

Course Description: This course is your first step towards success as an Oracle professional, designed to give you a firm foundation in basic database administration. In this class, you'll learn how to install and maintain an Oracle database. You will gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. You will also learn how to create an operational database and properly manage the various structures in an effective and efficient manner including performance monitoring, database security, user management, and backup/recovery techniques. The lesson topics are reinforced with structured hands-on practices. This course is designed to prepare you for the corresponding Oracle Certified Associate exam.

Who Should Attend: This course is for database administrators, sales consultants, support engineers, project managers, database designers, and technical consultants.

Prerequisites: Students should have a working knowledge of SQL.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Install Oracle Database 10g and configure a database.
- Manage the Oracle instance.
- Manage the Database storage structures.
- Create and administer user accounts.
- Perform backup and recovery of a database.
- Monitor, troubleshoot, and maintain a database.
- Configure Oracle Net services.
- Move data between databases and files.

Course Outline:

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