

Oracle® Database 11g Administration: Hands-On - 4 Days

Course 927 Overview

- You Will Learn How To**
- Create, maintain and support Oracle 11g databases and instances
 - Automate database administration tasks with Oracle Enterprise Manager 11g Database Control
 - Provide transaction support and flashback capability with UNDO tablespaces
 - Control user access and ensure database security through privileges and roles
 - Employ effective storage management to maximise space usage
 - Partition large tables and indexes to ease administration and improve performance
- Course Benefits** Oracle 11g is designed to handle the ever-increasing data needs of modern organisations. Effective management of Oracle 11g capabilities can help organisations ensure the integrity and security of data. In this hands-on course, you maximise the features of Oracle 11g to build and maintain databases, configure memory and storage for optimal performance, and manage large amounts of data.
- Who Should Attend** Database administrators, developers with data management responsibilities and others involved in the management or deployment of Oracle 11g databases. Course 926, "Oracle Database 11g Comprehensive Introduction", or equivalent experience is assumed.
- Hands-On Training** Extensive hands-on exercises using both GUI tools and SQL*Plus provide you with the practical skills to administer an Oracle 11g database. Exercises include:
- Building an Oracle database
 - Troubleshooting with automated alerts
 - Managing tablespaces with different block sizes
 - Maintaining UNDO tablespaces and retention periods to enable and perform flashback operations
 - Securing data by controlling user access with privileges and roles
 - Monitoring and optimising space usage
 - Setting up and maintaining partitioned objects

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Course 927 Outline

Introduction to Oracle Database 11g Administration

Your responsibilities as an Oracle 11g DBA

- Configuring the instance and database
- Maintaining security
- Balancing user requirements and resources
- Ensuring database availability

The Oracle 11g architecture

- Processing transactions with the server
- Identifying types of Oracle 11g processes and memory structures
- Determining database file structure
- Archiving redo log information
- Sizing the Result Cache for optimising repeated queries

Building an Oracle 11g Database

Creating the database

- Setting the initialisation parameters
- Simplifying memory allocation with memory targets
- Establishing network connectivity
- Converting from text-based to server parameter files
- Configuring control files and redo log files

Starting and stopping the database

- Mounting and opening the database with SQL*Plus
- Authenticating connections having SYSDBA privilege
- Closing the database and shutting down the instance

Automating Database Management

The Oracle Enterprise Manager architecture

- Navigating the graphical interface
- Comparing command-line and graphical techniques

Administering with Database Control

- Equipping Database Control to manage additional databases
- Setting thresholds and generating alerts
- Verifying changes in the data dictionary
- Performing privilege management

Performing Flashback Operations

Managing space for rollback and read consistency

- Configuring UNDO tablespaces
- Monitoring expansion of rollback segments

- Swapping to an alternative UNDO tablespace

Resetting data to recent points in time with flashback

- Tracking changes to data values with row history
- Obtaining transaction history with Flashback Transaction
- Performing efficient recovery of data with Flashback Table
- Retrieving dropped tables and dependent objects from the recycle bin

Securing the Database

Establishing user accounts

- Authenticating users with sophisticated password checking
- Allocating space quotas for user schemas
- Limiting resource usage through profiles

Enforcing security

- Granting and revoking system and object privileges
- Simplifying privilege management with roles
- Preventing changes to read-only tables

Controlling Database Storage

Defining logical and physical structures

- Creating, altering, and dropping tablespaces
- Handling sort data efficiently with temporary tablespaces
- Comparing traditionally managed and Oracle-managed files

Configuring storage patterns for database objects

- Structuring data and index segments
- Sizing database objects by defining extents and block occupancy
- Eliminating row migration with PCTFREE and Data Pump
- Compressing table data to conserve storage
- Shrinking tables and indexes online to regain space

Partitioning to Support

Administration and Availability

Creating table partitions and subpartitions

- Selecting partitioning methods: range, list, hash, interval
- Partitioning tables based on virtual columns
- Setting up automatic partition allocation

- Referencing the partitioning method in child tables
- Administering partitions with merge, split, add and drop

Maintaining index partitions

- Maximising performance with local and global indexes
- Monitoring index partition usage
- Rebuilding unusable indexes