Developing Applications with Google Cloud Platform (GCPDEV)

Duration: 3 Days   Course Code: GO6593   Delivery Method: Company Event

Overview:

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.

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

Target Audience:

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

Objectives:

- This course teaches participants the following skills:
- 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 Container Engine as a runtime environment and later switch to a no-ops solution with Google App Engine Flex.

Prerequisites:

To get the most benefit from this course, participants should have the following prerequisites:

- Completed Google Cloud Platform Fundamentals (GO8324) or have equivalent experience
- Working knowledge of Node.js
- Basic proficiency with command-line tools and Linux operating system environments

Content:

Module 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

Module 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

Module 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

Module 4: Best Practices for Using 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

Module 5: Performing Operations on Buckets and Objects

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

Module 6: Best Practices for Using 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

Module 7: Securing Your Application

- 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

- 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

Module 9: Adding Intelligence to Your Application

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

Module 10: Using 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

Module 11: Using Cloud Endpoint to Deploy APIs

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

Module 12: Debugging Your Application by Using Google Stackdriver

- Stackdriver Debugger
- Stackdriver Error Reporting
- Lab: Debugging an application error by using Stackdriver Debugger and Error Reporting

Module 13: Deploying an Application by Using Google Cloud Container Builder, 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 Flex test and production environments

Module 14: Execution Environments for Your Application

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

Module 15: Monitoring and Tuning Performance

- Best practices and watchpoints for performance
- Key concepts related to Stackdriver Trace and Stackdriver Monitoring
- Detecting and resolving performance issues
- Lab: Use Stackdriver Monitoring and Stackdriver Trace to trace a request across services, observe, and optimize performance

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Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

info@globalknowledge.co.uk

www.globalknowledge.co.uk

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK