

CP100A: Google Cloud Platform Fundamentals

Course Description

This 1 day instructor-led class provides an overview of Google Cloud Platform products and services. Through a combination of presentations and hands-on labs, participants learn the value of Google Cloud Platform and how to incorporate cloud-based solutions into business strategies.

Audience

This class is intended for solutions developers, systems operations professionals, and solution architects planning to deploy applications and create application environments on Google Cloud Platform. This class is also suitable for executives and business decision makers evaluating the potential of Google Cloud Platform to address their business needs.

Prerequisites

None. Familiarity with application development, Linux operating systems, systems operations, and data analytics/machine learning is helpful in understanding the technologies covered.

Duration

1 day (8 hours)

Delivery Method

Instructor-led, Instructor-led online

Objectives

At the end of this one-day course, participants will be able to:

- Identify the purpose and value of each of the Google Cloud Platform products and services
- Explain the difference between IaaS and PaaS
- List the methods of interacting with Google Cloud Platform services
- Describe ways in which customers have used Google Cloud Platform to improve their businesses
- Understand how to choose an appropriate application deployment environment on Google Cloud Platform: Google App Engine, Google Container Engine, or Google Compute Engine
- Deploy an application to: Google App Engine, Google Container Engine, and Google Compute Engine

- Compare the Google Cloud Platform storage options: Google Cloud Storage, Google Cloud SQL, Google Cloud Bigtable, and Google Cloud Datastore
- Deploy an application that uses Google Cloud Datastore and Google Cloud Storage to store data
- Load data into BigQuery and query it

Modules

Module 1: Introducing Google Cloud Platform

Learning objectives

- Explain the advantages of Google Cloud Platform
- Define the components of Google's network infrastructure, including: Points of presence, data centers, regions, and zones
- Understand the difference between Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS)

Lab: Sign Up for the Free Trial and Create a Project

Learning objectives

- Register for the GCP free trial
- Create a project using the Cloud Platform Console

Module 2: Getting Started with Google Cloud Platform

Learning objectives

- Identify the purpose of projects on Google Cloud Platform
- Understand the purpose of and use cases for Identity and Access Management
- List the methods of interacting with Google Cloud Platform

Lab: Getting Started with Google Cloud Platform

Learning objectives

- Deploy a LAMP stack using Google Cloud Launcher

Module 3: Google App Engine and Google Cloud Datastore

Learning objectives

- Understand the purpose of and use cases for Google App Engine and Google Cloud Datastore
- Contrast the App Engine Standard environment with the App Engine Flexible environment
- Understand the purpose of and use cases for Google Cloud Endpoints

Lab: Deploying Applications Using App Engine and Cloud Datastore

Learning objectives

- Deploy a sample Python application called Bookshelf to the App Engine standard runtime environment
- Test the Bookshelf application and inspect data saved to Cloud Datastore

Module 4: Google Cloud Platform Storage Options

Learning objectives

- Understand the purpose of and use cases for: Google Cloud Storage, Google Cloud SQL, and Google Cloud Bigtable
- Learn how to choose between the various storage options on Google Cloud Platform

Lab: Integrating Applications with Google Cloud Storage

Learning objectives

- Create a Google Cloud Storage bucket to store images
- Deploy an App Engine application that uses Cloud Storage
- Use the Cloud Storage Browser to view objects

Module 5: Google Container Engine

Learning objectives

- Define the concept of a container and identify uses for containers
- Identify the purpose of and use cases for Google Container Engine and Kubernetes

Lab: Deploying Applications Using Google Container Engine

Learning objectives

- Create a container cluster using the Cloud SDK
- Build and push a Bookshelf image to Container Registry
- Use kubectl to deploy the Bookshelf container

Module 6: Google Compute Engine and Networking

Learning objectives

- Identify the purpose of and use cases for Google Compute Engine
- Understand the various Google Cloud Platform networking and operational tools and services

Lab: Deploying Applications Using Google Compute Engine

Learning objectives

- Create a Google Compute Engine instance
- Deploy the Bookshelf application using a startup script
- Add a firewall rule to allow HTTP traffic to the application

Module 7: Big Data and Machine Learning

Learning objectives

- Understand the purpose of and use cases for the products and services in the Google Cloud big data and machine learning platforms

Lab: Getting Started with BigQuery

Learning objectives

- Load a CSV file into a BigQuery table using the web UI
- Query the data using the BigQuery web UI
- Query the data using the CLI and the BigQuery shell