



Professional Developer Engineer

Course description

Learn Modern Cloud Application Development using Google Cloud Services, Microservices, Event-Driven Architectures, and Cloud Functions.

- Course level: Introductory
- Duration: 3 days

Activities

This course includes instructor-led sessions, hands-on labs, classroom activities, cloud architecture workshops, deployment demonstrations, microservices design exercises, and monitoring and troubleshooting labs to reinforce learning.

Course objectives

In this course, you will learn to:

- Apply best practices for cloud-native application development.
- Select appropriate compute and storage services for application use cases.
- Secure applications using authentication and authorization mechanisms.
- Understand microservices and event-driven architectures.
- Coordinate services using orchestration and choreography patterns.

- Build, test, deploy, and secure Cloud Functions.
- Integrate Cloud Functions with cloud databases and services.
- Use CI/CD practices and monitoring tools for cloud applications.

Key features

- Cloud-Native Application Development
- Data Storage and Database Services
- Authentication and Security
- CI/CD and Application Deployment
- Microservices and Event-Driven Architectures
- Cloud Functions Development
- Monitoring and Performance Optimization
- Generative AI and Intelligent Applications

Intended audience

This course is intended for:

- Application Developers
- Cloud Engineers
- Software Architects
- DevOps Engineers
- Cloud-Native Application Teams

Prerequisites

We recommend that attendees of this course have:

- Google Cloud Fundamentals: Core Infrastructure
- Developing APIs with Google Cloud's Apigee API Platform

Products covered

- Cloud Run
- Cloud Functions
- Google Kubernetes Engine

- Compute Engine
- Firestore
- Cloud Storage
- Bigtable
- Cloud SQL
- AlloyDB
- Spanner
- BigQuery
- Memorystore
- Firebase Authentication
- Identity Platform
- Cloud Build
- Artifact Registry
- Workflows
- Eventarc
- Cloud Tasks
- Pub/Sub

Course outline

Best Practices for Cloud Application Development

- Cloud Application Development Best Practices
- Stability and Reliability Patterns

Getting Started with Google Cloud Development

- Google Cloud SDK
- Cloud Client Libraries
- Cloud Code

Data Storage Options

- Firestore
- Cloud Storage
- Database Selection Strategies

Handling Authentication and Authorization

- Identity-Aware Proxy
- Federated Identity
- API Authentication

Adding Intelligence to Your Application

- Pretrained Machine Learning APIs
- Generative AI Integration

Deploying Applications

- CI/CD Pipelines
- Cloud Build
- Artifact Registry

Compute Options for Your Application

- Cloud Run
- Cloud Functions
- Google Kubernetes Engine
- Compute Engine

Monitoring and Performance Tuning

- Google Cloud Operations Suite
- Golden Signals
- Monitoring and Observability

Introduction to Microservices

- Monolithic Applications
- SOA
- Microservices Architecture

Event-Driven Applications

- Events and Event Characteristics
- Event-Driven Architectures

Choreography and Orchestration

- Eventarc
- Workflows
- Cloud Tasks

- Cloud Scheduler
- Pub/Sub

Introduction to Cloud Functions

- Cloud Functions Basics
- Function Types and Runtimes
- Deployment Methods

Calling and Connecting Cloud Functions

- Function Triggers
- Workflow Integration
- VPC Connectivity

Securing Cloud Functions

- Function Authentication
- Access Controls
- Encryption and Data Protection

Integrating with Cloud Databases

- Firestore Integration
- Memorystore Integration
- Secret Management
- Environment Variables

Best Practices

- Cloud Functions Best Practices
- Retry Mechanisms
- Reliability and Optimization

Certification details

CloudThat Course Completion Certificate will be awarded to all learners who complete the training.

FAQs

Who should attend this course?

This course is designed for developers, architects, and cloud engineers building cloud-native applications on Google Cloud.

Is this course hands-on?

Yes. The course includes multiple labs, classroom activities, deployment exercises, and demonstrations.

What Google Cloud services are covered?

The course covers compute, storage, serverless, authentication, monitoring, orchestration, and AI services on Google Cloud.

Will serverless development be covered?

Yes. A major focus of the course is Cloud Functions development and integration.

Does the course include microservices and event-driven architecture?

Yes. Learners will explore microservices, orchestration, choreography, Eventarc, and Pub/Sub.

What is the delivery format?

3-day instructor-led training with lectures, hands-on labs, and classroom activities.

Is prior programming experience required?

Programming experience is recommended, and familiarity with Linux command-line environments is helpful.

Will I receive a certificate?

Yes. A CloudThat Course Completion Certificate will be awarded after successful completion of the training.