Architecting with Google Cloud Platform: Design and Process

Course 4321 – 16 Hours

Overview

This course equips students to build highly reliable and efficient solutions on Google Cloud using proven design patterns. It is a continuation of the Architecting with Google Compute Engine or Architecting with Google Kubernetes Engine courses and assumes hands-on experience with the technologies covered in either of those courses. Through a combination of presentations, design activities, and hands-on labs, participants learn to define and balance business and technical requirements to design Google Cloud deployments that are highly reliable, highly available, secure, and cost-effective.

On Completion, Delegates will be able to

- Apply a tool set of questions, techniques and design considerations
- Define application requirements and express them objectively as KPIs, SLO's and SLI's
- Decompose application requirements to find the right microservice boundaries
- Leverage Google Cloud developer tools to set up modern, automated deployment pipelines
- Choose the appropriate Google Cloud Storage services based on application requirements
- Architect cloud and hybrid networks Implement reliable, scalable, resilient applications balancing key performance metrics with cost
- Choose the right Google Cloud deployment services for your applications Secure cloud applications, data and infrastructure
- Monitor service level objectives and costs using Google Cloud's operations suite

Who Should Attend

- Cloud Solutions Architects, Site Reliability Engineers, Systems Operations professionals, DevOps Engineers, IT managers
- Individuals using Google Cloud Platform to create new solutions or to integrate existing systems, application environments, and infrastructure

Prerequisites

To get the most out of this course, participants should have:

- Have completed Architecting with Google Compute Engine, Architecting with Google Kubernetes Engine, or have equivalent experience.
- Basic proficiency with command-line tools and Linux operating system environments.
- Systems Operations experience including deploying and managing applications, either on-premises or in a public cloud environment.

Course Contents

Module 1: Defining Services

In this module, you will learn to describe users of a system in terms of the roles and personas they take. You will learn how to measure success using Key performance indicators (KPIs) and you will examine service level objectives (SLOs), service level indicators (SLIs), and service level agreements (SLAs).

Module 2: Microservice Design and Architecture

In this module, we introduce application architecture and microservice design.

Module 3: DevOps Automation

This module introduces DevOps automation, a key factor in achieving consistency, reliability, and speed of deployment.

Module 4: Choosing Storage Solutions

In this module, we discuss Google Cloud storage and data solutions and how to select the most suitable one to meet your business and technical requirements.

Module 5: Google Cloud and Hybrid Network Architecture

In this module, we discuss Google Cloud network architectures, including hybrid architectures.

Module 6: Deploying Applications to Google Cloud

In this module, we discuss the different options of deploying applications to Google Cloud. Google Cloud offers many possible deployment platforms, and the choice is not always immediately obvious.

Module 7: Designing Reliable Systems

In this module, we talk about how to design reliable systems.

Module 8: Security

In this module, we cover security. Google has been operating securely in the cloud for 20 years. There is a strong belief that security empowers innovation. The approach of the cloud architect should be that security should be put first; everything else will follow from this.

Module 9: Maintenance and Monitoring

In this final module of this course, we cover application maintenance and monitoring.