Oracle 11g Database Administration

Course Summary

Description

This course provides students with the skills needed to administer and maintain an Oracle 11g database. Included in the course are detailed instructions on the facilities available for database design, administration, and daily operation including user management and logical backup and recovery. The issues involved in creating a new instance and database are also presented. The Data Dictionary is examined in detail to create awareness among participants of the wealth of system information available to the informed user of the system. Dynamic performance tables are also examined to provide access to additional information about a database and instance.

This course includes additional topics not presented in the Oracle 11g Database Administration Lite course. Some topics presented in both courses will be covered in more detail in this course.

Topics

- Overview of Oracle Architecture
- Manageability Features
- Tablespaces & Data Files
- User Administration
- Tables
- Indexes
- Clusters
- Documenting Objects
- Synonyms
- Sequences
- Views
- Managing UNDO Data
- Utilities
- Resumable Space Allocation
- Online Data Evolution
- Overview of Oracle's Client-Server Architecture

Audience

This course is designed for Database Administrators responsible for the administration of an existing Oracle 11g database. Programmers and Analysts seeking a greater understanding of the Oracle DBMS will also find this class helpful.

Prerequisites

Students should have taken the Oracle 11g SQL Fundamentals course. Oracle 11g PL/SQL Programming not required, but would be helpful.

Duration

Five days

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Course Outline

I. Overview of Oracle Architecture
- A. Data Files
- B. Redo Log Files
- C. Control Files
- D. Data Dictionary
- E. Dynamic Performance Tables
- F. Server Processes
- G. Starting a Database
- H. Shutting Down a Database
- I. Data Base Buffers
- J. Trace and Alert Files

II. Manageability Features
- A. Controlling the Size of the SGA
- B. SGA_MAX_SIZE
- C. Non-Standard Block Size Buffers
- D. Dynamic SGA
- E. Automatic Shared Memory Management
- F. SGA_TARGET Parameter
- G. Automated PGA Memory Management
- H. PGA_AGGREGATE_TARGET
- I. WORKAREA_SIZE_POLICY
- J. MEMORY_TARGET
- K. Managing the Result Cache
- L. Server Parameter File
- M. Creating a Server Parameter File

III. Tablespaces & Data Files
- A. Extent Management
- B. Dictionary-Managed Tablespaces
- C. Locally-Managed Tablespaces
- D. PCTFREE and PCTUSED
- E. Free Lists
- F. Automatic Segment Space Management
- G. Oracle Managed Files
- H. SYSAUX Tablespace
- I. Tablespace-Level Encryption

IV. User Administration
- A. External Authentication
- B. Privileges
- C. Roles
- D. Administrative Users
- E. SYSDBA and SYSOPER Privileges
- F. Grant & Revoke Statements
- G. Profiles
- H. Account LOcking
- I. Password Management
- J. Password Complexity Verification

V. Tables
- A. Data Types
- B. Integrity Constraints
- C. Row Format
- D. Row Chaining
- E. Deferred Constraint Checking
- F. Virtual Columns
- G. Index-Organized Tables
- H. Partitioned Tables
- I. External Tables

VI. Indexes
- A. Variations of Indexes
- B. Guidelines for Index Creation
- C. Function-Based Indexes
- D. Invisible Indexes

VII. Clusters
- A. Advantages of Clusters
- B. Disadvantages of Clusters
- C. Cluster Guidelines
- D. Indexed Clusters
- E. Hash Clusters

VIII. Documenting Objects
- A. Metadata
- B. Comment On

IX. Synonyms
- A. Private Synonyms
- B. Public Synonyms

X. Sequences
- A. Referencing Sequence Values
- B. Evaluating CURRVAL and NEXTVAL
- C. Restrictions on Sequences

XI. Views
- A. Processing a View
- B. Restrictions on Views
- C. Changing a View Definition
- D. Updatable Join Views

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Course Outline (cont'd)

XII. Managing UNDO Data

A. Automatic Undo Management
B. Rollback Segments

XIII. Utilities

A. SQL*Loader
B. Export & Import
C. Datapump Export & Import
D. DBNEWID
E. DBMS_METADATA
F. Automatic Workload Repository
G. Automatic Database Diagnostic Monitor
H. Server-Generated Alerts

XIV. Resumable Space Allocation

A. Online Data Evolution
B. Overview of Oracle's Client-Server Architecture

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