**Create a new instance from the Cloud Console**

In this section, you'll learn how to create new pre-defined machine types with Compute Engine from the Cloud Console.

* In the Cloud Console, on the **Navigation menu** (), click **Compute Engine** > **VM Instances**.

This may take a minute to initialize for the first time.

* To create a new instance, click **Create**.
* There are many parameters you can configure when creating a **new instance**. Use the following for this lab:

|  |  |  |
| --- | --- | --- |
| **Field** | **Value** | **Additional Information** |
| **Name** | **gcelab** | Name for the VM instance |
| **Region** | **us-central1 (Iowa)** | For more information about regions, see [Regions and Zones](https://cloud.google.com/compute/docs/zones). |
| **Zone** | **us-central1-c** | **Note:** Remember the zone that you selected: you'll need it later. For more information about zones, see [Regions and Zones](https://cloud.google.com/compute/docs/zones). |
| **Series** | **N1** | Name of the series |
| **Machine Type** | **2 vCPUs** | This is an (n1-standard-2), 2-CPU, 7.5GB RAM instance. Several machine types are available, ranging from micro instance types to 32-core/208GB RAM instance types. For more information, see [Machine Types](https://cloud.google.com/compute/docs/machine-types). **Note:** A new project has a default [resource quota](https://cloud.google.com/compute/docs/resource-quotas), which may limit the number of CPU cores. You can request more when you work on projects outside this lab. |
| **Boot Disk** | **New 10 GB standard persistent disk** **OS Image: Debian GNU/Linux 10 (buster)** | Several images are available, including Debian, Ubuntu, CoreOS, and premium images such as Red Hat Enterprise Linux and Windows Server. For more information, see Operating System documentation. |
| **Firewall** | **Allow HTTP traffic** | Select this option in order to access a web server that you'll install later. **Note:** This will automatically create a firewall rule to allow HTTP traffic on port 80. |

* Click **Create**.

It should take about a minute for the machine to be created. After that, the new virtual machine is listed on the **VM Instances** page.

* To use **SSH** to connect to the virtual machine, in the row for your machine, click **SSH**.

This launches an SSH client directly from your browser.

**Create a new instance with gcloud**

Instead of using the Cloud Console to create a virtual machine instance, you can use the command line tool gcloud, which is pre-installed in [Google Cloud Shell](https://cloud.google.com/developer-shell/). Cloud Shell is a Debian-based virtual machine loaded with all the development tools you'll need (gcloud, git, and others) and offers a persistent 5-GB home directory.

**Note:** If you want to try this on your own machine, read the gcloud command line tool guide.

* In the Cloud Shell, use gcloud to create a new virtual machine instance from the command line:
* gcloud compute instances create gcelab2 --machine-type n1-standard-2 --zone us-central1-c

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**Expected output** (Do not copy):

Created [...gcelab2].

NAME ZONE MACHINE\_TYPE ... STATUS

gcelab2 us-central1-c n1-standard-2 ... RUNNINGcontent\_copy

To check your progress in this lab, click **Check my progress** below. A checkmark means you're successful.

Create a new instance with gcloud.

Check my progress

The new instance has these default values:

* The latest [Debian 10 (buster)](https://cloud.google.com/compute/docs/images) image.
* The n1-standard-2 [machine type](https://cloud.google.com/compute/docs/machine-types). In this lab, you can select one of these other machine types: n1-highmem-4 or n1-highcpu-4. When you're working on a project outside Qwiklabs, you can also specify a [custom machine type](https://cloud.google.com/compute/docs/instances/creating-instance-with-custom-machine-type).
* A root persistent disk with the same name as the instance; the disk is automatically attached to the instance.
* To see all the defaults, run:
* gcloud compute instances create --help

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**Note:** You can set the default region and zones that gcloud uses if you are always working within one region/zone and you don't want to append the --zone flag every time. To do this, run these commands:

gcloud config set compute/zone ...

gcloud config set compute/region ...

* To exit help, press **CTRL + C**.
* In the Cloud Console, on the **Navigation menu**, click **Compute Engine > VM instances**. Your 2 new instances should be listed.



* You can also use SSH to connect to your instance via gcloud. Make sure to add your zone, or omit the --zone flag if you've set the option globally:
* gcloud compute ssh gcelab2 --zone us-central1-c

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**Expected output** :

WARNING: The public SSH key file for gcloud does not exist.

WARNING: The private SSH key file for gcloud does not exist.

WARNING: You do not have an SSH key for gcloud.

WARNING: [/usr/bin/ssh-keygen] will be executed to generate a key.

This tool needs to create the directory

[/home/gcpstaging306\_student/.ssh] before being able to generate SSH

Keys.content\_copy

* Type **Y** to continue.
* Do you want to continue? (Y/n)

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* Press **ENTER** through the passphrase section to leave the passphrase empty.
* Generating public/private rsa key pair.

Enter passphrase (empty for no passphrase)content\_copy

* After connecting, disconnect from SSH by exiting from the remote shell:
* exit

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