# Alibaba Cloud Cloud Enterprise Network

UserGuide

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# **Generic conventions**

Table -1: Style conventions

Style	Description	Example	
•	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.	
A	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.	
	This indicates warning information, supplementary instructions, and other content that the user must understand.	Note: Take the necessary precautions to save exported data containing sensitive information.	
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	Note: You can use Ctrl + A to select all files.	
>	Multi-level menu cascade.	Settings > Network > Set network type	
Bold	It is used for buttons, menus, page names, and other UI elements.	Click <b>OK</b> .	
Courier font	It is used for commands.	Run the cd /d C:/windows command to enter the Windows system folder.	
Italics	It is used for parameters and variables.	bae log listinstanceid  Instance_ID	
[] or [a b]	It indicates that it is a optional value, and only one item can be selected.	ipconfig [-all -t]	
{} or {a b}	It indicates that it is a required value, and only one item can be selected.	swich {stand   slave}	

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# 1 CEN instances

After creating a CEN instance, you can attach networks (VPCs or VBRs) to the CEN instance, buy bandwidth packages and set the cross-region interconnection bandwidth, thereby rapidly building a secure, reliable, and enterprise-class global network.

#### **Create a CEN instance**

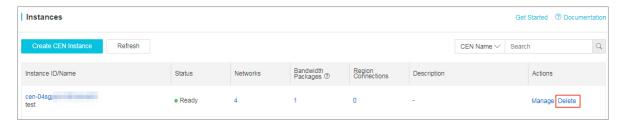
- 1. Log on to the CEN console.
- 2. On the Instances page, click Create CEN instance.
- **3.** Configure the CEN instance according to the following information:

Configuration	Description	
Name	Enter the name of the CEN instance. The name can contain 2-128 English letters, numbers, hyphens, and underlines, and must start with English letters.	
Description	Enter the description of the CEN instance.  The description can contain 2-256 characters, and cannot start with http://and https://.	
Attach Network	You can attach networks of your account or other accounts to a CEN instance. For more information, see <i>Networks</i> .	

#### **Delete a CEN instance**

Before deleting a CEN instance, make sure there is no bandwidth package or network under the instance.

- 1. Log on to the CEN console.
- 2. Click **Delete** in the **Actions** column of the target CEN instance.



3. Click **OK** in the displayed dialog box.

# 2 Networks

#### Attach networks

You can attach networks in the same account or a different to a CEN instance. To attach a network in a different account, authorization is required.

#### Attach a network in the same account

- 1. Log on to the CEN console.
- 2. Click the ID of the target CEN instance.
- 3. Click Attach Network.
- **4.** Choose **Your Account**, and configure the network according to the following information:

Configuration	Description	
Network Type	Select the type of the network to attach.	
Region	Select the region of the network.	
Networks  Select the network.  Note: You cannot select a network already attached instance or connected using Express Connect.		
Description  Enter the description of the network.  The description can contain 2-256 characters, and can start with http://orhttps://.		

5. Click OK.

#### Attach a network in a different account

To attach a network belonging to a different account, you must get authorized. The network owner must first authorize CEN to attach the network on the corresponding VPC page and VBR page. For more information, see *Cross-account network authorization*.

- 1. Log on to the CEN console.
- 2. Click the ID of the target CEN instance.
- 3. Click Attach Network.
- **4.** Choose **Different Account**, and configure the network according to the following information:

Configuration	Description	
Owner Account	Enter the ID of the account that owns the network to attach.	
Network Type	Select the type of the network to attach.	

Configuration	Description
Region	Select the region of the authorized network.
Networks	Enter the ID of the network to attach.

5. Click OK.

#### **Cross-account network authorization**

To attach a network belonging to a different account, you must get authorized.

#### **Cross-account authorization for VPC**

- **1.** Use the account of the target VPC to log on to the *VPC console*.
- 2. In the left-side navigation pane, click **VPC**.
- 3. Click the ID of the target VPC, and then click CEN Cross Account Authorization in the CEN cross account authorization information area.
- 4. In the displayed dialog box, enter the ID of the account and the CEN instance to authorize.
- 5. Click OK.

#### **Cross-account authorization for VBR**

- 1. Use the account of the target VBR to log on to the Express Connect console.
- 2. In the left-side navigation pane, click **Physical Connection > Virtual Border Router**.
- 3. Click the ID of the VBR to attach, and then click **CEN Cross Account Authorization** in the **CEN cross account authorization information** area.
- **4.** In the displayed dialog box, enter the ID of the account and the CEN instance to authorize.

#### Rapidly join in a CEN instance

On the VPC Details or VBR Details page, you can rapidly join in a CEN instance of your account.

On the VPC Details page, click Attach to CEN, and then select the created CEN instance.
 Click OK.



On the VBR Details page, click Attach to CEN, and then select the created CEN instance.
 Click OK.

#### Detach a network

- 1. Log on to the CEN console.
- 2. Click the ID of the target CEN instance.
- 3. Click **Detach** in the **Actions** column of the target network.
- **4.** In the displayed dialog box, click **OK**.

# 3 Attach a network in a different account

To attach a network belonging to a different account, you must get authorized.

#### **Cross-account authorization for VPC**

- 1. Use the account of the target VPC to log on to the VPC console.
- 2. In the left-side navigation pane, click VPC.
- 3. Click the ID of the target VPC, and then click **CEN Cross Account Authorization** in the **CEN cross account authorization information** area.
- **4.** In the displayed dialog box, enter the ID of the account and the CEN instance to authorize, and then click **OK**.

#### Cross-account authorization for VBR

- 1. Use the account of the target VBR to log on to the Express Connect console.
- 2. In the left-side navigation pane, click **Physical Connection** > **Virtual Border Router**.
- 3. Click the ID of the VBR to attach, and then click **CEN Cross Account Authorization** in the **CEN cross account authorization information** area.
- **4.** In the displayed dialog box, enter the ID of the account and the CEN instance to authorize, and then click **OK**.

# 4 Cross-region interconnection bandwidth

To connect networks in different regions, you must set cross-region interconnection bandwidth after buying a bandwidth package. The total bandwidth set for all the interconnected regions of a bandwidth package cannot exceed the bandwidth of the bandwidth package.

For example, a CEN instance is bound to a 20 Mbps bandwidth package connecting Mainland China and North America. You can set the cross-region interconnection bandwidth between US West 1 and China East 1, China East 2, China South 1, and so on. However, the total bandwidth set for all the interconnected regions cannot exceed 20 Mbps.

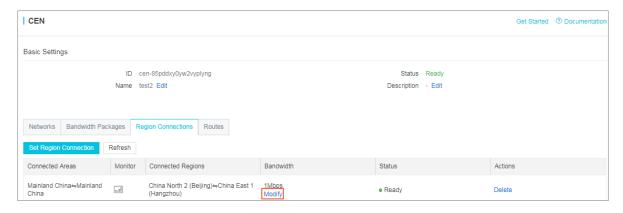
#### Set a cross-region interconnection bandwidth

- 1. Log on to the CEN console.
- 2. On the Instances page, click the ID of the target instance.
- 3. Click Region Connections, and then click Set Region Connection.
- 4. Configure the cross-region bandwidth:

Configuration	Description
Bandwidth Package	Select the bandwidth package bound to the CEN instance.
Connected Regions	Select the regions to connect.
Bandwidth	Enter the bandwidth.

#### Modify cross-region interconnection bandwidth

- 1. Log on to the CEN console.
- **2.** On the **Instances** page, click the ID of the target instance.
- Click Region Connections, and then click Modify in the Bandwidth column of the target cross-region interconnection bandwidth.
- 4. In the displayed dialog box, enter the bandwidth and click **OK**.



#### Delete a cross-region interconnection bandwidth

- **1.** Log on to the *CEN console*.
- 2. On the Instances page, click the ID of the target instance.
- **3.** Click **Region Connections**, and then click **Delete** in the **Bandwidth** column of the target cross-region interconnection bandwidth.
- 4. In the displayed dialog box, click **OK**.

# 5 Bandwidth package

### 5.1 Bandwidth packages

To connect networks in different regions, you must buy a bandwidth package and set cross-region bandwidths.

#### Bandwidth package overview

The Cloud Enterprise Network bandwidth package is an abstract concept that includes an interconnection bandwidth and a pair of areas to connect. You must specify the areas to connect when purchasing a bandwidth package. An area consists of one or more Alibaba Cloud regions. The areas in CEN include Mainland China, Asia Pacific, North America, and Europe. The price of the bandwidth package varies by the connected areas.

The following table is the relationship between regions and areas.

区域	包含的地域
中国大陆	华北1(青岛)、华北2(北京)、华北3(张家口)、华南1(深圳)、华东1(杭州)、华东2(上海)、华北5(呼和浩特)
北美	美国(硅谷)、美国(弗吉尼亚)
亚太	香港、新加坡、马来西亚(吉隆坡)、日本(东京)、印度(孟 买)、印度尼西亚(雅加达)
欧洲	德国(法兰克福)
澳洲	澳大利亚(悉尼)

#### Purchasea bandwidth package

To connect networks in different regions, you must buy a bandwidth package and set cross-region bandwidths. No bandwidth package is required for interconnection in the same region.



#### Note:

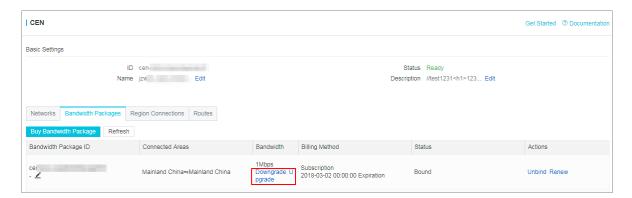
To delete a bandwidth package, you must open a ticket.

To purchase a bandwidth package, complete these steps:

- 1. Log on to the Cloud Enterprise Network console.
- 2. Click the ID of the target CEN instance.

- On the CEN page, click Bandwidth Packages, and then click Buy Bandwidth Package(Subscription).
- **4.** Configure the bandwidth package according to the following information and complete the payment.

Configuration	Description	
CEN	Select the CEN instance that requires a bandwidth package.	
Areas	Select the areas to connect.	
Bandwidth	Select the bandwidth of the bandwidth package.	
	Note: Cannot modify the interconnection areas after the bandwidth package is created.	
Bandwidth Package Name	Enter the name of the bandwidth package.	



#### Unbind a bandwidth package

You can unbind a bandwidth package from a CEN instance and then bind the bandwidth package to another CEN instance.



#### Note:

Before deleting a bandwidth package, delete region connections using the bandwidth package.

To unbind a bandwidth package, complete these steps:

- 1. Log on to the Cloud Enterprise Network console.
- 2. Click the ID of the target CEN instance.
- 3. Click **Unbind** in the **Actions** column of the target bandwidth package.
- 4. In the displayed dialog box, click OK.

#### Bind a bandwidth package

You can bind an unbound bandwidth package to another CEN instance.

To bind a bandwidth package, complete these steps:

- 1. Log on to the Cloud Enterprise Network console.
- 2. Click the ID of the target CEN instance.
- 3. Click **Bind** in the **Actions** column of the target bandwidth package.
- 4. In the displayed dialog box, click **OK**.

#### Change bandwidth

You can change the bandwidth of a bandwidth package and the change takes effect immediately.

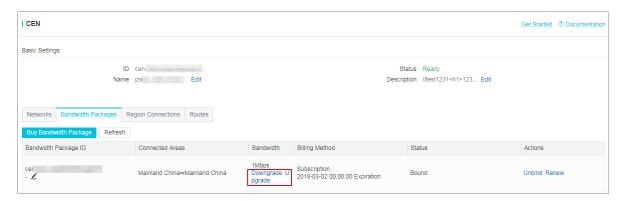
To change bandwidth, complete these steps:

- 1. Log on to the Cloud Enterprise Network console.
- 2. Click the ID of the target CEN instance.
- 3. Click Upgrade or Downgrade in the Bandwidth column of the target bandwidth package.
- 4. Select the bandwidth and complete the payment.

#### Renew a bandwidth package

To renew a bandwidth package, complete these steps:

- 1. Log on to the Cloud Enterprise Network console.
- 2. Click the ID of the target CEN instance.
- 3. Click **Renew** in the **Actions** column of the target bandwidth package.



4. Select the renew duration and complete the payment.

## 6 Health check

CEN provides the health check function so that you can monitor the network conditions of local data centers connected to the attached VBRs.

#### Configure health check

To configure the health check, complete these steps:

- 1. Log on to the CEN console.
- 2. In the left-side navigation pane, click Health Check.
- 3. Select the region of the CEN instance and click Add Health Check.
- 4. On the displayed page, configure the following:

Configuration	Description
Instances	Select the CEN instance associated with the VBR.
Virtual Border Router (VBR)	Select the VBR to monitor.
Source IP	Any unused IP address in the VPC attached to the CEN instance.
Target IP	The IP address of the customer premises equipment connected to the VBR.

#### View monitoring data

To view the monitoring data after configuring the health check, complete these steps:

- **1.** Log on to the *CEN console*.
- 2. In the left-side navigation pane, click **Health Check**.
- 3. Click the monitoring icon to view the monitoring data.
  - Outbound bandwidth: The bandwidth of data transmission from Alibaba Cloud to the local data center.
  - Inbound bandwidth: The bandwidth of data transmission from the local data center to the Alibaba Cloud.
  - Packet loss: The loss rate of data transmitted between the Alibaba Cloud and the local data center.

# 7 Manage routes

### 7.1 CEN routing

CEN automatically realizes the multi-node adaptive routing forwarding and distribution. The adaptive routing process improves the network performance.

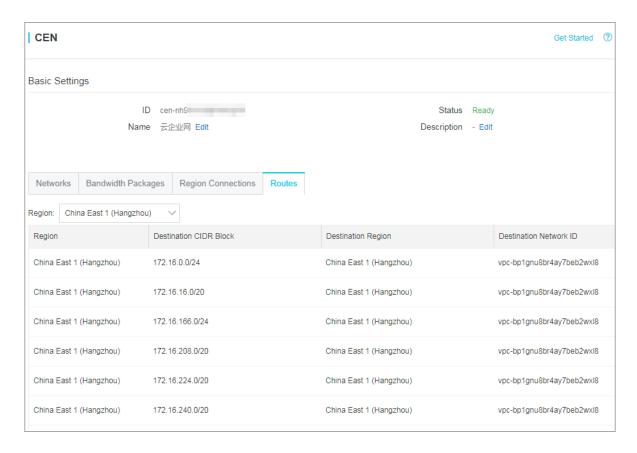
#### **View CEN routing**

You can view routes of networks in other regions learned by the CEN instance. For example, a CEN instance has attached a VPC in China North 1 (Qingdao) and another VPC in China North 2 (Beijing). You can follow these steps to view routes learned from the VPC in China North 1:

- 1. Log on to the CEN console.
- 2. Click the ID of the target CEN instance.
- 3. Click Routes and select the region to query.

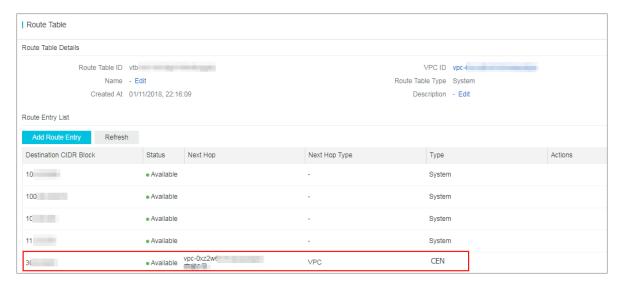
Descriptions of fields in the routes are as follows:

Field	Description	
Region	The region of the routes to query.	
Destination CIDR Block	The learned CIDR block.	
Destination Region	The region of the learned CIDR block.	
Destination Network ID	The network to which the destination CIDR block belongs.	



#### View learned CEN routes in a VPC

- 1. Log on to the VPC console.
- 2. In the left-side navigation pane, click Route Tables.
- Click the ID of the target route table, then you can view CEN route entries in the Route Entry List table.



#### View learned CEN routes in a VBR

- **1.** Log on to the *Express Connect console*.
- 2. In the left-side navigation pane, clickPhysical Connection > Virtual Border Router.
- 3. Click the ID of the target VBR, then you can view CEN route entries in the Route Entry List table.

### 7.2 Manage routing

Cloud Enterprise Network (CEN) supports publishing and withdrawing route entries of attached networks. You can publish a route entry of an attached VPC or VBR to a CEN instance, then other attached networks can learn the route if there is no route conflict. You can withdraw a published route entry when CEN does not need it any more.



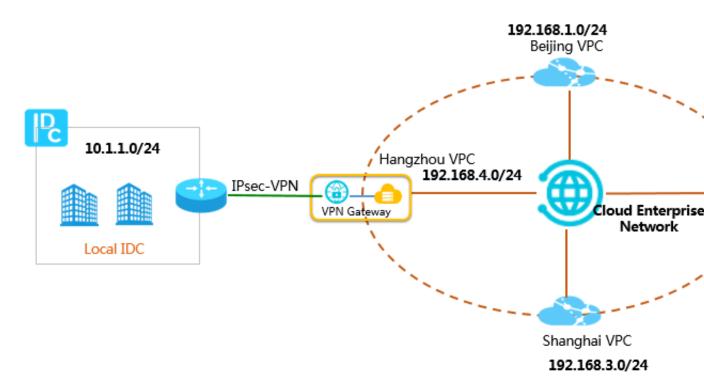
#### Note:

Currently, the console only supports publishing and withdrawing VPC routes and does not support publishing or withdrawing VBR routes. You can publish or withdraw VBR route entries by calling Open API *PublishRouteEntries*.

The following table lists the route entries that can be published to CEN. You can withdraw a route entry that has been published to CEN. Once withdrawn, the route entry does not exist in the CEN instance anymore. If you have published a custom route entry to a CEN instance and then delete it from the VPC route table, the route entry is also deleted from the CEN instance.

Route entries	Network	Publish to CEN by default
A route entry pointing to an ECS instance	VPC	No
A route entry pointing to a VPN Gateway	VPC	No
A route entry pointing to a HaVip	VPC	No
A VPC system route entry	VPC	Yes
A route entry pointing to a local data center	VBR	Yes
A BGP route entry	VBR	Yes

As shown in the following figure, four VPCs are attached to the CEN instance. The VPC in the Hangzhou region is configured with a VPN Gateway to connect to the local data center. After you publish the router entry pointing to the VPN Gateway in the VPC to the CEN instance, the other three VPCs learn the route and can also communicate with the local data center.



#### Publish a route entry to CEN

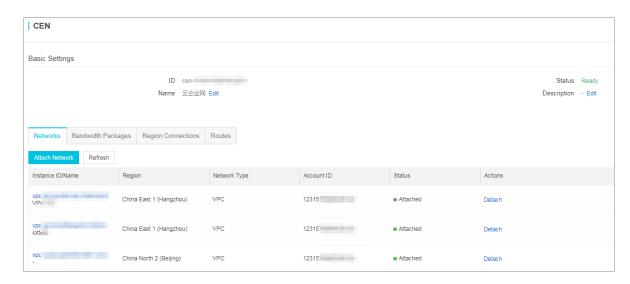
To publish a route entry in a VPC to CEN, complete these steps:



#### Note:

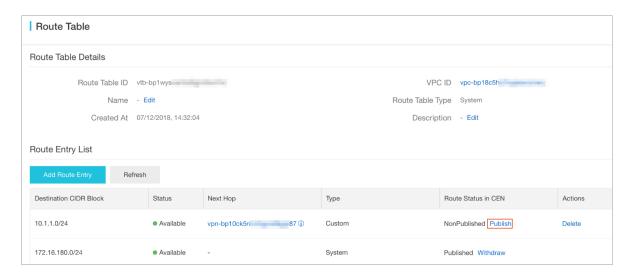
Make sure that the VPC is attached to the CEN.

- 1. Log on to the CEN console.
- 2. On the Instances page, click the ID of the target CEN instance.
- 3. On the **Networks** page, click the ID of the target VPC.

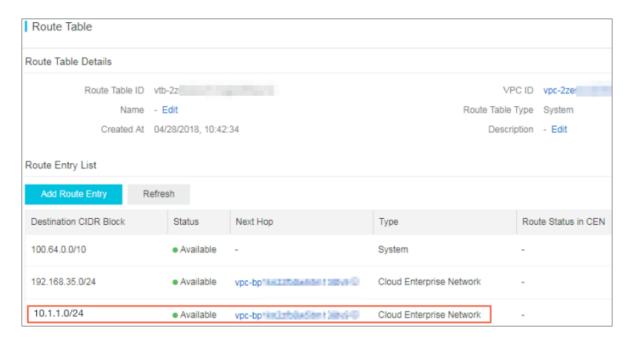


4. On the VPC Details page, click the link to the route table.

- 5. On the Route Tables page, click the ID of the route table.
- 6. Find the target route entry and click Publish.



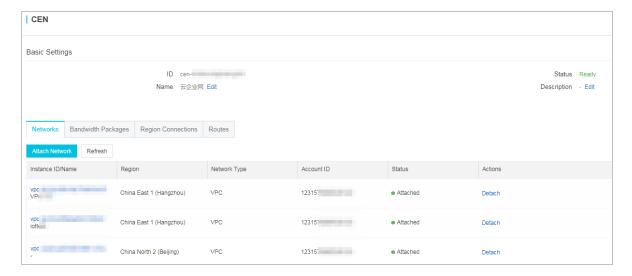
After the route entry is successfully published, you can view the learnt routes in other networks.



#### Withdraw a route entry from CEN

To withdraw a route entry published to CEN, complete these steps:

- 1. Log on to the CEN console.
- 2. On the Instances page, click the ID of the target CEN instance.
- **3.** On the **Networks** page, click the ID of the target VPC.



- **4.** On the **VPC Details** page, click the link to the route table.
- **5.** On the **Route Tables** page, click the ID of the route table.
- 6. Find the target route entry and click Withdraw. In the displayed dialog box, click OK.

