Direct Connect

Getting Started

Issue 01

Date 2026-01-28

HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

Trademarks and Permissions


and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.
All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: https://www.huaweicloud.com/intl/en-us/

Contents

1 Using Direct Connect to Connect an On-Premises Data Center to the Cloud

1.1 Solution Overview

When servers in your on-premises data center or a private cloud need to communicate with cloud servers in a VPC, you can create a Direct Connect connection on the console to establish connectivity between them.

NOTE

The telecom carrier needs to perform a site survey and lay the leased line, which takes about two or three months. Make sure that you leave enough time for the project.

Process

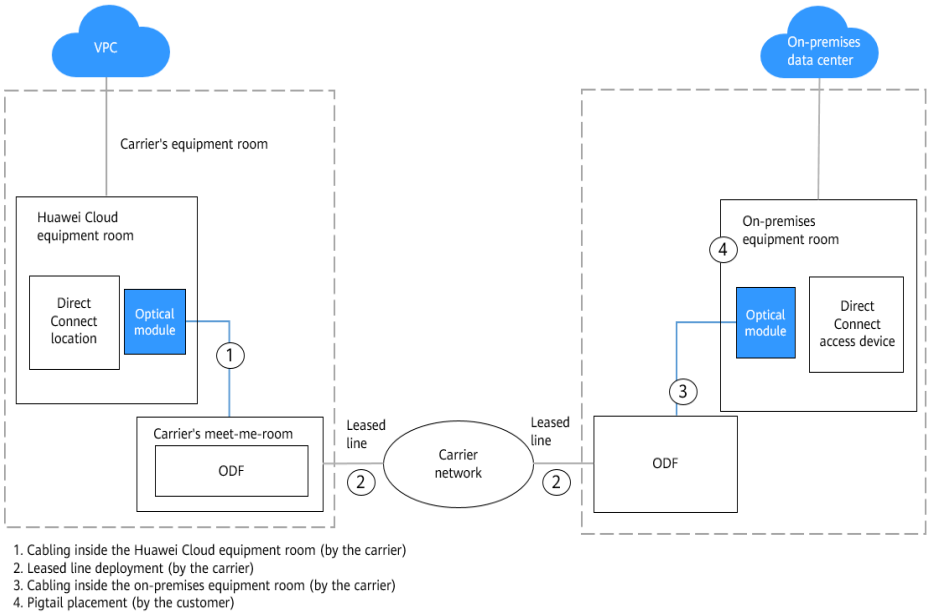
Step	Description
Preparations	Before creating Direct Connect connections, sign up for a HUAWEI ID, enable cloud services, complete real-name authentication, top up your account, confirm the Direct Connect locations, confirm the port availability, contact the carrier to complete the site survey, and confirm the prices.
Step 1: Create a Connection	Create a connection to order a dedicated port and work with the carrier to connect the leased line to the cloud. This process involves operations of the customer, carrier, and Huawei Cloud. The operation instructions and the progress of each phase will be displayed on the console.
Step 2: Create a Virtual Gateway	Create a virtual gateway and associate it with the VPC that you need to access.

Step	Description
Step 3: Create a Virtual Interface	After the connection and the gateway are ready, create a virtual interface so that your on-premises network can access the VPC.
Step 4: Configure Routes	After your on-premises network is connected to Huawei Cloud, configure routes on your on-premises network device.

The leased line construction process varies depending on the networking topology. The following figures show two common networking topologies. Consult your carrier about the actual networking topology.

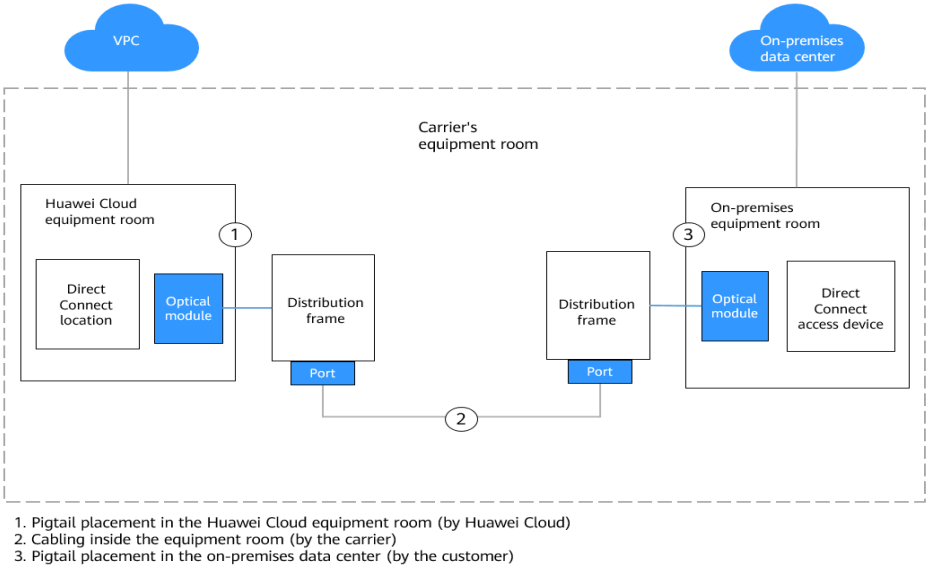
- **Figure 1-1** shows the networking topology for establishing connectivity when your on-premises equipment room is in a different campus from that of the Direct Connect location.

  Figure 1-1 Networking topology



- **Figure 1-2** shows the networking topology for establishing connectivity when your on-premises equipment room is in the same campus as that of the Direct Connect location.

Figure 1-2 Networking topology



1.2 Preparations

Before creating resources such as connections, sign up for a HUAWEI ID, enable cloud services, complete real-name authentication, top up your account, confirm the Direct Connect locations, and complete the site survey.

Signing Up for a HUAWEI ID and Completing Real-Name Authentication

To access the Direct Connect console, you need an account. If you do not have an account, sign up for one.

For details, see and **Completing Real-Name Authentication**.

If you have enabled Huawei Cloud services and completed real-name authentication, skip this step.

Selecting a Direct Connect Location

When selecting a location, you need to consider the distance to your on-premises data center, which carrier you want to choose, and which type of port will be used.

- Distance to your on-premises data center

  Select a location nearest to your on-premises data center to reduce network latency. The telecom carriers and bandwidth capabilities vary at different locations.

- Carrier

  Select a carrier that can lease a line to you based on your requirements.

- Port type

  Decide what type of port you want to use, an optical port or electrical port.

  - Optical port: The carrier directly provides a fiber optic transmission path for the end user. The port speed is effectively infinite, only limited by the auto-negotiation rate of the optical modules at both ends, for example, 1GE, 10GE, 40GE, and 100GE.

- Electrical port: Generally, RJ45 ports are used. The carrier uses an optical transceiver to convert electrical signals to optical signals required on the transmission network. The industry standard is to use this type of port when the bandwidth is less than 100 Mbit/s.

  NOTE

  - Currently, 1GE and 10GE single-mode optical ports can transmit data up to 10 km. If you need an optical port to transmit data for more than 10 km, or you need a 40GE or 100GE port, you need to purchase the optical modules by yourself.
  - Ensure that the leased line provider can provide the optical fibers to connect to Direct Connect devices.
  - No O/E conversion device is allowed on Huawei Cloud. Ensure that the leased line provider uses the correct line type to connect to Direct Connect devices.

To obtain the detailed address of a Direct Connect location, contact the Direct Connect manager or **submit a service ticket**.

Contacting the Carrier for Site Survey

After you select a location, contact the carrier for a site survey.

1. Consult the carrier about how to access the cloud.

   You can contact the Direct Connect manager or **submit a service ticket** to obtain the detailed address of the equipment room.

2. Submit an application to Huawei Cloud for conducting a site survey in the equipment room.

   The application must include the name, ID card number, and contact information of the personnel who will go to the equipment room for the site survey.

   CAUTION

   During the site survey, the construction party only needs to apply to the equipment room supplier for entering the carrier's meet-me room for the site survey.

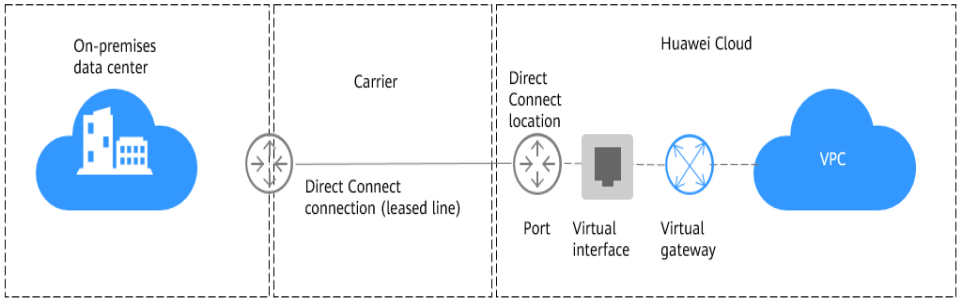
3. After the application is approved, Huawei Cloud will assist the carrier in entering the equipment room for completing the site survey within two working days.
4. Ask the carrier to carry out the site survey and confirm the expenses, including those for:
   - The port (paid to Huawei Cloud) and one-time setup (free for now)
   - The leased line (paid to the carrier)
   - In-building cabling

1.3 Step 1: Create a Connection

You can choose self-service installation or full-service installation.

Figure 1-3 shows how Direct Connect connects your on-premises data center to a VPC.

Figure 1-3 Connecting your on-premises data center to a VPC



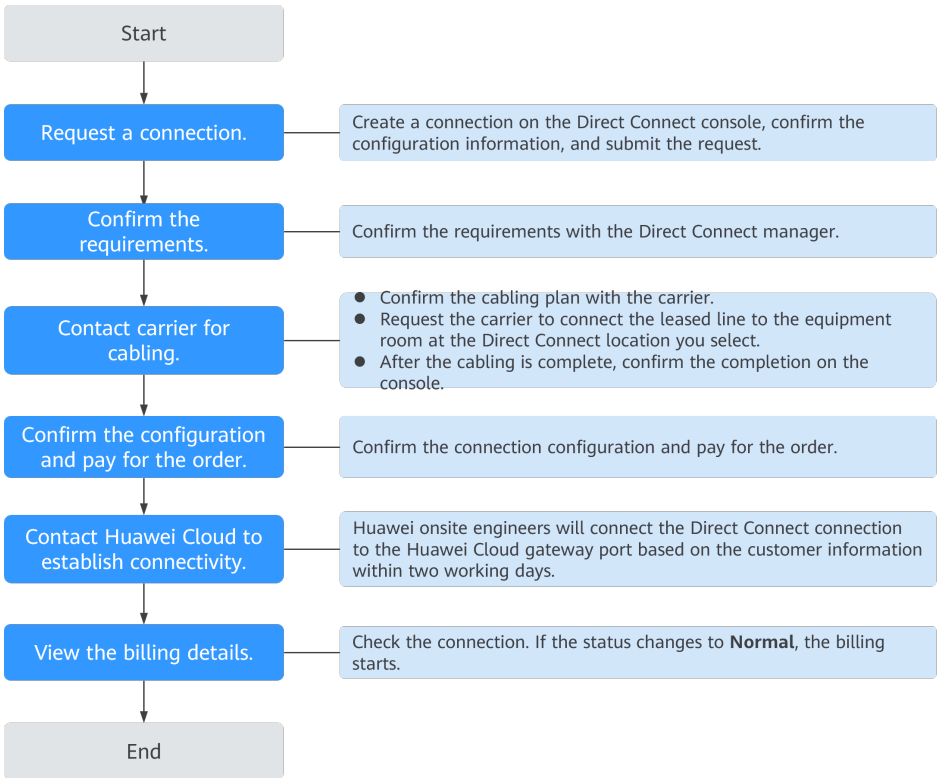
Self-Service Installation

- **Scenario**

  You need to create a connection to connect your on-premises data center to the Direct Connect location you have selected to build a hybrid cloud.

  After you create a connection on the console, Huawei Cloud will provide a dedicated port for exclusive use. To establish connectivity, you need to contact the carrier to connect the leased line to the Direct Connect location you have selected.

  Figure 1-4 Self-service installation process



- **Procedure**

  a. Go to the **Connections** page.

b. In the upper left corner of the page, click  and select a region and project.

c. In the upper right corner, click **Create Connection**.

d. On the **Create Connection** page, enter the equipment room details and select the Direct Connect location and port based on **Table 1-1**.

Figure 1-5 Creating a connection

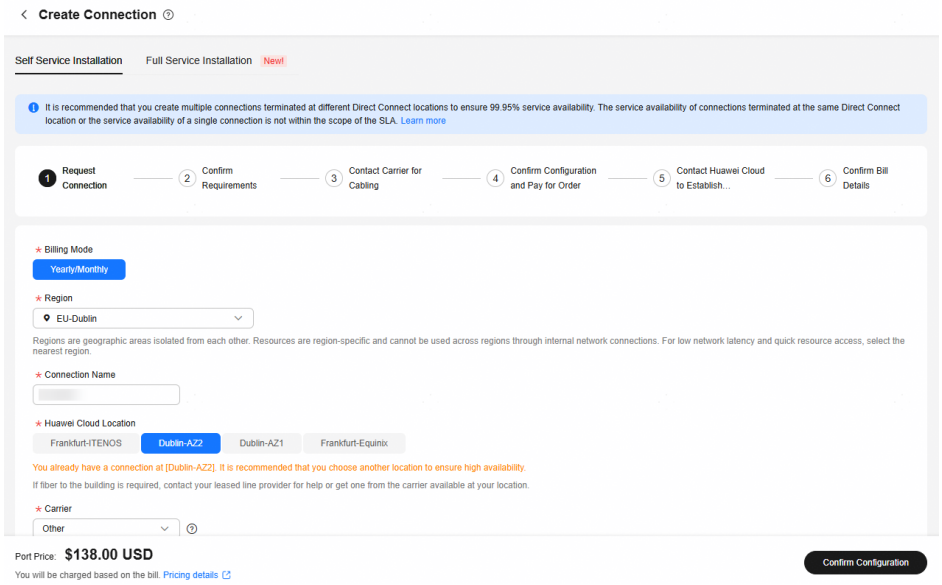


Table 1-1 Parameters for creating a connection

Parameter	Example Value	Description
Billing Mode	Yearly/Monthly	Specifies how you will be billed for the connection. Currently, only **Yearly/Monthly** is supported.
Region	EU-Dublin	Specifies the region where the connection resides. You can also change the region in the upper left corner of the console.
Connection Name	dc-123	Specifies the name of the connection.
Location	Dublin-AZ2	Specifies the Direct Connect location where your leased line can be connected to.
Carrier	Other	Specifies the carrier that provides the leased line.

Parameter	Example Value	Description
Port Type	1GE single-mode optical port	Specifies the type of the port: 1GE single-mode optical port, 10GE single-mode optical port, 40GE single-mode optical port, or 100GE single-mode optical port.
Leased Line Bandwidth (Mbit/s)	100	Specifies the bandwidth of the line you need to lease from the carrier.
Equipment Room Address	Room xx, xx building, xx road, xx district, xx city	Specifies the address of your equipment room. The address must be specific to the floor your equipment room is on.
Tag	example_key1 example_value1	Adds tags to help you identify your connection. You can change them after the connection is created.
Description	-	Provides supplementary information about the connection.
Required Duration	3 months	Specifies how long the connection will be used for.
Auto-renew	3 months	Specifies whether to automatically renew the subscription to ensure service continuity. For example, if you select this option and the required duration is three months, the system automatically renews the subscription for another three months.
Enterprise Project	default	Specifies the enterprise project by which connections are centrally managed. Select an existing enterprise project.

e. Click **Confirm Configuration**.

f. Confirm the configuration and click **Submit**.

Then confirm the requirements with the Direct Connect manager.

If the request is not approved, repeat **c** to **f** based on the review comments and submit the request again.

g. After the request is approved, contact the carrier for cabling.

After the cabling is complete, locate the connection in the connection list and click **Confirm Cabling** in the **Operation** column.

h. In the displayed dialog box, click **OK**.

i. In the connection list, locate the connection and click **Confirm Configuration** in the **Operation** column.
j. Confirm the configuration and click **Pay Now**.
k. Confirm the order, select a payment method, and click **Confirm**.
l. Wait for Huawei Cloud to complete the construction.

   Huawei onsite engineers will connect the leased line to the port on the Huawei Cloud gateway based on the customer's information within two working days.
m. Verify that the connection is in the **Normal** state, which means that the connection is ready, and the billing starts.

NOTE

After the connection is ready, you need to create a virtual gateway and associate it with the VPC you want to access on the **Virtual Gateways** page.

Create a virtual interface to associate the connection with the created virtual gateway, so that you can connect your on-premises data center to the VPC through the connection.

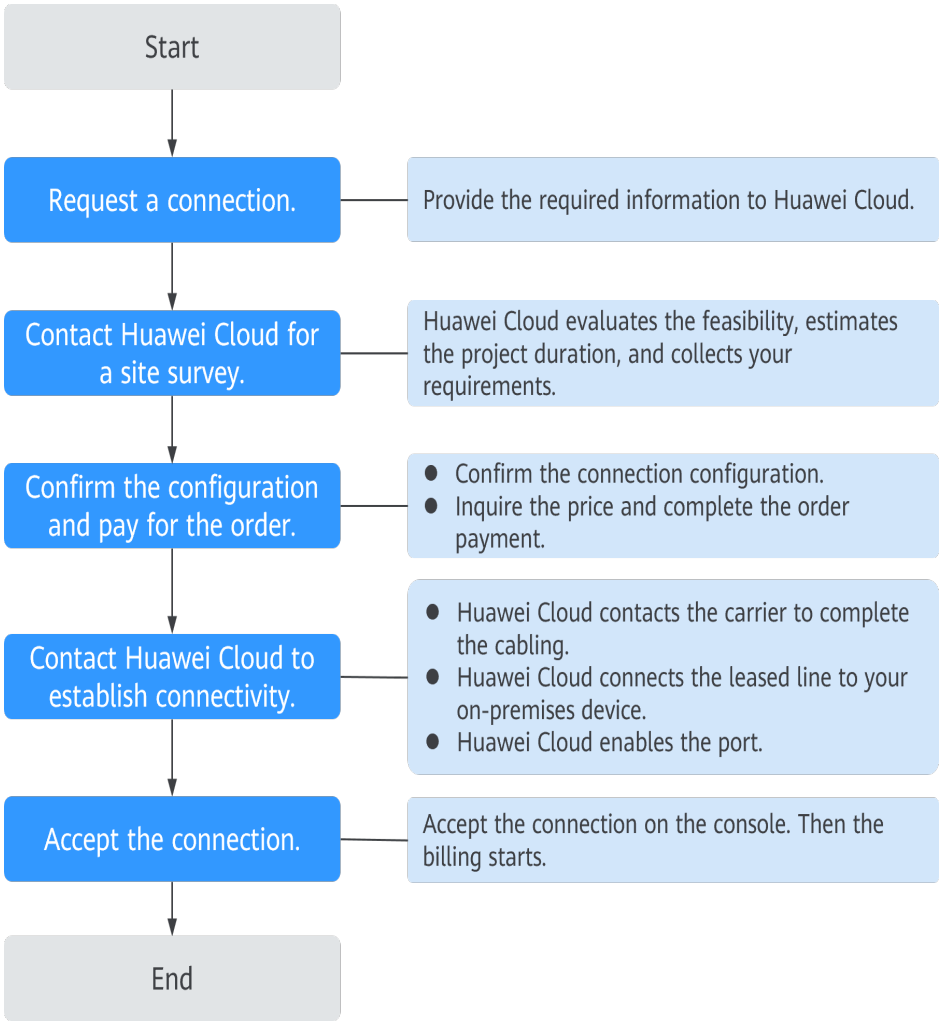
Full-Service Installation

- **Scenario**

  Huawei Cloud completes all operations required for connecting your on-premises data center to the cloud, including integrating the network resources and ports.

  Figure 1-6 shows the entire process.

Figure 1-6 Full-service installation process



- **Procedure**

  a. Submit your request.

     i. Go to the **Connections** page.

     ii. In the upper left corner of the page, click  and select a region and project.

     iii. In the upper right corner, click **Create Connection**.

     iv. Click **Full Service Installation**.

     v. Provide information about your equipment room and select a Huawei Cloud location. For details about the parameters, see **Table 1-2**.

Figure 1-7 Full-Service Installation

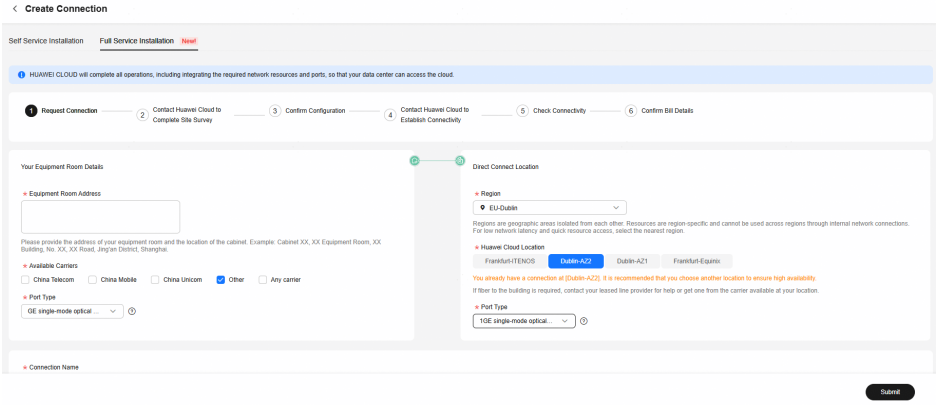


Table 1-2 Parameters for creating a connection

Parameter	Example Value	Description
Equipment Room Address	Room xx, xx building, xx road, xx district, xx city	Specifies the address of your equipment room. The address must be specific to the floor your equipment room is on.
Available Carriers	Other	Specifies the carriers that are allowed to enter your equipment room.
Port Type	GE single-mode optical port	Specifies the type of port on the device in your equipment room for connecting to the leased line.
Region	EU-Dublin	Specifies the region where the connection resides. You can also change the region in the upper left corner of the console.
Location	Dublin-AZ2	Specifies the Direct Connect location where your leased line can be connected to.
Port Type	GE single-mode optical port	Specifies the type of the port. You can select **1GE single-mode optical port**, **10GE single-mode optical port**, **40GE single-mode optical port**, or **100GE single-mode optical port**.
Connection Name	dc-123	Specifies the name of your connection.

Parameter	Example Value	Description
Billing Mode	Yearly/Monthly	Specifies how you will be billed for the connection. Currently, only **Yearly/Monthly** is supported.
Leased Line Bandwidth (Mbit/s)	1,000	Specifies the bandwidth of the leased line.
Required Duration	1 year	Specifies how long the connection will be used for.
Tag	example_key1 example_value1	Adds tags to help you identify your connection. You can change them after the connection is created.
Enterprise Project	default	Specifies the enterprise project by which connections are centrally managed. Select an existing enterprise project.
Contact Person/Phone Number/Email	Tom +86 139xxxxxxxx Tom@mail.com	Specifies who is responsible for your connection. **CAUTION** If no contact information is provided, we will contact the person in your account information. This will prolong the review period.

vi. Click **Submit**.

b. Wait for Huawei Cloud's site survey.

Huawei Cloud evaluates your requirements and the carrier's resources and confirms whether your requirements can be met. If your requirements can be met, Huawei Cloud will place an order for you.

NOTE

Generally, the site survey takes three working days.

c. Confirm and pay for the order.

i. In the connection list, locate the connection and click **Confirm Configuration** in the **Operation** column.

ii. Confirm the connection configuration and expenses, and then click **Next**.

NOTE

You need to read and agree to the **Full-Service Installation Statement** before paying for the order.

iii. On the purchase page, select a payment mode and click **Pay**.

> **NOTE**
>
> If you select **Download Contract**, download a contract on the contract page and complete the payment. Discounts, if any, will automatically apply.

d. Wait for Huawei Cloud to complete the following work:
   i. Contacts the carrier to deploy the leased line.
   ii. Connects your on-premises data center to the cloud using the leased line.
   iii. Contacts the carrier to complete in-building cabling.

   > **NOTE**
   >
   > This step is required when you choose a full-service connection with a dedicated port and need cabling for your site.

   iv. Enables the port.
e. Confirm that you want to enable Direct Connect.
   i. In the connection list, locate the connection and click **Confirm Completion** in the **Operation** column.
   ii. Click **OK**. Confirm that your connection is available for use, and the billing starts.

1.4 Step 2: Create a Virtual Gateway

Scenario

You can create a virtual gateway and associate it with the VPC that you need to access.

Procedure

1. Go to the **Virtual Gateways** page.
2. In the upper left corner of the page, click  and select a region and project.
3. In the upper right corner, click **Create Virtual Gateway**.
4. Configure the parameters based on **Table 1-3**.

Figure 1-8 Creating a virtual gateway

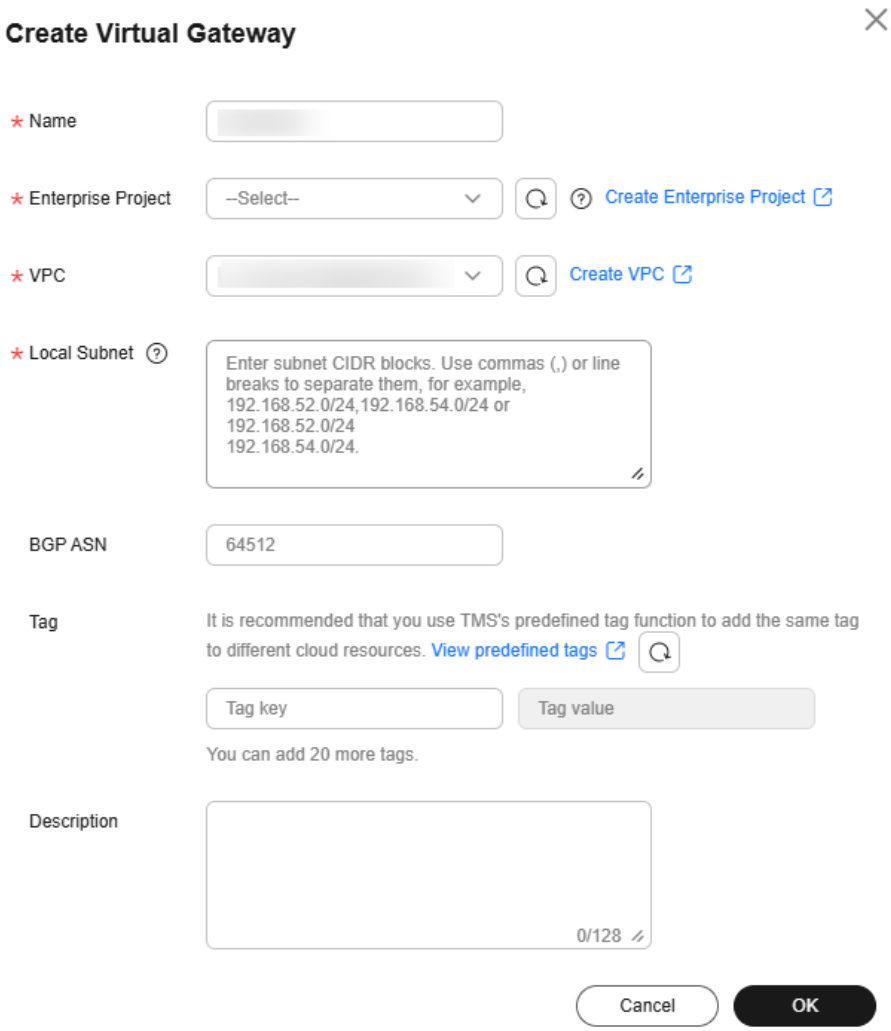


Table 1-3 Parameters required for creating a virtual gateway

Parameter	Example Value	Description
Name	vgw-123	Specifies the virtual gateway name. The name can contain 1 to 64 characters.
Enterprise Project	default	Specifies the enterprise project by which virtual gateways are centrally managed. Select an existing enterprise project.
VPC	VPC-001	Specifies the VPC to be associated with the virtual gateway.

Parameter	Example Value	Description
Local Subnet	192.168.0.0/16	Specifies the CIDR blocks of the subnets in the VPC to be accessed using Direct Connect. You can add one or more CIDR blocks. If there are multiple CIDR blocks, separate every entry with a comma (,).
BGP ASN	64512	Specifies the BGP ASN of the virtual gateway.
Tag	example_key1 example_value1	Adds tags to help you identify your virtual gateway. You can change them after the virtual gateway is created.
Description	-	Provides supplementary information about the virtual gateway.

5. Click **OK**.
   When the status changes to **Normal**, the virtual gateway has been created.

1.5 Step 3: Create a Virtual Interface

Scenario

After the connection and the gateway are ready, you need to create a virtual interface so that your network can access the VPC.

Procedure

1. Go to the **Virtual Interfaces** page.
2. In the upper left corner of the page, click  and select a region and project.
3. In the upper right corner, click **Create Virtual Interface**.
   Configure the parameters based on **Table 1-4**.

Figure 1-9 Creating a virtual interface

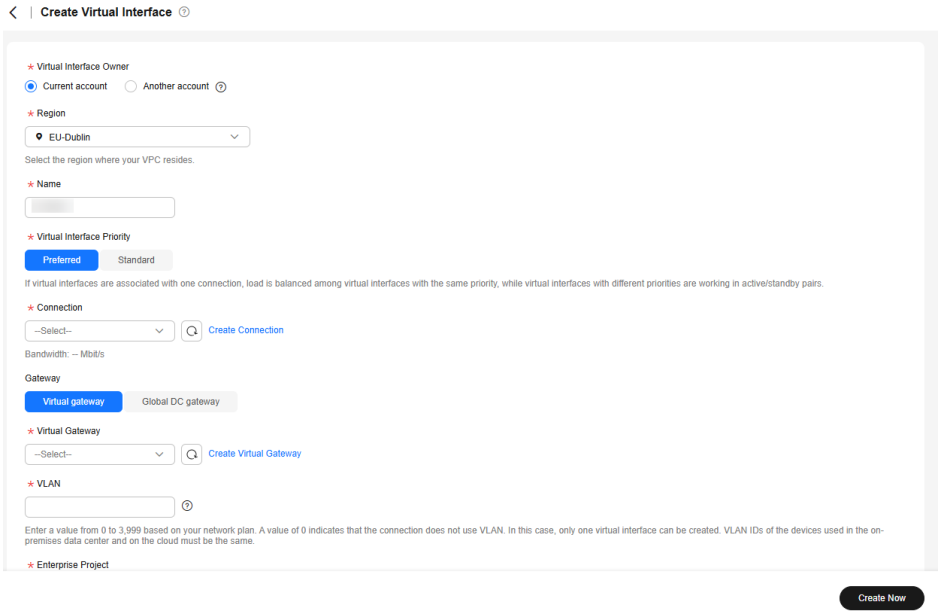


Table 1-4 Parameters for creating a virtual interface

Parameter	Example Value	Description
Virtual Interface Owner	Current account	Specifies the account that this virtual interface will be created for. There are two options: • **Current account**: You create a virtual interface for the current account. • **Another account**: You create a virtual interface for another account so that this account can use your connection to access the VPC from the on-premises data center. Select **Current account** in this example.
Region	EU-Dublin	Specifies the region where the connection resides. You can also change the region in the upper left corner of the console.
Name	vif-123	Specifies the virtual interface name. The name can contain 1 to 64 characters.

Parameter	Example Value	Description
Virtual Interface Priority	Preferred	Specifies whether the virtual interface will be preferentially used over other virtual interfaces. There are two options: **Preferred** and **Standard**. If multiple virtual interfaces are associated with one Direct Connect device, the load is balanced among virtual interfaces with the same priority, while virtual interfaces with different priorities are working in active/standby pairs.
Connection	dc-123	Specifies the connection you can use to connect your on-premises network to Huawei Cloud.
Gateway	Virtual gateway	Specifies the type of the gateway that the virtual interface connects to. You can select a virtual gateway or global DC gateway.
Virtual Gateway	vgw-123	This parameter is mandatory when **Virtual Interface Owner** is set to **Current account** and **Gateway** is set to **Virtual gateway**. Select a virtual gateway that the virtual interface connects to.
Global DC Gateway	dgw-123	This parameter is mandatory when **Virtual Interface Owner** is set to **Current account** and **Gateway** is set to **Global DC gateway**. Select a global DC gateway that the virtual interface connects to.
Project ID	-	Specifies the ID of the project that the virtual gateway belongs to. This parameter is mandatory when **Virtual Interface Owner** is set to **Another account** and **Gateway** is set to **Virtual gateway**. On the management console, hover the cursor on the account name in the upper right corner and select **My Credentials**. On the **My Credentials** page, view the project ID.

Parameter	Example Value	Description
ID	-	Specifies the ID of the virtual gateway. This parameter is mandatory when **Virtual Interface Owner** is set to **Another account** and **Gateway** is set to **Virtual gateway**. In the virtual gateway list, hover the cursor on the virtual gateway name and view the name and ID of the virtual gateway.
Project ID	-	Specifies the ID of the project that the global DC gateway belongs to. This parameter is mandatory when **Virtual Interface Owner** is set to **Another account** and **Gateway** is set to **Global DC gateway**. On the management console, hover the cursor on the account name in the upper right corner and select **My Credentials**. On the **My Credentials** page, view the project ID.
Global DC Gateway ID	-	Specifies the ID of the global DC gateway. This parameter is mandatory when **Virtual Interface Owner** is set to **Another account** and **Gateway** is set to **Global DC gateway**. In the global DC gateway list, hover the cursor over the global DC gateway name and view the name and ID of the global DC gateway.
VLAN	30	Specifies the ID of the VLAN for the virtual interface. You need to configure the VLAN if you create a standard connection. The VLAN for a hosted connection will be allocated by the partner. You do not need to configure the VLAN.
Bandwidth (Mbit/s)	50 Mbit/s	Specifies the bandwidth that can be used by the virtual interface. The bandwidth cannot exceed that of the connection.

Parameter	Example Value	Description
Enable Rate Limiting	Not enabled	Limits the highest bandwidth that can be used by the virtual interface. If this option is enabled, the rate limit gradients are as follows: • If the bandwidth is less than or equal to 100 Mbit/s, the rate limit gradient is 10 Mbit/s. • If the bandwidth is greater than 100 Mbit/s but is less than or equal to 1,000 Mbit/s, the rate limit gradient is 100 Mbit/s. • If the bandwidth is greater than 1,000 Mbit/s but is less than or equal to 100 Gbit/s, the rate limit gradient is 1 Gbit/s. • If the bandwidth is greater than 100 Gbit/s, the rate limit gradient is 10 Gbit/s. For example, if the bandwidth is 52 Mbit/s, the actual rate limit is 60 Mbit/s. If the bandwidth is 115 Mbit/s, the actual rate limit is 200 Mbit/s.
Enterprise Project	default	Specifies the enterprise project by which virtual interfaces are centrally managed. Select an existing enterprise project.
Tag	example_key1 example_value 1	Adds tags to help you identify your virtual interface. You can change them after the virtual interface is created.
IP Address Family	IPv4	Specifies the address type of the virtual interface. **IPv4** is selected by default.
Local Gateway	10.0.0.1/30	Specifies the IP address used by Huawei Cloud to connect to your on-premises network. After you configure **Local Gateway** on the console, the configuration will be automatically delivered to the gateway used by Huawei Cloud.

Parameter	Example Value	Description
Remote Gateway	10.0.0.2/30	Specifies the IP address used by the on-premises data center to connect to Huawei Cloud. After you configure **Remote Gateway** on the console, you need to configure the IP address on the interface of the on-premises device. **CAUTION** The IP addresses of the local gateway and remote gateway must be in the same IP address range. Generally, an IP address range with a 30-bit mask is used. The IP addresses you plan cannot conflict with IP addresses used on your on-premises network. Plan an IP address range that will be used at both ends of the connection for network communications between your on-premises data center and the cloud.
Routing Mode	BGP	Specifies whether static routing or BGP routing is used to route traffic between your on-premises network and the cloud network. If there are or will be two or more connections, select BGP routing for higher availability.
Remote Subnet	192.168.51.0/24, 10.1.123.0/24	Specifies the subnets and masks of your on-premises network. If there are multiple subnets, use commas (,) to separate them. This parameter is required when static routing is selected.
BGP ASN	12345	Specifies the autonomous system number (ASN) of the BGP peer. This parameter is required when BGP routing is selected.

Parameter	Example Value	Description
BGP MD5 Authentication Key	Qaz12345678	Specifies the password used to authenticate the BGP peer using MD5. This parameter can be set when BGP routing is selected, and the parameter values on both gateways must be the same. The key contains 8 to 255 characters and must contain at least two types of the following characters: • Uppercase letters • Lowercase letters • Digits • Special characters ~!,.:;-_"(){}[]/@#$%^&*+|=
Description	-	Provides supplementary information about the virtual interface.

NOTE

When you configure the local and remote gateways, note the following:

- The local gateway is used by Huawei Cloud for connecting to your equipment room. After you configure **Local Gateway** on the console, the configuration will be automatically delivered to the gateway used by Huawei Cloud.
- The remote gateway is used by your equipment room for connecting to Huawei Cloud. After you configure **Remote Gateway** on the console, you also need to configure the gateway deployed in your equipment room.
- The local and remote gateways must use the same CIDR block and cannot conflict with service IP addresses on the network.

4. Click **Create Now**. When the status of the virtual interface changes to **Normal**, the virtual interface has been created.

   Ping the IP address of a server in the VPC from your on-premises data center to test network connectivity. If the test is successful, your on-premises data center can connect to Huawei Cloud and access the desired VPC.

1.6 Step 4: Configure Routes

After your on-premises network is connected to Huawei Cloud, you need to configure routes on your on-premises network device.

For details about how to configure static routes, see **Connecting an On-Premises Data Center to a VPC over a Single Connection and Using Static Routing to Route Traffic**.

For details about how to configure BGP routes, see **Connecting an On-Premises Data Center to a VPC over a Single Connection and Using BGP Routing to Route Traffic**.

2 Using Enterprise Router and Direct Connect Global DC Gateway to Connect an On-Premises Data Center to the Cloud

Direct Connect establishes a dedicated, secure, stable, low-latency, and high-speed network connection between your on-premises data center and VPCs. Direct Connect allows you to use global DC gateways to build a large-scale hybrid cloud network globally.

Enterprise Router helps choose the fastest possible route dynamically and switch between Direct Connect connections. It balances the load among connections and fully uses the network bandwidth. This makes network transmission faster, more reliable, and better performing.

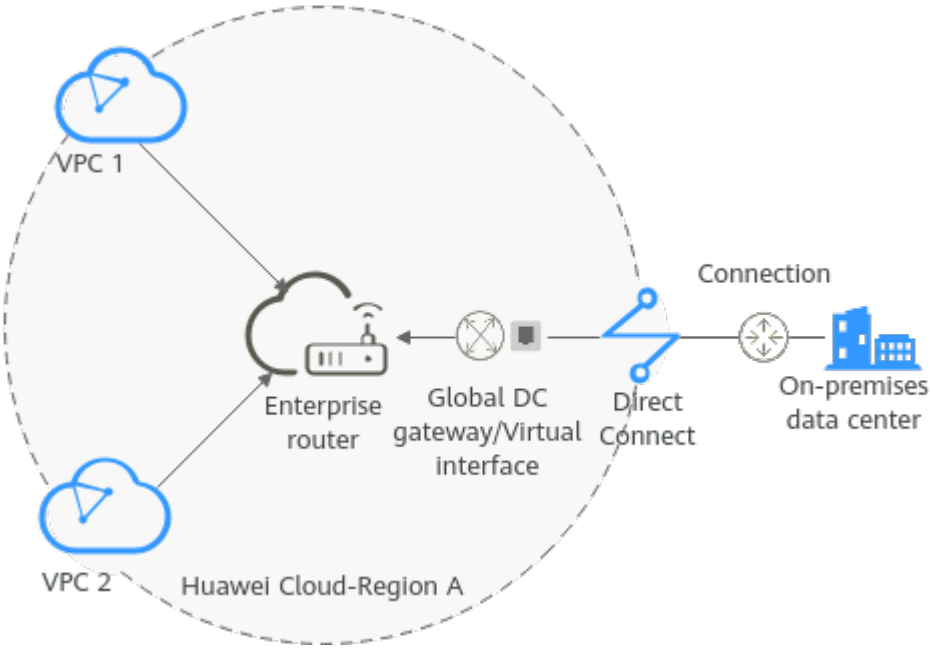
In this section, an enterprise router and a global DC gateway are used together to allow an on-premises data center to access the VPCs.

Architecture

Suppose your enterprise has deployed two VPCs in a region. The two VPCs need to communicate with each other and communicate with your on-premises data center through a global DC gateway.

For this to work, you can create an enterprise router in the region and attach the VPCs and the global DC gateway to the enterprise router. The enterprise router can forward traffic between the VPCs and the global DC gateway.

Figure 2-1 Hybrid cloud network that you set up using an enterprise router and a global DC gateway



Procedure

For details, see **Setting Up a Hybrid Cloud Network Using Enterprise Router and Direct Connect (Global DC Gateway)**.

