

Course Outline: Oracle Database 10g: Administration Workshop II Release 2

Learning Method: Instructor-led Classroom Learning

Duration: 5.00 Day(s)/ 40 hrs

Overview:

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.

Who Should Attend: This course is intended for:

- Database Administrators
- Sales Consultants
- Support Engineer
- Technical Consultant

At Course Completion:

- Use RMAN to create and manage backup sets and image copies
- Recover the database to a previous point in time
- Use Oracle's Flashback technology to recover your database
- Detect block corruptions and take appropriate measures to correct them
- Control database resource usage with the Resource Manager
- Simplify management tasks by using the Scheduler
- Administer a VLDB
- Transport data across platforms

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Outline:

Module 1: Introduction

Lessons:

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

Module 2: Configuring Recovery Manager

Lessons:

- 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

Module 3: Using Recovery Manager

Lessons:

- 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

Module 4: Oracle Secure Backup

Lessons:

- 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

Module 5: Recovering from Non-critical Losses

Lessons:

- 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

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- Loss of Password Authentication File
- Creating a new temporary tablespace
- Altering the default temporary tablespace for a database

Module 6: Incomplete Recovery

Lessons:

- 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

Module 7: Flashback

Lessons

- 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

Module 8: Module 8: Dealing with Database Corruption

Lessons

- 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

Module 9:

Monitoring and Managing Memory

Lessons

- 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

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Module 10: Automatic Performance Management

Lessons:

- Identifying Tunable Component
- 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

Module 11: Monitoring and Managing Storage I

Lessons:

- 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

Module 12: Monitoring and Managing Storage II

Lessons:

- 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

Module 13: Automatic Storage Management

Lessons

- 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

Module 14: VLDB Support

Lessons

- Creating Big file Table spaces
- Packages and data dictionary changes to support VLDB

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- Creating and maintaining temporary table space groups (TTG)
- Partitioning and Partitioned Indexes
- Skipping unusable indexes
- Creating and using hash-partitioned global indexes
- DML Error Logging
- Interpreting Big file ROWIDs

Module 15: Managing Resources

Lessons

- 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

Module 16: Automating Tasks with the Scheduler

Lessons

- Scheduler Concepts Creating a Job Class and a Window
- 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

Module 17: Database Security

Lessons:

- 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
- Use external tables to move data via platform-independent files

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Module 18: Data Movement

Lessons

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

Module 19: Using Globalization

Support

Lessons:

- 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

Module 20: Workshop

Lessons

- 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 data file
- Scenario 6: Managing space in a table space – REDO
- Scenario 7: Missing TEMP data file

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