

# IBM Db2 Database

Deploy, develop and run a cloud database that's accessible to everyone, everywhere

## Highlights

Ensure business continuity with high availability and disaster recovery

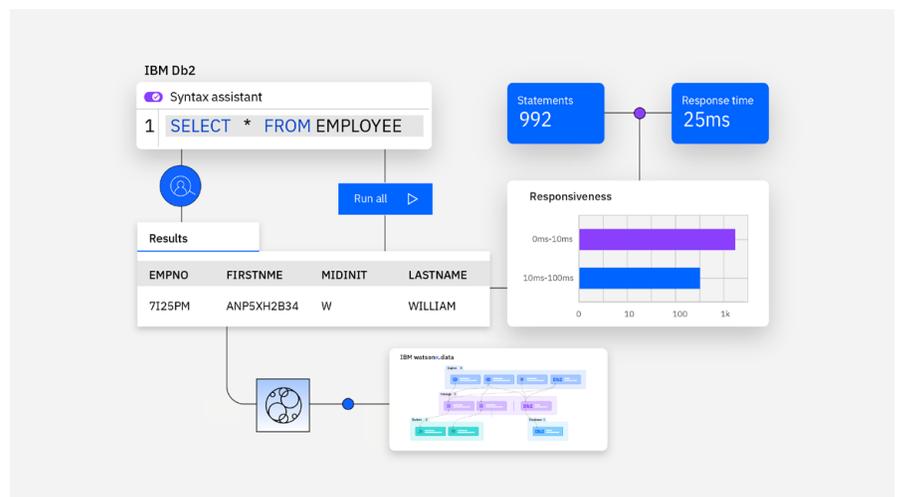
Protect your data with built-in security and governance

Unify all data types in one database

Scale transactional and analytics workloads infinitely

While enterprises look to use data and AI to broaden their competitive advantage, they're still faced with unprecedented data challenges that make it difficult to build new applications, dashboards and AI models. At the same time, mission-critical workloads need to always be on. They also require continuous availability, security and resiliency of data—no matter where it's stored. Data leaders and consumers need a simple way to manage complexity with a single, trusted, cloud-native database engine built for any workload, data type and skillset that's available everywhere across on-premises, hybrid and SaaS on IBM Cloud and Amazon RDS.

IBM Db2® Database is a cloud-native database built on decades of expertise in bringing data governance, data security, low-latency transactions and continuous availability to your mission-critical workloads. With support for mixed transactional and analytics workloads and integrations with your data warehouse and lakehouse architectures, IBM Db2 Database provides a single place for DBAs, enterprise architects and developers to keep apps running, store and query anything, and simplify development.



The screenshot displays the IBM Db2 on Cloud console interface for Disaster recovery. The top navigation bar includes options like Compute & storage, Backups, Workloads, Authorization, User management, Connections, Access restriction, and Disaster recovery. The main content area is titled 'Disaster recovery' and shows a 'Primary node' dropdown menu.

**Connection status**

- Primary node:** Dallas, Active. Includes a 'Promote' button and 'Current console' label.
- DR - Backup node:** Washington DC, Standby. Includes a 'Promote' button and 'View console' link.
- A 'Connected' status is indicated between the two nodes.

**Details**

Variable	Status
State	REMOTE_CATCHUP
Sync mode	SUPERASYNC
Log gap	0 bytes
Standby log time	Tue 10/3/2023 05:11 PM
Standby replay log time	Tue 10/3/2023 05:11 PM
Reads on standby enabled	Yes
Tablespace status	HEALTHY

Figure 1. Keep critical applications always on with continuous availability and HADR capabilities.

### Ensure business continuity with high availability and disaster recovery

With IBM Db2 Database, you can deploy high availability (HA) nodes to achieve ultimate redundancy, availability and scalability with support for active and passive deployment, multiple deployment options, HA replicas and automatic failover. Built-in disaster recovery covers the “last mile” availability in the event of a local availability zone (AZ) or region failure. For mission-critical workloads that require continuous, always-on availability, eliminate unplanned downtime while achieving high performance with IBM Db2 Database pureScale. It leverages the IBM Db2 Database parallel sysplex architecture, providing mainframe-class, 99.999% availability that runs both on premises and on AWS. IBM Db2 Database provides flexibility, not only to replicate a cluster to another region, but to choose what gets replicated and deployed anywhere. Support high-volume, low-latency replication with the Q replication capability of IBM Db2 Database, powered by IBM MQ message queues to transmit transactions between source and target databases. IBM Db2 Database provides best-in-class reliability with self-service-managed backups and point-in-time recovery.<sup>1</sup> Schedule your backups to run when it’s most convenient for your business and use point-in-time restoration with database logs backed up to object storage.

```

Sample.java x
39 password = args[2];
40 try
41 {
42     // Load the driver
43     Class.forName("com.ibm.db2.jcc.DB2Driver");
44     System.out.println("**** Loaded the JDBC driver");
45
46     // Create the connection using the IBM Data Server Driver for JDBC and SQL
47     con = DriverManager.getConnection (url, user, password);
48     // Commit changes manually
49     con.setAutoCommit(false);
50     System.out.println("**** Created a JDBC connection to the data source");
51
52     // Create the Statement
53     stmt = con.createStatement();
54     System.out.println("**** Created JDBC Statement object");
55
56     // Execute a query and generate a ResultSet instance
57     rs = stmt.executeQuery("SELECT EMPNO FROM EMPLOYEE");
58     System.out.println("**** Created JDBC ResultSet object");
59
60     // Print all of the employee numbers to standard output device
61     while (rs.next()) {
62         empNo = rs.getString(1);
63         System.out.println("Employee number = " + empNo);
64     }
65     System.out.println("**** Fetched all rows from JDBC ResultSet");

```

Figure 2. Let's build something great. Connect to IBM Db2 Database using our selection of drivers and code repositories to start building your next project.

### Protect your data with built-in security and governance

Automatically secure data in motion and at rest, monitor and detect unknown behaviors, and support the privacy of your data with built-in end-to-end governance and security capabilities. Direct governed access to live data sets, services and applications. IBM Db2 Database controls data visibility and masking for different levels of authority. Enable granular control over who has access to the data in your table rows or columns—no matter how data is accessed—with separation of duties over security management. Manage Health Insurance Portability and Accountability Act (HIPAA) and General Data Protection Regulation (GDPR) compliance with native encryption in motion and at rest, row-column access, data masking and more.

### Unify all data types in one database

Support new data, analytics and AI use cases with support for XML, JSON, text and spatial data in a single multi-model database. Develop new applications with support for Java, .Net, Ruby, Python, R, Perl, C, C++, pureXML, XQuery, Mongo, FLWOR Expression and JSON. You can also connect your web, mobile and cloud applications with IBM Db2 Database data through a set of scalable, seamless RESTful APIs fully integrated in the IBM Db2 Database distributed data facility (DDF). With Amazon RDS for IBM Db2 Database, connect IBM Db2 Database transactional data with IBM Db2 Database Warehouse and watsonx.data lakehouse, available as SaaS on AWS, for analytics and AI use cases in the cloud.

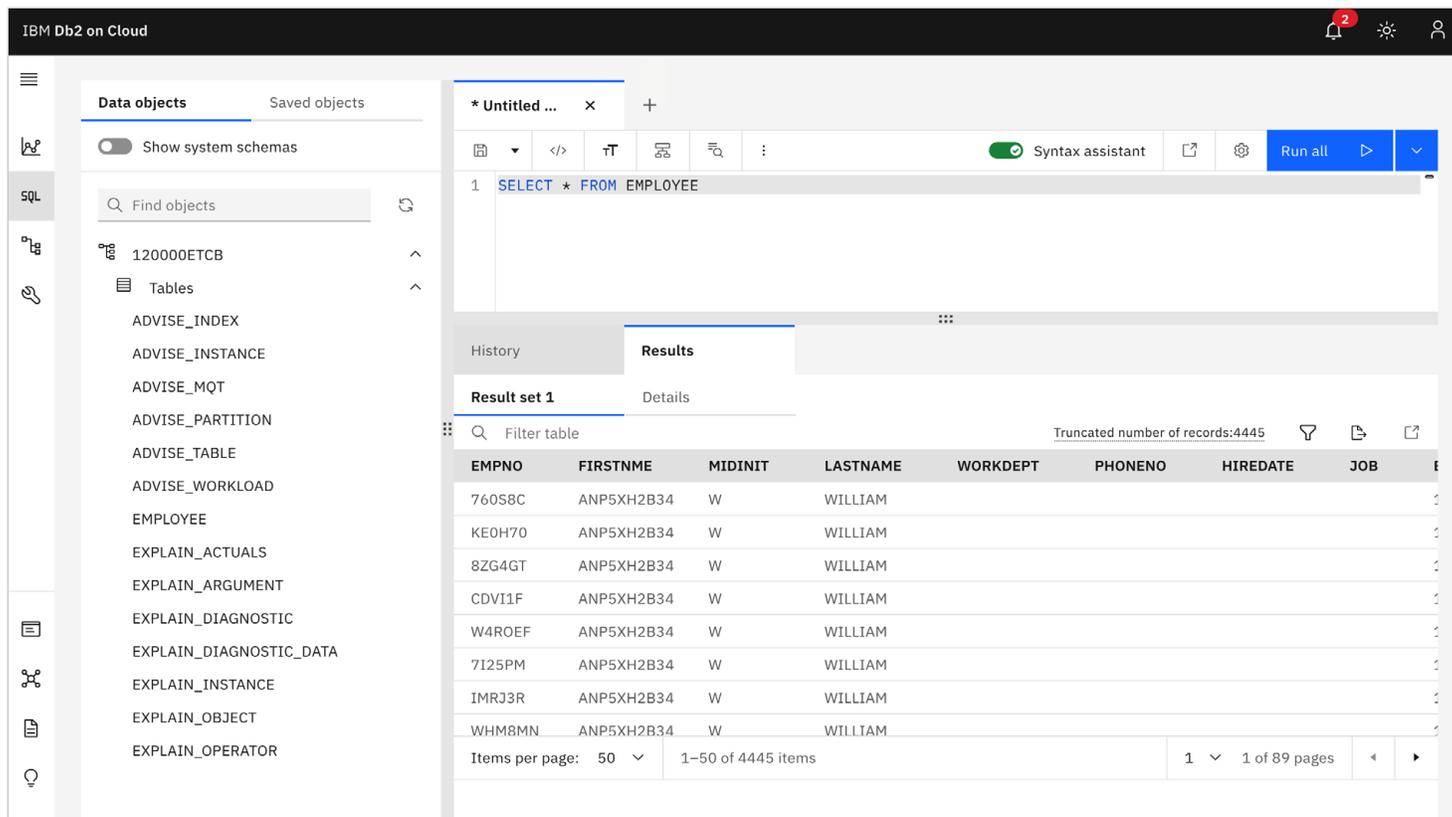


Figure 3. Use a simple UI and SQL-based, high-performance query engine to analyze your data.

### Scale transactional and analytics workloads infinitely

IBM Db2 Database enables multiple high-performing, mission-critical workloads—transactional, analytics and operational—running against the same database. The machine-learning (ML)-based query optimization in IBM Db2 Database monitors SQL performance information over time and correlates it with queries using ML models, resulting in both faster query execution and a reduction in resource consumption. Additionally, the built-in workload management of IBM Db2 Database automatically manages job scheduling and concurrency for IBM Db2 Database and allows you to define custom policies and resource limits for varying workloads. Enable faster data retrieval and high-performance applications with best-in-class compression, scalable storage and compute in the cloud.<sup>1</sup> For cloud-native workloads, choosing Amazon RDS for Db2 makes it easy to set your scaling options and control your cloud costs using push-button scaling with a few clicks. Amazon RDS for Db2 hourly-based consumption licenses are available through the AWS Marketplace to further simplify workload management and cloud provisioning.

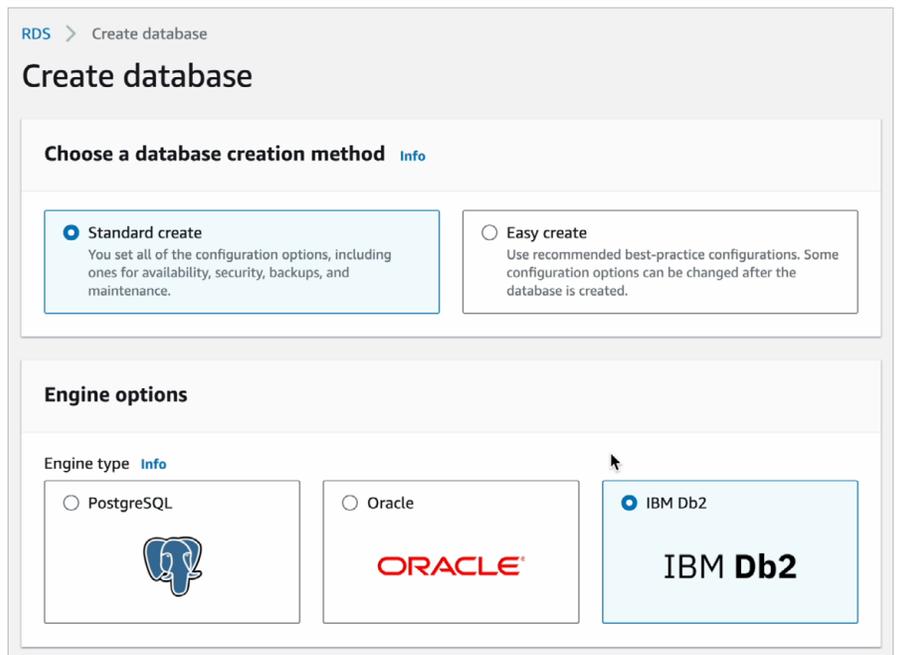


Figure 4. Set up, operate and scale an IBM Db2 Database on Amazon RDS in just a few clicks

### Conclusion

Build once, deploy anywhere. No matter the volume or complexity of your workloads, make your applications secure, high-performing and resilient anywhere with IBM Db2 Database. Begin experiencing what IBM Db2 Database has to offer today with our fully managed SaaS, software or hybrid deployments. Get started on [Amazon RDS for Db2](#) or [IBM Cloud® free trial](#), or [download](#) the free IBM® Community Edition today.

### Why IBM?

IBM is trusted to manage the most mission-critical data and applications for our clients. Our experience with innovation in enterprise data solutions includes market-making database solutions and enterprise-ready AI. We help our clients run solutions in almost any cloud or on-premise environment and believe that our clients' data belongs to them 100%.

### For more information

To learn more about IBM Db2 Database and available cloud deployments, including AWS RDS for IBM Db2 Database, contact your IBM representative or IBM Business Partner or visit [ibm.com/db2](http://ibm.com/db2).

1. Based on data provided from IBM  
running IBM Db2 Database pureScale.

© Copyright IBM Corporation 2023  
IBM Corporation  
New Orchard Road  
Armonk, NY 10504

Produced in the  
United States of America  
November 2023

IBM, the IBM logo, IBM Cloud, and Db2 are trademarks or registered trademarks of International Business Machines Corporation, in the U.S. and/or other countries. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on [ibm.com/legal/copyright-trademark](http://ibm.com/legal/copyright-trademark).

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

