

# Oracle Database: Backup and Recovery Workshop Ed 1

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **5 Day**

## **Overview**

**In the Oracle Database 12c: Backup and Recovery Workshop, learn to evaluate your own recovery requirements. Develop appropriate strategies for backup, restore and recovery procedures from provided scenarios.**

### **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:**

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

### **Backup and Recovery:**

Expert instructors will begin by helping you gain a deeper understanding of possibly the most important job of a Database Administrator - backup and recovery. The concepts and architecture that support backup and recovery, along with the steps required to carry it out in various ways and situations, are covered in detail.

### **Recovery Manager Command Line and Graphical Interfaces**

This course will teach you about Recovery Manager (RMAN) command line and graphical interfaces for various backup, failure, restore and recovery scenarios.

### **Benefit From Hands-on Practices and Workshops:**

Participating in extensive hands-on practices and workshops will help you gain experience in a realistic technical environment. Interactive workshops give you the opportunity to diagnose and recover from numerous failure scenarios, based on backup and recovery case studies.

### **Upon Completion of Course:**

When finished with this course, you will know how to evaluate your own recovery requirements. You will have learned to develop an appropriate strategy for backup and recovery procedures.

### **Target Audience:**

- Database Administrators
- Data Warehouse Administrator
- Support Engineer
- Technical Consultant
- Technical Administrator

## **Prerequisites**

- Knowledge of Oracle Database 12c
- Knowledge of SQL and PL/SQL
- Oracle Database 12c: Administration Workshop

### Recommended:

- Using Oracle Enterprise Manager Cloud Control 12c

## **What You Will Learn**

At the end of this course you will be able to:

- 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.
- 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

## **Outline**

### **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
- Best Practices for Data Warehouse Backups
- 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

- 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
- Backing Up ASM Disk Group Metadata

### **Using RMAN-Encrypted Backups**

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

### **Diagnosing Database Failures**

- Reducing Problem Diagnosis Time
- Automatic Diagnostic Repository
- Interpreting RMAN Message Output and Error Stacks
- Data Recovery Advisor
- Diagnosing Data File Loss (file system and ASM)
- 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 Through RESETLOGS

### **Performing Recovery, Part 1**

- 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
- Table Recovery from Backups

### **Performing Recovery, Part 2**

- Recovery of Server Parameter File, Control File
- 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
- Oracle Database Disk and Tape Backup Solution
- Backing Up the Fast Recovery Area to Tape
- Defining Retention for RMAN Backups
- RMAN and Oracle Secure Backup Basic Process Flow
- Integration with Cloud Control
- RMAN Database Backup to Tape

### **Performing Tape Backups and Restores**

- Scheduling Backups with EM
- Oracle-Suggested Backup
- RMAN and OSB Process Flow
- RMAN and Oracle Secure Backup Jobs
- Managing Database Tape Backups
- Performing Database Recovery
- RMAN Automatic Failover to Previous Backup

### **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

### **Managing Backup Space or Transporting Data**

- Transporting Tablespaces
- Transporting Databases

### **Duplicating a Database**

- Using a Duplicate Database
- Choosing Database Duplication Techniques
- Creating a Backup-up Based Duplicate Database
- Understanding the RMAN Duplication Operation
- Using Cloud Control to Clone a Database

### **RMAN Performance and Tuning**

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

### **Backup and Recovery Workshop**

- Workshop Structure
- Workshop Approach to Solving Failure Scenarios
- Business Requirements for Database Availability and Procedures