

## Oracle Database 12c: Administration Workshop

**Duration:** 5 Days

### What you will learn

The Oracle Database 12c: Administration Workshop will teach you about the Oracle Database architecture. You will discover how to effectively manage an Oracle Database instance, configure the Oracle Network Environment and perform database maintenance.

### Learn To:

Create and manage an Oracle Database Instance.

Create and manage Storage Structures.

Configure the Oracle Network Environment.

Create and manage users.

Monitor the database and manage performance.

Learn basic information on backup and recovery techniques.

Use the Oracle Support Workbench and My Oracle Support to update your Oracle Database software.

### Benefits To You:

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

### Hands-on Practices and Demonstrations

Expert instruction and hands-on demonstrations will provide you with real world experience on how to effectively manage an Oracle Database.

A Live Virtual Class (LVC) is exclusively for registered students; unregistered individuals may not view an LVC at any time. Registered students must view the class from the country listed in the registration form. Unauthorized recording, copying, or transmission of LVC content may not be made.

### Audience

Data Warehouse Administrator

Database Administrators

Database Designers

Support Engineer

Technical Administrator

### Related Training

*Required Prerequisites*

Working knowledge of SQL and use of PL/SQL packages

### *Suggested Prerequisites*

Basic knowledge of Linux operating system

## **Course Objectives**

Monitor the Database

Manage Database Performance

Implement Database Auditing

Configure the Database Instance Such That Resources Are Appropriately Allocated Among Sessions and Tasks

Schedule Jobs to Run Inside or Outside of the Database

Configure Oracle Net Services

Configure your Database For Backup and Recovery Operations

Describe Oracle Database Architecture

Manage the Oracle Database Instance

Manage Oracle Database Storage structures

Create and Administer User Accounts

## **Course Topics**

### **Introduction**

Course Objectives

Course Schedule

Overview of Oracle Database 12c

Overview of Oracle Cloud

Overview of the HR Schema

### **Exploring the Oracle Database Architecture**

Oracle Database Architecture: Overview

Oracle Database Instance Configurations

Connecting to the Oracle Database Instance

Oracle Database Memory Structures

Process Architecture

Process Structures

Process Startup Sequence

Database Storage Architecture

### **Managing the Database Instance**

- Introducing Oracle Database Management Tools
- Understanding the Enterprise Manager Management Framework
- Logging in to Oracle Enterprise Manager Database Express
- Using the Enterprise Manager Database Express Home Page
- Using Enterprise Manager Cloud Control
- Using SQL\*Plus
- Using SQL Developer
- Initialization Parameter Files

### **Configuring the Oracle Network Environment**

- Oracle Net Services Overview
- Oracle Net Listener Overview
- Establishing Oracle Network Connections
- Tools for Configuring and Managing the Oracle Network
- Using the Listener Control Utility
- Using Oracle Net Configuration Assistant
- Using Oracle Net Manager
- Using Enterprise Manager Cloud Control

### **Managing Database Storage Structures**

- Understanding Storage of Data
- Database Block Contents
- Exploring the Storage Structure
- Creating a New Tablespace
- Overview of Tablespaces Created by Default
- Managing Tablespaces
- Viewing Tablespace Information
- Using Oracle Managed Files

### **Administering User Security**

- Database User Accounts
- Predefined Administrative Accounts
- Creating a User
- Authentication
- Unlocking a User Account and Resetting the Password
- Privileges
- Roles
- Profiles

### **Managing Data Concurrency**

- Overview of Locks
- Locking Mechanism
- Data Concurrency
- DML Locks
- Enqueue Mechanism
- Lock Conflicts

### **Managing Undo Data**

- Undo Data Overview
- Transactions and Undo Data
- Storing Undo Information
- Comparing Undo Data and Redo Data

- Managing Undo
- Configuring Undo Retention
- Guaranteeing Undo Retention
- Changing an Undo Tablespace to a Fixed Size

### **Implementing Oracle Database Auditing**

- Separation of Responsibilities
- Database Security
- Monitoring for Compliance
- Standard Database Auditing
- Unified Audit Data Trail
- Separation for Duties for Audit Administration (AUDIT\_ADMIN and AUDIT\_VIEWER roles)
- Configuring the Audit trail
- Specifying Audit Options

### **Performing Database Maintenance**

- Database Maintenance
- Viewing the Alert History
- Terminology
- Automatic Workload Repository (AWR)
- Statistic Levels
- Automatic Database Diagnostic Monitor (ADDM)
- Advisory Framework
- Enterprise Manager and Advisors

### **Managing Performance**

- Performance Monitoring
- Tuning Activities
- Performance Planning
- Instance Tuning
- Performance Tuning Methodology
- Performance Tuning Data
- Monitoring Performance
- Managing Memory

### **Managing Performance: SQL Tuning**

- SQL Tuning
- Oracle Optimizer
- SQL Plan Directives
- Adaptive Execution Plans
- SQL Advisors
- Automatic SQL Tuning Results
- Implement Automatic Tuning Recommendations
- SQL Tuning Advisor

### **Managing Resources by Using Database Resource Manager**

- Database Resource Manager Overview
- Database Resource Manager Concepts
- Using the Resource Manager
- Default Maintenance Resource Manager Plan
- Default Plan Example
- Resource Manager Workflow

### **Automating Tasks by Using Oracle Scheduler**

- Simplifying Management Tasks
- Understanding a Simple Job
- Core Components
- Basic Work Flow
- Persistent Lightweight Jobs
- Using a Time-Based or Event-Based Schedule
- Creating a Time-Based Job
- Creating an Event-Based Schedule

### **Managing Space**

- Space Management Overview
- Block Space Management
- Row Chaining and Migration
- Free Space Management Within Segments
- Types of Segments
- Allocating Extents
- Allocating Space
- Creating Tables Without Segments

### **Backup and Recovery Concepts**

- Categories of Failures
- Flashback Technology
- Understanding Instance Recovery
- Phases of Instance Recovery
- Tuning Instance Recovery
- Using the MTTR Advisor
- Media Failure
- Configuring for Recoverability

### **Moving Data**

- Moving Data: General Architecture
- Oracle Data Pump
- SQL\*Loader
- External Tables

### **Working with Oracle Support**

- Using the Support Workbench
- Using Enterprise Manager
- Working with Oracle Support
- My Oracle Support Integration
- Researching an Issue
- Logging Service Requests
- Managing Patches
- Applying a Patch Release