Google Cloud

Getting Started with Google Kubernetes Engine

This course covers an introduction to Kubernetes, a software layer that sits between your applications and your hardware infrastructure. Google Kubernetes Engine (GKE) brings you Kubernetes as a managed service on Google Cloud. This course teaches the basics of GKE and how to get applications containerized and running in Google Cloud. The course covers a basic introduction to Google Cloud, an overview of containers and Kubernetes, Kubernetes architecture, and Kubernetes operations.

DURATION
1 day

LEVEL
Intermediate

FORMAT
Instructor led
On-demand

What you'll learn

- Discuss the differences among Google Cloud compute platforms.
- Discuss the components and architecture of Kubernetes.
- Identify how Google manages Kubernetes orchestration.
- Create and manage Google Kubernetes Engine clusters by using the Google Cloud console and the gcloud/kubectl commands.

Overview	6 modules · 28 videos · 4 labs · 8 classroom activities
Who this course is for	• Application developers, cloud solutions architects, DevOps engineers, IT managers • Individuals who use Google Cloud to create new solutions or to integrate existing systems, application environments, and infrastructure with Google Cloud.
Products	• Primary: Google Kubernetes Engine • Secondary: Google Cloud console, Cloud Shell, Networking, Virtual Private Cloud (VPC), Compute Engine, Cloud Build, IAM
Prerequisite	• Having completed Google Cloud Fundamentals: Core Infrastructure, or having equivalent experience • Basic proficiency with command-line tools and Linux operating system environments

Module 01 Introduction to the Course

Topics	The course introduction explains the course goals and previews each section.
Objectives	Introduce the course goals and preview each section of the course.

Module 02 Introduction to Google Cloud

Topics	• Cloud computing and Google Cloud • Google Cloud compute offerings • The Google network • Resource management • Billing • Interacting with Google Cloud
Objectives	• Identify Google Cloud services and their functions. • Choose the right Google Cloud services to create your own cloud solution. • Define the purpose of and use cases for Identity and Access Management (IAM). • Identify how costs can be managed in the resource hierarchy. • Use the Google Cloud console and Cloud Shell to create virtual machines (VMs), service accounts, and buckets.
Activities	• Lab: Accessing the Google Cloud console and Cloud Shell • Quiz: Module quiz

Module 03 Introduction to Containers and Kubernetes

Topics

- Introduction to containers
- Container images
- Working with Cloud Build
- Kubernetes
- Google Kubernetes Engine

Objectives

- Define the concept of a container and identify uses for containers.
- Identify the purpose of and use cases for Kubernetes.
- Outline the concept of Google Kubernetes Engine.
- Create a container using Cloud Build.

Activities

- Lab: Working with Cloud Build
- Quiz: Module quiz

Module 04 Kubernetes Architecture

Topics

- Kubernetes concepts
- The Kubernetes control plane
- Google Kubernetes Engine concepts
- Kubernetes object management

Objectives

- Conceptualize the Kubernetes architecture.
- Identify how to view and manage Kubernetes objects.
- Distinguish between Google Kubernetes Engines modes of operation.
- Deploy a Kubernetes cluster by using GKE.

Activities

- Lab: Deploying GKE Autopilot clusters
- Quiz: Module quiz

Module 05 Kubernetes Operations

Topics

- The kubectl command
- Introspection

Objectives

- Work with the kubectl command.
- Inspect the cluster and Pods.
- View a Pod's console output.
- Sign in interactively to a Pod.

Activities

- Lab: Deploying GKE Autopilot Clusters from Cloud Shell
- Quiz: Module quiz

Module 06 Course Summary

Topics The course summary recaps the major concepts learners were introduced to during the course.

Objectives Recap the content covered in each section of the course.