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DB2 Connect Problem Determination

Course Summary

Description

This course is designed for the experienced DB2 system or database administrator, or network administrator responsible for the administration of a DB2 Connect to DB2 for z/OS environment. This course addresses problem and performance issues that can occur within a distributed database environment. Through lectures and labs, students will practice how to start, use, and interpret output results from monitoring and problem determination tools available on the various platforms.
Students will work with Windows clients, Windows DB2 Connect servers, and DB2 for z/OS servers. TCP/IP network configurations will be provided and addressed.

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

- Design a DB2 Connect DRDA environment and describe the data flow
- Use the problem determination and monitoring tools available on the various platforms
- Analyze problem information in a distributed database environment, identify the location of the problem, and determine the cause of the problem
- Analyze the output of problem determination and monitoring tools, and determine where performance bottlenecks exist

Topics

- Architecture
- Problem Determination Overview
- Client Monitoring and Problem Determination
- DB2 Connect Monitoring and Problem Determination
- Network Monitoring and Problem Determination
- DB2 for z/OS Monitoring and Problem Determination
- Problem Determination Analysis
- Performance Tuning
- Problem Reporting

Audience

This is an advance course for DB2 database administrators, system administrators, systems engineers or system implementers, or communications specialists responsible for distributed database configuration and implementation, problem determination and performance in a DB2 Connect to DB2 for z/OS environment.

Prerequisites

Before taking this course, you should have:

- Completed the DB2 Connect DRDA Implementation with TCP/IP course
- A working knowledge of DB2 Connect
- A working knowledge of DB2 for z/OS
- Experience with Windows or UNIX operating systems
- Basic knowledge of TCP/IP networking concepts

Duration

Four days

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Course Outline

I. Architecture
- A. Design multitier configurations
- B. Explain the difference between DB2 Connect and DB2 ESE
- C. List TCP/IP Networking options
- D. Describe supported Host Attachment options
- E. Perform initial sizing of components

II. Problem Determination Overview
- A. Describe the data flow within a DB2 Connect environment
- B. Develop a problem determination methodology

III. Client Monitoring and Problem Determination
- A. List monitoring and problem determination tools available on a DB2 Client
- B. Interpret the db2 diagnostic log with the db2diag tool
- C. Capture SQLCA information in the db2diag.log
- D. Benchmark queries with the db2batch tool
- E. Configure the db2cli.ini file
- F. Start and format a db2trc, a CLI trace, or a Java trace
- G. Parse a CLI trace or a Java trace
- H. Enable the Java application monitor
- I. Examine the contents of a bind file
- J. Interpret Visual Explain output
- K. Explain UNICODE and CCSID conversions

IV. DB2 Connect Monitoring and Problem Determination
- A. Configure DBM CFG and DB2 Connect Registry variables
- B. List DCS applications
- C. SNAPSHOT DCS data
- D. View error logs
- E. Trace DB2 Connect internal processing and DRDA flow
- F. View performance data
- G. Use the db2pd tool to monitor and troubleshoot DB2 Connect
- H. Explain the DB2 Connect Process Model

V. Network Monitoring and Problem Determination
- A. Run and interpret the TCP/IP PING command
- B. Run and interpret the PATHPING command
- C. Run and interpret the DB2 PING command
- D. Run and interpret the TCP/IP TRACEROUTE command
- E. Run and interpret the TCP/IP NETSTAT command
- F. Locate TCP/IP network configuration settings
- G. Capture a TCP/IP trace

VI. DB2 for z/OS Monitoring and Problem Determination
- A. Minimize TCP/IP network failures
- B. Configure DB2 for z/OS configuration parameters
- C. Use and interpret the DISPLAY DDF command
- D. Use and interpret the DISPLAY THREAD command
- E. Use and interpret the DISPLAY LOCATION command
- F. Use and interpret the DISPLAY DATABASE command
- G. Start Accounting, Statistics, and Performance traces

VII. Problem Determination Analysis
- A. Identify and resolve connection problems
- B. Use trace data to capture performance information
- C. Identify performance bottlenecks
- D. Identify and resolve hung thread problems
- E. Identify and resolve security problems

VIII. Performance Tuning
- A. List application programming and client performance recommendations
- B. Identify DB2 Connect performance recommendations
- C. Specify DB2 for z/OS performance recommendations
- D. List TCP/IP performance recommendations
- E. Examine local versus remote access times
- F. Determine how block size affects performance
- G. Describe the benefits of HiperSocket technology
- H. Tune agents' parameters to work with connection concentrator
- I. Enable automatic client reroute configuration
- J. Improve detection of client failures using TCP/IP keepalive settings

IX. Problem Reporting
- A. Collect environment related information
- B. Collect problem related information
- C. Package information to transmit to the Support Center