

# Sela.

GCPDePro

## Reliable Google Cloud Infrastructure: Design and Process

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# Reliable Google Cloud Infrastructure: Design and Process

GCPDePro - Version: 1

 2 days Course

## Description:

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.

## Intended audience:

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

## Prerequisites:

To get the most out of this course, participants should: \*Have completed Architecting with Google Compute Engine, Architecting with Google Kubernetes Engine, or have equivalent experience \*Have basic proficiency with command-line tools and \* Have systems operations experience, including deploying and managing applications, either on-premises or in a public



cloud environment

## Objectives:

Define application requirements and express as KPIs, SLOs, and SLIs.

Build microservice applications and architect cloud and hybrid networks.

Choose appropriate Google Cloud storage and deployment services.

Secure cloud applications, data, and infrastructure, and monitor service levels.

## Topics:

▫ Introduction

### Defining Services

- Module Overview
- Requirements, Analysis, and Design
- Activity Intro: Analyzing your case study
- Activity Review: Analyzing your case study
- KPIs and SLIs
- SLOs and SLAs
- Activity Intro: Defining SLIs and SLOs
- Activity Review: Defining SLIs and SLOs
- Module Review

### Microservice Design and Architecture

- Module Overview



- Microservices
- Microservices Best Practices
- Activity Intro: Designing microservices for your application
- Activity Review: Designing microservices for your application
- REST
- HTTP
- APIs
- Activity Intro: Designing REST APIs
- Activity Review: Designing REST APIs
- Module Review

## DevOps Automation

- Module Overview
- Continuous Integration Pipelines
- Infrastructure as Code
- Lab Intro: Building a DevOps Pipeline
- Getting Started with Google Cloud Platform and Qwiklabs
- Lab review Building a DevOps Pipeline
- Module Review

## Choosing Storage Solutions

- Module Overview
- Key Storage Characteristics
- Activity Intro: Defining storage characteristics
- Activity Review: Defining storage characteristics
- Choosing Google Cloud Storage and Data Solutions
- Activity Intro: Choosing Google Cloud storage and data services
- Activity Review: Choosing Google Cloud storage and data services



- Module Review

## Google Cloud and Hybrid Network Architecture

- Module Overview
- Designing Google Cloud Networks
- Designing Google Cloud Load Balancers
- Activity Intro: Defining network characteristics
- Activity Review: Defining network characteristics
- Connecting Networks
- Activity Intro: Diagramming your network
- Activity Review: Diagramming your network
- Module Review

## Deploying Applications to Google Cloud

- Module Overview
- Google Cloud Infrastructure as a Service
- Google Cloud Deployment Platforms
- Lab intro Deploying Apps to Google Cloud
- Lab review Deploying Apps to Google Cloud
- Module Review

## Designing Reliable Systems

- Module Overview
- Key Performance Metrics
- Designing for Reliability
- Activity Intro: Designing Reliable Scalable Applications
- Activity Review: Designing Reliable Scalable Applications



- Disaster Planning
- Activity Intro: Disaster planning
- Activity Review: Disaster planning
- Module Review

## Security

- Module Overview
- Security Concepts
- Securing People
- Securing Machine Access
- Network Security
- Encryption
- Activity Intro: Modeling Secure Google Cloud Services
- Activity Review: Modeling Secure Google Cloud Services
- Module Review

## Maintenance and Monitoring

- Module Overview
- Managing Versions
- Cost Planning
- Monitoring Dashboards
- Activity Intro: Cost estimating and planning
- Activity Review: Cost estimating and planning
- Lab Intro: Monitoring Applications in Google Cloud
- Lab Review: Monitoring Applications in Google Cloud
- Module Review
- Course Review