

Alibaba Cloud

Alibaba Cloud CDN

User Guide

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Note: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the <code>cd /d C:/windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is a optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand / slave}</code>

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1 Introduction

Quick start

Alibaba Cloud Content Delivery Network(CDN) is a distributed network that overlays on the bearer network and is composed of edge node server clusters distributed across different regions. The CDN network replaces the traditional data transmission modes centered on web servers. The CDN console can help you add a CDN domain, refresh cache, and perform other configuration tasks. It also provides resource monitoring services including real-time data analysis. This document presents basic information about the CDN console.

Overview of CDN operation

After you log on to the [CDN console](#), the CDN operation information for the current account is displayed on the home page as follows:

1. Billing method display and change:
2. Key data: the number of domains in normal status and the total traffic for all domains this month
3. This month's data:
 - a. Domain peak bandwidth
 - b. Top 4 domain names according to the accumulated downstream traffic
 - c. Region distribution of users who access the acceleration resources
 - d. Real-time cache hit rate of users who access acceleration resources

**Note:**

This month indicates the current calendar month.

You can complete relevant function settings and view data in the left-side navigation pane:

Functions	Brief introduction
Domain name management	Add a CDN domain name, manage, or delete a CDN domain name, and change the basic and configuration information of the CDN domain name.
Monitoring	Include four parts, Traffic Monitoring, User Access Monitoring, Data Analysis, and Security Protection

Functions	Brief introduction
Refresh	URL refresh and directory refresh are available.
Log	Log downloads, log storage (upcoming), Cloud reports
Tools	Link diagnostic tools, IP queries

2 Function overview

HTTPS secure acceleration

Function	Description	Default
HTTPS secure acceleration	Provides a full link HTTPS secure acceleration scheme, just upload the CDN domain name certificate/private key after you activate secure acceleration mode, and supports viewing, disabling, enabling, editing of certificates.	Disabled
Force redirect	When the "HTTPS secure acceleration" is enabled, the CDN domain name supports custom settings, and redirect the user's original request in a forcible way.	Disabled

Back-to-source settings

Function	Description	Default
Back-to-source host	Specifies the host domain name that a CDN node accesses in the back-to-source process. Three options are available: CDN domain name, original site domain name, and custom domain name.	CDN domain name
Back-to-source with the same protocol	Back-to-source requests for resources use exactly the same protocol as used by the client to request the resources.	Disabled

Cache settings

Function	Description	Default
Cache expiration time	Customizes cache expiration rules for specified resources.	Disabled

Function	Description	Default
Setting the HTTP Request Header	Sets an HTTP request header . Nine parameters are currently available for HTTP request header customization.	Disabled
Custom 404 page	Available in three options: default 404, public welfare 404 , custom 404	Default 404 page

Access control

Function	Description	Default
Anti-leech	Configures a referer blacklist or whitelist to identify and filter visitors.	Disabled
URL authentication	Uses URL authentication methods to protect resources on an origin site.	Disabled
IP blacklist	Configures the access IP blacklist to identify and filter visitors.	Disabled

Performance optimization

Function	Description	Default
Page optimization	Compresses and removes useless blank lines and carriage return characters to effectively reduce the page size.	Disabled
Smart compression	Supports smart compression for content in multiple formats to effectively reduce the size of user transmitted content.	Disabled
Filter parameter	Removes parameters after ? in a URL request during the back-to-source process.	Disabled

Video-related settings

Function	Description	Default
Back-to-source of range	Allows a user to notify an origin site server to return partial content within a specified range. This function helps with accelerated delivery of large files.	Disabled
Drag/drop playback	Enables random drag or drop playback in a video or audio on-demand scenario.	Disabled
Notify_URL	【Applicable to Live】 Real-time information callback of stream status, promptly notifies users about the operation results of streaming or stream disconnection.	Disabled

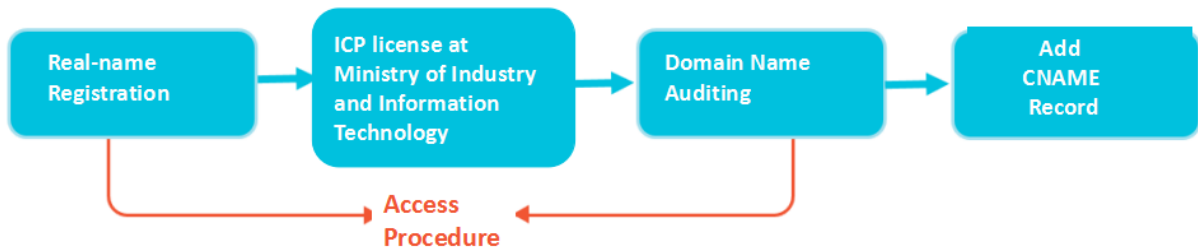
Other settings

Function	Description	Default
Set httpDNS	Provides a DNS service by using the HTTP protocol to directly access the server of Alibaba Cloud CDN.	Disabled

3 Limits

Restrictions on the use of CDN

Procedure



1. Real-name registration must be performed for accounts on the Alibaba Cloud official website.
2. A CDN domain must have an [ICP license](#) and be connected to Alibaba Cloud.
3. The origin site content of a CDN domain must be stored on Elastic Compute Service (ECS) or Object Storage Service (OSS). If the origin site content is not stored on Alibaba Cloud, access must be reviewed.

Domain Name reviewing standards

All domains attempting to access CDN must be reviewed. CDN access is not allowed in any of the following scenarios:

- The CDN domain cannot be accessed normally or the content does not include any substantive information.
- The CDN domain is for a private game server.
- The CDN domain is used for role playing games or card games.
- The CDN domain name is for website that has no download rights such as pirate software
- The CDN domain is for a P2P website.
- The CDN domain is for a lottery website.
- The CDN domain is for an illegal hospital or pharmaceutical website.
- The CDN domain is for a site involving porn, gambling, drugs, etc.
- An automatic timeout rejection occurs, and outputs the following: Your domain name is rejected because it failed to comply with CDN access rules. Reference the feedback and submit a qualified domain name to be reviewed again.

The losses incurred by attacks or malicious download because the CDN domain name does not comply with the previous rules will be born on you, and Alibaba Cloud CDN carries no responsibilities.

- Domains that have accessed Alibaba Cloud CDN will be reviewed regularly. If any of these violations are detected, the system immediately terminates the CDN acceleration of the domain name, and stops the CDN service for all your domain names at the same time.
- If your CDN domain name cannot be accessed normally or is denied due to reason which does not contain any substantive information, and your business is a compliance business, you can submit a ticket, and send the screenshots of the web site business content(which contains the domain name) through the ticket. After the ticket is reviewed separately, you will be informed of the results of the second audit.

Restriction

Quantity	Limit quantity
Quantity	Limit quantity
Domain Name	The maximum number of CDN domains for each Alibaba Cloud account is 20 .
IP origin site	The maximum number of IP origin sites for each CDN domain is 10 .
Cache refresh and push operations	refresh: 2000items/day/account. Directory refresh: 100100 items/day/account.

If you have a large number of domain name acceleration needs, submit a ticket for special support

CDN domain name reclaiming rules

If your CDN domain name...	The system will...	To continue using CDN acceleration, you must...
not access traffic for more than 90 days (including "normal operation")	Automatically deactivate the domain name to save the CDN domain name related records	Enable CDN domain names.
Is in the disabled state for more than 120 days (including auditing failed)	Automatically delete the domain name related records.	Re-add the domain name.

4 Business type

4.1 Type 1: Images And Small Files Acceleration

Use cases

Distribution of static website or application contents, such as various image files, HTML file, Flash animation, css and JavaScript files. Suitable for portal websites, e-commerce websites, news websites and applications, government and enterprise official websites, and entertainment and game websites and applications.

Procedure

1. Add a CDN domain

See [Quick Start](#). Make sure you select **Acceleration of images and small files** for the business type.

2. Configure domain

After the domains are added, use the appropriate feature to configure the CDN domains based on your business needs. All domain configurations are optional. The following configurations are recommended for the acceleration of "images and small files".

Recommended configurations:

- [HTTPS Secure Acceleration](#): You only need to enable the secure acceleration mode and then upload the certificate and the private key for the CDN domains. You can also view, disable or edit the certificate. For more information, see [Certificates formats instructions](#).
- [Cache configuration](#): This feature can be used to set the actions of a cache server against resources in different **directory paths** or with different **file name suffixes**. You can customize cache expiration rules for specified resources.
- Access control settings: ensure the security of the distributed content, and prevent unnecessary traffic losses from leeching or malicious requests.
 - [Refer anti-leech protection](#)
 - [IP blacklist](#)
- Performance optimization settings: intelligently compress the distributed content and ignore URL parameters to improve cache hit rate.
 - [Page optimization](#)

- [Smart compression](#)
- [Filter parameters](#)
- For more features, see [CDN feature list](#).

4.2 Type 2: Large File Downloads Acceleration

Use cases

Distribution of large static website or application files, such as game installation packages `.apk`, application update files `.rar`, patch files, and audio and video files. Suitable for download sites and audio and video applications.

Procedure

1. Add CDN domains

See [Quick Start](#). Make sure you select **Acceleration of large file downloads** for the business type.

2. Domain configuration

After the domains are added, use the appropriate feature to configure the CDN domains based on your business needs. All domain configurations are optional. The following configurations are recommended for the **Acceleration of large file downloads**.

Recommended configurations

- [HTTPS Secure Acceleration](#), you only need to enable the secure acceleration mode and then upload the certificate and the private key for the CDN domains. You can also view, disable and edit the certificate. For more information, see [Certificate format instructions](#).
- [Cache configuration](#): This feature can be used to set the actions of a cache server against resources in different **directory paths** and with different **file name suffixes**. You can customize cache expiration rules for specified resources.
- Access control settings: ensure the security of the distributed content, and prevent unnecessary traffic losses from leeching or malicious requests.
 - [Refer anti-leech protection](#)
 - [IP blacklist](#)
- [Range back-to-origin](#): This feature can be used for reduced consumption of back-to-origin traffic and improved resource response time.

- [URL prefetch](#): Proactively prefetches the content from the origin server to the L2 Cache node. You can directly hit the cache at the first visit to help relieve pressure on the origin server.
- For more features, see [Overview of domain configuration](#).

4.3 Type 3: On-Demand Video/Audio Acceleration

Use cases

All kinds of video/audio websites, such as video websites for films and TV dramas, video websites for online education, video websites for news, short video-featured social websites, and audio websites and applications.

Procedure

1. Add CDN domains

See [Quick Start](#). Make sure you select **Acceleration of on-demand video/audio** for the business type.

2. Domain configuration

After the domains are added, use the appropriate feature to configure the CDN domains based on your business needs. All domain configurations are optional. The following configurations are recommended for the **Acceleration of on-demand video/audio**.

Recommended configurations

- [HTTPS Secure Acceleration](#): You only need to enable the secure acceleration mode and then upload the certificate and the private key for the CDN domains. You can also view, disable, enable and edit the certificate. For more information, see [Certificate format instructions](#).
- [Cache configuration](#): This feature can be used to set the actions of a cache server against resources in different **directory paths** or with different **file name suffixes**. You can customize cache expiration rules for specified resources.
- Access control settings: ensure the security of the distributed content, and prevent unnecessary traffic losses from leeching or malicious requests.
 - [Authentication settings](#): The URL authentication feature is implemented by collaboration between the Alibaba Cloud CDN nodes and client resource sites to provide a more secure and reliable way to protect origin server resources from theft.
 - [Refer anti-leech protection](#)

— IP blacklist

- [Range back-to-origin](#): This feature can be used for reduced consumption of back-to-origin traffic and improved resource response time.
- [Drag/drop playback](#): Enables random drag/drop playback in a video/audio on demand scenario.
- [URL prefetch](#): Proactively prefetches the content from the origin server to the L2 Cache node. You can directly hit the cache at the first visit to help relieve pressure on the origin server.
- For more features, see [Overview of domain configuration](#).

4.4 Type 4: Live Streaming Media Acceleration

Use cases

High-performance and stable live broadcast technical support is provided for video broadcast platforms, including interactive online educational websites, live broadcast gaming sites, personal live shows, and live broadcast platforms of event or vertical industry type. RTMP, HLS, and FLV live broadcasts. Currently, acceleration is applicable to [RTMP](#), [HLS](#) and [FLV](#) live broadcasts.

Procedure

1. See

Please refer [Quick Start](#). Make sure you select **Acceleration of live streaming media** for the business type.



Note:

This business type does not support the custom live streaming server. The origin site address **live-origin.alivecdn.com** of the Alibaba Cloud CDN live broadcast center is used.

2. Stream push instructions

Stream push address

```
rtmp://video-center.alivecdn.com/app-name/video-name? vhost=test.example.com
```

Operation on the console: Select the CDN domain for live broadcast in **Domain Name Management** to go to the configuration page:

CDN

概览

域名管理

监控

刷新

支出

日志

工具

live.finalexam.cn

CNAME: live.finalexam.cn.w.alikunlun.net

业务类型: 视频云直播

创建时间: 2017-08-03 20:48

推流地址: `rtmp://video-center.alivecdn.com/app-name/video-name?vhost=live.finalexam.cn`

RTMP格式: `rtmp://live.finalexam.cn/app-name/video-name`

FLV格式: `http://live.finalexam.cn/app-name/video-name.flv`

M3U8格式: `http://live.finalexam.cn/app-name/video-name.m3u8`

回源设置

配置项	说明	当前配置
源站设置	指定资源回源地址及端口, 支持域名源站及IP源站, 推荐使用OSS源站	live-origin.alivecdn.com:80
协议跟随回源	回源使用协议和客户端访问资源的协议保持一致。注: 源站需支持443端口	未开启
私有Bucket回源	支持权限为Private的OSS源站的内容加速, 有效防止资源盗链	未开启



Note:

- By default, the number of pushed streams is limited to 20.
- video-center.alivecdn.com is the domain name of the live streaming server. At present, it does not support customization.
- app-name indicates the application name. Customization is supported. The application name may include letters, numbers, and underscores. Special characters are not allowed. Modification is supported. The length must not exceed 255 characters.
- video-name indicates the stream name. Customization is supported. The stream name may include letters, numbers, and underscores. Special characters are not allowed. Modification is supported. The length cannot exceed 255 characters.
- vhost indicates the final domain name for broadcast on the edge node, that is, your CDN domain (For example: test.example.com).

3. Stream playback instructions

Based on the pushed streams, three reading modes are supported on edge nodes:

Mode	URL
RTMP	<code>rtmp://test.example.com/app-name/video-name</code>
FLV	<code>http://test.example.com/app-name/video-name.flv</code>
M3U8	<code>http://test.example.com/app-name/video-name.m3u8</code>

The following figure shows the location of a stream push address on the console.



4. Domain name configuration

After the domains are added, use the appropriate feature to configure the CDN domains based on your business needs. All domain configurations are optional. The following configurations are recommended for the acceleration of “live streaming media”.

- **Authentication settings:** The URL authentication feature is implemented by collaboration between the Alibaba Cloud CDN nodes and client resource sites to provide a more secure and reliable way to protect origin server resources from theft.



Note:

- Currently, the same authentication scheme is adopted for stream push and stream playback.
- The CDN domain performs stream push and playback only after authentication configuration is completed. Currently, the live broadcast business type supports the A-type authentication method only.
- The streaming and playback addresses must receive authentication signature calculations respectively. Every signature is calculated based on the URL strictly, so you cannot apply the signature calculated from the streaming URL to the playback address. Similarly, different stream playback addresses correspond to different authentication calculation results.
- During signature calculation, no parameter is included in the URL. For example, during calculation of authentication signature for stream push is not included? `vhost=test.yourcompany.com`

Example:

Step	Content
Resource URL	rtmp://video-center.alivecdn.com/app-name/video-name
Authorization settings	Authentication method: Method A Authentication key: test123 valid time: 3, 600s
Stream push address	rtmp://video-center.alivecdn.com/app-name/video-name? auth_key=1449030595-0-0-dee5f3819d7b62a9830ee2913caf111c&vhost=test.example.com
Stream playback address (take the FLV format as an example)	http://test.example.com/app-name/video-name.flv?auth_key=1449030834-0-0-5e1c604710241001fd7a367bc96a17b7

- Notify_url settings, flow status real-time feedback, send a GET request to the user server through the HTTP interface, real-time feedback to the user on the status of successful streaming and successful streaming of video, the user server returns the result by 200 response to the interface returned by default. 1 indicates a success in receiving; 0 indicates a failure in receiving.

5 Value-added service

6 Domain Names

6.1 Batch Configure

Introduction

You can copy specific configurations of a domain name then apply them to one or more other domain names.

**Note:**

You can only copy the configuration of a domain name when it is running normally.

Procedure

Make sure that you have configured the domain name that you want to copy.

**Note:**

You cannot copy an HTTPS certificate to another domain name. Configure it independently.

**Warning:**

You cannot return to the configuration before copying. Make sure the source domain name is on service or has existing configuration, and its bandwidth is large. Copy with caution.

1. On the **Domain Names** page, select the domain name you want to copy, then click **Copy Configuration**.

Domain Names

Add Domain Name

All Types ▾

<input type="checkbox"/>	Domain Name
<input type="checkbox"/>	16tp.com
<input type="checkbox"/>	5tp.com
<input type="checkbox"/>	ipe.com
<input type="checkbox"/>	tp.com
<input type="checkbox"/>	<div><div>Disable</div><div>Download Domains</div></div>

2. Select the configuration items you wish to copy, then click **Next**.

**Note:**

You cannot copy the origin site and other configurations at the same time.

3. Select the target domain name you wish to apply configurations to, then click **Next Step**.

You can also enter keywords to search for the domain name.

**Note:**

The copied configurations will overwrite any configurations you previously set for the target domain name. Take caution when copying configurations, or your service may become unavailable.

4. Click **Confirm**.

Note

- For Custom back-to-origin HTTP header, copying means adding configuration to your existing . For example, if Domain A has 2 Custom back-to-origin HTTP header configurations, and you copy 5 configurations from Domain B, you may have 7 configurations in total.
- For HTTP header, copying means covering existing configurations. For example, if Domain A's Cache_Control is set to Private, and you copy Domain B's configuration of Public, then your Cache Control is now set to Public.
- Copying configurations of switches, Referer or IP's blacklist or whitelists cover existing configurations.

6.2 HTTPS Acceleration

6.2.1 HTTPS Secure Acceleration

Introduction

HTTPS (Hyper Text Transfer Protocol over Secure Socket Layer) is an HTTP channel designed to ensure security. It encapsulates HTTP with the SSL/TLS protocol, so the foundation of HTTPS security is SSL/TLS.

HTTPS Acceleration Advantages:

- Encrypt important information during transmission, avoiding attack-caused information leaking, such as session ID or cookies.
- Perform the data integrity during transmission, preventing man-in-the-middle attack (MITM), such as DNS or contents being hijacked by third party.

Alibaba Cloud CDN provides HTTPS Secure acceleration. When you have uploaded certificate and secret keys after enabling HTTPS, so that you can check, disable, enable and edit the certificate.

**Note:**

[Submit a ticket](#) if you need SNI back-to-origin.

How it works

The HTTPS Secure Acceleration encrypts your request to Alibaba Cloud CDN nodes. And the CDN nodes still follow your origin site's configuration to access resources in the origin site. We recommend you configure and enable HTTPS on your origin site, encrypting your full-link HTTPS acceleration.

Here is the HTTPS encryption process:

1. You start an HTTPS request.
2. The server generates a public key and a secret key (self-made or apply from professional organization).
3. The server sends the public certificate to your side.
4. You side verify the certificate.
 - If the certificate is correct, a random number (private key) is generated and encrypted with the public key, and transferred to the server.
 - If the certificate is incorrect, the SSL handshake fails.

**Note:**

The certificate verification includes: the certificate being within the period of validity, the reliability of certificate's CA, the certificate's public key being able to encrypt the number signature of the server's issuer, and the domain name on the server's certificate being matched with its real domain name.

5. The server uses the previous secret key to decrypt and get the random number (private key).
6. The server encrypt the transmitted data by using the private key.
7. You side decrypt the encrypted server data by using private key, and eventually get the data.

Notes**About configuration**

- HTTPS secure acceleration is available in the following service types: Image and Small File, Download, Video, and Live Streaming Media.
- HTTPS acceleration for wildcard domain names is available.
- You can **Enable** or **Disable** HTTPS acceleration:
 - Enable: you can modify the certificate. The system is compatible with all your HTTP and HTTPS requests by default. You can also customize **Forcible redirect** for original request method.
 - Disable: the system will neither support HTTPS request nor save the certificate or secret key's information. You need to re-upload the certificate or secret key when you reopen the certificate.
- You can check the certificate, but cannot check the secret key due to its importance. Make sure that you have taken care of certificate information.
- Update your certificate with caution. The update will take effect in 1 minute.

About billing

HTTPS Secure Acceleration is a value-added service, so that you need to pay for the HTTPS requests. For more information, see [HTTPS pricing](#).



Note:

You need to pay for HTTPS requests separately. Make sure that your account balance is sufficient, otherwise it may affect your CDN service.

About certificate

- To enable acceleration domain name with the **HTTPS Secure Acceleration** feature, you need to upload the certificate and secret key in the `PEM` format.



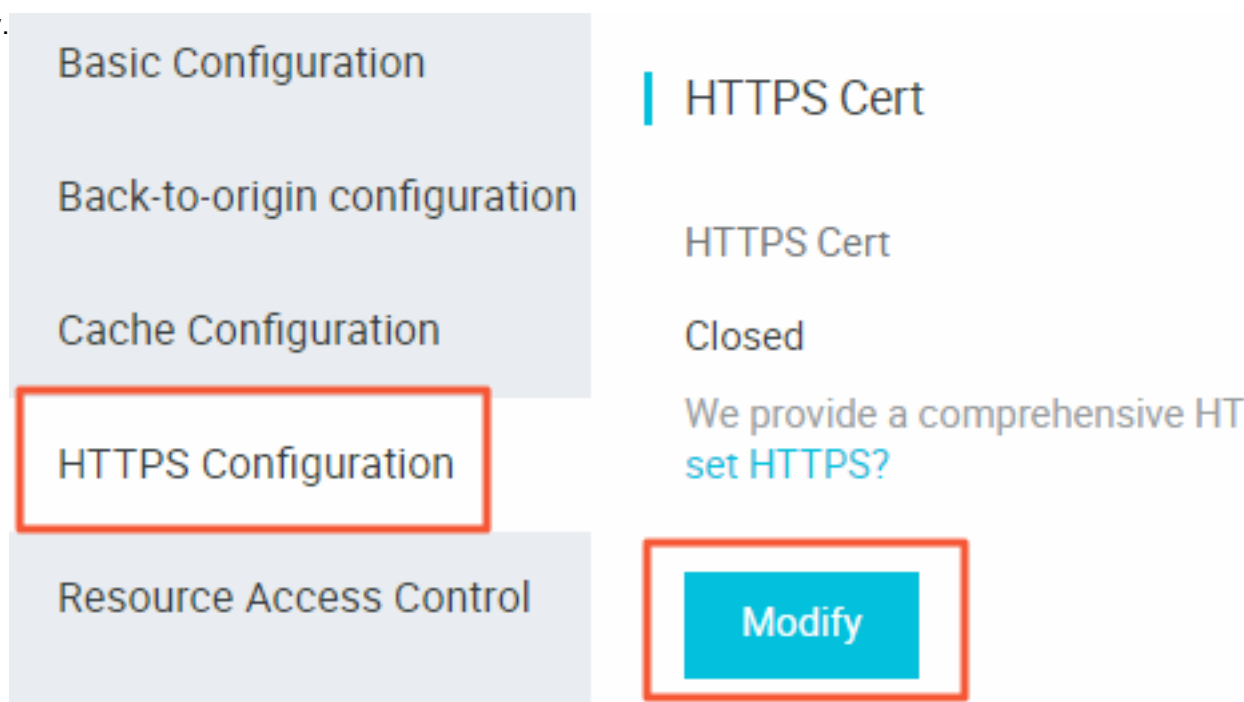
Note:

As Alibaba Cloud CDN only adopts Nginx-based Tengine service, only the certificate in `PEM` format is available. For more information, see [Certificate Format](#).

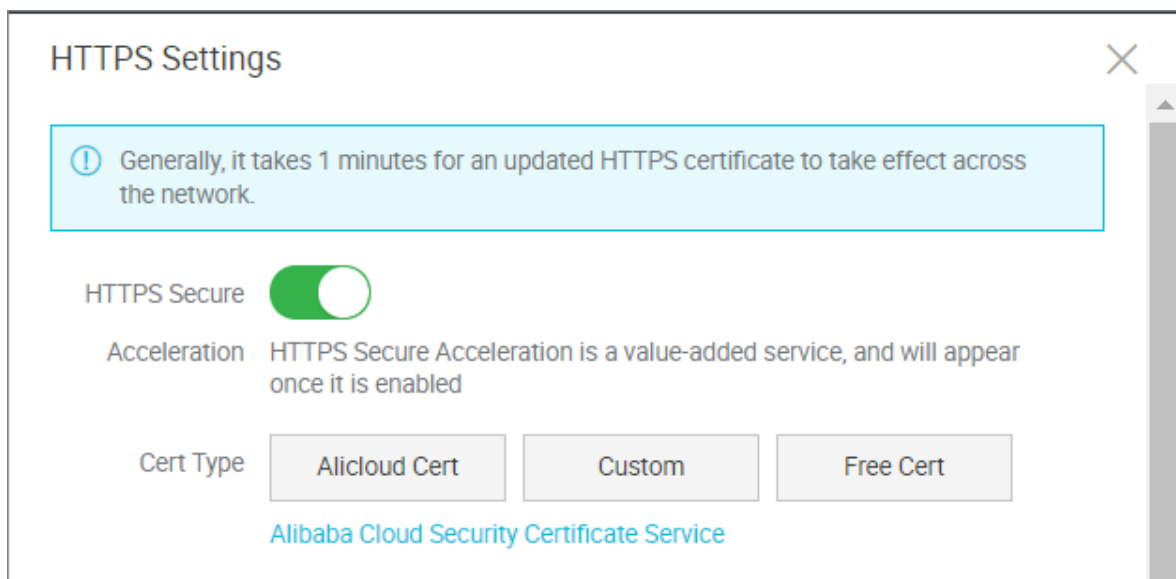
- Only SSL/TLS handshake with SNI information is available.
- The certificate you upload should be matched with your secret key, otherwise your verification may fail.
- Secret key with a password is unavailable.

Procedure

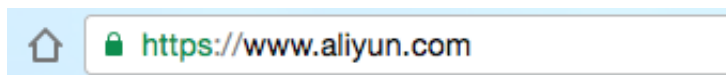
1. Purchase a certificate. Only when you own the certificate that is matched with your domain name can you enable HTTPS Secure Acceleration. You can easily purchase AliCloud Certificate in the [YunDun console](#), or apply for free certificate.
2. Log on to the [CDN console](#), and enter the **Domain Names** page. Select the domain name, and click **Manage**.
3. In **HTTPS Configurations > HTTPS Cert**, click **Modify**.



4. In the **HTTPS Settings** dialogue, enable **HTTPS Secure**.
5. Select your certificate type. You can choose **Alicloud**, **Custom** or **Free Cert**. Currently, only the **PEM** format is available.



- You can choose the Alicloud Certificate. If you have no matched certificate in your list, choose custom certificate. You need to upload the certificate contents and secret key after setting the certificate name. This certificate will be saved in your Alibaba Cloud Security. You can check in [My Certificate](#).
 - You can also choose free certificate, namely, Alicloud CDN DigiCert DV version SSL Free certificate. This free certificate is only available for Alibaba Cloud CDN service, and it can't be managed in the SSL Certificates service of Alibaba Cloud Security. This certificate is only used to enable HTTPS Secure Acceleration in CDN, and you cannot obtain its public and private keys for other use. After you choose to use the Free Cert type, it takes about 10 minutes for the certificate to be effective.
6. Verify whether the certificate is effective. You can access resources by using HTTPS after the certificate becomes effective (about 1 hour). Green HTTPS mark indicates that you have established private connection with the website, and HTTPS secure acceleration has come into effect.

**Note:**

About replacing your certificate:

- If you wish to change your certificate to free certificate or Alicloud certificate, re-choose the target certificate (**Free Cert** or **Alicloud Cert**) in the **HTTPS Settings** page.

- If you wish to change your certificate to custom certificate, choose **Custom** in the **HTTPS Settings** page. Enter the target certificate name and contents to the box of the window, then deliver it.

6.2.2 Certificate Format

Before [Enabling the HTTPS](#) service, you must configure certificates. You can directly select <https://yundun.console.aliyun.com> managed or purchased certificates in Alibaba Cloud Security, apply for free certificates, or manually upload custom certificates. Custom upload only supports certificates in PEM format. You must convert certificates and private keys from other formats to the PEM format.

Certificate format requirements

Certificate authorities (CAs) generally provide the following types of certificates. Among these, Alibaba Cloud CDN uses the Nginx format (certificates are .crt files and private keys are .key files):

- If certificates are issued by a root CA, you receive only one certificate.
- If you have obtained a certificate file consisting of multiple certificates from an intermediate CA, you must manually splice the server certificate and intermediate certificate before uploading them together.



Note:

Splicing rules: The server certificate must be followed by the intermediate certificate without any blank line. Generally, the CA provides the relevant description when issuing a certificate. So pay attention to the rule description.

Example

Confirm the format is correct before uploading.

Certificates issued by a root CA

In Linux environments, certificates are in the PEM format:

```

-----BEGIN CERTIFICATE-----
MIIE+TCCA+GgAwIBAgIQU306HIX4KsioTW1s2A2krTANBgkqhkiG9w0BAQUFADCB
tELMAkGA1UEBhMCVVMxZzFzAVBgNVBAoTD1Zlcm1TdWduLCBJbmMuMR8wHQYDVQQL
ExZWZXJpU21nbjBUcnVzdCB0ZXR3b3JrMTswOQYDVQQLEzJUZjJtYcyBvZiB1c2Ug
YXQgaHR0cHM6Ly93d3ducudmVyaXNpZ24uY29tL3JwYSoAYykwOTEvMC0GA1UEAxMm
VmVyaVNPZ24gQ2xhc3MgMyBTZW51cmUgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBwMBBgrBgEFBQcDAjAFBgNVHSMEGDAWgBS17wsRzsBBA6NKZZBIshzgVy19
RzB2BggrBgEFBQcBAQRqMGgwJAYIKwYBBQUHMAAGGGGh0dHA6Ly9vY3NwLnZlcm1z
aWduLmNvb3RzANBgkqhkiG9w0BAQEEggDovL1NWU1N1Y3VyZS1HMi1haWEudmVyaXNp
Z24uY29tL1NWU1N1Y3VyZUcyLmN1c2UgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBwMBBgrBgEFBQcDAjAFBgNVHSMEGDAWgBS17wsRzsBBA6NKZZBIshzgVy19
RzB2BggrBgEFBQcBAQRqMGgwJAYIKwYBBQUHMAAGGGGh0dHA6Ly9vY3NwLnZlcm1z
aWduLmNvb3RzANBgkqhkiG9w0BAQEEggDovL1NWU1N1Y3VyZS1HMi1haWEudmVyaXNp
Z24uY29tL1NWU1N1Y3VyZUcyLmN1c2UgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBwMBBgrBgEFBQcDAjAFBgNVHSMEGDAWgBS17wsRzsBBA6NKZZBIshzgVy19
RzB2BggrBgEFBQcBAQRqMGgwJAYIKwYBBQUHMAAGGGGh0dHA6Ly9vY3NwLnZlcm1z
aWduLmNvb3RzANBgkqhkiG9w0BAQEEggDovL1NWU1N1Y3VyZS1HMi1haWEudmVyaXNp
Z24uY29tL1NWU1N1Y3VyZUcyLmN1c2UgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBwMBBgrBgEFBQcDAjAFBgNVHSMEGDAWgBS17wsRzsBBA6NKZZBIshzgVy19
RzB2BggrBgEFBQcBAQRqMGgwJAYIKwYBBQUHMAAGGGGh0dHA6Ly9vY3NwLnZlcm1z
aWduLmNvb3RzANBgkqhkiG9w0BAQEEggDovL1NWU1N1Y3VyZS1HMi1haWEudmVyaXNp
Z24uY29tL1NWU1N1Y3VyZUcyLmN1c2UgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBwMBBgrBgEFBQcDAjAFBgNVHSMEGDAWgBS17wsRzsBBA6NKZZBIshzgVy19
RzB2BggrBgEFBQcBAQRqMGgwJAYIKwYBBQUHMAAGGGGh0dHA6Ly9vY3NwLnZlcm1z
aWduLmNvb3RzANBgkqhkiG9w0BAQEEggDovL1NWU1N1Y3VyZS1HMi1haWEudmVyaXNp
Z24uY29tL1NWU1N1Y3VyZUcyLmN1c2UgU2VydmlVYIENBIC0gRzIwHhcnMTAxdMA4
MDAwMDAwWhcnMTMxMDA3MjM1OTU5WjBqMQswCQYDVQQGEwJVUzETMBEGA1UECBMK
V2FzaGluZ3Rvb3JlQMA4GA1UEBxQHU2VhdHRsZTEYMBYGA1UEChQPQW1hem9uLmNv
bSBjb2MuMR0wGAYDVQQDFBFpYW0uYW1hem9uYXZzLmNvb3RzANBgkqhkiG9w0B
AQEFAAOBjQAwGykCgYEA3Xb0EGea2d8B8QGEUwLCEpwwGawEkUdLZmGL1rQJZdeeN
3vaF+ZTM8Qw5Adk2Gr/RwYXtpx04xvQXmNm+9YmksHmCZdrucrW1eN/P9wBfQMZ
X964CjVov3NrF5AukU8jgtwEyu//C3HwN0uIVGdg76626gg0oJ5aj48R2n0MnVcC
AwEAAAOCAQEEggHNMakGA1UdEwYQChMAAwCwYDVDR0PBAQDAAGWMEUGA1UdHwQ+MDww
OqA4oDaGNghdHA6Ly9TVlJTZW51cmUtdzItY3J3LnZlcm1zaWduLmNvbS9TVlJT
ZW51cmVHMi5jcmwwRAYDVROgBD0wOzA5BgtghkgBhvhFAQcXAAZqMCgGCCsGAQUF
BwIBFhxodHRwczovL3d3dy52ZXJpc21nb3JlZ2V0cnBhMB0GA1UdJQQNMBQGCCsG
AQUFBw
```

Certificate rules:

- Upload the `-----BEGIN CERTIFICATE-----` and `-----END CERTIFICATE-----` content together.
- Each line has 64 characters, but the last line can have less than 64 characters.

Certificate links issued by intermediate CAs:

-----BEGIN CERTIFICATE-----

-----END CERTIFICATE-----

```
-----BEGIN Certificate -----
```

-----END CERTIFICATE-----

-----BEGIN CERTIFICATE-----

-----END CERTIFICATE-----

Certificate link rules:

- Do not insert a blank line between certificates.
- Each certificate must comply with the certificate rules.

RSA private key format requirements

```
-----BEGIN RSA PRIVATE KEY-----
MIIEpAIBAAKCAQEAzSSSSChH67bmT8mFykAxQ1tKCYukwBiWZwk0StFEbTWHy8K
tTHSfD1u9TL6qycrHEG7cjYD4DK+kVIHU/Of/pUWj9LLnrE3W34DaVzQdKA00I3A
Xw95grqfJMJcLva2khNKA1+tNPSCPJoo9DDrP7wx7cQx7LbMb0dfZ8858KIoluzJ
/fD0XXyuWoqaIePZtK9Qn957ZEPHjtUpVZuhS3409DDM/tJ3TL8aaNYWhrPBc0
jNcz0Z6XQGf1rZG/Ve520GX6rb5dUYpdcfXzN5MM6xYg8a1L7UHDHHPi4AYsatdG
z5TMPnmE8yZPUYudTLxgMVAovJr09Dq+5Dm3QIDAQABAoIBAGl68Z/nnFyRHRFi
laF6+Wen8ZvNqkm0hAMQwIJh1Vp1f174//8Qyea/EvUtuJHyB6T/2PZQoNVhx35
cgQ93Tx424WGpCwUshSfxewfbAYGf3ur8W0xq0uU07BAxaKHnCMNG7dGyolUowRu
S+yXLrpVzH1YkuH8TT53udd6TeTWi77r8dkGi9KSAZ0pRa19B7t+CHKIzm6ybs/2
06W/zHZ4YAxwkTYLKGHjoieYs111ah1AJvICVgTc3+LzG2pIpM7I+K0nHC5eswvM
i5x9h/OT/ujZsyX9P0PaAyE2bqy0t080tGexM076Ssv0KVhKFvWjLUnhf6WcqFCD
xqhhxkECgYEA+PftNb6eyXl+/Y/U8NM2fg3+rSCms0j9Bg+9+yZzF5GhggHu0edU
ZXIHrJ9u6B1XE1arpijVs/WHmFhYSTm6DbdD7S1tLy0BY4cPTRhziFTKt8AkIXMK
605u0UiWsq0Z8hn1X141ox2cW9ZQa/Hc9udeyQotP4NsMJWgpBV7tC0CgYEAwwNf
0f+/jUjt0HoyxCh4SIAqk4U0o4+hBCQbWcXv5qCz4mRyTaWzfEG8/AR3Md2rhmZi
GnJ5dfde7uY+JsQfX2Q5JjwTad1BW4led0Sa/uKRa04UzVgnYp2aJKxtuWffvVbU
+kf728ZJRA6azSLvGmA8hu/GL6bgfU3fkSkw03ECgYBpYK7TT7JvvnAERMtJf2yS
ICRkbQaB3gPSe/LCgzy1nhtaFOUbNtGeuowLAZR0wrz7X3TZqHEDcYoJ7mK346of
QhGLITyoeHkbYkAUtq038Y04EKH6S/IzMzB0frXiPKg9s8UKQzkU+GSE7ootli+a
R8Xzu835EwxI6BwNN1abpQKBgQC8TialClq1FteXQyGcNdcReLMncUHKIKcP/+xn
R3kV106MZCFAdqirAjiQWApkh9Bxbp2eHCrb81MFAWLRQSl0k79b/jVmTZMC3upd
EJ/iSWjZKPbw7hCFAeRtPhxyNTJ5idEiu9U8EQid8111giPgn0p3sE0HpDI89qZX
aaIMEQKBgQDK2bsnZE9y0ZWhteu94vziKmFrSkJMGH8pLaTiliw1iRhRYWJysZ9
BOIDxnrmwiPa9bCtEpK80zq28dq7axpCs9CavQRcv0Bh5Hx0yy23m9hFRzfDeQ7z
NTKh193HHF1joNM81LHFyGRFEWwrr0W5gfBudR6USRnR/6iQ11xZXw==
-----END RSA PRIVATE KEY-----
```

RSA private key rules:

- Run the `openssl genrsa -out privateKey.pem 2048` command to generate a local private key, with `privateKey.pem` being the private key file.
- `-----BEGIN RSA PRIVATE KEY-----` and `-----END RSA PRIVATE KEY-----` indicate the beginning and end of the private key file, respectively. Upload the beginning and end content together.
- Each line has 64 characters, but the last line can have less than 64 characters.

If your private key is not generated in the format `-----BEGIN PRIVATE KEY-----`,

```
-----END PRIVATE
KEY-----
```

based on the preceding rules, run the following command to convert the private key:

```
openssl rsa -in old_server_key.pem -out new_server_key.pem
```

Then, upload `new_server_key.pem` content together with the certificate.

Certificate format conversion method

CDN HTTPS Secure Acceleration only supports certificates in the PEM format. Certificates in other formats must be converted to the PEM format. We recommend using the OpenSSL tool for conversion. The following shows the methods used to convert other common certificate formats to PEM.

DER to PEM

The DER format is generally used on Java platforms.

- Certificate conversion:

```
openssl x509 -inform der -in certificate.cer -out certificate.pem
```

- Private key conversion:

```
openssl rsa -inform DER -outform pem -in privatekey.der -out  
privatekey.pem
```

P7B to PEM

The P7B format is generally used in Windows Server and Tomcat.

- Certificate conversion:

```
openssl pkcs7 -print_certs -in incertificat.p7b -out outcertificate.  
cer
```

In outcertificat.cer, Retrieve the -----BEGIN CERTIFICATE-----, -----END CERTIFICATE----- content and upload the content as a certificate.

- Private key conversion: P7B certificates do not have private keys, so you only have to enter the certificate portion, not the private key portion, in the CDN console.

PFX to PEM

The PFX format is generally used in Windows Server.

- Certificate conversion:

```
openssl pkcs12 -in certname.pfx -nokeys -out cert.pem
```

- Private key conversion:

```
openssl pkcs12 -in certname.pfx -nocerts -out key.pem -nodes
```

Free certificates

The free certificate here is Alicloud CDN Digicert DV version SSL Free certificate, only available for Alibaba Cloud CDN service. It cannot be managed in the SSL Certificates service of Alibaba Cloud Security. This certificate is only used to enable HTTPS Secure Acceleration in CDN, and you cannot obtain its public and private keys for other use.

- The application process for a free certificate takes 5-10 minutes. While waiting, you can also go back and choose to upload a custom certificate or select a managed certificate.
- You can always switch among custom, managed or free certificate no matter which one you enable at the beginning.
- Free certificates are valid for one year and automatically renewed upon expiration.
- When using this product, if you disable the HTTPS settings and then enable the free certificate option again, the system uses the free certificate you applied for previously, provided it has not expired. If your certificate has expired when you enable the free certificate option, the system reapplies for a free certificate.

Other certificate issues

- You can disable, enable, and modify certificates. After you disable a certificate, the system no longer retains the certificate information. When you re-enable the certificate, you must upload the certificate and private key again. See [HTTPS Secure Acceleration settings tutorial](#).
- Only SSL/TLS "handshakes" with SNI information are supported.
- Ensure that the certificate and private key you upload match.
- Certificate updates take effect in 10 minutes.
- Private keys with passwords are not supported.

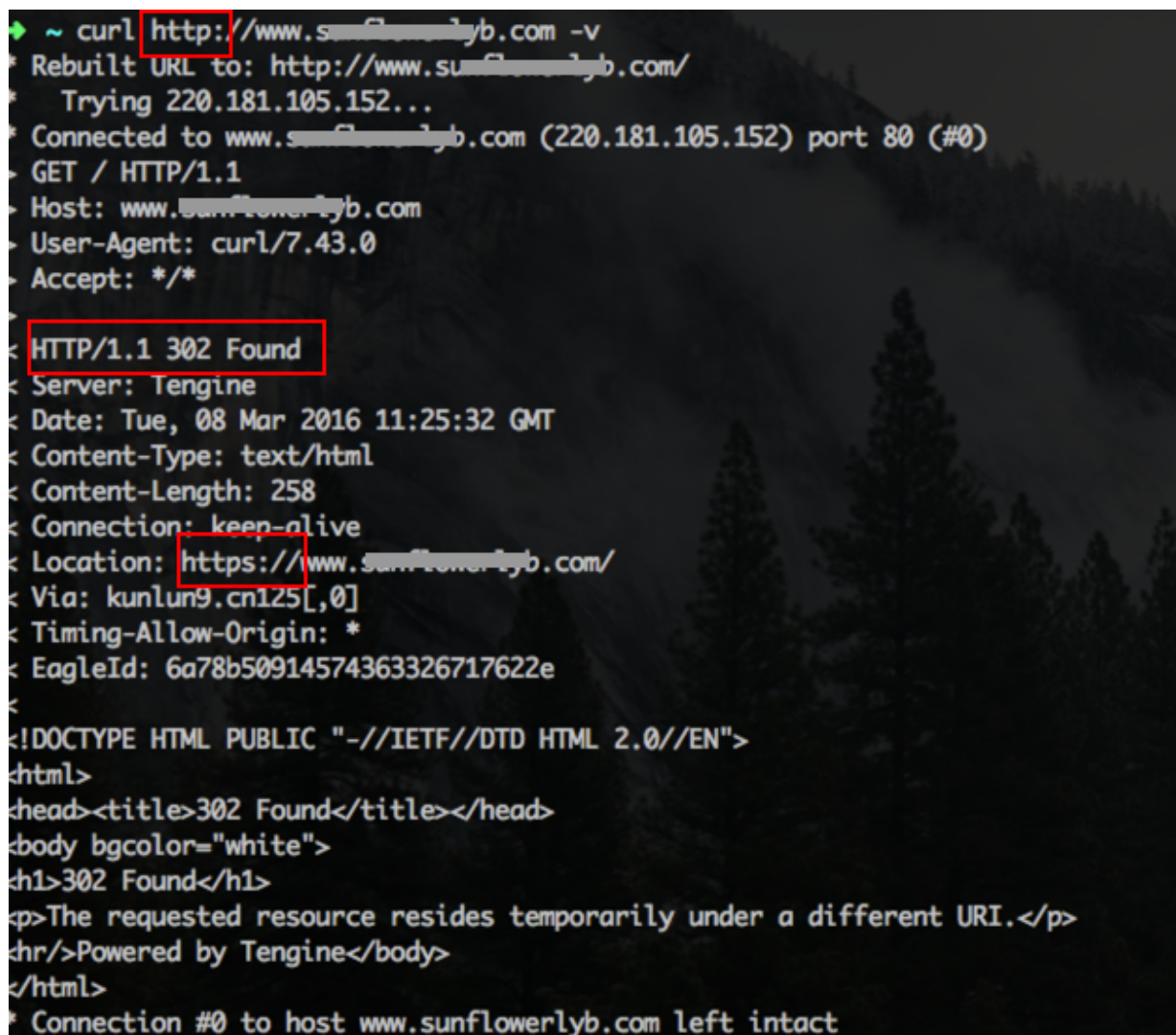
For more certificate-related FAQs, see [More certificate questions](#).

6.2.3 Force Redirect

Introduction

When **HTTPS Secure Acceleration** is enabled for a CDN domain, it supports custom settings to perform force redirects on users' original request methods.

For example, when **force HTTPS** redirect is enabled and a user initiates an HTTP request, the server returns a 302 redirect response and the original HTTP request is forcibly redirected to an HTTPS request, as shown in the following figure.



```
~ curl http://www.sunflowerlyb.com -v
* Rebuilt URL to: http://www.sunflowerlyb.com/
* Trying 220.181.105.152...
* Connected to www.sunflowerlyb.com (220.181.105.152) port 80 (#0)
* GET / HTTP/1.1
* Host: www.sunflowerlyb.com
* User-Agent: curl/7.43.0
* Accept: */*
< HTTP/1.1 302 Found
< Server: Tengine
< Date: Tue, 08 Mar 2016 11:25:32 GMT
< Content-Type: text/html
< Content-Length: 258
< Connection: keep-alive
< Location: https://www.sunflowerlyb.com/
< Via: kunlun9.cn125[,0]
< Timing-Allow-Origin: *
< EagleId: 6a78b50914574363326717622e
<
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html>
<head><title>302 Found</title></head>
<body bgcolor="white">
<h1>302 Found</h1>
<p>The requested resource resides temporarily under a different URI.</p>
<hr/>Powered by Tengine</body>
</html>
* Connection #0 to host www.sunflowerlyb.com left intact
```

Force Redirect is disabled by default. When you enable the feature, both HTTP and HTTPS requests are enabled simultaneously by default.

Options: **Default**, **Force HTTPS redirect**, and **Force HTTP Redirect**.

- **Force HTTPS redirect**: User requests are forcibly redirected to HTTPS requests.
- **Force HTTP redirect**: User requests are forcibly redirected to HTTP requests.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Enable the function in **HTTPS Configuration > Forcible redirect**.

6.2.4 HTTP/2

Introduction

HTTP/2, the latest HTTP protocol published in 2015, is now available in many browsers, such as Chrome, IE11, Safari, and Firefox. With main features similar to SPDY, HTTP/2 can be seen as an advanced edition of HTTP/1.1.

HTTP/2 Benefits

- Binary protocol: Compared with HTTP 1. x, HTTP/2 segments transferring information into smaller frames and messages and encodes them by using binary, which makes the protocol more scalable. For example, data and command can be transferred by frame.
- Content security: Based on HTTPS, HTTP/2 gives considerations to both security and performance.
- Multiplexing: With HTTP/2, your browser can trigger multiple requests in one connection, and receive these requests in any order or at the same time. Moreover, stream dependencies is also available in multiplexing, allowing client servers to define which contents to be transferred in priority.
- Header compression: HTTP/2 compresses and transfers message headers in the HPACK format and creates an index table for the headers. Only the index are transferred, which improves the transferring efficiency and speed.
- Server push: Similar to SPDY, HTTP/2 allows servers to actively push contents to clients without a request, significantly improving web page loading speeds.

Procedure

1. Log on to the [CDN console](#).
2. On the **Domain Names** page, select a domain name and click **Configure**.



Note:

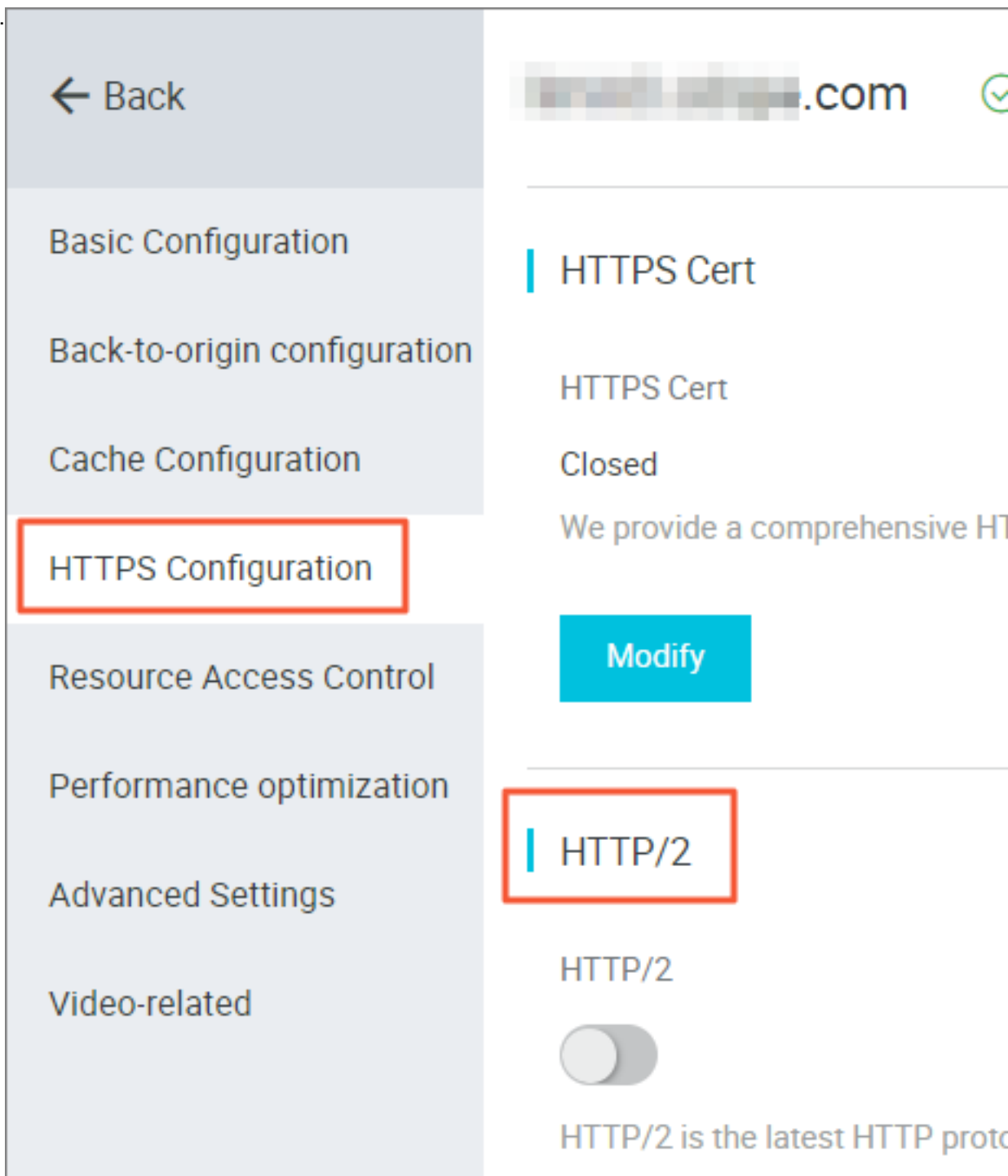
Make sure that you have configured HTTPS certificates before enabling HTTP/2.

- If it is your first time configuring HTTPS certificate, wait for a while until your configuration coming into effect.

- If you disable HTTPS certificates when your HTTP/2 service is running, your HTTP/2 service will be disabled automatically.

3. Enable the HTTP/2 in **HTTPS Settings > HTTP/2**

Setting.



6.3 Content back-to-source settings

6.3.1 Configure origin site

Introduction

Alibaba Cloud CDN supports three types of back-to-origin domain names: OSS back-to-origin domain name, IP address, and custom domain name. Multiple IP addresses and custom domain names are supported, and back-to-origin priority can be configured when multiple origin sites exist .

When the back-to-origin type is IP address or custom domain name, multiple origin sites are allowed and their priorities are configurable. When multiple origin sites are added, the site priority is "main" and "standby", and the priority is "main">"standby".

All back-to-origin traffic is preferentially directed to higher-priority origin sites. If an origin site fails the health check for three consecutive times, all traffic is directed to lower-priority origin sites. If the origin site passes the health check, it is marked as available again and restored to its the original priority. When all origin sites have the same back-to-origin priority, CDN round-robin takes place.

Origin site health check: 4-layer health check is automatically performed on origin sites every 5 seconds.

Main supported scenario: Master/Slave origin site switch.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Go to **Basic configuration > Origin site info****Origin Site Configuration**, set origin site types, address, and port. (Now you can set the back-to-origin port to Port 80, Port 443, or Custom.)
 - If you set your Origin site information to **IP** or **Origin Site**, pay as the internet-caused traffic.
 - If you set your Origin site information to **OSS domain**, pay as the intranet-caused traffic.
[OSS Pricing Details](#).
 - If you have set an OSS domain name for your **origin site**, still pay as the intranet-caused traffic.
3. Click **OK** to complete the configuration.



Note:

- Multi-source priority setting is only applicable to the IP address type and origin-site domain name type, but is not applicable to the OSS domain name type. You can select appropriate origin site types and set the reasonable priorities based on your needs.
- Origin site setting is not applicable to acceleration of live video streaming.

Set Custom Port

You can set custom port after enabling the white list. The port number must be between 0 and 65535.

- You cannot set custom port when your static or dynamic protocol is set to **Follow**.
- Make sure that your back-to-origin protocol and custom port are properly in use if you wish to set your back-to-origin protocol to **Follow** by using OpenAPI.
- Your back-to-origin method will always follow the protocol (**HTTP** or **HTTPS**) and custom port you have set by using port, no matter what you have set in console.

6.3.2 Private bucket back-to-origin authentication

Function overview

Private bucket back-to-origin authentication is performed when traffic of a CDN domain is diverted to the bucket marked as private under a user account. After authentication is successful and authentication configuration is enabled, domain names enabled with private bucket authentication have the permission to access the private bucket.

You can use functions such as the referer anti-leech protection and authorization provided by CDN to protect resource security.



Warning:

- After authentication is successful and the private bucket function of corresponding domains are enabled, the CDN domain can be used to access the resource content in your private bucket. Consider carefully when you decide whether to enable this function. If the content in the private bucket to be authorized is not suitable to function as the back-to-origin content of the CDN domain, do not perform authorization or enable the function.
- If your website faces attack risks, please buy Anti-DDoS service and do not perform authorization or enable the private bucket function.

Procedure

Enable private bucket back-to-origin authorization

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Enable the function in **Origin Site Configuration**, > **Private Bucket Authorization**.
3. Click **Authorize Now**.
4. Authorization is successful. Enable private bucket back-to-origin configuration for the domain and click **Confirm**.

Disable private bucket back-to-origin authorization



Note:

If your CDN domain is sending back-to-origin requests with the private bucket as the origin site, do not disable or delete private bucket authorization.

1. Choose **Access Control** > **Role Management**.
2. Delete AliyunCDNAccessingPrivateOSSRole authorization.
3. Private bucket authorization is successfully deleted.

6.3.3 Back-to-origin with the Same Protocol

Introduction

When the back-to-source with the same protocol feature is enabled, back-to-source requests for resources uses the same protocol used by the client in order to request resources. If the client makes an HTTPS request for resources, but the resources are not cached on the node, the same back-to-source HTTPS request will be made for resources. This protocol is also applicable for HTTP requests.



Note:

The origin site must support both the port 80 and port 443; otherwise, the back-to-source may fail.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Click **Modify** in **Cache Configuration** > **Back-to-origin with the Same Protocol**.
3. Choose your **Redirect Type**: **Follow HTTPS**, or **HTTP**.

6.3.4 Back-to-source host

Introduction

You can customize a Web server domain name that a CDN node accesses in the back-to-source process.

Origin site: The origin site determines which IP the request is returned to during back-to-source.

Back-to-source host: The back-to-source host determines which site on the IP to access when the request is returned to source.

- Example 1: The origin site of the domain name is `www.a.com`, the back-to-source host is `www.b.com`. then the request is returned to the actual IP resolved through `www.a.com` corresponding to the host site `www.b.com`.
- Example 2: origin site is IP origin site `1.1.1.1` Back-to-source host is `www.b.com` then the request is actually returned to `www.b.com` of the host corresponding to `1.1.1.1`.



Note:

Currently, sni back-to-source is not supported.

Procedure

- **Back-to-source host** is optional, and default value is:
 - If the origin site is **IP**, the back-to-source host is `CDN domain name` by default.
 - If the origin site is **OSS origin site**, back-to-source host is `origin site domain name` by default.
- The value options include `CDN domain name`, `origin site domain name`, and `custom domain name`.
- Configuration change: Go to **CDN Domain Names**, select the desired domain name to go to management page, back-to-source configuration to modify the configuration of the back-to-source host.

Overview	Back-to-Source Settings		
Domain Names	Configuration Item	Description	Current Configuration
Monitoring Data	Origin site settings	This specifies the resource's back-to-source address and port. Domain name and IP addresses are supported for origin sites. We recommend that you use an OSS origin site	ali-2.oss-cn-hongkong.aliyuncs.com:80
Refresh	Use the same protocol as the back-to-source protocol	The back-to-source protocol must be the same as the protocol the client uses to access resources. Note: The origin site must support port 443	Not enabled Modify
Billings	Acceleration regions	Different charges apply for overseas and domestic acceleration. You cannot change between them currently.	Overseas
Logs	Private Bucket Back-to-Source	Supports the acceleration of private OSS origin site content	Not enabled Modify
Tools	Back-to-Source host	Customize the web server domain name a CDN node needs to access during the back-to-source process.	ali-2.oss-cn-hongkong.aliyuncs.com Modify
Value Added Service✓			

6.4 Node Cache Settings

6.4.1 Set the HTTP Response Header

Introduction

HTTP headers (fields) are components of the header section of request and response messages in the Hypertext Transfer Protocol (HTTP). They define the operating parameters during the HTTP process. HTTP headers can be classified into general headers, request headers, response headers, and so on.

You can set an HTTP Response Header. The following HTTP response header parameters are available for customization:

Parameters	Description
Content-Type	Specifies the content type of the client program's response object.
Cache-control	Specifies the caching policy that the client program is following when requesting and responding.
Content-Disposition	Specifies the default file name provided by the client program when it is willing to save the contents accessed by request as a file.
Content-language	Specifies the language of the client program's response object.
Expires	Specifies the expiration time of the client program's response object.
Access-Control-Allow-Origin	Specifies the allowed origin domain of cross-origin requests.

Parameters	Description
Access-Control-Allow-Methods	Specifies the allowed method of cross-origin requests.
Access-Control-Max-Age	Specifies the length of time the response result is cached for a pre-fetch request initiated by a client program for a particular resource.
Access-Control-Expose-Headers	Specifies the custom header information that is allowed to be accessed.

Note

- The HTTP response header configurations will affect the response actions of all client programs of the resource under the CDN domain name, rather than the actions of the cache server.
- For now, you can only customize the HTTP header. [Submit a ticket](#) if you have other custom requirements for HTTP header.
- You can type in * (indicating all domain names) or a full domain name (such as `www.aliyun.com`) for the **Access-Control-Allow-Origin** parameter.
- For now, you cannot set HTTP headers for an extensive domain name.

Procedure

1. Log on to the CDN console, then go to the **Domain Names** page. Choose a domain name, then click **Manage**.
2. Go to **Caching Configuration > HTTP Header**, then click **Modify** or **Delete** for a parameter.
You can also click **Add**, and then choose the parameter and enter value to add a custom HTTP header parameter

6.5 Access Control Settings

6.5.1 Anti-leech

Introduction

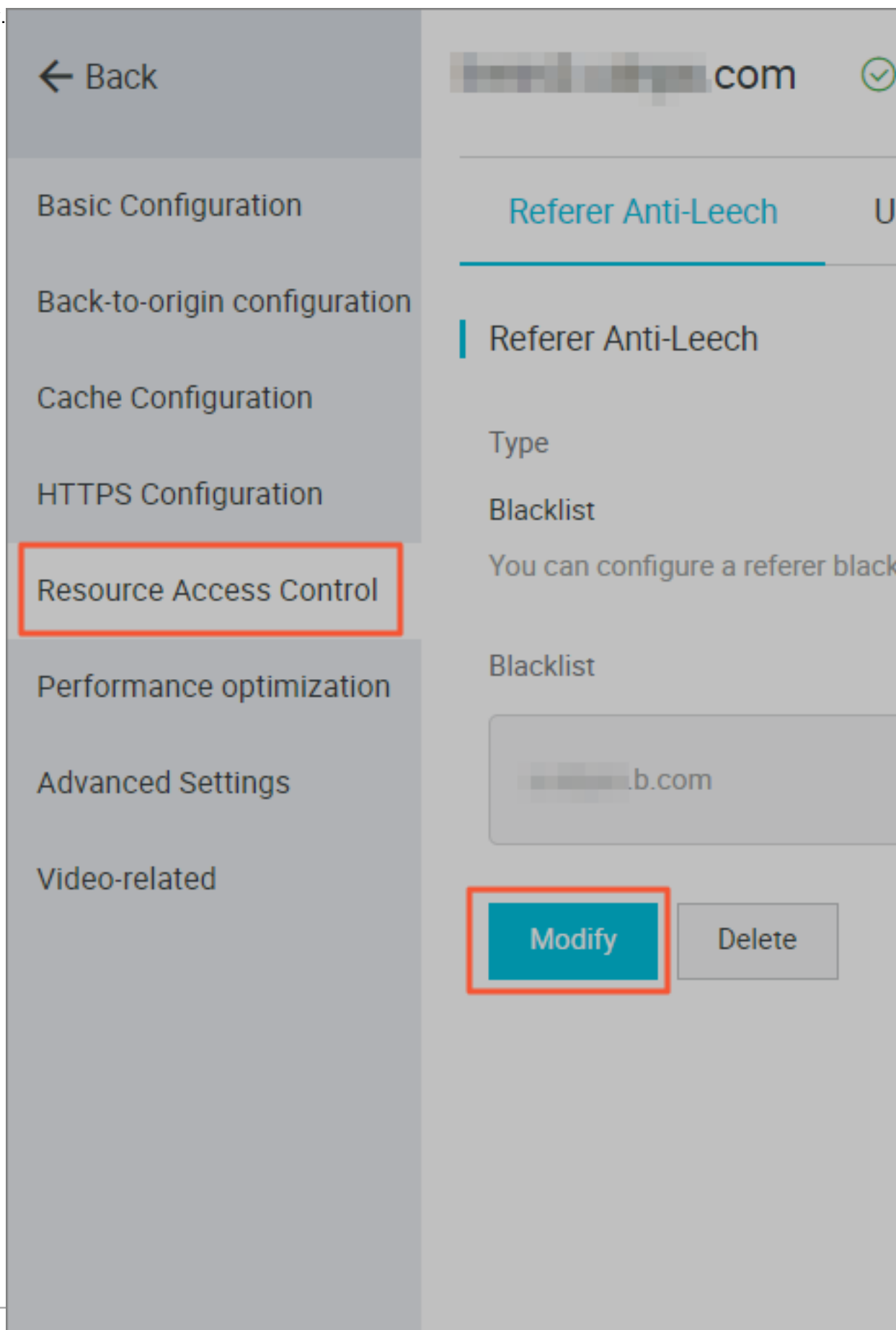
- The anti-leech function is based on the HTTP referer mechanism where the referer, namely an HTTP header field, is used for source tracking, source recognition and processing. You can configure a referer black list or whitelist to identify and filter visitors in order to limit access to your CDN resources.

- Currently, the anti-leech function supports the black list or whitelist mechanism. After a visitor initiates a request for a resource, and the request arrives at a CDN node, the CDN node filters the identity of the visitor based on the preset configuration of the anti-leech black list or whitelist.
 - If the identity complies with the rules, the visitor can access the requested resource.
 - If the identity does not comply with the rules, the request is forbidden and a 403 response code is returned.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.

2. On **Resource Access Control > Anti-leech**, click **Modify**.



3. Choose **Blacklist** or **Whitelist**, and add the IP network segment in the box below.
4. Click **Confirm**.

Notes

- This function is optional and is disabled by default.
- You can only select one of Refer Blacklist or Refer Whitelist to edit at the same time.
- After configuration, wildcard domain name support is added automatically. For example, if you enter `a.com`, all sub-domain names under `*.a.com` take effect.
- You can set a null Referer field to access resources on a CDN node (that is, allowing to access the resource URL by typing the address in browser).

6.5.2 IP Blacklist and Whitelist

Introduction

CDN supports the blacklist and whitelist rules. You can add IP addresses on the IP blacklist. An IP address on the blacklist cannot access the target domain. Likewise, only IP addresses on the whitelist can access the target domain.

You can use an IP network segment to add IP addresses to the blacklist or whitelist. For example, 127.0.0.1/24.



Note:

127.0.0.1/24. 24 indicates that the first 24 bits in the subnet mask are used as effective bits, for example, $32-24=8$ bits are used to express host numbers. In this way, the subnet can accommodate $2^8-2 = 254$ hosts. And 127.0.0.1/24 indicates the IP network segment scope of 127.0.0.1~127.0.0.255.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. On **Access Control > IP Blacklist/Whitelist**, click **Modify**.
3. Choose **Blacklist** or **Whitelist**, and add the IP network segment in the box below.
4. Click **Confirm**.

6.5.3 Authentication configuration

The URL authentication feature is designed to protect user's origin server resources from unauthorized downloading and misappropriation. Referer blacklist and whitelist with anti-leech can protect video content from some leeching attacks too some degree. However, it cannot completely

protect site resources, as the referer contents can be forged. As a result, it is a more secure and effective way to protect your resources by using URL authentication.

How it works

URL authentication uses Alibaba Cloud CDN nodes together with client resource sites to provide more secure and reliable anti-leech protection for origin site resources.

1. The CDN client site provides an encrypted URL including verification information of permissions.
2. You use the encrypted URL to initiate a request to the CDN node.
3. The accelerated node authenticates the permission information in the encrypted URL to determine the legitimacy of the request. A normal response to a legitimate request will reject an illegal request.

Authentication method

Alibaba Cloud CDN supports 3 authentication methods: A, B, and C. You can choose the authentication method based on your business need, so that it will help protect your origin site.

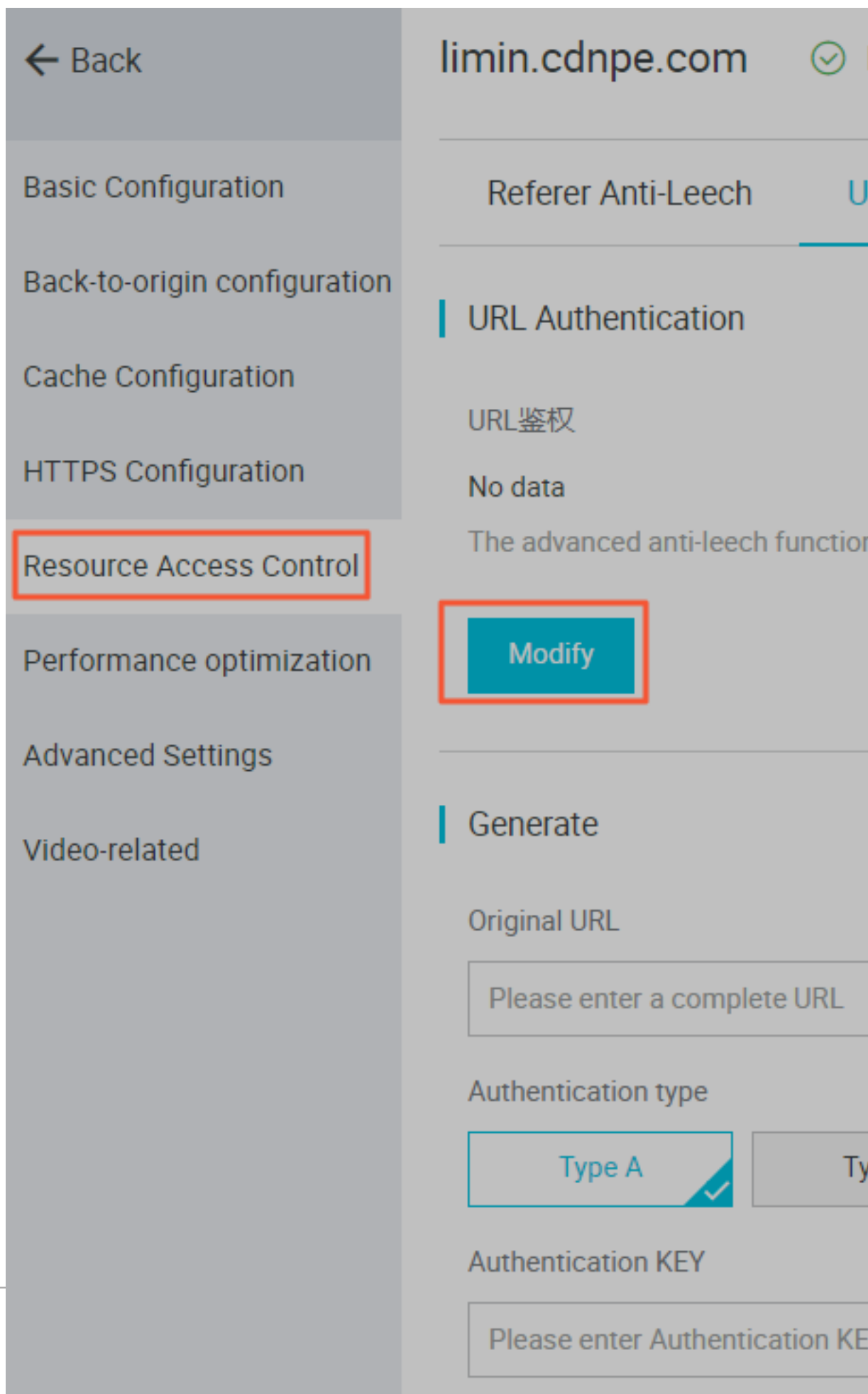
Sample authentication code

You can check [Sample authentication code](#).

Procedure

1. Go to the CDN console. Go to the **Domain Names** page, then select the target domain name. Click **Manage**.

2. In the **Access Control > Authentication Configuration** label, click **Modify**.



3. Switch on **Authentication**, choose Authentication **type**, and enter **Main Key** and **Backup Key**.
4. Click **Confirm**.

6.5.4 Authentication method A

How it works

Formats of the encrypted URL for user access

```
http://DomainName/Filename?auth_key=timestamp-rand-uid-md5hash
```

Authentication fields

- You can set the `PrivateKey` field.
- The validity period 1,800 seconds indicates that the authentication fails when the user fails to access the client source server 1,800 seconds after the preset access time. For example, if the user sets the access expiration time to 2020-08-15 15:00:00, the link actually fails at 2020-08-15 15:30:00.

Field	Description
timestamp	The expiration time. It is a positive integer with a fixed length of 10 and a time in seconds from January 1, 1970. This 10-digit integer is used to control the expiration time. Effective time is 1,800 seconds.
rand	random number, we recommend that you use UUID (not including hyphen "-", for example, 477b3bbc253f467b8def6711128c7bec format)
uid	Not used yet (set to 0).
md5hash	Verification string calculated by the MD5 algorithm, which is a combination of numbers 0 to 9 and lowercase English letters a to z, with a fixed length of 32 characters

When the CDN server receives a request, it first determines whether the `timestamp` in the request is earlier than the current time.

- If the `Timestamp` is earlier than the current time, the URL is regarded as expired, and the CDN server returns an HTTP 403 error.
- If the `timestamp` is later than the current time, the CDN server constructs an equivalent string (see the construction of the `sstring` field described later). Use the MD5 algorithm to calculate `HashValue`, and compare it with `md5hash`. If they are consistent, the request

passes the authentication and the requested file is returned. Otherwise, the request fails the authentication, and an HTTP 403 error is returned.

- The `HashValue` is calculated based on the following string:

```
sstring = "URI-Timestamp-rand-uid-PrivateKey" (URI is the relative address of the user's request object. It does not contain parameters such as /Filename.)
HashValue = md5sum(sstring)
```

An instance of authorization

1. Request object by `req_auth`:

```
http://cdn.example.com/video/standard/1K.html
```

2. Set key to: aliyncdnexp1234 (you can configure yourself)
3. The expiration date of the authentication configuration file is October 10, 2015 00:00:00. The calculated number of seconds is 1,444,435,200.
4. The CDN server constructs a signature string for the calculation of HashValue:

```
/video/standard/1K.html-1444435200-0-0-aliyncdnexp1234"
```

5. Depending on the signature string, the CDN server evaluates hashvalue:

```
HashValue = md5sum("/video/standard/1K.html-1444435200-0-0-aliyncdnexp1234") = 80cd3862d699b7118eed99103f2a3a4f
```

6. When requested, the URL is:

```
http://cdn.example.com/video/standard/1K.html?auth_key=1444435200-0-0-80cd3862d699b7118eed99103f2a3a4f
```

If the calculated HashValue matches the value of md5hash = 80cd3862d699b7118eed99103f2a3a4f that is carried in the user request, authentication succeeds.

6.5.5 Authentication method B

Principles

Formats of the encrypted URL for user access

* The user access URL is as follows:

```
http://DomainName/timestamp/md5hash/FileName
```

Encrypted URL structure: domain name/URL generation time (accurate to minutes) (timestamp)/md5 value (md5hash)/real path of the source server (FileName). The URL validity period is 1,800 s.

When the request passes the authentication, the back-to-source URL is as follows.

```
http://DomainName/FileName
```

Authentication fields

- Note: `PrivateKey` is set by CDN clients.
- * Validity period of 1,800 seconds: The user fails the authentication if attempting to access the client source server 1,800 seconds (specified in the `Timestamp` field) later than the preset access time. For example, if the preset access time is 15:00:00 on August 15, 2020, the link expires at 15:30:00 on the same day.

Field	Description
DomainName	CDN client domain name.
timestamp	Resource failure time, as part of the URL and as a factor in the calculation of <code>md5hash</code> , is formatted: <code>YYYYMMDDHHMM</code> , effective time 1800 s
md5hash	//md5hash: The "timestamp", "FileName", and preset "PrivateKey" are used in the MD5 algorithm to get this string, i.e., (<code>PrivateKey + timestamp + FileName</code>)
FileName	The actual URL of the origin access. Note that <code>FileName</code> must start with a slash (/) in authentication.

Example

1. Back-to-source request object.

```
http://cdn.example.com/4/44/44c0909bcfc20a01afaf256ca99a8b8b.mp3
```

2. The key is set to `aliyuncdnexp1234` (user-defined).
3. The time for the user to access the client source server is 201508150800 (format: `YYYYMMDDHHMM`).

4. The CDN server constructs a signature string used to calculate the "md5hash":

```
aliyuncdnexp1234201508150800/4/44/44c0909bcfc20a01afaf256ca99a8b8b.mp3
```

5. The CDN server calculates the "md5hash" according to the signature string:

```
md5hash = md5sum("aliyuncdnexp1234201508150800/4/44/44c0909bcfc20a01afaf256ca99a8b8b.mp3") = 9044548ef1527deadafa49a890a377f0
```

6. The URL to request CDN:

```
http://cdn.example.com/201508150800/9044548ef1527deadafa49a890a377f0/4/44/44c0909bcfc20a01afaf256ca99a8b8b.mp3
```

The calculated "md5hash" is the same as the "md5hash = 9044548ef1527deadafa49a890a377f0" value in the user request, so the request passes authentication

6.5.6 Authentication method C

Principles

Formats of the encrypted URL for user access

Format 1

```
http://DomainName/{<md5hash>/<timestamp>}/FileName
```

Format 2

```
http://DomainName/FileName{&KEY1=<md5hash>&KEY2=<timestamp>}
```

- The content in braces represents the encrypted information that is added based on the standard URL.
- <md5hash> is the MD5 encrypted string of authentication information.
- <timestamp> is a non-encrypted string expressed in plaintext.. The fixed length is 10 bits. It is the number of seconds since January 1, 1970, Coordinated Universal Time (UTC), expressed in hexadecimal format.
- Use format 1 to encrypt a URL, for example:

```
http://cdn.example.com/a37fa50a5fb8f71214b1e7c95ec7a1bd/55CE8100/test.flv
```

<md5hash> 为 a37fa50a5fb8f71214b1e7c95ec7a1bd<timestamp> is 55CE8100。

Authentication fields

- Field description for <md5hash>:

Field	Description
PrivateKey	Interference string. Different clients use different interference strings.
FileName	The actual URL of the origin fetch access. Note that the path must start with a slash (/) in authentication.
time	The UNIX time of the user's access to the origin server, expressed in hexadecimal format.

- PrivateKey value: aliyncdnexp1234
- FileName value: /test.flv
- time value: 55CE8100
- So the "md5hash" value is:

```
md5hash = md5sum(aliyncdnexp1234/test.flv55CE8100) = a37fa50a5fb8f71214b1e7c95ec7a1bd
```

- Plaintext: timestamp = 55CE8100

The encrypted URL is then generated as follows:

Format 1:

```
http://cdn.example.com/a37fa50a5fb8f71214b1e7c95ec7a1bd/55CE8100/test.flv
```

Format 2:

```
http://cdn.example.com/test.flv?KEY1=a37fa50a5fb8f71214b1e7c95ec7a1bd&KEY2=55CE8100
```

Example

The user accesses the acceleration node using the encrypted URL. The CDN server first extracts the encrypted string 1, obtains

<FILENAME>

After this process, the CDN server authenticates the URL.

1. Use <FileName> of the original URL, request time, and PrivateKey to do MD5
2. Compare whether the encrypted string 2 and the encrypted string 1 are the same. The access request is rejected if the two strings are inconsistent.

3. Use the current time on the CDN server to subtract the plaintext time in the access URL to determine whether the preset time limit t expires (the time limit t is set to 1,800 s by default).
4. The validity period 1,800s means that authentication fails when the user fails to access the client source server 1,800s after the preset access time. For example, if the preset access time is 2020-08-15 15:00:00, the actual link expiry time is 2020-08-15 15:30:00
5. If the time difference is less than the preset time limit, the request is valid, and the CDN acceleration node responds normally. Otherwise, the request is rejected and an HTTP 403 error is returned.

6.5.7 Sample authentication code

For URL authentication rules, see URL Authentication Document. Using this demo, you can perform URL authentication based on your business needs. The demo provides three authentication methods and describes the composition of requested URLs and hash strings for each method.

Python version

```
import re
import time
import hashlib
import datetime
def md5sum(src):
    m = hashlib.md5()
    m.update(src)
    return m.hexdigest()
def a_auth(uri, key, exp):
    p = re.compile("^((http://|https://)?([ ^/?] +)(/[^? ]*)?( \\.? )*)?"
    "$")
    if not p:
        return None
    m = p.match(uri)
    scheme, host, path, args = m.groups()
    if not scheme: scheme = "http://"
    if not path: path = "/"
    if not args: args = ""
    rand = "0" # "0" by default, other value is ok
    uid = "0" # "0" by default, other value is ok
    sstring = "%s-%s-%s-%s-%s" %(path, exp, rand, uid, key)
    hashvalue = md5sum(sstring)
    auth_key = "%s-%s-%s-%s" %(exp, rand, uid, hashvalue)
    if args:
        return "%s%s%s%s&auth_key=%s" %(scheme, host, path, args,
        auth_key)
    else:
        return "%s%s%s%s? auth_key=%s" %(scheme, host, path, args,
        auth_key)
def b_auth(uri, key, exp):
    p = re.compile("^((http://|https://)?([ ^/?] +) ([^? ]*)? ( \\.?
    *)? $ ")
    if not p:
        return None
```

```

    m = p.match(uri)
    scheme, host, path, args = m.groups()
    if not scheme: scheme = "http://"
    if not path: path = "/"
    if not args: args = ""
    # convert unix timestamp to "YYmmDDHHMM" format
    nexp = datetime.datetime.fromtimestamp(exp).strftime('%Y%m%d%H%M')
    sstring = key + nexp + path
    hashvalue = md5sum(sstring)
    return "%s%s/%s/%s%s%s" %(scheme, host, nexp, hashvalue, path,
args)
def c_auth(uri, key, exp):
    p = re.compile("^(http://|https://)?([ ^/?] +) ([^?] *)? ( \\?.
*)?$")
    if not p:
        return None
    m = p.match(uri)
    scheme, host, path, args = m.groups()
    if not scheme: scheme = "http://"
    if not path: path = "/"
    if not args: args = ""
    hexexp = "%x" %exp
    sstring = key + path + hexexp
    hashvalue = md5sum(sstring)
    return "%s%s/%s/%s%s%s" %(scheme, host, hashvalue, hexexp, path,
args)
def main():
    uri = "http://xc.cdnpe.com/ping?foo=bar" # original uri
    key = "<input private key>" # private key
of authorization
    exp = int(time.time()) + 1 * 3600 # expiration
time: 1 hour after current itme
    authuri = a_auth(uri, key, exp) # auth type:
a_auth / b_auth / c_auth
    print("URL : %s\nAUTH: %s" %(uri, authuri))
if __name__ == "__main__":
    main()

```

6.6 Performance Optimization settings

6.6.1 Smart Compression

Introduction

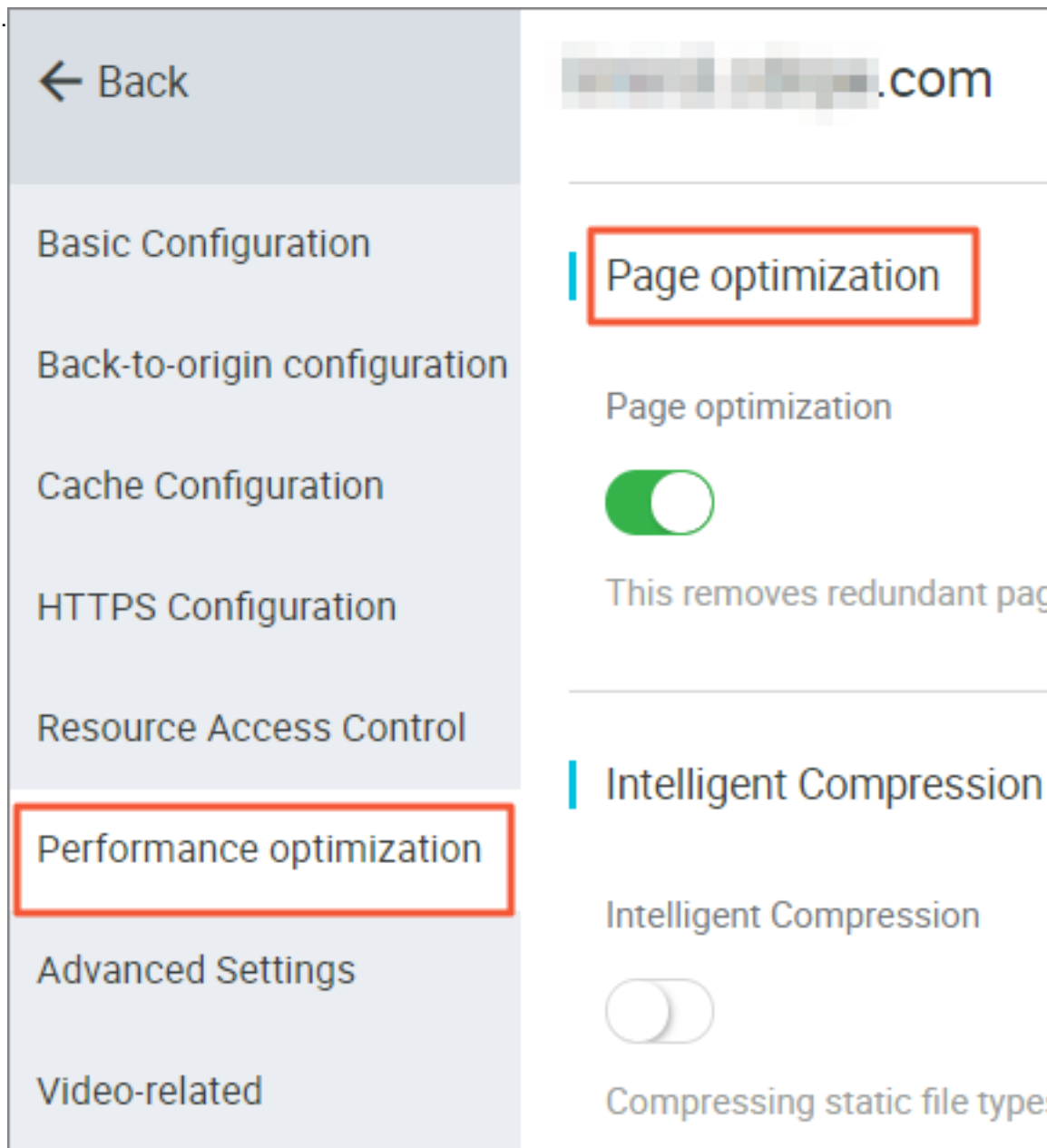
After enabling Smart Compression function, you can compress most types of static files, so as to reduce the size of content transmitted by users and accelerates the content delivery.

Contents in the following formats can be compressed: text/xml, text/plain, text/css, application/javascript, application/x-javascript, application/rss+xml, text/javascript, image/tiff, image/svg+xml, and application/json.

Applicable business type: All.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Enable the function in **Performance Optimization > Smart Compression**.



6.6.2 Filter Parameter

Introduction

When a URL request carrying? and request parameters are sent to a CDN node, the CDN node determines whether to send the request to the origin site.

- If you enable Filter Parameter function: after the request arrives at the CDN node, the URL without parameters is intercepted and requested against the origin site. Additionally, the CDN node retains only one copy.
 - An HTTP request typically contains the requisite parameters. If the content of a parameter has a low priority and the parameter overview file can be ignored, it is recommended to enable the Filter Parameter function. This improves the file cache hit rate and the delivery efficiency.
 - If a parameter has important indicators (for example, if it contains file version information), we recommend that you disable this function.
- If you disable Filter Parameter function, different copies are cached on the CDN node for different URLs.

Applicable business type: All.

Example

The `http://www.abc.com/a.jpg?x=1` URL request is sent to a CDN node.

- If the Filter Parameter function is enabled, the CDN node initiates to the origin site the `http://www.abc.com/a.jpg` request (ignore parameter `x = 1`). After the origin site returns a response, the CDN node retains a copy. Then, the origin site continues to respond to the terminal `http://www.abc.com/a.jpg`. For all requests similar to `http://www.abc.com/a.jpg?parameters`, the origin site responds to the CDN copy `http://www.abc.com/a.jpg`.
- If the Filter Parameter function is disabled, `http://www.abc.com/a.jpg?x=1` and `http://www.abc.com/a.jpg?x=2` respond to the response content of different parameter origin site.



Note:

URL authentication has a higher priority than the Filter Parameter function. Because type A authentication information is contained in the parameter section of an HTTP request, the system first performs the authentication and then caches a copy on the CDN node after the authentication succeeds.

Procedure

1. Go to **Domain Names** page, select the domain name, then click **Manage**.
2. Enable the function in **Performance Optimization > Filter Parameter**.

6.7 Video Service Configuration

6.7.1 Notify_URI Setting

Introduction

Call back stream-status real-time information and promptly notify users about the video streaming results.

Attentions:

- Principle: By sending GET requests to the user server through the HTTP interface, the real-time stream status feedback is sent to the users. The user server returns 200 to the return interface.
- You do not have to identify the URL if normal access is ensured. See the following rules for URL response.
- In case of access time-out, the URL can be retried. The current time-out duration is 5 seconds, the number of retries is 5, and the interval is 1 second.

Procedure

Configuration can be performed on the console, and it is optional.

Example:

```
http://1.1.1.1/pub?action=publish&app=xc.cdnpe.com&appname=hello&id=world&ip=42.120.74.183&node=cdnvideocenter010207116011.cm3
```

Parameter	Value description
time	unix timestamp
usrargs	User streaming parameters
action	publish indicates push streaming, and publish_done indicates completion of push streaming
app	Default value is the custom streaming domain name. If no streaming domain name is bound, it is the playback domain name
appname	Application name
id	Stream name

Parameter	Value description
node	The name of the node or machine in the CDN that receives the stream
ip	Streaming client's IP

6.7.2 Back-to-origin of range

Introduction

The Back-to-origin of Range function allows a client to notify an origin site server to return partial content within a specified range. It accelerates delivery of large files by reducing the consumption of back-to-origin traffic and improving the resource response speed.

The origin site must support the range request, that is, the range field is included in the HTTP request header, and the origin site can respond to the correct 206 file slice.

When the Back-to-origin of Range is	Description	Instances
Enable	A parameter request can be returned to an origin site. In this case, based on the Range parameter, the origin site returns the file byte range, while the CDN node returns the content in the byte range to the client.	If a request sent from a client to a CDN node contains range:0-100, the range:0-100 parameter will also be contained in the request received on the origin site. When the origin site returns the parameter content to the CDN node, the node returns the content in 101 bytes ranging from 0 to 100 to the client.
Disable	A CDN higher-level node requests an origin site for all files. However, the requested files will not be cached on the CDN node because a client will automatically disconnect HTTP links after receiving bytes specified by Range. This causes a low cache hit rate and large back-to-origin traffic.	If a request sent from a client to a CDN node contains range:0-100, the range:0-100 parameter will not be contained in the request received on the server. The origin site will return a complete file to the CDN node and the CDN node will return only 101 bytes to the client. However, the file cannot be cached on the CDN node

When the Back-to-origin of Range is	Description	Instances
		because the link is disconnected.

**Note:**

To use the Back-to-origin of Range function, an origin site must support Range requests, meaning that the origin site must be able to return correct 206 Partial Content for an HTTP request header containing a Range field.

Procedure

Back-to-origin of Range feature is optional and is disabled by default. You can change the configuration to enable it.

1. Go to **Domain Name** page, select your domain name, and click **Manage**.
2. Click **Modify Configuration** in **Video-related** > **Back-to-origin of Range**.
3. Select **Enable**, **Disable** or **Force**.

Go to the CDN domain name management page, click **Configure**, select **Enable/Disable/Force** Back-to-origin of Range function.

**Note:**

You can enable **Force** if your origin site is capable of using this feature. After enabling it, all requests will be forced to perform Back-to-origin of range.

See [Back-to-origin of Range](#) for more API information.

6.8 Advanced settings

6.8.1 Peak Bandwidth

Introduction

The bandwidth cap function sets the maximum bandwidth value for average bandwidth measured during each statistical cycle (five minutes). If the average bandwidth exceeds the maximum, the domain name automatically goes offline to protect your domain name security. In this situation, all requests are sent back to the origin site. When the bandwidth cap is reached, CDN stops

acceleration services to avoid excessive fees produced by abnormal traffic volumes. After your domain name goes offline, you can restart it in the console.

**Note:**

The bandwidth cap function is not currently available for wildcard domain names, so the function has no effect even it is enabled.

RAM subaccounts require CloudMonitor authorization to use this function. To grant authorization, use the **AliyunCloudMonitorFullAccess** policy group.

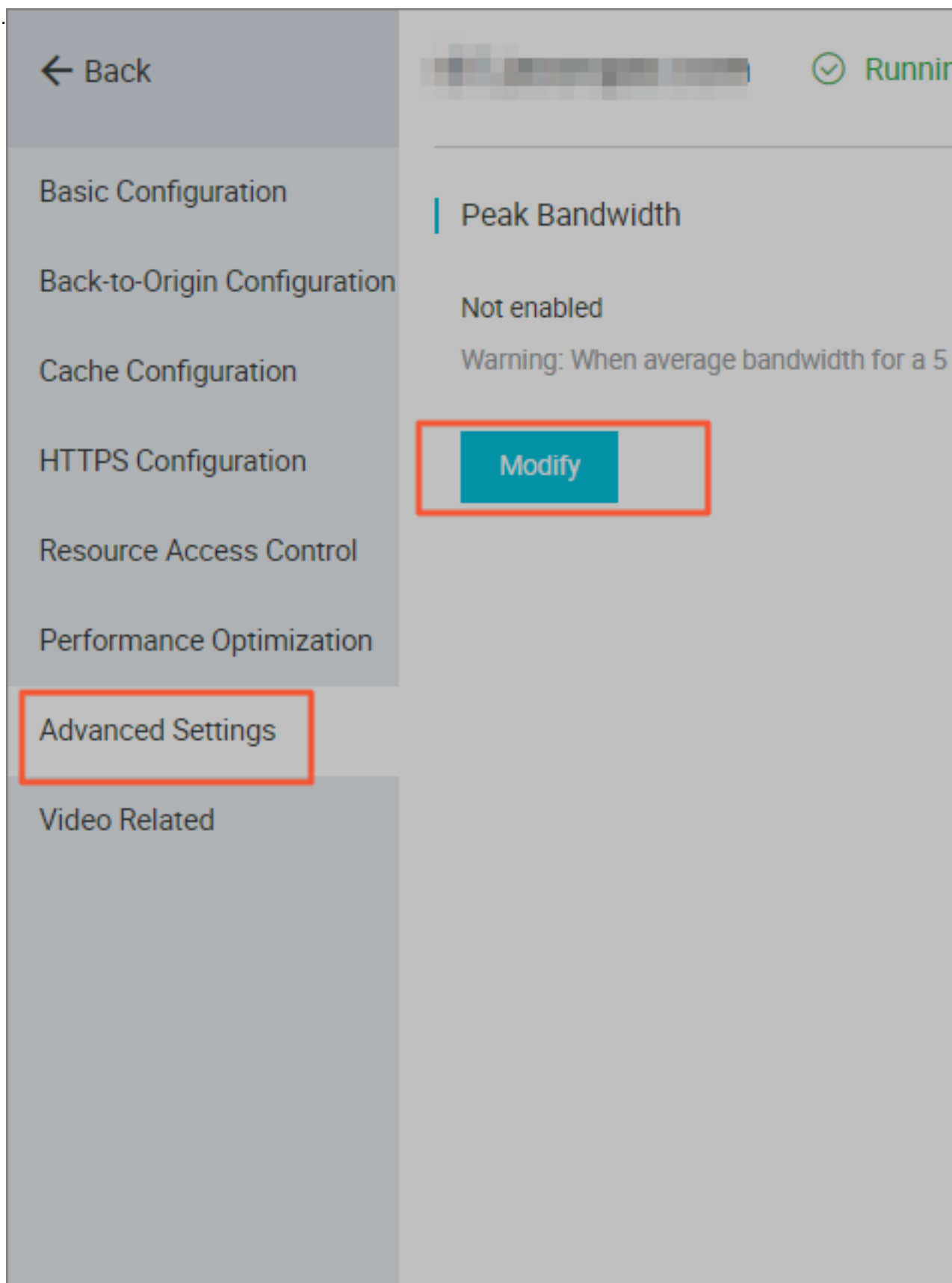
Procedure**Note:**

After you have enabled the peak bandwidth function, your services are limited by the bandwidth cap and go offline if it is exceeded. To guarantee your services running continuously on your domain name, we recommend you set the cap value with discretion based on reasonable estimation.

1. Log on to the CDN console.
2. On the **Domain Names** page, choose the domain name, then click **Manage**.

3. Choose **Advanced Settings**, then click **Modify** under the **Peak Bandwidth**

label.



4. Enable the bandwidth cap function. Choose the unit from Mbps, Gbps, or Tbps.

**Note:**

Bandwidth value can be set in powers of thousand.

5. Click **Confirm**. Then the peak bandwidth is successfully enabled.

You can choose to enable or disable the peak bandwidth function based on the actual usage of your domain name.

7 Set httpDNS

Introduction

- A traditional DNS resolution is implemented by accessing the local DNS of a carrier in order to obtain the resolution result. However, this action can easily allow for DNS hijacking, DNS errors, and inter-network traffics, and lead to slowed, or failed, website access.
- httpDNS is a DNS service that uses HTTP protocol to directly access the Alibaba Cloud CDN server. Because it bypasses the carrier's local DNS, it can avoid DNS hijacking and obtain real-time accurate DNS resolution results.
- Principle: Initiate a request to access a designated Alibaba Cloud CDN httpDNS server through HTTP protocol. The httpDNS server performs domain resolution based on second-level DNS nodes distributed everywhere, obtains the domain name resolution result, and returns the result.

httpDNS interface

Direct access through an HTTP interface is supported. The access method is as follows.

1. Service URL

```
http://umc.danuoyi.alicdn.com/multi_dns_resolve
```

2. Request method: `POST`

3. Supported parameter: `client_ip=x.x.x.x`. This parameter can be ignored if the IP address of the client initiating the httpDNS request is used.

4. Request example: Multiple domains to be resolved are placed in the body of a POST request and are separated by whitespaces (blank spaces, TABs, newline characters).

```
#curl 'http://umc.danuoyi.alicdn.com/multi_dns_resolve?client_ip=182.92.253.16' -d 'd.tv.taobao.com'
```

5. Returned format: json data is returned. After resolution, domain IP addresses are extracted and polling can be performed among them. TTL cache and expiration rules must be followed.

```
{ "dns": [ { "host": "d.tv.taobao.com", "ips": [ { "ip": "115.238.23.240", "spdy": 0 }, { "ip": "115.238.23.250", "spdy": 0 } ], "ttl": 300, "port": 80 } ], "port": 80 }
```

6. Request example with multiple domains

- Request example

```
#curl 'http://umc.danuoyi.alicdn.com/multi_dns_resolve?client_ip=182.92.253.16' -d 'd.tv.taobao.com vmtstvcdn.alicdn.com'
```

- Return example

```
{ "dns": [ { "host": "vmtstvcdn.alicdn.com", "ips": [ { "ip": "115.238.23.250", "spdy": 0 }, { "ip": "115.238.23.240", "spdy": 0 } ], "ttl": 300, "port": 80 }, { "host": "d.tv.taobao.com", "ips": [ { "ip": "115.238.23.240", "spdy": 0 }, { "ip": "115.238.23.250", "spdy": 0 } ], "ttl": 300, "port": 80 }, { "port": 80 }
```

8 Data Monitoring

Data Monitoring includes Resource Monitoring and Real-time Monitoring.

Resource Monitoring

You can select **Domain Name**, **Region**, **Operator**, **Time Granularity** (**1 minute**, **5 minute** or **1 hour**) and **Time Range** (**Today**, **Yesterday**, **7 Days**, **30 Days** or **Custom**) to view the specific condition in the following dimensions:

Items	Metrics
Traffic Bandwidth	Bandwidth, Traffic
Back-to-origin Statistics	Back-to-origin Bandwidth, Back-to-origin Traffic
Number of Visits	Number of requests, QPS.
HTTPS Hit Rate	N/A
HTTPCODE	5xx, 4xx, 3xx, 2xx

A difference exists between the graph data and the billing data in Resource Monitoring. For example, a 30-day statistical curve takes a granularity of 14400s, while the billing statistical curve takes a granularity of 300s. As a result, the graph, ignoring some metering points, is mainly used to show the trends of bandwidth. The billing data, with more precise granularity, always serves as the basis to calculate your bandwidth usage.

**Note:**

HTTP Hit Rate is not available for selecting Region or Operator.

Real-time Monitoring

You can select the **Domain Name**, **Region**, **Operator** or the **Time Range** you want to view (**Past 1 Hour**, **Past 6 hours**, **Past 12 hours** or **Custom**) to view the specific condition in the following dimensions:

Items	Metrics
Basic Data	Bandwidth, Traffic, Number of requests, QPS
Back-to-origin Traffic	Back-to-origin Traffic, Back-to-origin Bandwidth
Quality monitoring	Request Hit Rate, Byte Hit Rate, 5xx status code, 4xx status code, 3xx status code, 2xx status code.

Procedure

1. Log on to the CDN console, then go to the **Domain Names** page. Choose a domain name, then click **Manage**.
2. Go to **Data Monitoring > Resource Monitoring** or **Real-time Monitoring**, and select the monitoring items and metrics. Click **Query**.

Resource Monitoring :

Resource Monitoring

Traffic Bandwidth

Back-to-origin Statistics

Number of Requests

All Domains ▼

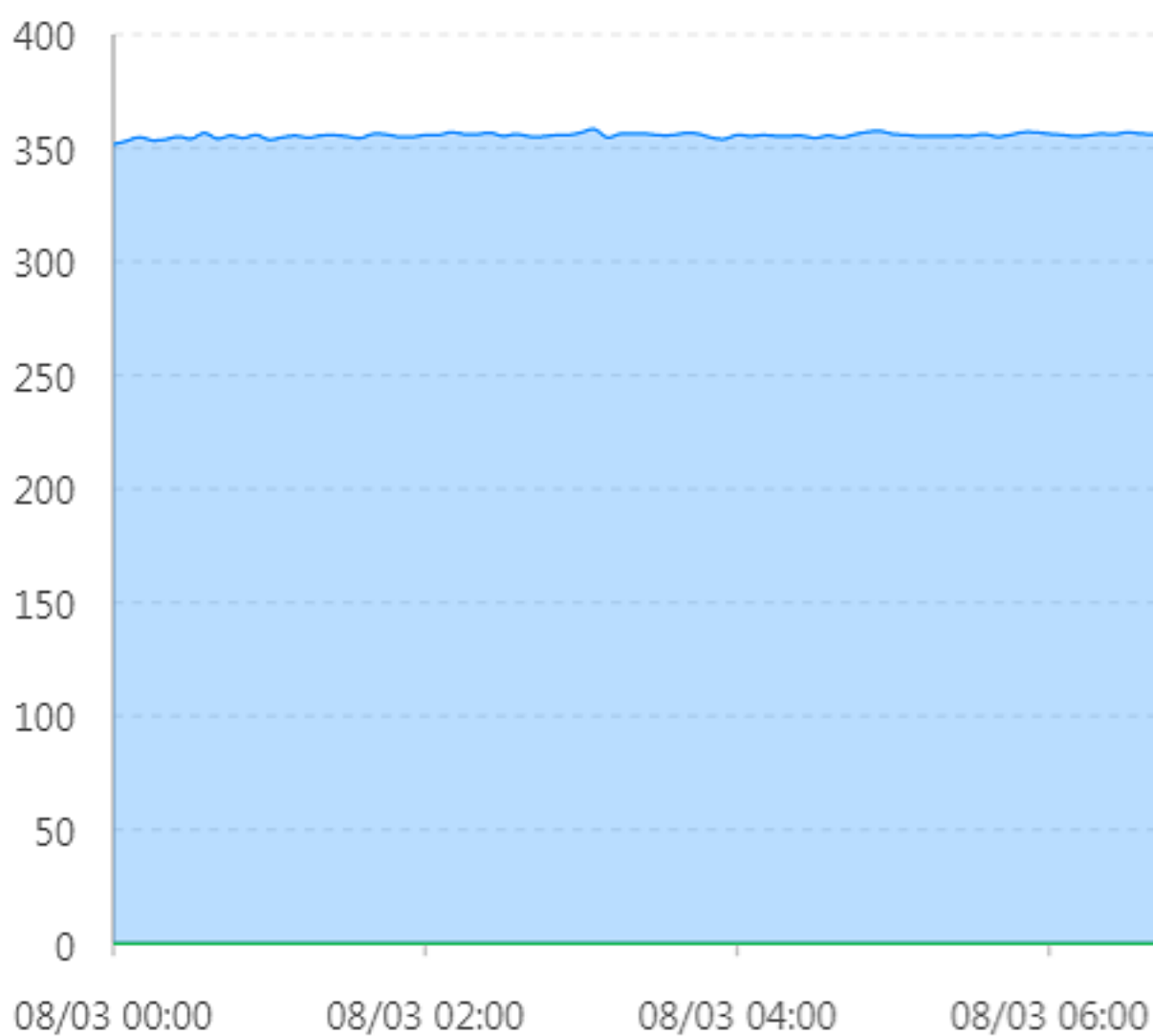
All Regions ▼

All Operators ▼

Time Range

Back-to-origin bandwidth

Unit Kbps



Real-time Monitoring :

Real-time Monitoring ?

Basic date

Back-to-origin Traffic

Quality Monitoring

Select Domain Name ▼

All Regions ▼

All Operators ▼

Bandwidth

9 Statistical Analysis

In Statistical Analysis, you can check data of PV and UV, Area and ISP, Domain Name Rankings, Popular Referer, and Popular URLs. You can also export detailed raw data, such as network bandwidth, traffic, the traffic-based ranking of domain names, visitor area, operator distribution, and so on.

**Note:**

The precision of original data collection varies according to time spans, which are 300s, 3600s, and 14400s for daily export, weekly export, and monthly export, respectively.

Item	Index	Time Span
PV and UV	PV, UV, regional user distribution, and operator proportions	Today, yesterday, past 7 days , past 30 days, and custom (within 90 days).
Area and ISP	Ranking, region, total traffic, traffic proportion, number of visits, by QPS, response time.	Today, yesterday, past 7 days , past 30 days, and custom (within 90 days).
Domain Name Rankings	Access rankings for each CDN domain name	Today, yesterday, past 7 days , past 30 days, and custom (within 90 days).
Popular Referer	Traffic, traffic proportion, number of visits, and visits proportion	You can view the daily data within your customized days (at most 90 days).
Popular URLs	Traffic, traffic proportion, number of visits, and visits proportion	You can view the daily data within your customized days (at most 90 days).

Procedure

1. Log on to the CDN console, then go to the **Domain Names** page. Choose a domain name, then click **Manage**.

2. Go to **Statistical Analysis** , and select the monitoring items and metrics. Click

Query.

The screenshot displays the Alibaba Cloud CDN console interface. On the left, a sidebar menu is visible with the following items: CDN, Overview, Domain Names, Data monitoring (with a dropdown arrow), **Statistical Analysis** (highlighted with a red rectangular box), Usage, Refresh, Logs, Tools, and Value Added Services (with a dropdown arrow). The main content area is titled 'Analysis'. It features two tabs: 'PV/UV' and 'Area & ISP'. Below these, there are three time-period tabs: 'Today', 'Yesterday' (which is selected and highlighted with a blue border), and 'Recent 7 Days'. A table is displayed below the tabs, with columns for 'Ranking' and 'Domain Name'. The table shows a single entry with a ranking of '1' and a domain name that is partially obscured by a blurred image, ending in '.com'.

10 Usage Query

10.1 Usage Query

Introduction

You can use this function to obtain the actual usage of traffic, bandwidth, or requests during a certain period. You can customize the time span (3 months at most) to query.

You can query the data by the following dimensions:

- Domain name or user
- Traffic, bandwidth, or requests.
- Billing regions. For more information, see [Billing regions](#).

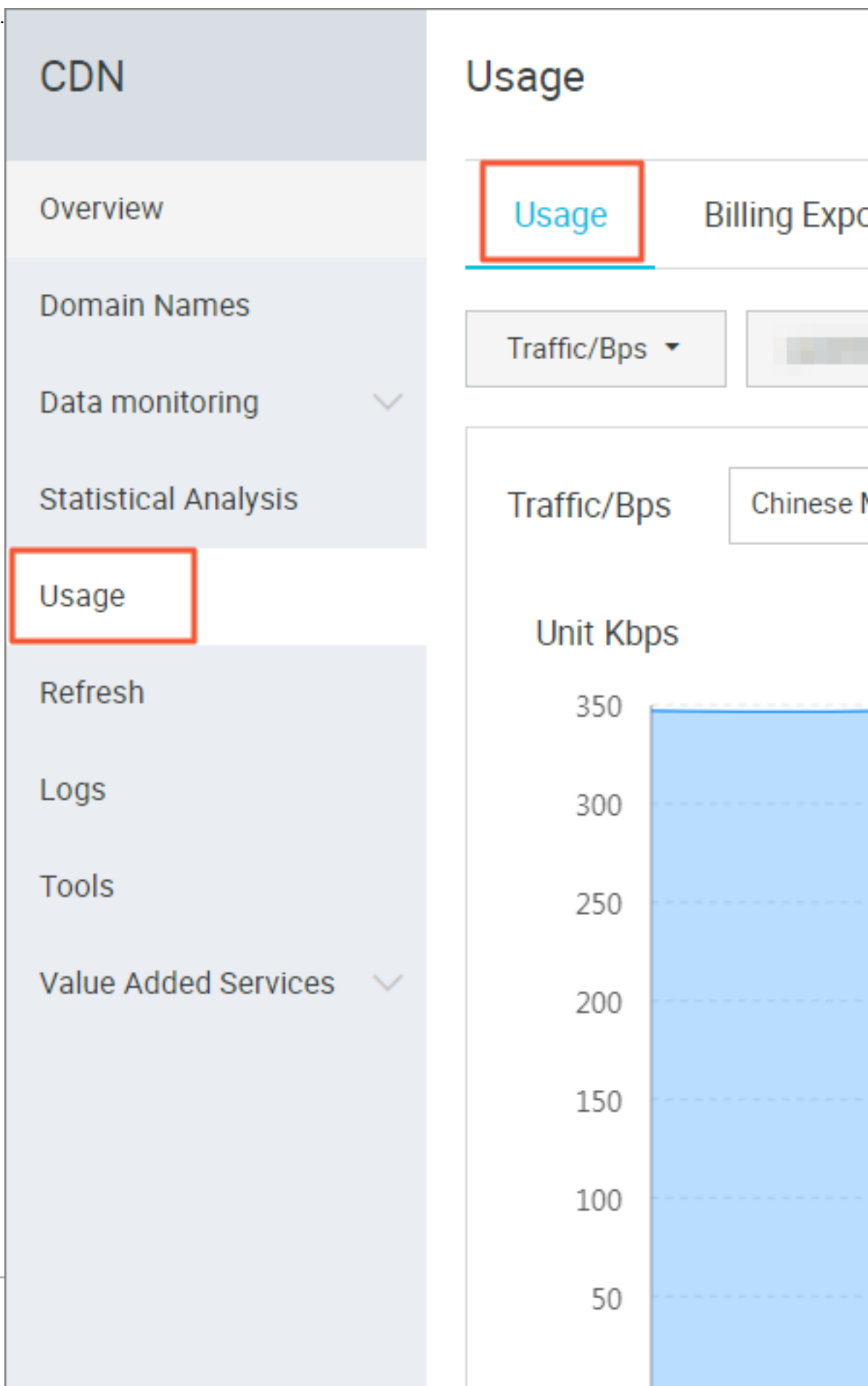
**Note:**

You cannot export data from the Usage page. To export the data you require, go to **Billing export** or **Detail export**.

Procedure

1. Log on to the [CDN Console](#).
2. On CDN **Overview** page, click **Usage** on the left.

3. On the **Usage** page, configure all conditions, including traffic/bandwidth/requests, time range, and billing regions. Then click **Query**.



10.2 Billing export

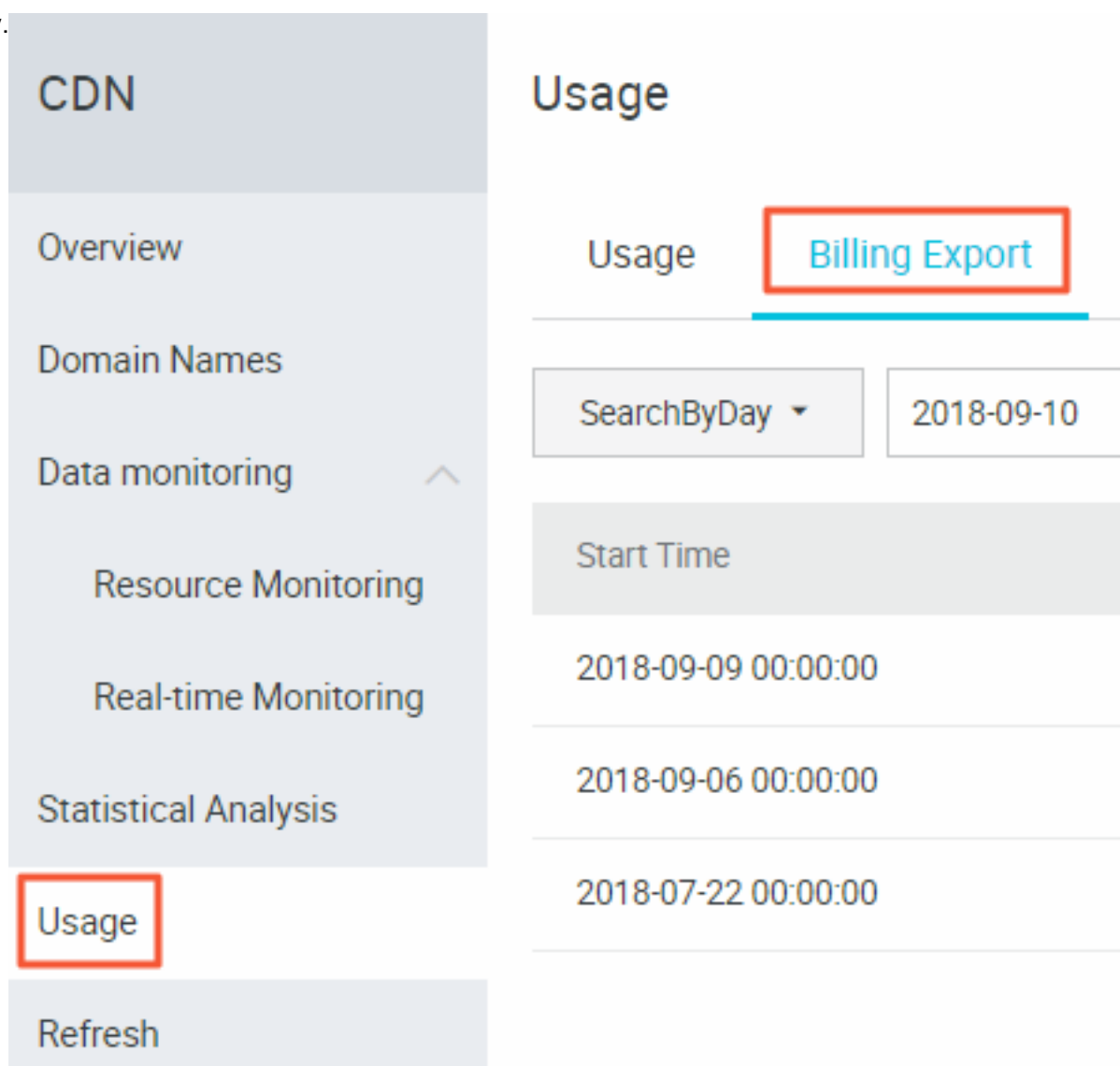
Introduction

You can export actual usage data by day or by month, so as to compare it with the report output from the billing center.

- You can only export data by account.
- You can only export data for one day, or for a whole month.
- Export format: PDF.

Procedure

1. Log on to the [CDN Console](#).
2. On CDN **Overview** page, click **Usage**.
3. On the **Usage** page, select the date, then click **Query**.



4. Click **Download** at the end of the line you choose.

10.3 Detail Data Export

Introduction

With this feature, you can export detail data for traffic/bps data or request times, so that you can calculate or review the usage you actually paid for,

- You can export data by account, resource group, or domain name.
- At the same time, all domain names of the resource group are also exported.
- You can export up to 100 domain names at a time. Only the resource group details are exported if you export over 100 domain names.
- The time span for all exported data is five minute.
- Download data format: CSV.
- You cannot export repeated time span.

Procedure

1. Log on to the CDN console, enter the **Domain Names** page, select the domain name, then click **Manage**.

2. On the **Usage > Detail Data Export** page, click **Create**

Task.

The screenshot displays the Alibaba Cloud CDN console interface. On the left is a sidebar menu with the following items: 'CDN', 'Overview', 'Domain Names', 'Data monitoring' (with a dropdown arrow), 'Statistical Analysis', 'Usage' (highlighted with a red rectangle), 'Refresh', 'Logs', 'Tools', and 'Value Added Services' (with a dropdown arrow). The main content area on the right is titled 'Usage' and contains two tabs: 'Usage' and 'Billing Export'. Below the tabs is a blue button labeled 'Creat Task'. Underneath the button is a table with a header 'Task Name' and several rows of data, each containing a small thumbnail image.

3. Enter **Task Name** (required), the choose **Type**、**Inquiry Time**(required), **Export Content**, and **Export Frequency**.

Creat Task

* Task Name

Enter Task Name

Type

Traffic/Bps Data

Request Times Data

* Inquiry Time

Start Time - End Time

Export Content

Account

Domain

Export Frequency

Single

4. Click **Confirm**.

11 Diagnostic Tools

An **IP address detection** tool is provided in order to verify whether a specified IP address is an Alibaba Cloud CDN node IP address or an IP address from a third-party node.

