



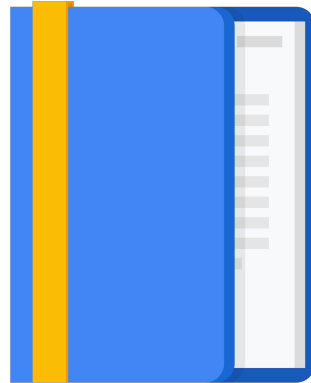
Introduction to Google Cloud

In this module, we will provide you with an introduction to Google Cloud by building on what you learned about the Google Cloud infrastructure from the course introduction.

Agenda

Using Google Cloud

Labs



This module is focused on how to interact with Google Cloud.

In the labs of this module, you will explore both Google Cloud's graphical user interface and its command-line interface. You will also deploy a solution from the Google Cloud Marketplace without having to manually configure the software, virtual machine instances, storage, or network settings.

Let's get started!

There are four ways to interact with Google Cloud

Cloud Console

Web user interface



Cloud Shell and Cloud SDK

Command-line
interface



REST-based API

For custom
applications



Cloud Mobile App


For iOS and Android



There are four ways you can interact with Google Cloud, and we'll talk about each in turn.

There's the Cloud Console (or Cloud Console), Cloud Shell and the Cloud SDK, the APIs, and the Cloud Mobile App.

Cloud Console, Cloud SDK and Cloud Shell



Cloud Console

console.cloud.google.com

<input type="checkbox"/>	Name ^	Zone	Internal IP	External IP	Connect
<input type="checkbox"/>	✓ nginxstack-1	us-central1-f	10.128.0.3 (nic0)	35.238.84.245	SSH ▾ ⋮
<input type="checkbox"/>	✓ nginxstack-2	us-central1-f	10.128.0.4 (nic0)	35.225.177.18	SSH ▾ ⋮
<input type="checkbox"/>	✓ nginxstack-3	us-central1-f	10.128.0.2 (nic0)	35.239.250.238	SSH ▾ ⋮

Cloud Shell

Google Cloud SDK

```
$ gcloud compute instances list
NAME          ZONE          INTERNAL_IP  EXTERNAL_IP
nginxstack-1  us-central1-f 10.128.0.3   35.238.84.245
nginxstack-2  us-central1-f 10.128.0.4   35.225.177.18
nginxstack-3  us-central1-f 10.128.0.2   35.239.250.238
```



The Cloud Console provides a web-based, graphical user interface that you access through `Console.cloud.google.com`. For example, you can view your virtual machines and their details, as shown on the top.

If you prefer to work in a terminal window, the Cloud SDK provides the `gcloud` command-line tool. For example, you can list your virtual machines and their details as shown on the bottom with the “`gcloud compute instances list`” command.

Google Cloud also provides Cloud Shell, which is a browser-based, interactive shell environment for Google Cloud that you can access from the Cloud Console. Cloud Shell is a temporary virtual machine with 5 GB of persistent disk storage that has the Cloud SDK pre-installed.

How to interpret lab instructions

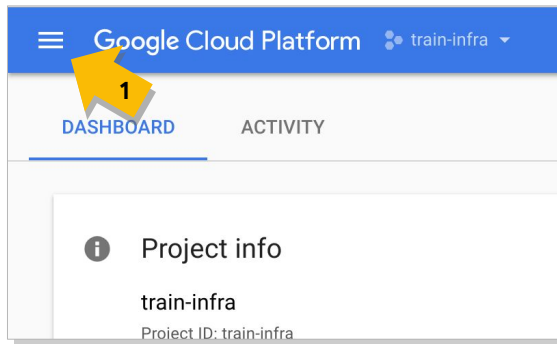
“On the Navigation menu, click **Compute Engine > VM instances**”



Throughout this course, you will apply what you learn in different labs. These labs will have instructions to use the Cloud Console, such as, “On the Navigation menu, click Compute Engine > VM instances.” Let me dissect these instructions.

How to interpret lab instructions

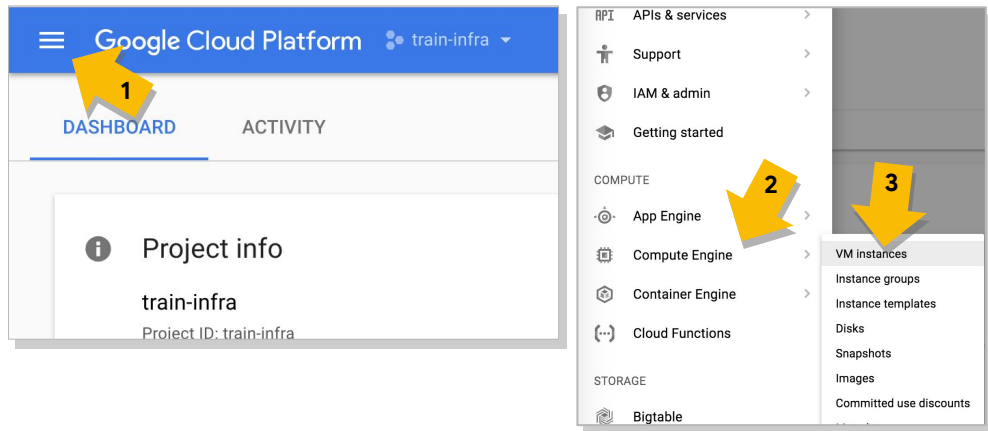
“On the Navigation menu, click **Compute Engine > VM instances**”



First, within the Cloud Console you will click on the icon with the three horizontal lines, which is the Navigation menu, as shown on the left.

How to interpret lab instructions

“On the Navigation menu, click **Compute Engine > VM instances**”



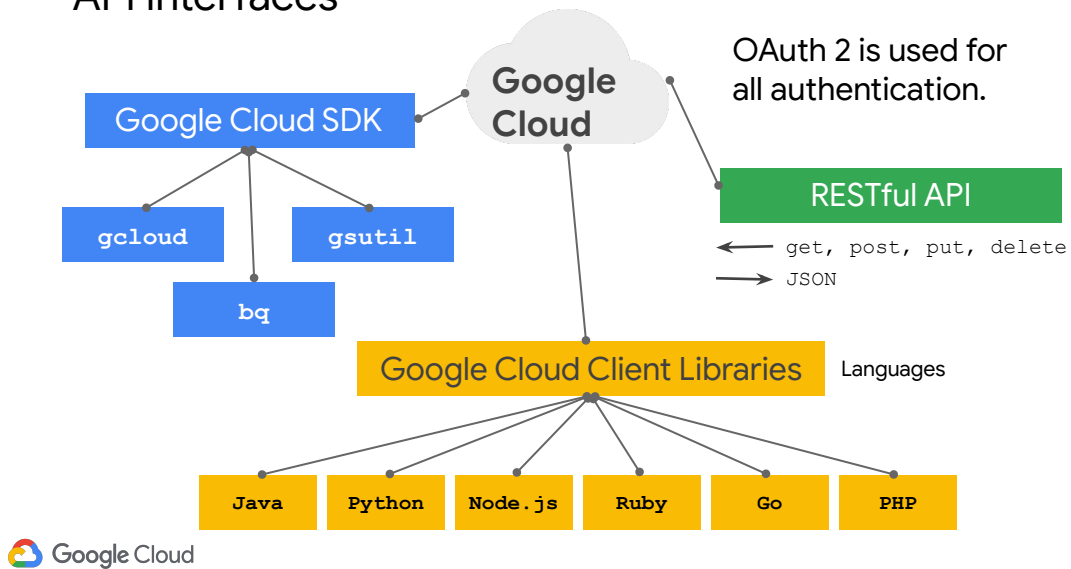
This opens a menu, as shown on the right. All of the major products and services are listed on this menu.

Then, within the menu, hover over “Compute Engine” to open a submenu. Finally, click on “VM instances” on the submenu.

You will get more comfortable with these instructions and the Cloud Console as you work on labs.

Now, labs will also use command-line instructions. You will enter these instructions either in Cloud Shell or an SSH terminal by simply copying and pasting them. In some cases, you will have to modify these commands, for example, when choosing a globally unique name for a Cloud Storage bucket.

API interfaces

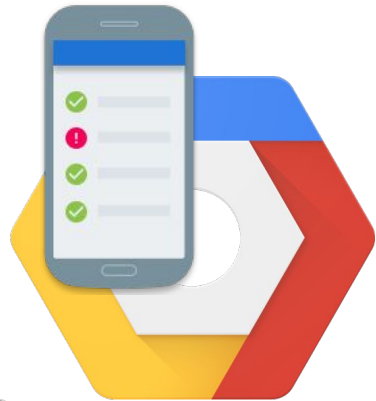


In addition to the Cloud SDK, you can also use client libraries that enable you to easily create and manage resources. Google Cloud client libraries expose APIs for two main purposes:

- App APIs provide access to services, and they are optimized for supported languages, such as Node.js or Python.
- Admin APIs offer functionality for resource management. For example, you can use admin APIs if you want to build your own automated tools.

Cloud Mobile App

- Manage virtual machines and database instances.
- Manage apps in App Engine.
- Manage your billing.
- Visualize your projects with a customizable dashboard.



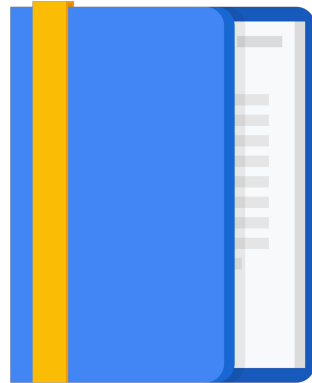
The Cloud Mobile App is another way to interact with Google Cloud. It allows you to manage Google Cloud services from your Android or iOS device. For example, you can start, stop, and SSH into Compute Engine instances and see logs from each instance. You can also set up customizable graphs showing key metrics such as CPU usage, network usage, requests per second, and server errors. The app even offers alerts and incident management and allows you to get up-to-date billing information for your projects and get billing alerts for projects that are going over budget.

You can download the Cloud Mobile App from Google Play or from the App Store.

Agenda

Using Google Cloud

Labs



Slides are great for explaining concepts, but let's apply what we just talked about.

Lab #1 of 2

Console and Cloud Shell



Cloud
Storage



Cloud Shell

Objectives

- Get access to Google Cloud
- Create a Cloud Storage bucket using the Cloud Console
- Create a Cloud Storage bucket using Cloud Shell
- Become familiar with Cloud Shell features



In this first lab, you'll explore the Google Cloud interface and the entry point of the graphical user interface that's called the Cloud Console. Within the Cloud Console, you will create a storage bucket in Cloud Storage, which is Google's unified object storage. Then you will repeat the same task using Cloud Shell, which is the command-line interface in Google Cloud.

We encourage you to develop familiarity with both the Cloud Console and Cloud Shell and to become comfortable moving back and forth between them.

Run a lab

1. Click

 Start Lab

2. Note the Connection Details

Username	gcpstaging25023_student@qwiklabs.	
Password	8TX65Vnc	
GCP Project ID	qwiklabs-gcp-9e3483a4a184429b	

3. Click

 Open Google Console

and sign in using the provided credentials

4. Accept terms and note the project ID

 qwiklabs-gcp-9e3483a4a184429b ▼

5. Follow the lab instructions and when you are done click

 End Lab



When ready to begin:

1. Click **Start Lab**
2. Note the lab's username, password, and project ID
3. Click **Open Google Console** and sign in to Cloud Console with these credentials
4. Accept the terms and note the project set for you.
5. Follow the lab instructions and when you are done click **End Lab**. The account will be wiped out and removed. You'll lose all work you have in the project.

Most labs are designed to be standalone, that is, you need to end lab when you finish each lab.

Lab #2 of 2

Infrastructure Preview



Cloud
Deployment
Manager



Jenkins

Google click to deploy

Integration server
supporting SCM tools:
CVS, Subversion and Git

Objectives

- Use Google Cloud Marketplace to build a Jenkins Continuous Integration environment
- Verify that you can manage the service from the Jenkins UI
- Administer the service from the Virtual Machine host through SSH



In this lab, you're going to experience the power of Google Cloud automation by setting up a complete Jenkins continuous integration environment using the Google Cloud Marketplace. You will then verify that you can manage the service from the Jenkins UI and administer the service from the VM host through SSH.

Now, you could accomplish a very similar result through manual configuration in a couple of hours or days. But in this lab, you'll see it set up in only a few minutes.

Also, if you're interested to learn more about projects, feel free to watch this [demo](#). Projects are the key organizer of infrastructure resources and relate these resources to billing accounts. Resources can only be created and consumed within projects, in a way that projects isolate related resources from one another.

Quiz

Which of the following tools allow you to interact with Google Cloud (select 2)?

- A. The Cloud Console which is a web-based, graphical user interface that you access through `Console.cloud.google.com`
- B. Google Cloud Wi-Fi hotspot which is available in some cities
- C. Google Cloud SDK which is a command-line interface that can be installed locally or accessed through Cloud Shell
- D. Google Cloud Operator which is a phone service that uses speech recognition to transmit your commands

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- A. Yes. You can use the Cloud Console which provides a web-based, graphical user interface that you access through `Console.cloud.google.com`.
- B. No. There is no Google Cloud Wi-Fi hotspot nor a phone service that uses speech recognition to interact with Google Cloud.
- C. Yes. If you prefer to work in a terminal window, Google Cloud SDK provides the `gcloud` command-line tool. The Cloud SDK can also be accessed through Cloud Shell, which is a browser-based, interactive shell environment for Google Cloud that you can access from the Cloud Console.
- D. No. There is no Google Cloud Wi-Fi hotspot nor a phone service that uses speech recognition to interact with Google Cloud.

Quiz

What is the difference between the Cloud Console and Cloud Shell?

- A. The Cloud Console is a command-line tool, while Cloud Shell is a graphical user interface
- B. Cloud Shell is a command-line tool, while the Cloud Console is a graphical user interface
- C. Cloud Shell is a locally installed tool, while the Cloud Console is a temporary virtual machine
- D. There is no difference as these tools are 100% identical

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- A. No
- B. Yes. The Cloud Console is a graphical user interface and Cloud Shell is a command-line tool. Both tools allow you to interact with Google Cloud. Even though the Cloud Console can do things Cloud Shell can't do and vice-versa, don't think of them as alternatives, but think of them as one extremely flexible and powerful interface.
- C. No.
- D. No.

Review

Introduction to Google Cloud



In this module, we looked at how to use Google Cloud, which you got to experience first-hand in two short labs. We also provided a demonstration of how to use projects, which are the key organizer of infrastructure resources.

Now that you can interact with Google Cloud, it's time to explore two of the foundational components of Google Cloud's infrastructure: virtual networks and virtual machines. Move on to the next module to learn more.

