Google PCNE - Objective Documentation Map

* Section 1: Designing, planning, and prototyping a Google Cloud network (~26% of the exam)
  + 1.1 Designing an overall network architecture.
    - Docs:
    - [Compute Engine IAM roles and permissions](https://cloud.google.com/compute/docs/access/iam#predefinedroles)
    - [Cloud CDN overview](https://cloud.google.com/cdn/docs/overview)
    - [Cloud NAT overview](https://cloud.google.com/nat/docs/overview)
    - [Cloud Load Balancing overview](https://cloud.google.com/load-balancing/docs/load-balancing-overview)
    - [Product overview | Google Cloud Armor](https://cloud.google.com/armor/docs/cloud-armor-overview)
    - [Network Intelligence Center | Google Cloud](https://cloud.google.com/network-intelligence-center/docs)
  + 1.2 Designing Virtual Private Cloud (VPC) instances.
    - Docs:
    - [VPC networks | Google Cloud](https://cloud.google.com/vpc/docs/vpc)
    - [VPC firewall rules | Cloud NGFW](https://cloud.google.com/vpc/docs/firewalls)
    - [Routes | VPC | Google Cloud](https://cloud.google.com/vpc/docs/routes)
    - [Shared VPC | Google Cloud](https://cloud.google.com/vpc/docs/shared-vpc)
    - [VPC Network Peering | Google Cloud](https://cloud.google.com/vpc/docs/vpc-peering)
    - [Choosing a Network Connectivity product | Google Cloud](https://cloud.google.com/network-connectivity/docs/how-to/choose-product)
    - [Global Locations - Regions & Zones | Google Cloud](https://cloud.google.com/about/locations)
    - [Regions and zones | Compute Engine Documentation | Google Cloud](https://cloud.google.com/compute/docs/regions-zones)
    - [Global, regional, and zonal resources | Compute Engine Documentation | Google Cloud](https://cloud.google.com/compute/docs/regions-zones/global-regional-zonal-resources)
    - [All networking pricing | Virtual Private Cloud](https://cloud.google.com/vpc/network-pricing)
    - [Compute Engine Service Level Agreement (SLA) | Google Cloud](https://cloud.google.com/compute/sla)
  + 1.3 Designing a hybrid and multi-cloud network.
    - Docs:
    - [Cloud VPN overview](https://cloud.google.com/network-connectivity/docs/vpn/concepts/overview)
    - [Cloud Interconnect overview](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/overview)
    - [Dedicated Interconnect overview | Google Cloud](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/dedicated-overview)
    - [Partner Interconnect overview | Google Cloud](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/partner-overview)
    - [Key terms | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/terminology)
    - [Cloud Interconnect pricing](https://cloud.google.com/network-connectivity/docs/interconnect/pricing)
    - [Choosing a Network Connectivity product | Google Cloud](https://cloud.google.com/network-connectivity/docs/how-to/choose-product#cloud-interconnect)
  + 1.4 Designing an IP addressing plan for Google Kubernetes Engine.
    - Docs:
    - [About cluster configuration choices | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/types-of-clusters)
    - [VPC-native clusters | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/alias-ips)
    - [Create a VPC-native cluster | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/alias-ips)
    - [Creating a routes-based cluster | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/routes-based-cluster)
    - [About private clusters | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/private-cluster-concept)
    - [Creating a private cluster | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/private-clusters)
  + Fundamental Networking Resources by Google:
    - Coursera course with 25 hours that can be audited:
    - [The Bits and Bytes of Computer Networking | Coursera](https://www.coursera.org/learn/computer-networking)
    - [Google Cloud Architecture Framework](https://cloud.google.com/architecture/framework)
* Section 2: Implementing Virtual Private Cloud (VPC) instances (~21% of the exam)
  + 2.1 Configuring VPCs.
    - Docs:
    - [VPC networks | Google Cloud](https://cloud.google.com/vpc/docs/vpc)
    - [Quickstart: Create and use VPC networks | Google Cloud](https://cloud.google.com/vpc/docs/using-vpc)
    - [VPC firewall rules | Cloud NGFW](https://cloud.google.com/vpc/docs/firewalls)
    - [Use VPC firewall rules | Cloud NGFW](https://cloud.google.com/vpc/docs/using-firewalls)
  + 2.2 Configuring routing.
    - Docs:
    - [Cloud VPN overview](https://cloud.google.com/network-connectivity/docs/vpn/concepts/overview)
    - [Best practices for Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/concepts/best-practices)
    - [HA VPN topologies | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/concepts/topologies)
    - [Classic VPN topologies | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/concepts/classic-topologies)
    - [Create an HA VPN gateway to a peer VPN gateway | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-ha-vpn)
    - [Create HA VPN gateways to connect VPC networks | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-ha-vpn2)
    - [Create a Classic VPN gateway using static routing | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-static-vpns)
    - [Networks and tunnel routing | Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/concepts/choosing-networks-routing)
    - [Cloud Router overview](https://cloud.google.com/network-connectivity/docs/router/concepts/overview)
    - [Routes | VPC | Google Cloud](https://cloud.google.com/vpc/docs/routes)
    - [Use routes | VPC | Google Cloud](https://cloud.google.com/vpc/docs/using-routes)
  + 2.3 Configuring and maintaining Google Kubernetes Engine clusters.
    - Docs:
    - [About cluster configuration choices | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/types-of-clusters)
    - [VPC-native clusters | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/alias-ips)
    - [Create a VPC-native cluster | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/alias-ips)
    - [Configure maximum Pods per node | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/flexible-pod-cidr)
    - [Setting up clusters with Shared VPC | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/cluster-shared-vpc)
    - [Network overview | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/network-overview)
    - [GKE Ingress for Application Load Balancers | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/ingress)
    - [Ingress configuration on Google Cloud | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/how-to/ingress-features)
    - [Best practices for GKE networking | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/best-practices/networking)
    - [Container-native load balancing | Google Kubernetes Engine (GKE)](https://cloud.google.com/kubernetes-engine/docs/concepts/container-native-load-balancing)
  + 2.4 Configuring and managing firewall rules.
    - Docs:
    - [VPC firewall rules | Cloud NGFW](https://cloud.google.com/vpc/docs/firewalls)
    - [Use VPC firewall rules | Cloud NGFW](https://cloud.google.com/vpc/docs/using-firewalls)
    - [Firewall Rules Logging | Cloud NGFW](https://cloud.google.com/vpc/docs/firewall-rules-logging)
    - [Use Firewall Rules Logging | Cloud NGFW](https://cloud.google.com/vpc/docs/using-firewall-rules-logging)
    - [View and understand Firewall Insights | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/firewall-insights/how-to/using-firewall-insights)
    - [Firewall Insights overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/firewall-insights/concepts/overview)
  + 2.5 Implementing VPC Service Controls.
    - Docs:
    - [Overview of VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/overview)
    - [Service perimeter details and configuration | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/service-perimeters)
    - [Ingress and egress rules | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/ingress-egress-rules)
    - [Sharing across perimeters with bridges | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/share-across-perimeters)
    - [Create a service perimeter | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/create-service-perimeters)
    - [Dry run mode for service perimeters | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/dry-run-mode)
    - [Ingress and egress rules | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/ingress-egress-rules)
    - [Sharing across perimeters with bridges | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/share-across-perimeters)
    - [Creating a perimeter bridge | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/create-perimeter-bridges)
    - [Secure data exchange with ingress and egress rules | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/secure-data-exchange)
    - [Context-aware access with ingress rules | VPC Service Controls | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/context-aware-access)
    - [Access level attributes | Access Context Manager | Google Cloud](https://cloud.google.com/access-context-manager/docs/access-level-attributes)
    - [Custom access level specification | Access Context Manager | Google Cloud](https://cloud.google.com/access-context-manager/docs/custom-access-level-spec)
* Section 3: Configuring network services (~23% of the exam)
  + 3.1 Configuring load balancing.
    - Docs:
    - [Cloud Load Balancing overview](https://cloud.google.com/load-balancing/docs/load-balancing-overview)
    - [Choose a load balancer](https://cloud.google.com/load-balancing/docs/choosing-load-balancer)
    - [Load balancer feature comparison](https://cloud.google.com/load-balancing/docs/features)
    - [External Application Load Balancer overview](https://cloud.google.com/load-balancing/docs/https)
    - [Internal Application Load Balancer overview](https://cloud.google.com/load-balancing/docs/l7-internal)
    - [Backend service-based external passthrough Network Load Balancer overview](https://cloud.google.com/load-balancing/docs/network)
    - [Internal passthrough Network Load Balancer overview](https://cloud.google.com/load-balancing/docs/internal)
    - [External proxy Network Load Balancer overview](https://cloud.google.com/load-balancing/docs/ssl)
    - [External proxy Network Load Balancer overview](https://cloud.google.com/load-balancing/docs/tcp)
    - [Backend services overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/backend-service)
    - [Forwarding rules overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/forwarding-rule-concepts)
    - [Instance groups | Compute Engine Documentation | Google Cloud](https://cloud.google.com/compute/docs/instance-groups)
    - [Basic scenarios for creating managed instance groups (MIGs) | Compute Engine Documentation | Google Cloud](https://cloud.google.com/compute/docs/instance-groups/creating-groups-of-managed-instances)
    - [Network endpoint groups overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/negs)
    - [Zonal network endpoint groups overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/negs/zonal-neg-concepts)
    - [Internet network endpoint groups overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/negs/internet-neg-concepts)
    - [Serverless network endpoint groups overview | Load Balancing | Google Cloud](https://cloud.google.com/load-balancing/docs/negs/serverless-neg-concepts)
  + 3.2 Configuring Google Cloud Armor policies.
    - Docs:
    - [Security policy overview | Google Cloud Armor](https://cloud.google.com/armor/docs/security-policy-overview)
    - [Configure Google Cloud Armor security policies](https://cloud.google.com/armor/docs/configure-security-policies)
    - [Configure custom rules language attributes | Google Cloud Armor](https://cloud.google.com/armor/docs/rules-language-reference)
    - [Tune Google Cloud Armor preconfigured WAF rules](https://cloud.google.com/armor/docs/rule-tuning)
  + 3.3 Configuring Cloud CDN.
    - Docs:
    - [Cloud CDN overview](https://cloud.google.com/cdn/docs/overview)
    - [Choose a CDN product | Google Cloud](https://cloud.google.com/cdn/docs/features)
    - [Content delivery best practices | Cloud CDN](https://cloud.google.com/cdn/docs/best-practices)
    - [Caching overview | Cloud CDN](https://cloud.google.com/cdn/docs/caching)
    - [Authenticate content | Cloud CDN](https://cloud.google.com/cdn/docs/private-content)
    - [Use signed URLs | Cloud CDN](https://cloud.google.com/cdn/docs/using-signed-urls)
    - [Use signed cookies | Cloud CDN](https://cloud.google.com/cdn/docs/using-signed-cookies)
    - [Cache invalidation overview | Cloud CDN](https://cloud.google.com/cdn/docs/cache-invalidation-overview)
    - [Invalidate cached content | Cloud CDN](https://cloud.google.com/cdn/docs/invalidating-cached-content)
  + 3.4 Configuring and maintaining Cloud DNS.
    - Docs:
    - [Cloud DNS overview](https://cloud.google.com/dns/docs/overview)
    - [General DNS overview | Google Cloud](https://cloud.google.com/dns/docs/dns-overview)
    - [Best practices for Cloud DNS](https://cloud.google.com/dns/docs/best-practices)
    - [Key terms | Cloud DNS](https://cloud.google.com/dns/docs/key-terms)
    - [Create, modify, and delete zones | Cloud DNS](https://cloud.google.com/dns/docs/zones)
    - [Add, modify, and delete records | Cloud DNS](https://cloud.google.com/dns/docs/records)
    - [DNS Security Extensions (DNSSEC) overview | Google Cloud](https://cloud.google.com/dns/docs/dnssec)
    - [Name resolution order | Cloud DNS](https://cloud.google.com/dns/docs/vpc-name-res-order)
    - [DNS policies overview | Google Cloud](https://cloud.google.com/dns/docs/policies-overview)
    - [Create a zone with cross-project binding | Cloud DNS](https://cloud.google.com/dns/docs/zones/cross-project-binding)
    - [DNS server policies | Google Cloud](https://cloud.google.com/dns/docs/server-policies-overview)
    - [Manage response policies and rules | Cloud DNS](https://cloud.google.com/dns/docs/zones/manage-response-policies)
    - [Manage DNS routing policies and health checks | Google Cloud](https://cloud.google.com/dns/docs/zones/manage-routing-policies)
  + 3.5 Configuring Cloud NAT.
    - Docs:
    - [Cloud NAT overview](https://cloud.google.com/nat/docs/overview)
    - [IP addresses and ports | Cloud NAT](https://cloud.google.com/nat/docs/ports-and-addresses)
    - [Quickstart: Set up and manage network address translation with Public NAT | Google Cloud](https://cloud.google.com/nat/docs/using-nat)
    - [Use Public NAT with Compute Engine | Google Cloud](https://cloud.google.com/nat/docs/gce-example)
    - [Set up and manage Cloud NAT rules](https://cloud.google.com/nat/docs/using-nat-rules)
  + 3.6 Configuring network packet inspection.
    - Docs:
    - [Multiple network interfaces | VPC | Google Cloud](https://cloud.google.com/vpc/docs/multiple-interfaces-concepts)
    - [Create VMs with multiple network interfaces | VPC | Google Cloud](https://cloud.google.com/vpc/docs/create-use-multiple-interfaces)
    - [Internal passthrough Network Load Balancers as next hops](https://cloud.google.com/load-balancing/docs/internal/ilb-next-hop-overview)
    - [Set up internal passthrough Network Load Balancer for third-party appliances](https://cloud.google.com/load-balancing/docs/internal/setting-up-ilb-next-hop)
    - [Packet Mirroring | VPC | Google Cloud](https://cloud.google.com/vpc/docs/packet-mirroring)
    - [Use Packet Mirroring | VPC | Google Cloud](https://cloud.google.com/vpc/docs/using-packet-mirroring)
    - [Monitor Packet Mirroring | VPC | Google Cloud](https://cloud.google.com/vpc/docs/monitoring-packet-mirroring)
* Section 4: Implementing hybrid interconnectivity (~14% of the exam)
  + 4.1 Configuring Cloud Interconnect.
    - Docs:
    - [Best practices for Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/best-practices)
    - [Key terms | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/terminology)
    - [Partner Interconnect overview | Google Cloud](https://cloud.google.com/network-connectivity/docs/interconnect/concepts/partner-overview)
    - [Partner Interconnect provisioning overview | Google Cloud](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/provisioning-overview)
    - [Create VLAN attachments | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/creating-vlan-attachments)
    - [Request connections | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/requesting-connections)
    - [Activate connections | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/activating-connections)
    - [Configure on-premises routers | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/configuring-onprem-routers)
    - [Create VLAN attachments | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/partner/creating-vlan-attachments)
    - [Create VLAN attachments | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/dedicated/creating-vlan-attachments)
    - Dedicated 4 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/dedicated-creating-9999-availability>
    - Partner 4 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/partner-creating-9999-availability>
    - Dedicated 3 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/dedicated-creating-999-availability>
    - Partner 3 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/partner-creating-999-availability>
  + 4.2 Configuring a site-to-site IPsec VPN.
    - Docs:
    - [VPC Network Peering | Google Cloud](https://cloud.google.com/vpc/docs/vpc-peering#on-premises_access_from_peer_network)
    - [Shared VPC | Google Cloud](https://cloud.google.com/vpc/docs/shared-vpc#hybrid_cloud_scenario)
    - [Options for connecting to multiple VPC networks | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/enabling-multiple-networks-access-same-attachment)
    - [Cloud VPN overview](https://cloud.google.com/network-connectivity/docs/vpn/concepts/overview)
    - [Create a Classic VPN gateway using static routing | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-static-vpns)
    - [Networks and tunnel routing | Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/concepts/choosing-networks-routing#traffic-selectors)
    - [HA VPN topologies | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/concepts/topologies)
    - [Create an HA VPN gateway to a peer VPN gateway | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-ha-vpn)
  + 4.3 Configuring Cloud Router.
    - Docs:
    - [Cloud Router overview](https://cloud.google.com/network-connectivity/docs/router/concepts/overview)
    - [Create a Cloud Router to connect a VPC network to a peer network | Google Cloud](https://cloud.google.com/network-connectivity/docs/router/how-to/creating-routers)
    - [Establish BGP sessions | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/configuring-bgp)
    - [Update the base route priority | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/updating-priority)
    - [Custom advertised routes | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/advertising-overview)
    - [Advertise custom address ranges | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/advertising-custom-ip)
    - [Advertise specific VPC subnets | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/advertising-subnets)
    - [Create an HA VPN gateway to a peer VPN gateway | Google Cloud](https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-ha-vpn)
    - Dedicated 4 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/dedicated-creating-9999-availability>
    - Partner 4 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/partner-creating-9999-availability>
    - Dedicated 3 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/dedicated-creating-999-availability>
    - Partner 3 nines:<https://cloud.google.com/network-connectivity/docs/interconnect/tutorials/partner-creating-999-availability>
* Section 5: Managing, monitoring, and optimizing network operations (~16% of the exam)
  + 5.1 Logging and monitoring with Google Cloud’s operations suite.
    - Docs:
    - [Global external Application Load Balancer logging and monitoring](https://cloud.google.com/load-balancing/docs/https/https-logging-monitoring)
    - [View logs and metrics | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/viewing-logs-metrics)
    - [Logs and metrics | Cloud NAT](https://cloud.google.com/nat/docs/monitoring)
    - [View logs and metrics | Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/how-to/viewing-logs-metrics)
    - [VPC Service Controls audit logging | Google Cloud](https://cloud.google.com/vpc-service-controls/docs/audit-logging)
    - [Google Cloud Armor audit logging information](https://cloud.google.com/armor/docs/audit-logging)
    - [Use request logging | Google Cloud Armor](https://cloud.google.com/armor/docs/request-logging)
    - [Monitor connections | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/how-to/monitoring)
    - [Monitoring Google Cloud Armor security policies](https://cloud.google.com/armor/docs/monitoring)
    - [Google Cloud metrics - Monitoring](https://cloud.google.com/monitoring/api/metrics_gcp)
  + 5.2 Managing and maintaining security.
    - Docs:
    - [Firewall Rules Logging | Cloud NGFW](https://cloud.google.com/vpc/docs/firewall-rules-logging)
    - [Use Firewall Rules Logging | Cloud NGFW](https://cloud.google.com/vpc/docs/using-firewall-rules-logging)
    - [Firewall Insights overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/firewall-insights/concepts/overview)
    - [Review and optimize firewall rules](https://cloud.google.com/network-intelligence-center/docs/firewall-insights/how-to/working-with-common-use-cases)
    - [Troubleshoot IAM permissions | Policy Intelligence | Google Cloud](https://cloud.google.com/iam/docs/troubleshooting-access)
    - [Optimize IAM policies | IAM Documentation | Google Cloud](https://cloud.google.com/iam/docs/policy-intelligence-tools)
    - [Analyze IAM policies | Policy Intelligence | Google Cloud](https://cloud.google.com/asset-inventory/docs/analyzing-iam-policy)
    - [Policy Simulator for allow policies | Policy Intelligence | Google Cloud](https://cloud.google.com/iam/docs/understanding-simulator)
    - [Overview of role recommendations | Policy Intelligence | Google Cloud](https://cloud.google.com/iam/docs/recommender-overview)
    - [Test permissions for custom user interfaces | IAM Documentation | Google Cloud](https://cloud.google.com/iam/docs/testing-permissions)
  + 5.3 Maintaining and troubleshooting connectivity issues.
    - Docs:
    - [VPC Flow Logs | Google Cloud](https://cloud.google.com/vpc/docs/flow-logs)
    - [Configure VPC Flow Logs | Google Cloud](https://cloud.google.com/vpc/docs/using-flow-logs)
    - [View logs and metrics | Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/how-to/viewing-logs-metrics)
    - [Troubleshooting | Cloud VPN](https://cloud.google.com/network-connectivity/docs/vpn/support/troubleshooting)
    - [View logs and metrics | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/how-to/viewing-logs-metrics)
    - [Troubleshoot BGP sessions | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/support/troubleshooting)
    - [Troubleshooting | Cloud Interconnect](https://cloud.google.com/network-connectivity/docs/interconnect/support/troubleshooting)
  + 5.4 Monitoring, maintaining, and troubleshooting latency and traffic flow.
    - Docs:
    - [Google Cloud Community | Network Throughput](https://cloud.google.com/community/tutorials/network-throughput)
    - [Using netperf and ping to measure network latency | Google Cloud Blog](https://cloud.google.com/blog/products/networking/using-netperf-and-ping-to-measure-network-latency)
    - [Performance Dashboard overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/performance-dashboard/concepts/overview)
    - [Network Topology metrics | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/network-topology/reference/metrics-reference)
    - [Google Cloud Performance Kit Benchmarker](https://github.com/GoogleCloudPlatform/PerfKitBenchmarker)
    - [Routes | VPC | Google Cloud](https://cloud.google.com/vpc/docs/routes)
    - [Troubleshoot internal connectivity between VMs | VPC | Google Cloud](https://cloud.google.com/vpc/docs/ts-vm-vm-internal)
    - [Troubleshoot BGP sessions | Cloud Router](https://cloud.google.com/network-connectivity/docs/router/support/troubleshooting)
    - [Connectivity Tests overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/connectivity-tests/concepts/overview)
    - [Performance Dashboard overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/performance-dashboard/concepts/overview)
    - [Firewall Insights overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/firewall-insights/concepts/overview)
    - [Network Topology overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/network-topology/concepts/overview)
    - [Network Topology metrics | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/network-topology/reference/metrics-reference)
    - [Connectivity Tests overview | Google Cloud](https://cloud.google.com/network-intelligence-center/docs/connectivity-tests/concepts/overview)