

Alibaba Cloud NAT Gateway

Product Introduction

Issue: 20190423

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	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 font</code>	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

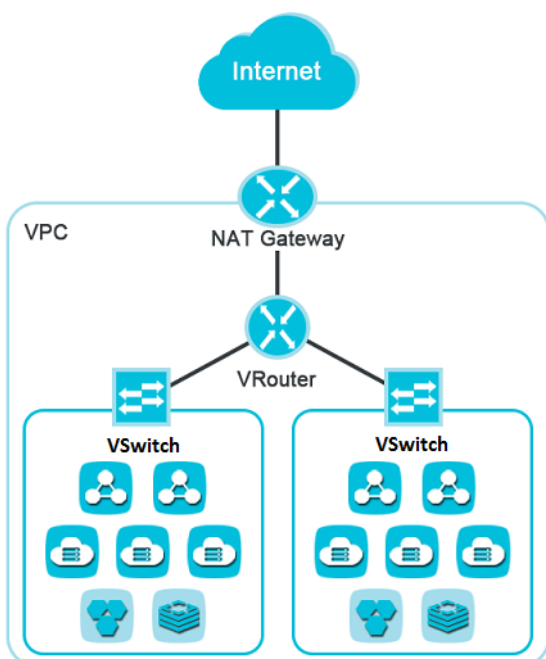
Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 What is NAT Gateway?

NAT Gateway is an enterprise-class VPC Internet gateway that provides NAT proxy services (SNAT and DNAT), up to 10 Gbps forwarding capacity and cross-zone disaster tolerance.



As an Internet gateway, public IP addresses are required to make NAT Gateway function normally. After creating a NAT Gateway, you can bind an Elastic IP Address (EIP) to the NAT Gateway.



Note:

If your account has purchased a NAT bandwidth package before January 26, 2018, you still need to use the bandwidth package to provide public IP addresses. To associate an EIP to the NAT Gateway, open a ticket.

If you want to use the Internet Shared Bandwidth function, you can add EIPs to the existing shared bandwidth in the EIP console or buy a shared bandwidth first and then add the EIPs to it. For more information, see [Add EIPs to Internet Shared Bandwidth](#).

2 Features

NAT Gateway provides SNAT and DNAT functions.

SNAT

NAT Gateway supports SNAT (Source NAT), allowing you to associate a public IP with a VSwitch. Then, the ECS instances in the VSwitch can use the public IP to access the Internet.

In addition, SNAT can serve as a simple firewall that protects backend ECS instances . An external terminal can access an ECS instance after the ECS instance actively establishes a connection with the external terminal. An untrustworthy external terminal cannot access a backend ECS instance if no connection is established.

DNAT

NAT Gateway supports DNAT (Destination NAT), allowing you to map a public IP to a private IP. Then, the ECS instance with the public IP can provide public service.

DNAT supports both port mapping and IP mapping.

3 Benefits

Flexible and easy-to-use

As an enterprise-class public network gateway for VPC, NAT Gateway provides SNAT and DNAT functions, which means you do not have to build your own SNAT gateway for your servers. NAT Gateway features high flexibility, stability, and reliability, and is easy to use.

High Performance

NAT Gateway, a virtual network hardware, is based on Alibaba Cloud's self-developed distributed gateway and supported by SDN virtualization technology. With the forwarding capacity of up to 10 Gbps, NAT Gateway supports large-scale Internet applications.

High availability

NAT Gateway supports the cross-zone disaster recovery. Failure in a single zone does not affect the service of NAT Gateway.

Pay-AS-You-Go billing

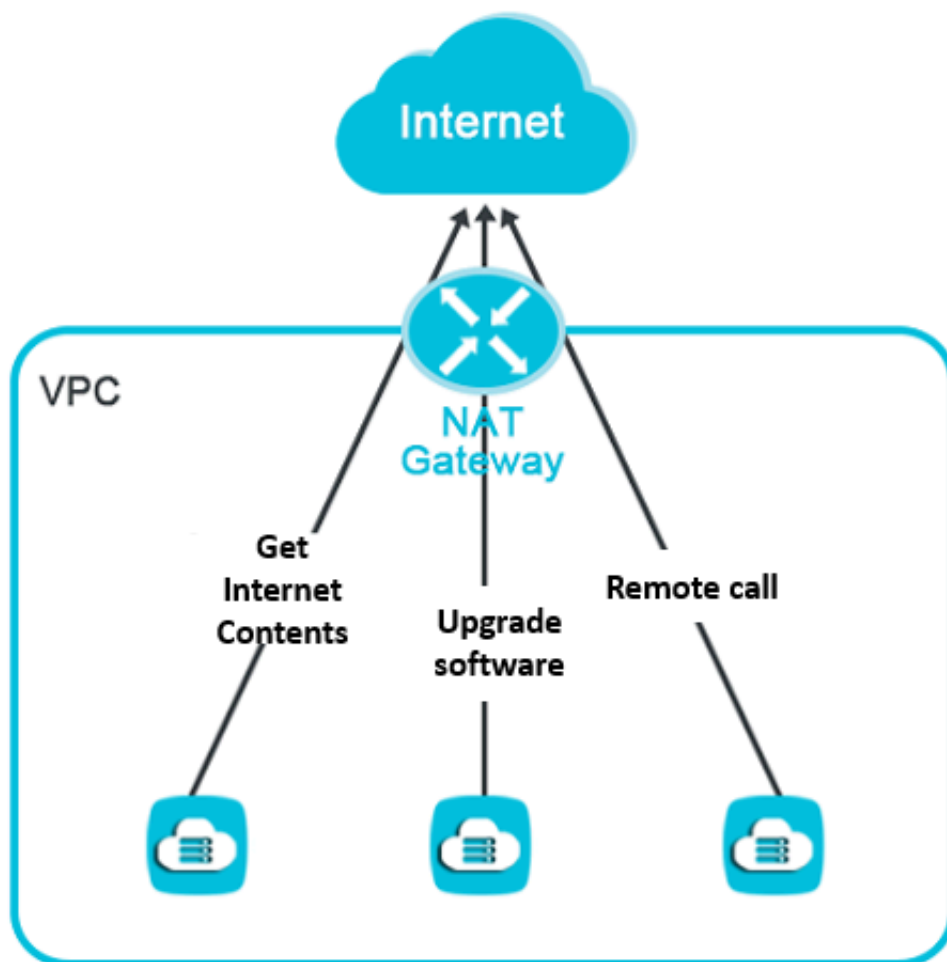
You can change the gateway specification and the number of EIPs at any time to meet changing service requirements.

4 Scenarios

NAT Gateway applies to scenarios where ECS instances of the VPC network need to access Internet or provide public services.

Scenario 1: Set up a high-availability SNAT Gateway

In an IT system, some ECS instances need to access the Internet. Out of security concerns, public IPs of these ECS instances cannot be exposed on the Internet. In such cases, you can use the SNAT function of NAT Gateway. For more information, see [Create an SNAT entry](#).



Scenario 2: Provide public services

The ECS instances of the VPC network can provide public services by configuring IP mapping or port mapping.

5 Terms

Term	Description
NAT Gateway	NAT Gateway is an enterprise-class public network gateway that provides Internet proxy services (SNAT and DNAT) with up to 10 Gbps forwarding capability. It also features in high availability in regions and disaster recovery across zones.
DNAT table	A DNAT table is a configuration table used for configuring DNAT. You can map a public IP in a NAT bandwidth package to an ECS instance. DNAT supports IP mapping and port mapping.
SNAT table	An SNAT table is a configuration table used for configuring SNAT. You can add an SNAT entry to enable ECS instances in a VSwitch to access the Internet by using a specified public IP.
EIP	Elastic IP Address (EIP) is a public IP address resource that can be independently purchased and owned. You can bind EIP to an ECS instance of the VPC network, a private SLB instance of the VPC network, and a NAT Gateway.

6 Limits

This topic describes limits related to the usage of NAT Gateway and EIPs.

Limits on NAT Gateway

- Only one NAT Gateway can be configured for a VPC.
- A public IP address cannot be used as an SNAT entry and a DNAT entry at the same time.
- If a VPC contains a custom route entry whose the destination CIDR block is 0.0.0.0/0, you must delete the CIDR block before you can create a NAT Gateway.
- If a VSwitch is added to an SNAT entry, it will be limited by the bandwidth of the selected EIP.
- Up to 100 DNAT entries can be added to a DNAT table.
- Up to 40 SNAT entries can be added to an SNAT table.

Limits on attaching EIPs

- Up to 20 EIPs can be associated with a NAT Gateway. You can open a ticket to increase the quota.
- Up to 10 Pay-As-You-Go EIPs can be attached to a NAT Gateway. The maximum bandwidth of each Pay-As-You-Go EIP is 200 Mbps.
- If you purchased a NAT bandwidth package before January 26, 2018, you need to use the bandwidth package to provide public IP addresses. However, if you must attach an EIP to the NAT Gateway, please open a ticket.