Alibaba Cloud

NAT Gateway Quick Start

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C-J Alibaba Cloud

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Document conventions

| Style | Description | Example |
|--------------|--|--|
| A 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. |
| O 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. |
| C) 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 cd /d C:/window command to enter the Windows system folder. |
| Italic | Italic formatting is used for parameters and variables. | bae log listinstanceid Instance_ID |
| [] or [a b] | This format is used for an optional value, where only one item can be selected. | ipconfig [-all -t] |
| {} or {a b} | This format is used for a required value, where only one item can be selected. | switch {active stand} |

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1.Use the SNAT feature of an Internet NAT gateway to access the Internet

This topic describes how to configure SNAT on an Internet NAT gateway. SNAT allows Elastic Compute Service (ECS) instances that are not assigned public IP addresses to access the Internet.

Scenarios

The following scenario is used as an example. You created a virtual private cloud (VPC) and a vSwitch on Alibaba Cloud. Multiple ECS instances are created in the vSwitch. The ECS instances are not assigned static public IP addresses or associated with elastic IP addresses (EIPs). To meet business requirements, the ECS instances must have access to the Internet.



In this scenario, you can configure SNAT on an Internet NAT gateway. SNAT allows ECS instances in a VPC to access the Internet when the ECS instances are not assigned public IP addresses.

Prerequisites

- An Alibaba Cloud account is created. For more information, see Create an Alibaba Cloud account.
- A VPC and a vSwitch are created. ECS instances are deployed in the vSwitch. For more information, see Create an IPv4 VPC.
- The VPC that you created meets the following requirements:
 - A custom route whose destination CIDR block is 0.0.0.0/0 does not exist in the VPC. If the custom route exists, delete it.
 - If you want to configure SNAT as a Resource Access Management (RAM) user, make sure that the RAM user is authorized to access the VPC. Otherwise, contact the Alibaba Cloud account owner to acquire the permissions.

Procedure



Step 1: Create an Internet NAT gateway

| 1. | | | |
|----|--|--|--|
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |

After you create an Internet NAT gateway, you can find the Internet NAT gateway on the **Internet NAT Gateway** page.

| Create NAT Gateway | Instance Name $~~$ | Search by Ins | stance Name | Q | | | |
|--|--------------------|------------------------|---------------|--------------------------------|-------------|-------------------------------------|----------------------|
| Instance ID/Name | Monitoring | Maximum Bandwidth | Specs/Type 🚯 | VPC | Status | Charge Type | Billing Metric |
| ngw- bp111z 7 d22rx35 - Pending Configuration | 4 | 5120 Mbps Adjust | - Enhanced | vpc-bp1q i90zh2qv dor frist | ✓ Available | Pay-As-You-Go Sep 29, Created | Pay-By-Data-Transfer |

Step 2: Associate an EIP with the Internet NAT gateway

An Internet NAT gateway can run as expected only when it is associated with an EIP. After you create an Internet NAT gateway, you can associate EIPs with the Internet NAT gateway to meet your business requirements.

- 1.
- 2.
- 3.
- 4. In the Associate EIP dialog box, set the following parameters and click OK.

| Parameter | Description |
|----------------|---|
| Resource Group | Select the resource group of the EIP. |
| EIPs | Select the EIP that you want to associate with the Internet NAT gateway. In this example, Purchase and Associate EIP is selected. The system automatically creates a pay-by-data-transfer EIP and associates the EIP with the Internet NAT gateway. |

After you associate an EIP with the Internet NAT gateway, the EIP is displayed in the **Elastic IP** Address column.

| Int | Internet NAT Gateway | | | | | | | | | | | | |
|-----|--|-----------------------|------|---------|-------------------------|--------------------|-------------|-------------|----------------------|----------------|--------------------|------------------|--|
| Cr | Create NAT Gateway Instance Name Y Q Enter an Instance Name to perform exact match | | | | | Filter by Tag | | | | | | | |
| | | Instance ID/Name | Tags | Monitor | Maximum Throughput | Specification/Type | VPC | Status | Charge Type | Billing Method | Elastic IP Address | Resource Group | |
| | | ng 93 | • | | 5120 Mbps Request to | | vpc-rj toj8 | ✓ Available | Pay-As-You-Go Mar | Pav-Bv-CU | 47 20: | default resource | |
| | | Pending Configuration | Ť | ļ | Adjust | Enhanced | yning | - Manapic | 29, Created | , ., ., | | group | |

Step 3: Create an SNAT entry

SNAT allows ECS instances in a VPC to access the Internet when no public IP addresses are assigned to the ECS instances.

- 1.
- 2.
- 3.
- 4. On the SNAT Management tab, click Create SNAT Entry.
- 5. On the Create SNAT Entry page, set the parameters and click Confirm.

| Parameter | Description | | | | |
|-----------------------------|--|--|--|--|--|
| | Specify whether to create an SNAT entry for a VPC, a vSwitch, an ECS instance, or a custom CIDR block. Specify vSwitch is selected in this example. The ECS instances that are attached to the specified vSwitch use the EIP to access the Internet. • Select VSwitch : Select a vSwitch from the drop-down list. | | | | |
| SNAT EILTY | Note If you select multiple vSwitches, the system creates multiple SNAT entries that use the same EIP. | | | | |
| | • VSwitch CIDR Block: displays the CIDR block of the vSwitch. | | | | |
| Select Public IP Address | Select one or more EIPs that are used to access the Internet. Use One IP Address is selected and an EIP is selected from the drop-down list. | | | | |
| Entry Name | Enter a name for the SNAT entry. The name must be 2 to 128 characters in length, and can contain digits, underscores (_), and hyphens (-). The name must start with a letter. | | | | |

After the SNAT entry is created, you can view the SNAT entry on the Used in SNAT Entry tab.

| ← ngw-rj9 | 4\ n | n4ssp7n93 | | | | | | Associate with EIP | More Y C | | |
|-----------------------|------------------------|-----------------|-----------------|-----------|------------|------------------------|-------------|--------------------|----------|--|--|
| Basic Information | Associated EIP (1) | DNAT Management | SNAT Management | Monitor | | | | | | | |
| SNAT Table Informatio | 3NAT Table Information | | | | | | | | | | |
| SNAT Table ID | stb-rj9v 6y31q | 195j Copy | | | Created At | Mar 29, 2022, 14:57:29 | | | | | |
| Used in SNAT Entry | | | | | | | | | | | |
| Create SNAT Entry | Entry ID 🗸 Enter | | Q | | | | | | ∓ c | | |
| SNAT Entry I | D | Source CIDR BI | ock ECS/vSwit | ch/VPC ID | | Public IP Address | Status | Actions | | | |
| snat- cesili | ge7om | 172.16.0.0/24 | vsw cenhi | ón , | | 47 20; | ✓ Available | Edit Remove | | | |
| | | | | | | | | | | | |

Step 4: Test network connectivity

After you create an SNAT entry, you can test the network connectivity of the ECS instances. In this example, an ECS instance that runs Linux is used to test the network connectivity.

? Note Make sure that the security group rules of the ECS instance allow the ECS instance to access the Internet. For more information, see Overview.

- 1. Log on to an ECS instance that is attached to the vSwitch. For more information, see Connection methods.
- 2. Run the ping command to ping www.aliyun.com .

If you can receive echo reply packets, it indicates that the connection is established.

The result shows that the ECS instance can access the Internet.

| [root@iZb_i | ~]# ping www.aliyun.com | | | | | | | | | |
|--|---|--|--|--|--|--|--|--|--|--|
| PING na61-na62.wagbr | aliyun.com 🔰 🗋 Wabadns.com (203 | | | | | | | | | |
| 64 bytes from 20 .114 | (20] 114): icmp_seq=1 ttl=93 time=35.4 ms | | | | | | | | | |
| 64 bytes from 20 7.114 | (20 114): icmp_seq=2 ttl=93 time=35.3 ms | | | | | | | | | |
| 64 bytes from 20 🔜 🔜 7.114 | (20: 114): icmp_seq=3 ttl=93 time=35.2 ms | | | | | | | | | |
| 64 bytes from 20 .114 | (20. 114): icmp_seq=4 ttl=93 time=35.2 ms | | | | | | | | | |
| ^C | | | | | | | | | | |
| na61-na62.wagbride | | | | | | | | | | |
| 4 packets transmitted, 4 received, 0% packet loss, time 3003ms | | | | | | | | | | |
| rtt min/avg/max/mdev = 35.219/ | /35.272/35.371/0.145 ms | | | | | | | | | |

FAQ

How many SNAT entries can I add to an Internet NAT gateway?

By default, you can add up to 40 SNAT entries to an Internet NAT gateway.

How many EIPs can I specify in an SNAT entry?

You can specify up to 64 EIPs in an SNAT entry. The quota cannot be increased.

For more information about SNAT, see FAQ about SNAT.

References

Configure DNAT on an Internet NAT gateway for an ECS instance

2.Configure DNAT on an Internet NAT gateway for an ECS instance

This topic describes how to configure DNAT on an Internet NAT gateway. DNAT allows Elastic Compute Service (ECS) instances to provide Internet-facing services.

Scenarios

The following scenario is used as an example. A company created an ECS instance on Alibaba Cloud and deployed applications on the ECS instance. The ECS instance is not assigned a static public IP address or associated with an elastic IP address (EIP). Due to business development, the company wants the ECS instance to provide Internet-facing services by using the DNAT feature of an Internet NAT gateway. Internet NAT gateways support IP mapping and port mapping.



Prerequisites

- An Alibaba Cloud account is created. If you do not have an Alibaba Cloud account, create an Alibaba Cloud account.
- A virtual private cloud (VPC) and a vSwitch are created. For more information, see Create an IPv4 VPC.
- An ECS instance is created in the vSwitch. Applications are deployed on the ECS instance. For more information, see Create an instance by using the wizard.

In this example, an application that uses Apache is deployed on the ECS instance.

• Make sure that the security group rules of the ECS instance allow the ECS instance to receive requests from the Internet. In this example, make sure that the inbound rules of the security group of the ECS instance allow TCP access to port 80. For more information, see Add a security group rule.

Procedure



Step 1: Create an Internet NAT gateway

| 1. | | |
|----|--|--|
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

After you create an Internet NAT gateway, you can find the Internet NAT gateway on the **Internet NAT Gateway** page.

| Create NAT Gateway | Instance Name 🗸 🗸 | Search by Ins | tance Name | Q | | | |
|--|-------------------|------------------------|---------------|------------------------------|-------------|-------------------------------------|----------------------|
| Instance ID/Name | Monitoring | Maximum Bandwidth | Specs/Type 🚯 | VPC | Status | Charge Type | Billing Metric |
| ngw- bp111z 7 d22rx35 - Pending Configuration | | 5120 Mbps Adjust | - Enhanced | vpc-bp1q i90zh2qv dc=^hst | ✓ Available | Pay-As-You-Go Sep 29, Created | Pay-By-Data-Transfer |

Step 2: Associate an EIP with the Internet NAT gateway

An Internet NAT gateway can run as expected only when it is associated with an EIP. After you create an Internet NAT gateway, you can associate EIPs with the Internet NAT gateway to meet your business requirements.

- 1.
- 2.
- 3.
- 4. In the Associate EIP dialog box, set the following parameters and click OK.

| Parameter | Description |
|----------------|---|
| Resource Group | Select the resource group of the EIP. |
| EIPs | Select the EIP that you want to associate with the Internet NAT gateway. In this example, Purchase and Associate EIP is selected. The system automatically creates a pay-by-data-transfer EIP and associates the EIP with the Internet NAT gateway. |

After you associate an EIP with the Internet NAT gateway, the EIP is displayed in the **Elastic IP** Address column.

| Inte | Internet NAT Gateway | | | | | | | | | | | | |
|---|--------------------------------|------|---------|-----------------------------------|--------------------|---------------------|-------------|-------------------------------------|----------------|--------------------|---------------------------|--|--|
| Create NAT Gateway Instance Name V Q. Enter an Instance Name to perform exact match Filter by Tag | | | | | | | | | | | | | |
| | Instance ID/Name | Tags | Monitor | Maximum Throughput | Specification/Type | VPC | Status | Charge Type | Billing Method | Elastic IP Address | Resource Group | | |
| | ng 93 Pending Configuration | ۰ | | 5120 Mbps Request to Adjust | - Enhanced | vpc-rj Saj8 ymrg | ✓ Available | Pay-As-You-Go Mar 29, Created | Pay-By-CU | 4720; | default resource group | | |

Step 3: Create a DNAT entry

You can create a DNAT entry that uses IP mapping or port mapping to enable an ECS instance to provide Internet-facing services.

- 1.
- 2.
- 3.
- 4. On the DNAT Management tab, click Create DNAT Entry.
- 5. On the **Create DNAT Entry** page, set the parameters that are described in the following table and click **Confirm**.

| Parameter | Description | |
|------------------------------|--|--|
| | Select an EIP. The EIP is used to communicate with the Internet. | |
| Select Public IP Address | Note For Internet NAT gateways, you can specify an EIP in both an SNAT entry and a DNAT entry. | |
| | In this example, the EIP that is associated with the Internet NAT gateway is selected. | |
| Select Private IP Address | Specify the IP address of the ECS instance that uses the DNAT entry to communicate with the Internet. In this example, Select by ECS or ENI is selected and the private IP address of the ECS instance is selected. | |
| Port Settings | Select a DNAT mapping method. In this example, Specific Port is selected, which specifies port mapping. Set Public Port to <i>80</i> , Private Port to <i>80</i> , and Protocol Type to <i>TCP</i> . | |
| Entry Name | Enter a name for the DNAT entry. The name must be 2 to 128 characters in length, and can contain digits, underscores (_), and hyphens (-). The name must start with a letter. | |

Step 4: Test network connectivity

After you create a DNAT entry, you can test the network connectivity by using a computer to access the application that is deployed on the ECS instance.

1. Open a browser on a computer.

2. Enter *http://IP address of the EIP:80* into the address bar of your browser and access the application that is deployed on the ECS instance.

The test result shows that the ECS instance can access the application that is deployed on the ECS instance.

| $\leftarrow \rightarrow$ | C O I I I 39 | |
|--------------------------|---|--|
| 6.88 | 1 200 1 10 1 10 1 10 1 10 10 10 10 10 10 10 | 8 1000 8 10. |
| | | Welcome to ECS1! |
| | | If you see this page, the nginx web server is successfully installed and working. Further configuration is required. |
| | | For online documentation and support please refer to <u>nginx.org</u> . Commercial support is available at <u>nginx.com</u> . |
| | | Thank you for using nginx. |