

# **TencentDB for DBbrain**

## **Product Introduction**

### **Product Documentation**



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# Product Introduction

## Overview

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TencentDB for DBbrain (DBbrain) is a database self-management service provided by Tencent Cloud, helping you with database management, and the optimization of performance and security.

It leverages machine learning and big data technologies to replicate the best industry practices and automate manual database OPS tasks, ensuring the security, stability and efficiency of your database services, both in and off the cloud.

### Key Features

**Intelligent optimization:** By leveraging machine learning and big data, DBbrain can quickly replicate the best industry practices and automate a large number of database diagnosis and optimization tasks, which facilitates the operations of your database services both on and off the cloud.

**Security protection:** DBbrain provides multiple data security services for user behavior, SQL statements, and data storage encryption. DBbrain is also compliant with cybersecurity classified protection requirements.

**Database management:** DBbrain provides an installation-free, OPS-free, and out-of-the-box web database management platform that supports multiple database types and environments.

### Benefits of DBbrain

#### Improved database stability

Your database is under 24/7 autonomous protection. On call personnel is not needed.

DBbrain can intelligently detect exceptions and perform corresponding optimization in real time, improving the self-healing capabilities of your databases.

Health checks are performed to reduce risk and prevent problems.

#### Improved management efficiency

Intelligent services are conveniently provided for your use, effectively shortening the OPS response time.

DBbrain offers unified multidimensional batch management to help you easily manage a massive amount of instances.

#### Enhanced database security

Data encryption and CCPCS-compliant protection ensure your databases operate securely.

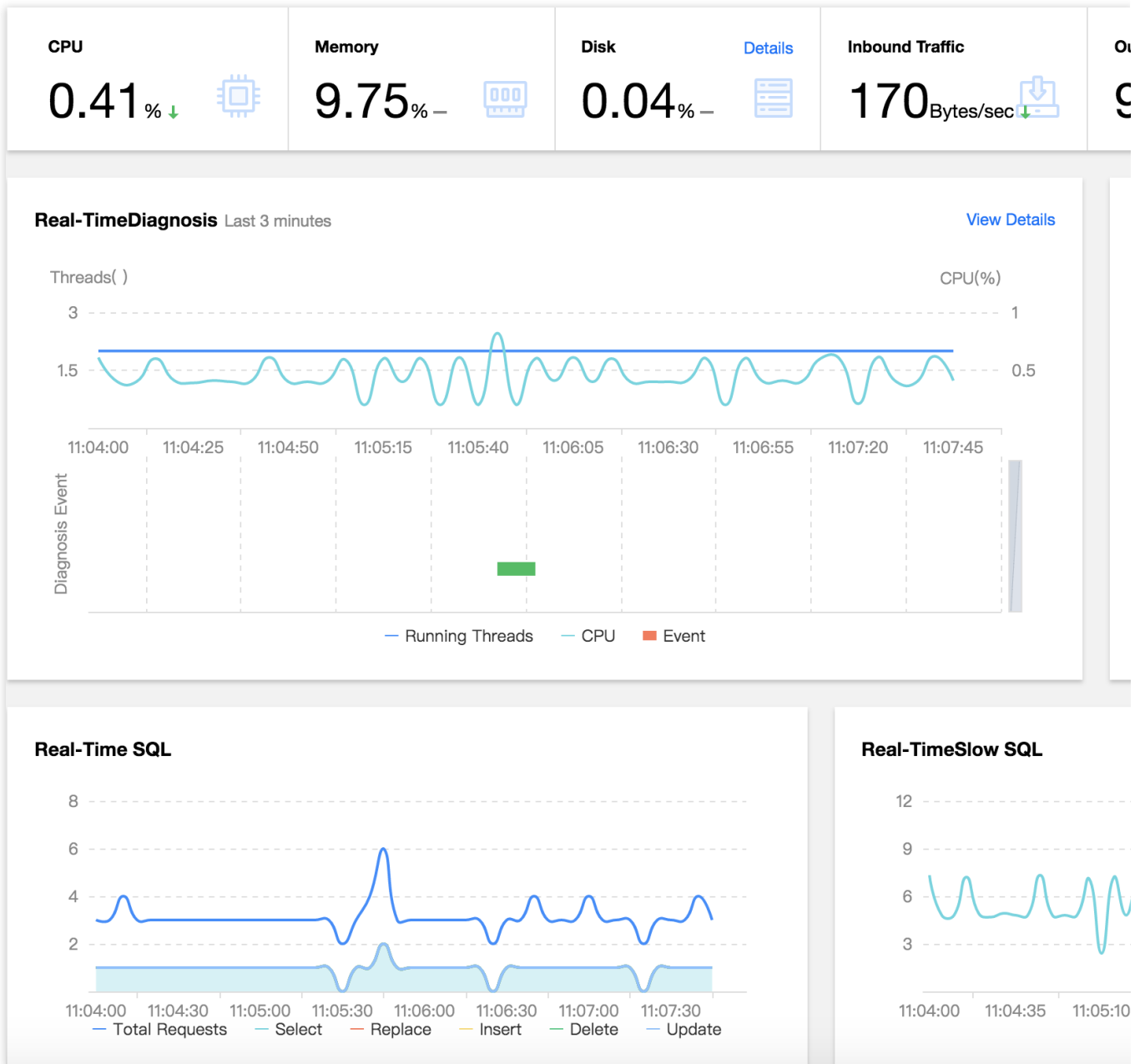
Standardized and normalized operations reduce the number of required server logins and thus minimize the probability of faulty operations.

Audit logs of all operations are retained for future review.

#### Reduced OPS costs

DBbrain enables one-click OPS management operations and performance optimization, which greatly reduce OPS costs.

DBbrain enables proactive failure location and intelligent optimization, which greatly reduce the threshold of database OPS management.



# Features

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## Intelligent optimization

### **Note:**

Included features: Exception diagnosis, real-time session, slow SQL analysis, space analysis, SQL optimization, audit log analysis (formerly SQL Pivot), key analysis (for Redis only), tiered delayed request type distribution, and health report.

DBbrain provides intelligent analysis for database instances throughout the Ops lifecycle, helping you intuitively understand their real-time operating statuses. You can also locate exceptions in real time, and optimize your system based on suggestions.

Intelligent optimization consists of the following features:

### **Intelligent check**

Intelligent check routinely performs health checks on database reliability, availability, performance, and maintainability, while generating optimization suggestions accordingly. You can get a full picture of the operating status of database instances, and troubleshoot problems to improve performance.

### **Intelligent monitoring**

Intelligent monitoring offers more focused monitoring dimensions and metric combinations by integrating the best practices of TencentDB technical experts. It can display the performance of TencentDB instances intuitively, while featuring real-time monitoring metrics.

### **Intelligent diagnosis**

Intelligent diagnosis diagnoses and analyzes database exceptions 24/7 in real time based on metric data collected by intelligent monitoring. For performance issues, it provides optimization measures with regard to specification configuration, SQL analysis, business logic, and usage by analyzing the results from SQL query optimizer, performance analysis engine, and rules engine.

### **Intelligent alarm**

Intelligent alarm adapts to your custom alarms and intelligently diagnose potential exceptions and risks. It can notify you of the exception promptly, provide optimization suggestions, and support automatic quick fix.

### **Intelligent optimization**

Intelligent optimization analyzes the performance problems of SQL statements, gives optimization suggestions, and provides SQL rewriting capabilities. It can also help you better understand the causes and details of performance differences through visual execution plans.

## Database management

**Note:**

Included features: Instance overview, instance management, full instance monitoring, and database management center (DMC).

DBbrain features a unified management platform that supports user-level database management, monitoring, and visual interaction. It can reduce your management cost by over 50% and greatly improve the Ops efficiency.

# Strengths

Last updated : 2022-08-15 16:26:06

## Real-time diagnosis and optimization

DBbrain provides 24/7 diagnosis of database exceptions based on real-time information, ensuring their timely detection and troubleshooting. This helps build a new database health protection mechanism that features regular check, proactive detection, instant analysis and optimization.

## Security and efficiency

With non-intrusive design and encrypted transfer, it will not impact the database environment and performance.

## Measurable optimization

DBbrain provides highly accurate data collection, exception analysis, diagnosis and optimization. Its suggestions are based on theoretical analysis of exceptions, and comparisons with the simulated optimization results. You can gauge the optimization effect more precisely.

## Versatility

DBbrain supports relational, NoSQL, NewSQL and many other types of databases, making it suitable for both in and off-cloud databases. It offers diagnosis and analysis not only for database instances in Tencent Cloud, but also those deployed in other clouds or on-premise databases, which facilitates hybrid cloud database management.

## One-tap mobile management

DBbrain can be used on mobile devices through the WeChat Mini Program ecosystem. You can easily track, manage and optimize your databases anytime, anywhere.

## AI support

DBbrain is backed by Tencent Cloud's deep learning algorithms and training environments with high numbers of samples. Its services include automated optimization of database performance, highly accurate threat analysis, security governance suggestions, and more.



# Use Cases

Last updated : 2021-03-18 14:59:13

## Daily database OPS

DBbrain provides 24/7 database exception detection, diagnosis, analysis, and intelligent alarm service. It also features recommendations, one-click optimization, AI-powered automatic optimization of database performance, and optimal configurations based on your business characteristics to greatly improve OPS efficiency.

## Security threat identification

Backed by Tencent Cloud's deep learning algorithms and training environments, DBbrain can monitor and trigger alarms for various types of attacks and risky operations. Based on data asset and sensitive data discovery information, it can trigger alarms and rate security levels for users, behaviors, and data that severely deviate from the models. This helps administrators discover malicious operations and provides more accurate threat analysis as well as security governance suggestions for database operations.

## Hybrid cloud database management

DBbrain is suitable for both in-cloud and off-cloud database scenarios. It provides diagnosis and optimization not only for database instances in Tencent Cloud, but also those deployed in other clouds or on-premise databases. It adopts a non-intrusive design and protected data transfer to ensure security, helping you build a unified platform for hybrid cloud database management.

## Mobile database OPS

DBbrain is integrated within the WeChat Mini Program ecosystem and accessible on both PCs and mobile devices. Features such as mobile alarms, daily health report subscription, exception diagnosis, and one-tap optimization are available on mobile devices for your convenience.

# Feature List

Last updated : 2024-07-31 10:26:34

DBbrain currently supports TencentDB for MySQL (excluding basic single-node instances), TDSQL-C for MySQL, TencentDB for MySQL, TencentDB for MariaDB, self-built MySQL, TencentDB for Redis, TencentDB for MongoDB, and TencentDB for PostgreSQL.

## Note:

In the following table, the symbol ✓ indicates supporting, and the symbol x indicates not supporting.

Feature		TencentDB for MySQL	TDSQL-C for MySQL	TencentDB for MariaDB	TDSQL for MySQL	TencentDB for Redis	Te for Mc
Database management	Instance overview	✓	✓	✓	✓	✓	✓
	Instance management	✓	✓	✓	✓	✓	✓
Monitoring and alarms	Database inspection	✓	✓	✓	✓	✓	✓
	Exception alarms	✓	✓	✓	✓	✓	✓
	Event Notification	✓	✓	x	x	✓	✓
	Monitoring dashboards	✓	✓	✓	✓	✓	✓
	Full instance monitoring	✓	✓	✓	✓	✓	✓
Diagnosis and optimization	Exception diagnosis	✓	✓	✓	✓	✓	✓
	Performance trends	✓	✓	✓	✓	✓	✓
	Real-time sessions	✓	✓	✓	✓	✓	✓
	SQL throttling	✓	✓	x	x	x	✓
	Hotspot update protection	✓	✓	x	x	x	x

	Slow SQL analysis	✓	✓	x	x	x	✓
	Space analysis	✓	✓	✓	✓	x	✓
	SQL optimization	✓	✓	✓	✓	x	x
	Autonomy Services	✓	✓	x	x	x	x
	Health reports	✓	✓	✓	✓	✓	✓
	Health reports email push	✓	✓	✓	✓	✓	✓
Redis-specific Feature	Slow Log Analysis	x	x	x	x	✓	x
	Memory Analysis (Big Key Analysis)	x	x	x	x	✓	x
	Latency Analysis (Hot Key Analysis)	x	x	x	x	✓	x
	Latency Analysis (Command Analysis)	x	x	x	x	✓	x
MongoDB-specific Feature	MongoStatus	x	x	x	x	x	✓
	MongoTop	x	x	x	x	x	✓
	Index Recommendation	x	x	x	x	x	✓

# Region List

Last updated : 2024-11-20 14:34:34

DBbrain currently supports TencentDB for MySQL (excluding basic single-node instances), TDSQL-C for MySQL, TencentDB for MySQL, TencentDB for MariaDB, self-built MySQL, TencentDB for Redis, TencentDB for MongoDB, and TencentDB for PostgreSQL.

Region	TencentDB for MySQL	TDSQL-C for MySQL	TencentDB for MariaDB	TencentDB for TDSQL MySQL	TencentDB for Redis	TencentDB for MongoDB	TencentDB for PostgreSQL
China	Guangzhou, Qingyuan, Shenzhen, Beijing, Shanghai, Nanjing, Hangzhou-ec, Tianjin, Chengdu, Chongqing, Shanghai Finance, Shenzhen Finance, Beijing Finance, Hong Kong (China), and Taipei (China)	Guangzhou, Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Hong Kong (China)	Guangzhou, Shenzhen, Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Hong Kong (China)	Guangzhou, Shenzhen, Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Hong Kong (China)	Guangzhou, Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Hong Kong (China)	Guangzhou, Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Hong Kong (China)	China
Other countries and regions	Singapore, Jakarta, Bangkok, Mumbai, Seoul, Tokyo, Silicon	Singapore, Seoul, Tokyo, Silicon Valley, Virginia,	Singapore, Jakarta, Mumbai, Seoul, Tokyo, Silicon Valley,	Singapore, Jakarta, Mumbai, Seoul, Tokyo, Silicon Valley,	Singapore, Jakarta, Bangkok, Mumbai, Seoul, Tokyo, Silicon	Singapore, Bangkok, Mumbai, Seoul, Tokyo, Silicon Valley,	Other countries and regions

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	Valley, Virginia, Frankfurt, São Paulo	and Frankfurt	Virginia, and Frankfurt	Virginia, and Frankfurt	Valley, Virginia, Frankfurt, and São Paulo	Virginia, Frankfurt, and São Paulo
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