

Alibaba Cloud

Virtual Private Cloud

FAQ

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Document conventions

Style	Description	Example
 Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
 Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
 Note	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings > Network > Set network type .
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
<code>Courier font</code>	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1.VPC FAQ

This topic provides answers to some frequently asked questions about Virtual Private Cloud (VPC).

- [What are the differences between a VPC and a classic network?](#)
- [Can I attach multiple network interface controllers \(NICs\) to an Elastic Compute Service \(ECS\) instance?](#)
- [Can a VPC have multiple vRouters?](#)
- [How many custom routes can I create in a route table?](#)
- [How many vSwitches can I create in a VPC?](#)
- [How many private IP addresses can be used by cloud services in each VPC?](#)

What are the differences between a VPC and a classic network?

Differences between a VPC and a classic network:

- A classic network is built on the public infrastructure of Alibaba Cloud. Services that are deployed in a classic network are managed by Alibaba Cloud. A classic network is suitable for users that require simplified networking.
- A VPC is an isolated virtual network built by users on Alibaba Cloud. VPCs are logically isolated from each other. You can customize the topology of a VPC and the IP addresses in a VPC. Compared with a classic network, a VPC is suitable for users who have high network management requirements and capabilities.

Can I attach multiple network interface controllers (NICs) to an Elastic Compute Service (ECS) instance?

Each ECS instance in a classic network supports two NICs: a public NIC and a private NIC. Each ECS instance in a VPC supports only one private NIC. You can attach multiple Elastic Network Interfaces (ENIs) to specific types of ECS instances. For more information, see [Overview](#).

Can a VPC have multiple vRouters?

No, each VPC can have only one vRouter. However, each vRouter can be associated with multiple route tables.

How many custom routes can I create in a route table?

By default, you can create at most 200 custom routes in a route table.

You can go to the [Quota Management](#) page to request a quota increase. For more information, see [Manage resource quotas](#).

How many vSwitches can I create in a VPC?

By default, you can create at most 150 vSwitches in a VPC.

You can go to the [Quota Management](#) page to request a quota increase. For more information, see [Manage resource quotas](#).

How many private IP addresses can be used by cloud services in each VPC?

In each VPC, cloud services can use a maximum of 60,000 private IP addresses. You cannot increase the quota.

If an ECS instance is assigned only one private IP address, the ECS instance uses one IP address. If multiple NICs are attached to an ECS instance or a NIC that is assigned multiple IP addresses is attached to the ECS instance, the ECS instance can use multiple IP addresses. The number of IP addresses used by the ECS instance equals the sum of IP addresses that are assigned to the NICs.

2.FAQ about CIDR blocks

This topic provides answers to some frequently asked questions about CIDR blocks.

What is CIDR?

Classless Inter-Domain Routing (CIDR) is a method for allocating IP address and IP routing. Compared with the old system based on classes (Class A, Class B, Class C, ...), CIDR is a more efficient method to allocate IP addresses. For example, the IP addresses from 10.203.96.0 to 10.203.127.255 translate into the following CIDR block:

10.203.0110 0000.0000 0000 to 10.203.0111 1111.1111 1111, or 10.203.96.0/19.

When you create a VPC or a vSwitch, you must specify one or more CIDR blocks for the VPC.

What is a customer CIDR block?

By default, a VPC uses 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16, 100.64.0.0/10, and the CIDR block of the VPC for private network communication. An ECS instance or elastic network interface (ENI) can access the Internet in the following scenarios: The ECS instance is assigned a public IP address, the ECS instance or ENI is associated with an elastic IP address (EIP), or DNAT IP mapping is configured for the ECS instance or ENI. In the preceding cases, when the ECS instance or ENI accesses CIDR blocks other than the preceding ones, the requests are forwarded to the Internet through the public IP address.

You must set the destination of a request to the customer CIDR block of the VPC to which the ECS instance or ENI belongs in the following scenario: You want the request to be forwarded based on the route table of a private network. The private network can be a VPC or a hybrid cloud built with VPN, Express Connect, or CEN. Then, requests that point to the customer CIDR block are forwarded based on the route table instead of the public IP address.

For example, ECS 1 is assigned a public IP address. When ECS 1 accesses the Alibaba Cloud International site (106.11.XX.XX), requests are automatically forwarded through the public IP address. If you want requests to be forwarded to ECS 2 before they are forwarded to the Internet, perform the following operation: Specify 106.11.XX.XX/24 as the customer CIDR block of the VPC to which ECS 1 belongs. Then, the public IP address of ECS 2 is used to access the Internet.

How do I configure a customer CIDR block?

You can configure a customer CIDR block when you create a VPC or for an existing VPC. You can perform the following operations based on one of these two scenarios:

- Call the `CreateVpc` operation to configure a customer CIDR block for a new VPC. For more information, see [CreateVpc](#).
- Configure the customer CIDR block of an existing VPC by using the console. Make sure that the VPC uses a custom CIDR block as the IPv4 CIDR block.

After you configure a customer CIDR block for the VPC, the customer CIDR block is displayed on the details page of the VPC.

VPC

VPCs

A plug-and-play network solution that connects your on-premises networks with Alibaba Cloud. Smart Access Gateway is your fast track to the cloud. [Learn more.](#)

Create VPC Refresh Custom

Instance ID/Name	CIDR	IPv6 CIDR Block	Status	Default VPC	Route Table	VSwitch	Resource Group	Actions
vpc- ing3nmg3wzmtt7kqgagjv4l	172.16.0.0/12	Enable IPv6 CIDR Block	Available Not Bound to CEN	No	1	0	Default	Manage Delete
vpc- cgm3e3dms3wzmtt7kqgagjv4l	172.16.0.0/12	Enable IPv6 CIDR Block	Available Not Bound to CEN	No	1	0	Default	Manage Delete
vpc- cgm3e3dms3wzmtt7kqgagjv4l CL-IPv6-VPC	192.168.0.0/16	2408:4004:0:a600::/56	Available Not Bound to CEN	No	1	1	Default	Manage Delete

↓

VPC Details

VPC Details

ID	vpc- ing3nmg3wzmtt7kqgagjv4l	Name	erer Edit
IPv4 CIDR Block	172.16.0.0/12 (Primary)	Created At	Dec 20, 2019, 09:19:10
IPv6 CIDR Block	Enable IPv6 CIDR Block	Status	Available
Description	erer Edit	Default VPC	No
ClassicLink	Disabled	Instance Attachment Details	Not attached to a CEN Instance
Region	China (Hohhot)	Resource Group	Default
User CIDR	188.88.0.0/16		

VRouter Basic Information

ID	vrt- g3nmg3wzmtt7kqgagjv4l	Name	- Edit
Created At	Dec 20, 2019, 09:19:10	Description	- Edit

How do I specify a CIDR block for a VPC?

You can specify 192.168.0.0/16, 172.16.0.0/12, 10.0.0.0/8, or their subnets as the private CIDR block of the VPC. You can also specify a custom CIDR block. The subnet mask must be 8 to 24 bits in length.

For more information, see [Create and manage a VPC](#).

How do I specify a CIDR block for a vSwitch?

Before you specify a CIDR block for a vSwitch, take note of the following items:

- The CIDR block of the vSwitch must fall within the CIDR block of the VPC to which the vSwitch belongs.
- The subnet mask of the vSwitch must be 16 to 29 bits in length.
- The CIDR block that you specify cannot be the same as or a subset of the CIDR blocks of the existing vSwitches.
- The CIDR block that you specify cannot be the same as the destination CIDR blocks of the routes in the VPC.
- The CIDR block that you specify cannot contain the destination CIDR blocks of the routes in the VPC. However, the CIDR block that you specify can be a subset of the destination CIDR blocks of the routes in the VPC.

For more information, see [Work with vSwitches](#).

3. FAQ about VPC communication

This topic provides answers to some commonly asked questions about virtual private cloud (VPC) communication.

- [In the same VPC, can ECS instances that belong to different vSwitches communicate with each other?](#)
- [Can I connect different VPCs?](#)
- [Do VPCs support leased lines?](#)
- [Do VPCs provide the VPN feature?](#)
- [Can a VPC access Internet services?](#)
- [Can I access cloud resources in a VPC over the Internet?](#)
- [Can a VPC directly communicate with a classic network?](#)

In the same VPC, can ECS instances that belong to different vSwitches communicate with each other?

Yes. In the same VPC, if allowed by security group rules, Elastic Compute Service (ECS) instances can communicate with each other regardless of whether they belong to the same vSwitch.

Can I connect different VPCs?

Yes. Different VPCs are logically isolated from each other. However, you can connect different VPCs through Express Connect, VPN Gateway, or Cloud Enterprise Network (CEN). For more information, see [Grant services access to a private network](#).

Do VPCs support leased lines?

Yes. You can connect a VPC to an on-premises data center through leased lines. For more information, see [Create a dedicated connection over an Express Connect circuit](#).

Do VPCs provide the VPN feature?

Yes. For more information, see [VPN gateways](#).

Can a VPC access Internet services?

Yes. You can allow a VPC to access Internet services by using one of the following methods:

- Assign public IP addresses to the cloud resources in the VPC
- Associate elastic IP addresses (EIPs) with the cloud resources in the VPC
- Configure a NAT gateway

For more information, see [Select a product to gain access to the Internet](#).

Can I access cloud resources in a VPC over the Internet?

Yes. You can access cloud resources in a VPC over the Internet by using one of the following methods:

- Assign public IP addresses to the cloud resources in the VPC
- Associate elastic IP addresses (EIPs) with the cloud resources in the VPC
- Configure a NAT gateway
- Configure a Server Load Balancer (SLB) instance

For more information, see [Select a product to gain access to the Internet](#).

Can a VPC directly communicate with a classic network?

No. However, you can use the following method to assign public IP addresses to the ECS instances in the VPC. This way, the ECS instances in the VPC can communicate with the classic network over the Internet. For more information, see [Select a product to gain access to the Internet](#).

Alternatively, you can use the ClassicLink feature to establish low-latency and high-speed connections between ECS instances in the VPC and the classic network. For more information, see [Overview](#).