

Networking in Google Cloud Platform

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 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 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.