

Alibaba Cloud Table Store

Product Introduction

Issue: 20190819

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 What is Tablestore?

Tablestore is a NoSQL database service built on Alibaba Cloud's Apsara distributed operating system that can store and access large volumes of structured data in real time, which allows you to:

- Organize data into instances and tables that can seamlessly scale using data partitioning and load balancing.
- Protect applications from faults and errors that may occur on the underlying hardware platform, providing fast recovery capability and high service availability.
- Manage data with multiple backups using solid state disks (SSDs), enabling quick data access and high data reliability.

Basic concepts

- Data model

The **data model** of Tablestore is defined by Table, Row, Primary Key, and Attribute. A table is a set of rows, and a row consists of the **primary key and attribute**.

- Time To Live

Time To Live (TTL) is a data table attribute measured in seconds that indicates the validity period of data. To save data storage space and reduce storage costs, Tablestore automatically clears any data that exceeds TTL.

- Region

Region refers to a service region of Alibaba Cloud. Tablestore is deployed across many service regions. You can select a suitable region tailored to your needs. For more information, see [Tablestore regions](#).

- Read/write throughput

The **read/write throughput** is measured by read/write capacity units (CUs), which is the smallest billing unit for the data read and write operations. Read/write throughput includes Reserved throughput and Additional throughput.

Related services

After you load your data to Tablestore, you can use it with other Alibaba Cloud products and services.

- For more information about how to export full data and synchronize incremental data in Tablestore to OSS, see [Overview](#).
- For more information about how to establish a seamless connection between Tablestore and MaxCompute under an Alibaba Cloud account, see [Allow MaxCompute to access Tablestore using one account](#).
- For more information about how to use Function Compute to perform real-time computation on incremental data in Tablestore data tables, see [Introduction to Function Compute](#).

Usage

When using Tablestore, you only pay for the resources you reserve and use. Services including cluster resizing, upgrades, and maintenance of database software and hardware are managed free of charge.

Alibaba Cloud provides an intuitive operation interface for you to manage your Tablestore resources. You can log on to the [Tablestore console](#) to operate your instances.

You can also use APIs and SDKs to manage your Tablestore resources. For more information, see [Tablestore API Reference](#) and [Tablestore SDK Reference](#).

Pricing

Billing items of Tablestore include Data storage, Reserved read/write throughput, Additional read/write throughput and Downstream Internet traffic. For more information, see [Billing items and pricing](#).

For more information about Tablestore pricing, see [Tablestore Pricing page](#).

2 Benefits

Table Store is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. Table Store lets you offload the administrative burdens of operating and scaling a distributed database, so that you don't have to worry about hardware provisioning, setup and configuration, replication, software patching, or cluster scaling. In addition, Table Store provides the following benefits:

Advantage item	Description
Scalability	<ul style="list-style-type: none"><li>· Dynamic adjustment of reserved read/write throughput When creating a table, you can configure the reserved read/write throughput for an application based on business requirements and data access conditions. Table Store schedules and reserves resources, based on the table's reserved read/write throughput, to minimize the resource usage costs. You can dynamically adjust the table's reserved read/write throughput based on the application.<li>· Unlimited capacity The amount of data stored in Table Store tables is unlimited. If a table size increases, Table Store adjusts the data partitions for immediate storage space allocation to the resized table.

Advantage item	Description
Data reliability	Table Store stores multiple data copies across different servers in different racks . If a failure occurs, backup servers with copied data immediately restore services , resulting in zero data loss.
High availability	Through automatic failure detection and data migration, Table Store protects applications from both hardware and network-related faults to deliver high availability.
Ease of management	Table Store automatically manages complex tasks, such as the management of data partitions, software upgrades , hardware upgrades, configuration updates, and cluster resizing, allowing you to focus on growing your business.
Secure access platform	Table Store performs identity authentication for each application request, preventing unauthorized data access and ensuring data access security.
Strong consistency	Table Store guarantees strong consistency of writing data, and makes sure that the data 3 copies are written to disk and that the data will eventually be consistent across all storage locations. Once a successful result is returned for a write operation, applications can read the latest data.
Flexible data models	Table Store tables do not require a fixed format. The column numbers of each row, and the value types in columns of the same name but different rows, can be varied. Table Store supports multiple data types, such as Integer, Boolean, Double, String, and Binary.

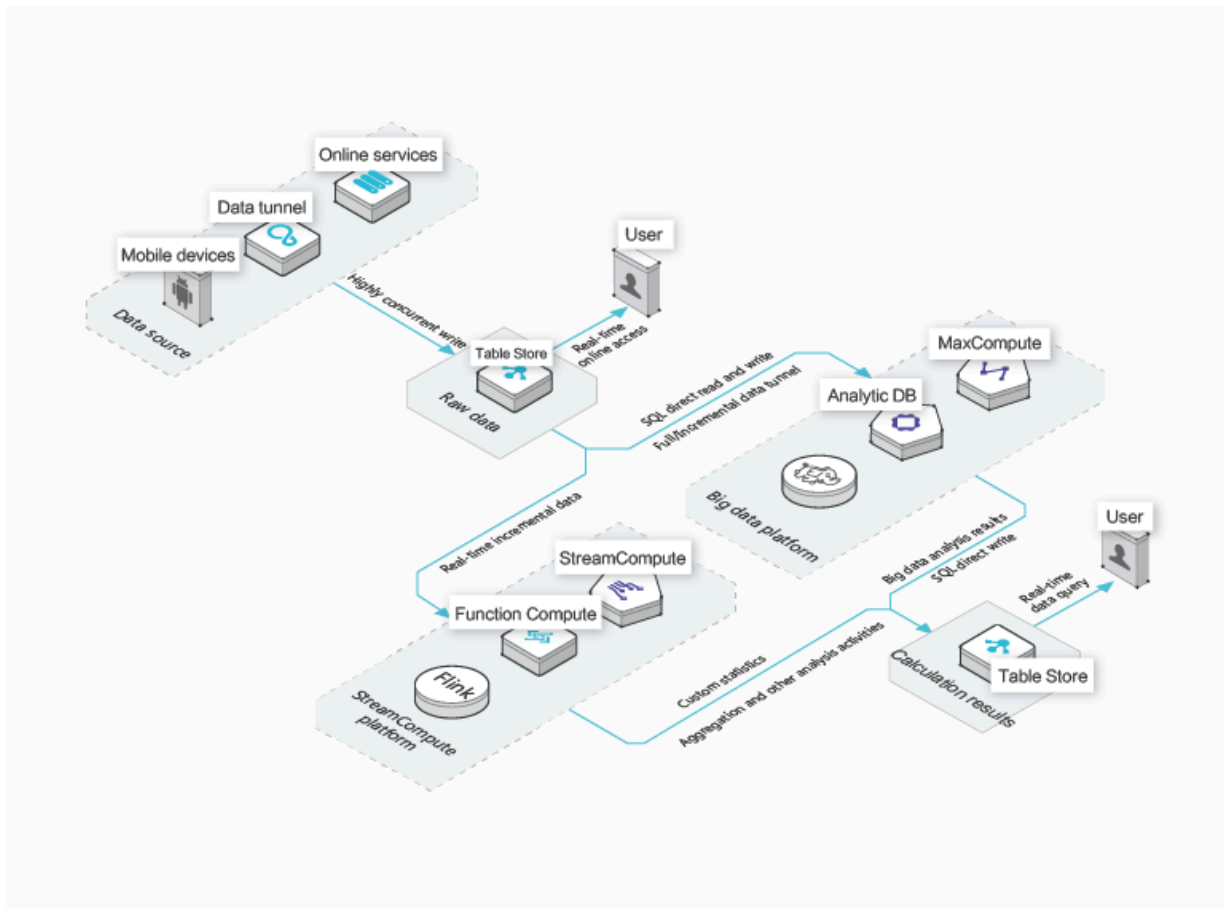
Advantage item	Description
Multi-tenancy mechanism	Table Store uses a shared storage mechanism, which allows multiple instances of different users to share the same cluster resource. Table Store uses the data partition as the smallest unit , which supports the load balancing mechanism at the data partition level to isolate the impact between different instances.
Pay-As-You-Go	Table Store only charges fees based on the actual resources you have reserved and used.
Monitoring integration	The Table Store console provides real-time monitoring information, including the request number per second and the average response latency.

3 Case studies

This document provides a variety of typical case studies for Table Store, helping you get more insight of Table Store.

Big data storage and analysis

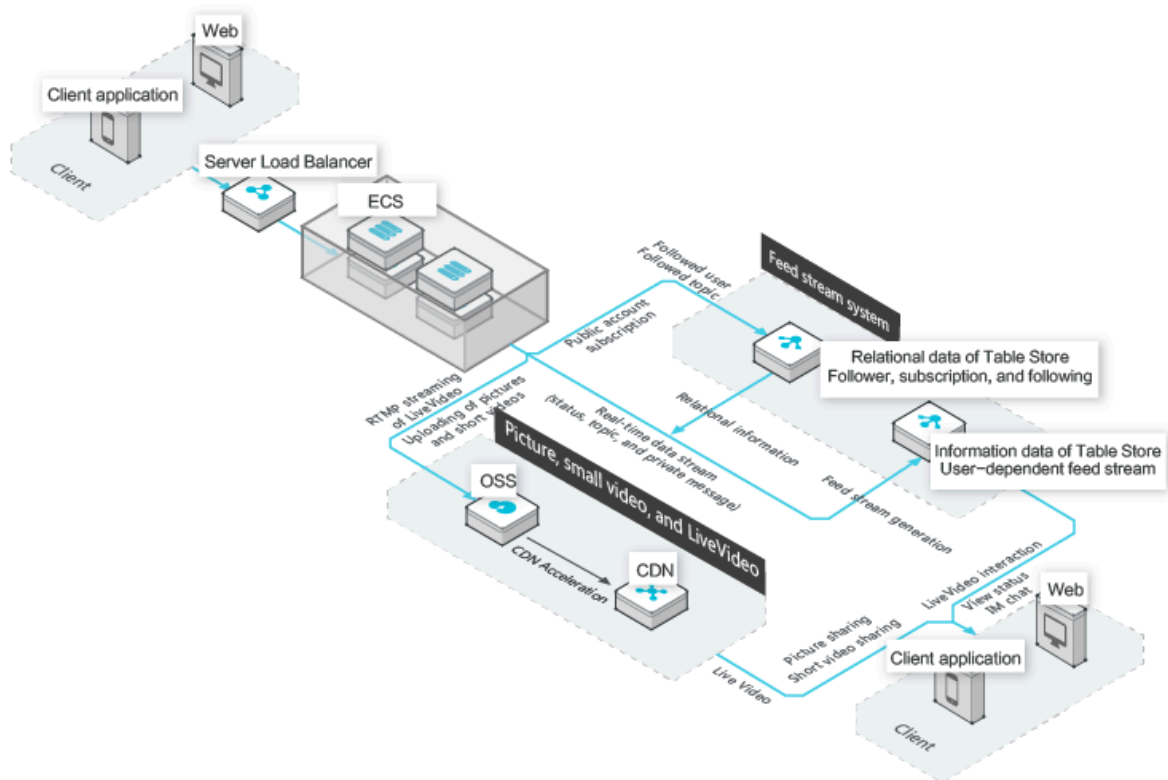
Table Store provides low-cost, low-latency, and high-concurrency storage and online access of high volumes of data. In addition, Table Store provides incremental and full data tunnels, and also SQL direct read and write on big data analysis platforms, such as MaxCompute. An efficient incremental streaming read interface is provided for easy computing of real-time data streams.



Social feed stream storage

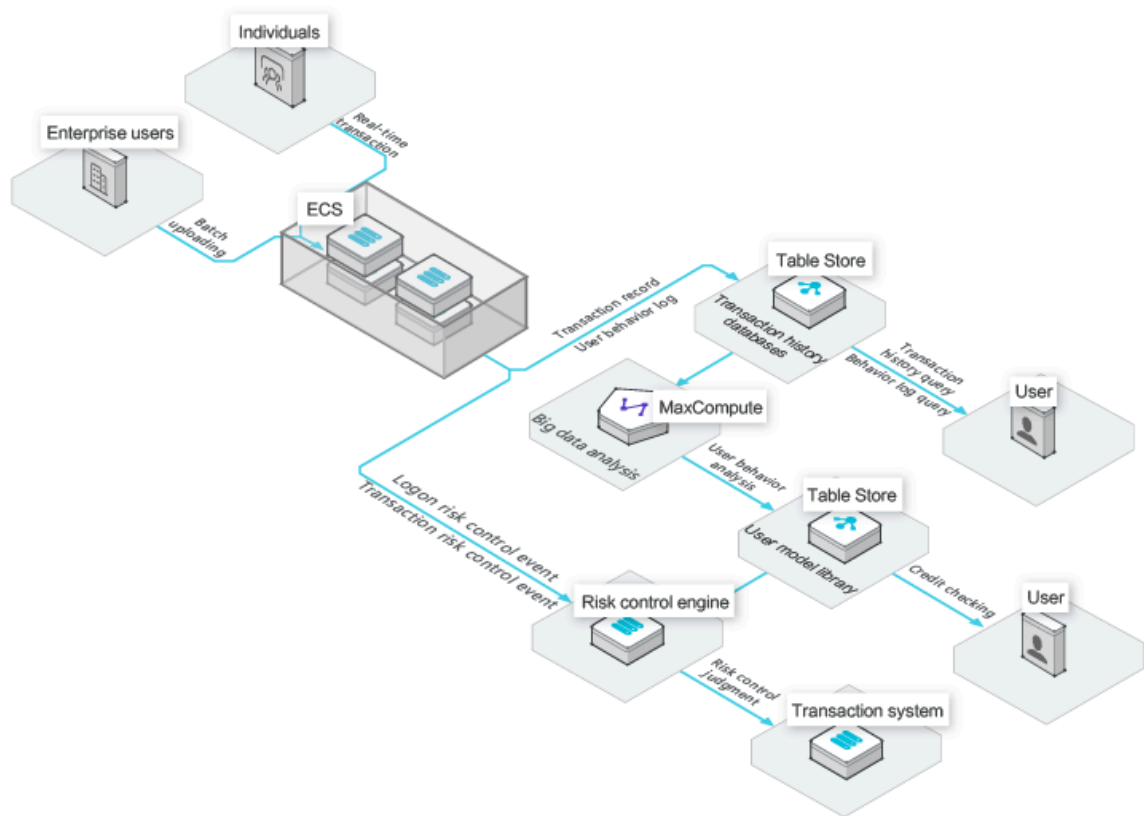
Table Store can store high volumes of social information produced by interactions between people, including instant messaging (IM) chats, comments, and threads. The elastic resources stored in Table Store are billed in Pay-As-You-Go method. At a very competitive cost, Table Store can meet the needs of applications that feature

significant traffic fluctuations and high concurrency when low latency is required. Table Store stores images and videos on OSS and, with CDN acceleration, provides an optimal user experience.



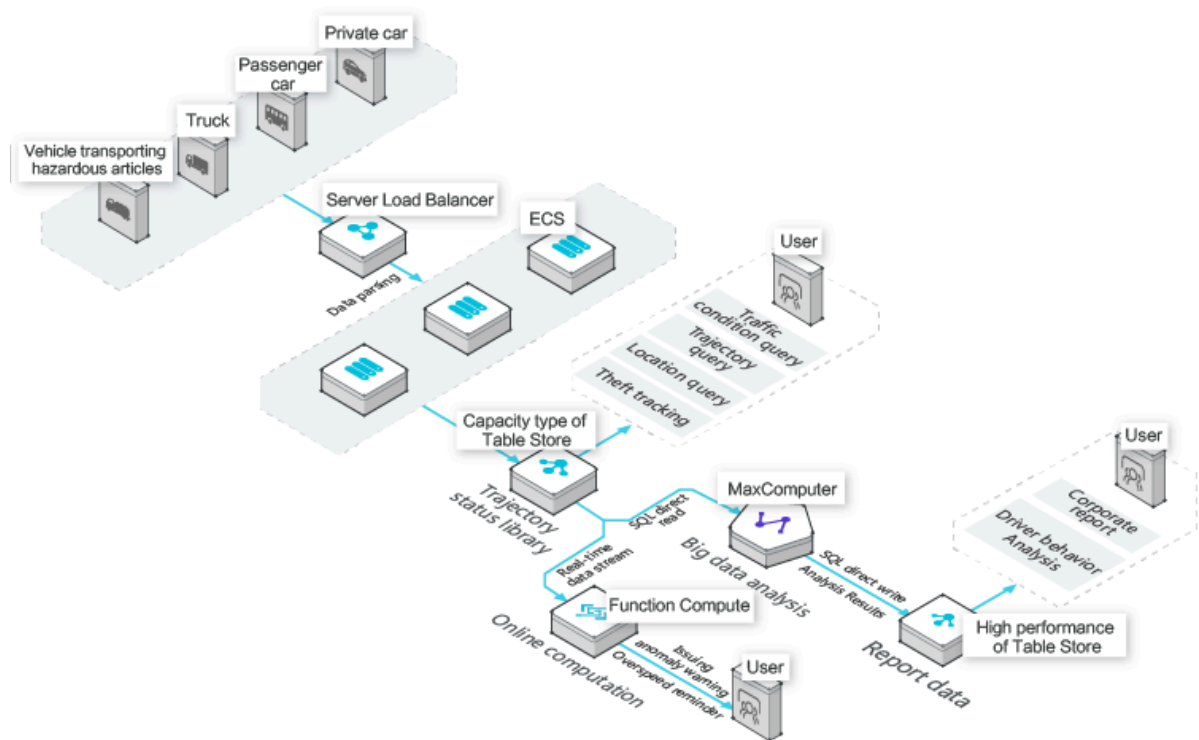
Financial risk control

The advantages of Table Store such as low latency, high concurrency, and Pay-As-You-Go billing of elastic resources combine to optimize the financial risk control system, allowing you to strictly limit transaction risks. Flexible data structures enable fast iteration of business models as market needs shift.



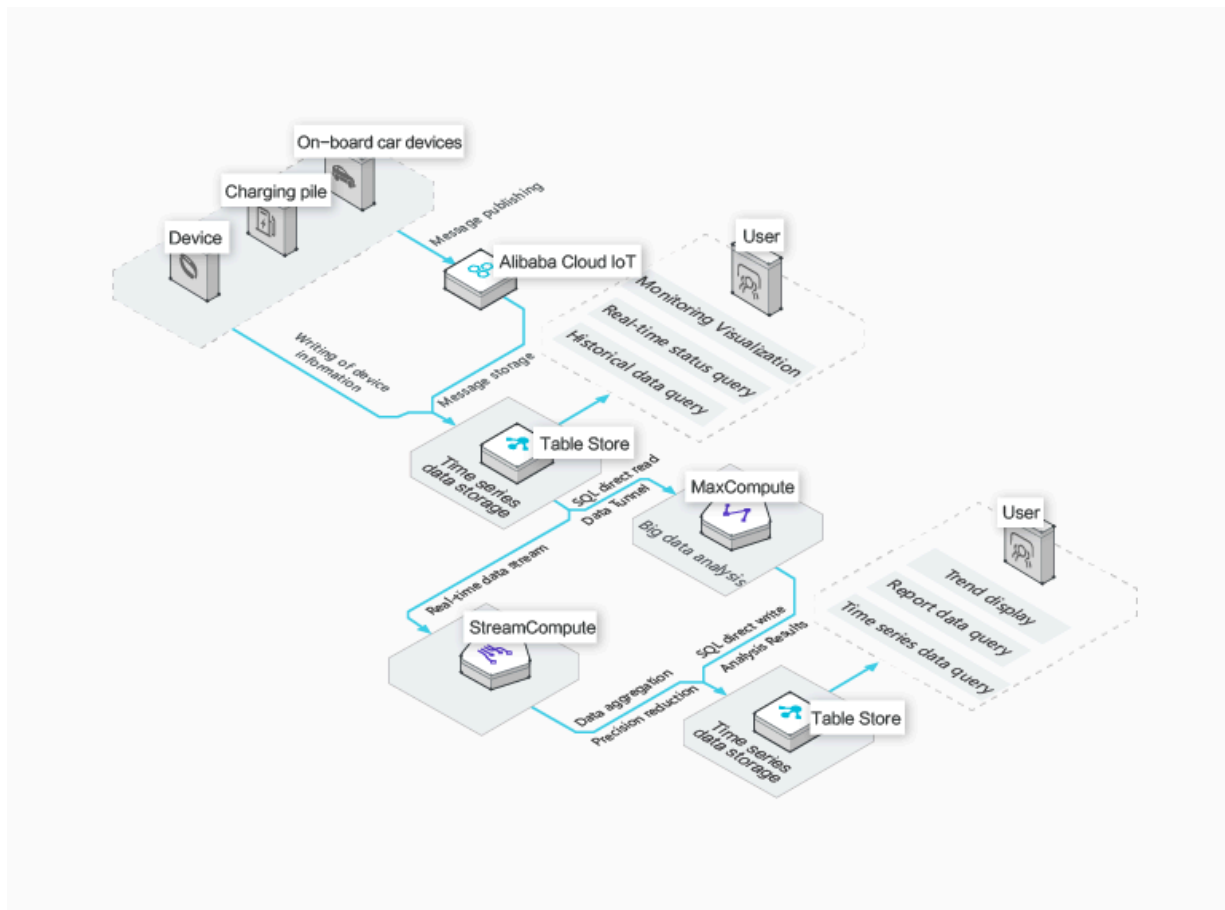
IoV data storage

A single table can store petabytes of data without distributing data in separate databases and tables, which simplifies the business logic. The schema-free data model enables easy access to the monitoring data of different vehicle-mounted devices. Table Store can be seamlessly integrated with multiple big data analysis platforms and real-time computing services for ease of real-time online query and business report analysis.



IoT time series data storage

With a single table capable of storing petabytes of data and processing thousands of queries per second (QPS), Table Store makes it easy to store the time series data of IoT devices and monitoring systems. The big data analysis SQL direct read function and the efficient incremental streaming read interface provide an easy way of offline data analysis and real-time streaming computing.



E-commerce recommendation

Table Store makes it possible for you to deal with data volumes and access performance with ease when handling a large number of historical transaction orders. Combined with MaxCompute, Table Store enables precision marketing, elastic resource storage, and Pay-As-You-Go billing. Table Store allows you to easily manage peak hours when a large majority of customers go online.

