

II. Introduction

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Unicode Support

- Architectural changes to DB2 V8 expand the DB2 catalog with enhanced support for the Unicode catalog.
- DB2 now converts any SQL statement to Unicode before parsing, and as a result, all characters parse correctly.
- DB2 also supports hexadecimal string constants.

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Schema Evolution

- As 24x7 availability becomes more critical for applications, there is an increasing need for allowing changes to database objects while minimizing the impact on availability.
- Online schema evolution allows for table, index, and table space attribute changes while maximizing application availability.
- For example, column types and lengths can be changed, columns added to an index, partitions can be added to, rotated, or rebalanced, the index to be used as the clustering index can be specified (the partitioning index or the non-partitioning index).

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64-bit Virtual Storage

- The zSeries 64-bit architecture allows DB2 UDB for z/OS to move storage areas above the 2-GB bar:
 - Buffer pool
 - EDM pool
 - Sort pool
 - RID pool
 - Castout buffers
 - Compression dictionaries

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Online Partitioning Changes

- A new partition can be added to an existing partitioned table space and the partitions rotated.
- This enhancement extends the maximum number of partitions in a partitioned table space and index space beyond the current maximum of 254.
- The new maximum number of partitions is 4096

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Separation of Partitioning and Clustering

- Partitioning and clustering were bundled together in versions prior to V8.
- It is now possible to have a partitioned table space without an index and the data can be clustered on any index.
- These changes may be able to eliminate one index (since there is no longer a requirement for a partitioning index) and reduce random I/O (any index can be defined as the clustering index).

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REORG Utility Enhancements

- The REORG utility has been enhanced to specify that only partitions placed in Reorg Pending state should be reorganized.
- It is not necessary to specify the partition number or the partition range.
- It is possible to specify that the rows in the table space or the partition ranges being reorganized should be evenly distributed for each partition range when they are reloaded.
- Therefore, it will not be necessary to execute an ALTER INDEX statement before executing the REORG utility.

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Longer Table and Column Names

- Architectural changes to DB2 V8 expand the DB2 catalog with support for long names.
- Support for longer string constants (up to 32,704 bytes), longer index keys (up to 2,000 bytes), and longer predicates (up to 32,704 bytes) make DB2 UDB for z/OS compatible with other members of the DB2 family.

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More Tables in Joins

- In DB2 V7 the number of tables in the FROM clause of a SELECT statement can be 225 for a star join.
- However, the number of tables that can be joined in other types of join is 15.
- DB2 V8 allows 225 tables to be joined in all types of joins.

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Materialized Query Tables

- This enhancement provides a set of functions that allow DB2 applications to define, populate, and make use of materialized query tables.

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Backward Index Scan

- The backward index chain has been part of Type 2 indexes since the introduction of DB2.
- However, only in V7 did DB2 begin to exploit the backward index chain for MIN and MAX functions.
- In V8, DB2 extends this functionality with the capability for backward index scans.
- This allows DB2 to avoid more sorts and allows customers to define fewer indexes.