

## Oracle Database 11g: Administration Workshop II

**Duration:** 5 Days

### What you will learn

In this course, the concepts and architecture that support backup and recovery, along with the steps of how to carry it out in various ways and situations, are covered in detail. This includes how to define and test your own backup and recovery scenarios.

Also, the students learn to manage memory effectively and to perform some performance evaluation and tuning tasks, including using some of the advisors. All types of flashback technologies, scheduling jobs inside and outside of the database, and controlling system resource usage are covered. Topics are reinforced with hands-on practices.

This course counts towards the Hands-on course requirement for the Oracle Database 11g Administrator Certification. Only instructor-led inclass or instructor-led online formats of this course will meet the Certification Hands-on Requirement. Self Study CD-Rom and Knowledge Center courses DO NOT meet the Hands-on Requirement.

Learn To:

Back up and recover a database using RMAN and Enterprise Manager

Configure Oracle Database for optimal recovery for any environment

Identify burdensome database sessions and poorly performing SQL

Configure the database instance such that resources are allocated among sessions and tasks appropriately

Schedule jobs to run inside or outside of the database

### Audience

Data Warehouse Administrator

Database Administrators

Support Engineer

Technical Consultant

### Prerequisites

*Required Prerequisites*

Oracle Database 11g: Administration Workshop I

### Course Objectives

Back up and recover a database

Configure Oracle Database for optimal recovery

Administer ASM disk groups

Use an RMAN backup to duplicate a database

Automating Tasks with the Scheduler

## Course Topics

### Database Architecture and ASM

- Oracle Database Architecture Overview
- ASM General Architecture
- Creating an ASM Instance
- Using Enterprise Manager to Manage ASM Users
- ASM Storage Concepts
- The ASMCMD Utility
- ASM Scalability and Performance

### Configuring for Recoverability

- Purpose of Backup and Recovery Functionality
- Typical Backup and Recovery Tasks
- Oracle Backup and Recovery Solutions
- Using Recovery Manager (RMAN)
- Using a Flash Recovery Area
- Flash Recovery Area Space Management

### Using the RMAN Recovery Catalog

- RMAN Repository Data Storage: Comparison of Options
- Storing Information in the Recovery Catalog
- Registering a Database in the Recovery Catalog
- Recovery Catalog Resynchronization: Concepts
- Using RMAN Stored Scripts
- Backing Up and Recovering the Recovery Catalog
- Using a Virtual Private Catalog

### Configuring Backup Specifications

- Using RMAN to Create Backups
- Configuring Persistent Settings for RMAN
- Using Enterprise Manager to Configure RMAN Settings
- Control File Auto-backups
- Managing Persistent Settings
- Configuring Devices for Backup
- Configuring and Allocating Channels for Use in Backups
- Configuring Backup Optimization

### Creating Backups

- Creating an Oracle-Suggested Backup
- Creating Backup Sets & Image Copies
- Creating a Whole Database Backup
- RMAN Backup Types
- Monitoring Block Change Tracking
- Creating Duplex Backup Sets
- Archival Backups: Concepts
- Encrypting Backups

### Performing User-Managed Backup and Recovery

- Restoring and Recovering
- Causes of File Loss
- Critical Versus Non-critical

- Recovering from a TEMPFILE Loss
- Re-creating Indexes
- Recovering from a Lost Index Tablespace
- Authentication Methods for Database Administrators
- Recovering a Read-Only Tablespace

### **Using RMAN to Perform Recovery**

- Using RMAN RESTORE and RECOVER Commands
- Performing Recovery Using Enterprise Manager
- Recovery Using Incrementally Updated Backups
- Perform a Fast Switch to Image Copies
- Restoring and Recovering the Database on a New Host
- Performing Disaster Recovery

### **Using RMAN to Duplicate a Database**

- Using RMAN to Create a Duplicate Database
- Creating a Duplicate Database
- Creating an Initialization Parameter File for the Auxiliary Instance
- Allocating Auxiliary Channels
- Understanding the RMAN Duplication Operation
- Using EM to Clone a Database
- Cloning a Running Database

### **Performing Tablespace Point-in-time Recovery**

- Tablespace Point-in-Time Recovery (TSPITR) Concepts
- Tablespace Point-in-Time Recovery: Architecture
- Understanding When to Use TSPITR
- Determining the Tablespaces for the Recovery Set
- Using Enterprise Manager to Perform TSPITR
- Understanding TSPITR Processing
- Troubleshooting RMAN TSPITR

### **Monitoring and Tuning RMAN**

- Parallelization of Backup Sets
- Monitoring RMAN Sessions
- Interpreting RMAN Message Output
- Using the DEBUG Option
- Tuning RMAN
- RMAN Multiplexing
- Comparing Synchronous and Asynchronous I/O
- Tape Subsystem Performance Rules

### **Using Flashback Technology**

- Flashback Technology
- Transactions and Undo
- Guaranteeing Undo Retention
- Preparing Your Database for Flashback
- Flashback Drop and the Recycle Bin
- Using Flashback Technology to Query Data
- Possible Workflow
- Flashback Transaction Wizard

## **Using Flashback Database**

Flashback Table

Enabling Row Movement on a Table

Enabling Row Movement on a Table

Flashback Database Architecture

Configuring Flashback Database

Performing Flashback Database Using EM

Flashback Database Considerations

Flashback Data Archive

## **Diagnosing the Database**

Automatic Diagnostic Workflow & Repository

Location for Diagnostic Traces

Viewing the Alert Log Using Enterprise Manager

The Support Workbench and Oracle Configuration Manager

Create a Service Request

Package and upload diagnostic data to Oracle Support

Incident Packaging Configuration

Health Monitor Overview & Data Recovery Advisor

## **Managing Memory**

Oracle Memory Structures

Automatic Memory Management Overview

Oracle Database Memory Parameters

Auto Memory Parameter Dependency

Automatic Shared Memory Management: Overview

Automatic PGA Memory Management

Using the Memory Advisor to Size the SGA

Memory Tuning Guidelines for the Library Cache

## **Managing Database Performance**

Tuning Activities

Performance Planning & Performance Tuning Methodology

Instance Tuning

Troubleshooting and Tuning Views

Automatic Workload Repository

SQL Tuning & SQL Advisors

Using the SQL Tuning Advisor

SQL Access Advisor: Overview

## **Using the Segment Advisor**

Space Management: Overview

Proactive Tablespace Monitoring

Thresholds and Resolving Space Problems

Monitoring Tablespace Space Usage

Shrinking Segments

Space Reclamation with ASSM

Automatic Segment Advisor

Minimum Compatibility Level

## **Managing Resources**

Database Resource Manager: Overview

- Database Resource Manager Concepts
- Accessing Resource Plans
- Default Maintenance Resource Manager Plan
- Creating Consumer Groups
- Resource Allocation Methods for Resource Plans
- Resource Allocation Methods for Resource Plans
- Monitoring the Resource Manager

### **Automating Tasks with the Scheduler**

- Simplifying Management Tasks
- Key Components and Steps
- Creating an Event-Based Schedule
- Creating Complex Schedules
- Creating Job Chains
- Creating Job Chains

### **Administering the Scheduler**

- Advanced Scheduler Concepts
- Job Classes
- Windows
- Prioritizing Jobs Within a Window
- Remote Jobs
- Installing the Scheduler Agent
- Dictionary Views Supporting Remote Jobs

### **Globalization**

- Globalization Support Features
- What Every DBA Needs to Know
- Understanding Unicode
- Database Character Sets and National Character Sets
- Language- and Territory-Dependent Parameters
- Linguistic Searching and Sorting
- Case- and Accent-Insensitive Search and Sort
- NLS Data Conversion with Oracle Utilities

### **Related Courses**

Oracle Database 11g: Administration Workshop II - Self-Study CD Course