Oracle® Database 12c: Administration Workshop

Duration: 5 Days
Method: Instructor-Led

Certification: Oracle® Database 12c Administrator Certified Associate — Exam: Oracle® Database 12c: Installation and Administration Code: 1Z0-062

Course Description

This course 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. Through hands on instruction and exercises to reinforce your learning, you'll develop in demand skills to effectively manage an Oracle® Database.

Target Audience

This course is intended for:
- Data Warehouse Administrators
- Database Administrators
- Database Designers
- Support Engineers
- Technical Administrators

Prerequisites

To attend this course, candidates should have two of the following:
- Basic knowledge of Linux® operating system
- Working knowledge of SQL and use of PL/SQL® packages
- Completed the Oracle® Database: Introduction to SQL course
- Completed the Oracle® Database 12c: Install and Upgrade Workshop course

Course Objectives

Upon successful completion of this course, candidates will be able to:

- 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 Content

Module 1: Introduction

- Course Objectives
- Course Schedule
- Overview of Oracle® Database 12c
- Overview of Oracle® Cloud
- Overview of the HR Schema

Module 2: 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

Module 3: Managing the Database Instance

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

Module 4: 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

Module 5: Managing Database Storage Structures

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

Module 6: Administering User Security

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

Module 7: Managing Data Concurrency

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

Module 8: 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

Module 9: 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

Module 10: 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

Module 11: Managing Performance

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

Module 12: Managing Performance: SQL Tuning

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

Module 13: 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

Module 14: 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

Module 15: 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

Module 16: 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

Module 17: Moving Data

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

Module 18: 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