

TencentDB for SQL Server

Product Introduction

Product Documentation



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Contents

Product Introduction

- Product Overview

- Architecture

- Strengths

- Use Cases

- Regions and AZs

- Features and Differences

- Instance Types

- Instance Types

 - Primary Instance Specifications

 - Read-Only Instance Specifications

- Storage Types

- Common Concepts

- Network Environment

- License Statement

Product Introduction

Product Overview

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Licensed by Microsoft, TencentDB for SQL Server continuously provides you with the latest features and helps you avoid the risks with unauthorized use of the software. It features out-of-the-box usage, high stability, reliability, and security, data security protection, and failover in a matter of seconds, enabling you to focus more on application development itself.

Note :

As one of the earliest commercial database products, SQL Server supports complex SQL queries with excellent performance. Thanks to its comprehensive support for applications based on the Windows .NET Framework, it is widely used in such fields as government services, finance, healthcare, retail, education, and gaming.

Deployment Architecture

TencentDB for SQL Server supports three deployment architectures:

Basic Edition

It separates computing and storage based on premium cloud disks and is deployed on a single node.

Dual-Server High Availability Edition

It consists of one primary SQL Server database and one mirror SQL Server database deployed across racks/AZs.

Cluster Edition

It adopts the Always On architecture, including one primary and one replica deployed across racks/AZs by default.

Architecture

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Cluster Edition

Supported versions

SQL Server 2017 Enterprise

Architecture

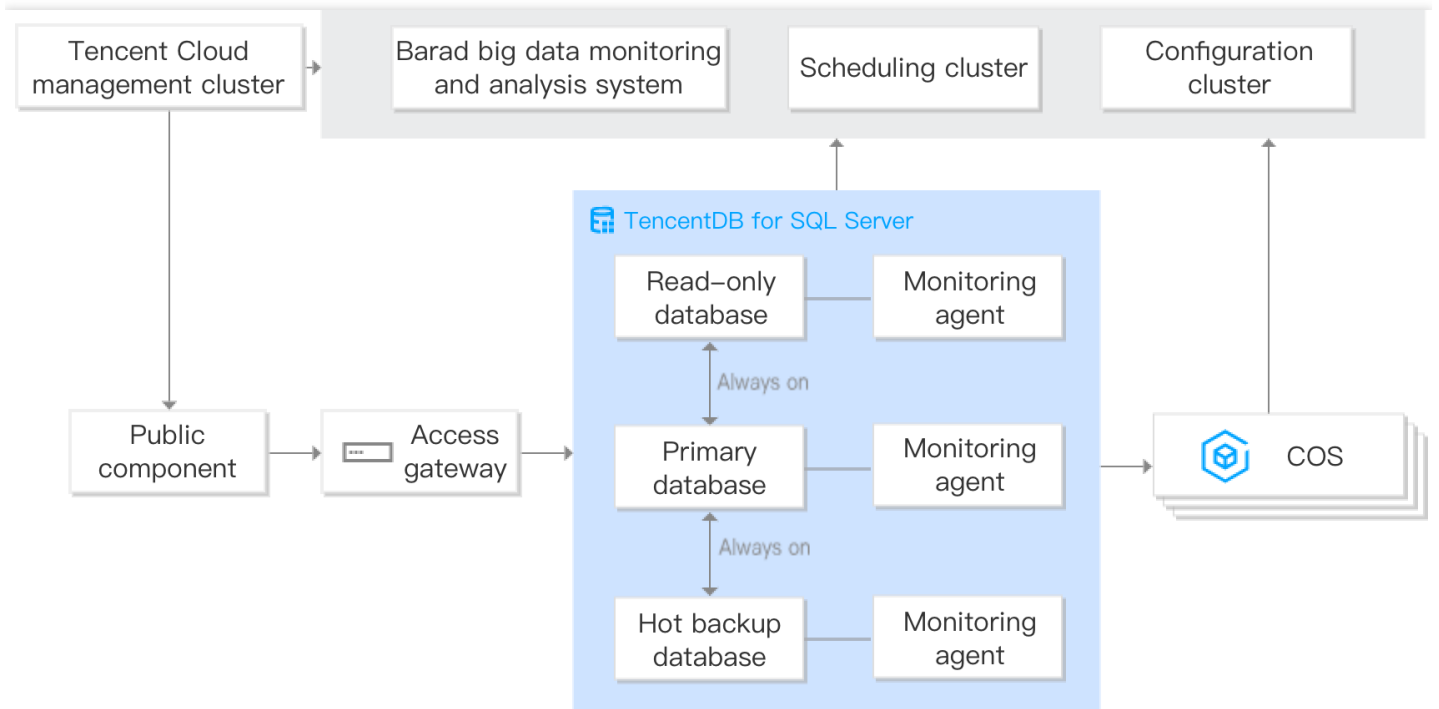
TencentDB for SQL Server Cluster Edition adopts the Always On architecture, including one primary and one replica deployed across racks/AZs. Each of them corresponds to a monitoring agent that monitors the database through heartbeat in real time.

- Tencent Cloud management cluster: it consists of the independently deployed decision-making and scheduling cluster and configuration cluster as the management and scheduling center of clusters and is responsible for managing the normal operations of database node groups, access gateway clusters, and COS.
- COS: it provides data disaster recovery and cold backup services.
- Access gateway cluster: it provides a unique IP externally, so that even if data nodes are switched, the IP for users to connect to the instance stays unchanged.

Note :

Basic sync process of Always On:

The logs (commits and log block writes) of the primary node will be flushed from the log cache to the disk. At the same time, the Log Capture thread of the primary node will also send the logs to all other replica nodes, and the Log Receive threads of the corresponding nodes will also flush the received logs from the log cache to the disk. Eventually, the Redo thread flushes these logs to the data file.



Dual-Server High Availability Edition

Supported versions

- SQL Server 2008/2012/2014/2016/2017 Enterprise
- SQL Server 2008/2012/2014/2016/2017 Standard

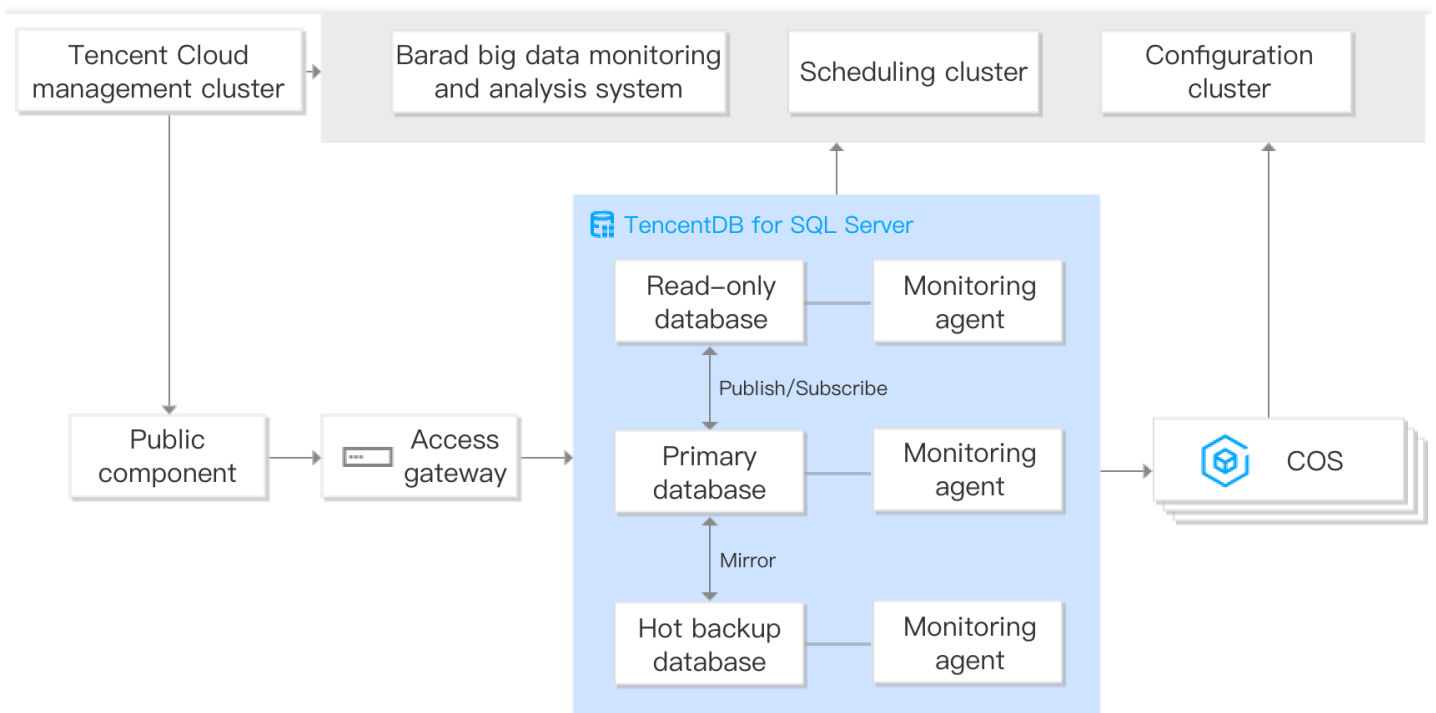
Architecture

TencentDB for SQL Server Dual-Server High Availability Edition consists of one primary database and one mirror database deployed across racks/AZs. Each of them corresponds to a monitoring agent that monitors the database through heartbeat in real time.

- Tencent Cloud management cluster: it consists of the independently deployed decision-making and scheduling cluster and configuration cluster as the management and scheduling center of clusters and is responsible for managing the normal operations of database node groups, access gateway clusters, and COS.
- COS: it provides data disaster recovery and cold backup services.
- Access gateway cluster: it provides a unique IP externally, so that even if data nodes are switched, the IP for users to connect to the instance stays unchanged.
- The scaling of read-only instances is implemented through the publish/subscribe model.

Note :

A mirror has a complete copy of data but does not provide read/write services by itself; instead, it implements data sync by receiving update logs from the primary and allows the creation of snapshots for reporting. In a mirror cluster, data sync between the primary and mirror relies on transaction logs. SQL Server's transaction logs are at the database level rather than instance level, and each database has separate transaction logs, so SQL Server mirroring is implemented at the database level.



Basic Edition

Supported versions

SQL Server 2008/2012/2014/2016/2017 Enterprise

Architecture

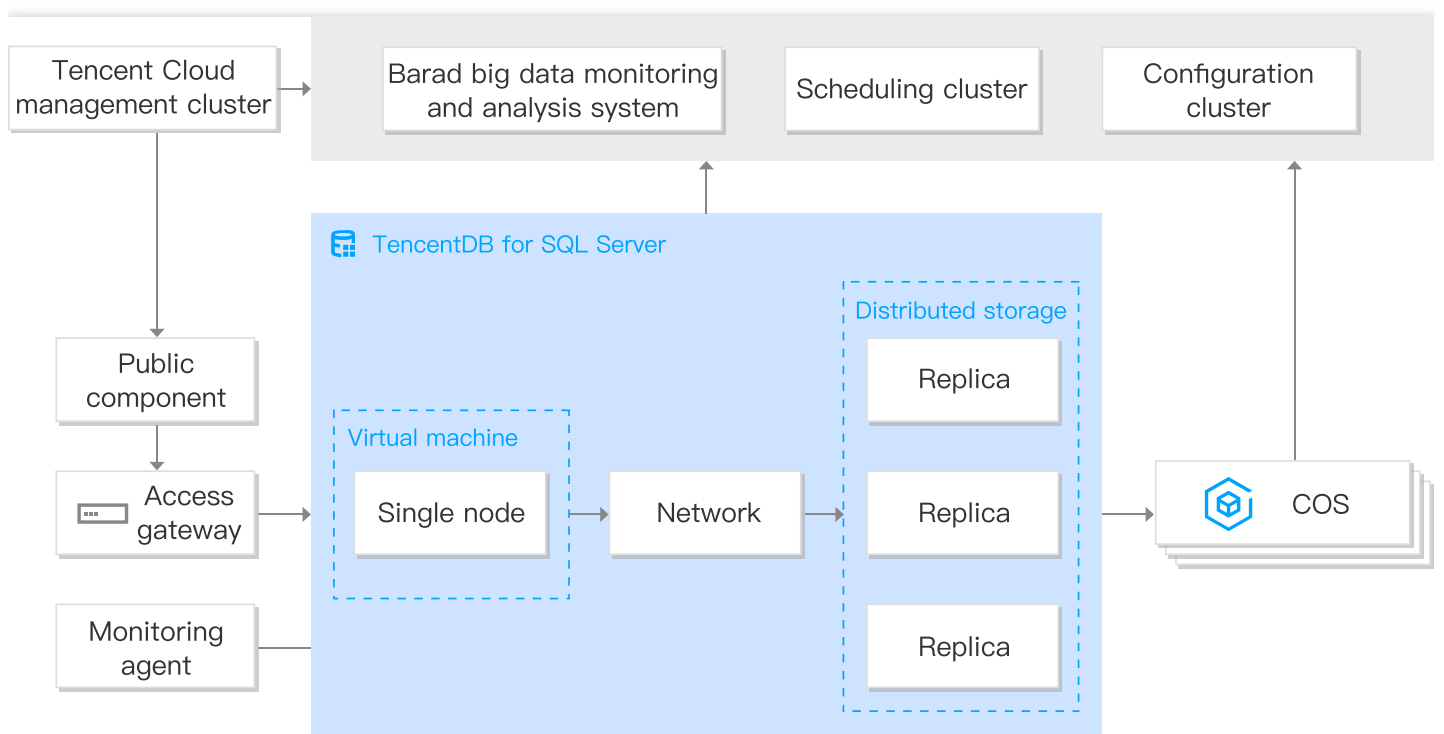
The Basic Edition adopts a single-node deployment method and offers extremely high cost effectiveness. Its features are highlighted as below:

- It supports computation-storage separation. If a computing node fails, fast recovery can be achieved by switching to another node. Underlying data is stored in three copies on cloud disks, which ensures a certain level of data reliability and enables quick data restoration from disk snapshots in case of disk failures.

- It offers over 20 monitoring metrics such as database connection, access, and resource and supports configuring alarm policies as needed. Compared with a CVM-based self-built database, a Basic Edition instance is also deployed on a CVM instance but is more convenient and provides higher database performance at lower costs.
- It uses premium cloud disks as its underlying storage media, making it suitable for 90% I/O scenarios with low costs and stable performance.

Note :

- It is suitable for personal learning, ISV software for small and medium-sized enterprises (such as financial, CRM, and ERP customers), web applications, and non-core small corporate systems.
- As it adopts a single-node architecture, when the node fails, it takes slightly longer to recover than CVM (due to instance startup and data restoration).
- If your business requires high availability, we recommend you use the Dual-Server High Availability Edition or Cluster Edition.



Strengths

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Licensed by Microsoft, TencentDB for SQL Server continuously provides you with the latest features, helping you avoid the risks of using unauthorized software and enhancing the trustworthiness of your business in competitive markets.

Stability and Reliability

TencentDB for SQL Server boasts 99.9996% data reliability and 99.95% service availability. Its master-slave dual-node database architecture allows for switching from a faulty instance to a healthy one in a matter of seconds and enables automatic backup, so the database can be restored to a previous point in time through rollback.

Best-in-class Performance

TencentDB for SQL Server uses enterprise-grade PCI-E SSDs to deliver industry-leading I/O throughput, outperforming user-built databases and supporting commercial-grade high-volume concurrent business requests.

Ease of Management

Various management tasks can be finished with ease in Tencent Cloud Console or SQL Server Management Studio, such as database management, permission setting, monitoring and alarming, eliminating concerns over database installation and OPS.

Performance Monitoring

Dozens of important metrics can be viewed in the console, such as the number of connections and requests, disk I/O and buffer hit rate, helping you comprehensively monitor database running conditions and accurately understand the database load and system health.

System Alarming

TencentDB for SQL Server supports user-defined resource threshold alarms to help OPS engineers discover database anomalies in a timely manner and quickly respond to and resolve potential system problems.

Use Cases

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Ecommerce, O2O, and Tourism

TencentDB for SQL Server provides stable and high-performance database solutions for transaction and order systems based on Microsoft C# and ASP.NET. It is specially optimized for flash sales scenarios to break through the performance bottleneck during high-concurrency update of hotspot data.

Finance

TencentDB for SQL Server offers a high-availability master/slave architecture and automated failover at the second level for core application databases for fund transactions, transfers, and accounting in banking, insurance, securities, funds, and internet finance that require extremely high data security.

It supports data encryption, network isolation, and access control to ensure data security and provides flexible data backup and restoration solutions to satisfy high data reliability requirements.

Gaming

Adapted to the characteristics of the gaming industry, TencentDB for SQL Server provides powerful elastic scalability of resources and enables deployment of databases for region-specific game servers in just minutes. Its high-availability master/slave architecture and high-security linkage implement automated imperceptible failover for data rollback with higher stability and efficiency. All these advantages help deliver a smoother gaming experience to large numbers of online players.

Mobile Work

TencentDB for SQL Server supports quick deployment of mobile work platforms such as office automation (OA), enterprise resource planning (ERP), and sales management, where the data is stored in cloud-based databases in Tencent Cloud's secure subnets for protection by multiple measures and improved reliability.

Data Warehouse and Data Analysis Platform

TencentDB for SQL Sever helps you conveniently create an in-cloud data warehouse and data analysis platform with SQL Server's built-in business intelligence, IT dashboards, and collaboration with SharePoint.

Regions and AZs

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Region

Overview

A region is the physical location of an IDC. In Tencent Cloud, regions are fully isolated from each other, ensuring cross-region stability and fault tolerance. When purchasing Tencent Cloud services, we recommend selecting the region closest to your end users to minimize access latency and improve download speed.

Characteristics

- The networks of different regions are fully isolated from each other, and Tencent Cloud services in different regions **cannot communicate using private networks by default**.
- Tencent Cloud services in different VPCs can communicate with each other over [Cloud Connect Network](#) which is fast and stable.
- [Cloud Load Balancer](#) currently supports intra-region traffic forwarding by default. If [cross-region binding](#) is enabled, cross-region binding of CLB and TencentDB instances is supported.

AZ

Overview

An availability zone (AZ) is a physical IDC of Tencent Cloud with independent power supply and network in the same region. It can ensure business stability, as failures (except for major disasters or power failures) in one AZ are isolated without affecting other AZs in the same region. By starting an instance in an independent AZ, users can protect their applications from being affected by a single point of failure.

Characteristics

Tencent Cloud services in the same VPC are interconnected over the private network, which means they can communicate using [private IPs](#), even if they are in different AZs of the same region.

Note :

Private network interconnection refers to the interconnection of resources under the same account. Resources under different accounts are completely isolated on the private network.

China

Region	AZ
South China (Guangzhou) ap-guangzhou	Guangzhou Zone 1 (sold out) ap-guangzhou-1
	Guangzhou Zone 2 (sold out) ap-guangzhou-2
	Guangzhou Zone 3 ap-guangzhou-3
	Guangzhou Zone 4 (sold out) ap-guangzhou-4
	Guangzhou Zone 6 ap-guangzhou-6
	Guangzhou Zone 7 ap-guangzhou-7
East China (Shanghai) ap-shanghai	Shanghai Zone 1 (sold out) ap-shanghai-1
	Shanghai Zone 2 ap-shanghai-2
	Shanghai Zone 3 ap-shanghai-3
	Shanghai Zone 4 ap-shanghai-4
	Shanghai Zone 5 ap-shanghai-5
East China (Nanjing) ap-nanjing	Nanjing Zone 1 ap-nanjing-1
	Nanjing Zone 2 ap-nanjing-2
North China (Beijing) ap-beijing	Beijing Zone 1 ap-beijing-1
	Beijing Zone 2

	ap-beijing-2
	Beijing Zone 3 ap-beijing-3
	Beijing Zone 4 ap-beijing-4
	Beijing Zone 5 ap-beijing-5
	Beijing Zone 6 ap-beijing-6
	Beijing Zone 7 ap-beijing-7
Southwest China (Chengdu) ap-chengdu	Chengdu Zone 1 ap-chengdu-1
	Chengdu Zone 2 ap-chengdu-2
Southwest China (Chongqing) ap-chongqing	Chongqing Zone 1 ap-chongqing-1
Hong Kong/Macao/Taiwan (Hong Kong, China) ap-hongkong	Hong Kong Zone 1 (Hong Kong nodes cover services in the China regions of Hong Kong, Macao, and Taiwan) ap-hongkong-1
	Hong Kong Zone 2 (Hong Kong nodes cover services in the China regions of Hong Kong, Macao, and Taiwan) ap-hongkong-2

Other Countries and Regions

Region	AZ
Southeast Asia (Singapore) ap-singapore	Singapore Zone 1 (Singapore nodes cover services in Southeast Asia) ap-singapore-1
	Singapore Zone 2 (Singapore nodes cover services in Southeast Asia) ap-singapore-2
Southeast Asia (Jakarta)	Jakarta Zone 1 (Jakarta nodes cover services in Southeast Asia)

ap-jakarta	ap-jakarta-1
Southeast Asia (Bangkok) ap-bangkok	Bangkok Zone 1 (Bangkok nodes cover services in Southeast Asia) ap-bangkok-1
	Bangkok Zone 2 (Bangkok nodes cover services in Southeast Asia) ap-bangkok-2
Northeast Asia (Seoul) ap-seoul	Seoul Zone 1 (Seoul nodes cover services in Northeast Asia) ap-seoul-1
Northeast Asia (Tokyo) ap-tokyo	Tokyo Zone 1 (Tokyo nodes cover services in Northeast Asia) ap-tokyo-1
	Tokyo Zone 2 (Tokyo nodes cover services in Northeast Asia) ap-tokyo-2
Western US (Silicon Valley) na-siliconvalley	Silicon Valley Zone 1 (Silicon Valley nodes cover services in Western US) na-siliconvalley-1
	Silicon Valley Zone 2 (Silicon Valley nodes cover services in Western US) na-siliconvalley-2
Europe (Moscow) eu-moscow	Moscow Zone 1 (Moscow nodes cover services in Europe) eu-moscow-1

Selection of Regions and AZs - The geographic locations of TencentDB instances, your business, and your target users: We recommend you choose the region closest to your end users when purchasing TencentDB instances to minimize access latency and improve access speed. - Other Tencent Cloud services you use. When you select other Tencent Cloud services, we recommend you try to locate them all in the same region and AZ to allow them to communicate with each other through the private network, reducing access latency and increasing access speed. - High availability and disaster recovery. Even if you have just one VPC, we still recommend you deploy your businesses in different AZs to prevent a single point of failure and enable cross-AZ disaster recovery. - There may be network latency among different AZs. We recommend you assess your business requirements and find the optimal balance between high availability and low latency. - If you need access to servers in other countries or regions, we recommend you select an instance in those other countries or regions. If you use a TencentDB instance in [China] (#MainlandChina1) to access [servers in other countries and regions](#InternationalArea1), you may encounter a higher network latency.

Resource Availability

The following table describes which resources are global, which are regional, and which are specific to AZs.

Resource	Resource ID Format -8-Digit String of Numbers and Letters	Type	Description
User account	No limit	Globally unique	You can use the same account to access Tencent Cloud resources from around the world.
SSH key	skey-xxxxxxx	Global	You can use an SSH key to bind a CVM instance in any region under the account.
CVM instance	ins-xxxxxxx	AZ-specific	A CVM instance created in an AZ is not available in other AZs.
Custom image	img-xxxxxxx	Regional	Custom images created for the instance are available in all AZs in the same region. Use the image replication feature to copy a custom image if you need to use it in other regions.
EIP	eip-xxxxxxx	Regional	EIPs are created in a region and can only be associated with instances in the same region.
Security group	sg-xxxxxxx	Regional	A security group can only be associated with instances in the same region. Tencent Cloud automatically creates three default security groups for you.
Cloud disk	disk-xxxxxxx	AZ-specific	You can only create a CBS cloud disk in a specific AZ and mount it to instances in the same AZ.
Snapshot	snap-xxxxxxx	Regional	A snapshot created from a cloud disk can be used for other purposes (such as creating cloud disks) in the same region.
CLB instance	clb-xxxxxxx	Regional	CLB instances can be bound to CVM instances in different AZs in the same region for traffic forwarding.
VPC	vpc-xxxxxxx	Regional	A VPC in one region can have resources created in different AZs in the region.
Subnet	subnet-xxxxxxx	AZ-specific	You cannot create subnets across AZs.
Route table	rtb-xxxxxxx	Regional	When creating a route table, you need to specify a VPC. Therefore, route tables are regional as well.

Related Operations

TencentDB for SQL Server supports cross-AZ instance migration. For more information, see [Migrating Across AZs](#).

Features and Differences

Last updated : 2022-05-31 16:54:23

This document describes the features and differences of TencentDB for SQL Server editions.

Edition Features and Differences

		Dual-Server High Availability Edition	Cluster Edition	Basic Edition
Module	Feature	2008 R2 Enterprise 2012 Standard/Enterprise 2014 Standard/Enterprise 2016 Standard/Enterprise 2017 Standard/Enterprise 2019 Standard/Enterprise	2017 Enterprise 2019 Enterprise	2008 R2 Enterprise 2012 Enterprise 2014 Enterprise 2016 Enterprise 2017 Enterprise 2019 Enterprise
Lifecycle	Instance creation	Supported	Supported	Supported
	Instance restart			
	Billing mode change			
	Instance termination			
	Read-only instance creation			
	Publish/Subscribe			
	Specification upgrade/downgrade			
	Disk capacity adjustment			
	Version upgrade			
	Architecture upgrade			

Instance attribute	Instance list view	Supported	Supported	Supported
	Instance details view			
	Instance renaming			
	Instance remarks modifying			
	Instance tagging			
	Maintenance time management			
	Project management			
Service availability	High availability method	Mirror HA	Always On high availability	Compute node migration + disk snapshot
	Cross-AZ disaster recovery	Supported	Supported	Unsupported
	Intra-region disaster recovery	Supported	Supported	Unsupported
	Read-only instance removal	Supported	Supported	Unsupported
	Cross-AZ migration	Supported	Supported	Unsupported
Backup and restoration	Full backup	Supported	Supported	Supported
	Data backup			
	Incremental backup			
	Log backup			
	Scheduled backup			
	Manual backup			
	Archive file			
	Unarchived files			
	Instance backup			

	Multi-database backup			
	Backup policy customization			
	Restoration by backup set			
	Restoration by time point			
	Restoration by user backup set			
	Backup download			
	Backup task execution on replica instance	Unsupported	Supported	Unsupported
Monitoring and alarms	Resource monitoring			Supported
	Engine monitoring	Supported	Supported	Supported
	Second-level monitoring			Unsupported (one-minute granularity)
	Monitoring policy customization	Unsupported	Unsupported	Supported
	Alarm	Supported	Supported	Supported
Account management	Account creation and deletion			
	Read/Write permission separation	Supported	Supported	Supported
	Admin account			
	SA account	Unsupported	Unsupported	Supported
Database management	Database creation	Supported	Supported	Supported
	Database deletion			
	Database cloning			
	Database authorization			

	Change data capture (CDC)			
	Change tracking (CT)			
	Database shrinking			
Data security	Security group	Supported	Supported	Supported
	Database audit	Unsupported currently	Unsupported currently	Unsupported
	Network encryption			
	TDE encryption	Supported	Supported	
Data channel	Data sync	Unsupported currently	Unsupported currently	Unsupported currently
	Homogeneous data migration	Supported	Supported	Supported
	Heterogeneous data migration	Unsupported	Unsupported	Unsupported
	Publish/Subscribe	Supported	Supported	
Log management	Error log	Unsupported	Unsupported	Unsupported
	Slow log	Supported	Supported	Supported
	Execution log	Unsupported	Unsupported	Unsupported
Parameter management	Parameter update	Supported	Supported	Supported
	Parameter history			
	Parameter template	Unsupported	Unsupported	Unsupported
Performance optimization	Expert service	Supported	Supported	Supported
	Resource analysis	Unsupported	Unsupported	Unsupported
	Engine analysis			
Network	Classic network	Supported	Supported	Supported
	VPC			
	Public address	Unsupported	Unsupported	Unsupported

Instance Types

Last updated : 2022-06-10 18:37:12

As the minimum management unit in TencentDB for SQL Server, a database instance is a database environment running independently in Tencent Cloud and represents an independent TencentDB for SQL Server instance. You can create, modify, and delete instances in the console and create and manage multiple databases in each instance.

This document describes TencentDB for SQL Server database instance types.

Instance Types and Descriptions

Instance Type	Overview	Description
Standalone instance - Basic Edition instance	<ul style="list-style-type: none">A single database node architecture is adopted, which is very cost-effective.Computing and storage are separated, and the underlying data is stored in three replicas in cloud disks.A Basic Edition node is deployed in a CVM instance, which has a higher database performance than self-built databases.High-performance cloud disk is used as the underlying storage media, suitable for 90% I/O scenarios with a stable performance.	This instance type is suitable for personal learning, ISV software for small and medium-sized enterprises, web applications, and non-core small corporate systems. If a standalone instance fails, it takes a slightly longer time to recover than a CVM instance.

Instance Type	Overview	Description
Primary/Replica instances - Dual-Server High Availability Edition/Cluster Edition instances	<ul style="list-style-type: none"> The classic one-primary-one-replica architecture is adopted, and all primary/replica instance nodes have the same specification. The primary and replica instances are deployed across racks/AZs. Each instance corresponds to a monitoring agent that monitors databases through heartbeat in real time. Cross-AZ high availability is supported; that is, the primary and replica instances can be deployed in different AZs. COS provides the data disaster recovery and cold data backup services. Independently deployed decision-making and scheduling cluster and configuration cluster serve as the management and scheduling center of database clusters. They are responsible for managing the normal operations of database node groups, access gateway clusters, and COS. 	<ul style="list-style-type: none"> Replica instances improve the instance reliability. When a primary instance is created, a replica instance will be created at the same time, which will be invisible to users. When the primary instance fails, primary-replica switch will be automatically triggered, and the database client will be disconnected momentarily. Therefore, the database client needs to support reconnection. The TencentDB for SQL Server primary and replica instances are async by default, so are the primary and read-only instances.
Read-only instance	<ul style="list-style-type: none"> It is a single-node (with no replica) instance that supports read requests. It cannot exist independently; instead, it must be in a read-only group and bound to a primary instance on Dual-Server High Availability or Cluster Edition. An RO group is a read-only instance group with the load balancing feature. 	<ul style="list-style-type: none"> A read-only instance is standalone. When the physical server fails or a database replication exception occurs, it will take a long time (subject to the data volume) for the instance to recover. For business scenarios with a strong dependency on read-only requests, we recommend you create multiple read-only instances to share the read pressure.
Cluster Edition instance	<p>The Always On architecture is adopted, where you can add up to five read-only instances to create a cluster with higher availability, reliability, and scalability. The primary and replica instances are deployed across racks/AZs. Each instance corresponds to a monitoring agent that monitors databases through heartbeat in real time.</p>	<p>This instance type is suitable for industry application scenarios, such as gaming, healthcare, medicine, internet, IoT, retail, ecommerce, logistics, insurance, securities, media, technical service, and automobile.</p>

Note :

You can create and manage instances of various types in the [TencentDB for SQL Server](#) console.

References

- [Features and Differences](#)

Instance Types

Primary Instance Specifications

Last updated : 2022-05-31 16:54:23

This document describes the latest specifications of TencentDB for SQL Server primary instances.

TencentDB for SQL Server Primary Instance

Instance Type	Version	Disk Type	CPU and Memory	Disk
Basic Edition	2008 R2 Enterprise 2012 Enterprise 2014 Enterprise 2016 Enterprise 2017 Enterprise 2019 Enterprise	High-performance cloud disk	2-core 4 GB MEM	20–3,000 GB
			2-core 8 GB MEM	
			4-core 8 GB MEM	
			4-core 16 GB MEM	
			8-core 16 GB MEM	
			8-core 32 GB MEM	
			16-core 32 GB MEM	
			16-core 64 GB MEM	
			24-core 48 GB MEM	
		24-core 96 GB MEM		
		SSD cloud disk	2-core 8 GB MEM	100–3,000 GB

Instance Type	Version	Disk Type	CPU and Memory	Disk
			4-core 8 GB MEM	
			4-core 16 GB MEM	
			8-core 16 GB MEM	
			8-core 32 GB MEM	
			16-core 32 GB MEM	
			16-core 64 GB MEM	
			24-core 48 GB MEM	
			24-core 96 GB MEM	
Cluster Edition	2017 Enterprise 2019 Enterprise	High-performance local SSD	1-core 2 GB MEM	10–3,000 GB
			1-core 4 GB MEM	
			1-core 8 GB MEM	
			2-core 16 GB MEM	
			4-core 32 GB MEM	
			8-core 64 GB MEM	
			12-core 96 GB MEM	

Instance Type	Version	Disk Type	CPU and Memory	Disk
			16-core 128 GB MEM	10-6,000 GB
			24-core 192 GB MEM	
			32-core 256 GB MEM	
			48-core 384 GB MEM	
			64-core 512 GB MEM	
			90-core 720 GB MEM	
Dual-Server High Availability Edition	2008 R2 Enterprise	High-performance local SSD	1-core 2 GB MEM	10-3,000 GB
	2012 Enterprise		1-core 4 GB MEM	
	2014 Enterprise		1-core 8 GB MEM	
	2016 Enterprise		2-core 16 GB MEM	
	2017 Enterprise		4-core 32 GB MEM	
			8-core 64 GB MEM	
			12-core 96 GB MEM	
			16-core 128 GB MEM	
			24-core 192 GB MEM	
				10-6,000 GB

Instance Type	Version	Disk Type	CPU and Memory	Disk
			32-core 256 GB MEM	
			48-core 384 GB MEM	
			64-core 512 GB MEM	
			90-core 720 GB MEM	
	2019 Enterprise		1-core 4 GB MEM	10-3,000 GB
	1-core 8 GB MEM			
	2-core 16 GB MEM			
	4-core 32 GB MEM			
	8-core 64 GB MEM			
	12-core 96 GB MEM			
	16-core 128 GB MEM		10-6,000 GB	
	24-core 192 GB MEM			
	32-core 256 GB MEM			
	48-core 384 GB MEM			
	64-core 512 GB MEM			

Instance Type	Version	Disk Type	CPU and Memory	Disk
			90-core 720 GB MEM	

Read-Only Instance Specifications

Last updated : 2022-05-31 16:54:23

In TencentDB for SQL Server, you can create one or more read-only instances and use them to sustain high numbers of database reads, so as to implement auto scaling of read capabilities and alleviate pressure on the database. This document describes the specifications and configurations of read-only instances.

TencentDB for SQL Server Read-Only Instance

Version	Disk Type	CPU and Memory	Disk
2008 R2 Enterprise 2012 Enterprise 2014 Enterprise 2016 Enterprise 2017 Enterprise 2019 Enterprise	High-performance local SSD	1-core 2 GB MEM	10–3,000 GB
		1-core 4 GB MEM	
		1-core 8 GB MEM	
		2-core 16 GB MEM	
		4-core 32 GB MEM	
		8-core 64 GB MEM	
		12-core 96 GB MEM	10–6,000 GB
		16-core 128 GB MEM	
		24-core 192 GB MEM	
		32-core 256 GB MEM	
		48-core 384 GB MEM	
		64-core 512 GB MEM	
		90-core 720 GB MEM	

Storage Types

Last updated : 2022-05-31 16:54:23

This document describes the storage types of TencentDB for SQL Server and their uses cases, including SSD cloud disk, high-performance cloud disk, and high-performance local SSD.

Storage Type Description

Storage Type	Description	Applicable Database Architecture	Application Scenario
SSD cloud disk	All-flash cloud disk storage type with NVMe SSD as the storage media. It adopts a three-copy distributed storage mechanism to provide low-latency and high-throughput I/O capabilities with a high random IOPS and 99.9999999% data security.	Basic Edition	Application scenarios such as I/O-intensive applications and small and medium relational databases.
High-performance cloud disk	Hybrid storage type offered by Tencent Cloud. It provides high-performance storage capabilities close to SSD through the cache mechanism and adopts a three-copy distributed mechanism to ensure the data reliability.	Basic Edition	Small and medium application scenarios that require high data reliability and moderate performance, such as web/app servers, business logic processing, and small and medium websites.
High-performance local SSD	High I/O local disk storage type, which has an excellent I/O throughput. A 90-core 720 GB MEM TencentDB for SQL Server instance can sustain up to 4.5 million TPM.	Dual-Server High Availability Edition/Cluster Edition	Business scenarios that have extremely high requirements for storage I/O performance and high-availability architecture at the application layer, such as online games, ecommerce, ERP software services, video live streaming, and media.

Selecting Storage Type

You can select the disk type after selecting the instance model on the [TencentDB for SQL Server purchase page](#).

Instance Type	Dual-Server High Availability	Cluster Edition	Basic Edition ^{NEW}
Disk Type	High-Performance Cloud Disk	SSD Cloud Disk	

Storage Type Comparison

Storage Type	I/O Performance	Maximum Disk Capacity (GB)
SSD cloud disk	Excellent I/O throughput	3,000
High-performance cloud disk	Stable I/O performance	3,000
High-performance local SSD	Low I/O latency and higher I/O throughput than cloud disk	6,000

Common Concepts

Last updated : 2022-05-31 16:54:23

This document describes the common concepts of TencentDB for SQL Server to help you better understand and use it.

- **Tencent Cloud console:** Web-based UIs.
- **Region:** A physical IDC. In general, a TencentDB for SQL Server instance and a CVM instance should be in the same region to achieve the best access performance.
- **Availability zone (AZ):** A physical location with independent power supply and network resources within a region. There are no substantial differences between different AZs in the same region.
- **Multi-AZ:** A physical location created by combining multiple AZs in the same region.
- **Instance:** A TencentDB for SQL Server resource in Tencent Cloud.
- **Read-only instance:** An instance that can only be read from.
- **RO group:** A group of read-only instances.
- **Billing mode:** The billing mode of an instance resource, which is pay-as-you-go.
- **Pay-as-you-go:** A postpaid billing mode, where you can apply for resources for on-demand use and will be charged based on the actual usage upon settlement.
- **Instance type:** Instance types include Basic Edition, Cluster Edition, and Dual-Server High Availability Edition, which have different deployment architectures.
- **Basic Edition:** A TencentDB for SQL Server Basic Edition instance is also called a standalone instance. It has only one database node, separates computing and storage, and is very cost-effective.
- **High Availability Edition:** An High Availability Edition instance consists of a primary instance and a replica instance. When the former fails and cannot be accessed, the system will automatically switch to the latter.

- **Cluster Edition:** Cluster Edition instances adopt the Always On architecture, including one primary instance and one replica instance deployed across racks/AZs, separate computing and storage, and allow purchasing read-only instances for read/write separation.
- **Engine versions:** Compatible database versions. Currently, the following versions are supported: 2008 R2 Enterprise, 2012 Enterprise, 2016 Enterprise, 2017 Enterprise, and 2019 Enterprise.
- **Specification:** Resource configuration of each node, such as 2-core 16 GB MEM.
- **Disk:** The main storage device of a computer, i.e., data storage space.
- **High-performance local SSD:** High-I/O local disk storage type.

SSD cloud disk: All-flash cloud disk storage type with NVMe SSD as the storage media. It adopts a three-copy distributed storage mechanism to provide low-latency and high-throughput I/O capabilities with a high random IOPS and 99.9999999% data security.

- **High-performance cloud disk:** Hybrid storage type. It provides high-performance storage capabilities close to SSD through the cache mechanism and adopts a three-copy distributed mechanism to ensure the data reliability.
- **Project:** Used to categorize and manage instance resources.
- **Tag:** A cloud resource management tool that allows you to use different standards to categorize, search for, and aggregate cloud resources with the same attributes.
- **Maintenance time:** To ensure the stability of your TencentDB instance, the backend system performs maintenance operations on the instance during the maintenance window from time to time. We highly recommend you set an acceptable maintenance time for your business instance, usually during off-peak hours, so as to minimize the potential impact on your business.
- **Security group:** Security access control to instances by specifying IP, protocol, and port rules for instance access.
- **Network:** A network made up of several nodes and linkages that connect them. It represents many objects and their interconnections. For performance and security considerations, only VPC network is supported currently.
- **Private network address:** The IP and port assigned to a database for both read and write requests within your VPC network.

- **Port:** A port in a computer, switch, or router.
- **Database:** A set of organized, shared, and centrally managed data that is stored on a computer for a long period.
- **Database account:** A username used to log in to and manage a database.
- **Character set:** A mapping relationship or encoding rule, including a coded character set and character encoding. The code points corresponding to a character set are mapped into binary sequences, so that they can be stored and processed by a computer.
- **Cloud Virtual Machine (CVM):** A scalable computing service provided by Tencent Cloud.
- **SSMS:** SQL Server Management Studio (SSMS) is an integrated environment to manage any SQL basic structures.
- **Alarm policy:** You can create alarms to stay informed of the status changes of certain metrics. The specific metrics will be monitored for a certain period of time, and alarm notifications will be sent by SMS, email, and phone at specified intervals based on the given threshold.
- **Pub/Sub:** Business data replication and sync. You can create, change, and delete pub/sub servers in the TencentDB for SQL Server console.
- **Recycle bin:** A place where terminated instances are stored before elimination. Such instances can be restored.
- **Backup:** Data is stored separately or as a file copy to tackle possible unexpected situations such as file or data loss or corruption.
- **Automatic backup:** You can set the backup time and cycle for the system to automatically and regularly save data.
- **Manual backup:** You can manually create backup files at any time.
- **Data backup:** You can back up one, multiple, or all databases in an instance.
- **Log backup:** The system automatically generates a log backup (log file) every 30 minutes and uploads it to the cloud for storage. You can download log files.

- **Backup policy:** You can select instance backup or multi-database backup. The former backs up all databases in an instance, while the latter backs up selected databases.
- **Backup task configuration:** It is used to set the global variables of manual and scheduled backups. You can set **Upload Backup File** (archive file or unarchived files) and select the primary or replica instance for backup.
- **Upload backup file:** It is used to set whether to use an archive file or unarchived files for instance backup.

Network Environment

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TencentDB for SQL Server supports VPC.

Network Restrictions

- The networks of different regions are fully isolated from each other, and Tencent Cloud services in different regions cannot communicate over the private network by default.
- Tencent Cloud services in different VPCs can communicate with each other over [Cloud Connect Network](#), which is fast and stable.
- [Cloud Load Balancer](#) currently supports intra-region traffic forwarding by default. If [cross-region binding](#) is enabled, cross-region binding of CLB and TencentDB instances is supported.

Currently, TencentDB for SQL Server doesn't support public IP. If you need to use a public IP, you can use the port mapping feature of SSH2 to connect to, configure, and manage an instance from the internet. For more information, see [Connecting to TencentDB for SQL Server Instance from Local Machine](#).

- When you purchase TencentDB for SQL Server, we recommend you select the same region as your CVM instance to reduce the access delay.

Network Connectivity Test

The network connectivity test tool provided on the [TencentDB for SQL Server purchase page](#) can be used to check whether there are CVM instances in the selected region/AZ and network type that can communicate with TencentDB for SQL Server over the private network.

Network Type

125 subnet IPs in total, with 125 available

You can also go to the console to [Create VPCs](#) or [Create Subnets](#).

In the Guangzhou region and under VPC VPC1, the servers that can be connected via private network are: 1 pcs. [View Details](#)

Click **View Details** to view the information of eligible CVM instances, including ID/instance name, AZ, configuration (CPU, memory, disk, and network), and primary IP address. You can also use the search feature to quickly filter CVM

instances that can communicate with TencentDB for SQL Server over the private network.

Servers can be connected via private network ✕

The number of servers that can be connected via private network: 1

ID/Instance Name	Availability Zone	Configuration	Primary IP address
[blurred]	Guangzhou Zone 3	1-core/1 GB Disk:50 GB Network:VPC1/test0723	[blurred]

License Statement

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License Included

Tencent Cloud offers TencentDB instances with **license included**. The price of a **license included** model includes a SQL Server software license, underlying hardware resources and TencentDB management functions, so there is no need to purchase a Microsoft SQL Server license separately.

You only need to pay for instance specifications and usage duration, and don't have to worry about hardware and licensing costs when using a "license included" database. You can cut IT costs by only paying low variable costs instead of high fixed costs.

Note :

- Purchasing TencentDB for SQL Server does not mean that you purchased a Microsoft SQL Server long-term license contract; therefore, you should not use the TencentDB license outside of this service. For more information, see [Microsoft Volume Licensing Product Terms and Online Services Terms](#).
- The basic price of TencentDB for SQL Server **does not include** other Microsoft or Tencent Cloud services.