COURSE OUTLINE

GC-GCF - Google Cloud Fundamentals: Core Infrastructure

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1 day	100 - Introductory	Google Cloud	VILT / ILT	N/A

INTRODUCTION

This course uses lectures and labs to give you an overview of Google Cloud products and services. You learn the value of Google Cloud and how to incorporate cloud-based solutions into your business strategies.

AUDIENCE PROFILE

Individuals planning to deploy applications and create application environments on Google Cloud; developers, systems operations professionals, solution architects, executives, and business decision makers evaluating Google Cloud.

PRODUCTS

- Spanner
- Google Kubernetes Engine
- Identity and Access Management (IAM)
- Cloud Marketplace
- Compute Engine
- Cloud Storage
- Bigtable
- Cloud SQL
- Firestore
- Cloud Functions
- Cloud Run

PREREQUISITES

- Familiarity with application development, systems operations, Linux operating systems, and data analytics or machine learning is helpful.

COURSE OUTLINE

COURSE OBJECTIVES

- Identify the purpose and value of Google Cloud products and services.
- Define how infrastructure is organized and controlled in Google Cloud.
- Explain how to create basic infrastructure in Google Cloud.
- Select and use Google Cloud storage options.
- Describe the purpose and value of Google Kubernetes Engine.
- Identify use cases for serverless Google Cloud services.

COURSE CONTENT

Module 01 | Introduction to the Course

Topics

- Course goals and section preview

Objectives

- Introduce course objectives and preview each section.

Module 02 | Introduction to Google Cloud

Topics

- Cloud computing overview
- IaaS and PaaS
- Google Cloud network
- Environmental impact
- Security
- Open-source ecosystems
- Pricing and billing

Objectives

- Identify Google Cloud benefits.
- Define Google network infrastructure components.
- Differentiate IaaS and PaaS.

Activities

- Quiz: Module quiz

COURSE OUTLINE

Module 03 | Resources and Access in the Cloud

Topics

- Google Cloud resource hierarchy
- IAM
- IAM roles
- Service accounts
- Cloud Identity
- Interacting with Google Cloud

Objectives

- Identify the purpose of projects.
- Define IAM use cases.
- List interaction methods.
- Use Cloud Marketplace.

Activities

- Lab: Getting Started with Cloud Marketplace
- Quiz: Module quiz

Module 04 | Virtual Machines and Networks in the Cloud

Topics

- VPC networking
- Compute Engine
- Scaling virtual machines
- VPC compatibilities
- Cloud Load Balancing
- Cloud DNS and Cloud CDN
- Connecting networks to Google VPC

Objectives

- Explore Google Cloud networking.
- Identify Compute Engine use cases.
- Outline scaling and VPC compatibility.
- Explore Cloud Load Balancing.
- Deploy basic infrastructure.

Activities

- Lab: Getting Started with VPC Networking and Google Compute Engine
- Quiz: Module quiz

COURSE OUTLINE

Module 05 | Storage in the Cloud

Topics

- Cloud Storage
- Cloud SQL
- Spanner
- Firestore
- Bigtable
- Storage option comparison

Objectives

- Identify Cloud Storage use cases.
- Distinguish storage classes and database options.
- Deploy an application using Cloud SQL and Cloud Storage.

Activities

- Lab: Getting Started with Cloud Storage and Cloud SQL
- Quiz: Module quiz

Module 06 | Containers in the Cloud

Topics

- Containers
- Kubernetes
- Google Kubernetes Engine

Objectives

- Define containers and their uses.
- Identify Kubernetes and GKE use cases.

Activities

- Quiz: Module quiz

COURSE OUTLINE

Module 07 | Applications in the Cloud

Topics

- Cloud Run
- Cloud Functions

Objectives

- Identify Cloud Run use cases.
- Describe Cloud Functions.
- Deploy a containerized application on Cloud Run.

Activities

- Lab: Hello Cloud Run
- Quiz: Module quiz

Module 08 | Course Summary

Topics

- Major course concepts

Objectives

- Summarize the content covered.