Virtual Private Cloud

Getting Started

Issue 01

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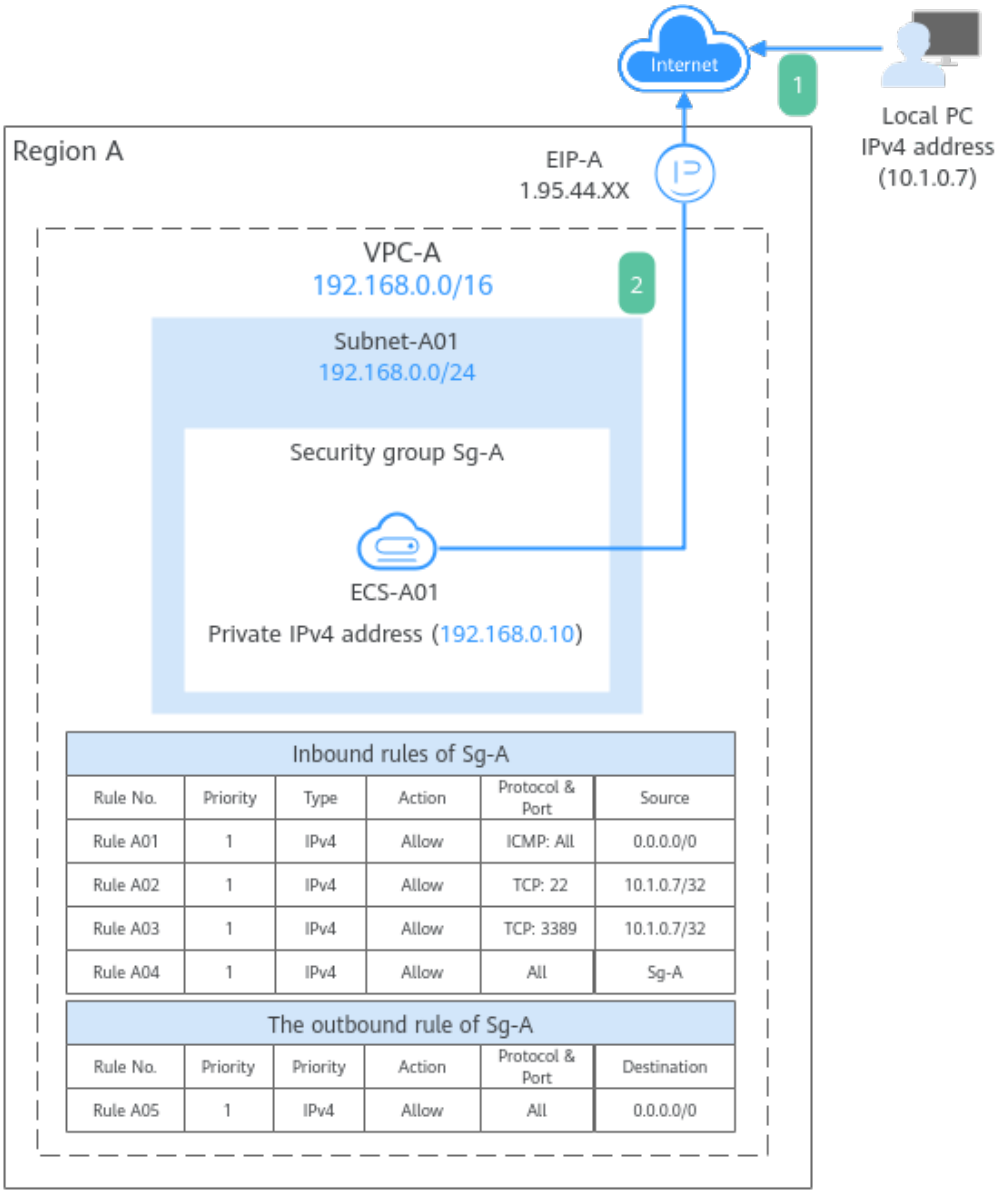
Contents

1 Setting Up an IPv4 Network in a VPC

This topic describes how to create a VPC and an ECS to set up an IPv4 private network on the cloud and bind an EIP to the ECS to allow the ECS to access the Internet.

Figure 1-1 shows the architecture of an IPv4 network. In this network, security group **Sg-A** protects ECS **ECS-A01** in it. You can configure security group rules to control access to and from **ECS-A01**.

Figure 1-1 The architecture of an IPv4 network



1. To allow users to remotely log in to **ECS-A01** from the local PC (IP address: 10.1.0.7) and perform operations on this ECS, you need to configure the following inbound rules:
   - Rule A01: allows the local PC to ping **ECS-A01** in **VPC-A** over all ICMP ports to test network connectivity.
   - Rules A02: allow the local PC to remotely log in to **ECS-A01** over TCP port 22 if the ECS runs Linux.
   - Rules A03: allow the local PC to remotely log in to **ECS-A01** over TCP port 3389 if the ECS runs Windows.
   - Rule A04: allows ECSs in **Sg-A** to communicate with each other.
2. To allow **ECS-A01** to access the Internet, you need to EIP **EIP-A** to it and add outbound rule A05.

Precautions

The network planning in this topic is only for your reference. Once a VPC and subnet are created, the CIDR blocks cannot be changed. Before creating VPCs, determine how many VPCs, the number of subnets, and what CIDR blocks or connectivity options you will need.

For details, see **VPC and Subnet Planning Suggestions**.

Procedure

Procedure	What to Do
Preparations	Before using cloud services, sign up for a HUAWEI ID, enable Huawei Cloud services, and complete real-name authentication.
Step 1: Create a VPC and Subnet	Create a VPC, specify an IPv4 CIDR block (for example, 192.168.0.0/16), and create a subnet with the CIDR block of 192.168.0.0/24 in the VPC.
Step 2: Buy an ECS	Buy an ECS in the subnet you have created and configure security group rules for the ECS.
Step 3: Buy an EIP and Bind It to ECS-A01	Buy an EIP and bind it to the ECS so that the ECS can access the Internet.
Step 4: Test Network Connectivity	To test ECS connectivity, you can: 1. Log in to the ECS from the local PC. 2. Access the Internet from the ECS using an EIP.

Preparations

Before creating resources such as VPCs and ECSs, you need to sign up for a HUAWEI ID, enable Huawei Cloud services, complete real-name authentication, and top up your account. Ensure that your account has sufficient balance.

1. You have created a HUAWEI ID, enabled Huawei Cloud services, and completed real-name authentication.

   If you already have a HUAWEI ID, skip this part. If you do not have a HUAWEI ID, perform the following operations to create one:

   a. **Sign up for a HUAWEI ID and enable Huawei Cloud services**.

   b. Complete **real-name authentication**.

Step 1: Create a VPC and Subnet

1. Go to the **Create VPC** page.
2. On the **Create VPC** page, set parameters as needed.

   In this example, you need to create a VPC and a subnet.

Table 1-1 VPC parameters

Parameter	Example Value	Description
Region	-	The region where the VPC is created. Select the region nearest to you to ensure the lowest possible latency. The VPC, ECS, and EIP used in this example must be in the same region. The region cannot be changed after the VPC is created.
Name	VPC-A	The VPC name. Set it to **VPC-A**. The name can be modified after **VPC-A** is created.
IPv4 CIDR Block	192.168.0.0/16	The IPv4 CIDR block of **VPC-A**. You are advised to select from the following CIDR blocks: • 10.0.0.0/8-24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. • 172.16.0.0/12-24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. • 192.168.0.0/16-24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. The IPv4 CIDR block cannot be changed after **VPC-A** is created.
Enterprise Project	default	The enterprise project by which VPCs are centrally managed. Select an existing enterprise project for **VPC-A**. The enterprise project cannot be changed after **VPC-A** is created.
Advanced Settings (Optional) > Tag	Not required	The tag that is used to classify and identify resources. Add tags to **VPC-A** as required. After **VPC-A** is created, you can edit tags added to **VPC-A**.
Advanced Settings (Optional) > Description	Not required	Supplementary information about **VPC-A**. Enter a description as required. The description can be modified after **VPC-A** is created.

Table 1-2 Subnet parameters

Parameter	Example Value	Description
AZ	AZ4	A geographic location with independent power supply and network facilities in a region. Each region contains multiple AZs. AZs are physically isolated but connected through an internal network. Subnets of a VPC can be located in different AZs without affecting communications. You can select any AZ in a region. An ECS and its VPC can be in different AZs. For example, you can select AZ1 for the ECS and AZ3 for its VPC subnet. The AZ cannot be changed after **Subnet-A01** is created.
Subnet Name	Subnet-A01	The subnet name. Set it to **Subnet-A01**. The name can be modified after **Subnet-A01** is created.
IPv4 CIDR Block	192.168.0.0/24	The IPv4 CIDR block of **Subnet-A01**, which is a unique CIDR block with a range of IP addresses in **VPC-A**. The CIDR block cannot be changed after **Subnet-A01** is created.
IPv6 CIDR Block (Optional)	Disabled	Whether to assign IPv6 addresses. You can enable or disable this option after **Subnet-A01** is created.
Associated Route Table	Default	The default route table that **Subnet-A01** is associated with. Each VPC comes with a default route table. Subnets in the VPC are then automatically associated with the default route table. The default route table has a preset system route that allows subnets in a VPC to communicate with each other. After **Subnet-A01** is created, you can create a custom route table and associate **Subnet-A01** with it.
Advanced Settings (Optional) > Gateway	192.168.0.1	The gateway address of **Subnet-A01**. You are advised to retain the default address. The gateway address cannot be changed after **Subnet-A01** is created.

Parameter	Example Value	Description
Advanced Settings (Optional) • DNS Server Address • Domain Name • NTP Server Address • IPv4 DHCP Lease Time	Not required	The parameters are configured for the **ECS-A01** in **VPC-A**. In this example, retain the default values or leave them blank. You can change the values after **Subnet-A01** is created.
Advanced Settings (Optional) > Tag	Not required	The tag that is used to classify and identify resources. Add tags to **Subnet-A01** as required. After **Subnet-A01** is created, you can edit the tags added to **Subnet-A01**.
Advanced Settings (Optional) > Description	Not required	Supplementary information about **Subnet-A01**. Enter a description as required. The description can be modified after **Subnet-A01** is created.

3. Click **Create Now**.

   You will be redirected to the VPC list, where you can find **VPC-A** you have created.

Step 2: Buy an ECS

1. Go to the **Buy ECS** page.
2. On the **Buy ECS** page, set parameters as required.

   In this example, set the ECS name to **ECS-A01** and configure other parameters as follows:

   - **Network**: Select **VPC-A** and **Subnet-A01** you have created.
   - **Security Group**: Create security group **Sg-A** and add inbound and outbound rules to it. Each security group comes with system rules. You need to check and modify the rules as required to ensure that all rules in **Table 1-3** are added.

Table 1-3 Sg-A rules

Direction	Action	Type	Protocol & Port	Source/ Destination	Description
Inbound	Allow	IPv4	TCP: 22	Source: 10.1.0.7/32	Allows the local PC (10.1.0.7/32) to remotely log in to Linux **ECS-A01** over SSH port 22.
Inbound	Allow	IPv4	TCP: 3389	Source: 10.1.0.7/32	Allows the local PC (10.1.0.7/32) to remotely log in to Windows **ECS-A01** over RDP port 3389.
Inbound	Allow	IPv4	ICMP: All	Source: 0.0.0.0/0	Allows ping traffic to **ECS-A01** in **VPC-A** over all ICMP ports to test network connectivity.
Inbound	Allow	IPv4	All	Source: current security group (**Sg-A**)	Allows the ECSs in **Sg-A** to communicate with each other.
Outbound	Allow	IPv4	All	Destination: 0.0.0.0/0	Allows **ECS-A01** in **Sg-A** to access the Internet.

- **EIP**: Select **Not required**.

You can configure other ECS parameters as required. For details, see **Buying an ECS**.

3. Click **Create**.

   Return to the ECS list to view **ECS-A01** you have bought.

Step 3: Buy an EIP and Bind It to ECS-A01

1. Go to the **Buy EIP** page.
2. On the **Buy EIP** page, set the EIP name to **EIP-A**.

   You can configure other EIP parameters as required. For details, see **Buying an EIP**.
3. Click **Next**.

   Return to the EIP list to view **EIP-A** you have assigned.
4. In the EIP list, locate **EIP-A** and click **Bind** in the **Operation** column.

   The **Bind EIP** dialog box is displayed.
5. In the displayed dialog box, select **ECS-A01** and click **OK**.

   Return to the EIP list. You can see that **ECS-A01** is displayed in the **Associated Instance** column in the EIP list.

Step 4: Test Network Connectivity

1. Use the local PC to remotely log in to **ECS-A01**.
2. Run the following command to test the network connectivity between **ECS-A01** and Internet:

   ping *IPv4 EIP or Domain name*

   Example command:

   ping support.huaweicloud.com

   If information similar to the following is displayed, **ECS-A01** can communicate with the Internet.

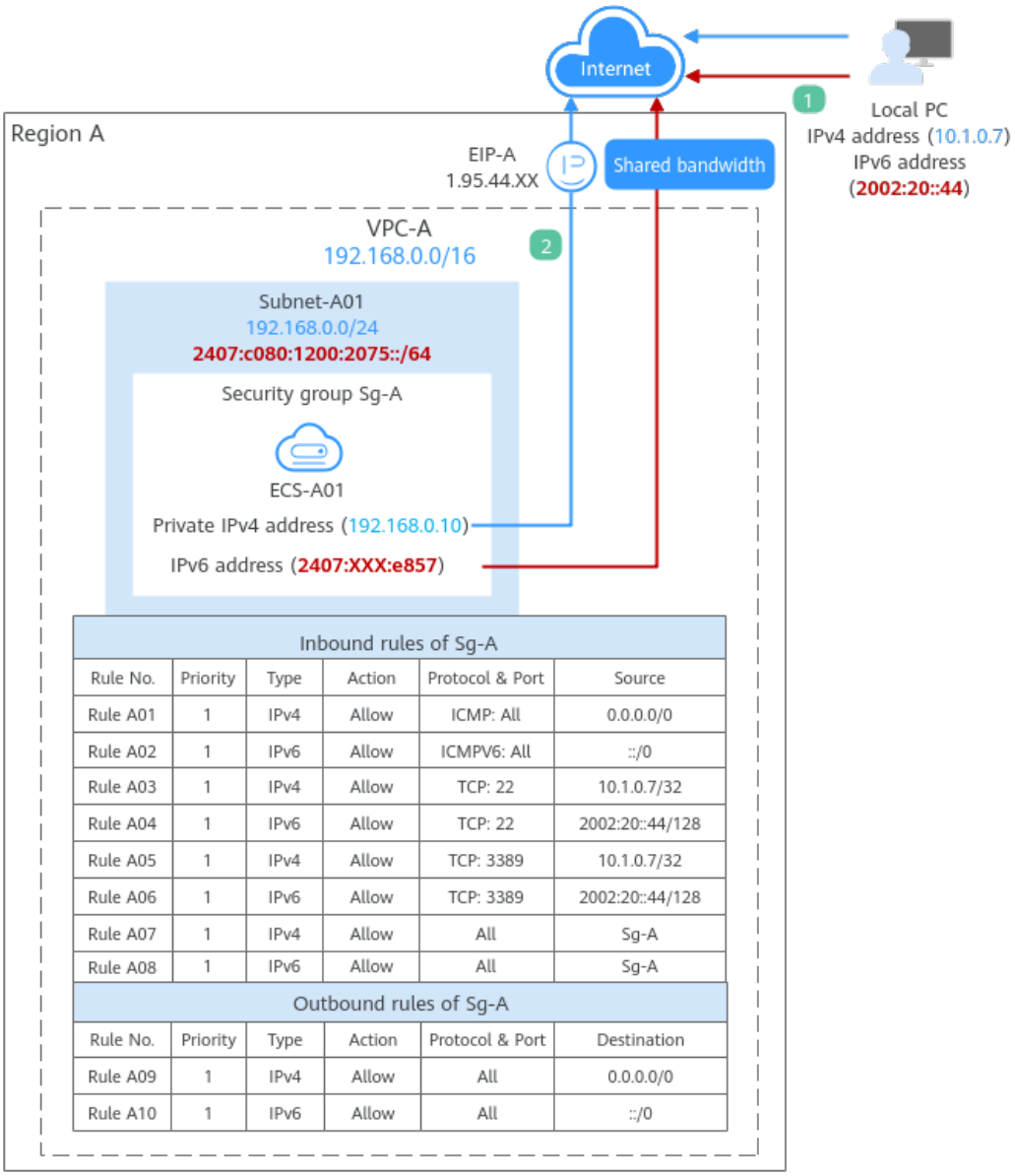
```
[root@ecs-a01 ~]# ping support.huaweicloud.com
PING hcdnw.cbg-notzj.c.cdnhwc2.com (203.193.226.103) 56(84) bytes of data.
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=1 ttl=51 time=2.17 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=2 ttl=51 time=2.13 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=3 ttl=51 time=2.10 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=4 ttl=51 time=2.09 ms
...
--- hcdnw.cbg-notzj.c.cdnhwc2.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 2.092/2.119/2.165/0.063 ms
```


2 Setting Up an IPv4/IPv6 Dual-Stack Network in a VPC

This topic describes how to create a VPC with an IPv4 and IPv6 CIDR block and create an ECS with both IPv4 and IPv6 addresses in the VPC. You can bind an EIP and add the IPv6 address of the ECS to a shared bandwidth to enable the ECS to communicate with the Internet over both IPv4 and IPv6 networks.

Figure 2-1 shows the architecture of an IPv4/IPv6 dual-stack network. In this network, security group **Sg-A** protects **ECS-A01** in it. You can configure security group rules to control access to and from **ECS-A01**.

Figure 2-1 The architecture of an IPv4/IPv6 dual-stack network



Inbound rules of Sg-A

Rule No.	Priority	Type	Action	Protocol & Port	Source
Rule A01	1	IPv4	Allow	ICMP: All	0.0.0.0/0
Rule A02	1	IPv6	Allow	ICMPV6: All	::/0
Rule A03	1	IPv4	Allow	TCP: 22	10.1.0.7/32
Rule A04	1	IPv6	Allow	TCP: 22	2002:20::44/128
Rule A05	1	IPv4	Allow	TCP: 3389	10.1.0.7/32
Rule A06	1	IPv6	Allow	TCP: 3389	2002:20::44/128
Rule A07	1	IPv4	Allow	All	Sg-A
Rule A08	1	IPv6	Allow	All	Sg-A

Outbound rules of Sg-A

Rule No.	Priority	Type	Action	Protocol & Port	Destination
Rule A09	1	IPv4	Allow	All	0.0.0.0/0
Rule A10	1	IPv6	Allow	All	::/0

1. To allow users to remotely log in to **ECS-A01** from the local PC (IPv4 address: 10.1.0.7; IPv6 address: 2002:20::44) and perform operations on this ECS, you need to configure the following inbound rules:
   - Rules A01 and A02: allow local PC to ping **ECS-A01** in **VPC-A** over all ICMP ports to test network connectivity.
   - Rules A03 and A04: allow the local PC to remotely log in to **ECS-A01** over TCP port 22 if the ECS runs Linux.
   - Rules A05 and A06: allow the local PC to remotely log in to **ECS-A01** over TCP port 3389 if the ECS runs Windows.
   - Rules A07 and A08: allow ECSs in **Sg-A** to communicate with each other.
2. To allow **ECS-A01** to access the Internet, you need to bind EIP **EIP-A** to it and add the IPv6 address of **ECS-A01** to a shared bandwidth. Then add rules A09 and A10 to allow outbound traffic.

Precautions

- The IPv4/IPv6 dual-stack function is free for now, but will be billed at a later date (price yet to be determined).
- The IPv6 function is now available for open beta test in **certain regions**. You can use the IPv6 function only after obtaining the OBT permission.
- Only certain ECS flavors support IPv6 networks. You need to select such ECSs in supported regions.

  On the ECS console, click **Buy ECS**. On the displayed page, check the ECS specifications. If **Yes** is shown in the **IPv6** column, the ECS with this specification supports IPv6.
- The network planning in this example is for your reference only. Once a VPC and subnet are created, the CIDR blocks cannot be changed. Before creating VPCs, determine how many VPCs, the number of subnets, and what CIDR blocks or connectivity options you will need.

  For details, see **VPC and Subnet Planning Suggestions**.

Procedure

Procedure	What to Do
Preparations	Before using cloud services, sign up for a HUAWEI ID, enable Huawei Cloud services, and complete real-name authentication.
Step 1: Create a VPC and Subnet	Create a VPC with an IPv4 CIDR block and create a subnet with IPv6 enabled in the VPC. • VPC IPv4 CIDR block: 192.168.0.0/16 • Subnet IPv4 CIDR block: 192.168.0.0/24 • Subnet IPv6 CIDR block: automatically assigned, which is 2407:c080:1200:2075::/64 in this example.
Step 2: Buy an ECS	Buy an ECS in the subnet you have created and configure security group rules for the ECS.
Step 3: Buy an EIP and Bind It to ECS-A01	Buy an EIP and bind it to the ECS so that the ECS can communicate with the Internet using the IPv4 address.
Step 4: Buy a Shared Bandwidth and Add the ECS IPv6 Address to It	Buy a shared bandwidth and add the IPv6 address of the ECS to the shared bandwidth so that the ECS can communicate with Internet using the IPv6 address.
Step 5: Test Network Connectivity	To test ECS connectivity, you can: 1. Log in to the ECS from the local PC through the IPv4 EIP or IPv6 address. 2. Check whether the ECS can communicate with the Internet over IPv4 and IPv6 networks.

Preparations

Before creating resources such as VPCs and ECSs, you need to sign up for a HUAWEI ID, enable Huawei Cloud services, complete real-name authentication, and top up your account. Ensure that your account has sufficient balance.

1. You have created a HUAWEI ID, enabled Huawei Cloud services, and completed real-name authentication.

   If you already have a HUAWEI ID, skip this part. If you do not have a HUAWEI ID, perform the following operations to create one:

   a. **Sign up for a HUAWEI ID and enable Huawei Cloud services**.

   b. Complete **real-name authentication**.

Step 1: Create a VPC and Subnet

1. Go to the **Create VPC** page.
2. On the **Create VPC** page, set parameters as needed.

   In this example, you need to create a VPC and subnet, and enable IPv6 for this subnet.

   Table 2-1 VPC parameters

Parameter	Example Value	Description
Region	-	The region where the VPC is created. Select the region nearest to you to ensure the lowest possible latency. The VPC, ECS, and EIP used in this example must be in the same region. The region cannot be changed after the VPC is created.
Name	VPC-A	The VPC name. Set it to **VPC-A**. The name can be modified after **VPC-A** is created.

Parameter	Example Value	Description
IPv4 CIDR Block	192.168.0.0/16	The IPv4 CIDR block of **VPC-A**. You are advised to select from the following CIDR blocks: • 10.0.0.0/8-24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. • 172.16.0.0/12-24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. • 192.168.0.0/16-24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. The IPv4 CIDR block cannot be changed after **VPC-A** is created.
Enterprise Project	default	The enterprise project by which VPCs are centrally managed. Select an existing enterprise project for **VPC-A**. The enterprise project cannot be changed after **VPC-A** is created.
Advanced Settings (Optional) > Tag	Not required	The tag that is used to classify and identify resources. Add tags to **VPC-A** as required. After **VPC-A** is created, you can edit tags added to **VPC-A**.
Advanced Settings (Optional) > Description	Not required	Supplementary information about **VPC-A**. Enter a description as required. The description can be modified after **VPC-A** is created.

Table 2-2 Subnet parameters

Parameter	Example Value	Description
AZ	AZ4	A geographic location with independent power supply and network facilities in a region. Each region contains multiple AZs. AZs are physically isolated but connected through an internal network. Subnets of a VPC can be located in different AZs without affecting communications. You can select any AZ in a region. An ECS and its VPC can be in different AZs. For example, you can select AZ1 for the ECS and AZ3 for its VPC subnet. The AZ cannot be changed after the VPC is created.
Name	Subnet-A01	The subnet name. Set it to **Subnet-A01**. The name can be modified after **Subnet-A01** is created.
IPv4 CIDR Block	192.168.0.0/24	The IPv4 CIDR block of **Subnet-A01**, which is a unique CIDR block with a range of IP addresses in **VPC-A**. The CIDR block cannot be changed after **Subnet-A01** is created.
IPv6 CIDR Block (Optional)	Enabled	Whether to assign IPv6 addresses. After this option is enabled, IPv6 addresses can be assigned to **Subnet-A01** the ECS. You can enable or disable this option after **Subnet-A01** is created.
Associated Route Table	Default	The default route table that **Subnet-A01** is associated with. Each VPC comes with a default route table. Subnets in the VPC are then automatically associated with the default route table. The default route table has a preset system route that allows subnets in a VPC to communicate with each other. After **Subnet-A01** is created, you can create a custom route table and associate **Subnet-A01** with it.

Parameter	Example Value	Description
Advanced Settings (Optional) > Gateway	192.168.0.1	The gateway address of **Subnet-A01**. You are advised to retain the default address. The gateway address cannot be changed after **Subnet-A01** is created.
Advanced Settings (Optional) • DNS Server Address • Domain Name	Not required	The parameters are configured for the **ECS-A01** in **VPC-A**. In this example, retain the default values or leave them blank. You can change the values after **Subnet-A01** is created.
Advanced Settings (Optional) > Tag	Not required	The tag that is used to classify and identify resources. Add tags to **Subnet-A01** as required. After **Subnet-A01** is created, you can edit tags added to **Subnet-A01**.
Advanced Settings (Optional) > Description	Not required	Supplementary information about **Subnet-A01**. Enter a description as required. The description can be modified after **Subnet-A01** is created.

3. Click **Create Now**.

   You will be redirected to the VPC list, where you can find **VPC-A** you have created.

Step 2: Buy an ECS

1. Go to the **Buy ECS** page.
2. On the **Buy ECS** page, set parameters as required.

   In this example, set the ECS name to **ECS-A01** and configure other parameters as follows:

   – **Network**: Select **VPC-A** and **Subnet-A01** you have created.

     Select **Automatically assign address**. An IPv4 address and an IPv6 address will be assigned to **ECS-A01**.

   – **Security Group**: Create security group **Sg-A** and add inbound and outbound rules to it. Each security group comes with system rules. You need to check and modify the rules as required to ensure that all rules in **Table 2-3** are added.

Table 2-3 Sg-A rules

Direction	Action	Type	Protocol & Port	Source/ Destination	Description
Inbound	Allow	IPv4	TCP: 22	Source: 10.1.0.7/32	Allows the local PC (10.1.0.7/32) to remotely log in to Linux **ECS-A01** over SSH port 22.
Inbound	Allow	IPv6	TCP: 22	Source: 2002:20::44/128	Allows the local PC (2002:20::44/128) to remotely log in to Linux **ECS-A01** over SSH port 22.
Inbound	Allow	IPv4	TCP: 3389	Source: 10.1.0.7/32	Allows the local PC (10.1.0.7/32) to remotely log in to Windows **ECS-A01** over RDP port 3389.
Inbound	Allow	IPv6	TCP: 3389	Source: 2002:20::44/128	Allows the local PC (2002:20::44/128) to remotely log in to Windows **ECS-A01** over RDP port 3389.
Inbound	Allow	IPv4	ICMP: All	Source: 0.0.0.0/0	Allows IPv4 ping traffic to **ECS-A01** in **VPC-A** over all ICMP ports to test network connectivity.
Inbound	Allow	IPv6	ICMPV6: All	Source: ::/0	Allows IPv6 ping traffic to **ECS-A01** in **VPC-A** over all ICMP ports to test network connectivity.
Inbound	Allow	IPv4	All	Source: current security group (**Sg-A**)	Allows the ECSs in **Sg-A** to communicate with each other using IPv4 addresses.
Inbound	Allow	IPv6	All	Source: current security group (**Sg-A**)	Allows the ECSs in **Sg-A** to communicate with each other using IPv6 addresses.
Outbound	Allow	IPv4	All	Destination: 0.0.0.0/0	Allows **ECS-A01** in **Sg-A** to access the Internet using the IPv4 address.
Outbound	Allow	IPv4	All	Destination: ::/0	Allows **ECS-A01** in **Sg-A** to access the Internet using the IPv6 address.

- **EIP**: Select **Not required**.

You can configure other ECS parameters as required. For details, see **Buying an ECS**.

3. Click **Create**.

   Return to the ECS list to view **ECS-A01** you have bought.

4. Log in to **ECS-A01** and check whether the ECS has obtained an IPv6 address.
   - By default, dynamic IPv6 address assignment is enabled for Windows public images.
   - Before enabling dynamic IPv6 address assignment for a Linux public image, check whether IPv6 is supported first.

     Currently, all Linux public images support IPv6. By default, dynamic IPv6 address assignment is enabled for Ubuntu 16. For other Linux public images, you need to enable this function.

   If an IPv6 address fails to be automatically assigned or the selected image cannot obtain an IPv6 address automatically, manually obtain the IPv6 address . Otherwise, ECSs cannot communicate using IPv6 addresses.

Step 3: Buy an EIP and Bind It to ECS-A01

Buy an EIP and bind it to **ECS-A01** so that the ECS can communicate with the Internet using the IPv4 address.

1. Go to the **Buy EIP** page.
2. On the **Buy EIP** page, set the EIP name to **EIP-A**.

   You can configure other EIP parameters as required. For details, see **Buying an EIP**.

3. Click **Next**.

   Return to the EIP list to view **EIP-A** you have assigned.

4. In the EIP list, locate **EIP-A** and click **Bind** in the **Operation** column.

   The **Bind EIP** dialog box is displayed.

5. In the displayed dialog box, select **ECS-A01** and click **OK**.

   Return to the EIP list. You can see that **ECS-A01** is displayed in the **Associated Instance** column in the EIP list.

Step 4: Buy a Shared Bandwidth and Add the ECS IPv6 Address to It

Buy a shared bandwidth and add the IPv6 address to the shared bandwidth so that **ECS-A01** can communicate with Internet.

1. Go to the **Buy Shared Bandwidth** page.
2. On the displayed page, set the shared bandwidth name to **bandwidth-A** and configure other parameters as required.

   For details, see **Assigning a Shared Bandwidth**.

3. Click **Next**.

   Return to the shared bandwidth list to view **Bandwidth-A** you have assigned.

4. Click **Add Public IP Address** in the **Operation** column.

   The **Add Public IP Address** dialog box is displayed.

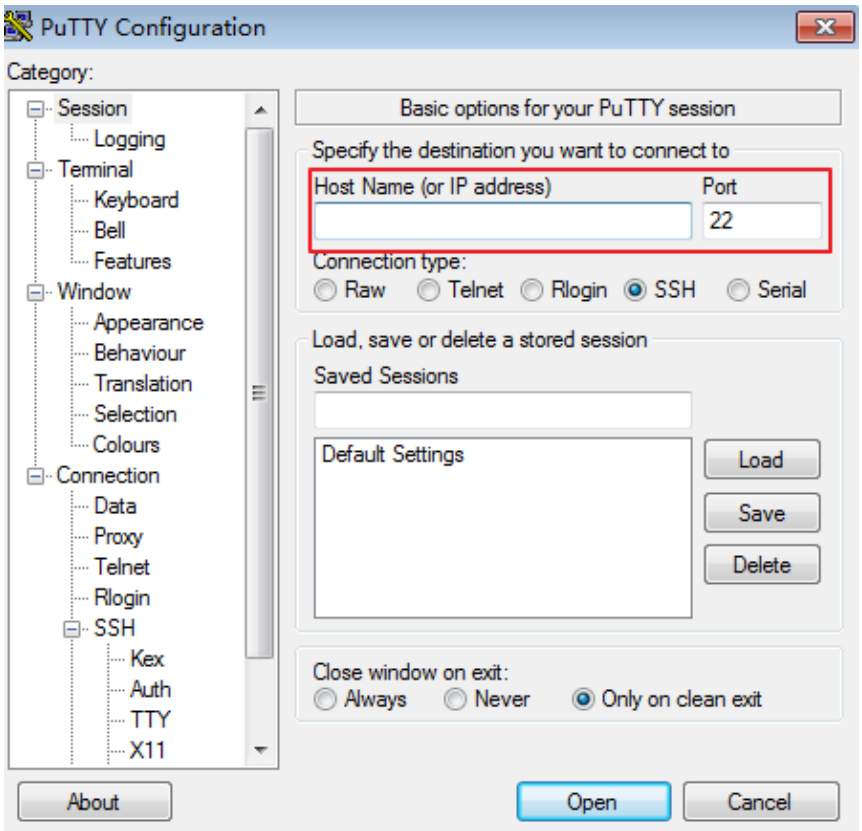
5. Configure the parameters and click **OK**.
   - **Public IP Address**: Select **IPv6 Address**.
   - **VPC**: Select **VPC-A**.
   - **Subnet**: Select **Subnet-A01**.
   - **IPv6 Address**: Select the IPv6 address assigned to **ECS-A01**.

Step 5: Test Network Connectivity

1. Use the local PC to log in to **ECS-A01** using the IPv4 EIP and IPv6 address.

   To remotely log in to **ECS-A01** using PuTTY:
   - Enter the EIP of **ECS-A01** under **Host Name (or IP address)**, for example, **1.95.44.XX**.
   - Enter the IPv6 address of **ECS-A01** under **Host Name (or IP address)**, for example, **2407:XXX:e857**.

   Figure 2-2 PuTTY configurations



2. Check whether **ECS-A01** can communicate with the Internet over IPv4 and IPv6 networks.
   - Run the following command to test the IPv4 public network connectivity:

     ping *IPv4 EIP or Domain name*

     Example command:

     ping support.huaweicloud.com

     If information similar to the following is displayed, **ECS-A01** can communicate with the Internet over the IPv4 network.


```
[root@ecs-a01 ~]# ping support.huaweicloud.com
PING hcdnw.cbg-notzj.c.cdnhwc2.com (203.193.226.103) 56(84) bytes of data.
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=1 ttl=51 time=2.17 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=2 ttl=51 time=2.13 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=3 ttl=51 time=2.10 ms
64 bytes from 203.193.226.103 (203.193.226.103): icmp_seq=4 ttl=51 time=2.09 ms
...
--- hcdnw.cbg-notzj.c.cdnhwc2.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 2.092/2.119/2.165/0.063 ms
```

- Run the following command to test the IPv6 public network connectivity:

  ping6 *IPv6 public address*

  In this example, **2002:20::45** is used as a public IP address. An example command is as follows:

  ping6 2002:20::45

  If information similar to the following is displayed, **ECS-A01** can communicate with the Internet over the IPv6 network.

```
[root@ecs-a01 ~]# ping6 2002:20::45
PING 2002:20::45(2002:20::45) from 2002:20::45 : 56 data bytes
64 bytes from 2002:20::45: icmp_seq=1 ttl=64 time=0.770 ms
64 bytes from 2002:20::45: icmp_seq=2 ttl=64 time=0.295 ms
64 bytes from 2002:20::45: icmp_seq=3 ttl=64 time=0.245 ms
^C
--- 2002:20::45 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2080ms
rtt min/avg/max/mdev = 0.245/0.436/0.770/0.237 ms
```

