

Course Outline

Architecting with Google Compute Engine

The course includes presentations, demonstrations, and hands-on labs.

Module 1: Introduction to Google Cloud Platform

- List the different ways of interacting with GCP
- Use the GCP Console and Cloud Shell
- Create Cloud Storage buckets
- Use the GCP Marketplace to deploy solutions

Module 2: Virtual Networks

- List the VPC objects in GCP
- Differentiate between the different types of VPC networks
- Implement VPC networks and firewall rules
- Design a maintenance server

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 GCP customers
- Use labels to organize resources
- Explain the behavior of budget alerts in GCP
- Examine billing data with BigQuery

Module 7: Resource Monitoring

- Describe the Stackdriver services for monitoring, logging, error reporting, tracing, and debugging
- Create charts, alerts, and uptime checks for resources with Stackdriver Monitoring
- Use Stackdriver Debugger to identify and fix errors

Module 8: Interconnecting Networks

- Recall the GCP interconnect and peering services available to connect your infrastructure to GCP
- Determine which GCP 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 GCP load balancer to use in specific circumstances
- Describe autoscaling behavior
- Configure load balancers and autoscaling

Module 10: Infrastructure Automation

- Automate the deployment of GCP services using Deployment Manager or Terraform
- Outline the GCP Marketplace

Module 11: Managed Services

- Describe the managed services for data processing in GCP