Training: Google Cloud
Architecting with Google Compute Engine

Google Cloud

TRANING TERMS

2026-11-30 | 3 days | Virtual Classroom
2026-12-02 | 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 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.

What you'll learn

- Interact with the Google Cloud console and Cloud Shell
- Deploy solutions using Google Cloud Marketplace
- Implement VPC networks and firewall rules
- Create and customize VM instances using Compute Engine
- 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

Audience

- Cloud Solutions Architects, DevOps Engineers
- Individuals using Google Cloud to create new solutions or to integrate existing systems,

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application environments, and infrastructure, with a focus on Compute Engine

Products

- Compute Engine
- VPC Networking
- Identity and Access Management (IAM)
- Cloud Storage
- Cloud SQL
- Cloud Spanner
- Firestore
- Cloud Bigtable
- BigQuery
- Resource Manager
- Cloud Monitoring
- Cloud Logging
- Cloud Interconnect
- Cloud VPN
- Cloud Load Balancing

CONSPECT:

- Introduction to Google Cloud
  - Objectives
    - List the different ways of interacting with Google Cloud
    - Interact with the Google Cloud console and Cloud Shell
    - Create Cloud Storage buckets
    - Deploy solutions using Google Cloud Marketplace
  - Activities
    - Lab: Console and Cloud Shell
    - Lab: Infrastructure Preview
    - Module quiz
- Virtual Networks
  - Objectives
    - List the VPC objects in Google Cloud

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        - Explore VPC Networking
        - Implement Private Google Access and Cloud NAT
    - Activities
        - Lab: VPC Networking
        - Lab: Implement Private Google Access and Cloud NAT
        - Module quiz
- Virtual Machines
    - Objectives
        - Recall the CPU and memory options for virtual machines
        - Describe the disk options for virtual machines
        - Explain VM pricing and discounts
        - Create and customize VM instances using Compute Engine
    - Activities
        - Lab: Creating Virtual Machines
        - Lab: Working with Virtual Machines
        - Module quiz
- Identity and Access Management (IAM)
    - Objectives
        - 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
    - Activities
        - Lab: Cloud IAM
        - Module quiz
- Storage and Database Services
    - Objectives
        - 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
    - Activities
        - Lab: Cloud Storage
        - Lab: Implementing Cloud SQL
        - Module quiz
- Resource Management

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- Objectives
  - Describe the cloud resource manager hierarchy
  - Recognize how quotas protect Google Cloud customers
  - Organize resources using labels
  - Explain the behavior of budget alerts in Google Cloud
  - Examine billing data with BigQuery
- Activities
  - Lab: Examining Billing Data with BigQuery
  - Module quiz

- Resource Monitoring
  - Objectives
    - Describe the services for monitoring, logging, error reporting, tracing, and debugging
    - Create charts, alerts, and uptime checks for resources with Cloud Monitoring
    - Identify and fix errors using Cloud Debugger
  - Activities
    - Lab: Resource Monitoring
    - Lab: Error Reporting and Debugging
    - Module quiz

- Interconnecting Networks
  - Objectives
    - 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 Google Cloud HA VPN
    - Recall when to use Shared VPC and when to use VPC Network Peering
  - Activities
    - Lab: Virtual Private Networks (VPN)
    - Module quiz

- Load Balancing and Autoscaling
  - Objectives
    - 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
  - Activities

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        - Lab: ILT Configure an HTTP Load Balancer with Autoscaling
        - Lab: Configuring an Internal Load Balancer
        - Module quiz
    - Infrastructure Automation
        - Objectives
            - Automate the deployment of Google Cloud services using Terraform
            - Outline the Google Cloud Marketplace
        - Activities
            - Lab: Automating the Deployment of Infrastructure Using Terraform
            - Module quiz
    - Managed Services
        - Objectives
            - Describe the managed services for data processing in Google Cloud
        - Activities
            - Module quiz

REQUIREMENTS:

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

- Have completed Google Cloud 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 (course completion).

This course is intended to help you prepare for the Professional Cloud Architect certification exam. Google Cloud certification exams are offered at Kryterion test centers worldwide. More information about Professional Cloud Architect exam https://cloud.google.com/learn/certification/cloud-architect

TRAINER:

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Authorized Google Cloud Trainer

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