

Oracle Database 12c R2: Backup and Recovery Workshop Ed 3

Duration: 5 Days

What you will learn

In this Oracle Database 12c R2: Backup and Recovery Workshop, students learn how to perform backup and recovery based on the related Oracle Database architecture components. Various backup, failure, restore, and recovery scenarios are provided so that students learn to evaluate their own recovery requirements and develop an appropriate strategy for backup and recovery procedures. This course includes an interactive workshop, with scenarios that provide participants with opportunities to diagnose and recover from several failure situations.

Learn To:

- Develop appropriate backup and recovery procedures to address your business needs.
- Implement backup and recovery settings and perform backup operations to disk and tape.
- Employ Oracle Database recovery procedures to recover from media and other failures.
- Diagnose and repair data failures.
- Use Flashback Technologies and data duplication to complement backup and recovery procedures.
- Secure the availability of your database by appropriate backup and recovery strategies.

Benefits To You

The student benefits by gaining a deeper understanding of possibly the most important job of a DBA – backup and recovery. 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.

Students gain knowledge of the Recovery Manager (RMAN) command line interface for various backup, failure, restore, and recovery scenarios, including tape backup and data duplication. (Familiarity with basic database tools and utilities, such as, SQL*Plus, is assumed.)

Hands-On Lessons

Extensive hands-on practices and workshop scenarios provide the student with experience in a realistic technical environment. This course includes an interactive workshop that provide participants with opportunities to diagnose and recover from several failure scenarios, based on backup and recovery case studies.

After completing this course, students should be able to evaluate their own recovery requirements and develop an appropriate strategy for backup and recovery procedures.

Audience

Data Warehouse Administrator
Database Administrators

Support Engineer
Technical Administrator
Technical Consultant

Related Training

Required Prerequisites

Knowledge of Oracle Database 12c

Knowledge of SQL and PL/SQL (for DBA use)

Oracle Database 12c R2: Administration Workshop Ed 3

Suggested Prerequisites

Using Oracle Enterprise Manager Cloud Control 13c Ed 1

Using Oracle Enterprise Manager Cloud Control 13c Ed 2

Course Objectives

Describe the Oracle Database architecture components related to backup and recovery operations

Plan effective backup and recovery procedures

Describe Oracle Database backup methods and recovery operations that can be used to resolve database failure

Configure the database for recoverability

Use Recovery Manager (RMAN) to create backups and perform recovery operations

Use the Data Recovery Advisor to diagnose and repair failures

Use Oracle Flashback Technologies to recover from human error

Perform an encrypted database backup and restore

Perform tablespace point-in-time recovery

Describe Cloud Tooling for Backup and Recovery

Course Topics

Introduction

Curriculum Context

Assess your recovery requirements

Categories of failures

Oracle backup and recovery solutions

Oracle Maximum Availability Architecture

Oracle Secure Backup
Benefits of using Oracle Data Guard
Basic Workshop Architecture

Getting Started

Core Concepts of the Oracle Database, critical for Backup and Recovery
Oracle DBA Tools for Backup and Recovery
Connecting to Oracle Recovery Manager (RMAN)
Quick Start: A Problem-Solution Approach

Configuring for Recoverability

RMAN commands
Configuring and managing persistent settings
Using the Fast Recovery Area (FRA)
Control File
Redo Log File
Archiving Logs

Using the RMAN Recovery Catalog

Creating and Configuring the Recovery Catalog
Managing Target Database Records in the Recovery Catalog
Using RMAN Stored Scripts
Maintaining and Protecting the Recovery Catalog
Virtual Private Catalogs

Backup Strategies and Terminology

Backup Solutions Overview and Terminology
Balancing Backup and Restore Requirements
Backing Up Read-Only Tablespaces
Data Warehouse Backup and Recovery: Best Practices
Additional Backup Terminology

Performing Backups

RMAN Backup Types
Incrementally Updated Backups
Fast Incremental Backup
Block Change Tracking
Oracle-Suggested Backup
Reporting on Backups
Managing Backups

Improving Your Backups

Compressing Backups
Using a Media Manager
Backup and Restore for Very Large Files
Creating RMAN Multisection Backups, Proxy Copies, Duplexed Backup Sets and Backups of Backup Sets
Creating and Managing Archival Backups
Backing Up Recovery Files
Backing Up the Control File to a Trace File
Cataloging Additional Backup Files

Using RMAN-Encrypted Backups

- Creating RMAN-Encrypted Backups
- Using Transparent-Mode Encryption
- Using Password-Mode Encryption
- Using Dual-Mode Encryption

Diagnosing Failures

- Reducing Problem Diagnosis Time
- Automatic Diagnostic Repository
- Data Recovery Advisor
- Handling Block Corruption

Restore and Recovery Concepts

- Restoring and Recovering
- Instance Failure and Instance/Crash Recovery
- Media Failure
- Complete Recovery (Overview)
- Point-in-Time Recovery (Overview)
- Recovery with the RESETLOGS Option

Performing Recovery, Part I

- RMAN Recovery in NOARCHIVELOG Mode
- Performing Complete Recovery (of critical and noncritical data files)
- Restoring ASM Disk Groups
- Recovery with Image Files
- Performing Point-in-Time (PITR) or Incomplete Recovery

Performing Recovery, Part II

- Recovery of Server Parameter File, Control File (One and All)
- Redo Log File Loss and Recovery
- Password Authentication File Re-creation
- Index, Read-Only Tablespace, and Tempfile Recovery
- Restoring the Database to a New Host
- Disaster Recovery
- Restoring RMAN Encrypted Backups

RMAN and Oracle Secure Backup

- Oracle Secure Backup Overview and Interface Options
- RMAN and OSB: Overview and Basic Process Flow
- Starting with Oracle Secure Backup
- Configuring Oracle Secure Backup for RMAN
- RMAN Backup and Restore Operations
- Oracle Secure Backup Jobs
- Displaying OSB log files and transcripts for RMAN activities

Using Flashback Technologies

- Flashback Technology: Overview and Setup
- Using Flashback Technology to Query Data
- Flashback Table
- Flashback Transaction (Query and Backout)
- Flashback Drop and the Recycle Bin
- Flashback Data Archive

Using Flashback Database

- Flashback Database Architecture
- Configuring Flashback Database
- Performing Flashback Database
- Best Practices for Flashback Database

Transporting Data

- Transporting Data Across Platforms
- Transporting Data with Backup Sets
- Database Transport: Using Data Files

Performing Point-in-Time Recovery

- When to use TSPITR
- TSPITR Architecture
- Performing RMAN TS Point-in-time Recovery
- Recovering Tables from Backups

Duplicating a Database

- Using a Duplicate Database
- Duplicating Database with "push" an "pull" techniques
- Choosing Database Duplication Techniques
- Creating a Backup-up Based Duplicate Database
- Understanding the RMAN Duplication Operation

RMAN Troubleshooting and Tuning

- Interpreting RMAN Message Output
- Tuning Principles
- Diagnosing Performance Bottlenecks
- RMAN Multiplexing
- Restore and Recovery Performance Best Practices

Cloud Tooling for Backup and Recovery

- Backup Destinations
- Customize Backup Configuration
- On-Demand Backup and Recovery
- Oracle Backup Cloud Service
- Installing the Backup Module

Backup and Recovery Workshop

- Workshop Structure and Approach
- Business Requirements for Database Availability and Procedures
- Diagnosing the Failures