ProTech Professional Technical Services, Inc.

Oracle Backup and Recovery

Course Summary

Description

This course gives the Oracle database administrator (DBA) a firm foundation in Oracle backup and recovery operations. It addresses backup and recovery techniques and examines various backup, failure, restore and recovery scenarios. Students also examine backup methodologies based on business requirements in a mission critical enterprise. Students use multiple strategies and Oracle Recovery Manager to perform backups, and restore and recovery operations. This course includes interactive workshops that provide participants with the opportunity to walk through real-world backup and recovery case studies.

Objectives

Upon successful completion of this course, the student will be able to:

- Perform database and datafile backups with and without Recovery Manager (RMAN)
- List the different Oracle backup methods and recovery operations that can be used to resolve database failure
- Describe the database utilities (Export and Import) and the situations where they can be used
- List the Oracle architecture components related to backup and recovery operations

Topics

- Backup and Recovery Overview
- Instance and Media Recovery Structures
- Configuration of the Database Archiving Mode
- Oracle Recovery Manager (RMAN) Overview and Configuration
- User-Managed Backups
- RMAN Backups
- User-Managed Complete Recovery
- RMAN Complete Recovery
- User-Managed Incomplete Recovery
- RMAN Incomplete Recovery
- RMAN Repository Maintenance
- RMAN Catalog Creation and Usage
- Flashback Technology
- Backup and Recovery and Networking Workshop

Audience

Database Administrators.

Prerequisites

Oracle Database Administration or Oracle DBA experience.

Duration

Four days

Course Outline

I. *Backup and Recovery Overview*
   A. Describing the Basics of Database Backup, Restore, and Recovery
   B. Listing the Types of Failures that May Occur in an Oracle Environment
   C. Defining a Backup and Recovery Strategy

II. *Instance and Media Recovery Structures*
   A. Describing the Oracle Processes, Memory Structures, and Files Relating to Recovery
   B. Identifying the Importance of Checkpoints, Redo Log Files, and Archived Log Files
   C. Describing Ways to Tune Instance Recovery

III. *Configuration of the Database Archiving Mode*
   A. Noarchivelog and Archivelog Mode Configuration
   B. Automatic and Manual Archiving of Redo Log Files
   C. Multiple Archival Destinations and Processes

IV. *Oracle Recovery Manager (RMAN) Overview and Configuration*
   A. Identifying the Features and Components of RMAN
   B. Describing the RMAN Repository and Control File Usage
   C. Describing Channel Allocation
   D. Describing Media Management Library Interface
   E. Connecting to Recovery Manager
   F. Configuring the RMAN Environment

V. *User-Managed Backups*
   A. Describing User-Managed Backup and Recovery Operations
   B. Performing Closed Database Backups
   C. Performing Open Database Backups
   D. Cleaning Up After a Failed Online Backup
   E. Backing Up the Control File
   F. Discussing Backup Issues Associated with Read-Only Tablespaces

   G. Identifying the Backup Implications of Operations with NOLOGGING Options
   H. Performing logical backups (export, import)
   I. Using Oracle Data Pump

VI. *RMAN Backups*
   A. Identifying RMAN Specific Backups
   B. Using the RMAN BACKUP Command to Create Backup Sets
   C. Backing Up the Control File
   D. Backing Up the Archived Redo Log Files
   E. Using the RMAN COPY Command to Create Image Copies

VII. *User-Managed Complete Recovery*
   A. Describing Media Recovery
   B. Performing Recovery in Noarchivelog Mode
   C. Performing Recovery in Archivelog Mode
   D. Read-only Tablespace Recovery
   E. Relocating and Recovering a Tablespace

VIII. *RMAN Complete Recover*
   A. Describing the Use of RMAN for Restoration and Recovery
   B. Performing Recovery in Noarchivelog Mode
   C. Performing Completing Recovery in Archivelog Mode
   D. Restoring Data Files to a Different Location
   E. Relocating and Recovering a Tablespace

IX. *User-Managed Incomplete Recovery*
   A. Describing the Steps of Incomplete Recovery
   B. Identifying the Situations Which Require Incomplete Recovery
   C. Performing an Incomplete Recovery
   D. Recovering from the Loss of Current Online Redo Logs

Course Outline *Course Outline* (Cont'd)

X. *RMAN Incomplete Recovery*
- A. Performing Incomplete Recovery Using UNTIL TIME
- B. Performing Incomplete Recovery Using UNTIL SEQUENCE

XI. *RMAN Repository Maintenance*
- A. Performing Crosschecking of Backups and Copies
- B. Updating the Repository When Backups Have Been Deleted
- C. Changing the Availability Status of Backups and Copies
- D. Making a Backup or Copy Exempt from the Retention Policy
- E. Cataloging Backups Made with Operating System Commands

XII. *Catalog Creation and Usage*
- A. Describing the Contents of the Recovery Catalog
- B. Listing the RMAN Features Which Require the Recovery Catalog
- C. Creating the Recovery Catalog
- D. Maintaining the Recovery Catalog by Using RMAN Commands
- E. Using RMAN to Register, Resynchronize, and Reset a Database
- F. Querying the Recovery Catalog to Generate Reports and Lists
- G. Creating, Storing and Executing Scripts
- H. Describing Methods for Backing Up and Recovering the Recovery Catalog

XIII. *Flashback Technology*
- A. Flashback Query
- B. Flashback Table
- C. Flashback Drop
- D. Flashback Database

XIV. *Backup and Recovery and Networking Workshop*
- A. The student is presented with various recovery scenarios
- B. Each scenario is documented
  1. Diagnosis
  2. Solutions
  3. Time to Complete
  4. Resources Needed