

# Alibaba Cloud

CDN

Service Management









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# Document conventions

| Style  | Description   | Example   |
|--|---|---|
|  <b>Danger</b>  | A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results. |  <b>Danger:</b><br>Resetting will result in the loss of user configuration data.                                       |
|  <b>Warning</b> | A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results. |  <b>Warning:</b><br>Restarting will cause business interruption. About 10 minutes are required to restart an instance. |
|  <b>Notice</b>  | A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.      |  <b>Notice:</b><br>If the weight is set to 0, the server no longer receives new requests.                              |
|  <b>Note</b>  | A note indicates supplemental instructions, best practices, tips, and other content.  |  <b>Note:</b><br>You can use Ctrl + A to select all files.  |
| >  | Closing angle brackets are used to indicate a multi-level menu cascade.   | Click <b>Settings&gt; Network&gt; Set network type</b> .  |
| <b>Bold</b>  | Bold formatting is used for buttons, menus, page names, and other UI elements.  | Click <b>OK</b> .   |
| <b>Courier font</b>  | Courier font is used for commands   | Run the <code>cd /d C:/window</code> command to enter the Windows system folder.  |
| <i>Italic</i>  | Italic formatting is used for parameters and variables.   | <code>bae log list --instanceid</code><br><i>Instance_ID</i>  |
| [ ] or [a b]   | This format is used for an optional value, where only one item can be selected.   | <code>ipconfig [-all -t]</code>   |
| { } or {a b}   | This format is used for a required value, where only one item can be selected.  | <code>switch {active stand}</code>  |


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# 1. Overview

Alibaba Cloud Content Delivery Network (CDN) provides service management features. You can use these features to manage CDN resources. This allows you to analyze the status of Alibaba Cloud CDN in real time and make informed business decisions.

 **Note** To help you understand and obtain up-to-date information about CDN, this topic divides the features in the CDN console into domain management and service management according to your business needs.

The following table describes these features.

| Feature                        | Reference   | Description   | Default value |
|--------------------------------|---|---|---------------|
| Monitoring and Usage Analytics | <a href="#">Monitor data</a>                                | This feature allows you to obtain up-to-date information about Alibaba Cloud CDN by using resource monitoring and real-time monitoring.   | None          |
|                                | <a href="#">View statistics</a>                             | This feature allows you to obtain up-to-date information about Alibaba Cloud CDN by analyzing retrieved data.   | None          |
|                                | <a href="#">Query usage data</a>                            | You can query logs of a specified time range or of a specified domain name. You can also download the returned logs.  | None          |
|                                | <a href="#">Query bills</a>                                 | By default, Alibaba Cloud CDN retains log data for up to one month. To retain logs for a longer period of time, import the logs to Object Storage Service (OSS). This allows you to analyze the logs at any time.                             | None          |
|                                | <a href="#">Export a bill</a>                               | You can query all bill statements under the current CDN user account by day or by month, and then save the bill statement data to a PDF file.   | None          |
|                                | <a href="#">Export billing details</a>                      | You can create a bill statement export task and then save the data to an EXCEL file.  | None          |
|                                | <a href="#">Resource plans</a>                              | If you have purchased CDN data transfer plans, check the data transfer plan details to make sure that you use the data transfer plans properly.   | None          |
| Refresh and prefetch           | <a href="#">Configure the refresh and prefetch features</a> | The refresh feature forces edge nodes to retrieve the latest content from origin servers. The prefetch feature allows Alibaba Cloud CDN to fetch frequently queried content into edge nodes before peak hours to accelerate content delivery. | None          |

| Feature          | Reference                        | Description  | Default value |
|------------------|----------------------------------|--|---------------|
| Logs             | <a href="#">Download logs</a>    | You can query logs of a specified time range or of a specified domain name. You can also download the returned logs.   | None          |
|                  | <a href="#">Log storage</a>      | By default, Alibaba Cloud CDN retains log data for up to one month. To retain logs for a longer period of time, import the logs to OSS. This allows you to analyze the logs at any time. | None          |
| Diagnostic tools | <a href="#">Diagnostic tools</a> | You can use diagnostic tools to identify whether an IP address belongs to an Alibaba Cloud CDN node.   | None          |

# 2. Monitoring and Usage Analytics

## 2.1. Overview

Alibaba Cloud Content Delivery Network (CDN) provides monitoring and usage analytics to help you manage CDN resources. These features enable you to analyze the status of CDN in real time and obtain up-to-date information about the resource usage and pricing details of CDN. This helps you make informed business decisions.

The following table describes these features.

| Feature                       | Description  |
|-------------------------------|--|
| <b>Monitor data</b>           | This feature allows you to obtain up-to-date information about CDN by using resource monitoring and real-time monitoring.  |
| <b>View statistics</b>        | This feature allows you to obtain up-to-date information about CDN by analyzing retrieved data.  |
| <b>Query usage data</b>       | You can query network traffic usage, bandwidth usage, or number of requests of a specified time range, of a specified domain, or in a specified region.  |
| <b>Query bills</b>            | You can query all billing statements for the current CDN user account by day or by month. The statements support the billing details of network traffic, bandwidth, value-added services, and real-time log entries. |
| <b>Export a bill</b>          | You can query all billing statements for the current CDN user account by day or by month, and save the billing statement data to a PDF file.   |
| <b>Export billing details</b> | You can create a billing details export task and save the data to an Excel file.   |
| <b>Resource plans</b>         | If you have purchased CDN data transfer plans, check the plan details to make sure that you use the data transfer plans properly.  |

## 2.2. Monitor data

The Monitoring & Usage Analytics module provides the Resource Monitoring and Real-time Monitoring features. You can use these features to obtain up-to-date information about your Content Delivery Network (CDN).

Resource monitoring Real-time monitoring

### Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, choose **Monitoring & Usage Analytics > Resource Monitoring** or **Real-time Monitoring**.
3. On the **Resource Monitoring** or **Real-time Monitoring** page, select monitoring items and metrics as needed and click **Search**.
  - Resource Monitoring

You can view and download the details about the following metrics by domain name, region, provider, time granularity, and time range. You can view metrics of the current day, the last day, the last seven days, the last 30 days, or of a custom period. The metrics can be displayed in the following granularities: one minute, five minutes, or one hour.

| Item                      | Metric  |
|---------------------------|---|
| Traffic/Bandwidth         | Bandwidth and Traffic                               |
| Back-to-origin Statistics | Back-to-origin Bandwidth and Back-to-origin Traffic |
| Visits                    | Requests and QPS                                    |
| Hit Rate                  | None  |
| HTTPCODE                  | 5xx, 4xx, 3xx, and 2xx                              |

### Resource Monitoring ?

Traffic/Bandwidth | Back-to-origin Statistics | Visits | Hit Rate | HTTPCODE

Range: Select Tags | All Domains | All Regions | All Providers

Time: Time Granularity | Today | Yesterday | Last 7 Days | Last 30 Days | Custom | Data comparison

Search

#### Traffic/Bandwidth

Bandwidth | Traffic

Peak Bandwidth: 1.06Mbps(Aug 19, 2019 4:00 AM)

— Peak Bandwidth — HTTPS Bandwidth

| Date       | Traffic | Peak Bandwidth | Bandwidth Peak Time | Peak Back-to-origin Bandwidth | Back-to-origin Bandwidth Peak Time | Visits            |
|------------|---------|----------------|---------------------|-------------------------------|------------------------------------|-------------------|
| 2019-08-14 | 9.23GB  | 978.83Kbps     | 2019-08-14 03:35:00 | 1.06Mbps                      | 2019-08-14 09:20:00                | 80.96Ten Thousand |
| 2019-08-15 | 9.22GB  | 999.61Kbps     | 2019-08-15 02:40:00 | 1.06Mbps                      | 2019-08-15 06:55:00                | 80.98Ten Thousand |
| 2019-08-16 | 9.71GB  | 1.04Mbps       | 2019-08-16 04:30:00 | 1.13Mbps                      | 2019-08-16 03:40:00                | 85.13Ten Thousand |
| 2019-08-17 | 9.63GB  | 1.05Mbps       | 2019-08-17 03:50:00 | 1.12Mbps                      | 2019-08-17 05:15:00                | 84.34Ten Thousand |
| 2019-08-18 | 9.87GB  | 1.05Mbps       | 2019-08-18 03:35:00 | 1.12Mbps                      | 2019-08-18 06:15:00                | 86.44Ten Thousand |
| 2019-08-19 | 9.69GB  | 1.06Mbps       | 2019-08-19 04:50:00 | 1.12Mbps                      | 2019-08-19 09:30:00                | 86.48Ten Thousand |
| 2019-08-20 | 9.87GB  | 1.05Mbps       | 2019-08-20 20:35:00 | 1.15Mbps                      | 2019-08-20 19:20:00                | 86.47Ten Thousand |

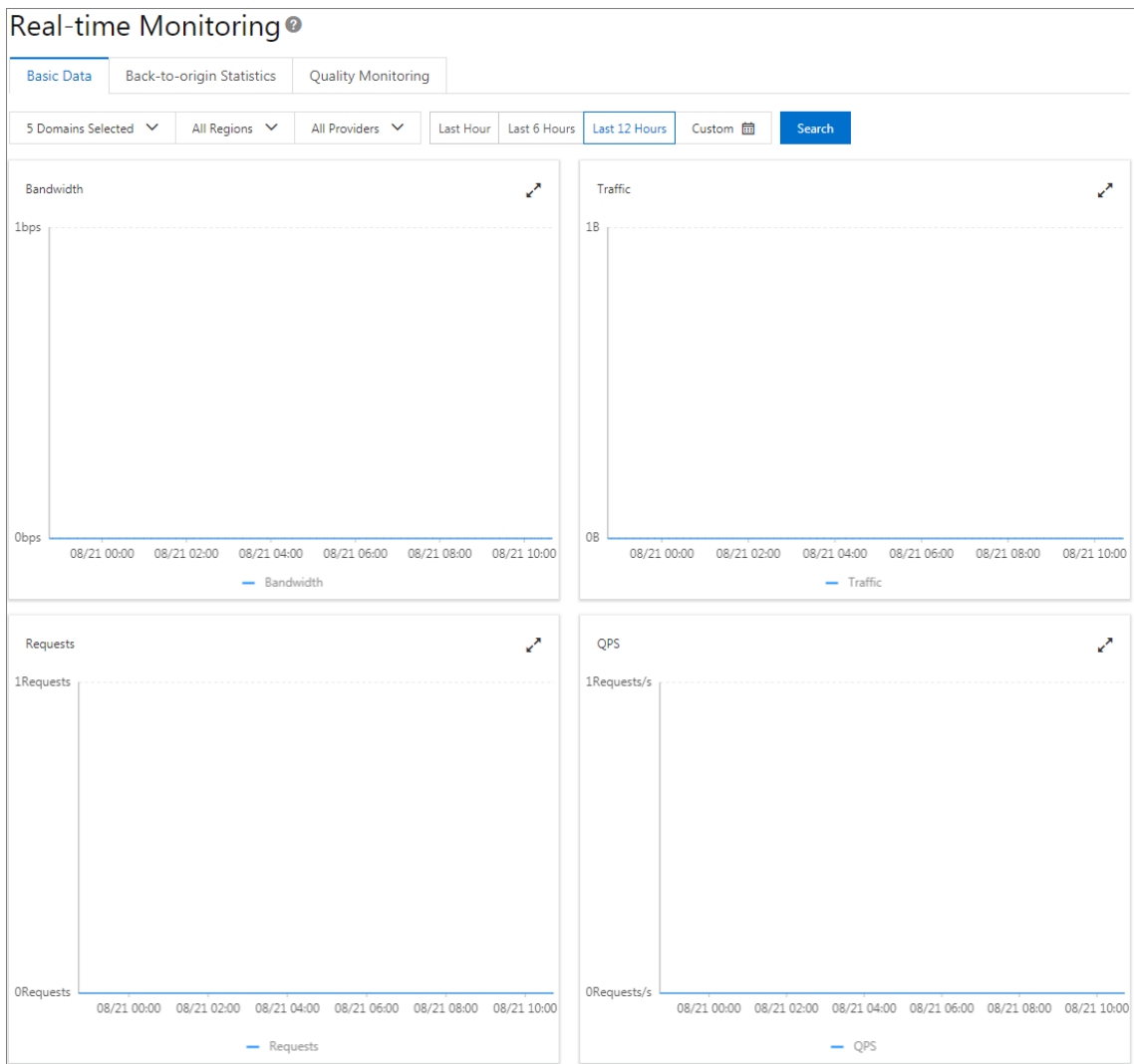


The data shown in the resource monitoring line chart differs slightly from the billing data. For example, a 30-day resource statistics line chart is plotted at 14,400-second intervals. The billing data is plotted at 300-second intervals. The line chart does not take certain points into account and is mainly used to show the bandwidth trend. You can view the billing data at a finer granularity to calculate the actual bandwidth usage.

- **Real-time Monitoring**

You can view the details about the following metrics by domain name, region, provider, and time range. You can view metrics of the last hour, the last six hours, the last 12 hours, or of a custom period.

| Item                      | Metric  |
|---------------------------|---|
| Basic Data                | Bandwidth, Traffic, Requests, and QPS   |
| Back-to-origin Statistics | Back-to-origin bandwidth and Back-to-origin Traffic   |
| Quality Monitoring        | Request Hit Rate, Byte Hit rate, 5xx Status Codes, 4xx Status Codes, 3xx Status Codes, and 2xx Status Codes |




## 2.3. View statistics

You can view and analyze statistics of CDN domains for the last one or several days for offline analysis. In this way, you can learn about the running status of Content Delivery Network (CDN).

Statistics CDN

### Context

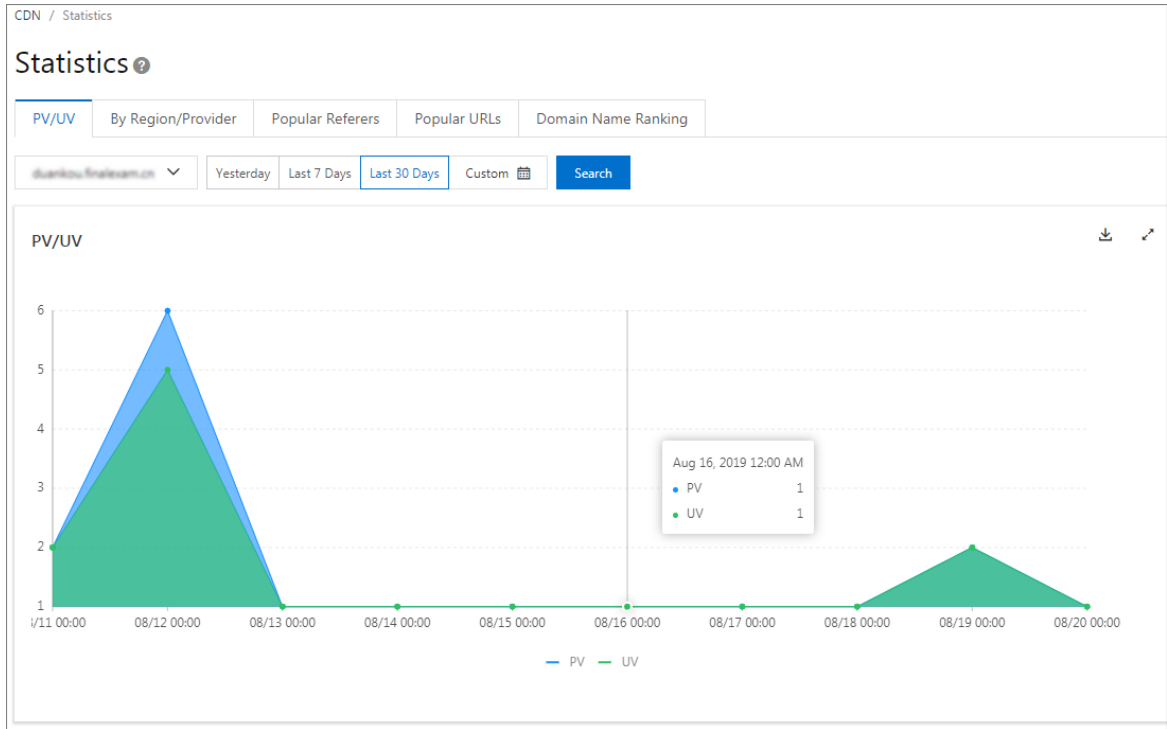
The Statistics module displays these monitoring items: PV/UV, By Region/Provider, Popular Referers, Popular URLs, and Domain Name Ranking. You can export detailed raw data such as network bandwidth, network traffic, domain name rankings based on traffic proportion, and visitor and provider distribution.

 **Note** The granularity for collecting raw data varies by time range for statistics. For example, the system exports raw data at 300-second intervals for daily statistics, at 3,600-second intervals for weekly statistics, and at 14,400-second intervals for monthly statistics.

### Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, choose **Monitoring & Usage Analytics > Statistics**.
3. On the **Statistics** page, select the target monitoring items and metrics, and click **Search**.

| Item                | Monitoring metric   | Time range  |
|---------------------|---|---|
| PV/UV               | Page views (PVs), unique visitors (UVs), user distribution by region, and PV and UV proportion distributed by provider  | Yesterday, last seven days, last 30 days, and a custom period (within the last 90 days) |
| By Region/Provider  | Ranking, region, total traffic, total traffic proportion distributed by region or provider, number of visits, visit proportion distributed by region or provider, and response time | Yesterday, last seven days, last 30 days, and a custom period (within the last 90 days) |
| Domain Name Ranking | Access ranking, traffic, traffic proportion distributed by domain, peak bandwidth, peak time, and number of visits for each CDN domain name   | Yesterday, last seven days, last 30 days, and a custom period (within the last 90 days) |
| Popular Referers    | Traffic, traffic proportion distributed by referer, number of visits, and visit proportion distributed by referer   | Yesterday and a specified day (within the last 90 days).                                |
| Popular URLs        | Traffic, traffic proportion distributed by URL, number of visits, and visit proportion distributed by referer   | Yesterday and a specified day (within the last 90 days).                                |



## 3.Refresh and prefetch

### 3.1. Overview

Alibaba Cloud Content Delivery Network (CDN) supports resource refresh and prefetch. The refresh feature allows you to force CDN nodes to retrieve the latest version of the resources from the origin. The prefetch feature allows you to cache frequently requested resources on CDN nodes before peak hours to accelerate content delivery. This topic describes how the refresh and prefetch features work, the amount of time that it takes to refresh or prefetch resources, and the related API operations.

#### Refresh and prefetch

The refresh and prefetch features of Alibaba Cloud CDN are described as follows:

- **Refresh:** After you submit a URL or directory refresh request, the corresponding resource cached on the CDN node will forcibly expire. When a client requests the resource, the CDN node retrieves the latest version of the resource from the origin, returns the resource to the client, and then caches the resource. The refresh feature reduces the cache hit ratio.
- **Prefetch:** After you submit a URL prefetch request, the origin automatically caches the corresponding resource on the CDN node. When a client requests the resource for the first time, the CDN node returns the cached resource to the client without the need to reroute the request to the origin. The prefetch feature increases the cache hit ratio.

The following table describes the refresh and prefetch features in details.

| Category                              | How it works  | Time consumption  | API operation                       |
|---------------------------------------|---|---|-------------------------------------|
| URL refresh                           | CDN nodes are forced to retrieve the latest version of the specified files from the origin.   | It takes less than five minutes to refresh or prefetch resources. | <a href="#">RefreshObjectCaches</a> |
| Directory refresh                     | CDN nodes are forced to retrieve the latest version of the files in the specified directories from the origin.  |   | <a href="#">RefreshObjectCaches</a> |
| URL refresh using regular expressions | You can use regular expressions to refresh all matching URLs.   |   | N/A                                 |
| URL prefetch                          | Alibaba Cloud CDN retrieves the specified resources from the origin and caches them on CDN L2 nodes. When a client requests these resources for the first time, the nearest CDN L2 node returns the cached resources to the client. |   | <a href="#">PushObjectCache</a>     |

### 3.2. Configure the refresh and prefetch features

Alibaba Cloud Content Delivery Network (CDN) allows you to refresh and prefetch resources. You can use the refresh feature to force the CDN nodes to retrieve the latest resources from the origin servers. You can use the prefetch feature to fetch frequently requested resources during off-peak hours. This accelerates content delivery. This topic describes how to configure the refresh and prefetch features and how to query the refresh and prefetch records.

### Context

The refresh and prefetch features can refresh resources from specific URLs and directories and prefetch resources from specific URLs. For more information, see [Overview](#).

### Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, click **Refresh & Prefetch**.
3. On the Refresh and Prefetch page, click the **Refresh Cache** tab and set the following parameters to refresh or prefetch resources based on your business requirements.


## Refresh and Prefetch

[Refresh Cache](#) | [Records](#)

Operation: Refresh

Object: URL

URL: Limits per day: URL refresh=2000, URL prefetch=500, and directory refresh=100. A refresh task takes about 5 minutes to take effect.



Enter text or drag a file here.

2000 Remaining Refresh Quota

[Submit](#)

| Parameter | Description |
|-----------|-------------|
|-----------|-------------|

| Parameter | Description  |
|-----------|--|
| Operation | <p>The operation that you want to perform. Supported options:</p> <ul style="list-style-type: none"> <li>Refresh                     <p>After resources are updated on the origin server, you can refresh the URLs of the resources. The system then automatically clears the data of the resources that are cached on the CDN nodes. When clients visit the refreshed URLs, the corresponding CDN nodes redirect the requests to the origin server. Alibaba Cloud CDN then retrieves the latest resources from the origin server and returns them to the clients. The retrieved resources are also cached on the CDN nodes.</p> </li> <li>Prefetch                     <p>You can prefetch frequently requested resources or less frequently visited accelerated domain names during off-peak hours to increase the cache hit ratio.</p> </li> </ul>  |
| Object    | <p>The type of the object that you want to refresh or prefetch. Available options:</p> <ul style="list-style-type: none"> <li>Directory                     <p>This option is available only when you set Operation Type to Refresh.</p> </li> <li>URL                     <p>This option is available when you set Operation Type to Refresh or Prefetch.</p> </li> </ul>   |
| URL       | <p>If you need to refresh or prefetch multiple URLs, enter one URL on each line. When you enter URLs, note that:</p> <ul style="list-style-type: none"> <li>Refresh resources based on directories                     <p>Each URL must start with the string <code>http://</code> or <code>https://</code>, and end with a forward slash (<code>/</code>).</p> <p>You can refresh up to 100 directories with each Alibaba Cloud account per day. A maximum of 100 directories can be submitted at a time.</p> </li> <li>Refresh resources based on URLs                     <p>Each URL must start with the string <code>http://</code> or <code>https://</code>.</p> <p>You can refresh up to 2,000 URLs with each Alibaba Cloud account per day. A maximum of 1,000 URLs can be submitted at a time.</p> </li> <li>Prefetch resources based on URLs                     <p>Each URL must start with the string <code>http://</code> or <code>https://</code>.</p> <p>You can prefetch up to 500 URLs with each Alibaba Cloud account per day. A maximum of 100 URLs can be submitted at a time.</p> </li> </ul> |

- Click **Submit**.
- Click the **Records** tab.
- On the **Records** tab, specify a time range and an operation type, enter a domain name or a URL, and then click **Search**.

You can check the refresh and prefetch records, including the refreshed or prefetched

object, type, time, status, and progress of each operation.

## Related API operations

You can call API operations listed in the following table to refresh and prefetch resources.

| API                         | Description   |
|-----------------------------|---|
| <b>PushObjectCache</b>      | Prefetches resources from origin servers to L2 CDN nodes. This reduces workloads on origin servers because users can hit cache upon their first visits.   |
| <b>DescribeRefreshQuota</b> | Queries the maximum and remaining numbers of URLs and directories that can be refreshed, the maximum and remaining numbers of URLs that can be prefetched, and the maximum and remaining numbers of URLs and directories that can be blocked. |
| <b>DescribeRefreshTasks</b> | Queries the status of refresh or prefetch tasks.  |
| <b>RefreshObjectCaches</b>  | Refreshes files on CDN nodes. Alibaba Cloud CDN allows you to refresh resources based on multiple URLs at a time.   |

# 4. Log Management

## 4.1. Overview

You can analyze log data of Alibaba Cloud Content Delivery Network (CDN) to locate and resolve issues. This improves the overall performance of your CDN service. This topic describes the log management features of Alibaba Cloud CDN and the related services.

### Log management features

Alibaba Cloud CDN supports the following log management features:

| Feature                       | Description   |
|-------------------------------|---|
| <a href="#">Download logs</a> | You can query log data within the specified time range or for a specified domain name, and then download the log data.  |
| <a href="#">Log storage</a>   | By default, Alibaba Cloud CDN retains log data for up to one month. To retain log data for a longer period of time, import the log data to Object Storage Service (OSS). This allows you to analyze the log data at any time. |

### Related services

The log management features of Alibaba Cloud CDN can be integrated with the following services:

- **Function Compute**

Function Compute supports various events for CDN. You can use Function Compute events to import log data of Alibaba Cloud CDN to another service, refresh and prefetch content, add domain names to be accelerated, delete accelerated domain names, enables domain names, and disables domain names. For more information about how these events are triggered, see [CDN event triggers](#).

For more information about Function Compute, see [What is Function Compute](#).

- **Object Storage Service (OSS)**

For more information about OSS, see [What is OSS?](#)

## 4.2. Download logs

This topic describes the usage notes and procedure for downloading log data, and the definitions of the fields in each log entry. You can download log files to check the logs of a domain name.


### Context

Usage notes:

- **Log update delay:** Typically, log data is generated within 24 hours after an event occurs. However, in some cases, the log data may be generated after 24 hours.
- **Log data is generated once every other hour.** The number of log files generated for the hour is dynamically adjusted based on the amount of log data.



- You can download log data generated within the last three months.
- Naming rule for log entries: Accelerated domain name\_year\_month\_day\_start time\_end time[extension field].gz. The extension field must start with an underscore (\_). Example: `example.com_2018_10_30_000000_010000_xx.gz` .

 **Note** Some log entries may not contain an extension field. Example: `example.com_2018_10_30_000000_010000.gz` .

The following table lists the fields in log entries.

- Sample log entry

```
[9/Jun/2015:01:58:09 +0800] 192.168.15.75 - 1542 "-" "GET http://www.aliyun.com/index.html" 200 191 2830 MISS "Mozilla/5.0 (compatible; AhrefsBot/5.0; +http://ahrefs.com/robot/)" "text/html"
```

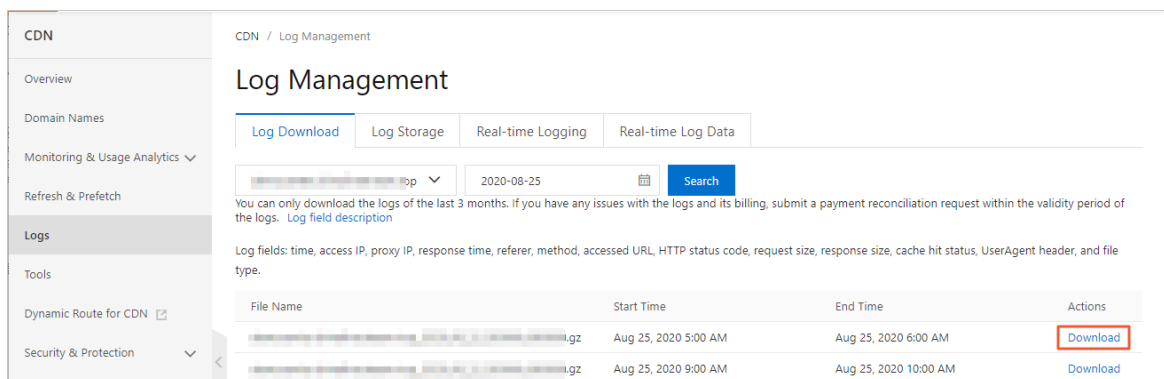
- Descriptions of log fields

| Field   | Description  |
|---|--|
| <code>[9/Jun/2015:01:58:09 +0800]</code>  | The start time of the log entry.                         |
| <code>192.168.15.75</code>  | The IP address of the client that initiated the request. |
| <code>-</code>  | The proxy IP address of the client.                      |
| <code>1542</code>   | The response time. Unit: milliseconds.                   |
| <code>"-"</code>  | referrer   |
| <code>GET</code>  | method   |
| <code>http://www.aliyun.com/index.html</code>                                   | The requested URL.                                       |
| <code>200</code>  | httpcode   |
| <code>191</code>  | The size of the request. Unit: bytes.                    |
| <code>2830</code>   | The size of the response. Unit: bytes.                   |
| <code>MISS</code>   | The cache hit status.                                    |
| <code>Mozilla/5.0 (compatible; AhrefsBot/5.0; +http://ahrefs.com/robot/)</code> | The User-Agent header in the request.                    |

| Field           | Description   |
|-----------------|---|
| text/html       | The type of the file that was requested.  |
| quic/https/http | The protocol over which the request was transmitted. This field is available beginning November 12, 2020. |

## Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, click **Log Management**.
3. On the **Log Download** page, select a domain name and a date and click **Search**.
4. Find the log file that you want to download, and click **Download** in the **Actions** column.



## API operation

You can call an API operation to download log data. For more information, see [DescribeCdnDomainLogs](#).

## 4.3. Log storage

The log storage service of Alibaba Cloud Content Delivery Network (CDN) uses Function Compute to deliver logs to Object Storage Service for a longer retention period of the logs. You can analyze the log data to further understand your CDN service quality and user behaviors. This helps you make informed decisions.

### log storage

### Prerequisites

The log storage service of Alibaba Cloud CDN integrates with Function Compute to deliver logs. You must activate Function Compute before you can use the log storage service. After you authorize Alibaba Cloud CDN to access Function Compute, Alibaba Cloud CDN creates a Function Compute service to deliver logs. You can also log on to the [Function Compute console](#) and use an existing Function Compute service to deliver logs.

### Context

- The offline log service of Alibaba Cloud CDN stores logs for only one month. You can use the log storage service of Alibaba Cloud to deliver logs to OSS, where logs can be stored for a longer period of time. This facilitates log storage and analysis.
- **Billing:** The log storage service is free of charge. However, you will consume Function Compute resources during the log storage process. You are charged at a lower price rate when the amount of Function Compute resources consumed in each month exceeds the specified quota. For more information about Function Compute pricing, see [Function Compute billing methods](#).
- Alibaba Cloud CDN is seamlessly integrated with Function Compute. This allows you to configure functions for processing different events and filter events by parameter such as domain name to collect data from specific domain names. After receiving events that meet the filter conditions, Alibaba Cloud CDN automatically calls functions to process the events.

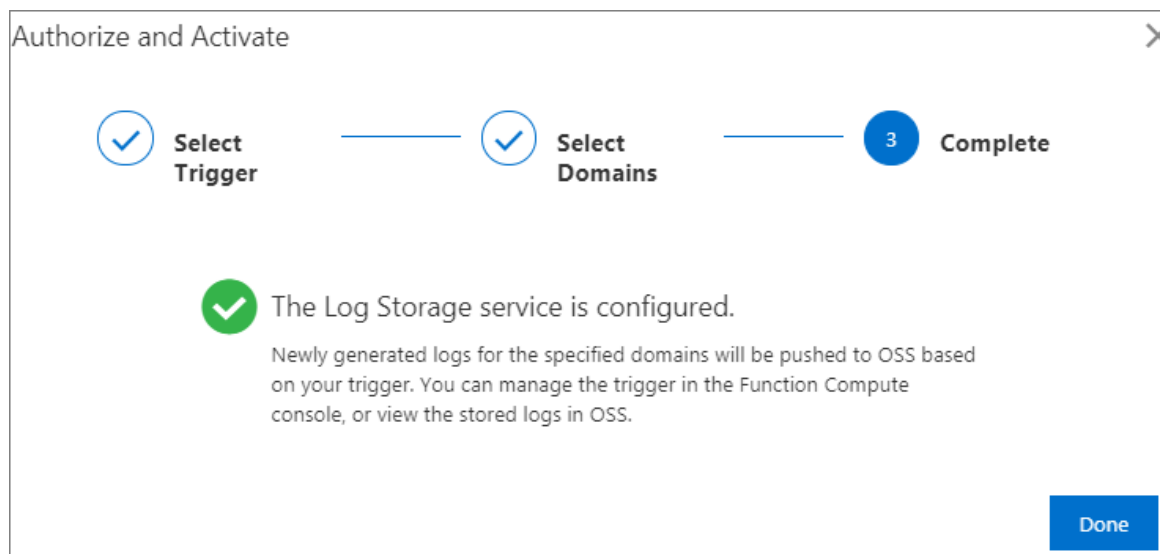
## Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, click **Logs**.
3. On the **Log Management** page, click the **Log Storage** tab.
4. On the **Log Storage** tab, click **Activate Log Storage**.
5. In the **Authorize and Activate** dialog box, enter a service name in the **Service Name** field, select an OSS bucket from the **OSS Bucket** drop-down list, and then click **Next**.

You must select I understand and agree that fees will be incurred by Function Compute after I activate Log Storage before you can perform the next step.

6. Click **Authorize** next to **Service Authentication**. On the **RAM** page, authorize Function Compute to write data to OSS and execute functions.
7. Click **Authorize** next to **Authorize Trigger**. On the **RAM** page, authorize Alibaba Cloud CDN to access Function Compute.
8. Select domain names to be associated with the Function Compute service and click **Create**.

9. Click **Done**.



## **Call an API operation to use the log storage service.**

You can call API operations listed in the following table to use the log storage service.

# 5.Diagnostic tools

You can use diagnostic tools to identify whether an IP address belongs to an Alibaba Cloud CDN node. This topic describes how to identify whether an IP address belongs to an Alibaba Cloud CDN node.

Diagnostic tools CDN tools

## Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
2. In the left-side navigation pane, click Tools.



3. Enter the IP address to be checked, and click Check.

If the specified IP address belongs to an Alibaba Cloud CDN node, the check result is displayed as shown in the following figure. Otherwise, the "No matching records found" message is displayed.

|          |             |
|----------|-------------|
| Region   | China-Hunan |
| Provider | ChinaNet    |
| CDN Node | Yes         |

## 6.DCDN

Dynamic Route for Content Delivery Network (DCDN) is an Alibaba Cloud CDN product developed to accelerate static and dynamic content delivery. This product provides an all-in-one service to resolve issues of high latency, packet loss, and service instability. These issues may occur when your website contains both static and dynamic content, content is delivered across ISPs, your network is unstable, only one cache node is used, network traffic spikes occur, or network congestion occurs. You can use DCDN to improve the overall performance of your website and accelerate content delivery to improve user experience.

For more information about DCDN, see [DCDN](#).

# 7. Value-added services

## 7.1. Configure an SSL certificate

### Context

Alibaba Cloud CDN supports only SSL certificates in the `PEM` format. If your certificate is not in the `PEM` format, convert it to the PEM format first. For more information, see [Convert certificate formats](#).

HTTPS secure acceleration is a value-added service. After you enable HTTPS, you are charged based on the number of HTTPS requests. You cannot use CDN data transfer plans to offset the fees. For more information about the pricing of HTTPS secure acceleration, see [增值服务计费](#).

Certificates are classified into the following types based on the validation level:

- A domain validated (DV) certificate has a safety lock. It only verifies the ownership of a domain. A DV certificate verifies the ownership of a domain name by verifying the specified file of the domain name or the TXT record of the domain name.
- An organization validated (OV) certificate is a standard SSL certificate that verifies the identity of an organization. An OV certificate provides more trust than a DV certificate, but the validation process is stricter and longer. OV certificates are typically used in the e-commerce, education, and gaming sectors.
- An extended validation (EV) certificate follows the guidelines maintained by the Certification Authority Browser Forum, also known as the CA/Browser Forum. EV certificates are SSL certificates of the highest security level. Each EV certificate is identified by an object identifier (OID), which is a complete enterprise name. EV certificates are widely used in sectors such as financial transactions and online banking.

 **Note** SSL certificates for Alibaba Cloud CDN do not support the 3DES algorithm.

### Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
- 2.
3. On the page, click **Add Certificate**.
4. On the **Add Certificate** page, configure the certificate parameters.

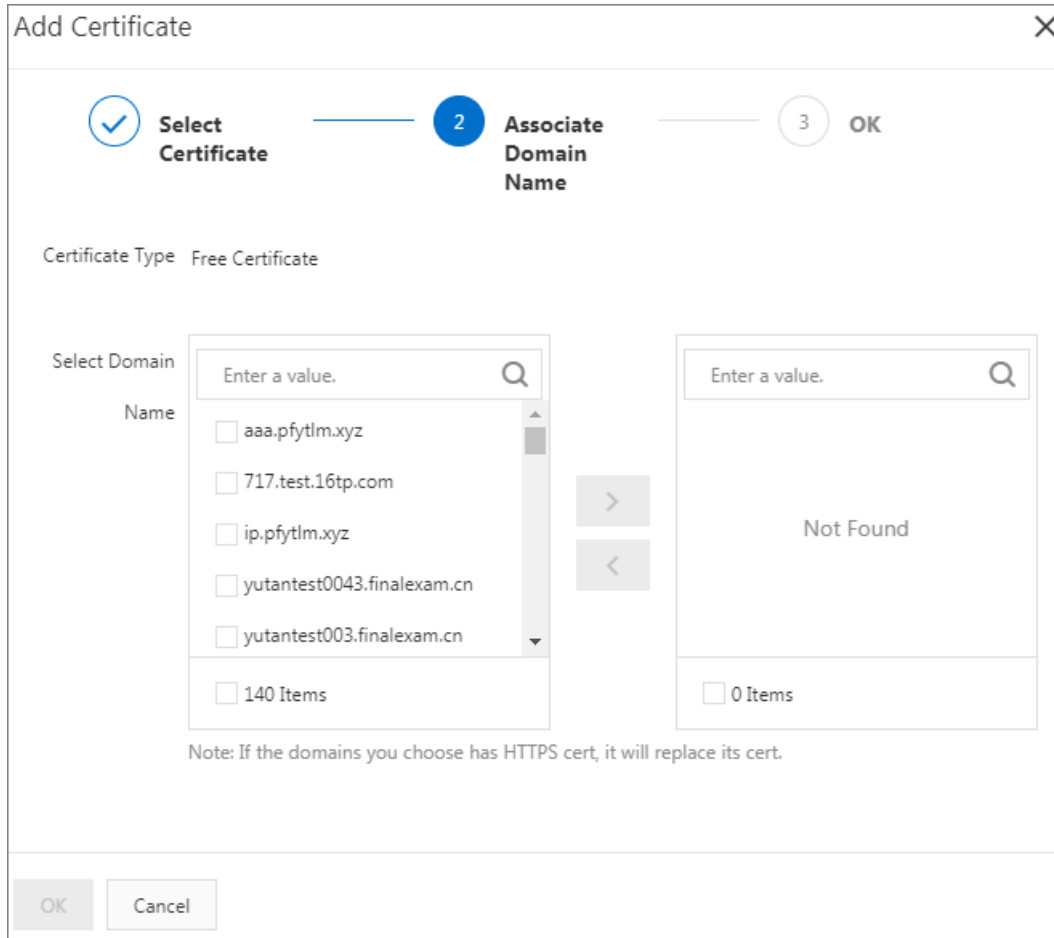
The following table describes the certificate parameters.

| Parameter | Description |
|-----------|-------------|
|-----------|-------------|

| Parameter                | Description  |
|--------------------------|--|
| Certificate Source       | <ul style="list-style-type: none"> <li>○ Alibaba Cloud Security Certificate<br/>You can apply for a free certificate or purchase an advanced certificate in the <a href="#">Alibaba Cloud Security console</a>.</li> <li>○ Custom Certificate (Certificate+Private Key)<br/>If you cannot find a suitable certificate, upload a custom certificate. To upload a custom certificate, you must enter a certificate name and upload the certificate content and private key. The uploaded certificate is saved to SSL Certificates Service. You can check the certificate on the <a href="#">SSL Certificates</a> page.</li> <li>○ Free Certificate<br/>Free Digicert DV certificates provided by Alibaba Cloud. Free certificates are used only for HTTPS secure acceleration. You cannot manage free certificates or view their public or private keys in the SSL Certificates Service console. <ul style="list-style-type: none"> <li>■ It takes 5 to 10 minutes to apply for a free certificate. During this period, you can also upload a custom certificate or an Alibaba Cloud Security certificate.</li> <li>■ Free certificates are valid for one year.</li> <li>■ You do not need to apply for a new certificate each time you enable HTTPS secure acceleration. You must apply for a new certificate only if the current one has expired.</li> </ul> <p>You can switch among an Alibaba Cloud certificate, a custom certificate, and a free certificate as needed.</p> </li> </ul> |
| Certificate Name         | When you set Certificate Source to SSL Certificates Service or Custom Certificate (Certificate+Private Key), you must specify the certificate name.  |
| Certificate (Public Key) | When you set Certificate Source to Custom Certificate (Certificate+Private Key), this parameter is required. For more information, see the Certificate (Public Key) below the PEM Encoding Reference field.  |
| Private Key              | When you set Certificate Source to Custom Certificate (Certificate+Private Key), this parameter is required. For more information, see the PEM Encoding Reference below the Private Key field.   |

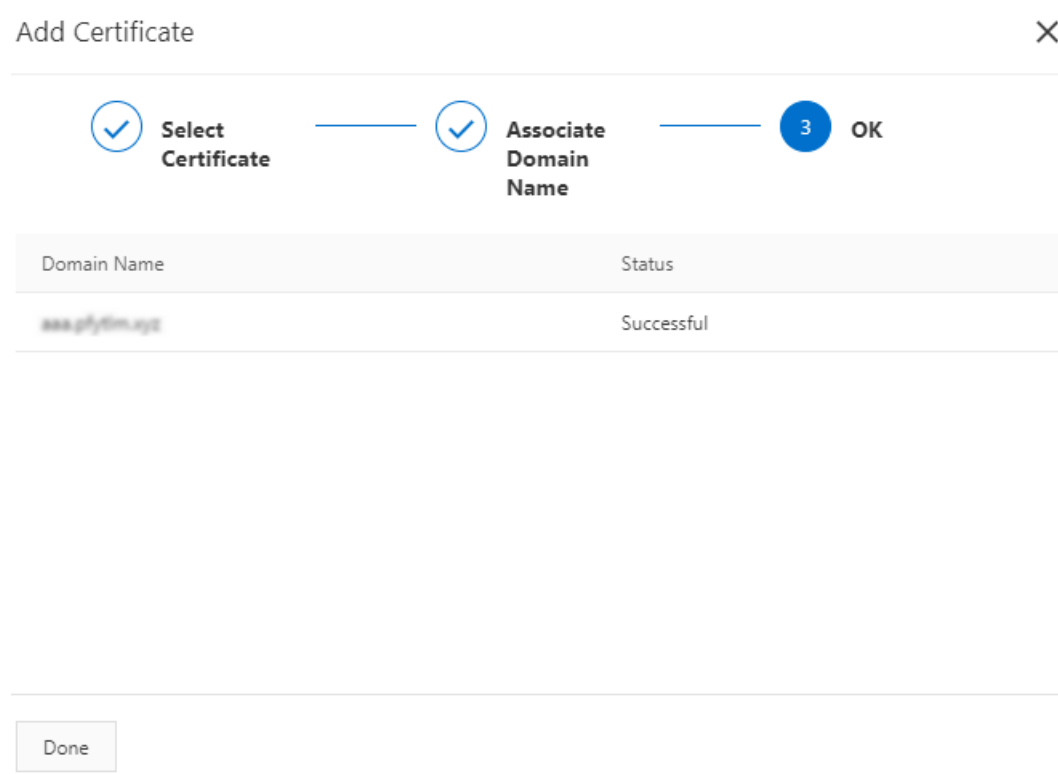
#### 5. Click Next.





6. Select one or more domain names and click OK.

**Note** If a selected domain name is already associated with a certificate, in this step, the existing certificate will be replaced with the selected certificate.



7.

## 7.2. Create a CSR file

When you configure a certificate for HTTPS, you must use the Certificate Signing Request (CSR) file to apply for an SSL certificate from a certificate authority (CA). This topic describes how to create a CSR file.

### Context

The following description compares two methods for uploading custom certificates to Alibaba Cloud CDN:

- **Upload a certificate only**

You can create a private key and a CSR file in the CDN console, and use the CSR file to apply for a certificate from a CA. After the application is approved, upload the certificate to Alibaba Cloud CDN. If you use this method, your private key file will not be exposed to environments outside Alibaba Cloud CDN. This method is more secure than the other method.

- **Upload a certificate and the private key**

You must obtain the certificate and the private key file from a CA and then upload the certificate and the private key file to Alibaba Cloud CDN.

### Procedure

1. Log on to the [Alibaba Cloud CDN console](#).
- 2.
3. On the **Certificates** page, click **CSR Generator**.
4. On the **CSR Generator** page, enter the required information.

| Parameter             | Description   | Example           |
|-----------------------|---|-------------------|
| Country               | Enter the code of the country where your organization resides. For more information, see <a href="#">Country codes for CSR creation</a> .                   | CN                |
| Province/State/Region | Enter the name of the province, state, or region where your organization resides. Chinese Pinyin is supported.  | Zhejiang          |
| City                  | Enter the name of the city where the organization resides. Chinese Pinyin is supported.   | Hangzhou          |
| Organization          | Enter the name of your organization. Chinese Pinyin is supported.   | Alibaba Inc.      |
| Organization Unit     | Enter the name of your department. Chinese Pinyin is supported.   | IT Department     |
| Email                 | Enter your email address.   | 1234567@qq.com    |
| Common Name           | Enter the primary domain name used to apply for the SSL certificate.  | aliyun.com        |
| SANs                  | This parameter is required if you want to apply for the same SSL certificate for more than one domain name. Separate multiple domain names with commas (,). | a.com,b.com,c.com |

### CSR Generator ✕

**i** The system generates a CSR after you provide the following organization information. You can submit the CSR to a Certificate Authority to apply for an SSL certificate.

Country \*   
[Country Codes](#)

Province/State/Region

City

Organization

Organization Unit

Email

Common Name \*

SANs

**5. Click Generate CSR.**

CSR Generator
✕

✔ **Generated.**  
You can download the following CSR.

```
-----BEGIN CERTIFICATE REQUEST-----
MIICsjCCAzoCAQAwbTElMAkGA1UEBhMCVVMxETAPBgNVBAGTCFpoZWppYW5nMREw
DwYDVQQHEwhiYW5nemhvdTEVMBMGA1UEChMMQWxpYmFiYSBJbmMuMRMwEQYDVQQL
EwpBbGI5dW4gQ0ROMQwwCgYDVQQDEwNTU1MwggEiMA0GCSqGSIb3DQEBAQUAA4IB
DwAwggEKAoIBAQC+i9Jig0MOAhM1TCfDLRqou/xr+162uc+xt3fv0DjrOr9WZ+DN
qCJgJfN3wAyV4+aYx+tXRQwtAsKvYsOC53pLGjJs3klzsaybzAvSfW/npl8LWKWc
CNhUz2JZKXJbnBI/kAq0HbtgD6bZfJmCcUz/ZszBgPFxQM418H61FMqqB5I/Ni
Vk2RHYZV54as99sMKcQlFRIOGf2JBNYqKsZi/6cQneAORTyBpbPFAW4ngMK0ATas
muCXGyu2NZSNwhRHqY9kkCBCv85tQu7CEF+YWbxd1LH7SOKRIGC0ij/tSbmg70qa
ndAJL6gHI1f56G+/0sB6O43ea++pNGuHKH1AgMBAAGgADANBgkqhkiG9w0BAQsF
AAOCAQEAOUCQ4hFaA+aDwloDLUVOH37NcqAbjGKMmri+KtG2rLaBZyF1T3LUPTyE
fHxkAikre659xql/3I3Fd+rGvuEoVjchxUG2CLBaDcYV3tER0z4o2pcjrAwDNRvh
nXL2zwBcvDLQZTnZmg87wTR7Q8ZAufzeq3aljQH6q793D+grM/FlaKC2/gsoJ45O
GnLJBrrOF+WqLJ9FcgdNr741yTizp0Ovr6ouQV1su3Wr1Pf73FRtXbzALPylPL6V
WC/M/KaZ+qTzhkAQ0ekVIMa5t4tr55G7lwBZ6TtIzasjLi4YBmugfAMprNcqWc
Oq/cCl8PZ8jVSt5Ho0zaWWjGeLQRw==
-----END CERTIFICATE REQUEST-----
```

Download

Close

6. Click **Download** to save the created CSR file to your local PC.

## 7.3. Country codes for CSR creation

When you create a Certificate Signing Request (CSR) file, you must provide the information about the country where your organization resides.

The country codes for CSR creation are as follows.

| Code | Full name                |
|------|--------------------------|
| US   | United States of America |
| CA   | Canada                   |
| AX   | Aland Islands            |
| AD   | Andorra                  |
| AE   | United Arab Emirates     |
| AF   | Afghanistan              |
| AG   | Antigua and Barbuda      |
| AI   | Anguilla                 |
| AL   | Albania                  |

| Code | Full name              |
|------|------------------------|
| AM   | Armenia                |
| AN   | Netherlands Antilles   |
| AO   | Angola                 |
| AQ   | Antarctica             |
| AR   | Argentina              |
| AS   | American Samoa         |
| AT   | Austria                |
| AU   | Australia              |
| AW   | Aruba                  |
| AZ   | Azerbaijan             |
| BA   | Bosnia and Herzegovina |
| BB   | Barbados               |
| BD   | Bangladesh             |
| BE   | Belgium                |
| BF   | Burkina Faso           |
| BG   | Bulgaria               |
| BH   | Bahrain                |
| BI   | Burundi                |
| BJ   | Benin                  |
| BM   | Bermuda                |
| BN   | Brunei Darussalam      |
| BO   | Bolivia                |
| BR   | Brazil                 |
| BS   | Bahamas                |
| BT   | Bhutan                 |
| BV   | Bouvet Island          |

| Code | Full name                   |
|------|-----------------------------|
| BW   | Botswana                    |
| BZ   | Belize                      |
| CA   | Canada                      |
| CC   | Cocos (Keeling) Islands     |
| CF   | Central African Republic    |
| CH   | Switzerland                 |
| CI   | Cote D'Ivoire (Ivory Coast) |
| CK   | Cook Islands                |
| CL   | Chile                       |
| CM   | Cameroon                    |
| CN   | China                       |
| CO   | Colombia                    |
| CR   | Costa Rica                  |
| CS   | Czechoslovakia (former)     |
| CV   | Cape Verde                  |
| CX   | Christmas Island            |
| CY   | Cyprus                      |
| CZ   | Czech Republic              |
| DE   | Germany                     |
| DJ   | Djibouti                    |
| DK   | Denmark                     |
| DM   | Dominica                    |
| DO   | Dominican Republic          |
| DZ   | Algeria                     |
| EC   | Ecuador                     |
| EE   | Estonia                     |

| Code | Full name                   |
|------|-----------------------------|
| EG   | Egypt                       |
| EH   | Western Sahara              |
| ER   | Eritrea                     |
| ES   | Spain                       |
| ET   | Ethiopia                    |
| FI   | Finland                     |
| FJ   | Fiji                        |
| FK   | Falkland Islands (Malvinas) |
| FM   | Micronesia                  |
| FO   | Faroe Islands               |
| FR   | France                      |
| FX   | France, Metropolitan        |
| GA   | Gabon                       |
| GB   | Great Britain (UK)          |
| GD   | Grenada                     |
| GE   | Georgia                     |
| GF   | French Guiana               |
| GG   | Guernsey                    |
| GH   | Ghana                       |
| GI   | Gibraltar                   |
| GL   | Greenland                   |
| GM   | Gambia                      |
| GN   | Guinea                      |
| GP   | Guadeloupe                  |
| GQ   | Equatorial Guinea           |
| GR   | Greece                      |



| Code | Full name                        |
|------|----------------------------------|
| GS   | S. Georgia and S. Sandwich Isls. |
| GT   | Guatemala                        |
| GU   | Guam                             |
| GW   | Guinea-Bissau                    |
| GY   | Guyana                           |
| HK   | Hong Kong (China)                |
| HM   | Heard and McDonald Islands       |
| HN   | Honduras                         |
| HR   | Croatia (Hrvatska)               |
| HT   | Haiti                            |
| HU   | Hungary                          |
| ID   | Indonesia                        |
| IE   | Ireland                          |
| IL   | Israel                           |
| IM   | Isle of Man                      |
| IN   | India                            |
| IO   | British Indian Ocean Territory   |
| IS   | Iceland                          |
| IT   | Italy                            |
| JE   | Jersey                           |
| JM   | Jamaica                          |
| JO   | Jordan                           |
| JP   | Japan                            |
| KE   | Kenya                            |
| KG   | Kyrgyzstan                       |
| KH   | Cambodia                         |

| Code | Full name             |
|------|-----------------------|
| KI   | Kiribati              |
| KM   | Comoros               |
| KN   | Saint Kitts and Nevis |
| KR   | Korea (South)         |
| KW   | Kuwait                |
| KY   | Cayman Islands        |
| KZ   | Kazakhstan            |
| LA   | Laos                  |
| LC   | Saint Lucia           |
| LI   | Liechtenstein         |
| LK   | Sri Lanka             |
| LS   | Lesotho               |
| LT   | Lithuania             |
| LU   | Luxembourg            |
| LV   | Latvia                |
| LY   | Libya                 |
| MA   | Morocco               |
| MC   | Monaco                |
| MD   | Moldova               |
| ME   | Montenegro            |
| MG   | Madagascar            |
| MH   | Marshall Islands      |
| MK   | Macedonia             |
| ML   | Mali                  |
| MM   | Myanmar               |
| MN   | Mongolia              |

| Code | Full name                |
|------|--------------------------|
| MO   | Macau (China)            |
| MP   | Northern Mariana Islands |
| MQ   | Martinique               |
| MR   | Mauritania               |
| MS   | Montserrat               |
| MT   | Malta                    |
| MU   | Mauritius                |
| MV   | Maldives                 |
| MW   | Malawi                   |
| MX   | Mexico                   |
| MY   | Malaysia                 |
| MZ   | Mozambique               |
| NA   | Namibia                  |
| NC   | New Caledonia            |
| NE   | Niger                    |
| NF   | Norfolk Island           |
| NG   | Nigeria                  |
| NI   | Nicaragua                |
| NL   | Netherlands              |
| NO   | Norway                   |
| NP   | Nepal                    |
| NR   | Nauru                    |
| NT   | Neutral Zone             |
| NU   | Niue                     |
| NZ   | New Zealand (Aotearoa)   |
| OM   | Oman                     |

| Code | Full name               |
|------|-------------------------|
| PA   | Panama                  |
| PE   | Peru                    |
| PF   | French Polynesia        |
| PG   | Papua New Guinea        |
| PH   | Philippines             |
| PK   | Pakistan                |
| PL   | Poland                  |
| PM   | St. Pierre and Miquelon |
| PN   | Pitcairn                |
| PR   | Puerto Rico             |
| PS   | Palestinian Territory   |
| PT   | Portugal                |
| PW   | Palau                   |
| PY   | Paraguay                |
| QA   | Qatar                   |
| RE   | Reunion                 |
| RO   | Romania                 |
| RS   | Serbia                  |
| RU   | Russian Federation      |
| RW   | Rwanda                  |
| SA   | Saudi Arabia            |
| SB   | Solomon Islands         |
| SC   | Seychelles              |
| SE   | Sweden                  |
| SG   | Singapore               |
| SH   | St. Helena              |

| Code | Full name                      |
|------|--------------------------------|
| SI   | Slovenia                       |
| SJ   | Svalbard and Jan Mayen Islands |
| SK   | Slovak Republic                |
| SL   | Sierra Leone                   |
| SM   | San Marino                     |
| SN   | Senegal                        |
| SR   | Suriname                       |
| ST   | Sao Tome and Principe          |
| SU   | USSR (former)                  |
| SV   | El Salvador                    |
| SZ   | Swaziland                      |
| TC   | Turks and Caicos Islands       |
| TD   | Chad                           |
| TF   | French Southern Territories    |
| TG   | Togo                           |
| TH   | Thailand                       |
| TJ   | Tajikistan                     |
| TK   | Tokelau                        |
| TM   | Turkmenistan                   |
| TN   | Tunisia                        |
| TO   | Tonga                          |
| TP   | East Timor                     |
| TR   | Turkey                         |
| TT   | Trinidad and Tobago            |
| TV   | Tuvalu                         |
| TW   | Taiwan (China)                 |

| Code | Full name                        |
|------|----------------------------------|
| TZ   | Tanzania                         |
| UA   | Ukraine                          |
| UG   | Uganda                           |
| UM   | US Minor Outlying Islands        |
| US   | United States                    |
| UY   | Uruguay                          |
| UZ   | Uzbekistan                       |
| VA   | Vatican City State (Holy See)    |
| VC   | Saint Vincent and the Grenadines |
| VE   | Venezuela                        |
| VG   | Virgin Islands (British)         |
| VI   | Virgin Islands (U.S.)            |
| VN   | Viet Nam                         |
| VU   | Vanuatu                          |
| WF   | Wallis and Futuna Islands        |
| WS   | Samoa                            |
| YE   | Yemen                            |
| YT   | Mayotte                          |
| ZA   | South Africa                     |
| ZM   | Zambia                           |
| COM  | US Commercial                    |
| EDU  | US Educational                   |
| GOV  | US Government                    |
| INT  | International                    |
| MIL  | US Military                      |
| NET  | Network                          |

| Code | Full name               |
|------|-------------------------|
| ORG  | Non-Profit Organization |
| ARPA | Old style Arpanet       |

## 7.4. Sandbox description

This topic describes the concept of a sandbox and the related features and solutions for domains in the sandbox.

### What is a sandbox?

Alibaba Cloud CDN is a public content acceleration service that hosts thousands of accelerated domains. If your accelerated domain is under attack, CDN automatically adds the attacked domain to the sandbox. This ensures that the CDN acceleration service of other users are not adversely affected. If the attack is severe, other accelerated domains under the same account are also added to the sandbox. An accelerated domain in the sandbox can still be accelerated by CDN, but service quality may be compromised.

### How do I check whether my domain is added to the sandbox?

After your domain is added to the sandbox, the system automatically sends an SMS notification. You can also log on to the CDN console and check the domain status to verify that the domain is added to the sandbox, as shown in the following figure.

### Can a domain be restored after it is added to the sandbox?

No, it cannot be restored. This helps to ensure that the acceleration service of other users' domains can work correctly.

### How do I reduce the negative impact on my domain after it is attacked and added to the sandbox?

By default, Alibaba Cloud CDN does not provide protection against network attacks. After an accelerated domain is added to the sandbox, the acceleration service is not guaranteed and the domain cannot be restored. You can purchase [Secure Content Delivery Network](#) or [Alibaba Cloud Anti-DDoS Pro](#) to meet your security requirements.

#### Notice

- Alibaba Cloud CDN reserves the right to disable the acceleration service for domains that are frequently attacked and for domains that are attacked because of violations of CDN use limits. If your domain is under attack because it has failed to comply with CDN use limits, Alibaba Cloud CDN does not bear any responsibility and all fees incurred are borne by you.
- If you use a domain that is not filed and its acceleration region is outside mainland China, the domain becomes inaccessible after it is added to the sandbox.

# 8.Domain Names

## 8.1. Create a RAM user

You can create RAM users and grant these RAM users limited permissions to manage resources of different departments for domain names in Alibaba Cloud Content Delivery Network (CDN). This topic describes how to create a RAM user.

RAM user

### Procedure

1. Create a RAM user. For more information, see [Create a RAM user](#).
2. (Optional) Customize permission policies for Alibaba Cloud CDN. If a RAM user requires more permissions other than the default permissions `AliyunCDNFullAccess` and `AliyunCDNReadOnlyAccess`, you can create permission policies for the RAM user. For more information, see [Use RAM to manage Alibaba Cloud CDN permissions](#).
3. Log on to the Alibaba Cloud CDN console as the RAM user.

Logon URL: <http://signin.aliyun.com/Custom domain.onaliyun.com/login.htm>.

RAM users cannot use the **DCDN** feature. They can use other features in the same way as with an Alibaba Cloud account.



## 9.FAQ

This topic describes issues about security and caching in Alibaba Cloud Content Delivery Network (CDN) and their solutions.

- Security
  - [Why can an IP address in the IP blacklist still be used to request resources?](#)
  - [How can I protect domain names accelerated by Alibaba Cloud CDN from DDoS or HTTP flood attacks?](#)
  - [How can I use CDN to block a specified IP address?](#)
- Caching
  - [What are the causes of a decreased cache hit rate on a CDN node?](#)
  - [How are CDN cache nodes divided?](#)
  - [How do I handle an error message "Preload queue is full, please try again later"?](#)