



# Oracle Database 10g: Administration Workshop I

(5 days)

## Description

Oracle DBAs manage the industry's most advanced information systems and command some of the highest salaries. 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.

Students will gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. Students 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.

## Audience

- Database Administrators
- Sales Consultants
- Support Engineer
- Technical Consultant

## Required Prerequisites

- None

## Objectives

After completing this course, students should be able to:

- Install and configure the Oracle Database 10g
- Create and administer user accounts in the Oracle Database 10g
- Backup and Recovery of the Oracle Database 10g
- Monitor, troubleshoot, and maintain the Oracle Database 10g
- Configure Oracle Net services for the Oracle Database 10g

## Topics

### Introduction

- Explain the course objectives
- Identify the Oracle product line
- Describe the basic concepts of a relational database
- Know core database administrator tasks

### Installing Oracle Database 10g Software

- Identify system requirements
- Use optimal flexible architecture
- Install software with the Oracle Universal Installer

### Create an Oracle Database

- Describe Oracle Database Architecture
- Understand the instance architecture
- Use the management framework
- Use the Database Creation Assistant

#### Database interfaces

- Use structured query language (SQL)
- Use Procedural Language/Structured Query Language (PL/SQL)
- Use Java
- Use the Oracle C++ Call Interface (OCCI)

#### Controlling the database

- Start and stop the agent
- Start and stop the enterprise manager database console
- Start and stop the listener
- Startup and shutdown the database

#### Storage Structures

- Define the purpose of tablespaces and data files
- Create tablespaces
- Manage tablespaces
- Obtain tablespace information
- Create and manage tablespaces using Oracle Managed Files (OMF)

#### Administering users

- Create and manage database user accounts
- Create and manage roles
- Grant and revoke privileges
- Control resource usage by users

#### Managing Schema Objects

- Create and modify tables
- Define constraints
- View the attributes of a table
- View the contents of a table
- Create indexes and views

#### Managing Data

- Manipulating data through SQL
- Using Import
- Using Export
- Using SQL Loader

#### PL/SQL

- Identify PL/SQL objects
- Understand triggers and triggering events
- Identify configuration options that affect PL/SQL performance

#### Oracle Database Security

- Apply the principal of least privilege
- Manage default user accounts
- Implement standard password security features
- Audit database activity

#### Oracle Net Services

- Understand Oracle Net concepts
- Use Oracle Net Manager to create and configure listeners
- Use the listener control utility to control the Oracle Net Listener

- Use the Oracle Net Manager to configure client and middle-tier connection
- Use TNSPING to test Oracle Net connectivity

#### Oracle Shared Server

- Understand when to use Oracle Shared Servers
- Configure Oracle Shared Servers
- Monitoring Shared Servers

#### Performance Monitoring

- Troubleshoot invalid and unusable objects
- Gather optimizer statistics
- View performance metrics
- React to performance issues

#### Proactive Maintenance: Objectives

- Set warning and critical alert thresholds
- Collect and use baseline metrics
- Use tuning and diagnostic advisors
- Use the Automatic Database Diagnostic Monitor (ADDM)
- Manage the Automatic Workload Repository

#### Undo Management

- Monitor and administer undo
- Configure undo retention
- Guarantee undo retention
- Use the undo advisor

#### Monitoring and Resolving Lock Conflicts

- Detect and resolve lock conflicts
- Manage deadlocks

#### Backup and Recovery Concepts

- Describe the basics of database backup, restore and recovery
- List 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 file
- Configure ARCHIVELOG mode

#### 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

#### Database Recovery

- Recover from loss of a control file
- Recover from loss of a redo log file
- Recover from loss of a data file

