

Oracle Cloud Infrastructure Operations Professional(2023): Hands-on Workshop

Oracle Cloud Infrastructure

DURATION

3 Days

MODULES

10 Lectures

COURSE CODE

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Course Overview

This course is going to walk you through some of the day-to-day operational activities that you might find yourself managing in the Oracle Cloud Infrastructure ecosystem.

What You Will Learn

Module 1: Introduction

- Operations Professional Course Overview
- Course Big Picture

Module 1: Interacting with OCI

- Interacting with OCI: Console, CLI, SDK, REST API
- REST API
- Cloud Console
- Command Line Interface (CLI)
- Software Development Kit (SDK)
- OCI CLI Authentication
- Recall, Authentication, API Keys, Security Tokens
- Instance and Resource Principals
- Cloud Shell
- OCI CLI Syntax
- Syntax, Examples, Option Types
- Generating Examples, Advanced Examples

Module 2: Resource & Configuration Management

- Resource and Configuration Management Overview
- Infrastructure as Code: Terraform

- Configuration Management: Ansible
- Ansible vs Terraform
- CM Lifecycle, Roadmap, and DevOps Integration
- OCI Ansible Collection and Modules
- Using Ansible Playbooks: Examples and Demos
- Common Errors in Ansible
- Terraform Introduction
- Overview, Workflow, Advantages
- Terraform CLI Commands (apply, refresh, plan, destroy)
- Providers, Terraform Language, Modules, Registry
- OCI Resource Manager Basics
- Local Terraform Drawbacks and Version Control
- Cloud-based Terraform with Resource Manager
- Resource Discovery, Drift Detection, Templates

Module 3: Common Operational Activities

- OCI Compute Operations
- Objectives, Custom Images, Best Practices
- Managing Custom Images with Userdata
- Disaster Recovery Considerations
- Importing/Exporting Images
- OCI Troubleshooting
- SSH Connections, Instance Console, User Data Execution
- Performance Troubleshooting
- OS Management with OCI
- OS Management Service Overview (Oracle Linux & Windows)
- Instance Details, Package Updates, Software Sources
- Fleet Management, CVEs, Scheduled Jobs, Metrics, and Alarms
- Load Balancer Operations
- OCI Load Balancing Concepts, Shapes, Policies, Health Checks
- Request Routing, SSL Certificates, SSL Handling, Metrics
- Traffic Management and Health Checks
- DNS Traffic Management, Steering Policies, OCI Health Checks
- Storage Operations

Block Volumes: Backup, Restore, Cloning, Volume Groups, Multi-Attach, Performance

- File Systems: Management, Utilization, Export Options, Performance

Object Storage: Buckets, Objects, Lifecycle Management, Multipart Uploads, Replication, Versioning, Security

Module 4: Troubleshooting and Disaster Recovery

- Networking Services Troubleshooting
- IPSec Connection Testing, FastConnect Redundancy, Health Checks
- Block Volume Troubleshooting

Backup Copy Errors, Recovery Steps, Multi-Attach, Volume Resize, NVMe Device Failures

- File Storage Troubleshooting

- Mounting Issues, Path Conflicts, Orphaned Mount Targets

Module 5: Identity & Access Management (IAM)

- Introduction to IAM
- What is OCI IAM, Identity Concepts, Resources, OCIDs
- Authentication & Authorization
- AuthN, AuthZ, Principals, Subjects Clause, Actions Clause, Common Policies
- Compartments

Resource Compartments, Access, Interaction, Movement, Multiple Regions, Nested Compartments

- Quotas and Budgets
- Policy Management
- Inheritance, Attachment, Conditional Policies, Tag-Based Access Control
- Dynamic Groups, Resource Principals, Ephemeral Principals
- Federation
- Concepts, User Groups Mapping, Identity Providers
- Identity Domains
- Use Cases, Types

Module 6: Security Services

- Security Design and Controls
- Platform Security, Physical Security, Operational Security, Secure Connectivity
- Data & Application Protection, Trust & Compliance
- Cloud Security Posture Management (CSPM)
- Concepts, Capabilities, DevSecOps, Outcomes, Benefits
- Cloud Guard

Enabling Cloud Guard, Roles, Concepts, Targets, Detectors, Detector Rules & Recipes

Problems and Responders, Managed Lists, Notifications, Integration with Events & Notifications

- Security Zones and Security Advisor
- Concepts, Policies, Overview
- Encryption and OCI Vault
- Basics, At-Rest/In-Transit, Symmetric/Asymmetric, HSM, Vault, Keys
- Master/Data Encryption Keys, Protection Modes, Wrapping, Rotation
- Import/Export Keys, Cryptographic & Management Endpoints

OCI Services Integration, Oracle-Managed & Customer-Managed Keys, Object Storage Integration, Backup/Restore, Cross-Region Replication

- Secrets Management
- What is a Secret, Rules, Demo
- Bastion
- Objectives, Features, Networking Architectures, Use Cases, Demo
- Securing Applications in the Cloud

WAF Concepts, Architecture, Use Cases, OWASP Rules, Service Components, Protection Rules, Bot Management, Shared Responsibility Model

- Demos: WAF Policy, XSS Protection, Bot Management, Access Control
- Vulnerability Scanning

Module 7: Observability & Management

- Introduction to Observability & Management Services
- Key Benefits, Key OCI Services, DevOps Use Case
- Monitoring Service
- Overview, Capabilities, Workflow, Metrics, Intervals, Statistics, Alarms
- Metric Queries, Notifications Service, Access & Limits
- IAM Policies, Sample & Nested Queries, Managing Alarms
- Logging Service
- Overview, Types of Logs, Service Flow, Log Groups, Access, Search, Queries
- Log Streams, Fields, Data Types, Tabular & Scalar Operators

Module 8: Billing & Cost Management

- Managing Costs with Budgets & Budget Alerts
- Cost Analysis
- Compute: Pricing, Scaling, Autoscaling
- Block Storage: Costs, VPIs, Auto-tuning
- File Storage: Costs
- Object Storage: Tiers, Costs, Lifecycle, Auto-Tiering
- Networking: Ingress/Egress, VPN vs FastConnect, Pricing
- Software Licensing
- Models, Licensing Mobility

Module 9: Governance & Administration

- Governance & Administration Overview
- Service Limits
- Viewing, Managing, Requests for Increases
- Resource Caps & Quotas
- Compartment Quotas, Policy Statements, Demo
- Cloud Advisor
- Overview, How it Works, Benefits, Recommendation Categories, Statuses
- High Availability, Performance, Cost Management Recommendations
- Recommendation Profiles: Load Balancers, Compute Instances
- Organization Management
- Multitenancy Approach, Managing Multitenancy, Cost Reporting Integration