

Virtual Private Cloud

Getting Started

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1 Quick Start

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](#).

Top Up Your Account

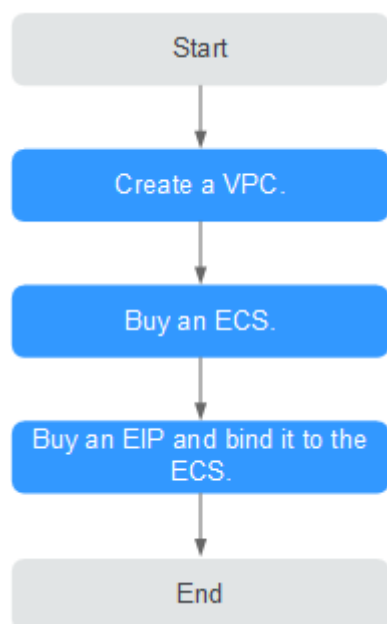
Top up your account to ensure that your account has sufficient balance.

- For more information about product price, such as the price of EIPs, see [Pricing Details](#).
- For details about how to top up an account, see [Topping Up an Account](#).

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. Log in to the management console.
2. On the console homepage, under **Networking**, click **Virtual Private Cloud**.
3. Click **Create VPC**.

The **Create VPC** page is displayed.

4. 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

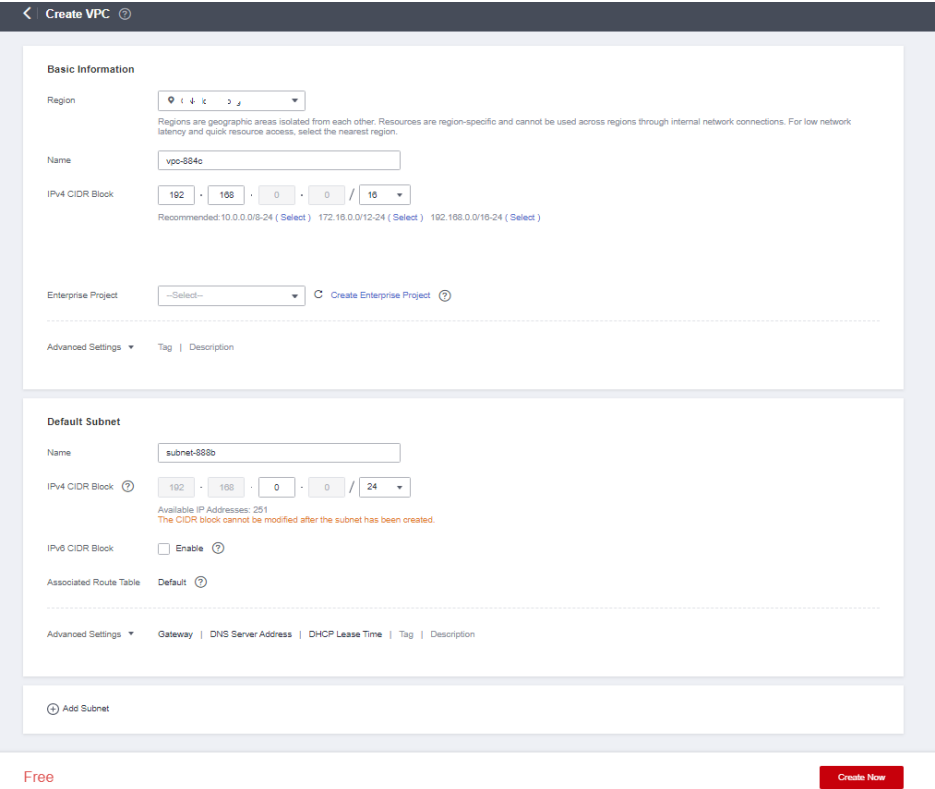


Table 2-1 VPC parameter descriptions

Parameter	Description	Example Value
Region	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.	CN-Hong Kong

Parameter	Description	Example Value
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
CIDR Block or 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">• 10.0.0.0/8-24• 172.16.0.0/12-24• 192.168.0.0/16-24 This parameter will be CIDR Block in regions where IPv4/IPv6 dual stack is not supported, and IPv4 CIDR Block if IPv4/IPv6 dual stack is supported.	192.168.0.0/16
Enterprise Project	The enterprise project to which the VPC belongs. An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is default . For details about creating and managing enterprise projects, see the Enterprise Management User Guide .	default
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">• Key: vpc_key1• Value: vpc-01

Parameter	Description	Example Value
Description	Supplementary information about the VPC. This parameter is optional. The VPC description can contain a maximum of 255 characters and cannot contain angle brackets (< or >).	N/A

Table 2-2 Subnet parameter descriptions

Parameter	Description	Example Value
Name	The subnet 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.	subnet-01
CIDR Block	The CIDR block for the subnet. This value must be within the VPC CIDR block. This parameter is displayed only in regions where IPv4/IPv6 dual stack is not supported.	192.168.0.0/24
IPv4 CIDR Block	The CIDR block for the subnet. This value must be within the VPC CIDR block. This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.	192.168.0.0/24

Parameter	Description	Example Value
IPv6 CIDR Block	<p>Specifies whether to set IPv6 CIDR Block to Enable.</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	The default route table to which the subnet will be associated. You can change the route table to a custom route table on the Subnets page.	Default
Advanced Settings	Click the drop-down arrow to set advanced settings for the subnet, including Gateway and DNS Server Address .	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 Reset 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

Parameter	Description	Example Value
Domain Name	<p>Enter domain names (), separated with spaces. A maximum of 254 characters are allowed. A domain name can consist of multiple labels (max. 63 characters each).</p> <p>To access a domain name, you only need to enter the domain name prefix. ECSs in the subnet automatically match the configured domain name suffix.</p> <p>If the domain names are changed, ECSs newly added to this subnet will use the new domain names.</p> <p>If an existing ECS in this subnet needs to use the new domain names, restart the ECS or run a command to restart the DHCP Client service or network service.</p> <p>NOTE</p> <p>The command for updating the DHCP configuration depends on the ECS OS. The following commands are for your reference.</p> <ul style="list-style-type: none">Restart the DHCP Client service: service dhcpd restartRestart the network service: service network restart	test.com

Parameter	Description	Example Value
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">• Limited: Set the DHCP lease time. The unit can be day or hour.• Unlimited: The DHCP lease time does not expire. <p>If a DHCP lease time is changed, the new lease automatically takes effect when half of the current lease time has passed. To make the change take effect immediately, restart the ECS or log in to the ECS to cause the DHCP lease to automatically renew.</p>	365 days

Parameter	Description	Example Value
NTP Server Address	<p>The IP address of the NTP server. This parameter is optional.</p> <p>You can configure the NTP server IP addresses to be added to the subnet as required. The IP addresses are added in addition to the default NTP server addresses. If this parameter is left empty, no IP address of the NTP server is added.</p> <p>Enter a maximum of four valid IP addresses, and separate multiple IP addresses with commas. Each IP address must be unique. If you add or change the NTP server addresses of a subnet, you need to renew the DHCP lease for or restart all the ECSs in the subnet to make the change take effect immediately. If the NTP server addresses have been cleared out, restarting the ECSs will not help. You must renew the DHCP lease for all ECSs to make the change take effect immediately.</p>	192.168.2.1
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">• Key: subnet_key1• Value: subnet-01
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 (< or >).</p>	N/A

Table 2-3 VPC tag key and value requirements

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

Table 2-4 Subnet tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none">• Cannot be left blank.• Must be unique for each subnet.• Can contain a maximum of 36 characters.• Can contain letters, digits, underscores (_), and hyphens (-).	subnet_key1
Value	<ul style="list-style-type: none">• Can contain a maximum of 43 characters.• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).	subnet-01

5. 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

VPC ?

vpc-test

Create VPC

NIC

Primary NIC ?

subnet-01(192.168.0.0/24)

User-configured IP address

View In-Use IP Address

+ Add NIC

You can add 11 more NICs.

Security Group ?

Learn how to configure a security group.

Sys-default (Inbound:TCP/3389, 22 | Outbound:...

Create Security Group

Inbound: TCP/3389, 22 | Outbound: -

EIP ?

To enable Internet access from your ECSs, create a plan for the EIPs you require. View EIP

Automatically assign

Use existing

Not required

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

vpc-test

subnet-01

Automatically assign IP address

Available private IP addresses: 248

Create VPC

Extension NIC

+ Add NIC

NICs you can still add: 1

Security Group

Sys-default (86608c3-5c07-430a-96c4-4209f86f6c5)

Create Security Group

Similar to a firewall, a security group logically controls network access.

Security Group Rules

Inbound Rules

Outbound Rules

Security Group Name	Protocol & Port	Type	Source	Description
	TCP: 22	IPv4	0.0.0.0/0	Permit default Linux SSH port.
	TCP: 3389	IPv4	0.0.0.0/0	Permit default Windows remote desktop port.
Sys-default	All	IPv6	Sys-default	...
	All	IPv4	Sys-default	...

EIP

☐ Auto assign

☐ Use existing

☒ Not required

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.

- **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	Priority	Action	Protocol	Port/Range	Source/Destination	Description
Outbound	100	Allow	All	All	Destination: 0.0.0.0/0	Allows all outbound traffic.
Inbound	100	Allow	All	All	Source: Current security group name	Allows communications among ECSs within the same security group on any port.
Inbound	100	Allow	TCP	22	Source: 0.0.0.0/0	Allows all IP addresses to access Linux ECSs over SSH.

Direction	Priority	Action	Protocol	Port/Range	Source/Destination	Description
Inbound	100	Allow	TCP	3389	Source: 0.0.0.0/0	Allows all IP addresses to access Windows ECSs over RDP.

- **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. On the console homepage, under **Networking**, click **Virtual Private Cloud**.
3. Choose **Elastic IP and Bandwidth > EIPs**.
4. Click **Buy EIP**.
5. Set parameters as prompted.

Figure 2-5 Buying an EIP

Billing Mode: Yearly/Monthly Pay-per-use

Region: [Region Selection]

An EIP can only be associated with a cloud resource in its same region. After the purchase, the region cannot be changed. Exercise caution when selecting the region.

EIP Type: Dynamic BGP Static BGP ?

Greater than or equal to 99.95% service availability rate

Billed By: Bandwidth For heavy/stable traffic Traffic For light/sharply fluctuating traffic Shared Bandwidth For staggered traffic

Billed based on usage duration and bandwidth size.

Bandwidth: 1 2 5 10 100 200 Custom 5 The bandwidth can be from 1 to 2,000 Mbit/s.

Free Anti-DDoS protection

Bandwidth Name: bandwidth-test

Enterprise Project: default Create Enterprise Project ?

Advanced Settings: Tag

Monitoring: Monitoring is enabled by default. Free You can monitor network traffic at one-minute granularity, for free. You can monitor bandwidth fluctuations, and inbound/outbound bandwidth rates.

Quantity: 1 A maximum of 5 EIPs can be purchased at a time. You can buy 20 more EIPs. Increase quota

EIP Price: \$0.003 USD/hour + Bandwidth Price: \$0.05 USD/hour

[After you bind the EIP to an instance, the EIP will not be billed. You only need to pay for the bandwidth.]

The estimated price is for reference only and may vary from the final price in your bill. Pricing details

Next

Table 2-6 Parameter descriptions

Parameter	Description	Example Value
Billing Mode	The following billing modes are available: <ul style="list-style-type: none">• Yearly/Monthly• Pay-per-use	Pay-per-use
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.	CN-Hong Kong
EIP Type	<ul style="list-style-type: none">• Dynamic BGP: Dynamic BGP provides automatic failover and chooses the optimal path when a network connection fails.• Static BGP: 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.	Dynamic BGP

Parameter	Description	Example Value
Billed By	<p>This parameter is available when you set Billing Mode to Pay-per-use.</p> <ul style="list-style-type: none">• Bandwidth: 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.• Traffic: You specify a maximum bandwidth and pay for the total traffic you use. This is suitable for scenarios with light or sharply fluctuating traffic.• Shared Bandwidth: The bandwidth can be shared by multiple EIPs. This is suitable for scenarios with staggered traffic.	Bandwidth
Bandwidth	The bandwidth size in Mbit/s.	5
Bandwidth Name	The name of the bandwidth.	bandwidth-test
Required Duration	This parameter is available only when Billing Mode is set to Yearly/Monthly .	1 month
Quantity	<p>The number of EIPs you want to assign.</p> <p>The quantity must be specified if the Billing Mode is set to Pay-per-use.</p>	1
Tag	<p>The EIP tag that consists of a key and value pair.</p> <p>The tag key and value must meet the requirements listed in Table 2-7.</p>	<ul style="list-style-type: none">• Key: Ipv4_key1• Value: 192.168.12.10

Parameter	Description	Example Value
Enterprise Project	<p>The enterprise project that the EIP belongs to.</p> <p>An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is default.</p> <p>For details about creating and managing enterprise projects, see the Enterprise Management User Guide.</p>	default

Table 2-7 EIP tag requirements

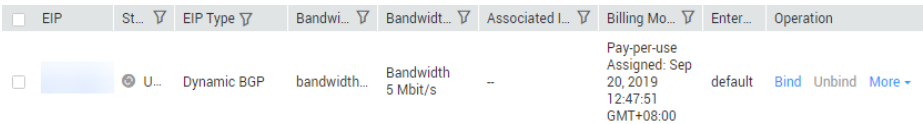
Parameter	Requirement	Example Value
Key	<ul style="list-style-type: none">• Cannot be left blank.• Must be unique for each EIP.• Can contain a maximum of 36 characters.• Can contain letters, digits, underscores (_), and hyphens (-).	Ipv4_key1
Value	<ul style="list-style-type: none">• Can contain a maximum of 43 characters.• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).	3005eip

6. Click **Next**.

Binding the EIP

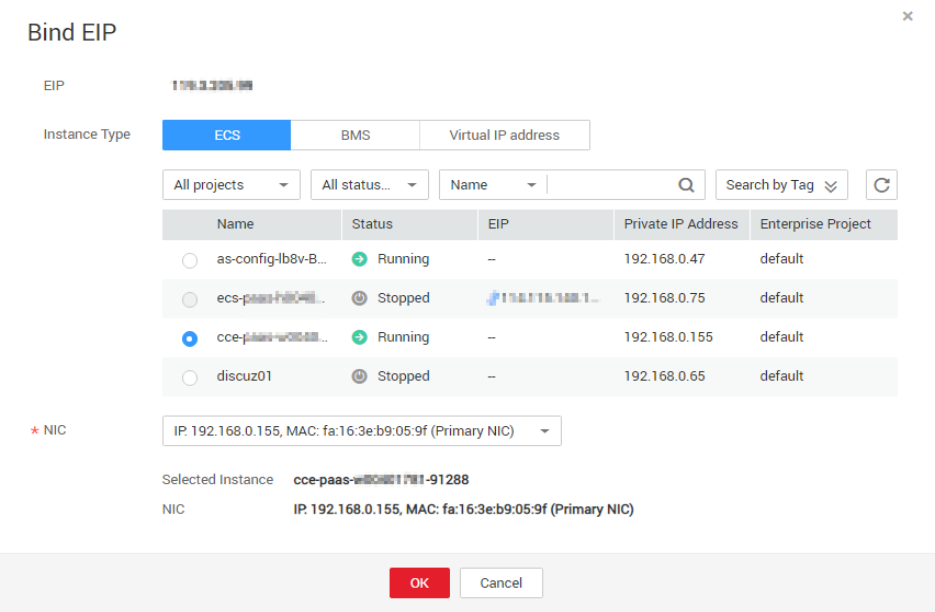
1. In the EIP list, locate the target EIP and click **Bind**.

Figure 2-6 Bind



2. Select the ECS.

Figure 2-7 Bind EIP



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

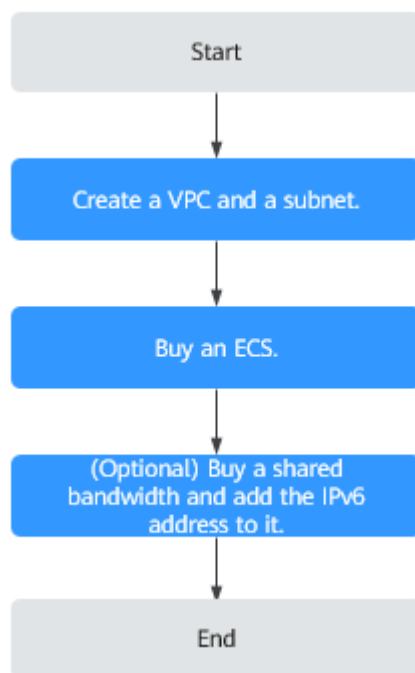
Ensure that the security group of the ECS allows the ICMP traffic (ping) and the access from specific ports, such as port 22 (SSH) and port 3389 (RDP).

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 currently free, but will be billed at a later date (price yet to be determined).
- Only ECS flavors that support IPv6 addresses can use IPv4/IPv6 dual-stack networks.

You can use either of the following methods to check which ECS flavors support IPv6 addresses:

- On the ECS console, click **Buy ECS**. On the displayed page, view the ECS flavors.

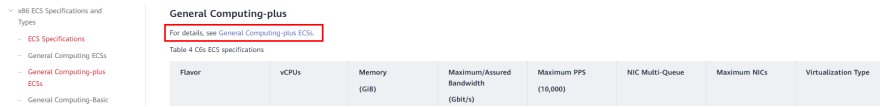
If an ECS flavor has the **IPv6** parameter with the value of **Yes**, the ECS flavor supports IPv6 addresses.

- On the [ECS Specifications](#) page, click the link of your desired ECS specifications for detailed information, and check the ECS flavors that support IPv6 in the table of ECS features.

For example, if you want to check the flavors of general computing-plus ECSs that support IPv6:

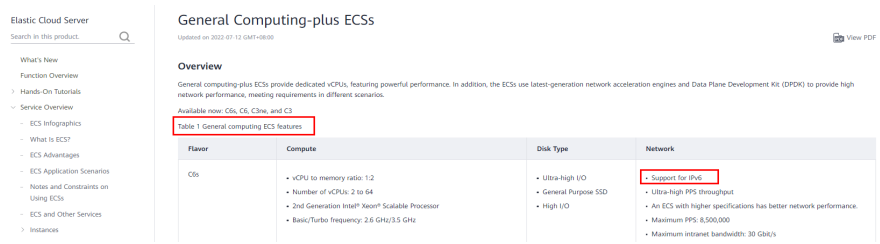
- i. Open the [ECS Specifications](#) page.
- ii. Under **General Computing-Plus**, click the link for detailed information.

Figure 3-2 Link for detailed information



- iii. On the **General Computing-plus ECSs** page, check whether IPv6 is supported in the table of ECS features.

Figure 3-3 General computing-plus ECSs



Application Scenarios of IPv4/IPv6 Dual Stack

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

Applica tion Scenari o	Description	Subnet	ECS
Private commu nicatio n using IPv6 address es	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">• IPv4 CIDR block• IPv6 CIDR block	<ul style="list-style-type: none">• Private IPv4 address: used for private communication• IPv6 address: used for private communication.
Public commu nicatio n using IPv6 address es	<div>Your applications deployed on ECSs need to provide services accessible from the Internet using IPv6 addresses.</div> <div>Your applications deployed on ECSs need to both provide services accessible from the Internet and analyze the access request data using IPv6 addresses.</div>	<ul style="list-style-type: none">• IPv4 CIDR block• IPv6 CIDR block	<ul style="list-style-type: none">• Private IPv4 address + IPv4 EIP: used for public network communication• IPv6 address + shared bandwidth: used for public network communication

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. Under **Networking**, click **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	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.	CN-Hong Kong
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
CIDR Block or 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">• 10.0.0.0/8-24• 172.16.0.0/12-24• 192.168.0.0/16-24 This parameter will be CIDR Block in regions where IPv4/IPv6 dual stack is not supported, and IPv4 CIDR Block 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 default.</p> <p>For details about creating and managing enterprise projects, see the Enterprise Management User Guide.</p>	default
Tag	<p>The VPC tag, which consists of a key and value pair. You can add a maximum of 10 tags to each VPC.</p>	<ul style="list-style-type: none">• Key: vpc_key1• Value: vpc-01
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 (< or >).</p>	N/A

Table 3-3 Subnet parameter descriptions

Parameter	Description	Example Value
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
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 not supported.</p>	192.168.0.0/24

Parameter	Description	Example Value
IPv4 CIDR Block	The CIDR block for the subnet. This value must be within the VPC CIDR block. This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.	192.168.0.0/24
IPv6 CIDR Block	Specifies whether to set IPv6 CIDR Block to Enable . 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. This parameter is displayed only in regions where IPv4/IPv6 dual stack is supported.	-
Associated Route Table	The default route table to which the subnet will be associated. You can change the route table to a custom route table on the Subnets page.	Default
Advanced Settings	Click the drop-down arrow to set advanced settings for the subnet, including Gateway and DNS Server Address .	Retain the default settings.
Gateway	The gateway address of the subnet. This IP address is used to communicate with other subnets.	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 Reset 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

Parameter	Description	Example Value
Domain Name	<p>Enter domain names (), separated with spaces. A maximum of 254 characters are allowed. A domain name can consist of multiple labels (max. 63 characters each).</p> <p>To access a domain name, you only need to enter the domain name prefix. ECSs in the subnet automatically match the configured domain name suffix.</p> <p>If the domain names are changed, ECSs newly added to this subnet will use the new domain names.</p> <p>If an existing ECS in this subnet needs to use the new domain names, restart the ECS or run a command to restart the DHCP Client service or network service.</p> <p>NOTE</p> <p>The command for updating the DHCP configuration depends on the ECS OS. The following commands are for your reference.</p> <ul style="list-style-type: none">Restart the DHCP Client service: service dhcpd restartRestart the network service: service network restart	test.com

Parameter	Description	Example Value
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">• Limited: Set the DHCP lease time. The unit can be day or hour.• Unlimited: The DHCP lease time does not expire. <p>If a DHCP lease time is changed, the new lease automatically takes effect when half of the current lease time has passed. To make the change take effect immediately, restart the ECS or log in to the ECS to cause the DHCP lease to automatically renew.</p>	365 days

Parameter	Description	Example Value
NTP Server Address	<p>The IP address of the NTP server. This parameter is optional.</p> <p>You can configure the NTP server IP addresses to be added to the subnet as required. The IP addresses are added in addition to the default NTP server addresses. If this parameter is left empty, no IP address of the NTP server is added.</p> <p>Enter a maximum of four valid IP addresses, and separate multiple IP addresses with commas. Each IP address must be unique. If you add or change the NTP server addresses of a subnet, you need to renew the DHCP lease for or restart all the ECSs in the subnet to make the change take effect immediately. If the NTP server addresses have been cleared out, restarting the ECSs will not help. You must renew the DHCP lease for all ECSs to make the change take effect immediately.</p>	192.168.2.1
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">• Key: subnet_key1• Value: subnet-01
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 (< or >).</p>	N/A

Table 3-4 VPC tag key and value requirements

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

Table 3-5 Subnet tag key and value requirements

Parameter	Requirements	Example Value
Key	<ul style="list-style-type: none">• Cannot be left blank.• Must be unique for each subnet.• Can contain a maximum of 36 characters.• Can contain letters, digits, underscores (_), and hyphens (-).	subnet_key1
Value	<ul style="list-style-type: none">• Can contain a maximum of 43 characters.• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).	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 3-4 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 (11b83c2b-10a2-4bc2-bc14-a4d5ab328e4b) ⓘ 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.

(Optional) Dynamically Assigning IPv6 Addresses

If an IPv6 address fails to be automatically assigned or the selected image does not support the function of automatic IPv6 address assignment, manually obtain the IPv6 address by referring to **Dynamically Assigning IPv6 Addresses**.

 **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, the 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 select the desired region and project.
3. On the console homepage, under **Networking**, click **Elastic IP**.
4. In the navigation pane on the left, choose **Elastic IP and Bandwidth** > **Shared Bandwidths**.
5. 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	<p>A shared bandwidth can be billed on a yearly/monthly or pay-per-use basis.</p> <ul style="list-style-type: none">• Yearly/Monthly: You pay for the bandwidth by year or month before using it. No other charges apply during the validity period of the bandwidth.• Pay-per-use: You pay for the bandwidth based on the amount of time you use the bandwidth.	Yearly/Monthly

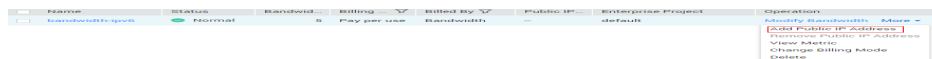
Parameter	Description	Example Value
Region	Regions are geographic areas that are physically isolated from each other. The networks inside different regions are not connected to each other, so resources cannot be shared across different regions. For lower network latency and faster access to your resources, select the region nearest you.	CN-Hong Kong
Billed By	The billing method for the shared bandwidth. You can pay by bandwidth.	Bandwidth
Bandwidth	The bandwidth size in Mbit/s. The minimum value is 5 Mbit/s. The maximum bandwidth can be 2000 Mbit/s.	10
Enterprise Project	The enterprise project to which the EIP belongs. An enterprise project facilitates project-level management and grouping of cloud resources and users. The name of the default project is default .	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 Billing Mode is set to Yearly/Monthly .	2 months

6. Click **Next**.

Adding the IPv6 Address to a Shared Bandwidth

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

Figure 3-5 Adding an IPv6 address to a shared bandwidth



2. Add the IPv6 address to the shared bandwidth.

Figure 3-6 Adding an IPv6 address to a shared bandwidth

Add Public IP Address

After an EIP or IPv6 address is added to the shared bandwidth, the EIP or IPv6 address will use the shared bandwidth 5 Mbit/s. The EIP or NIC IPv6 address charging mode will be invalid and no extra traffic or bandwidth fees will be charged. Yearly/monthly EIPs cannot be added to a shared bandwidth.

Shared Bandwidth

test

You can add 148 more public IP addresses to the shared bandwidth. A maximum of 150 public IP addresses can be added to the shared bandwidth. [Increase quota](#)

Public IP Address

EIP

IPv6 address

VPC

vpc1

Subnet

subnet-ipv60102(192.168.0.0/24)

IPv6 address

<input type="checkbox"/> IPv6 Address	VPC	Subnet	Instance
<input type="checkbox"/> 2407:c080:802:18:4221:3a0e:1d52:e3f5	vpc1	subnet-ipv60102(...	Virtual IP Address

OK

Cancel

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 3-7](#) 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 3-7 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
```