

SingleStore DB with IBM

The fast modern database built to unify transactional and analytical workloads. Deploy anywhere on-premises, cloud or hybrid.

Highlights

- ↳ IBM serves as a single source for purchasing, deployment, and support of SingleStore DB
- ↳ Unifies data-intensive, transactional and analytical workloads
- ↳ Extend your existing technologies and skills with support for ANSI SQL
- ↳ Deploys ultra-low latency analytics at high concurrency
- ↳ Designed to meet the toughest service level agreements (SLA) with parallel distributed ingestion and real-time query processing
- ↳ Leverages IBM's expertise and global footprint
- ↳ Deploys anywhere across any cloud including on-premises

SingleStore DB is a fast, distributed, highly scalable SQL database designed to power today's data-intensive applications. It is designed to deliver maximum performance for both transactional (OLTP) and analytical (OLAP) workloads in a single unified engine to drive maximum performance for your modern applications. With SingleStore you can ingest millions of events per second with ACID transactions using SingleStore Pipelines, while simultaneously delivering blazing-fast SQL queries on billions of rows of data.

SingleStore offers an innovative breakthrough in database architecture, allowing both transactional and analytical workloads to be processed using a single table type. This together with separation of storage and compute, point-in-time recovery (PITR) and new system of record improvements, delivers on our vision of being the single database for all data-intensive applications and workloads.

SingleStore is designed from the ground up as a multimodel database, supporting relational, key-value, JSON, geospatial, time series, and full-text search. With a relational engine at its core, SingleStore delivers effortless scalability and simplicity to modern data architectures, reducing the overall complexity and cost.

IBM provides a one-stop experience for the procurement, use, and management of SingleStore DB. In addition, users will gain access to IBM's global deployment capabilities and expert support, which includes client consultancy on individual database technologies and overall solution architectures.



The SingleStore DB advantage

With 10-100x performance at one third the cost of traditional databases¹, SingleStore is deal for applications that require fast data ingestion, low-latency queries and elastic scaling with familiar relational SQL.

Benefits

Ultra-fast time to insight

Unify transactional and analytical workloads for a single pane of experience. Improve customer experiences and spot new opportunities with continuous monitoring and discovery.

Reduced cost and risks

Save costs and mitigate risks by controlling database sprawl. Create a single table type to build a storage with unlimited scale.

Improved productivity and visibility

Extend your SQL skills and bring your teams together to drive productivity. Increase visibility of data and analytical value-chains through unification of data tiers.

Higher operational efficiency

Consolidate multiple application sources and power a complete view for front-line users. Detect resource drains and duplications to streamline operations.

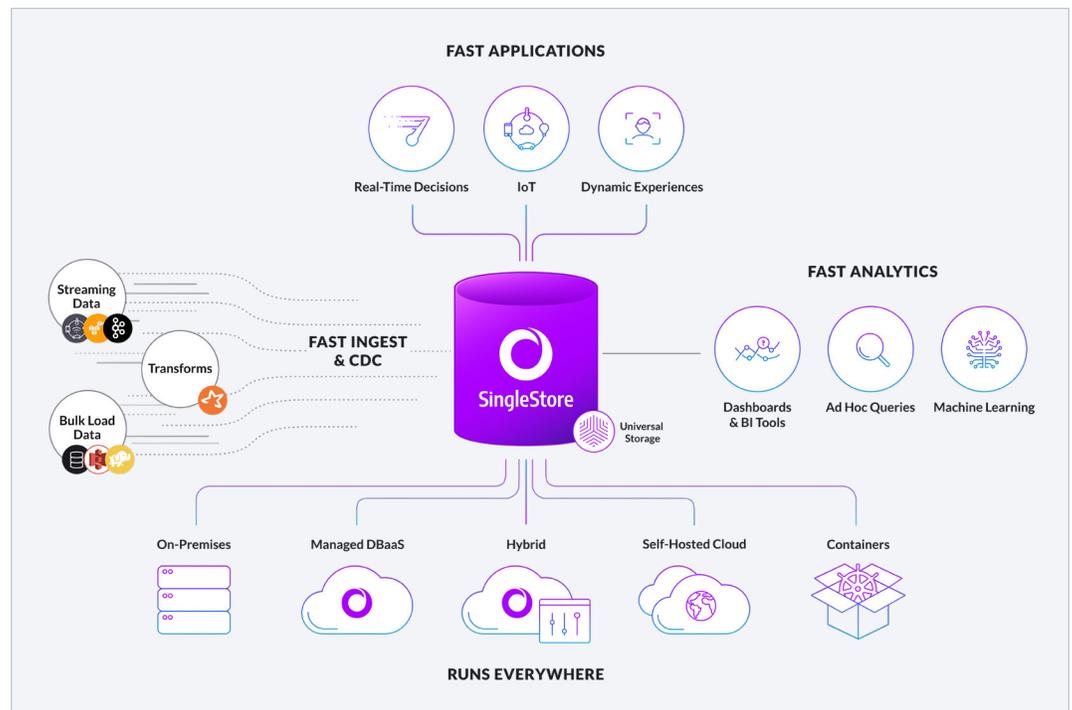
Robust security, compliance and resiliency

Rely on security certifications including ISO/IEC 27001, SOC 2 Type 2 and Privacy Shield. Comply with CCPA and GDPR as well as HIPAA.

Improved agility

Run your workload anywhere across any cloud including hybrid and on-premises deployment. Keep your data for ease of data access and processing.

Fig 1:
SingleStore solution architecture
Source: SingleStore



The SingleStore capabilities

With near ubiquitous connectivity driving high-velocity, high-volume data workloads, SingleStore's innovative database enables companies to simplify their data architectures while delivering the ultra-fast speed and elastic scalability needed to create breakthrough experiences

SingleStore pipelines: Built-in parallel data ingestion technology natively ingests high-throughput real-time data from external sources such as Apache Kafka, Amazon S3, Azure Blob, Filesystem, Google Cloud Storage, and HDFS data sources.

Universal storage: A patented new table type that supports both OLTP and OLAP in the same engine. Universal Storage gives you the best qualities of row stores and column stores together while reducing data duplication, data movement, and data latency.

MySQL compatibility: SingleStore is wire-protocol compatible with MySQL/MariaDB making it instantly accessible from any BI tool such as Tableau, PowerBI or Looker and with widely available bindings to popular programming languages such as Golang, Rust, Python, NodeJS, R, Java, and C++.

Distributed ingest, bulk or streaming, with concurrent non-blocking reads: SingleStore offers a lock-free architecture which is based on the skip list index, that efficiently processes transactions and updates without locking or blocking concurrent reads, resulting in delivering the capability to perform bulk and/or streaming ingestion online, simultaneously with query workload.

Compiled, vectorized query execution: Built-in distributed query optimizer evenly divides the processing workload to maximize the efficiency of CPU usage. Query plans are compiled to machine code and cached to expedite subsequent executions. Vectorized operations can reduce per-row CPU overhead by more than 100x.

Separation of storage and compute: Offers unlimited storage and allows users to effortlessly scale compute resources to meet the needs of any workload while managing the storage needs completely independently. The only product to offer separation of storage and compute for both transactions and analytics.

Limitless point-in-time recovery (PITR): With PITR users can restore the database to any specified date and time, down to the microsecond. PITR enables customers to power mission-critical applications and provides peace of mind that application or user errors can be quickly and easily remediated.

SingleStore replicate: SingleStore Replicate is a data ingestion tool for replicating data from an external 3rd-party database into SingleStore, and provides a number of features and functions, including both filters and maps, to tailor how the data is replicated.

Multi-version concurrency control (MVCC) and lock-free data structures: With these technologies, readers and writers never block each other, even amidst a high volume of concurrent reads and writes.

Enterprise security: Ensures military-grade security with RBAC, encryption, auditing, password policy management, and strict mode to isolate data from administrators.

Extensible: Supports in-database programming via the MPSQL language, which allows the definition of user-defined functions, stored procedures (SPs), table-valued functions, and user-defined aggregates.



The added advantage of IBM

IBM brings a single unified experience, strong integration capabilities, and a global presence to improve the value provided by SingleStore.

Single unified experience with IBM

IBM has developed considerable experience across thousands of client engagements spanning decades. It shares that experience in two primary ways: consultancy and support. Anyone interested in integrating databases into their data architectures should note that IBM experts are happy to consult on individual technologies or the overall architecture of a business. In this way, an organization can leverage IBM's previous experience to double-check their options and preparedness prior to or even after selecting a solution.



Integration into your data fabric

IBM allows the deployment of multiple databases on a unified AI architecture so that data can be brought together within a hybrid environment.



One-stop shopping-freedom of choice

Choose the best databases for your workloads, condensing multiple vendor interactions into one.



One-stop support and industry expertise

Many of the support issues are due to lack of product knowledge—IBM's client history spans thousands of engagements, providing end-to-end guidance for all your infrastructure and database issues.



Accelerate your journey to AI

Leverage immediate access to IBM Watson® services and IBM Cloud Pak® for Data for end-to-end enablement of your journey to AI.

In addition, organizations struggle to track and manage risk in the form of security vulnerabilities, license conflicts, compliance and reliability. By providing level 1 support and consultation in addition to multivendor support, IBM can help reduce support and maintenance costs.

Integration

Integration is vital for hybrid data management environments so that businesses can increase efficiencies and drive down costs and wasted time. IBM provides three levels of integration across the various stages of implementation. Foremost, by purchasing databases from IBM alongside other hybrid data management technology, an experience that once would have required interaction with multiple vendors can be accomplished easily with one-stop shopping. This also allows the various technologies to be deployed together. IBM also provides one unified architecture for AI so that all data can be brought together in a hybrid environment for self-service analytics with integrated governance. Finally, support can also be delivered through a single source. IBM experts can be leveraged to speak to entire architectures that span multiple offerings. Together, these factors provide a seamless environment with a strong vendor relationship.

Global presence

As a global company, with a presence in over 175 countries and support for 127 languages, IBM understands various geographic challenges and opportunities better than providers who limit themselves to a single market. The advice shared in consultations and support reflects that knowledge. In addition, having data centers around the globe can benefit customers in two key ways. First, locating data nearer to where it will be used reduces latency and helps provide insights more quickly. Second, some regulations require that data is stored in the country of origin. This cannot be done by vendors who are absent from particular markets.

For more information

To learn more about SingleStore with IBM, [schedule time with an IBM expert for a no-cost, 30-minute discussion.](#)

© Copyright IBM Corporation 2022

IBM Corporation New Orchard Road Armonk, NY 10504

Produced in the United States of America March 2022

IBM, IBM logo, IBM Watson, IBM Cloud Pak, and IBM Cloud are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on ibm.com/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 performance data discussed herein is presented as derived under specific operating conditions. Actual results may vary. It is the user's responsibility to evaluate and verify the operation of any other products or programs with IBM products and programs. 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.

Statement of Good Security Practices: IT system security involves protecting systems and information through prevention, detection and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, misappropriated or misused or can result in damage to or misuse of your systems, including for use in attacks on others. No IT system or product should be considered completely secure and no single product, service or security measure can be completely effective in preventing improper use or access. IBM systems, products and services are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products or services to be most effective. IBM DOES NOT WARRANT THAT ANY SYSTEMS, PRODUCTS OR SERVICES ARE IMMUNE FROM, OR WILL MAKE YOUR ENTERPRISE IMMUNE FROM, THE MALICIOUS OR ILLEGAL CONDUCT OF ANY PARTY.

The client is responsible for ensuring compliance with laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.

1. SingleStore FAQ <https://www.singlestore.com/faq/>

