Alibaba Cloud
Express Connect

Product Introduction

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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 What is Express Connect?

Alibaba Cloud Express Connect helps you build private network communication channels between VPCs or between a VPC and your on-premises data center. These channels feature increased network topology flexibility and enhanced cross-network communication quality and security. Express Connect also helps you mitigate unstable network latency and data breaches.
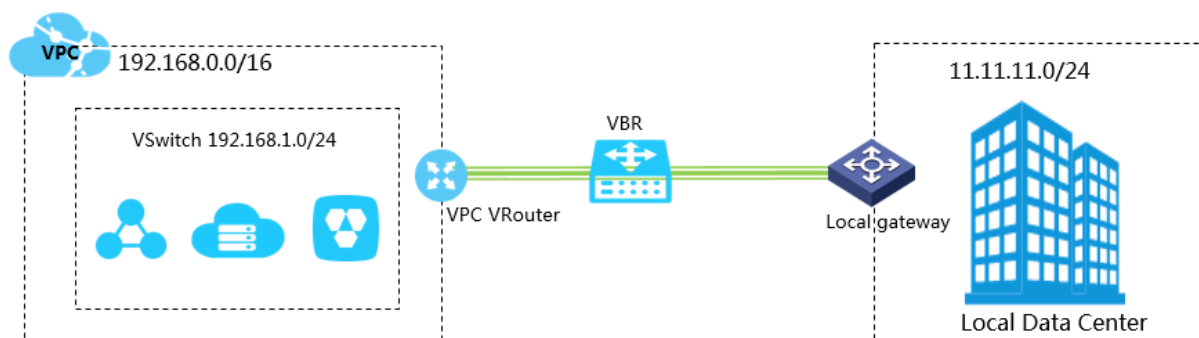
Features

Express Connect provides the following functions:

· Express Cloud Connect

Express Cloud Connect can meet the requirements regarding the underlying network links for guaranteed compliance within high-availability architecture. It is equipped with the SD-WAN technology provided by Smart Access Gateway (SAG) and can provide multiple value-added services, such as encrypted channels, direct access to Private Zone and other cloud resources, and accelerated Internet access.

· Physical connection

You can use a leased line from your service provider to establish a physical connection from your on-premises data center to an Alibaba Cloud access point. After the physical connection is established, you can create a Virtual Border Router (VBR) to connect your on-premises data center with Alibaba Cloud to build hybrid clouds.

As a private network connection, the physical connection does not pass through the Internet. Compared with traditional Internet connections, the physical connection is safer, faster, more reliable, and has less latency.

- VPC interconnection

  You can create a peering connection to build an intranet communication channel between two VPCs.

Benefits

The benefits of Express Connect are as follows:

- High-speed intercommunication

  Powered by Alibaba Cloud, Express Connect can connect different network environments so that both ends can directly communicate with each other through an intranet connection without the need for access to the Internet. A low-latency, high-bandwidth intranet connection can be achieved regardless of the distance between the connected network environments.

- Stability and reliability

  Built on the state-of-the-art infrastructure of Alibaba Cloud, Express Connect ensures stable and reliable communication between networks.

- Security

  Express Connect implements cross-network communication at the network virtualization layer, where all data is transmitted through the infrastructure of Alibaba Cloud and tenants are isolated from each other.

- Pay-As-You-Go billing

  Express Connect provides different bandwidth specifications. You only pay for resources used.

2 Scenarios

You can use Express Connect to create a secure and high-speed private network communication channel between two VPCs or between a VPC and an on-premises data center.

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

If your on-premises data center needs to communicate with a VPC in Alibaba Cloud through a private network, you can apply for a physical connection interface in Express Connect or use the Express Cloud Connect service provided by Alibaba Cloud . With the physical connection, you can implement a private network communication channel between your on-premises data center and the VPC that is of high quality, highly reliable, and highly secure.

- For more information about applying for a physical connection interface, see *Connect an on-premises IDC to a VPC through a physical connection*.
- For more information about the Express Cloud Connect service, see *Activate Express Cloud Connect*.

Connect two VPCs

You can use Express Connect to establish a private network communication channel between two VPCs that mitigates poor network latency and the threat of data breaches occurring during data transmissions.

For more information, see *Interconnect two VPCs under different accounts* and *Interconnect two VPCs under the same account*.

3 Limits

Note the following limits before you use the Express Connect service.

Resource	Default limit
The maximum number of VBRs that can be created on a physical connection	5
The maximum number of physical connections that an account can access at an access point	2
The maximum number of idle VBRs (VBRs without interfaces) under an account	5
The maximum number of peering connections that can be created for a VPC	10
The maximum number of peering connections that can be created for a VBR	10
The maximum number of peering connections that can be created under an account	20
The maximum number of route entries that can be added to a VBR	48
The maximum number of BGP route entries that can be accepted by a VBR	110
We recommend that you use private CIDR blocks for a VBR and VPC to communicate with each other. The CIDR blocks cannot conflict with each other.	
After you use Express Connect to connect VBRs or VPCs, you cannot use Cloud Enterprise Network (CEN) any more.	
If you use dual physical connections to access Alibaba Cloud, you must configure health checks so that traffic is distributed to the standby link when the active link fails.	

4 Terms

Term	Description
Express Connect	An Alibaba Cloud service that helps you build private-network communication channels between VPCs or between VPCs and on-premises data centers. It provides features that increase network topology flexibility and enhance cross-network communication quality and security.
Virtual Private Cloud (VPC)	A custom private network created on Alibaba Cloud. VPCs are logically isolated from each other. You can create and manage your cloud product instances, such as ECS instances, SLB instances, and RDS instances in your VPC.
Physical connection interface	A physical interface through which the leased physical line accesses an Alibaba Cloud access point.
VRouter	A hub that connects all VSwitches in the VPC and serves as a gateway to connect the VPC with other networks.
Virtual Border Router (VBR)	A product mapping of the physical connection that you apply for to access a VSwitch. The VBR can be regarded as a router between your Customer-Premises Equipment (CPE) and the VPC, serving as a bridge for data exchange between your on-premises data center and the VPC.
Peering connection	A private-network communication channel between two VPCs or between a VPC and a VBR.
Access point	A geographical location where the physical connection accesses Alibaba Cloud. Each access point has two access devices. Each region has one or more access points, any of which can be used to access Alibaba Cloud VPCs.
Express Cloud Connect	A cloud access service that is based on the hardware capacities and built-in routing encapsulation technology of Smart Access Gateway (SAG), and can be easily integrated with the dedicated lines of telecom carriers. By using Express Cloud Connect, you can not only guarantee compliance but also experience the benefits of a highly reliable, high-performance, and low-latency cloud network environment.