# Google Cloud Fundamentals: Getting Started with Compute Engine

## **Objectives**

* Create a Compute Engine virtual machine using the Google Cloud Platform (GCP) Console.
* Create a Compute Engine virtual machine using the gcloud command-line interface.
* Connect between the two instances.

## **Task 2: Create a virtual machine using the GCP Console**

The following commands create a VM instance named my-vm-1 using the default region and machine type. It uses Debian GNU/Linux 9 (stretch) as the boot disk image and creates a firewall rule that allows HTTP traffic. You will be asked to confirm the zone at the time of creating the instance.

gcloud compute instances create my-vm-1 --image-project "debian-cloud" --image=debian-9-stretch-v20200902 --tags=http-server

gcloud compute firewall-rules create default-allow-https --direction=INGRESS --priority=1000 --network=default --action=ALLOW --rules=tcp:80 --source-ranges=0.0.0.0/0 --target-tags=http-server

## **Task 3: Create a virtual machine using the gcloud command line**

This command lists all the zone in the us-central1 region

gcloud compute zones list | grep us-central1

This command sets your default zone to us-central1-b

gcloud config set compute/zone us-central1-b

This command creates a VM instance called **my-vm-2** in the default zone

gcloud compute instances create "my-vm-2" \

--machine-type "n1-standard-1" \

--image-project "debian-cloud" \

--image "debian-9-stretch-v20190213" \

--subnet "default"

## **Task 4: Connect between VM instances**

This command opens an ssh terminal in my-vm-2. Use the ping command to confirm that my-vm-2 can reach my-vm-1 over the network

gcloud compute ssh my-vm-2

ping -c 3 my-vm-1

This command opens an ssh terminal in my-vm-1. Use the ping command to confirm that **my-vm-1** can reach **my-vm-2** over the network.

The exit command closes the ssh

gcloud compute ssh my-vm-1

ping -c 3 my-vm-2

exit

Use the ssh command to open a command prompt on my-vm-1:

ssh my-vm-1

From the shell, install the Nginx web server on my-vm-1

sudo apt-get install nginx-light -y

Use the nano text editor to add a custom message to the homepage of the web server:

sudo nano /var/www/html/index.nginx-debian.html

Use the arrow keys to move the cursor to the line just below the h1 header. Add text like this after the <p> tag.

Hi from Olubunmi

Press **Ctrl+O** and then press **Enter** to save your edited file, and then press **Ctrl+X** to exit the nano text editor.

Confirm that the web server is serving your new page using the curl command.

curl http://localhost/

The response will be the HTML source of the web server's home page, including your line of custom text.

To exit the command prompt on **my-vm-1**, execute this command:

exit

You will return to the command prompt on **my-vm-2**

gcloud compute ssh my-vm-2

To confirm that **my-vm-2** can reach the web server on **my-vm-1**, at the command prompt on **my-vm-2**, execute this command:

curl http://my-vm-1/

The response will again be the HTML source of the web server's home page, including your line of custom text.

The exit command closes the ssh

exit

To get the external IP address of my-vm-1 using either of the following commands

gcloud compute instances list | grep my-vm-1

gcloud compute instances describe my-vm-1 | grep networkIP

You can also use a slight modification of the previous command to get its internal IP address.

gcloud compute instances describe my-vm-1 | grep natIP

Copy the External IP address for **my-vm-1** and paste it into the address bar of a new browser tab. Hit enter. You will see your web server's home page, including your custom text.