Content Delivery Network

Product Introduction

Product Documentation
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Product Overview

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CDN Overview

Content Delivery Network (CDN) is a new layer of network architecture built on the existing internet. It consists of high-performance cache nodes distributed around the globe to accelerate internet content delivery. These nodes store your content based on caching policies. When a user makes a content request, it will be routed to the node closest to the user, reducing access delay and improving availability.

CDN offers an effective solution to the following network issues:

1. The long physical distance between the user and the business server requires the request to be forwarded multiple times, leading to high latency and instability.
2. The ISP used by the user is different from that used by the business server, so the request needs to be forwarded between ISPs after they are interconnected.
3. The business server has limited bandwidth and processing capabilities, resulting in slower response and lower availability when there are massive amounts of user requests.

CDN is easy to use. You do not need to adjust your business structure or manage any complex configurations. For more information, please see Getting Started.

How Acceleration Works

For example, if your business origin server’s domain name is www.test.com and has been connected with the CDN to activate the acceleration service, when a user makes an HTTP request, the request will be processed as shown below:
The process is detailed below:

1. When a user makes an access request for an image resource (e.g., 1.jpg) at www.test.com, a domain name resolution request will be initiated to the local DNS.
2. When the local DNS resolves www.test.com, it will find that CNAME www.test.com.cdn.dnsv1.com has been configured, so the resolution request will be sent to Tencent DNS (GSLB), the proprietary scheduling system of Tencent Cloud that will assign the optimal node IP for the request.
3. The local DNS receives the resolved IP returned by Tencent DNS.
4. The user receives the resolved IP.
5. The user makes an access request for 1.jpg to the received IP.
6. If the CDN node corresponding to the IP has already cached 1.jpg, data will be directly returned to the user (10) and the request will end. Otherwise, the CDN node will initiate a request for 1.jpg to the origin server (6, 7, and 8). After receiving the resource, the CDN node will cache it (9) based on the caching policy configured (please see Cache Expiration Configuration) and return it to the user (10) to end the request.
Product Strengths

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Vast Resource Reserves

**Nodes in mainland China**

CDN has over 1,100 cache nodes deployed across all provinces in mainland China, with a total reserved bandwidth of over 100 Tbps. These are all high performance and highly secure Tencent Cloud data centers with quality ISP networks. In addition, Tencent Cloud has strengthened connections with China Mobile, China Unicom, China Telecom, and over 50 small and medium-sized ISPs, and has built four central nodes to significantly improve CDN's acceleration effect.

![Map of Tencent Cloud CDN nodes in mainland China](image)

**Nodes outside mainland China**

CDN has been working industriously on global acceleration since 2017. As of January 2020, CDN has over 1,000 cache nodes across more than 50 countries and regions with a total reserved bandwidth of over 20 Tbps, helping your business go global with...
Global Intelligent Scheduling

When accessing resources, a variety of factors including the ISP network, client region, and the network bandwidth of the IDC origin server might affect the response time and user experience.

Through real-time monitoring of the linkages across the entire network and leveraging Tencent Cloud's self-designed GSLB scheduling system and intelligent routing technology, CDN schedules users' access requests to the optimal edge nodes for acceleration. This ensures quick and stable resource access for users.

Quick Configuration

You can use CDN to accelerate your services through a simple and quick configuration process, with no additional modification required on your end.
After registering your Tencent Cloud account and completing identity verification, you can activate the CDN service. Prepayment is not required. Add your business domain name on the CDN Console and wait for about 5 minutes for the domain name configuration to be distributed to cache nodes across the entire network. During this process, as the acceleration service has not taken effect yet, your business will not be affected.

When enabling the acceleration service, you need to modify the CNAME resolution configuration through your domain name service provider. Acceleration service will take effect when the DNS takes effect.

A Variety of Features

CDN comes with an easy-to-use, full-featured console where you can change the configuration items and view monitoring data as needed:

**Domain management**
- You can add, delete, activate, and deactivate domain names.
- You can switch acceleration regions and select "Mainland China", "Outside Mainland China", or "Global" for the acceleration scope.
- You can customize the domain name list page to display, filter, and query configuration items.

**Domain configuration**
- You can configure an external origin server (IP list or domain names) or use COS as an origin server. Round robin, weighted origin-pull, and hot backup of origin server are supported.
- You can configure custom access control policies such as referer blacklist/whitelist, IP blacklist/whitelist, timestamp hotlink protection, and IP access frequency limit.
- You can customize the expiration time of node cache, status code cache, and HTTP header cache.
- CDN supports configuring optimizations for cross-border origin-pull linkage, range GETs, and 301/302 origin-pull follow-redirect.
- CDN supports HTTPS acceleration, HTTP/2 acceleration, and forced request redirection.
- You can configure the bandwidth cap and customize advanced configuration items such as HTTP response header, auto compression, and SEO.

**Cache purge**
- Self-service purging of the entire network’s cache is supported, as well as directory purge and URL purge.

**Real-time monitoring**
- CDN supports real-time monitoring of the bandwidth, traffic, traffic hit rate, number of requests, and all status codes generated by access requests at a granularity of 1 minute. The statistics can be filtered by project, domain name, province, ISP, and protocol to present a comprehensive view of service status.
- CDN supports real-time monitoring of the origin-pull bandwidth, traffic, number of requests, failure rate, and all status codes generated by origin-pull requests at a granularity of 1 minute. The statistics can be filtered by project or domain name to help you conveniently view the origin server status.
- You can view real-time reports of user distribution by region around the globe or by ISP in mainland China.
- CDN provides daily, weekly, and monthly operational reports to keep you updated on business fluctuations.

**Log service**
- All logs generated by access requests are grouped by hour and can be downloaded.
- CDN access logs can be collected and published in real time to quickly search and analyze log data.
CDN APIs

CDN provides APIs for all the supported features listed above to enable customized service usage. You and your team can conveniently manage, monitor, display, and analyze your business through these APIs.
Use Cases

Last updated: 2020-04-16 16:11:14

This document describes the features and use cases of CDN.

Scenario Overview

The table below lists the use cases of CDN. You can click to view the details.

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website Acceleration</td>
<td>CDN provides accelerated delivery capabilities for static contents such as webpages, images, and small files in business scenarios like web portals, ecommerce, and UGC communities, significantly improving end users’ website experience.</td>
</tr>
<tr>
<td>Download Acceleration</td>
<td>CDN can stably and reliably accelerate downloads of game, app, or ROM installation packages.</td>
</tr>
<tr>
<td>Audio/Video Acceleration</td>
<td>Supported by Tencent's profound experience in online video operation, CDN can sustain massive volumes of concurrent requests for online audio and video playback during peak hours, effectively ensuring high service availability and media transfer speed while providing a stable, smooth and enriched viewing experience.</td>
</tr>
<tr>
<td>ECDN</td>
<td>Enterprise Content Delivery Network (ECDN) is a standalone product of Tencent Cloud for one-stop acceleration of dynamic or dynamic-static resources. It can automatically identify dynamic and static resources while implementing simultaneous acceleration for all types of internal resources on one single platform.</td>
</tr>
<tr>
<td>SCDN</td>
<td>In addition to all the acceleration benefits of CDN, Secure Content Delivery Network (SCDN) also features enhanced network security protection against high-traffic DDoS and CC attacks while supporting integration with Web Application Firewall (WAF). Security protection can be quickly enabled in CDN.</td>
</tr>
</tbody>
</table>

Scenario Description

**Website Acceleration**

Website acceleration is suitable for all types of websites such as web portals, ecommerce platforms, and UGC communities. CDN can cache and accelerate the delivery of static contents on your website such as images, HTML, CSS, and JavaScript files. To accelerate access to dynamic contents such as .asp, .jsp, .php, .cgi, and .perl files as well as API and database requests, use ECDN.

CDN provides powerful static content delivery capabilities, significantly speeding up page loading and offering a smooth and fast browsing experience for geographically dispersed end users. During service peaks with a large number of concurrent users, it can
alleviate the pressure on origin servers to ensure stable and smooth access to services and webpages.

**Download Acceleration**

Download acceleration is suitable for speeding up the download of various files such as game, app, and ROM installation packages. Supported by the massive amounts of elastic bandwidth resources of Tencent Cloud, CDN can endure large-scale traffic and speed up the download of large files, ensuring service stability and providing an efficient download experience for all end users.

**Audio/Video acceleration**

Audio/video acceleration is suitable for different types of audio/video on-demand websites and applications such as audio/video apps, online audio/video platforms, and IPTV. With enhanced content delivery capabilities and supported by Tencent's profound experience in online video operation, Tencent Cloud CDN can effectively ensure smooth audio/video playback for all end users.
during peak hours with massive volumes of concurrent requests.

**ECDN**

Enterprise Content Delivery Network (ECDN) is suitable for websites and applications with a mix of dynamic and static resources, or with many requests for dynamic resources such as .asp, .jsp, .php, .cgi, and .perl files as well as API and database requests.

By integrating static edge caching with dynamic origin-pull route optimization, intelligently scheduling requests to the optimal service nodes, automatically identifying static and dynamic resources, and utilizing Tencent's proprietary optimal route calculation algorithm and TCP optimization technology, ECDN, currently a standalone product, can provide end users with a high-performance and one-stop acceleration experience.

**SCDN**

Secure Content Delivery Network (SCDN) is suitable for scenarios that integrate high-speed delivery of static and dynamic contents with security protection. It is ideal for industries that require fast content delivery and high network security, such as gaming, internet finance, ecommerce, and government portals. In addition to all the acceleration benefits of CDN, SCDN also...
features enhanced network security protection against high-traffic DDoS and CC attacks while supporting integration with Web Application Firewall (WAF). Security protection can be quickly enabled in CDN.

SCDN is built upon CDN and you do not need to re-do DNS configuration. Network security protection can be quickly enabled for domain names accelerated by CDN.
Use Limits
Last updated : 2020-06-09 11:56:16

ICP filing for domain name

You need to obtain ICP filing for your domain name connected to CDN for acceleration. If you have not done so, use the ICP filing registration service of Tencent Cloud.

Credit Check

When connecting your domain name to CDN, CDN will check its credibility. If your domain name has had the following situations, it will have a low credibility and be blacklisted.

- The accelerated domain name has published content via Tencent Cloud CDN that severely violates regulations.
- The account to which the accelerated domain name belongs has generated a large amount of outstanding fees.
- The accelerated domain name is listed as a malicious domain name by Tencent PC Manager.

Content Check

CDN regularly scans contents delivered over the entire internet. If your domain name has the following illegal contents, CDN will block the contents and no longer provide acceleration service in severe cases.

- Unauthorized gaming server
- Pirated game/software/video websites
- Illegal hospital and medicine websites
- Pornographic contents
- Drug-related contents
- Gambling advertising contents and gambling-related games

Acceleration Service

<table>
<thead>
<tr>
<th>Type</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerated domain name</td>
<td>Wildcard domain names can be connected</td>
</tr>
<tr>
<td></td>
<td>Up to 100 ones are supported</td>
</tr>
<tr>
<td>Data statistics</td>
<td>Statistics generated in the past 90 days can be queried by default</td>
</tr>
<tr>
<td>Content purge</td>
<td>URL purger: 1,000 per day</td>
</tr>
<tr>
<td></td>
<td>Directory purge: 200 per day</td>
</tr>
<tr>
<td>Access log</td>
<td>Access logs are retained for 30 days by default</td>
</tr>
</tbody>
</table>

Domain name repossession

If your domain name does not generate any website access traffic within three months after connection, CDN will automatically close the acceleration service. If you want to use the service again, log into the CDN console to enable it manually.
CDN Performance Descriptions (Spot-check)

Test Descriptions

**Test Tools**
CVM instance (1-core, 1 GB memory) and Tencent Cloud CDN

**Test Method**
We used the benchmark test method commonly used in the industry. The service provider is TingYun.

**Test Parameters**

<table>
<thead>
<tr>
<th>Tested period</th>
<th>May 21, 2019 07:45 - 19:15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested city</td>
<td>All</td>
</tr>
<tr>
<td>Tested ISP</td>
<td>China Unicom, China Telecom, China Mobile</td>
</tr>
<tr>
<td>Origin server link</td>
<td>http://*/simptab-wallpaper-20190520181120.png</td>
</tr>
<tr>
<td>CDN link</td>
<td>http://*/simptab-wallpaper-20190520181120.png</td>
</tr>
</tbody>
</table>

**Result Analysis**

**Latency Performance Curve**
Unit: second

![Trend of Latency](image)

**Availability Curve**
In %
### Chart Analysis

<table>
<thead>
<tr>
<th>Monitoring Task</th>
<th>Monitoring Points</th>
<th>Performance (in seconds)</th>
<th>Availability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>Best</td>
</tr>
<tr>
<td>CDN</td>
<td>2235</td>
<td>0.196</td>
<td>May 21 07:45</td>
</tr>
<tr>
<td>Origin Server</td>
<td>2177</td>
<td>0.933</td>
<td>May 21 10:45</td>
</tr>
</tbody>
</table>

### Data Details

<table>
<thead>
<tr>
<th>Time</th>
<th>CDN</th>
<th>Origin Server</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance (in seconds)</td>
<td>Availability (%)</td>
</tr>
<tr>
<td>May 21 07:45</td>
<td>0.117</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 08:15</td>
<td>0.160</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 08:45</td>
<td>0.135</td>
<td>99.91</td>
</tr>
<tr>
<td>May 21 09:15</td>
<td>0.240</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 09:45</td>
<td>0.190</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 10:15</td>
<td>0.158</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 10:45</td>
<td>0.170</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 11:15</td>
<td>0.123</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 11:45</td>
<td>0.246</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 12:15</td>
<td>0.313</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 12:45</td>
<td>0.258</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 13:15</td>
<td>0.175</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 13:45</td>
<td>0.173</td>
<td>100.00</td>
</tr>
<tr>
<td>Date Time</td>
<td>Value 1</td>
<td>Value 2</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>May 21 14:15</td>
<td>0.257</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 14:45</td>
<td>0.214</td>
<td>100.00</td>
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<tr>
<td>May 21 15:15</td>
<td>0.240</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 15:45</td>
<td>0.169</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 16:15</td>
<td>0.146</td>
<td>100.00</td>
</tr>
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<td>May 21 16:45</td>
<td>0.269</td>
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</tr>
<tr>
<td>May 21 17:15</td>
<td>0.181</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 17:45</td>
<td>0.208</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 18:15</td>
<td>0.219</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 18:45</td>
<td>0.119</td>
<td>100.00</td>
</tr>
<tr>
<td>May 21 19:15</td>
<td>0.212</td>
<td>100.00</td>
</tr>
<tr>
<td>Average/Summary</td>
<td>0.196</td>
<td>99.996</td>
</tr>
</tbody>
</table>

Excluded points: 0