

# Course : Developing Applications with Google Cloud Platform

Official course, preparation for Google Cloud certification exams

*Practical course - 3d - 21h00 - Ref. DGP*

*Price : 2890 € E.T.*

With this course, you'll learn how to design, develop and deploy applications that seamlessly integrate components from the Google Cloud ecosystem. Through extensive hands-on work, you'll discover how to create secure, scalable and intelligent native cloud applications using Google Cloud Platform (GCP) services and pre-trained machine learning APIs.

## Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Apply best practices in development and application architecture
- ✓ Manage identities and integrate application components and their data sources
- ✓ Design and deploy applications in a reproducible manner, in particular via containers
- ✓ Choose the most suitable runtime environments and storage solutions
- ✓ Develop, debug and monitor microservices and loosely coupled components

## Intended audience

Application developers who want to create cloud-native applications or rethink existing ones that will run on Google Cloud Platform.

## Prerequisites

Completion of [ Google Cloud Fundamentals: Core Infrastructure " training or equivalent knowledge. Experience in application development.

## Certification

We recommend you take this course if you want to prepare for the [ Google Cloud Professional Cloud Developer " certification.

[Comment passer votre examen ?](#)

## PARTICIPANTS

Application developers who want to create cloud-native applications or rethink existing ones that will run on Google Cloud Platform.

## PREREQUISITES

Completion of [ Google Cloud Fundamentals: Core Infrastructure " training or equivalent knowledge. Experience in application development.

## TRAINER QUALIFICATIONS

The experts who lead the training courses are specialists in the subjects covered. They are approved by the publisher and certified for the course. They have also been validated by our teaching teams in terms of both professional knowledge and teaching skills for each course they teach. They have at least three to ten years of experience in their field and hold or have held positions of responsibility in companies.

## ASSESSMENT TERMS

Assessment of targeted skills prior to training.

Assessment by the participant, at the end of the training course, of the skills acquired during the training course.

Validation by the trainer of the participant's learning outcomes, specifying the tools used: multiple-choice questions, role-playing exercises, etc.

At the end of each training course, ITTCERT provides participants with a course evaluation questionnaire, which is then analysed by our teaching teams. Participants also complete an official evaluation of the publisher.

An attendance sheet for each half-day of attendance is provided at the end of the training course, along with a certificate of completion if the participant has attended the entire session.

## Practical details

### Teaching methods

Training in French. Official course material in English.

## Course schedule

### 1 Best practices in application development

- Code and environment management.
- Design and develop secure, scalable, loosely coupled microservices and application components...
- Continuous integration and distribution.
- Modify application architecture for the cloud.

### 2 Google Cloud client libraries

- Configure and use Google Cloud client libraries, the Google Cloud SDK and the Google Firebase SDK.

#### Hands-on work

Install Google Cloud, the Google Cloud SDK and the Firebase SDK client libraries on a Linux installation, then configure application credentials.

### 3 Overview of data storage options

- Overview of application data storage options.
- Use cases for Google Cloud Storage, Cloud Firestore, Cloud Bigtable, Google Cloud SQL and Cloud Spanner.

### 4 Best practices for using Cloud Datastore

- Best practices: queries, integrated and composite indexes, data insertion and deletion, transactions...
- Load grouped data into Cloud Datastore using Google Cloud Dataflow.

#### Hands-on work

Store application data in Cloud Datastore.

### 5 Perform operations on buckets and objects

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

### 6 Best practices for using Cloud Storage

- Assign names to buckets for static websites and other uses.
- Assign names to objects (according to access distribution).
- Performance considerations.
- Define and debug a CORS configuration on a bucket.

#### Hands-on work

Store files in Cloud Storage.

## TEACHING AIDS AND TECHNICAL RESOURCES

The teaching resources used are the publisher's official materials and practical exercises.

## TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training course.

## ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you have specific accessibility requirements? Contact Ms FOSSE, disability advisor, at the following address: [psh-accueil@orsys.fr](mailto:psh-accueil@orsys.fr) so that we can assess your request and its feasibility.

## 7 Manage authentication and authorizations

- Cloud IAM (Identity and Access Management) roles and service accounts.
- User authentication with Firebase Authentication.
- User authentication and authorization with Cloud Identity-Aware Proxy.

### Hands-on work

Authenticate users with Firebase Authentication.

## 8 Integrate application components using Google Cloud Pub/Sub

- Subjects, publishers and subscribers.
- Pull and push subscriptions.
- Cloud Pub/Sub use cases.

### Hands-on work

Develop a back-end service to handle queued messages.

## 9 Injecting artificial intelligence into an application

- Presentation of pre-trained machine learning APIs such as the Cloud Vision API and the Cloud NLP API.

## 10 Google Cloud Functions for event-driven processes

- Key concepts such as triggers, background functions and HTTP functions.
- Use cases.
- Develop and deploy functions.
- Logging, error reporting and monitoring.

## 11 Managing APIs with Google Cloud Endpoints

- Configure deployment of open APIs.

### Hands-on work

Deploy an API for an application.

## 12 Deploying an application

- Overview of Google Cloud Container Builder, Google Cloud Container Registry and Google Cloud Deployment Manager.
- Create and store container images.
- Reproducible deployments using deployment configuration and templates.

### Hands-on work

Use Deployment Manager to deploy a web application on the flexible Google App Engine environment in test and production.

## 13 Runtime environments for an application

- Introduction to Google Compute Engine, Kubernetes Engine, App Engine Flexible Environment, Cloud Functions...
- Choosing an execution environment for an application or service.

### Hands-on work

Deploy an application in the flexible App Engine environment.

## 14 Debug, monitor and tune performance with Google Stackdriver

- Stackdriver.
- Discover Stackdriver (Debugger / Logging) and Stackdriver error reports
- Explore the key concepts behind Stackdriver Trace and Stackdriver Monitoring.

### Hands-on work

Use Stackdriver Monitoring and Stackdriver Trace to track requests on different services, examine performance and optimize them.

## Dates and locations

### REMOTE CLASS

2026 : 21 Apr., 16 June, 18 Aug., 20 Oct., 8 Dec.

### PARIS LA DÉFENSE

2026 : 21 Apr., 16 June, 18 Aug., 20 Oct., 8 Dec.