Oracle Database 11g: Administration Workshop II

Duration: 5 Days

What you will learn

In this course, 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 students learn to manage memory effectively and 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 covered. Topics are reinforced with hands-on practices.

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.

Learn To:

Back up and recover a database using RMAN and Enterprise Manager
Configure Oracle Database for optimal recovery for any environment
Identify burdensome database sessions and poorly performing SQL
Configure the database instance such that resources are allocated among sessions and tasks appropriately
Schedule jobs to run inside or outside of the database

Audience
Data Warehouse Administrator
Database Administrators
Support Engineer
Technical Consultant

Prerequisites

Required Prerequisites
Oracle Database 11g: Administration Workshop I

Course Objectives

Back up and recover a database
Configure Oracle Database for optimal recovery
Administer ASM disk groups
Use an RMAN backup to duplicate a database
Automating Tasks with the Scheduler
Course Topics

Database Architecture and ASM
Oracle Database Architecture Overview
ASM General Architecture
Creating an ASM Instance
Using Enterprise Manager to Manage ASM Users
ASM Storage Concepts
The ASMCMD Utility
ASM Scalability and Performance

Configuring for Recoverability
Purpose of Backup and Recovery Functionality
Typical Backup and Recovery Tasks
Oracle Backup and Recovery Solutions
Using Recovery Manager (RMAN)
Using a Flash Recovery Area
Flash Recovery Area Space Management

Using the RMAN Recovery Catalog
RMAN Repository Data Storage: Comparison of Options
Storing Information in the Recovery Catalog
Registering a Database in the Recovery Catalog
Recovery Catalog Resynchronization: Concepts
Using RMAN Stored Scripts
Back Up and Recovering the Recovery Catalog
Using a Virtual Private Catalog

Configuring Backup Specifications
Using RMAN to Create Backups
Configuring Persistent Settings for RMAN
Using Enterprise Manager to Configure RMAN Settings
Control File Auto-backups
Managing Persistent Settings
Configuring Devices for Backup
Configuring and Allocating Channels for Use in Backups
Configuring Backup Optimization

Creating Backups
Creating an Oracle-Suggested Backup
Creating Backup Sets & Image Copies
Creating a Whole Database Backup
RMAN Backup Types
Monitoring Block Change Tracking
Creating Duplex Backup Sets
Archival Backups: Concepts
Encrypting Backups

Performing User-Managed Backup and Recovery
Restoring and Recovering
Causes of File Loss
Critical Versus Non-critical
Recovering from a TEMPFILE Loss
Re-creating Indexes
Recovering from a Lost Index Tablespace
Authentication Methods for Database Administrators
Recovering a Read-Only Tablespace

Using RMAN to Perform Recovery
Using RMAN RESTORE and RECOVER Commands
Performing Recovery Using Enterprise Manager
Recovery Using Incrementally Updated Backups
Perform a Fast Switch to Image Copies
Restoring and Recovering the Database on a New Host
Performing Disaster Recovery

Using RMAN to Duplicate a Database
Using RMAN to Create a Duplicate Database
Creating a Duplicate Database
Creating an Initialization Parameter File for the Auxiliary Instance
Allocating Auxiliary Channels
Understanding the RMAN Duplication Operation
Using EM to Clone a Database
Cloning a Running Database

Performing Tablespace Point-in-time Recovery
Tablespace Point-in-Time Recovery (TSPITR) Concepts
Tablespace Point-in-Time Recovery: Architecture
Understanding When to Use TSPITR
Determining the Tablespaces for the Recovery Set
Using Enterprise Manager to Perform TSPITR
Understanding TSPITR Processing
Troubleshooting RMAN TSPITR

Monitoring and Tuning RMAN
Parallelization of Backup Sets
Monitoring RMAN Sessions
Interpreting RMAN Message Output
Using the DEBUG Option
Tuning RMAN
RMAN Multiplexing
Comparing Synchronous and Asynchronous I/O
Tape Subsystem Performance Rules

Using Flashback Technology
Flashback Technology
Transactions and Undo
Guaranteeing Undo Retention
Preparing Your Database for Flashback
Flashback Drop and the Recycle Bin
Using Flashback Technology to Query Data
Possible Workflow
Flashback Transaction Wizard
Using Flashback Database
Flashback Table
Enabling Row Movement on a Table
Enabling Row Movement on a Table
Flashback Database Architecture
Configuring Flashback Database
Performing Flashback Database Using EM
Flashback Database Considerations
Flashback Data Archive

Diagnosing the Database
Automatic Diagnostic Workflow & Repository
Location for Diagnostic Traces
Viewing the Alert Log Using Enterprise Manager
The Support Workbench and Oracle Configuration Manager
Create a Service Request
Package and upload diagnostic data to Oracle Support
Incident Packaging Configuration
Health Monitor Overview & Data Recovery Advisor

Managing Memory
Oracle Memory Structures
Automatic Memory Management Overview
Oracle Database Memory Parameters
Auto Memory Parameter Dependency
Automatic Shared Memory Management: Overview
Automatic PGA Memory Management
Using the Memory Advisor to Size the SGA
Memory Tuning Guidelines for the Library Cache

Managing Database Performance
Tuning Activities
Performance Planning & Performance Tuning Methodology
Instance Tuning
Troubleshooting and Tuning Views
Automatic Workload Repository
SQL Tuning & SQL Advisors
Using the SQL Tuning Advisor
SQL Access Advisor: Overview

Using the Segment Advisor
Space Management: Overview
Proactive Tablespace Monitoring
Thresholds and Resolving Space Problems
Monitoring Tablespace Space Usage
Shrinking Segments
Space Reclamation with ASSM
Automatic Segment Advisor
Minimum Compatibility Level

Managing Resources
Database Resource Manager: Overview
Database Resource Manager Concepts
Accessing Resource Plans
Default Maintenance Resource Manager Plan
Creating Consumer Groups
Resource Allocation Methods for Resource Plans
Resource Allocation Methods for Resource Plans
Monitoring the Resource Manager

Automating Tasks with the Scheduler
Simplifying Management Tasks
Key Components and Steps
Creating an Event-Based Schedule
Creating Complex Schedules
Creating Job Chains
Creating Job Chains

Administering the Scheduler
Advanced Scheduler Concepts
Job Classes
Windows
Prioritizing Jobs Within a Window
Remote Jobs
Installing the Scheduler Agent
Dictionary Views Supporting Remote Jobs

Globalization
Globalization Support Features
What Every DBA Needs to Know
Understanding Unicode
Database Character Sets and National Character Sets
Language- and Territory-Dependent Parameters
Linguistic Searching and Sorting
Case- and Accent-Insensitive Search and Sort
NLS Data Conversion with Oracle Utilities

Related Courses

Oracle Database 11g: Administration Workshop II - Self-Study CD Course