

Course Information

Course Code : ORA10gADMN
Course Title : Oracle 10g: Database Administration 1

Overview:

To introduce the concepts of RDBMS and Oracle database administration

Target Audience:

Anyone wanting to learn about Oracle Database 10g database administration and start their career in Oracle technology as a database administrator

Prerequisites:

Knowledge of SQL and Database Concepts is plus

Duration of the course:

Total number of Hours: 40Hours

Course Content:

Introduction (Database Architecture)

- Describe course objectives
- Explore the Oracle 10g database architecture

Installing the Oracle Database Software

- Explain core DBA tasks and tools
- Plan an Oracle installation
- Use optimal flexible architecture
- Install software with the Oracle Universal Installer (OUI)

Creating an Oracle Database

- Create a database with the Database Configuration Assistant (DBCA)
- Create a database design template with the DBCA
- Generate database creation scripts with the DBCA

Managing the Oracle Instance

- Start and stop the Oracle database and components
- Use Enterprise Manager (EM)
- Access a database with SQL*Plus and iSQL*Plus
- Modify database initialization parameters

- Understand the stages of database startup
- View the Alert log
- Use the Data Dictionary

Managing Database Storage Structures

- Describe table data storage (in blocks)
- Define the purpose of tablespaces and data files
- Understand and utilize Oracle Managed Files (OMF)
- Create and manage tablespaces
- Obtain tablespace information
- Describe the main concepts and functionality of Automatic Storage Management (ASM)

Administering User Security

- Create and manage database user accounts
- Authenticate users
- Assign default storage areas (tablespaces)
- Grant and revoke privileges
- Create and manage roles
- Create and manage profiles
- Implement standard password security features
- Control resource usage by users

Managing Schema Objects

- Define schema objects and data types
- Create and modify tables
- Define constraints
- View the columns and contents of a table
- Create indexes, views and sequences
- Explain the use of temporary tables
- Use the Data Dictionary

Managing Data and Concurrency

- Manage data through SQL

- Identify and administer PL/SQL Objects
- Describe triggers and triggering events
- Monitor and resolve locking conflicts

Managing Undo Data

- Explain DML and undo data generation
- Monitor and administer undo
- Describe the difference between undo and redo data
- Configure undo retention
- Guarantee undo retention
- Use the undo advisor

Implementing Oracle Database Security

- Describe DBA responsibilities for security
- Apply the principal of least privilege
- Enable standard database auditing
- Specify audit options
- Review audit information
- Maintain the audit trail

Configuring the Oracle Network Environment

- Use Enterprise Manager for configuring the Oracle network environment
- Create additional listeners
- Create Net Service aliases
- Configure connect-time failover
- Control the Oracle Net Listener
- Test Oracle Net connectivity
- Identify when to use shared versus dedicated servers

Proactive Maintenance

- Use statistics
- Manage the Automatic Workload Repository (AWR)
- Use the Automatic Database Diagnostic Monitor (ADDM)

- Describe advisory framework
- Set alert thresholds
- Use server-generated alerts
- Use automated tasks

Performance Management

- Use Enterprise Manager pages to monitor performance
- Use the SQL Tuning Advisor
- Use the SQL Access Advisor
- Use Automatic Shared Memory Management
- Use the Memory Advisor to size memory buffers
- Use performance related dynamic views
- Troubleshoot invalid or unusable objects

Backup and Recovery Concepts

- Identify the types of failure that may occur in an Oracle Database
- Describe ways to tune instance recovery
- Identify the importance of checkpoints, redo log files, and archived log files
- Configure ARCHIVELOG mode

Performing Database Backups

- Create consistent database backups
- Back your database up without shutting it down
- Create incremental backups
- Automate database backups
- Monitor the flash recovery area

Performing Database Recovery

- Recover from loss of a control file
- Recover from loss of a redo log file
- Perform complete recovery following the loss of a data file

Performing Flashback

- Describe Flashback database

- Restore the table content to a specific point in the past with Flashback Table
- Recover from a dropped table
- View the contents of the database as of any single point in time with Flashback Query
- See versions of a row over time with Flashback Versions Query
- View the transaction history of a row with Flashback Transaction Query

Moving Data

- Describe available ways for moving data
- Create and use directory objects
- Use SQL*Loader to load data from a non-Oracle database (or user files)
- Explain the general architecture of Data Pump
- Use Data Pump Export and Import to move data between Oracle databases
- Use external tables to move data via platform-independent files