ALIBABA CLOUD

Alibaba Cloud

Tablestore

Product Introduction

Document Version: 20220107

Alibaba Cloud

Legal disclaimer

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.

2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company or individual in any form or by any means without the prior written consent of Alibaba Cloud.

3. The content of this document may be changed because of product version upgrade, adjustment, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and an updated version of this document will be released through Alibaba Cloud-authorized channels from time to time. You should pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.

4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides this document based on the "status quo", "being defective", and "existing functions" of its products and services. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not take legal responsibility for any errors or lost profits incurred by any organization, company, or individual arising from download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, take responsibility for any indirect, consequential, punitive, contingent, special, or punitive damages, including lost profits arising from the use or trust in this document (even if Alibaba Cloud has been notified of the possibility of such a loss).

5. By law, all the contents in Alibaba Cloud documents, including but not limited to pictures, architecture design, page layout, and text description, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of this document shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates.

6. Please directly contact Alibaba Cloud for any errors of this document.

Document conventions

Style	Description	Example
Danger	A danger notice 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.
Warning	A warning notice 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 restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	**Notice:** If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	**Note:** You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.What is Tablestore?

Tablestore is a storage service that is developed by Alibaba Cloud. Tablestore can store a large volume of structured data by using multiple models, and supports fast data query and analytics. Empowered by the distributed storage and index-based search engine, Tablestore can store petabytes (PBs) of data while delivering tens of millions transactions per second (TPS) at ultra-low latency (milliseconds).

Features

- Fully managed

  Tablestore is a fully managed storage service for structured data, and supports software and hardware provisioning and configurations, error handling, cluster scaling, and security mechanisms. Tablestore ensures the availability of your business and helps you reduce management and O&M costs. This way, you can focus on developing your business.

- Seamless scaling

  Tablestore uses shards and load balancing to perform seamless scaling operations. When the data volume increases, Tablestore automatically scales the sizes of data partitions. This allows you to store a large volume of data. Tablestore can store a minimum of 10 PB of data. A single table can store a minimum of 1 PB of data or 1 trillion data records.

- Powerful query capabilities

  Tablestore supports queries based on secondary indexes and search indexes in addition to queries based on primary keys.

  - Secondary index: defines a custom data structure that can be used to improve query efficiency based on your business scenarios.
  - Search index: supports query methods such as boolean query, fuzzy query, geo query, and full-text search based on inverted indexes and column store.
  - SQL query: compatible with MySQL query syntax and supports table creation by using DDL statements. For existing tables, you can execute the CREATE TABLE statement to create mapping tables. Then, you can use SQL statements to access data in the tables.

- High reliability

  Tablestore creates multiple backups of data and stores the backups in different servers across physical racks. When a backup fails, the system immediately switches over to a different backup server to restore the data. This mechanism ensures service availability of 99.99999999% (ten 9s).

- Strong consistency

  Tablestore ensures consistency across all three backups. After a write success response is returned, applications can read new data in real time.

- Highly concurrent read and write operations

  Tablestore supports tens of millions of concurrent read and write requests.

Quick start

You can get started with Tablestore in the Tablestore console. For more information, see Getting Started.

Terms

- Time to live (TTL)

  The validity period of data in the Tablestore data table in seconds. For more information, see Max versions and TTL. To save storage space and reduce storage costs, Tablestore automatically clears data when the TTL of data expires.

- Region

  A physical data center. Tablestore is deployed across multiple Alibaba Cloud regions. You can select a region based on your business requirements. For more information, see Region.

- Read/write throughput

  A Tablestore attribute that is measured by read and write capacity units (CUs). A CU is the basic billable unit for data read and write operations. For more information, see Read/write throughput.

Use Tablestore

- Console

  Alibaba Cloud provides a web UI that you can use to manage Tablestore. To manage Tablestore instances, log on to the Tablestore console.

- SDKs

  Alibaba Cloud provides Tablestore SDKs in various programming languages. For more information, see Tablestore SDK Reference.

- CLI

  Alibaba Cloud provides the Tablestore CLI that you can use to manage Tablestore. For more information, see CLI.

Computing and analytics

You can run data computing and analytic tasks in Tablestore.

- For more information about how to connect Tablestore to MaxCompute, see Use MaxCompute to access Tablestore.

Data migration and synchronization

Tablestore allows you to seamlessly migrate heterogeneous data from your applications to Tablestore. You can also synchronize the data from Tablestore to services such as Object Storage Service (OSS).

- For more information about how to migrate data from Tablestore to OSS, see Overview.

Billing

The billable items of Tablestore include data storage usage, reserved read/write throughput, additional read/write throughput, and Internet downstream traffic. For more information, see Billing overview.

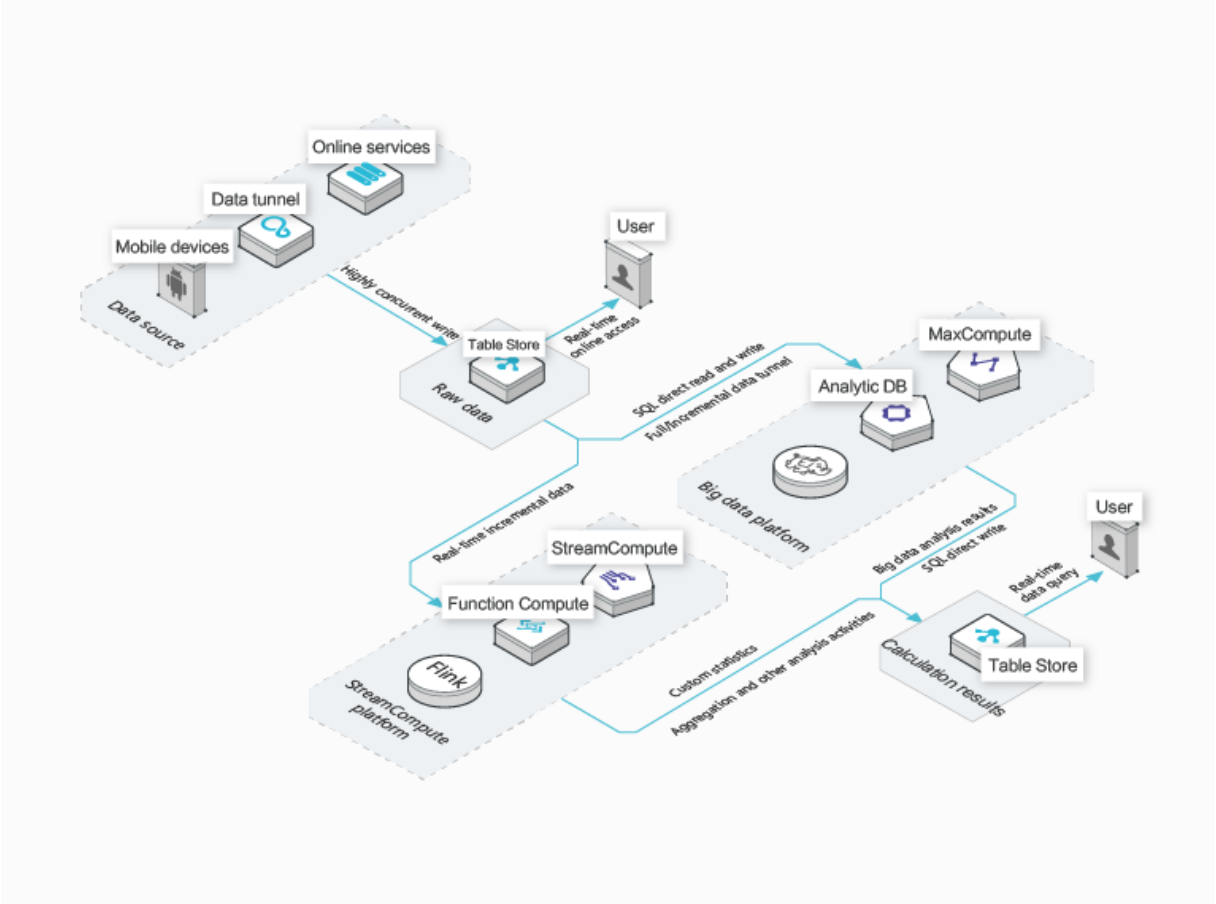
For more information about Tablestore and the pricing of related resources, visit the Tablestore Pricing page.

2.Case studies

This topic provides a variety of case studies to help you gain insight into Tablestore.

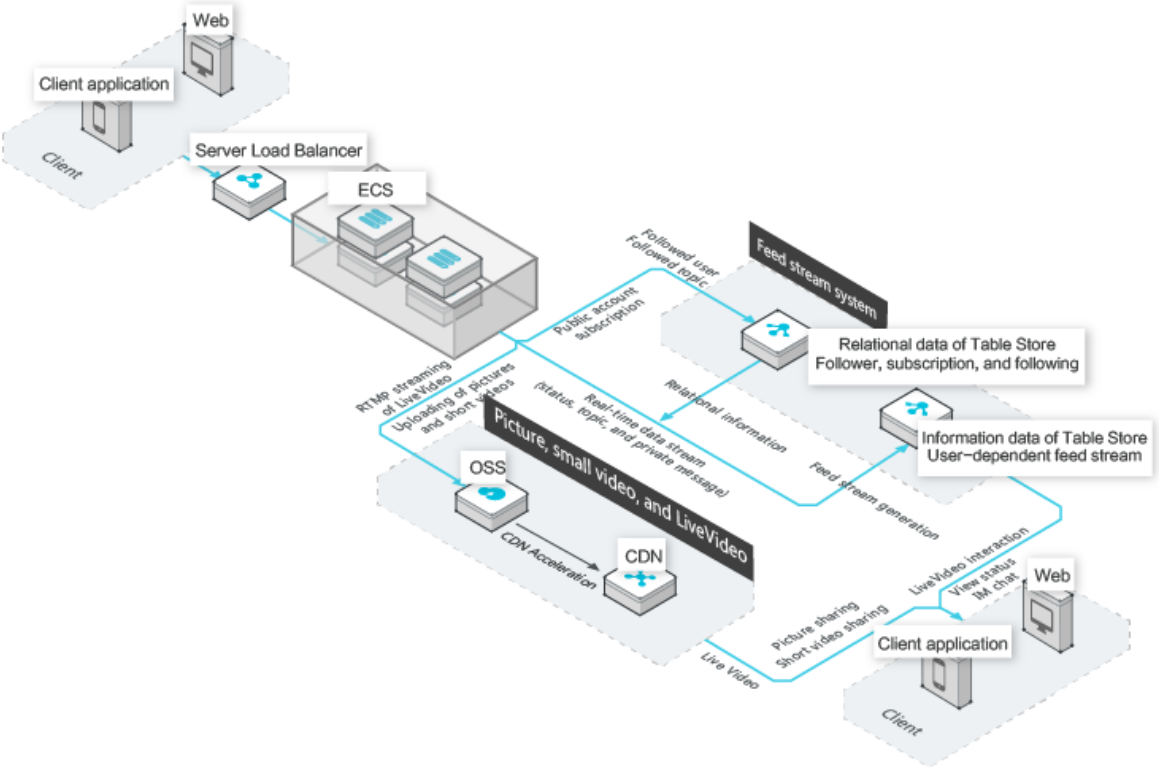
Big data storage and analysis

Tablestore provides cost-effective, low-latency, and high-concurrency storage of and online access to large amounts of data. In addition, Tablestore provides incremental and full data tunnels as well as SQL syntax-based read and write on big data analysis platforms such as MaxCompute. An efficient incremental streaming read operation is provided for easy computing of real-time data streams.



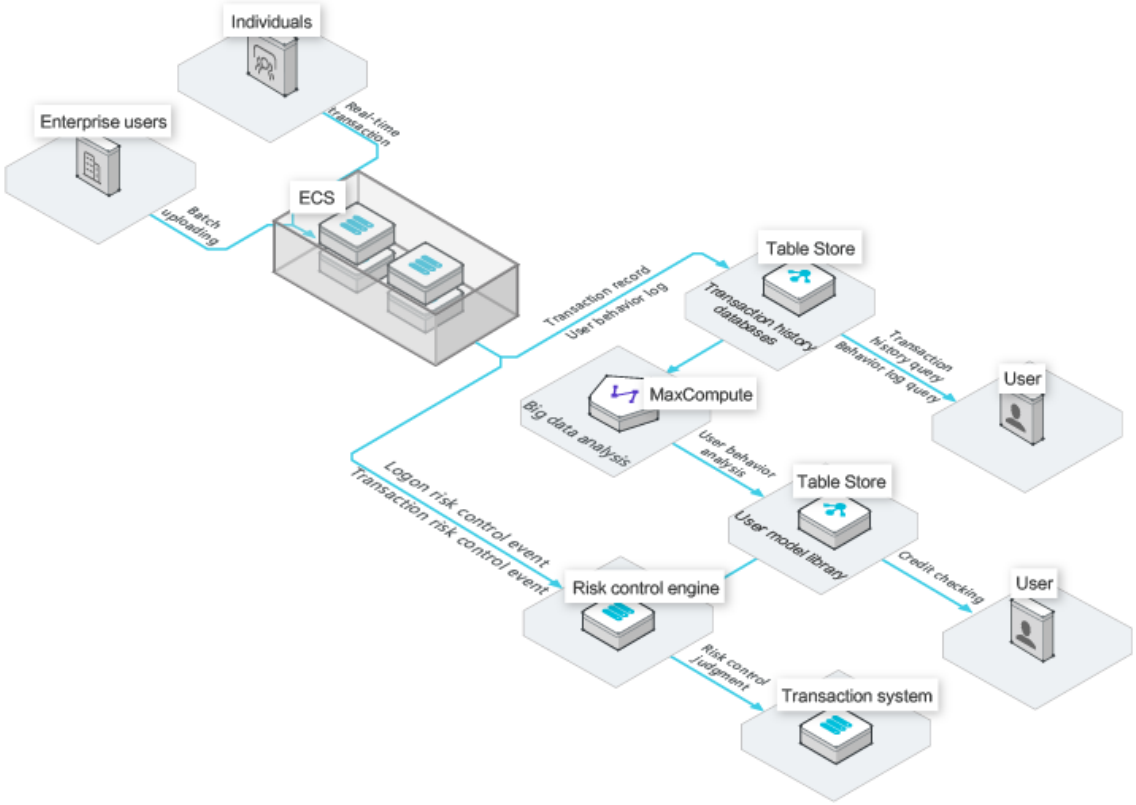
Social feed stream storage

Tablestore can store large amounts of social information generated by interactions between people, including feed stream information such as instant messaging (IM) chats, comments, threads, and likes. Tablestore charges resources based on pay-as-you-go. Tablestore can meet the needs of applications that feature significant traffic fluctuations and high concurrency while low latency is required and costs are minimized. Tablestore stores image and video objects in OSS. You can accelerate the speed of accessing these objects by using CDN.



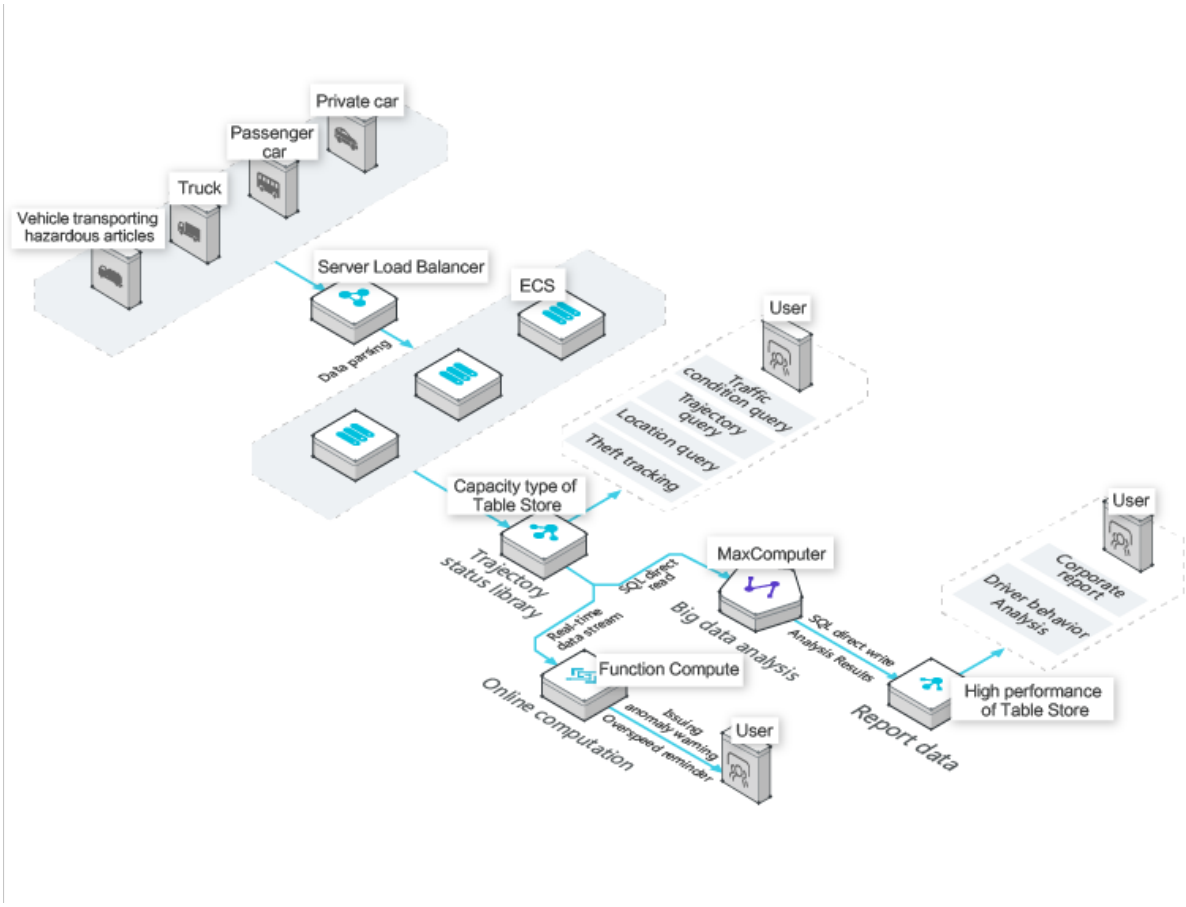
Financial risk management

The advantages of Tablestore such as low latency, high concurrency, and the pay-as-you-go billing method of elastic resources enable you to optimize the financial risk control system, which allows you to minimize transaction risks. Flexible data structures tailor fast iteration of business models to market needs.



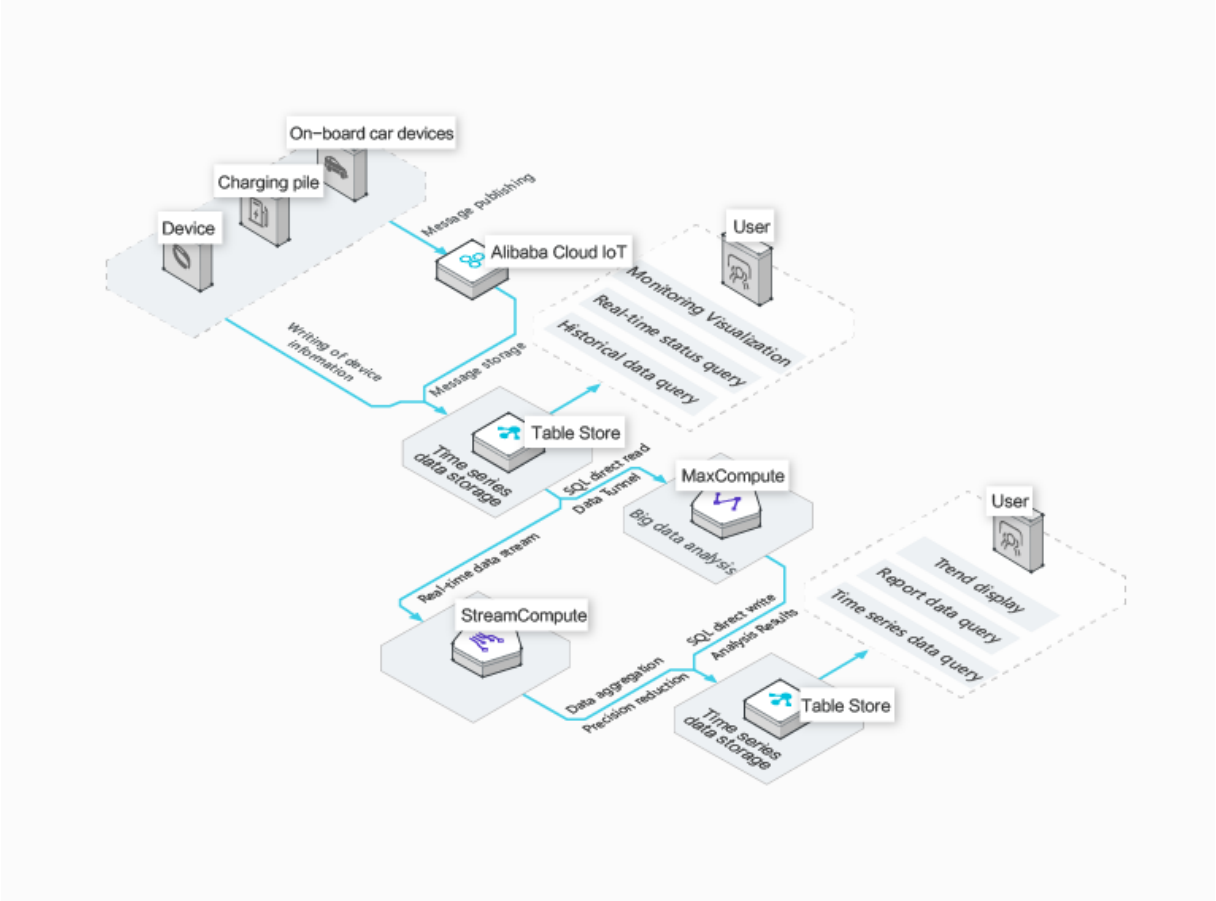
IoV data storage

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



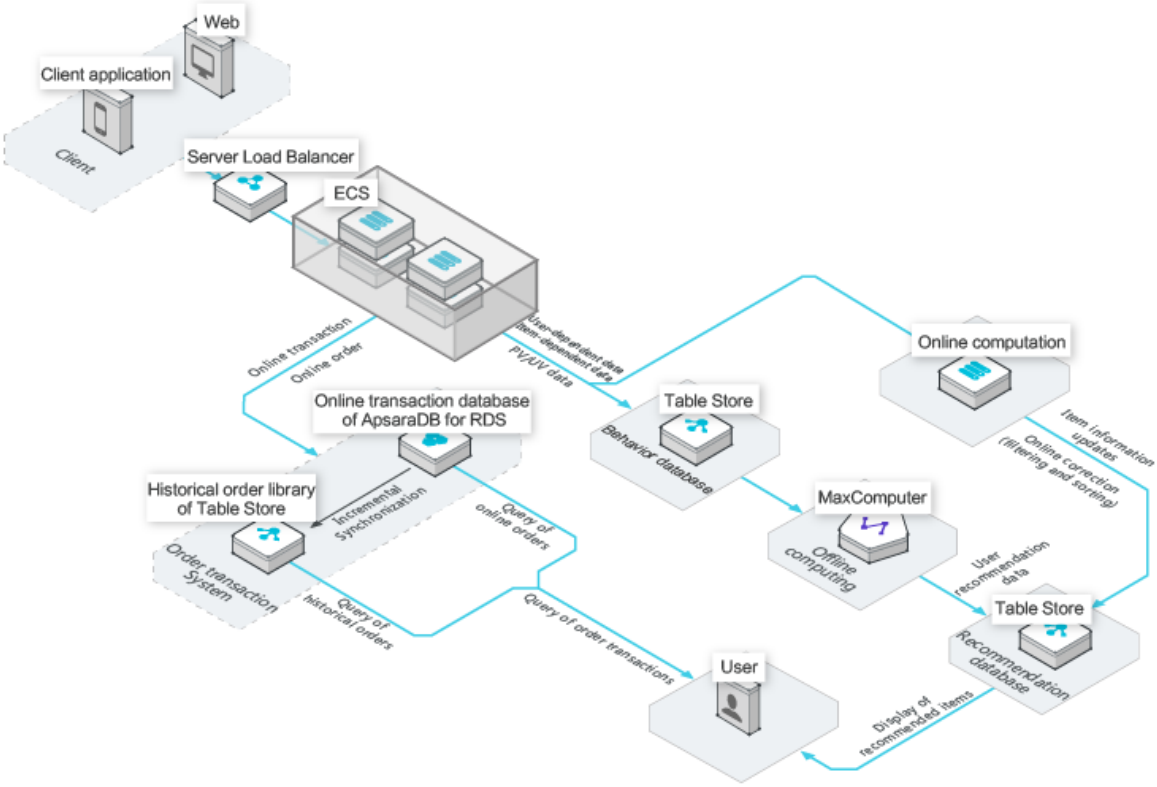
IoT time-series data storage

A single table can store petabytes of data and process tens of millions of queries per second (QPS), which enables Tablestore to store the time-series data of IoT devices and monitoring systems. The SQL syntax-based read feature for big data analysis and the efficient incremental streaming read operation provide an easy way of offline data analysis and real-time computing.



E-commerce recommendation

Tablestore enables you to process a large number of historical transaction orders without worrying about access performance. Combined with MaxCompute, Tablestore can implement precision marketing. Tablestore stores resources as needed and provides the pay-as-you-go billing method to allow you to manage business at peak hours when a large majority of customers go online.


Web
Client application
Client
Server Load Balancer
ECS
Online transaction
Online order
User-dependent data
Item-dependent data
PV/UV data
Online transaction database of ApsaraDB for RDS
Table Store
Behavior database
Online computation
Item information updates
Online correction (filtering and sorting)
Historical order library of Table Store
Incremental synchronization
Query of online orders
MaxComputer
Offline computing
User recommendation data
Order transaction System
Query of historical orders
Query of order transactions
Table Store
Recommendation database
User
Display of recommended items