

Cloud Developer

Course Outline

Module 1: Google Cloud Fundamentals: Core Infrastructure

Topics:

- Introducing Google Cloud
- Resources and Access in the Cloud
- Virtual Machines and Networks in the Cloud
- Storage in the Cloud
- Containers in the Cloud
- Applications in the Cloud
- Developing and Deploying in the Cloud
- Logging and Monitoring in the Cloud

Hands-On Labs:

- Cloud Storage: Qwik Start - Cloud Console
- Compute Engine: Qwik Start - Windows
- Cloud IAM: Qwik Start
- Cloud Monitoring: Qwik Start

Module 2: Getting Started With Application Development

Topics:

- Best Practices for Application Development
- Getting Started with Google Cloud Development
- Overview of Data Storage Options
- Best Practices for Using Datastore
- Best Practices for Using Cloud Storage

Hands-On Labs:

- App Dev: Setting up a Development Environment
- Importing Data to a Firestore Database

Module 3: Securing and Integrating Components of Your Application

Topics:

- Handling Authentication and Authorization
- Using Pub/Sub to Integrate Components of Your Application
- Adding Intelligence to Your Application
- Using Cloud Functions for Event-Driven Processing
- Managing APIs with Cloud Endpoints

Hands-On Labs:

- App Dev - Adding User Authentication to Your Application
- App Dev - Developing a Backend Service
- App Dev - Processing Cloud Pub/Sub Data Using Cloud Functions

Module 4: Application Development with Cloud Run

Topics:

- Introduction to Cloud Run
- Understanding Cloud Run

- Building Container Images
- Diving Deeper into Cloud Run
- Service Identity & Authentication
- Serving Requests
- Controlling Inbound & Outbound Requests
- Persisting Data
- Service-to-Service Communication
- Building Serverless Workflows

Hands-On Labs:

- Build a Serverless App with Cloud Run that Creates PDF Files
- Build a Resilient, Asynchronous System with Cloud Run and Pub/Sub
- Developing a REST API with Go and Cloud Run
- Creating PDFs with Go and Cloud Run

Module 5: App Deployment, Debugging, and Performance

Topics:

- Deploying Applications
- Compute Options for Your Application
- Debugging, Monitoring, and Performance Tuning

Hands-On Labs:

- Build a Serverless Web App with Firebase
- Deploy a Hugo Website with Cloud Build and Firebase Pipeline
- Google Assistant: Build an Application with Dialogflow and Cloud Functions

Module 6: Getting Started with Google Kubernetes Engine

Topics:

- Introduction to Google Cloud
- Introduction to Containers and Kubernetes
- Kubernetes Architecture
- Introduction to Kubernetes Workloads

Hands-On Labs:

- Introduction to Docker
- Kubernetes Engine: Qwik Start
- Orchestrating the Cloud with Kubernetes
- Managing Deployments Using Kubernetes Engine
- Continuous Delivery with Jenkins in Kubernetes Engine