



Cloud Services

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Contents

1. Global deployment	2
2. Global acceleration	3
3. Autoscaling	4
4. Network acceleration	5
5. Openness	8
6. Security	9
6.1. Data security	9
6.2. Service security	9

Based on the global public cloud, Tuya is committed to providing safe, stable, and fast global IoT cloud services with the interconnection of smart scenes and smart devices. The platform is capable of concurrently processing more than 100 million concurrent requests, providing users with highly stable uninterrupted computing services. Deployed across global service nodes of different public cloud service providers, the platform allows users to access the nearest available service node and enjoy efficient and stable smart device experiences.

1. Global deployment

- Wide coverage

In consideration of the international market, the distribution of submarine optical fiber cables, and actual testing results, Tuya has deployed six data centers worldwide: **China Data Center, Eastern America Data Center, Western America Data Center, Central Europe Data Center, Western Europe Data Center, and India Data Center**. Data access is accelerated in regions such as Hong Kong and Japan. High availability of services is ensured. It enables your products to be accessed in most populous countries and cities.

- Multiple data centers

Automatically select the data center nearest to users' geographic locations, to guarantee a fast response time with the smallest data link. For more information, see [Data Center](#) . Data centers are deployed as follows.

Service coverage area	Data center location
China Data Center	Alibaba Cloud data center in Shanghai
Western America Data Center	Amazon Web Services (AWS) data center in Oregon
Eastern America Data Center	Microsoft Azure data center in Virginia
Central Europe Data Center	AWS data center in Frankfurt
Western Europe Data Center	Microsoft Azure data center in Amsterdam
India Data Center	AWS data center in Mumbai
Singapore Data Center	Alibaba Cloud data center in Singapore

In addition, Tuya has other available data centers in regions such as Hong Kong, Tokyo, and São Paulo. Therefore, your services can be automatically scaled as needed depending on your service locations. For more information about the country codes that represent the countries or regions supported by each data center, see [Mappings Between OEM App Accounts and Data Centers](#) .

2. Global acceleration

- High-speed networking

In mainland China, Tuya has reached in-depth cooperation with Tencent Cloud and shares the same performance of network links as Tencent. In other countries or regions, Amazon Web Services (AWS) cloud services are deployed with data centers hosted in multiple cities worldwide, which allows users to access the nearest available nodes.

- Acceleration service

Access to Tuya's global services is accelerated by content delivery network (CDN) nodes widely distributed in more than 500 cities in mainland China and more than 100 cities in countries or regions outside mainland China. Tuya also employs localized acceleration services for the domain name system (DNS) and short message service (SMS) provided by different carriers around the world to extend your global reach.

- Data drift

Tuya's proprietary algorithms allow enterprises to release products and view business data on a global scale. Secure and stable cloud services can be delivered to all countries and regions.

3. Autoscaling

- High availability

With a **distributed microservice** architecture, Tuya can implement auto-scaling to adapt to business peaks. The modular architecture enables scaling out and hot swapping of business modules.

- Hot deployment

Even if new features are weekly released, Tuya applies a service-based code release mechanism to create a smooth experience without data loss in device control commands.

- Huge data processing

Tuya's core R&D team has rich experience in the architecture building and processing of large amounts of data. Currently, Tuya can process AI voice interactions more than 122 million times per day.

4. Network acceleration

- DNS acceleration
- Tuya accelerates DNS resolution for global customers from different major cities based on their mobile network carriers.
- Tuya's automated algorithm mechanism can maximize the stability of DNS resolution to prevent Border Gateway Protocol (BGP) hijacking.
- CDN acceleration
- CDN nodes in mainland China:
 - CDN nodes are deployed in more than 500 cities in mainland China and deliver the same performance of network acceleration as Tencent.
 - Acceleration stability is monitored in real time through autonomous monitoring services.
- Acceleration nodes in countries and regions outside mainland China:
 - North America: Ashburn, Virginia; Atlanta, Georgia; Chicago, Illinois; Dallas-Fort Worth, Texas; Hayward, California; Jacksonville, Florida; San Francisco, California; Miami, Florida; New York, New York State; Newark, New Jersey; Palo Alto, California; San Jose, California; Seattle, Washington; South Bend, Indiana; and St. Louis, Missouri.
 - South America: Rio de Janeiro, Brazil; and São Paulo, Brazil.
 - Europe, Middle East, and Africa: Amsterdam, Netherlands; Dublin, Ireland; Frankfurt, Germany; London, UK; Madrid, Spain; Marseille, France; Milan, Italy; Paris, France; Stockholm, Sweden; and Warsaw, Poland.
 - Asia-Pacific: Hong Kong, China; Taipei, Taiwan, China; Chennai, India; Mumbai, India; New Delhi, India; Manila, Philippines; Seoul, South Korea; Singapore; Melbourne, Australia; Sydney, Australia; Osaka, Japan; and Tokyo, Japan.
- Global networking report
 - The response time in Chinese cities is less than 40 ms (0.04 s).
 - The response time in Asian cities is less than 80 ms (0.08 s).
 - The response time in Europe and America is less than 90 ms (0.09 s).
 - The response time in the Middle East and Africa is also acceptable.

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The server connection speed listed in the following table comes from a third-party testing service provider. Due to network quality fluctuations, there might be a minor deviation.

Area	Country/region	City/province	Server connection speed (ms)
Asia	China	Hangzhou	3
Asia	China	Jiangsu	9
Asia	China	Hunan	21
Asia	China	Sichuan	40
Asia	China	Guangzhou	25
Asia	China	Shanghai	7
Asia	China	Shenzhen	31
Asia	China	Guangxi	31
Asia	China	Yunnan	38
Asia	China	Fujian	20
Asia	Hong Kong SAR, China	Hong Kong	49
Asia	Japan	Tokyo	73
Asia	Republic of Korea	Seoul	68
Europe	Germany	Munich	6.152
Europe	Germany	Cologne	4.078
Europe	Germany	Frankfurt	0.629
Europe	Germany	Berlin	16.145
Europe	Spain	Madrid	34.787
Europe	France	Lille	14.909
Europe	Italy	Milan	10.143
Europe	Italy	Padova	53.637
Europe	Italy	Rome	22.347
Europe	Turkey	Istanbul	46.642
Europe	Norway	Oslo	30.707
Middle East	United Arab Emirates	Dubai	152.772
Middle East	Saudi Arabia	Riyadh	81.425

Area	Country/region	City/province	Server connection speed (ms)
Middle East	Israel	Kiryat Matalon	53.221
Africa	South Africa	Durban	330.413
Africa	South Africa	Cape Town	298.473
Africa	South Africa	Johannesburg	319.452
North America	United States	Santa Ana	29
North America	United States	Kansas	35
North America	United States	Los Angeles	38
North America	United States	San Jose	23
North America	United States	Atlanta	70.117
North America	United States	Boulder	36.056
North America	United States	Boston	74.252
North America	United States	Chicago	88.373
North America	Canada	Vancouver	12.916
North America	Canada	Toronto	87.596
South America	Argentina	Buenos Aires	203
South America	Brazil	São Paulo	179
South America	Brazil	Alegre	220
Oceania	Australia	Perth	227

5. Openness

- OpenAPI

Tuya supports API requests over multiple protocols such as HTTP/HTTPS, MQTT, and WebSocket. You can export your own business data at your convenience.

- Partners

Tuya allows you to integrate with multiple platforms such as Amazon Alexa, Google Assistant, and Tencent's WeChat.

6. Security

6.1. Data security

- User device security

Tuya provides an end-to-end **five-layer security** mechanism to guarantee the security of smart devices.

- Enterprise data security

Tuya isolates your business data from other enterprises to ensure your data security. Sensitive data is encrypted. Different data storage services are provided to support respective business scenarios.

6.2. Service security

Tuya provides cloud services with financial-grade security, and your data is secured by a comprehensive protection system. Tuya has established security measures such as real-time log analytics, intrusion prevention, risk perception capability, and security management system. Also, implement technical solutions of communication and data security, including data encryption, identity verification, dynamic password, channel encryption, security chip, and virtual devices.

- Data encryption: The communication content is fully encrypted according to the Advanced Encryption Standard (AES). Even if a device is lost, the content cannot be cracked.
- Identity verification: Tuya's proprietary algorithm guarantees data isolation and strengthens the identity verification.
- Dynamic password: A password is assigned dynamically. Even if the algorithm is cracked, the service security is guaranteed.
- Channel encryption: The data is transmitted in a safe channel that is fully encrypted with Transport Layer Security (TLS).
- Security chip: A separate security chip protects the hardware keys.
- Virtual device: With unique virtual device protection, a device can be recovered immediately after being attacked.

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- Cooperation with security agencies: Tuya has been working with professional security agencies to build a continuously iterated security system.