DB2 for z/OS - Data Sharing Performance and Tuning

Dauer: 4 Tage      Kurscode: CV4701DE

Kursbeschreibung:
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.

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

Kursziele:
- 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 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)

Voraussetzungen:
You should have:
- DB2 9 for z/OS Data Sharing Implementation (CV410) or
- DB2 9 for z/OS Data Sharing Implementation Workshop (CV450)
  - equivalent experience
- DB2 9 for z/OS System Performance Analysis and Tuning (CV960) or equivalent experience is desirable
Schulungsinhalt:

**z/OS Sysplex Overview**
- Describe the role of z/OS components like XCF and XES in a Parallel Sysplex environment
- Define CFM 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: CLASLEN, MSGBUF, and Number of signaling paths

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
Weitere Informationen:
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