



# IBM DB2 10 for z/OS improves efficiency and resiliency

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## At a glance

DB2® 10 for z/OS® expands the value delivered to your business by IBM's industry-leading mainframe data server through innovations in key areas:

- Improved operational efficiencies for "out-of-the-box" DB2 CPU savings
- Unsurpassed resiliency for business-critical information
- Rapid application and warehouse deployment for business growth
- Enhanced business analytics and data visualization solutions with QMF™

Selected features that deliver these valuable benefits to your business include:

- When compared to running on DB2 9, IBM's internal testing and early beta results revealed that, depending on the workload, customers may experience reduced CPU utilization of up to 5% to 10%
- When compared to running DB2 9, up to five to ten times more concurrent users on a single subsystem by avoiding memory constraints
- Greater concurrency for data management, data definition, and data access, including DDL, BIND, REBIND, PREPARE, utilities, and SQL
- Additional online changes for data definitions, utilities, and subsystems
- Improved security with better granularity for administrative privileges, data masking, and audit capabilities
- Temporal or versioned data to understand system and business times at the database level
- pureXML™ and SQL enhancements to simplify portability from other database solutions
- Productivity improved for database administrators, application programmers, and systems administrators
- QMF Classic Edition, an optional for-charge feature, providing greater interoperability with other programs plus improved queries, forms, diagnostics, performance, and resource control
- QMF Enterprise Edition, an optional for-charge feature, supporting QMF-based dashboards with visually rich page-based reports, an enhanced security model, support for HTML, PDF, or Flash QMF report and dashboard outputs and simplified content authoring

For ordering, contact your IBM® representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: LE001).

In today's business and economic environment, the challenge for IT is clear: improve operational efficiencies, reduce costs, and adapt quickly to support business growth -- all without sacrificing the resiliency required for today's demanding business requirements. Building on the formidable capabilities of DB2 9 for z/OS (DB2 9) and the IBM System z® platform, DB2 10 for z/OS (DB2 10) addresses those requirements.

DB2 10 for z/OS delivers innovations in these key areas:

### **Improved operational efficiency for "out-of-the-box" DB2 CPU savings**

DB2 10 delivers great value by reducing CPU usage. IBM's internal testing and early beta customer results revealed that, depending on the specific workload, customers could achieve "out-of-the-box" DB2 CPU savings of up to 5% - 10% for traditional workloads and up to 20% for specific workloads (see the [Description](#) section for details), when compared to running the same workloads on DB2 9. REBIND is needed to obtain the best performance and memory improvements. DB2 reduces its CPU usage by optimizing processor times and memory access, leveraging the latest processor improvements, larger amounts of memory, and z/OS enhancements. Improved scalability and virtual storage constraint relief can add to the savings. Continued productivity improvements for database and systems administrators can drive even more savings.

### **Unsurpassed resiliency for business-critical information**

Business resiliency is a key component of the value proposition of DB2 for z/OS and the System z platform. Uniquely integrated technology allows DB2 for z/OS and System z to support your efforts of keeping your business running even when things go wrong or you need to make changes. DB2 10 innovations raise the bar on data resiliency through scalability improvements and fewer outages. This release delivers the ability to support up to five to ten times more concurrent active users in a single DB2 subsystem than in DB2 9, allowing customers to scale-up or scale-out simply, and with less system management. Schema evolution or data definition on demand as well as query performance manageability enhancements support improved availability, performance, and manageability.

### **Rapid application and warehouse deployment for business growth**

Staying competitive in today's global economy is tougher than ever, requiring agility, adaptability, and responsiveness. SQL and pureXML enhancements in DB2 10 help extend usability, improve performance, and ease application portability to DB2 for z/OS, supporting your efforts to create an efficient, productive application structure with a sustainable competitive advantage. DB2 10 adds unique capabilities to support temporal data using business and system time within the database itself, making application development and maintenance significantly simpler and more cost effective.

Business intelligence (BI) and analytics are more mission-critical than ever as demand for real-time data analysis on operational data increases. DB2 10 delivers significant capabilities to support this need, with better performance and CPU reductions, allowing you to manage and maintain your data in a single platform infrastructure with single audit and security processes, most importantly, which will allow users to obtain a consistent answer based on your core operational data maintained in a centralized location.

### **Enhanced business analytics and data visualization solutions with QMF**

Query Management Facility™ (QMF) Version 10 allows you to do more with your existing QMF investment than ever before. New analytic and mathematical functions and OLAP support dramatically enhance QMF's ability to deliver new function to business users -- an important option for BI and analytics usage. Providing access to many more data sources via JDBC opens QMF to a wider array of information that

can be combined with QMF's known and trusted support for DB2 within the same report.

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## Key prerequisites

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- z/OS V1.10 Base Services, (5694-A01) or later, executing in 64-bit addressing mode.
- Any processor that supports z/Architecture® with some limitations. Refer to the [Technical information](#) section for details.

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## Planned availability date

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October 22, 2010

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## Description

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IBM DB2 10 for z/OS (DB2 10) improves your business efficiency and resiliency.

DB2 10 for z/OS delivers innovations in these key areas:

### **Improved operational efficiency for "out-of-the-box" DB2 CPU savings**

DB2 10 delivers great value by reducing CPU usage. IBM's internal testing and early beta customer results revealed that, depending on the specific workload, customers could achieve "out-of-the-box" DB2 CPU savings of up to 5% - 10% for traditional workloads and up to 20% for specific workloads, when compared to running the same workloads on DB2 9. REBIND is needed to obtain the best performance and memory improvements. DB2 reduces its CPU usage by optimizing processor times and memory access, leveraging the latest processor improvements, larger amounts of memory, and z/OS enhancements. Improved scalability and virtual storage constraint relief can add to the savings. Continued productivity improvements for database and systems administrators can drive even more savings.

In DB2 10, performance improvements focus on reducing CPU processing time without causing significant administration or application changes. Most of these performance improvements are implemented by simply migrating to Version 10 and rebinding. You gain significant performance improvements from distributed data facility (DDF) optimization, buffer pool enhancements, parallelism enhancements, and more.

DB2 10 is focused on delivering CPU reductions. Most customers should see up to 5% - 10% DB2 CPU reduction, "out-of-the-box," for traditional workloads compared to DB2 9. Early DB2 10 performance benchmarking and customer experience has shown a up to 5% - 10% CPU reduction after rebinding. Actual CPU reduction will, of course, vary depending on the specific customer workload. Customers who have scalability issues, such as virtual storage constraints or latching can see improvements. Memory improvements can aid tuning. High-volume, short-running distributed transactions can experience reduced CPU usage, using release deallocate. Testing revealed that DB2's concurrent sequential insert CPU time can, for certain workloads, be reduced from 5% - 40%; queries can be improved as much as 20% without access path change. A workload using SET statements, IF statements and SYSDUMMY1 in native SQL procedures achieved up to 20% CPU reduction. Customers moving from DB2 9 should expect the same CPU times for utilities, while customers moving from DB2 V8 will see CPU reductions up to 20%.

### *Productivity improvements*

New SQL and XML capabilities can provide improved productivity for those who develop new applications and for those who are porting applications from other platforms. Automating, reducing, or eliminating tasks, and avoiding manual invocation improves productivity and can help avoid problems. Resiliency

improvements for virtual storage and availability increase productivity. DB2 10 improvements make the install, migration, and service processes faster and more reliable.

#### *Flexibility in migration paths*

For this release, you can migrate a DB2 Version 8 subsystem in new-function mode directly to Version 10 without starting the system in Version 9. This provides customers greater flexibility to meet their business needs.

### **Unsurpassed resiliency for business-critical information**

Business resiliency is a key component of the value proposition of DB2 for z/OS coupled with System z hardware and z/OS operating system, supporting your efforts to keep your business running even during unexpected circumstances. Innovations in DB2 10 drive new value in resiliency through scalability improvements and the need for fewer planned outages compared to DB2 9. Because of these changes, customers should also experience significantly fewer unplanned outages. Virtual storage enhancements deliver the ability to handle depending on workload, up to five to ten times more concurrent active users in a single DB2 subsystem than were handled in DB2 9 (as many as 20,000 concurrent active threads). Improved availability is supported by schema evolution, or data definition on demand, and manageability enhancements for query performance. Security improvements also contribute to robust business resiliency.

#### *Continuous availability enhancements*

DB2 10 provides online schema enhancements that allow you to make changes to database objects (indexes and table spaces) while maximizing the availability of the altered objects. Through enhancements to ALTER statements, you can now change more attributes of indexes and table spaces without having to unload the data, drop and re-create the objects, regenerate all of the security authorizations, re-create the views, and reload the data. The changes are materialized when the altered objects are reorganized.

In addition, DB2 10 improves the usability and performance of online reorganization in several key ways. It supports the reorganization of disjoint partition ranges of a partitioned table space, and improves SWITCH phase performance and diagnostics. Also, DB2 10 removes restrictions related to the online reorganization of base table spaces that use LOB (large object) columns.

#### *Reduced catalog contention*

In DB2 10, the DB2 catalog has been restructured to reduce lock contention by removing all links in the catalog and directory. In addition, new functionality improves the lock avoidance techniques of DB2, and improves concurrency by holding acquired locks for less time and preventing writers from blocking the readers of data.

In DB2 10 new-function mode (NFM), you can access currently committed data to minimize transaction suspension. Now, a read transaction can access the currently committed and consistent image of rows that are incompatibly locked by write transactions without being blocked. Using this type of concurrency control can greatly reduce timeout situations between readers and writers who are accessing the same data row.

#### *Virtual storage relief*

Enhancements in DB2 10 substantially increase the capacity of a single DB2 subsystem by removing virtual storage and other constraints. This release moves most memory to 64-bit, which provides virtual storage relief and can greatly improve the vertical scalability of your DB2 subsystem while minimizing administration. In addition, a 64-bit ODBC driver is now available on DB2 9 and 10.

Extended support for LOB and XML streaming, improvements to LOB and XML processing, and enhancements to the FETCH statement for LOB and XML data also

contribute to reducing virtual storage consumption, and improve the stability of your DB2 subsystem.

### *Security enhancements*

This release of DB2 provides critical enhancements to security and auditing, strengthening DB2 security in the z/OS environment. For example, DB2 10 provides increased granularity for DB2 administrative authority, and offers a new DB2 data security solution that enables you to manage access to a table at the level of a row, a column, or both. In addition, you can define and create different audit policies to address the various security needs of your business.

### **Rapid application and warehouse deployment for business growth**

Staying competitive in today's global economy is tougher than ever, requiring agility, adaptability, and responsiveness. SQL, pureXML, and optimization enhancements in DB2 10 help extend usability, improve performance, and ease application portability to DB2. These improvements support your efforts to create a sustainable, competitive advantage.

BI and analytics are more mission-critical than ever as demand for real-time data analysis on operational data increases. DB2 10 delivers significant capabilities to support this need, with better performance and CPU reductions, allowing you to manage and maintain your data in a single platform infrastructure with single audit and security processes, most importantly which will allow users to obtain a consistent answer based on your core operational data maintained in a centralized location.

### *SQL improvements*

SQL enhancements deliver new function for improved productivity, DB2 family consistency, and simplified porting applications to DB2 for z/OS from other platforms and database management systems. Enhancements are provided for SQL scalar functions and SQL table functions are added. Native SQL procedure language (SQL PL) enhancements make porting easier from other database management systems. Implicit casting makes porting simpler, as DB2 SQL is more consistent with other products and platforms. Allowing more flexibility in the number of digits for fractions of seconds and allowing timestamps with time zones simplify porting. Moving sums and moving averages help in warehouse queries and in porting. Now it is easier than ever to use DB2 for z/OS and System z for all of your core enterprise data serving needs.

### *Temporal tables and versioning*

In this release of DB2 for z/OS, you have a lot of flexibility in how you can query data based on periods of time. DB2 supports two types of periods, which are the system time (SYSTEM\_TIME) period and the business time (BUSINESS\_TIME) period. The SYSTEM\_TIME period is a system-maintained period in which DB2 maintains the beginning and ending timestamp values for a row. For the BUSINESS\_TIME period, you maintain the beginning and ending values for a row. Support of business time and system time allows for significant simplification of applications, pushing the complicated handling of these concepts down to the database engine itself.

In addition, DB2 10 introduces versioning, which is the process of keeping historical versions of rows for a temporal table that is defined with a SYSTEM\_TIME period, or both time periods, allowing for simple retrieval of key historical data.

### *pureXML improvements*

This release of DB2 substantially improves DB2 family consistency and productivity for pureXML users. These improvements also deliver excellent performance improvements, and includes support for the binary XML format, XML schema validation as a built-in function, XML date and time data types and functions, XML parameters in routines, and much more.

## Enhanced business analytics and data visualization solutions with QMF

Query Management Facility (QMF) Version 10 allows you to do more with your existing QMF investment than ever before. New analytic and mathematical functions and OLAP support dramatically enhance QMF's ability to deliver new function to business users -- an important option for BI and analytics usage. Providing access to many more data sources via JDBC opens QMF to a wider array of information that can be combined with QMF's known and trusted support for DB2 within the same report.

QMF Enterprise Edition offers:

- Support for QMF-based dashboards and visually rich page-based reports
- Introduction of a broad variety of charts and graphical presentation items
- Over 140 new analytical functions for use in reports and dashboard solutions
- New application-level security model for access control and personalization
- Support for HTML, PDF, or Flash report and dashboard output formats
- New QMF metadata layer that shields users from the underlying complexities within your database data models, thus establishing a unified view of information for enhanced confidence and ease of use
- Introduction of data environments, simplifying the distribution and management of dashboard and reporting content across the enterprise

QMF Classic Edition provides greater flexibility and interoperability by allowing you to start QMF for TSO as a DB2 for z/OS stored procedure. Additional features include support for multi-statement SQL queries, as well as enhancements to certain commands and changes that improve performance, resource control, and troubleshooting capabilities.

Migration to DB2 10 is provided from DB2 9 (New Function Mode) and from DB2V8 (New Function Mode) subsystems.

For additional information and presentations on selected features of DB2 10 and later news, visit our website at

<http://www.ibm.com/software/data/db2/zos/index.html>

### Overview of DB2 features

DB2 10 for z/OS consists of the base DB2 product with a set of optional orderable features. Some of these features are available at no additional charge and others are chargeable.

### Chargeable features

#### DB2 QMF Enterprise Edition:

DB2 QMF Enterprise Edition provides the entire DB2 QMF family of technologies, enabling enterprise-wide business information across end-user and database platforms. DB2 QMF Enterprise Edition consists of these components:

- DB2 QMF for TSO/CICS
- DB2 QMF High Performance Option (HPO)
- DB2 QMF for Workstation
- DB2 QMF for WebSphere®

New features for each product in the QMF family are explained below.

New features in QMF for TSO/CICS:

- Ability to start QMF for TSO as a DB2 for z/OS stored procedure

- Any software program that can call a DB2 for z/OS stored procedure can start QMF for TSO and receive report output in up to 12 result sets, including diagnostic data.
- Query and form enhancements
  - Support for multiple SQL statements in a single SQL query
  - Support for running DB2 for z/OS SQL queries up to 2,097,152 bytes (2 MB)
  - Optional use of DB2 labels for column names in QMF forms
- Improved report performance and resource control
  - 64-bit virtual storage area for spill data in QMF for TSO
  - Independent governing of database activity generated by user commands
  - Support for the DB2 9 SKIP LOCKED DATA option, and DB2 10 concurrent access resolution options, from within QMF
- Enhancements to QMF commands and support of SQL statements
  - Ability to cancel a DISPLAY TABLE command when it has been estimated to exceed the allocated resource defined in the DB2 resource limit facility
  - Support for implicit casting when replacing or appending existing tables using the SAVE and IMPORT commands
  - A global-variable-based default for the OWNER parameter of the QMF LIST command
  - Restrict an object's "Last Used" timestamp to updates by RUN, SAVE, and IMPORT commands only
  - A maximum of 63 parameters allowed on SQL CALL statements issued in QMF SQL queries
  - Supports SET CURRENT SCHEMA and SET CURRENT REFRESH AGE statements in QMF SQL queries
- Broader support for data types
  - Full support for long and extended formats of decimal floating-point data
  - Support for increased precision for the TIMESTAMP data type
  - Support for the DB2 10 TIMESTAMP WITH TIME ZONE data type
- Improved diagnostic capabilities
  - Availability of SQLCA information in the QMF message help for errors associated with SQL codes
  - Ability to set notification of positive SQL codes at varying levels of detail

New features in QMF for Workstation and QMF for WebSphere:

- Drag-and-drop development of OLAP analytics, SQL queries, tabular reports, graphical reports, pivot tables, and data analysis views.
- Drag-and-drop development of interactive visual solutions such as executive dashboards, capable of graphically rendering data simultaneously drawn from multiple data sources.
- Rich security model supports the personalization and dissemination of data and reports on a per-user-group basis.
- Support for geospatial presentation within both visual reports and graphical dashboards.
- Enhanced data access with JDBC support and OLAP access.
- Ability to embed queries, reports, or dashboards within third-party web pages, web applications, or custom-developed web-based solutions.
- Metadata layer shields end users from the underlying complexities within data sources, allowing end users to select from well-named virtual tables that may draw data from multiple physical tables and views.
- Data environments simplify enterprise-wide deployment of content by automatically routing database connections appropriate for each end user.
- Built-in support for exporting data in the XLS file format.

New features in QMF High Performance Option:

- Support for SQL queries up to 2 MB.
- SQL queries can now include multiple non-SELECT statements delimited by a semicolon.
- An option to save the complete text of SQL statements.

## **DB2 QMF Classic Edition**

DB2 QMF Classic Edition supports users functioning entirely from traditional mainframe terminals and emulators (including IBM Host On Demand) to access DB2 databases. QMF Classic Edition consists of DB2 QMF for TSO/CICS. For a list of enhancements to QMF for TSO/CICS, see above.

## **Orderable no-charge feature**

z/OS Application Connectivity to DB2 for z/OS consists of a component known as the DB2 Universal Database™ Driver for z/OS, Java Edition, a pure Java, type 4 JDBC driver designed to deliver high performance and scalable remote connectivity for z/OS Java-based enterprise applications on z/OS to a remote DB2 for z/OS database server.

## **Related no-charge product**

IBM DB2 Accessories Suite for z/OS (DB2 Accessories Suite) is a no-charge offering that provides DB2 for z/OS with expanded capabilities in several areas. Included in the suite is:

- IBM Spatial Support for DB2 for z/OS (Spatial Support)
- IBM OmniFind™ Text Search Server for DB2 for z/OS
- IBM International Components for Unicode for DB2 for z/OS (ICU)

For more information, refer to Software Announcement [210-345](#), dated October 19, 2010.

## **IBM Spatial Support for DB2 for z/OS**

Spatial Support delivers a set of spatial data types, user-defined functions, and stored procedures for spatial related queries. These spatial queries can be invoked for local and remote clients to answer questions based on geographic relationships. Relationships such as contains, crosses, equals, intersects, overlaps, touches, within, distance, and envelope intersect can be used in a WHERE clause of the SELECT statement by using predicate functions. Spatial Support provides this capability to create spatial indexes on spatial columns, which can improve query performance when using spatial predicate functions. Stored procedure interfaces allow the user to manage geographic coordinate systems, spatial indexes, and spatial column usages. Spatial Support includes an ODBC program to enable/disable the spatial feature. This program can invoke each of the stored procedures through a set of command line arguments.

## **IBM OmniFind Text Search Server for DB2 for z/OS**

The IBM Text Search for DB2 for z/OS feature allows users to issue SQL statements to satisfy familiar text search queries on data that is stored in a DB2 for z/OS database. The feature is powered by an IBM OmniFind Text Search Server for DB2 for z/OS. It offers excellent query performance and scalability by integrating optimization and state-of-the-art search technologies. With the availability of the Linux® on System z server support, it delivers a complete System z solution for the customer.

## **Accessibility by people with disabilities**

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A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

## Section 508 of the U.S. Rehabilitation Act

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IBM DB2 10 for z/OS is capable as of October 22, 2010, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) can be requested at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

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## Hardware and software support services

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### SmoothStart/installation services

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IBM SmoothStart™ and Installation Services are offered in conjunction with general availability of this product.

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## Program number

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| Program number | VRM  | Program name    |
|----------------|------|-----------------|
| 5605-DB2       | 10.1 | DB2 10 for z/OS |

### Previous program information

Previous program name and number:

- 5635-DB2 - DB2 V9.1 for z/OS
- 5625-DB2 - IBM DB2 UDB for z/OS V8

### Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=210-380>

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## Technical information

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### Specified operating environment

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#### Hardware requirements

##### Processors

DB2 10 for z/OS operates on System z or equivalent processors running in a 64-bit mode with z/OS V1.10, or later. This includes zEnterprise 196 (z196), z10™, z9™, z990, z890, and later processors. The processors must have enough real storage to satisfy the combined requirements of:

- DB2
- z/OS
- The appropriate DFSMS™ storage management subsystem components, access methods, telecommunications, batch requirements, and other customer-required applications

DB2's 64-bit virtual addressing support is likely to require increased real storage as compared to DB2 9 for z/OS and DB2 UDB for z/OS V8.

The configuration must include sufficient I/O devices to support the requirements for system output, system residence, and system data sets. Sufficient disk storage must be available to satisfy the user's information storage requirements and can consist of any direct-access facility supported by the system configuration and the programming system.

In addition to listing auxiliary storage and data communication devices, this section identifies function-dependent hardware requirements and virtual storage requirements.

### ***Auxiliary storage***

DB2 is independent of both disk and tape device type. You can use any magnetic, optical, or tape device that is supported by the data facilities component of DFSMS or the DB2 data sets. Tape products are not supported for databases but can be used for the DB2 archive log and utility functions.

The following DB2 data sets are supported by the following device types:

- Active recovery log data sets: disk
- Archive recovery log data sets: disk, tape
- Image copy data sets: disk, tape
- Bootstrap data sets: disk
- User data sets: disk, tape (if migrated by HSM)
- DB2 catalog data sets: disk
- Work data sets (for utilities): disk, tape

If these data sets are on a disk device that is shared with other z/OS systems, you should use global resource serialization to prevent concurrent access by more than one z/OS system.

The minimum disk space requirement, based on installing DB2 using the panel default values, is approximately 1 GB. You need additional disk space for your data.

For subsystems that use dual logging and tape for the log archiving device, at least two tape drives are needed.

### ***Data communication devices***

DB2 operations can be controlled from:

- The system console
- Authorized IMS™ Transaction Manager terminals
- Authorized CICS® terminals
- TSO terminals (by authorized users)

### **Function-dependent hardware requirements:**

#### ***DRDA® Data Stream Encryption***

DRDA Data Stream Encryption requires cryptographic hardware, but can optionally use a cryptographic coprocessor, cryptographic accelerator, or set of cryptographic instructions.

#### ***Encryption and decryption functions***

Built-in functions for encryption and decryption require cryptographic hardware in the form of a cryptographic coprocessor, cryptographic accelerator, or set of cryptographic instructions.

## **Data sharing**

Data sharing requires the coupling facility. See the latest Coupling Facility (CF) level recommended for your processor at

<http://www.ibm.com/systems/z/advantages/pso/cftable.html>

## **DB2 QMF components of DB2 10 for z/OS**

- DB2 QMF for TSO/CICS requires a display station supported by Graphical Data Display Manager (GDDM®).
- DB2 QMF High Performance Option (HPO) requires a display station that is supported by ISPF.
- DB2 QMF for WebSphere requires 200 MB hard disk space.
- DB2 QMF for Workstation requires a workstation that supports:
  - Network connectivity
  - Approximately 275 MB of disk space
  - Minimum of 256 MB of RAM

## **Software requirements**

This section lists licensed programs, or specific elements and features of licensed programs, that are required in the DB2 10 environment. You can use subsequent versions or releases of the subprograms, unless stated otherwise. This section also identifies requirements that are associated with specific DB2 capabilities, as well as optional programs that you can use with DB2 10. Refer to the following websites for the most current information:

For z/OS and DB2 for z/OS Support Lifecycle dates, visit

<http://www.ibm.com/software/support/systemsz/lifecycle/>  
<http://www.ibm.com/software/data/support/lifecycle/>

For DB2 10 for z/OS specifics, visit the main DB2 z/OS website

<http://www.ibm.com/software/data/db2/zos/>

Information on topics such as support, planning, and migration is available from the main DB2 website. Click "Support" to display the Support overview page. From the Support overview page, you may select "Planning," then click "Product Support Lifecycle." For migration, enter "V10 migration" in the Support overview search window.

## *Operating system and support programs*

DB2 10 requires the function that is provided by the following licensed programs or their equivalents. Subsequent versions or releases of these products are acceptable.

- z/OS V1.10 Base Services (5694-A01) with the following base and optional elements:
  - DFSMS V1.10
  - Language Environment® Base Services
  - z/OS V1.10 Security Server (RACF®)
- IRLM V2.3 (delivered with DB2 10 for z/OS)

If DB2 10 is installed with IRLM V2R3 into the same SMP zone as any version of IMS with IRLM V2R2, IRLM V2R2 will be deleted during the SMP/E installation of IRLM V2R3.

## Notes:

- Customers with large buffer pools that are page fixed (standard) and z10 or zEnterprise machines will use large pages and require the following z/OS APARs:
  - z/OS V1.10: APARs OA24441, OA25169, OA25485, OA27799, OA31116, OA32001, and OA32668
  - z/OS V1.11 and V1.12: APARs OA32001, OA31116, and OA32668
- New functions are available only in new-function mode (NFM) unless explicitly stated otherwise in the product documentation. A general exception exists for optimization and virtual storage. In prior versions, most utility functions were available in conversion mode or compatibility mode (CM), but for DB2 10, most new utility improvements only work in NFM.
- z/OS Unicode Services and appropriate conversion definitions are required.
- Some of the basic operations of a DBMS is provided by utility functions such as backup, recovery, reorganization, loading and unloading data, gathering statistics, and checking data, indexes, and large objects. You should ensure that these functions are provided either by ordering DB2 Utilities Suite for z/OS, V10 or by obtaining equivalent function elsewhere.

### *Virtual storage requirements*

Most DB2 data resides in shared memory of the DB2 address spaces that is above the bar. DB2 10 for z/OS requires 128 GB of 64-bit shared private storage for each DB2 subsystem above the 2 GB bar. This storage is virtual and is controlled by the z/OS parameters HVSHARE and HVCOMMON in IEASYSxx. This storage is not physically assigned (or "backed") as it is allocated; it is backed only as it is used. Most control blocks and buffers reside in the extended private area above the 2 GB bar, while modules and some data resides above the 16 MB line, but below the 2 GB bar.

The amount of space needed for the common service area (CSA) below the 16 MB line is less than 40 KB for each DB2 for z/OS subsystem and 24 KB for each IRLM subsystem. High concurrent activity, parallelism, or high contention can require more CSA.

### *Functional-dependent requirements*

The following functions of DB2 require specific licensed programs, or features of licensed programs, before they can be used:

- Application execution: Application programming languages, such as applications or stored procedures written in the C language and using the ODBC or CLI interfaces to DB2, require Language Environment at run time. Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2, require IBM SDK for z/OS, Java 2 Technology Edition V1.4 (SDK1.4.2) (5655-I56), or later, at run time.

Before using the features below, refer to the installation information for these features to ensure you have all required and recommended products.

- System-level Point-in-Time (PIT) Backup and Recovery function needs:
  - DFSMShsm™
  - DFSMSdss™
  - FlashCopy® V1
  - FlashCopy V2 (required for object-level recovery from system-level backup and FlashCopy backups)
  - Remove restriction for object recovery from a system-Level backup; requires z/OS V1.11 (5694-A01)

**Note:** RECOVER uses HSM to restore objects from a system-level backup recovery base. Prior to z/OS 1.11, HSM had a restriction that any dataset being restored must reside on the same volume it was on when the system level backup (SLB) was created. As a result, RECOVER restricted the use of a

SLB as a recovery base if a subsequent utility may have moved the dataset. HSM removed the aforementioned restriction in z/OS 1.11, so the RECOVER restriction is being removed.

- Extended Address Volumes (EAV)
  - Large sequential datasets require z/OS V1.11 (5694-A01).
- Encryption and decryption functions
  - Built-in functions for encryption and decryption require z/OS Cryptographic Services Integrated Cryptographic Service Facility (ISCF).
- DRDA Data Stream Encryption can optionally use z/OS Cryptographic Services Facility (ICSF).
- Offload queries that run with CP query parallelism to zIIP requires WLM APAR OA26104.
- DB2 QMF.
  - QMF Classic Edition feature includes QMF for TSO/CICS.
  - QMF Enterprise Edition feature includes the following components:
    - QMF TSO/CICS
    - QMF High Performance Option (HPO)
    - QMF for Workstation
    - QMF for WebSphere

Note that QMF is a separately priced feature of DB2 10 for z/OS, and although QMF V10 can be used with earlier versions of DB2, you must have a license for DB2 V10 or DB2 V9 to use QMF V10 with any supported version of DB2.

#### *QMF requirements*

DB2 QMF for TSO/CICS requirements are as follows:

- One of the following databases:
  - DB2 10 for z/OS
  - DB2 9 for z/OS
  - DB2 UDB for z/OS V8 (New Function Mode)
- GDDM V3R2

DB2 QMF High Performance Option (HPO) requirements are as follows:

- One of the following databases
  - DB2 10 for z/OS
  - DB2 9 for z/OS
  - DB2 UDB for z/OS V8

DB2 QMF for WebSphere requirements are as follows:

- IBM WebSphere Application Server V6, V6.0.2, or later, or WebSphere Application Server V7 running under Java V1.5.x on any platform supported by WebSphere Application Server
- One of the following web browsers (with JavaScript support enabled) on each user machine:
  - Microsoft® Internet Explorer V7.0, or later
  - Netscape Navigator V6.2, or later
  - Firefox, V1.5, or later
- Java Runtime Environment JRE 1.5, or later (required if deploying visual dashboards using the optional Java Applet)
- Adobe® Flash Player on the client (required if deploying visual dashboards using the optional Flash output format)

- One of the following servers (subject to license restrictions):
  - DB2 10 for z/OS
  - DB2 9 for z/OS
  - DB2 UDB for z/OS V8
  - DB2 Server for VSE and VM V7.3 and V7.4
  - DB2 for System i® V5.4, V6.1, and V7.1
  - DB2 for Linux, UNIX®, and Windows® V9.1, V9.5, and V9.7
  - Informix® Dynamic Server (IDS) V9.x, V10, and V11

Prerequisites:

The following QMF for WebSphere functions have software dependencies:

- Database connectivity requires an appropriate JDBC driver for each type of RDBMS that is accessed.
- QMF for WebSphere OLAP support requires InfoSphere™ Warehouse V9.5.2, or later, or other MDX-based OLAP servers with support for XMLA connectivity.

DB2 QMF for Workstation software requirements: Database client access requires at least one of the following communication products or drivers on each user machine:

- DB2 QMF for Workstation runs on any of the following operating systems:
  - Microsoft Windows XP
  - Microsoft Windows Server 2003
  - Microsoft Windows Server 2008
  - Microsoft Windows Vista
  - Microsoft Windows 7
  - Red Hat Enterprise Linux WS 5 and 6
  - SUSE Linux 10 and 11
  - Mac OS X 10.6
- DB2 QMF for Workstation supports the following DB2 database servers (subject to license restrictions):
  - DB2 10 for z/OS
  - DB2 9 for z/OS
  - DB2 UDB for z/OS V8
  - DB2 Server for VSE and VM V7.3 and V7.4
  - DB2 for iSeries® V5.4, V6.1, and V7.1
  - DB2 for Linux, UNIX, and Windows V9.1, V9.5, and V9.7
  - Informix Dynamic Server (IDS) V9.x, V10, and V11

Prerequisites:

The following QMF for Workstation functions have software dependencies:

- Database connectivity requires an appropriate JDBC driver for each type of RDBMS that is accessed.
- QMF for Workstation OLAP support requires InfoSphere Warehouse V9.5.2, or later, or other MDX-based OLAP servers with support for XMLA connectivity.

*Limited-use license for z/OS Application Connectivity to DB2 for z/OS*

The no-charge z/OS Application Connectivity DB2 for z/OS feature, a Type 4 JDBC driver, is licensed for installation and use solely on z/OS. Its sole authorized use is limited to connecting an application that runs on z/OS to Version 8, 9, or 10 of DB2 for z/OS running in a separate partition on the same server as the application or on a different z/OS server. You can also connect applications to a subsequent supported

version of DB2 for z/OS. Authorized use does not extend to applications that run on Linux or any other platform or operating system.

### *Optional program requirements*

The following functions are enabled in conjunction with the specified optional licensed programs when used together with DB2.

### **Connectivity:**

For DB2 database applications running on Linux, UNIX, or Windows platforms, customers can use DB2 Connect™ and either deploy the DB2 Connect gateway server for access to DB2 10 or as more and more customers do, they can use nongateway DB2 Connect direct access from the database client machine to DB2 10. Especially for application servers such as WebSphere, the direct access approach provides excellent performance and scalability for all DB2 applications.

Both of these approaches -- direct access or access via the gateway -- provide runtime support to access DB2 by applications that use ODBC, CLI, .NET, OLE DB, PHP, Ruby, JDBC, pureQuery, JPA, SQLJ, Python, Perl, and so on, and they can be used alone or in combination as needed. For more information about DB2 Connect deployment choices, see the documentation for the DB2 Connect product.

DB2 10 supports the following relational database products:

- IBM DB2 9 for Linux, UNIX, and Windows (5765-F41), or later
  - DB2 Enterprise Server (ESE) for Linux, UNIX, and Windows V9.1 (5765-F41)
  - DB2 Workgroup Server Edition for Linux, UNIX, and Windows V9.1 (5765-F35)
  - DB2 Express® Edition for Linux, UNIX, and Windows, V9.1 (5724-E49)
  - Database Enterprise Developer Edition V9.1 (5724-N76)
  - DB2 Personal Edition for Linux, UNIX, and Windows V9 (5724-B55)
- IBM DB2 for System i V6.1 (5761-SS1), or later
- DB2 Server for VSE and VM V7.3 (5697-F42), or later
- Any other DRDA-compliant client or relational DBMS server

The following products provide connectivity to DB2 10 via the Internet:

- WebSphere Application Server V6 (5724-J08), or later
- WebSphere Application Server for z/OS V6.1 (5655-N01), or later
- DB2 Connect V9.1 (Fixpack 1), or later
  - DB2 Connect Enterprise Edition (CEE) V9.1 (5765-F30), or later
  - DB2 Connect Unlimited Edition (CUE) V9.1 (5724-B62), or later
  - DB2 Connect Application Server Edition (CASE) V9.1 (Fixpack 1 or later) (5724-D54), or later
  - DB2 Connect Unlimited Edition for iSeries V9.1 (5724-M15), or later
- For DB2 Connect support services, refer to  
<http://www-01.ibm.com/software/data/support/>

**Note:** DB2 Connect 9.7 (Fixpack 3a) supports new functions in DB2 10.

### **JDBC:**

DB2 10 supports the following JDBC Application Programming Interface specification levels:

- JDBC 3.0 API requires any of the following at run time:
  - IBM SDK for z/OS, Java 2 Technology Edition, V1.4 (SDK1.4.2) (5655-I56), or later

- IBM 64-bit SDK for z/OS, Java 2 Technology Edition, V5 (SDK5) (5655-N99), or later
- JDBC 4.0 API requires any of the following at run time:
  - IBM 31-bit SDK for z/OS, Java Technology Edition, V6 (SDK6) (5655-R31), or later
  - IBM 64-bit SDK for z/OS, Java Technology Edition, V6 (SDK6) (5655-R32), or later
- For more information, refer to  
<http://www.ibm.com/servers/eserver/zseries/software/java/>

### **Transaction management:**

The following transaction management products work with DB2 10:

Information Management System (IMS)

- IMS V11 (5635-A02)
- IMS V10 (5635-A01)

Customer Information Control System (CICS)

- CICS Transaction Server for z/OS V4.1 (5655-S97), or later
- CICS Transaction Server for z/OS V3.1 (5655-M15)
  - For Version 3.1 and Version 3.2, you also need APAR PM01880 to return the correct version and release number for DB2 10.

### **Query support:**

The following query programs work with DB2:

- DataQuant for z/OS Version 1 Release 2 (5697-N64)
- Query Management Facility (QMF) Version 9 and Version 10 family of products

### **Programming languages:**

The following application development programming languages can be used to build applications for DB2 10:

Building applications using a DB2 precompiler:

- Assembler: High Level Assembler, part of the System Services element of z/OS
- C/C++: C/C++ (without Debug Tool), which is an optional priced feature of z/OS
- COBOL
  - Enterprise COBOL for z/OS V3.4 (5655-G53)
  - Enterprise COBOL for z/OS V4.1 (5655-S71), or later
- Fortran: VS Fortran Version 2 Release 6 (5668-806, 5688-087, 5668-805)
 

**Note:** New data types and new SQL functions (such as FETCH CONTINUE) are not supported since DB2 9 for z/OS.
- PL/1: Enterprise PL/I for z/OS V3.7 (5655-H31), or later

Building applications using a DB2 coprocessor:

- C/C++: C/C++ (without Debug Tool), which is an optional priced feature of z/OS
- COBOL
  - Enterprise COBOL for z/OS, V3.4 (5655-G53)
  - Enterprise COBOL for z/OS, V4.1 (5655-S71), or later
- PL/1: Enterprise PL/I for z/OS, V3.7 (5655-H31), or later

Building applications that are not supported with a precompiler or coprocessor:

- Java: Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2, require IBM SDK for z/OS, Java 2 Technology Edition V1.4 (SDK1.4.2) (5655-I56), or later, at run time. Optionally, the following may be used for applications written in Java (not including Java stored procedures):
  - IBM 64-Bit SDK for z/OS, Java 2 Technology Edition, V5 (SDK5) (5655-N99), or later, at run time.  
**Note:** 5655-I56 and 5655-N99 are independent products and can co-exist on the same z/OS system.
  -
- REXX™:
  - IBM TSO Extensions for MVS™ REXX, which is part of z/OS
  - SQL Procedure Language
  - Native SQL Procedure Language
  - External SQL Procedure Language, which requires a C language compiler
- APL2®:
  - Mainframe APL2 V2.2 (5688-228) (full APL2)
  - APL2 Application Environment (5688-229)

### **Operational support:**

The following programs provide operational support for DB2 10:

- DFSMS features, part of the Systems Management optional feature of z/OS; specifically:
  - DFSMSHsm for archiving
  - DFSMSdss for concurrent copy in Utilities

### **Development tools:**

The following application development tools can be used to build applications for DB2 10:

- Optim™ Development Studio, Version 2 Release 2 (5724-X83), or later
- IBM Optim pureQuery Runtime for Linux, UNIX, and Windows, Version 2 Release 2 Mod 1 (5724-X84), or later
- IBM Optim pureQuery Runtime for z/OS, Version 2 Release 2 Mod 1 (5655-V80), or later
- IBM InfoSphere Data Architect, Version 7 Release 5 (5724-V15), or later
- Data Studio Version 2 Release 2, or later, available at  
<http://www.ibm.com/developerworks/downloads/im/data/learn.html>

### **Tools support:**

Refer to the IBM Data Management Tools website for the complete list of products

<http://www.ibm.com/software/data/db2imstools>

Refer to the IBM DB2 and IMS Tools Support website for recent news about DB2 Tools compatibility with DB2 10 for z/OS

<http://ibm.com/software/data/db2imstools/support.html>

IBM Tools for Replication Management and Database Recovery

- IBM Tools for Replication Management, including the following tools:

- IBM WebSphere Replication Server V9.1 (5655-R55)
- IBM WebSphere Data Event Publisher V9.1 (5655-R56)
- IBM Tools for Database Recovery, including the following tools:
  - IBM DB2 Change Accumulation Tool for z/OS, V2.1 (5655-F55), or later
  - IBM DB2 Object Restore for z/OS, V2.1 (5697-I20)
  - IBM DB2 Log Analysis Tool for z/OS, V3.2 (5655-T56)
  - IBM DB2 Recovery Expert for z/OS, V2.2 (5697-N92)

IBM Tools for Database Application Management, including the following tools:

- IBM DB2 Table Editor for z/OS, V4.3 (5697-G65)

IBM Tools for Database Administration and System Management Support, including the following tools:

- DB2 Administration Tool for z/OS, V10.1 (5655-W34)
- DB2 Audit Management Expert V2.1 (5655-T57)
- DB2 Object Comparison Tool for z/OS, V10.1 (5655-W36)

IBM Tools for Utilities Management, including the following tools:

- DB2 Automation Tool for z/OS, V3.1 (5655-T59)
- DB2 Cloning Tool for z/OS, V2.2 (5655-S91)
- DB2 Utilities Suite for z/OS, V10.1 (5655-V41)
- DB2 Utilities Enhancement Tool, V2.1 (5655-T58)
- DB2 High Performance Unload for z/OS, V4.1 (5655-AA1)

IBM Tools for Database Performance Management, including the following tools:

- Optim Query Tuner for DB2 for z/OS, V2.2 (modification 1) (5655-V91)
- Optim Query Workload Tuner for DB2 for z/OS, V2.2 (modification 1) (5655-V81)
- DB2 Buffer Pool Analyzer for z/OS, V5.1 (5655-W35)
- Tivoli® OMEGAMON® XE for DB2 Performance Expert V5.1 (5655-W37)
- Tivoli OMEGAMON XE for DB2 Performance Monitor V5.1 (5655-W38)

### **Compatibility**

DB2 10 for z/OS is upwardly compatible with earlier releases of DB2 for z/OS. Migration is available for customers that are running in New Function Mode on DB2 V9.1 for z/OS or on DB2 UDB for z/OS V8. Existing customers should ensure they are successfully running on DB2 9 for z/OS (NFM) or on DB2 UDB for z/OS V8 (NFM) before migrating to DB2 10. Fallback protection is provided for steps of moving to DB2 10 conversion mode, to enabling New Function Mode, and to New Function Mode.

### **User group requirements**

This announcement satisfies or partially satisfies many requirements from one or more of the worldwide user group communities.

|              |  |
|--------------|--|
| MR0120063916 | DEFINE NO for LOB tablespaces                                |
| MR0908063631 | DB2 inline copy: option to invoke FlashCopy                  |
| MR0303041654 | Allow multiple matching in-list predicates                   |
| MR0825046717 | More aggressive view / table expression merge for outer join |
| MR0301045620 | Query transformation necessary on DB2 for z/OS               |
| MR1102044131 | SAP FR239: Multiple IN Predicates                            |
| MR0315047153 | SAP FR288: IN Access Path Performance                        |
| MR0625092243 | scattering of INLIST items is not considered                 |
| MR1025072313 | Compression dictionary is always build                       |

if tablespace is populated  
 MR0112073151 New functionality for copying COMPRESSION-  
 DICTIONARY from existi  
 MR110204505 SAP FR236: Compression Dictionary without  
 LOAD/REORG  
 MR0417092725 Add PLANMGMT to the DSNTINST clist  
 MR041409637 "Enable DRDA Connections when generating  
 IVP jobs for DRDA default installations."  
  
 MR0227075726 "IBM provides IVP job DSNTJ1L for customers  
 who do not have the PL1 compiler to run  
 job DSNTJ1P. Can IBM create a similar companion  
 job for DSNTJ6U."  
 MR1003074027 PACKAGE VERSIONING of DB2 for z/OS standard  
 programs (DSNTIAUL  
 MR0409086546 SAP FR462: Automate setup of external  
 stored procedures  
 MR0104025621 Allow alter segsize in ALTER TABLESPACE  
 MR0123086827 ALTER TABLESPACE with SEGSIZE-option  
 MR0102062655 Alter tablespace/index  
 MR00073845 Change of tablespace segmentsize by use of  
 ALTER Tablespace  
 MR0114084245 DB2 V9 simple TS conversion  
 MR0130083224 DB2 V9 simple TS conversion  
 MR0526085953 DB2 V9 simple TS conversion  
 MR0814081131 DB2 V9 simple TS conversion  
  
 MR0114052144 Implement the ability to do an 'alter  
 tablespace DSSIZE '  
 MR0428055053 Implement the ability to do an 'alter  
 tablespace DSSIZE '  
 MR1023057039 Online Schema Evolution enhancements  
 MR0716034356 Partitioning Tool  
 MR00039309 Provide a utility to conveet to  
 segmented tablespaces.  
 MR0130046720 SAP FR010: Changing Segmented into  
 Partitioned Tablespaces  
 MR0130042713 SAP FR006: Support to Extend Row Length beyond  
 Page Size  
 MR121506412 SAP FR421: ZPARM to enable MDM customers to  
 create all tables with 32 KB page size  
 MR0720092550 Instrument Lock and Latch Suspend times separately  
 MR0315043727 SAP FR317: Reducing log latch contentions  
 MR0417075251 Row size retrieval from internal workfile processing  
 MR0513055430 Alter Tablespace Member Cluster statement  
 MR0615052136 SAP FR022: Altering MEMBER CLUSTER Option  
  
 MR0716076251 SAP FR277: Non-Partitioned Tablespace Limit:  
 MEMBER CLUSTER  
 MR1017055913 Slow Performance with DB2 Utilities  
 ( COPY, UNLOAD ) with PRE-formated Tables  
 MR0424095157 Spatial Indexes  
 MR062204603 "Audit all SQL access to confidential and  
 sensitive data including SELECT or  
 read-only access"  
 MR1121051423 Data Base, DB2, Adding a new privilege  
 MR110106177 DB2 cascade revoke problem  
 MR1123072138 New authorization schema: SYSADM without data access  
 MR031504683 Revoke from DB Owner/Creator results in cascaded  
 revoke  
 MR0129073750 REVOKE SYSADM FROM XXXX WITH NO CASCADE  
 MR0115076126 SAP FR426: EXPLAIN STMTCACHE without SYSADM  
 privilege  
 MR031208273 To produce a DBRM from the db2sqljcustomize  
 that accepts "onlinecheck YES" without  
 the need for the requester to have the  
 authority to execute the SQLJ.  
 MR1208063126 Support for mandatory XML schema validation  
 on a defined XML column  
 MR1230082158 XML features across DB2 for z/OS & DB2 LUW  
 MR00076369 Create SHRLEVEL REFERENCE COPY without  
 drain & Offline Check Indx  
  
 MR092900247 Ability to add archive logs dynamically

MR0925084528 Add active logs and refresh DB2 exits  
(sign-on, secondary authid) without recycling DB2.

MR0507046856 Capability to add active logs while DB2 is up.

MR00063641 Change log inventory while DB2 is active (BDUG)

MR00063641\_1 Change log inventory while DB2 is active (BDUG)

MR00037643 DB2 - Provide dynamic BSDS update capability

MR00037962 Dynamic Addition and Deletion of DB2 active logs

MR1022023459 Maintain dynamically logs in BSDS

MR00052318 Online BSDS update

MR00072525 Online Change Log Inventory

MR00039312 Update possibility of the BSDS when DB2 is active

MR0918082433 Add rollup IFCID3 for data sections 5, 6, 7, and  
11 mapped by DSNQLAC, DSNQMDA, DSNQIFA, and  
DSNQWDA when ACCUMAC is on.

MR0801085440 Excessive SMF data under V8 with package  
level detail

MR0702043313 SAP FR338: IFCID 316: Filtering by  
transaction name, workstation name, end user ID

MR0422082510 LOBs supported by Schema Evolution

MR0518046544 SAP FR260: 'Small' LOB Performance

MR063006596 Unload LOB performance

MR0205083044 Allow DB2 z/OS server to manage distributed  
inactive threads

MR1112072057 DB2 detect/deny excessive connection-requesting  
users/applications

MR0429081944 DSP: make analysis of deadlock/timeout/lock  
escalation easier

MR0708083642 DSP: Need aggregated statement statistics  
similar to IFCID316, but for static  
SQL statements

MR0708084022 DSP: need to know when statement are  
dropped from EDM or DSC

MR1122081733 Idle Thread Timeout parameter setting on User  
level for DB2 for z

MR070606605 DB2 Virtual Storage Constraint Relief  
- DBM1 & DDF Addresses Spaces

MR0518042632 SAP FR274: Full 64-bit virtual addressing support

MR0919022041 IRLM parameter display

MR010808213 Add a separate SQLCODE for an  
authorization problem with EXPLAIN STMTCACHE  
statement

MR0321075446 The Ability to UNLOAD LOBS to Tape

MR0305076840 Unload/Load of LOBS to tape.

MR0731071319 DSNHDECP and DSNHMCID customization

MR0609053623 Suggestion for individual DSNHDECP modules

MR0914053926 Unique names for DSNHDECP modules

MR1023054133 Dynamic statement cache enhancements

MR0913074840 managing Global Dynamic Statement Cache by package

MR0612052358 PWIS0404-688 DB2 Connect should convert  
literals to using parameter markers to  
Improve DB2 on Z Performance

MR0214056029 Reuse the statement package cache when  
only "literal variables" changed

MR0315045823 SAP FR283: Client Statements Cache

MR0803073341 IFX: Implicit numeric <=> string casting

MR00067933 Remove Table Auth requirement from Explain Auth.

MR00072736 Explain privilege

MR0103045219 Authorization for EXPLAIN

MR0308015226 Title Explain authority

MR0311052534 SYSADM authority needs individual  
accountability and must be able to be revoked

MR0405066740 User authority to run explain  
(using SQL PA and other tools)

MR0510015655 DB2 Explain Authority without access  
authority to data referred.

MR0917015443 would like DB2 security changed to  
allow explain of a statement without  
the need to

MR0923023347 New zparm for Explain

MR112403420 Explain on SQL statement without authorization  
on tables

## Planning information

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### **Customer responsibilities**

Review the sections in this announcement that describe the hardware and software dependencies for DB2 10 for z/OS. Note that DB2 10 supports migration only from Version 8 in New Function Mode (NFM) or DB2 9 in NFM. Customers not yet running Version 8 or Version 9 should plan to migrate to DB2 8 NFM or DB2 9 NFM as preparation for a migration to DB2 10.

For information about DB2 for z/OS V8 discontinuance of service, refer to Software Announcement [910-169](#), dated August 03, 2010.

### **Migration considerations:**

IBM added many data server capabilities in DB2 10 and reduced or removed support for some functions. As you prepare to migrate your subsystems to DB2 10, you should be aware of the following changes:

For both DB2 UDB for z/OS V8 and DB2 9 for z/OS:

- DB2 XML Extender is no longer supported.
- The DB2 Management Clients feature is no longer available. The Control Center does not support connections to DB2 10. Some functions previously available in Control Center are available in Data Studio  
<http://www.ibm.com/software/data/studio/>
- EXPLAIN tables prior to Version 8 format are no longer supported. Alter tables to add the needed columns.
- Private protocol is no longer supported. Convert to DRDA.
- Plans containing DBRMs are no longer supported. Plans will contain packages, which have the DBRMs. Use the COLLID option of REBIND to make the needed changes. Acquire allocate is not a supported BIND option any longer. Use the option acquire use for all packages.
- DB2 catalog tables are DB2-managed and SMS-controlled. Catalog and directory tables do not have links, but have more LOBs and more table spaces. Compression for table space SPT01 is not supported.
- DB2 MQ XML functions are no longer supported. Use pureXML functions.
- msys for Setup DB2 Customization Center is no longer supported. Use installation panels instead.
- REORG TABLESPACE SHRLEVEL NONE on LOB table spaces is removed. Use SHRLEVEL CHANGE or REFERENCE.
- Several subsystem parameters are removed or no longer supported.
- To create a classic partitioned table space in DB2 Version 10, you must specify SEGSIZE 0 and the Numparts keyword of the CREATE TABLESPACE statement.

For DB2 UDB for z/OS V8 only:

- Net.Data® is removed. WebSphere is the strategic IBM solution for delivering DB2 data to web applications.
- DB2-established stored procedure address spaces are no longer supported. Workload Manager (WLM) managed stored procedure address spaces is the strategic solution for stored procedure support, and migration to WLM managed stored procedure spaces is required for use of stored procedures in DB2 10.
- JDBC/SQLJ Driver for OS/390® and z/OS is no longer supported. All Java application programs and Java routines that are currently written to work with the JDBC/SQLJ Driver for OS/390 and z/OS need to be modified to work with the IBM DB2 Driver for JDBC and SQLJ (formerly known as the DB2 Universal JDBC Driver). The steps for migrating JDBC and SQLJ applications from the legacy JDBC/SQLJ Driver for OS/390 and z/OS to the IBM DB2 Driver for JDBC and

SQLJ can be found in the Application Programming Guide and Reference for Java (SC19-2970). In addition, all WLM-managed stored procedures address spaces that are set up to execute Java routines must be modified to reference the IBM DB2 Driver for JDBC and SQLJ.

- Connections from VAX machines and the PASCAL L string data type are no longer supported.
- Creation of simple table spaces is no longer supported. DB2 10 for z/OS no longer implicitly creates simple table spaces nor allows customers to create simple table spaces. However, DB2 10 for z/OS continues to support simple table spaces created in previous versions.
- DB2 QMF Visionary Studio program is removed from DB2 QMF Enterprise Edition.
- DB2 Estimator is no longer available.
- BookManager-based online help has been removed. The prior help support has been replaced by the Information Management Software for z/OS Solutions Information Center (Information Center). The web-based Information Center is updated periodically during the life of each DB2 version, thus ensuring reader access to the most up-to-date information.
- AIV Extender, Text Extender, and Net Search Extender are removed.
- Java stored procedures no longer run in resettable JVMs.

For DB2 9 for z/OS only:

- Annotated XML schema decomposition using XDBDECOMPXML and XDBDECOMPXML100MB is no longer supported.

Plans and packages should be rebound on current releases to benefit from optimizer enhancements. For the DB2 10 release, packages from DB2 V5 or earlier will be automatically rebound when accessed by DB2 10.

For more detailed information on migrating to DB2 10, refer to the *DB2 10 for z/OS Installation and Migration Guide* (GC19-2974).

As part of ongoing efforts to deliver the most current technology and to remove those features that no longer provide our customers with strategic benefits, the following features are deprecated in DB2 10 for z/OS and may be dropped from future versions:

- Simple and partitioned table spaces other than universal table spaces are deprecated. Use ALTER in New Function Mode to convert single-table table spaces to universal. The default table space type for new tables is now the universal table space. For partitioned table spaces, the default is now partition-by-range.
- Some current use of DSNHDECP is deprecated. If you have code that loads DSNHDECP and maps it with macros, you should plan to change that code by using the new techniques. Customers who want to have one library for multiple DSNHDECP modules need to make this change.
- SQL processing options NEWFUN(YES) and NEWFUN(NO) options are deprecated. Use NEWFUN(V10) rather than NEWFUN(YES). Use NEWFUN(V9) or NEWFUN(V8) rather than NEWFUN(YES).
- The DSNHPC7 precompiler is deprecated. Use the current precompiler or coprocessor.

### **Direct customer support**

Direct customer support is provided by IBM Operational Support Services - SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition. These fee services can enhance your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services - SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition will help answer questions pertaining to usage, how-to, and suspected software defects for eligible products.

Installation and technical support is provided by IBM Global Services. For more information on services, call 888-426-4343.

## **Packaging**

Included with each base or optional feature of DB2 10 is a Program Directory and other media, such as CD-ROM, as applicable:

### **DB2 for z/OS**

| Title                                      | Order number |
|--|--------------|
| DB2 10 for z/OS Program Directory          | GI10-8829    |
| DB2 Licensed Library Collection<br>CD-ROM  | LK5T-7390    |
| DB2 Licensed Programming<br>Specifications | GC19-2977    |

### **QMF Classic Edition**

| Title                                    | Order number |
|--|--------------|
| QMF Classic Edition<br>Program Directory | GI10-8831    |

### **QMF Enterprise Edition**

| Title   | Order number |
|---|--------------|
| QMF Enterprise Edition<br>Program Directory         | GI10-8833    |
| QMF for workstation and<br>WebSphere, V10R1, CD Kit | LK5T-7400    |

### **z/OS Application Connectivity to DB2 for z/OS**

| Title  | Order number |
|--|--------------|
| z/OS Application Connectivity to<br>DB2 for z/OS Program Directory | GI10-8830    |

The QMF Classic Edition V10 feature and QMF Enterprise Edition V10 feature of DB2 9 for z/OS includes a Program Directory and other media, such as CD-ROM, as applicable:

### **QMF Classic Edition V10**

| Title  | Order number |
|--|--------------|
| QMF Classic Edition V10<br>(Feature of DB2 9)<br>Program Directory | GI10-8835    |

### **QMF Enterprise Edition V10**

| Title   | Order number |
|---|--------------|
| QMF Enterprise Edition V10<br>(Feature of DB2 9)<br>Program Directory | GI10-8837    |
| QMF for workstation and<br>WebSphere, V10R1, CD Kit                   | LK5T-7400    |

## Security, auditability, and control

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DB2 10 uses the security and auditability features of the host z/OS systems. It also provides facilities for the protection and control of its resources. These facilities include controls for:

- System access
- Data access and control
- Concurrent access
- Data recovery
- Accounting and auditing

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## Ordering information

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### Ordering z/OS through the Internet

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the U.S., Canada, and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries website at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

### New licensees

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Orders for new licenses can be placed now.

Registered customers can access IBMLink™ for ordering information and charges.

Shipment will not occur before the availability date.

Unless a later date is specified, orders entered before the planned availability date will be assigned a schedule date of one week following availability.

Shipment will begin on the planned availability date.

New users of DB2 10 for z/OS should specify:

Type: 5605            Mode1: DB2

Along with the announcement of the IBM zEnterprise 196 (z196) server, IBM introduced a new software pricing structure called *Advanced Workload License Charges (AWLC)*. The AWLC pricing metric leverages the reporting mechanisms and existing Millions of Service Units (MSU) per hour tiers of the Variable Workload License Charges (VWLC) pricing model while extending the software price/performance provided by the VWLC tiers. AWLC applies only to eligible z/OS and z/TPF software programs and their associated middleware programs when running on a z196 server. For details, refer to Software Announcement [210-238](#), dated July 22, 2010.

### **Advanced Workload License Charges (AWLC) basic license**

To order a basic license, specify the program number and quantity of MSU.

#### **Product: DB2 10 for z/OS**

| Entitlement identifier | Description           | License option / pricing metric |
|------------------------|-----------------------|---------------------------------|
| S015SW2                | DB2 10 for z/OS       | Basic MLC, AWLC                 |
| S015SW4                | QMF Classic Ed V10    | Basic MLC, AWLC                 |
| S015SW3                | QMF Enterprise Ed V10 | Basic MLC, AWLC                 |

#### **Product: DB2 9 for z/OS (5635-DB2)**

| Entitlement identifier | Description                                      | License option / pricing metric |
|------------------------|--|---------------------------------|
| S015SLK                | QMF Classic Edition V10<br>(Feature of DB2 9)    | Basic MLC, AWLC                 |
| S015SLL                | QMF Enterprise Edition V10<br>(Feature of DB2 9) | Basic MLC, AWLC                 |

Parallel Sysplex® License Charge (PSLC) Basic License: To order a basic license, specify the program number and feature 9001 for asset registration. Specify the PSLC Base feature. If applicable, specify the PSLC Level A and PSLC Level B, and PSLC Level C, and PSLC Level D features and quantity.

### **Parallel Sysplex license charge (PSLC) basic license**

To order a basic license, specify the program number and quantity of MSU.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable PSLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

#### **Product: DB2 10 for z/OS**

| Entitlement identifier | Description           | License option/<br>Pricing metric |
|------------------------|-----------------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS       | Basic MLC, PSLC(ABCD)             |
| S015SW4                | QMF Classic Ed V10    | Basic MLC, PSLC(ABCD)             |
| S015SW3                | QMF Enterprise Ed V10 | Basic MLC, PSLC(ABCD)             |

#### **Product: DB2 9 for z/OS (5635-DB2)**

| Entitlement identifier | Description                                      | License option/<br>Pricing metric |
|------------------------|--|-----------------------------------|
| S015SLK                | QMF Classic Edition V10<br>(Feature of DB2 9)    | Basic MLC, PSLC(ABCD)             |
| S015SLL                | QMF Enterprise Edition V10<br>(Feature of DB2 9) | Basic MLC, PSLC(ABCD)             |

### **Workload License Charge (WLC) Basic License**

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable WLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the Workload Registration Variable WLC Identifier on the licenses.

**Product: DB2 10 for z/OS**

| Entitlement identifier | Description           | License option/<br>Pricing metric |
|------------------------|-----------------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS       | Basic MLC, VWLC                   |
| S015SW4                | QMF Classic Ed V10    | Basic MLC, VWLC                   |
| S015SW3                | QMF Enterprise Ed V10 | Basic MLC, VWLC                   |

**Product: DB2 9 for z/OS (5635-DB2)**

| Entitlement identifier | Description                                      | License option/<br>Pricing metric |
|------------------------|--|-----------------------------------|
| S015SLK                | QMF Classic Edition V10<br>(Feature of DB2 9)    | Basic MLC, VWLC                   |
| S015SLL                | QMF Enterprise Edition V10<br>(Feature of DB2 9) | Basic MLC, VWLC                   |

**Entry Workload License Charge (EWLC) Basic License**

To order a basic license, specify the program number and the quantity of MSUs.

**Product: DB2 10 for z/OS**

| Entitlement identifier | Description           | License option/<br>Pricing metric |
|------------------------|-----------------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS       | Basic MLC, EWLC                   |
| S015SW4                | QMF Classic Ed V10    | Basic MLC, EWLC                   |
| S015SW3                | QMF Enterprise Ed V10 | Basic MLC, EWLC                   |

**Product: DB2 9 for z/OS (5635-DB2)**

| Entitlement identifier | Description                                      | License option/<br>Pricing metric |
|------------------------|--|-----------------------------------|
| S015SLK                | QMF Classic Edition V10<br>(Feature of DB2 9)    | Basic MLC, EWLC                   |
| S015SLL                | QMF Enterprise Edition V10<br>(Feature of DB2 9) | Basic MLC, EWLC                   |

**S/390® and System z Usage License Charge, basic license:** Specify the applicable S/390 and System z Usage License Charge option. Charges will be based upon the Peak MSUs. Usage reported between thresholds of features 1, 2, or 3, will be rounded up to the next MSU level. Above 1.0 MSU, usage will be rounded to the nearest whole MSU. For example, 2.4 MSUs would round to 2.0 MSUs for pricing, and 2.5 MSUs would round to 3.0 MSUs for pricing. The customer pricing will be determined by selecting either:

| Entitlement identifier | Description     | License option/<br>Pricing metric |
|------------------------|-----------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS | Basic MLC, ULC                    |

To order zELC software, specify the program number and System z model.

Specify the zELC monthly license option.

## Product: DB2 10 for z/OS

| Entitlement identifier | Description           | License option/<br>Pricing metric |
|------------------------|-----------------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS       | Basic MLC, zELC                   |
| S015SW4                | QMF Classic Ed V10    | Basic MLC, zELC                   |
| S015SW3                | QMF Enterprise Ed V10 | Basic MLC, zELC                   |

## Product: DB2 9 for z/OS (5635-DB2)

| Entitlement identifier | Description                                      | License option/<br>Pricing metric |
|------------------------|--|-----------------------------------|
| S015SLK                | QMF Classic Edition V10<br>(Feature of DB2 9)    | Basic MLC, zELC                   |
| S015SLL                | QMF Enterprise Edition V10<br>(Feature of DB2 9) | Basic MLC, zELC                   |

### **Single version charging (SVC) for skip level migration:**

When a direct migration is taking place from DB2 UDB for z/OS V8 to DB2 10 for z/OS, and if IBM has determined in its sole discretion that the migration is eligible for Single Version Charging, SVC may be offered for a period not to exceed 18 months from the start date of the SVC.

### **Single version charging**

To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

### **Basic machine-readable material**

Product 5605-DB2, DB2 10 for z/OS:

| Orderable<br>Supply ID: | Language     | Distribution medium | Description             |
|-------------------------|--------------|---------------------|-------------------------|
| S0165W2                 | US English   | 3590 Cartridge      | DB2 10 for z/OS         |
| S0165VW                 | US English   | 3590 Cartridge      | QMF Classic Ed V10      |
| S0165W5                 | US English   | 3590 Cartridge      | QMF Enterprise Ed V10   |
| S0165W0                 | US English   | 3590 Cartridge      | z/OS App Connect to DB2 |
| S0165W3                 | Japanese     | 3590 Cartridge      | DB2 10 for z/OS         |
| S0165VX                 | Multilingual | 3590 Cartridge      | QMF Classic Ed V10      |
| S0165W6                 | Multilingual | 3590 Cartridge      | QMF Enterprise Ed V10   |

Product: 5635-DB2, DB2 9 for z/OS:

| Orderable<br>Supply ID: | Language     | Distribution medium | Description                |
|-------------------------|--------------|---------------------|----------------------------|
| S0165VW                 | US English   | 3590 Cartridge      | QMF Classic Edition V10    |
| S0165W5                 | US English   | 3590 Cartridge      | QMF Enterprise Edition V10 |
| S0165VX                 | Multilingual | 3590 Cartridge      | QMF Classic Edition V10    |
| S0165W6                 | Multilingual | 3590 Cartridge      | QMF Enterprise Edition V10 |

### **Customization options**

Select the appropriate feature numbers to customize your order to specify the delivery options desired. These features can be specified on the initial or MES orders.

A program directory is shipped with the basic machine-readable material.

The following DB2 10 publications are shipped with the product.

| Title                                   | Order number |
|---|--------------|
| DB2 10 for z/OS<br>Program Directory    | GI10-8829    |
| Licensed Program Specifications         | GC19-2977    |
| Licensed Library Collection<br>(CD-ROM) | LK5T-7390    |

The following optional publications are available in PDF format and in the IBM Information Management Software for z/OS Solutions Information Center. These publications are not available for ordering in hardcopy.

| Title   | Order number |
|---|--------------|
| DB2 10 for z/OS<br>Administration Guide                 | SC19-2968    |
| Application Programming and SQL Guide                   | SC19-2969    |
| Application Programming Guide and<br>Reference for Java | SC19-2970    |
| Codes   | GC19-2971    |
| Command Reference                                       | SC19-2972    |
| Data Sharing: Planning and<br>Administration            | SC19-2973    |
| Installation and Migration Guide                        | GC19-2974    |
| Internationalization Guide                              | SC19-2975    |
| Introduction to DB2 for z/OS                            | SC19-2976    |
| IRLM Messages and Codes for IMS<br>and DB2 for z/OS     | GC19-2666    |
| Managing Performance                                    | SC19-2978    |
| Messages  | GC19-2979    |
| ODBC Guide and Reference                                | SC19-2980    |
| pureXML Guide   | SC19-2981    |
| RACF Access Control Module Guide                        | SC19-2982    |
| SQL Reference   | SC19-2983    |
| Utility Guide and Reference                             | SC19-2984    |
| What's New?   | GC19-2985    |

The following QMF publications are delivered in softcopy only. When ordering DB2 10, these QMF publications are included on the publication CD-ROM "DB2 10 for z/OS Licensed Library Collection, LK5T-7390."

| Title  | Order number |
|--|--------------|
| Introducing DB2 QMF                                    | GC19-2885    |
| Installing and Managing DB2 QMF<br>for TSO and CICS    | GC19-2886    |
| Developing DB2 QMF Applications<br>Using DB2 QMF       | SC19-2887    |
| DB2 QMF Reference                                      | SC19-2888    |
| DB2 QMF Messages and Codes                             | SC19-2889    |
| DB2 QMF High Performance Option                        | GC19-2890    |
| User's Guide for TSO and CICS                          | SC19-2891    |
| Installing and Managing DB2 QMF<br>for workstation and | GC19-2892    |
| DB2 QMF for Websphere                                  |              |
| Getting started with DB2 QMF<br>for workstation and    | SC19-2893    |
| DB2 QMF for Websphere                                  |              |

DB2 10 product information, except the licensed documentation, is viewable from the Information Management Software for z/OS Solutions Information Center at

<http://publib.boulder.ibm.com/infocenter/imzic/>

## **Licensed documentation**

The following licensed materials are available only to customers with a DB2 10 license. The licensed material can be ordered through the IBM Publications Center. In addition, the Diagnosis Guide and Reference is shipped in a DB2 data set that is updated during post general availability maintenance updates. (DSNA10.SDSNIVPD data set member DSNDR. FTP the data set to the workstation and open it with Adobe Acrobat Reader.)

| Title  | Order number |
|--|--------------|
| DB2 10 for z/OS<br>Diagnosis Guide and Reference | LY37-3220    |

Terms and conditions for use of the machine-readable files are shipped with the files.

The BookManager® format is dropped in DB2 10; you should not create any new dependencies that rely on DB2 9 BookManager books, and if you have existing dependencies on them, you should develop plans to remove those dependencies. (As part of ongoing efforts to deliver the most current technology and to remove those features that no longer provide our customers with strategic benefits, the BookManager format for DB2 for z/OS publications was deprecated in DB2 9. Books that were new to the DB2 9 library were not offered in the BookManager format.)

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

## **Customized offerings**

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Product deliverables are shipped only via CBPDO, ServerPac, and SystemPac®.

CBPDO and ServerPac are offered for Internet delivery in countries where ShopzSeries product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options for CBPDO, ServerPac, SystemPac include:

- 3590
- 3592

Most products can be ordered in ServerPac and SystemPac the month following their availability on CBPDO. z/OS can be ordered via all three offerings at general availability. Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability
- SystemPac shipments will begin four weeks after general availability due to additional customization, and data input verification.

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## **Terms and conditions**

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### **Agreement**

IBM Customer Agreement

**Variable charges apply**

No

**Indexed monthly license charge (IMLC) applies**

No

**Location license applies**

No

**Use limitation applies**

No

**Educational allowance available**

Yes, 15% education allowance applies to qualified education institution customers.

**Volume orders**

Not applicable.

Replaced programs Replacement programs

| Program number | Program name | Program number                  | Program name |
|----------------|--------------|---------------------------------|--------------|
| 5740-XYR       | DB2 V1       | 5605-DB2                        | DB2 10       |
| 5665-DB2       | DB2 V2       | 5605-DB2                        | DB2 10       |
| 5685-DB2       | DB2 V3       | 5605-DB2                        | DB2 10       |
| 5695-DB2       | DB2 V4       | 5605-DB2                        | DB2 10       |
| 5655-DB2       | DB2 V5       | 5605-DB2                        | DB2 10       |
| 5645-DB2       | DB2 V6       | 5605-DB2                        | DB2 10       |
| 5675-DB2       | DB2 V7       | 5605-DB2                        | DB2 10       |
| 5625-DB2       | DB2 V8       | 5605-DB2                        | DB2 10       |
| 5635-DB2       | DB2 V9       | 5605-DB2                        | DB2 10       |
| 5605-DB2       | DB2 V10      | To a follow-on program, if any. |              |

**Warranty applies**

Yes

**Licensed program materials availability**

|                                  |      |
|----------------------------------|------|
| Restricted Materials of IBM:     | None |
| Non-Restricted Source Materials: | None |
| Object Code Only (OCO):          | All  |

**Program services**

Support Center applies: Yes

Access available through the IBM Support Center

Available until discontinued: 12-month's written notice

APAR Mailing Address: IBM Corporation  
APAR Processing  
555 Bailey Avenue  
San Jose, CA 95141

### **Program currency**

IBM DB2 10 for z/OS (5605-DB2)

Available until discontinued: 12-month's written notice

### **IBM Operational Support Services -- SupportLine**

Yes

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## **IBM Electronic Services**

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IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

<http://www.ibm.com/support/electronic>

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## **Prices**

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For additional information and current prices, contact your local IBM representative.

| Program number         | MLC                      |                                   |
|------------------------|--------------------------|-----------------------------------|
| 5605-DB2               | \$ 000                   |                                   |
| Entitlement identifier | Description              | License option/<br>Pricing metric |
| S015SW2                | DB2 10 for z/OS          | Basic MLC, ZELC                   |
| S015SW4                | QMF Classic<br>Ed V10    | Basic MLC, ZELC                   |
| S015SW3                | QMF Enterprise<br>Ed V10 | Basic MLC, ZELC                   |

|         |   |                 |
|---------|---|-----------------|
| S015SLK | QMF Classic<br>Edition V10<br>(Feature of DB2 9)    | Basic MLC, ZELC |
| S015SLL | QMF Enterprise<br>Edition V10<br>(Feature of DB2 9) | Basic MLC, ZELC |

z800  
models

0A1  
0B1  
0C1  
001  
0A2  
002  
003  
004

No-charge  
feature

S015SW5      z/OS Application Connectivity to DB2 for z/OS

| Entitlement<br>identifier | Description   | License option/<br>Pricing metric |
|---------------------------|---|-----------------------------------|
| S015SW2                   | DB2 10 for z/OS                                     | Basic MLC, PSLC(ABCD)             |
| S015SW4                   | QMF Classic<br>Ed V10                               | Basic MLC, PSLC(ABCD)             |
| S015SW3                   | QMF Enterprise<br>Ed V10                            | Basic MLC, PSLC(ABCD)             |
| S015SLK                   | QMF Classic<br>Edition V10<br>(Feature of DB2 9)    | Basic MLC, PSLC(ABCD)             |
| S015SLL                   | QMF Enterprise<br>Edition V10<br>(Feature of DB2 9) | Basic MLC, PSLC(ABCD)             |

No-charge  
feature

S015SW5      z/OS Application Connectivity to DB2 for z/OS

### **Variable Workload License Charges**

| Entitlement<br>identifier | Description   | License option/<br>Pricing metric |
|---------------------------|---|-----------------------------------|
| S015SW2                   | DB2 10 for z/OS                                     | Basic MLC, Variable WLC           |
| S015SW4                   | QMF Classic<br>Ed V10                               | Basic MLC, Variable WLC           |
| S015SW3                   | QMF Enterprise<br>Ed V10                            | Basic MLC, Variable WLC           |
| S015SLK                   | QMF Classic<br>Edition V10<br>(Feature of DB2 9)    | Basic MLC, Variable WLC           |
| S015SLL                   | QMF Enterprise<br>Edition V10<br>(Feature of DB2 9) | Basic MLC, Variable WLC           |

No-charge  
feature

S015SW5      z/OS Application Connectivity to DB2 for z/OS

**Entry Workload License Charge (EWLC):**

| Entitlement identifier | Description   | License option/<br>Pricing Metric |
|------------------------|---|-----------------------------------|
| S015SW2                | DB2 10 for z/OS                                     | Basic MLC, Entry WLC              |
| S015SW4                | QMF Classic<br>Ed V10                               | Basic MLC, Entry WLC              |
| S015SW3                | QMF Enterprise<br>Ed V10                            | Basic MLC, Entry WLC              |
| S015SLK                | QMF Classic<br>Edition V10<br>(Feature of DB2 9)    | Basic MLC, Entry WLC              |
| S015SLL                | QMF Enterprise<br>Edition V10<br>(Feature of DB2 9) | Basic MLC, Entry WLC              |

No-charge  
features

S015SW5      z/OS Application Connectivity to DB2 for z/OS

**Advanced Workload License Charges (AWLC):**

| Entitlement identifier | Description   | License option/<br>Pricing Metric |
|------------------------|---|-----------------------------------|
| S015SW2                | DB2 10 for z/OS                                     | Basic MLC, AWLC                   |
| S015SW4                | QMF Classic<br>Ed V10                               | Basic MLC, AWLC                   |
| S015SW3                | QMF Enterprise<br>Ed V10                            | Basic MLC, AWLC                   |
| S015SLK                | QMF Classic<br>Edition V10<br>(Feature of DB2 9)    | Basic MLC, AWLC                   |
| S015SLL                | QMF Enterprise<br>Edition V10<br>(Feature of DB2 9) | Basic MLC, AWLC                   |

No-charge  
feature

S015SW5      z/OS Application Connectivity to DB2 for z/OS

| Entitlement identifier | Description     | License option/<br>Pricing metric |
|------------------------|-----------------|-----------------------------------|
| S015SW2                | DB2 10 for z/OS | Basic MLC, ULC                    |

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## Order now

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To order, contact the Americas Call Centers or your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)  
Fax: 800-2IBM-FAX (242-6329)  
For IBM representative: callserv@ca.ibm.com  
For IBM Business Partner: pswna@us.ibm.com  
Mail: IBM Teleweb Customer Support  
ibm.com® Sales Execution Center, Americas North  
3500 Steeles Ave. East, Tower 3/4  
Markham, Ontario  
Canada  
L3R 2Z1

Reference: LE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

**Note:** Shipments will begin after the planned availability date.

### **Trademarks**

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<http://www.ibm.com/legal/us/en/>

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

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## Corrections

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**(Corrected on January 3, 2011)**

Minor corrections were made to the At a glance and Ordering information sections.