FORM OF TRAINING | MATERIALS | PRICE     | DURATION
-----------------|-----------|-----------|----------
Traditional      | Digital materials | 10950 EUR | 5 days   
Traditional      | CTAB Tablet    | 11050 EUR | 5 days   
Distance learning| Digital materials | 10950 EUR | 5 days   
Distance learning| CTAB Tablet    | 11050 EUR | 5 days   

LOCATIONS

Krakow - 5 Tatarska Street, II floor, hours: 9:00 am - 4:00 pm
Warsaw - 17 Bielska Street, hours: 9:00 am - 4:00 pm

TRAINING GOALS:

The course provides a brief introduction to the main concepts of DB2 data sharing. It then looks in detail at performance monitoring and tuning in a DB2 data sharing environment. Paper lab and machine lab exercises will reinforce the lecture material.

Course Materials

The course materials address the data sharing component available as part of DB2 9 for z/OS.

Hands-On Labs

Lab exercises will be provided to give you experience working with the data sharing component of DB2 9 for z/OS.

Training Path

This course is part of an IBM Training Path. Taking this course in the recommended sequence allows you to maximize the benefits from your education.

If you are enrolling in a Self Paced Virtual Classroom or Web Based Training course, before you enroll, please review the Self-Paced Virtual Classes and Web-Based Training Classes on our Terms and Conditions page, as well as the system requirements, to ensure that your system meets the minimum requirements for this course.

http://www.ibm.com/training/terms

- Describe DB2 for z/OS data sharing components
- Describe a z/OS parallel sysplex environment
○ Describe how DB2 data sharing utilizes z/OS sysplex services
○ Identify the key performance issues for a DB2 data sharing environment
○ Monitor and tune the following DB2 data sharing components:
  ○ Group buffer pools
  ○ Global locking structure
  ○ SCA (Shared Communications Area)

This is an advanced course suitable for DBAs, Systems Programmers, Operations personnel, and anyone involved with DB2 data sharing performance.

CONSPECT:

z/OS Sysplex Overview

○ Describe the role of z/OS components like XCF and XES in a Parallel Sysplex environment
○ Define CFRM Policy
○ Identify various hardware and software components of Parallel Sysplex
○ Identify System z servers supporting Parallel Sysplex

Introduction to DB2 Data Sharing

○ List the requirements addressed by DB2 data sharing
○ Identify components of DB2 data sharing
○ Describe the global caching, global locking and global communication mechanisms
○ Describe the global logging environment
○ Describe distributed connectivity options
○ Describe Sysplex query parallelism

Monitoring Tools

○ Use DB2 and z/OS commands to monitor: CF configuration, DB2 data sharing members in the Sysplex, Group buffer pools, Global Locking, and Shared communication area
○ Use RMF and OMEGAMON XE for DB2 PE Reports to monitor Sysplex and data sharing Performance

Coupling Facility Performance

○ Describe use of various RMF reports to monitor performance of coupling facility and XCF communication
○ List the various factors that can affect CF performance: Processing power, Number of links, and Links distance
List various parameters that can affect XCF communication performance: CLASSLEN, MSGBUF, and Number of signaling paths

**Global Caching (GBP)**

- Identify various GBP parameters that can effect global caching performance: RATIO, GBPCACHE, ALLOWAUTOALT, and SIZE
- Describe the ways of monitoring GBP performance using: RMF reports, OMEGAMON XE for DB2 PE STATISTICS report, and Display GBPOOL commands
- List various techniques for improving the GBP performance

**Global Locking**

- Locking overheads in data sharing: Lock contentions, Row level locking, and Space map contentions
- Global locking tuning: Lock structure size tuning, Use of MEMBER CLUSTER and TRACKMOD NO options, and Use of MAXROWS 1 option with row level locking

**Global Communication (SCA)**

- Discuss the effect of SCA storage shortage in a data sharing group
- List various conditions that can lead to shortage of SCA storage
- Monitor SCA storage shortage conditions
- Resolve storage shortage conditions

**DB2 Application Performance Considerations**

- Exploit the facilities to achieve high performance insert in your applications
- Influence lock avoidance as much as possible
- Efficiently generate unique identifiers
- Set up and monitor Sysplex query parallelism

**Data Sharing Performance - Additional Considerations**

Discuss other additional considerations for data sharing performance

- Scalability considerations
- Design for high availability
  - Number of data sharing members
  - Number of CFs
  - Duplexing: System managed, User managed
- Use of Automatic Restart (ARM) and RETLWAIT
- Effect of distance between DB2 and CF
- Considerations for utilities in data sharing
- Virtual storage constraint
- Common IFCIDs for monitoring data sharing performance
- Active-active and active-passive data sharing

**Agenda**

**Day 1**

- Welcome and course introduction
- Unit 1 - z/OS Sysplex overview
- Unit 2 - Introduction to DB2 data sharing
- Unit 3 - Monitoring tools

**Day 2**

- Machine lab exercise 1 - Signaling and transport classes
- Machine lab exercise 2 - Page set P locks
- Unit 4 - Coupling facility performance
- Paper lab exercise 1 - Monitor coupling facility and XCF communication

**Day 3**

- Unit 5 - Global caching (GBP)
- Paper lab exercise 2 - Monitor GBP
- Machine lab exercise 3 - BP and GBP usage and analysis
- Unit 6 - Global locking

**Day 4**

- Unit 6 - Global locking
- Paper lab exercise 3 - Monitor locks
- Machine lab exercise 4 - Row level locking
- Unit 7 - Global communication (SCA)
- Unit 8 - DB2 application performance considerations

**Day 5**

- Unit 8 - DB2 application performance considerations
- Unit 9 - Data sharing performance additional considerations
Machine lab exercise 5 - PP locks and child lock propagation

REQUIREMENTS:

You should have completed:

- DB2 9 for z/OS Data Sharing Implementation (CV410) or DB2 9 for z/OS Data Sharing Implementation Workshop (CV450) or Equivalent experience
- DB2 9 for z/OS System Performance Analysis and Tuning (CV950) or Equivalent experience is desirable

Difficulty level