Training: Google Cloud
Google Cloud Infrastructure for Azure Professionals

TRAINING GOALS:

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.

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 the deploying and monitoring of Google Cloud infrastructure.
- Identify the purpose and use cases for Cloud Run.

Audience

This course is primarily intended for cloud architects or cloud engineers who are experienced with Azure cloud.

Products

- Google Cloud VPN
- Google Cloud VPC
- Google Cloud Firewall

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- Compute Engine
- Cloud Storage
- Cloud SQL
- Google Kubernetes Engine
- GKE Enterprise
- Cloud Operations

CONSPECT:

- Resource and Access Management in Google Cloud
  - Topics
    - Google Cloud Resource Hierarchy
    - Identity and Access Management
    - Service Accounts
    - Interaction with Google Cloud
  - Objectives
    - Review the AWS 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
- Networking in Google Cloud
  - Topics
    - Networking Concepts in AWS and Google Cloud
    - Virtual Private Cloud Networking
    - Lab: VPC Networking
    - Cloud Routing
    - Interconnecting Networks
  - Objectives
    - Compare networking concepts in AWS and Google Cloud.
    - Understand VPC networking on Google Cloud.
    - Explain how Google Virtual Private Cloud (VPC) differs from AWS VPC.
    - Create and configure Private Google Access and Cloud NAT.
    - Determine which Google Cloud interconnect or peering service to use in specific circumstances.

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- Activities
  - Lab: VPC Networking
  - Lab: Implement Private Google Access and Cloud NAT
- 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
- Load Balancing and Managed Instance Groups on Google Cloud
  - Topics
    - Load Balancing in AWS 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
- Storage in Google Cloud
  - Topics
    - Overview of Storage and Database Services
    - Cloud Storage
    - 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

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        - Lab: Cloud Storage
        - Lab: Implementing Cloud SQL
- 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
- Applications in Google Cloud
    - Topics
        - Developing 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
- Monitoring in Google Cloud
    - Topics
        - Monitoring in the Cloud
        - Cloud Operations
        - Monitoring GKE Clusters
        - Monitoring Tools in AWS and Google Cloud
    - Objectives
        - Describe Google Cloud's operations suite.
        - Create charts, alerts, and uptime checks for resources with Cloud Monitoring.

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- Describe system metrics collection in GKE.

- Activities
  - Lab: Monitoring a Compute Engine VM using Ops Agent

REQUIREMENTS:

Familiarity with Azure terms and concepts.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud (course completion).

TRAINER:

Authorized Google Cloud Trainer

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