

# Alibaba Cloud Elastic IP Address

## User Guide

Issue: 20190719

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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.	 <b>Danger:</b> Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 <b>Warning:</b> 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.	 <b>Notice:</b> 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.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
<b>Bold</b>	It is used for buttons, menus, page names, and other UI elements.	Click OK.
<code>Courier</code> font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[ ] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<b><code>{}</code> or <code>{a b}</code></b>	It indicates that it is a required value, and only one item can be selected.	<code>switch {stand   slave}</code>



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# 1 Create an EIP

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## 1.1 Create an EIP

Elastic IP Addresses (EIPs) are public IP address resources that you can purchase and hold independently. You can create an EIP or reinstate a released EIP through the console. This topic describes how to create an EIP.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. On the Elastic IP Addresses page, click Create EIP.
4. On the Elastic IP page, configure the EIP according to the following information. Then, click Buy Now and complete the payment.

Configuration	Description
Region	Select the region of the EIP to be created.  Make sure that the EIP and the cloud instance to be associated with the EIP belong to the same region.
Max Bandwidth	Set a peak bandwidth for the EIP to be created.
Quantity	Select the number of the EIPs that you want to create with the same configurations.

## 1.2 Reinstate a released EIP

This topic describes how to reinstate a released Elastic IP Address (EIP) by IP address or instance ID.

### Context

After you reinstate a released EIP, its default peak bandwidth is 5 Mbit/s and the EIP uses the Pay-As-You-Go billing method (billed by traffic).



#### Note:

Released EIPs under each account can be reinstated up to 20 times per month. To increase the quota, [open a ticket](#).

## Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, click Request Specific EIP.
5. Select either of the following methods to reinstate a released EIP:
  - Click the Request by IP Address tab, enter the IP address of the EIP to be reinstated, and click OK.
  - Click the Request by EIP Instance ID tab, enter the instance ID of the EIP to be reinstated, and click OK.

## 2 Convert an ECS public IP address to an EIP

---

This topic describes how to convert the assigned public IP address of an ECS instance to an Elastic IP address (EIP).

**Notice:**

After the ECS public IP address is converted, you cannot convert it back.

### Public IP addresses

A public IP address and Internet bandwidth are required for an ECS instance if you want users to access your application deployed on the ECS instance over the Internet.

Alibaba Cloud provides the following two types of public IP addresses:

- ECS public IP address

If you choose to use a public IP address allocated by the system when you create an ECS instance of the VPC network, the public IP address is permanently associated with the corresponding ECS instance (that is, it cannot be disassociated from the ECS instance).

- EIP

An EIP is a public IP address resource that can be purchased and held independently. Currently, you can associate an EIP with an ECS instance of the VPC network, an intranet Server Load Balancer (SLB) instance of the VPC network, a secondary Elastic Network Interface (ENI), a NAT Gateway, or a High-Availability Virtual IP Address (HaVip). You can also add EIPs to an Internet Shared Bandwidth instance or a Data Transfer Plan to save Internet costs.

Both ECS public IP addresses and EIPs use the high-quality multi-line BGP network of Alibaba Cloud to help your application provide external services over the Internet. You can disassociate an EIP from an ECS instance, and re-associate it with the ECS instance when required. However, you cannot disassociate an ECS public IP address from an ECS instance.

### Benefits of EIPs

ECS public IP addresses will be gradually replaced by EIPs. EIPs have the following benefits:

- Flexibly defend against DDoS attacks

If your server is under DDoS attacks, you can disassociate the EIP from the attacked ECS instance and re-associate a new EIP with the ECS instance. You can additionally combine this measure with Anti-DDoS Pro to defend DDoS attacks.

- Simplify system and application extensions

If you need to expand your application, you may need to deploy the application on multiple ECS instances and use SLB to distribute traffic to these ECS instances. For this scenario, you can disassociate the EIP from the ECS instances and associate it with the SLB instance of the VPC network. This architecture change has no impact on user experience.

- Reduce costs

If you add EIPs to an Internet Shared Bandwidth instance, the Internet costs can be greatly reduced.

For more information, see [How to save the Internet cost?](#)

- Simplify access control

You can open a ticket to apply for continuous public IP addresses to simplify network access control.

## Limits

Before you convert an ECS public IP address to an EIP, make sure that the following requirements are met:

- The target ECS instance must be of the VPC network type and have a public IP address.
- The target ECS instance must be in the Stopped or Running state. ECS instances in other status are not supported.
- The billing method of the target ECS instance is Subscription and is billed by traffic. ECS instances that are billed based on bandwidth are not supported.
- You can convert an ECS public IP address to an EIP only.
- No pending specification adjustments for the target ECS instance exist in the Billing console.
- The expiration time of the target ECS instance is more than 24 hours from the current time.

**Note**

Note the following before you convert an ECS public IP address to an EIP:

- The Internet access of the ECS instance is not affected and no network disconnect ions will occur when the IP address is in a state of conversion.
- You can retain the original IP address with only the type of the IP address changed.
- The billing method of the Internet bandwidth remains unchanged.
- After the IP address is converted to an EIP, the EIP is charged and billed separately. For more information about the billing method of EIPs, see [Pay-As-You-Go](#). You can view the bill of the EIP in the [User Center](#) by choosing Purchases record > Usage record and then exporting the bill of EIP.

**Procedure**

To convert an ECS public IP address to an EIP, follow these steps:

1. Log on to the [ECS console](#).
2. In the left-side navigation pane, click Instances.
3. Select the region of the target ECS instance.
4. On the Instances page, find the target ECS instance, and choose More > Network and Security Group > Convert to EIP in the Actions column.
5. In the displayed dialog box, click OK.
6. Refresh the list of ECS instances.

After the the ECS public IP address is converted to an EIP, the original public IP address is labelled as EIP.

## 3 Associate an EIP with a cloud instance

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### 3.1 Associate an EIP with a NAT Gateway

This topic describes how to associate an Elastic IP Address (EIP) with a NAT Gateway. After you associate an EIP with a NAT Gateway, you can use the EIP to configure DNAT and SNAT entries.

#### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.
5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configuration	Description
Instance Type	<p>Select NAT Gateway Instance.</p> <p>The NAT Gateway to be associated with the EIP must meet the following requirements:</p> <ul style="list-style-type: none"><li>· No bandwidth package was purchased under the account to which the NAT Gateway belongs before January 26, 2018</li><li>·</li><li>· The NAT Gateway and the EIP must belong to the same region.</li><li>· Up to 20 EIPs can be associated with a NAT Gateway. To associate more EIPs, open a ticket.</li></ul>
NAT Gateway Instance	Select the NAT Gateway to be associated with the EIP.

## 3.2 Associate an EIP with an ECS instance

This topic describes how to associate an Elastic IP Address (EIP) with an ECS instance. After you associate an EIP with an ECS instance, the ECS instance can communicate with the Internet.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.
5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

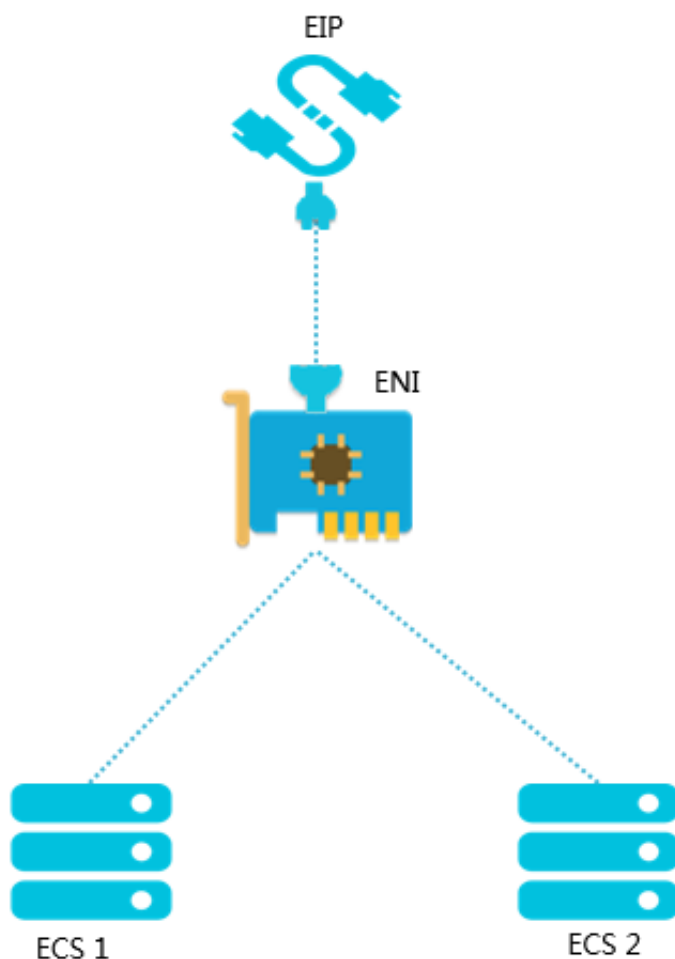
Configuration	Description
Instance Type	<p>Select ECS Instance.</p> <p>The ECS instance to be associated with the EIP must meet the following requirements:</p> <ul style="list-style-type: none"><li>· The network type of the ECS instance must be VPC.</li><li>· The ECS instance and the EIP must belong to the same region.</li><li>· The ECS instance must be in the Running or Stopped state.</li><li>· The ECS instance cannot have a public IP address or be associated with any EIP.</li><li>· One ECS instance can be associated with only one EIP.</li></ul>
ECS Instance	Select the ECS instance to be associated with the EIP.

## 3.3 Associate an EIP with a secondary ENI

### 3.3.1 Overview

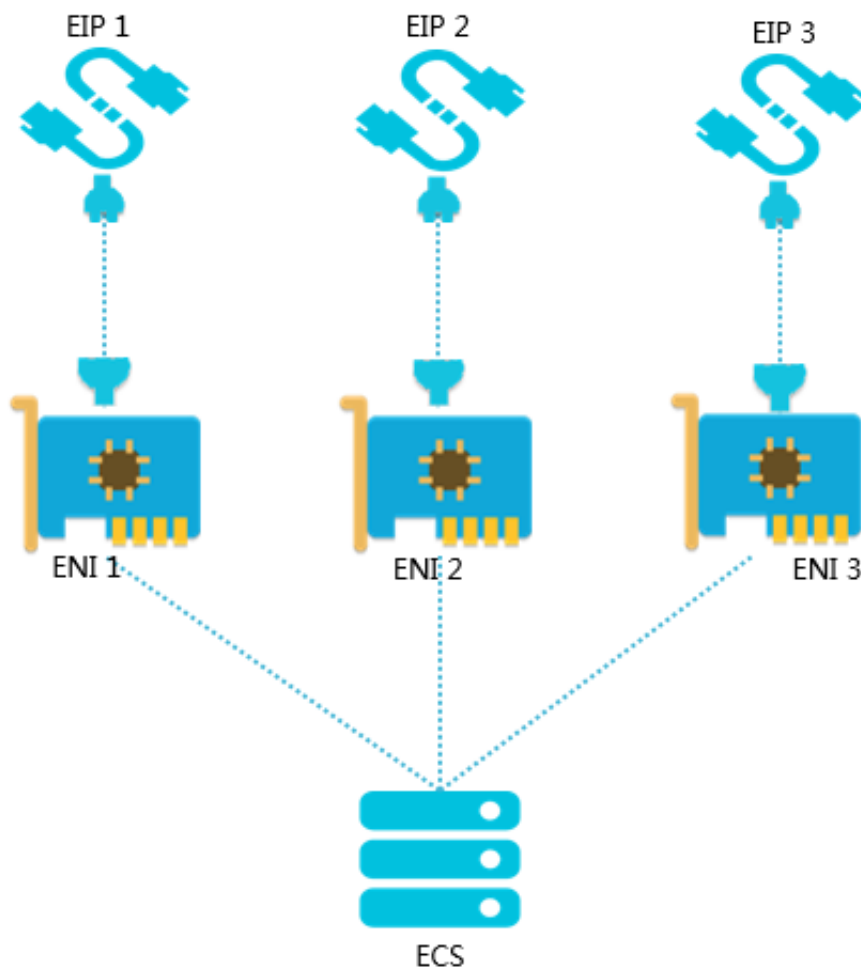
You can associate an Elastic IP Address (EIP) with an Elastic Network Interface (ENI). In this way, you can build a more robust, flexible, and scalable IT solution and allow a single server to use multiple public IP addresses.

An ENI has a private IP address. After an ENI is associated with an EIP, the ENI has both a private IP address and a public IP address. When you move an ENI that is associated with an EIP from an ECS instance to another ECS instance, the public IP address and private IP address are also migrated.



You can also associate multiple ENIs with an ECS instance and associate an EIP with each ENI so that the ECS instance has multiple public IP addresses. You can use these public IP addresses to provide external services with corresponding security group rules.





### Association modes

You can associate an EIP with an ENI in the following three modes:



- NAT mode
- Cut-through mode
- Multi-EIP to ENI mode






#### Note:

Currently, the Multi-EIP to ENI mode is supported only in the China (Beijing), China (Zhangjiakou), Singapore, Germany (Frankfurt), and India (Mumbai) regions.

The following table lists the differences among these three modes.

Item	NAT mode	Cut-through mode	Multi-EIP to ENI mode
Can the EIP be read on the ENI of the operating system?	No	Yes  <b>Note:</b> You can run the <code>ifconfig</code> or <code>ipconfig</code> command to obtain the EIP address of the ENI.	Yes  <b>Note:</b> After the operating system is configured with a static IP address, you can run the <code>ifconfig</code> or <code>ipconfig</code> command to obtain the public IP address of the ENI.
What types of ENIs can be associated with EIPs?	Primary ENIs and secondary ENIs	Secondary ENIs	Secondary ENIs
The number of EIPs that a primary ENI can be associated with.	1	Not supported	Not supported

Item	NAT mode	Cut-through mode	Multi-EIP to ENI mode
The number of EIPs that a secondary ENI can be associated with.	<p>Depends on the number of private IP addresses of the secondary ENI.</p> <div>  <b>Note:</b> EIPs are mapped to the private IP addresses of a secondary ENI. For example, if a secondary ENI has 10 private IP addresses, a maximum of 10 EIPs can be associated with the secondary ENI. </div>	<p>1</p> <div>  <b>Note:</b> In the cut-through mode, an EIP can only be associated with the primary private IP address of the secondary ENI. </div>	<p>10</p> <div>  <b>Note:</b> If you need to associate more EIPs, open a ticket to apply for an increase to the quota. </div>
Is the private IP address of the secondary ENI available after the ENI is associated with an EIP?	Yes	No	Yes
Supported protocols	When an EIP is deployed as a NAT ALG (NAT application layer gateway), protocols such as H.323, SIP, DNS, and RTSP are not supported.	All IP protocols such as FTP, H.323, SIP, DNS, RTSP, and TFTP.	All IP protocols such as FTP, H.323, SIP, DNS, RTSP, and TFTP.

## FAQ

Is the EIP instance fee charged after an EIP is associated with an ENI?

Yes.

The EIP instance fee is not charged only when the EIP is associated with an ECS instance.

Are additional configurations required after an EIP is associated with an ENI that is attached to an ECS instance?

- If an application that provides external services is deployed on the ECS instance, such as a website, you do not need to configure additional routing in the ECS instance or in the VPC. You can directly use the EIP associated with the ENI to provide external service.
- If an application that requires Internet access is deployed on the ECS instance, you must customize the default route or add new routes. The default route sends packets from the primary NIC. You can adjust the route priority to allow packets to be sent out through the ENI. You can also configure more routes to distribute packets from multiple NICs to balance the loads or randomly distribute the packets from one NIC.

### 3.3.2 Set the NAT mode

This topic describes how to set the NAT mode. When you associate an Elastic IP Address (EIP) with a secondary Elastic Network Interface (ENI), you can select the NAT Mode. In the NAT mode, the private and public IP addresses of the ENI are available at the same time, and the EIP is invisible to the ENI.

#### Prerequisites

A secondary ENI is created. For more information, see [Create an ENI](#).

#### Context

In the NAT mode:

- The EIP is associated with the ENI in the NAT mode. The private and public IP addresses of the ENI are available at the same time.
- The EIP is invisible to the operating system. If you need to know the public IP address associated with the ENI, you must call the DescribeEipAddresses API. For more information, see [#unique\\_16](#).
- Protocols that require NAT ALG are not supported, such as H.323, SIP, DNS, RTSP, and TFTP.

#### Procedure

1. Log on to the [VPC console](#).

2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.
5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configurat ion	Required?	Description
Instance Type	Yes	Select Secondary ENI.
Mode	No	Select NAT Mode.

Configurat ion	Required?	Description
Secondary ENI	Yes	Select the secondary ENI to be associated with the EIP .

Bind Elastic IP Address

×

IP Address:

4 . . 1

● Instance Type

Secondary ENI

▼

Mode

NAT Mode

▼

i

1. The elastic IP address binds to the ENI as a NAT IP. The ENI supports both public IP address and private IP address.

2. You cannot view the elastic IP address in the OS. However, you can use Open API to retrieve the public IP address of a specified ENI.

3. NAT mode does not support NAT ALG protocols such as H.323, SIP, DNS, RTSP, TFTP.

● Secondary ENI

-/er . . . 4

▼

OK

Cancel

Contact Us

### 3.3.3 Set the cut-through mode

This topic describes how to set the cut-through mode. When you associate an Elastic IP Address (EIP) with a secondary Elastic Network Interface (ENI), you can select the Cut-Through Mode. In this mode, the EIP replaces the private IP address of the ENI

and the ENI becomes a pure Internet network interface. You can see the EIP in the network interface information of the operating system.

### Prerequisites

- A secondary ENI is created. For more information, see [Create an ENI](#).
- The secondary ENI is not associated with any ECS instance.

If the secondary ENI is already associated with an ECS instance, disassociate the ENI from the ECS instance first. For more information, see [Detach an ENI from an instance](#).

### Context

EIPs are a type of NAT IP address. Because the public IP address in the NAT mode exists in the NAT Gateway and is not on the network interface of the ECS instance, you cannot see the public IP address in the operating system and can only see the private IP address. This complicates the operation and maintenance, and the relationship between network interfaces/servers and public IP addresses must be maintained manually. Additionally, when the EIP is deployed as a NAT ALG (NAT application layer gateway), protocols such as H.323, SIP, DNS, and RTSP are not supported.

The Cut-Through Mode makes the EIP visible on the network interface and solves the preceding problems. In the cut-through mode:

- The EIP replaces the private IP address of the ENI. The ENI becomes a pure Internet network interface and its intranet functions are not available any more.
- You can see the EIP in the ENI of the operating system, and directly obtain the public IP address on the ENI by running the `ifconfig` or `ipconfig` command.
- The EIP supports all IP protocols such as FTP, H.323, SIP, DNS, RTSP, and TFTP.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.



#### Note:

Currently, the cut-through mode is supported only in the China (Zhangjiakou), China (Shenzhen), China (Hohhot), Germany (Frankfurt), and US (Virginia) regions.

4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.
5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configuration	Required?	Description
Instance Type	Yes	Select Secondary ENI.
Mode	No	Select Cut-Through Mode.
Secondary ENI	Yes	Select the secondary ENI to be associated with the EIP.



Notice:



Make sure that the ENI is not associated with any ECS instance.

### Bind Elastic IP Address

**IP Address :**

47. [redacted] .251

● **Instance Type**

Secondary ENI

**Resource Group**

All

**Mode**

Cut-Through Mode

**i** 1. You can view the elastic IP address of the ENI by executing the `ifconfig/ipconfig` command in the OS.

2. The elastic IP address binds to the ENI and supports IP protocols such as FTP, H323, SIP, DNS, RTSP, TFTP.

3. The elastic IP address replaces the private IP address of the ENI. The ENI becomes a public network interface and will no longer provide private network capabilities.

4. This mode only supports binding an EIP to an ENI that has not been bound to an ECS instance. If the specified ENI is already bound to an ECS instance, you need to unbind the ENI from the ECS instance and then bind the EIP to the ENI.

● **Secondary ENI**

test/eni-bp14[redacted]

6. Return to the EIP list page and click the ID of the associated ENI.

<input type="checkbox"/>	ep-bp1a1abzbzmju66 y54u	47. [redacted] .68	1 Mbps Pay By Traffic	BGP	Pay-As-You-Go 11/29/2018, 17:02:31 Created	Allocated	Add to Shared Bandwidth Package	eni-bp1558hztv6[redacted]	Secondary ENI	Bind Unbind More
--------------------------	----------------------------	--------------------	--------------------------	-----	--	-----------	------------------------------------	---------------------------	---------------	------------------------

7. On the network interface list page, find the target ENI and click Bind to Instance to associate the ENI with an ECS instance.



Note:

After you set the cut-through mode, you must enable the DHCP function of the ECS instance with which the ENI is associated to make the cut-through mode take effect.

8. Log on to the ECS instance by using the associated EIP and check the network configurations of the ECS instance.



**Note:**

Make sure that the security group rules of the ECS instance allow remote access.

You can see that the local IP address of the ECS instance has changed to the associated EIP.

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 4:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80
    IPv4 Address. . . . . : 192.
    Subnet Mask . . . . . : 255.
    Default Gateway . . . . . : 192.

Ethernet adapter Ethernet 5:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::34ad:eb2c:be55:4a77%13
    IPv4 Address. . . . . : 47.9.68
    Subnet Mask . . . . . : 255.0.0
    Default Gateway . . . . . : 47.9.153

Tunnel adapter isatap.{3E630C83-2ED0-4BAB-99DC-5F6F22B80903}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 

Tunnel adapter Teredo Tunneling Pseudo-Interface:

    Connection-specific DNS Suffix  . : 
    IPv6 Address. . . . . : 2001:0:9
    Link-local IPv6 Address . . . . . : fe80::34
    Default Gateway . . . . . : ::

Tunnel adapter isatap.{D9E63B28-1504-4094-A5EB-086C41138E32}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 
PS C:\Users\Administrator>
```

### 3.3.4 Set the Multi-EIP to ENI mode

This topic describes how to set the Multi-EIP to ENI mode. When you associate multiple Elastic IP Addresses (EIPs) with a secondary Elastic Network Interface (ENI), you can select the Multi-EIP to ENI Mode. In this mode, the private and public IP addresses of the ENI are available at the same time. You can see the EIPs in the network interface information of the operating system.

#### Prerequisites

- A secondary ENI is created. For more information, see [Create an ENI](#).

- The secondary ENI is not associated with any EIP in the NAT or cut-through mode.

If the secondary ENI is already associated with an EIP, disassociate the EIP first.

For more information, see [Disassociate an EIP](#).

## Context

EIPs are a type of NAT IP address. Because the public IP address in the NAT mode exists in the NAT Gateway and is not on the network interface of the ECS instance, you cannot see the public IP address in the operating system and can only see the private IP address. This complicates the operation and maintenance, and the relationship between network interfaces/servers and public IP addresses must be maintained manually. Additionally, when the EIP is deployed as a NAT ALG (NAT application layer gateway), protocols such as H.323, SIP, DNS, and RTSP are not supported.

The Multi-EIP to ENI Mode makes the EIP visible on the network interface and solves the preceding problems. In the Multi-EIP to ENI mode:

- The intranet function of the secondary ENI is still available.
- The EIPs are visible to the ENI. After the operating system is configured with a static IP address, you can run the `ifconfig` or `ipconfig` command to obtain the public IP address of the ENI.
- The EIPs support all IP protocols such as FTP, H.323, SIP, DNS, RTSP, and TFTP.

## Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.



### Note:

Currently, the Multi-EIP to ENI mode is supported only in the China (Zhangjiakou), Singapore, Germany (Frankfurt), India (Mumbai), and UK (London) regions.

4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.

5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configuration	Required?	Description
Instance Type	Yes	Select Secondary ENI.
Resource Group	No	Select the resource group to which the EIP belongs.
Mode	No	Select Multi-EIP to ENI Mode.

Configuration	Required?	Description
Secondary ENI	Yes	Select the secondary ENI to be associated with the EIP.

Bind Elastic IP Address

×

IP Address:

4 1

● Instance Type

Secondary ENI

Mode

Multi-EIP to ENI Mode

1

1. The elastic IP address binds to the ENI as a NAT IP. The ENI supports both public IP address and private IP address.

2

2. You cannot view the elastic IP address in the OS. However, you can use Open API to retrieve the public IP address of a specified ENI.

3

3. NAT mode does not support NAT ALG protocols such as H.323, SIP, DNS, RTSP, TFTP.

● Secondary ENI

-/er 4

OK

Cancel

Contact Us

- Repeat the preceding steps to associate multiple EIPs with the secondary ENI.
- Return to the EIP list page and click the ID of the associated ENI.

<input type="checkbox"/>	eip-bp1a1wbczmjy66 y54u	47 69	1 Mbps Pay By Traffic	BGP	Pay-As-You-Go 11/29/2018, 17:02:31 Created	Allocated	Add to Shared Bandwidth Package	eip-bp1558hztv5	Secondary ENI	Bind Unbind More
--------------------------	----------------------------	-------	--------------------------	-----	--	-----------	------------------------------------	-----------------	---------------	------------------------

8. On the Network Interfaces page, find the target ENI and click Bind to Instance to associate the ENI with an ECS instance.

**Note:**

After you set the Multi-EIP to ENI mode, you must enable the DHCP function of the ECS instance with which the ENI is associated to make the Multi-EIP to ENI mode take effect.

9. Call `DescribeEipGatewayInfo` to obtain the gateway addresses and subnet masks of the EIPs. For more information, see [DescribeEipGatewayInfo](#).
10. Log on to the ECS instance and configure multiple EIPs for the ECS instance. For more information, see [Configure an EIP for a Windows instance](#) and [Configure an EIP for a Linux instance](#).

**Notice:**

When you configure EIPs for the ECS instance, change the secondary private IP addresses to EIP addresses and change the gateway addresses and subnet masks of the private IP addresses to the gateway addresses and subnet masks of the EIPs.

After configuring EIPs, you can run the `ifconfig` or `ipconfig` command to view the configured EIPs.

11. (Optional) After setting the Multi-EIP to ENI mode, you can test the network connectivity. For more information, see [Test network connectivity](#).

## 3.4 Associate an EIP with an SLB instance

This topic describes how to associate an Elastic IP Address (EIP) with a Server Load Balancer (SLB) instance. After you associate an EIP with an SLB instance, the SLB instance can forward requests from the Internet.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.

5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configuration	Description
Instance Type	<p>Select SLB Instance.</p> <p>The SLB instance to be associated with the EIP must meet the following requirements:</p> <ul style="list-style-type: none"><li>· The network type of the SLB instance must be VPC.</li><li>· The SLB instance and the EIP must belong to the same region.</li><li>· Each SLB instance can be associated with only one EIP at a time.</li></ul>
SLB Instance	Select the SLB instance to be associated with the EIP.

### 3.5 Associate an EIP with an HaVip

This topic describes how to associate an Elastic IP Address (EIP) with a High-Availability Virtual IP Address (HaVip). After you associate an EIP with an HaVip, the HaVip can access the Internet.

#### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Bind in the Actions column.

5. On the Bind Elastic IP Address page, complete the following configurations, and then click OK.

Configuration	Description
Instance Type	<p>Select HaVip Address</p> <p>The HaVip to be associated with the EIP must meet the following requirements:</p> <ul style="list-style-type: none"><li>· The HaVip and the EIP must belong to the same region.</li><li>· The HaVip must be in the Available or Allocated state.</li><li>· An HaVip can be associated with only one EIP.</li></ul>
HaVip Address	Select the HaVip address to be associated with the EIP.



## 4 Disassociate an EIP from a cloud instance

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You can disassociate an Elastic IP Address (EIP) from a cloud instance when Internet access is no longer required by the cloud instance. After an EIP is disassociated from a cloud instance, you still need to pay the EIP retention fee.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP and click Unbind in the Actions column.

If your EIP is associated with a NAT Gateway for which DNAT or SNAT entries have been created, choose More > Force Unbind NAT in the Actions column.

5. In the displayed dialog box, click OK.

## 5 Manage Pay-As-You-Go-billed EIPs

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### 5.1 Modify the peak bandwidth of an EIP

You can modify the peak bandwidth of an Elastic IP Address (EIP).

#### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP, and choose More > Upgrade in the Actions column.
5. In the Configuration Upgrade section, set a new peak bandwidth value and click Activate.

### 5.2 Add EIPs to an Internet Shared Bandwidth instance

Internet Shared Bandwidth provides region-level bandwidth sharing. After you purchase an Internet Shared Bandwidth instance, the ECS instances, NAT Gateways, and VPC SLB instances that are associated with the EIPs added to the instance can share the bandwidth.

#### Prerequisites

Make sure the following conditions are met before you add an EIP to an Internet Shared Bandwidth instance:

- The EIP adopts the Pay-As-You-Go billing method.
- The EIP and the Internet Shared Bandwidth instance must belong to the same region.
- Up to 100 EIPs can be added to an Internet Shared Bandwidth instance. If you need to add more EIPs, open a ticket.
- An Internet Shared Bandwidth instance is created. For more information, see [Create an Internet Shared Bandwidth instance](#).

#### Context

Internet Shared Bandwidth adopts the traffic-based Pay-As-You-Go billing method. For more information, see [Billing](#).

After you add EIPs to an Internet Shared Bandwidth instance:

- The ECS instances, SLB instances, and NAT Gateways that are associated with the EIPs share the bandwidth.
- The peak bandwidth of each added EIP becomes invalid and is replaced by the peak bandwidth of the Internet Shared Bandwidth.
- The billing method of each added EIP becomes invalid and no additional traffic or bandwidth fee is incurred. Only EIP retention fee is charged on EIPs associated with NAT Gateways or SLB instances, and no additional fee is charged on EIPs associated with ECS instances.

#### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP, and choose More > Add to Shared Bandwidth Package in the Actions column.
5. In the displayed dialog box, select the target Internet Shared Bandwidth instance, and click OK.

## 5.3 Remove an EIP from an Internet Shared Bandwidth instance

This topic describes how to remove an Elastic IP Address (EIP) from an Internet Shared Bandwidth instance. After an EIP is removed from an Internet Shared Bandwidth instance, the EIP is restored to its original peak bandwidth and billing method.

#### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP, and choose More > Remove from Internet Shared Bandwidth in the Actions column.
5. In the displayed dialog box, click OK.

## 5.4 Add an EIP to a shared-bandwidth Global Acceleration instance

This topic describes how to add an Elastic IP Address (EIP) to a shared-bandwidth Global Acceleration instance. After you create a shared-bandwidth Global Acceleration instance, you can add all EIPs in the same region to the shared-bandwidth Global Acceleration instance. In this way, the EIPs can obtain the feature of Internet access acceleration and share the bandwidth of the Global Acceleration instance to save the Internet cost.

### Prerequisites

The EIP to be added to a shared-bandwidth Global Acceleration instance must meet the following requirements:

- The EIP must adopt the Pay-As-You-Go billing method.
- The EIP and the shared-bandwidth Global Acceleration instance must belong to the same region.
- Up to 200 EIPs can be added to a shared-bandwidth Global Acceleration instance. If you need to add more EIPs, open a ticket.
- A shared-bandwidth Global Acceleration instance is created. For more information, see [Create a shared-bandwidth Global Acceleration instance](#).

### Context

Shared-bandwidth global acceleration instances are billed by using the bandwidth-based Subscription method. For more information, see [Billing instructions](#).

After an EIP is added to a shared-bandwidth Global Acceleration instance,

- The original peak bandwidth of the EIP becomes invalid and all added EIPs share the bandwidth of the Global Acceleration instance.
- The original billing method of the EIP becomes invalid. The EIP becomes a pure public IP address and no additional traffic or bandwidth fee is charged.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.

4. On the Elastic IP Addresses page, find the target EIP, and choose More > Add to Global Acceleration in the Actions column.
5. In the displayed dialog box, select the target shared-bandwidth Global Acceleration instance, and then click OK.

## 5.5 Remove an EIP from a Global Acceleration instance

You can remove an Elastic IP Address (EIP) from a Global Acceleration instance. After an EIP is removed from a Global Acceleration instance, the EIP is restored to the original peak bandwidth and billing method.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP, and choose More > Remove from Global Acceleration in the Actions column.
5. In the displayed dialog box, click OK.

## 5.6 Release an EIP

This topic describes how to release an Elastic IP Address (EIP). After you release an EIP, no fees are charged on the EIP.

### Prerequisites

Before you release an EIP, make sure that the following conditions are met:

- The billing method of the EIP to be released must be Pay-As-You-Go. Subscription-billed EIPs cannot be released.
- The EIP is not associated with any cloud instances. If the EIP is associated with a cloud instance, disassociate the EIP first. For more information, see [Disassociate an EIP from a cloud instance](#).

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.

4. On the Elastic IP Addresses page, find the target EIP, and choose **More > Release** in the Actions column.
5. In the displayed dialog box, click OK.

## 6 View bills

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This topic describes how to view your EIP bills.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, choose Elastic IP Addresses.
3. Select the region of the target EIP.
4. On the Elastic IP Addresses page, find the target EIP, and choose More > Bills in the Actions column.

## 7 Manage quotas

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You can query the number of remaining resources in your quota through the VPC console. If the remaining quota number is insufficient for your requirements, you can apply to increase the quota.

### Procedure

1. Log on to the [VPC console](#).
2. In the left-side navigation pane, click Quota Management.
3. On the Quota Management page, click the Elastic IP tab to view the resource usage of the EIP service under your account.
4. To increase your resource quota, click Apply in the Actions column. Then, enter the following information:
  - Quantity for Application: the number of resources you require.
  - Reason for Application: your reason for applying for an increase to your quota. We recommend that you include details about your specific scenario.
  - Email: the email address of the person to contact.
5. Click OK.

The system then determines whether the quota application is reasonable. If the system determines the request is unreasonable, the application enters the Rejected state. If the application is reasonable, the application enters the Approved state and the quota is automatically upgraded to the specified quota number.

To view the history of quota applications, click Application History in the Application History column.