

Architecting with Google Compute Engine

Course Code: GCPGCE

Duration: 3 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

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.

SKILLS COVERED

- 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

WHO SHOULD ATTEND?

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

MODULES

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: 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.

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.