CDN

Getting Started

Issue 20

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Contents

1 Domain Name Requirements

Table 1-1 lists requirements for domain names that require Content Delivery Network (CDN) acceleration.

Table 1-1 Domain name requirements

Service Area	Requirement
Chinese mainland	• Your HUAWEI ID has completed real-name authentication. • The domain name has been licensed by the Ministry of Industry and Information Technology (MIIT) and the Internet Content Provider (ICP) license is still valid. • The domain name has passed content moderation.
Outside Chinese mainland	The domain name has passed content moderation.
Global	• Your HUAWEI ID has completed real-name authentication. • The domain name has been licensed by the MIIT and the ICP license is still valid. • The domain name has passed content moderation.

☐ NOTE

Outside Chinese mainland indicates countries and regions other than the Chinese mainland. Hong Kong (China), Macao (China), and Taiwan (China) are included.

CDN does not support the access of websites that violate related laws and regulations, including but not limited to:

• Websites that contain pornographic content or content related to gambling, illegal drugs, frauds, or infringement

• Gaming websites that run on illegal private servers

- Websites that provide pirated games/software/videos
- P2P lending websites
- Unofficial lottery websites
- Unlicensed hospital and pharmaceutical websites
- Inaccessible websites or websites that do not contain any substantial information

☐ NOTE

- If your domain name content violates related laws and regulations, you shall bear the related risks.
- If any pornographic content or content related to gambling, illegal drugs, or frauds is found on your domain name, the domain name and other domain names that use the same origin server will be deleted from CDN and can no longer access CDN. Acceleration domain name quota of the account will be reduced to 0.
- Whether a domain name needs to be licensed does not depend on the region of the domain name provider or the area where the website server is. All that matters is the service area of your domain name. If your service area is **Chinese mainland** or **Global**, your domain name must be licensed by the MIIT before being added as an acceleration domain name.
- There is no limit on the domain name server (DNS) provider.
- Root domain name and common domain names need to be added to the CDN console separately for acceleration.

2 Overview

2.1 Before You Access CDN

Before using CDN acceleration, learn about concepts of acceleration domain name and origin server, billing, security, and how to verify the acceleration effect. This helps you quickly enable and use CDN.

Domain Name and Origin Server

Prepare a domain name for acceleration and an origin server (service server) based on the domain name admission conditions, content moderation requirements, and domain name description in the **Restrictions**.

Billing Options

Understanding CDN billing details helps you select a proper billing option when enabling CDN to reduce costs. Huawei Cloud CDN billing includes a basic service fee and additional fee for value-added services.

- The basic service fee is charged based on traffic or bandwidth generated when users access CDN points of presence (PoPs).

- The value-added service fee is charged based on the number of whole site acceleration requests.

Table 2-1 Billing options

Billing Item	Billed By	Description
Basic service fee	**Traffic**	• Suits you if your domain name traffic curve fluctuates greatly, bandwidth usage is always less than 30%, and the bandwidth has a peak. • You can buy traffic packages of appropriate specifications to save money. For details, see **Prepaid Traffic Packages**.

Billing Item	Billed By	Description
	Peak bandwidth	- Suits you if your domain name's daily bandwidth usage is always greater than 30% and the traffic curve is stable. - Requires account top-ups. The monthly usage fee will be deducted from your account balance. - Submit a service ticket to request this billing option.
	95th percentile bandwidth	Suits you if your service traffic is heavy and your monthly expenditure will be greater than $15,000 USD. Contact your account manager and request these billing options.
	Average daily peak bandwidth	
Value-added service fee	**Whole site acceleration requests**	If you use whole site acceleration, you will be charged by the number of requests.

Resource Type and Service Type

CDN caches content to speed up content delivery. It caches static resources to CDN PoPs so that users can get the resources from the nearest PoP. Whole site acceleration speeds up the transmission of dynamic and pseudo-static resources through network routing.

Table 2-2 Resource types

Resource Type	Description
Static	The same file is obtained for each access. Examples: images, videos, files (HTML, CSS, and JS) on websites, software installation packages, APK files, and compressed packages
Dynamic	Different files are obtained for each access. Example: files (ASP, JSP, PHP, PERL, and CGI) on websites, APIs, and database interaction requests
Pseudo-static	Pseudo-static resources, such as HTML files, appear to be static on websites, but are actually processed using dynamic scripts such as ASP. Pseudo-static resources are essentially dynamic and are processed as dynamic content.

CDN provides four service types. Select a service type based on the resource characteristics of your website to achieve better acceleration.

Table 2-3 Service types

Service Type	Scenario
Website	Web portals, e-commerce platforms, news apps, and user generated content (UGC)-focused apps
File download	Download clients, game clients, app stores, and websites that provide download services based on HTTP or HTTPS
On-demand services	On-demand video/audio services, such as online education websites, video sharing websites, TV VOD platforms, and music and video apps
Whole site	Websites that consist of both dynamic and static content and for sites with abundant ASP, JSP, or PHP requests

Service Area

CDN provides three service areas. Select one based on the distribution of your end users to improve user experience.

Service Area	Acceleration Effect	Scenario
Chinese mainland	All user requests are scheduled to PoPs in the Chinese mainland.	Users are centrally distributed in the Chinese mainland.
Outside Chinese mainland	All user requests are scheduled to PoPs outside the Chinese mainland.	Users are centrally distributed outside the Chinese mainland.
Global	User requests are scheduled to the optimal CDN PoP nearby.	Users are distributed around the world.

◯ NOTE

- **Outside Chinese mainland** indicates countries and regions other than the Chinese mainland. Hong Kong (China), Macao (China), and Taiwan (China) are included.
- The service area of a domain name has nothing to do with the origin location. You can choose the service area that suits your services best.

(Optional) Security

If your website has high security requirements, configure security settings to prevent malicious traffic or attacks.

Function	Description
HTTPS certificate	Enable HTTPS acceleration to encrypt requests between clients and CDN PoPs, securing data transmission.
Access control	Identity and filter visitors using referer validation, IP address access control lists (ACLs), token authentication, and User-Agent ACLs, restrict access sources, and prevent malicious traffic and attacks.
Interconnection with WAF	Associate Huawei Cloud CDN with Web Application Firewall (WAF) to accelerate websites and defend against web attacks.

Acceleration Effect Evaluation

You can use a third-party dialing test tool to test the response speed of websites. The test method is as follows:

1. Test the response speed of accessing a resource after CDN acceleration is used.
2. Test the response speed of accessing the same resource directly from the origin server.
3. Compare the preceding two data.

Important notes:

1. If you test the access to an uncached resource, CDN needs to pull it from the origin server. Accessing it through CDN will be more time-consuming. Use a cached resource for test.
2. This solution is used for qualitative analysis on the acceleration effect. If you require professional evaluation, contact professional analysis platforms (such as Tingyun and Bonree).

☐ NOTE

- This solution is for reference only. The final interpretation and copyright belong to third-party websites used for testing. The websites do not belong to Huawei Cloud. Please be careful when visiting them.
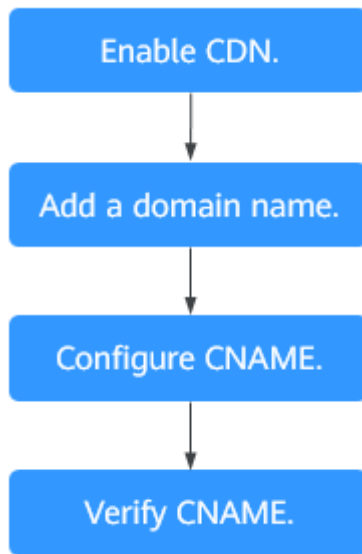
2.2 Access Process

Access Process

This section describes how to use CDN and how to select CDN billing options. If you are using Huawei Cloud CDN for the first time, you can quickly enable CDN by following the procedure described in this section to accelerate your content delivery.

Figure 2-1 describes the process of using CDN.

Figure 2-1 Process

For details about each step, see **Table 2-4**.

Table 2-4 Access procedure

No.	Step	Description
1	**Enabling CDN**	Enable CDN.
2	**Adding a Domain Name**	If you want to use CDN to accelerate your site, add the domain name of the site and configure origin details. CDN caches origin content on points of presence (PoPs) so that your content loads faster.
3	**(Optional) Testing a Domain Name**	Test your domain name before adding a CNAME record to the domain's DNS records to ensure that your domain configurations are correct.
4	Configuring a CNAME Record ● **Adding a CNAME Record on Huawei Cloud DNS**	If you have added a domain name, the system automatically assigns a CNAME record to it. The CNAME record cannot be accessed directly. Add this CNAME record to your domain's DNS records and point the domain name to it. Then requests for your domain name will be redirected to CDN PoPs for acceleration. The CNAME configuration method varies depending on the DNS provider.
5	**Checking Whether the CNAME Record Has Taken Effect**	The length of time before the CNAME record takes effect depends on the DNS provider. You can check whether the CNAME record has taken effect by yourself.

Billing Options

When enabling CDN, you can choose to be billed by traffic or peak bandwidth. For details about the billing options and examples, see **Billing**.

By traffic

If you choose traffic-based billing:

- You are billed by the traffic used per hour.
- You can buy a CDN traffic package to get more savings. For details about traffic packages, see **Prepaid Traffic Packages**.

By peak bandwidth

You are billed by the daily peak bandwidth.

3 Enabling CDN

Enable CDN before you use it. This section describes how to enable CDN.

Prerequisites

- You have registered a HUAWEI ID and have specified a payment method.

  📖 **NOTE**

 You need to complete real-name authentication when you:
  - Purchase and use cloud services on Huawei Cloud PoPs in the Chinese mainland. Real-name authentication is required by the laws and regulations in the Chinese mainland.
  - Purchase a cloud service whose region includes Chinese mainland.

Precautions

- You can enable and use CDN in traffic-based billing. To do so, buy a CDN traffic package, refresh the page of enabling CDN, and enable CDN.

Procedure

1. Log in to **Huawei Cloud console**. Choose **Service List** > **Content Delivery & Edge Computing** > **Content Delivery Network**.
2. Click **Enable Now**.
3. Click **Enable Now**.
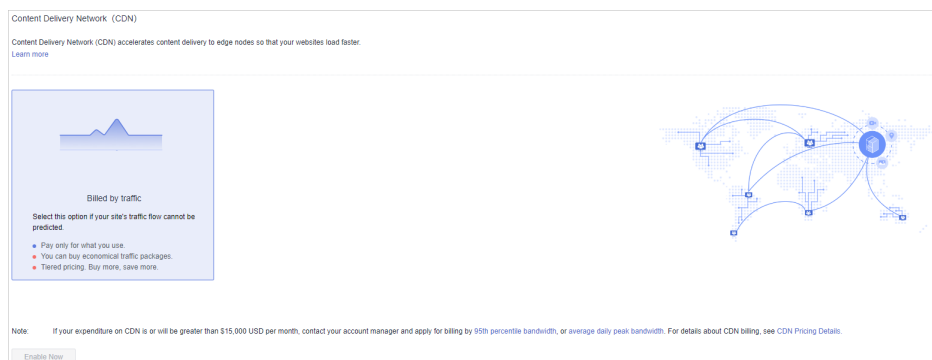
4 Adding a Domain Name

If you want to use CDN to accelerate your business, add the domain name of your site to CDN. CDN caches origin content on PoPs so that your content loads faster.

Preparations

- Enable CDN for your account by referring to **Enabling CDN**.
- Prepare a domain name for acceleration and an origin server (service server) based on the domain name admission conditions, content moderation requirements, and domain name description in the **Restrictions**.

Procedure

1. Log in to **Huawei Cloud console**. Choose **Service List** > **Content Delivery & Edge Computing** > **Content Delivery Network**.

   The CDN console is displayed.

2. In the navigation pane, choose **Domains**.

3. On the **Domains** page, click **Add Domain Names** and specify domain parameters.
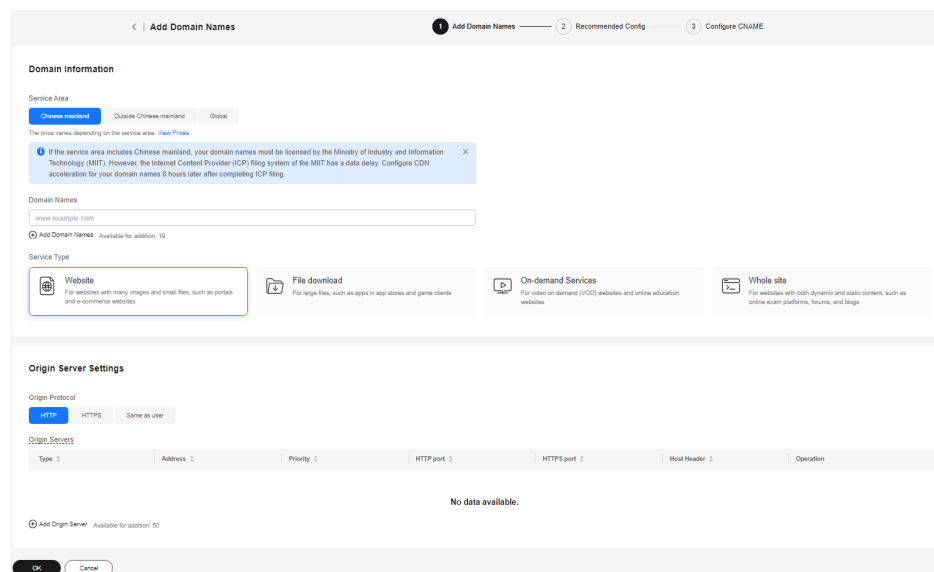
Figure 4-1 Adding a domain name

Table 4-1 Parameter description

Parameter	Item	Description

Domain Names	-	• A domain name can contain up to 75 characters, including letters, digits, hyphens (-), and periods (.).
		
		• You can add up to 100 domain names under each account.
		
		• CDN does not allow access from websites containing illicit content. For details, see "Content moderation" in **Restrictions**. The existing domain names connected to CDN are reviewed regularly. If a domain name involves any violations, the CDN acceleration service will be suspended for the domain name and other domain names in your account.
		
		• If a domain name has been in the **Disabled** or **Rejected** state for more than 120 days, CDN starts the domain name deletion process and deletes the domain name records after confirmation. If CDN acceleration is required for the domain name, add the domain name again.
		
		• If a domain name has not been accessed for more than 180 days, CDN starts the domain name suspension process and disables CDN acceleration for the domain name after confirmation.
		
		• An acceleration domain name must be unique.
		
		• You can add a domain name including a wildcard (*). For example, if you add ***.test.com** to CDN as an acceleration domain name and have it resolved to the CNAME provided by CDN, all of the level-2 domain names under ***.test.com**, such as **a.test.com**, will enjoy CDN acceleration by default. However, level-3 domain names (such as **b.a.test.com**) would not.
		
		  1. 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.
		
		  2. 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 wildcard domain name, not on each of the level-2 domain names.

Enterprise Project	-	This parameter is only available if Huawei Cloud Enterprise Project Management Service is enabled. For details, see **Enterprise Management User Guide**.

Parameter	Item	Description
Service Area	Global	CDN schedules access requests from users around the world to the optimal PoP nearby. The domain name must be licensed by the MIIT. For details, see **ICP License Service**.
	Chinese mainland	CDN schedules access requests from users around the world to PoPs in the Chinese mainland. The domain name must be licensed by the MIIT. For details, see **ICP License Service**.
	Outside Chinese mainland	CDN schedules access requests from users around the world to PoPs outside the Chinese mainland. The domain name does not need to be licensed by the MIIT.
Service Type	Website	CDN is perfect for web portals, e-commerce platforms, news apps, and user generated content (UGC)-focused apps. The cache format includes but is not limited to .zip, .exe, .wmv, .gif, .png, .bmp, .wma, .rar, .jpeg, and .jpg.
	File download	CDN is useful for download clients, game clients, app stores, and websites that provide download services based on HTTP or HTTPS.
	On-demand Services	CDN accelerates delivery of on-demand services, such as online education, video sharing, music or video on demand, and other audiovisual content.
	Whole site	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.
Origin Protocol	-	Protocol used by CDN PoPs to pull content from the origin server. ● **HTTP** ● **HTTPS** (Ensure that the origin server supports HTTPS access.) ● **Same as user**: The origin protocol is the same as the client access protocol. For example, if a client accesses CDN using HTTP, CDN also uses HTTP for origin pull.

4. In the **Origin Server Settings** area, click **Add Origin Server** to add an origin server for the domain names.

Figure 4-2 Adding an origin server

Table 4-2 Parameters

Paramet er	Description
Type	**IP address** ● CDN PoPs access the IP address directly to pull origin content. ● If multiple IP addresses are configured, CDN uses the **load balancing mechanism** to pull content from the origin server.
	Domain name ● Enter up to 250 characters. ● An origin domain cannot be the same as an acceleration domain name. ● You can also enter the domain name of an object storage bucket. **NOTE** ● You cannot use **private object storage buckets** as origin servers when you set **Type** to **Domain name**. ● If you use an object storage bucket as your origin server, the object storage service will charge the CDN origin pull traffic based on its billing standards.

Parameter	Description
	OBS bucket Select an OBS bucket domain name under your account or customize one. OBS charges the CDN origin pull traffic based on the billing standard for outgoing Internet traffic. If you set a bucket of OBS 3.0 or a later version as the origin server, you can purchase OBS pull traffic packages to deduct origin pull traffic. For details, see **OBS Billing for CDN Acceleration**. **Notes:** 1. If your OBS private bucket is unsuitable as an origin for your domain name, do not set the private bucket as the origin server. 2. If you enter a custom OBS bucket domain name, the origin domain name must end with .myhuaweicloud.com or .myhuaweicloud.cn. 3. If an OBS private bucket is configured as an origin server, enable **OBS authorization** and select the **Private bucket** checkbox. Otherwise, origin pull will fail. 4. To use a **custom OBS private bucket** as the origin server, configure a policy for the private bucket. For details, see **Configuring a Policy for a Custom OBS Private Bucket**. 5. If you have enabled **static website hosting** for your OBS bucket, select the **Static website hosting** checkbox when adding a domain name. In this way, the list of all files in the bucket will not be displayed when users access the bucket. 6. When back-to-source by mirroring is configured on OBS and range requests are enabled on CDN, if the mirror origin server does not comply with the RFC Range Requests standard, the response to range requests is not 206 and CDN fails to pull content. In this case, submit a service ticket.
Address	Address accessed by CDN PoPs during origin pull.
Bucket	This parameter is mandatory when **Type** is set to **OBS bucket**. ● **Public bucket**: public read. All users can read objects in the bucket. ● **Private bucket**: Only users granted permissions by the ACL can access the bucket.
Priority	The origin server can be primary or standby. The priority of the primary origin server is higher than that of the standby origin server. CDN PoPs preferentially pull content from the primary origin server. If the primary origin server is faulty, CDN PoPs pull content from the standby origin server. ● Configure at least one primary origin server.

Parameter	Description
Origin Ports	Port numbers for CDN PoPs to pull content. By default, the HTTP port is 80 and the HTTPS port is 443. ● If **Type** is set to **OBS bucket**, the port numbers cannot be changed.
Host Header	A host is specified in the HTTP request header. It is the domain name of the site accessed by CDN PoPs when CDN pulls content from the origin server. CDN obtains resources from the corresponding site based on the host details during origin pull. After a domain name is added, the default host will be the domain name. Change the host in a timely fashion if either of the following conditions is met: ● If you set **Type** to **Domain name** and enter the domain name of an object storage bucket, set the host to the domain name of the object storage bucket. ● If you want CDN to pull content from a custom domain name, specify the host. For example, suppose an origin server is bound to two sites, **www.origin01.com** and **www.origin02.com**, and the domain name connected to CDN is **www.example01.com**. If you need CDN to pull content from **www.origin02.com**, you would need to set the host to **www.origin02.com**.

5. Click **OK**. To add multiple origin servers, repeat **4**. You can add up to 50 origin servers.

6. After adding origin servers, click **OK** in the lower left corner of the page.

📖 **NOTE**

- The configuration takes 5 to 10 minutes to take effect. When **Status** of the domain name becomes **Enabled**, the domain name has been added.

- If the CNAME status of a domain name is 🔴 , no CNAME has been configured for this domain name.

Recommended Configuration

You can also follow the instructions of **(Optional) Recommended Configurations** to configure cache rules, usage caps, and HTTPS certificates for domain names, to improve access performance, cache hit ratio, and access security and reduce high bill risks.

Configuring CNAME Resolution

After a domain name is added, the system automatically assigns a CNAME record to this domain name. The CNAME record cannot be accessed directly. You must **add the CNAME record** to your domain's DNS records. Then requests for your domain name will be redirected to CDN PoPs for acceleration.

5 Verifying the Domain Name Ownership

Scenario

When connecting a domain name to CDN for the first time, verify the ownership of the domain name through file upload or DNS record verification, to prevent the domain name from being maliciously added.

Precautions

- After you verify the ownership of a domain name, ownership verification is not required for its subdomains or this domain name if you add it to CDN again.
  - Example: If you have verified the domain name ownership when adding the domain name **b.a.com** to CDN, you do not need to verify the ownership of subdomains of **a.com**, such as ****.a.com** and *****.a.com**, when you add them to CDN.
- If you have verified the ownership of a domain name using account A, you must verify the ownership of this domain name again when adding it to CDN using account B.
- This topic is also applicable to the ownership verification of subdomains.

File Upload

Domain name test.example.com is used as an example.

1. When adding a domain name to CDN, verify the ownership of the domain name in scenarios similar to the following.

Figure 5-1 Verifying the domain name ownership
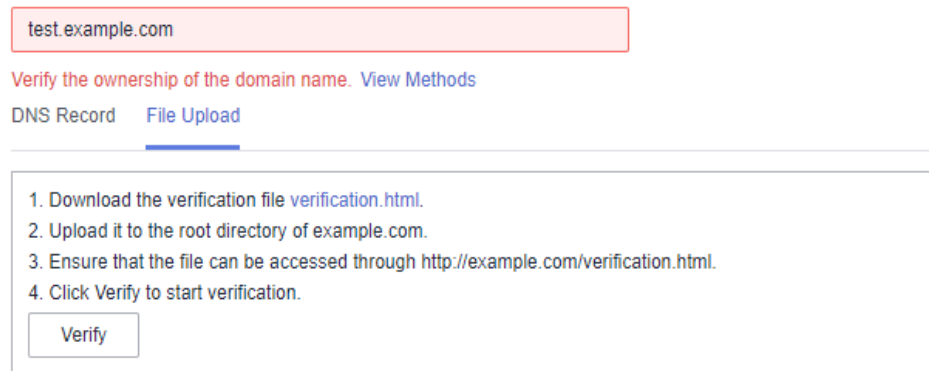
2. Select **File Upload**. Do not close the verification page before the verification is complete.

3. Click **verification.html** to download the file.

4. Upload the file to the root directory of your domain server.

5. Click **Verify** to verify the ownership of the domain name.

    📖 NOTE

    Huawei Cloud CDN will access **http://example.com/verification.html** to obtain the verification file. If the system verifies that the obtained file is correct, the verification is successful. Ensure that the verification file is accessible.

DNS Record

Domain name test.example.com provided by Huawei Cloud DNS is used as an example.

1. When adding a domain name to CDN, verify the ownership of the domain name in scenarios similar to the following. Do not close the verification page before the verification is complete.

    Figure 5-2 Verifying the domain name ownership
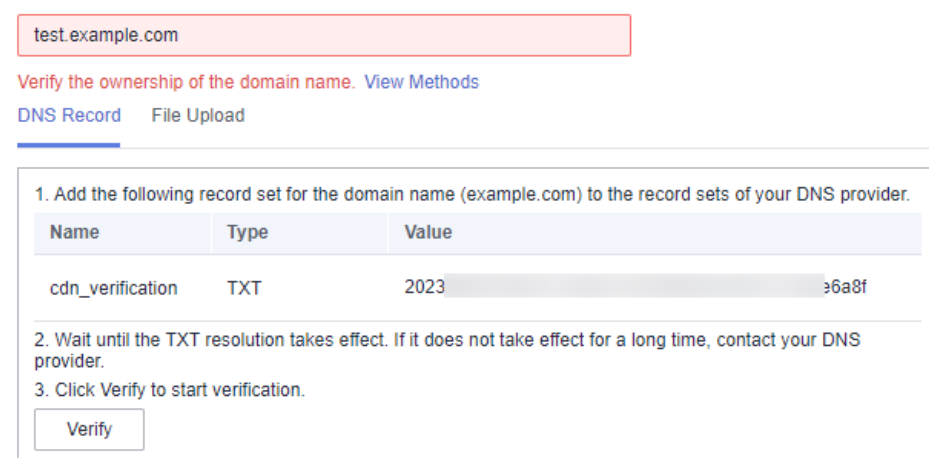
2. Add a TXT record to the record sets of your DNS provider.

    a. In the service list, choose **Networking** > **Domain Name Service**.

  b. In the navigation pane, choose **Public Zones**.

  c. Click **example.com**. In the upper right corner of the domain name details page, click **Add Record Set**.

   ▪ **Name**: **cdn_verification**

   ▪ **Type**: TXT

   ▪ **Value**: Enter 32 characters, consisting of a date and a random UUID.

Figure 5-3 Adding a record set

  a. Click **OK**.

 3. After the TXT resolution takes effect, return to the **Add Domain Names** page of the CDN console and click **Verify**.

◫ **NOTE**

- A new TXT resolution takes effect immediately. If it is modified, the modification takes effect 5 minutes later. The effective time depends on the DNS resolution time to live (TTL). The default TTL is 5 minutes.
- The configuration of other service providers, such as www.net.cn, DNSPod, Xinnet, or GoDaddy, is similar. You can verify the ownership of your domain name by referring to the preceding procedure.

6 (Optional) Testing a Domain Name

Test your domain name before adding a CNAME record to the domain's DNS records to ensure that your domain configurations are correct.

1. Ping the CNAME record for the domain name you added to obtain the IP address.

   For this example, we assume that the added domain name is www.example.com, the generated CNAME record is www.example.com.c.cdnhwc1.com, and the IP address obtained by pinging www.example.com.c.cdnhwc1.com is 10.0.0.0.

2. Edit the **hosts** file on the local PC.

   If you use a Windows system, map the domain name www.example.com to the IP address 10.0.0.0 in the **hosts** file in the **C:\Windows\System32\drivers\etc** directory.

Figure 6-1 Testing the domain name

```
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       1          )7        rhino.acme.com          # source server
#                  0         x.acme.com              # x client host

# localhost name resolution is handled within DNS itself.
#       1          1         localhost
#       :                    localhost

        10.0.0.0            www.example.com
```

3. Access your domain name to test services. If the test results meet your expectation, the configurations are correct.

4. Add a CNAME record to your domain's DNS records. For details, see **Configuring a CNAME Record**.

7 (Optional) Recommended Configurations

After adding an acceleration domain name, configure cache rules, smart compression, and secure acceleration to improve the cache hit ratio, optimize the acceleration effect, and enhance security.

Improving Cache Hit Ratio and Optimizing the Acceleration Effect

Scenario	Configuration Item	Description
The cache hit ratio is low and the acceleration effect is not obvious.	**Cache Rules**	Set a proper cache TTL and priority for different resources to improve the cache hit ratio, reduce the origin pull ratio, and relieve the pressure on the origin server. **Notes:** 1. The cache rule priority is an integer ranging from 1 to 100. A greater number indicates a higher priority. 2. If you modify or add a cache rule, purge the cache of the corresponding resource. 3. Set the cache TTL of dynamic resources to **0**, so dynamic resources are not cached. Otherwise, access exceptions may occur. 4. Check the cache settings on the origin server. If **no-cache**, **private**, or **no-store** is configured for a resource on the origin server and **Origin Cache Control** is enabled on the CDN console, CDN cannot cache the resource. CDN needs to pull the resource from the origin server each time it is requested. This does not achieve acceleration.

Scenario	Configuration Item	Description
	Range Requests	Configure range requests to accelerate distribution of large files during origin pull and reduce bandwidth consumption. ● Range requests are enabled by default for download acceleration. ● Check whether the origin server supports the **Range** header.
	Smart Compression	Compress static content on your websites to reduce the file size, speed up file transfer, and save bandwidth. ● Smart compression includes gzip compression and Brotli compression. The performance of Brotli compression is 15% to 25% higher than that of gzip compression. ● With smart compression, CDN automatically compresses .js, .html, .css, .xml, .json, .shtml and .htm files.
	URL Parameters	Ignore URL parameters to improve the cache hit ratio and speed up content distribution. ● If resources do not change with URL parameters, ignore the URL parameters. ● If resources change with URL parameters, retain the URL parameters.

Improving Website Security

Scenario	Configuration Item	Description
Improving security performance	**HTTPS**	Configure a Secure Sockets Layer (SSL) certificate to improve the domain name security.
	Access Control	Identify and filter visitors to restrict their access and improve CDN resource security.
	Accelerating Resources Protected by WAF	Huawei Cloud CDN works with WAF to defend against web attacks during content delivery acceleration, providing a more secure acceleration experience.

Reducing the Risk of High Bills

Scenario	Configuration Item	Description
If your domain name is attacked or has malicious traffic coming, there may be sudden traffic spikes that result in a bill higher than your normal expenditures. CDN can help you reduce the risk of high bills.	**Usage Cap**	Set a usage cap so CDN will disable your domain name when the access bandwidth reaches the threshold you specify to avoid excessive fee.

8 Configuring a CNAME Record

8.1 Overview

Background

If you have added a domain name, the system automatically assigns a CNAME record to it. The CNAME record cannot be accessed directly. You must add the CNAME record to your domain's DNS records. Then requests for your domain name will be redirected to CDN PoPs for acceleration.

What Is DNS Resolution?

When you use DNS for the first time, you may have some questions, such as "What is DNS resolution?", "Why is DNS resolution required?", "How is DNS resolution done?", and "What is an A record?". If you have similar questions, visit **Domain Name Service Help Center** to find the answers.

How Do I Add a CNAME Record?

If your DNS provider is Huawei Cloud, see **Adding a CNAME Record on Huawei Cloud DNS**.

DNS Conflicts

When you add a CNAME record, you may be informed of a DNS conflict, for example, an existing A record may conflict with the CNAME record, or an existing MX record may conflict with the CNAME record. For details, see **Why Is a Message Indicating Conflict with an Existing Record Set Displayed When I Add a Record Set?**

Table 8-1 Restrictions between record types

-	NS	CNAME	A	AAAA	MX	TXT	PTR	SRV	CAA
NS	No limit[a]	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
CNAME	Conflict[b]	No limit	Conflict	Conflict	Conflict	Conflict	Conflict	Conflict	Conflict
A	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
AAA	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
MX	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
TXT	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
PTR	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
SRV	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit
CAA	No limit	Conflict	No limit	No limit	No limit	No limit	No limit	No limit	No limit

a: NS record sets can be added for primary domains (for example, example.com). There are no restrictions on subdomains (for example, www.example.com).

b: For primary domains (for example, example.com), you can add CNAME record sets and NS record sets at the same time. However, CNAME record sets conflict with NS record sets for subdomains (for example, www.example.com), and therefore they cannot be added at the same time.

- **Conflict**: The two types of record sets cannot coexist in the same resolution line.
- **No limit**: The two types of record sets can coexist without restrictions.

Two common record set conflicts are:

1. A CNAME record conflicts with an A record.
   - How do I resolve this problem?

     Delete the A record and then configure the CNAME record.
   - Do I need to keep the A record for my website so that it remains accessible?

     As long as the CNAME record is configured, all client requests will be sent to CDN. In this case, you do not need to configure an A record.

For details about how the CNAME record works, see **How CDN Works**.

2. A CNAME record conflicts with an MX record.

For details, see **Why Is a Message Indicating Conflict with an Existing Record Set Displayed When I Add a Record Set?**

8.2 Adding a CNAME Record on Huawei Cloud DNS

If your domain name is resolved using the DNS service Huawei Cloud provides, then follow the steps in this section to add a CNAME record. **download.game-apk1.com** is used as an example.

Procedure

- **Obtain the CNAME record of the domain name.**

1. Log in to **Huawei Cloud console**. Choose **Service List** > **Content Delivery & Edge Computing** > **Content Delivery Network**.

   The CDN console is displayed.

2. In the navigation pane, choose **Domains**.

   On the **Domains** page, copy the CNAME record **download.game-apk1.com.** ******.**c.cdnhwc2.com** ******.

   Figure 8-1 Obtaining the CNAME record
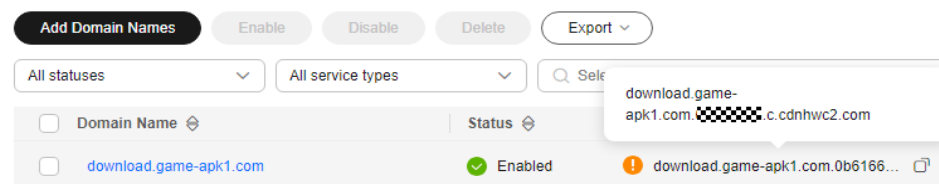
- **Add the CNAME record.**

1. Log in to the **management console** and choose **Service List** > **Networking** > **Domain Name Service**.

   The DNS console is displayed.

2. In the navigation pane, choose **Public Zones**.

   The public zone list is displayed.

3. Click the domain name you want to add a record set to. In this example, the domain name is **game-apk1.com**.

4. Click **Add Record Set** in the upper right corner.

Figure 8-2 Adding a record set

5. Configure the parameters as instructed. **Table 8-2** describes the parameters.

Table 8-2 Parameter description

Parameter	Parameter description	Example Value
Name	Domain name prefix	**Name** for www.huaweicloud.com is **www**. **Name** for testcdn.huaweicloud.com is **testcdn**.

Parameter	Parameter description	Example Value
Type	Type of the record set **NOTE** A CNAME record cannot coexist with an A record. Otherwise, DNS resolution will fail.	CNAME – Map one domain to another
Line	Used when the DNS server is resolving a domain name. It returns the IP address of the server according to the visitor source. For details, see **Resolution Line**.	Default
TTL (s)	Cache duration of the record set on a local DNS server. If your service address changes frequently, set **TTL** to a smaller value.	Retain the default value.
Value	Domain name to be pointed to, that is, the CNAME record allocated by CDN	download.game-apk1.com.****c.cdnhwc2.com
Weight	If a resolution line in a zone contains multiple record sets of the same type, you can set different weights to each record set. For details, see **Configuring Weighted Resolution**.	-

6.   Click **OK**.

📖 NOTE

- After the CNAME resolution takes effect, the status changes to 🔗 . However,
  CNAME resolution may fail the verification and the status changes to ❗ ,
  indicating that no CNAME record is configured for the domain name. If you have
  correctly configured the CNAME record, ignore the error message.
- A CNAME record takes effect immediately after being added. If you modify the
  CNAME record, then the change takes effect within 72 hours.
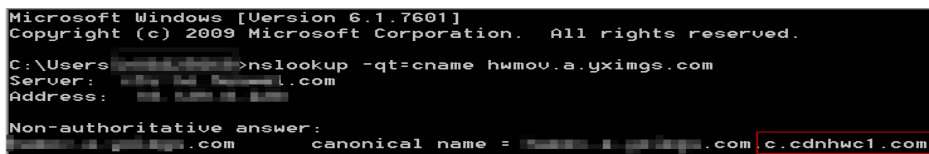- If you encounter a resolution conflict, see **DNS Conflicts**.

9 Checking Whether the CNAME Record Has Taken Effect

The length of time before the CNAME record takes effect depends on the DNS provider. To check whether a CNAME record has taken effect:

Open the command line interface that comes with Windows and run the following command:

nslookup -qt=cname *Acceleration domain name*

If the CNAME record is displayed, the CNAME record has taken effect.

Now CDN acceleration has been enabled. For details about more settings, see **Domain Name Settings**.

10 FAQ

How Do I Do If the ICP License of an Acceleration Domain Name Expires?

You must apply for a new license from the MIIT.

- If a new license is obtained before the original one expires, your CDN service is not affected.
- If a license has expired and no new license has been obtained yet, CDN bans the domain name and changes its status to **Rejected**. After the new license is obtained, you can apply to unban the domain name on the CDN console. For details, see **Reviewing a Domain Name**.

Can a Level-2 Domain Be Accelerated If Only Its Level-1 Domain Name Is Licensed by the MIIT, but Its Level-2 Domain Name Is Resolved Outside the Chinese Mainland?

Yes. If the level-1 domain name has been licensed by the MIIT, the level-2 domain name does not need to be licensed. In addition, a domain name that requires acceleration services only outside the Chinese mainland does not need to be licensed by the MIIT.

Can I Use CDN If My Domain Name Is Not Licensed?

If the service area of your domain name includes **Chinese mainland**, obtain an ICP license from the MIIT before using CDN. If the service area of your domain name is **Outside Chinese mainland**, the ICP license is not required before using CDN.

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. For details, see **Checking Whether the CNAME Record Has Taken Effect**.

How Do I Deploy CDN and WAF Together?

Resolve your acceleration domain name to CDN, and then change the origin address of your acceleration domain name to WAF's CNAME value. CDN forwards

the traffic to WAF. Then WAF filters out the illegitimate traffic and routes only the legitimate traffic back to your origin server. In this way, WAF protects CDN accelerated traffic.

To prevent other users from adding your domain name to WAF in advance (this will cause interference on your domain protection), you are advised to add a subdomain name and TXT record of WAF at your DNS provider.

Browser/App → Proxies (CDN or Advanced Anti-DDoS) → Web Application Firewall → Origin Server

For details, see **Domain Setup with Both CDN and WAF Deployed**.

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

- Acceleration domain names are provided by you for CDN acceleration. A domain name is an identification string that defines a realm of administrative autonomy, authority, or control within the Internet, such as a website, an email address, or an FTP server.
- An origin domain is the domain name of your origin server.

Can Multiple Acceleration Domain Names Use the Same Origin Server IP Address?

Yes. Different acceleration domain names can use the same origin IP address.

If a Domain Name Is Not Registered on the Chinese Mainland but Its CDN Service Area Is the Chinese Mainland, Is an ICP License Required for It?

Whether a domain name needs to be licensed does not depend on the region of the domain name provider or the area where the website server is. All that matters is the service area of your domain name. If the service area includes the Chinese mainland, the domain name must be licensed by the MIIT before being added as an acceleration domain name.

Can an Origin Domain Name Be the Same as an Acceleration Domain Name?

No.

When a user requests content on an acceleration domain name, if the desired content is not cached on CDN PoPs, CDN PoPs need to pull content 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.

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

Yes. A wildcard, *****, allows multiple level-2 domain names to be included by the same value. All these secondary domain names point to the same IP address. If

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

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 wildcard domain name, not on each of the level-2 domain names.

A Change History

Released On	Description
2023-06-26	This issue is the twenty-fourth official release. ● Released the new page for adding a domain name.
2023-04-06	This issue is the twenty-third official release. ● When using a private bucket as the origin server, you must select the **Private bucket** option.
2023-03-24	This issue is the twentieth official release. ● Removed section "Verifying the Origin Server."
2022-11-28	This issue is the nineteenth official release. ● When you add a domain name, you can specify an OBS bucket in South Africa, Mexico, and Brazil as the origin server.
2022-10-26	This issue is the eighteenth official release. ● Changed origin server verification in section "Adding an Acceleration Domain Name" to an independent section.
2022-02-09	This issue is the seventeenth official release. ● Updated "Enabling CDN."
2021-05-14	This issue is the sixteenth official release. This release incorporates the following change: ● Added origin server verification to section "Adding a Domain Name."
2021-04-06	This issue is the fifteenth official release. This release incorporates the following change: ● Whole site acceleration can be enabled on the CDN console.

Released On	Description
2020-11-10	This issue is the fourteenth official release. This release incorporates the following change: ● OBS buckets in Hong Kong (China), Singapore, and Bangkok can be connected to CDN as origin servers.
2020-09-25	This issue is the thirteenth official release. This release incorporates the following changes: ● Optimized the document structure. ● Added section "FAQ." ● Added section "Overview."
2020-06-11	This issue is the eleventh official release. This release incorporates the following changes: ● Removed the origin verification methods from "Step 3: Add a CDN Acceleration Domain Name." ● Optimized some descriptions.
2020-04-10	This issue is the tenth official release. This release incorporates the following changes: ● Added "Verifying Domain Ownership" in "Step 3: Add a CDN Acceleration Domain Name." ● Optimized some descriptions.
2020-01-02	This issue is the ninth official release. This release incorporates the following changes: ● Optimized the document structure. ● Added the origin verification methods in "Step 3: Add a CDN Acceleration Domain Name." ● Optimized some descriptions.
2019-10-28	This issue is the eighth official release. This release incorporates the following changes: ● Added the step of testing CDN in section "Accessing CDN." ● Optimized some descriptions.
2019-09-24	This issue is the seventh official release. This release incorporates the following changes: ● Added section "Overview." ● Optimized some descriptions.

Released On	Description
2019-06-26	This issue is the sixth official release. This release incorporates the following changes: ● Divided section "Quickly Accessing the CDN Service" into "Accessing CDN (Pay-per-Use)" and Accessing CDN (Yearly/Monthly)." ● Optimized some descriptions.
2019-05-08	This issue is the fifth official release. The modification is as follows: ● Combined "Enabling CDN", "Adding a CDN Acceleration Domain Name", and "Configuring CNAME" to "Quickly Accessing the CDN Service." ● Changed the method of verifying whether a CNAME takes effect. ● Moved "Configuring CNAME Records (Non-Huawei Cloud DNS)" to "Related Resources."
2019-03-14	This issue is the fourth official release. The modification is as follows: ● Optimized the document structure.
2019-02-28	This issue is the third official release. The modification is as follows: ● Optimized the document content.
2018-12-28	This issue is the second official release. The modification is as follows: ● Optimized description in section "Adding a Domain Name for Acceleration."
2018-09-21	This issue is the first official release.