

Networking in Google Cloud

Course#:NE-GCP
Duration:2 Days
Price:0.00

Course Description

This 2-day instructor-led course gives participants a broad study of networking options on Google Cloud. Through presentations, demonstrations, and hands-on labs, participants explore and deploy Google Cloud 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:

- Configure Google VPC networks, subnets, and routers
- Control administrative access to VPC objects
- Control network access to endpoints in VPCs
- Interconnect networks among Google Cloud projects
- Interconnect networks among Google Cloud VPC networks and on-premises or other-cloud networks
- Choose among Google Cloud load balancer and proxy options and configure them
- Use Cloud CDN to reduce latency and save money
- Optimize network spend using Network Tiers
- Configure Cloud NAT or Private Google Access to provide instances without public IP addresses access to other services
- Deploy networks declaratively using Cloud Deployment Manager or Terraform
- Design networks to meet common customer requirements
- Configure monitoring and logging to troubleshoot networks problems

Audience

This course is intended for the following participants:

Network engineers and Admins who are either using Google Cloud or are planning to do so
Individuals who want to be exposed to software-defined networking solutions in the cloud.

Prerequisites

To get the most out of this course, participants should:

Completed Google Cloud Fundamentals: Core Infrastructure or have equivalent experience.

Prior understanding of the 7 layer OSI model.

Prior understanding of IPv4 addressing.

Prior experience with managing IPv4 routes.

Content

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 Google Cloud DNS

Create Compute Engine instances with IP aliases

Create Compute Engine instances with multiple virtual network

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 tagbased 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 Network 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

Explain Layer 4 TCP or SSL proxy load balancing

Explain regional network load balancing

Configure internal load balancing

Recall the choices for enabling IPv6 Internet connectivity for Google Cloud load balancers

Determine which Google Cloud load balancer to use when

Module 5

Hybrid Connectivity

Recall the Google Cloud interconnect and peering services available to connect your infrastructure to Google Cloud

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 Google Cloud interconnect service to use when

Explain Direct Peering and Partner Peering

Determine which Google Cloud 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

Configure Private Google Access to allow access to certain Google Cloud services from VM instances with only internal IP addresses

Configure Cloud NAT to provide your instances without public IP addresses access to the internet

Automate the deployment of networks using Deployment Manager or Terraform
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