Oracle Cloud Infrastructure Architect Professional (2023) Hands-on Workshop

Oracle Cloud Infrastructure

DURATION	MODULES	COURSE CODE
5 Days	**14 Lectures**	**—**

Course Overview

This course will help you prepare for the Oracle Cloud Infrastructure 2023Architect Professional () certification exam.

What You Will Learn

Module 1: Course Introduction

- OCI 2023 Architect Certified Professional Overview
- Course Modules Overview

Module 2: Design and Implement a Real-World Network Architecture

- Lesson 1: Building a Networking Architecture
- Objectives
- OCI Networking Architecture
- Summary

Module 3: Design Scalable and Elastic Resilient Solutions for HA and DR

- Lesson 1: High Availability
- High Availability Concepts
- Availability Domains & Fault Domains
- Avoiding Single Points of Failure
- Regional and AD-Specific Subnets
- Load Balancer & Virtual IP
- Compute & Autoscaling
- Storage
- Connectivity High Availability
- IPSec VPN Redundancy Models
- Redundant FastConnect

- Lesson 2: Demo – High Availability Workshop Part 1
- Lesson 3: Demo – High Availability Workshop Part 2
- Lesson 4: Disaster Recovery
- DR Terminology, RTO & RPO
- DR Options: Backup & Restore, Standby, Active/Active
- Multi-Region DR
- Database Strategies for DR
- Lesson 5–9: Full Stack Disaster Recovery
- OCI Full Stack DR Overview & Benefits
- Supported Components & Dependencies
- DR Protection Groups (DRPG) & Plans
- Example Scenario
- Setting up Prerequisites
- Demo: Setting up Components, DR Plan Pre-Check & Execution
- DR Plan Switch Over Execution

Module 4: Design Cloud-Native, Microservices, and Serverless Architecture

- Lesson 1: Microservices Architecture Overview
- OCI DevOps Journey
- What are Microservices?
- Sample E-Commerce Application
- Microservices vs Monolithic Architectures
- Communication Mechanisms
- Lesson 2: Introduction to Containerization
- Containerization Concepts & Benefits
- Docker Introduction & Use Cases
- Lesson 3–4: Oracle Cloud Infrastructure Registry (OCIR)
- Introduction, Terminology, Managing Repositories, Images & Security
- Lesson 5: Introduction to Kubernetes
- Container Orchestration, Challenges, Scenario
- Lesson 6: Demo – Managing OCIR
- Lesson 7–10: Introduction and Creation of OKE Cluster
- Cluster Components & Node Pools
- Supported Shapes, OS, Versions
- Prerequisites, Policies
- Demo: Creating OKE Cluster
- Lesson 11–12: Setting Up Cluster Access
- Kubeconfig, Kubectl Tool, Demo
- Lesson 13–14: Deploying Applications to OKE
- Python Flask Application Deployment, Demo
- Lesson 15–17: DevOps and CI/CD Overview
- DevOps Story, Life Cycle, Benefits
- OCI DevOps Service, CI/CD Introduction
- Lesson 18–22: Serverless Functions
- Overview, Oracle Functions, Triggers, Integrations, Demo

- Functions Quickstart & Custom Dockerfile Demo
- Lesson 23–25: API Management
- Introduction to API, API Gateway
- Setting up API Gateway
- Prototyping and Creating an API

Module 5: Deliver Infrastructure as Code

- Lesson 1: Introduction to Terraform
- Overview, Workflow, CLI, Providers, Language, Modules & Registry, Demos
- Lesson 2: OCI Resource Manager Basics
- Local Terraform Limitations, Cloud-Based Resource Manager, Version Control
- Lesson 3: Terraform Configurations
- Providers, Language Overview, Modules & Registry, Demos
- Lesson 4: Syncing Resource Manager and Infrastructure
- Resource Discovery, Drift Detection
- Lesson 5: Extending the Console
- Templates, Schema Documents

Module 6: OCI Database – Service

- Lesson 1: OCI Database Overview
- On-Premises vs Cloud, Supported Database Services
- Lesson 2: Oracle Databases
- Base Database Service, Exadata Database Service, Autonomous Database
- Lesson 3: BaseDB System Configuration
- VM DB System Options, Shapes, Storage Architecture
- Lesson 4: Exadata Database Service
- Dedicated Infrastructure, Cloud at Customer, OCPU Scaling Options
- Lesson 5–7: Demo & Managed Features
- Provision & Connect to BaseDB
- Backup, Recovery, Cloning, Performance Hub, Custom Images
- Demo: BaseDB Cloning
- Lesson 8: Maintenance
- Upgrade DB System & Database
- Change Shapes
- Database Encryption Keys

Module 7: OCI Autonomous Database

- Lesson 1–2: Overview & Workload Types
- Managed Databases, Oracle Autonomous Database, Optimized Workload
- Lesson 3–5: Deployment Options & Auto-Provisioning
- Shared & Dedicated Provisioning
- Lesson 6–9: Demo
- Provision ADB, Connect to Private Subnet, Dedicated Infrastructure

Module 8: OCI Autonomous Database – Features

- Auto Configuration, Optimizer Statistics, Initialization Parameters
- Scaling & Demo
- Cloning & Demo
- Backup & Recovery
- Patching & Updates
- Autonomous Data Guard DR
- Backup-Based DR
- Demo: Disaster Recovery
- Database Actions

Module 9: Database Security

- Lesson 1: Base Database Security
- VM DBCS Security & DBCS Security
- Lesson 2–6: Autonomous Database Security
- Controlled Access, Data Encryption, TDE Master Key, Patching, Auditing
- Lesson 7–8: Demo
- Customer Managed Key, IAM Access Authentication
- Lesson 9–12: Oracle Data Safe

Introduction, Security Center, Assessment, Data Masking, Activity Auditing, Architecture

- Target DB Connectivity (Public & Private), On-Premises Connectors

Module 10: Design for Hybrid Cloud Architecture

- Lesson 1–3: Oracle Cloud VMware Solution (OCVS)
- Overview, Software-Defined Data Center (SDDC), Product Overview
- vSphere, vSAN, NSX-T, HCX
- Storage & Compute Shapes
- Lesson 4–6: Key Aspects & Hybrid Cloud Design
- Core Aspects, SDDC Deployment, VLANs

Connecting On-Premises & OCVS, HCX Components, Layer 2 Extension, Mobility Optimized Networking (MON), Migrations

- Lesson 7–8: Demo OCVS & Accessing SDDC
- Lesson 9: Multi-Cloud – OCI-Azure Interconnect
- Partnership Summary & Benefits
- Setup & Architecture
- Hands-On Lab Demo

Module 11: Design for Multicloud Architecture

- Lesson 1: Multicloud Introduction
- Multicloud as the New Normal
- Autonomous Database & Oracle Database Service for Azure
- Lesson 2: OCI-Azure Interconnect Introduction
- Regions, Architecture, Common Use Cases, Building Blocks, Benefits

- Lesson 3: Oracle DB for Azure Introduction
- Overview & Key Features

Module 12: Data Migration to OCI

- Lesson 1: Planning Your Data Migration
- Offline & Online Migration, Database Migration
- Lesson 2: Migration Approach
- Oracle & Non-Oracle Data Sources, Migration Process
- Lesson 3: Data Transfer Appliance & Disk
- Petabyte Scale, Specifications, Security, CLI, VM/Data/File Transport
- Lesson 4: Online Migration
- Storage Gateway Service, Use Cases
- Demo: Storage Gateway

Module 13: Database Migration to OCI

UI-Based Migration Tools, Remote Cloning, RMAN, Datapump, Automated Migration Methods

Module 14: Migrate On-Premises Workloads to OCI

- Lesson 1–2: Introduction & Key Concepts
- Oracle Cloud Migrations, Terminologies, Assets, Phases
- Lesson 3–4: Discovery & Inventory
- Oracle Cloud Bridge, Source Environment, Remote Agents, Inventory
- Demo: Discovery & Inventory
- Lesson 5–7: Planning, Assessment, Replicate & Launch
- Migration Project, Assets, Plans
- Demo: Replicate & Launch
- Lesson 8: Migration Workflow
- Service Architecture & Components
- End-to-End Migration Process