

# Oracle Database 11g R2: New & Advanced Features For Developers

Length of Course: 3 Days

This Oracle 11g courseware training guide book will present some of the most advanced features available to database developers. In addition to receiving the print copy of this course book, all students will receive e-Learning modules.

## Target Audience

The target audience for this course is senior application developers. Using these features one can rely upon less-frequently used database options to extend the capabilities and flexibility of business applications.

## Prerequisites

The following Sideris courses are mandatory prerequisites:

- ORACLE DATABASE 11g: INTRODUCTION TO SQL – COMPLETE LIBRARY
- ORACLE DATABASE 11g: PROGRAM WITH PL/SQL – COMPLETE LIBRARY

## Objectives

Many new features are either newly available with the Oracle 11g release or have been substantially improved with that release. Specific subjects presented in this course are:

- Creating and using directory objects within the database.
- A comprehensive look at all index types available when building an application schema, including B-tree internals, function-based, compressed, reverse key, invisible, linguistic, bitmap and bitmap join indexes.
- A comprehensive look at all table types available when building an application schema, including heap-organized tables, index clusters, hash clusters, index-organized tables, external tables, temporary tables, read-only and compressed tables.
- Advanced SQL hierarchal data processing capabilities available from the CONNECT BY PRIOR and related language structures.
- Enhanced SQL and transactional capabilities, including asynchronous commits, DML error trapping and use of regular expressions.
- How to use the result cache to achieve dramatic performance improvement for frequently executed SQL queries and PL/SQL functions.
- Enhancements to the PL/SQL programming language and coding capabilities.
- New and advanced SQL language application development capabilities.

## Content

### Moving Data: Export & Import

- Manage directory objects
- about the data pump architecture
- data pump export
- data pump import



### Security Enhancements

- transparent data encryption
- what is a database wallet?
- tde encryption algorithms
- column encryption

### Oracle Securefiles

- lob concepts & terminology
- basicfiles lob
- table ddl with lobs
- controlling lob physical storage
- initialize internal lobs
- initialize external lobs
- lob columns & SQL
- securefiles lobs
- migrating basicfiles to securefiles

### Indexes Within the Application Schema

- b-tree indexes
- indexes & performance
- rebuild & coalesce indexes
- creating very large indexes
- data dictionary storage
- function-based indexes
- compressed indexes
- reverse-key indexes
- bitmap indexes
- bitmap join indexes
- linguistic indexes
- invisible indexes

### Advanced Tables: Clusters & Iots

- about index clusters
- about hash clusters
- about index-organized tables
- defining index-organized tables

### Advanced Tables: External Tables

- about external tables
- creating the table
- oracle\_loader access parameters
- the general access parameters
- access parameters which define fields
- performance considerations
- oracle\_datapump access driver
- managing external table properties

### Advanced Tables: Specialized Tables

- temporary tables
- compressed tables
- read-only tables
- column default values
- virtual columns
- unused columns



### Processing Hierarchies

- why we need hierarchies
- processing 1:n hierarchies
- oracle-specific form
- ansi/iso standard SQL form
- processing m:n hierarchies
- bill-of-materials (explosion & implosion)
- more explosion examples
- more implosion examples
- advanced hierarchy processing

### Using the Database Result Cache

- about the result cache
- configuring the result cache
- result\_cache\_max\_size
- result\_cache\_mode
- result\_cache\_max\_result
- result\_cache\_remote\_expiration
- using the result cache
- managing & monitoring result cache
- managing the cache with dbms\_result\_cache()
- monitoring the cache with the system views

### SQL New & Advanced Features

- asynchronous commit options
- handling dml errors
- influencing locking behavior
- regular expressions

### PL/SQL Programming Enhancements

- program logic enhancements
- database-resident triggers
- using compound triggers

### Edition-Based Redefinition

- why online redefinition?
- edition-based architecture
- implementing editions
- using editions

### Redefinition with Cross-Edition Triggers

- Redefinition theoretical challenges
- forward cross-edition triggers
- reverse cross-edition triggers
- post-upgrade tasks
- Prepare To Transform Legacy Data
- Transform Legacy Data
- Retire The Old Application

