

## **Oracle Database 11g: Administration Workshop II Release 2**

**Duration:** 5 Days

### **What you will learn**

This Oracle Database 11g: Administration Workshop II Release 2 training takes the database administrator beyond the basic tasks covered in the first workshop. You'll begin by gaining a deep understanding of the most important responsibilities a DBA has: performing backup and recovery.

#### Learn To:

Diagnose and repair data failures with Flashback technology.

Manage space to optimize database storage so you can respond to growing space requirements. Monitor and manage major database components, including memory, performance and resources. Secure the availability of your database through appropriate backup and recovery strategies.

Automate DBA tasks with the Scheduler.

#### 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 smooth and rapid consolidation within your Datacenter.

#### Backup & Recovery

The concepts and architecture that support backup and recovery, along with the steps required to execute it in various ways and situations, are covered in detail. You'll learn how to define and test your own backup and recovery scenarios.

#### Manage Memory Effectively

You'll also learn how to manage memory effectively, as well as how to perform some performance evaluation and tuning tasks. Instructors will review all types of flashback technologies, scheduling jobs inside and outside of the database and controlling system resource usage.

#### Course Requirements

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

#### **Audience**

Database Administrators, Support Engineer, Technical Administrator, Technical Consultant

## **Related Training**

### *Required Prerequisites*

Oracle Database 11g Database Administration

Oracle Database 11g: Administration Workshop I Release 2

### *Suggested Prerequisites*

Working knowledge of SQL and how to use PL/SQL packages

## **Course Topics**

### **Core Concepts and Tools of the Oracle Database**

The Oracle Database Architecture: Overview

ASM Storage Concepts

Connecting to the Database and the ASM Instance

DBA Tools Overview

### **Configuring for Recoverability**

Purpose of Backup and Recovery (B&R), Typical Tasks and Terminology

Using the Recovery Manager (RMAN)

Configuring your Database for B&R Operations

Configuring Archive log Mode

Configuring Backup Retention

Configuring and Using a Flash Recovery Area (FRA)

### **Using the RMAN Recovery Catalog**

Tracking and Storing Backup Information

Setting up a Recovery Catalog

Recording Backups

Using RMAN Stored Scripts

Managing the Recovery Catalog (Backup, Export, Import, Upgrade, Drop and Virtual Private Catalog)

### **Configuring Backup Settings**

Configuring and Managing Persistent Settings for RMAN

Configuring Auto backup of Control File

Backup optimization

Advanced Configuration Settings: Compressing Backups

Configuring Backup and Restore for Very Large Files (Multi section)

### **Creating Backups with RMAN**

RMAN backup types

Creating and Using the following:

- Backup Sets and Image Copies
- Whole Database Backup
- Fast Incremental Backup
- Configure Backup Destinations
- Duplexed Backup Sets
- Archival Backups

### **Restore and Recovery Task**

Restoring and Recovering

Causes of File Loss

- Automatic Tempfile Recovery
- Recovering from the Loss of a Redo Log Group
- Recovering from a Lost Index Tablespace
- Re-creating a Password Authentication File
- Complete and Incomplete Recovery
- Other Recovery Operations

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

- Complete Recovery after Loss of a Critical or Noncritical Data File
- Recovering Image Copies and Switching Files
- Restore and Recovery of a Database in NOARCHIVELOG Mode
- Incomplete Recovery
- Performing Recovery with a Backup Control File
- Restoring from Autobackup: Server Parameter File and Control File
- Restoring and Recovering the Database on a New Host

### **Monitoring and Tuning RMAN**

- Monitoring RMAN Jobs
- Balance Between Speed of Backup Versus Speed of Recovery
- RMAN Multiplexing
- Synchronous and Asynchronous I/O
- Explaining Performance Impact of MAXPIECESIZE, FILESPERSET, MAXOPENFILES and BACKUP DURATION

### **Diagnosing the Database**

- Data Recovery Advisor (DRA)
- Block Corruption
- Automatic Diagnostic Repository (ADR)
- Health Monitor
- The ADR Command-Line Tool, ADRCI

### **Using Flashback Technology I**

- Flashback Technology: Overview and Setup
- Using Flashback Technology to Query Data
- Flashback Table
- Flashback Transaction Query
- Performing Flashback Transaction Backout

### **Using Flashback Technology II**

- Oracle Total Recall
- Flashback Drop and the Recycle Bin

### **Performing Flashback Database**

- Configuring Flashback Database
- Performing Flashback Database Operations
- Monitoring Flashback Database

### **Managing Memory**

- Oracle Memory Structures
- Oracle Database Memory Parameters
- Using Automatic Memory Management
- Automatic Shared Memory Management

Using Memory Advisors  
Using Data Dictionary Views

### **Managing Database Performance**

Tuning Activities  
Using Statistic Preferences  
Optimizer Statistics Collection  
Monitor the Performance of Sessions and Services  
Automatic Workload Repository (AWR)  
Describing the Benefits of Database Replay

### **Managing Performance by SQL Tuning**

SQL Tuning and SQL Advisors  
Using SQL Tuning Advisor  
SQL Access Advisor  
SQL Performance Analyzer Overview

### **Managing Resources**

Database Resource Manager: Overview and Concepts  
Accessing and Creating Resource Plans  
Creating Consumer Group  
Specifying Resource Plan Directives, including:  
- Limiting CPU Utilization at the Database Level  
- Instance Caging  
Activating a Resource Plan  
Monitoring the Resource Manager

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

Simplifying Management Tasks  
Creating a Job, Program, and Schedule  
Using Time-Based, Event-Based, and Complex Schedules  
Describing the Use of Windows, Window Groups, Job Classes, and Consumer Groups  
Multi-Destination Jobs

### **Managing Space in Blocks**

Free Space Management  
Monitoring Space  
Compressing Data

### **Managing Space in Segments**

Segment Creation on Demand  
Additional Automatic Space-Saving Functionalit  
Shrinking Segments  
Segment Advisor  
Managing Resumable Space Allocation

### **Managing Space for the Database**

Using 4 KB-Sector Disks  
Transporting Tablespaces  
Transporting Databases

### **Duplicating a Database**



Purpose and Methods of Cloning a Database  
Using RMAN to Create a Duplicate Database  
Cloning a Database from a Backup  
Duplicate a Database Based on a Running Instance  
Targetless Duplicating a Database