



Figure 5-10. Delete the VM instance

Working with GCE from the Command Line

In this section, we'll sample the commands for creating and deleting a compute instance on GCP using the command-line interface. To create a compute instance using 'gcloud' from the command-line interface, there are a variety of options that can be added to the commands for different specifications of the machine. To learn more about a command, attach 'help' after the command:

- Provisioning a VM instance: To create a VM instance, use the code syntax

```
gcloud compute instances create [INSTANCE_NAME]
```

For example, let's create an instance named 'ebisong-howad-instance'

```
gcloud compute instances create ebisong-howad-instance
```

Created [<https://www.googleapis.com/compute/v1/projects/secret-country-192905/zones/us-east1-b/instances/ebisong-howad-instance>].

NAME	ZONE	MACHINE_TYPE	PREEMPTIBLE
INTERNAL_IP	EXTERNAL_IP	STATUS	
ebisong-howad-instance	us-east1-b	n1-standard-1	
10.142.0.2	35.196.17.39	RUNNING	

To learn more of the options that can be included with the ‘gcloud instance create’ command, run

```
gcloud compute instances create -help
```

NAME

```
gcloud compute instances create - create Google Compute Engine
virtual
machine instances
```

SYNOPSIS

```
gcloud compute instances create INSTANCE_NAMES [INSTANCE_
NAMES ...]
  [--accelerator=[count=COUNT],[type=TYPE]] [--async]
  [--no-boot-disk-auto-delete]
  [--boot-disk-device-name=BOOT_DISK_DEVICE_NAME]
  [--boot-disk-size=BOOT_DISK_SIZE] [--boot-disk-type=BOOT_
DISK_TYPE]
  [--can-ip-forward] [--create-disk=[PROPERTY=VALUE,...]]
  [--csek-key-file=FILE] [--deletion-protection]
  [--description=DESCRIPTION]
  [--disk=[auto-delete=AUTO-DELETE],
    [boot=BOOT],[device-name=DEVICE-NAME],[mode=MODE],
    [name=NAME]]
  [--labels=[KEY=VALUE,...]]
  [--local-ssd=[device-name=DEVICE-NAME],[interface=INTERFACE]]
  [--machine-type=MACHINE_TYPE] [--maintenance-
policy=MAINTENANCE_POLICY]
  [--metadata=KEY=VALUE,[KEY=VALUE,...]]
  [--metadata-from-file=KEY=LOCAL_FILE_PATH,...]]
```

```
[--min-cpu-platform=PLATFORM] [--network=NETWORK]
[--network-interface=[PROPERTY=VALUE,...]]
[--network-tier=NETWORK_TIER] [--preemptible]
[--private-network-ip=PRIVATE_NETWORK_IP]
```

:

To exit from the help page, type 'q' and then press the 'Enter' key on the keyboard.

To list the created instances, run

```
gcloud compute instances list
```

NAME	ZONE	MACHINE_TYPE	PREEMPTIBLE
INTERNAL_IP	EXTERNAL_IP	STATUS	
ebisong-howad-instance	us-east1-b	n1-standard-1	
10.142.0.2	35.196.17.39	RUNNING	

- Connecting to the instance: To connect to a created VM instance using SSH, run the command

```
gcloud compute ssh [INSTANCE_NAME]
```

For example, to connect to the 'ebisong-howad-instance' VM, run the command

```
gcloud compute ssh ebisong-howad-instance
```

Warning: Permanently added 'compute.8493256679990250176' (ECDSA) to the list of known hosts.

```
Linux ebisong-howad-instance 4.9.0-8-amd64 #1 SMP Debian
4.9.110-3+deb9u4 (2018-08-21) x86_64
```

The programs included with the Debian GNU/Linux system are free software;

the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

```
ekababisong@ebisong-howad-instance:~$
```

- To leave the instance on the terminal, type 'exit' and then press the 'Enter' key on the keyboard.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

```
ekababisong@ebisong-howad-instance:~$ exit
logout
Connection to 35.196.17.39 closed.
```

- Tearing down the instance: To delete an instance, run the command

```
gcloud compute instances delete [INSTANCE_NAME]
```

Using our example, to delete the 'ebisong-howad-instance' VM, run the command

```
gcloud compute instances delete ebisong-howad-instance
```

The following instances will be deleted. Any attached disks configured to be auto-deleted will be deleted unless they are attached to any other instances or the `--keep-disks` flag is given and specifies them for keeping. Deleting a disk is irreversible and any data on the disk will be lost.

```
- [ebisong-howad-instance] in [us-east1-b]
```

```
Do you want to continue (Y/n)? Y
```

```
Deleted [https://www.googleapis.com/compute/v1/projects/secret-country-192905/zones/us-east1-b/instances/ebisong-howad-instance].
```

This chapter went through the step for launching a compute machine instance on GCP. It covered working with the web-based cloud console and using commands via the shell terminal.

In the next chapter, we'll discuss how to launch a Jupyter notebook instance on GCP called JupyterLab. A notebook provides an interactive environment for analytics, data science, and prototyping machine learning models.

CHAPTER 6

JupyterLab Notebooks

Google deep learning virtual machines (VMs) are a part of GCP AI Platform. It provisions a Compute Engine instance that comes pre-configured with the relevant software packages for carrying out analytics and modeling tasks. It also makes available high-performance computing TPU and GPU processing capabilities at a single click. These VMs expose a JupyterLab notebook environment for analyzing data and designing machine learning models.

In this chapter, we'll launch a JupyterLab notebook instance using the web-based console and the command line.

Provisioning a Notebook Instance

The following steps provide a walk-through for deploying a Notebook instance on a deep learning VM:

1. In the group named 'ARTIFICIAL INTELLIGENCE' on the GCP resources drawer, click the arrow beside 'AI Platform' and select 'Notebooks' as shown in Figure 6-1.