Google Cloud Platform Hands-On experience in Google Qwiklab.

PHP Version 7.4.27

System	Linux lampstack-2-vm 4.19.0-18-cloud-amd64 #1 SMP Debian 4.19.208-1 (2021-09-29) x86_64
Build Date	Jan 12 2022 06:26:40
Configure Command	'./bitnami/blacksmith-sandox/php-7.4.27/configure' '--prefix=/opt/bitnami/php' '--with-imap=/bitnami/blacksmith-sandox/imap-2007.0.0' '--with-imap-ssl' '--with-zlib-dir' '--with-zlib' '--with-libxml-dir=/usr' '--enable-soap' '--disable-rpath' '--enable-inline-optimization' '--with-bz2' '--enable-sockets' '--enable-pcntl' '--enable-exif' '--enable-bcmath' '--with-pdo-mysql=mysqlnd' '--with-mysqli=mysqlnd' '--with-png-dir=/usr' '--with-openssl' '--with-libdir=lib/x86_64-linux-gnu/' '--enable-ftp' '--enable-calendar' '--with-gettext' '--with-xmlrpc' '--with-xsl' '--enable-fpm' '--with-fpm-user=daemon' '--with-fpm-group=daemon' '--enable-mbstring' '--enable-cgi' '--enable-ctype' '--enable-session' '--enable-mysqlnd' '--enable-intl' '--with-iconv' '--with-pdo_sqlite' '--with-sqlite3' '--with-readline' '--with-gmp' '--with-curl' '--with-pdo-pgsql=shared' '--with-pgsql=shared' '--with-config-file-scan-dir=/opt/bitnami/php/etc/conf.d' '--enable-simplexml' '--with-sodium' '--enable-gd' '--with-pear' '--with-freetype' '--with-jpeg' '--with-webp' '--with-zip' '--with-pdo-dblib=shared' '--with-tidy' '--with-ldap=/usr/' '--enable-apcu=shared' 'PKG_CONFIG_PATH=/opt/bitnami/common/lib/pkgconfig'
Server API	FPM/FastCGI
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/opt/bitnami/php/lib
Loaded Configuration File	/opt/bitnami/php/etc/php.ini
Scan this dir for additional .ini files	/opt/bitnami/php/etc/conf.d
Additional .ini files parsed	(none)
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,NTS
PHP Extension Build	API20190902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
IPv6 Support	enabled
DTrace Support	disabled

← Google Cloud Fundamentals: Getting Started with Cloud Marketplace

End Lab   00:00:43

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. Learn more.

Open Google Console

Username
student-03-15f9581c10e

Password
TUdPJiiIvKGl

GCP Project ID
qwiklabs-gcp-04-d8de77

Region
us-central1

Zone
us-central1-a

Click *Check my progress* to verify the objective.

✓ Use Cloud Marketplace to deploy a LAMP stack

Check my progress

Checkpoints →

Use Cloud Marketplace to deploy a LAMP stack   **Check my progress**   10 / 10

LAMP stack

Task 3: Verify your deployment

Congratulations!

End your lab

More resources

Task 3: Verify your deployment

1. When the deployment is complete, click the **Site address** link in the right pane. (If the website is not responding, wait 30 seconds and try again.) If you see a redirection notice, click on that link to view your new site.

   Alternatively, you can click **Visit the site** in the **Get started with LAMP Packaged by Bitnami** section of the page. A new browser tab displays a congratulations message. This page confirms that, as part of the LAMP stack, the Apache HTTP Server is running.

2. Close the congratulations browser tab.

Top window - Cloud Shell Terminal:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to qwiklabs-gcp-04-1f2a96e36275.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ export MY_ZONE=us-central1-a
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ gcloud container clusters create webfrontend --zone $MY_ZONE --num-nodes 2
WARNING: Starting in January 2021, clusters will use the Regular release channel by default when `--cluster-version`, `--release-channel`, `--no-enable-aut
oupgrade`, and `--no-enable-autorepair` flags are not specified.
WARNING: Currently VPC-native is the default mode during cluster creation for versions greater than 1.21.0-gke.1500. To create advanced routes based cluste
rs, please pass the `--no-enable-ip-alias` flag
WARNING: Starting with version 1.18, clusters will have shielded GKE nodes by default.
WARNING: Your Pod address range (`--cluster-ipv4-cidr`) can accommodate at most 1008 node(s).
WARNING: Starting with version 1.19, newly created clusters and node-pools will have COS_CONTAINERD as the default node image when no image type is specifi
ed.
Creating cluster webfrontend in us-central1-a...done.
Created [https://container.googleapis.com/v1/projects/qwiklabs-gcp-04-1f2a96e36275/zones/us-central1-a/clusters/webfrontend].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload_/gcloud/us-central1-a/webfrontend?project=qwiklabs-gcp
-04-1f2a96e36275
kubeconfig entry generated for webfrontend.
NAME: webfrontend
LOCATION: us-central1-a
MASTER_VERSION: 1.21.5-gke.1302
MASTER_IP: 35.224.7.233
MACHINE_TYPE: e2-medium
NODE_VERSION: 1.21.5-gke.1302
NUM_NODES: 2
STATUS: RUNNING
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl version
Client Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.4", GitCommit:"b695d79d4f967c403a96986f1750a35eb75e75f1", GitTreeState:"clean", Build
Date:"2021-11-17T15:48:33Z", GoVersion:"go1.16.10", Compiler:"gc", Platform:"linux/amd64"}
Server Version: version.Info{Major:"1", Minor:"21", GitVersion:"v1.21.5-gke.1302", GitCommit:"639f3a74abf258418493e9b75f2f98a08da29733", GitTreeState:"clea
n", BuildDate:"2021-10-21T21:35:48Z", GoVersion:"go1.16.7b7", Compiler:"gc", Platform:"linux/amd64"}
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl create deploy nginx --image=nginx:1.17.10
deployment.apps/nginx created
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl get pods
NAME                    READY   STATUS    RESTARTS   AGE
nginx-674c77bcbb-7t7hj  1/1     Running   0          13s
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl expose deployment nginx --port 80 --type LoadBalancer
```

Bottom window - Cloud Shell Terminal:

```
NUM_NODES: 2
STATUS: RUNNING
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl version
Client Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.4", GitCommit:"b695d79d4f967c403a96986f1750a35eb75e75f1", GitTreeState:"clean", Build
Date:"2021-11-17T15:48:33Z", GoVersion:"go1.16.10", Compiler:"gc", Platform:"linux/amd64"}
Server Version: version.Info{Major:"1", Minor:"21", GitVersion:"v1.21.5-gke.1302", GitCommit:"639f3a74abf258418493e9b75f2f98a08da29733", GitTreeState:"clea
n", BuildDate:"2021-10-21T21:35:48Z", GoVersion:"go1.16.7b7", Compiler:"gc", Platform:"linux/amd64"}
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl create deploy nginx --image=nginx:1.17.10
deployment.apps/nginx created
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl get pods
NAME                    READY   STATUS    RESTARTS   AGE
nginx-674c77bcbb-7t7hj  1/1     Running   0          13s
student_02_4c1d833ba844@cloudshell:~ (qwiklabs-gcp-04-1f2a96e36275)$ kubectl expose deployment nginx --port 80 --type LoadBalancer
```

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googlecoursera.qwiklabs.com/focuses/19699729?parent=lti_session

Apps | CPU cache - Wikipe... | How to Overclock Y... | 32-bit and 64-bit W... | 64-bit computing -... | Supplemental Read... | Semantic HTML5 El... | Code Placement | C... | What is the Internet... | Reading list

← Google Cloud Fundamentals: Getting Started with GKE

End Lab | **00:20:21**

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. Learn more.

Open Google Console

Username
student-02-4c1d833ba84

Password
WvnG8C4f2aXJ

GCP Project ID
qwiklabs-gcp-04-1f2a96

Region
us-central1

Zone
us-central1-a

Google Cloud Fundamentals: Getting Started with GKE

35 minutes Free ★★★★½

10/10

Overview

In this lab, you create a Google Kubernetes Engine cluster containing several containers, each containing a web server. You place a load balancer in front of the cluster and view its contents.

← → C ⌂ | googlecoursera.qwiklabs.com/focuses/19699729?parent=lti_session

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Click *Check my progress* to verify the objective.

✓ Start a Kubernetes Engine cluster

Check my progress

Checkpoints →

| Start a Kubernetes Engine cluster | **Check my progress** | 5 / 5 |
| Run and deploy a container | **Check my progress** | 5 / 5 |

Task 4: Run and deploy a container

1. From your Cloud Shell prompt, launch a single instance of the nginx container. (Nginx is a popular web server.)

```
kubectl create deploy nginx --image=nginx:1.17.10
```

In Kubernetes, all containers run in pods. This use of the `kubectl create` command caused Kubernetes to create a deployment consisting of a single pod containing the nginx container. A Kubernetes deployment keeps a given number of pods up and running even in the event of failures among the nodes on which they run. In this

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← Google Cloud Fundamentals: Getting Started with GKE

End Lab 00:19:59

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. Learn more.

Open Google Console

Username
student-02-4c1d833ba84

Password
WvnG8C4f2aXJ

GCP Project ID
qwiklabs-gcp-04-1f2a96

Region
us-central1

Zone
us-central1-a

Checkpoints

→

Start a Kubernetes Engine cluster   [Check my progress] 5 / 5

Run and deploy a container   [Check my progress] 5 / 5

Task 3: Start a Kubernetes Engine cluster

Task 4: Run and deploy a container

Congratulations!

End your lab

Congratulations!

In this lab, you configured a Kubernetes cluster in Kubernetes Engine. You popula cluster with several pods containing an application, exposed the application, and the application.

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:

console.cloud.google.com/appengine/settings?authuser=4&project=qwiklabs-gcp-02-51618664ca76

Apps | CPU cache - Wikipe... | How to Overclock Y... | 32-bit and 64-bit W... | 64-bit computing -... | Supplemental Read... | Semantic HTML5 El... | Code Placement | C... | What is the Internet... | Reading list

☰ Google Cloud Platform ❖ qwiklabs-gcp-02-51618664ca76 ▼   🔍 Search products and resources   ▼

LEARN
Home   ✕

App Engine   Settings

Dashboard
Services
Versions
Instances
Task queues
Cron jobs
Release Notes

| APPLICATION SETTINGS | CUSTOM DOMAINS | SSL CERTIFICATES | EMAIL SENDERS |

Google login cookie expiration   Default (1 day)
Referers   Google Accounts API

Edit Application Settings

Enable application

This application is disabled. Serving requests has been stopped, but all the data and state have been saved.

Enable application

Recommended for you

Mapping custom domains ⊠
Map a custom domain to your app and update DNS records at your domain registrar.

Securing custom domains with SSL ⊠
Serve your app securely, reliably, and quickly with globally-distributed SSL endpoints and built-in load balancing.

How requests are routed ⊠
Understand how HTTP requests from users reach the appropriate version of a service.

dispatch.yaml configuration file ⊠
Override routing rules and send incoming requests to a specific service based on the path or hostname in the URL.

Using Cloud Storage with App Engine ⊠
Need to read/write files during runtime, or serve files such as movies, images, or static content? Try Cloud Storage.

How requests are handled ⊠
Understand how your App Engine app receives requests and sends responses.

How instances are managed ⊠
Understand instance scaling types, how dynamic instances are scaled, and the life-cycle of an instance.

CLOUD SHELL
Terminal   (qwiklabs-gcp-02-51618664ca76) ✕ +   ✏ Open Editor

```
File upload done.
ERROR: (gcloud.app.deploy) NOT_FOUND: Unable to retrieve P4SA: [service-412735166350@gcp-gae-service.iam.gserviceaccount.com] from GAIA. Could be GAIA prop
agation delay or requestfrom deleted apps.
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ ^C
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ gcloud app browse
Did not detect your browser. Go to this link to view your app:
https://qwiklabs-gcp-02-51618664ca76.uc.r.appspot.com
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ ^C
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ ^C
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ gcloud app browse
Did not detect your browser. Go to this link to view your app:
(venv) student_04_52cee3309cb9@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (qwiklabs-gcp-02-51618664ca76)$ []
```

mydeploy.yaml

5/10

When the deployment operation is complete, the **gcloud** command displays a list of the resources named in the template and their current state.

8. Confirm that the deployment was successful. In the GCP Console, on the **Navigation menu** ( ),

   click **Compute Engine > VM instances**. You will see that a VM instance called **my-vm** has been created, as specified by the template.

9. Click on the VM instance's name to open its VM instance details screen.

10. Scroll down to the **Custom metadata** section. Confirm that the startup script you specified in your Deployment Manager template has been installed.

Click *Check my progress* to verify the objective.

Create a Deployment Manager

Google Cloud Platform — qwiklabs-gcp-03-1575ed9d7cef

Compute Engine

VM instances — SHOW INFO PANEL

Virtual machines
- VM instances
- Instance templates
- Sole-tenant nodes

Marketplace

Release Notes

INSTANCES | INSTANCE SCHEDULE

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. Learn more

Filter — Enter property name or value

Status	Name ↑	Zone	Connect
✓	my-vm	us-central1-a	SSH ▾

This instance is running

CLOUD SHELL
Terminal (qwiklabs-gcp-0... ✕ + ▾ — Open Editor

```
- key: replacement_suggestion
  value: A suggested replacement is 'projects/debian-cloud/global/images/debian-9-stretch-
  v20210122'.
  message: The resource 'projects/debian-cloud/global/images/debian-9-stretch-v20201216'
  is deprecated. A suggested replacement is 'projects/debian-cloud/global/images/debian-9-
  stretch-v20210122'.

NAME: my-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$
```

LEARN — Tutorial

Start your project

Now that you've created a VM instance, learn how to put it to work for you.

Connect to your instance

Transfer files

Find existing VM solutions

Explore Marketplace ⧉

Quickly learn how to build a two-tier web app

SHOW ME HOW

How-to guides and tutorials

Setting up your website host name ⧉

Reserving a static external IP address ⧉

Creating and managing Windows instances ⧉

Explore tools and APIs

Learn about the Cloud Shell CLI

Connecting via client libraries ⧉

Import or migrate your workloads

---

successfully.

10/10

6. In the GCP console, on the **Navigation menu** ( ), click **Compute Engine > VM instances**.

7. Click on the **my-vm** VM instance's name to open its **VM instance details** pane.

8. Scroll down to the **Custom metadata** section. Confirm that the startup script has been updated to the value you declared in your Deployment Manager template.

Click *Check my progress* to verify the objective.

✓ Update the Deployment Manager deployment

Check my progress

Google Cloud Platform — qwiklabs-gcp-03-1575ed9d7cef

Compute Engine — my-vm — HELP ASSISTANT

Virtual machines
- VM instances
- Instance templates
- Sole-tenant nodes

Marketplace

Release Notes

‹ DETAILS | OBSERVABILITY | OS INFO ›

On (Recommended)

tadata

Value
apt-get update; apt-get install nginx-light -y

ST

CLOUD SHELL
Terminal (qwiklabs-gcp-0... ✕ + ▾ — Open Editor

```
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$ nano mydeploy.yaml
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$ gcloud deployment-man
ager deployments update my-first-depl --config mydeploy.yaml
The fingerprint of the deployment is b'7rkclOAUDfhLIteNCZqD9A=='
Waiting for update [operation-1642234383658-5d59a7d136e13-8627fda2-de59fb8d]...done.
Update operation operation-1642234383658-5d59a7d136e13-8627fda2-de59fb8d completed success
fully.
NAME: my-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$
```

VM instances

Concepts ⧉

How-to guides and tutorials

Connecting to instances

Connecting to instances using advanced methods ⧉

Transferring files to instances

Managing SSH keys in metadata ⧉

Assigning an external IP address to an existing instance ⧉

Sending email from an instance ⧉

Explore tools and APIs

gcloud reference ⧉

API reference ⧉

Explore related services

Firewall rules ⧉

Cloud Logging ⧉

Cloud Monitoring ⧉

Google Cloud Storage ⧉

Google Cloud SQL ⧉

2. Select the checkbox for **my-vm** and click on STOP

3. Click on **STOP** again to confirm.

4. Click on the VM instance's name to open its VM instance details screen.

5. Click on **EDIT (pencil icon)**.

6. Scroll down to the bottom of the page and select **Compute Engine default service account** from Service account dropdown.

7. Select **Allow full access to all Cloud APIs** for Access scopes.

8. Click on **Save**.

9. Now, restart the VM by clicking on **Start** at the top of the VM instance details screen page.

10. Click on **START** again to confirm.

11. In the GCP Console, on the **Navigation menu** (

10/10

← VM instance details   ✏ EDIT   ⟳ RESET

SSH Keys
☐ Block project-wide SSH keys
When checked, project-wide SSH keys cannot access this instance Learn more

You have 0 SSH keys
⌄ Show and edit

Service account ⓘ
Compute Engine default service account ▾

Access scopes ⓘ
◯ Allow default access
⦿ Allow full access to all Cloud APIs
◯ Set access for each API

Save •••   Cancel

CLOUD SHELL
Terminal   (qwiklabs-gcp-03-1575ed9d7cef) ✕   + ▾   ✎ Open Editor

```
INTENT:
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$ nano mydeploy.yaml
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$ gcloud deployment-manager deployments update my-first-depl -
-config mydeploy.yaml
The fingerprint of the deployment is b'7rkclOAUDfhL1teNCZqD9A=='
Waiting for update [operation-1642234383658-5d59a7d136e13-8627fda2-de59fb8d]...done.
Update operation operation-1642234383658-5d59a7d136e13-8627fda2-de59fb8d completed successfully.
NAME: my-vm
TYPE: compute.v1.instance
STA
TYP
ERR          Updating instance "my-vm"...    ✕
INTE
student_02_4e21aa87ff69@cloudshell:~ (qwiklabs-gcp-03-1575ed9d7cef)$ ▯
```