Hands-On Oracle® Database 10*g*: Backup, Recovery and Server Tuning - 5 Days

Course 518 Overview

You Will Learn How To

- Deploy backup and recovery strategies to safeguard Oracle 10*g* databases
- Perform recovery operations to maintain consistent and available data
- Failover to hot standby databases for high availability
- Exploit automated backup and recovery techniques with Recovery Manager
- Implement flashback and logmining to roll back user and logical errors
- Tune the Oracle 10*g* server by controlling memory allocation, disk I/O and locking/latch contention

Course Benefits

The guaranteed continuous operation of databases is a critical requirement of any successful organization. Oracle Database 10*g* includes an increased range of features to ensure optimal performance, plus protection and recovery from failure. In this course, you apply techniques to solve a range of issues, including media and site failures, invalid user input, lock contention, and poor memory and storage allocation.

Who Should Attend

Those interested in safeguarding Oracle 10*g* databases. Knowledge of database administration at the level of Course 594, "Oracle Database 10*g* Administration," is assumed.

Hands-On Training

You gain extensive experience using Oracle 10*g*. Exercises include:

- Implementing a backup strategy with Recovery Manager
- Recovering the database from serious errors
- Enabling fast recovery by rolling backup files forward
- Transporting tablespaces across databases
- Setting up LogMiner to recover bad transactions
- Creating hot standby databases
- Optimizing query performance
- Controlling shared pool usage
- Diagnosing lock contention with Database Control 10*g*

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Course 518 Outline

The Oracle 10*g* Architecture

- Instances and databases
- The System Global Area (SGA) and background processes
- Automated storage configurations

Implementing Backup and Recovery Strategies

Protecting the database

- Choosing appropriate backup strategies
- Identifying points of possible failure
- Safeguarding redo logs and control files
- Managing archive logs

Performing backups

- Generating full database backups
- Implementing partial online backups
- Backing up and creating control files

Transporting tablespaces

- Establishing a consistent dataset
- Migrating across hardware platforms

Achieving full database recovery

- Recovering tablespaces and datafiles
- Reconstructing datafiles without backups
- Repairing online redo logs
- Flashing back the entire database

Disaster Recovery Using Hot Standby Databases

Configuring the standby environment

- Creating and synchronizing the standby database
- Maintaining a read-only standby database
- Preserving the performance of the primary database
- Physical vs. logical standby databases

Moving operations to the standby

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

Automating Backup and Recovery with Recovery Manager (RMAN)

Setting up Oracle Recovery Manager

- Creating the Recovery Catalog
- Registering databases for recovery
- Configuring channels and redundancy

Recovery Manager backups

- Full and incremental backups
- Scripting the backup activity
- Maintaining the catalog
- Listing and reporting on backups

Performing automated recovery

- Restoring and recovering data from backup sets and image copies
- Rolling forward image copies with incremental backups
- Tuning backup processes with block change tracking

Analyzing Redo Log Files with LogMiner

Configuring LogMiner

- Creating the LogMiner dictionary
- Manually listing log files to be analyzed
- Automatically choosing log files using continuous mining
- Adding supplemental log data

Interpreting LogMiner information

- Auditing changes to specific columns
- Performing fine-grained recovery from logical corruptions

Tuning the Oracle 10*g* 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
- Configuring Startup with triggers

Automating memory management

- Managing Program Global Area (PGA)
- Enabling dynamic memory allocation

Optimizing transactions and queries

- Determining block contention
- Compressing table data
- Monitoring latch contention and waits

Applying Diagnostic Techniques

- Managing the workload repository
- Identifying contention with the Automatic Database Diagnostic Monitor (ADDM)
- Examining the alert log

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