Virtual Private Cloud

User Guide

MORE THAN JUST CLOUD | C-J Alibaba Cloud

User Guide

Alibaba Cloud provides a default VPC and VSwitch for you in the situation that you do not have any existing VPC and VSwitch to use when creating a cloud product instance. A default VPC and VSwitch will be created along with the creation of the instance.



Default VPC and VSwitch feature list

Default VPC	Default VSwitch
The default VPC in each region is unique.	The default VSwitch in each Availability Zone is unique.
The netmask for a default VPC is /16 such as 172.31.0.0/16, which provides up to 65536 private IP addresses.	The netmask for a default VSwitch is /20 such as 172.31.0.0/20, which provides up to 4096 private IP addresses.
The default VPC does not occupy the VPC quota that the Alibaba Cloud allocates to you.	The default VSwitch does not occupy the VSwitch quota that the Alibaba Cloud allocates to you.
The default VPC is created by the system, all the VPCs created by you are non-default VPCs.	The default VSwitch is created by the system, all the VSwitches created by you are non- default VSwitches.
The operations and restrictions for default and non-default VPCs are the same.	The operations and restrictions for default and non-default VSwitches are the same.

Build VPC

Prerequisite

Before creating a VPC, refer to Plan and design VPC network to design your private network.

Procedure

Log on to the VPC console.

In the left navigation bar, click VPC.

Choose the region where the VPC is located.

Click **Create VPC** in the upper-right corner.

Configuration	Description	
VPC Name	Enter the name of the VPC.	
Description(optional)	Add a description for the VPC.	
Description(optional)	Add a description for the VPC. Specify the IP address range for the VPC in the form of a Classless Inter-Domain Routing (CIDR) block. Note the following when selecting a CIDR block: - Use the standard private CIDR blocks (10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/1) or their subsets as the IP address ranges. Note: If you want to use the subset of the provided CIDR blocks as the IP address range, use the Open API to create a VPC. For details, refer to Create a VPC. - If you have multiple VPCs, or you want to build a hybrid cloud consisting of multiple VPCs and	
	on-premises IDCs, we recommend that you use the subset of the provided CIDR blocks, and ensure that the network mask is no larger than /16. - If you just have one VPC and it does not need to communicate with the on-premises data	
	center, you can use any of the	

 provided CIDR blocks. Consider the use of the classic network. If you plan to connect the cloud product instances in the classic network with a VPC, we recommend that you do not use the CIDR block 10.0.0.0/8, which is also used as CIDR block by the classic network. Note: If you have special requirements on the IP address range, open a ticket or contact your customer manager. 	
 Consider the use of the classic network. If you plan to connect the cloud product instances in the classic network with a VPC, we recommend that you do not use the CIDR block 10.0.0.0/8, which is also used as CIDR block by the classic network. Note: If you have special requirements on the IP address range, open a ticket or contact your customer manager. 	provided CIDP blocks
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- Note : If you have special requirements on the IP address range, open a ticket or contact your customer manager.	by the classic network.
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range, open a ticket or contact your customer manager.	requirements on the IP address
your customer manager.	range, open a ticket or contact
	your customer manager.

Click Create VPC.

Related operations

Create a VSwitch

A VSwitch is a basic network device in a VPC network used to connect the cloud product instances in the VPC. You can further segment your virtual networks into subnets by adding VSwitches. For more details, see Create a VSwitch.

Delete a VPC

On the VPC list page, locate the target VPC and click Delete.

Note: Before deleting the VPC, make sure you have released or transferred all instances in the VSwitches of the VPC and VSwitches have been deleted.

Modify the name of a VPC

On the VPC list page, hover the mouse pointer on the target VPC ID. A pencil icon appears. Click the pencil icon to modify the VPC name.

Prerequisite

Create a VPC.

Procedure

Log on to the VPC console.

In the left-side navigation pane, click VPC.

Click the VPC region where the VSwitch to be created is located.

Click the target VPC ID.

Then you are directed to the **VPC Details** page.

Click VSwitch and then click Create VSwitch.

In the **Create VSwitch** dialog, provide the following information:

Configuration	Description	
VPC	The ID of the VPC where the VSwitch is located.	
VPC CIDR block	The CIDR block of the VPC. Click Display Binary to view the CIDR block in binary format.	
Name	Enter the name of the VSwitch.	
Zone	Select a zone of the VSwitch. Zones are physical areas with independent power grids and networks in one region. Zones in the same region are intranet connected. We recommend creating different VSwitches in different zones to achieve disaster recovery.	
CIDR block	Specify the VSwitch IP address in the CIDR block form. Note the following when specifying a VSwtich CIDR block: - The allowed block size for a VSwitch is between a /16 netmask and /29 netmask, which can provide 8 to 65,536 IP addresses. - The CIDR block of the VSwitch	

	 can be the same as that of the VPC that it belongs to, or the subset of the VPC CIDR block. Note: If the CIDR block of the VSwitch is the same as that of the VPC, you can only create one VSwitch. The first and the last three IP addresses are reserved by the system. For example, for the CIDR block 192.168.1.0/24, IP addresses 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. You need to consider the number of the cloud product instances running in the VSwitch.
Number of Available Private IPs	The number of available IP addresses in the VSwitch.
Description (optional)	Add a description for the VSwitch.

7. Click OK.

Related operations

Create cloud product instances in a VPC

On the **VSwitch List** page, click **Create an Instance** to create an ECS, SLB, or RDS instance. For more details, refer to **Create cloud service instance in a VPC**.

Modify a VSwtich

On the **VSwitch List** page, find the target VSwitch and then click **Edit**. Or hover your mouse pointer over the VSwitch name to change the name of the VSwitch.

Delete a VSwitch

On the VSwitch List page, find the target VSwitch and then click Delete.

Note: Before deleting a VSwitch, confirm that you have released or transferred all the cloud product instances under it.

Route table basics

A VRouter is a hub in a VPC that connects all VSwitches in the VPC and also serves as a gateway device that connects the VPC with other networks.

A VRouter and a route table are automatically created after you create a VPC. Each entry in the route table is a *route entry*, which defines the next hop of the network traffic destined for a specific destination CIDR block. The network traffic is routed based on the configurations of the route entries in the route table.

Note: You cannot create or delete a VRouter or a route table directly. They will be deleted automatically along with the deletion of the VPC. But you can add route entries to the route table to route network traffic.

There are two types of route entries:

System route entry

A system route entry is created by the system and cannot be deleted.

After you create a VPC, a system route entry will be automatically created.

The destination CIDR block of this system route entry is 100.64.0.0/10, which is used for the communication within the VPC.

After you create a VSwitch, a system route entry will be automatically created.

The destination CIDR block of this system route entry is the CIDR block of the VSwitch, which controls the routing for the VSwitch.

Custom route entry

You can create or delete custom route entries, and you can create up to 40 custom route entries in a route table.

Note: In general, system route entries can meet your needs. But in some particular cases, you still need to add custom route entries. Before adding custom route entries, ensure that you have completed your network plan.

Routing policy

The longest prefix match algorithm is used to route the network traffic when more than one route entries match the destination IP address. That is, the route entry with the longest netmask (the most specific route) is used to determine the next hop.

Here is an example of a route table.

Destination CIDR block	Next Hop Type	Next Hop	Туре
100.64.0.0/10			System
192.168.0.0/24			System
0.0.0/0	Instance	i-12345678	Custom
10.0.0/24	Instance	i-87654321	Custom

In this example, route entries with the destination CIDR blocks100.64.0.0/10 and 192.168.0.0/24 are the system route entries. Route entries with the destination CIDR blocks0.0.0.0/0 and 10.0.0.0/24 are custom route entries.

All traffic destined for 0.0.0.0/0 is routed to the ECS instance with the IDi-12345678 and all traffic destined for 10.0.0.0/24 is routed to the ECS instance with the IDi-87654321.

According to the longest prefix match algorithm, the traffic destined for 10.0.0.1 is routed to ECS instance with the IDi-87654321, while the traffic destined for 10.0.1.1 is routed to the ECS instance with the IDi-12345678.

Scenarios of adding custom router entries

The custom route entries are needed in the following scenarios.

Traffic routing within a VPC

Assume that you have two ECS instances in your VPC: ECS01 and ECS02.

ECS01 is bounded with an Elastic IP (EIP) so that this ECS instance can communicate with the Internet. If you want ECS02 to communicate with the Internet without binding another EIP, you can add a custom route entry as follows.

Destination CIDR	Next hop type	Next hop
0.0.0/0	ECS instance	ECS01



Interconnection between VPCs

Assume that you have two VPCs. VPC1 uses the CIDR block 172.16.0.0/12 and VPC2 uses the CIDR block 192.168.0.0/16.

By using the router interface function of the Express Connect product, you can create a connection between these two VPCs. Firstly, you need to create a router interface, and set VPC1 as the initiator and VPC2 as the receiver. Then, you need to add two custom route entries as follows.



• Custom route entry added in VPC1

Destination CIDR	Next hop type	Next hop
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192.168.0.0/16	Route interface	RI1

• Custom route entry added in VPC2

Destination CIDR	Next hop type	Next hop
172.16.0.0/12	Route interface	RI2

Interconnection between VPC and on-premises IDC

Assume that you have a VPC with the CIDR block 172.16.0.0/12, and an on-premises IDC with the CIDR block 192.168.0.0/16.

By using the physical connection (leased line) function of the Express Connect product, you can create a connection between the VPC and the IDC. Firstly, you need to create a Virtual Border Router (VBR) to connect the IDC with the VBR. Then, you need to create a router interface to connect the VBR with the VPC. Lastly, you need to add the following custom router entries:



• Custom route entry added in VPC

Destination CIDR block	Next hop type	Next hop
192.168.0.0/16	Route interface	RI1

• Custom route entry added in VBR

Destination CIDR	Next hop type	Next hop
192.168.0.0/16	Leased line	RI3
172.16.0.0/12	VPC	RI2

• Custom route entry added in IDC

Destination CIDR	Next hop type	Next hop
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172.16.0.0/12	—	RI4

Add custom route entries

Log on to the VPC console.

In the left-side navigation pane, click VPC.

Choose the region where the VPC is created.

Click the ID of the target VPC.

In the left-side VPC Details pane, click VRouter, and then click Add Route Entry.

In the Add Route Ent	y dialog, provide	the following information	and click OK.
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Configuration	Description
Destination CIDR Block	Enter the destination CIDR block. If you enter an IP address, the network mask /32 is used by default.
Next hop type	 Choose a type of the next hop. ECS instance: routes the traffic destined for the destination CIDR to an ECS instance. Router interface: routes the traffic destined for the destination CIDR to a router interface. Then the router interface will route the traffic to its peer router interface.
Next hop	The next hop that receives the routed traffic. Note : If you select ECMP-Routing, you must add at least two router interfaces, and the corresponding peer router interface must be a Virtual Boarder Interface (VBR).

Instance management in VPC

Overview

You can directly create a cloud product instance such as ECS, SLB, and RDS under a specific VSwitch in the VPC console.

Prerequisite

Ensure that you have created a VPC and VSwitch.

Procedure

Log on to the VPC console.

In the left-side navigation pane, click VPC.

Click a region and then click the ID of the VPC where the VSwitch is created.

On the VPC Details navigation pane, click VSwitch.

Click **Create an Instance** for the target VSwitch, and click the type of instance you want to create.

<	VSwitch List						Ye	u can create 24 VSwitches at i	most for a VPC	CRefresh Create VSwitch
VPC Details	VSwitch ID VSwitch ID to s	search the VSwitch. Search								
Salech	V9witch ID/Name	Number of ECS Instances	CIDR	Status	Zone	Number of Available Private IPs	Creation Time	Default VSwitch D	escription	Action
Company of the second s	vsw-bj TEST	0	172.16.	Available	China East 1 Zone E	252	2017-05-26 16:19:37	No		Edit Delete Create an Instance-
								Total: 1 item(s	I. Per Pt O	eate ECS Instance reate RDS Instance vate Server Load Balancer Instance

Complete the instance configuration on the corresponding purchase page. After creating a VPC ECS instance, you can change the private IP address and VSwitch of the ECS instance.

After creating a VPC ECS instance, you can change the private IP address and also can change the VSwitch of the ECS instance.

Procedure

Log on to the ECS console.

On the left-side navigation pane, click Instances.

Click a region and then click the ID of the target ECS instance.

On the Instance Details page, click Stop on the upper-right corner.

In the **Configuration Information** panel, click **More** > **Modify Private IP Address**.

In **Modify Private IP Address** dialog, modify the private IP by either of the following ways, and then click **Modify**.

VSwitch: Select a new VSwitch for the ECS instance from the list.

Because each VSwitch in a VPC has a unique CIDR block, the ECS instance's private IP address will be automatically changed along with the change of the VSwitch.

Private IP Address: Enter the new IP address if you do not want to change the VSwitch of the ECS instance.

Restart the ECS instance.

You can migrate an RDS instance from one VPC to another VPC. Firstly, you have to switch the network type of the RDS instance to the classic network, and then switch it to the VPC.

Note:

The VPC switch will cause an ephemeral disconnection for the RDS instance. Ensure that you have set an automatic reconnection mechanism for it.

Procedure

Log on to the RDS console.

Switch the network type to the classic network:

Click the ID of the target RDS instance.

On the left-side navigation pane, click **Database Connection**.

In the Connection information section, click Switch to Classic.

Click OK in the pop-up dialog.

Switch the network type to VPC:

Click **Refresh** to check the database status.

After the network type is changed to the classic network, click Switch to VPC.

In the pop-up dialog, select a new VPC and VSwitch for the RDS instance and then click **OK**.

Connections from VPC to Internet

If a VPC ECS instance needs to access the Internet, you can choose to allocate a public IP for it when creating the ECS instance.

As shown in the following figure, after you have chosen the VPC and VSwitch where the ECS instance is created, you have to set a network bandwidth peak. The value must be larger than 0 so that a public IP will be allocated to the ECS instance after it is created.

Note:

Only when the specified network bandwidth peak is larger than 0, a public IP will be allocated. Otherwise, no public IP is allocated. In this situation, you can bind an Elastic IP to the ECS instance as an alternative.

You cannot unbind the system allocated IP from the ECS instance.

Choose Netwo	ork Type			
Network Type				
VPC	0			
[default] vpc-t4nfyadttt90	Da x	Select the VSwitch	-	
Network Billing Type				
Data Transfer	0			
Network Bandwidth Peak				
	25M	50M	100M	5 Mbps
We will bind a public IP addre You can purchase an Elastic You can charge this instance	ess to your in IP here . 's network us	stance, which cannot b age to an existing Data	oe changed. a Transfer p	If you do not need a public IP or you wish to use an Elastic IP instead, please choose "OM" bandwidth. Ian. You can buy one here .

After the ECS instance is created, you can view the public IP on the **Instance List** page. You can use this public IP to access the ECS instance in the public network.

Instance List	China North 1 (Qingdao)	China North 2	(Beijing) China North 3	(Zhangjiakou) China	a East 1 (Hangzhou) China	East 2 (Shanghai)	China South 1 (Shenzhen)	Hong Kong		0	Create In	rstance
	Asia Pacific NE 1 (Japan)	Singapore	Asia Pacific SE 2 (Sydney)	US East 1 (Virginia)	US West 1 (Silicon Valley)	Middle East 1 (Du	bai) Germany 1 (Frankfurt)					
Instance Nam	e • Enter Instance	e name (fuzzy si	earch) Search	● Tag						Advanced Sear	dh 🗕	0 ?
Instance	ID/Name		IP Address		Status	(AII) + Ne	twork Type(All) +	Billing Method(All) +				Action
e i-tojia iZbpla		0	121.4 (Inte 172 (Privat	met IP Address te IP Address)	 Rur 	ning VP	c	Subscription 17-06-27 00:00 Expiring	oon	Manage Connect Ch	ange Config Renew	uration More-

If the ECS instance does not have a system allocated public IP, you can bind an EIP to the ECS instance to access the Internet.

An EIP is a public IP address resource that you can purchase and possess independently. It can be dynamically bound to a VPC ECS instance without restarting the ECS instance. For more details, refer to EIP overview.

Procedure

Log on to the EIP console.

Click Apply for Elastic IP.

On the purchase page, configure the EIP and click **Buy Now**.

Go back to the Log on to the EIP console after completing the purchase, and click **Bind** next to the target EIP.

In the Bind dialog, select the ECS instance to be bound and click OK.

Note: Ensure the ECS instance is in the Running or Stopped status, and the ECS instance does not have a system allocated public IP or bound with any other EIPs.

After binding an EIP, the ECS instance can access the Internet through the EIP. You can unbind and release the EIP whenever the Internet access is not needed. For details, refer to Manage an EIP.

Access from Internet to VPC

If an ECS instance in a VPC needs to provide external services, you can allocate a public IP for it when creating the ECS instance.

As shown in the following figure, after you have chosen the VPC and VSwitch where the ECS instance is created, you have to set a network bandwidth peak. The value must be larger than 0 so that a public IP will be allocated to the ECS instance after it is created.

Note:

Only when the specified network bandwidth peak is larger than 0, a public IP will be allocated. Otherwise, no public IP is allocated. In this situation, you can bind an EIP to the ECS instance.

You cannot unbind the system allocated IP from the ECS instance.

🔀 Choose Netwo	rk Type)		
Network Type				
VPC	0			
[default] vpc-t4nfyadttt9c	π	Select the VSwitch	•	
Network Billing Type				
Data Transfer	0			
Network Bandwidth Peak				
	25M	50M	100M	5 Mbps
We will bind a public IP addres You can purchase an Elastic II You can charge this instance's	ss to your ir P <mark>here.</mark> s network u	stance, which cannot b sage to an existing Dat	oe changed a Transfer p	If you do not need a public IP or you wish to use an Elastic IP instead, please choose "0M" bandwidth. Jan. You can buy one here .

After the ECS instance is created, you can view the public IP on the **Instance List** page. You can resolve this public IP to a domain name to provide external services.

Instance List	China North 1 (Qingdao)	China North 2 (I	Beijing) China North 3 ((Zhangjiakou) China	East 1 (Hangzhou) China	East 2 (Shanghai)	China South 1 (Shenzhen)	Hong Kong	0	Create Instance
	Asia Pacific NE 1 (Japan)	Singapore Asi	ia Pacific SE 2 (Sydney)	US East 1 (Virginia)	US West 1 (Silicon Valley)	Middle East 1 (Du	ibai) Germany 1 (Frankfurt)			
Instance Nam	e Y Enter instance	name (fuzzy sear	rch) Search	€ Tag					Advanced Search	± 0 ?
0 Instance I	ID/Name		IP Address		Status(Al) ~ N	etwork Type(All) +	Billing Method(All) +		Action
E i-bp1a		٥	121.4 (Inten 172 (Private	net IP Address e IP Address)	 Run 	ning Vi	×c	Subscription 17-06-27 00:00 Expiring soon	Manage Connect Char	nge Configuration Renew More-

If an ECS instance in a VPC needs to provide external services, you can bind an Elastic IP (EIP) to the ECS instance.

An EIP is a public IP address resource that you can purchase and possess independently. It can be dynamically bound to a VPC ECS instance without restarting the ECS instance. For more details, refer to EIP overview.

Procedure

Log on to the EIP console.

Click Apply for Elastic IP.

On the purchase page, configure the EIP and click **Buy Now**.

Go back to the Log on to the EIP console after completing the purchase, and click **Bind** next to the target EIP.

In the **Bind** dialog, select the ECS instance to be bound and then click OK.

Note: Ensure the ECS instance is in the Running or Stopped status, and the ECS instance does not have a system allocated public IP or is bound with any other EIPs.

After binding an EIP, the ECS instance can access the Internet through the EIP. You can unbind and release the EIP whenever there is no need to provide external services. For details, refer to Manage an EIP.

A Server Load Balancer (SLB) is a traffic distribution control service that distributes traffic based on forwarding rules and scheduling algorithms to multiple backend servers.

You can create an Internet-facing SLB instance, and add VPC ECS instances as the backend servers to process the distributed requests from the Internet. In this way, the VPC ECS instances can provide external services.

Two ECS instances with Apache static web pages deployed are used in this tutorial.

Procedure

Log on to the Server Load Balancer console and click Create Server Load Balancer to create an Internet-facing SLB instance.

Note: Ensure that the selected instance type is Internet.

tance ty	Instance type :	Internet	Intranet
work and inst	Bandwidth :	By traffic	

A public IP address is allocated to the SLB instance after it is created. You can use this IP address to provide external services.

Instance Management	China North 1 (Qingdao)	China North 2 (Beijing)	China North 3 (Zhang	Jakou) China East 1 (Hangzhou	China East 2 (Shanghai)	China South 1 (Shenzhe	n) Hong Kong		C Refresh	Create Server Load Balancer
	Asia Pacific NE 1 (Tokyo)	Asia Pacific SE 1 (Singapor	re) Asia Pacific SE 2	2 (Sydney) US East 1 (Virginia)	US West 1 (Silicon Valley)	Middle East 1 (Dubai)	EU Central 1 (Frankfurt)			
Server Load Balancer Na	ame 🔻 Enter lo	ad balancer names separate	d by con Search	⊛ Tag						<u>×</u> •
Server Load Balancer	ID/Name Zone	IP Address(A	II) = Status	Network(All) -	Port/Health Check	Backend Server	Instance Spec	Bandwidth Billing Method(All) +	Billing Method(All) +	Action
lb-bp act-t	cn-hangzhou cn-hangzhou	r-e(Master) 101.37 r-d(Slave) Public IP	 Running 	Classic Network	Not ConfiguredConfigure	Not ConfiguredConfigu	e performance shared instance	Pay by Traffic	Pay-As-You-Go 2017-07-05 14:00:0	4 Created Manage More +

Add backend servers.

Click the ID of the created SLB instance.

In the left-side **Details** pane, click **Server** > **Backend Server**.

Click the Servers Not Added tab.

Select the checkboxes next to the VPC ECS instances and then click **Add in Batch**. In the pop-up dialog, set the weight to 100 and click **Confirm** to add.

<	acs-slb-c7a603ff35 • Return to Server Load Balancer List			Restrictions and Notes			
Details	Load Balancer Server Pool Regio	on : China East 1	(Hangzhou) Zone : cn-hang	gzhou∙e (Master) /	cn-hangzhou-d (Slave) 🛛		
 Server 	Servers Added Servers Not	Added					
Backend Server	VPC ID VPC		Searc	th			C Refresh
VServer Group	 ECS Instance ID/Name 	Zone	Public/Internal IP Address	Status(All) +	Network Type(All) +	Server Load Balancer	Action
Master-Slave Serv	ee23!	cn-hangzhou- e	120 (Elastic) 192 (Private)	Running	VPC		Add
	e ce23	cn-hangzhou- e	116. (Elastic) 192. (Private)	S Running	VPC		Add
	Add in Batch				Tota	l: 2 item(s) , Per Page: 20 item(s)	

Add a listener.

In the left-side **Details** pane, click **Listener**, and then click **Add Listener**.

In the **Add Listener** dialog, configure a TCP listener as shown in the following figure.

ld Listener			\times
1.List	tener Configuration	2.Health Check Configuration 3.Success	
Fronten [Port] <mark>*</mark>	d Protocol	TCP ▼ : 80 You can enter any port number from 1-65535.	
Backend [Port] *	d Protocol	TCP : 80 You can enter any port number from 1-65535.	
Peak Ba	andwidth:	Unlimited Configure You can set a peak bandwidth from 1-5000M. By default, the instances charged by traffic do not have peak bandwidth limit.	
Schedul	ling Algorithm:	Round Robin 🔻	
Use Ser	ver Group: 🕜		
Automa Listener Creatior	tically Activate r after n:	Activated	
Exp Adv Opt	pand vanced tions		
		Next Step Cance	.

Click **Next Step** to configure the health check and select **TCP** with other settings unchanged. Click **Confirm** twice to finish the configuration.

Go back to the Server Load Balancer list page and refresh the page to check the instance status. When the instance is running and the health check is normal, you can use the public IP address of the SLB instance to provide external services.



Interconnection between VPCs

Alibaba Cloud Express Connect can establish a dedicated private connection between two VPCs in

any regions. The connection does not go through the Internet. This allows Express Connect to offer a fast, stable, secure, and dedicated network communication.

As shown in the following figure, assume that you have two VPCs: VPC1 with the CIDR block 172.16.0.0/16 and VPC2 with the CIDR block 192.168.0.0/16.

To establish a connection between VPC1 and VPC2, you need to use the router interface function of Express Connect. First, create a router interface, and set VPC1 as the initiator and VPC2 as the receiver. Then, add two custom route entries.



- Custom route entry added in VPC1

Destination CIDR	Next hop type	Next hop
192.168.0.0/16	Route interface	RI1

- Custom route entry added in VPC2

Destination CIDR	Next hop type	Next hop
172.16.0.0/12	Route interface	RI2

For more details, refer to:

Establish a connection between VPCs under the same account

Establish a connection between VPCs under different accounts

Interconnection between VPC and Onpremises IDC

You can use the physical connection function of Express Connect to establish a connection between a VPC and an on-premises IDC.

Assume that you have a VPC with CIDR block 172.16.0.0/12, and an on-premises data center with CIDR block 192.168.0.0/16. When the cloud services needs to access the on-premises data center, you can apply for a leased line to create a connection between them.



Procedure

Apply for a leased line

A leased line is used to connect the IDC with the access point of Alibaba Cloud.

Create a virtual border router

A virtual border router (VBR) is a bridge between the IDC and the VPC for forwarding your data from your VPC to IDC.

After creating the VBR, the system will automatically establish a connection between the router interface (RI3 in the figure) and the IDC through the leased line.

Create a router interface

Create a router interface to connect the VPC and the VBR. When creating the router interface, set the router interface of the VBR as the local side, and the VPC as the peer side.

After creating the router interface, the system will automatically establish a connection between the VPC and VBR through two router interfaces (RI2 and RI3 in the figure).

Add route entries

Finally, you need to add route entries to route the network traffic between the VPC and IDC.

Custom route entries added in VPC

Destination CI	OR block No	ext hop type	Next hop
192.168.0.0/16	Ro	outer interface	RI1

Custom route entries added in VBR

Destination CIDR block	Next hop type	Next hop
192.168.0.0/16	Leased line	RI3
172.16.0.0/12	VPC	RI2

Route in IDC

Add a route pointing to the leased line in the IDC router.

For more details, refer to Leased line access.