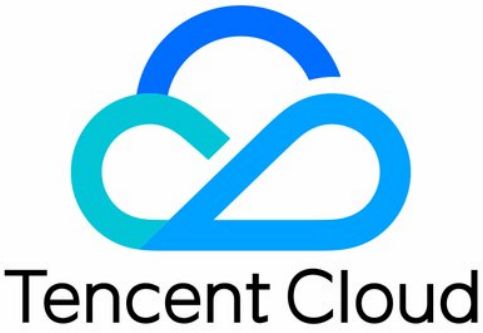
Introduction

Product Introduction



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Introduction
Overview

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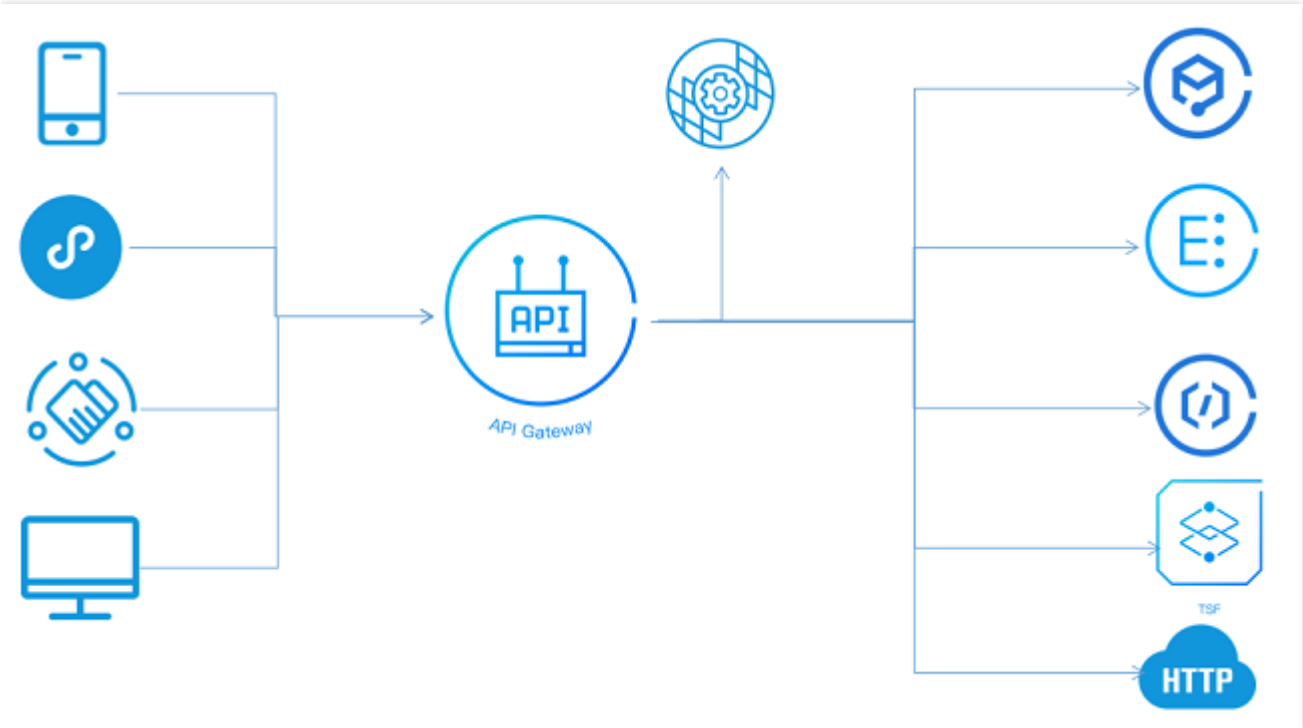
API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor and secure APIs at any scale. You can use API Gateway to encapsulate various backend services and make them available in the form of APIs. API Gateway also helps you with API document management, API testing, SDK generation and so on.



As a customer, you can directly use the services provided by API Gateway, and as a service provider, you can deploy your services on it to make the services available to end users through cloud marketplace. The end users (mobile clients, Web clients, Internet of Things and other applications) can call the API services provided in API Gateway directly using domain names.

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Advantages

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Simplified Management

The APIs are managed at a single place throughout their lifecycle from creation, to maintenance, and to publishing. API Gateway allows you to centrally encapsulate and manage SCFs, Web services on CVMs or users' own Web services.

Usage-based Billing

You pay only for the API calls you receive and the amount of data transferred out. The API management, document maintenance, SDK generation, traffic control and permission control are free of charge.

High Performance and Reliability

Built on the powerful capabilities of TGW (Tencent Gateway), API Gateway provides highly-reliable services based on multi-regional multi-server distributed clusters to handle all the tasks involved in accepting and processing up to hundreds of thousands of concurrent API calls.

High Security

Ensures security of API calls by using various authentication methods; prevents overload of your services through strict traffic throttling; and ensures the availability of your services relying on comprehensive monitoring and alarming mechanism.

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Features

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API Management Throughout Lifecycle

- Manages APIs throughout their lifecycle including creation, configuration, modification, testing, launch, running and deactivation.
- Provides three stages - testing, pre-publishing and publishing - for an easier API publishing and allows rollback of the specified stage to a specific version at any time.

API Traffic Throttling

- Provides accurate traffic throttling to allow you to configure traffic for API services as needed.
- Supports request filtering and control in seconds to avoid overload of backend service caused by traffic spikes.

API Security

- Supports HTTPS for Tencent Cloud sub-domain names and customers' domain names to ensure the secure communication of APIs.
- Supports secure and reliable user authentication with secretid + secretkey.

API Monitoring

- Monitors API calls in real time and provides multi-dimensional traffic and error rate analysis to ensure consistent and secure API services.

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Use Cases

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Microservice Development

If you are developing a microservice architecture, you may face the following facts:

- There are a large number of microservice modules.
- Each module provides its own API services.
- Each module provides its own service address or LB.
- Some API calls are associated with each other.
- In some cases, multiple APIs need to be called to obtain the final data.
- The calling specifications, naming conventions and parameter calling methods may vary with different APIs.
- API verification and authentication are required for each module.
- API calls of some modules may increase abruptly due to business changes.

In this case, the management and use of APIs will become more and more complicated with the growing number of micro-service modules. API Gateway can help you solve these problems easily:

- It allows centralized management of APIs. The API users can query the API usage in a single place.
- It generates documents and SDKs and tests and calls APIs automatically, allowing users or developers to get started with APIs more quickly.
- It helps you manage request traffic through throttling, so that back-end modules can withstand traffic spikes.
- It unifies the specifications, naming conventions and parameter calling methods of different APIs.
- It helps you centrally perform the API verification and authentication.

Serverless Development

In case of the development using Serverless Cloud Function (SCF), if you want to make API services available to Apps, Web applications or Clients after you write the functions, an access mechanism must be put in place.

You can use API Gateway to configure an API to be linked with the backend Cloud Function. Then each call to the API triggers the execution of the Cloud Function to implement the business functions. For Serverless development, you only pay for the API calls and the execution of SCF.

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Prevent Opening APIs of Traditional Applications

With API Gateway, you do not need to directly open the old APIs of traditional applications to the Internet, thus avoiding server vulnerabilities and security problems. Meanwhile, you can manage traffic through throttling in API Gateway to avoid application or service failures caused by traffic spikes. By leveraging Tencent Cloud's CAM, API Gateway will provide access control based on different permissions to cater for the needs of a diversity of users or clients.

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