

# Oracle Autonomous Database Workshop 2024 ELS

Oracle Cloud Infrastructure

DURATION

**3 Days**

MODULES

**19 Lectures**

COURSE CODE

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## Course Overview

Benefits to you Learn the technical architecture of Oracle Autonomous Database Learn the tasks involved in creating an Autonomous Database on shared and dedicated Exadata infrastructure Manage, maintain and monitor an Autonomous Database Learn about Oracle Machine Learning, APEX, and SQL Developer Web, which gets deployed with Autonomous Database Learn to use Autonomous JSON, Oracle Text, Spatial, and Graph Identify Migration Options and Considerations

## What You Will Learn

### Module 1: Getting Started with Autonomous Database

- Introduction and Objectives
- Overview of Oracle Autonomous Database
- Based on Exadata - World's Best Database Platform
- Complete Database Automation
- Key Features and Benefits
- Offerings and Service Differentiation
- Serverless vs Dedicated Deployment
- Licensing and Pricing
- Universal Credit Payment Structures

### Module 2: Oracle Cloud Infrastructure and Core Platform

- Complete Cloud Infrastructure Platform
- Cloud Regions, Hybrid Cloud, Multicloud
- Core Infrastructure Services
- Comprehensive Database Services
- Data Management and Data Science Capabilities
- Manage, Secure, and Operate at Scale
- Build and Run Cloud-Native Applications
- Oracle Analytics and Third-Party Support
- SaaS Portfolio Overview

## Module 3: Serverless Autonomous Database

- Objectives of Auto Scaling
- Setting Up Auto Scaling (During Provisioning & Anytime)
- Provisioning an Autonomous Database
- Starting and Stopping ADB
- Scaling Options
- Managing Users
- Creating Users
- Changing Admin Password
- Managing Users via Database Actions

## Module 4: Database Consolidation and Resource Management

- Elastic Resource Pools Overview
- Benefits of Elastic Resource Pools
- Cloning Autonomous Databases
- Refreshable Clones
- Moving Autonomous Database Resources
- Creating Alarms and Events
- Defining Events, Topics, Subscriptions
- Creating Alarms (CPU Utilization)

## Module 5: Backup, Recovery, and Data Guard

- Autonomous Database Backups
- Backups Available for Recovery
- Manual Backups
- Restoring and Recovering ADB
- Autonomous Data Guard Overview
- Enabling Data Guard
- Manual Switchover and Failover Options
- Cross-Region Data Guard

## Module 6: Dedicated Autonomous Database Infrastructure

- Dedicated Infrastructure Overview
- Primary Benefits and Workload Isolation
- Autonomous Management Model
- Dedicated Network Architecture
- Resilience, Backup Options, and Private Cloud
- Exadata Infrastructure for Dedicated ADB
- Provisioning Dedicated Resources
- Security Lists, Internet Gateway, Route Tables
- Creating Container Databases and Autonomous Databases
- IAM Roles and Policies (Fleet Admins, DBAs, Developers)

## Module 7: Monitoring and Managing Dedicated Infrastructure

- Database Operations via Cloud Control Plane
- Monitoring Activities using Events and Notifications
- Maintenance Scheduling and Preferences
- One-Off Patching and Update Policies
- Using REST APIs to Manage ADB
- Using OCI CLI for Database Management
- Supported Services and Examples

## Module 8: Patching, Security, and Network Configuration

- Serverless Patching and Upgrades
- Transparent Application Continuity
- Setting Up ACLs and Private Endpoints
- Network Security Groups
- Monitoring ADB Performance
- Setting Up Service Notifications and Announcement Subscriptions
- Managing Encryption Keys
- End-to-End Data Protection

## Module 9: Auto Indexing and Data Safe

- Auto-Index Creation and Continuous Optimization
- Automatic Indexing Configuration and Monitoring
- SQL Developer Web for Indexing Reports
- Oracle Data Safe Overview
- Security Zones of Control
- Database Security Assessment
- Detecting Configuration and User Drift
- Activity Auditing
- Sensitive Data Discovery and Masking
- Compartment Quotas and Service Limits

## Module 10: Connectivity

- ADB Connectivity Overview
- mTLS and TLS Connections
- JDBC Thin, UCP, and HTTP Proxy Connections
- SQLNet Connections
- Connecting via Python, Node.js, and Other Languages
- Using SQL Developer Desktop and Database Actions
- Predefined Database Service Names and Credentials
- Wallet Management and Expiration

## Module 11: Disaster Recovery

- Configuring Autonomous Data Guard (AuDG)
- Policy and Options for Dedicated ADB
- Fully Automated Data Protection

## Module 12: Autonomous Database Tools

- Oracle Autonomous Database Tools Overview
- Database Actions, SQL Developer, SQLcl, REST, JSON
- Data Studio Tools: Catalog, Insights, Machine Learning Notebooks
- Graph Studio and APEX Integration
- Rapid Schema Design with Quick SQL
- Building Apps with APEX and Sample Apps

## Module 13: Oracle Machine Learning and AutoML

- Introduction to AutoML and OML4Py
- AutoML UI Pipeline
- Algorithm Selection, Feature Selection, Model Tuning
- Business Model Integration
- Analytic Views and Optimized Query Processing
- Data Analysis and Demonstrations

## Module 14: Data Insights and Analytics

- Data Studio for Simplified Analytics
- Search, Discovery, and Understanding Data
- Data Insights Demonstrations
- Unified Data Management Platform Overview

## Module 15: Generative AI and Select AI

- Overview of Select AI
- Chat with Data Using Natural Language Queries
- Translating Natural Language to SQL
- Building Conversational Apps and Extending Queries
- Generative AI Models and Context Integration
- SQL Query Generation Process
- Key Takeaways

## Module 16: Autonomous JSON Database

- Converged Database Overview
- JSON Workloads, Pricing, and Performance
- Classic Relational Model vs JSON Flexibility
- Oracle Database API for MongoDB
- Document Collections and SQL Integration

- MongoDB Compatibility and Summary

## Module 17: Oracle Text

- Oracle Text Overview
- Full Text Indexes and Queries
- Indexing Pipeline and Faceted Navigation
- Text Analytics
- Handling Text Anywhere

## Module 18: Spatial and Graph Data Management

- Spatial Data Management in ADB
- Spatial Studio, Geocoding, Analysis, Visualization
- Graph Database Management
- Property Graph Model and PGQL
- Graph Analytics with Prebuilt Algorithms
- Graph Studio and Visualizations

## Module 19: Data Lake and Data Sharing

- Modern Data Platform Pillars
- Multi-Cloud Access to Data
- Working with Structured and Unstructured Datasets
- Iceberg Tables as External Tables
- Data Sharing Concepts and Best Practices
- Migration Considerations to ADB
- Loading Architecture, Data Pump, and Object Store Staging
- Database Migration Service and Cloud Migration Advisor