

Oracle Database 11g: Administration Workshop II DBA Release 2

Duration: 5 Days

What you will learn

This course takes the database administrator beyond the basic tasks covered in the first workshop. The student begins by gaining a much deeper understanding of possibly the most important job of a DBA – backup and recovery. 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 DBA learns how to manage memory effectively and how 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 also covered.

Learn To:

Automate DBA tasks with the Scheduler

Diagnose and repair data failures with Flashback technology

Manage space to optimize database storage and to be able to respond to growing space requirements

Monitor and manage major database components, including as memory, performance, and resources

Secure the availability of your database by appropriate backup and recovery strategies

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.

Audience

Database Administrators

Support Engineer

Technical Administrator

Technical Consultant

Prerequisites

Required Prerequisites

Oracle Database 11g Database Administration

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

Suggested Prerequisites

Oracle Database 11g: Administration Workshop I DBA Release 2

Course Objectives

Back and recover a database (and its parts) with RMAN (command-line and Enterprise Manager)

Use flashback technology to view past states of data and to revert either objects or the entire database back to a past state

Use an appropriate and flexible memory configuration for your database

Identify burdensome database sessions and poorly performing SQL

Configure the Oracle Database for optimal recovery

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

Schedule jobs to run inside or outside of the database

Use compression to optimize database storage and duplicate a database

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 Archivelog 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 Autobackup of Control File

Backup optimization

Advanced Configuration Settings: Compressing Backups

Configuring Backup and Restore for Very Large Files (Multisection)

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 Functionality
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

