



# IBM DB2 V9.1 for z/OS: Realize the business value of your information with innovation that matters

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## At a glance

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IBM DB2 V9.1 for z/OS (DB2 9) expands the value delivered to your business through innovations in key areas including:

- pureXML for on demand applications
- Unparalleled security and resiliency for business critical innovations
- Improved data warehousing capabilities
- Enhanced SAP and ERP vendor support
- Improved cost of ownership and reduction in administration requirements

IBM DB2 Query Management Facility (QMF) V9.1, an optional feature of DB2 9, allows full access to data in the enterprise for viewing, analysis, and reporting via a Web browser or workstation client, with an exciting new visual interface.

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## Overview

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IBM DB2® V9.1 for z/OS® (DB2 9) delivers exciting new innovations, in key areas, to help you realize the business value of your company's information.

### pureXML for on demand applications

DB2 9, a hybrid data server that integrates pureXML database technology into our industry leading relational data server, provides unprecedented scalability and performance for both relational and XML data. DB2 9 adds many new data types and SQL improvements. These new features allow you to gain great insight into your business data and enable high volume transaction processing for the next wave of Web applications and service oriented architecture (SOA) initiatives. Data Warehousing and OLTP improvements continue to make your System z™ and DB2 for z/OS environment a highly secure, high performance, and highly scalable enterprise data store that companies continue to bet their business on. The complex business applications of today include both transactions and reporting, so performing both well is imperative.

Some key optimization enhancements improve query and reporting performance and ease of use. A new innovation, the Optimization Service Center\*, captures meaningful information about your workload and can improve serviceability by showing insightful optimizer information. Enhanced support for key Business Partners allows you to get more from your data in critical business disciplines like ERP. A brand new user interface for IBM DB2 Query Management Facility\* (QMF™) lets you view, analyze, and report on data from either a workstation client or a Web browser.

### Unparalleled security and resiliency for business critical information

New technical innovations in operational compliance (both regulatory and internal governance) help teams work more efficiently, within guidelines and with enhanced auditing capabilities. The unique synergy between DB2, System z, and z/OS drives unparalleled improvements and new capabilities. DB2 benefits from large real memory support, faster processors, specialty engines, and better hardware compression. New capabilities include:

- Increased support for zIIP specialty engines. DB2 9 adds remote native SQL procedure enablement to zIIP processing
- Added security and encryption via IPv6 and Secure Socket Layer (SSL)
- Improved I/O
- Enhanced Parallel Sysplex®, improved backup and restore support, and new ways of using Workload Manager (WLM)

### **DB2 9 provides SAP environments with the highest level of availability, stability, and security**

DB2 9 offers innovations that keep your business running even when things go wrong or changes need to be made. These capabilities drive new value in business resiliency through scalability functions, fewer planned or unplanned outages, and improvements to enhance performance, usability, and availability in data sharing environments. The IBM Optimization Service Center can improve your performance by helping tune SQL statements and databases. DB2 9 performance improvements are in areas that include CPU reductions for index processing in load, reorg, runstats, recover, rebuild and check index, better scalability for inserts, updates and delete, improved line of business (LOB) scalability and performance, reduced CPU time for data with varying length and faster sequential access.

For more information about the new Optimization Service Center, refer to Software Announcement [AP07-0040](#), dated March 6, 2007.

\* Optimization Service Center and QMF for Workstation are built on Eclipse, an open source community committed to implementation of a universal development platform.

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## **Key prerequisites**

- z/OS V1.7 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.

### **Program Number**

For details, refer to the Program number section in this announcement.

### **Planned availability date**

March 16, 2007

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## **AP distribution**

Country/Region	Announced
ASEAN*	Yes
India/South Asia**	Yes
Australia	Yes
People's Republic of China	Yes
Hong Kong S. A. R. of the PRC	Yes
Macao S. A. R. of the PRC	Yes
Taiwan	Yes
Korea	Yes
Japan	Yes
New Zealand	Yes

\*Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, Vietnam

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## Description

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DB2 9 delivers key enhancements that improve the ability of DB2 to handle today's new, and enterprise on demand applications. Key enhancements delivered in DB2 9 include:

- pureXML for on demand applications
- Unparalleled security, and resiliency for business critical information
- Reduced cost of ownership and administration requirements

DB2 9 builds upon, and extends DB2 traditional strengths in many areas including online schema evolution, Unicode, XML, DB2 Family SQL, utilities, security and compliance, and 64-bit virtual storage. Optimization improvements include performance-boosting innovations, synergy with IBM System z, and query management enhancements driving increased cost savings.

### **pureXML for on demand applications**

- Rich new hybrid data server support for both relational and pure XML storage, with the necessary services to support both data structures.
- Leading-edge standards-based capabilities to enable service oriented architecture (SOA) requirements.
- Database on demand capabilities to ensure that your information design can be changed dynamically, often without database outages.
- Rich new SQL capabilities, including additional data types and built-in functions, expanded SQL commonality with DB2 family, and enriched text handling with functions like caseless comparisons, cultural sort, and index on expression.
- Enhanced support to allow key Business Partners, especially with ERP offerings such as SAP, to continue to push the envelope with capabilities that drive business value to their customers. Specific items include new autonomous features, optimization and availability enhancements, and support for new data types.
- Completely redesigned, cross-platform workstation and Web-based QMF query solution, providing high performance, on demand access to data, reports, and interactive data analysis using a rich desktop application or ordinary Web browser.

### **Unparalleled security and resiliency for business critical information**

- Increased security and regulatory compliance through implementation of roles, network-trusted contexts, and enhanced auditing
- Synergy with IBM System z and z/OS in areas that include XML parsing, zIIP, I/O improvements, encryption, IPV6, and Secure Socket Layer (SSL)
- Query management enhancements to make accessing your data even faster and more accurate; indexing improvements that include index on expression, randomization, and larger index page sizes; optimization improvements that provide better data for the optimizer, improved optimization techniques, and better management with optimization services

### **Reduced cost of ownership and administration requirements**

- Improvements to DB2 enhance performance, usability, and availability in data sharing environments, including fast replacement of one table with another, ability to alter table space and index logging, and improved ability to rebuild an index online.
- Performance-boosting innovations such as load and reorg utility CPU reductions, improved performance for varying length data, and improved logging and insert performance.
- Scalability innovations like table space partitioning by growth, log latch contention reduction, and ability to create and alter STOGROUP SMS constructs.
- Improvements beyond DB2 V8 to help manage business-critical information, with fewer planned or unplanned outages with features like online reorganization with no BUILD2 phase, rename column and index, alter index to change page size, and ability to modify early code without requiring an IPL.

For a technical presentation on selected features of DB2 V9, or later releases, visit the following Web site and select "What's coming"

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

DB2 9 consists of the base DB2 product with a set of orderable optional features, some of which are available at no additional charge, and others that are billable.

### **Orderable chargeable features**

#### **DB2 QMF V9**

With this release, DB2 QMF is a completely redesigned, cross-platform workstation and Web-based solution, providing high performance on demand access to data, reports, and interactive data analysis, using a rich desktop application or ordinary Web browser. Included in DB2 QMF V9 is:

- Support for DB2 9, with XML and enhancements to SQL
- Reengineered Eclipse-based desktop application that extends QMF to numerous workstation operating systems, including Windows™, Linux™, Solaris, and HP-UX platforms.
- New OLAP query builder, complete with graphical designer, hierarchical and dimension filtering, informational SQL view, and fully interactive results grid.
- New object repository simplifies the storage, access control, and distribution of QMF objects across the enterprise
  - "Offline" schemas and snapshots allow content authors to view filtered, role-specific database resources, such as tables, views, and procedures without physically accessing the underlying database.
  - Independent user interface "perspectives" for QMF administrators, QMF users and visual report designers.
- Redesigned QMF for WebSphere® companion delivers key workstation functionality, using a pure HTML, browser-based client.
  - Extends key QMF functionality to browser-based users across multiple platforms, including report authoring and drag-drop data analysis.
- Completely re-engineered form designer significantly simplifies the development of QMF forms/reports.
- Ability to develop and export query results and reports in a variety of formats including XML, HTML, and PDF.
- Improved table editor provides a means of directly inserting, deleting, and editing data in all supported database types.
- Newly developed data cache provides a means of caching query result sets with user or group-specific expiration rules.

**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

**DB2 QMF Classic Edition:** DB2 QMF Classic Edition supports end users who function entirely from traditional mainframe terminals and emulators (including IBM Host On Demand) to access DB2 databases. This edition consists of DB2 QMF for TSO/CICS.

### **Orderable no-charge features**

**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. It is a pure Java, type 4 JDBC driver designed to deliver high performance and scalable remote connectivity for Java-based enterprise

applications on z/OS to a remote DB2 for z/OS database server.

**DB2 Management Clients** feature includes components to assist in the administration of DB2 for z/OS:

- DB2 Administration Server (z/OS installable component)
- z/OS Enablement (z/OS installable component)
- DB2 Connect® Personal Edition Kit (workstation CD), which includes:
  - Control Center
  - Development Center
  - Replication Center

For a technical presentation on selected features of DB2 9, or later releases, visit the following Web site and select "What's coming"

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

IBM DB2 Accessories Suite for z/OS (DB2 Accessories Suite), a no-charge offering, is available to provide DB2 for z/OS with expanded capabilities in several areas. Included in the suite are:

- IBM Optimization Service Center
- IBM Spatial Support for DB2 for z/OS data (Spatial Support)

For more information, refer to Software Announcement [AP07-0040](#), dated March 6, 2007.

### **IBM Optimization Service Center**

The IBM Optimization Service Center represents an innovative set of capabilities that improve the performance of DB2 SQL queries at both the individual query and full SQL workload level.

- For individual queries, Optimization Service Center can annotate the query, draw an access plan graph, generate query reports, facilitate generation of optimization hints, and suggest statistics needed by SQL Optimizer.
- At your request, Optimization Service Center can send query-related information back to IBM service.
- For SQL workloads, Optimization Service Center can gather workloads from various kinds of sources such as the dynamic statement cache, the catalog tables, the files and directories, the QMF tables, the profile monitoring, and so on.
- SQL queries can be immediately captured by Optimization Service Center or captured at a scheduled time, on a one-time or periodic basis.
- Optimization Service Center can also suggest important statistics to be collected to improve performance for the entire workload.
- Profile monitoring provides a lightweight exception monitoring mechanism, since only those exception statements are pushed out by DB2, and Optimization Service Center fully supports the use and management of profile monitoring.

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

Spatial Support contains 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.

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## Program number

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Program number	Program name
5635-DB2	DB2 V9.1 for z/OS

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## Hardware and software support services

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### .SmoothStart™/installation services

SmoothStart Services, an on-site implementation and training startup service, is designed to accelerate your productive use of your IBM solution. The service is provided by IBM Global Services or your IBM Business Partner, at an additional cost. For additional information, refer to Services Announcement [AA97-3016](#), dated March 25, 1997, or contact your IBM representative and ask for SmoothStart Services for DB2 9.

IBM Installation Services are provided for DB2 9 by IBM Global Services or your IBM Business Partner, at an additional cost. For additional information, contact your IBM representative and ask for Installation Services for DB2 9 for z/OS.

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### Availability of national languages

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Description	Availability date	Language
DB2 V9.1 for z/OS	March 16, 2007	All

### Trademarks

System z, QMF, z/Architecture, and SmoothStart are trademarks of International Business Machines Corporation in the United States or other countries or both.

DB2, z/OS, Parallel Sysplex, WebSphere, CICS, DB2 Universal Database, and DB2 Connect are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Windows is a trademark of Microsoft Corporation.

Java is a trademark of Sun Microsystems, Inc.

Linux is a trademark of Linus Torvalds in the United States, other countries or both.

Other company, product, and service names may be trademarks or service marks of others.

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## Education support

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IBM Global Services, IT Education Services, provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM IT Education Services Web sites

<http://www-3.ibm.com/services/learning/>

Refer to the IBM IT Education Services Web site for information on course locations and availability dates.

Contact your IBM representative for course information.

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## Technical information

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### Specified operating environment

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**Hardware requirements:** The hardware requirements for DB2® 9 are identified below.

### **Processors and real storage**

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DB2 9 operates on any processor that supports z/Architecture™, including zSeries® z800, z890, z900, z990, IBM System z9™, or a comparable processor. The processor must have enough real storage to satisfy the combined requirements of:

- DB2 9
- z/OS®
- Other customer-required applications

The following restrictions apply:

- For z900 systems, microcode level 3G, or later is required.

For more information about how to determine or upgrade your microcode level, you can search for technotes on this subject in one of the following two places:

– At the DB2 for z/OS Support site at

<http://www.ibm.com/software/db2zos/support.html>

– On the Web search page (under "Troubleshooting and support") in the Information Management Software for z/OS Solutions Information Center at

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

- DB2 9 for z/OS may run on other compatible hardware that supports the Long Displacement Facility of the z/Architecture.
- Some workloads might require increased real storage when they run on V9.1 of DB2 for z/OS as compared to V8 of DB2 for z/OS. Sufficient disk storage must be available to satisfy the user's information storage requirements and can consist of any direct-access facility that is supported by the system configuration and the programming system.

### **Auxiliary storage**

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DB2 for z/OS is independent of both disk and tape device type. The customer can use any magnetic, optical, or tape device that is supported by the data facilities component of z/OS for the DB2 data sets.

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

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

If these data sets are on a disk 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. Users need additional disk space for their data. If you use dual logging and tape for the log archiving device, you need at least two tape drives.

### **Data communications devices**

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DB2 operations can be controlled from the following devices:

- The system console
- Authorized IMS™ Transaction Manager terminals



- Authorized CICS® terminals
- TSO terminals (by authorized users)

For information about the data communication devices supported by IMS Transaction Manager, CICS, and z/OS, refer to the documentation for these products.

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

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Certain functions of DB2 9 have associated hardware requirements. If you do not use these DB2 functions, the hardware requirements do not apply.

- **DRDA® Data Stream Encryption:** DRDA Data Stream Encryption can use cryptographic hardware in Cryptographic Coprocessor, Cryptographic Accelerator, or Cryptographic instructions.
- **Encryption and decryption functions:** Built-in functions for encryption and decryption require cryptographic hardware in Cryptographic Coprocessor, Cryptographic Accelerator, or Cryptographic instructions.
- **QMF™ functions:** DB2 QMF for TSO/CICS, DB2 QMF High Performance Option (HPO), DB2 QMF for Workstation, and DB2 QMF for WebSphere® are programs in the DB2 QMF family of products and can be obtained through the optional chargeable features of QMF Classic Edition or QMF Enterprise Edition. These programs have hardware requirements as follows:
  - DB2 QMF for TSO/CICS requires a display station that is supported by Graphical Data Display Manager (GDDM®).
  - DB2 QMF High Performance Option (HPO) requires a display station that is supported by ISPF.
  - Hardware requirements for the DB2 QMF for WebSphere and DB2 QMF for Workstation programs can be found in the QMF publication *Installing and Managing DB2 QMF for Workstation and DB2 QMF for WebSphere* (GC18-9691). The information in this publication is also available on the Web in the Information Management Software for z/OS Solutions Information Center at

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

**Software requirements:** This section lists licensed programs, or specific elements and features of licensed programs, that are required in the DB2 9 environment, at the time of announcement. You can use subsequent versions or releases of the programs, unless stated otherwise. This section also identifies the requirements that are associated with specific DB2 capabilities, as well as optional programs that you can use with DB2 9. Refer to the following Web sites for the most current information, including support for subsequent versions or versions of products listed here:

- For information about the product lifecycle dates for DB2 for z/OS and related products, refer to  
<http://www.ibm.com/software/db2zos/support/plc/index.html>
- For information about the operating system availability and withdrawal-of-service dates, refer to  
[http://www.ibm.com/servers/eserver/zseries/zos/support/zos\\_eos\\_dates.html](http://www.ibm.com/servers/eserver/zseries/zos/support/zos_eos_dates.html)
- For a variety of support-related information about DB2 for z/OS, refer to  
<http://www.ibm.com/software/db2zos/support.html>

At this site, you can click **Technotes**, specify "V9 migration" in the search field, and click **Go**.

### **Operating system and support programs**

DB2 V9.1 for z/OS requires the function that is provided by the following licensed programs or their equivalents, including subsequent versions or releases:

- z/OS V1.7 Base Services (5694-A01) or z/OS.e (5655-G52) and APAR OA16303, with the following base and optional elements:
  - DFSMS V1.7.



- Language Environment® Base Services.
- z/OS V1.7 Security Server (RACF®).
- IRLM V2.2 (delivered with DB2 V9.1 for z/OS). If DB2 for z/OS is installed with IRLM into the same SMP zone as any version of IMS with IRLM V2.1, IRLM V2.1 is deleted during the SMP/E installation of IRLM V2.2.

Selected functions of DB2 V9.1 for z/OS require z/OS or its components at the V1.8 level. Details are provided in the Requirements for dependent functions of DB2 section of this document.

- z/OS Unicode Services, including APAR OA14231 and APAR OA19072, and appropriate conversion definitions.
- Either V9.1 of the DB2 Utilities Suite for z/OS (5655-N97), or an equivalent alternative function that provides some of the basic operation of a DBMS (including backup, recovery, reorganization, loading, and unloading of data, gathering of statistics, and checking of data, indexes, and large objects).

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## Virtual storage requirements

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The amount of space that is needed for the common service area below the 16-MB line is less than 40 KB for each DB2 for z/OS subsystem and less than 24 KB for each IRLM subsystem. High concurrent activity, parallelism, or high contention can require more Common Service Area (CSA). Most of the DB2 common data resides in the extended common service area (ECSA). Most modules, control blocks, and buffers reside in the extended private area above the 16-MB line or above the 2-GB bar.

DB2 V9.1 for z/OS requires 128 GB of 64-bit shared storage for each DB2 subsystem.

### Function-dependent program requirements

The following functions of DB2 V9.1 for z/OS require specific licensed programs, or features of licensed programs, before they can be used in the context of application execution:

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

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## Optional program requirements

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The following functions are enabled in conjunction with the specified optional licensed programs, when used together with DB2 for z/OS.

### DRDA connectivity

DB2 V9.1 for z/OS supports any of the following IBM relational database products:

- In the Linux™, UNIX®, and Windows™ environment, either V9.1 of IBM DB2 for Linux, UNIX, and Windows (with fixpack 1, or later), or V8.1 of DB2 Universal Database®. (DB2 UDB) for Linux, UNIX, and Windows (with fixpack 13, or later). (V8.1 with fixpack 13 is equivalent to V8.2 with fixpack 6.) Any of the following editions are supported:
  - DB2 Enterprise Server Edition (ESE) (5765-F41)
  - DB2 Workgroup Server Edition (5765-F35)
  - DB2 Workgroup Server Unlimited Edition (5765-F43)
  - DB2 Universal Database Universal Developer's Edition (5765-F34)
- IBM DB2 Universal Database for iSeries™ OS/400® V5.3 (5722-SS1) (Info APAR II13348), including the following options:
  - DB2 DataPropagator™ for iSeries V8.1 (5722-DP4)

- DB2 Query Manager and SQL Development Kit for iSeries (5722-ST1)
- IBM DB2 Server for VSE and VM V7.4 (5697-F42)
- Any other DRDA-compliant client or relational DBMS server

### Web connectivity

The following products provide connectivity to DB2 V9.1 for z/OS from the Web:

- Any of the following editions of WebSphere Application Server:
  - WebSphere Application Server for z/OS V6.1 (5655-N01)
  - WebSphere Application Server for z/OS V5.1 (5724-J08)
  - WebSphere Application Server (5724-J08)
  - WebSphere Application Server for Developers (5724-H89)
  - WebSphere Application Server Network Deployment (5724-H88)
  - WebSphere Application Server — Express (5724-I63)
- DB2 Connect® at one of the following levels: V9.1 (with fixpack 1 or later), or V8.1 (with fixpack 13, or later). (V8.1 with fixpack 13 is equivalent to V8.2 with fixpack 6.) Any of the following editions are supported:
  - DB2 Connect Personal Edition (CPE) (5724-B56)
  - DB2 Connect Enterprise Edition (CEE) (5765-F30)
  - DB2 Connect Unlimited Edition for zSeries (CUE) (5724-B62)
  - DB2 Connect Application Server Edition (CASE) (5724-D54)
  - DB2 Connect Unlimited Edition for iSeries (5724-M15)

Visit

<http://www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/newsletter.d2w/report>

### Transaction management

The following transaction management products work with DB2 V9.1 for z/OS:

- Information Management System (IMS) (one of the following versions):
  - IMS V9 (5655-J38)
  - IMS V8 (5655-C56)
- Customer Information Control System (CICS) (either of the following versions):
  - CICS Transaction Server for z/OS V3.1 (5655-M15)
  - CICS Transaction Server for z/OS V2.3 (5697-E93)
- WebSphere MQ (any of the following versions):
  - WebSphere MQ for z/OS V6 (5655-L82)
  - WebSphere MQ for z/OS V5.3.1 (5655-F10)
  - WebSphere MQ Extended Security Edition V6.0 (5724-E84)
  - WebSphere MQ Workflow for z/OS V3.6 (5655-BPM)
  - WebSphere MQ Workflow for Multiplatforms V3.6 (5697-FM3)
- Application environments that use DB2 Connect to access DB2 V9.1 for z/OS remotely can use any of the following transaction manager products:
  - WebSphere Application Server
  - CICS Transaction Server
  - IBM TXSeries™ (CICS and Encina®)
  - WebSphere MQ

- Microsoft™ Transaction Server (MTS)
- BEA (Tuxedo and WebLogic)
- Java applications that support Java Transaction API (JTA) and Java 2 Platform, Enterprise Edition (J2EE)

### Query support

The following query programs work with DB2 V9.1 for z/OS:

- The DB2 Query Management Facility (QMF) family
- DB2 XML Extenders, which extend the SQL capabilities of native DB2 for z/OS

### Data warehouse support

The following products provide warehouse management capabilities for DB2 V9.1 for z/OS:

- IBM WebSphere Data Integration Suite, which consists of the following products:
  - IBM WebSphere DataStage® for z/OS
  - IBM WebSphere DataStage MVS™ Edition
  - IBM WebSphere DataStage Service Oriented Architecture (SOA) Edition
  - IBM WebSphere DataStage TX for z/OS Edition
  - IBM WebSphere QualityStage for z/OS Version
  - IBM WebSphere DataStage Changed Data Capture DB2 z/OS
  - IBM WebSphere DataStage for DB2 Warehouse Manager

### Development tools

The following application development tools can be used to build applications for DB2 V9.1 for z/OS:

- DB2 Development Center or IBM Developer Workbench, both of which are included in all editions of DB2, DB2 Connect, and DB2 Software Developer's Kit (SDK).
- WebSphere Studio Enterprise Developer V5.1.2 (5724-B67), which has the following program requirement of its own: IBM SDK for z/OS, Java 2 Technology Edition, V1.4 (5655-I56) (SDK1.4.2). For more information about Java 2 for z/OS, including a link to software prerequisites, visit
  - <http://www.ibm.com/servers/eserver/zseries/software/java/>
- IBM WebSphere Developer for System z™ V7.0 (5724-L44)
- IBM Rational® tools, including those listed here:
  - IBM Rational Application Developer for WebSphere Software V6.0 (5724-J19)
  - IBM Rational Web Developer for WebSphere Software V6.0 (5724-J18)
  - IBM Rational Data Architect V7.0 (5724-L66) or V6.1 (5724-L66)
  - IBM Rational Software Architect V6.0 (5724-I70)

Visit

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

- IBM DB2 Alphablox for Linux, UNIX, and Windows V8.4 (5724-L14)

### Programming languages

The following application development programming languages can be used to build applications for DB2 V9.1 for z/OS:

- Building applications by using the DB2 precompiler:
  - **Assembler:** High Level Assembler, which is part of the System Services element of z/OS. Note that PTF UK14811 is required for DFP support on z/OS V1.7, or later.

- **C/C++:** C/C++ (with or without Debug Tool), which are optional features of z/OS.
- **COBOL:** Enterprise COBOL for z/OS V3.4 (5655-G53), or later.
- **Fortran:** VS Fortran V2.6 (5668-806). Note that data types that are new to DB2 V9.1 for z/OS are not supported.
- **PL/I:** IBM Enterprise PL/I for z/OS V3.4 (5655-H31), or later.
- Building applications by using the DB2 coprocessor:
  - **C/C++:** C/C++ for z/OS, which are optional features of z/OS V1.8. (APAR PK38679 is required.)
  - **COBOL:** Enterprise COBOL for z/OS V3.4 (5655-G53), or later.
  - **PL/I:** IBM Enterprise PL/I for z/OS V3.4 (5655-H31), or later.
- Building applications that are supported with processes other than the precompiler or coprocessor:
  - **Java:**
    - Applications or stored procedures that are written in Java, such as those that use the JDBC or SQLJ interfaces to DB2 for z/OS, require IBM SDK for z/OS, Java 2 Technology Edition V1.4 (SDK1.4.2). Two editions are available: the 31-bit edition (5655-I56) and the 64-bit edition (5655-M30). However, the 64-bit edition does not support persistent reusable function.
    - Sharing class objects between Java virtual machine (JVM) processes that run in the same address space requires IBM SDK for z/OS, Java 2 Technology Edition V1.4 (SDK1.4.2). Two editions are available: the 31-bit edition (5655-I56) and the 64-bit edition (5655-M30). These are independent products that can coexist on the same z/OS system.
  - **REXX:** IBM TSO Extensions for MVS REXX, which is part of z/OS.
  - **SQL procedural language:**
    - External SQL procedural language: A C language compiler is required on z/OS to develop stored procedures by using the external SQL procedural language. The specific C compiler to use is C/C++ (with or without Debug Tool), which are optional features of z/OS.
    - Native SQL procedural language, which does not require a C compiler.
  - **APL2®:**
    - Mainframe APL2 V2.2 (5688-228) (full APL2)
    - APL2 Application Environment V2.2 (5688-229)

## Operational support

The following programs can provide operational support for DB2 V9.1 for z/OS:

- DFSMS features, which are part of the Systems Management optional feature of z/OS; specifically:
  - DFSMSHsm for archiving
  - DFSMSdss™ for concurrent copy in utilities
- IBM Softcopy Reader or Library Readers, which are included on the CD-ROMs for BookManager® books.
- Information Integrator Replication for z/OS, V8.2 (5655-L88) can be used in DB2 9 for z/OS Compatibility Mode. IBM WebSphere Replication Server V9 (5655-R55) and IBM Data Event Publisher V9 work with the following DB2 for z/OS versions:
  - DB2 V9.1 for z/OS
  - DB2 Universal Database for z/OS V8
  - DB2 for z/OS and OS/390® V7

To work with a DB2 V9.1 for z/OS source server in new-function mode, you must install IBM WebSphere Replication Server V9 or IBM Data Event Publisher V9, and you must migrate your QCapture control tables because of changes in the DB2 log record format for

new-function mode.

- The following IBM tools:
  - IBM DB2 Tools for Database Recovery
  - IBM DB2 Tools for Database Application Management
  - IBM DB2 Tools for Database Administration
  - IBM DB2 Tools for Utilities Management
  - IBM DB2 Tools for Business Analysis
  - IBM WebSphere Information Integration Tools
  - IBM DB2 Tools for Database Performance Management

The minimum levels of two key database performance management tools are IBM Tivoli® OMEGAMON® XE for DB2 Performance Expert on z/OS, V4 (5655-Q07) and IBM Tivoli OMEGAMON XE for DB2 Performance Monitor on z/OS, V4 (5655-Q08). Both of these tools require APAR PK36297 for support of new functions that are available in DB2 V9.1 for z/OS. Details about other performance management products can be found on the Web sites that are listed below.

For a current list of products, visit the IBM DB2 and IMS Tools Web page at

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

For recent news about DB2 Tools compatibility with DB2 V9.1 for z/OS, visit the IBM DB2 and IMS Tools Support Web page at

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

- IBM Tivoli Decision Support for z/OS (5698-A07), V1.7.2 with APAR PK30134, or V1.7.1
- Database Administration and Systems Management Support is provided by the DB2 Management Clients Package, an optional feature of DB2 V9.1 for z/OS, which includes:
  - DB2 Administration Server (DAS) (z/OS installable component)
  - z/OS Enablement (z/OS installable component)
  - DB2 Connect Personal Edition Kit (workstation CD), which includes the following tools and a limited-use license for these tools to access DB2 V9.1 for z/OS:
    - Control Center
    - Replication Center
    - Development Center
    - Command Center
    - IBM Developer Workbench

The DB2 Connect limited-use license is also authorized for use with IBM DB2 for z/OS Optimization Service Center (workstation CD included in 5655-R14, IBM Accessories Suite for DB2 for z/OS).

### Requirements for dependent functions of DB2

DB2 V9.1 for z/OS includes the following functions, some of which have requirements of their own, above and beyond what the base DB2 for z/OS product requires. This section identifies the requirements for using these functions, but does not repeat the requirements for DB2 V9.1 for z/OS.

**Recommendation:** Before using these features, refer to the relevant installation information to ensure that you have all required and recommended products.

- The following program requirements apply to the use of new functions and capabilities that are available in DB2 V9.1 for z/OS utilities:
  - For the new system-level backup and recovery capabilities for the DB2 V9.1 for z/OS BACKUP SYSTEM, RESTORE SYSTEM, and RECOVER utilities:
    - z/OS V1.8
    - DFSMSHsm V1.8

- DFSMSdss V1.8
- FlashCopy® V2

If you cannot currently satisfy one or more of the preceding program requirements, you can use the V8 level of DB2 functions in the BACKUP SYSTEM and RESTORE SYSTEM utilities if you can satisfy the following program requirements:

- z/OS V1.7
- DFSMSShm V1.7
- DFSMSdss V1.7
- FlashCopy V2
- Use of new functions that are provided in DB2 V9.1 for z/OS (CHECK INDEX, CHECK DATA, and CHECK LOB utilities) requires DFSMSdss V1.7.

In addition, FlashCopy V2 is highly recommended (although not technically required) for performance reasons.

- The following uses of encryption and decryption functions require z/OS Cryptographic Services Integrated Cryptographic Service Facility (ICSF), which is a component of z/OS:
  - Built-in encryption and decryption functions
  - All network datastream encryption mechanisms, except when DB2 is the server, and is processing a connection using the encrypted USERID and password mechanism to authenticate the user
  - Encryption Facility for z/OS, V1.1 (5655-P97)
- The following program requirements and recommendations apply to use of group buffer pool (GBP) batching:
  - Coupling Facility (CF) level 12 is required for all group buffer pool batching.
  - Coupling Facility (CF) level 13 is recommended if you want to use the castout enhancement or the lock table cleanup enhancement.
  - Coupling Facility (CF) level 14 is recommended if you use system-managed duplexing for lock or SCA structures.
- Use of MERGE and SELECT from MERGE requires DB2 Connect V9.1. Additional restrictions may apply; refer to product documentation for details.
- Use of decimal-float conversion capability requires IBM SDK for z/OS, Java 2 Technology Edition, V1.4 (5655-156) (SDK1.4.2) at run time.
- Use of XML Extender requires:
  - z/OS V1.7 Language Environment.
  - IBM XML Parser for z/OS, C++ Edition, which is provided with V1.9 of XML Toolkit for z/OS (5655-J51). 5655-J51 requires z/OS V1.6 or later.
  - Use of either XMLFile type or the Getting Started material requires the z/OS UNIX System Services (5694-A01) element of z/OS.
- Use of XML support requires z/OS XML System Services (XML z/OS). z/OS XML requires either z/OS V1.8 or z/OS V1.7 with APAR OA16303. In addition, use of XML schemas requires IBM 31-bit SDK for z/OS, Java 2 Technology Edition, V5 (5655-N98) (SDK5).
- The following program requirements apply to use of trusted contexts:
  - If you use WebSphere Application Server for z/OS, V6.1 (5655-N01) is required.
  - RACF SAF User-mapping plug-in Enterprise Identity Mapping (EIM) requires z/OS V1.8.
  - For full RACF support of roles (not limited to ownership checks for roles only), RACF Access Control Module (DSNXRXAC) requires z/OS V1.8.
- IBM Managed System Infrastructure (msys) for Setup DB2 Customization Center is available as a plug-in for msys for Setup. Therefore, msys for Setup DB2 Customization Center requires msys for Setup, which is a base element of z/OS in V1.4, or earlier. If you plan to use msys for setup DB2 Customization Center on z/OS V1.5, or later, you must retain and install the msys for Setup components from z/OS V1.4.

For information about installing and using msys for Setup, refer to Managed System Infrastructure for Setup Installation (SC33-7997), which is available for z/OS V1.4, or earlier.

- DB2 QMF for TSO/CICS, DB2 QMF High Performance Option (HPO), DB2 QMF for Workstation, and DB2 QMF for WebSphere are programs in the DB2 QMF family of products and can be obtained through the optional chargeable features of QMF Classic Edition or QMF Enterprise Edition. DB2 QMF for TSO/CICS requires DB2 for z/OS V8 or V9.1, or DB2 for z/OS and OS/390 V7. Program requirements for the QMF for Workstation and QMF for WebSphere programs can be found in the QMF publication Installing and Managing DB2 QMF for Workstation and DB2 QMF for WebSphere (GC18-9691). The information in this publication is also available on the Web in the Information Management Software for z/OS Solutions Information Center at

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

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

The no-charge z/OS Application Connectivity to DB2 feature, a Type 4 JDBC driver, is licensed for installation and use solely on z/OS. You are authorized to use z/OS Application Connectivity to DB2 only to support connectivity of an application running on z/OS (V7, V8, or V9.1), with such application, in addition to being allowed to connect to DB2 for z/OS (V7, V8, or V9.1), also being authorized to connect to V8.2 or V9 of DB2 for Linux, UNIX, and Windows. No other connections from or to any other products or databases are permitted. For any other connectivity, you must obtain a separate license from IBM for the edition of DB2 Connect that is appropriate for your environment. :p**Limited-use license for DB2 Connect Personal Edition**

A limited-use copy of V9.1 of DB2 Connect Personal Edition is provided in the DB2 Management Clients Package feature of DB2 V9.1 for z/OS. You are authorized to use this copy of DB2 Connect to enable access only to DB2 for z/OS data by the following workstation tools:

- DB2 Control Center
- DB2 Replication Center
- DB2 Development Center
- DB2 Command Center
- IBM Developer Workbench
- DB2 for z/OS Optimization Service Center, which is part of the IBM Accessories Suite for DB2 for z/OS (5655-R14)

For all other remote connections to DB2 for z/OS that are provided through DB2 Connect, you must obtain a separate license for DB2 Connect from IBM.

### **QMF Enterprise Edition and accompanying program licenses**

A license to QMF Enterprise Edition comes with entitlement to licenses to DB2 QMF for Workstation and DB2 QMF for WebSphere. QMF Enterprise Edition comes with the following programs:

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

The QMF TSO/CICS and QMF HPO programs are installed and run on z/OS and are licensed to you under the terms of the IBM Customer Agreement and its Licensed Program Specification. The QMF for Workstation and QMF for WebSphere programs are licensed under the terms of the IBM International Program License Agreement that accompanies the CD-ROM media for these programs and is displayed for acceptance during installation.

**Compatibility:** DB2 V9.1 for z/OS is upwardly compatible with earlier releases of DB2 for z/OS and OS/390. Upgrade with full fallback protection is available for customers running on DB2 UDB for z/OS, V8. Thus, existing customers should ensure they are successfully running on DB2 UDB for z/OS, V8 before updating to DB2 V9.1 for z/OS.

**User requirements:** This announcement satisfies or partially satisfies more than 225 requirements that were submitted to IBM from customers, Business Partners or from one or



more of the worldwide user group communities. Groups include Australasian SHARE/GUIDE, COMMON, COMMON Europe, GUIDE International, G.U.I.D.E. Europe, Japan GUIDE/SHARE, Guide Latin American, SHARE EUROPE, and SHARE Incorporated. User requirements satisfied include:

MR1230052054 DSNICOPY CHECK should check the whole objects  
in one run

MR1230025727 DATACLAS

MR1227001811 REORG LOB tablespaces

MR122203381 SAP FR309: Timely Release of LOB Locks

MR1221051257 Report Recovery on DBD01, SYSUTILX, SYSCOPY

MR121802461 On line LOAD replace utility

MR1212011549 DB2 DDL and SMS support

MR1209036855 DB2 Latches held by a delayed task

MR120302549 CREATE INDEX DEFER YES

MR1130044651 Spatial Extenders for DB2 for z/OS

MR1125041646 Improve the operationality of Audit Trace function

MR112202257 MODIFY RECOVERY

MR1120046822 Compression Dictionary

MR1120034755 Possibility to terminate a RECOVER utility,  
when it is in log apply phase

MR1120034124 TEMPLATE enhancement

MR1118031821 ONLINE LOAD REPLACE for table and or group of  
tables

MR1117054211 Improve DB2 utility statement MODIFY RECOVERY

MR111501521 Speed up the archive processing

MR1113057351 Multi Row Insert for Assembler

MR1113024124 DB2 Package Level Tracing

MR1104034935 No progress indication during Stop or restart of a  
DB2 member

MR110204263 SAP FR358: RTS enhancements

MR1101045743 DB2 for z/OS DSNDB07, SORT-WORK availability for  
SQL QUERY even if occupied by big sort activity of  
one single query.

MR103003715 DB2 Utilities -- Direct datasets to tape if  
exceeding a size threshold

MR1029022123 Need the ability for DBADM authority to perform  
GRANTS on aliases and views created  
for others (as per new ZPARM DBADM = YES).

MR1024024831 Ability to direct DB2 image copy to tape or disk

MR1023052606 Online Schema Evolution: Change column default

MR1023051942 Online Schema Evolution: Rename column

MR1022035431 DBADM privilege to GRANT/ DROP views created for  
another user

MR1021056746 Performance Tracing -- Qualify Traces by Corrid  
and Package

MR101705167 DB2 Visual Explain for Z/OS v8 -- enhancement #1

MR1015032942 Intelligent automatic database recovery  
after GRECP status

MR1010034749 Allow Delete of Aliases Created for another  
Authid when zparm DBACRVW=YES

MR1008031945 DB2 -- Missing sorting support for national  
alphabet, wrong sort results for  
Czech/Slovak/Hungarian/Croatian languages

MR0930055441 SAP FR024: DB2 Lock Avoidance for Tablespace Scans

MR0925011158 Online LOAD utility

MR092404603 SAP FR099: Rename index

MR0924044028 SAP FR348: Autonomic buffer pool

MR0923052430 DB2 z/OS 8.1 DSNISDMP doesn't always hit on all  
SQLCODEs received

MR0920047225 Remove the Requirement for a C Compiler When  
Using SQL Language Stored Procedures

MR0918024614 DBACRVW parameter

MR0917011951 DB2 temp work space management offers no solution  
to prevent one or two users from monopolizing  
the available space resulting in numerous  
'resource 4k unavailable' abends.

MR0914065211 PKLIST to specify a list of collection IDs

MR0902035851 SPUFI isolation levels

MR090104136 Analysis of broken pages

MR083105644 Visual Explain/ OPTHINT

MR0827022116 DB2 SQL support of BIG INTEGER (8 byte) for  
compatibility with Java BIGINT SQL type

MR0816045047 Data Base, DB2, not enough field size  
 MR0816044012 Data Base, DB2  
 MR081401572 Add LOB file reference method to DB2 OS/390  
 MR0812021206 Parameter DBACRVW=YES should get grant possibilities  
 MR081105289 If ID has DBA Authority it should be able to drop any objects it created for another ID  
 MR081105289 If ID has DBA Authority it should be able to drop any objects it created for another ID  
 MR0811051344 OPTHI NTS warning needed if hint is specified but not used.  
 MR0811035145 DSNU310I message is ambiguous  
 MR0810053718 Initialising TOTALROWS/TOTALENTRIES on creation  
 MR0809057255 Thread Display After STO DB2  
 MR0809024840 DB2 for z/OS Data Set Open Command  
 MR0728067234 Show Index usage in RTS table  
 SYSI BM INDEXSPACESTATS  
 MR0726057237 DRDA server time in Universal JDBC Driver trace  
 MR0722045154 SSI: Full support for CLOBs (CrossLoader, utilities)  
 MR0722044602 SSI: Sort Order Requirements Item 1  
 MR0722042859 SSI: Allow special procedures indicated by the customer to disable logging.  
 MR0721063459 Declared Temp Tables Monitoring  
 MR0719055414 Display DDF Detail enhancement  
 MR0719045643 Provide indexable case-insensitive search capability.  
 MR0719040715 Enable index compression.  
 MR0718042551 Eliminate virtual memory constraint on DBATs  
 MR0718041914 Schema Evolution  
 MR0715035220 Automate GRECP and LPL recovery at DB2 restart  
 MR0712052936 SAP FR365: Simulating indexes in EXPLAIN  
 MR0711057033 DBM memory utilization  
 MR0706064126 Eliminate REORG BUILD2 phase for unique NPIs  
 MR0705062635 Removing sequence numbers in DSNHPC  
 MR070303705 Managing internal DB2 Tasks  
 MR0629006250 MODIFY RECOVERY utility cannot delete SYSLGRNX entries without SYSCOPY entry, so make that possible  
 MR062602362 DB2 for OS/390 REORG Utility Enhancement Request  
 MR0625036817 Requirement of new function on DB2 locking mechanism  
 MR062502675 DB2 allow delete of SYSLGRNX entries and DBD cleanup when no SYSCOPY entries exist  
 MR0625013758 BLND ERROR MESSAGES REFER to 'C' code not Stored Procedure Builder  
 MR0625013520 AUTHENTICATION between DB2 for OS/390 and DB2 UDB  
 MR0623062507 Online check Index space calculation  
 MR0621045047 allow check data utility to use non matching foreign key indexes  
 MR0616042254 Skip locked records  
 MR0615062835 Options in effect  
 MR0615056626 Mechanism to start gathering Real Time Statistics (RTS) for new tables  
 MR0615051715 SAP FR249: Functional indexes  
 MR0615051424 SAP FR282: Reduce data sharing overhead for global indexes  
 MR061504502 DB2 RUNSTATS Utility Should Incorporate Histogram Stats  
 MR0614047606 Enhance DSN\_STATEMNT\_TABLE by total costs  
 MR0612053753 PDAN0300-259 DB2 BUFFERPOOL adjustment using WLM controls  
 MR0612053340 PWAL1103-630 WLM management of DBM's buffer pools for DB2  
 MR0611023923 Possibility to implement DASDMAX and TAPEMN in the DB2 Utility  
 MR0609051553 Need the ability for DBADM authority to perform GRANTS on aliases and views created for others (as per new ZPARAM DBADM = YES).  
 MR060804670 SAP FR109: UPSERT Statement  
 MR0608022846 Column changes need to be dynamic  
 MR0607055542 SAP FR246: Alter Column's DEFAULT Value  
 MR0607023438 Unload from Incremental Copy with Compress Yes  
 MR060700357 Reduce restriction of X-Lock on DBD by MODIFY

Utility

MR0603025554 DBACRVW parameter

MR0601044342 DSNWZP output format consistent with DSNTIJUZ

MR0530065821 dynamic alter/rename for column, table owner,  
view owner...

MR0530026440 Multiple Unload/Reload Task for Reorg

MR0526052022 Possibility to cancel an STOP DB Command

MR0525054935 DB2 MODIFY

MR0518052410 DB2 Image Copy Datasets with 256KB blocks

MR0518046544 SAP FR260: 'Small' LOB Performance

MR0518045946 SAP FR096: IEEE Floating Point Support

MR0518045413 SAP FR273: Reduce Host Variables Impact on Access  
Path Selection

MR051804494 SAP FR279: Skip uncommitted qualifying rows that  
are being inserted or deleted

MR0518044852 SAP FR253: FOR BIT DATA Collating Sequence

MR0518044358 SAP FR245: Other Partitioning Schemes

MR0518043722 SAP FR277: Non-Partitioned Tablespace Limit

MR0518043320 SAP FR335: BIGINT

MR051804325 SAP FR219: Full Support for Automated Volume  
Backups in DB2

MR0518042939 SAP FR334: Implicit objects creation for DDL

MR0518042632 SAP FR274: Full 64-bit virtual addressing support

MR0517045338 Skipped Locked Rows

MR0517045139 DB2 LOAD utility-Loading into shadow table

MR0517014857 Shrlevel change for LOAD REPLACE

MR0514046245 Allow EXCLUDE qualification in DSNWQAL for READS

MR0512041756 Structured SQL output

MR0511045556 Alter Audit Report Change

MR0507041657 Amend DB2 trace to allow greater trace  
granularity and allow exclusion of some  
trace record

MR0506041729 DBADM can create view/alias for other id but  
has not DROP/Alter privilege

MR0505003240 CHECK DATA utility performance

MR050404675 Possibility to implement DASDMAX and TAPEM N  
in the DB2 Utility

MR0429033022 Parameter DBACRVW=YES should get grant  
possibilities

MR0427061847 DB2 z/OS SQL Stored Procedure and DB2 Catalog  
Enhancement

MR0425051613 Automatic DB2 START DATABASE Issued for LPL/GRECP  
Objects Found in Startup

MR0425033337 DB2 LOB Tablespace Maintenance

MR0421003838 DB2 Mimize impact of create index defer

MR0414036035 MODIFY utility: new parameter to specify 'minimum  
number of Image copy kept'

MR0414033650 DB2CRVW=YES should allow delete and grant

MR0414004535 Enable SQL after deferred index creation

MR0414004314 Loading and unloading DB2 for OS/390 data

MR0414003158 Display DDF in status ''suspend''

MR0413045330 Run Unload, Reload, and Log phases in parallel  
for REORG

MR0413044047 Eliminate BUILD2 phase in Online REORG

MR0411003452 BIGINT support on DB2/MVS

MR0407045226 SAP FR325: Index compression

MR040502454 Check IX

MR0405014558 Mdfify

MR0405012936 COPY

MR0404052738 Remove Restriction on REORG When Compressed

MR0404016516 Utility support for LOAD and UNLOAD of LOBs  
greater than 32K

MR040105536 Excessive storage requirements for DB2  
DataSharing environment lock structures  
during group restart

MR0330057319 The limit of 100 user indexes on the catalog  
needs to be readdressed

MR0330015327 Point of Consistency recovery to 'any' point  
in time.

MR0329055316 Possibility to create RI (Referential Integrity)  
between Tables with different CCSIDs

MR0328062238 Remove need for DB2 Image Copy to clean up  
SYSLGRNG

MR0326034317 SQL Procedure create/drop security

MR032504342 Support of parallel DDL/DML statements on the same database/tablespace

MR0325042821 Automatic GRECP recovery after DB2 Group Restart

MR0325022845 Request for improvement of DB2 Locking mechanism

MR0324043945 More granularity for the Recovery Postponed on DB2 Restart

MR0324041537 JDBC Type 4 driver and password change

MR032305117 Request for Collate by language function in DB2 for Z/OS

MR0322054943 Command to display active stored procedures

MR0322024656 File reference variables in SQL for DB2 for z/OS

MR0322021925 REORG LOB to reclaim space

MR0321053331 Output of command -display thread\* is limited

MR031605659 DB2 Online Load utility with Replace functionality

MR0315045118 SAP FR295: Ensure optimal performance for all star scheme queries with one set of static indexes

MR0315043727 SAP FR317: Reducing log latch contentions

MR0311052534 SYSADM authority needs individual accountability and must be able to be revoked without a cascading effect

MR0308016524 Permanent Tables that do no logging

MR030603916 STOP command issue-zseries DB2

MR0306036336 Bind SPUFI with ISO (UR)

MR0304052121 Improved performance of DB2 Utilities

MR0304021622 DB2 Utility support for Large Block Interface (LBI)

MR0301044612 Utility support for LOAD and UNLOAD of LOBs greater than 32K

MR022403199 Utilities Panel does not provide for a LIB statement

MR022105438 Improve IBM DB2 Utility CPU consumption.

MR0221037236 RLF

MR0221033737 Add a function in MODIFY RECOVERY in order to allow specification of copies to delete to be more granular than DATE and AGE.

MR0218055759 TIMESTAMPADD and TIMESTAMDIFF functions

MR0218027050 Customer needs to run REORG LOB TABLESPACE with LOG NO

MR021705568 DASD dataset allocations for nonpartitioning index on a table space can be greater than 2GB

MR0215066642 Change the optimizer to perform subquery to join transformation within INSERTs

MR0215056540 High Availability Load Resume No Replace for DB2 z/OS

MR0211054036 SAP FR363: SQL statement to change the schema name of database objects

MR0203052944 DB2 Group Attach Load Balancing

MR0202065916 Change to DB2 IVP jobs

MR0202064050 MERGE function

MR0201015413 Encrypted passwords with DB2

MR0127063245 DBADM cannot grant access to views owner by other ID

MR0127033159 DBADM privilege to GRANT/ DROP views created for another user

MR012406429 Show all packages used by a thread instead of just the active package in IFCID 148 via READS

MR012105536 Requirement for DataClass and StorageClass definitions DB2

MR0121032140 REORG TABLESPACE —unload/reload in parallel

MR0120063432 The support for the Java type long (or Long) with a DB2 SQL Datatype.

MR0119044331 Need Ability to Pass SMS Classes on CREATE/ ALTER STOGROUP Statement

MR0113044345 Load Discard Messages

MR0111066819 Default value on UPDATE

MR0111066753 DSNL303I 00D31034

MR0110033725 DBADM privilege to GRANT/ DROP views created for another user

MR0110032143 Possibility to implement DASDMAX and TAPEMN in the DB2 Utility

MR0107055615 SAP FR033: Set Operation

MR0107052952 Declared Temp Tables Monitoring

MR010603172 Improve Performance of case Insensitive Search

MR0102062141 Alter Stogroup with new keyword VCAT

MR0102011842	INTERSECT operator
MR00076526	REORG of a LOB TS should explain what it has done
MR00076088	Utility support for LOAD and UNLOAD of LOBs greater than 32K
MR00075680	User LIMIT to amount of SORTWORK space to be USED by applications
MR00075679	Limit Sort Work Usage
MR00074535	RETAI N(R) ACCESS OF ORIGINAL DATA DURING LOAD REPLACE:
MR00074416_1	Improvement of DB2 subquery performance
MR00073924	Add CREATE VIEW(on user tables) privilege to SYSCTRL
MR00072990	Batchjob without Logging
MR00072945	New MODIFY Parm To Keep a Specific Number of Image Copies
MR00072150	A New option for Log Output/Non-Output Specification for DB2
MR00072107	Indexable predicates
MR00071858_1	DB2 Spufi Isolation level UR
MR00071858	DB2 Spufi Isolation level UR
MR00068654	CHANGE COLUMN NAMES in DB2 TABLES
MR00068141	DBADM must have all privileges with GRANT of view
MR00064613_2	DB2 STOGROUP use of SMS storage classes
MR00064613_1	DB2 STOGROUP use of SMS storage classes
MR00062090	Updating without Logging
MR00052320	Keep SYSLGRNG directory table clean
MR00048892	Implementation of better space structure for partitioned TS
MR00042792	NOLOG Option for DB2 Maintenance
MR00042666	Provide a Mechanism to Disable Logging for Subsystem Objects
MR00039195	Allow logging to be switched on and off as needed on an installation
MR00039156	DB2 -- Enhance DBADM authority.
MR00025435	Capability to change a column name

## Planning information

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**Customer responsibilities:** Review the sections in this announcement that describe the hardware and software dependencies for DB2 V9.1 for z/OS. Note that DB2 9 supports migration only from V8. Customers not yet running V8 should plan to upgrade to DB2 V8 for z/OS as preparation for an upgrade to DB2 9.

### Migration considerations

IBM added many data server capabilities in DB2 V9.1 for z/OS and reduced or removed support for some functions. As you prepare to upgrade your subsystems to DB2 9, you should be aware of the following changes:

- AIV Extender removed.
- Text Extender removed.
- Net Search Extender removed. **Note:** DB2 9 incorporates substantial text function into the base product. Use the new functions and indexing for text applications.
- Net.Data@ removed. WebSphere is the strategic IBM solution for delivering DB2 data to Web applications.
- DB2 QMF Visionary Studio program removed from DB2 QMF Enterprise Edition.
- DB2 Estimator, available via Web download for DB2 V8, will not be provided for DB2 V9 for z/OS.
- Visual Explain for DB2 for z/OS, available via Web download for DB2 V8, will not be provided for DB2 9. Instead, IBM Optimization Service Center for DB2 for z/OS, part of the no-charge IBM DB2 Accessories Suite for z/OS (5655-R14), extends Visual Explain's capability and adds more SQL tuning functions.
- DB2-managed stored procedure support removed. 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 V9.1 for z/OS.

- Simple table space creation support removed. DB2 V9.1 for z/OS no longer implicitly creates simple table spaces nor allows you to create simple table spaces. However, DB2 V9.1 for z/OS continues to support simple table spaces created in previous versions.
- Online help facility replaced. The previous 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.
- JDBC/SQLJ Driver for OS/390 and z/OS support removed. All Java application programs, and Java routines that are currently written to work with JDBC/SQLJ Driver for OS/390 and z/OS, need to be modified to work with 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 IBM DB2 Driver for JDBC and SQLJ can be found in the Application Programming Guide and Reference for Java. In addition, all WLM-managed stored procedures address spaces that are set up to execute Java routines must be modified to reference IBM DB2 Driver for JDBC and SQLJ.
- DB2 Precompiler Flagger support was removed in DB2 for z/OS V8, and SQLFLAG is no longer a valid precompiler option.
- Plans and packages should be rebound on current releases to benefit from optimizer enhancements and DB2 9 virtual storage constraint improvements on SQL statement storage. For DB2 9, plans and packages from DB2 V4, or earlier will be automatically rebound when accessed by DB2 9.
- As noted in the Hardware requirements section, DB2 9 for z/OS requires long displacement support in the hardware. Due to greater use of long displacement instructions by DB2 9 than DB2 V8, column-intensive applications may experience shorter CPU time. However, these applications may take longer on systems that emulate long displacement (for example, z800 or z900). For further information on the long displacement facility, refer to z/Architecture Principles of Operations, SA22-7832-04 available at  
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r8pdf/zarchpops.html>
- To allow you, in a potential future release of DB2, to specify a module name other than DSNHDECP to be used by a DB2 instance, in a manner similar to that used for other DB2 parameters, DB2 9 lays the ground work with these changes:
  - RRS attach provides information on which DB2 subsystems are available on an LPAR and provides the address of the DSNHDECP load module (DSNHDECP is loaded in common storage (ECSA)) being used by a DB2 subsystem.
  - IFCID 160 has been enhanced to provide the fully qualified DSNHDECP load module dataset name used by a DB2 subsystem.
  - The precompiler provides the fully qualified dataset name for the DSNHDECP load module used in a precompilation.
  - GETVARIABLE has been enhanced to provide all of the information that the DECP provides.
  - The fully qualified dataset name for the DB2 subsystem parameter module, DSNHDECP load module, and exits DSN3@ATH, DSN3@SGN, and DSNX@XAC, are displayed as a message on START DB2.

For more detailed information on upgrading to DB2 9, refer to the DB2 V9.1 for z/OS Installation Guide (GC18-9846).

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 9. These functions may be dropped in the future; you should not create any new dependencies that rely on them, and if you have existing dependencies on them, you should develop plans to remove those dependencies.

- XML Extender.
- DB2 MQ XML user-defined functions and stored procedures.
- msys for Setup DB2 Customization Center.
- DB2 Management Clients feature, which includes DB2 Administration Server, DB2 Control

Center, and DB2 Development Center.

- DDF Private Protocol.
- BookManager format for DB2 for z/OS publications. Books new to the library with DB2 V9 will not be offered in BookManager format, and the BookManager format may be dropped for all publications in the future.

**Direct customer support:**

Eligible customers can obtain installation and usage assistance from the Industry Support Center through a telephone response line.

**Packaging:** The DB2 UDB for z/OS features are available on 3480 cartridges.

Also included with each base or optional feature is a Program Directory, and under separate cover, one copy of the entitled publications, and other media, such as CD-ROM, as applicable.

**DB2 for z/OS**

Title	Order number
DB2 9 for z/OS Program Directory	GI 10-8737
DB2 Installation Guide	GC18-9846
DB2 Licensed Library CD-ROM	LK3T-7195
DB2 Licensed Programming Specifications	GC18-9848

**QMF Classic Edition**

Title	Order number
QMF Classic Edition Program Directory	GI 10-8740

**QMF Enterprise Edition**

Title	Order number
QMF Enterprise Edition Program Directory	GI 10-8742
QMF for Workstation and WebSphere, V9R1, CD Kit	LK3T-7338

**DB2 Management Clients**

The workstation client functions of DB2 Management Clients Package are shipped on CD-ROM.

Title	Order number
DB2 Management Clients Pkg Program Directory	GI 10-8738
DB2 Connect Personal Edition Pre-packaged Kit	LK3T-7139

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

Title	Order number
z/OS Application Connectivity to DB2 for z/OS Program Directory	GI 10-8739

**Security, auditability, and control**

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DB2 9 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.

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## Ordering information

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### 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 V9.1 for z/OS should specify: Type: 5635, Model: DB2.

**Basic license:** To order a basic license, specify the program number and feature number 9001 for asset registration.

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.

To order a basic license, specify the program number. 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.

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 feature numbers and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the PSLC No-Charge (NC) Identifier feature on the licenses.

Also, specify the feature number of the desired distribution medium.

Machines MSU capacity	PSLC feature number	PSLC basic license MLC feature description
DB2 V9.1 for z/OS		
1	A0AA	PSLC Base, 1 MSU
2	A0AB	PSLC Base, 2 MSUs
3	A0AC	PSLC Base, 3 MSUs
4 -- 45	A0AD A0AE	PSLC Level A, 1 MSU PSLC Level A, 42 MSUs
46 -- 175	A0AF A0AG A0AH	PSLC Level B, 1 MSU PSLC Level B, 10 MSUs PSLC Level B, 50 MSUs
176 -- 315	A0AJ A0AK A0AL	PSLC Level C, 1 MSU PSLC Level C, 10 MSUs PSLC Level C, 50 MSUs
316 or more	A0AM A0AN	PSLC Level D, 1 MSU PSLC Level D, 50 MSUs
Not applicable	A0AP	PSLC NC ID

QMF Enterprise Edition

1	A0VW	PSLC Base, 1 MSU
2	A0WA	PSLC Base, 2 MSUs
3	A0WB	PSLC Base, 3 MSUs
4 -- 45	A0WC A0WD	PSLC Level A, 1 MSU PSLC Level A, 42 MSUs
46 -- 175	A0WE A0WF A0WG	PSLC Level B, 1 MSU PSLC Level B, 10 MSUs PSLC Level B, 50 MSUs
176 -- 315	A0WH A0WJ A0WK	PSLC Level C, 1 MSU PSLC Level C, 10 MSUs PSLC Level C, 50 MSUs
316 or more	A0WL A0WM	PSLC Level D, 1 MSU PSLC Level D, 50 MSUs
Not applicable	A0WN	PSLC N/C ID

QMF Classic Edition

1	A0NR	PSLC Base, 1 MSU
2	A0NT	PSLC Base, 2 MSUs
3	A0NU	PSLC Base, 3 MSUs
4 -- 45	A0NV A0NW	PSLC Level A, 1 MSU PSLC Level A, 42 MSUs
46 -- 175	A0PA A0PB A0PC	PSLC Level B, 1 MSU PSLC Level B, 10 MSUs PSLC Level B, 50 MSUs
176 -- 315	A0PD A0PE A0PF	PSLC Level C, 1 MSU PSLC Level C, 10 MSUs PSLC Level C, 50 MSUs
316 or more	A0PG A0PH	PSLC Level D, 1 MSU PSLC Level D, 50 MSUs
Not applicable	A0PJ	PSLC N/C ID

z/OS Application Connectivity to DB2 for z/OS

Not applicable	A1FD	PSLC N/C ID
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CHINA ONLY -----Begin

**Parallel Sysplex One-Time Charge (PSOTC) Basic License**

Machines MSU capacity	PSOTC feature number	PSLC basic license PSOTC feature description
DB2 V9.1 for z/OS		
1	A0DM	PSOTC Base, 1 MSUs
2	A0DN	PSOTC Base, 2 MSUs
3	A0DP	PSOTC Base, 3 MSUs
4 -- 45	A0DQ A0DR	PSOTC Level A, 1 MSUs PSOTC Level A, 42 MSUs
46 -- 175	A0DT A0DU A0DV	PSOTC Level B, 1 MSUs PSOTC Level B, 10 MSUs PSOTC Level B, 50 MSUs
176 -- 315	A0DW A0EA A0EB	PSOTC Level C, 1 MSUs PSOTC Level C, 10 MSUs PSOTC Level C, 50 MSUs

316 or more	A0EC A0ED	PSOTC Level D, 1 MSUs PSOTC Level D, 50 MSUs
Not applicable	A0EE	PSOTC N/C ID
QMF Enterprise Edition		
1	AICB	PSOTC Base, 1 MSUs
2	AICC	PSOTC Base, 2 MSUs
3	AICD	PSOTC Base, 3 MSUs
4 -- 45	AICE AICF	PSOTC Level A, 1 MSUs PSOTC Level A, 42 MSUs
46 -- 175	AICG AICH AICJ	PSOTC Level B, 1 MSUs PSOTC Level B, 10 MSUs PSOTC Level B, 50 MSUs
176 -- 315	AICK AICL AICM	PSOTC Level C, 1 MSUs PSOTC Level C, 10 MSUs PSOTC Level C, 50 MSUs
316 or more	AICN AICP	PSOTC Level D, 1 MSUs PSOTC Level D, 50 MSUs
Not applicable	AICQ	PSOTC N/C ID
QMF Classic Edition		
1	A0RU	PSOTC Base, 1 MSUs
2	A0RV	PSOTC Base, 2 MSUs
3	A0RW	PSOTC Base, 3 MSUs
4 -- 45	A0TA A0TB	PSOTC Level A, 1 MSUs PSOTC Level A, 42 MSUs
46 -- 175	A0TC A0TD A0TE	PSOTC Level B, 1 MSUs PSOTC Level B, 10 MSUs PSOTC Level B, 50 MSUs
176 -- 315	A0TF A0TG A0TH	PSOTC Level C, 1 MSUs PSOTC Level C, 10 MSUs PSOTC Level C, 50 MSUs
316 or more	A0TJ A0TK	PSOTC Level D, 1 MSUs PSOTC Level D, 50 MSUs
Not applicable	A0TL	PSOTC N/C ID

CHINA ONLY -----End

CHINA ONLY -----Begin

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

Machines	PSOTC feature number	PSLC basic license PSOTC feature description
MSU capacity		
Not applicable	AIFD	PSLC N/C ID
CHINA ONLY -----End		
For JAPAN only		
Entitlement identifier	Description	License option/ pricing metric
		Basic MLC, PSLC below 3 MSU Basic MLC, PSLC AD SYSUSGREG NC, PSLC AD
S011XS0	DB2 for z/OS	
S012J7R	QMF Classic Edition	

S012J7P QMF Enterprise Edition  
 S012J7T z/OS Application  
 Connectivity to DB2  
 for z/OS

**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.

**Workload License Charge (WLC) Basic License:** To order a basic license, specify the program number and the quantity of MSUs.

WLC Feature description	WLC Feature number
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DB2 V9.1 for z/OS

Level 0 incl 3 MSU, Workload Per User Base	A0BD
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	A0BE
Level 1 46-175 MSU, Per Usage Addl Qty Workload	A0BF
Level 2 176-315 MSU, Per Usage Addl Qty Workload	A0BG
Level 3 316-575 MSU, Per Usage Addl Qty Workload	A0BH
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	A0BJ
Level 4 576-875 MSU, Per Usage Addl Qty Workload	A0BK
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	A0BL
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	A0BM
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	A0BN
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	A0BP
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	A0BQ
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	A0BR
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	A0BT

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	A0BU
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	A0BV
Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	A0BW
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	A0CA
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	A0CB
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regist	A0CC
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	A0CD
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regist	A0CE
Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regist	A0CF
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regis	A0CG
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regis	A0CH
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Regi	A0CJ
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Reg	A0CK
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload Re	A0CL

QMF Enterprise Edition

Level 0 incl 3 MSU, Workload Per User Base	A0WP
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	A0WQ
Level 1 46-175 MSU, Per Usage Addl Qty Workload	A0WR
Level 2 176-315 MSU, Per Usage Addl Qty Workload	A0WT
Level 3 316-575 MSU, Per Usage Addl Qty Workload	A0WU
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	A0WW
Level 4 576-875 MSU, Per Usage Addl Qty Workload	A0WV
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	A1AA
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	A1AB
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	A1AC
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	A1AD
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	A1AE
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	A1AF
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	A1AG

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	A1AH
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	A1AJ

Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	AI AK
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	AI AL
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	AI AM
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regist	AI AN
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	AI AP
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regist	AI AQ
Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regist	AI AR
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regis	AI AT
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regis	AI AU
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Regi	AI AV
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Reg	AI AW
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload Re	AI BA

QMF Classic Edition

Level 0 incl 3 MSU, Workload Per User Base	A0PK
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	A0PL
Level 1 46-175 MSU, Per Usage Addl Qty Workload	A0PM
Level 2 176-315 MSU, Per Usage Addl Qty Workload	A0PN
Level 3 316-575 MSU, Per Usage Addl Qty Workload	A0PQ
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	A0PR
Level 4 576-875 MSU, Per Usage Addl Qty Workload	A0PT
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	A0PU
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	A0PV
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	A0PW
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	A0QA
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	A0QB
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	A0PP
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	A0QC

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	A0QD
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	A0QE
Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	A0QF
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	A0QG
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	A0QH
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regist	A0QJ
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	A0QK
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regist	A0QL
Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regist	A0QM
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regis	A0QN
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regis	A0QP
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Regi	A0QQ
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Reg	A0QR
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload Re	A0QT

CHINA ONLY ---Begin

VWLC	VWLC
Feature description	Feature number

DB2 V9.1 for z/OS

Level 0 incl 3 MSU, Workload Per User Base	A0EF
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	A0EG
Level 1 46-175 MSU, Per Usage Addl Qty Workload	A0EH
Level 2 176-315 MSU, Per Usage Addl Qty Workload	A0EJ
Level 3 316-575 MSU, Per Usage Addl Qty Workload	A0EK
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	A0EL
Level 4 576-875 MSU, Per Usage Addl Qty Workload	A0EM
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	A0EN
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	A0EP
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	A0EQ
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	A0ER
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	A0ET
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	A0EU
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	A0EV

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	A0EW
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	A0FA

Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	A0FB
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	A0FC
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	A0FD
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regis	A0FE
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	A0FF
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regis	A0FG
Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regis	A0FH
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regi	A0FJ
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regi	A0FK
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Reg	A0FL
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Re	A0FM
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload R	A0FN

QMF Enterprise Edition

Level 0 incl 3 MSU, Workload Per User Base	AICR
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	AICT
Level 1 46-175 MSU, Per Usage Addl Qty Workload	AICU
Level 2 176-315 MSU, Per Usage Addl Qty Workload	AICV
Level 3 316-575 MSU, Per Usage Addl Qty Workload	AICW
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	AIDA
Level 4 576-875 MSU, Per Usage Addl Qty Workload	AIDB
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	AIDC
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	AIDD
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	AIDE
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	AIDF
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	AIDG
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	AIDH
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	AIDJ

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	AIDK
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	AIDL
Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	AIDN
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	AIDM
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	AIDP
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regis	AIDQ
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	AIDR
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regis	AIDT
Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regis	AIDU
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regi	AIDV
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regi	AIDW
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Reg	AIEA
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Re	AIEB
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload R	AIEC

QMF Classic Edition

Level 0 incl 3 MSU, Workload Per User Base	A0TM
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload	A0TN
Level 1 46-175 MSU, Per Usage Addl Qty Workload	A0TP
Level 2 176-315 MSU, Per Usage Addl Qty Workload	A0TQ
Level 3 316-575 MSU, Per Usage Addl Qty Workload	A0TR
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload	A0TT
Level 4 576-875 MSU, Per Usage Addl Qty Workload	A0TU
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload	A0TV
Level 5 876-1315 MSU, Per Usage Addl Qty Workload	A0TW
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload	A0UA
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload	A0UB
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload	A0UC
Level 7 1976 MSU and up, Per Usage Addl Qty Workload	A0UD
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload	A0UE

License option -- Workload registration no charge

Level 0 incl 1 MSU, Workload Registration Per User Base	A0UF
Level 0 Up to 45 MSU, Per Usage Addl Qty Workload Regist	A0UG
Level 1 46-175 MSU, Per Usage Addl Qty Workload Regist	A0UH
Level 2 176-315 MSU, Per Usage Addl Qty Workload Regist	A0UJ
Level 3 316-575 MSU, Per Usage Addl Qty Workload Regist	A0UK
Level 3 316-575 MSU, Per 50 MSU Addl Qty Workload Regis	A0UL
Level 4 576-875 MSU, Per Usage Addl Qty Workload Regist	A0UM
Level 4 576-875 MSU, Per 50 MSU Addl Qty Workload Regis	A0UN

Level 5 876-1315 MSU, Per Usage Addl Qty Workload Regis	A0UP
Level 5 876-1315 MSU, Per 50 MSU Addl Qty Workload Regi	A0UQ
Level 6 1316-1975 MSU, Per Usage Addl Qty Workload Regi	A0UR
Level 6 1316-1975 MSU, Per 50 MSU Addl Qty Workload Reg	A0UT
Level 7 1976 MSU and up, Per Usage Addl Qty Workload Re	A0UU
Level 7 1976 MSU and up, Per 50 MSU Addl Qty Workload R	A0UV

CHINA ONLY ---End

For JAPAN only

Entitlement identifier	Description	License option/ pricing metric
		Basic MLC, Variable WLC Workload Registration, Variable WLC
S011XS0	DB2 for z/OS	
S012J7R	QMF Classic Edition	
S012J7P	QMF Enterprise Edition	
S012J7T	z/OS Application Connectivity to DB2 for z/OS	

**Entry Workload License Charge (EWLC) basic license:** To order a basic license, specify the program number and the quantity of MSUs.

To order EWLC software, specify the program number and the EWLC monthly charge feature number from the following table. Also, specify the feature number for the desired distribution medium.

EWLC Feature description	EWLC Feature number
DB2 V9.1 for z/OS	
Level 1 incl 3 MSU, Basic Per User Base EWLC	A0DC
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A0DD
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A0DE
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A0DF
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A0DG
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A0DH
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A0DJ
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A0DK
Level 7 261 and up MSU, Per 50 MSU Usage Addit Qty EWLC	A0DL

QMF Classic Edition

Level 1 incl 3 MSU, Basic Per User Base EWLC	A0RJ
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A0RK
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A0RL
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A0RM
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A0RN
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A0RP
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A0RQ
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A0RR
Level 7 261 and up MSU, Per 50 MSU Usage Addit Qty EWLC	A0RT

QMF Enterprise Edition

Level 1 incl 3 MSU, Basic Per User Base EWLC	A1BN
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A1BP
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A1BQ
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A1BR
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A1BT
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A1BU
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A1BV
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A1BW
Level 7 261 and up MSU, Per 50 MSU Usage Addit Qty EWLC	A1CA

CHINA ONLY ----- Begin

EWLC	EWLC
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Feature description	Feature number
DB2 V9.1 for z/OS	
Level 1 incl 3 MSU, Basic Per User Base EWLC	A0GE
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A0GF
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A0GG
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A0GH
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A0GJ
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A0GK
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A0GL
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A0GM
Level 7 261 and up MSU, Per 50 MSU Usage Additional Qty	A0GN

QMF Classic Edition

Level 1 incl 3 MSU, Basic Per User Base EWLC	A0VL
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A0VM
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A0VN
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A0VP
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A0VQ
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A0VR
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A0VT
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A0VU
Level 7 261 and up MSU, Per 50 MSU Usage Additional Qty	A0VV

QMF Enterprise Edition

Level 1 incl 3 MSU, Basic Per User Base EWLC	A1EQ
Level 1 4-17 MSU, Per Usage Additional Qty EWLC	A1ER
Level 2 18-30 MSU, Per Usage Additional Qty EWLC	A1ET
Level 3 31-45 MSU, Per Usage Additional Qty EWLC	A1EU
Level 4 46-87 MSU, Per Usage Additional Qty EWLC	A1EV
Level 5 88-175 MSU, Per Usage Additional Qty EWLC	A1EW
Level 6 176-260 MSU, Per Usage Additional Qty EWLC	A1FA
Level 7 261 and up MSU, Per Usage Additional Qty EWLC	A1FB
Level 7 261 and up MSU, Per 50 MSU Usage Addit Qty EWLC	A1FC

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Entitlement identifier	Description	License option/ pricing metric
Basic MLC, Entry WLC		
S011XS0	DB2 for z/OS	
S012J7R	QMF Classic Edition	
S012J7P	QMF Enterprise Edition	
S012J7T	z/OS Application Connectivity to DB2 for z/OS	

**S/390® and zSeries Usage License Charge basic license:** Specify the applicable S/390 and zSeries 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's pricing will be determined by selecting either:

Usage license charge — Up to 0.5 MSU

Basic license monthly license charge

Feature description	Feature number
DB2 V9.1 for z/OS	
Band 1, Up to 0.25 MSU	A0AQ
Band 2, Up to 0.50 MSU	A0AR

## Usage license charge

### Basic license monthly license charge

Feature description	Feature number
DB2 V9.1 for z/OS	
Base, incl 1 MSU	A0AT
1 -- 11 MSU	A0AU
12 -- 44 MSU	A0AV
45 -- 78 MSU	A0AW
79 and up MSU	A0BA
79 and up MSU, Per 50 additional quantity	A0BB

### System usage registration no charge

Feature description	Feature number
System usage registration no charge	A0BC

### For JAPAN only

Entitlement identifier	Description
S011XS0	DB2 for z/OS
S012J7R	QMF Classic Edition
S012J7P	QMF Enterprise Edition
S012J7T	z/OS Application Connectivity to DB2 for z/OS

### Examples for ordering:

- A customer with a measured usage (from the IBM Measured Usage report) of 0.3 MSU would order quantity 1 of the 0.26 to 0.5 MSU base feature.
- A customer with 6.6 MSUs (from the IBM Usage report) would:
  - Be rounded up to 7.0 MSUs
  - Order quantity 1 of the "0.51 to 1.0 MSU" base feature
  - Order quantity 6 of the Level A 1 MSU feature
- A customer with 15 MSUs (from the IBM Usage report) would:
  - Order quantity 1 of the "0.51 to 1.0 MSU" base feature
  - Order quantity 10 of the Level A 1 MSU feature
  - Order quantity 4 of the Level B 1 MSU feature
- A customer with 50 MSUs (from the IBM Usage report) would:
  - Order quantity 1 of the "0.51 to 1.0 MSU" base feature
  - Order quantity 10 of the Level A 1 MSU feature
  - Order quantity 33 of the Level B 1 MSU feature
  - Order quantity 6 of the Level C 1 MSU feature
- A customer with 85 MSUs (from the IBM Usage report) would:
  - Order quantity 1 of the "0.51 to 1.0 MSU" base feature
  - Order quantity 10 of the Level A 1 MSU feature
  - Order quantity 33 of the Level B 1 MSU feature
  - Order quantity 34 of the Level C 1 MSU feature
  - Order quantity 7 of the Level D 1 MSU feature

**zSeries Entry License Charge (zELC):** To order zELC software, specify the program number and z800 model.

Specify the zELC monthly charge feature number. Also, specify the feature number for the desired distribution medium.

z800 models	zELC feature number
DB2 V9.1 for z/OS	
A01 -- 1 engine Mdel A01 Basic	A3AV
110 -- 1 engine Mdel 110 Basic	A0CM
0E1 -- 1 engine Mdel 0E1 Basic	A0CN
0A1 -- 1 engine Mdel 0A1 Basic	A0CP
0B1 -- 1 engine Mdel 0B1 Basic	A0CQ
0C1 -- 1 engine Mdel 0C1 Basic	A0CR
0X2 -- 1 engine Mdel 0X2 Basic	A0CT
001 -- 1 engine Mdel 001 Basic	A0CU
0A2 -- 2 engines Mdel 0A2 Basic	A0CV
002 -- 2 engines Mdel 002 Basic	A0CW
003 -- 3 engines Mdel 003 Basic	A0DA
004 -- 4 engines Mdel 004 Basic	A0DB

QMF Enterprise Edition

A01 -- 1 engine Mdel A01 Basic	A3AW
110 -- 1 engine Mdel 110 Basic	A1BB
0E1 -- 1 engine Mdel 0E1 Basic	A1BC
0A1 -- 1 engine Mdel 0A1 Basic	A1BD
0B1 -- 1 engine Mdel 0B1 Basic	A1BE
0C1 -- 1 engine Mdel 0C1 Basic	A1BF
0X2 -- 1 engine Mdel 0X2 Basic	A1BG
001 -- 1 engine Mdel 001 Basic	A1BH
0A2 -- 2 engines Mdel 0A2 Basic	A1BJ
002 -- 2 engines Mdel 002 Basic	A1BK
003 -- 3 engines Mdel 003 Basic	A1BL
004 -- 4 engines Mdel 004 Basic	A1BM

QMF Classic Edition

A01 -- 1 engine Mdel A01 Basic	A3BA
110 -- 1 engine Mdel 110 Basic	A0QU
0E1 -- 1 engine Mdel 0E1 Basic	A0QV
0A1 -- 1 engine Mdel 0A1 Basic	A0QW
0B1 -- 1 engine Mdel 0B1 Basic	A0RA
0C1 -- 1 engine Mdel 0C1 Basic	A0RB
0X2 -- 1 engine Mdel 0X2 Basic	A0RC
001 -- 1 engine Mdel 001 Basic	A0RD
0A2 -- 2 engines Mdel 0A2 Basic	A0RE
002 -- 2 engines Mdel 002 Basic	A0RF
003 -- 3 engines Mdel 003 Basic	A0RG
004 -- 4 engines Mdel 004 Basic	A0RH

CHINA ONLY ----- Begin

z800 models	zELC feature number
DB2 V9.1 for z/OS	
A01 -- 1 engine Mdel A01 Basic	A3BB
110 -- 1 engine Mdel 110 Basic	A0FP
0E1 -- 1 engine Mdel 0E1 Basic	A0FQ
0A1 -- 1 engine Mdel 0A1 Basic	A0FR
0B1 -- 1 engine Mdel 0B1 Basic	A0FT
0C1 -- 1 engine Mdel 0C1 Basic	A0FU
0X2 -- 1 engine Mdel 0X2 Basic	A0FV
001 -- 1 engine Mdel 001 Basic	A0FW
0A2 -- 2 engines Mdel 0A2 Basic	A0GA
002 -- 2 engines Mdel 002 Basic	A0GB
003 -- 3 engines Mdel 003 Basic	A0GC
004 -- 4 engines Mdel 004 Basic	A0GD

QMF Enterprise Edition

A01 -- 1 engine	Mdel	A01	Basic	A3BD
110 -- 1 engine	Mdel	110	Basic	A1ED
0E1 -- 1 engine	Mdel	0E1	Basic	A1EE
0A1 -- 1 engine	Mdel	0A1	Basic	A1EF
0B1 -- 1 engine	Mdel	0B1	Basic	A1EG
0C1 -- 1 engine	Mdel	0C1	Basic	A1EH
0X2 -- 1 engine	Mdel	0X2	Basic	A1EJ
001 -- 1 engine	Mdel	001	Basic	A1EK
0A2 -- 2 engines	Mdel	0A2	Basic	A1EL
002 -- 2 engines	Mdel	002	Basic	A1EM
003 -- 3 engines	Mdel	003	Basic	A1EN
004 -- 4 engines	Mdel	004	Basic	A1EP

**QMF Classic Edition**

A01 -- 1 engine	Mdel	A01	Basic	A3BC
110 -- 1 engine	Mdel	110	Basic	A0UW
0E1 -- 1 engine	Mdel	0E1	Basic	A0VA
0A1 -- 1 engine	Mdel	0A1	Basic	A0VB
0B1 -- 1 engine	Mdel	0B1	Basic	A0VC
0C1 -- 1 engine	Mdel	0C1	Basic	A0VD
0X2 -- 1 engine	Mdel	0X2	Basic	A0VE
001 -- 1 engine	Mdel	001	Basic	A0VF
0A2 -- 2 engines	Mdel	0A2	Basic	A0VG
002 -- 2 engines	Mdel	002	Basic	A0VH
003 -- 3 engines	Mdel	003	Basic	A0VJ
004 -- 4 engines	Mdel	004	Basic	A0VK

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Specify the zELC monthly license option.

Entitlement identifier	Description	License option/ pricing metric
		Basic MLC, zELC
S011XS0	DB2 for z/OS	
S012J7R	QMF Classic Edition	
S012J7P	QMF Enterprise Edition	
S012J7T	z/OS Application Connectivity to DB2 for z/OS	

**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**

**Note: Includes China**

Feature description	Feature number
DB2 V9 for z/OS	
- English US, ENU - 3480 1/2" Data Cartridge 34K bpi uncompressed	5950
- Japanese - Kanji (DBCS) (JPN) - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	5963
DB2 Mgmt Clients Pkg	
- English US, ENU - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	5976
- Multilingual (MLL) - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	5989
QMF Classic Edition V9	
- English US, ENU - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	6000
- Multilingual (MLL) - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	6001
QMF Enterprise Edition V9	

- English US, ENU - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	6002
- Multilingual (ML) - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	6003
z/OS App Connect to DB2	
- English US, ENU - 3480 1/2" Data Cartridge 34K bpi - Uncompressed	6004
DB2 Diag Guide/Ref V9	
- English US, ENU - Hardcopy Publication	8000
DB2 Diag Quick Ref V9	
- English US, ENU - Hardcopy Publication	8001

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Orderable supply ID	Language	Distribution medium	Description
S012ZHP	U. S. English	3480 Tape Cartridge	DB2 V9.1 for z/OS
S012ZHT	Multilingual	3480 Tape Cartridge	DB2 Mgmt Client PKG
S012ZHX	Multilingual	3480 Tape Cartridge	QMF Classic Edition
S012ZJ1	Multilingual	3480 Tape Cartridge	QMF Enterprise Edition
S012ZJ3	Multilingual	3480 Tape Cartridge	z/OS App Connect to DB2

**Customization options:** Expedite shipments will be processed to receive 72-hour delivery from the time IBM Software Delivery and Fulfillment (SDF) receives the order. SDF will then ship the order via overnight air transportation.

**Unlicensed documentation: Optional machine-readable material:** To order, select the feature number for the desired distribution medium.

**Unlicensed documentation:** A memo and the program directory are shipped with the basic machine-readable material.

The following DB2 9 publications are shipped with the product tapes.

- Installation Guide
- Licensed Program Specifications
- Licensed Library Collection (CD-ROM)

The following optional publications are available for ordering immediately:

Title	Order number
DB2 V9.1 for z/OS Administration Guide	SC18-9840
Application Programming Guide and Reference for Java	SC18-9842
Application Programming and SQL Guide	SC18-9841
Codes	GC18-9843
Command Reference	SC18-9844
Data Sharing: Planning and Administration	SC18-9845
Installation Guide	GC18-9846
Internationalization Guide	SC19-1161
Introduction to DB2 for z/OS	SC18-9847
Messages	GC18-9849
ODBC Guide and Reference	SC18-9850
Performance Monitoring and Tuning Guide	SC18-9851
Reference Summary*	SX26-3854
SQL Reference	SC18-9854
Utility Guide and Reference	SC18-9855
What's New?	GC18-9856
XML Extender Administration and Programming	SC18-9857
XML Guide	SC18-9858

\* Available as hardcopy only.

All of the publications listed above, except What's New (GC18-9856), can be ordered using bill-of-forms number SBOF-7791.

Publications designated as "hardcopy only" can be ordered from the IBM Publications Center at

<http://www.ibm.com/shop/publications/order>

The following DB2 9 publications will be available in softcopy format only; they cannot be ordered in hardcopy.

- RACF Access Control Module
- Reference for Remote DRDA Requesters and Servers

The following QMF publications are delivered in softcopy only. When ordering DB2 9, these QMF publications are included on the publication CD "DB2 9 Licensed Library Collection, LK3T-7195".

- Introducing DB2 QMF
- Installing and Managing DB2 QMF for TSO and CICS
- Using DB2 QMF
- DB2 QMF Reference
- DB2 QMF Messages and Codes
- Developing DB2 QMF Applications
- Installing and Managing DB2 QMF for Workstation and DB2 QMF for WebSphere
- Getting Started with DB2 QMF for Workstations and DB2 QMF for WebSphere
- DB2 QMF High Performance Option User's Guide for TSO and CICS

DB2 9 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/db2zhhelp>

**Licensed documentation:** The following licensed materials are separately priced with an 8000 feature number, available only to customers with a DB2 9 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 updated during post general availability maintenance updates. (DSN910.SDSNIVPD data set member DSNDR. FTP the data set to the workstation and open it with Adobe Acrobat Reader.)

Title	Order number	Entitlement identifier
DB2 9 for z/OS		
Diagnostic Guide and Reference	LY37-3218	S013NC3
Diagnostic Quick Reference*	LY37-3219	S013NC4

\* Available as hardcopy only.

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

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 will be deprecated in DB2 9. Books that are new to the DB2 9 library will not be offered in the BookManager format. The BookManager format may be dropped in the future; 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.

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 Customized Offerings (for example, CBPDO, ServerPac, SystemPac®). CBPDO and ServerPac are offered for electronic delivery, where ShopzSeries product ordering is available. For more details on electronic delivery, refer to the ShopzSeries help information at

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

Media type for this software product is chosen during the customized offerings ordering process. Based on your customer environment, it is recommended that the highest possible density tape media is selected. Currently offered media types are:

- CBPDOs — 3480, 3480 Compressed, 3490E, 3590, 3592\*
- ServerPacs — 3480, 3480 Compressed, 3490E, 3590, 3592\*
- SystemPacs — 3480, 3480 Compressed, 3490E, 3590, 3592\*

\* 3592 is highest density media, which will ship the fewest number of media.

Once a product becomes generally available, it will be included in the next ServerPac and SystemPac monthly update.

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 three weeks after inclusion in ServerPac.
- SystemPac shipments will begin four weeks after inclusion in SystemPac 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

**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.

Replac ed pr ogr am num ber	pr ogr am na me	Replac ement pr ogr am num ber	pr ogr am pr ogr am na me
5740-XYR	DB2 V1	5635-DB2	DB2 V9
5665-DB2	DB2 V2	5635-DB2	DB2 V9
5685-DB2	DB2 V3	5635-DB2	DB2 V9
5695-DB2	DB2 V4	5635-DB2	DB2 V9
5655-DB2	DB2 V5	5635-DB2	DB2 V9
5645-DB2	DB2 V6	5635-DB2	DB2 V9
5675-DB2	DB2 V7	5635-DB2	DB2 V9
5625-DB2	DB2 V8	5635-DB2	DB2 V9
5635-DB2	DB2 V9	To a follow-on program if any.	

**Warranty applies:** Yes

**Licensed program materials availability**

- Restricted materials of IBM: No
- Non-restricted source materials: Some
- Object code only (OCO): Some

**Program services**

- Support Center applies: Yes. Access available through the IBM Support Center.
- Available until discontinued: 12-months written notice.
- APAR mailing address:  
IBM Corporation  
APAR Processing  
555 Bailey Avenue  
San Jose, CA 95141

**Program currency:** IBM DB2 V9.1 for z/OS (5635-DB2)

Available until discontinued: 12-months written notice.

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## IBM Electronic Services

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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.

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## Prices

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For all local charges, contact your IBM representative.

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