

Anycast Internet Acceleration

Product Introduction

Product Documentation



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Overview

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What is Tencent Cloud Anycast Internet Acceleration?

Anycast Internet Acceleration (AIA) is a cross-region dynamic acceleration network that significantly enhances your businesses' access to public network. Different from other acceleration services at the application layer, AIA is capable of achieving IP transfer optimization and multi-entry nearby access, while reducing issues such as network jitter and packet loss, which can ultimately increase the service quality of your in-cloud applications, expand their service scope, and streamline backend deployment.

Why Tencent Cloud AIA?

Low latency

AIA publishes an IP to multiple regions simultaneously by means of Anycast. According to the transfer protocol, a request package will arrive at the optimal IP publishing region to gain privileged access to Tencent Cloud and then get to the CVM instance through Tencent Cloud private network, avoiding public network congestion and reducing latency.

High reliability

Internet transmission is unreliable, and for the inaccessibility to the network caused by ISP's line interruption, users can only wait for its restoration. For Tencent Cloud backbone network, ISP's backbone network and Tencent Cloud POP point, AIA can achieve network access through multiple paths and multiple entries, block single-region and single-line failures, and improve the network stability.

Reducing Jitter

The performance of Internet link is unstable, and network jitter can be caused by north-south or cross-border issue, for example, thereby affecting the service experience. After connecting the request to Tencent Cloud from nearby, AIA can implement cross-region transmission through the private network-based Direct Connect of Tencent Cloud, to solve the problem of Internet jitter and ensure the stability of transmission.

Simplified deployment

For services with customers located in multiple regions that need to be connected to nearby, you must deploy servers and configure the DNS to implement load balance in these regions. Deployment can be quite complex because different regions have different IPs. After AIA is used, the region attributes are converged at the IP level. It is not required to configure the IP for each region, and only one set of logic needs to be maintained at the backend. The requests from different regions are directly accelerated to the backend servers with the Direct Connect.

Global Load Balancing

An IP can be published to multiple regions simultaneously with Anycast, and a request packet will arrive at the optimal IP publishing region (usually the nearest one) according to the transfer protocol, thereby achieving global load balancing. When a traffic attack occurs, as the IP has been published to multiple regions, the attacking traffic will be distributed.

Ease of use

AIA can be made compatible with common IP operations just by purchasing an accelerated EIP. It is simple to use and supports customizing the limit on public network bandwidth, which makes it easier for you to configure an appropriate bandwidth limit depending on costs or server processing speed. Plus, it features traffic monitoring for convenient issue traceability and analysis, and supports binding and unbinding operations to help you make changes to backend resources conveniently.

Features

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AIA can help publish an elastic IP to multiple regions by way of the Anycast technology to implement the following features:

Same Server in Multiple Regions

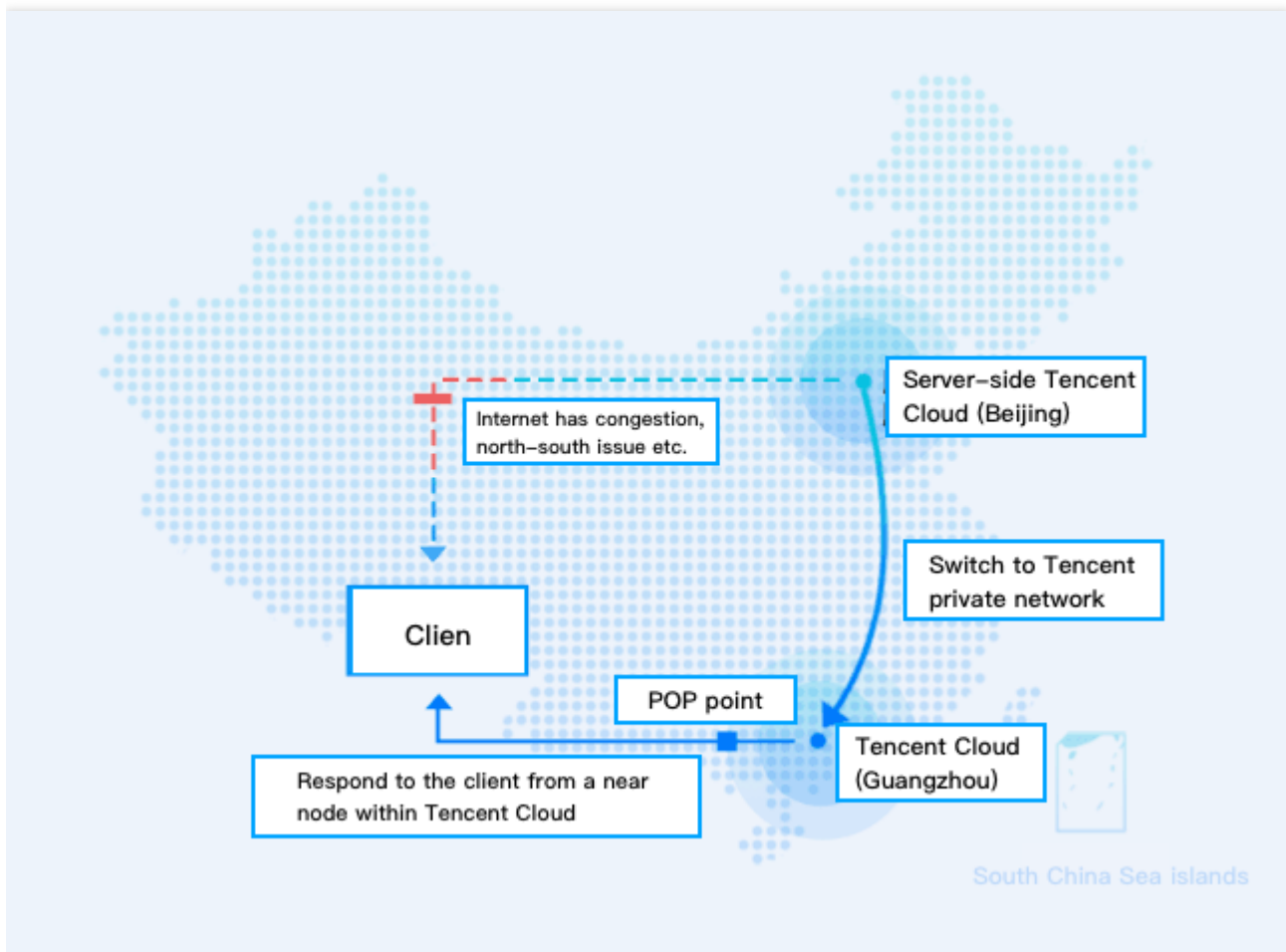
All user requests and responses can come in and out of the nearest Tencent Cloud access point, and only one set of service cluster, database, and storage node needs to be deployed at the backend. With the aid of Anycast, the backend service will be available in multiple regions through Tencent Cloud's dedicated private network connection. In contrast, in a traditional mode, one set of cluster or storage node needs to be deployed in each region to serve users nearby.

Multi-regional Acceleration

AIA helps avoid slow connection to the internet, and services are not affected by the congestion on the internet, cross-carrier issues, and ISP failures.

Avoiding Congestion

Anycast is capable of avoiding internet congestion.



Blocking Failures

ISP networks may fail from time to time, and Anycast can be used to block the failures.



Additional Information

The following concepts can help you better understand AIA:

For more information on the concepts, please see [Glossary](#).

To provide Anycast service, public cloud vendors must have interconnection network nodes deployed across regions and support cross-region network scheduling. AIA offers the following basic capabilities :

- Multi-path ISP aggregation: Tencent Cloud has BGP network egresses with 35+ ISP lines at the Tbps level.
- Multi-node interconnection: Tencent Cloud's global backbone network at the Tbps level is used for hosting.

- Multidimensional network monitoring models, global network monitoring alarms, and real-time detection of internet conditions are available.
- SDN controller that controls the entire network can change IP publishing regions in seconds and enable multidimensional fine-grained control.
- Optimal path algorithm is generated through self-learning.

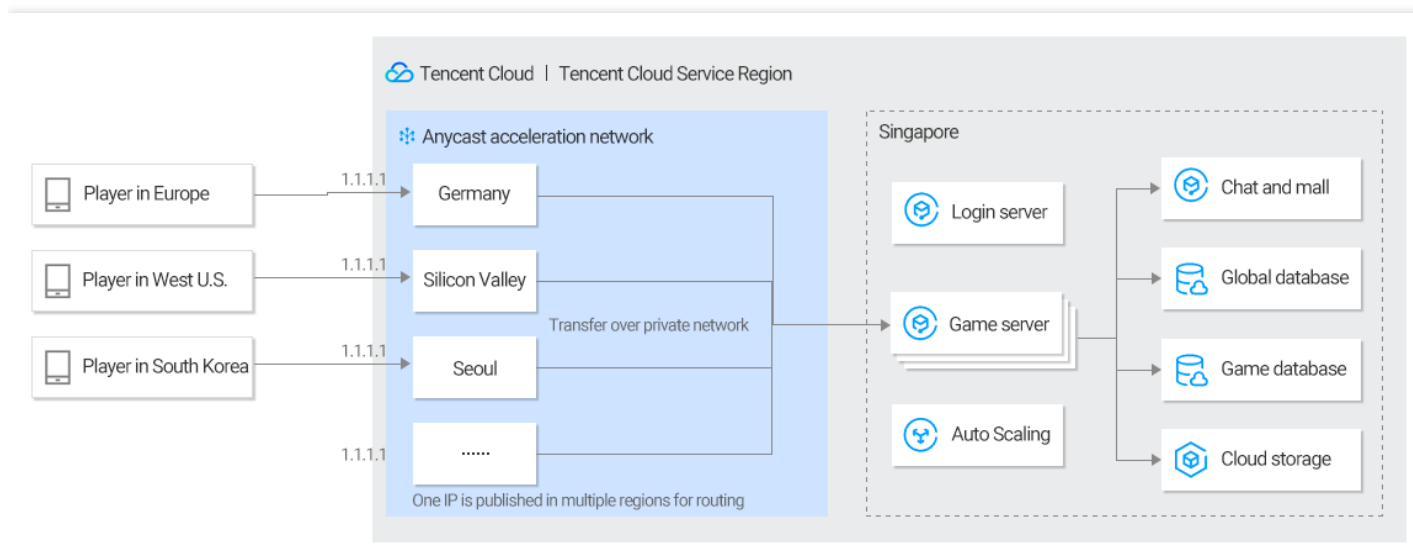
Scenarios

Last updated : 2020-08-21 14:01:21

Tencent Cloud Anycast Internet Acceleration (AIA) can implement quality optimization of IP transfer and nearby access to network through multiple entries. This document describes the application scenarios of AIA.

Gaming Acceleration

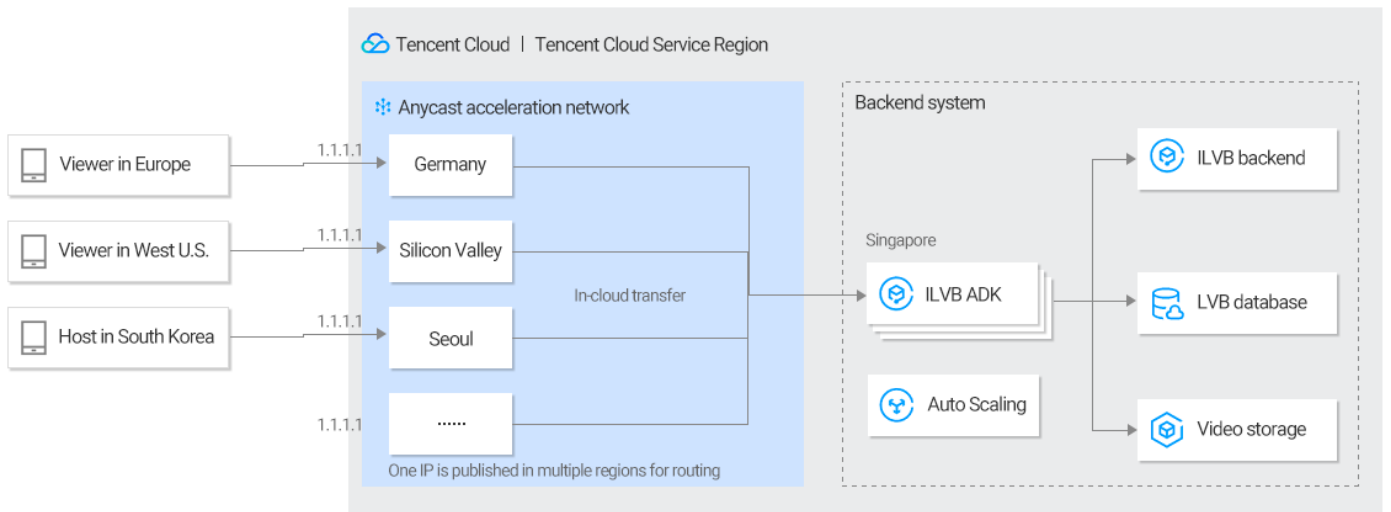
An Anycast IP can be used for gaming acceleration. Through AIA, game requests can have nearby access to Tencent Cloud and get to game servers through Tencent Cloud's private network, greatly shortening the public network path and reducing problems such as delay, jitter, and packet loss. Compared to the traditional acceleration, an Anycast IP requires no extra deployment of traffic receivers at the entry and eliminates the need for zoning, thus simplifying DNS deployment.



Interactive Live Video Broadcasting (ILVB)

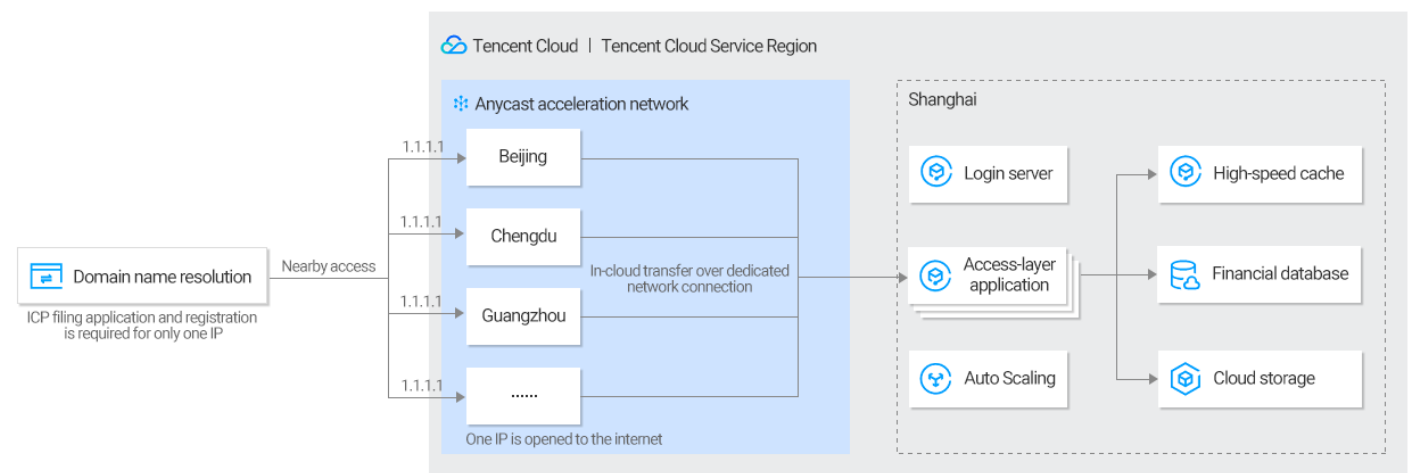
If high-quality and delay-free audio/video streaming is desired during live video broadcasting (LVB) in the case of cross-region transfer, the dedicated network connection and access points covering multiple regions are required for the LVB platform. With the aid of AIA, the LVB platform can directly use Tencent Cloud's private network and POPs to serve users, eliminating the need to build a

dedicated network connection from scratch.



Financial Service

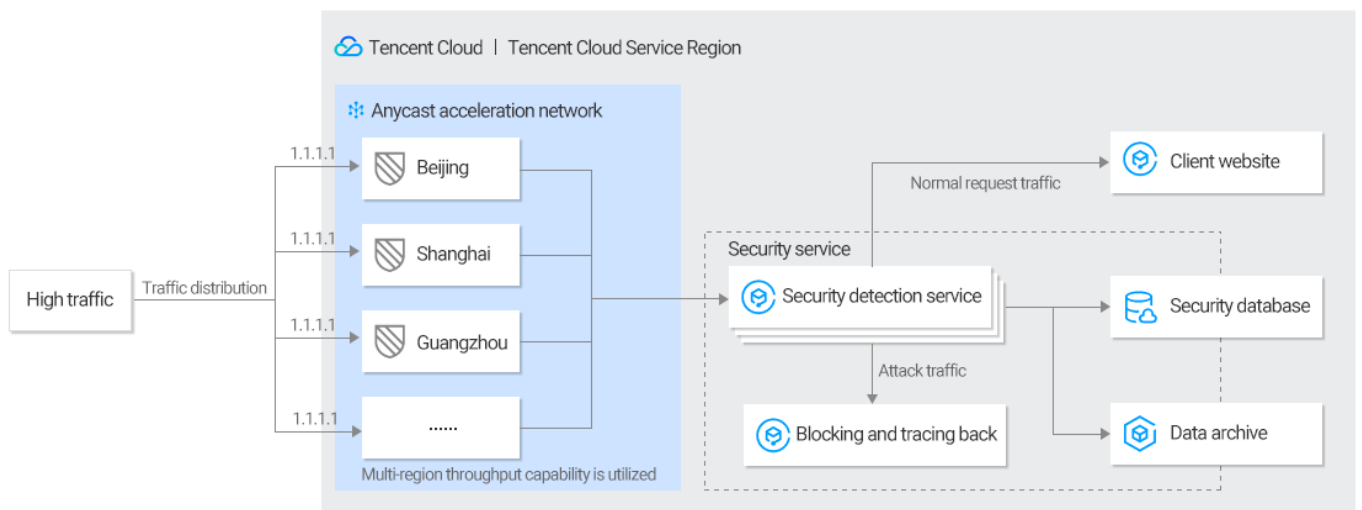
Financial services such as securities trading require very high real-time performance, and unstable public network transfer obviously cannot meet this requirement. After the access layer of financial applications is bound to an Anycast IP, data can be transferred over Tencent Cloud's private network to make these applications available in multiple regions. In addition, the AIA service also allows the same IP to be used in multiple regions, which simplifies IP-related approval work, such as application for ICP filing for services in Mainland China and registration with financial regulators.



Security Service

Security cleansing service providers, games, and large website applications are often under various high-traffic attacks such as SYN floods and ICMP floods. An ordinary public IP is generally published in a single region; therefore, all attack traffic flows through the single ingress/egress. After AIA is used, an IP can be simultaneously published in multiple regions without the need to change the DNS configuration, and attack traffic is diverted to different ingresses for processing.

Anti-DDoS Basic is enabled for AIA by default, which gives an AIA IP the same basic DDoS attack prevention capabilities enjoyed by a BGP IP. If you need a higher level of protection, please purchase [Anti-DDoS Pro](#).



Use Limits

Last updated : 2021-09-18 11:28:57

This document describes the use limits of AIA.

Restrictions

- AIA only provides acceleration services for regions outside the Chinese mainland. It does not accelerate the transmission between the Chinese mainland and other regions.
- The Anycast EIP can be bound to a CVM instance, NAT Gateway, ENI, HAVIP, and private network CLB.
- When an Anycast EIP is created in the console, only one AIA BGP bandwidth package will be automatically created for each region. This bandwidth package only records the bandwidth usage details in the region, which is not used for billing.
- All Anycast EIPs in a single region are aggregated into the bandwidth package of the region, which is subdivided into bandwidth packages corresponding to the acceleration region. Assume you create an Anycast EIP in the Asia Pacific region (Hong Kong, China), the bill lists three bandwidth packages: Asia Pacific to Asia Pacific, Asia Pacific to North America, and Asia Pacific to Europe.

Bandwidth Cap

The network bandwidth cap configured for an Anycast EIP refers to the maximum outbound bandwidth, i.e., the bandwidth flowing out from the Anycast EIP. The supported network bandwidth cap is 1-2000 (inclusive) Mbps.

Note :

An Anycast EIP created after July 20, 2021, 00:00:00 restricts the total outbound bandwidths of a single IP to the bandwidth cap. However, the bandwidth cap configured for Anycast EIPs created before the time point still restricts the maximum bandwidth going to a single region.

To restrict the total outbound bandwidths of an Anycast EIP created before July 20, 2021, you can adjust the bandwidth cap to apply the new rule.

Peak Bandwidth

Peak Bandwidth	Description
Single instance	The peak bandwidth of instances including public IP and EIP in a single bandwidth package is 2 Gbps. The peak bandwidth is only regarded as the maximum possible peak bandwidth, and not as the committed bandwidth. In case of resource contention, the peak bandwidth may not reach this value.
Single region	The sum of peak bandwidths of all the running instances billed on bandwidth packages cannot exceed 50 Gbps in one region. If your application requires a guaranteed or higher bandwidth, contact your sales rep or contact us .

References

[Elastic IP \(EIP\)](#)

Version History

Last updated : 2020-01-22 11:19:19

Updated on	Description
June 30, 2019	Private network CLB can be bound.
December 30, 2018	Service coverage in Southeast Asia is optimized.
March 31, 2018	The acceleration scope is expanded with new POPs deployed.
November 23, 2017	Accelerated EIP of Anycast is released for beta test, and multi-region Anycast is supported.
January 20, 2016	Cross-region traffic scheduling is supported on the backend.