

## Oracle Database 12c: Administration Workshop Ed 2

**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. In this course, you will be introduced to Oracle Database Cloud Service.

### 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.

Gain an understanding of the Oracle Database Cloud Service.

### 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.

### Participate in Hands-On Practices and Demonstrations

Expert instruction and hands-on demonstrations will provide you with real world experience. By engaging in hands-on exercises to reinforce your learning, you'll develop in demand skills to effectively manage an Oracle Database.

### Audience

Data Warehouse Administrator

Database Administrators

Database Designers

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

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

Monitor the Database

Manage Database Performance

Implement Database Auditing

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

Gain an understanding of the Oracle Database Cloud Service

Schedule Jobs to Run Inside or Outside of the Database

## 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

Specifying Resource Plan Directives

Resource Allocation Methods for Resource Plans

## **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

### **Oracle Database Cloud Service: Overview**

- Database as a Service Architecture, Features and Tooling
- Software Editions: Included Database Options and Management Packs
- Automated Database Provisioning
- Managing the Compute Node Associated With a Database Deployment
- Enabling Access to a Compute Node Port
- Scaling a Database Deployment & Patching Database as a Service
- Using the Oracle Database Cloud Service Console to Manage Patches