Content Delivery Network

FAQs

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Contents

1 Functions and Usage

1.1 Functions

1.1.1 What Service Types Does CDN Support?

- Website acceleration

  CDN is perfect for web portals, e-commerce platforms, information apps, and UGC-focused apps. It can accelerate the delivery of images and small HTML, CSS, and JS files.

- File download acceleration

  CDN is suitable for websites, game clients, and app stores that provide file download services, and download tools. It is used in scenarios such as downloading game installation packages and application packages, and updating the ROM on mobile phones.

- On-demand service acceleration

  For customers providing on-demand audiovisual services, CDN is a must. On-demand services include online education, video sharing, music or video on demand, and other audiovisual content.

- CDN is a good option for websites that consist of both dynamic and static content and for sites that involve a large number of ASP, JSP, or PHP requests.

  Example:

  – If both on-demand service acceleration and file download acceleration are required, only one service type can be selected for an acceleration domain name. You need to create two domain names, one for on-demand service acceleration and the other for file download acceleration.

1.1.2 Which Protocols Does CDN Support?

CDN supports HTTP, HTTPS, and WebSocket. It does not support FTP, TCP, UDP, or WSS.

1.1.3 Does On-Demand Service Acceleration Support HLS and RTMP?

On-demand service acceleration supports the HLS protocol but does not support the RTMP or FLV protocol.

1.1.4 Can CDN Identify Whether a User Is on a Desktop or Mobile Device?

No.

You need to distinguish the content for mobile and desktop devices on your origin servers. If a CDN PoP caches the content for mobile devices, when a user accesses that content, the CDN PoP directly serves the content. The same goes for content cached for desktop devices.

1.1.5 Does CDN Support Acceleration for a Single Web Page?

Yes.

To accelerate delivery of some website resources, you need to set a domain name for them and configure CDN acceleration for the domain name according to **Access Process**.

1.1.6 Does CDN Support Binary File Acceleration?

Yes. CDN can accelerate binary file downloads. When adding a domain name to CDN, set **Service Type** to **File download**. For details, see **Access Process**.

1.1.7 Does CDN Support Level-2 Domain Name Acceleration?

Yes.

1.1.8 Does CDN Accelerate POST Requests?

POST requests are dynamic interaction requests. If you have only configured website acceleration, download acceleration, or on-demand service acceleration, CDN does not accelerate these requests.

1.1.9 What Origin Types Does CDN Support?

CDN supports origin IP addresses and origin domain names. An origin server can be deployed on Huawei Cloud, other clouds, or Internet Data Centers (IDCs). There is no requirement on the location of the origin server. For details about how to access CDN, see **Adding a Domain Name**.

1.1.10 Does Huawei Cloud CDN Support HTTP/3?

No.

1.1.11 Does Huawei Cloud CDN Support Content Encryption Before Distribution?

No. CDN only provides content distribution acceleration.

1.1.12 Does Huawei Cloud CDN Support Intranet Acceleration?

No.

CDN requires DNS resolution to forward domain access requests to PoPs, which cannot be completed for private domain names.

1.2 Usage

1.2.1 How Do I Grant Some CDN Permissions to IAM Users?

You can use IAM to implement fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you secure access to your Huawei Cloud resources.

Check all CDN permissions and grant permissions to IAM users by following instructions in **Permissions Management**.

1.2.2 Does CDN Support Acceleration by Region?

No. However, you can configure DNS settings at the domain name provider to redirect requests from a certain region to CDN PoPs, so that acceleration can be implemented only for this region.

1.2.3 What Is the Conversion Rule for Traffic and Bandwidth?

CDN charges you for the basic traffic or bandwidth service fee. The default conversion rules are as follows:

- Traffic: 1 GB = 1,024 MB
- Bandwidth: 1 Mbit/s = 1,000 kbit/s

1.2.4 Does CDN Accelerate Access to the Origin Server of a Website, or Accelerate Access to the Domain Name?

CDN accelerates user access to domain names.

After a domain name is connected to CDN for acceleration, when a user accesses resources under the domain name, the request is forwarded to the PoP nearest to the user through DNS resolution. In this way, user access is accelerated.

1.2.5 Can Wildcards Be Used as Part of an Acceleration Domain Name?

Yes. A wildcard, *, allows multiple secondary domain names to be included by the same value. All these secondary domain names point to the same IP address. For

example, if you add ***.test.com** to CDN as an acceleration domain name and have it resolved to the CNAME provided by CDN, CDN acceleration will apply to all level-2 domain names under ***.test.com**, such as **a.test.com**, by default. However, CDN acceleration will not apply to level-3 domain names such as **b.a.test.com**.

The following are the rules for adding wildcards to domain names:

- If you add a wildcard domain name to a particular account, you cannot add any of the level-2 domain names under that domain name to other accounts.
- You will be billed for the acceleration service provided to all of the level-2 domain names under a wildcard domain name. If there are multiple level-2 domain names, billing will be based on the traffic generated by the domain name with the wildcard, not on each of the level-2 domain names.

You can log in to the CDN console, choose **Domains** in the navigation pane, and click **Add Domain Names** to configure a wildcard domain name.

1.2.6 Is CDN Necessary If My Services Are Deployed Within a City?

Yes. CDN has different lines. Its carrier partners have their own PoPs. Using CDN to cache static resources on different PoPs can relieve the pressure on your origin server and improve user experience.

1.2.7 How Does CDN Determine the Region to Which a User Belongs?

Huawei Cloud CDN uses Local Domain Name Server (LDNS) to determine the region to which a user belongs.

1.2.8 How Do I Direct Traffic from a Third-Party Platform to CDN?

Add your domain name to CDN. Test your domain name before adding a CNAME record. For details, see **Testing the Domain Name**. After the test is successful, add the CNAME provided by CDN to your domain's DNS records. For details, see **Configuring a CNAME Record**.

1.2.9 Can an Acceleration Domain Name Be Configured with Multiple Origin Servers?

Yes. For details, see **Modifying Origin Server Settings**.

1.2.10 Can I Use CDN If the Origin Port Is Not 80?

Yes. The origin port is customizable. You can modify the origin port on the CDN console. For details, see **Modifying Origin Server Details**.

1.2.11 How Do I Configure an Origin Server When It Is a Non-Huawei Cloud Object Storage Bucket?

1. Obtain the domain name of your bucket. Add a domain name on the CDN console, set the origin server type to **Domain name**, and enter the obtained bucket domain name.
2. By default, the host for origin pull is your acceleration domain name. If you configure an object storage bucket as your origin server, change the host to the domain name of that object storage bucket. Otherwise, origin pull will fail.

1.2.12 Does CDN Accelerate User Access from a Specified Line?

No.

Among all the requests for your domain name, CDN cannot accelerate access from a specific line.

1.2.13 What Are the Differences Between an Acceleration Domain Name and an Origin Domain?

- An acceleration domain name is provided for acceleration, that is, the domain name accessed by users.
- An origin domain corresponds to the server IP address. It is accessed by CDN during origin pull.

The acceleration domain name and origin domain cannot be the same. When a user accesses the acceleration domain name for a website resource but it is not cached, CDN will need to pull the resource from the origin server. If the origin domain is the same as the acceleration domain name, the user's request will be repeatedly directed to CDN PoPs, and CDN PoPs will not be able to pull content from the origin server.

1.2.14 Can CDN Provide Acceleration for a Domain Name That Houses Different Types of Services (Website, VOD, and File Download)?

Yes, but the acceleration will not be noticeable. It is recommended that different types of pages use different domain names for acceleration.

For example, place the VOD content in http://video.example.com and video content in http://file.example.com, and then apply CDN separately to the two different domains.

2 Purchase and Billing

2.1 What Will I Billed For?

You will be billed for:

- Traffic generated by user access to CDN PoPs. CDN does not charge any origin pull requests.
- Traffic for obtaining content from the origin server that is an object storage bucket.

Billing on the CDN side:

- You can choose to be billed by traffic, peak bandwidth, 95th percentile bandwidth, or average daily peak bandwidth. You can also purchase economical traffic packages. For details, see **Billing**.

Cache prefetch:

- Cache prefetch is simulation of origin pull. Traffic or bandwidth consumed during cache prefetch is not billed by CDN, but billed by other services based on your origin server configuration. For example, if your origin server is an OBS bucket, you will be billed by OBS for traffic generated during origin pull.

CDN services will be suspended if you have outstanding unpaid balance. Pay off the outstanding amount in a timely manner to ensure that your services are not interrupted.

2.2 Will I Be Billed If My Domain Name Is Under Attack?

Yes. The consumed traffic or bandwidth will be billed.

If a domain name is under attack and the attacks affect other CDN users or pose risks to CDN, CDN will ban the domain name, change its status to **Disabled**, and disable the acceleration service for it. The domain name cannot be accessed but its configuration is retained. When the attack stops, contact customer service to unban the domain name.

- Solutions

Solution	Description
Access control	You can use access control functions such as referer validation, IP address access control lists (ACLs), and token authentication for domain names to avoid unnecessary traffic or bandwidth consumption. For details, see **Access Control**.

NOTE

To ensure data integrity and accuracy of bills, a bill is usually generated after a billing cycle ends. Therefore, the bill time is later than the time when resources are consumed, and resource consumption cannot be reflected in real time through bills. This is due to the distributed architecture of CDN PoPs. This billing method is widely used.

2.3 Is Billing for On-Demand Service Acceleration the Same as That for File Download Acceleration?

CDN is billed based on the used traffic or bandwidth, regardless of the acceleration service types. For details, see **Billing**.

2.4 What Is a Retention Period?

It is the time Huawei Cloud provides for a customer to renew or repay when the yearly/monthly resources are still not renewed, the pay-per-use resources are still in arrears, or the overdue bills are still not paid off. Within the retention period, you cannot access or use your cloud service but your data stored in the cloud service is still retained. After a resource enters a retention period, Huawei Cloud will notify you of this by email or text message. If you still do not complete the renewal or payment after the retention period has ended, your data stored in the cloud service will be deleted and the resource will be released.

For details about the retention period, see **Retention Period**.

3 Domain Name Settings

3.1 Does CDN Support the Configuration of Domain Names with Ports?

For security purposes, Huawei Cloud CDN adjusts the ports supported for acceleration domain names.

Time When CDN Is Enabled for Your Account	Acceleration Domain Ports
Before August 21, 2024	When adding an acceleration domain name, you cannot customize the ports. All domain names can be accessed through ports such as 80, 443, and 8080. If you have configured special ports for a domain name, you can visit the CDN console and go to the **Ports** area on the **Basic Settings** tab to check them. To disable some ports, submit a service ticket.
August 21, 2024 and later	When adding an acceleration domain name, you cannot customize the ports. The default ports are 80 and 443. To enable other ports, submit a service ticket for consulting. **NOTE** When an end user includes a special port that is not enabled in the backend when accessing an acceleration domain name, the access will fail, and a message indicating that connection setup fails or the status code 403 will be returned.

3.2 Can a Subdomain Name Be Used as an Acceleration Domain Name?

Yes.

3.3 Can the CNAME of an Acceleration Domain Name Be Directly Accessed?

No.

After a domain name is added, the system will assign a CNAME to the domain name. Then, you need to configure a CNAME record with your domain provider, mapping the acceleration domain name to the CNAME. After the CNAME record takes effect, all requests for your domain name will be sent to CDN PoPs.

3.4 Do I Need to Configure a Certificate for the Origin Server After Adding a Security Certificate to CDN?

The security certificate configured on CDN encrypts transmission when users access CDN PoPs.

- If you want to encrypt transmission from CDN to your origin server, configure a security certificate on the origin server for full-link HTTPS.
- If your services do not have high security requirements, your origin server does not require a certificate, and CDN PoPs will use HTTP to pull content.

Configure a security certificate based on your service requirements.

3.5 Can I Limit Access to Domain Names Based on QPS?

No.

You are advised to check access logs for any suspicious access. If you find suspicious accesses from any IP addresses, configure an IP address blacklist to block them.

3.6 Does Huawei Cloud CDN Accelerate Delivery of Content Redirected from VPN?

No.

3.7 Does My Domain Name Have to Be Resolved on Huawei Cloud?

No.

CDN only accelerates content delivery. No matter where your domain name is resolved, make sure it resolves to the CNAME provided by CDN.

3.8 Why Do My Domain Requests Still Go to CDN PoPs After My Domain Name Has Been Disabled and Domain Resolution Has Been Changed?

Possible causes:

- Carriers and users have cached the DNS resolution result locally. Before the cache expires, domain requests are still sent to CDN PoP. They will be resolved to the new DNS record only after the cache expires.
- Before the domain name is disabled, a user pings the domain name to obtain the IP addresses of CDN PoPs, and then binds the domain name with the PoP IP addresses in the local **hosts** file. It means that the user specifies a resolution to bypass normal DNS resolution. As a result, requests from the user are sent to CDN PoPs.

Solutions:

- If the problem is caused by local cache, wait until the cache expires.
- If a user binds the domain name with CDN PoPs in the local **hosts** file, the user needs to unbind them.

3.9 How Do I Configure a Certificate for a Wildcard Domain?

When you configure a wildcard certificate, the wildcard domain must match the certificate at the same level. For example:

1. If your domain name is a.b.example.com or *.b.example.com, the wildcard certificate must be *.b.example.com rather than *.example.com or *.a.b.example.com.
2. If your domain name is a.example.com or *.example.com, the wildcard certificate must be *.example.com rather than *.b.example.com.

Configuration Method

- To configure a certificate for a domain name:

  In the navigation pane of the CDN console, choose **Domains**. Click **Configure** in the row containing the target domain name, click the **HTTPS Settings** tab, and configure a certificate.

3.10 Why Am I Seeing the "Incomplete certificate chain" Message?

This is maybe because:

- Certificates are installed in the wrong order.

Sort the certificates with the root certificate at the end. For example, if you have three certificates, A, B, and C; and the root certificate, the order should be: certificate C - certificate B - certificate A - root certificate.

Alternatively, you can use an online certificate chain tool to fix the incomplete certificate chain.

3.11 Why Am I Seeing a Message Indicating that the Certificate Format Is Incorrect?

HTTPS configuration only supports certificates and private keys in the PEM format. Different certificate authorities have different requirements on the upload of the certificate body. For details about the format requirements, see **HTTPS Certificate Requirements**.

If your certificate format is not PEM, use an online third-party tool to convert the certificate before uploading it.

3.12 Are Self-Signed HTTPS Certificates Supported?

No.

You are advised to buy trusted root certificates. For details about HTTPS certificates, see **HTTPS Certificate Requirements**.

3.13 Obtaining Real IP Addresses of Users

This section describes how to obtain real IP addresses of users on different types of web servers (including Tomcat, Apache, Nginx, IIS 6, and IIS 7).

Background

After a website is connected to CDN for acceleration, IP addresses obtained by the origin server from IP address headers are not the real IP addresses of users. You can configure your web server to obtain the real IP addresses of users.

When a proxy server (such as CDN and WAF) forwards an HTTP, WebSocket, or WSS request to the next server, the proxy server adds the **X-Forwarded-For** field to the request header to record the real IP address of the user. The format of the record is **X-Forwarded-For:** *Real IP address of the user*, *IP address of the proxy server 1*, *IP address of the proxy server 2*, *IP address of the proxy server 3*, ..., *IP address of the proxy server N*.

You can obtain the real IP address of the user by obtaining the first IP address from the **X-Forwarded-For** field.

Nginx

If an Nginx reverse proxy is deployed on your origin server, you can configure location information on the Nginx reverse proxy so that the backend web server can use similar functions to obtain real IP addresses of users.

1. Configure the following information in the corresponding location of the Nginx reverse proxy to obtain the information about real IP addresses of users:
```
Location ^ /<uri> {
    proxy_pass  ....;
    proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
}
```
2. Enable the backend web server to use similar functions to obtain real IP addresses of users.
```
request.getAttribute("X-Forwarded-For")
```

Tomcat

If Tomcat is deployed on your origin server, you can enable the **X-Forwarded-For** function of Tomcat to obtain real IP addresses of users.

1. Open the **server.xml** file in the **tomcat/conf/** directory. Partial information about the AccessLogValve logging function is as follows:
```
<Host name="localhost"  appBase="webapps" unpackWARs="true" autoDeploy="true">
      <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
            prefix="localhost_access_log." suffix=".txt"
            pattern="%h %l %u %t "%r" %s %b"/>
```
2. Add **%{X-Forwarded-For}i** to **pattern**. Part of the modified **server.xml** file is as follows:
```
<Host name="localhost"  appBase="webapps" unpackWARs="true" autoDeploy="true">
      <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
            prefix="localhost_access_log." suffix=".txt"
            pattern="%{X-Forwarded-For}i %h %l %u %t "%r" %s %b" />
</Host>
```
3. Obtain real IP addresses of users from the value of the **X-Forwarded-For** field in the **localhost_access_log** file.

Apache

If Apache is deployed on your origin server, you can run commands to install the third-party module mod_rpaf of Apache, and modify the **http.conf** file to obtain real IP addresses of users.

1. Run the following commands to install the third-party module mod_rpaf of Apache:
```
wget https://github.com/gnif/mod_rpaf/archive/v0.6.0.tar.gz
tar xvfz mod_rpaf-0.6.tar.gz
cd mod_rpaf-0.6
/usr/local/apache/bin/apxs -i -c -n mod_rpaf-2.0.so mod_rpaf-2.0.c
```
2. Open the **httpd.conf** configuration file and modify the file content as follows:
```
LoadModule rpaf_module   modules/mod_rpaf-2.0.so ## Load module mod_rpaf.
<IfModule mod_rpaf.c>
RPAFenable On
RPAFsethostname On
RPAFproxy_ips 127.0.0.1 <Reverse proxy IP address>
RPAFheader X-Forwarded-For
</IfModule>
```
3. Define the log format.
```
LogFormat "%{X-Forwarded-For}i %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\""
common
```
4. Enable custom logs.
```
CustomLog"[Apache server directory]/logs/$access.log"common
```
5. Restart the Apache server for the configuration to take effect.


```
/[Apache server directory]/httpd/bin/apachectl restart
```

6. Obtain real IP addresses of users from the value of the **X-Forwarded-For** field in the **access.log** file.

IIS 6

If IIS 6 is deployed on your origin server, you can install the **F5XForwardedFor.dll** plug-in to obtain real IP addresses of users from access logs recorded by the IIS 6 server.

1. Download the **F5XForwardedFor** module.
2. Copy the **F5XForwardedFor.dll** file in the **x86\Release** or **x64\Release** directory based on the OS version of your server to a specific directory (for example, **C:\ISAPIFilters**). Ensure that the IIS process has the read permission on the destination directory.
3. Open the Internet Information Services (IIS) Manager, right-click the website that is currently open, and choose **Properties** from the shortcut menu.
4. In the **Properties** dialog box, click the **ISAPI Filters** tab, and click **Add**. In the dialog box that is displayed, configure the following information:
   - **Filter name**: Enter **F5XForwardedFor**.
   - **Executable**: Enter the full path of the **F5XForwardedFor.dll** file, for example, **C:\ISAPIFilters\F5XForwardedFor.dll**.
5. Click **OK** to restart the IIS 6 server.
6. Obtain real IP addresses of users from the value of the **X-Forwarded-For** field in the access logs recorded by the IIS 6 server (the default log path is **C:\WINDOWS\system32\LogFiles**, and the IIS log file name extension is .log).

IIS 7

If IIS 7 is deployed on your origin server, you can install the **F5XForwardedFor** module to obtain real IP addresses of users from access logs recorded by the IIS 7 server.

1. Download the **F5XForwardedFor** module.
2. Copy the **F5XFFHttpModule.dll** and **F5XFFHttpModule.ini** files in the **x86\Release** or **x64\Release** directory based on the OS version of the server to the specific directory (for example, **C:\x_forwarded_for\x86** or **C:\x_forwarded_for\x64**) and ensure that the IIS process has the read permission on the destination directory.
3. Double-click **Modules** in the IIS server option.
4. Click **Configure Native Modules**. In the dialog box that is displayed, click **Register**.
5. In the dialog box that is displayed, register the downloaded DLL file based on the OS and click **OK**.
   - x86: Register the module **x_forwarded_for_x86**.
     - **Name**: Enter **x_forwarded_for_x86**.
     - **Path**: Enter **C:\x_forwarded_for\x86\F5XFFHttpModule.dll**.

- x64: Register the module **x_forwarded_for_x64**.
  - **Name**: Enter **x_forwarded_for_x64**.
  - **Path**: Enter **C:\x_forwarded_for\x64\F5XFFHttpModule.dll**.

6. After the registration is complete, select the newly registered module (x_forwarded_for_x86 or x_forwarded_for_x64) and click **OK**.
7. In **ISAPI and CGI Restrictions**, add the registered DLL file based on OS and set **Restriction** to **Allowed**.
   - x86
     - **ISAPI or CGI path**: Enter **C:\x_forwarded_for \x86\F5XFFHttpModule.dll**.
     - **Description**: Enter **x86**.
   - x64
     - **ISAPI or CGI path**: Enter **C:\x_forwarded_for \x64\F5XFFHttpModule.dll**.
     - **Description**: Enter **x64**.
8. Restart the IIS 7 server and wait for the configuration to take effect.
9. Obtain real IP addresses of users from the value of the **X-Forwarded-For** field in the access logs recorded by the IIS 7 server (the default log path is **C:\WINDOWS\system32\LogFiles**, and the IIS log file name extension is .log).

3.14 Can Users Use HTTP to Visit My Domain Name After HTTPS Is Configured?

Yes. They can visit your domain name using HTTP or HTTPS.

4 Cache Settings

4.1 Will the Cache on CDN PoPs Be Updated in Real Time?

Cached content on CDN PoPs is not updated in real time. CDN PoPs only obtain new content from the origin server when the previously cached content expires. To update content cached on CDN PoPs, configure cache rules.

4.2 Does CDN Cache Status Codes 404 and 403?

By default, CDN caches status codes 404, 500, 502, and 504 for 3 seconds and does not cache other 4*XX* and 5*XX* status codes.

4.3 What Are the Default Cache Rules? Can I Modify the Cache TTL?

Each domain name is configured with one or more default cache rules.

- If the service type is website acceleration, file download acceleration, or on-demand service acceleration, and the origin server address is an origin IP address or origin domain, two default cache rules are available.
  - The default cache TTL for common dynamic files (for example, .php, .jsp, .asp, and .aspx files) is 0. CDN pulls content from the origin server directly when receiving requests for such dynamic files. You can modify and delete this rule.
  - The default cache TTL for all files is 30 days. You can modify but cannot delete this rule.
- If the service type is whole site acceleration, there will be a cache rule for all files by default. In this rule, the cache TTL is 0. You can modify but cannot delete this rule.

If you want to change the cache TTL, choose **Domains** > **Configure** > **Cache Settings** on the CDN console to change it.

4.4 Does the Path in Cache Settings Refer to a Web Address or File Path on the Server?

It refers to a web address.

4.5 Why Is the CDN Cache Hit Ratio Low?

Possible causes:

- The HTTP header has been incorrectly configured. As a result, the content cannot be cached. Check the Cache-Control settings of your origin server. If **cache-control** is set to **no-cache**, **no-store**, **max-age=0**, or **private** on the origin server and **Origin Cache Control** is enabled on CDN, CDN cannot cache resources, resulting in a low hit ratio.
- The cache TTL you have configured is too short. In this case, CDN PoPs will not be able to cache data. They will frequently pull the fresh content from the origin server. As a result, the CDN cache hit ratio will be low.
- A large portion of the content on your origin server is dynamic. CDN mainly accelerates delivery of static content (such as CSS, JS, HTML, TXT files, pictures, and video). Dynamic content (such as ASP, JSP, PHP files, APIs, and dynamic interaction requests) is typically pulled from the origin server.
- If your origin server has a large number of resources and does not support range requests, CDN PoPs will pull complete resources, increasing the pull traffic and affecting the traffic hit ratio.
- The website is not accessed very frequently. Content cached on the CDN PoPs may be deleted due to infrequent access. As a result, the fresh content is pulled when it is accessed, and the CDN cache hit ratio will decrease.
- An exception occurred on your origin server. In this case, troubleshoot your origin server first.
- HEAD requests are sent. By default, CDN does not cache HEAD requests. Even if cache prefetch is performed, HEAD requests are not cached.

4.6 How Do I Cache the Homepage (Root Directory)?

On the CDN console, choose **Domains** > **Configure** > **Cache Settings**. In the **Configure Cache Rule** dialog box, set **Type** to **Homepage** and set the cache rule for the root directory.

4.7 How Do I Check Whether a Cache Is Hit?

1. Open Google Chrome and press **F12**.
2. Choose **Network**.
3. Enter the website to be accessed in the address box and press **Enter**. View the response headers of the URL of a specific resource and perform the following operations:

  - If the value of the **x-hcs-proxy-type** header is **1**, the cache is hit. If the value is **0**, the cache is not hit.

4.8 Why Is the Latest Content Inaccessible Even When the Cache TTL Is Set to 0?

If the cache TTL is set to 0, CDN pulls the requested content from the origin server. After the cache TTL is reset, the new setting does not take effect immediately. Wait for a few minutes and try again. You can also manually purge the cache to force the cache to expire.

4.9 Does Huawei Cloud CDN Support Caching octet-stream Stream Files?

Yes.

4.10 Why Are Certain Files Not Downloadable Even Though They Have Not Expired (365 Days)?

CDN PoPs regularly evict cached content that has not recently been accessed, regardless of the content's expiration time.

You can prefetch resources so that users can obtain the most recent resources from CDN PoPs upon first access.

4.11 How Do I Configure Cache for Resources That Do Not Need to Be Cached?

You can set the cache TTL of these resources to **0** in a cache rule.

4.12 How Do I Synchronize Content Cached on CDN PoPs with That on the Origin Server?

- You can set cache rules. For content that is frequently updated, you can set a cache rule with a short cache TTL. For other content, you can set a cache rule with a long cache TTL to reduce the pressure on the origin server.
- If the configured cache TTL is not reached but new content is released or content is deleted on the origin server, you can manually purge the cache.
  - Log in to the console and choose **Service List** > **Content Delivery & Edge Computing** > **Content Delivery Network**. In the navigation pane, choose **Prefetch & Purge**. On the **Purge** tab, refresh the cache.

4.13 Why Does a Cache Rule Not Take Effect?

Possible causes and solutions:

1. You have just completed configuring the cache rule and it takes about 5 minutes for the rule to take effect. Verify cache configuration after the rule takes effect.
2. You have modified the cache rule.
   - Your modifications are effective for new content cached.
   - You can purge to apply modifications to the existing cache.
3. Cache rules have priorities. The cache rule with a higher priority (large value) is matched first. Check the priority of your cache rules.

   Example: You have configured a **File type** cache rule for domain name **www.example.com** to cache JPG files for only one day. The priority of the cache rule is set to **2**.

Type	Content	Priority	Maximum Age
Full path	/test/*.jpg	8	3 days
Directory	/test/folder01	6	5 days
File type	.jpg	2	1 days
All files		1	30 days

   Result: When a user accesses the **www.example.com/test/cdn.jpg** file, two cache rules, **Full path** and **File type**, can be applied to this file. The priority of the **Full path** rule is **8**, which is higher than that of the **File type** rule. Therefore, the system follows the **Full path** rule **/test/*.jpg** and caches the file for three days.

   Method: To make the **File type** rule to take effect, set its priority to a value greater than **8**.

5 Troubleshooting

5.1 Why Am I Seeing a Message Indicating that the Domain Name Already Exists When I Add a Domain Name for CDN Acceleration?

If you have the permission to resolve the domain name, submit a service ticket.

5.2 Why Is My Domain Name Inaccessible After HTTPS Secure Acceleration Is Configured?

Possible cause: The origin protocol of the domain name is HTTP and force redirect from HTTP to HTTPS is configured on your origin server, so that the domain name cannot be accessed using HTTP or HTTPS.

In this case, a status code 301 is returned. CDN PoPs access the origin server using HTTP rather than HTTPS until the maximum number of retransmissions has been reached. As a result, the access will fail.

Solution: Go to the CDN console, choose **Domains** in the navigation pane, click **Configure** in the **Operation** column, click the **Origin Settings** tab, and set **Origin Protocol** to **Same as user**.

5.3 Why Is Data Obtained from a CDN PoP Not the Updated Data?

Cached content on CDN PoPs is not updated in real time. They only pull new content from the origin server when the previously cached content expires and then update the cache.

- After updating content on the origin server, you can submit cache purge requests to force the cached content on CDN PoPs to expire. In this way, users can get the latest data when they access the website.

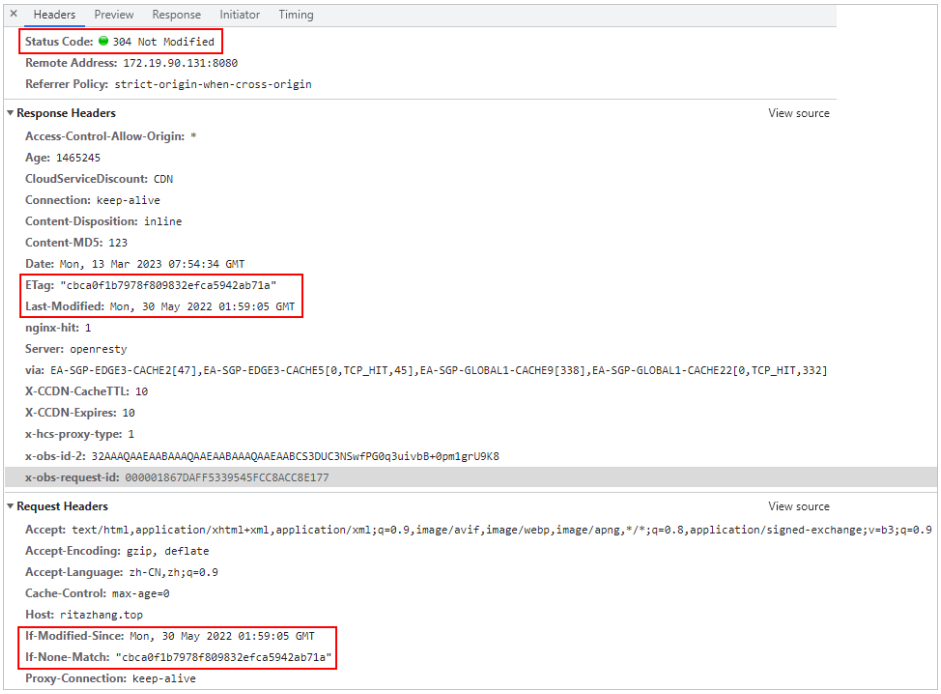
5.4 Why Is 304 Returned When a User Accesses a Resource Under My Acceleration Domain Name?

Status code 304 indicates that the resource has not changed since the last time CDN cached it.

When a client requests the resource for the first time, CDN returns the resource in a 200 response to the client. The response includes **ETag** that marks the time when the resource was last modified. When the client requests the resource again, if the **ETag** value is not modified, 304 is returned and the client loads the cached content. If the **ETag** value differs, the modification time is marked and CDN returns the new resource to the client. Details are as follows:

1. When a client accesses **1.jpg** for the first time, CDN returns the image in a 200 response to the client. Response headers include **Last-Modified** (last modification time) and **ETag**.

2. When the client accesses **1.jpg** again, the request headers carry the **Last-Modified** and **ETag** values. If the two values differ, CDN returns the latest image in a 200 response to the client. If not modified, the client loads the cached content.



3. The user can press **Ctrl+F5** to clear the client cache. When the user accesses the resource again, status code 200 will be returned.

5.5 Why Can't a Web Page Be Properly Displayed After the Origin Server's IP Address Is Changed?

CDN PoPs still cache outdated content. In this case, you need to manually purge the cache.

5.6 Why Do I Get an Access Failure and Access-Control-Allow-Origin Error?

This issue occurs due to the cross-origin setting.

Solution:

1. Click the target domain name on the **Domains** page.
2. On the **Advanced Settings** tab, click **Edit** next to **HTTP Headers**.
3. Select **Access-Control-Allow-Origin** and set its value to ***** or a specified domain name.

5.7 Why Does the System Always Display "301" After HTTPS Is Configured for a Domain Name?

Cause: **Origin Protocol** is set to **HTTP** for the domain name on the CDN console but force redirect to HTTPS is enabled on your origin server.

Solution: Go to the CDN console, click your domain name, select the **Origin Settings** tab, and set **Origin Protocol** to **Same as user**.

5.8 Why Do I Get Request Timed Out When Trying to Ping an Acceleration Domain Name?

For security purposes, ping operations are not allowed. You can run the **nslookup** command to check whether CDN has taken effect.

5.9 Why Are Incorrect Resources Being Pulled from My Origin Server?

The host may be incorrectly configured. A host is the host specified in HTTP request headers. It is the domain name of the site accessed by CDN during origin pull.

NOTE

- After a domain name is added, CDN regards it as the host by default. If you do not want CDN to pull content from the acceleration domain name, set the host to specify the location of the requested content.
- If you set your origin server address as a domain name, and specify the domain name as that of an object storage bucket of Huawei Cloud or another vendor, set the host to the domain name of your object storage bucket. Otherwise, the origin pull fails.

5.10 Why Is My Site Slow the First Time I Access It After CDN Is Configured?

This is normal. The first time you access a site, CDN PoPs have not yet cached the resources. They still need to pull resources from the origin server.

- To prevent such a situation, you can prefetch the cache.

5.11 What Should I Do If a Domain Name Fails to Be Added?

The following table lists the causes and solutions.

Cause	Solution
The acceleration domain name is the same as the origin server domain name.	Change either of the domain name and try again. Otherwise, an infinite loop occurs and CDN cannot pull content from the origin server.

Cause	Solution
The acceleration domain name has already been added.	Use another domain name as the acceleration domain name.
The acceleration domain name is restricted.	• If your account is frozen due to domain name violation, submit a service ticket. • If your account is frozen due to outstanding payments, pay off the outstanding amount and add the domain name again.
The origin server is a subdomain name of the acceleration domain name.	The origin server cannot be a subdomain name of a wildcard domain name that has been added to Huawei Cloud CDN for acceleration. Otherwise, origin pull fails. Change the origin server domain name and try again.

6 Cache Purge and Prefetch

6.1 What Are the Differences Between Cache Purge and Cache Prefetch?

- Cache purge

  After you submit a cache purge request, cached content on CDN PoPs will be forcibly expired. If a user requests that content, CDN has to pull fresh content from the origin server and then caches that new content.

- Cache prefetch

  After you submit a cache prefetch request, the origin server proactively sends the most current content to a CDN PoP for caching. If a user requests the content, the CDN PoP immediately returns the cached content. It does not pull any new content.

6.2 Why Am I Seeing Insufficient Permission for Cache Purge and Prefetch?

Perform the following operations to rectify the fault:

- If you log in as an IAM user, check whether you have the permissions required to perform cache purge and prefetch. If you do not have the required permissions, apply for them from your account administrator.
- If you have the permissions required to perform cache purge and prefetch, check whether your account is in arrears.

6.3 Why Does a Cache Prefetch Operation Fail?

The following lists the possible causes.

1. A large number of files are being prefetched at the same time, and this occupies all of the origin server's bandwidth. Perform prefetch in batches, or increase the bandwidth of the origin server to improve the efficiency.

2. The cache TTL of your requested content is 0. Modify the cache setting.
3. **Cache-Control** is set to **private**, **no-cache**, or **no-store** on the origin server and **Origin Cache Control** is enabled on the CDN console.
4. You requested to prefetch directories or dynamic content.
5. Your origin server cannot be accessed due to network errors, security restrictions such as firewalls and ACLs on the origin server, or other issues.
6. Cross-border prefetch may exist, that is, the origin server location is not in the same area as the prefetch PoP. For example, the origin server is outside the Chinese mainland and the PoP is in the Chinese mainland.

6.4 Does Cache Purge Refresh Content Cached on All PoPs?

Yes. Cache on all PoPs will be purged to ensure that users can access the latest resources.

6.5 Should I Enter an Origin URL or Domain Name URL for Cache Purge and Prefetch?

CDN can purge and prefetch URLs of domain names. Therefore, you need to enter a domain name URL.

6.6 Why Does a Prefetch Task Remain in the Being Processed Status for a Long Time?

Possible causes:

- The task was submitted during a peak hour, so it is still in the queue.
- You are prefetching a large number of files. Prefetch will pull content from the origin server so prefetching a large number of files may consume all of the bandwidth available for your origin server. You are advised to:
  - Prefetch files batches.
  - Prefetch files during off-peak hours, for example, at night.
  - Increase your origin server bandwidth.
- The task has been completed but the status is not refreshed on the console. Refresh the console page and check again.

6.7 How Do I Purge the CDN Cache Where the Domain Name Includes a Wildcard?

When purging the cache for a domain name that includes a wildcard, enter the URLs or directories of the level-2 domain names to be refreshed. Do not enter a URL containing a wildcard, such as **https://*.example.com/file01.html** or **https://*.example.com/file02/**.

Example:

- An acceleration domain name is ***.example.com**.
- The level-2 domain name **abc.example.com** houses the content whose CDN cache is to be refreshed.
  a. Enter the URL to be refreshed: https://abc.example.com/file01.html.
  b. Enter the directory to be refreshed: https://abc.example.com/file02/.

6.8 Why Do Users Still Access the Stale Resource After It Has Been Updated on the Origin Server and Its Cache on CDN Has Been Purged?

Possible causes:

1. You have prefetched resources before purge and the operation interval may be too short. It is recommended that the interval be longer than 5 minutes.
2. Resource update is not complete on the origin server before purge. As a result, CDN cannot pull the updated resource.
3. The URL entered for purge is incorrect, or the directory does not contain the resource. Take domain name **example.com** and image **/test/test1/1.jpg** as an example.
   a. When you set the purge type to **URL**, the entered resource URL should be **http://example.com/test/test1/1.jpg**.
   b. When you set the purge type to **Directory**, the entered resource URL should be **http://example.com/test/**. If you enter **http://example.com/test/test1/**, CDN cannot pull the image.
4. No parameter is contained during purge. If the resource URL contains parameters and you have set a cache rule for this resource to retain all or specific parameters, the parameters must be contained during purge.

6.9 Does CDN Support Directory Prefetch?

No. Only complete URLs can be prefetched.

6.10 Are Cache Purge and Prefetch Mandatory?

This depends on the scenario.

1. After updating a file on the origin server, purge the cache on CDN PoPs. Or, clients may obtain the stale version of the file, or encounter issues such as access failures, repeated redirections, white screens, or disordered page displays.
2. It is recommended that large files, especially video files, be prefetched to improve user experience.
3. Prefetch is not recommended for small files.

6.11 Do I Need to Purge or Prefetch the Cache of Both HTTP and HTTPS URLs?

No. You only need to purge or prefetch the cache of either HTTP or HTTPS URLs.

6.12 Can I Prefetch M3U8 Files?

Yes. When you prefetch M3U8 files, TS files under the M3U8 files are also prefetched.

6.13 Which Should I Do First, Purge or Prefetch, When I Want to Update Cache?

If your origin server content is updated and you want to update the cache on CDN PoPs:

- Purge the cache first. When cache purge is completed (about 5 minutes), prefetch the cache.
- If you directly perform cache prefetch, content that has been cached on CDN PoPs will not be updated.

If your domain name is added to CDN for the first time and no content is cached on CDN PoPs, you can directly perform cache prefetch to cache the content on PoPs.

7 Security

7.1 What Security Capabilities Does CDN Provide?

- By adding your domain name to Huawei Cloud CDN, you can have your origin IP addresses hidden to prevent origin servers from being exposed to attackers.
- Huawei Cloud CDN has more than 2,800 PoPs on the entire network. It relieves the pressure of DDoS/CC attacks on origin servers and prevents the servers from being paralyzed due to attacks. If CDN PoPs fail to provide services due to heavy attack traffic, CDN will temporarily ban the domain name, change its status to **Disabled**, and disable the acceleration service for it. The domain name cannot be accessed but its configuration is retained.
- CDN supports referer validation, IP address access control lists (ACLs), and token authentication. For details, see **Access Control**.

7.2 Does CDN Support IP Address Filtering?

Yes.

To prevent attacks from specific IP addresses, you can set a blacklist to filter out requests from these addresses. Log in to the CDN console and choose **Domains** > **Access Control** > **IP ACL** to configure the IP address blacklist.

7.3 How Does CDN Respond to CC Attacks?

In a challenge collapsar (CC) attack, the attacker uses a proxy server to generate and send disguised requests to the target host. The attacker keeps sending a large number of data packets to target servers to exhaust server resources and break them down. If a site is attacked, CDN PoPs will bear the attack traffic. Therefore, the origin server will not break down.

- If CDN PoPs fail to provide services due to heavy attack traffic, CDN will temporarily ban the domain name, change its status to **Disabled**, and disable the acceleration service for it. The domain name cannot be accessed but its configuration is retained. When the attack stops, contact customer service to unban the domain name.

- You will be billed for the traffic generated by CDN PoPs during attacks.
- If your acceleration domain name has burst traffic, for example, during new function release, the domain name may be considered to be under attack. Contact technical support in advance to avoid service loss.

7.4 Does CDN Have Anti-DDoS Capabilities?

Yes. CDN's anti-DDoS capabilities depend on the PoP capacity.

- If CDN PoPs fail to provide services due to heavy attack traffic, CDN will temporarily ban the attacked domain name, change its status to **Disabled**, and disable the acceleration service for it.
- The domain name cannot be accessed but its configuration is retained.
- Traffic generated by attacks will be charged.

7.5 Can Certificates Be Updated Without Service Interruption?

Yes.

You can choose **Domains** > **Configure** > **HTTPS Settings** on the CDN console to update SSL certificates.

7.6 Does CDN Detect Viruses in an Acceleration File?

No.

CDN does not check whether your file content contains viruses. If your file content contains viruses, the carrier will notify you so that you can take appropriate measures. If the risk is severe, the carrier will disable the URL and then notify you.

7.7 Can Multiple Certificates Be Configured for a Domain Name?

No.

Only one certificate can be configured for a domain name.

8 Statistics and Logs

8.1 What Could Fall Into the "Other" Category in the Visitor Region Statistics?

Other refers to those whose region cannot be identified because their IP addresses are not recorded in the IP address library or their IP addresses cannot be obtained by CDN.

8.2 What Are the Meanings of HEAD, HIT, and MISS in CDN Logs?

- **HEAD**

  The HEAD method is similar to the GET method. The only difference is that the server does not return a message body for a HEAD request. In a response to a HEAD request, the metadata contained in the HTTP header is the same as that in a response to a GET request. This method can be used to obtain the metadata about an entity without transferring the entity itself. It is also often used to test the validity, availability, and recent changes of hyperlinks.

- **HIT**

  This indicates a cache hit. A PoP directly serves the content.

- **MISS**

  This indicates a cache miss. A PoP needs to pull content from the origin server.

8.3 What Does User-Agent OkHttp in CDN Logs Mean?

OkHttp is a request protocol used by the Android network framework to process network requests.

8.4 How Many Days of Data Can Be Queried?

- In **Analytics**

  You can query CDN data over the past 90 days. The maximum query time range is 7 days.
- On the **Logs** page

  You can query and download logs over the past 30 days.

8.5 Why Is There No Data in Analytics?

- The CNAME record configured for your domain name is incorrect.
- CDN statistics in **Analytics** are not available in real time. It is updated about 1 hour later.

9 Origin Pull

9.1 In What Scenarios Does CDN Pull Content from an Origin Server?

1. When the requested content is not cached on CDN PoPs
2. When the cached content on CDN PoPs has expired

9.2 What Do I Fix Origin Pull Failures?

Origin pull failures indicate that CDN PoPs fail to access your origin server or the origin server returns an error. If CDN fails to pull content, CDN will retry once. For details, see **How Does Origin Pull Work If Origin Servers Have Multiple IP Addresses?**.

Check whether the origin server is normal. For details, see **How Do I Check Whether an Access Fault Is Caused by a CDN PoP or Origin Server?**

9.3 How Do I Check Whether Range Requests Are Supported for Origin Pull?

Check the response of the origin server. If the response contains the **Content-Range** field, range requests are supported for origin pull.

For example, **Content-Range: bytes 0-100/2600** indicates that bytes from 0 to 100 are requested and the total data size is 2,600 bytes.

The status code of range requests is 206 instead of 200.

9.4 If a Domain Name Is Attacked, Will Access Requests Be Directed to the Origin Server?

If a domain name is under attack and the attacks affect other CDN users or pose risks to CDN, CDN will ban the domain name, change its status to **Disabled**, and disable the acceleration service for it.

9.5 What Are the Benefits of a Standby Origin Server?

If the primary origin server fails, CDN can pull content from the standby one, preventing origin pull failures.

9.6 Does CDN Support Direct Origin Pull Through Crawler Access?

No.

CDN cannot distinguish normal user access from crawler access. If the crawler records the IP address of a PoP, the crawler can directly access that IP address next time. If the PoP is malfunctioning or undergoing routine maintenance, the crawler will be unable to pull content from that IP address.

9.7 What Is the Difference Between a Host and an Origin Server?

The differences are as follows:

- The origin server decides the IP address to be accessed during origin pull.
- The host decides the site that is associated with the requested content.

9.8 How Does Origin Pull Work If Origin Servers Have Multiple IP Addresses?

If the origin servers have multiple IP addresses, the following load balancing mechanism is used for origin pull.

- An origin pull request can be forwarded to up to two IP addresses of the primary origin server. If origin pull from both IP addresses fails, the request is forwarded to the standby origin server. The request can be forwarded to up to two IP addresses of the standby origin server. If origin pull fails again, the request fails.
- Origin pull fails when the connection times out, the connection fails, or a 5*xx* error code is returned from the origin server.

9.9 Why Are Incorrect Resources Being Pulled?

The configuration for host may be incorrect. By default, the host is your acceleration domain name. If your acceleration domain name is not the one that you want CDN to pull content from, change the host to the origin domain.

9.10 How Do I View Origin Pull Records?

CDN does not have origin pull logs. You can use the following methods to view origin pull records:

- Check the request logs of your origin server.
- Check whether the CDN logs contain the **MISS** field. If yes, origin pull is performed.

You are advised to prefetch the cache before checking the origin pull traffic.

9.11 Will CDN Download All Files If I Send a Status Code 206 to Request 100-Byte Content?

No.

The status code 206 indicates CDN pulls the requested portion from the origin server.

If you constantly request remaining portions, all files will be fetched from the origin server.

