Oracle Database 11g: Administration Workshop II Ed 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.

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 Objectives

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

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

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 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