

Oracle Database 10g: Administration Workshop II Release 2

Duration: 5 Days

What you will learn

This course advances your success as an Oracle professional in the area of database administration. In this class, you'll learn how to configure an Oracle database for multilingual applications. You will practice various methods of recovering the database using RMAN and Flashback technology. Database performance monitoring tools will be covered, in addition to the steps to take to resolve common problems and improve performance. You will also learn how to administer a database efficiently by using database technologies such as the Resource Manager, the Scheduler, Automatic Storage Management (ASM), and VLDB features. You will set up a secure database using Virtual Private Database, and learn how to efficiently move data from database to database. The lesson topics are reinforced with structured hands-on practices and a workshop. This course is designed to prepare you for the corresponding Oracle Certified Professional exam. This course counts towards the Hands-on course requirement for the Oracle Database 10g 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 are excellent study and reference tools but DO NOT meet the Hands-on Requirement for certification.

Database Administrators
Sales Consultants
Support Engineer
Technical Consultant

Prerequisites

Required Prerequisites

Knowledge of basic database administration

Suggested Prerequisites

Oracle Database: SQL and PL/SQL Fundamentals
Oracle Database 10g: Administration Workshop I Release 2

Course Objectives

- Use RMAN to create and manage backup sets and image copies
- Recover the database to a previous point in time
- Use Oracle Secure Backup to backup and recover a database
- Use Oracle's Flashback technology to recover your database
- Detect block corruptions and take appropriate measures to correct them
- Use the various Database advisors and views to monitor and improve database performance
- Control database resource usage with the Resource Manager
- Simplify management tasks by using the Scheduler
- Review database log files for diagnostic purposes
- Customize language-dependent behavior for the database and individual sessions
- Administer a VLDB
- Implement a secure database
- Transport data across platforms

Course Topics

Introduction

Grid Computing
Oracle Enterprise Manager 10g Product Controls
Database Architecture Review

Configuring Recovery Manager

Recovery Manager Features and Components
Using a Flash Recovery Area with RMAN
Configuring RMAN
Control File Autobackups
Retention Policies and Channel Allocation
Using Recovery Manager to connect to a target database in default NOCATALOG mode
Displaying the current RMAN configuration settings
Altering the backup retention policy for a database

Using Recovery Manager

RMAN Command Overview
Parallelization of Backup Sets
Compressed Backups
Image Copy
Whole Database and Incremental Backups
LIST and REPORT commands
Enable ARCHIVELOG mode for the database
Use Recovery Manager

Oracle Secure Backup

Installation and Configuration
Implement the Oracle suggested strategy
RMAN and Oracle Secure Backup
Database and File-system files backup/restore to tape
Using obtool and web interface to configure Oracle Secure Backup devices (CLI/GUI)
Configuring EM for Oracle Secure Backup and test backup to tape (EM)
Using RMAN to backup your database to tape (CLI)
Using the OB Web tool to backup file system files

Recovering from Non-critical Losses

Recovery of Non-Critical Files
Creating New Temporary Tablespace
Recreating Redo Log Files, Index Tablespaces, and Indexes
Read-Only Tablespace Recovery
Authentication Methods for Database Administrators
Loss of Password Authentication File
Creating a new temporary tablespace
Altering the default temporary tablespace for a database

Incomplete Recovery

Recovery Steps
Server and User Managed Recovery commands
Recovering a Control File Autobackup
Creating a New Control File

- Incomplete Recovery Overview
- Incomplete Recovery Best Practices
- Simplified Recovery Through RESETLOGS
- Point-in-time recovery using RMAN

Flashback

- Flashback Database Architecture
- Configuring and Monitoring Flashback Database
- Backing Up the Flash Recovery Area
- Using V\$FLASH_RECOVERY_AREA_USAGE
- Flashback Database Considerations
- Using the Flashback Database RMAN interface
- Using Flashback Database EM Interface
- Managing and monitoring Flashback Database operations

Dealing with Database Corruption

- Block Corruption Symptoms: ORA-1578
- DBVERIFY Utility and the ANALYZE command
- Initialization parameter DB_BLOCK_CHECKING
- Segment Metadata Dump and Verification
- Using Flashback for Logical Corruption and using DBMS_REPAIR
- Block Media Recovery
- RMAN BMR Interface
- Dumping and Verifying Segment Metadata

Monitoring and Managing Memory

- Oracle Memory Structures
- Automatic Shared Memory Management
- SGA Tuning Principles
- Database Control and Automatic Shared Memory Management
- Behavior of Auto-Tuned and Manual SGA Parameters
- Resizing SGA_TARGET
- PGA Management Resources
- Using the Memory Advisor

Automatic Performance Management

- Identifying Tunable Components
- Oracle Wait Events and System Statistics
- Troubleshooting and Tuning Views
- Direct Attach to SGA for Statistic Collection
- Workload Repository
- Advisory Framework
- ADDM Scenarios and Usage Tips
- Using the SQL Tuning and SQL Access Advisor

Monitoring and Managing Storage I

- Database Storage Structures
- Space Management Overview
- Oracle-Managed Files (OMF)
- Row Chaining and Migrating
- Proactive Tablespace Monitoring
- Managing Resumable Space Allocation

SYSAUX Tablespace

Monitoring table and index space usage

Monitoring and Managing Storage II

Automatic Undo Management

Redo Log Files

Table Types

Partitioned Tables

Index-Organized Tables (IOT)

Managing index space with SQL

Configure optimal redo log file size

View “Automatic Tuning of Undo Retention”

Automatic Storage Management

ASM General Architecture and Functionalities

Dynamic Performance View Additions

Managing an ASM Instance

ASM Disk Groups

Using asmcmd Command Line

Migrating Your Database to ASM Storage

Creating an ASM instance in a separate Oracle Home

Migrating a tablespace to use ASM storage

VLDB Support

Creating Bigfile Tablespaces

Packages and data dictionary changes to support VLDB

Creating and maintaining temporary tablespace groups (TTG)

Partitioning and Partitioned Indexes

Skipping unusable indexes

Creating and using hash-partitioned global indexes

DML Error Logging

Interpreting Bigfile ROWIDs

Managing Resources

Database Resource Manager Concepts and Configuration

Creating a New Resource Plan

Active Session Pool Mechanism

Maximum Estimated Execution Time

Creating a Complex Plan

Administering and Monitoring Resource Manager

Resource Plan Directives

Creating Resource Consumer Groups

Automating Tasks with the Scheduler

Scheduler Concepts

Creating a Job Class and a Window

Managing Jobs, Programs, Chains, Events, Schedules, priority

Viewing and Purging Job Logs

Creating a program and a schedule

Creating a job that uses a program and a schedule

Altering the program and schedule for the job and observing the behavior change of the job

Monitoring job runs

Database Security

- Virtual Private Database: Overview
- Creating a Column-Level Policy
- Writing a Policy Function
- Policy Types
- Column level VPD with column masking
- Transparent Data Encryption
- Setting the listener password
- Implement VPD

Data Movement

- External Tables Concepts
- Creating a Directory object and External Table
- Data Pump
- Transport Database
- RMAN CONVERT DATABASE Command
- Transport Tablespace
- Create a Directory Object
- Create a Temporary Table

Using Globalization Support

- Globalization Support Features
- Encoding Schemes
- Database Character Sets and National Character Sets
- Specifying Language-Dependent Behavior
- Locale Variants
- Using Linguistic Comparison and Sorting
- Data Conversion Between Client and Server Character Sets
- Determining the Default NLS Settings

Workshop

- Workshop Methodology, requirements, and setup
- Scenario 1: Database performance
- Scenario 2: Finding and Tuning Inefficient SQL
- Scenario 3: SGA Management - REDO
- Scenario 4: Running out of Undo Space
- Scenario 5: Missing datafile
- Scenario 6: Managing space in a tablespace - REDO
- Scenario 7: Missing TEMP data file

Related Courses

- Oracle Database 10g: Administration Workshop II Self-Study CD Course