

## Oracle 11g New Features For Administrators

**Length:** 5 Days

**Audience:** Database Administrators

**Prerequisites:** Administration experience of an Oracle database

**Overview:** This course presents an overview of new features and enhancements introduced to the Oracle DBMS in Oracle 11g. Attendees should already be familiar with the general features available in earlier releases of Oracle, including features introduced in Oracle10g. The examination of this release includes reviewing the benefits and use of the new features in diagnosing and recovering from problems, ensuring high availability, improving scalability and performance, strengthening security, and several other areas that concern database administrators. The material covered in this course is presented through lectures, demonstrations, and student workshops. This course covers Oracle 11g Release 2.

### Topics Discussed Include:

- Introducing Oracle 11g
  - Product History
  - Oracle 11g Architecture
  - Oracle 11g Database Editions
  - Scope of Changes
  - Grid Computing
- Security Features
  - Database Security
  - Password Case Sensitivity
  - Built-in User Profile
  - Default Auditing
  - Built-in Password Complexity Checker
  - OLAP Security Enhancements
  - New Privileges
  - Transparent Data Encryption
  - Tablespace-Level Encryption
  - Enhanced Key Management
  - Metadata Related to Security Features
  - Database Vault Overview
- Database Architecture and Instance Performance Enhancements
  - UNDO Management
  - Oracle Memory Management
  - Automatic Memory Management
  - Oracle 11g Memory Parameters
  - Result Cache Overview
  - Enabling Result-Caching

- Cross-Session PL/SQL Function Result Cache
- Enabling Result-Caching for a Function
- Restrictions on Using the Result Cache
- Result Caches in Oracle RAC Environment
- The Result Cache and Shared Pool Size
- Peeking of User-Defined Bind Variables
- Bind-Aware Cursor Matching
- Adaptive Cursor Sharing Overview
- ADDM Enhancements
- Smart Flash Cache
- 4KB Sector Disk Support
- In-Memory Parallel Execution
- Instance Caging
- Diagnosability Enhancements
  - Oracle 11g Fault Diagnosability Infrastructure
  - Automatic Diagnostic Repository (ADR)
  - Automatic Diagnostic Workflow
  - Overview of Health Monitor
  - Incident Packaging Service (IPS)
  - Enterprise Manager Support Workbench Overview
  - Data Recovery Advisor Overview
  - ADRCI Command-Line Tool
- SQL Plan Management
  - Dealing with Uncertainty
  - Plan Stability and Stored Outlines
  - Proactive versus Reactive Tuning
  - SQL Plan Baseline Architecture
  - Evolving SQL Plan Baselines
  - SQL Plan Selection
  - SQL Performance Analyzer
  - Capturing the SQL Workload
  - Loading a SQL Plan Baseline Automatically
  - Stored Outline Migration
- Real Application Testing
  - Real Application Testing Overview
  - Database Replay Overview
  - Capturing a Database Workload
  - Preparing to Replay a Database Workload
  - Resolving References to External Systems
  - Specifying Replay Options
  - Replaying a Database Workload Using Enterprise Manager
  - Viewing a Completed Workload Replay
  - DBMS\_WORKLOAD\_REPLAY Package
  - DBMS\_WORKLOAD\_CAPTURE Package
  - SQL Performance Analyzer Overview

- Working with SQL Tuning Sets
- Using SQL Performance Analyzer
- Automatic SQL Tuning
  - Automated Maintenance Tasks
  - Predefined Maintenance Tasks
  - Maintenance Windows
  - Predefined Maintenance Windows
  - Autotask Database Dictionary Views
  - Gathering Optimizer Statistics
  - Enabling Automatic Statistics Collection
  - SQL Tuning Advisor Enhancements
- Data Warehousing and Storage Enhancements
  - Partitioning Overview
  - Partition-Wise Joins
  - Evolution of Partitioning
  - Range Partitioning
  - Hash Partitioning
  - List Partitioning
  - Partitioning in Oracle 11g
  - Reference Partitioning
  - Interval Partitioning
  - Extended Composite Partitioning
  - Virtual Columns
  - Virtual Column Partitioning
  - System Partitioning
  - Partition Advisor
  - Table Compression
  - Using Table Compression
  - Using Table Compression with Partitioned Tables
  - Table Deferred Segment Creation
  - Zero-Size Unusable Indexes
  - Extended Statistics
  - Gathering Statistics on Column Groups
  - Expression Statistics
  - Pivoting and Un-Pivoting Operations
  - Cross-tab Queries
- Using RMAN Enhancements
  - Parallel Backup and Restore for Very Large Files
  - Using RMAN Multisection Backups
  - Duplicating a Database
  - Virtual Private Catalogs
- Using Flashback Features
  - Overview of Flashback Technology
  - Logical Flashback Features
  - Database Administration Features

- Flashback Transaction
- Preparing for Flashback Transaction Backout
- Using Flashback Data Archive
- Creating a Flashback Data Archive
- Altering a Flashback Data Archive
- Dropping a Flashback Data Archive
- Enabling and Disabling Flashback Data Archives
- Dictionary Views for Flashback Data Archives
- Using Flashback Data Archives
- Flashback Data Archive Notes
- Using the Data Recovery Advisor
  - Data Recovery Advisor Overview
  - Data Recovery Advisor RMAN Command Line Interface
  - Repairing Data Failures
  - Setting Parameters to Detect Corruption
- Enhancements to Utilities
  - Changes to Utilities
  - Original Export Utility
  - Data Pump Export/Import Enhancements
  - External Table Enhancements
  - SQL\*Plus Error Logging
  - SET ERRORLOGGING Statement
  - Creating a User Defined Error Log Table
  - Viewing the Error Logging Table
  - Site Profile Script
  - Additional SQL\*Plus Enhancements
  - Enhancements to Oracle Scheduler
  - Overview of Data Guard and LogMiner Enhancements
- Oracle SecureFiles
  - LOB Concepts and Terminology
  - BasicFile LOB
  - Oracle SecureFiles Overview
  - DB\_SECUREFILE Parameter
  - LOB Storage Syntax
  - Usage Notes for Compression
  - Usage Notes for Deduplication
  - Usage Notes for Encryption
  - Migrating to SecureFile
- Storage Enhancements
  - Overview of ASM Fast Mirror Resync
  - Overview of Preferred Mirror Read
  - ASM Scalability and Performance Enhancements
  - ASMCMD Extensions
- SQL Enhancements
  - Subquery Factoring Recursive SQL

- CREATE TABLE and ALTER TABLE Enhancements
- Edition-Based Redefinition
- Editioning View
- Crossedition Triggers
- Optimizer Hints
- Miscellaneous New Features
  - Online Redefinition Enhancements
  - Enhancements to ALTER TABLE
  - DDL Lock Timeout
  - Minimizing Dependent Recompilations
  - Temporary Tablespace Shrink
  - Database Resident Connection Pooling
  - Transportable Tablespace Enhancements
  - Initialization Parameter Management
  - Invisible Indexes
  - Multicolumn Statistics
  - Compound Triggers
  - Create Disabled Triggers
  - Use the ENABLE Clause with a Trigger
  - Control Trigger Order with FOLLOWS and PRECEDES Clauses
  - Fine-Grained Dependencies for Triggers
  - PL/SQL Native Compilation
- Installation and Upgrade Enhancements
  - Oracle 11g Software Installation
  - Oracle Upgrade Process
  - Oracle 11g Upgrade Paths
  - Database Upgrade Assistant (DBUA)
  - Hot Patching Overview
  - Configuring Automatic Restart