

# Architecting with Google Compute Engine

## Module 1: Introduction to Google Cloud Platform

- Google Cloud Platform (GCP) Infrastructure
- Using GCP
- Demo: Projects

## Module 2: Virtual Networks

- Virtual Private Cloud (VPC), Projects, Networks, Subnetworks, IP addresses, Routes, Firewall rules
- Subnetworks for resource management instead of physical network topology

## Module 3: Virtual Machines

- Compute Engine
- Compute options (vCPU and Memory)
- Images
- Common Compute Engine actions

## Module 4: Cloud IAM

- Organizations, Roles, Members, Service accounts, Cloud IAM best practices

## Module 5: Data Storage Services

- Cloud Storage
- Cloud SQL
- Cloud Spanner, Cloud Datastore
- Cloud Bigtable

## Module 6: Resource Management

- Cloud Resource Manager, Quotas, Labels, Names, Billing
- Demo: Billing Administration

## Module 7: Resource Monitoring

- Stackdriver, Monitoring
- Logging, Error Reporting, Tracing, Debugging

## Module 8: Interconnecting Networks

- Cloud Virtual Private Network (VPN)
- Cloud Router, Cloud Interconnect, External Peering, Cloud DNS

### **Module 9: Load Balancing**

- Managed Instance Groups, HTTPS load balancing, Cross-region and content-based load balancing, SSL proxy/TCP proxy load balancing, Network load balancing

### **Module 10: Autoscaling**

- Autoscaling, Policies, Configuration

### **Module 11: Infrastructure Automation with Google Cloud Platform APIs**

- Infrastructure automation, Images, Metadata, Scripts, Google Cloud API

### **Module 12: Infrastructure Automation with Deployment Manager**

- Deployment Manager, Configuration, Cloud Launcher

### **Module 13: Managed Services**

- Cloud Dataproc, Cloud Dataflow, BigQuery, Cloud Datalab