Developing Applications with Google Cloud Platform

Price	Duration	Delivery Methods
$1,995.00	3 Days	VILT, Private Group

In this course, application developers learn how to design, develop, and deploy applications that seamlessly integrate components from the Google Cloud ecosystem. Through a combination of presentations, demos, and hands-on labs, participants learn how to use GCP services and pre-trained machine learning APIs to build secure, scalable, and intelligent cloud-native applications.

Who Should Attend

Application developers who want to build cloud-native applications or redesign existing applications that will run on Google Cloud Platform

Course Objectives

- Use best practices for application development.
- Choose the appropriate data storage option for application data.
- Implement federated identity management.
- Develop loosely coupled application components or microservices.
- Integrate application components and data sources.
- Debug, trace, and monitor applications.
- Perform repeatable deployments with containers and deployment services.
- Choose the appropriate application runtime environment; use Google
- Kubernetes Engine as a runtime environment and later switch to a no-ops solution with Google App Engine Flex.

Upcoming Class Dates and Times

Click Here to View Course Online and Enroll

Apr 24, 25, 26 8:00 AM - 4:00 PM Virtual: Online - CST	$1,995.00
Jun 5, 6, 7 9:00 AM - 5:00 PM Virtual: Online - CST	$1,995.00

Agenda

1 - BEST PRACTICES FOR APPLICATION

DEVELOPMENT

- Code and environment management
- Design and development of secure, scalable, reliable, loosely coupled application components and microservices
- Continuous integration and delivery
- Re-architecting applications for the cloud

2 - GOOGLE CLOUD CLIENT LIBRARIES, GOOGLE CLOUD SDK, AND GOOGLE FIREBASE SDK

- How to set up and use Google Cloud Client Libraries, Google Cloud SDK, and Google Firebase SDK
- Lab: Set up Google Client Libraries, Google Cloud SDK, and Firebase SDK on a Linux instance and set up application credentials

3 - OVERVIEW OF DATA STORAGE OPTIONS

- Overview of options to store application data
- Use cases for Google Cloud Storage, Google Cloud Datastore, Cloud Bigtable, Google Cloud SQL, and Cloud Spanner

4 - BEST PRACTICES FOR USING GOOGLE CLOUD DATASTORE

- Best practices related to the following:
- Queries
- Built-in and composite indexes
- Inserting and deleting data (batch operations)
- Transactions
- Error handling
- Bulk-loading data into Cloud Datastore by using Google Cloud Dataflow
- Lab: Store application data in Cloud Datastore

5 - PERFORMING OPERATIONS ON BUCKETS AND OBJECTS

- Operations that can be performed on buckets and objects
- Consistency model
- Error handling

6 - BEST PRACTICES FOR USING GOOGLE CLOUD STORAGE

- Naming buckets for static websites and other uses
- Naming objects (from an access distribution perspective)
- Performance considerations
- Setting up and debugging a CORS configuration on a bucket
- Lab: Store files in Cloud Storage

7 - HANDLING AUTHENTICATION AND AUTHORIZATION

- Cloud Identity and Access Management (IAM) roles and service accounts
- User authentication by using Firebase Authentication
- User authentication and authorization by using Cloud Identity-Aware Proxy
- Lab: Authenticate users by using Firebase Authentication

8 - USING GOOGLE CLOUD PUB/SUB TO INTEGRATE COMPONENTS OF YOUR APPLICATION

- Topics, publishers, and subscribers
- Pull and push subscriptions
- Use cases for Cloud Pub/Sub
- Lab: Develop a backend service to process messages in a message queue

9 - ADDING INTELLIGENCE TO YOUR APPLICATION

- Overview of pre-trained machine learning APIs such as Cloud Vision API and Cloud Natural Language Processing API

10 - USING GOOGLE CLOUD FUNCTIONS FOR EVENT-DRIVEN PROCESSING

- Key concepts such as triggers, background functions, HTTP functions
- Use cases
- Developing and deploying functions
- Logging, error reporting, and monitoring

11 - MANAGING APIS WITH GOOGLE CLOUD ENDPOINTS

- Open API deployment configuration
- Lab: Deploy an API for your application

12 - DEPLOYING AN APPLICATION BY USING GOOGLE CLOUD CLOUD BUILD, GOOGLE CLOUD CONTAINER REGISTRY, AND GOOGLE CLOUD DEPLOYMENT MANAGER

- Creating and storing container images
- Repeatable deployments with deployment configuration and templates
- Lab: Use Deployment Manager to deploy a web application into Google App Engine flexible environment test and production environments

13 - EXECUTION ENVIRONMENTS FOR YOUR APPLICATION

- Considerations for choosing an execution environment for your application or service:
- Google Compute Engine
- Kubernetes Engine
- App Engine flexible environment
- Cloud Functions
- Cloud Dataflow
- Lab: Deploying your application on App Engine flexible environment

14 - DEBUGGING, MONITORING, AND TUNING PERFORMANCE BY USING GOOGLE STACKDRIVER

- Stackdriver Debugger
- Stackdriver Error Reporting
- Lab: Debugging an application error by using Stackdriver Debugger and Error Reporting
- Stackdriver Logging
- Key concepts related to Stackdriver Trace and Stackdriver Monitoring. Lab: Use Stackdriver Monitoring and Stackdriver Trace to trace a request across services, observe, and optimize performance