DB2 10 Transition and Performance

By David Beulke

Abstract:

This **DB2 10 Transition and Performance** class details the performance, application and data warehousing enhancements, new parameters and CPU reduction opportunities implementing DB2 10 for z/OS. Early adopters and customer testimonies document reductions in CPU consumption by 5-10% right out of the box. This class will teach you about DB2 10's many enhancements that will help you optimize your DB2 run-time environments. You will learn additional DB2 performance techniques that can provide an additional CPU savings of up to 10% by specifically leveraging DB2 10's processing and utility improvements.

This class also discusses how to make a smooth transition to DB2 10 and avoid any migration issues. You will also learn about the new DB2 performance factors, DB2 table maintenance options and the new DB2 data warehousing temporal features. This class provides you with the in-depth discussion for a successful migration and a performance playbook to reduce your CPU consumption right away with DB2 10.

Outline

Chapter 1: DB2 10 Overview

- Performance Enhancements
- Availability Improvements
- Security and Scalability Improvements
- Application Improvements
- XML Enhancements
- Data Warehousing and Temporal Enhancements

Chapter 2: Leveraging System Z

- Synergy with z10 and z/OS
- WLM enhancements
- Warehousing on System z
- Data encryption enhancements
- WebSphere DataPower
- More zIIP eligibility
- Synergy with z/OS V1.12

Chapter 3: Scalability Enhancements

- Virtual storage relief
- Reduction in catalog contention
- Increased size limits for SPT01
- Support for full 64-bit run time
- WORKFILE database enhancements
- Elimination of UTSERIAL for DB2 utilities
- Support for extended address volumes (EAV)
- 64-bit support for the z/OS ODBC driver

Chapter 4: Availability Enhancements

- Online schema enhancements
- Retrieving consistent data without frequent timeouts
- Universal table space MEMBER CLUSTER
- Autonomic checkpoint
- Adding an active log data set to the active log inventory
- Pre-emptable backout
- Support for rotating logical partitions
- Compress on insert
- Long-running reader warning message
- Online REORG enhancements

Chapter 5: Data Sharing Enhancements

- Subgroup attach name
- Buffer pool scan avoidance
- Delete data sharing member contention
- Restart light handles DDF indoubt URs
- Auto rebuild CF lock structure on long IRLM waits during restart
- LRSN spin avoidance
- IFCID 359 for index split
- New DSNZPARM to force deletion of CF structures during restart
- Avoid cross member invalidations

Chapter 6: SQL Enhancements

- Enhanced support for SQL scalar and SQL table functions
- Enhanced support for native SQL procedures
- Extended support for implicit casting
- Greater timestamp precision & datetime constants
- Support for TIMESTAMP WITH TIME ZONE
- Support for OLAP aggregation specification

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Chapter 7: Temporal Tables & Application Enablement

- Support for temporal tables and versioning
- Temporal Table Design & Examples
- Temporal Table – Data Manipulation
- Temporal Table SQL Considerations
- History Table Considerations
- Access plan stability
- New Universal Language Interface program (DSNULI)
- Instance-based statement hints

Chapter 8: XML Enhancements

- DB2 9 XML additional functions
- XML type modifier
- XML schema validation
- XML consistency checking with CHECK DATA
- Support for multiple versions of XML documents
- Support for updating part of an XML document
- Support for binary XML
- Support for XML date and time
- XML in native SQL stored procedures and UDFs
- Support for DEFINE NO for LOBs and XML

Chapter 9: Connectivity Enhancements

- Inactive threads
- JDBC Drivers Improvements
- High performance DBAT
- Support for 64-bit ODBC driver (Li833)
- DRDA support of Unicode encoding for system code pages (Li842)
- DB2 provided stored procedures

Chapter 10: Security and Audit Enhancements

- New policy based audit capability
- More granular system authorities and privileges
- System defined routines
- New REVOKE dependent privilege clause
- Support for row and column access control
- Support of new z/OS security features

Chapter 11: Improvements within the Utilities

- Changes to utilities in DB2 10
- Auto-stats within DB2engine support
- Support FlashCopy enhancements
- RECOVER with BACKOUT YES
- Online REORG enhancements
- Support for EAV
- UTSERIAL elimination

Chapter 12: Installation and Migration Chapter

- Currency of version and migration paths
- DB2 10 packaging
- Catalog changes
- DSNZPARM change summary
- Performance monitoring and tuning changes
- EXPLAIN table changes
- New and changed IFCIDs
- SMS managed catalog
- Skip migration
- Simplified installation and configuration of DB2-supplied routines
- Implications of DB2 catalog restructure
- Elimination of DDF private protocol
- Enhanced monitoring support

Chapter 13: Performance Summary:

- Improved optimization techniques
- Dynamic pre-fetch enhancements
- DDF enhancements
- Dynamic statement cache enhancements
- INSERT performance improvements
- Buffer pool enhancements
- Workfile enhancements
- Support for z/OS enqueue management
- LOAD and UNLOAD with spanned records
- File reference variable (FRV) enhancement for 0 length LOBs - DK1367
- Streaming LOBs and XML between DDF and DBM1
- Performance enhancements for local Java and ODBC applications
- Logging enhancements
- inline LOBs

Appendix 1: DB2 9 Performance Features List
Appendix 2: DB2 10 Performance Features List

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Additional or custom material substituted per request