Alibaba Cloud
Express Connect

Getting Started (New Console)

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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}*

Contents

1 Establish a physical connection

This topic describes the physical connection methods you can use to access Alibaba
Cloud through Express Connect. Specifically, you can apply for a dedicated physical
line from your service provider or providers, or use Express Cloud Connect (ECC).

Use Express Cloud Connect

You can connect to Alibaba Cloud through ECC and an Internet connection, as shown
in the following figure.
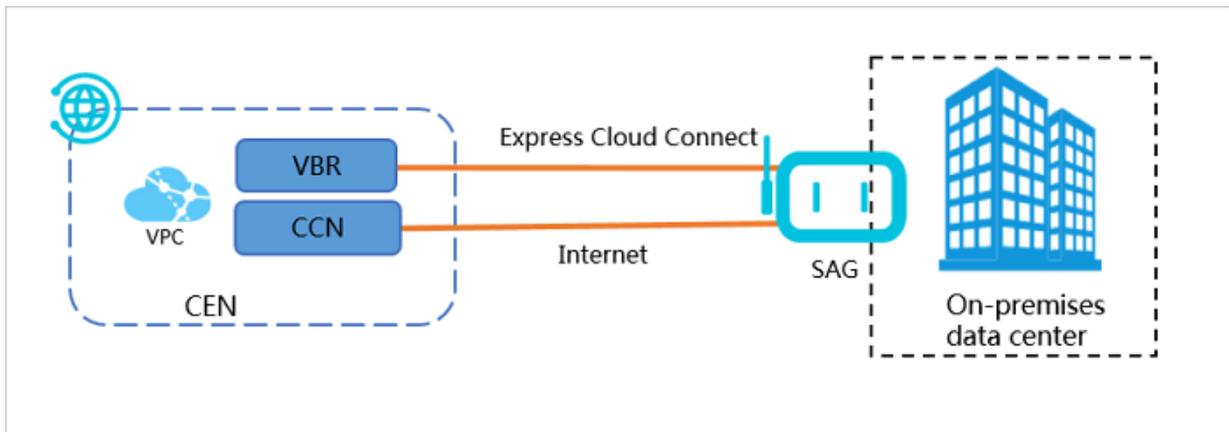
Apply for a dedicated physical line

You can apply for a dedicated physical line from your service provider or providers,
and connect your on-premises data center to an Alibaba Cloud access point
through this dedicated line. This physical connection method needs to occupy a

physical port of Alibaba Cloud. The following figure shows the overall connection

process.
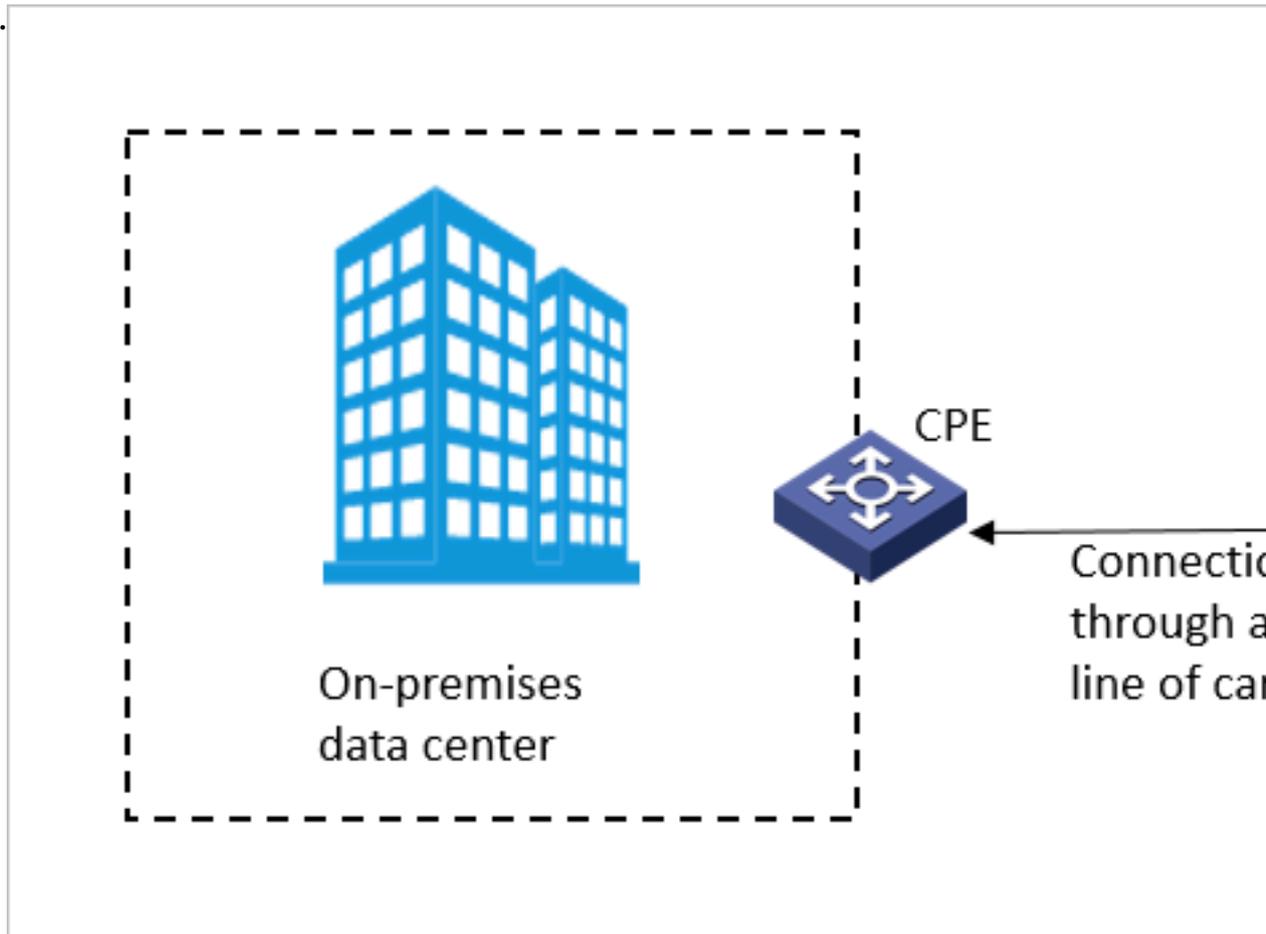
Differences between the two physical connection methods

Item	ECC	Dedicated line
User experience	ECC provides you with an end-to -end cloud access service, which covers the whole connection process from access equipment debug, connection of user-side data centers with Alibaba Cloud -side data centers, and cloud- side configurations. You do not need to apply for a dedicated line from service providers.	Multiple parties are involved.

Item	ECC	Dedicated line
Function	· SD-WAN technology: high reliability through backup bandwidth and links; simplified operation and maintenance through centralized configuration and monitoring; high security through encrypted links. · Alibaba Cloud services: OSS, DTS, RDS, DNS, and NAT.	Connects on-premises data centers and VPCs.
Billing	ECC is based on Smart Access Gateway. No initial installation fee, resource occupation fee, or outbound traffic fee is charged. Only ECC service fee is charged. For more information, see Billing of Express Cloud Connect instances	An initial installation fee (one-time charge) and a resource occupation fee (on a monthly basis) are charged by Alibaba Cloud. Other construction and bandwidth rental fees are charged by the service provider. For more information, see Billing of physical connections.
Process	For detailed procedures, see Activate Express Cloud Connect.	For detailed procedures, see Apply for a physical connection interface.

2 Select an access point

This topic describes how to select a suitable access point. When you apply for a physical connection interface, you need to select an Alibaba Cloud access point. To select a suitable access point, you must consider some factors, such as the region, service provider, and port.

Scenario

In this example, an on-premises data center needs to connect to an Alibaba Cloud VPC that belongs to the China (Beijing) region. The on-premises data center is located in Beijing Yizhuang and run by China Unicom. The connection needs a 10 Gbit/s bandwidth.

For more information about how to apply for a physical connection interface, see #unique_9.

Step 1 Select a region

When you select an access point, you need to first select a region. We recommend that you select a region that is closest in geographic proximity to your on-premises data center. In this example, select China (Beijing).

Note that different access points have different service providers and connection bandwidths. The purchase page displays available service providers and bandwidth values.

Step 2 Select a service provider

After selecting the region, you need to select a service provider who provides the leased line. Generally, China Unicom, China Telecom, China Mobile, and some local service providers are available.

In this example, the on-premises data center to be connected is run by China Unicom . Therefore, select China Unicom or a neutral access point. The access points that support China Unicom include Beijing-Daxing-A, Beijing-Daxing-B, Beijing-Fengtai-A , Beijing-Yizhuang-A, and Beijing-Yizhuang-B.

Step 3 Select a port

Select an electrical or optical port:

· All electrical ports use MSTP links. At Alibaba Cloud data centers where access
  points are located, service providers convert the optical cable of the transmission
  network to a low-bandwidth network cable with an RJ45 interface. According to
  the industry standard, RJ45 interfaces are used for the bandwidth lower than 100
  Mbit/s. Therefore, if you need a low bandwidth, we recommend that you select a
  100M electrical port.

  The switches at Alibaba Cloud data centers of access points support 10GE electrical
  ports by default. The ports can be 100M, 1000M, or 10G and are auto-sensing.
  If you select 100Base-T, the port adapt itself to a speed of 100M. If you select
  1000Base-T, the port adapt itself to a speed of 1000M.

  > **Note:**
  > - 100Base-T: Indicates a 100M electrical port.
  > - 1000Base-T: Indicates a 1000M electrical port.

· Optical ports are commonly known as bare optical fibers. If you choose optical
  ports, service providers do not need to convert the optical cable of the transmissi
  on network at the access points. Users can use optical cables directly. Theoretica
  lly, the speed of an optical path is unlimited. The speed only depends on the
  negotiation of optical modules at both ends of the connection. The speed can be
  1000M, 10G, 40G, or 100G. Alibaba Cloud data centers provide 1000M and 10G
  single-mode modules with a transmission distance of 10 km free of charge. If
  you need modules with a longer distance, you need to purchase the modules by
  yourself.

According to the preceding description, available access points for the on-premises
data center in this example include Beijing-Daxing-A, Beijing-Daxing-B, Beijing-
Fengtai-A, Beijing-Yizhuang A, and Bejing-Yizhuang-B. The available ports are 10G
optical ports.

3 Activate Express Cloud Connect

Express Cloud Connect (ECC) allows you to focus more on developing your business on the cloud without the hassle of infrastructure concerns.

Procedure

1. Log on to the Express Connect console.

2. In the left-side navigation pane, choose Physical Connections > Express Cloud Connect.

3. On the Express Cloud Connect page, click Apply for Express Cloud Connect.

   > 📋 **Note:**
   > Currently, the ECC service is available as a beta release. To activate the service, open a ticket.

4. After a site survey is finished, the application enters the To be Paid state.

   On the payment page, you can choose whether to use the equipment debug service provided by Alibaba Cloud and whether to purchase backup equipment, and select a purchase period.

5. After you pay the ECC service fee, Alibaba Cloud begins the cable installation.

   After the installation is completed, the system automatically creates a VBR and you need to confirm the installation.

4 Connect an on-premises data center to a VPC through a physical connection

This topic describes how to use Express Connect to implement intercommunication between your on-premises data center and an Alibaba Cloud VPC.

Context

This topic uses the VPC and on-premises data center configurations shown in the following figure.
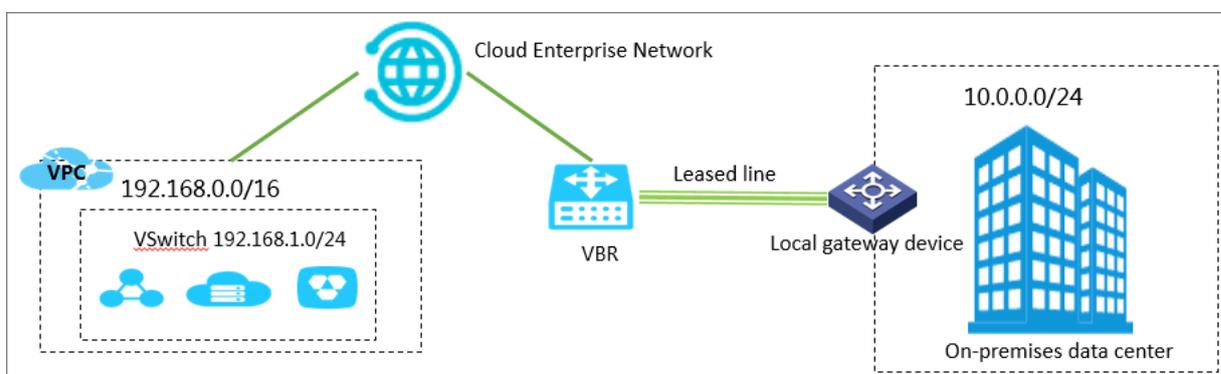
Step 1: Apply for a physical connection interface

1. Log on to the Express Connect console.

2. In the left-side navigation pane, choose Physical Connections > Physical Connection Interfaces.

3. Click Apply for New Interface.

4. Configure the interface.

   Perform the following configurations:

   - Region: Select the region where the leased line is deployed.
   - SP: Select the service provider of your leased line. In this example, select China Mobile.
   - Access Point: Select an access point that is closest in geographical proximity to your on-premises data center. In this example, select Zhangjiakou-Xiaoertai-A-Ali.
   - Port Specification: Select a port specification. Note that different specifications incur different resource occupation fees.
   - Port Type: Select the access port of the physical connection. In this example, select 1000Base-LX.
   - Redundancy: If you want to implement Equal-Cost Multi-Path (ECMP) routing through two physical connections, you can select another physical connection to provide redundancy for this physical connection.

   In this example, do not select a redundant physical connection.

5. Click Buy Now and complete the payment for an initial installation fee.

6. Click OK. Return to the Physical Connection Interfaces page to check the physical connection interface you have applied for.

   The physical connection interface is in the To Apply for LOA state.

7. Click Apply for LOA in the Actions column. On the Apply for LOA page, enter your company name, the name of the data center cable installation company, the scheduled installation date and time, and the contact information of the data center cable installation technician or representative, and select a construction type.

8. Click OK. Your application is then sent to Alibaba Cloud personnel for review.

   The physical connection interface enters the In Application state.

9. After your application is approved, download the LOA to view installation information in the console, such as the location of the installation site (the Alibaba Cloud data center site), cabinet location, and port information.

10. At this stage, we recommend that you instruct your installation company to start installation. After the installation is complete, click Delivery Report on the Physical Connection Interfaces page, enter the leased line code and the label numbers of

the cables at the installation site, and click OK. The physical connection interface enters the Waiting state.

11. Alibaba Cloud will connect the cables to the corresponding CSW ports according to the information you provided. Alibaba Cloud should complete this step within two working days of you clicking OK in the preceding step.

   The physical connection interface enters the Waiting state.

12. After you confirm that the physical connection interface has been deployed, pay the resource occupation fee and enable the port. When the physical connection interface changes to the Enabled state, the leased line connection is completed.

   📋 Note:

   The estimated time frame of completing the LOA application, installation, and on-site assistance from Alibaba Cloud is subject to local laws and authorities.

Step 2: Create a virtual border router

After the leased line connection is completed, you need to create a Virtual Border Router (VBR) for it as a forwarding bridge between the VPC and your on-premises data center.

1. Log on to the Express Connect console.

2. In the left-side navigation pane, choose Physical Connections > Virtual Border Routers (VBRs).

3. Click Create VBR.

   The VBR configurations in this example are as follows:

   · Account: Select Current Account.

   · Name: Enter the VBR name.

   · Physical Connection Interface: Select the physical connection interface created in Step 1.

   · VLAN ID: Enter the VLAN ID. In this example, enter 1678.

   · Gateway IP Address on Alibaba Cloud Side: Enter the gateway from the VPC to your on-premises data center. In this example, enter 10.0.0.1.

   · Gateway IP Address on Customer Side: Enter the gateway from your on-premises data center to the VPC. In this example, enter 10.0.0.2.

   · Subnet Mask: Enter the subnet mask of the IP address on Alibaba Cloud side and customer side. In this example, enter 255.255.255.0.

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4. Click OK.

Step 3 Add the VBR and VPC to a CEN instance

After you create a VBR, you need to add the VBR and the VPC to be connected to a
Cloud Enterprise Network (CEN) instance.

1. Log on to the CEN console.

2. On the Instances page, find the target CEN instance and click the instance ID.

3. On the Networks tab, click Attach Network and add the VBR and VPC to be
    connected to the CEN instance.

    For more information, see Networks.

4. If you have added routes destined for ECS instances, VPN Gateways, or High-Availability Virtual IP Addresses (HaVips) in the VPC, you need to publish these routes to the CEN instance.

Route Table Details

Route Table ID vtr: ▮▮▮▮▮▮   VPC ID vpc ▮▮▮▮▮▮
Name - Edit   Route Table Type System
Created At 01/25/2018, 10:36:59   Description - Edit

Route Entry List

| Add Route Entry | Refresh | Export |

Destination CIDR Block	Status	Next Hop	Type	Route Status in CEN	Actions
1▮▮▮4 - ✎	● Available	vpr-▮▮▮▮▮▮	Instance ID:vpn-▮▮▮▮▮▮ Instance Type:VPN Gateway	NonPublished Publish	Delete
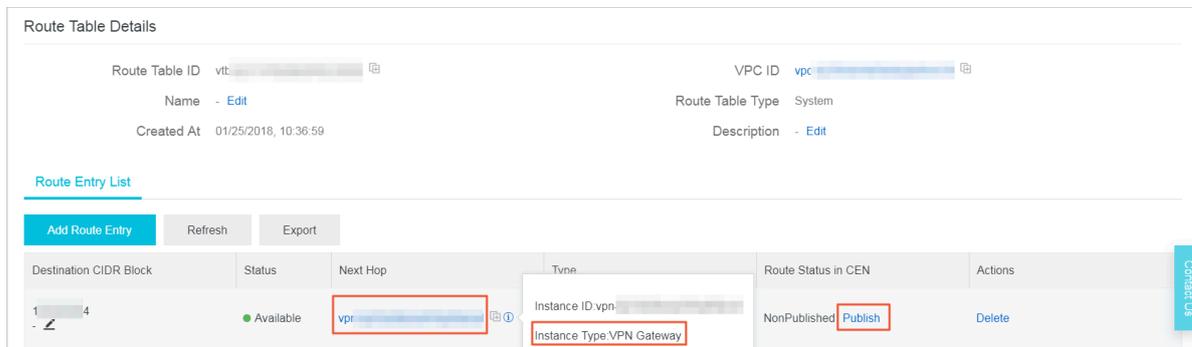
Step 5: Configure VBR routing

You need to add a route entry destined for your on-premises data center and the physical connection interface in the VBR. To do so, follow these steps:

1. Log on to the Express Connect console.

2. In the left-side navigation pane, choose Physical Connections > Virtual Border Routers (VBRs). Find the target VBR and click the instance ID.

3. Click the Routes tab, and then click Add Route.

4. On the Add Route page, configure the route as follows:

   · Destination Subnet: Enter the CIDR block of the on-premises data center. In this example, enter `10.0.0.0/24`.

   · Next Hop Type: Select Physical Connection Interface.

   · Next hop: Select the physical connection interface created in Step 1.

5. Click OK.

Step 6: Configure routing for your on-premises data center

Now the route configuration for the Alibaba Cloud side is completed. On the physical connection device, you still need to configure a route destined for the VPC. You can configure a static route or BGP route as follows to forward traffic from your on-premises data center to VBR:

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· **Static route**

Example:

```
ip   route   192 . 168 . 0 . 0 / 16   10 . 0 . 0 . 2
```

· **Dynamic route**

You can also forward traffic between your on-premises data center and the VBR by configuring BGP. For more information, see Configure BGP.

After the route configuration is completed, the intranet communication link between your on-premises data center and VPC (on-premises data center→physical connection→VBR→VPC) is established.

📋 **Note:**

You can manage the access to your on-premises data center devices and Alibaba Cloud resources by adjusting the ECS security group rules or adding an RDS whitelist.

Step 6: Perform a test

After the VPC is connected to the on-premises data center, test the speed of the physical connection to ensure that it can meet service needs. For more information, see Test the network performance of a physical connection.