Oracle Cloud Infrastructure Architect Associate (2025): Hands-on Workshop

Oracle Cloud Infrastructure

DURATION	MODULES	COURSE CODE
5 Days	**23 Lectures**	**—**

Course Overview

Develop key insights into key concepts and features of Oracle Cloud Infrastructure (OCI). Identify how OCI's global distribution of infrastructure components can assist your enterprise.

What You Will Learn

Module 01: Course Overview

- Course Speakers
- For Whom is This Course Intended?
- Course Outline
- Measuring Your Progress: Skill Checks
- Get the Answers You Need: “Ask Your Instructor” & OU Community
- Best Practices and Retention Tips

Module 02: Identity and Access Management (IAM) Overview

- Introduction
- What is OCI IAM?
- OCI IAM: Authentication (AuthN)
- OCI IAM Components
- OCI IAM Summary
- OCI IAM Identity Domains
- What are IAM Identity Domains?
- Identity Domains Overview
- Identity Domains Use Cases
- Identity Lifecycle Management
- IAM with Identity Domains
- Identity Domain Types

Module 03: IAM Basics

- Managing OCI IAM Identity Domains
- Default Identity Domain
- Dos and Don’ts for Administrator Users
- Creating Identity Domains
- Why Multiple Identity Domains are Needed
- Demo: Creating Identity Domains
- Demo: Creating Groups
- Managing Groups
- Default Groups in Identity Domains
- Creating Users
- Managing Users
- User Lifecycle Management
- Demo: Creating Users and Groups
- Administrator Roles
- Understanding Administrator Roles
- Types of Administrator Roles
- Assigning Administrative Roles (Demo)
- Policies
- Subjects, Actions, Placement Clauses
- Demo: Policies
- Compartments
- Resource Compartments & Access
- Nested Compartments
- Compartment Quotas: Syntax, Examples, Policy Types
- Budgets

Module 04: IAM Advanced

- Policy Inheritance and Attachment
- Demo: Policy Inheritance
- Conditional Policies & Examples
- Demo: Creating Users
- Enforce Least Privilege: Advanced Policies
- Permissions Example
- Tag-Based Access Control (Demo)
- Dynamic Groups (Scenario & Demo)
- Network Sources (Demo & Scenario)
- Resource Principals: Patterns
- Infrastructure, Stacked, Ephemeral Principals
- Optimizing IAM Policies
- Eliminating Duplicates
- Consolidating Group Membership
- Combining Policy Statements
- Object-Level Granular Access Control for OCI Object Storage

- Object IAM Policy Examples

Module 05: Expert Tip 1

Module 06: Networking – Virtual Cloud Network (VCN)

- CIDR Block Prefixes
- VCN Overview & Components
- Subnets
- Types of Subnets
- Demo: Create VCN (Manual & Wizard)
- Route Tables
- Route Rules & Target Types
- Demo: Route Tables
- Gateways
- Internet Gateway (Demo)
- NAT Gateway (Demo)
- Service Gateway (Demo)
- Public & Private Subnets (Demo)
- VCN Security
- Network Security Groups (NSG), Stateful & Stateless Rules (Demo)
- Security Lists (Demo)

Module 07: Networking – IP Management

- IP Management Overview
- Private IPs
- Public IPs & Types
- Reserved Public IP
- Bring Your Own IP (BYOIP)
- Benefits & Workflow
- Public IP Pools
- Demo: IP Management

Module 08: Networking – Connectivity

- VCN Connectivity Options
- Local vs. Remote Peering
- Local Peering (LPGs & Upgraded DRG) Demo
- Remote Peering Connection & Across Regions Demo
- BGP Basics & Dynamic Routing Gateway (DRG)
- DRG Attachments, Route Tables & Distributions
- Demo: Dynamic Routing Gateway
- Site-to-Site VPN
- Overview, Use Cases, CPE, Tunnel Modes, Demo
- FastConnect Overview
- Concepts, Connectivity Models

- Oracle Partner, Third-Party Provider & Colocation Setups
- FastConnect Redundancy & Best Practices
- Demo: FastConnect

Module 09: Expert Tip 2

Module 10: Networking – Load Balancer

- OCI Load Balancing Service Overview
- Load Balancer Concepts & Shapes
- Content-Based Routing (Host & Path-Based)
- Load Balancing Policies: Round Robin, Least Connections, IP Hash
- Health Checks
- Public Load Balancers
- Regional & AD-Specific Subnets Demo
- Private Load Balancers (Demo)
- Network Load Balancers (Demo)
- Web Application Acceleration Overview
- Use Cases & Concepts
- Demo: Web Application Acceleration

Module 11: Networking – DNS Management

- What is DNS?
- Domain Name System (DNS) Introduction
- OCI DNS Capabilities & Benefits of OCI Public DNS
- DNS Service Components
- OCI DNS Management
- Zones
- Public DNS Zone (Demo)
- Private DNS Zone (Demo)
- Choices for DNS in VCN
- Private Views
- HTTP Redirects
- Traffic Management
- Components & Policy Types
- Steering Policy Types & Use Cases
- Demo: Failover Policy, Load Balancer Policy, Geolocation Steering Policy

Module 12: Networking – Network Command Center

- Network Command Center Overview
- Inter-Region Latency (IRL)
- OCI Global Locations & IRL Dashboard
- Current Round-Trip Time
- Use Cases
- Demo: Inter-Region Latency

- Network Path Analyzer (NPA)
- Features & Scenarios
- Demo: Network Path Analyzer
- Network Visualizer
- Architecture Overview
- Use Cases
- Demo: Network Visualizer
- Capture Filters (VTAP Capture Filter Overview)
- Rules, Actions, Examples
- Demo: Capture Filters
- Virtual Test Access Points (VTAP)
- Components, Source & Target
- Use Cases
- Demo: Virtual Test Access Points

Module 13: Expert Tip

Module 14: Compute – Basics

- Overview of Compute Service
- OCI Compute Service Features
- Platform and Custom Images
- Instance Images: Platform & Custom
- Import/Export & Bring Your Own Image (BYOI)
- Compute Shapes
- Flexible Shapes, GPU Shapes (VM GPU, BMGPU)
- Bare Metal vs VM vs Dedicated Hosts
- Demo: Generate SSH Keypair
- Demo: Launch & Connect to Oracle Linux and Windows Instances
- Demo: Create Custom Image
- Capacity Types
- Preemptible Instances (Demo)
- Capacity Reservations (Demo)
- Dedicated VM Hosts (Demo)

Module 15: Compute – Advanced

- Burstable Instances
- Supported Shapes, Examples, Demo
- Vertical Scaling (Demo)
- Compute Autoscaling
- Instance Configurations & Pools
- Configuring Autoscaling (Demo)
- Oracle Cloud Agent
- Oracle OS Management Hub (OSMH)
- Architecture, Dashboard, Benefits, Components, Policies
- Supported OS Platforms

- Lifecycle Environments & Management Station
- Demo: Run Command
- Instance Console Connections (Demo)
- Infrastructure Maintenance
- VM Relocation & Live Migration
- Shielded Instances (Demo)
- Confidential Computing
- Supported Shapes & Benefits

Module 16: Object Storage – Basics

- Overview of Object Storage & OCI Storage Services
- Object Storage Resources & Endpoints
- Demo: Create Bucket, Upload Objects, Manage Visibility
- Multipart Uploads
- Console, CLI, Multipart Upload API (Demo)
- Object Storage Tiers & Auto-Tiering (Demo)
- Object Lifecycle Management
- Lifecycle Policy Rules & Filters
- Demo: Update Storage Tier via Lifecycle Management

Module 17: Expert Tip

Module 18: Object Storage – Advanced

- Object Storage Replication (Demo)
- Object Versioning (Demo)
- Retention Rules
- Types, Lock, Time-Bound & Indefinite (Demo)
- Object Copy (Demo)
- Object Storage Logging (Demo)
- Securing Object Storage
- Initial & Routine Security Tasks
- Pre-Authenticated Requests (Demo)
- Customer Managed Keys (Demo)
- Object Re-encryption & Automation

Module 19: Block Storage – Basics

- Overview of Block Volume & OCI Storage Services
- Features, Use Cases, NVMe SSD Devices
- Volume Attachment Types (iSCSI vs Paravirtualized)
- Boot Volumes & Custom Boot Volumes
- Troubleshooting & Demo: Block Volume Creation & Attachments
- Block Volume Performance
- Performance Levels & Autotuning

Module 20: Block Storage – Advanced

- Resizing Volumes (Online & Offline) (Demo)
- Block Volume Backups & Restore (Demo)
- Block Volume Clones (Demo)
- Cross Region & Cross Availability Domain Replication (Demo)
- Volume Groups & Encryption (Demo)

Module 21: File Storage – Basics

- Overview of File Storage & OCI Storage Services
- Use Cases & Service Features
- Mounting a File System (Demo)
- NFS Export Options (Demo)
- File System Paths & Export Paths

Module 22: File Storage – Advanced

- File System Snapshots (Demo: Create & Restore)
- File System Cloning (Demo)
- In-Transit Encryption (Demo)
- File System Replication (Demo)
- File Storage Security
- Usage and Metering
- Snapshot & Clone Metered Utilization

Module 23: Expert Tip