Google Cloud

Google Cloud Infrastructure for Azure Professionals

This is a course for cloud architects and engineers with existing Azure knowledge that compares Google Cloud solutions with Azure and guides professionals on their use. In this course, you'll apply the concepts and technologies knowledge in Azure to explore the similarities and differences with concepts and technologies in Google Cloud. You'll get hands-on practice building and managing Google Cloud resources.

DURATION
2 days

LEVEL
Intermediate

FORMAT
Instructor-led

What you'll learn

- Explain best practices for the Google Cloud solutions that incorporate resources and access management in Google Cloud.
- Implement Google Cloud networks by using best practices for Cloud virtual private network (VPN), Virtual Private Cloud (VPC), and Google Cloud Firewall.
- Create and customize virtual machine (VM) instances using Compute Engine.
- Configure load balancers and autoscaling for VM instances.
- Implement data storage services in Google Cloud.
- Design a solution using Google Kubernetes Engine (GKE) for deploying applications in Google Cloud.
- Examine best practices for deploying and monitoring of Google Cloud infrastructure.
- Identify the purpose and use cases for Cloud Run.

Overview	8 modules · 11 labs
Who this course is for	Cloud architects or cloud engineers who are experienced with Azure cloud.
Products	• Google Cloud VPN • Google Cloud VPC • Google Cloud Firewall • Compute Engine • Cloud Storage • Cloud SQL • Google Kubernetes Engine • GKE Enterprise • Cloud Operations
Prerequisite	Familiarity with Azure terms and concepts

Module 01 Resource and Access Management in Google Cloud

Topics

- Google Cloud resource hierarchy
- Identity and Access Management (IAM)
- Service accounts
- Interacting with Google Cloud

Objectives

- Review the Azure resource hierarchy.
- Explore how IAM lets you apply policies that define who can do what on which resources in Google Cloud.
- Examine service account types and keys in Google Cloud.
- Navigate through Google Cloud console and Cloud Shell to perform basic tasks.

Activities

Lab: Exploring Identity and Access Management

Module 02 Networking in Google Cloud

Topics

- Networking concepts in Azure and Google Cloud
- Virtual Private Cloud Networking
- Lab: VPC Networking
- Cloud Routing

Topics	• Interconnecting Networks • Lab: Implement private Google access and Cloud NAT
Objectives	• Compare networking concepts in Azure and Google Cloud. • Understand VPC networking on Google Cloud. • Explain how Google Virtual Private Cloud (VPC) differs from Azure VPC. • Create and configure Private Google Access and Cloud NAT. • Determine which Google Cloud interconnect or peering service to use in specific circumstances.
Activities	• Lab: VPC Networking • Lab: Implement private Google access and Cloud NAT

Module 03 Virtual machines in Google Cloud

Topics	• Google Compute Engine • Machine types and images • Spot VMs
Objectives	• List the various CPU, GPU, and memory options for virtual machines. • Explore Google Cloud images. • Explain where you would want to use Spot VMs in Google Cloud.
Activities	Lab: Getting started with Compute Engine

Module 04 Load Balancing and Managed Instance Groups on Google Cloud

Topics	• Load Balancing in Azure and Google Cloud • Cloud Load Balancing features in Google Cloud • Managed instance groups
Objectives	• Explain Cloud Load Balancing features in Google Cloud. • Describe Managed instance groups and how to use them. • Explain how to use Managed Instance Groups with Load Balancers.
Activities	Lab: Configuring an HTTP Load Balancer with Autoscaling

Module 05 Storage in Google Cloud

Topics	• Overview of Storage and Database Services • Cloud Storage

Topics	• Managed Database Services • Data Lake Options
Objectives	• Explore storage options and use cases. • Explore the features of Cloud SQL and Cloud Spanner. • Learn about using Cloud Bigtable.
Activities	• Lab: Cloud Storage • Lab: Implementing Cloud SQL

Module 06 Containers in Google Cloud

Topics	• Containers in Google Cloud • Google Kubernetes Engine • Kubernetes Concepts and Architecture • Deployments and Networking • Hybrid and Multi-Cloud Computing with GKE Enterprise
Objectives	• Explain how containers can be utilized in Google Cloud. • Provision a Kubernetes cluster using GKE. • Explain how Deployments are used in Kubernetes. • Identify the purpose of hybrid and multi-cloud computing with GKE Enterprise.
Activities	• Lab: Getting started with Google Kubernetes Engine • Lab: Creating Google Kubernetes Engine Deployments

Module 07 Applications in Google Cloud

Topics	• Development of Applications in Google Cloud • Cloud Run Functions • Cloud Run
Objectives	• Describe how Cloud Run Functions can support application development. • Deploy a containerized application on Cloud Run.
Activities	Lab: Hello Cloud Run

Module 08 Monitoring in Google Cloud

Topics	• Monitoring in the Cloud • Cloud Operations

Topics	• Monitoring GKE Clusters • Monitoring Tools in Azure and Google Cloud
Objectives	• Describe Google Cloud's operations suite. • Create charts, alerts, and uptime checks for resources with Cloud Monitoring. • Describe system metrics collection in GKE.
Activities	Lab: Monitoring a Compute Engine VM using Ops Agent