

Cloud Network Engineer

Course Outline

Module 1: Preparing for Your Professional Cloud Network Engineer Journey

Topics Covered:

- Introduction
- Designing, planning, and prototyping a Google Cloud Network
- Implementing a VPC
- Configuring network services
- Implementing hybrid interconnectivity
- Managing, monitoring, and optimizing network operations

Module 2: Google Cloud Fundamentals: Core Infrastructure

Topics Covered:

- Introducing Google Cloud
- Resources and Access in the Cloud
- Virtual Machines and Networks in the Cloud
- Storage in the Cloud
- Containers in the Cloud
- Applications in the Cloud
- Developing and Deploying in the Cloud
- Logging and Monitoring in the Cloud

Hands-On Labs:

- A Tour of Google Cloud Hands-on Labs
- Compute Engine: Qwik Start - Windows
- Getting Started with Cloud Shell and gcloud
- Kubernetes Engine: Qwik Start
- Cloud Storage: Qwik Start - Cloud Console

Module 3: Networking in Google Cloud: Defining and Implementing Networks

Topics Covered:

- Google Cloud VPC Networking Fundamentals
- Controlling Access to VPC Networks
- Sharing Networks across Projects
- Load Balancing

Hands-On Labs:

- Securing Virtual Machines using BeyondCorp Enterprise (BCE)
- Multiple VPC Networks
- VPC Networks - Controlling Access
- HTTP Load Balancer with Cloud Armor
- Create an Internal Load Balancer
- Network Performance Testing
- Improving Network Performance I
- Improving Network Performance II
- Building a High-throughput VPN
- Cloud CDN

- Network Tiers - Optimizing Network Spend
- VPC Flow Logs - Analyzing Network Traffic

Module 4: Logging, Monitoring and Observability in Google Cloud

Topics Covered:

- Introduction to Monitoring in Google Cloud
- Avoiding Customer Pain
- Alerting Policies
- Monitoring Critical Systems
- Configuring Google Cloud Services for Observability
- Advanced Logging and Analysis
- Monitoring Network Security and Audit Logs
- Managing Incidents
- Investigating Application Performance Issues
- Optimizing the Costs of Monitoring

Hands-On Labs:

- Cloud IAM: Qwik Start
- IAM Custom Roles
- Service Accounts and Roles: Fundamentals
- VPC Network Peering
- User Authentication: Identity-Aware Proxy
- Getting Started with Cloud KMS
- Setting up a Private Kubernetes Cluster