

Training: Google Cloud Architecting with Google Compute Engine



TRAINING TERMS

2025-05-07 | 3 days | Virtual Classroom

2025-06-04 | 3 days | Virtual Classroom

TRAINING GOALS:

This course will familiarize you with Google Cloud's flexible infrastructure and platform services, with a specific focus on Compute Engine. This session uses a combination of lectures, demos, and hands-on labs to explore and deploy solution elements, including infrastructure components like networks, systems, and application services. You'll also learn how to deploy practical solutions such as secure interconnecting networks, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring.

Course objectives:

- Configure VPC networks and virtual machines
- Administer Identity and Access Management for resources
- Implement data storage services in GCP
- Manage and examine billing of GCP resources
- Monitor resources using Stackdriver services
- Connect your infrastructure to GCP
- Configure load balancers and autoscaling for VM instances
- Automate the deployment of GCP infrastructure services
- Leverage managed services in GCP

Audience:

- Cloud Solutions Architects, DevOps Engineers
- Individuals using Google Cloud to create new solutions or to integrate existing systems, application environments, and infrastructure, with a focus on Compute Engine

CONSPECT:

- Introduction to Google Cloud
 - List the different ways of interacting with Google Cloud.

- Use the Cloud Console and Cloud Shell.
- Create Cloud Storage buckets.
- Use the Google Cloud Marketplace to deploy solutions.
- Virtual Networks
 - List the VPC objects in Google Cloud.
 - Differentiate between the different types of VPC networks.
 - Implement VPC networks and firewall rules.
 - Implement Private Google Access and Cloud NAT.
- Virtual Machines
 - Recall the CPU and memory options for virtual machines.
 - Describe the disk options for virtual machines.
 - Explain VM pricing and discounts.
 - Use Compute Engine to create and customize VM instances.
- CloudIAM
 - Describe the Cloud IAM resource hierarchy.
 - Explain the different types of IAM roles.
 - Recall the different types of IAM members.
 - Implement access control for resources using Cloud IAM.
- Storage and Database Services
 - Differentiate between Cloud Storage, Cloud SQL, Cloud Spanner, Cloud Firestore and Cloud Bigtable.
 - Choose a data storage service based on your requirements.
 - Implement data storage services.
- Resource Management
 - Describe the cloud resource manager hierarchy.
 - Recognize how quotas protect Google Cloud customers.
 - Use labels to organize resources.
 - Explain the behavior of budget alerts in Google Cloud.
 - Examine billing data with BigQuery.
- Resource Monitoring
 - Describe the services for monitoring, logging, error reporting, tracing, and debugging.
 - Create charts, alerts, and uptime checks for resources with Cloud Monitoring.
 - Use Cloud Debugger to identify and fix errors.
- Interconnecting Networks
 - Recall the Google Cloud interconnect and peering services available to connect your infrastructure to Google Cloud.
 - Determine which Google Cloud interconnect or peering service to use in specific

- circumstances.
 - Create and configure VPN gateways.
 - Recall when to use Shared VPC and when to use VPC Network Peering.
- Load Balancing and Autoscaling
 - Recall the various load balancing services.
 - Determine which Google Cloud load balancer to use in specific circumstances.
 - Describe autoscaling behavior.
 - Configure load balancers and autoscaling.
- Infrastructure Modernization
 - Automate the deployment of Google Cloud services using Deployment Manager or Terraform.
 - Outline the Google Cloud Marketplace.
- Managed Services
 - Describe the managed services for data processing in Google Cloud.

REQUIREMENTS:

- Have completed Google Cloud Platform Fundamentals: Core Infrastructure or have equivalent experience.
- Have basic proficiency with command-line tools and Linux operating system environments.
- Have systems operations experience, including deploying and managing applications, either on-premises or in a public cloud environment.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud.

This course additionally helps prepare for **Associate Cloud Architect** and **Professional Cloud Architect** certification exams available at Kryterion test centers.

TRAINER:

Authorized Google Cloud Trainer.