ProTech Professional Technical Services, Inc.

Exploiting Native SQL Stored Procedures on Db2 for z/OS

Course Summary

Description

One of the most anticipated new features of Db2 for z/OS was the Native SQL PL stored procedure. A key advantage is the ability to work entirely within the IBM Data Studio environment and accomplish Db2 development and deployment with no green screen. Students will leave this course with the ability to code new SQL PL stored procedures and maintain existing. This is a very hands-on course where students code, test, and deploy 7 stored procedure programs. First introduced in V9, there has been a number of enhancements to the SQL PL language that also get covered in this course. Topics like XML parameters, array parameters, autonomous processing, piece-wise delete, and UDF code enhancements are covered. Everyone leaves with a set of 'Best Practices'.

Objectives

At the end of this course, students will be able to:

- Understand the benefits of Stored Procedures
- Code Db2 SQL PL Stored Procedures
- Use the IBM Data Studio to code, test, deploy, and debug SQL PL Stored Procedures
- Understand the new XML and Array parameters
- Understand the many ways of error handling
- Use the Unified Debugger to test and troubleshoot stored procedures
- Understand how to use SQL PL enhancements within User Defined Functions

Topics

- Introduction to stored Procedures
- The SQL Procedure Language
- IBM Data Studio
- Error Handling in SQL PL
- Global Temporary Tables
- Native SQL Logistical & Performance Considerations
- Unified Debugger in IBM Data Studio
- User Defined Functions with SQL PL

Audience

Analysts and programmers involved in the development of Db2 for z/OS SQL Stored Procedures.

Prerequisites

Understanding of relational database concepts and SQL syntax (Db2 SQL For Everyone or equivalent).

Duration

Three Days

Course Outline

I. Introduction to Stored Procedures
- A. What are Stored Procedures?
- B. Problems Solved Using Stored Procedures
- C. Advantages of using Stored Procedures
- D. Calling a Stored Procedure
- E. Native and External SQL Procedures
- F. Stored Procedure Run-time Environments

II. The SQL Procedure Language
- A. CREATE PROCEDURE statement
- B. Db2 for z/OS BIND options
- C. Declaring SQL Variables
- D. Procedural Statements in SQ
- E. Creating & Retrieving Result Sets
- F. Calling another Stored Procedure

III. IBM Data Studio
- A. Introduction to Data Studio
- B. Managing Database Connections
- C. Coding Stored Procedures
- D. Deploying Stored Procedures
- E. Importing Existing Stored Procedures

IV. Error Handling in SQL PL
- A. Capturing SQLCODE and SQLSTATE
- B. Unhandled Exception Behavior
- C. Coding Exception Handlers
- D. GET DIAGNOSTICS
- E. SIGNAL & RESIGNAL Commands

V. Global Temporary Tables
- A. Created Global Temporary Tables
- B. Declared Global Temporary Tables
- C. Example of a Stored Procedure Using Declared Global Temporary Table

VI. Native SQL Logistical & Performance Considerations
- A. Naming Conventions
- B. Versioning Procedures
- C. Performance and Execution Considerations
- D. Using Explain
- E. Migrating External to Native

VII. Unified Debugger in IBM Data Studio
- A. Invoking the Debugger
- B. The Debug Perspective
- C. Using Breakpoints
- D. Working with Variables & Values

VIII. User Defined Functions with SQL PL:
- A. External User Defined Functions
- B. "Native" Scalar Functions
- C. Non-inline Scalar Functions
- D. "Native" Table Functions