

Alibaba Cloud

NAT Gateway
API reference

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Document conventions







Style	Description	Example
 Danger	A danger notice 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.
 Warning	A warning notice 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 restart an instance.
 Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
 Note	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings> Network> Set network type .
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1.API overview

This topic describes API actions that are available for NAT Gateways. The endpoint of NAT Gateway API actions is vpc.aliyuncs.com. For information about how to call NAT Gateway API actions, see the corresponding VPC API documentation.

NAT Gateway

API	Description
CreateNatGateway	Creates a NAT Gateway.
ModifyNatGatewayAttribute	Modifies the name and description of a NAT Gateway.
ModifyNatGatewaySpec	Modifies the specifications of a NAT Gateway.
DescribeNatGateways	Queries created NAT Gateways.
DeleteNatGateway	Deletes a NAT Gateway.
ConvertBandwidthPackage	Converts a NAT bandwidth package.

DNAT table

API	Description
CreateForwardEntry	Adds a DNAT entry.
ModifyForwardEntry	Modifies a DNAT entry.
DescribeForwardTableEntries	Queries created DNAT entries.
DeleteForwardEntry	Deletes a DNAT entry.

SNAT table

API	Description
CreateSnatEntry	Creates a SNAT entry.
ModifySnatEntry	Modifies a SNAT entry.
DescribeSnatTableEntries	Queries created SNAT entries.
DeleteSnatEntry	Deletes a SNAT entry.

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=CreateNatGateway
&Format=xml
&Version=2016-04-28
&Signature=xxxx%xxxx%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&AccessKeyId=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&SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0axxxxxxxxx
```

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=CreateNatGateway
&Timestamp=2016-05-23T12:46:24Z
&Format=XML
&AccessKeyId=testid
&SignatureMethod=HMAC-SHA1
&SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0axxxxxxxxx
&Version=2014-05-26
&SignatureVersion=1.0
```

To generate the signature, follow these steps:

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

```
GET%2F&AccessKeyId%3Dtestid&Action%3DCreateNatGateway&Format%3DXML&SignatureMethod%3DHMAC-SHA1&SignatureNonce%3D3ee8c1b8-83d3-44af-a94f-4e0axxxxxxxxx&SignatureVersion%3D1.0&TimeStam%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&`.

```
CT9X0VtwR86fNWS*****juE=
```

3. Add the signature to the request parameter.


```
http://vpc.aliyuncs.com/?Action=CreateNatGateway
&Timestamp=2016-05-23T12:46:24Z
&Format=XML
&AccessKeyId=testid
&SignatureMethod=HMAC-SHA1
&SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0axxxxxxxxx
&Version=2014-05-26
&SignatureVersion=1.0
&Signature=XXXX%3D
```

3.Common parameters

Common request parameters

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

Common request parameters

Parameter	Type	Required?	Description
Format	String	No	The format of the response. Valid values: <i>JSON (default) XML</i>
Version	String	Yes	The version of the API. It uses the date format <code>YYYY-MM-DD</code> . Valid value: <i>2016-04-28</i>
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: <i>HMAC-SHA1</i>
Timestamp	String	Yes	The time at which the request is signed. It uses the format: <code>YYYY-MM-DDThh:mm:ssZ</code> . For example, <i>2013-01-10T12:00:00Z</i> .
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-AC049166F216</RequestId>
    <!--The returned result-->
  </Action+Response>
```

- JSON format

```
{
  "RequestId": "4C467B38-3910-447D-87BC-AC049166F216",
  /*The returned result*/
}
```

4. NAT Gateway

4.1. ModifyNatGatewayAttribute

Modifies the name and description of a NAT Gateway.

Debug

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

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.
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions .
Description	String	No	fortest	Optional. 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	Optional. The name of the NAT Gateway. The name must be 2 to 128 characters in length. It must start with a letter. It can contain numbers, periods (.), underscores (_), and hyphens (-). 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"
}
```

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	InvalidNatGatewayId.NotFound	The specified NatGatewayId does not exist in our records.	The specified NAT Gateway ID 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.

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

4.2. ModifyNatGatewaySpec

Modifies the specification of a NAT Gateway.

API description

NAT Gateway comes in different specifications. The specification of a NAT Gateway determines the performance metrics (Max Connections and Connections Per Second) of SNAT, but does not relate to data throughput.

The relationship between the NAT Gateway specification and SNAT performance is as follows:

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

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyNatGatewaySpec	The name of this action. Value: ModifyNatGatewaySpec
NatGatewayId	String	Yes	ngw-bp1uewa15k4iy5770****	The ID of the NAT Gateway.
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT Gateway belongs.
Spec	String	Yes	Small	The specification of the NAT Gateway. Valid values: <ul style="list-style-type: none"> • Small • Middle • Large

Parameter	Type	Required?	Example value	Description
ClientToken	String	No	SHA234js121223 xxxxx	<p>The client token that guarantees the idempotence of the request.</p> <p>The value of this parameter is generated by the client. The value is unique among different requests and is 1 to 64 ASCII characters in length.</p> <p>For more information, see How to guarantee the idempotence?</p>

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-bp1uewa15k4iy5770****
&RegionId=cn-hangzhou
&Spec=Small
&<Common request parameters>
```

Response example

XML format

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

JSON format

```
{
  "RequestId": "DBD4E4A2-786E-4BD2-8EB6-107FFC2B5B7D"
}
```

Errors

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified RegionId 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 specified specification is the same as the current one.
400	InvalidParameter.Spec.ValueNotSupported	The specified Spec is not valid.	The specification is invalid.

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

4.3. DescribeNatGateways

Queries one or more NAT Gateways in a region.

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

Request parameters


Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeNatGateways	The name of this action. Value: DescribeNatGateways
RegionId	String	Yes	cn-hangzhou	The region ID of the NAT Gateway. To query the region ID, call DescribeRegions .
NatGatewayId	String	No	ngw-bp1uewa15k4iy5770****	The ID of the NAT Gateway.
VpcId	String	No	vpc-bp15zckdt37pq72z****	The ID of the VPC.
Name	String	No	test	The name of the NAT Gateway.

Parameter	Type	Required?	Example value	Description
InstanceChargeType	String	No	PostPaid	<p>The billing method of the instance. Valid values:</p> <ul style="list-style-type: none"> • PostPaid: pay-as-you-go • PrePaid: subscription <p>This parameter can only be set to PostPaid on the international site.</p>
Spec	String	No	Large	<p>The specification of the NAT Gateway. Valid values:</p> <ul style="list-style-type: none"> • Small (default) • Middle • Large • XLarge.1
NatType	String	No	Normal	The type of the NAT Gateway. Valid value: Normal
ResourceGroupId	String	No	rg-bp67acfmxazb4ph****	The ID of the resource group.
PageNumber	Integer	No	10	The page number. Default value: 1
PageSize	Integer	No	1	The number of entries per page in the case of a paged query result. Maximum value: 100. Default value: 10

Response parameters

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

Parameter	Type	Example value	Description
PageSize	Integer	10	The number of entries per page.
NatGateways	Array		Details of NAT Gateways.
NatGatewayId	String	ngw- bp1047e2d4z7kf2ki ****	The ID of the NAT Gateway.
RegionId	String	cn-hangzhou	The ID of the region to which the NAT Gateway belongs.
Name	String	abc	The name of the NAT Gateway.
Description	String	NAT	The description of the NAT Gateway.
VpcId	String	vpc- bp15zcldt37pq72z* ***	The ID of the VPC.
Spec	String	Small	The specification of the NAT Gateway.
InstanceChargeType	String	PostPaid	<p>The billing method of the instance.</p> <ul style="list-style-type: none"> PostPaid: pay-as-you-go PrePaid: subscription <p>This parameter can only be set to PostPaid on the international site.</p>
ExpiredTime	String	2017-08-26T16:00Z	The time when the NAT Gateway expires.

Parameter	Type	Example value	Description
AutoPay	Boolean	true	<p>Indicates whether the NAT Gateway order is paid automatically. Valid values:</p> <ul style="list-style-type: none"> • false: Automatic payment is not enabled. After an order is placed, you must go to the order center to complete the payment. • true: Automatic payment is enabled and the order is paid automatically. <div style="background-color: #e1f5fe; padding: 5px; border: 1px solid #cfe2f3;"> <p> Note This parameter is required if the value of the InstanceChargeType is set to PrePaid.</p> </div>
BusinessStatus	String	Normal	<p>The business status of the NAT Gateway:</p> <ul style="list-style-type: none"> • Normal: Indicates that the NAT Gateway is normal. • FinancialLocked: The NAT Gateway is locked because of an overdue bill. • SecurityLocked: The NAT Gateway is locked due to security reasons.
CreationTime	String	2017-06-08T12:20:55	<p>The time when the instance was created. The format follows the ISO 8601 standard and uses UTC+8 time. Format: YYYY-MM-DDThh:mmZ</p>
Status	String	Initiating	<p>The status of the NAT Gateway:</p> <ul style="list-style-type: none"> • Initiating: The NAT Gateway is being initialized. • Available: The NAT Gateway is available. • Pending: The NAT Gateway is being configured.
NatType	String	Normal	<p>The type of the NAT Gateway. Valid value: Normal</p>

Parameter	Type	Example value	Description
InternetChargeType	String	PayBySpec	The billing method for network usage of the NAT Gateway. This value can only be PayBySpec.
ResourceGroupId	String	rg-bp67acfmxazb4ph***	The ID of the resource group.
DeletionProtection	Boolean	true	Indicates whether deletion protection is enabled for the instance. <ul style="list-style-type: none"> true: Deletion protection is enabled. false: Deletion protection is disabled.
IpLists	Array		The Elastic IP address associated with the NAT Gateway.
IpAddress	String	116.62.222.xx	The IP address of the Elastic IP address.
ForwardTableIds	List	ftb-uf6gj3mhsg94qsqs†****	The ID of the port forwarding table.
SnatTableIds	List	stb-uf6dalcdu0krz423p****	The ID of the SNAT table of the NAT Gateway.
BandwidthPackageIds	List	bwp-s6lmotmkk****	The ID of the bandwidth package associated with the NAT Gateway.
NatGatewayPrivateInfo	Struct		The private information of the NAT Gateway. If the value of NatType is Normal, all parameters returned in this list are null.
EniInstanceId	Integer	10	The ID of the ENI.
PrivateIpAddress	String	192.168.1.xx	The private IP address.
VswitchId	String	vsw-bp1s2laxhdf9ayjbo****	The ID of the VSwitch.

Parameter	Type	Example value	Description
IzNo	String	cn-hangzhou-b	The zone.
MaxBandwidth	Integer	5120	The maximum bandwidth. Unit: Mbit/s

Examples

Request example

```
http(s)://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>
  <NatGateways>
    <NatGateway>
      <Description></Description>
      <Spec>Small</Spec>
      <IpLists>
        <IpList>
          <IpAddress>118.xx.xx.181</IpAddress>
          <AllocationId>eip-bp1xyg5ipmh3nledx****</AllocationId>
          <UsingStatus>UsedBySnatTable</UsingStatus>
        </IpList>
        <IpList>
          <IpAddress>47.xx.xx.34</IpAddress>
          <AllocationId>eip-bp19eue77u20cffjc****</AllocationId>
          <UsingStatus>UsedByForwardTable</UsingStatus>
        </IpList>
      </IpLists>
      <ForwardTableIds>
        <ForwardTableId>ftb-bp15o9aylj19vfvgt****</ForwardTableId>
      </ForwardTableIds>
      <VpcId>vpc-bp15k6sx6fhdz2jw4****</VpcId>
      <NatGatewayId>ngw-bp1047e2d4z7kf2ki****</NatGatewayId>
      <CreationTime>2018-01-10T09:48:29Z</CreationTime>
      <BandwidthPackageIds>
        <Name></Name>
        <Status>Available</Status>
        <BusinessStatus>Normal</BusinessStatus>
        <RegionId>cn-hangzhou</RegionId>
        <SnatTableIds>
          <SnatTableId>stb-bp1tyr0o48w6wymur****</SnatTableId>
        </SnatTableIds>
        <InstanceChargeType>PostPaid</InstanceChargeType>
      </NatGateway>
    </NatGateways>
  </DescribeNatGatewaysResponse>
```

JSON format

```
{
  "PageNumber": 1,
  "TotalCount": 1,
  "PageSize": 10,
  "RequestId": "1207C80C-7CAB-4874-A9A0-D19EC9F35490",
  "NatGateways": {
    "NatGateway": [
      {
        "Description": "",
        "Spec": "Small",
        "IpLists": {
          "IpList": [
            {
              "IpAddress": "118.xx.xx.181",
              "AllocationId": "eip-bp1xyg5ipmh3nledx****",
              "UsingStatus": "UsedBySnatTable"
            },
            {
              "IpAddress": "47.xx.xx.34",
              "AllocationId": "eip-bp19eue77u20cffjc****",
              "UsingStatus": "UsedByForwardTable"
            }
          ]
        },
        "ForwardTableIds": {
          "ForwardTableId": [
            "ftb-bp15o9aylj19vfvgt****"
          ]
        },
        "VpcId": "vpc-bp15k6sx6fhdz2jw4****",
        "NatGatewayId": "ngw-bp1047e2d4z7kf2kiy25t",
        "CreationTime": "2018-01-10T09:48:29Z",
        "BandwidthPackageIds": {
          "BandwidthPackageId": []
        },
        "Name": "",
        "Status": "Available",
        "BusinessStatus": "Normal",
        "RegionId": "cn-hangzhou",

```

```

    "SnatTableIds":{
      "SnatTableId":[
        "stb-bp1tyr0o48w6wymur****"
      ]
    },
    "InstanceChargeType":"PostPaid"
  }
]
}
}

```

Errors

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

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

4.4. 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: <i>DeleteNatGateway</i>
NatGatewayId	String	Yes	ngw-bp1uewa15k4iy5770ya89	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.
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-E11ED28DCAC0</RequestId>
</DeleteNatGatewayResponse>
```

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCAC0"
}
```

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	DependencyViolation.BandwidthPackages	There are BandwidthPackages 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

4.5. ListNatGatewayEcsMetric

View the traffic monitoring data of a NAT gateway.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates a sample code of the operation for different SDKs.

Request parameters

Parameter	Type	Required	Example	Description
Action	String	Yes	ListNatGatewayEcsMetric	The operation that you want to perform. Set the value to ListNatGatewayEcsMetric.
NatGatewayId	String	Yes	ngw-2vc53wynunp35lw1y****	The ID of the NAT gateway whose traffic monitoring data you want to view. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> ? Note You can query only a single NAT gateway. </div>
RegionId	String	Yes	cn-chengdu	The ID of the region to which the NAT gateway belongs. You can call the DescribeRegions operation to query the region ID.

Parameter	Type	Required	Example	Description
TimePoint	Long	Yes	1602653760	<p>The timestamp of the traffic monitoring data that is accurate to the minute.</p> <p>For example, to view the traffic monitoring data from 17:22:00 on 2020-07-13 to 17:23:00 on 2020-07-13, specify the timestamp at 17:22:00 on 2020-07-13.</p>
DryRun	Boolean	No	false	<p>Specifies whether to precheck only the current request. Valid values:</p> <p>true: sends a precheck request and does not view the traffic monitoring data. The system checks whether your AccessKey pair is valid, RAM user is authorized, and required parameter values are specified. If the request fails to meet the requirements in the check items, an error message is returned. If the request passes the precheck, the <code>DryRunOperation</code> error message is returned.</p> <p>false (default): checks the API request. After the request passes the check, the 2XX HTTP status code is returned, and service resources are automatically added to the endpoint service.</p>
OrderKey	String	No	ActiveSessionNum	The field by which traffic monitoring data is sorted. Default value: ActiveSessionNum.
OrderType	String	No	desc	<p>The sorting rule of traffic monitoring data. Valid values:</p> <ul style="list-style-type: none"> desc (default): The data is sorted in descending order. asc: The data is sorted in ascending order.
PrivateIpAddress	String	No	192.168.0.12	The IP address of the ECS instance whose traffic monitoring data you want to view.

Parameter	Type	Required	Example	Description
NextToken	String	No	caeba0bbb2be03f84eb48b699f0a4883	The query token. Set this parameter to the NextToken value that is returned in the last API call. If no subsequent request is sent, you do not need to set this parameter.
MaxResults	String	No	20	The number of entries to return on each page. Valid values: 10 to 20. Default value: 20.

Response parameters

Parameter	Type	Example	Description
MaxResults	Integer	1	The number of entries to return on each page.
MetricDataList	Array of MetricData		The list of traffic monitoring data.
ActiveSessionNum	Long	6	The number of concurrent connections per minute. Unit: connections
NatGatewayId	String	ngw-2vc53wynunp35lw1y****	The ID of the NAT gateway whose traffic monitoring data you want to view.
NewSessionRate	Long	0	The new session rate. Unit: sessions/s
PrivateIpAddress	String	192.168.0.12	The IP address of the ECS instance whose traffic monitoring data you want to view.
RxBps	Long	125	Outbound bandwidth. Unit: bit/s.
RxPps	Long	2	Outbound data packets transferred per second.
Timestamp	Long	1602653760	The timestamp of the traffic monitoring data that is accurate to the minute.
TxBps	Long	125	Inbound bandwidth. Unit: bit/s.

Parameter	Type	Example	Description
TxPps	Long	2	Inbound data packet. Unit: count/s.
NextToken	String	caeba0bbb2be03f8 4eb48b699f0a4883	The token that is required for the next query. If the NextToken parameter is empty, no subsequent query will be sent.
RequestId	String	0ED8D006-F706- 4D23-88ED- E11ED28DCAC0	The ID of the request.

Examples

Sample requests

```
https://vpc.aliyuncs.com/?Action=ListNatGatewayEcsMetric
&NatGatewayId=ngw-2vc53wynunp35lw1y****
&RegionId=cn-chengdu
&TimePoint=1602653760
&<Common request parameters>
```

Sample success responses

XML format

```
<ListNatGatewayEcsMetricResponse>
  <RequestId>F3C9E92A-0BAA-4444-ABD9-4E41BADBBD3E</RequestId>
  <NextToken></NextToken>
  <MetricDataList>
    <PrivateIpAddress>192.168.0.48</PrivateIpAddress>
    <RxBps>1178</RxBps>
    <TxBps>45593</TxBps>
    <RxPps>2</RxPps>
    <TxPps>4</TxPps>
    <ActiveSessionNum>6</ActiveSessionNum>
    <NewSessionRate>0</NewSessionRate>
    <NatGatewayId>ngw-2vc53wynunp35lw1y****</NatGatewayId>
    <Timestamp>1602653760</Timestamp>
  </MetricDataList>
  <MaxResults>1</MaxResults>
</ListNatGatewayEcsMetricResponse>
```

JSON format

```
{
  "RequestId": "F3C9E92A-0BAA-4444-ABD9-4E41BADBBD3E",
  "NextToken": "",
  "MetricDataList": [
    {
      "PrivateIpAddress": "192.168.0.48",
      "RxBps": 1178,
      "TxBps": 45593,
      "RxPps": 2,
      "TxPps": 4,
      "ActiveSessionNum": 6,
      "NewSessionRate": 0,
      "NatGatewayId": "ngw-2vc53wynunp35lw1y****",
      "Timestamp": 1602653760
    }
  ],
  "MaxResults": 1
}
```

Error codes

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

4.6. ConvertBandwidthPackage

Converts a NAT bandwidth package.

Debug

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

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ConvertBandwidthPackage	The name of this action. Value: ConvertBandwidthPackage
BandwidthPackageId	String	Yes	bwp-bp1xea10o8qxw4f****	The ID of the NAT bandwidth package to be converted.

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 .
ClientToken	String	No	123e4567-e89b-12d3-a456-426655440000	The client token that guarantees the idempotence of the request. The value of this parameter is generated by the client. The value is unique among different requests and is 1 to 64 ASCII characters in length.

Response parameters

Parameter	Type	Example value	Description
ConvertInstanceId	String	bwp-s6lmotmkkf567b*** *	The ID of the NAT bandwidth package after the conversion.
RequestId	String	455AC20C-7061-446A-BDBD-B3BEE0856304	The ID of the request.

Examples

Request example

```
http(s)://[Endpoint]/? Action=ConvertBandwidthPackage
&BandwidthPackageId=bwp-bp1xea10o8qxw4f****
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

XML format

```
<ConvertBandwidthPackageResponse>
  <RequestId>0C2EE7A8-74D4-4081-8236-CEBDE3BBCF50</RequestId>
  <ConvertInstanceId>bwp-s6lmotmkkf567b***</ConvertInstanceId>
</ConvertBandwidthPackageResponse>
```

JSON format

```
{  
  "RequestId": "0C2EE7A8-74D4-4081-8236-CEBDE3BBCF50",  
  "ConvertInstanceId": "bwp-s6lmotmkkf567b****"  
}
```

Errors

HTTP status code	Error code	Error message	Description
500	InternalServerError	The request processing has failed due to some unknown error.	The request failed to be processed due to unknown errors.

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

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: <i>CreateForwardEntry</i>

Parameter	Type	Required?	Example value	Description
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: <ul style="list-style-type: none"> • <i>TCP</i>: forward TCP packets. • <i>UDP</i>: forward UDP packets. • <i>Any</i>: forward all packets.
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 <code>http://</code> or <code>https://</code> .

Response parameters

Parameter	Type	Example value	Description
ForwardEntryId	String	fwd-119smw5tkxxxxxxx	The ID of the DNAT entry.

Parameter	Type	Example value	Description
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-bp1mbjubq34hlxxxxxxxxx
&InternalIp=192.168.xx.xx
&InternalPort=80
&IpProtocol=TCP
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

```
<CreateForwardEntryResponse>
  <ForwardEntryId>fwd-119smw5tkxxxxxxxxx</ForwardEntryId>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
</CreateForwardEntryResponse>
```

- JSON format

```
{
  "ForwardEntryId": "fwd-119smw5tkxxxxxxxxx",
  "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.
400	InvalidExternalIp.Malformed	The specified ExternalIp is not a valid IP address.	The specified ExternalIp is invalid.


HTTP status code	Error code	Error message	Description
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.
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.InternalIpOutOfVpcCIDR	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.

HTTP status code	Error code	Error message	Description
500	InternalServerError	The request processing has failed due to some unknown error.	The request cannot be processed due to unknown errors.
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: <i>ModifyForwardEntry</i>
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.
ExternalIp	String	No	116.62.222.28	The public IP address.

Parameter	Type	Required?	Example value	Description
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: <ul style="list-style-type: none"> <i>TCP</i>: forward TCP packets. <i>UDP</i>: forward UDP packets. <i>Any</i>: 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-8vbn3bc8roygjp0gy3xk7
&ForwardTableId=ftb-8vbx8xu2lqj9qb334h0ow
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

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

- 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.
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	IncorretForwardEntryStatus	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.
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.ExternalIpUsedInSnatTable	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.

HTTP status code	Error code	Error message	Description
400	Forbidden.Already.Bounded	The specified instance already bounded	The specified instance is already attached.

See [common error codes](#)

5.3. DescribeForwardTableEntries

Queries one or more DNAT entries in a DNAT table.

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	DescribeForwardTableEntries	The name of this action. <code>DescribeForwardTableEntries</code>
ForwardTableId	String	Yes	ftb-bp1mbjubq34hlcqpa****	The ID of the DNAT table.
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions .
ForwardEntryId	String	No	fwd-8vbn3bc8roygjp0gy****	The ID of the DNAT entry allocated by the system.
ExternalIp	String	No	116.xx.xx.28	The public IP address.
ExternalPort	String	No	8080	The public port number. Value range: 1 to 65535
InternalIp	String	No	192.168.xx.xx	The destination private IP address.
InternalPort	String	No	80	The destination private port number. Value range: 1 to 65535

Parameter	Type	Required?	Example value	Description
IpProtocol	String	No	TCP	The protocol type. Valid values: <ul style="list-style-type: none"> TCP: Forward TCP packets. UDP: Forward UDP packets. Any: Forward all packets.
ForwardEntryName	String	No	ForwardEntry-1	The name of the DNAT entry. The name must be 2 to 128 characters in length. It must start with a letter, and cannot start with <code>http://</code> or <code>https://</code> .
PageNumber	Integer	No	1	The page number. Default value: 1
PageSize	Integer	No	10	Optional. The number of entries per page in the case of a paged query result. Maximum value: 50. Default value: 10.

Response parameters

Parameter	Type	Example value	Description
RequestId	String	A6C4A8B1-7561-4509-949C-20DEB40D71E6	The ID of the request..
TotalCount	Integer	5	The number of total entries.
PageNumber	Integer	1	The current page number.
PageSize	Integer	10	The number of entries per page.
ForwardTableEntries	Array		The details of DNAT entries.
ForwardTableId	String	ftb-11tc6xgmv****	The ID of the DNAT table to which the DNAT entry belongs.
ForwardEntryId	String	fwd-119smw5tk****	The ID of the DNAT entry.

Parameter	Type	Example value	Description
ExternalIp	String	139.xxx.xx.79	The public IP address.
ExternalPort	String	80	The public port.
IpProtocol	String	TCP	The protocol type.
InternalIp	String	192.168.1.xx	The private IP address.
InternalPort	String	25	The destination private port number. Value range: 1 to 65535
Status	String	Available	The status of the DNAT entry.
ForwardEntry Name	String	ForwardEntry-1	The name of the DNAT rule.

Examples

Request example

```
https://vpc.aliyuncs.com/?Action=DescribeForwardTableEntries
&ForwardTableId=ftb-bp1mbjubq34hlcqpa****
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

`XML` format

```
<DescribeForwardTableEntriesResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>1</TotalCount>
  <PageSize>10</PageSize>
  <RequestId>D15864E1-6068-4CF9-AC3D-653D2143E269</RequestId>
  <ForwardTableEntries>
    <ForwardTableEntry>
      <Status>Available</Status>
      <IpProtocol>TCP</IpProtocol>
      <ForwardEntryId>fwd-bp1yjpsk36ojv9rrz****</ForwardEntryId>
      <ExternalIp>47.96.xx.184</ExternalIp>
      <ForwardTableId>ftb-bp1pnianh59fsh09b****</ForwardTableId>
      <ExternalPort>80</ExternalPort>
      <InternalPort>25</InternalPort>
      <InternalIp>192.168.xx.39</InternalIp>
      <ForwardEntryName>vmeixme</ForwardEntryName>
    </ForwardTableEntry>
  </ForwardTableEntries>
</DescribeForwardTableEntriesResponse>
```

JSON format

```
{
  "PageNumber": 1,
  "TotalCount": 1,
  "PageSize": 10,
  "RequestId": "D15864E1-6068-4CF9-AC3D-653D2143E269",
  "ForwardTableEntries": {
    "ForwardTableEntry": [
      {
        "Status": "Available",
        "IpProtocol": "TCP",
        "ForwardEntryId": "fwd-bp1yjpsk36ojv9rrz****",
        "ExternalIp": "47.96.xx.184",
        "ForwardTableId": "ftb-bp1pnianh59fsh09b****",
        "ExternalPort": "80",
        "InternalPort": "25",
        "InternalIp": "192.168.xx.39",
        "ForwardEntryName": "vmeixme"
      }
    ]
  }
}
```

Errors

HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified RegionId does not exist.
400	IncorretForwardEntryStatus	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.
404	InvalidForwardTableId.NotFound	Specified forwardTableId does not exist	The specified DNAT table does not exist.

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

6. SNAT table

6.1. CreateSnatEntry

Adds an SNAT entry to the SNAT table.

API description

Note the following before you call this action:

- The VSwitch and the ECS instance 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.
- A public IP address cannot be used in both SNAT and DNAT entries at the same time.

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

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 .
SnatIp	String	Yes	47.XX.XX.98	The public IP addresses. Separate multiple IP addresses with commas (,).
SnatTableId	String	Yes	Stb-bp190wu8io1vgev****	The ID of the SNAT table.
SourceVSwitchId	String	No	vsw-bp1nhx2s9ui5o**	The ID of the VSwitch that requires access to the Internet.

Parameter	Type	Required?	Example value	Description
SourceCIDR	String	No	10.1.1.0/24	<p>The CIDR block of the VSwitch or ECS instance.</p> <ul style="list-style-type: none"> 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 public IP addresses specified for SnatIp 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 public IP addresses specified for SnatIp to access the Internet. <p>This parameter and the SourceVSwitchId parameter are mutually exclusive. If you have specified SourceVSwitchId, you cannot specify SourceCIDR. If you have specified SourceCIDR, you cannot specify SourceVSwitchId.</p>

Parameter	Type	Required?	Example value	Description
SnatEntryName	String	No	SnatEntry-1	The name of the SNAT entry. The name must be 2 to 128 characters in length. It must start with a letter, and cannot start with <code>http://</code> or <code>https://</code> .
ClientToken	String	No	02fb3da4-130e-11e9-8e44-001****	The client token that guarantees the idempotence of the request. The value of this parameter is generated by the client and is unique among different requests. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters.

Response parameters

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

Examples

Request example

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

Response example

XML format

```
<CreateSnatEntryResponse>
  <RequestId>2315DEB7-5E92-423A-91F7-4C1EC9AD97C3</RequestId>
  <SnatEntryId>snat-119smw5tkx****</SnatEntryId>
</CreateSnatEntryResponse>
```

JSON format

```
{
  "SnatEntryId": "snat-kmd6nv8fyx****",
  "RequestId": "2315DEB7-5E92-423A-91F7-4C1EC9AD97C3"
}
```

Errors


HTTP status code	Error code	Error message	Description
404	InvalidRegionId.NotFound	The specified RegionId does not exist in our records.	The specified RegionId 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 public IP address is invalid.
400	SNAT_IP_POOL_COUNT_TOO_MANY	The Snat pool ip too many.	The number of IP addresses in the SNAT IP address pool has reached the quota.
400	Forbidden.SnatEntryCountLimited	SNAT entry in the specified SNAT table reach its limit.	The number of SNAT entries has reached the quota.
400	NOT_ALLOW_USE_SOURCECIDR	The User not in nat_scope_unlimited white list. Cannot use SourceCidr param.	The private IP address falls outside of the VPC CIDR block.
404	InvalidVSwitchId.NotFound	The specified virtual switch does not exist.	The specified VSwitch does not exist.
400	INVALID_PARAMETER	The parameter invalid.	The specified parameter is invalid.

HTTP status code	Error code	Error message	Description
400	Forbidden.SourceVSwitchId.Duplicated	The specified SourceCIDR is duplicated.	SNAT rules have already been configured for this VSwitch.
404	InvalidSnatIp.NotFound	Specified SnatIp does not found on the NAT Gateway	The specified public IP address does not belong to the NAT Gateway.
400	Forbidden.IpUsedInForwardTable	The specified SnatIp already used in forward table	The specified public IP address is being used by a DNAT rule. Select a different IP address or delete the DNAT rule that uses this IP address.
400	Forbidden	The specified Instance already bind eip	An EIP is already associated with this ECS instance. Disassociate the EIP from the ECS instance first and then add the forwarding rule.
400	OperationUnsupported.CidrConflict	The specified CIDR block conflicts with an existing SNAT entry.	The specified CIDR block conflicts with the existing SNAT entry.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The specified name is invalid.

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

6.2. ModifySnatEntry

Modifies an SNAT entry.

 **Note** If any SNAT entry in the SNAT table is in the Pending or Modifying state, you cannot modify any SNAT entry.

Debug

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

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 ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions .
SnatEntryId	String	Yes	snat-bp1vcgcf8tm0plqcgl04	The ID of the SNAT entry to be modified.
SnatTableId	String	Yes	stb-8vbczigrhop8x5u3twlhd	The ID of the SNAT table.
SnatEntryName	String	No	SnatEntry-1	The name of the SNAT entry. The name must be 2 to 128 characters in length. It must start with a letter, but cannot start with <code>http://</code> or <code>https://</code> .
SnatIp	String	No	47.XXX.XXX.98	The public IP address. Separate multiple IP addresses by using commas (,).

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-bp1vcgcf8tm0plqcgl04
&SnatIp=47.XXX.XXX.98
&SnatTableId=stb-8vbczigrhop8x5u3twlhd
&<CommonParameters>
```

Response example

XML format

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

JSON format

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

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	InvalidSnatIp.Malformed	The specified SnatIp is not a valid IP address.	The specified public IP address 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.
404	InvalidSnatIp.NotFound	Specified SnatIp does not found on the NAT Gateway	The specified public IP address does not belong to the NAT Gateway.
400	Forbidden.IpUsedInForwardTable	The specified SnatIp already used in forward table	The specified public IP address is being used by a DNAT rule. Select a different IP address or delete the DNAT rule that uses this IP address.
400	InvalidParameter.Name.Malformed	The specified Name is not valid.	The specified name is invalid.

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

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	DescribeNatTableEntries	The name of this action. Value: <i>Describeforwardtableentries</i>
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: <i>1</i> .
PageSize	Integer	No	10	The number of rows per page. Maximum value: <i>50</i> . Default value: <i>10</i> .
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.

Parameter	Type	Example value	Description
L_SnatTableId	String	stb-gz3r3odaw	The ID of the SNAT table to which the SNAT entry belongs.
L_SourceCIDR	String	116.62.222.28/33	The source CIDR block of the SNAT entry.
L_SourceVSwitchId	String	vsw-3xbxxxxx	The ID of the VSwitch that accesses the Internet through the SNAT function.
L_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-8vbczigrhop8x5u3twlhd
&<CommonParameters>
```

Response example

- XML format

```
<DescribeSnatTableEntriesResponse>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <RequestId>6D7E89B1-1C5B-412B-8585-4908E222EED5</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-8585-4908E222EED5"
}
```


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: <i>DeleteSnatEntry</i>
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.
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-E11ED28DCAC0</RequestId>
</DeleteSnatEntryResponse>
```

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCAC0"
}
```

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: <i>CreateBandwidthPackage</i>
Bandwidth	Integer	Yes	5	The bandwidth of the NAT bandwidth package. Value range: 5 to 1000.
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.

Parameter	Type	Required?	Example value	Description
ClientToken	String	No	she11234556664566	<p>A client token used to guarantee the idempotence of requests.</p> <p>This parameter value is generated by the client and must be unique. It must be 1 to 64 ASCII characters in length.</p>
Description	String	No	The description of the bandwidth package	<p>The description of the NAT bandwidth package.</p> <p>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>.</p>
ISP	String	No	BGP	Valid value: BGP.
InternetChargeType	String	No	PayByBandwidth	<p>The Internet billing method. Valid values:</p> <ul style="list-style-type: none"> PayByTraffic: Billing based on traffic
Name	String	No	The name of the bandwidth package	<p>The name of the NAT bandwidth package.</p> <p>The name must be 2 to 128 characters in length and can letters, numbers, underscores (<code>_</code>), and hyphens (<code>-</code>). The name must start with a letter, but cannot start with <code>http://</code> or <code>https://</code>.</p>

Parameter	Type	Required?	Example value	Description
Zone	String	No	cn-shanghai-a	<p>The zone of the NAT bandwidth package.</p> <p>If this parameter is not specified, the system randomly allocates a zone.</p> <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e6f2ff;"> <p>? 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.</p> </div>

Response parameters

Parameter	Type	Example value	Description
BandwidthPackageId	String	bwp-s6lmotmkk	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-s6lmotmkk</BandwidthPackageId>
</CreateBandwidthPackageResponse>
```

- JSON format

```
{
  "BandwidthPackageId": "bwp-s6lmotmkk",
  "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.
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.Isp.ValueNotSupport	The specified ISP of BandwidthPackage is not valid.	The ISP of the shared bandwidth package is invalid.

HTTP status code	Error code	Error message	Description
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.

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 can associate an Elastic IP Address (EIP).

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

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

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 ID of the region to which the NAT Gateway belongs. To query the region ID, call DescribeRegions .
BandwidthPackageId	String	No	bwp-bp1xea10o8qxwdfs****	The ID of the NAT bandwidth package.
NatGatewayId	String	No	ngw-bp1uewa15k4iydfre****	The ID of the NAT Gateway.
PageNumber	Integer	No	10	The page number. Default value: 1

Parameter	Type	Required?	Example value	Description
PageSize	Integer	No	10	The number of entries per page in the case of a paged query result. Maximum value: 50. Default value: 10

Response parameters

Parameter	Type	Example value	Description
BandwidthPackages			A list of NAT bandwidth packages.
BandwidthPackage			The details of the NAT bandwidth package.
Bandwidth	String	5	The bandwidth value of the NAT bandwidth package. Value range: 5 to 5000. Unit: Mbit/s
BandwidthPackageId	String	bwp-xxoo123sfwr****	The ID of the NAT bandwidth package.
BusinessStatus	String	Normal	<p>The status of the NAT bandwidth package.</p> <ul style="list-style-type: none"> Normal: The NAT bandwidth package is normal. FinancialLocked: The NAT bandwidth package is locked because of an overdue bill. SecurityLocked: The NAT bandwidth package is locked due to security reasons.
CreationTime	String	2017-06-08T12:20:55	<p>The time when the NAT bandwidth package was created.</p> <p>This parameter uses the ISO 8601 format and the output is UTC+8.</p> <p>Format: YYYY-MM-DDThh:mmZ.</p>

Parameter	Type	Example value	Description
Description	String	test123	<p>The description of the NAT bandwidth package.</p> <p>The description is 2 to 256 characters in length. The description is displayed in the console. If this parameter is not specified, it is null. The default value is null. The description cannot start with <code>http://</code> or <code>https://</code>.</p>
ISP	String	BGP	The service provider type. Currently, only BGP is supported.
InstanceChargeType	String	PostPaid	The billing method of the NAT bandwidth package. Currently, only PostPaid (pay-as-you-go) is supported.
InternetChargeType	String	PayByBandwidth	<p>The billing method of the Internet traffic.</p> <ul style="list-style-type: none"> PayByTraffic: billed according to the traffic consumed.
IpCount	String	1	<p>The number of public IP addresses in the NAT bandwidth package.</p> <p>Value range: 1 to 50</p>
Name	String	abc	The name of the NAT bandwidth package.
NatGatewayId	String	ngw-xxoo123ggtf****	The ID of the NAT Gateway.
PublicIpAddresses			A list of IP addresses in the NAT bandwidth package.
PublicIpAddress			The details of the IP address in the NAT bandwidth package.
AllocationId	String	eip-2zeerraiwb7ujded****	The ID of the IP address.
IpAddress	String	116.xx.xx.28	The IP address.

Parameter	Type	Example value	Description
UsingStatus	String	Available	The status of the IP address.
RegionId	String	cn-hangzhou	The ID of the region to which the NAT bandwidth package belongs.
Status	String	Available	The status of the NAT bandwidth package.
ZoneId	String	cn-shanghai-a	The zone to which the NAT bandwidth package belongs.
TotalCount	Integer	10	The total number of 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></Description>
      <IpCount>2</IpCount>
      <ISP>BGP</ISP>
      <ZoneId>cn-hangzhou-b</ZoneId>
      <InternetChargeType>PayByTraffic</InternetChargeType>
      <NatGatewayId>ngw-bp1uewa15k4iyaszaasza****</NatGatewayId>
      <Name></Name>
      <CreationTime>2018-03-06T07:33:51Z</CreationTime>
      <Status>Available</Status>
      <BandwidthPackageId>bwp-bp1xea10o8qxwaswq****</BandwidthPackageId>
      <BusinessStatus>Normal</BusinessStatus>
      <RegionId>cn-hangzhou</RegionId>
      <InstanceChargeType>PostPaid</InstanceChargeType>
      <PublicIpAddresses>
        <PublicIpAdresse>
          <IpAddress>118.31.xx.xx</IpAddress>
          <AllocationId>nateip-bp1jb1uijvm9oqaqaqaq****</AllocationId>
          <UsingStatus>Idle</UsingStatus>
        </PublicIpAdresse>
        <PublicIpAdresse>
          <IpAddress>118.31.xx.xx</IpAddress>
          <AllocationId>nateip-bp1dt4hpe8847aceb****</AllocationId>
          <UsingStatus>UsedBySnatTable</UsingStatus>
        </PublicIpAdresse>
      </PublicIpAddresses>
      <Bandwidth>5</Bandwidth>
    </BandwidthPackage>
  </BandwidthPackages>
  <PageSize>10</PageSize>
  <RequestId>8909013D-4A64-41A6-93E6-E3FD08A3EAFE</RequestId>
</DescribeBandwidthPackagesResponse>
```

JSON format

```
{
  "PageNumber":1,
  "TotalCount":1,
  "BandwidthPackages":{
    "BandwidthPackage":[
      {
        "Description": "",
        "IpCount": "2",
        "ISP": "BGP",
        "ZoneId": "cn-hangzhou-b",
        "InternetChargeType": "PayByTraffic",
        "NatGatewayId": "ngw-bp1uewa15k4iyaszaasza****",
        "Name": "",
        "CreationTime": "2018-03-06T07:33:51Z",
        "Status": "Available",
        "BandwidthPackageId": "bwp-bp1xea10o8qxwaswq****",
        "BusinessStatus": "Normal",
        "RegionId": "cn-hangzhou",
        "InstanceChargeType": "PostPaid",
        "PublicIpAddresses": {
          "PublicIpAdresse": [
            {
              "IpAddress": "118.31.xx.xx",
              "AllocationId": "nateip-bp1jb1uijvm9oaaqaaqaaq****",
              "UsingStatus": "Idle"
            },
            {
              "IpAddress": "118.31.xx.xx",
              "AllocationId": "nateip-bp1dt4hpe8847aceb****",
              "UsingStatus": "UsedBySnatTable"
            }
          ]
        },
        "Bandwidth": "5"
      }
    ]
  },
  "PageSize": 10,
  "RequestId": "8909013D-4A64-41A6-93E6-E3FD08A3EAFE"
}
```

Errors

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

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

7.3. ModifyBandwidthPackageAttribute

Modifies the name and description of a NAT bandwidth package.

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 can associate an Elastic IP Address (EIP). For more information, see [AssociateEipAddress](#).

Debug

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

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyBandwidthPackageAttribute	The name of this action. Value: ModifyBandwidthPackageAttribute
BandwidthPackageId	String	Yes	bwp-s6lmtmkkxxxxxxx	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 .
Description	String	No	This is NAT.	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> .

Parameter	Type	Required?	Example value	Description
Name	String	No	NATABC	The name of the NAT bandwidth package. The name must be 2 to 128 characters in length. It must start with a letter. It can contain numbers, periods (.), underscores (_), and hyphens (-). 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-s6lmotmkkxxxxxxxxx
&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"
}
```

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	InvalidBandwidthPackageId.NotFound	The specified bandwidthPackageId does not exist in our records.	The specified NAT 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.

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

7.4. ModifyBandwidthPackageSpec

Modifies the bandwidth of a NAT bandwidth package.

This action is available 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 can associate an Elastic IP Address (EIP).

For more information, see [AssociateEipAddress](#)

Make the API call

You can use [OpenAPI Explorer](#) to make API calls, search for API calls, perform debugging, and generate SDK example code.

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	ModifyBandwidthPackageSpec	The name of this action. Value: ModifyBandwidthPackageSpec
Bandwidth	String	Yes	5	The bandwidth of the NAT bandwidth package. Value range: 5 to 1000
BandwidthPackageId	String	Yes	bwp-s6lmtmkkxxxxxxx	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 .

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-s6lmotmkkxxxxxxxxx
&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"
}
```

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	InvalidBandwidthValueNotSupported	The specified value of Bandwidth not supported.	The specified peak bandwidth is not supported.
404	BandwidthPackage.FinancialLocked	The specified BandwidthPackage has been Financial Lock.	The specified NAT bandwidth package is locked due to overdue payment.

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

7.5. AddBandwidthPackageIps

Adds public IP addresses to a NAT bandwidth package.

This action is available 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 can associate an Elastic IP Address (EIP).

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

Debug

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

Request parameters

Parameter	Type	Required?	Example value	Description
Action	String	Yes	AddBandwidthPackageIps	The name of this action. Value: AddBandwidthPackageIps
RegionId	String	Yes	cn-hangzhou	The ID of the region to which the NAT bandwidth package belongs. To query the region ID, call DescribeRegions .
IpCount	String	Yes	2	The number of public IP addresses in the NAT bandwidth package. Value range: 1 to 50
BandwidthPackageId	String	Yes	bwp-s6lmtmkkxxxxxxx	The ID of the NAT bandwidth package.

Parameter	Type	Required?	Example value	Description
ClientToken	String	No	02fb3da4-130e-11e9-8e44-0016e04115b	The client token that guarantees the idempotence of the request. The value of this parameter is generated by the client and is unique among different requests. The maximum length is 64 ASCII characters.

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-s6lmotmkkxxxxxxxxx
&IpCount=2
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

XML format

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

JSON format

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

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.
400	InvalidIpCount.ValueNotSupported	The specified value of IpCount not supported.	The specified value of IpCount is invalid.
400	QuotaExceeded.BandwidthPackageIps	The specified ipCount exceeded quota.	The number of IP addresses has reached the quota.
404	BandwidthPackage.FinancialLocked	The specified BandwidthPackage has been Financial Lock.	The NAT bandwidth package is locked due to an overdue payment.


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

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: <i>RemoveBandwidthPackageIps</i>

Parameter	Type	Required?	Example value	Description
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.n	String	Yes	116.62.222.28	The ID of the public IP address to be deleted. Value range of n: 1 to 20.
ClientToken	String	No	SHAww112344jhs w233	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-s6lmtmkk
&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 Financial Lock.	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: <i>DeleteBandwidthPackage</i>
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-bp1arsrmca9kpxxxxxxxx
&RegionId=cn-hangzhou
&<CommonParameters>
```

Response example

- XML format

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

- JSON format

```
{
  "RequestId": "0ED8D006-F706-4D23-88ED-E11ED28DCAC0"
}
```

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.SnateEntry	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](#)