

O1120 – Oracle 11g DBA Fundamentals II

Course Objectives

This course has been designed to show the concepts and architecture that support backup and recovery, effective memory management, alongside some performance evaluation and tuning tasks.

The new features and changes introduced with 11g will be discussed during this course.

Who Should Attend

Oracle DBA
Oracle Technical Consultants
Oracle Support Engineers

Prerequisites

Oracle 11g Fundamentals I
Working knowledge of SQL

Duration

5 Days

Course Contents

Database Architecture and ASM

Oracle Database Architecture Overview.

ASM General Architecture
Creating an ASM Instance
ASM Storage Concepts
The ASMCMD Utility

Configuring for Recoverability

Backup and Recovery Functionality
Typical Backup and Recovery Tasks.

Oracle Backup and Recovery Solutions.

Causes of File Loss

Performing User-Managed Backup and Recovery

Restoring and Recovering
Critical Versus Non-critical
Recovering from a TEMPFILE Loss
Recovering a Read-Only Tablespace.

Configuring RMAN

Using RMAN to Create Backups
Configuring Persistent RMAN Settings.
Control File Auto-backups
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
Archival Backups: Concepts.

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.
Resynchronization: Concepts
Using RMAN Stored Scripts
Backing Up and Recovering the Recovery Catalog.

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

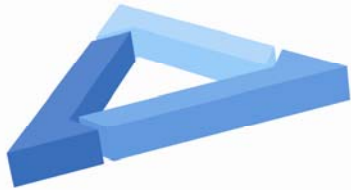
Creating a Duplicate Database
Creating an Initialization Parameter File for the Auxiliary Instance.
Allocating Auxiliary Channels
Understand RMAN Duplication
Using EM to Clone a Database
Cloning a Running Database

Performing Tablespace Point-in-time Recovery

Tablespace Point-in-Time Recovery (TSPITR) Concepts.
TSPITR Architecture.
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

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

Transactions and Undo
Guaranteeing Undo Retention
Preparing Your Database for Flashback.
Flashback Drop and the Recycle Bin.
Using Flashback Technology to Query Data.
Flashback Transaction Wizard

Using Flashback Database

Flashback 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 (AMM) Overview.
Oracle Database Memory Parameters
Auto Memory Parameter Dependency
Automatic Shared Memory Management (ASMM) 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 & Tuning Methodology.
Instance Tuning
Troubleshoot and Tune 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

Scheduler

Simplifying Management Tasks
Key Components and Steps
Programs
Schedules
Jobs and Job classes
Windows