

Alibaba Cloud Express Connect

FAQ

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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 <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

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

Contents

Legal disclaimer.....	I
Generic conventions.....	I
1 VPC-to-VPC connection FAQ.....	1
2 Physical connection FAQ.....	3
3 Differences between CEN and Express Connect.....	8

1 VPC-to-VPC connection FAQ

Does the data transferred through Express Connect go over the Internet?

No. Data on Express Connect is transmitted only inside Alibaba Cloud data centers or over lease lines among the data centers and does not pass through the Internet. This avoids data leakage during transmission and provides better network quality than the Internet.

Does Express Connect support cross-account VPC-to-VPC connections?

Yes. Express Connect supports intranet connections between two VPCs under the same account or different accounts. For more information, see [#unique_4](#).

Does Express Connect support cross-region VPC-to-VPC connections?

Yes. Express Connect supports intranet connections between VPCs in the same region or different regions. You can create a router interface on the VRouter of each VPC respectively and build Express Connect through Alibaba Cloud's backbone transmission network to achieve secure, reliable, fast, and convenient communication between the VPCs.

After I connect two VPCs by using Express Connect, what resources of one VPC can the other VPC access?

ECS instances of either VPC can access the ECS instances, Server Load Balancer (SLB) instances, and RDS instances of the other VPC.

- However, the SLB instances of either VPC cannot use ECS instances of the other VPC as backend servers.
- Currently, cloud product instances other than ECS instances, SLB instances, and RDS instances of either VPC cannot be accessed by ECS instances of the other VPC.

Can I adjust the specification of a router interface in the case of service spike?

Yes. Alibaba Cloud now supports upgrading or downgrading the specification of a router interface. You can change the specification of the initiator router interface at any time and the change takes effect immediately.

Does Alibaba Cloud limit the transmission capacity of an Express Connect router interface?

Yes. Alibaba Cloud limits the data transmission capacity according to the specification of the router interface you purchased.

Can I purchase a peering connection?

No. All purchasing of peering connections stopped on June 20, 2019. However, if you purchased peering connections before June 20, 2019, you can continue to use the purchased peering connections without being affected.

You can use Cloud Enterprise Network (CEN) instead to meet your needs. For more information, see [Migrate VPCs and VBRs to CEN](#).

How many peering connections can I create for a VPC?

The maximum number of peering connections that can be created for a VPC is 10 by default. If you need to create more peering connections, go to the Express Connect console and on the [Quota Management](#) page, apply to increase the `ec_quota_vroute_ri_num` quota.

How many peering connections can I create for a Virtual Border Router (VBR)?

The maximum number of peering connections that can be created for a VBR is 10 by default. If you need to create more peering connections, go to the Express Connect console and on the [Quota Management](#) page, apply to increase the `ec_quota_vbr_ri_num` quota.

How many peering connections can I create under one account?

The maximum number of peering connections that can be created under one account is 20 by default. If you need to create more peering connections, go to the Express Connect console and on the [Quota Management](#) page, apply to increase the `ec_quota_user_ri_num` quota.

2 Physical connection FAQ

Does a physical connection enable an on-premises IDC connected to Alibaba Cloud to access different regions?

Yes. The on-premises IDC can access VPCs in all regions of Alibaba Cloud after the physical connection is established.

What types of physical connections does Alibaba Cloud support?

Alibaba Cloud devices support Ethernet optical interfaces and electrical interfaces. For optical interfaces, 10GE and Gigabit single-mode LC optical modules are provided by default at a distance of 10 km. Modules of other specifications require two to four weeks' preparations (such as 10GE multi-mode LC modules and Gigabit multi-mode LC modules at a distance of 10 km). If you require modules to be positioned at a distance other than 10 km, you need to manually prepare the module before providing it to Alibaba Cloud.

What is the maximum bandwidth of a physical connection?

The highest port specification available in the console is 10G. If you need a higher value, open a ticket to apply for it.

Does a physical connection support dynamic routing protocols?

Physical connection supports using the BGP dynamic routing protocol to forward data between the on-premises IDC and the VPC.

Is disaster tolerance of multiple physical connections supported?

ECMP implemented by up to four physical connections is supported.

Can I use a physical connection to connect multiple VPCs?

Yes. The new VPC reuses the existing VBR. You only need to create a new router interface to connect the new VPC to the VBR.

How many VPCs can a physical connection connect at most?

Up to five routers can be created for one physical connection and up to 10 peering connections can be established for each VBR.

Can I extend my local VLAN to a VPC through physical connection?

No. Currently, Alibaba Cloud only supports Layer-3 interconnection.

If a physical connection is connected to multiple VPCs, are the networks of the VPCs over the physical connection isolated from one another?

You can isolate network data by dividing VLANs on the physical connection. For more information, see [Create a virtual border router](#).

Does physical connection support NAT?

Physical Connection does not support configuring NAT now. If you must use NAT in special scenarios, you need to configure NAT in your on-premises IDC.

What is the relation between zones and access points?

Both zones and access points belong to a region. Any access point in a region can use all zones in this region.

If an access point and a VPC are in different regions, you can use a cross-region Express Connect to connect them.

My cloud server is in zone A, which access point should I use to connect to zone A?

Both zones and access points are located in regions, but they are not mapped in a one-to-one relationship. Specifically, access points are deployed at Alibaba Cloud AP locations (that is, sites where the network service is provided). As a result, in some regions, an AP location can be in the same geographic position as that of a zone.

What is the process of establishing a physical connection?

To establish a physical connection, follow these steps:

1. Determine an appropriate access point.
2. Apply for a physical connection interface and pay the initial installation fee.
3. Apply for the LOA and begin installation work for the physical connection.
4. Contact Alibaba Cloud to complete the installation and pay the resource fee.
5. Enable the physical connection interface.
6. Configure a VBR.
7. Add the VBR to the CEN, or create a VBR-to-VPC peering connection.
8. Configure routes and test the connectivity between hosts (generally, the physical connection is normal if a ping test succeeds).

What factors need to be considered before establishing a physical connection to a VPC?

- Whether only one physical connection is required, or multiple physical connections are required to achieve load balancing or highly reliable redundancy.

- Determine a suitable bandwidth. Generally, a selection of 10 Mbit/s, 100 Mbit/s, 1 Gbit/s, or 10 Gbit/s meets most requirements.
- Determine the interface type of the physical connection. Available interfaces include optical interfaces and electrical interfaces. If you use optical interfaces, the compatibility between the optical modules (including factors such as distance, device brand, and more) must be considered.
- Demands for Alibaba Cloud's other cloud services and the expected VPC scale. (When a VPC is created, the CIDR Block of the VPC can be determined based on the expected VPC scale.)

How do I plan IP addresses for physical connection access?

IP addresses at the two ends of the physical connection cannot conflict with each other and must be private IP addresses. If the customer side is using a public IP address, open a ticket to configure a private IP address.

What is the VLAN ID of the VBR?

- When the VLAN ID is 0, physical switch ports of the VBR use the Layer-3 router interface mode instead of the VLAN mode. In the Layer-3 router interface mode, each leased line corresponds to a VBR, which means that a leased line can only be connected to VPCs under the same account.
- When the VLAN ID is [1, 2999], the physical switch ports of the VBR use VLAN-based Layer-3 subinterfaces. In the Layer-3 subinterface mode, each VLAN ID corresponds to a VBR, which means that a leased line can be connected to VPCs under different accounts.

Assume a company includes multiple departments or subsidiaries. Each of the departments or subsidiaries has an independent Alibaba Cloud account and each account includes a VPC. When applying for a leased line, the company needs to plan VLAN IDs for each department or subsidiary. When creating a VBR, the company uses VLAN IDs to identify departments or subsidiaries.

What do the Alibaba Cloud-side IP address and customer-side IP address in a VBR mean?

The Alibaba Cloud-side IP address is the IP address used as the gateway to connect to the on-premises IDC. The customer-side IP address is the IP address used as the gateway to connect to VPC. You must plan an IP address for each side of the leased line to connect the on-premises IDC to the VPC. The two IP addresses must be in the same CIDR block.

How to verify that the leased line connection is completed?

After the installation is completed at the service provider side, Alibaba Cloud will change the leased line status to Waiting. To complete the leased line connection, you must log on to the Express Connect console, choose Physical Connections > Physical Connection Interfaces in the left-side navigation pane, and click Confirm. If the leased line status changes to Enabled, the leased line connection is completed. After that, you need to create a VBR and configure routes to complete the physical connection. For more information, see [Connect an on-premises data center to a VPC through a physical connection](#).

How does the on-premises IDC access the OSS intranet domain name in the VPC?

The OSS intranet domain name belongs to 100.64.0.0/10, which is a CIDR block reserved by Alibaba Cloud. Therefore, a route pointing to 100.64.0.0/10 cannot be directly added to the VBR. If you have related demands, split 100.64.0.0/10 into smaller subnets, for example, 100.64.0.0/11 and 100.96.0.0/11. Add them to the route table of the VBR, and set the next hop direction to VPC.

The communication line to Alibaba Cloud is disconnected, what should I do?

Test whether the client-side IP address can successfully ping the Alibaba Cloud-side IP address on the gateway device of the on-premises IDC. If the ping test fails, report the fault to the service provider. A physical switch port on the Alibaba Cloud side connects the VPC to the on-premises IDC. If the port is blocked, the leased line of the service provider is interrupted. In this case, report the fault to the service provider.

What should I do if the bandwidth does not meet the expectation?

If the router interface speed is lower than 1 Gbit/s, use iPerf to test the bandwidth. If the bandwidth cannot exceed 10 Mbps, it is possible that ports at one end of the leased line run in half duplex mode after negotiation. You can request the carrier to change the port mode to adaptive mode.

If the router interface speed exceeds 1 Gbps, the speed of each data stream is limited to a certain degree (130 Mbps or 250 Mbps) because the data streams use different loading mode.

What should I do if an error is returned when I add or delete a route entry on the VBR?

Because the hardware of the VBR is slow in processing, before you add or delete a route entry, wait until the processing of the last route is completed.

What can I do if a token error is returned when I add a route entry?

This error is caused by cookie timeout of your browser. Log out of your account and log on again.

3 Differences between CEN and Express Connect

Both Cloud Enterprise Network (CEN) and Express Connect can be used to connect an on-premises data center with a VPC to allow access to cloud resources and to build a hybrid cloud.

The following table shows the differences between CEN and Express Connect.

Item	CEN	Express Connect
Network connection	<p>Network-wide interconnection</p> <p>All networks (VPCs and Virtual Border Routers) associated with a CEN instance are interconnected with each other. A secure, reliable, and high-speed intranet communication channel can be established between any two networks.</p>	<p>Single point interconnection</p> <p>Express Connect connections cannot be extended. Specifically, the VPCs or on-premises data centers that are connected through Express Connect can only communicate with the peer VPCs.</p>
Route management	<p>Dynamic learning</p> <p>Based on the Fullmesh link, CEN dynamically learns and distributes routes, which improves the convergence of routes, and the quality and security of network communication.</p>	<p>Manual configuration</p> <p>Express Connect requires end-to-end manual route configuration.</p>

Item	CEN	Express Connect
Bandwidth management	Cross-region shared bandwidth package CEN provides bandwidth packages which are sold by region to facilitate cross-region bandwidth adjustments. Bandwidth packages also help optimize resource allocation and save costs.	Point-to-point purchase The bandwidth of an Express Connect connection must be specified when you create the connection. You can adjust the bandwidth value after you create an Express Connect connection, but you cannot change the connected regions.