

Global Accelerator

Getting Started

Issue 01
Date 2024-01-22



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For vulnerability information, enterprise customers can visit the following web page:

<https://securitybulletin.huawei.com/enterprise/en/security-advisory>

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1 Preparations for Using Global Accelerator

Before using Global Accelerator, you need to make the following preparations:

- [Signing Up with Huawei Cloud](#)
- [Applying for a Cross-Border Permit \(Mandatory for Cross-Border Communications\)](#)

Signing Up with Huawei Cloud

You need a HUAWEI ID to access the Global Accelerator console. If you do not have a HUAWEI ID, sign up one first:

NOTE

To use Global Accelerator, sign up a HUAWEI ID, complete real-name authentication, and enable the enterprise project function.

1. Visit [Huawei Cloud official website](#).
2. Click **Sign Up** in the upper right corner.

Enter the required information. Once the sign-up is complete, the system automatically redirects you to your personal information page.

After registration, your account will have permissions to access the Global Accelerator service and all other cloud services.

Applying for a Cross-Border Permit (Mandatory for Cross-Border Communications)

In accordance with the laws and administrative regulations of the Ministry of Industry and Information Technology (MIIT) of the People's Republic of China, only China Mobile, China Telecom, and China Unicom are allowed for cross-border network communications, and a cross-border permit is required if you carry out business activities outside the Chinese mainland.

If the acceleration area is inside the Chinese mainland but the endpoint group is outside the Chinese mainland, or if the endpoint group is inside the Chinese mainland but the acceleration area is outside the Chinese mainland, you need to apply for a cross-border permit.


1. Log in to the management console.
2. Click  in the upper left corner and choose **Networking > Global Accelerator**.
The **Global Accelerator** page is displayed.
3. In the navigation pane on the left, click **Cross-Border Permits**.
4. Click **Request a Cross-Border Permit**.
5. On the application page, set related parameters and upload related materials.

Table 1-1 Online cross-border permit application

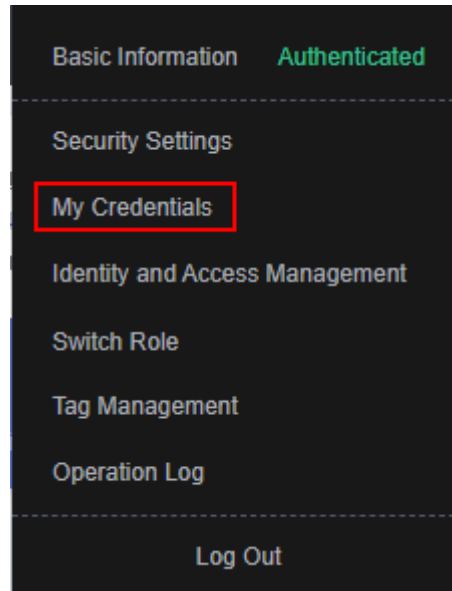
Parameter
Applicant Name
Huawei Cloud UID
Type of Product
Bandwidth (M)
Start Date
Termination Date
Customer Type
Country of the Customer
Contact Name
Contact Number
Type of ID
ID Number
Scope of Business
Number of Employees
Per Capita Bandwidth
Branch Location Country

 **NOTE**

HUAWEI ID is your account ID. You can take the following steps to obtain your account ID.

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

Figure 1-1 My credentials



3. On the **API Credentials** page, view the **Account ID**.

Figure 1-2 Obtaining an account ID

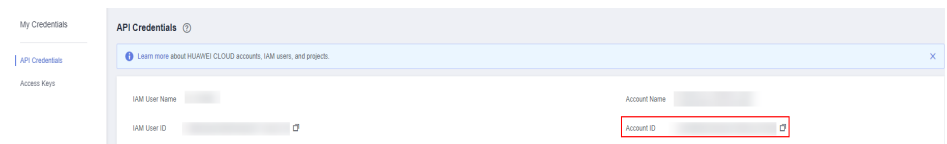


Table 1-2 Required materials

Material	Signature	Seal	Description
A scanned copy of your company's business license	-	√	See the template Huawei Cloud provides for the position of the seal.
A scanned copy of <i>Huawei Cloud Cross-Border Circuit Service Agreement</i>	√	√	<ul style="list-style-type: none"> • Sign the material on the signature block. • Stamp the seal over the signature.

Material	Signature	Seal	Description
<p>A scanned copy of <i>China Unicom Letter of Commitment to Information Security of the Cross-Border Circuit Service</i></p>	<p>√</p>	<p>√</p>	<ul style="list-style-type: none"> ● Sign the material on the signature block. ● Stamp the seal over the signature. ● Specify the bandwidth you estimated and your company name.

6. Click **Submit**.

2 Accelerating Access to an Application

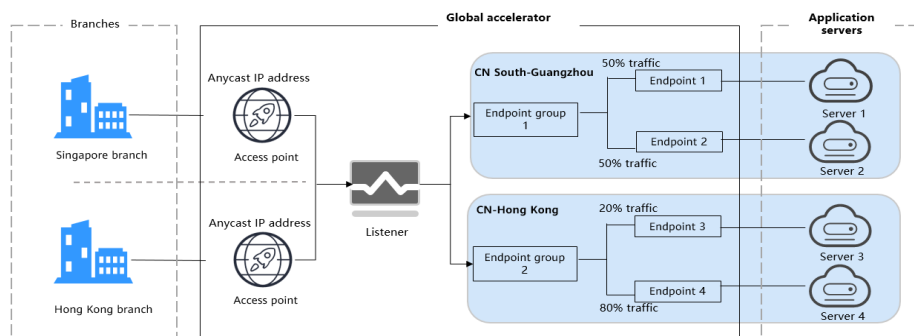
Global Accelerator helps accelerate access to an application so that your global users can access your applications faster.

Example Scenario

As shown in [Figure 2-1](#), a multinational enterprise has two branches, one in Singapore and one in Hong Kong. The Singapore branch has deployed an application on two servers in the CN South-Guangzhou region, and the Hong Kong branch has deployed an application on two servers in the CN-Hong Kong region.

Global Accelerator is required for each branch to access the cloud network from the nearest access point.

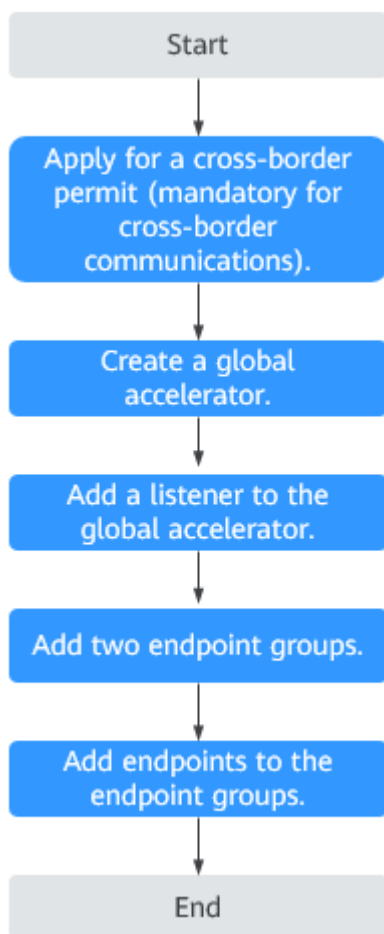
Figure 2-1 Network topology



When users in the Singapore branch access the application in the CN South-Guangzhou region, requests are sent to the anycast IP address in Singapore. The listener then distributes the requests evenly between endpoint 1 and endpoint 2.

When users in the Hong Kong branch access the application in the CN-Hong Kong region, requests are sent to the anycast IP address in Hong Kong. The listener then distributes 20% of the requests to endpoint 3 and 80% of the requests to endpoint 4.

Flowchart




Procedure

Step 1 Apply for a cross-border permit (mandatory for cross-border communications).

In accordance with the laws and administrative regulations of the Ministry of Industry and Information Technology (MIIT) of the People's Republic of China, only China Mobile, China Telecom, and China Unicom are allowed for cross-border network communications, and a cross-border permit is required if you carry out business activities outside the Chinese mainland.

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2. Click  in the upper left corner and choose **Networking > Global Accelerator**.

The **Global Accelerator** page is displayed.

3. In the navigation pane on the left, click **Cross-Border Permits**.
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Table 2-1 Online cross-border permit application

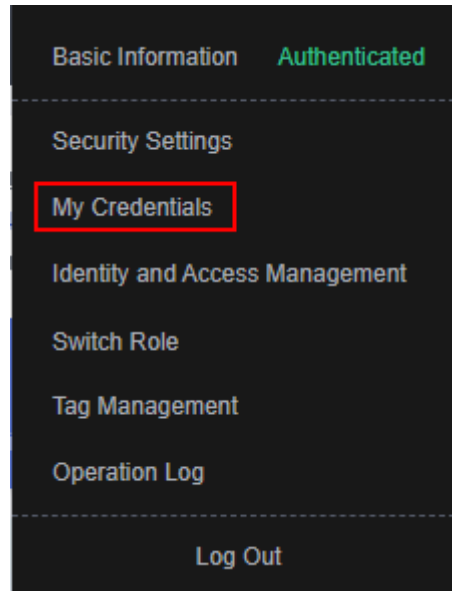
Parameter
Applicant Name
Huawei Cloud UID
Type of Product
Bandwidth (M)
Start Date
Termination Date
Customer Type
Country of the Customer
Contact Name
Contact Number
Type of ID
ID Number
Scope of Business
Number of Employees
Per Capita Bandwidth
Branch Location Country

NOTE

HUAWEI ID is your account ID. You can take the following steps to obtain your account ID.

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Figure 2-2 My credentials



3. On the **API Credentials** page, view the **Account ID**.

Figure 2-3 Obtaining an account ID



Table 2-2 Required materials

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Material	Signature	Seal	Description
A scanned copy of <i>China Unicom Letter of Commitment to Information Security of the Cross-Border Circuit Service</i>	√	√	<ul style="list-style-type: none"> – Sign the material on the signature block. – Stamp the seal over the signature. – Specify the bandwidth you estimated and your company name.

6. Click **Submit**.
7. **Submit a service ticket** to request a cross-border permit.

Step 2 Create a global accelerator.

To use Global Accelerator for faster access, you first need to create a global accelerator.


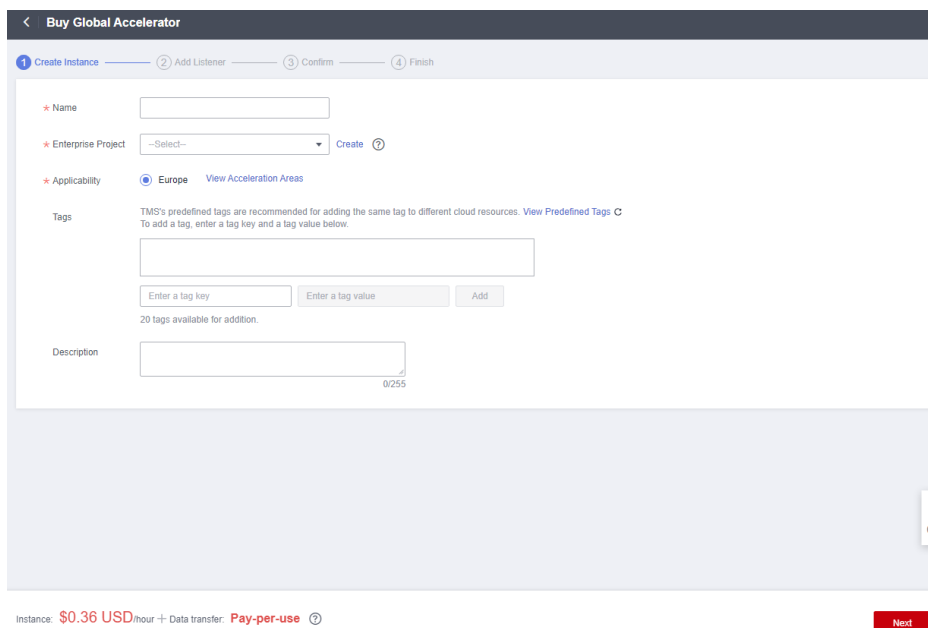
1. Log in to the management console.
2. On the homepage, click  in the upper left corner and choose **Networking > Global Accelerator**.
The **Global Accelerator** page is displayed.
3. Click **Buy Global Accelerator**.
4. Specify the parameters listed in **Table 2-3**.

Figure 2-4 Creating a global accelerator



Buy Global Accelerator

1 Create Instance — 2 Add Listener — 3 Confirm — 4 Finish

* Name

* Enterprise Project --Select-- Create ?

* Applicability Europe [View Acceleration Areas](#)

Tags TMS's predefined tags are recommended for adding the same tag to different cloud resources. [View Predefined Tags](#)
To add a tag, enter a tag key and a tag value below.

Enter a tag key	Enter a tag value	Add
<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

20 tags available for addition.

Description

Instance: \$0.36 USD/hour + Data transfer: Pay-per-use ?

Next

Table 2-3 Parameters required for creating a global accelerator

Parameter	Description
Name	Name of the global accelerator you want to create. You can enter up to 64 characters. Only letters, digits, and hyphens are allowed.
Enterprise Project	An enterprise project you would like to use to centrally manage your Global Accelerator resources. You can use an existing enterprise project or create one.
Applicability	Where the global accelerator will be used. Europe is selected by default.
Tags	The identifier of a global accelerator. Each tag consists of a key and a value. You can add 20 tags for a global accelerator. Tag keys and values must meet the requirements listed in Table 2-4 . NOTE If a predefined tag has been created in TMS, you can select the corresponding tag key and value. For details about predefined tags, see Predefined Tag Overview .
Description	Supplementary information about the global accelerator. You can enter up to 255 characters.

Table 2-4 Tag key and value requirements

Parameter	Requirements
Key	<ul style="list-style-type: none"> - Cannot be left blank. - Can contain letters, digits, spaces, underscores (_), periods (.), colons (:), equal signs (=), plus signs (+), hyphens (-), and at signs (@). - Cannot start or end with a space. - Cannot start with _sys_. - Can contain a maximum of 128 characters.
Value	<ul style="list-style-type: none"> - Can be left blank. - Can contain letters, digits, spaces, underscores (_), periods (.), colons (:), slashes (/), equal signs (=), hyphens (-), and at signs (@). - Cannot start or end with a space. - Can contain a maximum of 255 characters.

5. Click **Next**.

The **Add Listener** page is displayed.

Step 3 Add a listener to the global accelerator.

Associate an endpoint group with the listener in the AP-Singapore region and add endpoint 1 and endpoint 2 to the endpoint group. The listener will listen to requests and routes them to the two endpoints based on the load balancing algorithm.

For details about the parameters, see [Table 2-5](#).

Figure 2-5 Adding a listener

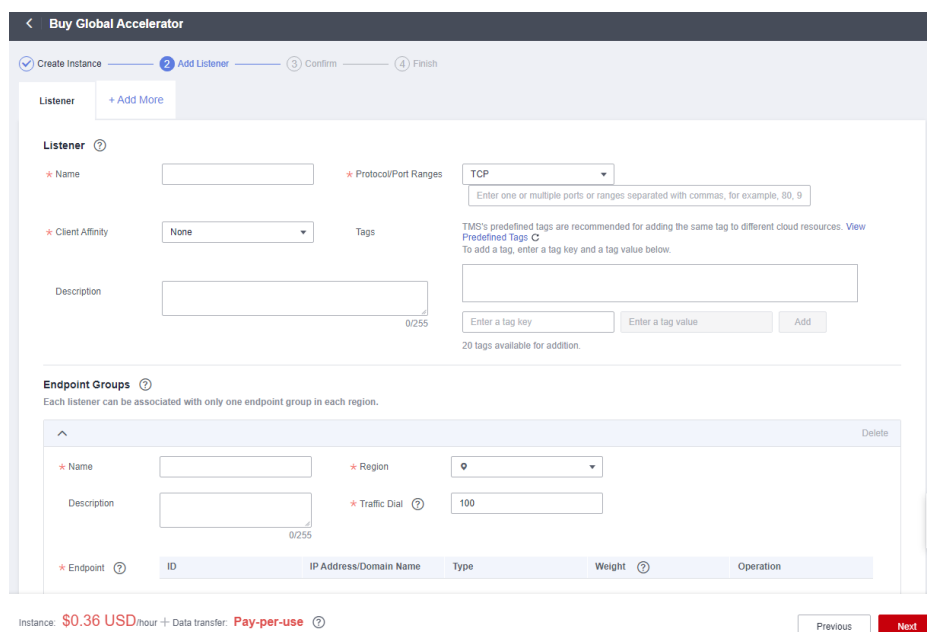


Table 2-5 Parameters required for adding a listener

Item	Parameter	Description
Basic Configuration	Name	Listener name. You can enter up to 64 characters. Only letters, digits, and hyphens are allowed.
	Protocol	The protocol used by the listener to receive requests from clients. The protocol can be TCP or UDP.
	Port	The ports or port ranges used by the listener to receive requests from clients. The port number ranges from 1 to 65535. You can enter one or more ports or port ranges separated by commas (,). Example: 1-10,11-50,51,52-200

Item	Parameter	Description
	Client Affinity	<ul style="list-style-type: none"> If you select None, the listener routes requests evenly among the endpoints in the endpoint group. If you select Source IP address, the source IP address of each request is calculated using the consistent hashing algorithm to obtain a unique hash key, and all the endpoints are numbered and mapped to the hash keys. Requests from the same IP address are forwarded to the same endpoint for processing. <p>TCP and UDP listeners support only Source IP address.</p>
	Tags	<p>The identifier of a global accelerator. Each tag consists of a key and a value. You can add 20 tags for a global accelerator.</p> <p>Tag keys and values must meet the requirements listed in Table 2-4.</p> <p>NOTE If a predefined tag has been created in TMS, you can select the corresponding tag key and value.</p> <p>For details about predefined tags, see Predefined Tag Overview.</p>
	Description	<p>Supplementary information about the listener.</p> <p>You can enter up to 255 characters.</p>
Endpoint Groups	Name	<p>Name of the endpoint group.</p> <p>Each listener can be associated with only one endpoint group in a given region.</p> <p>You can enter up to 64 characters. Only letters, digits, and hyphens are allowed.</p>
	Region	<p>Region to which the endpoint group belongs.</p>
	Description	<p>Supplementary information about the endpoint group.</p> <p>You can enter up to 255 characters.</p>

Item	Parameter	Description
	Traffic Dial	<p>The percentage of traffic directed to the endpoint group.</p> <p>If you increase the traffic dial, more requests will be distributed to this endpoint group.</p> <p>If you set the traffic dial to 0, no requests will be distributed to this endpoint group.</p> <p>The value ranges from 0 to 100.</p> <p>NOTE</p> <p>If a listener has multiple endpoint groups, traffic will be first distributed to the endpoint group with the lowest latency and then to other endpoint groups based on the traffic dial value you set.</p>
	Endpoint	<p>An endpoint serves as a single point of contact for clients. Global Accelerator distributes incoming traffic across healthy endpoints.</p> <ul style="list-style-type: none"> Endpoint 1: EIP bound to server 1 (88.xx.xx.10) Endpoint 2: EIP bound to server 2 (10.xx.xx.11) <p>Set the weights of the two endpoints both to 1.</p>
Health Check	Health Check	<p>Whether to enable health check.</p> <p>If you disable health check, requests may be forwarded to unhealthy endpoints.</p>
	Protocol	<p>The health check protocol can be TCP.</p> <p>Default value: TCP.</p>
	Port	<p>The port used for health check.</p> <p>The port number ranges from 1 to 65535.</p>
	Advanced Settings	
	Interval (s)	<p>The maximum time between two consecutive health checks, in seconds.</p> <p>The interval ranges from 1 to 60.</p>
	Timeout (s)	<p>The maximum time required for waiting for a response to a health check request, in seconds.</p> <p>The timeout ranges from 1 to 60.</p>
	Maximum Retries	<p>The maximum number of health check retries allowed.</p> <p>The value ranges from 1 to 10.</p>

Table 2-6 Tag key and value requirements

Parameter	Requirements
Key	<ul style="list-style-type: none"> • Cannot be left blank. • Can contain letters, digits, spaces, underscores (_), periods (.), colons (:), equal signs (=), plus signs (+), hyphens (-), and at signs (@). • Cannot start or end with a space. • Cannot start with _sys_. • Can contain a maximum of 128 characters.
Value	<ul style="list-style-type: none"> • Can be left blank. • Can contain letters, digits, spaces, underscores (_), periods (.), colons (:), slashes (/), equal signs (=), hyphens (-), and at signs (@). • Cannot start or end with a space. • Can contain a maximum of 255 characters.

Step 4 Associate an endpoint group with the listener.

Associate an endpoint group with the listener in the CN-Hong Kong region, and add endpoint 3 and endpoint 4 to this endpoint group.

1. Click **Add Endpoint Group** and specify the parameters listed in [Table 2-7](#).

Table 2-7 Parameters required for adding an endpoint group

Item	Parameter	Description
Endpoint Groups	Name	Name of the endpoint group. Each listener can be associated with only one endpoint group in a given region. You can enter up to 64 characters. Only letters, digits, and hyphens are allowed.
	Region	Region to which the endpoint group belongs.
	Description	Supplementary information about the endpoint group. You can enter up to 255 characters.

Item	Parameter	Description
	Traffic Dial	<p>The percentage of traffic directed to the endpoint group.</p> <p>If you increase the traffic dial, more requests will be distributed to this endpoint group.</p> <p>If you set the traffic dial to 0, no requests will be distributed to this endpoint group.</p> <p>The value ranges from 0 to 100.</p> <p>NOTE</p> <p>If a listener has multiple endpoint groups, traffic will be first distributed to the endpoint group with the lowest latency and then to other endpoint groups based on the traffic dial value you set.</p>
	Endpoint	<p>An endpoint serves as a single point of contact for clients, and Global Accelerator distributes incoming traffic across healthy endpoints.</p> <ul style="list-style-type: none"> – Endpoint 3: EIP bound to server 3 (97.xx.xx.159) – Endpoint 4: EIP bound to server 4 (10.xx.xx.240) <p>Set the weight of endpoint 3 to 1, and the weight of endpoint 4 to 4.</p>
Health Check	Health Check	<p>Whether to enable health check.</p> <p>If you disable health check, requests may be forwarded to unhealthy endpoints.</p>
	Protocol	<p>The health check protocol can be TCP.</p> <p>Default value: TCP.</p>
	Port	<p>The port used for health check.</p> <p>The port number ranges from 1 to 65535.</p>
	Advanced Settings	
	Interval (s)	<p>The maximum time between two consecutive health checks, in seconds.</p> <p>The interval ranges from 1 to 60.</p>
	Timeout (s)	<p>The maximum time required for waiting for a response to a health check request, in seconds.</p> <p>The timeout ranges from 1 to 60.</p>

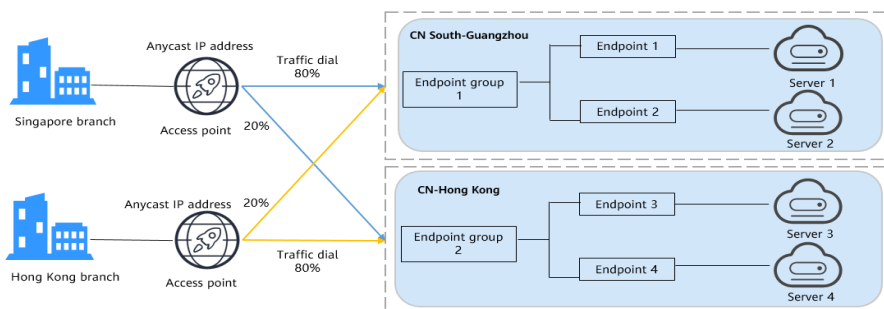
Item	Parameter	Description
	Maximum Retries	The maximum number of health check retries allowed. The value ranges from 1 to 10 .

In this example, users in the Singapore branch have faster access to the application on servers in the CN South-Guangzhou region than to that in the CN-Hong Kong region. Requests are preferentially sent to servers in the CN South-Guangzhou region.

If the percentage of traffic directed to the endpoint group 1 and endpoint group 2 are set to 80%, requests from users in the Singapore and Hong Kong branches are distributed as follows:

- 80% of the requests from users in Singapore will be sent to endpoint group 1, and the remaining 20% to the endpoint group 2.
- 80% of the requests from users in Hong Kong will be sent to the endpoint group 2, and the remaining 20% to the endpoint group 1.

Figure 2-6 Cross-border traffic dial



2. Click **Save**.
3. Click **Next** and confirm the configuration.
4. Click **Submit**.
5. If message "Accelerator xxx created successfully" is displayed, click **Finish**.

----End

Verifying Global Accelerator

The listener uses TCP to receive requests from clients, so you can run **curl** to verify that the global accelerator is working normally. Run **curl** before and after you configure Global Accelerator and compare the values of **time_connect**.

1. Before you configure Global Accelerator, run the following command on a server in the tested region:

```
curl -o /dev/null -s -w "time_connect: %{time_connect}\ntime_starttransfer: %{time_starttransfer}\ntime_total: %{time_total}\n" "http[s]://<IP>[:<Port>]"
```

 NOTE

- **IP:** EIP bound to the application server.
 - **Port:** HTTP port number used by the application server.
 - **time_connect:** time taken to establish a TCP connection, in seconds. It is from the time when a TCP connection request is initiated to the time when the connection is established.
 - **time_starttransfer:** time when transfer starts, in seconds. It is from the time when the client sends a request to the time when the endpoint replies with the first byte.
 - **time_total:** total connection time, in seconds. It is from the time when the client sends a request to the time when the endpoint responds to the request.
2. After you configure Global Accelerator, run the following command:
- ```
curl -o /dev/null -s -w "time_connect: %{time_connect}\ntime_starttransfer: %{time_starttransfer}\ntime_total: %{time_total}\n" "http[s]://<IP>[:<Port>]"
```

 NOTE

- Set **IP** in the command to the anycast IP address provided by Global Accelerator in the region.
3. Compare the values of **time\_connect** and view the latency before and after acceleration.

# 3 Change History

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| Released On | Description                               |
|-------------|-------------------------------------------|
| 2024-01-22  | This issue is the first official release. |