Google Cloud Fundamentals: Getting Started with Compute Engine

25 minutes

Free

Rate Lab

Overview

In this lab, you will create virtual machines (VMs) and connect to them. You will also create connections between the instances.

Objectives

In this lab, you will learn how to perform the following tasks:

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 1: Sign in to the Google Cloud Platform (GCP) Console

For each lab, you get a new GCP project and set of resources for a fixed time at no cost.

Make sure you signed into Qwiklabs using an incognito window.

Note the lab's access time (for example, img/time.png and make sure you can finish in that time block.

There is no pause feature. You can restart if needed, but you have to start at the beginning.

When ready, click img/start\_lab.png.

Note your lab credentials. You will use them to sign in to Cloud Platform Console. img/open\_google\_console.png

Click Open Google Console.

Click Use another account and copy/paste credentials for this lab into the prompts.

If you use other credentials, you'll get errors or incur charges.

Accept the terms and skip the recovery resource page.

Do not click End Lab unless you are finished with the lab or want to restart it. This clears your work and removes the project.

Task 2: Create a virtual machine using the GCP Console

In the Navigation menu (Navigation menu), click Compute Engine > VM instances.

Click Create.

On the Create an Instance page, for Name, type my-vm-1

For Region and Zone, select the region and zone assigned by Qwiklabs.

For Machine type, accept the default.

For Boot disk, if the Image shown is not Debian GNU/Linux 9 (stretch), click Change and select Debian GNU/Linux 9 (stretch).

Leave the defaults for Identity and API access unmodified.

For Firewall, click Allow HTTP traffic.

Leave all other defaults unmodified.

To create and launch the VM, click Create.

Note: The VM can take about two minutes to launch and be fully available for use.

Click Check my progress to verify the objective.

Create a virtual machine using the GCP Console

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

In GCP console, on the top right toolbar, click the Open Cloud Shell button.

Cloud Shell icon

Click Continue. cloudshell\_continue.png

To display a list of all the zones in the region to which Qwiklabs assigned you, enter this partial command gcloud compute zones list | grep followed by the region that Qwiklabs or your instructor assigned you to.

Your completed command will look like this:

gcloud compute zones list | grep us-central1

Choose a zone from that list other than the zone to which Qwiklabs assigned you. For example, if Qwiklabs assigned you to region us-central1 and zone us-central1-a you might choose zone us-central1-b.

To set your default zone to the one you just chose, enter this partial command gcloud config set compute/zone followed by the zone you chose.

Your completed command will look like this:

gcloud config set compute/zone us-central1-b

To create a VM instance called my-vm-2 in that zone, execute this command:

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

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

--image-project "debian-cloud" \

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

--subnet "default"

Note: The VM can take about two minutes to launch and be fully available for use.

To close the Cloud Shell, execute the following command:

exit

Click Check my progress to verify the objective.

Create a virtual machine using the gcloud command line

Task 4: Connect between VM instances

In the Navigation menu (Navigation menu), click Compute Engine > VM instances.

You will see the two VM instances you created, each in a different zone.

Notice that the Internal IP addresses of these two instances share the first three bytes in common. They reside on the same subnet in their Google Cloud VPC even though they are in different zones.

To open a command prompt on the my-vm-2 instance, click SSH in its row in the VM instances list.

Use the ping command to confirm that my-vm-2 can reach my-vm-1 over the network:

ping my-vm-1

Notice that the output of the ping command reveals that the complete hostname of my-vm-1 is my-vm-1.c.PROJECT\_ID.internal, where PROJECT\_ID is the name of your Google Cloud Platform project. GCP automatically supplies Domain Name Service (DNS) resolution for the internal IP addresses of VM instances.

Press Ctrl+C to abort the ping command.

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

ssh my-vm-1

If you are prompted about whether you want to continue connecting to a host with unknown authenticity, enter yes to confirm that you do.

At the command prompt on my-vm-1, install the Nginx web server:

sudo apt-get install nginx-light -y

Use the nano text editor to add a custom message to the home page 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, and replace YOUR\_NAME with your name:

Hi from YOUR\_NAME

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. At the command prompt on my-vm-1, execute this 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

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.

In the Navigation menu (Navigation menu), click Compute Engine > VM instances.

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

If you forgot to click Allow HTTP traffic when you created the my-vm-1 VM instance, your attempt to reach your web server's home page will fail. You can add a firewall rule to allow inbound traffic to your instances, although this topic is out of scope for this course.

Congratulations!

In this lab, you created virtual machine (VM) instances in two different zones and connected to them using ping, ssh, and HTTP.

End your lab

When you have completed your lab, click End Lab. Qwiklabs removes the resources you’ve used and cleans the account for you.

You will be given an opportunity to rate the lab experience. Select the applicable number of stars, type a comment, and then click Submit.

The number of stars indicates the following:

1 star = Very dissatisfied

2 stars = Dissatisfied

3 stars = Neutral

4 stars = Satisfied

5 stars = Very satisfied

You can close the dialog box if you don't want to provide feedback.

For feedback, suggestions, or corrections, please use the Support tab.

Copyright 2020 Google LLC All rights reserved. Google and the Google logo are trademarks of Google LLC. All other company and product names may be trademarks of the respective companies with which they are associated.