

Alibaba Cloud NAT Gateway

API reference

Issue: 20190719

Legal disclaimer

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.
2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company, or individual in any form or by any means without the prior written consent of Alibaba Cloud.
3. The content of this document may be changed due to product version upgrades, adjustments, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and the updated versions of this document will be occasionally released through Alibaba Cloud-authorized channels. You shall pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.
4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides the document in the context that Alibaba Cloud products and services are provided on an "as is", "with all faults" and "as available" basis. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not bear any liability for any errors or financial losses incurred by any organizations, companies, or individuals arising from their download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, bear responsibility for any indirect, consequential, exemplary, incidental, special, or punitive damages, including lost profits arising from the use

or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.

5. By law, all the content of the Alibaba Cloud website, including but not limited to works, products, images, archives, information, materials, website architecture, website graphic layout, and webpage design, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of the Alibaba Cloud website, product programs, or content shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates).
6. Please contact Alibaba Cloud directly if you discover any errors in this document.

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.
	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.	 Notice: 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 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 a optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

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

Contents

Legal disclaimer.....	I
Generic conventions.....	I
1 API overview.....	1
2 Call APIs.....	3
3 Common parameters.....	6
4 NAT Gateway.....	8
4.1 CreateNatGateway.....	8
4.2 ModifyNatGatewayAttribute.....	14
4.3 ModifyNatGatewaySpec.....	17
4.4 DescribeNatGateways.....	19
4.5 DeleteNatGateway.....	25
5 DNAT table.....	28
5.1 CreateForwardEntry.....	28
5.2 ModifyForwardEntry.....	33
5.3 DescribeForwardTableEntries.....	36
5.4 DeleteForwardEntry.....	40
6 SNAT table.....	43
6.1 CreateSnatEntry.....	43
6.2 ModifySnatEntry.....	48
6.3 DescribeSnatTableEntries.....	51
6.4 DeleteSnatEntry.....	54
7 NAT bandwidth package.....	57
7.1 CreateBandwidthPackage.....	57
7.2 DescribeBandwidthPackages.....	62
7.3 ModifyBandwidthPackageAttribute.....	67
7.4 ModifyBandwidthPackageSpec.....	70
7.5 AddBandwidthPackageIps.....	72
7.6 RemoveBandwidthPackageIps.....	74
7.7 DeleteBandwidthPackage.....	77

1 API overview

The following table lists available NAT Gateway API actions. The endpoint of NAT Gateway API actions is `vpc.aliyuncs.com`. For more information on how to call NAT Gateway API actions, see the VPC API documentation.

API	Description
#unique_4	Creates a NAT Gateway.
#unique_5	Modifies the name and description of a NAT Gateway.
#unique_6	Modifies the specifications of a NAT Gateway.
#unique_7	Queries created NAT Gateways.
#unique_8	Adds a DNAT entry.
#unique_9	Modifies a DNAT entry.
#unique_10	Queries DNAT entries in a DNAT table.
#unique_11	Deletes a DNAT entry.
CreateSnatEntry	Creates an SNAT entry.
#unique_13	Modifies an SNAT entry.
#unique_14	Queries SNAT entries in a SNAT table.
#unique_15	Deletes an SNAT entry.
#unique_16	Creates a NAT bandwidth package.
#unique_17	Queries NAT bandwidth packages.
#unique_18	Modifies the bandwidth of a NAT bandwidth package.
#unique_19	Modifies the name and description of a NAT bandwidth package.
#unique_20	Adds a public IP address to a NAT bandwidth package.
#unique_21	Removes a public IP address from a NAT bandwidth package.
#unique_22	Deletes a NAT bandwidth package.
#unique_23	Deletes a NAT Gateway.

**Note:**

You can call `DescribeBandwidthPackages`, `ModifyBandwidthPackageSpec`, `AddBandwidthPackageIps`, `RemoveBandwidthPackageIps`, and `DeleteBandwidthPackage` only if you purchased a NAT bandwidth package before January 26, 2018. If you did not purchase a NAT bandwidth package before January 26, 2018, use an EIP.

2 Call APIs

NAT Gateway and VPC use the same service address (endpoint). This means that when you call NAT Gateway APIs, HTTP GET requests are sent to the API end point of NAT Gateway, and the system responds according to the parameters set in the request.

Both the requests and responses are UTF-8 encoded.

Request syntax

NAT Gateway APIs use RPC style. To call NAT Gateway APIs, send HTTP GET requests.

The structure of a NAT Gateway API request is as follows:

```
http :// Endpoint /? Action = xx & Parameters
```

Where:

- **Endpoint** : The endpoint of NAT Gateway APIs is `vpc . aliyuncs . com` .
- **Action** : the name of the action. For example, if you need to create a NAT Gateway, the action is `CreateNatGateway`.
- **Version** : The version of the API. The version of NAT Gateway APIs is `2016 - 04 - 28` .
- **Parameters** : the request parameters. Separate multiple parameters by using ampersands (&).

Request parameters include common parameters and API-specific parameters.

Common parameters include API version and identity authentication information among other parameters. For more information, see [Common parameters](#).

The following is an example of calling `CreateNatGateway` to create a NAT Gateway:



Note:

The following code has been edited to improve readability.

```
https :// vpc . aliyuncs . com /? Action = CreateNatG  ateway
& Format = xml
& Version = 2016 - 04 - 28
& Signature = xxxx % xxxx % 3D
& SignatureM ethod = HMAC - SHA1
& SignatureN  once = 1521552885  2396
& SignatureV ersion = 1 . 0
& AccessKeyI  d = key - test
& Timestamp = 2012 - 06 - 01T12 : 00 : 00Z
```

...

API authorization

To maintain account security, we recommend that you use the Access Keys (AKs) of RAM users to call APIs. Before you call APIs using the AKs of RAM users, you need to grant permissions to the RAM users by attaching corresponding policies to them.

For more information about the policies related to NAT Gateway APIs, see [RAM authentication](#).

Request signature

Authentication is required by the NAT Gateway service for each API call, which is provided by the inclusion of signature information in the request.

NAT Gateway uses an AccessKeyID and AccessKeySecret pair (that is, an AK) and symmetric encryption to authenticate the identity of the request sender. AKs are certificates that Alibaba Cloud issues to Alibaba Cloud accounts and RAM users for authentication. It is similar to a logon password. The AccessKeyID is used to identify the visitor's identity. The AccessKeySecret is the key used to encrypt the signature string. The server uses the AccessKeySecret to decrypt the signature string. The AccessKeySecret must be kept confidential.

A request in an API call is signed in the following format:

```
https://endpoint/?SignatureVersion= 1 . 0 &SignatureMethod= HMAC - SHA1
&Signature= XXXX % 3D & SignatureN once = 3ee8c1b8 - 83d3 - 44af -
a94f - 4e0axxxxxx xx
```

Take the API call of CreateNatGateway as an example. If your AccessKey ID is `testid` , and your AccessKey Secret is `testsecret` , then, the URL in the signature is as follows:

```
http :// vpc . aliyuncs . com /? Action = CreateNatG ateway
& Timestamp = 2016 - 05 - 23T12 : 46 : 24Z
& Format = XML
& AccessKeyI d = testid
& SignatureM ethod = HMAC - SHA1
& SignatureN once = 3ee8c1b8 - 83d3 - 44af - a94f - 4e0axxxxxx xx
& Version = 2014 - 05 - 26
& SignatureV ersion = 1 . 0
```

To generate the signature, follow these steps:

1. Create the string to be signed by using the request parameter.

```
GET &% 2F & AccessKeyI d % 3Dtestid & Action % 3DCreateNa
tGateway & Format % 3DXML & SignatureM ethod % 3DHMAC - SHA1 &
SignatureN once % 3D3ee8c1b8 - 83d3 - 44af - a94f - 4e0axxxxxx xx
& SignatureV ersion % 3D1 . 0 & TimeStamp % 3D2016 - 02 - 23T12 %
253A46 % 253A24Z & Version % 3D2014 - 05 - 15
```

.

2. Calculate the HMAC value of the string.

Add an ampersand (&) after the AccessKeySecret to add the key of the HMAC value.

In this example, the key is `testsecret &`.

```
CT9X0VtwR8 6fNWS ***** juE =
```

3. Add the signature to the request parameter.

```
http :// vpc . aliyuncs . com /? Action = CreateNatG ateway
& Timestamp = 2016 - 05 - 23T12 : 46 : 24Z
& Format = XML
& AccessKeyI d = testid
& SignatureM ethod = HMAC - SHA1
& SignatureN once = 3ee8c1b8 - 83d3 - 44af - a94f - 4e0axxxxxx xx

& Version = 2014 - 05 - 26
& SignatureV ersion = 1 . 0
& Signature = XXXX % 3D
```

3 Common parameters

Common request parameters

The following table describes common request parameters used in most Alibaba Cloud APIs.

Table 3-1: Common request parameters

Parameter	Type	Required?	Description
Format	String	No	The format of the response. Valid values: JSON (default) XML
Version	String	Yes	The version of the API. It uses the date format <code>YYYY-MM-DD</code> . Valid value: 2016-04-28
AccessKeyId	String	Yes	The AccessKey ID of the user who calls the API.
Signature	String	Yes	The request signature.
SignatureMethod	String	Yes	The algorithm used to create the request signature. Valid value: HMAC-SHA1
Timestamp	String	Yes	The time at which the request is signed. It uses the format: <code>YYYY-MM-DDThh:mm:ssZ</code> . For example, 2013-01-10T12:00:00Z.
SignatureVersion	String	Yes	The signature version to use. Valid value: 1.0
SignatureNonce	String	Yes	A random number for the signature to prevent from network attacks. Different random numbers must be used for different requests.

Common response parameters

Alibaba Cloud API responses all use a unified format. A status code of the format 2xx indicates a successful call, and a status code of the 4xx or 5xx format indicates a failed call. For successful calls, returned data can be in a XML or JSON format. You can specify the format of the returned data when sending a request. The default format is XML.

A `RequestId` is returned no matter if it is successful or not.

- XML format

```
<? xml version =" 1 . 0 " encoding =" utf - 8 "? >
<!-- The root node of the result -->
< Action + Response >
    <!-- The returned result -->
    < RequestId > 4C467B38 - 3910 - 447D - 87BC - AC049166F2 16
</ RequestId >
    <!-- The returned result -->
</ Action + Response >
```

- JSON format

```
{
  " RequestId ":" 4C467B38 - 3910 - 447D - 87BC - AC049166F2 16
",
  /* The returned result */
}
```

4 NAT Gateway

4.1 CreateNatGateway

Create a NAT Gateway.

Note the following before creating a NAT Gateway:

- A NAT Gateway and a self-hosted SNAT Gateway cannot coexist in a VPC.
- After a NAT Gateway is created, a route entry of which the destination CIDR block is 0.0.0.0/0 and the next hop is the NAT Gateway is automatically added to the route table of the VPC. This means that traffic can be routed to the NAT Gateway.
- If a route entry of which the destination CIDR block is 0.0.0.0/0 already exists in the route table of the VPC, you need to delete the router entry. Otherwise, the NAT Gateway cannot be created.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs. API Explorer can help reduce possible difficulty with using cloud APIs. We recommend that you use API Explorer.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	CreateNatGateway	The action to perform. Valid value: CreateNatGateway
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To obtain the region ID, call DescribeRegions.
VpcId	String	Yes	vpc-bp1di7uewzmtvfug8ufpv	The ID of the VPC to be used.

Parameter	Type	Required?	Example value	Description
BandwidthPackage.n.Bandwidth	String	No	5	The bandwidth of the NAT bandwidth package (n). Valid value: [5,5000]  Note: This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to attach an EIP.
BandwidthPackage.N.ISP	String	No	BGP	The ISP type of the shared bandwidth package (n). Default value: BGP (multiple lines).
BandwidthPackage.n.IpCount	String	No	5	The number of public IP addresses in the shared bandwidth package. Valid value: [1,50]. n represents the n-th bandwidth package. Valid values: [1,4].  Note: This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account did not include a NAT bandwidth package before January 26, 2018, attach an EIP.

Parameter	Type	Required?	Example value	Description
BandwidthPackage . n . Zone	String	No	cn-hangzhou-b	The zone of the shared bandwidth package (n). The system randomly allocates a zone if this parameter is not specified. If the NAT bandwidth package and the backend ECS instance are not in the same zone, the latency of the connection between them is unchanged; if they are in the same zone, the latency can be reduced.  Note: This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package before January 26, 2018, you need to attach an EIP.
ClientToken	String	No	shefffxddjehfh123	A client token used to guarantee the idempotence of requests. This parameter value is generated by the client and must be unique. It cannot exceed 64 ASCII characters.

Parameter	Type	Required ?	Example value	Description
Description	String	No	testnat	The description of the NAT Gateway. The description must be 2 to 256 characters in length. It cannot start with <code>http ://</code> or <code>https ://</code>.
Name	String	No	fortest	The name of the NAT Gateway. The name must be 2 and 128 characters in length. It can contain letters, numbers, periods (.), underscores (_), and hyphens (-). The name must start with a letter. It cannot start with <code>http ://</code> or <code>https ://</code>. If this parameter is not specified, the gateway ID is used by default.
Spec	String	No	small	The specification of the NAT Gateway. Valid values: • <code>Small</code> (default): <code>small</code> • <code>Middle</code> : <code>medium</code> • <code>Large</code> : <code>large</code> • <code>Xlarge</code> . <code>1</code> : <code>super large</code>

Response parameters

Parameter	Type	Example value	Description
NatGatewayId	String	ngw-112za33e4	The ID of the NAT Gateway. The ID is generated by the system and is globally unique.
ForwardTableIds		ftb-11tc6xgmv	A list of forwarding tables.
BandwidthPackageIds		bwp-11odxu2k7	A list of shared bandwidth packages.
RequestId	String	2315DEB7-5E92-423A-91F7-4C1EC9AD97C3	The ID of the request.
SnatTableIds		stb-SnatTableIds	The ID of the SNAT table.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=CreateNatGateway
&RegionId=cn-hangzhou
&VpcId=vpc-bp1di7uewz-mtvfuq8ufp-v
&<CommonParameters>
```

Response example

• XML format

```
<CreateNatGatewayResponse>
  <BandwidthPackageIds>bwp-*****</BandwidthPackageIds>
  <forwardTableIds>ftb-*****</forwardTableIds>
  <natGatewayId>ngw-*****</natGatewayId>
  <snatTableIds>stb-*****</snatTableIds>
  <RequestId>E43E51F2-344F-4685-8DF5-30EB298CFA81</RequestId>
</CreateNatGatewayResponse>
```

• JSON format

```
{
  "BandwidthPackageIds": [
    "bwp-*****"
  ],
  "snatTableIds": [
    "stb-*****"
  ]
}
```

```

],
" natGateway Id ":" ngw -*****",
" RequestId ":" E43E51F2 - 344F - 4685 - 8DF5 - 30EB298CFA 81 ",
" forwardTab leIds ":"[
" ftb -*****"
]
}

```

Error codes

HTTP code	Error code	Error message	Description
400	InvalidVPCStatus	vpc incorrect status.	The VPC status is invalid.
404	InvalidRegionId. NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	MissingParameter. BandwidthPackage	only support one BandwidthPackage be created with NatGateway.	At least one shared bandwidth package must be specified.
400	MissingParameter	Miss mandatory parameter.	Required parameters are missing.
404	InvalidZoneId. NotFound	Specified value of ZoneId is not exists.	The specified zone does not exist.
404	InvalidZoneId. NotFound	Can not find ZoneId for allocated ip.	The zone of the IP address is incorrect.
400	QuotaExceeded. BandwidthPackageIps	The specified ipCount exceeded quota.	The IP address quota has been reached. To increase the quota, open a ticket.
400	InvalidParameter.Name. Malformed	The specified Name is not valid.	The specified name is invalid.
400	InvalidParameter. Description. Malformed	The specified Description is not valid.	The specified description is invalid.
400	ZONE_NO_AVAILABLE_IP	The Zone have no available ip.	There are no available IP addresses in this zone.

HTTP code	Error code	Error message	Description
400	InvalidParameter.BandwidthPackage.n.ISP.ValueNotSupport	The specified ISP of BandwidthPackage is not valid.	The ISP of the shared bandwidth package is invalid.
400	InvalidNatGatewayId.NotFound	The NatGatewayId not exist.	The specified NatGatewayId is invalid.
400	VswitchStatusError	The VSwitch is creating .	The VSwitch is being created.
400	VpcStatusError	The Vpc is creating .	The VPC is being created.
400	InvalidParameter.Spec.ValueNotSupported	The specified Spec is not valid.	The specification is invalid.

[View the error codes of the product](#)

4.2 ModifyNatGatewayAttribute

Modifies the name and description of a NAT Gateway.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyNatGatewayAttribute	The name of this action. Value: ModifyNatGatewayAttribute
NatGatewayId	String	Yes	ngw-xxoo123	The ID of the NAT Gateway.

Parameter	Type	Required?	Example value	Description
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
Description	String	No	fortest	The description of the NAT Gateway. The description must be 2 to 256 characters in length. It must start with a letter. It cannot start with <code>http://</code> or <code>https://</code> .
Name	String	No	nat123	The name of the NAT Gateway. The name must be 2 to 128 characters in length and can contain letters, numbers, periods (.), underscores (_), or hyphens (-). The name must start with a letter. It cannot start with <code>http://</code> or <code>https://</code> .

Response parameters

Parameter	Type	Example value	Description
RequestId	String	AB5F62CF-2B60-4458-A756-42C9DFE108D1	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifyNatGatewayAttribute
&NatGatewayId=ngw-xxoo123
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<ModifyNatGatewayAttributeResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
</ModifyNatGatewayAttributeResponse>
```

- JSON format

```
{
  "RequestId": "2315DEB7-5E92-423A-91F7-4C1EC9AD97C3"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidNatGatewayId.NotFound	The specified NatGatewayId does not exist in our records.	The specified NatGatewayId does not exist.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The name is invalid.
400	InvalidParameter.Description.Malformed	The specified Description is not valid.	The description is invalid.

[See common error codes](#)

4.3 ModifyNatGatewaySpec

Modifies the specification of a NAT Gateway.

The NAT Gateway is billed according to the largest specification used in a day.

A NAT Gateway specification determines the performance metrics (Max Connections and Connections Per Second) of SNAT, but does not relate to data throughput.

The relationship between a NAT Gateway specification and its corresponding performance metrics is as follows:

Specification	Max Connections	Connections Per Second (CPS)
Small	10 thousand	1 thousand
Medium	50,000	5,000
Large	200,000	10,000

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK example codes, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyNatGatewaySpec	The action to perform. Valid value: ModifyNatGatewaySpec
NatGatewayId	String	Yes	ngw-bp1uewa15k4iy5770ya89	The ID of the NAT Gateway.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.

Parameter	Type	Required ?	Example value	Description
Spec	String	Yes	Small	The specification of the NAT Gateway. Valid values: - Small (default value): small - Middle : medium - Large : large
ClientToken	String	No	SHA234js121223xxxxx	A client token used to guarantee the idempotence of requests. This parameter value is generated by the client and must be unique. It cannot exceed 64 ASCII characters.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	DBD4E4A2-786E-4BD2-8EB6-107FFC2B5B7D	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifyNatGatewaySpec
&NatGatewayId=ngw-bp1uewa15k4iy5770ya89
&RegionId=cn-hangzhou
&Spec=Small
&<CommonParameters>
```

Response example

• XML format

```
<ModifyNatGatewaySpecResponse>
  <RequestId>DBD4E4A2-786E-4BD2-8EB6-107FFC2B5B7D</RequestId>
```

```
</ ModifyNatGatewaySpec Response >
```

- JSON format

```
{  
  "RequestId ":" DBD4E4A2 - 786E - 4BD2 - 8EB6 - 107FFC2B5B 7D "  
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidNatGatewayId.NotFound	The specified NatGatewayId does not exist in our records.	The specified NatGatewayId does not exist.
400	NATGW_MODIFY_SPEC_SAME	The specified Spec is same with now.	The specification you entered is the same as the current specification.
400	InvalidParameter.Spec.ValueNotSupported	The specified Spec is not valid.	The specification is invalid.

[See common error codes](#)

4.4 DescribeNatGateways

Queries one or more NAT Gateways in a region.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeNatGateways	The name of the action. Valid value: DescribeNatGateways

Parameter	Type	Required ?	Example value	Description
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
Name	String	No	The name of the NAT Gateway	The name of the NAT Gateway.
NatGatewayId	String	No	ngw-bp1uewa15k4iy5770ya89	The ID of the NAT Gateway.
PageNumber	Integer	No	10	The number of pages to return. Default value: 1 .
PageSize	Integer	No	1	The number of entries per page. Maximum value: 50 . Default value: 10 .
VpcId	String	No	vpc-bp15zckdt37pq72zvw3	The ID of the VPC.

Response parameters

Parameter	Type	Example value	Description
NatGateways	N/A	N/A	A list of NAT Gateways.

Parameter	Type	Example value	Description
<code>└AutoPay</code>	Boolean	true	Indicates whether automatic payment is enabled. Valid values: · false: Automatic payment is not enabled. After an order is generated, you need to go to the order center to complete the payment. · true: Automatic payment is enabled.  Note: This parameter is required when the InstanceChargeType value is PrePaid.
<code>└BandwidthPackageIds</code>	N/A	bwp-s6lmotmkk	The IDs of the bandwidth packages attached to the NAT Gateway.
<code>└BusinessStatus</code>	String	Normal	The status of the NAT Gateway: · Normal: Normal · FinancialLocked: Locked due to insufficient account balance · SecurityLocked: Locked due to security reasons
<code>└CreationTime</code>	String	2017-06-08T12:20:55	The time at which the NAT Gateway was created. Standard: ISO8601. Format: YYYY-MM-DDThh:mmZ
<code>└Description</code>	String	NAT	The description of the NAT Gateway.
<code>└ExpiredTime</code>	String	2017-08-26T16:00Z	The time at which the NAT Gateway is to expire.
<code>└ForwardTableIds</code>	N/A	ftb-uf6gj3mhsg94qsqstfqsx	The IDs of port forwarding tables.

Parameter	Type	Example value	Description
<code>InstanceChargeType</code>	String	PostPaid	The billing method of the instance . Currently, only the Pay-As-You-Go billing method is supported. Valid value: PostPaid: Pay-As-You-Go
<code>IpLists</code>			The EIPs attached to the NAT Gateway.
<code>IpAddress</code>	String	116.62.222.28	The IP address of the EIP.
<code>Name</code>	String	The name of the instance	The name of the NAT Gateway.
<code>NatGatewayId</code>	String	ngw-bp1047e2d4z7kf2kiy25t	The ID of the NAT Gateway.
<code>RegionId</code>	String	cn-hangzhou	The ID of the region to which the NAT Gateway belongs.
<code>SnatTableIds</code>		stb-uf6dalcd0krz423pv8mq	The ID of the SNAT table of the NAT Gateway.
<code>Spec</code>	String	Small	The specification of the NAT Gateway.
<code>Status</code>	String	Initiating	The status of the NAT Gateway. Valid values: - Initiating: initiating - Available: available - Pending: being configured
<code>VpcId</code>	String	vpc-bp15zckdt37pq72zvw3	The ID of the VPC.
<code>TotalCount</code>	Integer	10	The number of queried entries.
<code>PageNumber</code>	Integer	10	The current page number.

Parameter	Type	Example value	Description
PageSize	Integer	10	The number of entries per page.
RequestId	String	4EC47282-1B74-4534-BD0E-403F3EE64CAF	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DescribeNatGateways
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

• XML format

```
<DescribeNatGatewaysResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>1</TotalCount>
  <PageSize>10</PageSize>
  <RequestId>1207C80C-7CAB-4874-A9A0-D19EC9F35490</RequestId>
  <NatGatewayList>
    <NatGateway>
      <Description></Description>
      <Spec>Small</Spec>
      <IpLists>
        <IpList>
          <IpAddress>118.31.65.181</IpAddress>
          <AllocationId>eip-bp1xyg5ipm-h3nledxywx-f</AllocationId>
          <UsingStatus>UsedBySnatTable</UsingStatus>
        </IpList>
        <IpList>
          <IpAddress>47.97.187.34</IpAddress>
          <AllocationId>eip-bp19eue77u-20cffjcu4e-a</AllocationId>
          <UsingStatus>UsedByForwardTable</UsingStatus>
        </IpList>
      </IpLists>
      <ForwardTableIds>
        <ForwardTableId>ftb-bp15o9aylj-19vfvgtznzoy</ForwardTableId>
      </ForwardTableIds>
      <VpcId>vpc-bp15k6sx6f-hdz2jw4daz-0</VpcId>
      <NatGatewayId>ngw-bp1047e2d4-z7kf2kiy25-t</NatGatewayId>
      <CreationTime>2018-01-10T09:48:29Z</CreationTime>
      <BandwidthPackageIds></BandwidthPackageIds>
      <Name></Name>
      <Status>Available</Status>
      <BusinessStatus>Normal</BusinessStatus>
    </NatGateway>
  </NatGatewayList>
</DescribeNatGatewaysResponse>
```

```

    < RegionId > cn - hangzhou </ RegionId >
    < SnatTableIds >
      < SnatTableId > stb - bp1tyr0o48 w6wymur4gv n </
SnatTableId >
    </ SnatTableIds >
    < InstanceChargeType > PostPaid </ InstanceChargeType >
  </ NatGateway >
</ NatGateway >
</ DescribeNatGatewaysResponse >

```

• JSON format

```

{
  "PageNumber": 1,
  "TotalCount": 1,
  "PageSize": 10,
  "RequestId": "1207C80C - 7CAB - 4874 - A9A0 - D19EC9F354 90",
  "NatGateway": {
    "NatGateway": [
      {
        "Description": "",
        "Spec": "Small",
        "IpLists": {
          "IpList": [
            {
              "IpAddress": "118 . 31 . 65 . 181",
              "AllocationId": "eip - bp1xyg5ipm h3nledxywx f",
              "UsingStatus": "UsedBySnatTable"
            },
            {
              "IpAddress": "47 . 97 . 187 . 34",
              "AllocationId": "eip - bp19eue77u 20cffjcu4e a",
              "UsingStatus": "UsedByForwardTable"
            }
          ]
        },
        "ForwardTableIds": {
          "ForwardTableId": [
            "ftb - bp15o9aylj 19vfvgtznzo y"
          ]
        },
        "VpcId": "vpc - bp15k6sx6f hdz2jw4daz 0",
        "NatGatewayId": "ngw - bp1047e2d4 z7kf2kiy25 t",
        "CreationTime": "2018 - 01 - 10T09 : 48 : 29Z",
        "BandwidthPackageIds": {
          "BandwidthPackageId": []
        },
        "Name": "",
        "Status": "Available",
        "BusinessStatus": "Normal",
        "RegionId": "cn - hangzhou",
        "SnatTableIds": {
          "SnatTableId": [
            "stb - bp1tyr0o48 w6wymur4gv n"
          ]
        },
        "InstanceChargeType": "PostPaid"
      }
    ]
  }
}

```

```
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId. NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.

[See common error codes](#)

4.5 DeleteNatGateway

Deletes a NAT Gateway.



Note:

If the NAT Gateway is associated with a shared bandwidth package, you must delete the shared bandwidth package first.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required ?	Example value	Description
Action	String	Yes	DeleteNatGateway	The name of this action. Value: DeleteNatGateway
NatGatewayId	String	Yes	ngw-bp1uewa15k4iy5770ya89	The ID of the NAT Gateway.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.

Parameter	Type	Required ?	Example value	Description
Force	Boolean	No	false	Indicates whether to forcibly delete the NAT Gateway.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	4EC47282-1B74-4534-BD0E-403F3EE64CAF	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DeleteNatGateway
&NatGatewayId=ngw-bp1uewa15k4iy5770ya89
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<DeleteNatGatewayResponse>
  <RequestId>0ED8D006-F706-4D23-88ED-E11ED28DCA C0</
  RequestId>
</DeleteNatGatewayResponse>
```

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCA C0"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.

HTTP status code	Error code	Error message	Description
404	InvalidNatGatewayId.NotFound	The specified NatGateway Id does not exist in our records.	The specified NatGateway Id does not exist.
400	Dependency Violation. BandwidthP ackages	There are BandwidthP ackages on specified NatGateway not deleted.	The NAT Gateway is associated with one or more shared bandwidth packages. Delete all shared bandwidth packages first.

[See common error codes](#)

5 DNAT table

5.1 CreateForwardEntry

Adds a DNAT entry to a DNAT table.

Each DNAT entry consists of five parts: ExternalIp, ExternalPort, Protocol, InternalIp, InternalPort. After a DNAT entry is added, the NAT gateway forwards the data of the specified protocol received by [ExternalIp:ExternalPort] to [InternalIp:InternalPort], and returns a response.

Note the following before you call this action:

- Each combination of ExternalIp, ExternalPort, and Protocol of all DNAT entries must be unique (that is, a message cannot be forwarded to multiple targets).
- Each combination of Protocol, InternalIp, and InternalPort of all DNAT entries must be unique.
- If any DNAT entry in the DNAT table is in the Pending or Modifying state, a new DNAT entry cannot be added.
- ExternalIp must meet the following requirements:
 - If your account has a NAT bandwidth package purchased before January 26, 2018, ExternalIp must be a public IP address in the NAT bandwidth package of the NAT Gateway.
 - If your account does not have a NAT bandwidth package purchased before January 26, 2018, ExternalIP must be an EIP associated to the NAT Gateway.
 - A public IP address cannot be used in both SNAT and DNAT entries at the same time.
- InternalIp must meet the following requirements:
 - The InternalIp must belong to the CIDR block of the VPC to which the NAT Gateway belongs.
 - The DNAT entry takes effect only when the InternalIP is used by an ECS instance that is not associated with an EIP. If the InternalIP is used by non-ECS resources

such as HaVip, SLB, or RDS, the DNAT entry does not take effect and the Internet traffic cannot be forwarded to the IP address.

- A public IP address cannot be used in both SNAT and DNAT entries at the same time.
- A maximum of 100 DNAT entries can be added to a DNAT table.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	CreateForwardEntry	The name of this action. Value: CreateForwardEntry
ExternalIp	String	Yes	116.xx.xx.28	The public IP address.
ExternalPort	String	Yes	8080	The public port number. Value range: 1 to 65535.
ForwardTableId	String	Yes	ftb-bp1mbjubq34hlcqpa5u3a	The ID of the DNAT table.
InternalIp	String	Yes	192.168.xx.xx	The target private IP address.
InternalPort	String	Yes	80	The target private port number. Valid value: 1 to 65535.
IpProtocol	String	Yes	TCP	The protocol type. Valid values: • TCP : forward TCP packets. • UDP : forward UDP packets. • Any : forward all packets.

Parameter	Type	Required?	Example value	Description
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
ForwardEntryName	String	No	ForwardEntry-1	The name of the DNAT entry to be created. The name must be 2 to 128 characters in length and start with a Chinese character or a letter. The name cannot start with http :// or https ://.

Response parameters

Parameter	Type	Example value	Description
ForwardEntryId	String	fwd-119smw5tkx-xxxxxxx	The ID of the DNAT entry.
RequestId	String	A4AEE536-A97A-40EB-9EBE-53A6948A6928	The ID of the request.

Examples

Request example

```
https :// vpc . aliyuncs . com /? Action = CreateForwardEntry
& ExternalIp = 116 . xx . xx . 28
& ExternalPort = 8080
& ForwardTableId = ftb - bp1mbjubq3 - 4hlxxxxxxx - x
& InternalIp = 192 . 168 . xx . xx
& InternalPort = 80
& IpProtocol = TCP
& RegionId = cn - hangzhou
&< CommonParameters >
```

Response example

- XML format

```
< CreateForw arEntryRe sponse >
  < ForwardEnt ryId > fwd - 119smw5tkx xxxxxxxx </ ForwardEnt ryId
  >
  < RequestId > 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 </
  RequestId >
</ CreateForw arEntryRe sponse >
```

- JSON format

```
{
  " ForwardEnt ryId ":" fwd - 119smw5tkx xxxxxxxx ",
  " RequestId ":" 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 "
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	InvalidExternalIp.Malformed	The specified ExternalIp is not a valid IP address.	The specified ExternalIp is invalid.
400	InvalidInternalIp.Malformed	The specified InternalIp is not a valid IP address.	The specified InternalIp is invalid.
400	InvalidExternalPort.Malformed	The specified ExternalPort is not a valid port.	The specified ExternalPort is invalid.
400	InvalidInternalPort.Malformed	The specified InternalPort is not a valid port.	The specified InternalPort is invalid.
400	Forbidden.DestinationIpOutOfVpcCIDR	The specified Internal Ip is Out of VPC CIDR.	The specified InternalIp is not in the CIDR block of the VPC.
400	InvalidProtocol.ValueNotSupported	The specified IpProtocol does not support.	The specified protocol type is not supported.

HTTP status code	Error code	Error message	Description
400	IncorretForwardEntryStatus	Some Forward entry status blocked this operation..	You cannot perform this operation because one or more DNAT entries are in the Pending or Modifying status.
404	InvalidForwardTableId.NotFound	Specified forward table does not exist.	The specified DNAT table does not exist.
404	InvalidExternalIp.NotFound	Specified External Ip address does not found on the VRouter	The specified ExternalIP does not exist.
400	Forbidden.ExternalIp.UsedInSnatTable	The specified ExternalIp is already used in SnatTable	The specified ExternalIp is being used by an SNAT rule. Select a different IP address or delete the SNAT rule that uses this IP address.
400	Forbindden	The specified Instance already bind eip	An EIP is already attached to this ECS instance. Detach the EIP from the ECS instance first and then add the forwarding rule.
400	Forbidden.InternalIp.OutOfVpcCIDR	The specified Internal Ip is Out of VPC CIDR.	The specified InternalIP is not in the CIDR block of the VPC.
400	Invalid.natgwNotExist	The specified natgateway not exist.	The specified NAT Gateway does not exist.
400	InvalidIp.NotInNatgw	The specified Ip not belong to natgateway.	The specified IP address does not belong to the NAT Gateway.
400	MissingParameter	Missing mandatory parameter	The required parameters are missing.
500	InternalError	The request processing has failed due to some unknown error.	The request cannot be processed due to unknown errors.

HTTP status code	Error code	Error message	Description
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The specified name is invalid. Enter a valid name and try again.

[See common error codes.](#)

5.2 ModifyForwardEntry

Modifies a DNAT entry.



Note:

You cannot modify a DNAT entry if the DNAT entry is in the Pending or Modifying state.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyForwardEntry	The name of this action. Value: ModifyForwardEntry
ForwardEntryId	String	Yes	fwd-8vbn3bc8roygjp0gy3xk7	The ID of the DNAT entry.
ForwardTableId	String	Yes	ftb-8vbx8xu2lqj9qb334h0ow	The ID of the DNAT table.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.

Parameter	Type	Required?	Example value	Description
ExternalIp	String	No	116.62.222.28	The public IP address.
ExternalPort	String	No	80	The public port. Value range: 1 to 65535.
InternalIp	String	No	10.34.56.78	The target private IP address.
InternalPort	String	No	80	The target private port. Value range: 1 to 65535.
IpProtocol	String	No	TCP	The protocol type. Valid values: - TCP : forward TCP packets. - UDP : forward UDP packets. - Any : forward all packets.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	24CC85DC-7700-4F09-9624-99E988C7DD03	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifyForwardEntry
&ForwardEntryId=fwd-8vbn3bc8ro-ygjp0gy3xk7
&ForwardTableId=ftb-8vbx8xu2lq-j9qb334h0ow
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

• XML format

```
<ModifyForwardEntryResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
</ModifyForwardEntryResponse>
```

• JSON format

```
{
```

```
" RequestId ":" 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 "
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	InvalidExternalIp.Malformed	The specified ExternalIp is not a valid IP address.	The specified public IP address is invalid.
400	InvalidInternalIp.Malformed	The specified InternalIp is not a valid IP address.	The specified InternalIp is invalid.
400	InvalidExternalPort.Malformed	The specified ExternalPort is not a valid port.	The public port is invalid.
400	InvalidInternalPort.Malformed	The specified InternalPort is not a valid port.	The private port is invalid.
400	Forbidden.DestinationIpOutOfVpcCIDR	The specified Destination Ip is Out of VPC CIDR.	The specified InternalIp is not in the CIDR block of the VPC.
400	InvalidProtocol.ValueNotSupported	The specified IpProtocol does not support.	The specified protocol type is not supported.
400	IncorrectForwardEntryStatus	Some Forward entry status blocked this operation..	You cannot perform this operation because one or more DNAT entries in the DNAT table are in the Pending or Modifying state.
400	QuotaExceeded	Forward entry quota exceeded in this route table.	The quota for custom route entries in the route table has been reached. To increase the quota, open a ticket.

HTTP status code	Error code	Error message	Description
404	InvalidForwardEntryId.NotFound	Specified forward entry ID does not exist	The specified DNAT entry does not exist.
404	InvalidExternalIp.NotFound	Specified External Ip address does not found on the VRouter	The specified ExternalIp does not exist.
404	InvalidForwardTableId.NotFound	Specified forward table does not exist.	The specified DNAT table does not exist.
400	Forbidden.ExternalIp.UsedInSnatTable	The specified ExternalIp is already used in SnatTable	This specified ExternalIp is being used by an SNAT rule. Select a different IP address or delete the SNAT rule that uses this IP address.
400	Forbidden.Already.Bounded	The specified instance already bounded	The specified instance is already attached.

[See common error codes](#)

5.3 DescribeForwardTableEntries

Queries DNAT entries in a DNAT table.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeForwardTableEntries	The name of this action. Value: DescribeForwardTableEntries
ForwardTableId	String	Yes	ftb-bp1mbjubq34hlcqpa5u3a	The ID of the DNAT table.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
ForwardEntryId	String	No	fwd-8vbn3bc8roygjp0gy3xk7	The ID of the DNAT entry allocated by the system.
PageNumber	Integer	No	1	The number of pages to return. Default value: 1 .
PageSize	Integer	No	10	The number of rows per page. Maximum value: 50 . Default value: 10 .

Response parameters

Parameter	Type	Example value	Description
ForwardTableEntries			A list of DNAT entries.
└ExternalIp	String	139.xxx.xx.79	The public IP address.
└ExternalPort	String	80	The public port.

Parameter	Type	Example value	Description
ForwardEntryId	String	fwd-119smw5tk	The ID of the DNAT entry.
ForwardTableId	String	ftb-11tc6xgmv	The ID of the DNAT table to which the DNAT entry belongs.
InternalIp	String	192.168.1.1	The private IP address.
InternalPort	String	any	The target private port. Value range : 1 to 65535.
IpProtocol	String	tcp	The protocol type.
Status	String	Available	The status of the DNAT entry.
TotalCount	Integer	5	The number of queried entries.
PageNumber	Integer	1	The current page number.
PageSize	Integer	10	The number of entries per page.
RequestId	String	A6C4A8B1-7561-4509-949C-20DEB40D71E6	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DescribeForwardTableEntries
&ForwardTableId=ftb-bp1mbjubq3-4hlcqpa5u3-a
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

• XML format

```
<DescribeForwardTableEntriesResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>1</TotalCount>
  <PageSize>10</PageSize>
```

```

< RequestId > 74F2BAD8 - AF35 - 4C57 - 81F1 - 5E33BFB0F5 F2 </
RequestId >
< ForwardTab leEntries >
  < ForwardTab leEntry >
    < Status > Available </ Status >
    < IpProtocol > any </ IpProtocol >
    < ForwardEnt ryId > fwd - bp18jpb1tl m550di3q5p b </
ForwardEnt ryId >
    < ExternalIp > 47 . 97 . xx . xx </ ExternalIp >
    < ForwardTab leId > ftb - bp15o9aylj 19vfvgtntzo y </
ForwardTab leId >
    < ExternalPo rt > any </ ExternalPo rt >
    < InternalPo rt > any </ InternalPo rt >
    < InternalIp > 192 . 168 . xx . xx </ InternalIp >
  </ ForwardTab leEntry >
</ ForwardTab leEntries >
</ DescribeFo rwardTable EntriesRes ponse >

```

• JSON format

```

{
  " PageNumber ": 1 ,
  " TotalCount ": 1 ,
  " PageSize ": 10 ,
  " RequestId ": " 74F2BAD8 - AF35 - 4C57 - 81F1 - 5E33BFB0F5 F2 ",
  " ForwardTab leEntries ":{
    " ForwardTab leEntry ":[
      {
        " ForwardEnt ryId ":" fwd - bp18jpb1tl m550di3q5p b ",
        " IpProtocol ":" any ",
        " Status ":" Available ",
        " ExternalIp ":" 47 . 97 . xx . xx ",
        " ForwardTab leId ":" ftb - bp15o9aylj 19vfvgtntzo y ",
        " ExternalPo rt ":" any ",
        " InternalPo rt ":" any ",
        " InternalIp ":" 192 . 168 . xx . xx "
      }
    ]
  }
}

```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	IncorretForwardEntryStatus	Some Forward entry status blocked this operation..	This operation is forbidden because one or more DNAT entries in the DNAT table are in the Pending or Modifying state.

HTTP status code	Error code	Error message	Description
404	InvalidForwardTableId.NotFound	Specified forwardTableId does not exist	The specified DNAT table does not exist.

[See common error codes](#)

5.4 DeleteForwardEntry

Deletes a DNAT entry.



Note:

You cannot delete a DNAT entry if the DNAT entry is in the Pending or Modifying state.

Debug

By using [API Explorer](#), you can debug APIs, automatically generate SDK example codes, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DeleteForwardEntry	The name of this action. Value: DeleteForwardEntry
ForwardEntryId	String	Yes	fwd-8vbn3bc8roygjp0gy3xk7	The ID of the DNAT entry.
ForwardTableId	String	Yes	ftb-8vbx8xu2lqj9qb334h0ow	The ID of the DNAT table.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	0ED8D006-F706-4D23-88ED-E11ED28DCAC0	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DeleteForwardEntry
&ForwardEntryId=fwd-8vbn3bc8ro-ygjp0gy3xk-7
&ForwardTableId=ftb-8vbx8xu2lq-j9qb334h0o-w
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<DeleteForwardEntryResponse>
  <RequestId>0ED8D006-F706-4D23-88ED-E11ED28DCAC0</RequestId>
</DeleteForwardEntryResponse>
```

- JSON format

```
<DeleteForwardEntryResponse>
  <RequestId>0ED8D006-F706-4D23-88ED-E11ED28DCAC0</RequestId>
</DeleteForwardEntryResponse>
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	IncorrectForwardEntryStatus	Some Forward entry status blocked this operation..	This operation cannot be performed because one or more DNAT entries are in the Pending or Modifying status.

HTTP status code	Error code	Error message	Description
404	InvalidForwardEntryId.NotFound	Specified forward entry ID does not exist	The specified DNAT entry does not exist.
404	InvalidForwardTableId.NotFound	Specified forward table does not exist.	The specified DNAT table does not exist.
400	IncorrectForwardEntryStatus	The Specified forwardEntry is not exist	The specified DNAT entry does not exist.
400	MissingParameter	Missing mandatory parameter	Required parameters are missing.

[See common error codes](#)

6 SNAT table

6.1 CreateSnatEntry

Adds a SNAT entry to the SNAT table.

Before you call this API action to add an SNAT entry, note the following:

- The VSwitch specified in the SNAT entry must belong to the same VPC as the NAT Gateway.
- Each VSwitch and ECS instance can belong to only one SNAT entry.
- No SNAT entry can be added if any HAVIP instance exists in the VSwitch.
- The public IP address (SnatIp) in the SNAT entry must meet the following conditions:
 - If you purchased a NAT bandwidth package before January 26, 2018, SnatIp must be a public IP address in the NAT bandwidth package of the NAT Gateway.
 - If you did not purchase a NAT bandwidth package before January 26, 2018, SnatIp must be an EIP associated with the NAT Gateway.
 - A public IP address cannot be used by a DNAT entry and an SNAT entry at the same time.

Debug

Use [OpenAPI Explorer](#) to perform debug operations and generate SDK code examples.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	CreateSnatEntry	The name of this action. Value: CreateSnatEntry.
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions .

Parameter	Type	Required?	Example value	Description
SnatIp	String	Yes	47.XX.XX.98	The public IP address. Multiple IP addresses are separated by commas.
SnatTableId	String	Yes	stb-bp190wu8io1vgev****	The ID of the SNAT table.
SnatEntryName	String	No	SnatEntry-1	The name of the SNAT entry to be added. The name must be 2 to 128 characters in length and start with a letter or a Chinese character. The name cannot start with <code>http://</code> or <code>https://</code> .

Parameter	Type	Required ?	Example value	Description
SourceCIDR	String	No	10.1.1.0/24	The CIDR block of the VSwitch or ECS instance. · VSwitch granularity: specifies the CIDR block of the VSwitch (for example, 192.168.1.0/24). When an ECS instance in the VSwitch initiates an Internet access request, the NAT Gateway provides the SNAT service (Internet proxy service) for the ECS instance. If you specify only one public IP address for the SnatIp parameter, the ECS instance uses the specified public IP address to access the Internet. However, if you specify multiple public IP addresses for the SnatIp parameter, the ECS instance randomly uses one of the specified public IP addresses to access the Internet. · ECS granularity: specifies the IP address of the ECS instance (for example, 192.168.1.1/32). When an ECS instance initiates an Internet access request, the NAT Gateway provides the SNAT service (Internet proxy service) for the ECS instance. If you specify only one public IP address for the SnatIp parameter, the ECS instance uses the specified public IP address to access the Internet. However, if you specify multiple public IP addresses for the SnatIp parameter, the ECS instance randomly uses one of the specified public IP addresses to access the Internet.

Parameter	Type	Required?	Example value	Description
SourceVSwitchId	String	No	vsw-bp1nhx2s9ui5o****	The ID of the VSwitch that requires access to the Internet.

Response parameters

Parameter	Type	Example value	Description
SnatEntryId	String	snat-kmd6nv8fy****	The ID of the SNAT entry.
RequestId	String	2315DEB7-5E92-423A-91F7-4C1EC9AD97C3	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=CreateSnatEntry
&RegionId=cn-hangzhou
&SnatIp=47.XX.XX.98
&SnatTableId=stb-bp190wu8io1vgev****
&<CommonParameters>
```

Response example

XML format

```
<CreateSnatEntryResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
  <SnatEntryId>snat-119smw5tk****</SnatEntryId>
</CreateSnatEntryResponse>
```

JSON format

```
{
  "RequestId": "2315DEB7-5E92-423A-91F7-4C1EC9AD97C3",
  "SnatEntryId": "snat-kmd6nv8fy****"
}
```

Errors

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidSnatTableId.NotFound	Specified SNAT table does not exist.	The specified SNAT table does not exist.
400	Forbidden.SourceVSwitchId.IncludeHaVip	There is some HaVips under specified VSwitch	One or more HAVIPs already exist under the specified VSwitch.
400	InvalidSnatIp.Malformed	The specified SnatIp is not a valid IP address.	The specified SNAT IP address is invalid.
400	SNAT_IP_POOL_COUNT_TOO_MANY	The Snat pool ip too many.	The quota for IP addresses in the SNAT IP address pool has been reached.
400	Forbidden.SnatEntryCountLimited	SNAT entry in the specified SNAT table reaches its limit.	The quota for SNAT entries has been reached.
400	NOT_ALLOW_USE_SOURCE_CIDR	The User not in nat_scope_unlimited white list. Cannot use SourceCidr param.	The specified intranet IP address does not belong to the CIDR block of the VPC.
404	InvalidVSwitchId.NotFound	The specified virtual switch does not exist.	The specified VSwitch does not exist.
400	INVALID_PARAMETER	The parameter is invalid.	The parameter is invalid.
400	Forbidden.SourceVSwitchId.Duplicated	The specified SourceCIDR is duplicated.	A SNAT rule has already been configured for this VSwitch.
404	InvalidSnatIp.NotFound	The specified SnatIp is not found in the NAT Gateway.	The public IP address is not found in the NAT Gateway.

HTTP status code	Error code	Error message	Description
400	Forbidden. IpUsedInForwardTable	The specified SnatIp already used in forward table.	This public IP address is being used by a DNAT rule . Select a different public IP address or delete the DNAT rule.
400	Forbidden	The specified Instance already bind eip	An EIP is already associated with this ECS instance. Disassociate the EIP from the ECS instance and then add the forwarding rule.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The specified name is invalid. Enter a valid name and try again.

For a list of error codes, visit the [API Error Center](#).

6.2 ModifySnatEntry

Modifies an SNAT entry.



Note:

You cannot modify an SNAT entry that is in the Pending or Modifying state.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required ?	Example value	Description
Action	String	Yes	ModifySnatEntry	The name of this action. Value: ModifySnatEntry

Parameter	Type	Required?	Example value	Description
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
SnatEntryId	String	Yes	snat-bp1vcgcf8tm0plqcgfl04	The ID of the SNAT entry.
SnatIp	String	Yes	47.XXX.XXX.98	The public IP address. Separate multiple IP addresses with commas.
SnatTableId	String	Yes	stb-8vbczigrhop8x5u3twlh d	The ID of the SNAT table.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	2315DEB7-5E92-423A-91F7-4C1EC9AD97C3	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifySnatEntry
&RegionId=cn-hangzhou
&SnatEntryId=snat-bp1vcgcf8tm0plqcgfl04
&SnatIp=47.XXX.XXX.98
&SnatTableId=stb-8vbczigrhop8x5u3twlh d
&<CommonParameters>
```

Response example

• XML format

```
<ModifySnatEntryResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
```

```
</ ModifySnat EntryResponse >
```

- JSON format

```
{
  "RequestId ":" 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 "
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidSnatTableId.NotFound	Specified SNAT table does not exist.	The specified SNAT table does not exist.
400	InvalidSnatIp.Malformed	The specified SnatIp is not a valid IP address.	The specified SnatIp is invalid.
404	InvalidSnatEntryId.NotFound	Specified SNAT entry does not exist.	The specified SNAT entry does not exist.
400	Forbidden.SourceVSwitchId.Duplicated	The specified SourceCIDR is duplicated.	SNAT rules have already been configured for this VSwitch.
400	Forbidden.IpUsedInForwardTable	The specified SnatIp already used in forward table	The specified public IP address is already being used by a DNAT rule. Select a different IP address or delete the DNAT rule that uses this IP address.

[See common error codes](#)

6.3 DescribeSnatTableEntries

Queries one or more SNAT entries in a SNAT table.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeSnatTableEntries	The name of this action. Value: DescribeForwardTableEntries
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
SnatTableId	String	Yes	stb-8vbczigrhop8x5u3twlhd	The ID of the SNAT table.
PageNumber	Integer	No	1	The number of pages to return. Default value: 1 .
PageSize	Integer	No	10	The number of rows per page. Maximum value: 50 . Default value: 10 .
SnatEntryId	String	No	snat-8vbae8uqh7rjpk7d2kuwt	The ID of the SNAT entry.

Response parameters

Parameter	Type	Example value	Description
SnatTableEntries	N/A	N/A	A list of SNAT entries.
└SnatEntryId	String	snat-kmd6nv8fy	The ID of the SNAT entry.
└SnatIp	String	116.62.222.28	The public IP address in the SNAT entry.
└SnatTableId	String	stb-gz3r3odaw	The ID of the SNAT table to which the SNAT entry belongs.
└SourceCIDR	String	116.62.222.28/33	The source CIDR block of the SNAT entry.
└SourceVSwitchId	String	vsw-3xbxxxxx	The ID of the VSwitch that accesses the Internet through the SNAT function.
└Status	String	Pending	The status of the SNAT entry.
TotalCount	Integer	1	The number of queried entries.
PageNumber	Integer	1	The current page number.
PageSize	Integer	5	The number of entries per page.
RequestId	String	6D7E89B1-1C5B-412B-8585-4908E222EED5	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DescribeSnatTableEntries
&RegionId=cn-hangzhou
&SnatTableId=stb-8vbczigrho-p8x5u3twlh
```

&< CommonParameters >

Response example

• XML format

```
< DescribeSnatTableEntriesResponse >
  < PageNumber > 1 </ PageNumber >
  < PageSize > 10 </ PageSize >
  < RequestId > 6D7E89B1 - 1C5B - 412B - 8585 - 4908E222EE D5 </
RequestId >
  < SnatTableEntries >
    < SnatTableEntry >
      < SnatEntryId > snat - kmd6nv8fy </ SnatEntryId >
      < SnatIp > 139 . xxx . xx . 40 </ SnatIp >
      < SnatTableId > stb - gz3r3odaw </ SnatTableId >
      < SourceCIDR > 192 . 168 . 1 . 0 / 24 </ SourceCIDR >
      < SourceVSwitchId > vsw - yrv0xxxxx </ SourceVSwitchId >
      < Status > Available </ Status >
    </ SnatTableEntry >
    < SnatTableEntry >
      < SnatEntryId > snat - bs5bezbme </ SnatEntryId >
      < SnatIp > 139 . xxx . xx . 40 </ SnatIp >
      < SnatTableId > stb - gz3r3odaw </ SnatTableId >
      < SourceCIDR > 192 . 168 . 3 . 0 / 24 </ SourceCIDR >
      < SourceVSwitchId > vsw - 3xbxxxxx </ SourceVSwitchId >
      < Status > Available </ Status >
    </ SnatTableEntry >
  </ SnatTableEntries >
</ DescribeSnatTableEntriesResponse >
```

• JSON format

```
{
  "SnatTableEntries": {
    "SnatTableEntry": [
      {
        "Status": "Available",
        "SourceCIDR": "192 . 168 . 1 . 0 / 24",
        "SnatTableId": "stb - gz3r3odaw",
        "SnatIp": "139 . xxx . xx . 40",
        "SnatEntryId": "snat - kmd6nv8fy",
        "SourceVSwitchId": "vsw - yrv0xxxxx"
      },
      {
        "Status": "Available",
        "SourceCIDR": "192 . 168 . 3 . 0 / 24",
        "SnatTableId": "stb - gz3r3odaw",
        "SnatIp": "139 . xxx . xx . 40",
        "SnatEntryId": "snat - bs5bezbme",
        "SourceVSwitchId": "vsw - 3xbxxxxx"
      }
    ]
  },
  "PageNumber": 1,
  "PageSize": 10,
  "RequestId": "6D7E89B1 - 1C5B - 412B - 8585 - 4908E222EE D5"
```

```
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidSnatTableId.NotFound	Specified SNAT table does not exist.	The specified SNAT table does not exist.

[See common error codes](#)

6.4 DeleteSnatEntry

Deletes an SNAT entry.



Note:

You cannot delete an SNAT entry if the SNAT entry is in the Pending or Modifying state.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required ?	Example value	Description
Action	String	Yes	DeleteSnatEntry	The name of this action. Value: DeleteSnatEntry
RegionId	String	Yes	cn-hangzhou	The region ID of the NAT Gateway where the SNAT entry is to be deleted. To query the region ID, call DescribeRegions.

Parameter	Type	Required?	Example value	Description
SnatEntryId	String	Yes	snat-bp1vcgcf8tm0plqcgfl04	The ID of the SNAT entry to be deleted.
SnatTableId	String	Yes	stb-bp190wu8io1vgev80kec7	The ID of the SNAT table from which the SNAT entry is to be deleted.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	47B80B6A-759A-479C-A565-76D04BDA29F3	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DeleteSnatEntry
&RegionId=cn-hangzhou
&SnatEntryId=snat-bp1vcgcf8tm0plqcgfl04
&SnatTableId=stb-bp190wu8io1vgev80kec7
&<CommonParameters>
```

Response example

- XML format

```
<DeleteSnatEntryResponse>
  <RequestId>0ED8D006-F706-4D23-88ED-E11ED28DCA C0</RequestId>
</DeleteSnatEntryResponse>
```

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCA C0"
```

}

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	IncorretSnatEntryStatus	Some Snat entry status blocked this operation..	You cannot perform this operation because one or more SNAT entries are in the Pending or Modifying state.
404	InvalidSnatEntryId.NotFound	Specified Snat entry ID does not exist	The specified SNAT entry does not exist.
404	InvalidSnatTableId.NotFound	Specified SNAT table does not exist.	The specified SNAT table does not exist.
404	InvalidSnatEntryId.NotFound	Specified SNAT entry does not exist.	The specified SNAT entry does not exist.

[View common error codes](#)

7 NAT bandwidth package

7.1 CreateBandwidthPackage

Creates a NAT bandwidth package.

A NAT Gateway package includes a group of public IP addresses and a shared bandwidth. You can create up to four NAT bandwidth packages for a NAT Gateway.

A NAT bandwidth package includes:

- A shared bandwidth
- A group of public IP addresses



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to attach an EIP.

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	CreateBandwidthPackage	The name of this action. Value: CreateBandwidthPackage
Bandwidth	Integer	Yes	5	The bandwidth of the NAT bandwidth package. Value range: 5 to 1000.

Parameter	Type	Required?	Example value	Description
IpCount	Integer	Yes	2	The number of public IP addresses in the NAT bandwidth package. Value range: 1 to 50.
NatGatewayId	String	Yes	ngw-7mwb327j1	The ID of the NAT Gateway to be used.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
ClientToken	String	No	she11234556664566	A client token used to guarantee the idempotence of requests. This parameter value is generated by the client and must be unique. It must be 1 to 64 ASCII characters in length.
Description	String	No	The description of the bandwidth package	The description of the NAT bandwidth package. The description must be 2 to 256 characters in length. The description must start with a letter. It cannot start with <code>http ://</code> or <code>https ://</code> .
ISP	String	No	BGP	Valid value: BGP.

Parameter	Type	Required?	Example value	Description
InternetChargeType	String	No	PayByBandwidth	The Internet billing method. Valid values: PayByTraffic: Billing based on traffic
Name	String	No	The name of the bandwidth package	The name of the NAT bandwidth package. The name must be 2 to 128 characters in length and can letters, numbers, underscores (_), and hyphens (-). The name must start with a letter, but cannot start with <code>http://</code> or <code>https://</code>.
Zone	String	No	cn-shanghai-a	The zone of the NAT bandwidth package. If this parameter is not specified, the system randomly allocates a zone.  Note: If the NAT bandwidth package and the backend ECS instance are not in the same zone, the latency of the connection between them is unchanged; if they are in the same zone, the latency of the connection between them can be reduced.

Response parameters

Parameter	Type	Example value	Description
BandwidthPackageId	String	bwp-s6lmtmkk	The ID of the NAT bandwidth package.
RequestId	String	54ED4074-3F89-4F11-B166-837DD3E20FE3	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=CreateBandwidthPackage
&Bandwidth=5
&IpCount=2
&NatGatewayId=ngw-7mwb327j1
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<CreateBandwidthPackageResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
  <BandwidthPackageId>bwp-s6lmtmkk</BandwidthPackageId>
</CreateBandwidthPackageResponse>
```

- JSON format

```
{
  "BandwidthPackageId": "bwp-s6lmtmkk",
  "RequestId": "54ED4074-3F89-4F11-B166-837DD3E20FE3"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	MissingParameter	Miss mandatory parameter.	The required parameters are missing.

HTTP status code	Error code	Error message	Description
404	InvalidZoneId.NotFound	Specified value of ZoneId is not exists.	The specified zone does not exist.
404	InvalidZoneId.NotFound	Can not find ZoneId for allocated ip.	The specified zone of the IP address is incorrect.
400	QuotaExceeded.BandwidthPackageIps	The specified ipCount exceeded quota.	The quota of IP addresses has been reached. To increase the quota, open a ticket.
400	QuotaExceeded.BandwidthPackageCountOnNatGateway	BandwidthPackage count limit on one NatGateway exceeded.	The quota of shared bandwidth packages has been reached. You can create up to four shared bandwidth packages for a NAT Gateway.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The name is invalid.
400	InvalidParameter.Description.Malformed	The specified Description is not valid.	The description is invalid.
400	InvalidParameter.BandwidthPackage.n.ISP.ValueNotSupport	The specified ISP of BandwidthPackage is not valid.	The ISP of the shared bandwidth package is invalid.
400	ZONE_NO_AVAILABLE_IP	The Zone have no available ip.	There are no available IP addresses in this zone.
404	NATGW_NOT_EXIST	The NatGateway not exist.	The specified NAT Gateway does not exist.

[See common error codes](#)

7.2 DescribeBandwidthPackages

Queries one or more NAT bandwidth packages in a region.



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP.

For more information, see [AssociateEipAddress](#).

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeBandwidthPackages	The name of this action. Value: DescribeBandwidthPackages
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
BandwidthPackageId	String	No	bwp-bp1xea10o8qwx8lkw2xa1	The ID of the NAT bandwidth package.
NatGatewayId	String	No	ngw-bp1uewa15k4iy5770ya89	The ID of the NAT Gateway.
PageNumber	Integer	No	10	The number of pages to return. Default value: 1.

Parameter	Type	Required ?	Example value	Description
PageSize	Integer	No	10	The number of rows per page. Maximum value: 50 . Default value: 10 .

Response parameters

Parameter	Type	Example value	Description
BandwidthPackages	N/A	N/A	A list of NAT bandwidth packages.
└Bandwidth	String	5	The bandwidth value in Mbps. Valid values: 5 to 5000.
└BandwidthPackageId	String	bwp-xxoo123	The ID of the NAT bandwidth package.
└BusinessStatus	String	Normal	The status of the bandwidth package. Valid values: Normal FinancialLocked SecurityLocked.
└CreationTime	String	2017-06-08T12:20:55	The time at which the bandwidth package was created. Standard: ISO861. Format: UTC, YYYY-MM-DDThh:mmZ
└Description	String	test123	The description of the bandwidth package.
└ISP	String	BGP	Valid value: BGP.

Parameter	Type	Example value	Description
<code>InstanceChargeType</code>	String	PostPaid	The billing method of the instance. Currently, only the Pay-As-You-Go billing method is supported. Valid value: PostPaid
<code>InternetChargeType</code>	String	PayByBandwidth	The Internet billing method. Valid values: PayByTraffic: Billing based on traffic
<code>IpCount</code>	String	1	The number of public IP addresses in the NAT bandwidth package. Value range: 1 to 50.
<code>Name</code>	String	xxxxxxx	The name of the NAT Gateway.
<code>NatGatewayId</code>	String	ngw-xxoo123	The ID of the NAT Gateway.
<code>PublicIpAddresses</code>	N/A	N/A	The IP addresses in the bandwidth package.
<code>AllocationId</code>	String	eip-2zeerraiwb7uj6i0d0fo3	The allocation ID.
<code>ApAccessEnabled</code>	Boolean	true	Indicates whether AP access is enabled.
<code>IpAddress</code>	String	116.62.222.28	The IP address.
<code>UsingStatus</code>	String	Available	The usage status.
<code>RegionId</code>	String	cn-hangzhou	The region ID.
<code>Status</code>	String	Available	The status of the bandwidth package.

Parameter	Type	Example value	Description
ZoneId	String	cn-shanghai-a	The zone of the NAT bandwidth package.
TotalCount	Integer	10	The number of queried entries.
PageNumber	Integer	10	The current page number.
PageSize	Integer	10	The number of entries per page.
RequestId	String	4EC47282-1B74-4534-BD0E-403F3EE64CAF"	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DescribeBandwidthPackages
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

• XML format

```
<DescribeBandwidthPackagesResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>1</TotalCount>
  <BandwidthPackages>
    <BandwidthPackage>
      <Description/>
      <IpCount>2</IpCount>
      <ISP>BGP</ISP>
      <ZoneId>cn-hangzhou-b</ZoneId>
      <InternetChargeType>PayByTraffic</InternetChargeType>
      <NatGatewayId>ngw-bp1uewa15k4iy5770ya89</NatGatewayId>
      <Name/>
      <CreationTime>2018-03-06T07:33:51Z</CreationTime>
      <Status>Available</Status>
      <BandwidthPackageId>bwp-bp1xea10o8qwx8lkwx2xa1</BandwidthPackageId>
      <BusinessStatus>Normal</BusinessStatus>
      <RegionId>cn-hangzhou</RegionId>
      <InstanceChargeType>PostPaid</InstanceChargeType>
      <PublicIpAddresses>
        <PublicIpAddress>
```

```

        < IpAddress > 118 . 31 . xx . xx </ IpAddress >
        < Allocation Id > nateip - bp1jbluijv m9o8z30ejq p </
Allocation Id >
        < UsingStatu s > Idle </ UsingStatu s >
    </ PublicIpAd dresse >
    < PublicIpAd dresse >
        < IpAddress > 118 . 31 . xx . xx </ IpAddress >
        < Allocation Id > nateip - bp1dt4hpe8 847yj4oh10 w </
Allocation Id >
        < UsingStatu s > UsedBySnat Table </ UsingStatu s >
    </ PublicIpAd dresse >
</ PublicIpAd dresses >
    < Bandwidth > 5 </ Bandwidth >
</ BandwidthP ackage >
</ BandwidthP ackages >
    < PageSize > 10 </ PageSize >
</ DescribeBa ndwidthPac kagesRespo nse >

```

• JSON format

```

{
  " PageNumber ": 1 ,
  " TotalCount ": 1 ,
  " BandwidthP ackages ":{
    " BandwidthP ackage ":[
      {
        " Descriptio n ":"",
        " IpCount ":" 2 ",
        " ISP ":" BGP ",
        " ZoneId ":" cn - hangzhou - b ",
        " InternetCh argeType ":" PayByTraff ic ",
        " NatGateway Id ":" ngw - bpluewa15k 4iy5770ya8 9 ",
        " Name ":"",
        " CreationTi me ":" 2018 - 03 - 06T07 : 33 : 51Z ",
        " Status ":" Available ",
        " BandwidthP ackageId ":" bwp - bp1xea10o8 qxw8lkx2xa 1 ",
        " BusinessSt atus ":" Normal ",
        " RegionId ":" cn - hangzhou ",
        " InstanceCh argeType ":" PostPaid ",
        " PublicIpAd dresses ":{
          " PublicIpAd dresse ":[
            {
              " IpAddress ":" 118 . 31 . xx . xx ",
              " Allocation Id ":" nateip - bp1jbluijv m9o8z30ejq p ",
              " UsingStatu s ":" Idle "
            },
            {
              " IpAddress ":" 118 . 31 . xx . xx ",
              " Allocation Id ":" nateip - bp1dt4hpe8 847yj4oh10 w ",
              " UsingStatu s ":" UsedBySnat Table "
            }
          ]
        }
      ]
    },
    " Bandwidth ":" 5 "
  }
},
  " PageSize ": 10 ,
  " RequestId ":" 8909013D - 4A64 - 41A6 - 93E6 - E3FD08A3EA FE "

```

```
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.

[See common error codes](#)

7.3 ModifyBandwidthPackageAttribute

Modifies the name and description of a NAT bandwidth package.



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP. For more information, see [AssociateEipAddress](#).

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyBandwidthPackageAttribute	The name of the action. Value: ModifyBandwidthPackageAttribute
BandwidthPackageId	String	Yes	bwp-s6lmtmkk	The ID of the NAT bandwidth package.

Parameter	Type	Required?	Example value	Description
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT bandwidth package belongs. To query the region ID, call DescribeRegions.
Description	String	No	xxxxxxx	The description of the NAT bandwidth package. The description must be 2 to 256 characters in length. It must start with a letter. It cannot start with <code>http://</code> or <code>https://</code> .
Name	String	No	NAT bandwidth package	The name of the NAT bandwidth package. The name must be 2 to 128 characters in length and can contain letters, numbers, periods (.), underscores (_), and hyphens (-). The name must start with a letter. It cannot start with <code>http://</code> or <code>https://</code> .

Response parameters

Parameter	Type	Example value	Description
RequestId	String	DFDDD35D-3F29-4E15-AA28-53F5341F9599	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifyBandwidthPackageAttribute
&BandwidthPackageId=bwp-s6lmtmkkx-xxxxxxx
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<ModifyBandwidthPackageAttributeResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
</ModifyBandwidthPackageAttributeResponse>
```

- JSON format

```
{
  "RequestId": "54ED4074-3F89-4F11-B166-837DD3E20FE3"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidBandwidthPackageId.NotFound	The specified bandwidthPackageId does not exist in our records.	The specified shared bandwidth package does not exist.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The specified name is invalid.
400	InvalidParameter.Description.Malformed	The specified Description is not valid.	The specified description is invalid.

[See common errors](#)

7.4 ModifyBandwidthPackageSpec

Modifies the bandwidth of a NAT bandwidth package.



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP.

[AssociateEipAddress](#) .

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyBandwidthPackageSpec	The name of this action. Value: ModifyBandwidthPackageSpec
BandWidth	Integer	Yes	5	The bandwidth of the NAT bandwidth package. Value range: 5 to 1000.
BandwidthPackageId	String	Yes	bwp-s6lmotmkk	The ID of the NAT bandwidth package.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT bandwidth package belongs. To query the region ID, call DescribeRegions.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	079874CD-AEC1-43E6-AC03-ADD96B6E4907	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=ModifyBandwidthPackageSpec
&Bandwidth=5
&BandwidthPackageId=bwp-s6lmtmkkx-xxxxxxx
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<ModifyBandwidthPackageSpecResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
</ModifyBandwidthPackageSpecResponse>
```

- JSON format

```
{
  "RequestId": "54ED4074-3F89-4F11-B166-837DD3E20FE3"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	InvalidBandwidth.ValueNotSupported	The specified value of Bandwidth not supported.	The specified peak bandwidth is not supported.

HTTP status code	Error code	Error message	Description
404	BandwidthPackageFinancialLocked	The specified BandwidthPackage has been Financial Locked.	The specified bandwidth package is locked due to insufficient account balance.

[See common error codes](#)

7.5 AddBandwidthPackageIps

Adds public IP addresses to a NAT bandwidth package.



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP.

For more information, see [AssociateEipAddress](#).

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	AddBandwidthPackageIps	The name of this action. Value: AddBandwidthPackageIps
BandwidthPackageId	String	Yes	bwp-s6lmtmkk	The ID of the NAT bandwidth package.

Parameter	Type	Required?	Example value	Description
IpCount	String	Yes	2	The number of public IP addresses in the NAT bandwidth package. Value range: 1 to 50.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT bandwidth package belongs. To query the region ID, call DescribeRegions.
ClientToken	String	No	02fb3da4-130e-11e9-8e44-0016e04115b	A client token used to guarantee the idempotence of requests. This parameter value is generated by the client and must be unique. It must be 1 to 64 ASCII characters in length.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	EC0B5C51-7F40-44D6-A642-1DE764B547EC	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=AddBandwidthPackageIps
&BandwidthPackageId=bwp-s6lmtmkk
&IpCount=2
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
< AddBandwidthPackage psResponse >
  < RequestId > 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 </
    RequestId >
</ AddBandwidthPackage psResponse >
```

- JSON format

```
{
  "RequestId ":" 2315DEB7 - 5E92 - 423A - 91F7 - 4C1EC9AD97 C3 "
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	InvalidIpCount.ValueNotSupported	The specified value of IpCount not supported.	The IpCount value is invalid.
400	QuotaExceeded.BandwidthPackageIps	The specified ipCount exceeded quota.	The quota of IP addresses has been reached. To increase the quota, open a ticket.
404	BandwidthPackage.FinancialLocked	The specified BandwidthPackage has been FinancialLock.	The bandwidth package is locked due to insufficient account balance.

[See common error codes](#)

7.6 RemoveBandwidthPackageIps

Removes public IP addresses from a NAT bandwidth package.

Before you call RemoveBandwidthPackageIps to delete public IP addresses, note the following:

- You cannot delete all public IP addresses in the NAT bandwidth package.
- You cannot delete an IP address that is not included in the target NAT bandwidth package.

- You cannot delete an IP address occupied by a DNAT entry or SNAT entry.

**Note:**

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP.

For more information, see [AssociateEipAddress](#).

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	RemoveBandwidthPackageIps	The name of the action. Value: RemoveBandwidthPackageIps
BandwidthPackageId	String	Yes	bwp-s6lmtmkk	The ID of the NAT bandwidth package.
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT bandwidth package belongs. To query the region ID, call DescribeRegions.
RemovedIpAddresses	String	Yes	116.62.222.28	The ID of the public IP address to be deleted. Value range of n: 1 to 20.

Parameter	Type	Required?	Example value	Description
ClientToken	String	No	SHAww112344jhsW233	A client token used to guarantee the idempotence of requests. This parameter value is generated by the client and must be unique. It cannot exceed 64 ASCII characters.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	7D275A59-1EB0-4775-8A20-2A47055EAC5C	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=RemoveBandwidthPackageIps
&BandwidthPackageId=bwp-s6lmotmkk
&RegionId=cn-hangzhou
&RemovedIpAddresses.1=116.62.222.28
&<CommonParameters>
```

Response example

• XML format

```
<RemoveBandwidthPackageIpsResponse>
  <RequestId>7D275A59-1EB0-4775-8A20-2A47055EAC5C</RequestId>
</RemoveBandwidthPackageIpsResponse>
```

• JSON format

```
{
  "RequestId": "7D275A59-1EB0-4775-8A20-2A47055EAC5C"
}
```

}

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
404	invalidRemovedIpAddresses.NotFound	Some of the specified value of RemovedIpAddress not found in specified BandwidthPackage.	Some IP addresses in the IP address list are not in the shared bandwidth package. Check these IP addresses.
400	InvalidIpCount.ValueNotSupported	Can not remove all ips of the bandwidthPackage.	You cannot remove all IP addresses in the bandwidth package.
400	InvalidRemovedIpAddresses.NotFound	Some of remove ip is not natPublicIp.	Some specified IP addresses are not public IP addresses of the NAT Gateway and cannot be removed.
400	DependencyViolation.ForwardEntry	The ip has been used by ForwardEntry.	The IP address is being used by a forwarding rule . Delete the rule first.
400	DependencyViolation.SnatEntry	The ip has been used by SnatEntry.	The IP address is being used by an SNAT rule. Delete the rule first.
404	BandwidthPackage.FinancialLocked	The specified BandwidthPackage has been FinancialLock.	The bandwidth package is locked due to insufficient balance.

[See common error codes](#)

7.7 DeleteBandwidthPackage

Deletes a NAT bandwidth package.



Note:

This API can be called only if you purchased a NAT bandwidth package before January 26, 2018. If your account does not have a NAT bandwidth package purchased before January 26, 2018, you need to associate an EIP. For more information, see [AssociateEipAddress](#).

Debug

By using [API Explorer](#), you can easily debug APIs, automatically generate SDK code examples, and quickly search for APIs.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DeleteBandwidthPackage	The name of this action. Value: DeleteBandwidthPackage
BandwidthPackageId	String	Yes	bwp-bp1arsrmca9kp7inuc3a1	The ID of the NAT bandwidth package.
RegionId	String	Yes	cn-hangzhou	The region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions.
Force	Boolean	No	false	Indicates whether to forcibly delete the NAT bandwidth package.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	7D275A59-1EB0-4775-8A20-2A47055EAC5C	The ID of the request.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DeleteBandwidthPackage
&BandwidthPackageId=bwp-bp1arsrmca9kpxxxxxxx&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<DeleteBandwidthPackageResponse>
  <RequestId>0ED8D006-F706-4D23-88ED-E11ED28DCA-C0</RequestId>
</DeleteBandwidthPackageResponse>
```

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCA-C0"
}
```

Error codes

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified region ID does not exist.
400	DependencyViolation.ForwardEntry	The specified BandwidthPackageId has dependent resource.	The specified shared bandwidth package is associated with an SNAT/DNAT entry. Delete the SNAT/DNAT entry first.
400	DependencyViolation.SnatEntry	The specified BandwidthPackageId has dependent resource.	The specified shared bandwidth package is associated with an SNAT/DNAT entry. Delete the SNAT/DNAT entry first.

[See common error codes](#)