

## Hands-On Oracle® Database 11g: Backup, Recovery and Server Tuning - 4 Days

*Course 928 Overview*

- You Will Learn How To**
- Implement backup and recovery strategies to safeguard Oracle 11g databases
  - Configure the database for fault tolerance
  - Perform backup and recovery with Recovery Manager and Oracle Enterprise Manager
  - Maintain high availability with hot standby databases using Oracle Data Guard
  - Alleviate bottlenecks by tuning the Oracle 11g server memory components
  - Automate server tuning with the workload repository and diagnostics information
- Course Benefits** Oracle Database 11g includes an increased range of tools that can be used to ensure full protection and recovery from failure. Those responsible for administering Oracle data need an in-depth knowledge of these tools to ensure optimal database availability. In this course, you gain extensive hands-on experience with backup strategies and recovery techniques on Oracle databases. You employ a set of automated tuning tools to mitigate poor resource allocation and enhance database performance.
- Who Should Attend** Those interested in safeguarding and tuning Oracle 11g databases. Knowledge of database administration at the level of Course 927, "Oracle Database 11g Administration," is assumed.
- Hands-On Training** Hands-on exercises provide you with practical experience with Oracle 11g. Exercises include:
- Building a fault-tolerant database
  - Enabling fast recovery with flashback database
  - Backing up and recovering databases with RMAN and OEM
  - Creating an Oracle 11g Data Guard environment
  - Activating the standby database
  - Improving the performance of commonly used queries with the result cache
  - Diagnosing and relieving lock contention with ADDM

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## Course 928 Outline

### Safeguarding the Database

#### Ensuring resilience

- Configuring and protecting redo logs and control files
- Achieving total recall with Flashback Data Archive

#### Performing backups

- Selecting appropriate backup strategies
- Implementing hot and cold backups
- Managing the Flash Recovery Area

#### Recovering the database

- Database, tablespace and datafile recoveries
- Flashing back the database to a recent point in time

### Performing Backup and Recovery with Recovery Manager (RMAN)

#### Setting up Recovery Manager

- Creating and merging recovery catalogs
- Registering databases for recovery
- Modifying catalog contents
- Implementing virtual private catalogs
- Configuring channels and redundancy

#### Backup operations with RMAN

- Working with full and incremental backups
- Scripting the backup activity
- Listing and reporting on RMAN operations
- Maintaining the redo stream with archival backups
- Protecting very large datafiles with multisection backups

#### Performing automated recovery

- Backup sets and image copies for restore and recovery
- Rolling forward image copies with incremental backups
- Tuning backup processing with block change tracking

### Managing Backup and Recovery with Oracle Enterprise Manager (OEM)

#### Automating backup and recovery operations

- Configuring default settings
- Navigating the screens to perform backup and recovery

#### Repairing lost data with Data Recovery Advisor

- Obtaining advice for repairing data failures

- Executing repairs
- Classifying and closing failures

### Disaster Recovery with Data Guard

#### Establishing the standby environment

- Building and synchronizing the standby database
- Creating the standby with active database duplication
- Controlling log shipping and redo apply mechanisms
- Applying data protection policies
- Physical vs. logical standby databases

#### Managing the standby database

- Maintaining a read-only standby during managed recovery
- Synchronizing the standby with incremental backups
- Preserving the performance of the primary database

#### Moving operations to the standby

- Failing over and switching to the standby facility
- Achieving No-Data-Loss and delayed recovery

### Configuring and Tuning the Oracle Server

#### Tuning the SGA

- Maximizing the use of the shared pool
- Tuning the buffer cache with the Buffer Cache Advisor
- Reducing I/O with multiple buffer pools
- Monitoring latch contention

#### Enhancing query performance with the result cache

- Controlling result cache usage with table annotations
- Monitoring the result cache with DBMS\_RESULT\_CACHE

### Oracle 11g Server Automated Tuning Automatic Workload Repository (AWR)

- Performing root cause analysis with the Automatic Database Diagnostics Monitor (ADDM)
- Tracking session activity with Active Session History (ASH)
- Handling logging and tracing with Automated Diagnostics Repository (ADR)

- Gathering statistics with user-specified preferences
- Managing deferred and historical statistics

### Automatic Memory Management (AMM)

- Tuning memory with the memory advisors
- Enabling total memory management with AMM

### Generating workloads for predictive testing

- Capturing workloads with Database Replay
- Analyzing and evaluating the results of the replay session