Oracle Advanced PL/SQL

Duration: 3 Days Course Code: OAP

Overview:

Oracle Advanced PL/SQL Course Overview
English - Please note this course is only available in English.
Nederlands - Let op: deze training is alleen in het Engels beschikbaar.
Français - Veuillez noter que ce cours est uniquement disponible en anglais.
This course,designed for Oracle database administrators and software development personnel who need to gain practical experience of the advance

Target Audience:

Who will the Course Benefit?
Software development personnel and Oracle database administrators who need to take advantage of the advanced features of PL/SQL in Oracle Database.
Practical experience of Oracle SQL or SQL Developer and a good working knowledge of the fundamentals of the PL/SQL programming language are required.
Versions supported 12cR2,18c and 19c.

Objectives:

■ Course Objectives

■ By the end of this Oracle Advanced PL/SQL course delegates will be able to effectively tune PL/SQL code; create subtypes; create and use collections; execute external C programs and Java programs from PL/SQL; use fine-grained access control; use LOB data types and the DBMS_LOB package; use SecureFile LOBs; effectively design cursors; improve memory usage with PL/SQL result caching and SQL result sets and apply coding standards to avoid SQL injection attacks.

Prerequisites:

■
Practical experience of Oracle SQL and the PL/SQL programming language is required. This can be gained by attendance on the pre-requisite courses. Familiarity with the Oracle Database is also required.

Follow-on-Courses:

Further Learning

■ Oracle 19c SQL Performance Tuning
■ Oracle Database 19c Administration

Content:

Oracle Advanced PL/SQL Training Course
Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: DESIGNING PL/SQL CODE FOR PERFORMANCE

- Oracle Predefined Data Types
- Create Subtypes Based on Existing Types for an Application
- Guidelines for Cursor Design
- Use Cursor Variables
- Pass Cursor Variables as Program Parameters
- Compare Cursor Variables to Static Cursors

Session 2: USE COLLECTIONS

- Overview of Collections
- Associative Arrays
- Nested Tables
- Varrays
- Select the Appropriate Collection Type
- Create PL/SQL Programs that use Collections
- Use Collections Effectively

Session 3: ADVANCED INTERFACE METHODS

- The Benefits of External Routines
- External Routine Components
- Define the Library to Oracle
- Register the External Function
- Networking Files
- The Shared Library
- Call an Operating System Supplied DLL from PL/SQL
- Create Secure External Procedures
- Call C Program from PL/SQL
- Call Java from PL/SQL

Session 4: VPD AND FINE-GRAINED ACCESS CONTROL

- Overview of Fine-Grained Access Control
- The Features of Fine-Grained Access Control
- Overview of an Application Context
- Create an Application Context
- Set an Application Context
- Describe the Package DBMS_RLS
- Implement a Policy
- Query the Data Dictionary for Fine-Grained Access Control Information
  Oracle Advanced PL/SQL Training Course   Course Contents - DAY 2

Session 5: MANIPULATE LARGE OBJECTS

- Overview of a LOB Object
- Manage Internal LOBs
- Character Large Objects
- Binary Large Objects
- External Large Objects - BFILEs
- Create and Use the DIRECTORY Object to Access and Use BFILEs
- The DBMS_LOB Package
- Delete LOBs
- Create a Temporary LOB using the Package DBMS_LOB

Session 6: ADMINISTER SECUREFILE LOBS

- Overview of SecureFile LOBs
- Configure the Environment for SecureFile LOBs
- Store Documents using SecureFile LOBs
- Convert BasicFile LOBS to SecureFile LOBs
- Evaluate the Performance of SecureFile LOBs
- Establish Space Utilization of a LOB File
- Set up Encryption
- Enable Compression and Deduplication

Session 7: TUNING PL/SQL CODE FOR PERFORMANCE

- Understand the PL/SQL Compiler
- Influence the Compiler
- Tuning PL/SQL Programs
- The DBMS_UTILITY.GET_TIME Function
- Tuning SQL
- Reduce the Number of SQL Calls
- PL/SQL Tuning
- The FETCH FIRST Clause and Bulk Collections
- The DBMS_EXECUTE_PARALLEL Package
- PL/SQL Functions that Run Faster in SQL
- PL/SQL Native Compilation

Session 9: ANALYZE PL/SQL CODE

- Use Data Dictionary Views to View Coding Information
- Use Supplied Packages to View Coding Information
- Use the DBMS_METADATA Package to View Metadata as XML
- Use the DBMS_METADATA Package to Create DDL that can be used to Re-create Objects
- Determine Identifier Types and Usages with PL/Scope
- The UTL_CALL_STACK Package
- Compile Time Warnings
- Conditional Compilation

Session 10: PROFILE AND TRACE PL/SQL CODE

- Trace PL/SQL Program Execution
- Profile PL/SQL Applications
- Access the Trace Data
- DBMS_PROFILER
- The Hierarchical Profiler
- PL/SQL Predefined Enquiry Directives

Session 11: SECURE CODE

- Grant Roles to Standalone Programs and PL/SQL Packages
- BEQUEATH CURRENT_USER Views
- Enable INHERENT PRIVILEGES and INHERIT ANY PRIVILEGES Privileges
- White Lists using the ACCESSIBLE BY Clause

Session 12: SAFEGUARD CODE

- Overview of SQL Injections
- Detecting Attacks
- Review of Dynamic SQL
- The Attack Surface
- Typical SQL Attacks
- Reduce Attack Surfaces
- Use the DBMS_ASSERT Package
- Design Immune Code
- Test Code for SQL Injection Flaws

Session 13: MISCELLANEOUS NEW 12c NEW FEATURES

- Edition Based Redefinition
- Invisible Columns and the %ROWTYPE Attribute

Session 8: USE SQL AND PL/SQL CACHING
TO IMPROVE PERFORMANCE

- The Importance of the Shared Pool
- Library Cache
- The Data Dictionary Cache
- Pinning Code in the Shared Pool
- SQL and PL/SQL Caching
- PL/SQL Function Cache
- Invoker's Right Function Result Caching
- The Invalidation of Cache Results
- The DBMS_RESULTS_CACHE Package
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  Course   Course Contents - DAY 3

Further Information:

For More information, or to book your course, please call us on 0800/84.009

info@globalknowledge.be

www.globalknowledge.com/en-be/