

ORACLE Database 19c Backup & Recovery with RMAN 4 Day Course

Overview

This Oracle Database 19c Backup and Recovery with RMAN course is designed to give an Oracle database administrator practical experience in planning and implementing a backup and recovery strategy using Recovery Manager and Flashback Database. The delegate will learn how to perform backup and recovery operations using RMAN and will learn how to use Flashback features to recover from human error.

Delegate will practice:

- Planning a backup and recovery strategy and a disaster recovery strategy
- Creating and managing a recovery catalog database
- Using Recovery Manager to perform backups
- Using Recovery Manager to perform recoveries
- Monitor and tune Recovery Manager
- Performing tablespace point-in-time recovery
- Perform an encrypted database backup and restore
- Creating a duplicate database
- Using Flashback technology to recover from errors

Audience

Database administrators, data warehouse administrators and technical support staff.

Course Objectives

On completion of this course delegates will have the knowledge needed to enable a delegate to plan and implement a backup and recovery strategy in the workplace for Oracle Databases using RMAN and Flashback Database technologies.

Prerequisites

A working knowledge of Oracle SQL and Oracle Database Administration is required. This can be obtained by attendance on the Oracle SQL course and a suitable database administration course. The ability to describe and use Oracle built-in packages would be advantageous, but is not essential.

This course is run on a Linux operating system, a basic knowledge of UNIX/Linux is recommended but is not essential.

Course Contents (4 days)

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| <ul style="list-style-type: none">• BACKUP AND RECOVERY CONSIDERATIONS<ul style="list-style-type: none">○ Plan and Implement a Backup and Recovery Strategy○ Define a Disaster Recovery Plan○ Test a Backup and Recovery Plan○ Advantages and Disadvantages of Different Backup Methods○ Backup Methods Comparison○ Data Recovery Strategy○ Backup Strategy○ Validate the Recovery Strategy | <ul style="list-style-type: none">• ORACLE RECOVERY STRUCTURES AND PROCESSES<ul style="list-style-type: none">○ Architectural Components of Backup and Restore○ Physical Database Structures○ Logical Database Structures○ Dynamic Performance Views○ Redo Logs, Checkpoints and Archives○ Use the Flash Recovery Area (FRA)○ The Archivelog Modes of a Database |
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- **FLASHBACK**
 - Configure and Use Flashback Database
 - Monitor Flashback Database
 - Flash Recovery Area Space Usage
 - Flashback Query
 - Retrieve Row History with Flashback Versions Query
 - Audit or Recover From Transactions with Flashback Transactions Query
 - Flashback Table
 - Recover Dropped Tables with Flashback Drop
 - The Recycle Bin
 - Recover Tables to a Point In Time with Flashback Table
 - Flashback Database
 - Flashback Restore Points
 - Flashback Transaction Backout
 - Flashback Data Archive
- **RECOVERY MANAGER OVERVIEW**
 - RMAN Features and Components
 - The sysbackup Privilege
 - RMAN Commands
 - Connect to RMAN
 - Specify the Location of RMAN Output
 - Start Up and Shut Down a Target Database Using RMAN
 - Issue SQL Commands in RMAN
- **CREATE AND CONFIGURE A RECOVERY CATALOG**
 - Create a Recovery Catalog
 - Register a Database
 - Unregister a Database
 - Control File Information
 - Virtual Private Catalogs
 - Backup a Recovery Catalog
 - Use a Flashback Recovery Area with RMAN
 - Configure Persistent RMAN Settings
 - Set Retention Policies
 - Configure Control File Autobackups
 - Integrate RMAN with a Media Manager
- **BACKUP WITH RMAN**
 - Channel Allocation
 - Types of RMAN Backup
 - Recovery Manager Commands
 - Performing Backups
 - Closed and Open Backups
 - Incremental Backups
 - Fast Incremental Backups using Block Change Tracking
- Backup File Image Copies
- Oracle Suggested Backup
- Validate Backups
- Listing Backups
- **ADVANCED BACKUP TECHNIQUES**
 - Create Multisection Backups
 - Create Duplexed Backup Sets
 - Create Compressed Backups
 - Backup the Control File to a Trace File
 - Backup Recovery Files
 - Backup up ASM Metadata
- **MAINTAIN A RECOVERY CATALOG**
 - Change the Availability Status of Backups and Copies
 - Catalog Backups Made with Operating System Commands
 - Generate Backup Reports and Lists
 - Cross Check Backups and Copies
 - Delete Backups
 - Update the Repository after Backup Deletion
 - Drop Database and Archival Backups
 - Import and Export the Recovery Catalog
 - Use Data Dictionary Tables
- **ENCRYPTED RMAN BACKUPS**
 - Create an Encrypted RMAN Backup
 - Transparent Encryption
 - Password Encryption
 - Use Different Encryption Modes
- **DATABASE FAILURE DIAGNOSTICS**
 - The Automatic Diagnostic Repository
 - The Data Recovery Advisor
 - Understanding RMAN Messages and the Error Stack
 - Diagnose Data File Loss
 - Recovery with RESETLOGS
 - Dealing with Block Corruption
- **OVERVIEW OF RESTORE AND RECOVERY**
 - Restore and Recover
 - Instance Failure and Crash Recovery
 - Media Failure
 - An Overview of Complete Recovery
 - An Overview of Point in Time Recovery
 - Recovery with RESETLOGS
- **BASIC RESTORE AND RECOVER WITH RMAN**
 - Perform Recovery in Noarchivelog Mode
 - Perform Complete Recovery in Archivelog Mode
 - Use the Flash Recovery Area for Fast Recovery
 - Automatic Tempfile Recovery
 - Identify the Database Files to Restore and Recover

- Preview Backups used in Restore Operations
- Apply Incremental Backups to Restore Datafile Image Copies
- The Switch Command
- The Data Recovery Advisor
- Perform Incomplete Recovery (PITR)
- Restore and Recover a tablespace
- Restore and Recover Datafiles
- Recover a Datafile Not Backed Up
- Table Recovery from Backups
- Recover Individual Data Blocks
- The Data Recovery Advisor
- **ADVANCED RESTORE AND RECOVER WITH RMAN**
 - Restore the Server Parameter File
 - Restore the Control File
 - Re-create the Password File
 - Handling Redo Log File Loss
 - Restore and Recover the Database on a New Host
 - Restore RMAN Encrypted Backups
 - Disaster recovery
- **TABLESPACE POINT IN TIME RECOVERY (TSPITR)**
 - Tablespace-Point-in-Time Overview
 - Tablespace-Point-in-Time Example
- **TRANSPORT DATA**
 - Transport Tablespaces
 - Transport Databases
- **CREATE A DUPLICATE DATABASE WITH RMAN**
 - Database Duplication
 - Duplication Options

- Create Files for the Duplicate Database
- Prepare the Auxiliary Instance for Duplication
- Create a Duplicate Database
- Clone a Running Database
- An Overview of Using Cloud Control to Clone a Running Database
- Targetless Duplication of a Database
- 18c Duplication Enhancements
- **MONITOR, TUNE AND TROUBLESHOOT BACKUP AND RECOVERY**
 - Tune Recovery Manager Overview
 - Restore and Recovery Performance Best Practices
 - Multiplexing in RMAN
 - Diagnosing Performance Bottlenecks
- **OVERVIEW OF RMAN AND ORACLE SECURE BACKUP**
 - Oracle Secure Backup Overview
 - Oracle Secure Backup Interfaces
 - Oracle Secure Backup Architecture
 - Oracle Secure Backup Jobs with RMAN
 - Backup the Fast Recovery Area to Tape
 - RMAN Backup to Tape
 - Overview of Integration with Cloud Control
- **OVERVIEW OF BACKUP AND RESTORE TO TAPE**
 - Schedule Backups with Enterprise Manager
 - Oracle Suggested Backup Strategy
 - Perform Backups to Tape
 - Manage Tape Backups
 - Perform Recovery from Tape
 - RMAN Automatic Failover to Previous Backup

Course Materials

Enliten IT will provide each delegate with a workbook and other useful reference materials where applicable.