

Architecting with Google Compute Engine

Duration
3 Days

Delivery Methods
VILT, Private Group



This course will familiarize you with Google Cloud's flexible infrastructure and platform services, with a specific focus on Compute Engine. This course 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 hybrid networking, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring.

Who Should Attend

- 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

Course Objectives

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

Agenda

1 - 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

2 - 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

3 - 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

4 - IDENTITY AND ACCESS MANAGEMENT (IAM)

- Describe the IAM resource hierarchy
- Explain the different types of IAM roles
- Recall the different types of IAM members
- Implement access control for resources using IAM

5 - STORAGE AND DATABASE SERVICES

- Differentiate between Cloud Storage, Cloud SQL, Cloud Spanner, Firestore and Cloud Bigtable
- Choose a data storage service based on your requirements
- Implement data storage services

6 - 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

7 - 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

8 - 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

9 - 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

10 - INFRASTRUCTURE AUTOMATION

- Automate the deployment of Google Cloud services using Terraform
- Outline the Google Cloud Marketplace

11 - MANAGED SERVICES

- Describe the managed services for data processing in Google Cloud