IBM

Licensed Program
Specifications

IBM Db2 12 for z/OS
Product number 5650-DB2

IBM Db2® 12 for z/OS® is a relational database management system licensed program for the z/OS environment.

IBM has embarked on an effort to rebrand DB2 to Db2. (See http://ibm.biz/Rebrand4Db2.) As such, there will be changes to all the Db2 offerings. For example, "DB2 for z/OS" is now referred to as "Db2 for z/OS," beginning with Db2 11 for z/OS. While IBM implements the product name change across the Db2 family of products, be aware that you might see references to the original name "DB2 for z/OS" or "DB2" in different IBM web pages and documents. Clients can be sure that "DB2 for z/OS" and "Db2 for z/OS" refer to the same product, when the PID, Entitlement Entity, version, modification, and release information match.

In this document, Db2 12 for z/OS is sometimes referred to as "Db2 for z/OS, " "Db2 12 ," or "Db2."

Highlights

Db2 for z/OS is a licensed program that supports the relational data model with a high-level language to access Db2 data. Db2 offers many functions in support of traditional database application areas, web and mobile devices, and business intelligence. The highlights of this licensed program and its functions are summarized below.

- **Relational data model:** Db2 provides a tabular data structure. Users view data as a series of rows and columns. Db2 provides hybrid data-server support for relational data (rows and columns), semi-structured data (XML and JSON), and unstructured data (large objects, or LOBs).
- **Structured query language:** Structured query language (SQL) is a high-level language that is used for data manipulation, data definition, and control. SQL does not depend on data paths, placement, or order when it accesses relational databases. In Db2 12 for z/OS, enhancements to SQL simplify application development and extend functionality, while also facilitating easier portability of applications from other members of the Db2 family or from other database products.
- **pureXML®:** Db2 supports XML data. With pureXML, your client applications can manage XML data in Db2 tables. In Db2 12 , enhancements to pureXML improve productivity by enabling programmers to perform multiple document updates within one function invocation and to transform an XML document into any of several document formats. In addition, pureXML enhancements in Db2 12 improve access path optimization and performance and increase consistency across the Db2 family of products.
- **Access to data:** Db2 provides robust availability and can be accessed by many applications, including:

  - IBM Information Management System (IMS) Transaction Manager
  - IBM Customer Information Control System (CICS®) Transaction Server
  - IBM Time Sharing Option (TSO) users
  - IBM Data Server Driver Package

  - REST API via z/OS Connect Db2 Adapter
  - Web and mobile devices
  - WebSphere® Application Server
  - Batch jobs

  Application programs that run under the control of IMS Transaction Manager or the CICS Transaction Server can also access Db2 data, IMS data, or both.

  The data sharing function enables a group of Db2 subsystems to have concurrent access to the same data without replication.

  In addition, Db2 can access, or be accessed by, different instances of Db2 or by other database management systems that support Distributed Relational Database Architecture™ (DRDA). These systems must be connected to the local Db2 subsystem by TCP/IP or Advanced Communication Facility/Virtual Telecommunications Access Method (ACF/VTAM®). Each data sharing member or non-data sharing subsystem can have up to 150,000 concurrent connections; up to 20,000 of those connections can be active at one time. Data can be changed and read by more than one subsystem in a single unit of work, and the commit processing of all data is coordinated. Other programs can access the data at the same time.

- **Application programming:** Programmers can use integrated development environments (Java™ and Microsoft .NET), many languages, and many access styles to access Db2. Users can access and manipulate Db2 data by using SQL through application programs that are written in Java, JavaScript, C#, APL2®, Perl, PHP, Ruby on Rails, SQL procedural language, REXX, C, C++, COBOL, Fortran, PL/I, or assembler language. C and C++ applications can use embedded SQL or ODBC. Other "modern" languages, such as Scala, Python, and node.js, are also supported. Programmers can write applications that are written in the Java programming language and that access Db2 for z/OS data or data on any DRDA server. These applications can access data either dynamically through JDBC or through static embedded SQL by using pureQuery® or SQLJ.

  Db2 programmers can use a wide variety of IBM products that provide useful capabilities that help them develop, debug, tune performance for, and deploy traditional applications, web services, and Java database applications. Many of these products are identified in the *Db2 12 for z/OS Program Directory*.

  Db2 12 delivers a wide variety of enhancements to improve application performance, expand programming capabilities, and improve compatibility across the Db2 family of products.

- **Migration:** Db2 12 for z/OS supports migration from Db2 11 for z/OS. Migration to Db2 12 with fallback protection is available for customers who are running on Db2 11. Fallback SPE APAR PI33871 is required. Existing customers should ensure that they are successfully running on Db2 11 (in new-function mode) before migrating to Db2 12. Db2 11 can coexist with Db2 12 in a data sharing environment and in a distributed environment.

After the initial release of Db2 12, subsequent new features may be delivered with maintenance in the service stream without the need to move to a new release or version of Db2. In Db2 12, IBM has implemented additional capabilities that will enable clients to manage the function level capability of Db2. To learn more about the enhancements that are delivered after the initial release of Db2 12 visit IBM Documentation and search for "Db2 12 continuous delivery".

Optional features

Db2 12 for z/OS delivers a variety of optional features. Each optional feature includes a Program Directory.

Specified operating environment

Db2 12 for z/OS has hardware and software requirements for the operating environment, which are identified in detail in the *Db2 12 for z/OS Program Directory*.

Compatibility

Db2 12 for z/OS is upwardly compatible with earlier releases of Db2 for z/OS. Migration with full fallback protection is available for customers who are running on Db2 11 for z/OS. Fallback SPE APAR PI33871 is required. Existing customers should ensure that they are successfully running on Db2 11 (in new-function mode) before migrating to Db2 12.

Licensed program materials availability

Restricted materials - No. This licensed program is available without source licensed program materials. It is available in object code.

Supplemental terms

Designated machine identification

Designated machine identification is required.

The machine identification requirement prohibits copying platform-independent components that are delivered with this product, such as JDBC drivers, to other machines or operating systems unless specifically permitted by this document.

Limited-use license for z/OS Application Connectivity to Db2 for z/OS

The z/OS Application Connectivity to Db2 for z/OS feature, a type 4 JDBC driver, is licensed for installation and use solely on z/OS. The sole authorized use of z/OS Application Connectivity to Db2 for z/OS is limited to connecting an application that runs on z/OS to any supported version of Db2 for z/OS that is running in a separate partition on the same server as the application is running or on a different z/OS server. You can also connect applications to a subsequent supported version of Db2 for z/OS. Authorized use does not extend to applications that run on Linux® or on any other platform or operating system.

QMF Enterprise Edition Advanced, QMF Classic Edition, and accompanying program licenses

QMF Enterprise Edition Advanced is a licensed program that consists of the following capabilities:

- QMF for TSO/CICS
- QMF High Performance Option
- QMF Analytics for TSO
- QMF Enhanced Editor

- QMF Data Service, including QMF Data Service Studio
- QMF Vision
- QMF for Workstation
- QMF for WebSphere
- QMF Z Client
- QMF Server

QMF Enterprise Edition Advanced supersedes QMF Enterprise Edition.

QMF Classic Edition is a licensed program that consists of the following capabilities:

- QMF for TSO/CICS
- QMF High Performance Option
- QMF Analytics for TSO
- QMF Enhanced Editor

QMF Enterprise Edition Advanced and QMF Classic Edition may include third-party code that IBM licenses to Licensee under the terms of the IBM Customer Agreement. Notices for the third-party code are included for information purposes only. These notices can be found in the Program's NOTICES file(s). Information on how to obtain source code for certain third-party code can be found in the Program's NOTICES file(s).

QMF Version 12 works with any supported version of Db2 for z/OS, but it can be licensed only with Db2 11 or Db2 12.

Redistribution of code for Db2 for z/OS

This document includes information about certain language interface modules that are intended to be bound or otherwise included with code and run on Db2 for z/OS subsystems. In connection with your authorized use of Db2 for z/OS, you may include these language interface modules in your modules and distribute your modules with the included language interface modules for the purposes of developing, using, marketing and distributing programs conforming to the documented programming interfaces for Db2 for z/OS, provided that each language interface module is included in its entirety, including any IBM copyright statements. These language interface modules have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply the reliability, serviceability, or function of these language interface modules. The language interface modules referred to here are:

- DSNAA
- DSNALI
- DSNELI
- DSNHADD2
- DSNHADDR
- DSNHLIR
- DSNHMLTR
- DSNHMVHW
- DSNRLI
- DSNTIA1
- DSNTIAR
- DSNTIAM
- DSNULI

Usage restriction

Not applicable.

Type and duration of program services

IBM Support will be provided until discontinued by IBM with a minimum of six months written notice.

Warranty

This Program is warranted as specified in the IBM license.

Licensed Program Specifications may be updated from time to time and such updates may constitute a change in specifications.

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