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.

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.

Related Training

Required Prerequisites

Knowledge of Oracle Database 12c

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

Oracle Database 12c R2: Install and Upgrade Workshop

Oracle Database 12c R2: Administration Workshop Ed 3

Suggested Prerequisites
Using Oracle Enterprise Manager Cloud Control 13c Ed 2

Course Objectives

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 additional high availability features such as Oracle Data Guard.

Gain an understanding of the Oracle Database Cloud Service

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

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

Plan effective backup and recovery procedures.

Configure the database for recoverability.

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

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 Recoverablility
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