Course : Architecting with Google Kubernetes Engine

Official course, preparation for Google Cloud certification exams

Practical course - 2d - 14h00 - Ref. AGL
Price : 1980 € E.T.

Nouvelle édition

With this training course, you'll learn how to deploy and manage containerized applications on Google Kubernetes Engine (GKE). You'll also learn how to use other tools on Google Cloud that interact with GKE deployments. Through a variety of hands-on exercises, you'll deploy solution elements: infrastructure components such as pods, containers, deployments and services, as well as networks and application services, and also security and access management, resource management and resource monitoring.

Teaching objectives

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

- Create and manage workloads in Google Kubernetes Engine (GKE)
- Understanding pod networking in GKE
- Using the main Kubernetes storage abstractions
- Manage application authentication, authorization, security and monitoring in GKE
- Configuring CI/CD pipelines for GKE deployments

Intended audience

Cloud architect, administrator and SysOps/DevOps profile. People using Google Cloud to create solutions or integrate systems, application environments and infrastructures.

Prerequisites

Have completed the "Getting Started with Google Kubernetes Engine" training course or equivalent knowledge.

Certification

We recommend you take this course if you want to prepare for the [Google Cloud Professional Cloud Architect " certification.
Comment passer votre examen ?

PARTICIPANTS

Cloud architect, administrator and SysOps/DevOps profile. People using Google Cloud to create solutions or integrate systems, application environments and infrastructures.

PREREQUISITES

Have completed the "Getting Started with Google Kubernetes Engine" training course or equivalent knowledge.

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 Workloads: deployments and tasks

- Define, configure, inspect, manage and update deployments.
- Define Jobs and Cronjobs in GKE and explore relevant use cases.
- Create and run jobs.
- Explain how to scale clusters manually and automatically.
- Configure node and pod affinity.

Hands-on work

Create Google Kubernetes Engine deployments.

2 Networking the Google Kubernetes engine

- Explore Kubernetes networking, including pod and cluster networking.
- Create services to expose to applications running in pods.
- Configure load balancers to expose services to external clients.
- Explore native container load balancing in GKE.
- Configure Google Kubernetes Engine networking.

Hands-on work

Configure Google Kubernetes Engine (GKE) networking.

3 Persistent data and storage

- Define and use Kubernetes storage abstractions.
- Run and manage pod sets using StatefulSets.
- Use ConfigMaps to decouple pod configuration.
- Manage and store sensitive access and authentication data.
- Configure persistent storage for Google Kubernetes Engine.

Hands-on work

Configure persistent storage for Google Kubernetes Engine.

4 Access control and security in Kubernetes and Google Kubernetes Engine

- Explore Kubernetes authentication and authorization.
- Define Kubernetes RBAC and how it works with IAM to secure GKE clusters.
- Configure Workload Identity to access Google Cloud services from GKE.
- Securing GKE with Pod Security Standards and Pod Security Admission.
- Implement role-based access control with GKE.

Hands-on work

Securing Google Kubernetes Engine with Cloud IAM and pod security.

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 so that we can assess your request and its feasibility.

5 Google Kubernetes Engine logging and monitoring

- Identify the tools included in Google Cloud Observability.
- Configure the Google Cloud Operations Suite to monitor and manage availability and performance.
- Inspect the logs using the kubectl command.
- Inspect Kubernetes logs using Google Cloud Observability.
- Configure GKE's native monitoring and logging.

Hands-on work

Configure GKE's native monitoring and logging.

6 Using Google Cloud storage with Google Kubernetes Engine

- Compare managed storage services with self-managed storage.
- Identify Cloud Storage use cases for Kubernetes applications.
- Compare the range of database services managed by Google Cloud.
- Discover Cloud SQL Auth Proxy and how it connects to Cloud SQL from GKE.
- Using Cloud SQL with Google Kubernetes Engine.

Hands-on work

Using Cloud SQL with Google Kubernetes Engine and Workload Identity.

7 Using CI/CD with Google Kubernetes Engine

- Define continuous integration and continuous delivery and identify why they are important.
- Examine CI/CD pipelines and how they can optimize application releases.
- Explore proprietary and third-party CI/CD tools supported by Google Cloud.
- Explore Google's best practices for a GKE CI/CD pipeline.

Dates and locations

REMOTE CLASS
2026 : 28 Apr., 23 June, 25 Aug., 27 Oct., 15 Dec.

PARIS LA DÉFENSE
2026 : 28 Apr., 23 June, 25 Aug., 27 Oct., 15 Dec.