

Oracle Database 10g / 11g: Administration II

Course Summary

Description

This course provides the information for database administrators to become fully responsible for ongoing Oracle database operations, backup, recovery, tuning and using advanced features of the Oracle database. The first 2-day segment provides in-depth understanding of backup and recovery concepts, backup set-up, and using RMAN in practical backup and recovery scenarios. The remaining 2 days cover advanced administration tasks such as understanding the Oracle self-tuning database approach, utilizing the Oracle scheduler, controlling resource utilization through Resource Plans, comprehensive coverage of the various Flashback technologies, Oracle support for multi-national/lingual functionality and using Automatic Storage Management.

Objectives

At the end of this course, students will be able to:

- Enhance the security of Oracle by 'hardening' the Listener
- Prepare for Oracle failures by implementing appropriate backup procedure(s)
- Recover from Oracle failures caused by individual users
- Recovery from non-critical Oracle database failures
- Recover from critical Oracle database failures
- Discover and recover from block corruption
- Utilize the automated performance monitoring and tuning features of Oracle
- Utilize Oracle resource management
- Schedule background jobs using the Oracle Scheduler
- Use the different Flashback capabilities of the Oracle database
- Understand multi-national Oracle capabilities (globalization)
- Configure Automatic Storage Management (ASM)

Topics

- Course Overview and Introduction
- Securing the Listener
- Overview of Recovery Manager (RMAN)
- Configuring RMAN
- Backing up Using RMAN
- Recovering From Non-Critical Crashes
- Database Recovery
- Flashback Database
- Recovering User Errors
- Handling Block Corruption
- Automatic Workload Repository (AWR)
- Automatic Database Diagnostic Manager (ADDM) and the Advisor Framework
- Database Resource Management
- The Scheduler
- Globalization Support
- Automatic Storage Management (ASM)

Audience

This course is designed for Oracle database administrators.

Prerequisites

SQL and PL/SQL or comparable experience is required. Knowledge of routine database administration tasks is recommended. Students without database administration experience will likely struggle with this class.

Duration

Four days

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Course Outline

- I. Course Overview and Introduction**
 - A. Review of some Oracle10g New Features
 - B. Oracle10/11g Architecture
 - C. Oracle's "Self-tuning" Database components
 - D. Enterprise Manager's Advisors
 - E. Overview of RMAN Enhancements
- II. Securing the Listener**
 - A. Reviewing the TNS Architecture
 - B. Installing Isnrctl.exe on a Client
 - C. Steps to "Harden" the TNS Listener
- III. Overview of Recovery Manager (RMAN)**
 - A. RMAN Features
 - B. RMAN Architecture
 - C. RMAN Commands
 - D. Remote Operations
 - E. Redo and Undo data content
 - F. Recovery Concepts
- IV. Configuring RMAN**
 - A. Determine RMAN Configuration
 - B. Alternative Ways to Run RMAN
 - C. Understanding the Recovery Catalog
 - D. Retention Policies
 - E. Backing up Using Enterprise Manager
- V. Backing up Using RMAN**
 - A. Identify the Types of Backups Supported by RMAN
 - B. Manage File Copy Backups
 - C. Define a Backup Set
 - D. Using Incremental Backups
 - E. Understand the RMAN Backup Algorithm
- VI. Recovering From Non-Critical Crashes**
 - A. Recover Temporary Tablespaces
 - B. Recover a Redo Log Group Member
 - C. Recover an Index Tablespace
 - D. Recover Read-Only Tablespaces
 - E. Recreate the Password File
- VII. Database Recovery**
 - A. Recovering the Control File
 - B. Reasons for Incomplete Recovery
 - C. Performing Incomplete Recovery
- VIII. Flashback Database**
 - A. Match Flashback Technology to Different Recovery Situations
 - B. Using Flashback Database
 - C. Manage Flashback Database Using Enterprise Manager
 - D. Manage and Maintain the Flash Recovery Area
- IX. Recovering User Errors**
 - A. Recover Dropped Tables using Flashback
 - B. Perform Flashback Table
 - C. Manage the Oracle Recycle Bin
 - D. Recover User Errors using Flashback Versions Query
 - E. Perform Transaction Recovery using Flashback Transaction Query
- X. Handling Block Corruption**
 - A. Block Corruption and Its Causes and Symptoms.
 - B. Using ANALYZE and DBVERIFY to Detect Block Corruptions
 - C. Detecting Corruptions using dbms_repair
 - D. The DB_BLOCK_CHECKING parameter
 - E. Using RMAN's BMR to Repair Block Corruption
- XI. Automatic Workload Repository (AWR)**
 - A. The Common Manageability Infrastructure (CMI)
 - B. How the Automatic Workload Repository (AWR) Collects Statistics
 - C. Enabling the AWR
 - D. Active Session History (ASH) in Oracle
 - E. AWR Snapshots and Baselines
 - F. Using AWR Reports
- D. Performing Database Recovery Following RESETLOGS**
- E. Performing BMR (Block Media Recovery) and Trial Recovery**
- F. Performing Complete Recovery using RMAN and EM**

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Course Outline (cont'd)

XII. Automatic Database Diagnostic Manager (ADDM) and the Advisor Framework

- A. The Common Manageability (CMI) Infrastructure: ADDM
- B. Setting and Using Server-Generated Alerts
- C. Using Database Advisors
- D. Using the Segment Tuning Advisor
- E. Using the SQL Tuning Advisor

XIII. Database Resource Management

- A. Configuring the Oracle Database Resource Manager
- B. Assigning Users to Resource Manager Groups
- C. Creating Resource Plans within Groups
- D. Specifying Resource Directives to Consumer Groups

XIV. The Scheduler

- A. Core Scheduler Features
- B. Simplifying Administration Tasks Using the Scheduler
- C. Creating Jobs, Programs, Schedules & Windows
- D. Reusing Scheduler Components
- E. Viewing Information about Job Executions and Instances

XV. Globalization Support

- A. Customize Language-Dependent Behavior
- B. Specifying Different Linguistic Sorts for Queries
- C. Using Timestamp Datatypes

XVI. Automatic Storage Management (ASM)

- A. Understanding Automatic Storage Management
- B. Administering an ASM Instance
- C. Configuring the Components of ASM
- D. Using ASM in the Database
- E. Viewing Information about ASM