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WEB 2

Short Summary of DB2 V4 Through V6 Changes

This appendix provides short checklists of features for the most recent versions of DB2 prior to the two most-recent versions covered in this book. There have been four versions of DB2 released since 1995:

- DB2 Version 4 (also known as DB2 V4 or DB2 V4.1)
- DB2 Version 5 (also known as DB2 V5 or DB2 V5.1)
- DB2 Version 6 (also known as DB2 V6 or DB2 V6.1)
- DB2 Version 7 (also known as DB2 V7 or DB2 V7.1)
- DB2 Version 8 (also known as DB2 V8 or DB2 V8.1)

The following sections contain very short, bulleted lists that inventory the features of each release. The lists are in reverse chronological order.

DB2 Version 6 Features

DB2 V6 has been generally available since June 1999. The most important new features provided by V6 are listed in the following sections.

Database Administration Features

16-terabyte tables.

Object/relational capabilities including `BLOB`s, `CLOB`s, and `DBCLOB`s, triggers, UDFs, and UDTs.

Multimedia support with DB2 Extenders.

8K and 16K tablespace page sizes.

`VARCHAR` column resizing.

Explicit `CREATE` support for stored procedures.

Ability to specify a default buffer pool for indexes.

Enhanced support for pattern-matching characters in DB2 commands.

Improved partition rebalancing.

You can change checkpoint frequency dynamically using the SET LOG command.

Object code version of DSNTEP2 provided (no longer need a PL/I compiler).

Utility Features

COPY and RECOVER can process a list of objects in parallel and recover indexes and tablespaces at the same time from image copies and the log.

Parallel index build reduces the elapsed time of LOAD and REORG jobs involving more than one index.

Inline statistics collection during utility jobs.

Threshold limits to determine when to run REORG.

Remote site recovery improvements.

Programming Features

SQLJ support for embedded SQL in Java programs.

Three-part names support using DRDA.

Many stored procedure enhancements, including nested procedure CALLs and the ability to issue CALL statements dynamically using ODBC drivers.

More than 50 new built-in functions.

Up to 225 tables permitted in SQL SELECT, INSERT, UPDATE, and DELETE statements and views.

Support for VALUES and VALUES INTO.

Direct-row access using the ROWID data type to re-access a row directly without using the index or scanning the table.

ODBC extensions including new and modified APIs, support for DB2 V6 object/relational extensions, and ODBC catalog query redirection to shadow copies of DB2 catalog tables.

Performance Features

Optimization hints.

Predictive governing.

Statement cost estimation.

Buffer pools in data spaces.

DDF connection pooling.

Improved workload balancing in parallel Sysplex.

Faster log apply process.

Ability to postpone backout work during a restart.

Increased log output buffer size (from 1000 to 100000 4K buffers).

Query parallelism improvements.

DB2 Catalog Impact

9 new tables.

1 table no longer used, but kept for fallback purposes.

24 tables have one or more new or changed columns.

52 total new columns.

80 total revised columns.

DB2 Version 5 Features

DB2 V5 was first announced by IBM as V4.2. However, late in 1996 IBM changed plans and switched from a point release to a full-fledged new version. DB2 V5, generally available since June 1997, offers the following features.

Database Administration Features

`LARGE` tables (up to 254 partitions; approx. 1TB).

Multiple stored procedure address spaces.

Table renaming.

ASCII server support.

Native TCP/IP.

DCE security.

DDL-based support rows per page (up to 255).

Workstation GUI install.

Utility Features

Online `REORG`.

`LOAD` and `REORG` improvements.

`COPY` with thresholds.

`RUNSTATS` using sampling.

Programming Features

`CASE` expressions.

Stored procedure results sets.

Temporary tables.

RRSAF.

Call Level Interface (ODBC).

`NULLIF` function.

`STRIP` function.

Visual `EXPLAIN`.

Temporary tables.

Performance Features

Optimization changes.

Skip partition scanning.

Changes to stage 1 and indexable predicates.

SQL caching.

Persistent dynamic `BIND`.

Query Sysplex parallelism.

Partition locking.

Data sharing improvements.

DB2 Catalog Impact

Communications Database moved to the DB2 Catalog Database.

8 new or renamed tables.

31 tables have one or more new or changed columns.

65 total new columns.

59 total revised columns.

DB2 Version 4 Features

IBM introduced many new and useful features with DB2 V4. The highlights of this release are as follows.

Database Administration Features

DB2 Catalog `REORG`.

User-defined DB2 Catalog indexes.

`COPY`, `RECOVER`, and `REORG` improvements.

Dynamic SQL security improvements.

`REFERENCES` privilege.

Data sharing.

Type 2 indexes.

User-defined defaults.

Check constraints.

`UNIQUE WHERE NOT NULL` indexes.

Row-level locking.

Multi-character command prefixes.

Tracking DFSMS concurrent copies in the DB2 Catalog.

Client/Server Features

Stored procedures.

Support for 25,000 distributed connections.

Performance Features

Partition scanning (page range scan).

Query CP parallelism.

Uncommitted read (read-through locks).

No locks on Type 2 indexes.

Programming Features

Outer join.

In-line views (nested tables).

`COALESCE` function.

Column renaming using `AS`.

`DCLGEN` improvements.

DB2 Catalog Impact

Communications Database moved to the DB2 Catalog Database.

3 new tables.

16 tables have one or more new or changed columns.

18 total new columns.

21 total revised columns.