT](#) [DELETE VPC NETWORK](#)

default

Description
Default network for the project

Subnet creation mode
Auto subnets

Dynamic routing mode
Regional

Subnets Static internal IP addresses **Firewall rules** Routes VPC Network Peering

2 Add firewall rule Delete

<input type="checkbox"/>	Name	Type	Targets	Filters	Protocols / ports	Action	Priority
<input type="checkbox"/>	default-allow-http	Ingress	http-server	IP ranges: 0.0.0.0/0	tcp:80	Allow	1000
<input type="checkbox"/>	default-allow-https	Ingress	https-server	IP ranges: 0.0.0.0/0	tcp:443	Allow	1000
<input type="checkbox"/>	jupyter	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:8888, udp:8888	Allow	1000
<input type="checkbox"/>	default-allow-icmp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	icmp	Allow	65534
<input type="checkbox"/>	default-allow-internal	Ingress	Apply to all	IP ranges: 10.128.0.0/9	tcp:0-65535, udp:0-65535, 1 more ▼	Allow	65534
<input type="checkbox"/>	default-allow-rdp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:3389	Allow	65534
<input type="checkbox"/>	default-allow-ssh	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:22	Allow	65534

9. Complete the form with the following configuration.

jupyter

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

tcp:8888; udp:8888

Save

Cancel

10. Return to your VM instances, either by selecting the blue arrow next to VPC network details twice, or by going to console.cloud.google.com/compute/instances. Select the arrow next to SSH in the row of your instance, and select Open in browser window.

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/> instance-name-here	us-east1-b		10.142.0.4	35.227.71.189	SSH
<input type="checkbox"/> template-instance	us-east1-c		10.142.0.2	None	SSH
<input type="checkbox"/> ubuntu1604	us-east1-b		10.142.0.3	None	SSH

Open in browser window

Open in browser window on custom port

View gcloud command

Use another SSH client

11. Enter the following commands **one at a time**. Press Y and enter when prompted.

```

sudo apt-get update
sudo apt-get install python-pip
sudo pip install tensorflow
sudo apt-get install ipython
sudo apt-get install python3-pip
pip3 install --upgrade setuptools
pip3 install keras
sudo pip3 install jupyter
sudo jupyter notebook --ip 0.0.0.0 --port 8888 --allow-root

```

12. Construct the url for your notebook by combining the following two pieces: the external IP of your instance, and the sequence following 0.0.0.0 that results from the console.

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/> instance-name-here	us-east1-b		10.142.0.4	<u>35.227.71.189</u>	SSH
<input type="checkbox"/> template-instance	us-east1-c		10.142.0.2	None	SSH
<input type="checkbox"/> ubuntu1604	us-east1-b		10.142.0.3	None	SSH

```

wyuan95@instance-name-here:~/TensorFlow-Examples$ sudo jupyter notebook --ip 0.0.0.0 --port 8888 --allow-root
[I 19:12:58.539 NotebookApp] Writing notebook server cookie secret to /home/wyuan95/.local/share/jupyter/runtime/notebook_cookie_secret
[I 19:12:59.018 NotebookApp] Serving notebooks from local directory: /home/wyuan95/TensorFlow-Examples
[I 19:12:59.019 NotebookApp] 0 active kernels
[I 19:12:59.019 NotebookApp] The Jupyter Notebook is running at:
[I 19:12:59.019 NotebookApp] http://0.0.0.0:8888/?token=8a5c05c195a0d24e273b2f2297ec655fb34cecf2600d1be3
[I 19:12:59.019 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).

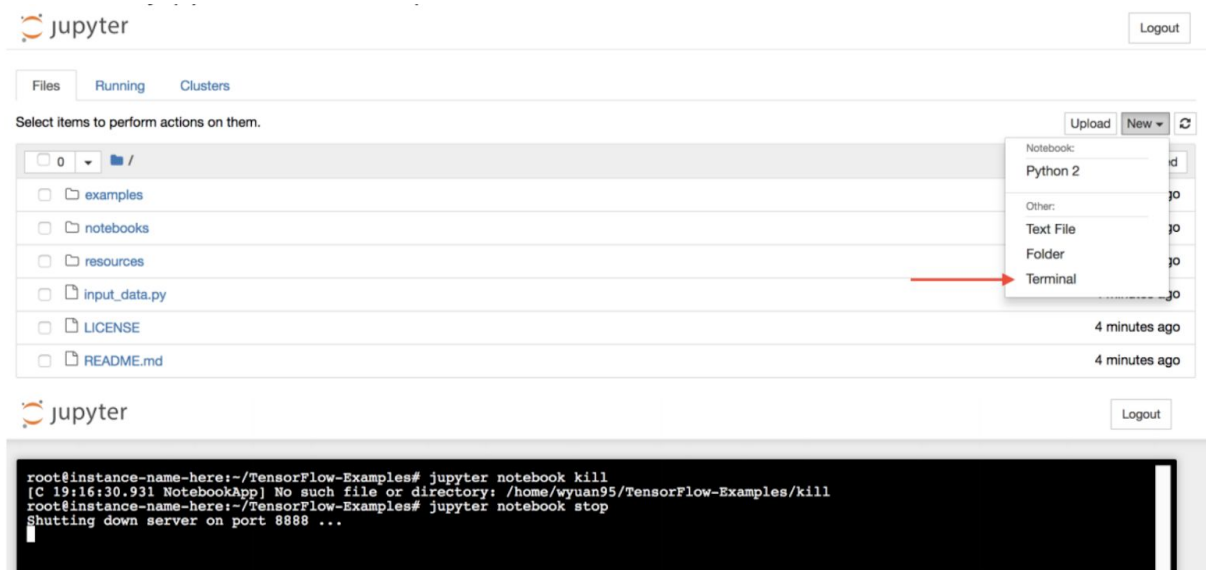
[W 19:12:59.019 NotebookApp] No web browser found: could not locate runnable browser.
[C 19:12:59.020 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://0.0.0.0:8888/?token=8a5c05c195a0d24e273b2f2297ec655fb34cecf2600d1be3

```

The url here would be [https://35.227.71.189:8888/?token=\(letters and numbers\)](https://35.227.71.189:8888/?token=(letters and numbers)). Your should be similar. Enter the url in your browser. Now you can upload data and/or a Jupyter notebook and work.

13. To close the notebook, select the New dropdown menu, and select Terminal. Enter the command: `jupyter notebook stop`



The screenshot shows the JupyterLab interface. At the top, there's a 'jupyter' logo and a 'Logout' button. Below that are tabs for 'Files', 'Running', and 'Clusters'. A message says 'Select items to perform actions on them.' Below this is a file browser showing a directory structure with folders like 'examples', 'notebooks', 'resources' and files like 'input_data.py', 'LICENSE', and 'README.md'. A red arrow points to the 'New' dropdown menu, which is open and shows options: 'Notebook: Python 2', 'Other: Text File', 'Folder', and 'Terminal'. The 'Terminal' option is highlighted.

14. To shut off your instance, return to the VM instances page, select the three dots in the row of your instance, and select Stop. **This is important to avoid be charged for an instance that you are not using.**

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect	
<input type="checkbox"/> instance-name-here	us-east1-b		10.142.0.4	35.227.71.189	SSH ▾	⋮
<input type="checkbox"/> template-instance	us-east1-c		10.142.0.2	None	SSH ▾	Start
<input type="checkbox"/> ubuntu1604	us-east1-b		10.142.0.3	None	SSH ▾	Stop
						Reset
						Delete
						New instance group
						View logs