

**Virtual Private Cloud**

# **Getting Started**

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# Contents

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<b>1 Quick Start.....</b>	<b>1</b>
<b>2 Setting Up an IPv4 Network.....</b>	<b>2</b>
<b>3 Setting up an IPv6 Network.....</b>	<b>16</b>

# 1 Quick Start

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This document describes how to prepare for and quickly create a VPC with an IPv4 or IPv6 CIDR block.

## CIDR Block Types

**IPv4:** When you create a VPC and subnet, IPv4 CIDR block is used by default. Servers on the IPv4 network cannot access IPv6 services on the Internet or provide services accessible from users using an IPv6 client. For details about how to set up an IPv4 network, see [Setting Up an IPv4 Network](#).

**IPv6:** When you need to access the IPv6 services on the Internet or provide services accessible from users using an IPv6 client, you need to enable the IPv6 function. After the IPv6 function is enabled, you can provide services for users using an IPv4 or IPv6 client. For details about how to set up an IPv6 network, see [Setting Up an IPv6 Network](#).

## Preparations

### Registering with Huawei Cloud and Completing Real-Name Authentication

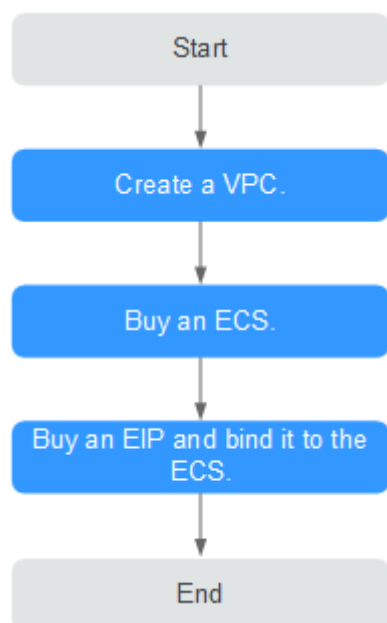
If you already have an authenticated HUAWEI ID account, skip this part. If you do not have a HUAWEI ID account, perform the following operations to create an account:

1. Visit the [Huawei Cloud official website](#).
2. Click **Register** and complete the registration as instructed.  
After the registration, the system automatically redirects you to your personal information page.
3. Complete real-name authentication by following the instructions in [Individual Real-Name Authentication](#).

# 2 Setting Up an IPv4 Network

This topic describes how to create a VPC with an IPv4 CIDR block and bind an EIP to an ECS in the VPC to allow the ECS to access the Internet. [Figure 2-1](#) shows the configuration process.

**Figure 2-1** Setting up an IPv4 network



## Step 1: Create a VPC

Before creating your VPCs, determine how many VPCs, the number of subnets, and what IP address ranges you will need. For details, see [Network Planning](#).

In the instructions presented here, our sample VPC is named **vpc-test** and its default subnet called **subnet-01**.

1. Go to the [Create VPC](#) page.
2. On the **Create VPC** page, set parameters as prompted.

A default subnet will be created together with a VPC and you can also click **Add Subnet** to create more subnets for the VPC.

Figure 2-2 Creating a VPC and subnet

Table 2-1 VPC parameter descriptions

Parameter	Description	Example Value
Region	Select the region nearest to you to ensure the lowest latency possible.	EU-Dublin
Name	The VPC name. The name can contain a maximum of 64 characters, which may consist of letters, digits, underscores (_), hyphens (-), and periods (.). The name cannot contain spaces.	VPC-test

Parameter	Description	Example Value
IPv4 CIDR Block	<p>The CIDR block of the VPC. The CIDR block of a subnet can be the same as the CIDR block for the VPC (for a single subnet in the VPC) or a subset of the CIDR block for the VPC (for multiple subnets in the VPC).</p> <p>The following CIDR blocks are supported:</p> <ul style="list-style-type: none"> <li>• 10.0.0.0/8-24</li> <li>• 172.16.0.0/12-24</li> <li>• 192.168.0.0/16-24</li> </ul> <p>This parameter will be <b>CIDR Block</b> in regions where IPv4/IPv6 dual stack is not supported, and <b>IPv4 CIDR Block</b> if IPv4/IPv6 dual stack is supported.</p>	192.168.0.0/16
Enterprise Project	<p>The enterprise project to which the VPC belongs.</p> <p>An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is <b>default</b>.</p> <p>For details about creating and managing enterprise projects, see the <a href="#">Enterprise Management User Guide</a>.</p>	default
Advanced Settings	Click the drop-down arrow to set advanced VPC parameters, including tags.	Retain the default settings.
Tag	The VPC tag, which consists of a key and value pair. You can add a maximum of 10 tags to each VPC.	<ul style="list-style-type: none"> <li>• Key: vpc_key1</li> <li>• Value: vpc-01</li> </ul>
Description	<p>Supplementary information about the VPC. This parameter is optional.</p> <p>The VPC description can contain a maximum of 255 characters and cannot contain angle brackets (&lt; or &gt;).</p>	N/A



**Table 2-2** Subnet parameter descriptions

Parameter	Description	Example Value
AZ	<p>An AZ is a geographic location with independent power supply and network facilities in a region. AZs are physically isolated, and AZs in the same VPC are interconnected through an internal network. For details, see <a href="#">Region and AZ</a>.</p> <p>Note the following when you select an AZ:</p> <ul style="list-style-type: none"><li>• A VPC can have subnets that are in different AZs. For example, a VPC can have subnet A in AZ 1, and subnet B in AZ 3.</li><li>• A cloud resource and its subnet can be in different AZs. For example, a cloud server in AZ 1 can use a subnet in AZ 3.</li></ul>	AZ1
Name	<p>The subnet name.</p> <p>The name can contain a maximum of 64 characters, which may consist of letters, digits, underscores (_), hyphens (-), and periods (.). The name cannot contain spaces.</p>	subnet-01
IPv4 CIDR Block	<p>The CIDR block for the subnet. This value must be within the VPC CIDR block.</p> <p>This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.</p>	192.168.0.0/24

Parameter	Description	Example Value
IPv6 CIDR Block	<p>Specifies whether to set <b>IPv6 CIDR Block</b> to <b>Enable</b>.</p> <p>After the IPv6 function is enabled, the system automatically assigns an IPv6 CIDR block to the created subnet. Currently, the IPv6 CIDR block cannot be customized. IPv6 cannot be disabled after the subnet is created.</p> <p>This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.</p>	-
Associated Route Table	<p>The default route table to which the subnet will be associated. You can change the route table to a custom route table on the <b>Subnets</b> page.</p>	Default
Advanced Settings	<p>Click the drop-down arrow to set advanced settings for the subnet, including <b>Gateway</b> and <b>DNS Server Address</b>.</p>	Retain the default settings.
Gateway	<p>The gateway address of the subnet.</p> <p>This IP address is used to communicate with other subnets.</p>	192.168.0.1

Parameter	Description	Example Value
DNS Server Address	<p>Huawei Cloud private DNS server addresses are entered by default. This allows ECSs in a VPC to communicate with each other and also access other cloud services using private domain names without exposing their IP addresses to the Internet.</p> <p>You can change the default DNS server addresses if needed. This may interrupt your access to cloud services.</p> <p>You can also click <b>Reset</b> on the right to restore the DNS server addresses to the default value.</p> <p>A maximum of two DNS server IP addresses can be configured. Multiple IP addresses must be separated using commas (,).</p>	100.125.x.x
DHCP Lease Time	<p>The period during which a client can use an IP address automatically assigned by the DHCP server. After the lease time expires, a new IP address will be assigned to the client.</p> <ul style="list-style-type: none"><li>• <b>Limited:</b> Set the DHCP lease time. The unit can be day or hour.</li><li>• <b>Unlimited:</b> The DHCP lease time does not expire.</li></ul> <p>After you change the DHCP lease time on the console, the change is applied automatically when the DHCP lease of an instance (such as ECS) is renewed. You can wait for the system to renew the lease or manually renew the lease. Renewing lease will not change the IP address used by the instance. If you want the new lease time to take effect immediately, manually renew the lease or restart the ECS.</p>	-

Parameter	Description	Example Value
Tag	The subnet tag, which consists of a key and value pair. You can add a maximum of 10 tags to each subnet.	<ul style="list-style-type: none"> <li>• Key: subnet_key1</li> <li>• Value: subnet-01</li> </ul>
Description	<p>Supplementary information about the subnet. This parameter is optional.</p> <p>The subnet description can contain a maximum of 255 characters and cannot contain angle brackets (&lt; or &gt;).</p>	N/A

**Table 2-3** VPC tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none"> <li>• Cannot be left blank.</li> <li>• Must be unique for each VPC and can be the same for different VPCs.</li> <li>• Can contain a maximum of 36 characters.</li> <li>• Can contain only the following character types: <ul style="list-style-type: none"> <li>- Uppercase letters</li> <li>- Lowercase letters</li> <li>- Digits</li> <li>- Special characters, including hyphens (-) and underscores (_)</li> </ul> </li> </ul>	vpc_key1
Value	<ul style="list-style-type: none"> <li>• Can contain a maximum of 43 characters.</li> <li>• Can contain only the following character types: <ul style="list-style-type: none"> <li>- Uppercase letters</li> <li>- Lowercase letters</li> <li>- Digits</li> <li>- Special characters, including periods (.), hyphens (-) and underscores (_)</li> </ul> </li> </ul>	vpc-01

**Table 2-4** Subnet tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Must be unique for each subnet.</li><li>• Can contain a maximum of 36 characters.</li><li>• Can contain only the following character types:<ul style="list-style-type: none"><li>- Uppercase letters</li><li>- Lowercase letters</li><li>- Digits</li><li>- Special characters, including hyphens (-) and underscores (_)</li></ul></li></ul>	subnet_key1
Value	<ul style="list-style-type: none"><li>• Can contain a maximum of 43 characters.</li><li>• Can contain only the following character types:<ul style="list-style-type: none"><li>- Uppercase letters</li><li>- Lowercase letters</li><li>- Digits</li><li>- Special characters, including hyphens (-) and underscores (_)</li></ul></li></ul>	subnet-01

3. Confirm the current configuration and click **Create Now**.

## Step 2: Buy an ECS

On the management console, under **Compute**, click **Elastic Cloud Server**, and then click **Buy ECS**.

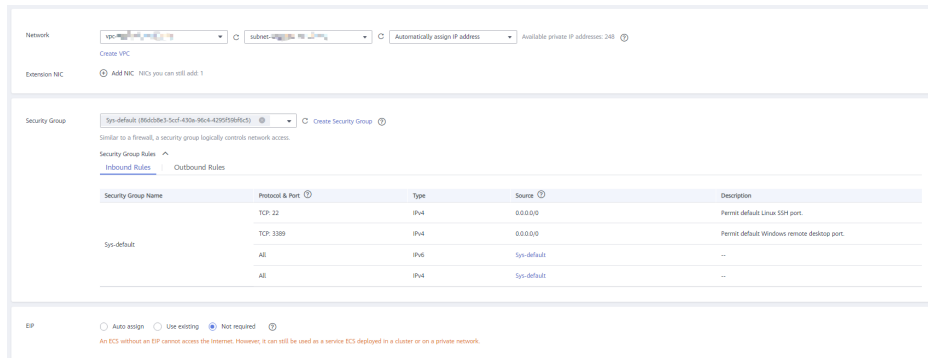
Configure the network as follows:

**Figure 2-3** Network configuration

The screenshot displays the network configuration section of the ECS purchase process. It includes the following elements:

- VPC:** A dropdown menu showing 'vpc-test' with a 'Create VPC' link.
- NIC:** A 'Primary NIC' dropdown showing 'subnet-01(192.168.0.0/24)' and a 'User-configured IP address' field with a 'View In-Use IP Address' link. Below this is an 'Add NIC' button and a note: 'You can add 11 more NICs.'
- Security Group:** A dropdown menu showing 'Sys-default (Inbound:TCP/3389, 22 | Outbound:...' with a 'Create Security Group' link. Below this, it shows 'Inbound: TCP/3389, 22 | Outbound: -'.
- EIP:** A section with the text 'To enable Internet access from your ECSs, create a plan for the EIPs you require. View EIP'. It contains three buttons: 'Automatically assign', 'Use existing', and 'Not required' (which is highlighted in blue). Below this is a note: 'An ECS without an EIP cannot access the Internet. However, it can still be used as a service ECS deployed in a cluster or on a private network.'

**Figure 2-4** Network configuration



- **Network:** Select the created VPC **vpc-test** and subnet **subnet-01**.
- **Security Group:** Select the default security group **Sys-default**. [Table 2-5](#) lists the default security group rules.

You can also create a security group and add rules to it.

**Table 2-5** Rules in the default security group

Direction	Action	Type	Protocol & Port	Source/Destination	Description
Inbound	Allow	IPv4	All	Source: default security group (default)	This rule allows IPv4 instances in the security group to communicate with each other using any protocol over any port.
Inbound	Allow	IPv6	All	Source: Default security group (default)	This rule allows IPv6 instances in the security group to communicate with each other using any protocol over any port.
Outbound	Allow	IPv4	All	Destination: 0.0.0.0/0	This rule allows all traffic from the instances in the security group to any IPv4 address over any port.
Outbound	Allow	IPv6	All	Destination: ::/0	This rule allows all traffic from the instances in the security group to any IPv6 address over any port.

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

### Step 3: Buy an EIP and Bind It to an ECS

The EIP service provides independent public IP addresses and bandwidth for Internet access. You can buy an EIP and bind it to an ECS to allow the ECS to access the Internet.

If you already have an EIP that has not been bound to any resource, you can directly bind the EIP to the ECS.

#### Buying an EIP


1. Log in to the management console.
2. Click  in the upper left corner and choose **Networking > Virtual Private Cloud**.  
The **Virtual Private Cloud** page is displayed.
3. Choose **Elastic IP and Bandwidth > EIPs**.
4. Click **Buy EIP**.
5. Set parameters as prompted.

Figure 2-5 Buying an EIP

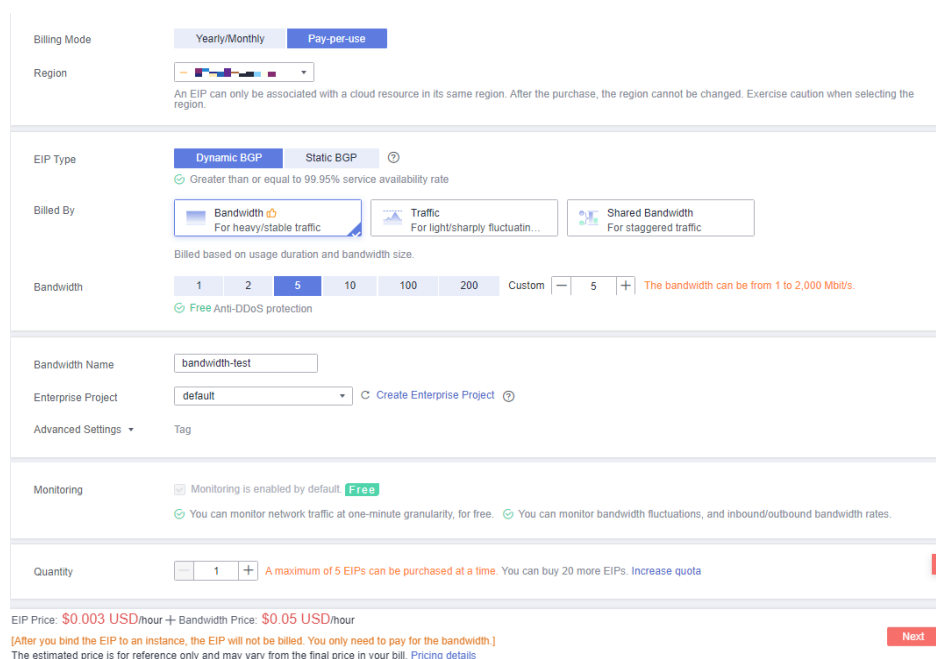


Table 2-6 Parameter descriptions

Parameter	Description	Example Value
Billing Mode	The following billing modes are available: <ul style="list-style-type: none"> <li>• Yearly/Monthly</li> <li>• Pay-per-use</li> </ul>	Pay-per-use

Parameter	Description	Example Value
Region	Regions are geographic areas that are physically isolated from each other. The networks inside different regions are not connected to each other, so resources cannot be shared across different regions. For lower network latency and faster access to your resources, select the region nearest you.	-
EIP Type	<ul style="list-style-type: none"><li>• <b>Dynamic BGP:</b> Dynamic BGP provides automatic failover and chooses the optimal path when a network connection fails.</li><li>• <b>Static BGP:</b> Static BGP offers more routing control and protects against route flapping, but an optimal path cannot be selected in real time when a network connection fails.</li></ul>	Dynamic BGP
Billed By	This parameter is available when you set <b>Billing Mode</b> to <b>Pay-per-use</b> . <ul style="list-style-type: none"><li>• <b>Bandwidth:</b> You specify a maximum bandwidth and pay for the amount of time you use the bandwidth. This is suitable for scenarios with heavy or stable traffic.</li><li>• <b>Traffic:</b> You specify a maximum bandwidth and pay for the total traffic you use. This is suitable for scenarios with light or sharply fluctuating traffic.</li><li>• <b>Shared Bandwidth:</b> The bandwidth can be shared by multiple EIPs. This is suitable for scenarios with staggered traffic.</li></ul>	Bandwidth
Bandwidth	The bandwidth size in Mbit/s.	5
Bandwidth Name	The name of the bandwidth.	bandwidth-test



Parameter	Description	Example Value
Required Duration	This parameter is available only when <b>Billing Mode</b> is set to <b>Yearly/Monthly</b> .	1 month
Quantity	The number of EIPs you want to assign. The quantity must be specified if the <b>Billing Mode</b> is set to <b>Pay-per-use</b> .	1
Tag	The EIP tag that consists of a key and value pair. The tag key and value must meet the requirements listed in <a href="#">Table 2-7</a> .	<ul style="list-style-type: none"> <li>• Key: ipv4_key1</li> <li>• Value: 192.168.12.10</li> </ul>
Enterprise Project	The enterprise project that the EIP belongs to. An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is <b>default</b> . For details about creating and managing enterprise projects, see the <a href="#">Enterprise Management User Guide</a> .	default

**Table 2-7** EIP tag requirements

Parameter	Requirement	Example Value
Key	<ul style="list-style-type: none"> <li>• Cannot be left blank.</li> <li>• Must be unique for each EIP.</li> <li>• Can contain a maximum of 36 characters.</li> <li>• Can contain only the following character types: <ul style="list-style-type: none"> <li>- Uppercase letters</li> <li>- Lowercase letters</li> <li>- Digits</li> <li>- Special characters, including hyphens (-) and underscores (_)</li> </ul> </li> </ul>	ipv4_key1

Parameter	Requirement	Example Value
Value	<ul style="list-style-type: none"> <li>Can contain a maximum of 43 characters.</li> <li>Can contain only the following character types:                             <ul style="list-style-type: none"> <li>Uppercase letters</li> <li>Lowercase letters</li> <li>Digits</li> <li>Special characters, including hyphens (-) and underscores (_)</li> </ul> </li> </ul>	3005eip

6. Click **Next**.

### Binding the EIP

1. In the EIP list, locate the target EIP and click **Bind**.

**Figure 2-6 Bind**

EIP	St...	EIP Type	Bandwi...	Bandwid...	Associated I...	Billing Mo...	Enter...	Operation
<input type="checkbox"/>	U...	Dynamic BGP	bandwidth...	Bandwidth 5 Mbit/s	--	Pay-per-use Assigned: Sep 20, 2019 12:47:51 GMT+08:00	default	Bind Unbind More

2. Select the ECS.

**Figure 2-7 Bind EIP**

Bind EIP

EIP: 192.168.0.155

Instance Type: ECS (selected), BMS, Virtual IP address

All projects: [dropdown] All status: [dropdown] Name: [input] Search by Tag: [dropdown]

Name	Status	EIP	Private IP Address	Enterprise Project
as-config-lb8v-B...	Running	--	192.168.0.47	default
ecs-paas-192.168.0.155	Stopped	192.168.0.155	192.168.0.75	default
cce-paas-192.168.0.155	Running	--	192.168.0.155	default
discuz01	Stopped	--	192.168.0.65	default

\* NIC: IP: 192.168.0.155, MAC: fa:16:3e:b9:05:9f (Primary NIC)

Selected Instance: cce-paas-192.168.0.155-91288

NIC: IP: 192.168.0.155, MAC: fa:16:3e:b9:05:9f (Primary NIC)

OK Cancel

3. Click **OK**.

### Verifying the Result

After an EIP is bound to the ECS, you can access the ECS from the Internet. You can perform the following steps to verify the access:

- Log in to the ECS using SSH or the RDP file through the EIP. For details, see [Logging In to an ECS](#).
- Ping the EIP of the ECS from the Internet.

 **NOTE**

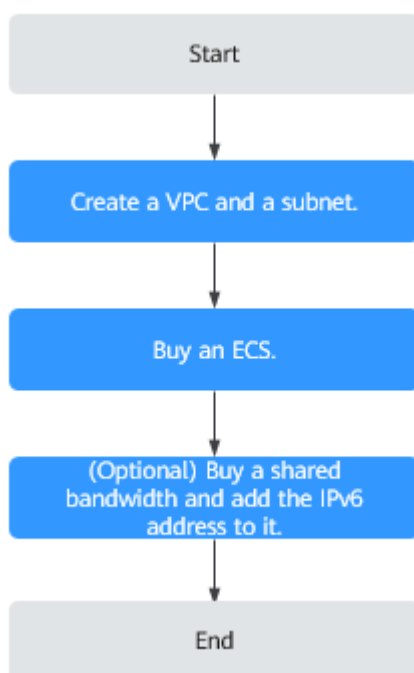
Ensure that the security group of the ECS allows the ICMP traffic (ping) and the access from specific ports, such as port 22 (SSH) and port 3389 (RDP).

# 3 Setting up an IPv6 Network

## Scenarios

This topic describes how to create a VPC with an IPv6 CIDR block and create an ECS with an IPv6 address in the VPC, so that the ECS can access the Internet using the IPv6 address. [Figure 3-1](#) shows the configuration process.

**Figure 3-1** Setting up an IPv6 network



### NOTE

If you already have a shared bandwidth, you can configure Internet access using an IPv6 address when purchasing an ECS.

## Prerequisites

The IPv6 function is now available for open beta test in regions list on [Function Overview](#). You can experience the IPv6 function only after obtaining the OBT

permission. For details about IPv6 functions, see [IPv4 and IPv6 Dual-Stack Network](#).

## Notes and Constraints

- The IPv4/IPv6 dual-stack function is free for now, but will be billed at a later date (price yet to be determined).
- Only certain ECS specifications support IPv6 networks and can use IPv4/IPv6 dual-stack networks. You need to select such ECSs in supported regions.

To check which ECSs support IPv6:

- On the ECS console: Click **Buy ECS**. On the displayed page, view the ECS specifications.

If there is the **IPv6** parameter with the value of **Yes**, the ECS specifications support IPv6.

## Application Scenarios of IPv4/IPv6 Dual Stack


**Table 3-1** Application scenarios of IPv4/IPv6 dual stack

Application Scenario	Description	Subnet	ECS
Private communication using IPv6 addresses	Your applications deployed on ECSs need to communicate with other systems (such as databases) through private networks using IPv6 addresses.	<ul style="list-style-type: none"> <li>• IPv4 CIDR block</li> <li>• IPv6 CIDR block</li> </ul>	<ul style="list-style-type: none"> <li>• Private IPv4 address: used for private communication</li> <li>• IPv6 address: used for private communication.</li> </ul>
Public communication using IPv6 addresses	<p>Your applications deployed on ECSs need to provide services accessible from the Internet using IPv6 addresses.</p> <p>Your applications deployed on ECSs need to both provide services accessible from the Internet and analyze the access request data using IPv6 addresses.</p>	<ul style="list-style-type: none"> <li>• IPv4 CIDR block</li> <li>• IPv6 CIDR block</li> </ul>	<ul style="list-style-type: none"> <li>• Private IPv4 address + IPv4 EIP: used for public network communication</li> <li>• IPv6 address + shared bandwidth: used for public network communication</li> </ul>

## Step 1: Create a VPC

Before creating your VPCs, determine how many VPCs, the number of subnets, and what IP address ranges you will need. For details, see [Network Planning](#).

Perform the following operations to create a VPC named **vpc-ipv6** and its default subnet named **subnet-ipv6**.

1. Log in to the management console.
2. Click  in the upper left corner and choose **Networking > Virtual Private Cloud**.

The **Virtual Private Cloud** page is displayed.

3. Click **Create VPC**.
4. Set the VPC and subnet parameters.

When configuring a subnet, select **Enable** for **IPv6 CIDR Block** so that the system will automatically allocate an IPv6 CIDR block to the subnet. IPv6 cannot be disabled after the subnet is created. Currently, customizing IPv6 CIDR block is not supported.

**Table 3-2** VPC parameter descriptions

Parameter	Description	Example Value
Region	Select the region nearest to you to ensure the lowest latency possible.	EU-Dublin
Name	The VPC name. The name can contain a maximum of 64 characters, which may consist of letters, digits, underscores (_), hyphens (-), and periods (.). The name cannot contain spaces.	VPC-test
IPv4 CIDR Block	The CIDR block of the VPC. The CIDR block of a subnet can be the same as the CIDR block for the VPC (for a single subnet in the VPC) or a subset of the CIDR block for the VPC (for multiple subnets in the VPC). The following CIDR blocks are supported: <ul style="list-style-type: none"><li>• 10.0.0.0/8-24</li><li>• 172.16.0.0/12-24</li><li>• 192.168.0.0/16-24</li></ul> This parameter will be <b>CIDR Block</b> in regions where IPv4/IPv6 dual stack is not supported, and <b>IPv4 CIDR Block</b> if IPv4/IPv6 dual stack is supported.	192.168.0.0/16

Parameter	Description	Example Value
Enterprise Project	<p>The enterprise project to which the VPC belongs.</p> <p>An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is <b>default</b>.</p> <p>For details about creating and managing enterprise projects, see the <a href="#">Enterprise Management User Guide</a>.</p>	default
Advanced Settings	Click the drop-down arrow to set advanced VPC parameters, including tags.	Retain the default settings.
Tag	The VPC tag, which consists of a key and value pair. You can add a maximum of 10 tags to each VPC.	<ul style="list-style-type: none"><li>• Key: vpc_key1</li><li>• Value: vpc-01</li></ul>
Description	<p>Supplementary information about the VPC. This parameter is optional.</p> <p>The VPC description can contain a maximum of 255 characters and cannot contain angle brackets (&lt; or &gt;).</p>	N/A

**Table 3-3** Subnet parameter descriptions

Parameter	Description	Example Value
AZ	<p>An AZ is a geographic location with independent power supply and network facilities in a region. AZs are physically isolated, and AZs in the same VPC are interconnected through an internal network. For details, see <a href="#">Region and AZ</a>.</p> <p>Note the following when you select an AZ:</p> <ul style="list-style-type: none"><li>• A VPC can have subnets that are in different AZs. For example, a VPC can have subnet A in AZ 1, and subnet B in AZ 3.</li><li>• A cloud resource and its subnet can be in different AZs. For example, a cloud server in AZ 1 can use a subnet in AZ 3.</li></ul>	AZ1
Name	<p>The subnet name.</p> <p>The name can contain a maximum of 64 characters, which may consist of letters, digits, underscores (_), hyphens (-), and periods (.). The name cannot contain spaces.</p>	subnet-01
IPv4 CIDR Block	<p>The CIDR block for the subnet. This value must be within the VPC CIDR block.</p> <p>This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.</p>	192.168.0.0/24



Parameter	Description	Example Value
IPv6 CIDR Block	<p>Specifies whether to set <b>IPv6 CIDR Block</b> to <b>Enable</b>.</p> <p>After the IPv6 function is enabled, the system automatically assigns an IPv6 CIDR block to the created subnet. Currently, the IPv6 CIDR block cannot be customized. IPv6 cannot be disabled after the subnet is created.</p> <p>This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.</p>	-
Associated Route Table	<p>The default route table to which the subnet will be associated. You can change the route table to a custom route table on the <b>Subnets</b> page.</p>	Default
Advanced Settings	<p>Click the drop-down arrow to set advanced settings for the subnet, including <b>Gateway</b> and <b>DNS Server Address</b>.</p>	Retain the default settings.
Gateway	<p>The gateway address of the subnet.</p> <p>This IP address is used to communicate with other subnets.</p>	192.168.0.1

Parameter	Description	Example Value
DNS Server Address	<p>Huawei Cloud private DNS server addresses are entered by default. This allows ECSs in a VPC to communicate with each other and also access other cloud services using private domain names without exposing their IP addresses to the Internet.</p> <p>You can change the default DNS server addresses if needed. This may interrupt your access to cloud services.</p> <p>You can also click <b>Reset</b> on the right to restore the DNS server addresses to the default value.</p> <p>A maximum of two DNS server IP addresses can be configured. Multiple IP addresses must be separated using commas (,).</p>	100.125.x.x
DHCP Lease Time	<p>The period during which a client can use an IP address automatically assigned by the DHCP server. After the lease time expires, a new IP address will be assigned to the client.</p> <ul style="list-style-type: none"><li>• <b>Limited:</b> Set the DHCP lease time. The unit can be day or hour.</li><li>• <b>Unlimited:</b> The DHCP lease time does not expire.</li></ul> <p>After you change the DHCP lease time on the console, the change is applied automatically when the DHCP lease of an instance (such as ECS) is renewed. You can wait for the system to renew the lease or manually renew the lease. Renewing lease will not change the IP address used by the instance. If you want the new lease time to take effect immediately, manually renew the lease or restart the ECS.</p>	-

Parameter	Description	Example Value
Tag	The subnet tag, which consists of a key and value pair. You can add a maximum of 10 tags to each subnet.	<ul style="list-style-type: none"> <li>• Key: subnet_key1</li> <li>• Value: subnet-01</li> </ul>
Description	<p>Supplementary information about the subnet. This parameter is optional.</p> <p>The subnet description can contain a maximum of 255 characters and cannot contain angle brackets (&lt; or &gt;).</p>	N/A

**Table 3-4** VPC tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none"> <li>• Cannot be left blank.</li> <li>• Must be unique for each VPC and can be the same for different VPCs.</li> <li>• Can contain a maximum of 36 characters.</li> <li>• Can contain only the following character types: <ul style="list-style-type: none"> <li>- Uppercase letters</li> <li>- Lowercase letters</li> <li>- Digits</li> <li>- Special characters, including hyphens (-) and underscores (_)</li> </ul> </li> </ul>	vpc_key1
Value	<ul style="list-style-type: none"> <li>• Can contain a maximum of 43 characters.</li> <li>• Can contain only the following character types: <ul style="list-style-type: none"> <li>- Uppercase letters</li> <li>- Lowercase letters</li> <li>- Digits</li> <li>- Special characters, including periods (.), hyphens (-) and underscores (_)</li> </ul> </li> </ul>	vpc-01

**Table 3-5** Subnet tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Must be unique for each subnet.</li><li>• Can contain a maximum of 36 characters.</li><li>• Can contain only the following character types:<ul style="list-style-type: none"><li>– Uppercase letters</li><li>– Lowercase letters</li><li>– Digits</li><li>– Special characters, including hyphens (-) and underscores (_)</li></ul></li></ul>	subnet_key1
Value	<ul style="list-style-type: none"><li>• Can contain a maximum of 43 characters.</li><li>• Can contain only the following character types:<ul style="list-style-type: none"><li>– Uppercase letters</li><li>– Lowercase letters</li><li>– Digits</li><li>– Special characters, including hyphens (-) and underscores (_)</li></ul></li></ul>	subnet-01

5. Click **Create Now**.

## Step 2: Buy an ECS

On the management console, under **Compute**, click **Elastic Cloud Server**, and then click **Buy ECS**.

Configure the network for the ECS as follows:

**Figure 3-2** Network configuration

Network

vpc-ipv6(192.168.0.0/16) C subnet-ipv6(192.168.0.0/24) C Automatically-assigned IP address 226 available private IP addresses ?

Self-assigned IPv6 address Do not configure C Allocate Shared Bandwidth

To create a new VPC, switch to the console.

Extension NIC + Add NIC You can add 1 more NICs.

Security Group Sys-default (1bb83c2b-10a2-4bc2-bc14-a4d5ab328e4b) C Create Security Group ?

Ensure that the selected security group allows access to port 22 (SSH-based logins for Linux), 3389 (logins for Windows) and ICMP (for ping operations). Configure Security Group Rules

Security Group Rules ^

EIP  Auto assign  Use existing  Not required ?

- Network:

- Select the created VPC **vpc-ipv6**.
- Select the created subnet **subnet-ipv6**.
- Select **Self-assigned IPv6 address**.

---

**NOTICE**

Select **Self-assigned IPv6 address** during ECS creation to assign an IPv6 address to the ECS. Otherwise, the IPv4/IPv6 dual-stack network cannot be used.

---

- Shared Bandwidth
  - If you select **Do not configure**, only IPv6 communication in a VPC is supported. If you want to enable Internet access, you need to perform operations in [\(Optional\) Step 3: Buy a Shared Bandwidth and Add the IPv6 Address to It](#).
  - If you assign a shared bandwidth or select an existing shared bandwidth, the ECS can use the IPv6 address to access the Internet after the configuration is complete.
- **Security Group**: Select the default security group **Sys-default**. The default security group rule allows all outgoing IPv4 and IPv6 data packets and denies all inbound data packets. ECSs in the same security group can access each other without the need to add rules. You can also create a security group and add rules to it. For details, see [Creating a Security Group](#) and [Adding a Security Group Rule](#).
- EIP: Select **Not required**.

After the ECS is created, you can view the assigned IPv6 address on the ECS details page. You can also log in to the ECS and run the **ifconfig** command to view the assigned IPv6 address.

**NOTE**

If an ECS is created from a public image:


Before enabling dynamic IPv6 address assignment for a Linux public image, check whether IPv6 is supported and then check whether dynamic IPv6 address assignment has been enabled. Currently, all Linux public images support IPv6, and dynamic IPv6 address assignment is enabled for Ubuntu 16 by default. You do not need to configure dynamic IPv6 address assignment for the Ubuntu 16 OS. For other Linux public images, you need to enable this function.

### (Optional) Step 3: Buy a Shared Bandwidth and Add the IPv6 Address to It

By default, an IPv6 address can only be used for private network communication. If you want to use this IPv6 address to access the Internet or want it to be accessed by IPv6 clients on the Internet, you need to buy a shared bandwidth and add the IPv6 address to it.

If you already have a shared bandwidth, add the IPv6 address to the shared bandwidth.

#### Buying a Shared Bandwidth

1. Log in to the management console.
2. Click  in the upper left corner and choose **Networking > Elastic IP**.
3. In the navigation pane on the left, choose **Elastic IP and Bandwidth > Shared Bandwidths**.
4. In the upper right corner, click **Buy Shared Bandwidth**. On the displayed page, configure parameters as prompted.

**Table 3-6** Parameter descriptions

Parameter	Description	Example Value
Billing Mode	A shared bandwidth can be billed on a yearly/monthly or pay-per-use basis. <ul style="list-style-type: none"><li>● <b>Yearly/Monthly:</b> You pay for the bandwidth by year or month before using it. No other charges apply during the validity period of the bandwidth.</li><li>● <b>Pay-per-use:</b> You pay for the bandwidth based on the amount of time you use the bandwidth.</li></ul>	Yearly/Monthly
Region	Regions are geographic areas that are physically isolated from each other. The networks inside different regions are not connected to each other, so resources cannot be shared across different regions. For lower network latency and faster access to your resources, select the region nearest you.	N/A
Bandwidth Type	Select a type of the shared bandwidth based on your EIP type. <ul style="list-style-type: none"><li>● <b>Standard:</b> Dynamic BGP and premium BGP EIPs can be added to a shared bandwidth of this type.</li></ul> <b>NOTE</b> In the CN-Hong Kong region, only dynamic BGP EIPs can be added to standard shared bandwidths.	Standard
Billed By	The billing method for the shared bandwidth.  You can specify a shared bandwidth to be billed by bandwidth.	Bandwidth
Bandwidth	The bandwidth size in Mbit/s.	10

Parameter	Description	Example Value
Enterprise Project	The enterprise project that the EIP belongs to. An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is <b>default</b> .	default
Name	The name of the shared bandwidth.	Bandwidth-001
Required Duration	The duration for which the purchased EIP will use. The duration must be specified if the <b>Billing Mode</b> is set to <b>Yearly/Monthly</b> .	2 months

5. Click **Create Now**.

### Adding the IPv6 Address to a Shared Bandwidth

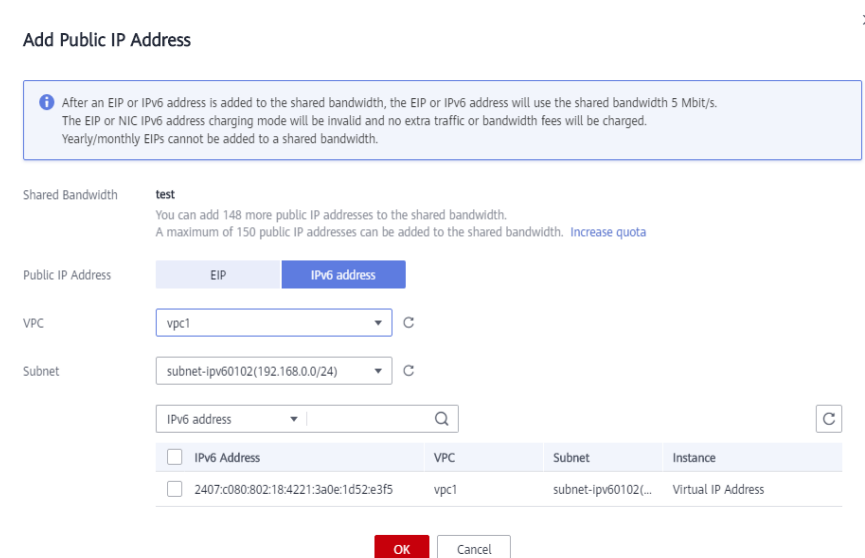
1. On the **Shared Bandwidths** page, click **Add Public IP Address** in the **Operation** column.

**Figure 3-3** Adding an IPv6 address to a shared bandwidth



2. Add the IPv6 address to the shared bandwidth.

**Figure 3-4** Adding an IPv6 address to a shared bandwidth



3. Click **OK**.

### Verifying the Result

Log in to the ECS and ping an IPv6 address on the Internet to verify network connectivity. For example, run **ping6 huawei.com**. **Figure 3-5** shows an example command output.

Log in to the ECS using SSH or the RDP file through the EIP. For details, see [Logging In to an ECS](#).

**Figure 3-5** Verification

```
64 bytes from 2400:da00:2::29: icmp_seq=1 ttl=42 time=45.6 ms
64 bytes from 2400:da00:2::29: icmp_seq=2 ttl=42 time=45.1 ms
64 bytes from 2400:da00:2::29: icmp_seq=3 ttl=42 time=44.8 ms
64 bytes from 2400:da00:2::29: icmp_seq=4 ttl=42 time=45.1 ms
```