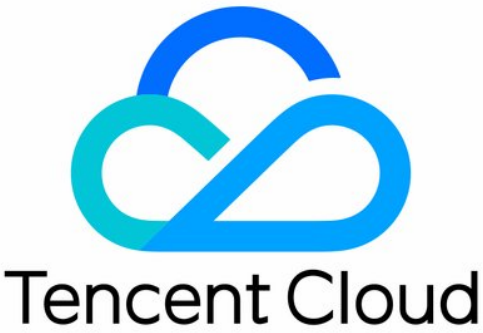
TencentDB for MySQL

Product Intro

Product Introduction



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Contents

Product Intro
- Advantages
- Scenarios
  - Database Instance
    - Database Instance Duplication
- High Availability (Multiple AZs)

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Product Intro Advantages

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High Elasticity

Powerful Hardware Ensuring High Performance

PCI-e SSD's powerful IO performance guarantees access to the database.
A maximum of 240k QPS and 6 TB storage space are supported for a single instance.

Flexible Billing Methods

Prepaid billing method is supported. You can make a payment for the database services for one month or several months at a time based on your business needs, so as to avoid a huge one-off investment in the infrastructure construction.

Read/Write Separation

Read-only instances can be mounted to CDB for MySQL. "One Master, Multi-Slave" architecture allows you to respond to massive requests. RO group with CLB feature is supported to greatly simplify the process of pressure distribution among slaves.

Security

DDoS Protection

When you suffer a DDoS attack, this feature can help you resist various attack traffic, ensuring the normal operation of businesses.

Protection Against Database Attack

Effectively defense against such database attacks as SQL injection and brute-force attack.

Highly Reliable Storage

Online master/slave data storage service is provided to ensure the security of online data. Meanwhile, the data backup mechanism stores backup data of several days to allow data recovery in case of database disaster.

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Availability

Real-time Hot Backup

Real-time master/slave hot backup; lossless recovery within 3 days; cold backup data dump within 5 days.

Automatic Disaster Recovery

Automatic failure detection and automatic failover are supported. Procedures of master/slave switchover and failover are transparent to users.

Ease of Use

Easy Management of Massive Databases

You can manage CDB by using either command line or Web. Batch database management, permission setting and SQL import are supported.

Data Import and Backup Rollback

Multiple data import methods are provided for initialization. Data is backed up automatically on a daily basis. CDB allows data to be rolled back to any time point within the last 3 days based on backup files.

Professional Monitoring and Alarm

Multi-dimensional monitoring and custom resource threshold alarm are supported. Slow log analysis report and full SQL operating report can be downloaded.

A Variety of Connection Methods

Public network access and VPC network are supported. You can connect CDB with IDC, private cloud or other computing resources using these methods to apply them in a hybrid cloud environment.

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Scenarios

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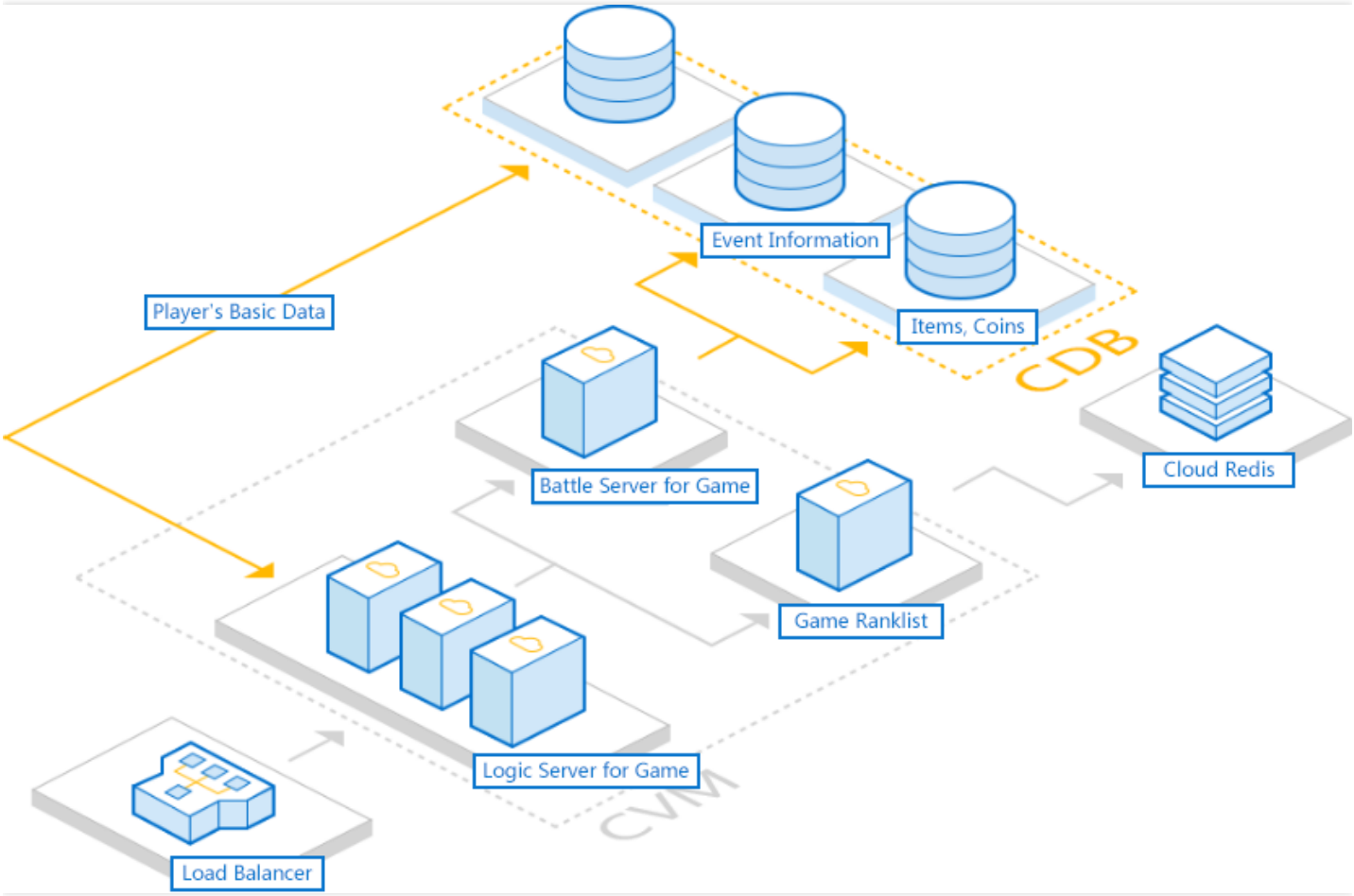
Typical Scenarios of Games

As the final server data storage media for games, CDB for MySQL can satisfy the demands for most service scenarios with its extremely high performance.



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Typical Scenarios of Internet/Mobile APPs

As the final server data storage media for Internet/mobile APPs, CDB for MySQL provides increased read-only instances in hotspot library for the WRRM (Write Rarely, Read Mostly) scenarios, thus significantly improving the read capability.

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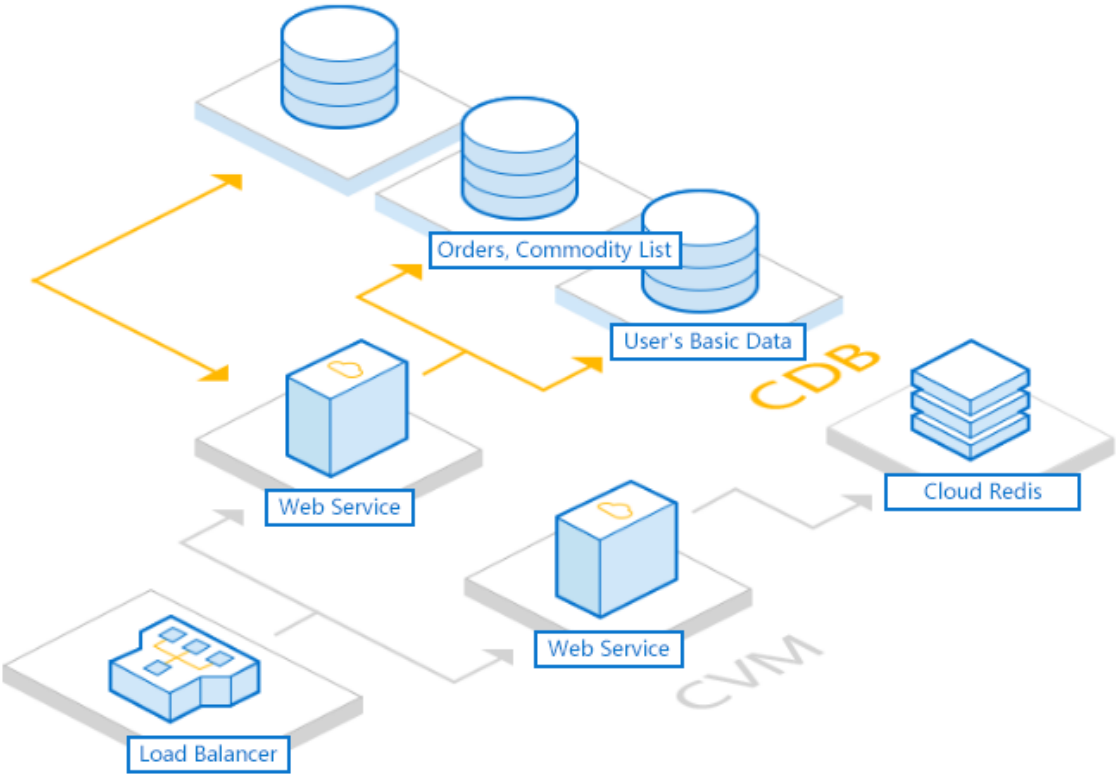

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Scenarios of Read/Write Separation

CDB for MySQL supports read-only instances with RO groups, which can apportion the load to each read-only instance to ensure high availability of services.

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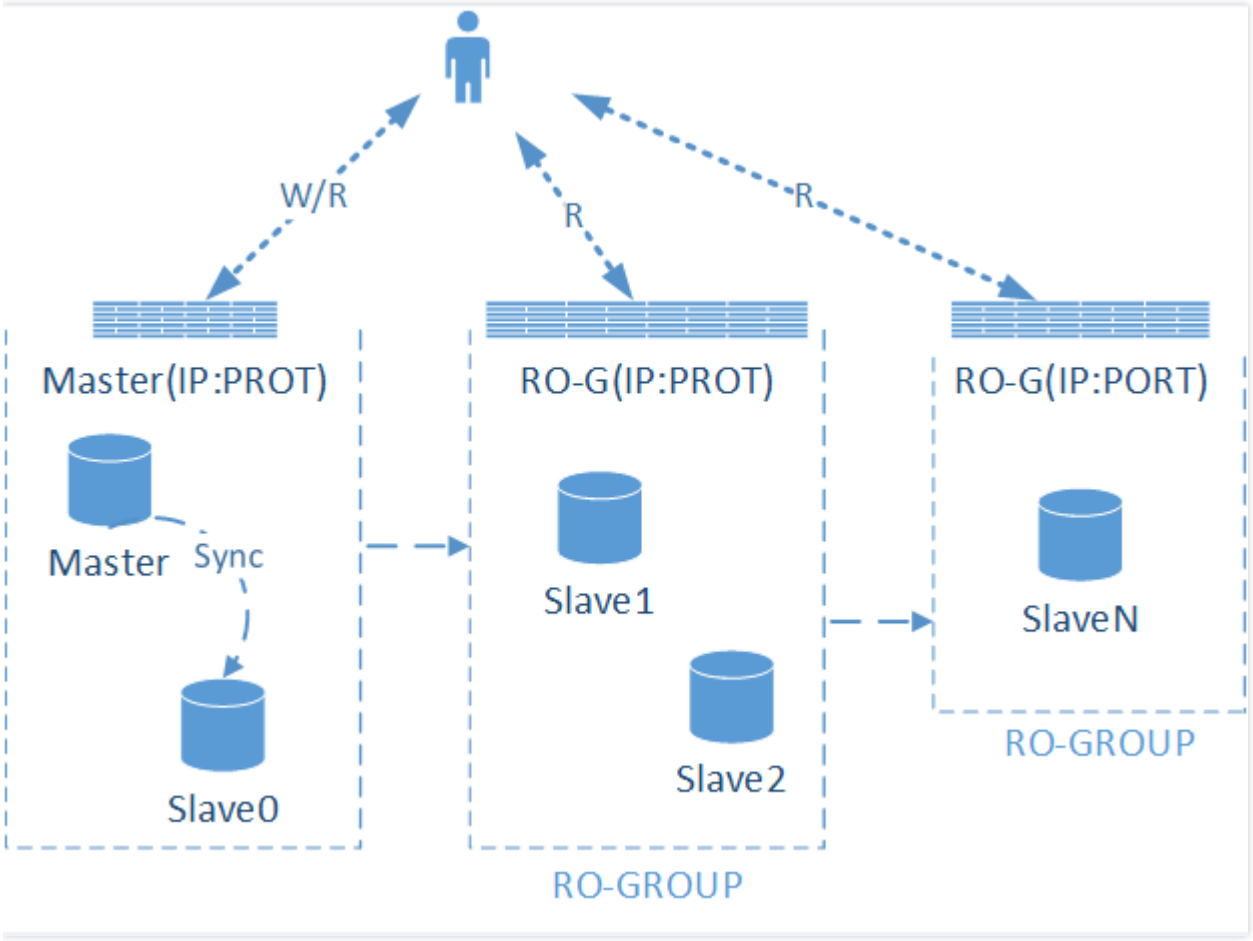

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Database Instance
Database Instance Duplication

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Database instance replication refers to data synchronization by configuring one or more backup databases for the server to distribute MySQL data to multiple systems. You can specify a data replication mode among three when purchasing instances in Tencent Cloud database for MySQL, where Master is the primary database instance, and Slave refers to the backup database instance.

Asynchronous Replication

An application initiates a data update (including insert, update and delete operations) request. After completing the update operation, the Master sends a response to the application immediately, and then replicates the data to the Slave.
During the data update, the Master needs not to wait for a response from the Slave, so the database instance replicated in an asynchronous way often has a higher performance and the unavailability of Slave does not prevent the Master from providing services. However, since the data is not synchronized to the Slave in real time, if the Master fails when a latency occurs on the Slave, there is a little chance of data inconsistency.
Asynchronous replication of Tencent Cloud database for MySQL uses a "One Master, One Slave" architecture.

Semi-synchronous Replication

An application initiates a data update (including insert, update and delete operations) request. After completing the update operation, the Master replicates the data to a Slave immediately. After **receiving and writing the data into relay log (bypassed)**, the Slave returns success message to the Master. Only after receiving the message from the Slave, the Master can return a response to the application.
Only when an exception occurs with the data replication (a Slave node becomes unavailable or an exception occurs with the network used for data replication), the Master will suspend the response to the application (for about 10 seconds by default in MySQL), and the replication will be downgraded to asynchronous replication. When the data replication returns to a normal state, strong synchronous replication will be restored.
Semi-synchronous replication of Tencent Cloud database for MySQL uses a "One Master, One Slave" architecture.

Strong Synchronous Replication

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An application initiates a data update (including insert, update and delete operations) request. After completing the update operation, the Master replicates the data to a Slave immediately. After **receiving and updating the data**, the Slave returns success message to the Master. Only after receiving the message from the Slave the Master can return a response to the application.
Since the data is replicated synchronously from the Master to the Slave, for each update operation of the Master, the success of update on the Slave must be ensured. As a result, strong synchronous replication can maximize the data consistency between the Master and the Slave. However, each update request of the Master cannot be executed until it gets the response of the Slave, so the unavailability of the Slave can greatly affect the operations on the Master.
Strong synchronous replication of Tencent Cloud database for MySQL uses a "One Master, Two Slaves" architecture. The Master can receive the success message as long as either of the two Slave updates the data successfully, preventing the unavailability of a single Slave from affecting the operations on the Master, and improving the availability of strong synchronous replication cluster.

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High Availability (Multiple AZs)

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Tencent Cloud CDB provides high availability and failover support for database instances using multi-availability zone deployments. A multi-availability zone is a physical zone consisting of multiple single availability zones within the same region. Multi-availability zone deployments help protect your database against database instance failure and availability zone disruption. For more information on availability zones, please see Regions and Availability Zones.

Note:

- Whether the instances in a database cluster are running across multiple availability zones or not, each CDB for MySQL has a slave for real-time hot backup to ensure high availability for the database.
- In a multi-availability zone deployment, CDB for MySQL automatically presets and maintains a sync standby replica in a different availability zone.
- The master database instance is synchronously replicated across availability zones to a standby replica to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.

Supported Regions

Tencent Cloud CDB multi-availability zone deployments are supported in Shenzhen Finance Zone and Shanghai.

Multi-availability Zone Deployments

1. Log in to **Tencent Cloud Console** 1. Click **Relational Database** in the navigation bar to enter **Cloud Database Console** 2. Click **New** button.
2. On the cloud database purchase page, select **Yes** on the **Multi-availability Zone Deployments** option.

Failover

CDB for MySQL handles failovers automatically so you can resume database operations as quickly as possible without administrative intervention. The master database instance switches over automatically to the standby replica if any of the following conditions occur:

- Availability zone outage
- Master database instance failure

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