

# Alibaba Cloud

## Express Connect Virtual Border Router









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# Document conventions


Style	Description	Example
 <b>Danger</b>	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 <b>Danger:</b> Resetting will result in the loss of user configuration data.
 <b>Warning</b>	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 <b>Warning:</b> Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 <b>Notice</b>	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 <b>Notice:</b> If the weight is set to 0, the server no longer receives new requests.
 <b>Note</b>	A note indicates supplemental instructions, best practices, tips, and other content.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click <b>Settings</b> > <b>Network</b> > <b>Set network type</b> .
<b>Bold</b>	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click <b>OK</b> .
<code>Courier font</code>	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[ ] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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# 1. What is a VBR?

Virtual border routers (VBRs) are an abstraction of Express Connect circuits that are isolated and virtualized by using the Layer 3 overlay and vSwitch technologies in the Software Defined Network (SDN) architecture. A VBR is deployed between a customer-premises equipment (CPE) and a virtual private cloud (VPC) to exchange data between the VPC and data center.

 **Note** Similar to VPC routers, each VBR manages a route table. You can add routes to the route table of a VBR to control network traffic forwarding.

## Features

A VBR provides the following features:

- Exchanges data between a VPC and a data center.
- Determines the type of virtual interface of an Express Connect circuit: Layer 3 router interface or Layer 3 VLAN subinterface.
- Adds or identifies VLAN tags if a Layer 3 VLAN subinterface is used.
- Supports Border Gateway Protocol (BGP) routing.
  - BGP is a dynamic routing protocol based on Transmission Control Protocol (TCP). BGP is used to exchange routing and network accessibility information across autonomous systems. When you create a connection over an Express Connect circuit, you can configure BGP routing between your data center and the associated VBR. This way, the data center and the VBR can communicate with each other through a private connection. This helps you to set up a hybrid cloud with higher efficiency, flexibility, and security.
  - VBRs support BGP dynamic routing in both IPv4 and IPv6 networks.

## Limits

- VBRs do not support source address-specific policy-based routes.
- Each VBR has one and only one route table.
- VBRs support only BGP-4.
- You can create at most eight BGP peers for each VBR.
- Each BGP peer supports at most 110 dynamic routes. Routes are denied when the upper limit is exceeded.
- To configure BGP when you connect to a VPC, you must specify an Autonomous System Number (ASN) for the VPC. The ASN that you specify must be different from the ASNs of the vSwitches in the VPC.

## 2. Create a VBR

After an Express Connect circuit is enabled, you must create a virtual border router (VBR) for the Express Connect circuit. The VBR is used to route traffic between the virtual private cloud (VPC) and the data center that are connected through the Express Connect circuit.

### Context

A VBR is a router deployed between a VPC and customer-premises equipment (CPE) in a data center. Each VBR is associated with a route table. You can add routes to the route table of a VBR to control network traffic forwarding. A VBR provides the following features:

- Exchanges data between a VPC and a data center.
- Determines the type of virtual interface of an Express Connect circuit: Layer 3 router interface or Layer 3 Virtual Local Area Network (VLAN) subinterface.


Adds or identifies VLAN tags if a Layer 3 VLAN subinterface is used.

- Supports Border Gateway Protocol (BGP) routing.

### Create a VBR

- 1.
- 2.
- 3.
4. In the **Create VBR** panel, set the following parameters and click **OK**.


Parameter	Description
Account	Specify whether to create a VBR for the current or another Alibaba Cloud account. By default, <b>Current account</b> is selected. If you use the default setting, the VBR that you create belongs to the account with which you are logged on.
Name	Enter a name for the VBR.
Physical Connection Interface	Select the type of Express Connect circuit to be associated with the VBR. Then, select an Express Connect circuit is installed and enabled from the drop-down list.  Valid types: <ul style="list-style-type: none"><li>◦ <b>Dedicated Physical Connection</b>: a dedicated Express Connect circuit</li><li>◦ <b>Shared Physical Connection</b>: a shared Express Connect circuit</li></ul>

Parameter	Description
<b>VLAN ID</b>	<p>Enter the VLAN ID of the VBR. Valid values: 0 to 2999.</p> <p>Description of VLAN IDs:</p> <ul style="list-style-type: none"> <li>◦ If the VLAN ID is set to 0, the switch port of the VBR is a Layer 3 router interface instead of a VLAN interface. When a Layer 3 router interface is used, each Express Connect circuit corresponds to a VBR.</li> <li>◦ If the VLAN ID is set to a value from 1 to 2999, the switch port of the VBR is a Layer 3 VLAN subinterface. When a Layer 3 VLAN subinterface is used, each VLAN ID corresponds to a VBR. In this case, the Express Connect circuit with which the VBR is associated can be used to connect to VPCs that belong to different Alibaba Cloud accounts. VBRs in different VLANs are isolated from each other at Layer 2.</li> </ul> <p>Before you set this parameter, take note of the following rules:</p> <ul style="list-style-type: none"> <li>◦ To set a <b>VLAN ID</b> for a dedicated connection over an Express Connect circuit, make sure that the Layer 2 or Layer 3 devices that are used to connect the Express Connect circuit, VBR, and gateway device in the data center have trunking enabled. This way, data can be transmitted from and to the VLAN based on the specified ID. The VLAN ID that you specify is preserved in the packets sent to the destination VLAN and not modified during data transmission. If trunking is disabled, the connection may fail. We recommend that you set <b>VLAN ID</b> to 0 unless your connectivity provider has specific rules or limits on the <b>VLAN ID</b> configuration.</li> <li>◦ You do not need to specify a <b>VLAN ID</b> when you create a VBR for a hosted connection. The <b>VLAN ID</b> is already configured. Therefore, ignore the <b>VLAN ID</b> parameter.</li> </ul>
<b>Set VBR Bandwidth Value</b>	<p>Set the maximum bandwidth of the VBR.</p> <p>You do not need to set this parameter when you create a VBR for a hosted connection. The bandwidth is already configured when the hosted connection is created.</p>
<b>Peer IPv4 Address of Gateway at Alibaba Cloud Side</b>	<p>Specify an IPv4 address for the VBR to route network traffic between the VPC and data center. <b>Peer IPv4 Address of Gateway at Alibaba Cloud Side</b> and <b>Peer IPv4 Address of Gateway at Customer Side</b> must belong to the same CIDR block.</p>
<b>Peer IPv4 Address of Gateway at Customer Side</b>	<p>Specify an IPv4 address for the gateway device in the data center to route network traffic between the VPC and data center.</p> <div>  <b>Note</b> To allow services in the VPC to access a specified gateway IP address, you must add a route to the route table of the VBR. Set the destination CIDR block to the CIDR block to which the specified gateway IP address belongs and the next hop to the Express Connect circuit. For more information about how to add a route, see <a href="#">Add a custom route</a>. </div>
<b>Subnet Mask (IPv4 Address)</b>	<p>Enter the subnet mask of the specified IPv4 addresses. You can enter a longer subnet mask because only two IP addresses are required.</p>

Parameter	Description
Support IPv6	<p>Specify whether to enable IPv6. IPv6 is disabled by default. To use this feature, .</p> <ul style="list-style-type: none"><li>◦ <b>Disable</b>: disables IPv6. This is the default setting.</li><li>◦ <b>Enable</b>: enables IPv6. After you enable IPv6, you cannot disable this feature. Set the following parameters of the VBR:<ul style="list-style-type: none"><li>■ <b>Peer IPv6 Address of Gateway at Alibaba Cloud Side</b>: Specify an IPv6 address for the VBR to route network traffic between the VPC and data center. <b>Peer IPv6 Address of Gateway at Alibaba Cloud Side</b> and <b>Peer IPv6 Address of Gateway at Customer Side</b> must belong to the same CIDR block.</li><li>■ <b>Peer IPv6 Address of Gateway at Customer Side</b>: Enter an IPv6 address for the gateway device in the data center to route network traffic between the VPC and data center.</li><li>■ <b>Subnet Mask (IPv6 Address)</b>: Enter the subnet mask of the specified IPv6 addresses.</li></ul></li></ul>

## Purchase VBRs after the free VBR quota is exhausted

When your free VBR quota is exhausted, you can choose to purchase VBRs.

 **Note** Before you purchase VBRs for your account, you must to acquire the permissions.

- 1.
- 2.
- 3.
4. In the **Create VBR** panel, set the following parameters and click **OK**.
5. In the **Warn** message, click **buy**.
6. On the buy page, set the parameters of the VBR, click **Buy Now**, and then complete the payment.
  - **Region**: Use the default value for this parameter.
  - **Bandwidth**: Specify the maximum bandwidth of the VBR.
  - **Quantity**: Specify the number of VBRs that you want to purchase.
  - **Duration**: Specify the subscription duration. To prevent service interruptions caused by overdue payments, we recommend that you enable **Auto-renewal**.


You can also renew VBRs on the details page of the associated Express Connect circuit. For more information, see [Manage renewal](#).

After you complete the payment, you can choose **Expenses > Orders** in the top navigation bar to view the order details. VBR names are displayed in the `pconn-{vbrId}` format. *vbrId* indicates the VBR ID. For example, if the name is `pconn-vbr-uf6ql2vm2avp****`, the ID of the VBR is `vbr-uf6ql2vm2avp****`.

## Modify the maximum bandwidth of a VBR

You can modify the maximum bandwidth of a free VBR.




- 1.
- 2.
- 3.
4. On the details page of the Express Connect circuit that you want to manage, choose  > **Bandwidth Settings** in the **Actions** column.
5. In the **Bandwidth Settings** panel, specify **Bandwidth Cap** and click **OK**.

## Modify the configuration of a VBR

- 1.
- 2.
3. On the **Virtual Border Routers (VBRs)** page, find the VBR that you want to manage and click **Modify** in the **Actions** column.
4. To modify the VBR, set the following parameters and click **OK**.

Parameter	Description
<b>VLAN ID</b>	<p>Enter the VLAN ID of the VBR. Valid values: 0 to 2999.</p> <ul style="list-style-type: none"><li>◦ If the VLAN ID is set to 0, the switch port of the VBR is a Layer 3 router interface instead of a VLAN interface. When a Layer 3 router interface is used, each Express Connect circuit corresponds to a VBR.</li><li>◦ If the VLAN ID is set to a value from 1 to 2999, the switch port of the VBR is a Layer 3 VLAN subinterface. When a Layer 3 VLAN subinterface is used, each VLAN ID corresponds to a VBR. In this case, the Express Connect circuit with which the VBR is associated can be used to connect to VPCs that belong to different Alibaba Cloud accounts. VBRs in different VLANs are isolated from each other at Layer 2.</li></ul> <p>For example, a company has multiple subdivisions or subsidiaries. Each subdivision or subsidiary has a separate Alibaba Cloud account. Each Alibaba Cloud account has a separate VPC. If the company applies for an Express Connect circuit, the company must assign a VLAN ID to the connection of each subdivision or subsidiary. When the company creates router interfaces, the VLAN IDs are used to identify the subsidiaries or subdivisions that use the Express Connect circuit. In this case, the VBRs of each subsidiary or subdivision are isolated at Layer 2.</p>
<b>Peer IPv4 Address of Gateway at Alibaba Cloud Side</b>	Specify an IPv4 address for the VBR to route network traffic between the VPC and data center.
<b>Peer IPv4 Address of Gateway at Customer Side</b>	Specify an IPv4 address for the gateway device in the data center to route network traffic between the VPC and data center.
<b>Subnet Mask (IPv4 Address)</b>	Enter the subnet mask of the specified IPv4 addresses. You can enter a long subnet mask because only two IP addresses are required.

Parameter	Description
Support IPv6	<p>Specify whether to enable IPv6. IPv6 is disabled by default. To use this feature, .</p> <ul style="list-style-type: none"> <li>◦ <b>Disable</b>: disables IPv6. This is the default setting.</li> <li>◦ <b>Enable</b>: enables IPv6. After you enable IPv6, you cannot disable this feature. Set the following parameters of the VBR: <ul style="list-style-type: none"> <li>■ <b>Peer IPv6 Address of Gateway at Alibaba Cloud Side</b>: Specify an IPv6 address for the VBR to route network traffic between the VPC and data center. <b>Peer IPv6 Address of Gateway at Alibaba Cloud Side</b> and <b>Peer IPv6 Address of Gateway at Customer Side</b> must belong to the same CIDR block.</li> <li>■ <b>Peer IPv6 Address of Gateway at Customer Side</b>: Enter an IPv6 address for the gateway device in the data center to route network traffic between the VPC and data center.</li> <li>■ <b>Subnet Mask (IPv6 Address)</b>: Enter the subnet mask of the specified IPv6 addresses.</li> </ul> </li> </ul>
BFD Parameter	<p>After you enable this feature, the system establishes a Bidirectional Forwarding Detection (BFD) session between the VBR and the gateway device in the data center. This way, the VBR and the gateway device can exchange BFD packets at a specified interval to verify network connectivity. If no packets are returned, the peer is considered unreachable.</p> <div style="background-color: #e6f2ff; padding: 10px; margin: 10px 0;"> <p> <b>Note</b> The BFD parameters take effect only if BFD is enabled. For more information about how to enable BFD, see <a href="#">配置和管理BGP</a>.</p> </div> <ul style="list-style-type: none"> <li>◦ <b>Submission Interval</b>: Specify the interval at which BFD packets are sent. Valid values: 200 to 1000. Unit: milliseconds.</li> <li>◦ <b>Reception Interval</b>: Specify the interval at which BFD packets are received. Valid values: 200 to 1000. Unit: milliseconds.</li> <li>◦ <b>Detection Time Multiple</b>: The detection time multiplier. Valid values: 3 to 10.</li> </ul>

## Delete a VBR

You can delete VBRs that you no longer need.

- 1.
- 2.
3. On the **Virtual Border Routers (VBRs)** page, find the VBR that you want to delete and click **Delete** in the **Actions** column.
4. In the **Delete VBR** message, click **OK**.

## References

- [AttachVbrToVpconn](#): associates a VBR with a hosted connection.
- [CreateVirtualBorderRouter](#): creates a VBR.
- [DescribeVirtualBorderRouters](#): queries VBRs.

- [DescribeVirtualBorderRoutersForPhysicalConnection](#): queries VBRs on a specified Express Connect circuit, including VBRs that belong to the owner of the Express Connect circuit, and VBRs that belong to the tenants of the Express Connect circuit.
- [DeleteVirtualBorderRouter](#): deletes a VBR.
- [ListVirtualPhysicalConnections](#): queries hosted connections.
- [ModifyVirtualBorderRouterAttribute](#): modifies the configuration of a VBR.
- [UpdateVirtualBorderBandwidth](#): modifies the maximum bandwidth of a VBR.

## 3. Connect to a VPC

After you connect your data center to an access point of Alibaba Cloud through an Express Connect circuit, you must attach the associated virtual border router (VBR) to a Cloud Enterprise Network (CEN) instance. The CEN instance must be connected to the virtual private cloud (VPC) that you want to access. This way, your data center can communicate with the VPC through private connections.

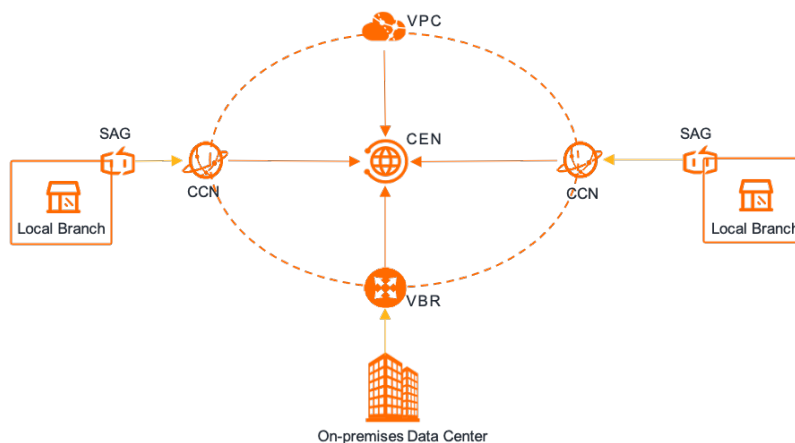
### Prerequisites

- Your data center is connected to Alibaba Cloud through an Express Connect circuit. In addition, a VBR is created for the Express Connect circuit. For more information, see [Create a VBR](#).
- A CEN instance is created and the VPC that you want to access is attached to the CEN instance. For more information, see [Create a CEN Instance](#).

### Context

CEN helps you build a global network for hybrid cloud environments or distributed systems. CEN supports automatic route distribution and learning, which accelerates network convergence and improves the quality and security of cross-region communications.

Network instances such as VPCs, VBRs, and Cloud Connect Network (CCN) instances that are created in the same region and attached to the same CEN instance can communicate with each other through private connections free of charge. Data transfer between network instances in different regions is charged. For example, if you want a VBR in the China (Hangzhou) region and a VPC in the US (Silicon Valley) to communicate with each other, you must purchase a bandwidth plan and allocate bandwidth to the cross-region connection. For more information, see [Allocate bandwidth for cross-region communication](#).



### Procedure

- 1.
- 2.
- 3.
4. In the **Basic Information** section, click **Join CEN**.
5. In the **Join CEN** panel, select the CEN instance to which you want to attach the VBR and click **OK**.

## 4. Manage routes

After you create a virtual border router (VBR), the system automatically creates a route table for the VBR. You can add routes to the route table to manage where network traffic is forwarded.

### Background information

- After you create a VBR, you must add routes that point to the Express Connect circuit and the virtual private cloud (VPC) to route network traffic to the data center and the VPC.
- When you use Cloud Enterprise Network (CEN), Express Connect, Smart Access Gateway (SAG), or Virtual Private Network (VPN) to access internal Object Storage Service (OSS) endpoints, you must add routes that point to the CIDR blocks of the regions where the endpoints are created. For more information, see [Regions and endpoints](#).
- VBRs support custom routes, Border Gateway Protocol (BGP) routes, and CEN routes.
  - You can add or delete a custom route as needed. You can add at most 48 custom routes.
  - You can also configure BGP routing for a VBR. For more information, see [配置和管理BGP](#).
  - After a VBR is attached to a CEN instance, the VBR and the CEN instance can automatically learn routes from each other.
- VBRs do not support source address-specific policy-based routes.

### Add a custom route

- 1.
- 2.
- 3.
4. Click the **Routes** tab and then click **Add Route**.
5. In the **Add Route** panel, set the following parameters and click **OK**.

Parameter	Description
Next Hop Type	Select the next hop type. Valid values: <ul style="list-style-type: none"><li>◦ <b>VPC</b>: The VBR routes network traffic to a VPC.</li><li>◦ <b>Physical Connection Interface</b>: The VBR routes network traffic to an Express Connect circuit.</li></ul>
Destination CIDR Block	Enter the destination CIDR block.
Next Hop	Select the next hop based on the specified type.
Description	Enter a description for the route. The description must be 2 to 256 characters in length and can contain letters and digits.

### Delete a custom route

- 1.

- 2.
- 3.
4. Click the **Routes** tab, find the route that you want to delete, and then click **Delete** in the **Actions** column.
5. In the message that appears, click **OK**.

## References

- **CreateRouteEntry**: adds a custom route to a route table.
- **ModifyRouteEntry**: modifies the name and description of a custom route.
- **DescribeRouteEntryList**: queries routes. Before you delete a route from a route table of a VBR, call the corresponding API operation to query the ID of the next hop, which is returned by **NextHopId**.
- **DeleteRouteEntry**: deletes a custom route from a route table of a VBR.

## 5. Configure a failover group

When the system detects a failure in an Express Connect circuit, the system performs a failover within a few seconds. To accelerate failovers, you can add virtual border routers (VBRs) to a failover group. After the system detects failures on a VBR by using Bidirectional Forwarding Detection (BFD), the system can seamlessly switch workloads to the standby VBR in the failover group within less than one second.

### Limits

- Before you use this feature, to acquire the required permissions.
- You can add only VBRs that have BFD enabled to failover groups.
- Each failover group can contain only two VBRs and each VBR can be added to only one failover group.
- The VBRs in a failover group must be deployed in the same region and attached to the same Cloud Enterprise Network (CEN) instance.
- The BGP peer groups of the VBRs in a failover group must use the same Autonomous System (AS) number.

### Prerequisites

- Two VBRs are created in the same region and each VBR is connected to your data center through an Express Connect circuit. For more information, see [Create a VBR](#) and [Manage routes](#).
- The VBRs are attached to the same CEN instance. For more information, see [Attach a network instance](#).
- BFD is configured for the VBRs. For more information, see [配置和管理BGP](#).


### Create a failover group

- 1.
- 2.
3. On the **Virtual Border Routers (VBRs)** page, click the ID of the VBR that you want to manage.
4. On the VBR details page, click the **Failover Groups** tab, and click **Configure Backup Next Hop**.
5. In the **Configure Backup Next Hop** dialog box, set the following parameters and click **OK**:

Parameter	Description
CEN	The system automatically displays the CEN instance to which the VBR is attached.  If the VBR is not attached to a CEN instance, click <b>Attach Now</b> to attach the VBR to a CEN instance.
Region	The system automatically displays the region where the VBR is deployed.
Failover Group Name	Enter a name for the failover group.
Description	Enter a description for the failover group.

Parameter	Description
<b>Standby VBR</b>	Select a standby VBR from the drop-down list.  The system automatically lists all VBRs that are deployed in the same region, attached to the same CEN instance, and have BFD enabled.

After you complete the preceding steps, the status of the failover group changes to Normal.

 **Note** You cannot modify the configuration of a failover group after the failover group is created. If the configuration of a failover group does not meet your business requirements, click **Delete** in the **Actions** column to delete the failover group. Then, create another failover group that meets your business requirements.

## Test the failover group

After you complete the preceding steps, you can perform the following operations to test the failover group:

1. Log on to an Elastic Compute Service (ECS) instance. For more information, see [Connection methods](#).
2. Run the `ping` command on the ECS instance to check the connectivity between the ECS instance and your data center.

If you can receive echo reply packets, it indicates that the connection is established.

3. Disconnect the active VBR from the data center.
4. Run the `ping` command again on the ECS instance to check the connectivity between the ECS instance and your data center.

If you can receive echo reply packets, it indicates that the connection is switched to the standby VBR in the failover group.



# 6. Monitoring and alerting for VBRs


## Monitoring and alerting

Express Connect is integrated with CloudMonitor. You can view the status of virtual border routers (VBRs) updated in real time and configure alert rules to enable the system to send notifications when alerts are triggered. This helps you gain deep insights into VBRs and detect connectivity errors at the earliest opportunity to prevent service interruptions.

## Prerequisites

- A VBR is created. For more information, see [Create a VBR](#).
- A contact or a contact group is created before you configure an alert rule. For more information, see [Create an alert contact or alert contact group](#).


## View monitoring data of a VBR

- 1.
- 2.
3. On the **Virtual Border Routers (VBRs)** page, find the VBR that you want to manage and click the  icon in the **Monitor** column.



By default, the system displays monitoring data within the last hour. You can select 1 hour, 3 hours, 6 hours, or 12 hours on the dashboard, or specify a custom time range.

## Configure an alert rule for a VBR

The following procedure shows how to configure an alert rule for a VBR in the Express Connect console. For more information about how to configure an alert rule for a VBR in the CloudMonitor console, see [Create an alert rule](#).

- 1.
- 2.
3. On the **Virtual Border Routers (VBRs)** page, find the VBR that you want to manage and click the  icon in the **Monitor** column.
4. Click **Set Alert Threshold** in the upper-right corner of the **Monitor** panel.
5. On the **Alert Rules** page, click **Create Alert Rule**.
6. In the **Create Alert Rule** panel, set the following parameters and click **OK**.

Parameter	Description
Product	Select the type of resource that you want to monitor by using CloudMonitor. In this example, <b>Express Connect-VBR</b> is selected.

Parameter	Description
Resource Range	<p>Specify the resources to which the alert rule is applied.</p> <ul style="list-style-type: none"> <li>◦ If you select <b>All Resources</b>, the system generates an alert when a VBR that belongs to the current Alibaba Cloud account meets the specified condition.</li> <li>◦ If you select <b>Application Group</b> and select an application group from the <b>Associated Resources</b> drop-down list, the system generates an alert when a VBR that belongs to the application group meets the specified condition.</li> <li>◦ If you select <b>Instance</b> and select the region and ID of a VBR from the <b>Associated Resources</b> drop-down list, the system generates an alert only when the selected VBR meets the specified condition.</li> </ul>
Rule Description	<p>Specify the condition of the alert rule. An alert is triggered when the condition of the alert rule is met. To specify a condition, perform the following operations:</p> <ol style="list-style-type: none"> <li>Click <b>Add Rules</b>.</li> <li>In the <b>Add Rule Description</b> panel, specify the rule name, metric type, metric, threshold, alert level, and notification method.</li> <li>Click <b>OK</b>.</li> </ol>
Mute For	<p>Specify the interval at which CloudMonitor resends alert notifications before the alert is cleared.</p> <p>An alert is triggered when the condition of an alert rule is met. CloudMonitor does not resend an alert notification if the alert is triggered again within the mute period. If the alert is not cleared after the mute period ends, CloudMonitor resends alert notifications.</p> <div>  <b>Note</b> You can click <b>Advanced Settings</b> to set this parameter.         </div>
Effective Time	<p>Specify the period of time during which the alert rule is effective. CloudMonitor monitors a resource and generates alerts only if the alert rule is effective.</p> <div>  <b>Note</b> You can click <b>Advanced Settings</b> to set this parameter.         </div>
Alert Contact Group	Select a contact group to which alert notifications are sent.
Alert Callback	<p>Specify a URL that can be accessed over the Internet. CloudMonitor sends HTTP POST requests to push alert notifications to the specified URL. Only HTTP requests are supported. For more information about how to configure webhooks, see <a href="#">Use the alert callback feature to send notifications about threshold-triggered alerts</a>.</p>

Parameter	Description
Auto Scaling	<p>If you turn on <b>Auto Scaling</b>, the specified scaling rule is enabled when an alert is triggered. In this case, you must specify <b>Region</b>, <b>ESS Group</b>, and <b>ESS Rule</b>.</p> <ul style="list-style-type: none"><li>◦ For more information about how to create a scaling group, see <a href="#">Create a scaling group</a>.</li><li>◦ For more information about how to create a scaling rule, see <a href="#">Create a scaling rule</a>.</li></ul>
Log Service	<p>If you turn on <b>Log Service</b>, the alert information is written to Log Service when an alert is triggered. You must specify <b>Region</b>, <b>Project</b>, and <b>Logstore</b> if you select this option.</p> <p>For more information about how to create a project and a Logstore, see <a href="#">Getting Started</a>.</p>
Message Service - topic	<p>If you turn on <b>Message Service - topic</b>, the alert information is written to the specified topic in Message Service (MNS) when an alert is triggered. In this case, you must select a region and a topic.</p> <p>For information about how to create a topic, see <a href="#">Create a topic</a>.</p>
No data alarm processing method	<p>Select a method that is used to handle alerts when no monitoring data is found.</p> <ul style="list-style-type: none"><li>◦ <b>Do not do anything</b></li><li>◦ <b>Send no data alarm</b></li><li>◦ <b>Treated as normal</b></li></ul>