Alibaba Cloud
VPN Gateway

IPsec-VPN Quick Start

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus , page names, and other UI elements.	Click OK.
`Courier font`	It is used for commands.	Run the `cd /d C:/windows` command to enter the Windows system folder.
Italics	It is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	It indicates that it is a optional value, and only one item can be selected.	`ipconfig` *[-all|-t]*

Style	Description	Example
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich {stand | slave}`

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1 Tutorial overview

This topic describes how to connect a VPC to an on-premises data center through IPsec-VPN.

Prerequisites

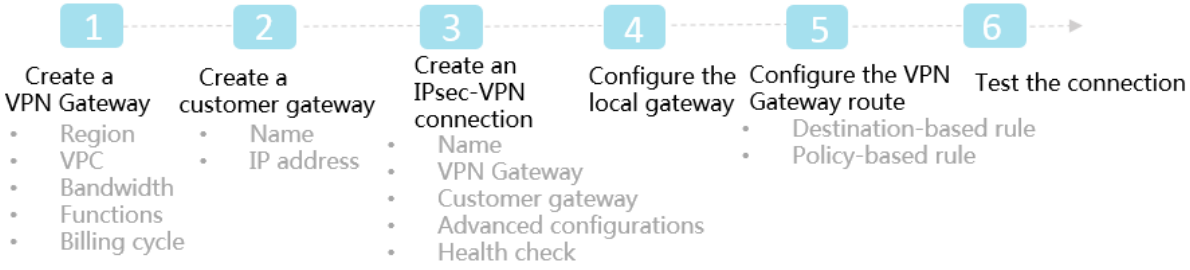
Before creating a site-to-site VPN connection, make sure the following conditions are met:

- The protocols IKEv1 and IKEv2 are supported by the gateway device of the on-premises data center.

  IPsec-VPN supports IKEv1 and IKEv2 protocols. Devices that support these two protocols can connect to Alibaba Cloud VPN Gateway, including devices of Huawei , H3C, Hillstone, SANGFOR, Cisco ASA, Juniper, SonicWall, Nokia, IBM, and Ixia.
- A static public IP address is configured for the local gateway.
- The IP address ranges of the VPC and on-premises data center to be connected do not conflict with each other.

Procedure

The following figure shows the procedure of connecting a VPC to an on-premises data center through IPsec-VPN.



1. Create a VPN Gateway

   Enable the IPsec-VPN function. Up to 10 IPsec-VPN connections can be established in a VPN Gateway.
2. Create a customer gateway

   By creating a customer gateway, you can register the local gateway to Alibaba Cloud and connect the customer gateway to the VPN Gateway. A customer gateway can be connected to multiple VPN Gateways.

3. Create an IPsec connection

   An IPsec connection is a VPN channel established between a VPN Gateway and a customer gateway. The encrypted communication between the VPN Gateway and the on-premises data center can be achieved only after the IPsec connection is established.

4. Configure the local gateway

   You need to load the VPN Gateway configurations to the local gateway device. For more information, see Local CPE configurations.

5. Configure the VPN Gateway route

   You need to configure a route in the VPN Gateway and publish it to the VPC route table. For more information, see #unique_5.

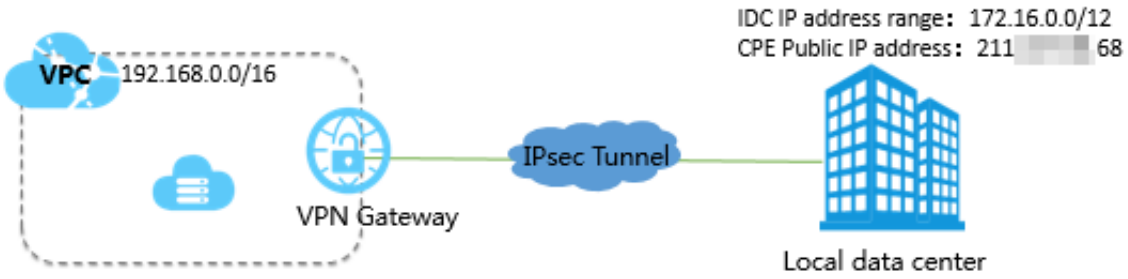
6. Test the connection

   Log on to an ECS instance (without a public IP address) in the connected VPC. `ping` the private IP address of a server in the on-premises data center to check whether the connection is established.

For more information, see #unique_6.

2 Establish a connection between a VPC and an on-premises data center

This topic describes how to use the IPsec-VPN function to establish a connection between a VPC and an on-premises data center.



Prerequisites

Before you can use the IPsec-VPN function to establish a connection between a VPC and an on-premises data center, the following conditions must be met:

- The gateway device of the on-premises data center operates properly. Alibaba Cloud VPN Gateways support standard IKEv1 and IKEv2 protocols. Devices that support these two protocols can connect to Alibaba Cloud VPN Gateways, including devices from Huawei, H3C, Hillstone, SANGFOR, Cisco ASA, Juniper, SonicWall, Nokia, IBM, and Ixia.
- A static public IP address is configured for the gateway device of the on-premises data center.
- The CIDR block of the on-premises data center does not overlap the CIDR block of the VPC.

Step 1: Create a VPN Gateway

To create a VPN Gateway, follow these steps:

1. Log on to the VPC console.
2. In the left-side navigation pane, choose VPN > VPN Gateways.
3. On the VPN Gateways page, click Create VPN Gateway.

4. On the purchase page, set the parameters, and then click Buy Now to complete the payment.
   - Name: Enter a name for the VPN Gateway.
   - Region: Select a region for the VPN Gateway.

     Note:
     The VPN Gateway must be in the same region as the VPC.
   - VPC: Select the VPC to be connected.
   - Peak Bandwidth: Select a peak bandwidth. The bandwidth is the Internet bandwidth of the VPN Gateway.
   - IPsec-VPN: Enable the IPsec-VPN function.
   - SSL-VPN: Select whether to enable the SSL-VPN function. The SSL-VPN function allows access to the VPC from a computer anywhere.
   - SSL connections: Select the maximum number of clients to which you want to connect simultaneously.

     Note:
     This parameter is valid only after the SSL-VPN function is enabled.
   - Billing Cycle: Select a billing cycle.
5. Go back to the VPN Gateways page to check the created VPN Gateway.

   The initial status of the VPN Gateway is Preparing. The status changes to Normal in about two minutes and then the VPN Gateway is ready to use.

   Note:
   It takes one to five minutes to create a VPN Gateway.

Step 2: Create a customer gateway

To create a customer gateway, follow these steps:

1. In the left-side navigation pane, choose VPN > Cusomer Gateways.
2. Select the region in which you want to create a customer gateway.
3. On the Customer Gateways page, click Create Customer Gateway.

4. On the Create Customer Gateway page, set the parameters, and then click OK.
   - Name: Enter a name for the customer gateway.
   - IP Address: Enter the private IP address of the gateway device in the on-premises data center.
   - Description: Enter a description of the customer gateway.

Step 3: Create an IPsec connection

To create an IPsec connection, follow these steps:

1. In the left-side navigation pane, choose VPN > IPsec Connections.
2. Select the region in which you want to create an IPsec connection.
3. On the IPsec Connections page, click Create IPsec Connection.
4. On the Create IPsec Connection page, set the parameters, and then click OK.
   - Name: Enter a name for the IPsec connection.
   - VPN Gateway: Select the created VPN Gateway.
   - Customer Gateway: Select the customer gateway to be connected.
   - Local Network: Enter the CIDR block of the VPC to which the selected VPN Gateway belongs.
   - Remote Network: Enter the CIDR block of the on-premises data center.
   - Effective Immediately: Select whether to negotiate immediately.
     - Yes: Both ends of the IPsec connection negotiate immediately after the configuration is completed.
     - No: Both ends of the IPsec connection negotiate only when traffic is detected in the tunnel.
   - Pre-Shared Key: Enter a pre-shared key. It must be the same as that configured for the local gateway.

     Use the default settings for other parameters.

Step 4: Load the VPN configuration to the local gateway

To load the VPN configuration to the local gateway, follow these steps:

1. In the left-side navigation pane, choose VPN > IPsec Connections.
2. Select the region to which the target IPsec connection belongs.
3. On the IPsec Connections page, find the target IPsec connection, and then click Download Configuration in the Actions column.

4. Add the downloaded configuration to the local gateway device. For more information, see Local gateway configuration.

   RemotSubnet and LocalSubnet are opposite to the Local Network and Remote Network that you set when you create an IPsec connection in Step 3. Specifically, for the VPN Gateway, its remote network is the CIDR block of the on-premises data center and its local network is the CIDR block of the VPC. For the local gateway, LocalSubnet is the CIDR block of the on-premises data center and RemoteSubnet is the CIDR block of the VPC.

Step 5: Configure a route for the VPN Gateway

To configure a route for the VPN Gateway, follow these steps:

1. In the left-side navigation pane, choose VPN > VPN Gateways.
2. Select the region to which the target VPN gateway belongs.
3. On the VPN Gateways page, find the target VPN Gateway, and then click the instance ID in the Instance ID/Name column.
4. On the Destination-based Routing tab, click Add Route Entry.
5. On the Add Route Entry page, set the parameters, and then click OK.
   - Destination CIDR Block: Enter the private CIDR block of the on-premises data center.
   - Next Hop: Select the IPsec connection instance.
   - Publish to VPC: Select whether to publish the new route to the VPC route table. In this example, select Yes.
   - Weight: Select a weight. In this example, select 100.

Step 6: Test the connection

Log on to an ECS instance (without a public IP address) in the connected VPC. Use the `ping` command to `ping` the private IP address of a server in the on-premises data center to check whether the connection is established.