Oracle Cloud Infrastructure Networking Professional (2025): Hands-on Workshop

Oracle Cloud Infrastructure

DURATION	MODULES	COURSE CODE
3 Days	**10 Lectures**	**—**

Course Overview

Develop deep technical proficiency in building secure, high-performance network infrastructures using Oracle Cloud Infrastructure (OCI) Networking and Connectivity solutions. Explore the core components of OCI's Virtual Cloud Network (VCN). Additionally, with the hands-on practices, you'll gain experience in designing, implementing, and optimizing resilient network architectures on OCI.

What You Will Learn

Module 01: OCI Networking Professional Overview

- Welcome! OCI 2025 Certified Networking Professional
- Abilities Validated by this Certification
- Recommendations & Learning Path
- Course Outline & Go Earned!

Module 02: Introduction to Virtual Cloud Network (VCN)

- OCI Architecture Overview
- Virtual Cloud Network Networking Constructs
- Introduction to RFC 1918
- Private IPv4 Addresses
- IP Address Range for Your VCN
- Hands-on Demos:
- Create a VCN Manually
- Create a VCN using the VCN Wizard
- Subnets
- Subnet Concepts
- Types of Subnets
- Hands-on Demos:
- Create a Public Subnet

- Create a Private Subnet
- Virtual Network Interface Card (VNIC)
- VNIC Overview
- Multiple VNICs on VMs
- Secondary IPs, Private IPs, Public IPs
- Hands-on Demo: Virtual Network Interface Card (VNIC)
- OCI Public IP Addresses
- Overview of Public IPs
- Types of Public IPs
- BYOIP (Bring Your Own IP)
- IP Pools & Quotas
- Hands-on Demo: IP Address Management
- Security List & Network Security Group (NSG)
- Security List Concepts: Stateful vs Stateless Rules
- NSG Concepts and Use Cases
- Hands-on Demos:
- Security List
- Network Security Group
- Nested NSG

Module 03: Route Tables and Gateways

- Route Tables: Basics and Routing to Private IP
- OCI Gateways Overview
- Internet Gateway (IGW) – Demo
- NAT Gateway – Demo
- Local Peering Gateway (LPG) – Demo
- Remote Peering Connection (RPC) – Demo
- Dynamic Routing Gateway (DRG) – Demo
- Oracle Services Network & Service Gateway – Demo
- OCI Private Endpoints – Demo
- Tips and Tricks: Rename VCN, Cloud Shell/CLI

Module 04: Plan and Design OCI Networking Solutions

- IPv6 Introduction & Benefits
- IPv6 Addressing Model and Planning Considerations
- Launching IPv6 Instances on OCI
- IPv6 Design Examples: East-West and North-South
- Hands-on Demo: IPv6 on OCI
- IP Management: BYOIP, Reserved Public IPs, Public IP Pools
- Load Balancing Overview
- Public, Private, Network Load Balancers
- Content-Based Routing
- Health Checks & Metrics
- Hands-on Demos: Public & Private Load Balancers
- DHCP and DNS Management

- Public DNS & Private DNS
- DNSSEC, Private Views, Endpoints, Rules
- Hands-on Demos: Public & Private DNS Zones
- Traffic Management and Steering Policies

Use Cases: Failover, Cloud Migration, Hybrid/Multi-Cloud, Geolocation, Canary Testing

- Hands-on Demo: Geolocation Steering

Module 05: Hybrid Networking Architectures

- Dynamic Routing Gateways (DRG)
- Features, Benefits, Attachments, Routing Engine
- Metrics & Use Cases
- OCI Realms Overview
- Border Gateway Protocol (BGP)
- Routing Overview, ECMP, Multiple FastConnect
- Site-to-Site VPN
- Product Overview, Use Cases, Redundancy
- Static Routing & BGP
- Policy-Based vs Route-Based VPNs
- Hands-on Demo: Site-to-Site VPN with BGP
- FastConnect
- Connectivity Models: Partner, Direct, Public & Private Peering
- IPsec Over FastConnect & Redundancy
- Hands-on Demos: Private Peering, Public Peering, OCI-Azure Interconnect

Module 06: OCI Transit Routing

- Introduction to Transit Routing
- Transit Routing Options via:
- Local Peering Gateway (LPG)
- Dynamic Routing Gateway (DRG)
- Third-Party Appliance
- Remote Peering Connection (RPC)
- Hands-on Demo: Transit Routing via RPC

Module 07: Implement and Operate Secure OCI Networking

- Inter-Tenancy Connectivity
- Local vs Remote Peering Scenarios
- DRG Attachments
- Hands-on Demos: LPG, DRG, DRG Attachments
- OCI Bastion Service
- Managed SSH & Port Forward Sessions
- Hands-on Demo: OCI Bastion Service
- OCI Zero Trust Packet Routing (ZPR)
- Architecture, Workflow, Use Cases
- Hands-on Demo: ZPR

- OCI Network Firewall

Use Cases: Perimeter Security, Intrusion Detection, OSN Access, Zero-Trust Segmentation

- Logging, Monitoring, Analytics
- Hands-on Demo: Network Firewall
- Cloud Shell Overview
- Public vs Private Network Access
- Hands-on Demo: Cloud Shell
- OCI Web Application Firewall (WAF)
- Architecture, Use Cases, Features, Policies
- Hands-on Demo: WAF Policies
- OCI Certificates
- Digital Certificates, Certificate Authorities, TLS & mTLS Connections
- Lifecycle Management
- Hands-on Demo: Certificates

Module 08: Migrate Workloads to OCI

- Workload Migration Strategies
- Data Migration
- BYOIP
- DNS
- Summary

Module 09: Network Command Center

- Network Operations Overview
- Inter-Region Latency (IRL)
- Dashboards, Use Cases
- Hands-on Demo: Inter-Region Latency
- Network Visualizer
- VCN, Subnet, Regional Topology Maps
- Use Cases
- Hands-on Demo: Network Visualizer
- Network Path Analyzer (NPA)
- Features, Scenarios, Limitations
- Hands-on Demo: Network Path Analyzer
- Virtual Test Access Point (VTAP)
- Components, Capture Filters, Use Cases
- Hands-on Demo: VTAP
- VCN Flow Logs
- Features, Enablement Points, Use Cases
- Hands-on Demo: VCN Flow Logs

Module 10: OCI Networking Best Practices

- Network Design Best Practices
- Hub-and-Spoke VCN Design

- Security Best Practices (CIS Landing Zone, NSG Usage)
- OCI Network Connectivity Best Practices
- Redundancy, FastConnect Partners
- OCI Network Monitoring, Observability & Management
- Network Command Center Tools
- Notifications for Key Network Events