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Networking in Google Cloud Platform

Course#:SE-NGCP
Duration:2 Days
Price:0.00

Course Description

This two-day instructor-led class gives participants broad study of networking options on Google Cloud Platform. Through a combination of presentations, demonstrations, and hands-on labs, participants explore and deploy GCP networking technologies, such as Google Virtual Private Cloud (VPC) networks, subnets, firewalls; interconnection among networks; load balancing; Cloud DNS; Cloud CDN; Cloud NAT. The course will also cover common network design patterns and automated deployment using Deployment Manager or Terraform.

Objectives

This course teaches participants the following skills:

Understand how software containers work Understand the architecture of Kubernetes
Understand the architecture of Google Cloud Platform Understand how pod networking works in Kubernetes Engine
Create and manage Kubernetes Engine clusters using the GCP Console and gcloud/ kubectl commands Launch, roll back and expose jobs in Kubernetes
Manage access control using Kubernetes RBAC and Google Cloud IAM Managing pod security policies and network policies Using Secrets and ConfigMaps to isolate security credentials and configuration artifacts

Choose among and use Google Cloud Platform storage options: Google Cloud Storage, Google Cloud SQL, Google Cloud Bigtable, and Google Cloud Datastore

Audience

This class is intended for network engineers and network admins that are either using Google Cloud Platform or are planning to do so. The class is also for individuals that want to be exposed to software-defined networking solutions in the cloud.

Prerequisites

Familiarity with the Linux command line, web servers, and text editors.

Content

This course teaches participants the following skills:

Module 1: Google Cloud VPC Networking Fundamentals

Recall that networks belong to projects
Explain the differences among default, auto, and custom networks
Create networks and subnets
Explain how IPv4 addresses are assigned to Compute Engine instances
Publish domain names using Cloud DNS
Create Compute Engine instances with IP aliases
Create Compute Engine instances with multiple virtual network interfaces

Module 2: Controlling Access to VPC Networks

Outline how IAM policies affect VPC networks
Control access to network resources using service accounts

Control access to Compute Engine instances with tag-based firewall rules

Module 3: Sharing Networks across Projects

Outline the overall workflow for configuring shared VPC
Differentiate between the IAM roles that allow network resources to be managed
Configure peering between unrelated VPC networks
Recall when to use shared VPC and when to use VPC peering

Module 4: Load Balancing

Recall the various load balancing services
Configure Layer 7 HTTP(S) load balancing
Whitelist and blacklist IP traffic with Cloud Armor
Cache content with Cloud CDN
Configure internal load balancing
Determine which GCP load balancer to use when

Module 5: Hybrid Connectivity

Recall the GCP interconnect and peering services available to connect your infrastructure to GCP
Explain Dedicated Interconnect and Partner Interconnect
Describe the workflow for configuring a Dedicated Interconnect
Build a connection over a VPN with Cloud Router
Determine which GCP interconnect service to use when
Explain Direct Peering and Partner Peering
Determine which GCP peering service to use when

Module 6: Networking Pricing and Billing

Recognize how networking features are charged for
Use Network Service Tiers to optimize spend
Determine which Network Service Tier to use when
Recall that labels can be used to understand networking spend

Module 7: Network Design and Deployment

Explain common network design patterns
Automate the deployment of networks using Deployment Manager
Launch networking solutions using Cloud Marketplace

Module 8: Network Monitoring and Troubleshooting

Configure uptime checks, alerting policies, and charts for your network services
Use VPC Flow Logs to log and analyze network traffic behavior