**Google Cloud Fundamentals: Getting Started with Compute Engine**

Creating a Compute Engine Virtual machine:

Below is complete command line to create a virtual machine on Cloud Shell. Give it the name “my-vm-1”. Its zone is in us-central1-a, machine type: n1-standard, subnet is selected as default, the image is the **Debian GNU/Linux 9 (stretch) and the firewall rule set to “Allow http traffic”.**

***gcloud beta compute --project=qwiklabs-gcp-00-78ef38d65745 instances create my-vm-1 --zone=us-central1-a --machine-type=n1-standard-1 --subnet=default --network-tier=PREMIUM --maintenance-policy=MIGRATE --service-account=455456924502-compute@developer.gserviceaccount.com --scopes=https://www.googleapis.com/auth/devstorage.read\_only,https://www.googleapis.com/auth/logging.write,https://www.googleapis.com/auth/monitoring.write,https://www.googleapis.com/auth/servicecontrol,https://www.googleapis.com/auth/service.management.readonly,https://www.googleapis.com/auth/trace.append --tags=http-server --image=debian-9-stretch-v20200805 --image-project=debian-cloud --boot-disk-size=10GB --boot-disk-type=pd-standard --boot-disk-device-name=my-vm-1 --reservation-affinity=any***

***gcloud compute --project=qwiklabs-gcp-00-78ef38d65745 firewall-rules create default-allow-http --direction=INGRESS --priority=1000 --network=default --action=ALLOW --rules=tcp:80 --source-ranges=0.0.0.0/0 --target-tags=http-server***

You can confirm that it has been created with this command line:

***gcloud compute zones list | grep us-central1***

Congratulations, you have a created a virtual machine with the name, my-vm-1.

Using the gcloud command line to create another virtual machine, my-vm-2:

Run this command line on the cloud shell. Change the [PROJECT\_ID] to your project ID name.

***gcloud config set project [PROJECT\_ID]***

Set the virtual machine zone to us-central1-b:

***gcloud config set compute/zone us-central1-b***

Run this command line to create the virtual machine, my-vm-2 with a n1-standard-1 machine type, image as the Debian and subnet set to default network.

***gcloud compute instances create "my-vm-2" \ --machine-type "n1-standard-1" \ --image-project "debian-cloud" \ --image "debian-9-stretch-v20190213" \ --subnet "default"***

You go to the Cloud console to SSH the virtual machine my-vm-2, then try to ping my-vm-1 with this command:

***ping my-vm-1***

It should connect successfully. Press Ctrl+C to stop the connection. Then SSH into my-vm-1:

***ssh my-vm-1***

It should also connect successfully since they are bothh running on the same network so they can connect through the internal IP.

For my-vm-1 SSH session, run this command line to install Nginx:

***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 age:

***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, go to Compute Engine then VM instances.

Copy the External IP address for **my-vm-1** and visit it using a browser. You will see your web server's home page, including your custom text.

That’s all.