



Course 281: Oracle Database Administration – Basics, Hands-On

Course Description...

This course is aimed at students in the process of becoming (or already are) responsible for the administration of the Oracle Database. An intuitive understanding of the Oracle Architecture is derived as the foundation. All the steps necessary for the creation, expansion, and management of the Database are covered from the perspective of the DBA.

Learning Objectives...

- Explain the Oracle Architecture and trace processing through it
- Start up and shut down a database in the proper mode
- Create a brand new Oracle Database
- Expand the data storage allocated to Oracle so that applications can be managed and tuned
- Establish user accounts and control what each is allowed to do
- Allocate sufficient resources to support transaction processing
- Set up the Oracle Database to minimize downtime due to crashes
- Recover an Oracle Database from a failure

Who should attend

Participants include beginning Oracle DBA's, those aspiring to attain this position, DBA's of other relational products (Sybase, SQL Server, DB2, etc.), developers who wish to acquire knowledge of the Oracle database, and other administrators/operational staff who interface with or run Oracle databases.

Prerequisites

No specific prerequisites are assumed, other than a familiarity with the SQL SELECT statement.



Course Outline...

Introduction and Overview

Course Objectives

Unit 1: How Oracle Database Architecture Meets OUR Requirements

- Overview of the Oracle Architecture from the application perspective

Unit 2: Managing the Oracle Instance

- Oracle Configurations
- Memory Areas
 - The System Global Area (SGA)
 - The Process Global Area (PGA)
- Processes
- Dedicated and Shared Server Configurations

Unit 3: Managing State of Oracle Database

- Connecting through the Oracle Service
- Bringing up the database to different states
 - Unmount
 - Mount
 - Open

Unit 4: Creating an Oracle Database

- Pre-creation activities
- The CREATE DATABASE statement
- Post-creation steps: the SPFILE option

Unit 5: Managing Database Files and Applications via Tablespaces

- Creating and maintaining tablespaces
- Special tablespaces
- Oracle managed files (OMF)

Unit 6: Managing Oracle Internal Storage: Blocks

- Extent allocations
- Internal block storage settings
- Automatic Segment Space Management (ASSM)
- Gathering statistics

Unit 7: Managing Users

- Creating users
- Managing resources and passwords with PROFILES
- Administering system and object privileges
- Creating roles to manage privileges



Unit 8: Managing Transactions

- The UNDO Record: what is it and what it is used for
- How Rollback/UNDO segments are used by transactions
- RBU Mode: Rollback segments
- SMU Mode: UNDO Tablespaces
- FLASHBACK QUERY

Unit 9: Keeping Your Job

- Setting up for recovery: ARCHIVELOG mode
- Preserving the Database definition: Control Files
- What can go wrong? -- types of failures

Unit 10: Managing the Backups: User Managed Mode

- COLD
- WARM
- HOT
- What about EXPORT/IMPORT?

Unit 11: Managing the Crisis: Restoration and Recovery

- Determining WHAT is wrong
- Recovery options

Unit 12: Is that ALL a DBA Needs to Know?

- Future topics...
 - Advance Backup and Recovery (RMAN)
 - Server tuning
 - Managing Very Large Databases (VLDBs)
 - Real Application Clusters
 - Hot Standbys
 - Managing distributed databases