Networking in Google Cloud Training

Duration: **3 Day**

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Overview

The Networking in Google Cloud course builds on foundational networking knowledge and develops the practical skills needed to design, deploy, and manage network architectures in Google Cloud.

Throughout the course, participants explore VPC networks, subnets, interconnection options, load balancing, Cloud CDN, and other key Google Cloud networking services. The program focuses on how these technologies can be combined to create and manage effective cloud network environments.

The course uses a combination of presentations, demonstrations, and hands-on labs to help participants apply networking concepts in practical scenarios.

Prerequisites

Participants should have:

- Completed the Google Cloud Fundamentals: Core Infrastructure course or have equivalent experience
- An understanding of the seven-layer OSI model
- Knowledge of IPv4 addressing
- Experience with managing IPv4 routes

Who Should Attend

This course is particularly suitable for:

- Network engineers and administrators using or planning to use Google Cloud
- Professionals interested in software-defined networking solutions in cloud environments

What You Will Learn

By the end of the course, participants should be able to:

- Design, configure, and manage Google Cloud VPC networks and subnets.
- Implement network connectivity and traffic management strategies.
- Optimize network performance with Google Cloud technologies such as Cloud CDN and Service Tiers.
- Secure and monitor network resources using tools including Cloud Firewall, IDS, and VPC Flow Logs.
- Configure and manage load balancing and private network connectivity.

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Outline

Module 1 – VPC Networking Fundamentals

This module introduces the core concepts of VPC networking in Google Cloud.

Topics

- Overview of VPC networks
- Service Tiers
- Creating Compute Engine VMs with multiple network interfaces
- Managing VM networking

Module 2 – Sharing VPC Networks

This section examines options for sharing and connecting VPC environments.

Topics

- Shared VPC
- VPC Network Peering
- Migration between networks
- Lab exercises
- Quizzes

Module 3 – Network Monitoring and Logging

This module focuses on monitoring network resources and analysing network traffic.

Topics

- Configuring uptime checks
- Creating alerts
- Monitoring network resources
- VPC Flow Logs
- Network traffic analysis

Module 4 – Network Routing and Addressing in Google Cloud

This section covers routing, subnetting, firewall management, and addressing.

Topics

- Managing route tables
- Managing subnets
- Firewall configuration
- IP addressing
- Cloud DNS configuration

Module 5 – Private Connection Options

This module explores private connectivity options available in Google Cloud.

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Topics

- Private Google Access use cases
- Private Service Connect
- Configuring Cloud NAT
- Other private connectivity solutions

Module 6 – Network Architecture and Topologies

This section focuses on designing effective and resilient cloud network architectures.

Topics

- Best practices for network architecture design
- Designing resilient network topologies
- Implementing network topology solutions

Module 7 – Distributed Denial of Service (DDoS) Protection

This module examines Google Cloud approaches to DDoS protection.

Topics

- Google Cloud DDoS mitigation techniques
- Cloud Armor
- Implementing Cloud Armor for external Application Load Balancers

Module 8 – Advanced Security Monitoring and Analysis

This section introduces more advanced techniques for traffic inspection and security monitoring.

Topics

- Configuring Packet Mirroring
- Traffic inspection
- Network security best practices

Module 9 – Hybrid Load Balancing and Traffic Management

This module covers load balancing and traffic management approaches for hybrid environments.

Topics

- Hybrid load balancing options
- Traffic management strategies

Module 10 – Connectivity Options

The final module reviews the main connectivity solutions available in Google Cloud.

Topics

- Overview of Google Cloud connectivity solutions
- Cloud VPN

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- Interconnect
- Network Connectivity Center