

Advanced DB2 Application Programming – Part 1

(5 Day)

Benefits

The student learns advanced programming techniques for accessing DB2 data, and acquires skills in assessing the performance of SQL statements.

Audience

Application programmers who need to be able to employ advanced tools to access DB2 data.

Prerequisites

The student should be skilled in coding basic SQL statements, and in embedding these statements in application programs

Major Topics Include:

- DB2 access strategies
- EXPLAIN, PLAN_TABLE, and DSN_STATEMNT_TABLE
- TRUNCATE, GET_DIAGNOSTICS, MERGE, SELECT from DML statements
- OLAP functions
- Joins, left, right, and full
- Subqueries
- UNION, INTERSECT, and EXCEPT
- Nested table expressions
- Common table expressions
- Views
- Application plans and packages
- Remote Data Access
- LOAD and UNLOAD utilities
- DSNTDP2, DSNTIAUL, and DSNTIAD
- Working with LOBs

There are 12 machine exercises.

Course Outline

Introduction

The course data base
Review of relational concepts
Review of basic SQL
Computer Exercise: Course setup

Access Strategies in DB2

Index Usage
EXPLAIN
PLAN_TABLE and DSN_STATEMNT_TABLE
Computer Exercise: EXPLAIN and
PLAN_TABLE

TRUNCATE

Multi-row access
GET DIAGNOSTICS
MERGE
SELECT from INSERT, UPDATE, DELETE, and
MERGE
OLAP Functions
Encryption Functions
Computer Exercise: TRUNCATE, MERGE, and
Multi-row Access

Joins: Inner, Left, Right, and Full

Joins and Aggregates
Joins and Table Expressions
Computer Exercise: Joins

Subqueries

UNION
EXCEPT
INTERSECT
Computer Exercise: Subqueries and UNION

Nested Table Expressions

Common Table Expressions
Declared global temporary tables
View Definition
ORDER BY and FETCH FIRST Enhancements
Computer Exercise: Advanced SQL

DB2 Processing Sequence

Indexable, Stage 1, and Stage 2 Predicates
Filter Factors
Join Access Strategies
Subquery Access Strategies
Computer Exercise: DB2 Data Access
Strategies

Application Plans and Packages - 1

Collection
Version Control
Qualifier
Mirror Tables
Explaining Packages and Plans
BIND PACKAGE - Action Parameter
Package Maintenance Strategies
DROP PACKAGE and FREE PACKAGE
BINDAGENT Authority
Security Issues Related to Packages, Plans,
and Collections
BIND PACKAGE Parameters
BIND PLAN Parameters
REBIND PACKAGE and REBIND PLAN
Computer Exercise: Using Plans and
Packages

Application Plans and Packages - 2

ISPF DB2I Panels for Packages and Plans
Catalog Tables for Packages and Plans
Distributed Data
Distributed Data and Packages
Remote Unit of Work
Connect - Type 1
Distributed Unit of Work
Connect - Type 2
SET CONNECTION and RELEASE
System-directed access
Computer Exercise: Catalog Tables and
Distributed Access

DB2 Utilities

LOAD

UNLOAD

DSNTEP2 / DSNTIAD

DSNTIAUL

Computer Exercise: Populating Tables with Utilities

Working with LOBs

Defining BLOBs, CLOBs, and DBCLOBs

ROWIDs

LOB table spaces

Auxiliary tables and indexes

LOBs and the LOAD utility

Using LOBs in programs

LOB host variables

LOB locators

FETCH CONTINUE

LOB file reference variables

LOB Catalog Tables

Computer Exercise: A program that Uses LOBs