

Global Accelerator

Getting Started

Issue 01
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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](#)
- [Topping Up Your Account](#)
- [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 the [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.

Topping Up Your Account

If you want to purchase an endpoint, ensure that your account has sufficient balance.

- For details about the price for each endpoint, see the pricing details of the corresponding service.
- For details about how to top up an account, see [Topping Up an Account](#).

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	Description
Applicant Name	The applicant name, which must be the same as the company name in the <i>Letter of Commitment to Information Security</i> .
Huawei Cloud UID	The account ID to log in to the management console. You can take the following steps to obtain your account ID. <ol style="list-style-type: none">1. Log in to the management console.2. Click the username in the upper right corner and select My Credentials from the drop-down list.3. On the API Credentials page, view the Account ID.
Type of Product	The product type. Select Global Accelerator here.
Bandwidth (M)	The bandwidth size, which must be the same as the bandwidth in the <i>Letter of Commitment to Information Security</i> . The information is for reference only and does not affect the actual service bandwidth.
Start Date	For reference only
Termination Date	For reference only

Parameter	Description
Customer Type	The customer type. Select a type as required.
Country of the Customer	Country where the applicant is located.
Contact Name	-
Contact Number	-
Type of ID	-
ID Number	-
Scope of Business	Briefly describe the main business.
Number of Employees	For reference only
Per Capita Bandwidth	For reference only
Branch Location Country	Country where the applicant branch is located. Set this parameter as required.

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.
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**.

2 Accelerating Access to an Application

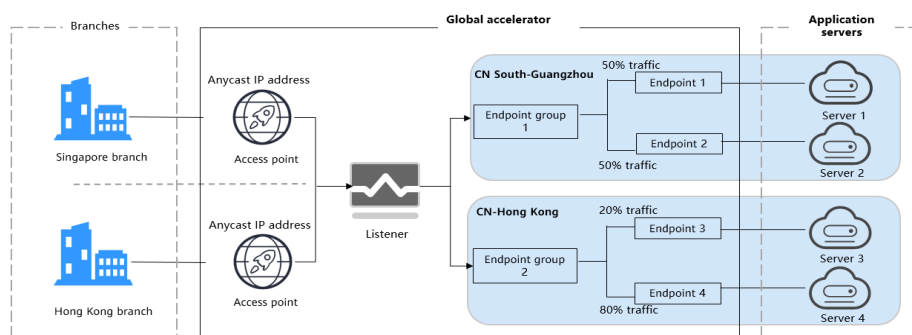
Global Accelerator helps accelerate access to an application so that your global users can access your applications faster.

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.

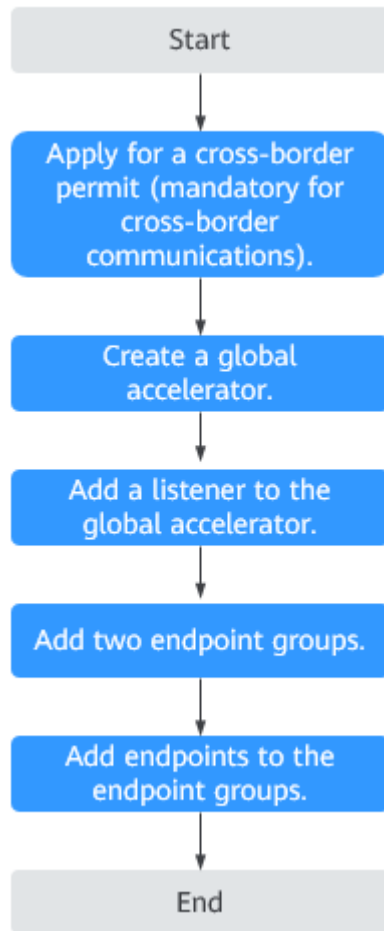
Figure 2-1 Network topology



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.

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.

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Termination Date	For reference only
Customer Type	The customer type. Select a type as required.
Country of the Customer	Country where the applicant is located.
Contact Name	-
Contact Number	-
Type of ID	-
ID Number	-
Scope of Business	Briefly describe the main business.
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Table 2-2 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.
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**.

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 2-2 Creating a global accelerator

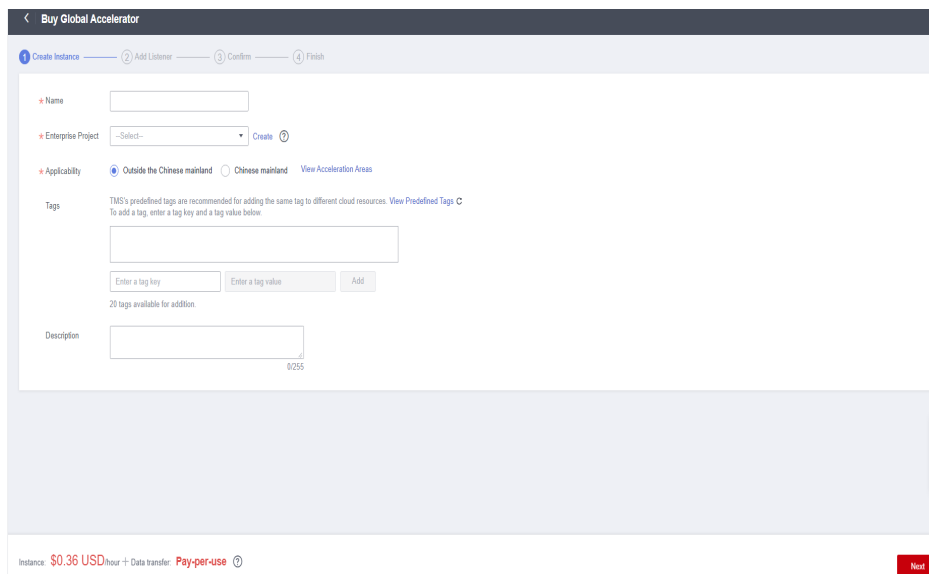


Table 2-3 Parameters required for creating a global accelerator

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. There are two options: Outside the Chinese mainland or Chinese mainland . Outside the Chinese mainland is selected by default.
Tags	An identifier of the 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 . If you have configured tag policies for Global Accelerator, you need to add tags to your accelerators based on the tag policies. If you add a tag that does not comply with the tag policies, global accelerators may fail to be created. Contact the administrator to learn more about tag policies.

Parameter	Description
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 2-3 Adding a listener

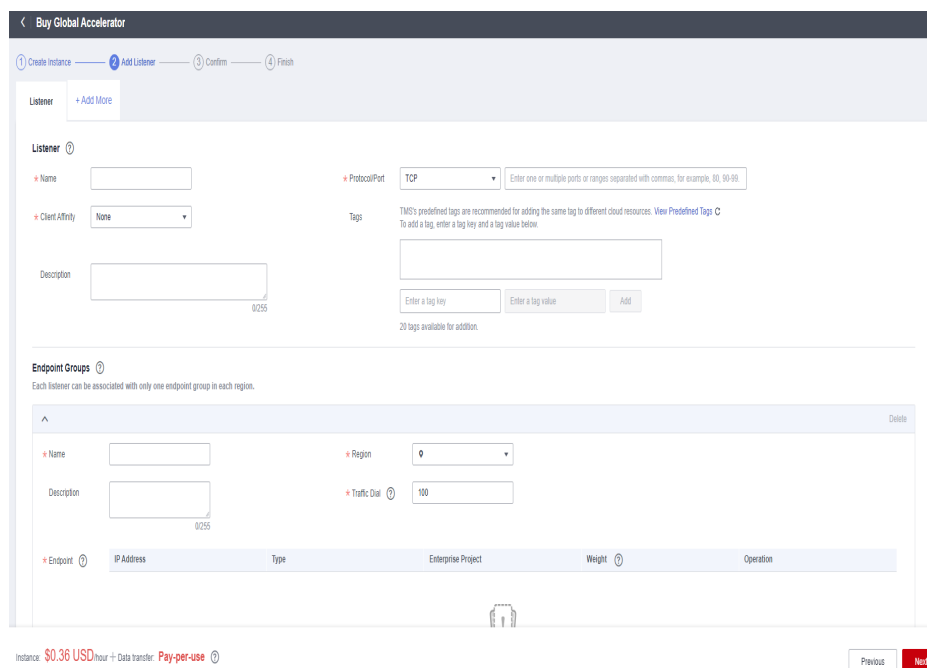


Table 2-5 Parameters required for adding a listener

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>An identifier of the listener. Each tag consists of a key and a value. You can add up to 20 tags to a listener.</p> <p>Tag keys and values must meet the requirements listed in Table 2-4.</p> <p>NOTE</p> <p>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> <p>If you have configured tag policies for Global Accelerator, you need to add tags to listeners based on the tag policies. If you add a tag that does not comply with the tag policies, listeners may fail to be created. Contact the administrator to learn more about tag policies.</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 where the endpoint group is used.</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 where the endpoint group is used.
	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>

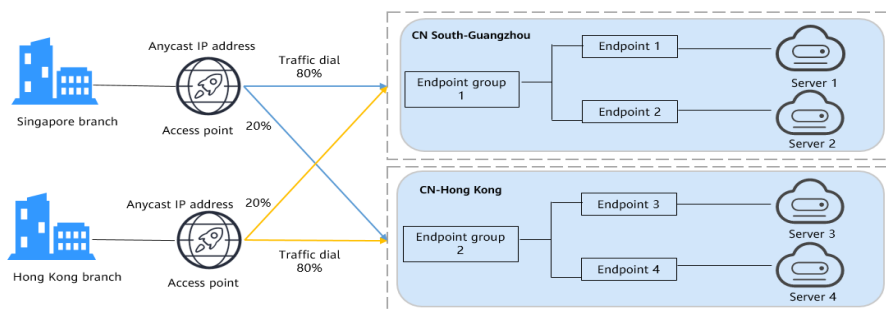
Item	Parameter	Description
	Maximum Retries	The maximum number of health check retries allowed. The value ranges from 1 to 10 .

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 2-4 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 Acceleration

The listener uses TCP to receive requests from clients, so you can run the **curl** command to verify that the global accelerator is working normally. Run the **curl** command 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.
3. Compare the values of **time\_connect** and view the latency before and after acceleration.

# 3 Change History

---

| Released On | Description                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2023-02-10  | This issue is the fourth official release. The updates are as follows:<br>Global Accelerator is officially launched for commercial use.                                          |
| 2022-09-30  | This issue is the third official release. The updates are as follows:<br>Added examples for cross-border traffic dial in <a href="#">Accelerating Access to an Application</a> . |
| 2022-07-18  | This issue is the second official issue. The updates are as follows:<br>Updated content related to applying for a cross-border permit.                                           |
| 2022-05-30  | This issue is the first official release.                                                                                                                                        |