

Google Cloud - Architecting with Google Compute Engine

Code:	GCP-CE
Length:	3 days
URL:	View Online

This three-day instructor-led class introduces participants to the comprehensive and flexible infrastructure and platform services provided by Google Cloud, with a focus on Compute Engine. Through a combination of presentations, demos, and hands-on labs, participants explore and deploy solution elements, including infrastructure components such as networks, systems, and application services. This course also covers deploying practical solutions including securely interconnecting networks, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring.

Who Can Benefit

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

Prerequisites

Completion of Google Cloud Fundamentals or 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 Details

Course Outline

Module 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.

Module 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.

Module 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.

Module 4: Cloud IAM

- 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.

Module 5: 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.

Module 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.

Module 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.

Module 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.

Module 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

Module 10: Infrastructure Modernization

- Automate the deployment of Google Cloud services using Deployment Manager or Terraform.
- Outline the Google Cloud Marketplace.

Module 11: Managed Services

- Describe the managed services for data processing in Google Cloud.

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