

# DB2 Product

## DB2 Overview for Java Developers

# DB2 Product

## Chapter 2:

## Objectives

You will learn:

- DB2 products.
- Enhancements to DB2.
- Optimizer for advanced queries.
- J2EE application platform portability.
- Universal driver for SQLJ and JDBC.
- zSeries 64-bit virtual storage and storage areas.

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### DB2 Products

- SQL Structured Query Language
  - SQL is a non-procedural language which can be used for DB2 data base definition, data manipulation, and data control.
- DB2I Interactive DB2
  - DB2I is an extension to TSO which provides the capability for interactive set up and execution of SQL programs.
- SPUFI
  - Used to issue and test SQL statements.
- QMF Query Management Facility
  - QMF is a query and report writer designed for users of DB2 data bases.
- DXT Data Extract
  - DXT makes data from IMS/DB, VSAM, or QSAM available in relational format.

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### DB2 Products

- CSP Cross System Product
  - Fourth generation language that generates on line transaction processing systems.
- DB2 Connect
  - DB2 Connect makes a company's host data directly available to a personal computer and LAN-based workstations.
- PM DB2 Performance Monitor
  - Runs a performance analysis on log and RMF data. This information is printed in a number of different reports.
- PA IBM DB2 SQL Performance Analyzer
  - Extensive analysis of SQL queries without executing them. This analysis aids in the tuning queries for achieving maximum performance.
- Utilities DB2 Utilities Suite
  - All the functions of DB2 Operational Utilities and DB2 Diagnostic and Recovery Utilities.

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### Version 8 Enhancements

- The enhancements to DB2 version 8 are as follows:
  - Virtual storage constraints removal.
  - Unicode support.
  - Automated prior point-in-time recovery.
  - Multi-row fetch, insert.
  - Multiple DISTINCT clauses.
  - Lock contention avoidance via volatile tables.
  - Use of index for backwards searches.
  - Transparent ROWID.
  - Longer table names.
  - Converting column type.
  - Adding columns to an index.
  - Index-only access path for VARCHAR.

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### Optimizer

- There is an advanced optimizer for complex queries.
  - It provides a cost model, statistics and optimizer.
  - It optimizes the entire query.
  - There is no reliance on user hints.
  - Considers constraints, triggers, and RI in building an access plan.
  - Removes joins, push down group by, etc.
  - Provides advanced SQL capabilities.

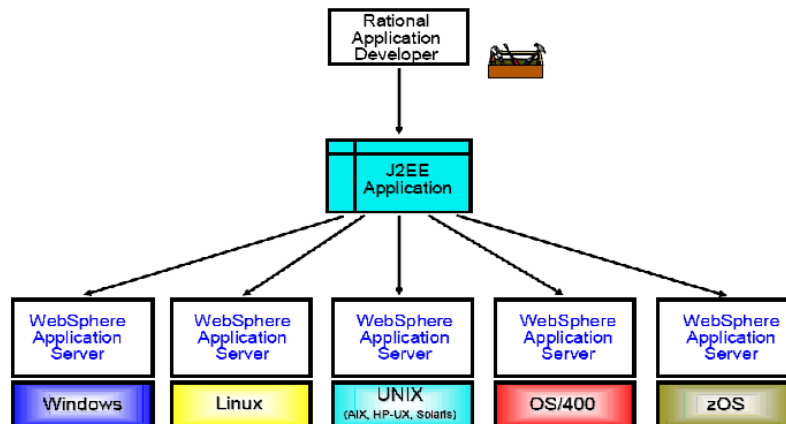
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## DB2 Overview for Java Developers

### J2EE Application Platform Portability



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### Universal Driver for SQLJ and JDBC

- Organizations increasingly require access to data residing in multiple sources in multiple platforms throughout the enterprise.
  - Companies are buying applications rather than database management systems, as database selection is being driven by interoperability, price performance, and scalability of the server platform.
- The Universal Driver for SQLJ and JDBC provides an open and consistent set of database protocols to access data on the UNIX, Windows, and z/OS platforms.
- Tools and applications can be developed using a consistent set of interfaces regardless of the platform where the data resides.
  - End users can integrate their desktop tools and other applications in a consistent manner with whatever databases or multiple databases concurrently are in the enterprise.

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### 64-bit Virtual Storage

- The zSeries 64-bit architecture allows DB2 UDB for z/OS to move various storage areas above the 2-GB bar:
  - Buffer pool
  - EDM pool
    - DBDs, OBDs, and dynamic statement cache
  - Sort pool
  - RID pool
  - Compression dictionaries