

- COURSE CODE:** DZ9DS1
- COURSE TITLE:** DB2 V9 for z/OS: V9 Update (DBA), including SQL Tuning
- AUDIENCE:** **Database Administrators**, System Administrators and Capacity Planners.
- LEVEL:** Intermediate to advanced.
- PREREQUISITES:** At least six (6) months experience in a DB2 (V7 or V8) technical role.
- DURATION:** 2 days
- SUMMARY:** As DB2 for z/OS V9 new features are detailed, performance and best practices are discussed and summarized.
- OBJECTIVES:** Upon completion of this course, the delegate should have a comprehensive understanding of DB2 for z/OS new features, including the following:
- Integration with System z
 - Scalability
 - Availability
 - Commands and utilities
 - Data sharing
 - SQL: DML, DDL and DCL
 - Application enhancements
 - XML
 - Security
 - Performance and best practices (summarized)
 - Installation and migration

1. THE DB2 FAMILY

- DB2 platform options

2. DB2 & SYSTEM z (zIIPs)

- zSynergy
- Synergy with new I/O and new CPU hardware
- System z9 Integrated Information Processor and speciality engines
- Activating zIIP exploitation
- Capacity planning for zIIPs
- RMF support for zIIPs
- SMF records for zIIP support
- RMF Monitor III support for zIIPs

3. SCALABILITY

- Virtual storage management
- WLM assisted buffer pool management
- NOT LOGGED table spaces
- WLM to resolve lock contention
- Universal table space
- Reordered row format
- Index compression
- Native SQL procedures

4. AVAILABILITY

- Universal table space support and partitioning
- Clone table option
- Recovery to point in time with consistency
- APPEND
- Conditional Restart Log Truncation by Timestamp
- REFRESH for EARLY code
- RENAME INDEX
- RENAME COLUMN
- UPDATE SCHEMA
- Toleration of DBET errors during DB2 restart

5. DATA SHARING

- Logging improvement
- Index enhancements
- Reduction in LOB locks
- Locking constraint enhancements
- Group buffer pool enhancements
- Improved WLM routing based on DB2 health
- Improved workload balancing within the same LPAR
- Open dataset enhancements
- Enhanced messages for p-locks

5. DATA SHARING, cont'd.

- Initiating Auto GRECP recovery at the end of restart
- Opening data sets earlier in restart processing
- Allowing table level retained locks to support postponed abort URs
- Improvement for open processing
- Coupling Facility Control Code (CFCC) Level 15

6. APPLICATION: GENERAL

- Automatic creation of objects
- Index on expression
- Optimistic concurrency control and update detection
- Cultural sort and case insensitive comparison
- CURRENT SCHEMA
- Skip locked rows
- FETCH CONTINUE
- Allow ALTER TABLE ... LONG VARCHAR TO VARCHAR
- RENAME COLUMN
- RENAME INDEX
- SMS constructs
- Native SQL procedures
- Nested compound statements in SQL stored procedures
- New stored procedure related special registers
- DB2 and DSN commands for native SQL procedures

7. APPLICATION: SQL

- New data types
- INSTEAD OF triggers
- MERGE
- SELECT FROM MERGE/UPDATE/DELETE
- ORDER BY and FETCH FIRST in subselect
- TRUNCATE
- INTERSECT and EXCEPT
- Built-in functions

8. XML

- XML with DB2 for z/OS, usage
- Pure XML
- XML support
- Accessing XML data
- XPath
- XML indexing
- XML schema support
- XML schema validation
- XML decomposition
- Utilities support of XML data

9. SECURITY

- Security functions overview
- Enterprise identity mapping
- INSTEAD OF triggers
- Improved tracing
- Audit Management Expert
- View maintenance
- Backing up a DBA, assuming the identity of another user ID
- Securing DBA activities
- Reducing risk of a table being dropped by another person

10. UTILITIES

- REORG enhancements
- CLONE TABLE support
- BACKUP and RESTORE SYSTEM
- RECOVER enhancements
- LOAD enhancements
- Histogram statistics
- COPY improvements
- TEMPLATE switching
- MODIFY RECOVERY
- DSN1LOGP message enhancement
- Online CHECK DATA
- Online CHECK LOB
- REPAIR LOCATE SHRLEVEL CHANGE
- DB2I and DSNU CLIST enhancement
- Online REBUILD INDEX
- Time stamps in messages
- Large format data sets
- Support of large block interface
- DSN1COPY RESET enhancement
- DSNJU004
- Automatic display of blocking claimers for REORG (V8)
- Online REORG enhancements (V8)

11. INSTALLATION & MIGRATION

- Currency of versions and migration paths
- DB2 V9 packaging
- Changes to installation and migration
- Removal of support for DB2-managed stored procedures
- Installation and migration overview
- Migration and coexistence
- Fallback
- DSNZPARM change summary



12. PERFORMANCE & BEST PRACTICES

- Best practices
- Enhanced sequential key insert
- REOPT AUTO based on parameter marker change
- RLF enhancements
- Histogram statistics
- Utilities CPU reduction
- CHECK INDEX SHRLEVEL REFERENCE parallelism
- Optimization of complex query
- Global query optimization
- Generalised sparse index and in-memory data cache
- Dynamic index ANDing for star join queries

13. DB2 SUBSYSTEM PERFORMANCE

- CPU utilisation (e.g., OLTP processing, query processing and column processing)
- Virtual storage constraint relief
- Real storage
- Latch class contention relief
- Accounting trace overhead
- Reordered row format
- Buffer manager enhancements
- WORKFILE and TEMP database merge
- Native SQL procedures
- Index lookaside
- Enhanced preformatting
- Hardware enhancements