

Cloud Eye

User Guide

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1 Dashboards

1.1 Introduction to Dashboards

Dashboards serve as custom monitoring platforms and allow you to view core metrics and compare the performance data of different services.

1.2 Creating a Dashboard

You must create a dashboard before you add graphs. You can create a maximum of 10 dashboards.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Dashboard**. Click **Create Dashboard** in the upper right corner.
The **Create Dashboard** dialog box is displayed.
4. Set the dashboard name.
 - **Name:** Enter a maximum of 128 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.
 - **Enterprise Project:** If you associate a dashboard with an enterprise project, only users who have the permissions of the enterprise project can manage the dashboard.

NOTE

The enterprise project feature is available only in some regions.

5. Click **OK**.

1.3 Adding a Graph

After you create a dashboard, you can add graphs to the dashboard to monitor cloud services. Each dashboard supports up to 50 graphs.

You can add up to 50 metrics to one graph. Monitoring comparison between different services, dimensions, and metrics is supported.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Dashboard**. Switch to the dashboard to which you want to add a graph, and click **Add Graph**.
The **Add Graph** dialog box is displayed.
4. Set parameters based on [Table 1-1](#).

Table 1-1 Parameters


Parameter	Description
Title	Specifies the title of the graph to be added. Only letters, digits, underscores (_), and hyphens (-) are allowed. Enter a maximum of 128 characters. Example value: widget-axaj
Enterprise Project	Specifies the enterprise project associated with the graph. You can view the monitoring data on the graph only when you have the enterprise project permission.
Resource Type	Specifies the type of the resource to be monitored. Example value: Elastic Cloud Server
Dimension	Specifies the metric dimension. Example value: ECSs
Monitored Object	Specifies the monitored objects of the metric. You can select a maximum of 50 monitored objects at a time.
Metric	Specifies the metric name. Example value: CPU Usage

5. Click **Next: Configure Legend**.

The graph title is displayed on the metric change curve in the monitoring graph. You can set the graph title as required, for example, ECS01-CPU usage. If the CPU usage is 10%, **ECS01 - CPU Usage: 10%** is displayed as the graph title.

If you do not configure the graph title, the default title in the following format is displayed: monitored object (resource type) - metric: monitoring data. For example, if the CPU usage is 10%, **ECS01 (Elastic Cloud Server) - CPU Usage: 10%** is displayed as the graph title.

6. Click **OK**.

On the selected dashboard, you can view the trends of the new graph. If you hover your mouse on the graph and click , you can view detailed metric data comparison.

1.4 Viewing a Graph


After you add a graph, you can view the metric trends on the **Dashboards** page. The system provides you both default and customizable time ranges to view trends from last month. This topic describes how to view trends for a longer time range.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Dashboard**.

You can view all monitoring graphs on the current dashboard.

NOTE

- You can sort graphs by dragging them.
 - You can click **1h**, **3h**, **12h**, **1d**, or **7d** in the upper part of monitoring graphs to switch the monitoring periods of all graphs on the dashboard. By default, raw metric data is displayed for **1h** and , and the aggregated metric data is displayed for other periods.
4. Hover your mouse over a graph. In the upper right corner, click  to view monitoring details on an enlarged graph. You can select a time period or customize a time range to view the metric trend in a specific monitoring interval.

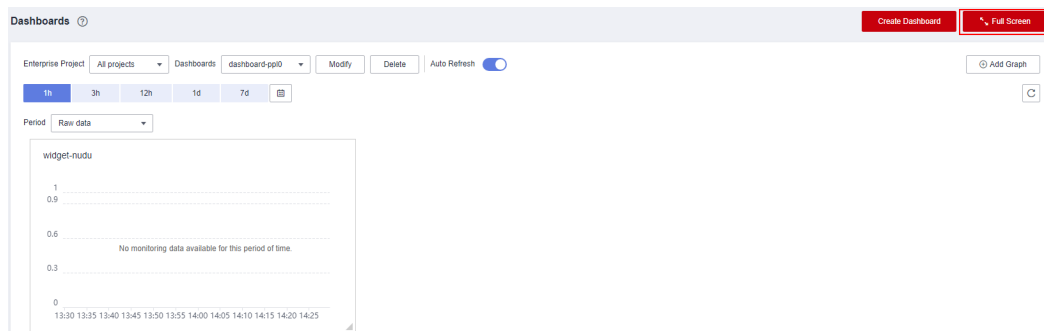
Raw metric data is displayed for **1h**, **3h**, **12h**, and **1d** by default. For **7d** and **30d**, rolled-up data is displayed by default.

Using the Full Screen

The full screen displays metric data more clearly.

- To enter the full screen, click **Full Screen** in the upper right corner of the **Dashboard** page.
- To exit the full screen, click **Exit Full Screen** in the upper left corner of the page.

Figure 1-1 Full Screen

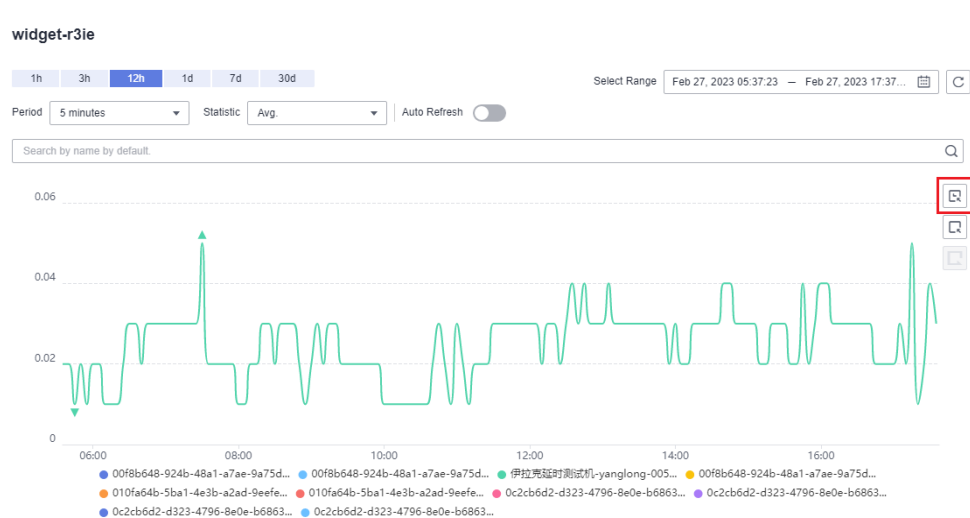


Customizing a Period to View the Monitoring Graph

By default, metrics in the last 1 hour, last 3 hours, last 12 hours, last 24 hours, and last 7 days are displayed. If you want to view metrics in the last 2 hours or a customized time period, you can drag the mouse to select the time range you want to view on the X axis.

- To view metric details in a customized time period, click the first icon on the right. Drag the mouse to select a customized time range. The system automatically displays the monitoring data in the selected time range.

Figure 1-2 Customizing a period

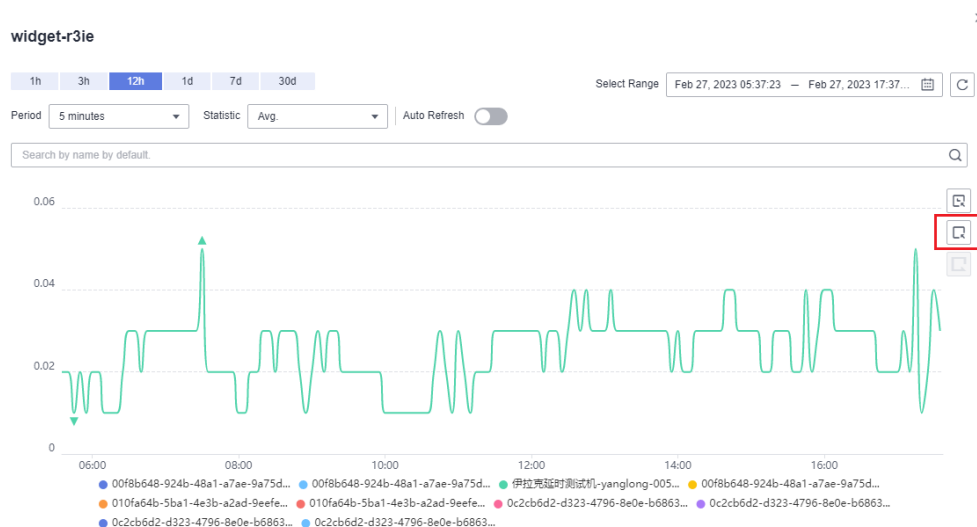


- To go back to the default graph, click the third icon on the right.

Selecting Monitoring Objects and Viewing Metrics

To compare the same metric of multiple resources, you can combine the metrics of the resources into a graph. When there are a large number of resources, you can drag to select monitored objects if you want to compare the metric data of only some of the resources.

- To select a monitored object, click the second icon on the right. Drag the mouse on part of the curve of the target monitored objects. Then, the system automatically displays the data of the selected monitored objects and hides the monitoring data of other monitored objects.

Figure 1-3 Selecting the object to be monitored

- To go back to the default graph, click the third icon on the right.

NOTE

In the lower part of an enlarged graph, you can select a monitored object as follows: Click a resource object to hide its trend chart, and click the monitored object again to display its trend chart.

1.5 Configuring a Graph

This topic describes how to add, modify, and delete metrics on graphs.

Procedure

- Log in to the management console.
- Click **Service List** in the upper left corner, and select **Cloud Eye**.
- In the navigation pane on the left, choose **Dashboard**. Select the target panel and graph, and click the configure icon.

On the displayed **Configure Graph** dialog box, you can edit the graph title and add new metrics. You can also delete or modify the current metrics.

NOTE

You can add up to 50 metrics to a graph.

1.6 Deleting a Graph

- Log in to the management console.
- Click **Service List** in the upper left corner, and select **Cloud Eye**.
- In the navigation pane on the left, choose **Dashboard**.
- Select the dashboard from which you want to delete a graph.
- Hover your mouse on the target graph and click the trash icon in the upper right corner.

6. In the displayed **Delete Graph** dialog box, click **Yes**.

1.7 Deleting a Dashboard

To re-plan graphs on a dashboard, you can delete the dashboard. After that, all graphs on the dashboard will also be deleted.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Dashboard**.
4. Select the target dashboard.
5. Click **Delete**.
6. In the displayed **Delete Dashboard** dialog box, click **OK**.

2 Resource Groups

2.1 Introduction to Resource Groups

A resource group allows you to add and monitor correlated resources and provides a collective health status for all resources that it contains.

2.2 Creating a Resource Group

Scenarios

If you use multiple cloud services, you can add all related resources, such as ECSs, BMSs, EVS disks, elastic IP addresses, bandwidths, and databases to the same resource group for easier management and O&M.

Restrictions

- Each user can create up to 10 resource groups.
- A resource group must contain 1 to 1,000 cloud service resources.
- There are restrictions on the number of resources of different types that can be added to a resource group. For details, see the tips on the Cloud Eye console.

Procedure

1. Log in to the management console.
2. In the upper left corner, select a region and project.
3. Click **Service List** in the upper left corner, and select **Cloud Eye**.
4. In the navigation pane on the left, choose **Resource Groups**.
5. In the upper right corner, click **Create Resource Group**.
6. Enter the group name.
7. Select the target cloud service resources.

 NOTE

You can search for ECSs and BMSs by name, ID, and private IP address. For other cloud services, you can search only by name and ID.

8. Click **Create**.

2.3 Viewing Resource Groups

2.3.1 Resource Group List

The resource group list displays all resource groups you have on Cloud Eye, the resources they contain, and the health status of each resource group.

Procedure

1. Log in to the management console.
2. In the upper left corner, select a region and project.
3. Click **Service List** in the upper left corner, and select **Cloud Eye**.
4. In the navigation pane on the left, choose **Resource Groups**.

On the **Resource Groups** page, you can view all the resource groups that have been created.

Table 2-1 Parameters of the resource group list

Parameter	Description
Name/ID	Specifies the resource group name and ID. NOTE The group name can contain a maximum of 128 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.
Alarm Status	<ul style="list-style-type: none">• No alarm: No alarm resource exists in the group.• In alarm: An alarm is being generated for a resource in the group.• No alarm rules set: No alarm rules have been created for any resource in the group.
Resources (Alarm/Total)	Total number of resources that are generating alarms in a group/Total number of resources in the group.
Resource Types	Specifies the number of different resource types in a group. For example, if there are two ECSs and one EVS disk in a resource group, then there are two types of resources and Resource Types is 2.
Enterprise Project	Specifies the name of the enterprise project that has the resource group permission.
Add Resources	Indicates the method of creating a resource group. The value can be Manual or Intelligent.

Parameter	Description
Synchronize Resources	You can add all resources in an enterprise project or resources with the same tags to a resource group.
Created	Specifies the time when the resource group was created.
Operation	Only the group deletion operation is supported.

2.3.2 Resource Overview

The **Resource Overview** page displays the resource types contained in the current group, as well as the total number of resources of each resource type, dimensions, and whether there are alarms generated for the resources.

Procedure

1. Log in to the management console.
2. In the upper left corner, select a region and project.
3. Click **Service List** in the upper left corner, and select **Cloud Eye**.
4. In the navigation pane on the left, choose **Resource Groups**.
5. Click a resource group name to go to the **Resource Overview** page.

2.3.3 Alarm Rules

The **Alarm Rules** page displays all alarm rules in a resource group. You can enable, disable, modify, or delete alarm rules.

Procedure

1. Log in to the management console.
2. In the upper left corner, select a region and project.
3. Click **Service List** in the upper left corner, and select **Cloud Eye**.
4. In the navigation pane on the left, choose **Resource Groups**.
5. Click a resource group name to go to the **Resource Overview** page.
6. In the navigation pane on the left, choose **Alarm Rules** to view all alarm rules in the resource group.

2.4 Managing Resource Groups

2.4.1 Deleting a Resource Group

Procedure

1. Log in to the management console.
2. In the upper left corner, select a region and project.

3. Click **Service List** in the upper left corner, and select **Cloud Eye**.
4. In the navigation pane on the left, choose **Resource Groups**.
5. Locate the row containing the target resource group and click **Delete** in the **Operation** column.
6. In the displayed **Delete Resource Group** dialog box, click **Yes**.

3 Using the Alarm Function

3.1 Introduction to the Alarm Function

You can set alarm rules for key metrics of cloud services. When the conditions in the alarm rule are met, Cloud Eye sends emails, or SMS messages, or sends HTTP/HTTPS messages, enabling you to quickly respond to resource changes.

Cloud Eye invokes SMN APIs to send notifications. This requires you to create a topic and add subscriptions to this topic on the SMN console. Then, when you create alarm rules on Cloud Eye, you can enable the alarm notification function and select the topic. When alarm rule conditions are met, Cloud Eye sends the alarm information to subscription endpoints in real time.

NOTE

If no alarm notification topic is created, alarm notifications will be sent to the default email address of the login account.

3.2 Creating Alarm Notification Topics

3.2.1 Creating a Topic

Scenarios

A topic serves as a message sending channel, where publishers and subscribers can interact with each other.

You can create your own topic.

Creating a Topic

1. Log in to the management console.
2. In the upper left corner, select a region and project.
3. In the service list, select **Simple Message Notification**.
The SMN console is displayed.

- In the navigation pane on the left, choose **Topic Management > Topics**.
The **Topics** page is displayed.
- Click **Create Topic**.
The **Create Topic** dialog box is displayed.
- Enter a topic name and display name (topic description).

Table 3-1 Parameters required for creating a topic

Parameter	Description
Topic Name	Specifies the topic name, which <ul style="list-style-type: none">Contains only letters, digits, hyphens (-), and underscores (_) and must start with a letter or a digit.Must contain 1 to 255 characters.Must be unique and cannot be modified after the topic is created.
Display Name	Specifies the message sender name, which must be less than 192 characters. NOTE After you specify a display name in <i>Display name</i> <username@example.com> format, the name you specify will be displayed as the email sender. Otherwise, the sender will be username@example.com .
Tag	Tags identify cloud resources so that they can be categorized easily and searched quickly. <ul style="list-style-type: none">For each resource, each tag key must be unique, and each tag key can have only one tag value.A tag key can contain a maximum of 36 characters, including digits, letters, underscores (_), and hyphens (-).A tag value can contain a maximum of 43 characters, including digits, letters, underscores (_), periods (.), and hyphens (-).You can add up to 10 tags to a topic.

- Click **OK**.
The topic you created is displayed in the topic list.
After you create a topic, the system generates a uniform resource name (URN) for the topic, which uniquely identifies the topic and cannot be changed.
- Click a topic name to view the topic details and the total number of topic subscriptions.

Follow-up Operations

After you create a topic, **add subscriptions**. After the subscriptions have been confirmed, alarm notifications will be sent to the subscription endpoints via SMN.

3.2.2 Adding Subscriptions

A topic is a channel used by SMN to publish messages. Therefore, after you create a topic, add subscriptions. In this way, when the metric triggers an alarm, Cloud Eye sends the alarm information to subscription endpoints of the topic.

Adding Subscriptions

1. Log in to the management console.
2. Select **Simple Message Notification** under **Application**.
The SMN console is displayed.
3. In the navigation pane on the left, choose **Topic Management > Topics**.
The **Topics** page is displayed.
4. Locate the topic you want to add subscriptions to and click **Add Subscription** in the **Operation** column.
The **Add Subscription** dialog box is displayed.
5. Specify the subscription protocol and endpoints.
If you enter multiple endpoints, enter each endpoint on a separate line.
6. Click **OK**.
The subscription you added is displayed in the subscription list.

NOTE

After the subscription is added, the corresponding subscription endpoint will receive a subscription notification. You need to confirm the subscription so that the endpoint can receive alarm notifications.

3.3 Creating Alarm Rules

3.3.1 Introduction to Alarm Rules

You can flexibly create alarm rules on the Cloud Eye console. You can create an alarm rule for a specific metric or use the alarm template to create alarm rules in batches for multiple cloud service resources.

Cloud Eye provides you with default alarm templates tailored to each service. In addition, you can also create custom alarm templates by modifying the default alarm template or by specifying every required field.

3.3.2 Creating an Alarm Rule

This topic describes how to create an alarm rule.

Creating an Alarm Rule

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Alarm Management > Alarm Rules**.


4. Click **Create Alarm Rule** in the upper right corner.
5. On the **Create Alarm Rule** page, follow the prompts to configure the parameters.
 - a. Set the alarm rule name and description.

Table 3-2 Name and Description

Parameter	Description
Name	Specifies the alarm rule name. The system generates a random name, which you can modify. Example value: alarm-b6a1
Description	(Optional) Provides supplementary information about the alarm rule.

- b. Select a monitored object and configure alarm content parameters.

Table 3-3 Parameters

Parameter	Description	Example Value
Alarm Type	Specifies the alarm type to which the alarm rule applies. The value can be Metric or Event .	Metric
Resource Type	Specifies the type of the resource the alarm rule is created for.	Elastic Cloud Server
Dimension	Specifies the metric dimension of the selected resource type.	EC2s
Monitoring Scope	<p>The monitoring scope of an alarm rule can be All resources, Resource groups, or Specified resources.</p> <p>NOTE</p> <ul style="list-style-type: none"> • If you select All resources, an alarm notification will be sent when any instance meets an alarm policy, and existing alarm rules will be automatically applied for newly purchased resources. • If Resource groups is selected and any resource in the group meets the alarm policy, an alarm is triggered. • If you select Specific resources, select one or more resources and click  to add them to the box on the right. 	All resources

Parameter	Description	Example Value
Method	You can select an associated template, use an existing template or create a custom template as required. NOTE After an associated template is modified, the policies contained in this alarm rule to be created will be modified accordingly.	Configure manually
Template	Specifies the template to be used. You can select a default alarm template or customize a template.	N/A
Alarm Policy	Specifies the policy for triggering an alarm. If you set Resource Type to Custom Monitoring , or a specific cloud service, whether to trigger an alarm depends on whether the metric data in consecutive periods reaches the threshold. For example, Cloud Eye triggers an alarm if the average CPU usage of the monitored object is 80% or more for three consecutive 5-minute periods. If you set Resource Type is to Event Monitoring , the event that triggers the alarm is an instant event. For example, if event improper ECS running occurs, Cloud Eye triggers an alarm. NOTE A maximum of 50 alarm policies can be added to an alarm rule. If any one of these alarm policies is met, an alarm is triggered.	N/A
Alarm Severity	Specifies the alarm severity, which can be Critical, Major, Minor, or Informational .	Major

- c. Configure the alarm notification.

Table 3-4 Alarm Notification parameters

Parameter	Description
Alarm Notification	Specifies whether to notify users when alarms are triggered. Notifications can be sent by email, text message, or HTTP/HTTPS message.

Parameter	Description
Notification Object	Specifies the object that receives alarm notifications. You can select the account contact or a topic. <ul style="list-style-type: none"> • Account contact is the mobile number and email address of the registered account. • A topic is used to publish messages and subscribe to notifications. If the required topic is unavailable, create one first and add subscriptions to it. For details, see Creating a Topic and Adding Subscriptions.
Validity Period	Cloud Eye sends notifications only within the notification window specified in the alarm rule. If Validity Period is set to 08:00-20:00 , Cloud Eye sends notifications only within 08:00-20:00.
Trigger Condition	Specifies the condition for triggering the alarm notification. You can select Generated alarm (when an alarm is generated), Cleared alarm (when an alarm is cleared), or both.

- d. Configure the enterprise project.

Figure 3-1 Advanced Settings



Table 3-5 Name and Description

Parameter	Description
Enterprise Project	Specifies the enterprise project that the alarm rule belongs to. Only users with the enterprise project permissions can manage the alarm rule. For details about how to create an enterprise project, see Creating an Enterprise Project .

- e. Click **Create**.

After the alarm rule is created, if the metric data reaches the specified threshold, Cloud Eye immediately informs you that an exception has occurred.

To view monitoring graphs, click **View Graph** or **View Resource** in the **Operation** column, and click **View Graph** in the displayed **View Resource** dialog box.

3.4 Viewing Alarm Records

The **Alarm Records** page can display the status changes of all alarm rules in the last 30 days.

When an alarm is generated, you can view the alarm records about the cloud resource.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. Choose **Alarm Management > Alarm Records**.

On the **Alarm Records** page, you can view the status changes of all alarm rules in the last 7 days.

NOTE

- You can select a time range within the past 30 days to view alarm records.
- In the upper right corner of the alarm record list, you can filter the alarm records by the alarm rule name, resource ID, and alarm rule ID.

3.5 One-Click Monitoring

Scenarios

One-click monitoring enables you to quickly and easily enable or disable monitoring of common events for certain services. This topic describes how to use the one-click monitoring function to monitor key metrics.

Constraints

- One-click monitoring sends notifications only when alarms are generated and does not send notifications when alarms are cleared.
- Once the alarm threshold is reached, one-click monitoring will trigger alarms immediately.
- Alarm policies cannot be modified in one-click monitoring.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Alarm Management > One-Click Monitoring**.
4. Locate the cloud service you want to monitor, and enable **One-Click Monitoring**.
5. Click the arrow on the left of the cloud service name to view the built-in alarm rules.

 NOTE

The notification object of one-click monitoring rule is the account contact. Alarm notifications will be sent to the mobile number or email address provided during registration.

3.6 Alarm Rule Management

This topic describes how to manage alarm rules as your system grows.

3.6.1 Modifying an Alarm Rule

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. Choose **Alarm Management > Alarm Rules**.
4. On the displayed **Alarm Rules** page, use either of the following two methods to modify an alarm rule:
 - Locate the row containing the alarm rule you want to modify, click **Modify** in the **Operation** column.
 - Click the name of the alarm rule you want to modify. On the page displayed, click **Modify** in the upper right corner.
5. On the **Modify Alarm Rule** page, modify alarm rule parameters as needed.

Table 3-6 Parameters

Parameter	Description	Example Value
Name	Specifies the alarm rule name. The system generates a random name, which you can modify.	alarm-b6al
Description	(Optional) Provides supplementary information about the alarm rule.	N/A
Resource Type	Specifies the type of the resource the alarm rule is created for.	Elastic Cloud Server
Dimension	Specifies the metric dimension of the selected resource type.	EC2s
Monitoring Scope	Specifies the monitoring scope the alarm rule applies to.	Resource Groups
Group	This parameter is mandatory when Monitoring Scope is set to Resource groups .	N/A

Parameter	Description	Example Value
Method	There are two options: Associate template or Configure manually . NOTE After an associated template is modified, the policies contained in this alarm rule to be created will be modified accordingly.	Configure manually
Monitored Object	Specifies the resource the alarm rule is created for. You can specify one or more resources.	N/A
Metric	For example: <ul style="list-style-type: none">• CPU Usage Indicates the CPU usage of the monitored object in percent.• Memory Usage Indicates the memory usage of the monitored object in percent.	CPU Usage
Alarm Policy	Specifies the policy for triggering an alarm. For example, an alarm is triggered if the average value of the monitored metric is 80% or more for three consecutive 5-minute periods.	N/A
Alarm Severity	Specifies the alarm severity, which can be Critical , Major , Minor , or Informational .	Major
Alarm Notification	Specifies whether to notify users by sending emails, or by sending HTTP/HTTPS messages to servers.	N/A
Trigger Condition	Specifies the condition for triggering the alarm notification. You can select Generated alarm (when an alarm is generated), Cleared alarm (when an alarm is cleared), or both.	N/A

6. Click **Modify**.

3.6.2 Disabling Alarm Rules

To disable an alarm rule, go to the **Alarm Rules** page, locate the row containing the alarm rule you want to disable, and click **More** and **Disable** in the **Operation** column. In the displayed **Disable Alarm Rule** dialog box, click **Yes**.

To disable multiple alarm rules, go to the **Alarm Rules** page, select multiple alarm rules, and click **Disable** in the upper left of the alarm rule list. In the displayed **Disable Alarm Rule** dialog box, click **Yes**.

3.6.3 Enabling Alarm Rules

To enable a single alarm rule, go to the **Alarm Rules** page, locate the row containing the alarm rule you want to enable, and click **More** and **Enable** in the **Operation** column. In the displayed **Enable Alarm Rule** dialog box, click **Yes**.

To enable multiple alarm rules, go to the **Alarm Rules** page, select multiple alarm rules, and click **Enable** in the upper left of the alarm rule list. In the displayed **Enable Alarm Rule** dialog box, click **Yes**.

3.6.4 Deleting Alarm Rules

To delete a single alarm rule, go to the **Alarm Rules** page, locate the row containing the alarm rule you want to delete, click **More** in the **Operation** column, and choose **Delete**. In the displayed **Delete Alarm Rule** dialog box, click **Yes**.

To delete multiple alarm rules, go to the **Alarm Rules** page, select multiple alarm rules, and click **Delete** in the upper left of the alarm rule list. In the displayed **Delete Alarm Rule** dialog box, click **Yes**.

3.7 Alarm Templates

3.7.1 Viewing Alarm Templates

An alarm template contains a group of alarm rules for a specific service. You can use it to quickly create alarm rules for multiple resources of a cloud service. Cloud Eye recommends alarm templates based on the attributes of each cloud service. It also allows you to create custom templates as needed.

Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. Choose **Alarm Management** > **Alarm Templates**.

On the **Alarm Templates** page, you can create, view, modify, or delete custom templates.

3.7.2 Creating a Custom Template

1. On the **Alarm Templates** page, click **Create Custom Template**.
2. On the **Create Custom Template** page, configure parameters by referring to [Table 3-7](#).

Table 3-7 Parameters

Parameter	Description
Name	Specifies the alarm rule name. The system generates a random name, which you can modify. Example value: alarmTemplate-c6ft
Description	(Optional) Provides supplementary information about the custom template.
Method	You can select Using existing template or Configure manually . <ul style="list-style-type: none">● Using existing template: Select an existing template for Template. The default alarm rules in the template are automatically added.● Configure manually: You can customize alarm policies as required.
Add Resource Type	Specifies the type of the resource the alarm rule is created for. Example value: Elastic Cloud Server
Metric Name	For example: <ul style="list-style-type: none">● CPU Usage Indicates the CPU usage of the monitored object in percent.● Memory Usage Indicates the memory usage of the monitored object in percent.
Alarm Policy	Specifies the policy for triggering an alarm. For example, an alarm is triggered if the average value of the monitored metric is 80% or more for three consecutive 5-minute periods.
Alarm Severity	Specifies the alarm severity, which can be Critical , Major , Minor , or Informational .
Operation	You can copy or delete an added alarm policy.

3. Click **Create**.

3.7.3 Modifying a Custom Template

1. In the navigation pane on the left, choose **Alarm Management > Alarm Templates** and click **Custom Templates**. Locate the template you want to modify and click **Modify** in the **Operation** column.
2. On the **Modify Custom Template** page, modify the configured parameters by referring to [Table 3-7](#).
3. Click **Modify**.

3.7.4 Deleting a Custom Template

In the navigation pane on the left, choose **Alarm Management > Alarm Templates** and click the **Custom Templates**. Locate the template you want to delete and click **Delete** in the **Operation** column. In the displayed **Delete Custom Template** dialog box, click **OK**.

4 Server Monitoring

4.1 Introduction to Server Monitoring

Server monitoring includes basic monitoring, process monitoring, and OS monitoring for servers.

- Basic monitoring covers metrics automatically reported by ECSs. The data is collected every 5 minutes. For details, see [Services Interconnected with Cloud Eye](#).
- OS monitoring provides proactive and fine-grained OS monitoring for ECSs or BMSs, and it requires the Agent to be installed on all servers that will be monitored. The data is collected every minute. OS monitoring supports metrics such as CPU usage and memory usage (Linux). For details, see [Services Interconnected with Cloud Eye](#).
- Process monitoring provides monitoring of active processes on hosts. By default, Cloud Eye collects CPU usage, memory usage, and number of opened files of active processes.

NOTE

- Windows and Linux OSs are supported. For details, see [What OSs Does the Agent Support?](#)
- For the ECS specifications, use 2 vCPUs and 4 GB memory for a Linux ECS and 4 vCPUs and 8 GB memory or higher specifications for a Windows ECS.
- The Agent will occupy system ports. For details, see descriptions of **ClientPort** and **PortNum** in section [\(Optional\) Manually Configuring the Agent \(Linux\)](#). If the Agent port conflicts with a service port, see [What Should I Do If the Service Port Is Used by the Agent?](#)
- To install the Agent in a Linux server, you must have the root permissions. For a Windows server, you must have the administrator permissions.

Scenarios

Whether you are using ECSs or BMSs, you can use server monitoring to track various OS metrics, monitor server resource usage, and query monitoring data when faults occur.

Constraints

Server monitoring is available only for servers installed using public images provided by Huawei Cloud. If any problem occurs when you use a private image, Cloud Eye will not provide technical support.

Monitoring Capabilities

Server monitoring provides multiple metrics, such as metrics for CPU, memory, disk, and network usage, meeting the basic monitoring and O&M requirements for servers. For details about metrics, see [Services Interconnected with Cloud Eye](#).

Resource Usage

The Agent uses considerably less resources. When the Agent is installed on a server, it uses less than 5% of the CPU and less than 100 MB of memory.

4.2 Agent Installation and Configuration

Based on the OS you are going to use, server quantity, and personal habits, install the Agent by choosing one or more of the following scenarios:

Scenario	Supported Service	Reference
Installing the Agent on a Linux server	ECS and BMS	Installing and Configuring the Agent on a Linux ECS or BMS
Installing the Agent on a Windows server	ECS	Installing and Configuring the Agent on a Windows ECS
Installing the Agent in batches on Linux servers	ECS	Installing the Agents in Batches on Linux ECSs

Agent installation and configuration description:

- To successfully install the Agent, ensure that both DNS and security group rules are correctly configured.
- After you install the Agent, you can click **Restore Agent Configurations** on the Cloud Eye console to complete the agency and Agent configuration.
- If the Agent fails to be configured by clicking **Restore Agent Configurations** or due to other reasons, manually configure it.
- For details about the OSs that support the Agent, see [What OSs Does the Agent Support?](#)
- It is recommended that you use an ECS or BMS with the Agent installed to create a private image, use the private image to create another ECS or BMS, and then configure the Agent for the new ECS or BMS by following the steps in [Restoring the Agent Configurations on a Linux Server](#).

 NOTE

A private image created in one region cannot be used in another region. Otherwise, no monitoring data will be generated for the ECSs created by using this private image.

If you install the Agent on an ECS created using a private image, and any problem occurs during the Agent installation and usage, Cloud Eye does not provide technical support.

4.3 Agent Features per Version

Metrics or functions supported by the Agent vary depending on the Agent version. By default, the Agent is automatically upgraded, so that you can experience new functions as earlier as possible. The following describes features of each Agent version.

Version 2.4.1

The Agent can monitor more metrics.

Version 2.3.2

The Agent architecture and installation path are updated.

Version 1.2.3

The permission on the file generated after the Agent is installed is optimized.

Version 1.2.2

A 20-minute random hash is added when the Agent is started.

Version 1.1.9

Some metrics are optimized for better experience.

Version 1.1.2

The Agent performance is optimized. When the Agent does not report data, manually rectify it by referring to [What Should I Do If the Monitoring Period Is Interrupted or the Agent Status Keeps Changing?](#)

Version 1.0.14

CPU, CPU load, disk, and disk I/O metrics are added to **OS Monitoring**. For details, see [Services Interconnected with Cloud Eye](#).

4.4 Installing and Configuring the Agent on a Linux ECS or BMS

4.4.1 Modifying the DNS Server Address and Adding Security Group Rules (Linux)

Scenarios

This topic describes how to add the DNS server address and security group rules to a Linux ECS or BMS to ensure successful downloading of the Agent installation package and successful monitoring data collection. This topic takes an ECS as an example. The operations for BMSs are similar.

You can modify the DNS server address of an ECS via command lines or the management console.

NOTE

DNS and security group configuration are intended for the primary NIC.

Modifying the DNS Server Address (Command Lines)

The following describes how to add the DNS server address to the `resolv.conf` file using command lines.

To use the management console, see [Modifying the DNS Server Address \(Management Console\)](#).

1. Log in to an ECS as user `root`.
2. Run the `vi /etc/resolv.conf` command to open the file.
3. Add the DNS server address, for example, `nameserver 100.125.1.250` and `nameserver 100.125.21.250` to the file. Enter `:wq` and press `Enter` to save the change.

Figure 4-1 Adding the DNS server address (Linux)

```
# Generated by NetworkManager
search openstacklocal
nameserver 100.125.1.250
nameserver 100.125.21.250
options single-request-reopen
```


NOTE

The `nameserver` value varies depending on the region. For details, see [What Are the Private DNS Servers Provided by the Huawei Cloud?](#)

Modifying the DNS Server Address (Management Console)

The following describes how to modify the DNS server address of an ECS on the management console. This topic takes an ECS as an example. The operations for BMSs are similar.

1. In the upper left corner, select a region and project.

2. Click **Service List** in the upper left corner. Under **Compute**, select **Elastic Cloud Server**.
On the ECS console, click the name of the target ECS to view its details.
3. On the displayed **Summary** tab page, click the VPC name.
The **Virtual Private Cloud** page is displayed.
4. Click the name of the target VPC.
5. In the **Networking Components** area, click the number following **Subnets**.
The **Subnets** page is displayed.
6. In the subnet list, click the name of target subnet.
7. In the **Gateway and DNS Information** area, click  following **DNS Server Address**.

 **NOTE**

Set the DNS server address to the value of **nameserver** in **3**.

8. Click **OK**.

 **NOTE**

The new DNS server address takes effect after the ECS or BMS is restarted.

Modifying the ECS Security Group Rules (Management Console)

The following describes how to modify security group rules for an ECS on the management console. This topic takes an ECS as an example. The operations for BMSs are similar.

1. On the ECS details page, click the **Security Groups** tab.
The security group list is displayed.
2. Click the security group name.
3. Click **Modify Security Group Rule**.
The security group details page is displayed.

 **NOTE**

Procedure for BMS:

1. Click the security group ID on the upper left.
2. Click **Manage Rule** in the **Operation** column of the security group.
4. Click the **Outbound Rules** tab, and click **Add Rule**.
5. Add rules based on [Table 4-1](#).

Table 4-1 Security group rules

Protocol	Port	Type	Destination	Description
TCP	80	IPv4	100.125.0.0/16	Used to download the Agent installation package from an OBS bucket to an ECS or BMS and obtain the ECS or BMS metadata and authentication information.
TCP and UDP	53	IPv4	100.125.0.0/16	Used by DNS to resolve domain names, for example, resolve the OBS domain name when you are downloading the Agent installation package, and resolve the Cloud Eye endpoint when the Agent is sending monitoring data to Cloud Eye.
TCP	443	IPv4	100.125.0.0/16	Used to collect monitoring data and send the data to Cloud Eye.

4.4.2 Installing the Agent on a Linux Server

Scenarios

This topic describes how to manually install the Agent on a Linux ECS or BMS.

Constraints

Only Windows and Linux OSs are supported. For details, see [What OSs Does the Agent Support?](#)

Prerequisites

- You have the read and write permissions for the installation directories in [Procedure](#). The Telescope process will not be stopped by other software after the installation.
- You have performed operations described in [Modifying the DNS Server Address and Adding Security Group Rules \(Linux\)](#).

Procedure

- Log in to the ECS or BMS as user **root**.
- Run the following command to install the Agent:

 NOTE

The script supports x86 and Kunpeng Arm-based ECSs.
The Agent is installed if the following command output is displayed.

Figure 4-2 Successful installation

```
telescope_linux_amd64/  
telescope_linux_amd64/uninstall.sh  
telescope_linux_amd64/install.sh  
telescope_linux_amd64/bin/  
telescope_linux_amd64/bin/conf.json  
telescope_linux_amd64/bin/telescope  
telescope_linux_amd64/bin/conf_ces.json  
telescope_linux_amd64/bin/conf_lts.json  
telescope_linux_amd64/bin/record.json  
telescope_linux_amd64/bin/logs_config.xml  
telescope_linux_amd64/bin/agent  
telescope_linux_amd64/telescoped  
telescope_linux_amd64/telescope-1.0.12-release.json  
Current user is root.  
Current linux release version : CENTOS  
Start to install telescope...  
In chkconfig  
Success to install telescope to dir: /usr/local/telescope.  
Starting telescope...  
Telescope process starts successfully.  
root@ecs-74e5-7 local1#
```

3. Configure the Agent by referring to [Restoring the Agent Configurations on a Linux Server](#) or [\(Optional\) Manually Configuring the Agent \(Linux\)](#).

 NOTE

- [Restoring Agent Configurations](#) allows you to configure **AK/SK**, **RegionID**, and **ProjectID** in just a few clicks. You can also modify related configuration files by referring to [\(Optional\) Manually Configuring the Agent \(Linux\)](#).
 - Agent configuration restoration cannot be performed on BMSs. For details about how to modify the Agent configuration file on a BMS, see [\(Optional\) Manually Configuring the Agent \(Linux\)](#).
4. Run the following command to clear the installation script:

```
if [[ -f /usr/local/uniagent/extension/install/telescope/bin/telescope ]];  
then rm /usr/local/agent_install.sh; else rm /usr/local/agentInstall.sh; fi
```

4.4.3 Restoring the Agent Configurations on a Linux Server

Scenarios

This topic describes how to restore the Agent configurations on the Cloud Eye console (recommended).

Most regions support one-click configuration of Agent permissions. You can choose **Server Monitoring > Elastic Cloud Server** and click **Configure** on top of the page. After the configuration is complete, the Agent configurations of all

servers in these regions are restored by default, and the **Configure** button is no longer displayed. If the system displays a message indicating that you do not have the required permission, rectify the fault by referring to FAQ.

NOTE

- The **Restore Agent Configurations** option is available for Agent 1.0.14 or later. If the Agent version is earlier than 1.0.14, upgrade the Agent first and then restore the Agent configurations or manually configure the Agent by following the instructions in [\(Optional\) Manually Configuring the Agent \(Linux\)](#).
- The **Restore Agent Configurations** option is unavailable for BMSs. For details, see [\(Optional\) Manually Configuring the Agent \(Linux\)](#).
- After you configure the Agent, its status is still displayed as **Not installed** because no monitoring data is reported yet. Wait 3 to 5 minutes and refresh the page.
- If the Agent is in the **Running** state and **Monitoring Status** is enabled, the Agent has been installed and has started to collect fine-grained metric data.

Restoring the Agent Configurations

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**. In the navigation pane on the left, choose **Server Monitoring**.
3. On the **Server Monitoring** page, select a server that has the Agent installed.
4. Click **Restore Agent Configurations**.

NOTE

If the **Configure** button is unavailable, check whether the one-click configuration function described in the [scenario](#) is enabled. If it is, the Agent permissions of all servers have been configured by default. In this case, skip the next step.

5. In the displayed **Restore Agent Configurations** dialog box, click **One-Click Restore**.

If the Agent status changes to **Running**, the Agent has been installed and has started to collect fine-grained metric data.

4.4.4 (Optional) Manually Configuring the Agent (Linux)

Scenarios

After you install the Agent, configure it by clicking **Restore Agent Configurations** on the Cloud Eye console. If the Agent fails to be configured by clicking **Restore Agent Configurations** or due to other reasons, manually configure it by following the instructions provided in this topic.

This topic takes an ECS as an example. The operations for BMSs are similar.

Prerequisites

The Agent has been installed.

Checking the Version of the Agent In Use

1. Log in to an ECS as user **root**.

2. Run the following command to check the Agent version:


```
if [[ -f /usr/local/uniagent/extension/install/telescope/bin/telescope ]];
then /usr/local/uniagent/extension/install/telescope/bin/telescope -v; elif
[[ -f /usr/local/telescope/bin/telescope ]]; then echo "old agent"; else
echo 0; fi
```

 - If **old agent** is returned, the early version of the Agent is used. For details about how to manually configure the Agent, see [Procedure \(for the Early Version of the Agent\)](#).
 - If a version is returned, the new version of the Agent is used. For details about how to manually configure the Agent, see [Procedure \(for the New Version of the Agent\)](#).
 - If **0** is returned, the Agent is not installed.

Procedure (for the New Version of the Agent)

1. Log in to an ECS as user **root**.
2. Modify the **conf.json** file in the **bin** directory.
 - a. Run the following command to open **conf.json**:


```
vi /usr/local/uniagent/extension/install/telescope/bin/conf.json
```
 - b. Modify the parameters in the file. For details, see [Table 4-2](#).

```
{
  "Instanceld": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "ProjectId": "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX",
  "AccessKey": "XXXXXXXXXXXXXXXXXXXX",
  "SecretKey": "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX",
  "RegionId": "ap-southeast-1",
  "ClientPort": 0,
  "PortNum": 200
}
```

Table 4-2 Public parameters

Parameter	Description
Instanceld	(Optional) Specifies the ECS ID. You can log in to the management console and view the ECS ID in the ECS list. NOTE If you do not configure Instanceld , retain " Instanceld :". If you configure it, ensure that the following two requirements are met: <ul style="list-style-type: none"> • The ECS ID must be unique at all sites, that is, in the same region, Instanceld used by the Agent cannot be the same. Otherwise, errors may occur. • The Instanceld value must be consistent with the actual ECS ID. Otherwise, you cannot see the OS monitoring data on Cloud Eye.

Parameter	Description
ProjectId	<p>(Optional) Specifies the project ID.</p> <p>If you do not configure ProjectId, retain "ProjectId": "".</p> <p>If you configure it, perform the following operations:</p> <ol style="list-style-type: none"> 1. Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials. 2. Under Projects, obtain the project ID for the region where the ECS is located.
AccessKey / SecretKey	<p>To obtain the AK and SK, perform the following operations:</p> <p>Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials, and choose Access Keys.</p> <ul style="list-style-type: none"> • If you have obtained the access key, obtain the AccessKey value and the SecretKey value in the credentials.csv file saved when you create Access Keys. • If no access keys are available, click Create Access Key to create one. Save the credentials.csv file and obtain the AccessKey value and the SecretKey value in it. <p>NOTICE</p> <ul style="list-style-type: none"> • For the security purpose, use an IAM username with the CES Administrator and LTS Administrator permissions. • The configured access key must be within the Access Keys list on the My Credentials page. Otherwise its authentication will fail and you cannot view OS monitoring data on Cloud Eye.
RegionId	Specifies the region ID.
ClientPort	<p>Specifies the start port number used by the Agent.</p> <p>NOTE</p> <p>The default value is 0, indicating that the Agent will randomly use any port. Ports 1 to 1023 are reserved. You are advised not to specify a port in this range for the Agent.</p>
PortNum	<p>Specifies the number of ports configured for the Agent.</p> <p>NOTE</p> <p>The default value is 200. If ClientPort is 5000, the port range will be 5000 to 5199.</p>
BmsFlag	<p>Set this parameter to true for a BMS. This parameter is not required by an ECS.</p> <p>You do not need to set this parameter for the Windows OS.</p>

Procedure (for the Early Version of the Agent)

1. Log in to an ECS as user **root**.

2. Run the following command to go to the Agent installation path **bin**:
cd /usr/local/uniagent/extension/install/telescope/bin
3. Modify configuration file **conf.json**.
 - a. Run the following command to open **conf.json**:
vi conf.json
 - b. Modify the parameters in the file. For details, see [Table 4-3](#).
ECS parameters

Table 4-3 Public parameters

Parameter	Description
InstanceId	<p>(Optional) Specifies the ECS ID. You can log in to the management console and view the ECS ID in the ECS list.</p> <p>NOTE</p> <p>If you do not configure InstanceId, retain "InstanceId":"".</p> <p>If you configure it, ensure that the following two requirements are met:</p> <ul style="list-style-type: none"> • The ECS ID must be unique at all sites, that is, in the same region, InstanceId used by the Agent cannot be the same. Otherwise, errors may occur. • The InstanceId value must be consistent with the actual ECS ID. Otherwise, you cannot see the OS monitoring data on Cloud Eye.
ProjectId	<p>(Optional) Specifies the project ID.</p> <p>If you do not configure ProjectId, retain "ProjectId": "".</p> <p>If you configure it, perform the following operations:</p> <ol style="list-style-type: none"> 1. Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials. 2. Under Projects, obtain the project ID for the region where the ECS is located.

Parameter	Description
AccessKey / SecretKey	<p>To obtain the AK and SK, perform the following operations:</p> <p>Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials, and choose Access Keys.</p> <ul style="list-style-type: none"> If you have obtained the access key, obtain the AccessKey value and the SecretKey value in the credentials.csv file saved when you create Access Keys. If no access keys are available, click Create Access Key to create one. Save the credentials.csv file and obtain the AccessKey value and the SecretKey value in it. <p>NOTICE</p> <ul style="list-style-type: none"> For the security purpose, use an IAM username with the CES Administrator and LTS Administrator permissions. The configured access key must be within the Access Keys list on the My Credentials page. Otherwise its authentication will fail and you cannot view OS monitoring data on Cloud Eye.
RegionId	Specifies the region ID.
ClientPort	<p>Specifies the start port number used by the Agent.</p> <p>NOTE</p> <p>The default value is 0, indicating that the Agent will randomly use any port. Ports 1 to 1023 are reserved. You are advised not to specify a port in this range for the Agent.</p>
PortNum	<p>Specifies the number of ports configured for the Agent.</p> <p>NOTE</p> <p>The default value is 200. If ClientPort is 5000, the port range will be 5000 to 5199.</p>
BmsFlag	<p>Set this parameter to true for a BMS. This parameter is not required by an ECS.</p> <p>You do not need to set this parameter for the Windows OS.</p>

4. Modify configuration file **conf_ces.json** for the Cloud Eye metric collection module.
 - a. Run the following command to open public configuration file **conf_ces.json**:
vi conf_ces.json
 - b. Modify the endpoint in **conf_ces.json**, and save the **conf_ces.json** file. For details, see [Table 4-4](#).

Table 4-4 Parameter setting of the metric collection module

Parameter	Description
Endpoint	Specifies the Cloud Eye endpoint URL in the region to which the ECS or BMS belongs.

NOTE

- After you configure the Agent, its status is still displayed as **Uninstalled** because no monitoring data is reported yet. Wait 3 to 5 minutes and refresh the page.
- If the Agent is in the **Running** state, the Agent has been installed and has started to collect fine-grained metric data.

4.5 Installing and Configuring the Agent on a Windows ECS

4.5.1 Modifying the DNS Server Address and Adding Security Group Rules (Windows)

Scenarios

This topic describes how to add the DNS server address and security group rules to a Windows ECS to ensure successful downloading of the Agent installation package and successful monitoring data collection.

The DNS server address of an ECS can be modified in either of the following ways: Windows GUI or management console. Choose a method based on your habits.

NOTE

DNS and security group configuration are intended for the primary NIC.

Modifying the DNS Server Address (Windows GUI)

The following describes how to use the Windows GUI to add the DNS server address.

1. Click **Service List** in the upper left corner. Under **Compute**, select **Elastic Cloud Server**. Use VNC to log in to the Windows ECS.
2. Choose **Control Panel > Network and Sharing Center**, and click **Change adapter settings**.
3. Right-click the used network, choose **Settings** from the shortcut menu, and configure the DNS.

NOTE

The **nameserver** value varies depending on the region. For details, see [What Are the Private DNS Servers Provided by the Huawei Cloud?](#)

Modifying the ECS Security Group Rules (Management Console)

The following describes how to modify security group rules for an ECS on the management console. This topic takes an ECS as an example. The operations for BMSs are similar.

1. On the ECS details page, click the **Security Groups** tab.
The security group list is displayed.
2. Click the security group name.
3. Click **Modify Security Group Rule**.
The security group details page is displayed.

 **NOTE**

Procedure for BMS:

1. Click the security group ID on the upper left.
2. Click **Manage Rule** in the **Operation** column of the security group.
4. Click the **Outbound Rules** tab, and click **Add Rule**.
5. Add rules based on [Table 4-5](#).

Table 4-5 Security group rules

Protocol	Port	Type	Destination	Description
TCP	80	IPv4	100.125.0.0/16	Used to download the Agent installation package from an OBS bucket to an ECS or BMS and obtain the ECS or BMS metadata and authentication information.
TCP and UDP	53	IPv4	100.125.0.0/16	Used by DNS to resolve domain names, for example, resolve the OBS domain name when you are downloading the Agent installation package, and resolve the Cloud Eye endpoint when the Agent is sending monitoring data to Cloud Eye.
TCP	443	IPv4	100.125.0.0/16	Used to collect monitoring data and send the data to Cloud Eye.

4.5.2 Installing and Configuring the Agent on a Windows Server

Scenarios

This topic describes how to install the Agent on a Windows ECS.

Constraints

The Agent cannot be installed on Windows BMSs.

Windows and Linux OSs are supported. For details, see [What OSs Does the Agent Support?](#)

Prerequisites

- You have performed operations described in [Modifying the DNS Server Address and Adding Security Group Rules \(Windows\)](#).
- Use an administrator account to install the Agent.
- Ensure that the Telescope process is not stopped by other processes after the installation.
- You have obtained the Agent installation package (Windows).

Procedure

1. Log in to the Windows ECS as an administrator.
2. Open a browser, and enter the address of the Agent installation package in the address box to download and save the installation package.
3. Create a directory for storing the installation package (for example, **D:\Agent**) and decompress the package or move **agent_install.exe** to this directory.
4. Double-click the **agent_install.exe** or **install.bat** script to install and start the Agent.

If **Install service success** or **Install agent successfully** is displayed, the Agent is successfully installed and started.

NOTE

After you configure the Agent, its status is still displayed as **Uninstalled** because no monitoring data is reported yet. Wait 3 to 5 minutes and refresh the page.

Most regions support one-click restoration of Agent configurations. You only need to click **Configure** without selecting servers. After the configuration is complete, the Agent configurations of all servers in these regions are restored by default, you do not need to perform the following step, and the **Configure** button is no longer displayed. If the system displays a message indicating that the tenant does not have insufficient permissions, see [What Can I Do If the System Displays a Message Indicating Insufficient Permissions When I Click Configure on the Server Monitoring Page?](#)

5. On the **Server Monitoring** page, select the target ECS and click **Restore Agent Configurations**.
6. In the displayed **Restore Agent Configurations** dialog box, click **One-Click Restore**.

The Agent configuration is completed.

If the Agent is in the **Running** state, the Agent has been installed and has started to collect fine-grained metric data.

4.5.3 (Optional) Manually Configuring the Agent on a Windows Server

Scenarios

After you install the Agent, configure it by clicking **Restore Agent Configurations** on the Cloud Eye console. If the Agent fails to be configured by clicking **Restore Agent Configurations** or due to other reasons, manually configure it by following the instructions provided in this topic.

Constraints

The Agent cannot be installed on Windows BMSs.

Windows and Linux OSs are supported. For details, see [What OSs Does the Agent Support?](#)

Prerequisites

The Agent has been installed.

Checking the Version of the Agent In Use

1. Log in to an ECS as an administrator.
2. Check the installation path and the Agent version.
 - The installation path of the early version of the Agent is **C:\Program Files\telescope**. For details about how to manually configure the Agent, see [Procedure \(for the Early Version of the Agent\)](#).
 - The installation path of the new version of the Agent is **C:\Program Files\uniagent\extension\install\telescope**. For details about how to manually configure the Agent, see [Procedure \(for the New Version of the Agent\)](#).

Procedure (for the New Version of the Agent)

1. Log in to the ECS.
2. Open the **conf.json** file in the **C:\Program Files\uniagent\extension\install\telescope\bin** folder.
3. Configure the following parameters. For details, see [Table 4-6](#).

```
{
  "InstanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "ProjectId": "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX",
  "AccessKey": "XXXXXXXXXXXXXXXXXXXX",
  "SecretKey": "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX",
  "RegionId": "ap-southeast-1",
  "ClientPort": 0,
  "PortNum": 200
}
```

Table 4-6 Public parameters

Parameter	Description
InstanceId	<p>(Optional) Specifies the ECS ID. You can log in to the management console and view the ECS ID in the ECS list.</p> <p>NOTE</p> <p>If you do not configure InstanceId, retain "InstanceId":"". If you configure it, ensure that the following two requirements are met:</p> <ul style="list-style-type: none"> • The ECS ID must be unique at all sites, that is, in the same region, InstanceId used by the Agent cannot be the same. Otherwise, errors may occur. • The InstanceId value must be consistent with the actual ECS or BMS ID. Otherwise, you cannot see the OS monitoring data on Cloud Eye.
ProjectId	<p>Specifies the project ID. You do not need to configure ProjectId. Retain "ProjectId":"". If you wish to configure it, perform the following operations:</p> <ol style="list-style-type: none"> 1. Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials. 2. Under Projects, obtain the project ID for the region where the ECS or BMS is located.
AccessKey/ SecretKey	<p>To obtain the AK and SK, perform the following operations: Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials, and choose Access Keys.</p> <ul style="list-style-type: none"> • If you have obtained the access key, obtain the AccessKey value and the SecretKey value in the credentials.csv file saved when you create Access Keys. • If no access keys are available, click Create Access Key to create one. Save the credentials.csv file and obtain the AccessKey value and the SecretKey value in it. <p>NOTICE</p> <ul style="list-style-type: none"> • For the security purpose, use an IAM username with the CES Administrator and LTS Administrator permissions. • The configured access key must be within the Access Keys list on the My Credentials page. Otherwise its authentication will fail and you cannot view OS monitoring data on Cloud Eye.
RegionId	Specifies the region ID.
ClientPort	<p>Specifies the start port number used by the Agent.</p> <p>NOTE</p> <p>The default value is 0, indicating that the Agent will randomly use any port. Ports 1 to 1023 are reserved. You are advised not to specify a port in this range for the Agent.</p>
PortNum	<p>Specifies the number of ports configured for the Agent.</p> <p>NOTE</p> <p>The default value is 200. If ClientPort is 5000, the port range will be 5000 to 5199.</p>

 NOTE

- After you configure the Agent, its status is still displayed as **Uninstalled** because no monitoring data is reported yet. Wait 3 to 5 minutes and refresh the page.
- If the Agent is in the **Running** state, the Agent has been installed and has started to collect fine-grained metric data.

Procedure (for the Early Version of the Agent)

1. Log in to the ECS.
2. Open the **conf.json** file in the **telescope_windows_amd64\bin** directory.
3. Configure the following parameters. For details, see [Table 4-7](#).

Table 4-7 Public parameters

Parameter	Description
Instanceld	<p>(Optional) Specifies the ECS ID. You can log in to the management console and view the ECS ID in the ECS list.</p> <p>NOTE If you do not configure Instanceld, retain "Instanceld":"". If you configure it, ensure that the following two requirements are met:</p> <ul style="list-style-type: none"> • The ECS ID must be unique at all sites, that is, in the same region, Instanceld used by the Agent cannot be the same. Otherwise, errors may occur. • The Instanceld value must be consistent with the actual ECS or BMS ID. Otherwise, you cannot see the OS monitoring data on Cloud Eye.
ProjectId	<p>Specifies the project ID. You do not need to configure ProjectId. Retain "ProjectId":"". If you wish to configure it, perform the following operations:</p> <ol style="list-style-type: none"> 1. Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials. 2. Under Projects, obtain the project ID for the region where the ECS or BMS is located.

Parameter	Description
AccessKey/ SecretKey	<p>To obtain the AK and SK, perform the following operations: Log in to the Cloud Eye console, click the username in the upper right corner, and choose My Credentials, and choose Access Keys.</p> <ul style="list-style-type: none">• If you have obtained the access key, obtain the AccessKey value and the SecretKey value in the credentials.csv file saved when you create Access Keys.• If no access keys are available, click Create Access Key to create one. Save the credentials.csv file and obtain the AccessKey value and the SecretKey value in it. <p>NOTICE</p> <ul style="list-style-type: none">• For security purposes, it is recommended that the user be an IAM user with the CES Administrator and LTS Administrator permissions only.• The configured access key must be within the Access Keys list on the My Credentials page. Otherwise its authentication will fail and you cannot view OS monitoring data on Cloud Eye.
RegionId	Specifies the region ID.
ClientPort	<p>Specifies the start port number used by the Agent.</p> <p>NOTE The default value is 0, indicating that the Agent will randomly use any port. Ports 1 to 1023 are reserved. You are advised not to specify a port in this range for the Agent.</p>
PortNum	<p>Specifies the number of ports configured for the Agent.</p> <p>NOTE The default value is 200. If ClientPort is 5000, the port range will be 5000 to 5199.</p>

4. Wait for a few minutes.

If **Agent Status** is **Running**, the Agent has been installed and starts to collect fine-grained metric data.

4.6 Installing the Agents in Batches on Linux ECSs

Scenarios

This topic describes how to install Agents in batches on Linux ECSs.

Operation

After binding an elastic IP address to an ECS, install and configure the Agent by following instructions in [Installing and Configuring the Agent on a Linux ECS or BMS](#) to ensure that data collection is normal. Use the ECS as a jump server and run scripts in batches to copy, decompress, and install the Agent package and configuration file to other ECSs.

NOTICE

- The ECSs where the Agent is to be installed in batches must belong to the same VPC.
- Agents cannot be installed on Windows servers in batches.

Prerequisites

- The IP addresses and password of user **root** of all ECSs for which the Agent is to be installed have been collected, sorted in the `iplist.txt` format, and uploaded to the `/usr/local` directory on the first ECS.

 **NOTE**

In the `iplist.txt` file, each line contains only one IP address in the "IP address,Password of user **root**" format.

In the following example, `abcd` is the password.

```
192.168.1.1,abcd  
192.168.1.2,abcd
```

Procedure

1. Use PuTTY to log in to the ECS on which the Agent has been installed as user **root**.
2. Run the following command to download and run the batch installation script:

 **NOTE**

The script supports x86 and Kunpeng Arm-based ECSs.

3. After the installation is complete, log in to the Cloud Eye console and choose **Server Monitoring** in the navigation pane on the left.

View the list of ECSs on which the Agent has been installed.

 **NOTE**

After you configure the Agent, its status is still displayed as **Uninstalled** because no monitoring data is reported yet. Wait 3 to 5 minutes and refresh the page.

4. On the **Server Monitoring** page, select all ECSs and click **Restore Agent Configurations**.
5. On the page that is displayed, click **One-Click Restore**.
6. (Optional) If Pexpect is not required after the installation, run the following commands to delete Pexpect and Ptyprocess from the Python installation directory:

```
cd /usr/lib/python2.7/site-packages  
rm pexpect-3.2-py2.7.egg-info -f  
rm ptyprocess-0.5.2-py2.7.egg-info -f  
rm pexpect -rf  
rm ptyprocess -rf
```


4.7 Managing the Agent

This topic describes how to manage the Agent, including how to view, start, stop, and uninstall the Agent.

4.7.1 Managing the Agent (Linux)

NOTE

To view, start, stop, update, and uninstall the Agent, you must log in as user **root**.

Viewing the Agent Version

1. Log in to the target ECS as user **root**.
2. Run the following command to check the Agent version:

```
if [[ -f /usr/local/uniagent/extension/install/telescope/bin/telescope ]];  
then /usr/local/uniagent/extension/install/telescope/bin/telescope -v; elif  
[[ -f /usr/local/telescope/bin/telescope ]]; then echo "old agent"; else  
echo 0; fi
```

- If **old agent** is returned, the early version of the Agent is used. Manage the Agent based on the Agent version.
- If a version is returned, the new version of the Agent is used. Manage the Agent based on the Agent version.
- If **0** is returned, the Agent is not installed.

Checking the Agent Status (New Version)

Log in to an ECS or BMS as user **root** and run the following command to check the Agent status:

```
/usr/local/uniagent/extension/install/telescope/telescoped status
```

The following message indicates that the Agent is running properly:

```
"Telescope process is running well."
```

Starting the Agent (New Version)

```
/usr/local/uniagent/extension/install/telescope/telescoped start
```

Restarting the Agent (New Version)

Check the Agent PID.

```
ps -ef |grep telescope
```

After the process is forcibly stopped, wait for 3 to 5 minutes for the Agent to automatically restart. [Figure 4-3](#) shows an operation example.

```
kill -9 PID
```

Figure 4-3 Restarting the Agent

```
[root@arm1-2 ~]# ps -ef |grep telescope
root      11671      1   0  10:23 ?        00:00:00 ./telescope
root      20245  19980   0  10:33 pts/1    00:00:00 grep --color=auto telescope
[root@arm1-2 ~]#
[root@arm1-2 ~]#
[root@arm1-2 ~]# kill -9 11671
```

Stopping the Agent (New Version)

Log in to an ECS or BMS and run the following command to stop the Agent:

```
service uniagent stop
```

```
/usr/local/uniagent/extension/install/telescope/telescoped stop
```

Uninstalling the Agent (New Version)

You can manually uninstall the Agent. After the uninstallation, Cloud Eye does not collect the ECS or BMS monitoring data every one minute. To use the Agent again, reinstall it by referring to [Installing and Configuring the Agent on a Linux ECS or BMS](#).

Run the following command to uninstall the Agent:

```
cd /usr/local/uniagent/script/
```

```
./uninstall.sh
```

NOTICE

Before reinstalling the Agent, manually delete the previous Agent installation package. The installation package of the new version of the Agent is stored in `/usr/local/uniagent_install_amd64.sh`.

Checking the Agent Status (for the Early Version of the Agent)

Log in to an ECS or BMS as user `root` and run the following command to check the Agent status:

```
service telescoped status
```

The following message indicates that the Agent is running properly:

```
"Active (running) or "Telescope process is running well."
```

Starting the Agent (for the Early Version of the Agent)

```
/usr/local/telescope/telescoped start
```

Restarting the Agent (for the Early Version of the Agent)

```
/usr/local/telescope/telescoped restart
```

Stopping the Agent (for the Early Version of the Agent)

Log in to an ECS or BMS and run the following command to stop the Agent:

```
service telescoped stop
```

NOTE

If the Agent installation fails, it may be impossible to stop the Agent normally. In this case, run the following command to stop the Agent:

```
/usr/local/telescope/telescoped stop
```

Uninstalling the Agent (for the Early Version of the Agent)

Run the following command to uninstall the Agent:

```
/usr/local/telescope/uninstall.sh
```

NOTICE

You can manually uninstall the Agent. After the uninstallation, Cloud Eye does not collect the ECS or BMS monitoring data every one minute. To use the Agent again, reinstall it by referring to [Installing and Configuring the Agent on a Linux ECS or BMS](#). Before reinstalling the Agent, manually delete the previous Agent installation package.

4.7.2 Managing the Agent (Windows)

The default installation path of the early version of the Agent is **C:\Program Files\telescope**.

The default installation path of the new version of the Agent is **C:\Program Files\uniagent\extension\install\telescope**.

Checking the Agent Status

In the task manager, check the status of the telescope process.

Starting the Agent

In the directory where the Agent installation package is stored, double-click the **start.bat** script.

Stopping the Agent

In the directory where the Agent installation package is stored, double-click the **shutdown.bat** script.

Uninstalling the Agent

In the directory where the Agent installation package is stored, double-click the **uninstall.bat** script.

NOTICE

Before reinstalling the Agent, manually delete the previous Agent installation package.

4.8 Installing the GPU Metrics Collection Plug-in (Linux)

Scenarios

This topic describes how to install the plug-in to collect GPU and RAID metrics.

NOTE

- ECSs support GPU metrics while BMSs do not.
- BMSs support RAID metrics while ECSs do not.
- If the Agent is upgraded to 1.0.5 or later, the corresponding plug-in must use the latest version. Otherwise, the metric collection will fail.

Prerequisites

- The Agent has been installed and is running properly.
- GPU metric collection requires ECSs to support GPU.
- Run the following command to check the Agent version:

```
if [[ -f /usr/local/uniagent/extension/install/telescope/bin/telescope ]];  
then /usr/local/uniagent/extension/install/telescope/bin/telescope -v; elif  
[[ -f /usr/local/telescope/bin/telescope ]]; then echo "old agent"; else  
echo 0; fi
```

 - If **old agent** is displayed, the early version of the Agent is used.
 - If a version is returned, the new version of the Agent is used.
 - If **0** is returned, the Agent is not installed.

Procedure (New Version)

1. Log in to an ECS as user **root**.

NOTE

- To monitor the BMS software RAID metrics, log in to a BMS.
 - The examples in the following procedure are based on the GPU plug-in installation. The installation for the software RAID plug-in is similar.
2. Run the following command to go to the Agent installation path **/usr/local/telescope**:

```
cd /usr/local/uniagent/extension/install/telescope
```
 3. Run the following command to create the **plugins** folder:

```
mkdir plugins
```
 4. Run the following command to enter the **plugins** folder:

```
cd plugins
```

- To download the script of the GPU metric collection plug-in, run the following command:

```
wget https://telescope-eu-west-101.obs.eu-west-101.myhuaweicloud.eu/gpu_collector
```

Table 4-8 Obtaining the plug-in installation package

Name	Download Path
Linux 64-bit installation package of the GPU metric collection plug-in	eu-west-101: https://telescope-eu-west-101.obs.eu-west-101.myhuaweicloud.eu/gpu_collector

- Run the following command to add the script execution permissions:
chmod 755 gpu_collector
- Run the following command to create the **conf.json** file, add the configuration content, and configure the plug-in path and metric collection period **crontime**, which is measured in seconds:

vi conf.json

GPU metric plug-in configuration

```
{
  "plugins": [
    {
      "path": "/usr/local/uniagent/extension/install/telescope/plugins/gpu_collector",
      "crontime": 60
    }
  ]
}
```

RAID metric plug-in configuration

```
{
  "plugins": [
    {
      "path": "/usr/local/uniagent/extension/install/telescope/plugins/raid_monitor.sh",
      "crontime": 60
    }
  ]
}
```

 **NOTE**

- The parameters **gpu_collector** and **raid_monitor.sh** indicate the GPU plug-in and RAID plug-in configuration.
 - The collection period of the plug-in is 60 seconds. If the collection period is incorrectly configured, the metric collection will be abnormal.
 - Do not change the plug-in path without permission. Otherwise, the metric collection will be abnormal.
- Open the **conf_ces.json** file in the **/usr/local/uniagent/extension/install/telescope/bin** directory. Add **"EnablePlugin": true** to the file to enable the plug-in to collect metric data.

```
{
  "Endpoint": "Region address. Retain the default value.",
  "EnablePlugin": true
}
```

9. Restart the Agent:
ps -ef | grep telescope | grep -v grep | awk '{print \$2}' | xargs kill -9

Procedure (for the Early Version of the Agent)

1. Log in to an ECS as user **root**.

NOTE

- To monitor the BMS software RAID metrics, log in to a BMS.
 - The examples in the following procedure are based on the GPU plug-in installation. The installation for the software RAID plug-in is similar.
2. Run the following command to go to the Agent installation path **/usr/local/telescope**:
cd /usr/local/telescope
 3. Run the following command to create the **plugins** folder:
mkdir plugins
 4. Run the following command to enter the **plugins** folder:
cd plugins
 5. To download the script of the GPU metric collection plug-in, run the following command:
wget https://telescope-eu-west-101.obs.eu-west-101.myhuaweicloud.eu/gpu_collector

Table 4-9 Obtaining the plug-in installation package

Name	Download Path
Linux 64-bit installation package of the GPU metric collection plug-in	eu-west-101: https://telescope-eu-west-101.obs.eu-west-101.myhuaweicloud.eu/gpu_collector

6. Run the following command to add the script execution permissions:
chmod 755 gpu_collector
7. Run the following command to create the **conf.json** file, add the configuration content, and configure the plug-in path and metric collection period **crontime**, which is measured in seconds:

vi conf.json

GPU metric plug-in configuration

```
{
  "plugins": [
    {
      "path": "/usr/local/telescope/plugins/gpu_collector",
      "crontime": 60
    }
  ]
}
```

RAID metric plug-in configuration

```
{
  "plugins": [
    {
      "path": "/usr/local/telescope/plugins/raid_monitor.sh",
      "crontime": 60
    }
  ]
}
```

NOTE

- The parameters **gpu_collector** and **raid_monitor.sh** indicate the GPU plug-in and RAID plug-in configuration.
 - The collection period of the plug-in is 60 seconds. If the collection period is incorrectly configured, the metric collection will be abnormal.
 - Do not change the plug-in path without permission. Otherwise, the metric collection will be abnormal.
8. Open the **conf_ces.json** file in the **/usr/local/telescope/bin** directory. Add **"EnablePlugin": true** to the file to enable the plug-in to collect metric data.

```
{
  "Endpoint": "Region address. Retain the default value.",
  "EnablePlugin": true
}
```

9. Run the following command to restart the Agent:
- ```
/usr/local/telescope/telescoped restart
```

## 4.9 Installing the Direct Connect Metric Collection Plug-ins

The Direct Connect plug-ins detect the end-to-end network quality of connections, and mainly monitor two metrics of remote subnets: network latency and packet loss rate.

There are two types of Direct Connect plug-ins:

- **dc-nqa-collector**: monitors the connections created on the Direct Connect console.
- **history-dc-nqa-collector**: monitors connections created through self-service.

**NOTE**

- Automated connections are requested by yourself on the console and are classified into self-service connections and full-service connections. Each connection has at least a virtual gateway and a virtual interface, and their routes are automatically advertised. Connections in most regions are automated connections.
- Historical connections are requested by email or phone. They do not have virtual gateways and virtual interfaces, and their routes must be manually configured. Historical connections exist only in some regions.

### Constraints

The plug-in supports only Linux.

### Prerequisites

- You have installed the Cloud Eye Agent. For details, see [Agent Installation and Configuration](#).

- The Agent has been restored. For details, see [Restoring the Agent Configurations on a Linux Server](#).
- You have obtained the password of user **root** for logging in to the target ECS.

## Using the One-Click Installation Script to Configure the Plug-ins

In some regions of Huawei Cloud, you can use the one-click installation script to configure the plug-ins. [Table 4-11](#) lists the supported regions.

1. Log in to an ECS as user **root**.
2. Run the following command to create the **user.txt** file in the **/usr/local/** directory and add user information, including the plug-in download link, monitored resource ID, and remote IP address:

```
cd /usr/local/
```

```
vi user.txt
```

The content of the **user.txt** file is in the following format.

**Figure 4-4** Example of format

```
https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector
9dbe3905-935f-4c7b-bc41-d33a963d57d4,X.X.X.X → ID of the first monitored resource, the first remote IP
b95b9fdc-65de-44db-99b1-ed321b6c11d0,X.X.X.X → ID of the second monitored resource, the second remote IP
```

Parameter descriptions are as follows.

- a. Plug-in download link: To monitor the connections created on the Direct Connect console, select the **dc-nqa-collector** plug-in. To monitor the connections created through self-service, select the **history-dc-nqa-collector** plug-in. For details about the download address of the installation package in each region, see [Table 4-10](#).
- b. Information about monitored resources: One resource occupies one line, and consists of a resource ID and a remote IP address. Use a comma (,) to separate the resource ID and remote IP address. To add multiple resources, add lines in the same format.
  - **Resource ID:** The ID must contain 32 characters, including letters and digits, for example, **b95b9fdc-65de-44db-99b1-ed321b6c11d0** or **b95b9fdc65de44db99b1ed321b6c11d0**.
    - If the **dc-nqa-collector** plug-in is used, the resource ID is the virtual interface ID, which can be queried on the **Virtual Interfaces** page of the Direct Connect console.
    - If the **history-dc-nqa-collector** plug-in is used, the resource ID is the ID of the connection created through self-service, which can be queried on the **Historical Connections** page of the Direct Connect console.
  - **Remote IP address:** indicates the remote IP address that needs to be pinged with the VPC. Generally, it is the remote gateway IP address.



- If the dc-nqa-collector plug-in is used, enter the IP address of the remote gateway, which can be obtained on the **Virtual Gateways** page of the Direct Connect console.
- If the history-dc-nqa-collector plug-in is used, enter the host address in the **Remote Subnet** column on the **Historical Connections** page of the Direct Connect console.

 **NOTE**

- Ensure that each monitored resource ID matches one remote IP address. You are not allowed to enter multiple IP addresses nor CIDR blocks.
- After the Agent is installed, if you want to add more resources to be monitored, edit the **user.txt** file by adding new IDs and IP addresses in sequence, and then perform [4](#).

**Table 4-10** Obtaining the plug-in installation package

| Name                                  | Download Path                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dc-nqa-collector installation package | <p>CN North-Beijing4: <a href="https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>CN North-Beijing1: <a href="https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>CN East-Shanghai1: <a href="https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>CN East-Shanghai2: <a href="https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>CN South-Guangzhou: <a href="https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>CN-Hong Kong: <a href="https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>AP-Bangkok: <a href="https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>AP-Singapore: <a href="https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>Africa-Johannesburg: <a href="https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>LA-Sao Paulo1: <a href="https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>LA-Santiago: <a href="https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>LA-Mexico City 1: <a href="https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> <p>LA-Mexico City2: <a href="https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector">https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/dc-nqa-collector</a></p> |

| Name                                          | Download Path                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| history-dc-nqa-collector installation package | CN North-Beijing4: <a href="https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>CN North-Beijing1: <a href="https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>CN East-Shanghai1: <a href="https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>CN East-Shanghai2: <a href="https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>CN South-Guangzhou: <a href="https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>CN-Hong Kong: <a href="https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>AP-Bangkok: <a href="https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>AP-Singapore: <a href="https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>Africa-Johannesburg: <a href="https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>LA-Sao Paulo1: <a href="https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>LA-Santiago: <a href="https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>LA-Mexico City 1: <a href="https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a><br>LA-Mexico City2: <a href="https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector">https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/history-dc-nqa-collector</a> |

- Download the one-click installation script to the `/usr/local/` directory.  
**wget** *Download path of the target region*

**Table 4-11** One-click installation script of the Direct Connect plug-ins

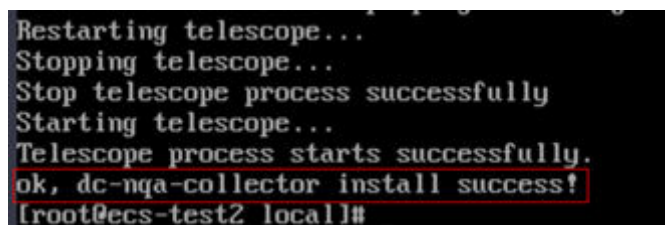
| Region             | Download Path                                                                                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CN North-Beijing4  | <a href="https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-cn-north-4.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |
| CN North-Beijing1  | <a href="https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-cn-north-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |
| CN East-Shanghai1  | <a href="https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-cn-east-3.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>           |
| CN East-Shanghai2  | <a href="https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-cn-east-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>           |
| CN South-Guangzhou | <a href="https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-cn-south-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |
| CN-Hong Kong       | <a href="https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-ap-southeast-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a> |
| AP-Bangkok         | <a href="https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-ap-southeast-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a> |
| AP-Singapore       | <a href="https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-ap-southeast-3.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a> |
| AF-Johannesburg    | <a href="https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-af-south-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |
| LA-Sao Paulo1      | <a href="https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-sa-brazil-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>       |
| LA-Santiago        | <a href="https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-la-south-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |
| LA-Mexico City1    | <a href="https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-na-mexico-1.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>       |
| LA-Mexico City2    | <a href="https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh">https://uniagent-la-north-2.obs.myhuaweicloud.com/extension/dc/dc-installer.sh</a>         |

4. Run the following command to run the plug-in script.

If the installation is successful, the information shown in [Figure 4-5](#) is displayed.

```
bash dc-installer.sh
```

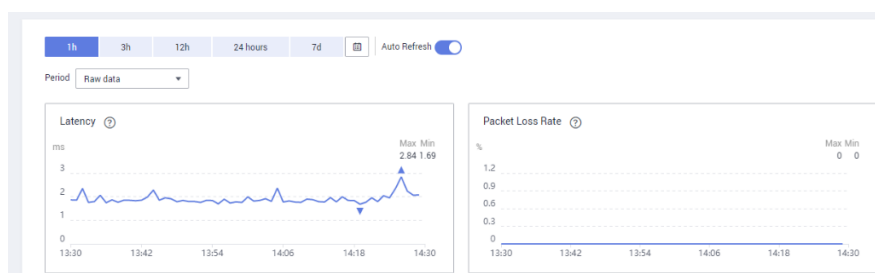
**Figure 4-5** Successful installation



5. Wait for about 1 minute after installation and view the Direct Connect monitoring data on the Cloud Eye console.

Click **Service List**, and select **Cloud Eye**. In the navigation pane on the left, choose **Cloud Service Monitoring > Direct Connect**. You can click the name of a monitored object to view the latency and packet loss rate.

**Figure 4-6** Network latency and packet loss rate



## 4.10 Process Monitoring

### 4.10.1 Viewing Process Monitoring

Process monitoring is used to monitor active processes on a host. By default, the Agent collects CPU usage, memory usage, and the number of opened files of the active processes. If you have customized process monitoring, the number of processes containing keywords is also monitored.

The Agent collects process CPU usages once every minute and displays the top 5 processes, ranked by the CPU usage over the last 24 hours.

#### NOTE

To view the process monitoring information, install the Agent.

### Querying the System Processes

After the Agent is installed, you can check system processes on Cloud Eye.

To query the number of processes

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Server Monitoring**.
4. On the **Server Monitoring** page, locate the row that contains the target ECS and click **View Metric** to go to the **OS Monitoring** page.
5. Select the **Process Monitoring** tab.

In the **System Processes** area, the process information is displayed. [Table 4-12](#) describes the metrics of system processes.

**Table 4-12** System process metrics

| Metric            | Description                          | Value Range | Collection Mode (Linux)                                                                                                                                                                                         | Collection Mode (Windows) |
|-------------------|--------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Running Processes | Number of processes that are running | $\geq 0$    | Monitored object: ECS or BMS<br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Not supported             |
| Idle Processes    | Number of processes that are idle    | $\geq 0$    | Monitored object: ECS or BMS<br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Not supported             |
| Zombie Processes  | Number of zombie processes           | $\geq 0$    | Monitored object: ECS or BMS<br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Not supported             |

| Metri<br>c                    | Description                           | Value<br>Rang<br>e | Collection Mode<br>(Linux)                                                                                                                                                                                             | Collection<br>Mode<br>(Windows)                                                                                                               |
|-------------------------------|---------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Blocke<br>d<br>Proces<br>ses  | Number of processes that are blocked  | ≥ 0                | Monitored object:<br>ECS or BMS<br><br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Not supported                                                                                                                                 |
| Sleepi<br>ng<br>Proces<br>ses | Number of processes that are sleeping | ≥ 0                | Monitored object:<br>ECS or BMS<br><br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Not supported                                                                                                                                 |
| Total<br>Proces<br>ses        | Total number of processes             | ≥ 0                | Monitored object:<br>ECS or BMS<br><br>You can obtain the state of each process by checking the <b>Status</b> value in the <b>/proc/pid/status</b> file, and then collect the total number of processes in each state. | Monitored object: ECS or BMS<br><br>Obtain the total number of processes by using the system process status support module <b>psapi.dll</b> . |


## Viewing the Running Data of Top CPU Processes

- The Agent collects process CPU usages once every minute and displays the top 5 processes, ranked by the CPU usage over the last 24 hours.
- Run the **top** command to query the CPU usage and memory usage of a process.
- Run the **lsof** or **ls /proc/pid/fd |wc -l** command to query the number of files opened by the current process. In the command, replace *pid* with the ID of the process to be queried.

 NOTE

- If a process occupies multiple CPUs, the CPU usage may exceed 100% because the collection result is the total usage of multiple CPUs.
- The top 5 processes are not fixed. The process list displays the top 5 processes that have entered the statistical period of 1 minute in the last 24 hours.
- The CPU usage, memory usage, and number of opened files are collected only for the top 5 processes for which monitoring has been enabled in the last 24 hours. If such a process has been stopped, its data will not be displayed.
- The time in the list indicates the time when the process is created.
- If the system time on the client browser is different from that on the monitored ECS, the graph may have no metric data. In this case, synchronize the local time with the ECS time.

To query information about top 5 processes with the highest CPU usages

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Server Monitoring**.
4. On the **Server Monitoring** page, locate the row that contains the target ECS and click **View Metric** to go to the **OS Monitoring** page.
5. Select the **Process Monitoring** tab.
6. In the **Monitored Processes** area, click  in the upper right corner to view **Top 5 Processes with Highest CPU Usage**.
7. In the displayed **TOP 5 Processes with Highest CPU Usage** window, enable process monitoring for target processes, and click **OK**.

In the **Monitored Processes** area, the system selects processes in the **Running** state by default and displays CPU usage curves of those processes in **1h**. The displayed data is raw data.


You can also select the process to be displayed and view its CPU usage curve in **1h**.

You can click **CPU Usage**, **Memory Usage**, or **Open Files** above the graph to view the curves of different metrics of the currently displayed process. [Table 4-13](#) lists **Process Monitoring** metrics.



**Table 4-13 Process Monitoring metrics**

| Metric       | Description                                                                                                                                | Value Range | Collection Mode (Linux)                                                                                                                                                                                                                                                                                                                                          | Collection Mode (Windows)                                                                                                                                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU Usage    | Specifies the usage of CPU consumed by a process.<br><b>pHashId</b> (process name and process ID) is the value of <b>md5</b> .             | 0–100 %     | Monitored object: ECS or BMS<br>Check the metric value changes in file <b>/proc/pid/stat</b> .                                                                                                                                                                                                                                                                   | Monitored object: ECS or BMS<br>Call Windows API <b>GetProcessTimes</b> to obtain the CPU usage of the process.                                                                                                                                                                |
| Memory Usage | Specifies the memory consumed by a process. <b>pHashId</b> (process name and process ID) is the value of <b>md5</b> .                      | 0–100 %     | Monitored object: ECS or BMS<br><b>Memory Usage = <math>RSS * PAGESIZE / MemTotal</math></b><br><b>RSS</b> : Obtain its value by checking the second column of file <b>/proc/pid/statm</b> .<br><b>PAGESIZE</b> : Obtain its value by running the <b>getconf PAGESIZE</b> command.<br><b>MemTotal</b> : Obtain its value by checking file <b>/proc/meminfo</b> . | Monitored object: ECS or BMS<br>Invoke Windows API <b>procGlobalMemoryStatusEx</b> to obtain the total memory size.<br>Invoke <b>GetProcessMemoryInfo</b> to obtain the used memory size.<br>Use the used memory size to divide the total memory size to get the memory usage. |
| Open Files   | Specifies the number of opened files consumed by the process.<br><b>pHashId</b> (process name and process ID) is the value of <b>md5</b> . | ≥ 0         | Monitored object: ECS or BMS<br>You can run the <b>ls -l /proc/pid/fd</b> command to view the number.                                                                                                                                                                                                                                                            | Not supported                                                                                                                                                                                                                                                                  |

8. Hover your mouse over a graph. In the upper right corner, click  to enlarge the graph for viewing detailed data.

In the upper left corner, you can see six default monitoring periods: **1h**, **3h**, **12h**, **1d**, **7d**, and **30d**. To view historical monitoring data for any period during

the last six months, customize the monitoring period by setting **Select Range** in the upper right corner.

In the upper left corner of the graph, you can click **Settings** to configure the rollup method.

## 4.11 Viewing Server Monitoring Metrics

### Scenarios

This topic describes how to view server monitoring metrics, including fine-grained OS metrics collected by the Agent and basic ECS metrics.

For details, see [Services Interconnected with Cloud Eye](#).

### Prerequisites

You have installed the Agent. For details, see [Installing and Configuring the Agent on a Linux ECS or BMS](#) and [Installing and Configuring the Agent on a Windows Server](#).


### Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. View ECS or BMS metrics.
  - To view OS monitoring metrics of an ECS, in the left navigation pane, choose **Server Monitoring > Elastic Cloud Server**, locate the ECS, and click **View Metric** in the **Operation** column.
  - To view basic monitoring metrics of an ECS, in the left navigation pane, choose **Server Monitoring > Elastic Cloud Server**, locate the ECS, and click **View Metric** in the **Operation** column. Click the **Basic Monitoring** tab.
  - To view OS monitoring metrics of a BMS, in the left navigation pane, choose **Server Monitoring > Bare Metal Server**, locate the BMS, and click **View Metric** in the **Operation** column.
  - To view processing monitoring metrics, click the **Process Monitoring** tab.

4. View metrics.

In the upper part of the **OS Monitoring** page, different metric types, such as CPU, memory, and disk metrics are displayed.

View metric graphs based on raw data from the last 1 hour, last 3 hours, last 12 hours, last 1 day, last 7 days, or last 30 days. Cloud Eye provides the **Auto Refresh** function at 60-second intervals.

5. Hover your mouse over a graph. In the upper right corner, click  to enlarge the graph for viewing detailed data.

In the upper left corner, you can see six default monitoring periods: **1h**, **3h**, **12h**, **1d**, **7d**, and **30d**. To view historical monitoring data for any period during the last six months, customize the monitoring period by setting **Select Range** in the upper right corner.

- In the upper left corner of the graph, click **Settings** to configure the rollup method.

## 4.12 Creating an Alarm Rule to Monitor a Server

### Scenarios

This topic describes how to create an alarm rule for an ECS or BMS.

### Procedure

- Log in to the management console.
- In the upper left corner, select a region and project.
- Click **Service List** in the upper left corner, and select **Cloud Eye**.
- In the navigation pane on the left, choose **Server Monitoring**.
- Locate the target ECS or BMS. In the **Operation** column, click **More**, and select **Create Alarm Rule**.
- On the **Create Alarm Rule** page, follow the prompts to configure the parameters.
  - Set the alarm rule name, description, and associated enterprise project.

**Table 4-14** Parameter description

| Parameter   | Description                                                                              |
|-------------|------------------------------------------------------------------------------------------|
| Name        | Specifies the alarm rule name. The system generates a random name, which you can modify. |
| Description | (Optional) Provides supplementary information about the alarm rule.                      |

- Select a monitored object and configure alarm content parameters.

**Table 4-15** Parameter description

| Parameter     | Description                                                                                                | Example Value        |
|---------------|------------------------------------------------------------------------------------------------------------|----------------------|
| Alarm Type    | Specifies the alarm type to which the alarm rule applies. The value can be <b>Metric</b> or <b>Event</b> . | Metric               |
| Resource Type | Specifies the type of the resource the alarm rule is created for.                                          | Elastic Cloud Server |
| Dimension     | Specifies the metric dimension of the selected resource type.                                              | EC2s                 |

| Parameter        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Example Value      |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Monitoring Scope | Specifies the monitoring scope the alarm rule applies to.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Specific resources |
| Monitored Object | You do not need to set the monitored object because it is the current ECS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                |
| Method           | There are three options: <b>Associate template</b> , <b>Use existing template</b> , and <b>Configure manually</b> .<br><b>NOTE</b><br>After an associated template is modified, the policies contained in this alarm rule to be created will be modified accordingly.                                                                                                                                                                                                                                                                                                                                                                                                                                        | Configure manually |
| Template         | Specifies the template to be used.<br>You can select a default alarm template or <b>a custom template</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                |
| Alarm Policy     | Specifies the policy for triggering an alarm.<br>For example, an alarm is triggered if the average CPU usage of the monitored object is 80% or more for three consecutive 5-minute periods. Cloud Eye triggers an alarm every one hour again if the alarm persists.<br>For details about basic and OS monitoring metrics, see <a href="#">Services Interconnected with Cloud Eye</a> .<br><b>NOTE</b> <ul style="list-style-type: none"> <li>That is, if the alarm is not cleared after it is generated, an alarm notification is sent, once every hour.</li> <li>A maximum of 50 alarm policies can be added to an alarm rule. If any one of these alarm policies is met, an alarm is triggered.</li> </ul> | N/A                |
| Alarm Severity   | Specifies the alarm severity, which can be <b>Critical</b> , <b>Major</b> , <b>Minor</b> , or <b>Informational</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Major              |

- c. Configure the alarm notification.

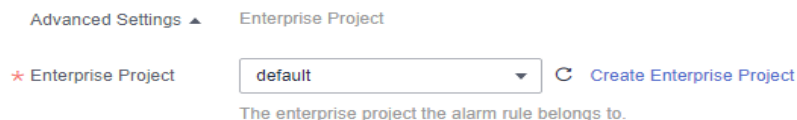
**Table 4-16** Parameter description

| Parameter          | Description                                                                                                                           |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Notification | Specifies whether to notify users when alarms are triggered. Notifications can be sent by email, text message, or HTTP/HTTPS message. |

| Parameter           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notification Object | <p>Specifies the object that receives alarm notifications. You can select the account contact or a topic.</p> <ul style="list-style-type: none"> <li>• <b>Account contact</b> is the mobile number and email address of the registered account.</li> <li>• <b>Topic</b>: A topic is used to publish messages and subscribe to notifications. If the required topic is unavailable, create one and add subscriptions to it on the SMN console. For details, see <a href="#">Creating a Topic</a> and <a href="#">Adding Subscriptions</a>. For the HTTP(S) messages, see <a href="#">Simple Message Notification User Guide</a>.</li> </ul> |
| Validity Period     | <p>Cloud Eye sends notifications only within the validity period specified in the alarm rule.</p> <p>If <b>Validity Period</b> is set to <b>08:00-20:00</b>, Cloud Eye sends notifications only within 08:00-20:00.</p>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Trigger Condition   | <p>Specifies the condition for triggering the alarm notification. You can select <b>Generated alarm</b> (when an alarm is generated), <b>Cleared alarm</b> (when an alarm is cleared), or both.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |

- d. Configure the enterprise project as prompted.

**Figure 4-7** Advanced Settings



**Table 4-17** Name and Description

| Parameter          | Description                                                                                                                                                                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enterprise Project | <p>Specifies the enterprise project that the alarm rule belongs to. Only users with the enterprise project permissions can view and manage the alarm rule. For details about how to create an enterprise project, see <a href="#">Creating an Enterprise Project</a>.</p> |

- e. Click **Create**.

After the alarm rule is created, if the metric data reaches the specified threshold, Cloud Eye immediately informs you that an exception has occurred.

# 5 Custom Monitoring

The **Custom Monitoring** page displays all custom metrics reported by users. You can use simple API requests to report collected monitoring data of those metrics to Cloud Eye for processing and display.

## Viewing Custom Monitoring

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Custom Monitoring**.
4. On the **Custom Monitoring** page, view the data reported by yourself through API requests, including custom services and metrics.

### NOTE

Only after you add monitoring data through APIs, will those data be displayed on the Cloud Eye console. For details about how to add monitoring data, see [Adding Monitoring Data](#).

5. Locate the row that contains the cloud resource to be viewed, and click **View Metric**.

On the page displayed, you can view graphs based on raw data collected in **1h**, **3h**, **12h**, **1d**, and **7d**. In the upper right corner of each graph, the maximum and minimum values of the metric in the corresponding time periods are dynamically displayed.

## Creating an Alarm Rule

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Custom Monitoring**.
4. On the **Custom Monitoring** page, locate the target resource and click **Create Alarm Rule** in the **Operation** column.
5. On the **Create Alarm Rule** page, follow the prompts to configure the parameters. For details, see [Table 3-2](#) and [Table 3-4](#).
6. Click **Create**.

# 6 Event Monitoring

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## 6.1 Introduction to Event Monitoring

In event monitoring, you can query system events that are automatically reported to Cloud Eye and custom events reported to Cloud Eye through the API. You can create alarm rules for both system events and custom events. When specific events occur, Cloud Eye generates alarms for you. Event monitoring does not depend on the Agent.

Events are key operations on cloud service resources that are stored and monitored by Cloud Eye. You can view events to see operations performed by specific users on specific resources, such as deleting or rebooting an ECS.

Event monitoring is enabled by default. For details, see [Events Supported by Event Monitoring](#).

Event monitoring provides an API for reporting custom events, which helps you collect and report abnormal events or important change events generated by services to Cloud Eye.

For details about how to report custom events, see [Reporting Events](#).

## 6.2 Viewing Event Monitoring Data

### Scenarios

This topic describes how to view the event monitoring data.

### Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Event Monitoring**.

On the displayed **Event Monitoring** page, all system events generated in the last 24 hours are displayed by default.

You can also click **1h**, **3h**, **12h**, **1d**, **7d**, or **30d** to view the events generated in different periods.

4. Expand an event, and click **View Event** in the **Operation** column to view details about a specific event.

## 6.3 Creating an Alarm Rule to Monitor an Event

### Scenarios

This topic describes how to create an alarm rule to monitor an event.

### Procedure

1. Log in to the management console.
2. Click **Service List** in the upper left corner, and select **Cloud Eye**.
3. In the navigation pane on the left, choose **Event Monitoring**.
4. On the event list page, click **Create Alarm Rule** in the upper right corner.
5. On the **Create Alarm Rule** page, configure the parameters.
  - a. Set the alarm rule name and description.

**Table 6-1** Parameters for configuring alarm rules

| Parameter   | Description                                                                              |
|-------------|------------------------------------------------------------------------------------------|
| Name        | Specifies the alarm rule name. The system generates a random name, which you can modify. |
| Description | (Optional) Provides supplementary information about the alarm rule.                      |

- b. Select a monitored object and configure alarm content parameters.

**Table 6-2** Parameters for configuring alarm content

| Parameter        | Description                                                                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Type       | Specifies the alarm type to which the alarm rule applies. The value can be <b>Metric</b> or <b>Event</b> .                                                                                    |
| Event Type       | Specifies the event type, which can be <b>System event</b> or <b>Custom event</b> .                                                                                                           |
| Event Source     | Specifies the service the event is generated for.<br>Example value: <b>Elastic Cloud Server</b><br>For a custom event, set <b>Event Source</b> to the value of <a href="#">event_source</a> . |
| Monitoring Scope | Specifies the monitoring scope for event monitoring.<br>Example value: <b>All resources</b>                                                                                                   |



| Parameter      | Description                                                                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method         | Specifies the means you use to create the alarm rule.                                                                                                                                                                                                                   |
| Event Name     | Specifies the instantaneous operations users performed on resources, such as login and logout.<br>For events supported by event monitoring, see <a href="#">Events Supported by Event Monitoring</a> .<br>Example value: <b>Delete ECS</b>                              |
| Trigger Mode   | You can select immediate trigger or accumulative trigger based on the operation severity.<br>Example value: <b>Immediate trigger</b>                                                                                                                                    |
| Alarm Policy   | Specifies the policy for triggering an alarm.<br>For example, an alarm is triggered if the event occurred for three consecutive periods of 5 minutes.<br><b>NOTE</b><br>This parameter is mandatory when <b>Triggering Mode</b> is set to <b>Accumulative Trigger</b> . |
| Alarm Severity | Specifies the alarm severity, which can be <b>Critical</b> , <b>Major</b> , <b>Minor</b> , or <b>Informational</b> .<br>Example value: <b>Major</b>                                                                                                                     |

- c. Configure the alarm notification.

**Table 6-3** Parameters for configuring alarm notifications

| Parameter           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Notification  | Specifies whether to notify users when alarms are triggered. Notifications can be sent by email, text message, or HTTP/HTTPS message.                                                                                                                                                                                                                                                                                                                                                                                            |
| Notification Object | Specifies the object that receives alarm notifications. You can select the account contact or a topic. <ul style="list-style-type: none"> <li>• <b>Account contact</b> is the mobile number and email address of the registered account.</li> <li>• <b>Topic</b>: A topic is used to publish messages and subscribe to notifications. If the required topic is unavailable, create one first and add subscriptions to it. For details, see <a href="#">Creating a Topic</a> and <a href="#">Adding Subscriptions</a>.</li> </ul> |
| Validity Period     | Cloud Eye sends notifications only within the validity period specified in the alarm rule.<br>If <b>Validity Period</b> is set to <b>08:00-20:00</b> , Cloud Eye sends notifications only within 08:00-20:00.                                                                                                                                                                                                                                                                                                                    |
| Trigger Condition   | Specifies the trigger of alarm notifications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

- d. Configure the enterprise project as prompted.

**Figure 6-1** Advanced Settings



**Table 6-4** Name and Description

| Parameter          | Description                                                                                                                                                                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enterprise Project | Specifies the enterprise project that the alarm rule belongs to. Only users with the enterprise project permissions can view and manage the alarm rule. For details about how to create an enterprise project, see <a href="#">Creating an Enterprise Project</a> . |

- e. Click Create.

## 6.4 Events Supported by Event Monitoring

**Table 6-5** Elastic Cloud Server (ECS)

| Event Source | Event Name                              | Event ID          | Event Severity | Description                                                                                                                           | Solution                                                           | Impact                       |
|--------------|-----------------------------------------|-------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------|
| ECS          | Restart triggered due to hardware fault | startAutoRecovery | Major          | ECSs on a faulty host would be automatically migrated to another properly-running host. During the migration, the ECSs was restarted. | Wait for the event to end and check whether services are affected. | Services may be interrupted. |

| Event Source | Event Name                                             | Event ID          | Event Severity | Description                                                                                                                | Solution                                                                                                          | Impact                    |
|--------------|--------------------------------------------------------|-------------------|----------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------|
|              | Restart completed due to hardware failure              | endAutoRecovery   | Major          | The ECS was recovered after the automatic migration.                                                                       | This event indicates that the ECS has recovered and been working properly.                                        | None                      |
|              | Auto recovery timeout (being processed on the backend) | faultAutoRecovery | Major          | Migrating the ECS to a normal host timed out.                                                                              | Migrate services to other ECSs.                                                                                   | Services are interrupted. |
|              | GPU link fault                                         | GPUlinkFault      | Critical       | The GPU of the host on which the ECS is located was faulty or was recovering from a fault.                                 | Deploy service applications in HA mode.<br>After the GPU fault is rectified, check whether services are restored. | Services are interrupted. |
|              | ECS deleted                                            | deleteServer      | Major          | The ECS was deleted <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul> | Check whether the deletion was performed intentionally by a user.                                                 | Services are interrupted. |

| Event Source | Event Name    | Event ID     | Event Severity | Description                                                                                                                                                                                            | Solution                                                                                                                                                                                                                              | Impact                    |
|--------------|---------------|--------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|              | ECS restarted | rebootServer | Minor          | <p>The ECS was restarted</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul>                                                                    | <p>Check whether the restart was performed intentionally by a user.</p> <ul style="list-style-type: none"> <li>Deploy service applications in HA mode.</li> <li>After the ECS starts up, check whether services recover.</li> </ul>   | Services are interrupted. |
|              | ECS stopped   | stopServer   | Minor          | <p>The ECS was stopped</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul> <p><b>NOTE</b><br/>The ECS is stopped only after CTS is enabled.</p> | <ul style="list-style-type: none"> <li>Check whether the restart was performed intentionally by a user.</li> <li>Deploy service applications in HA mode.</li> <li>After the ECS starts up, check whether services recover.</li> </ul> | Services are interrupted. |

| Event Source | Event Name  | Event ID   | Event Severity | Description                                                                                                                        | Solution                                                                                                                                                                                                                                      | Impact                       |
|--------------|-------------|------------|----------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|              | NIC deleted | delete Nic | Major          | The ECS NIC was deleted <ul style="list-style-type: none"> <li>• on the management console.</li> <li>• by calling APIs.</li> </ul> | <ul style="list-style-type: none"> <li>• Check whether the deletion was performed intentionally by a user.</li> <li>• Deploy service applications in HA mode.</li> <li>• After the NIC is deleted, check whether services recover.</li> </ul> | Services may be interrupted. |

| Event Source | Event Name                                 | Event ID                        | Event Severity | Description                                                                                                                                       | Solution                                                                                                                                                                                                                          | Impact                       |
|--------------|--------------------------------------------|---------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|              | ECS resized                                | resizeServer                    | Minor          | <p>The ECS specifications were resized</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul> | <ul style="list-style-type: none"> <li>Check whether the operation was performed by a user.</li> <li>Deploy service applications in HA mode.</li> <li>After the ECS is resized, check whether services have recovered.</li> </ul> | Services are interrupted.    |
|              | GuestOS restarted                          | Restart GuestOS                 | Minor          | The guest OS was restarted.                                                                                                                       | Contact O&M personnel.                                                                                                                                                                                                            | Services may be interrupted. |
|              | ECS failure due to abnormal host processes | VMFaultsByHostProcessExceptions | Critical       | The processes of the host accommodating the ECS were abnormal.                                                                                    | Contact O&M personnel.                                                                                                                                                                                                            | The ECS is faulty.           |
|              | Startup failure                            | faultPowerOn                    | Major          | The ECS failed to start.                                                                                                                          | Start the ECS again. If the problem persists, contact O&M personnel.                                                                                                                                                              | The ECS cannot start.        |

| Event Source | Event Name                         | Event ID                   | Event Severity | Description                                                                                                                 | Solution                                                                                                                             | Impact                                                 |
|--------------|------------------------------------|----------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|              | Host breakdown risk                | hostMayCrash               | Major          | The host where the ECS resides may break down, and the risk cannot be prevented through live migration due to some reasons. | Migrate services running on the ECS first and delete or stop the ECS. Start the ECS only after the O&M personnel eliminate the risk. | The host may break down, causing service interruption. |
|              | Scheduled migration completed      | instance_migrate_completed | Major          | Scheduled ECS migration is completed.                                                                                       | Wait until the ECSs become available and check whether services are affected.                                                        | Services may be interrupted.                           |
|              | Scheduled migration being executed | instance_migrate_executing | Major          | ECSs are being migrated as scheduled.                                                                                       | Wait until the event is complete and check whether services are affected.                                                            | Services may be interrupted.                           |
|              | Scheduled migration canceled       | instance_migrate_canceled  | Major          | Scheduled ECS migration is canceled.                                                                                        | None                                                                                                                                 | None                                                   |
|              | Scheduled migration failed         | instance_migrate_failed    | Major          | ECSs failed to be migrated as scheduled.                                                                                    | Contact O&M personnel.                                                                                                               | Services are interrupted.                              |
|              | Scheduled migration to be executed | instance_migrate_scheduled | Major          | ECSs will be migrated as scheduled.                                                                                         | Check the impact on services during the execution window.                                                                            | None                                                   |

| Event Source | Event Name                                          | Event ID                    | Event Severity | Description                                         | Solution                                                                   | Impact                    |
|--------------|-----------------------------------------------------|-----------------------------|----------------|-----------------------------------------------------|----------------------------------------------------------------------------|---------------------------|
|              | Scheduled specification modification failed         | instance_resize_failed      | Major          | Specifications failed to be modified as scheduled.  | Contact O&M personnel.                                                     | Services are interrupted. |
|              | Scheduled specification modification completed      | instance_resize_completed   | Major          | Scheduled specifications modification is completed. | None                                                                       | None                      |
|              | Scheduled specification modification being executed | instance_resize_executing   | Major          | Specifications are being modified as scheduled.     | Wait until the event is completed and check whether services are affected. | Services are interrupted. |
|              | Scheduled specification modification canceled       | instance_resize_canceled    | Major          | Scheduled specifications modification is canceled.  | None                                                                       | None                      |
|              | Scheduled specification modification to be executed | instance_resize_scheduled   | Major          | Specifications will be modified as scheduled.       | Check the impact on services during the execution window.                  | None                      |
|              | Scheduled redeployment to be executed               | instance_redeploy_scheduled | Major          | ECSs will be redeployed on new hosts as scheduled.  | Check the impact on services during the execution window.                  | None                      |
|              | Scheduled restart to be executed                    | instance_reboot_scheduled   | Major          | ECSs will be restarted as scheduled.                | Check the impact on services during the execution window.                  | None                      |



| Event Source | Event Name                    | Event ID                | Event Severity | Description                                                                                                                                 | Solution                                                           | Impact                                                    |
|--------------|-------------------------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|
|              | Scheduled stop to be executed | instance_stop_scheduled | Major          | ECSs will be stopped as scheduled as they are affected by underlying hardware or system O&M.                                                | Check the impact on services during the execution window.          | None                                                      |
|              | Live migration started        | liveMigrationStarted    | Major          | The host where the ECS is located may be faulty. Live migrate the ECS in advance to prevent service interruptions caused by host breakdown. | Wait for the event to end and check whether services are affected. | Services may be interrupted for less than 1s.             |
|              | Live migration completed      | liveMigrationCompleted  | Major          | The live migration is complete, and the ECS is running properly.                                                                            | Check whether services are running properly.                       | None                                                      |
|              | Live migration failure        | liveMigrationFailed     | Major          | An error occurred during the live migration of an ECS.                                                                                      | Check whether services are running properly.                       | There is a low probability that services are interrupted. |

| Event Source | Event Name                                          | Event ID                  | Event Severity | Description                                                                                                                                      | Solution                                                                                                           | Impact                                                                                               |
|--------------|-----------------------------------------------------|---------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|              | ECC uncorrectable error alarm generated on GPU SRAM | SRAMUncorrectableEccError | Major          | There are ECC uncorrectable errors generated on GPU SRAM.                                                                                        | If services are affected, submit a service ticket.                                                                 | The GPU hardware may be faulty. As a result, the GPU memory is faulty, and services exit abnormally. |
|              | FPGA link fault                                     | FPGALinkFault             | Critical       | The FPGA of the host on which the ECS is located was <ul style="list-style-type: none"> <li>faulty.</li> <li>recovering from a fault.</li> </ul> | Deploy service applications in HA mode.<br>After the FPGA fault is rectified, check whether services are restored. | Services are interrupted.                                                                            |

 **NOTE**

Once a physical host running ECSs breaks down, the ECSs are automatically migrated to a functional physical host. During the migration, the ECSs will be restarted.

**Table 6-6** Bare Metal Server (BMS)

| Event Source | Event Name                                          | Event ID                  | Event Severity | Description                                                                                                                  | Solution                                                                                                                                                       | Impact                                                                                               |
|--------------|-----------------------------------------------------|---------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| BMS          | ECC uncorrectable error alarm generated on GPU SRAM | SRAMUncorrectableEccError | Major          | There are ECC uncorrectable errors generated on GPU SRAM.                                                                    | If services are affected, submit a service ticket.                                                                                                             | The GPU hardware may be faulty. As a result, the GPU memory is faulty, and services exit abnormally. |
|              | BMS restarted                                       | osReboot                  | Major          | The BMS was restarted <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul> | <ul style="list-style-type: none"> <li>Deploy service applications in HA mode.</li> <li>After the BMS is restarted, check whether services recover.</li> </ul> | Services are interrupted.                                                                            |

| Event Source | Event Name          | Event ID       | Event Severity | Description                                                                                                                                                       | Solution                                                                                                                                                       | Impact                    |
|--------------|---------------------|----------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|              | Unexpected restart  | serverReboot   | Major          | <p>The BMS restarted unexpectedly, which may be caused by</p> <ul style="list-style-type: none"> <li>OS faults.</li> <li>hardware faults.</li> </ul>              | <ul style="list-style-type: none"> <li>Deploy service applications in HA mode.</li> <li>After the BMS is restarted, check whether services recover.</li> </ul> | Services are interrupted. |
|              | BMS stopped         | osShutdown     | Major          | <p>The BMS was stopped</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul>                                 | <ul style="list-style-type: none"> <li>Deploy service applications in HA mode.</li> <li>After the BMS is started, check whether services recover.</li> </ul>   | Services are interrupted. |
|              | Unexpected shutdown | serverShutdown | Major          | <p>The BMS was stopped unexpectedly, which may be caused by</p> <ul style="list-style-type: none"> <li>unexpected power-off.</li> <li>hardware faults.</li> </ul> | <ul style="list-style-type: none"> <li>Deploy service applications in HA mode.</li> <li>After the BMS is started, check whether services recover.</li> </ul>   | Services are interrupted. |

| Event Source | Event Name            | Event ID  | Event Severity | Description                                                                                                                                                                                                                                      | Solution                                                                                                                                                         | Impact                                                |
|--------------|-----------------------|-----------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|              | Network disconnection | linkDown  | Major          | <p>The BMS network was disconnected. Possible causes are as follows:</p> <ul style="list-style-type: none"> <li>• The BMS was unexpectedly stopped or restarted.</li> <li>• The switch was faulty.</li> <li>• The gateway was faulty.</li> </ul> | <ul style="list-style-type: none"> <li>• Deploy service applications in HA mode.</li> <li>• After the BMS is started, check whether services recover.</li> </ul> | Services are interrupted.                             |
|              | PCIe error            | pcieError | Major          | The PCIe devices or main board of the BMS was faulty.                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Deploy service applications in HA mode.</li> <li>• After the BMS is started, check whether services recover.</li> </ul> | The network or disk read/write services are affected. |

| Event Source | Event Name | Event ID     | Event Severity | Description                                                                                                                                                                                                | Solution                                                                                                                                                             | Impact                                                               |
|--------------|------------|--------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
|              | Disk fault | diskError    | Major          | The disk backplane or disks of the BMS were faulty.                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Deploy service applications in HA mode.</li> <li>• After the fault is rectified, check whether services recover.</li> </ul> | Data read/write services are affected, or the BMS cannot be started. |
|              | EVS error  | storageError | Major          | <p>The BMS failed to connect to EVS disks. Possible causes are as follows:</p> <ul style="list-style-type: none"> <li>• The SDI card was faulty.</li> <li>• Remote storage devices were faulty.</li> </ul> | <ul style="list-style-type: none"> <li>• Deploy service applications in HA mode.</li> <li>• After the fault is rectified, check whether services recover.</li> </ul> | Data read/write services are affected, or the BMS cannot be started. |

| Event Source | Event Name                     | Event ID        | Event Severity | Description                                                      | Solution                                                                                                                      | Impact                                                                                                                                                                                                   |
|--------------|--------------------------------|-----------------|----------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Inforom alarm generated on GPU | gpuInfoROMALarm | Major          | The driver failed to read inforom information due to GPU faults. | Non-critical services can continue to use the GPU card. For critical services, submit a service ticket to resolve this issue. | Services will not be affected if inforom information cannot be read. If error correction code (ECC) errors are reported on GPU, faulty pages may not be automatically retired and services are affected. |

| Event Source | Event Name                            | Event ID                    | Event Severity | Description                                   | Solution                                                                                                                                                                                                                                                                     | Impact                                                                                             |
|--------------|---------------------------------------|-----------------------------|----------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|              | Double-bit ECC alarm generated on GPU | doubleBitEccError           | Major          | A double-bit ECC error occurred on GPU.       | <ol style="list-style-type: none"> <li>If services are interrupted, restart the services to restore.</li> <li>If services cannot be restarted, restart the VM where services are running.</li> <li>If services still cannot be restored, submit a service ticket.</li> </ol> | Services may be interrupted. After faulty pages are retired, the GPU card can continue to be used. |
|              | Too many retired pages                | gpuTooManyRetiredPagesAlarm | Major          | An ECC page retirement error occurred on GPU. | If services are affected, submit a service ticket.                                                                                                                                                                                                                           | Services may be affected.                                                                          |



| Event Source | Event Name                      | Event ID        | Event Severity | Description                   | Solution                                                                                                                                                                                                                                                                              | Impact                                                                                             |
|--------------|---------------------------------|-----------------|----------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|              | ECC alarm generated on GPU A100 | gpuA100EccAlarm | Major          | An ECC error occurred on GPU. | <ol style="list-style-type: none"> <li>1. If services are interrupted, restart the services to restore.</li> <li>2. If services cannot be restarted, restart the VM where services are running.</li> <li>3. If services still cannot be restored, submit a service ticket.</li> </ol> | Services may be interrupted. After faulty pages are retired, the GPU card can continue to be used. |

| Event Source | Event Name                             | Event ID                          | Event Severity | Description                                         | Solution                                                                                                                                                                                                                                                                              | Impact                                                                                                                  |
|--------------|----------------------------------------|-----------------------------------|----------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
|              | GPU ECC memory page retirement failure | eccPageRetirementRecordingFailure | Major          | Automatic page retirement failed due to ECC errors. | <ol style="list-style-type: none"> <li>1. If services are interrupted, restart the services to restore.</li> <li>2. If services cannot be restarted, restart the VM where services are running.</li> <li>3. If services still cannot be restored, submit a service ticket.</li> </ol> | Services may be interrupted, and memory page retirement fails. As a result, services cannot no longer use the GPU card. |

| Event Source | Event Name                              | Event ID                        | Event Severity | Description                                               | Solution                                                                                                                                                                                                                                                                              | Impact                                                                                                                                            |
|--------------|-----------------------------------------|---------------------------------|----------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|              | GPU ECC page retirement alarm generated | eccPageRetirementRecordingEvent | Minor          | Memory pages are automatically retired due to ECC errors. | <ol style="list-style-type: none"> <li>1. If services are interrupted, restart the services to restore.</li> <li>2. If services cannot be restarted, restart the VM where services are running.</li> <li>3. If services still cannot be restored, submit a service ticket.</li> </ol> | <p>Generally, this alarm is generated together with the ECC error alarm. If this alarm is generated independently, services are not affected.</p> |

| Event Source | Event Name                            | Event ID                  | Event Severity | Description                               | Solution                                                                                                                                                                                                                                                                              | Impact                                                                                       |
|--------------|---------------------------------------|---------------------------|----------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|              | Too many single-bit ECC errors on GPU | highSingleBitEccErrorRate | Major          | There are too many single-bit ECC errors. | <ol style="list-style-type: none"> <li>1. If services are interrupted, restart the services to restore.</li> <li>2. If services cannot be restarted, restart the VM where services are running.</li> <li>3. If services still cannot be restored, submit a service ticket.</li> </ol> | Single-bit errors can be automatically rectified and do not affect GPU-related applications. |

| Event Source | Event Name         | Event ID                  | Event Severity | Description                                                                                | Solution                                                                                                                                                            | Impact                        |
|--------------|--------------------|---------------------------|----------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
|              | GPU card not found | gpuDriverLinkFailureAlarm | Major          | A GPU link is normal, but the NVIDIA driver cannot find the GPU card.                      | <ol style="list-style-type: none"> <li>1. Restart the VM to restore services.</li> <li>2. If services still cannot be restored, submit a service ticket.</li> </ol> | The GPU card cannot be found. |
|              | GPU link faulty    | gpuPcieLinkFailureAlarm   | Major          | GPU hardware information cannot be queried through lspci due to a GPU link fault.          | If services are affected, submit a service ticket.                                                                                                                  | The driver cannot use GPU.    |
|              | GPU card lost      | vmLostGpuAlarm            | Major          | The number of GPU cards on the VM is less than the number specified in the specifications. | If services are affected, submit a service ticket.                                                                                                                  | GPU cards get lost.           |

| Event Source | Event Name              | Event ID                | Event Severity | Description                                                                                | Solution                                           | Impact                                                                                                 |
|--------------|-------------------------|-------------------------|----------------|--------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------|
|              | GPU memory page faulty  | gpuMemoryPageFault      | Major          | The GPU memory page is faulty, which may be caused by applications, drivers, or hardware.  | If services are affected, submit a service ticket. | The GPU hardware may be faulty. As a result, the GPU memory is faulty, and services exit abnormally.   |
|              | GPU image engine faulty | graphicsEngineException | Major          | The GPU image engine is faulty, which may be caused by applications, drivers, or hardware. | If services are affected, submit a service ticket. | The GPU hardware may be faulty. As a result, the image engine is faulty, and services exit abnormally. |

| Event Source | Event Name               | Event ID             | Event Severity | Description                            | Solution                                           | Impact                                                                             |
|--------------|--------------------------|----------------------|----------------|----------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------|
|              | GPU temperature too high | highTemperatureEvent | Major          | GPU temperature too high               | If services are affected, submit a service ticket. | If the GPU temperature exceeds the threshold, the GPU performance may deteriorate. |
|              | GPU NVLink faulty        | nvlinkError          | Major          | A hardware fault occurs on the NVLink. | If services are affected, submit a service ticket. | The NVLink link is faulty and unavailable.                                         |

**Table 6-7** Elastic IP (EIP)

| Event Source | Event Name             | Event ID             | Event Severity | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Solution                                                                                                           | Impact                                        |
|--------------|------------------------|----------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| EIP          | EIP bandwidth exceeded | EIPBandwidthOverflow | Major          | <p>The used bandwidth exceeded the purchased one, which may slow down the network or cause packet loss. The value of this event is the maximum value in a monitoring period, and the value of the EIP inbound and outbound bandwidth is the value at a specific time point in the period.</p> <p>The metrics are described as follows:</p> <p><b>egressDropBandwidth:</b> dropped outbound packets (bytes)</p> <p><b>egressAcceptBandwidth:</b> accepted outbound packets (bytes)</p> <p><b>egressMaxBandwidthPerSec:</b> peak outbound bandwidth (byte/s)</p> <p><b>ingressAcceptBandwidth:</b> accepted inbound packets (bytes)</p> <p><b>ingressMaxBandwidthPerSec:</b></p> | Check whether the EIP bandwidth keeps increasing and whether services are normal. Increase bandwidth if necessary. | The network becomes slow or packets are lost. |



| Event Source | Event Name                    | Event ID     | Event Severity | Description                                                                                                                                   | Solution                                                                                        | Impact                                                        |
|--------------|-------------------------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
|              |                               |              |                | peak inbound bandwidth (byte/s)<br><b>ingressDropBandwidth</b> : dropped inbound packets (bytes)                                              |                                                                                                 |                                                               |
|              | EIP released                  | deleteEip    | Minor          | The EIP was released.                                                                                                                         | Check whether the EIP was release by mistake.                                                   | The server that has the EIP bound cannot access the Internet. |
|              | EIP blocked                   | blockEIP     | Critical       | The used bandwidth of an EIP exceeded 5 Gbit/s, the EIP were blocked and packets were discarded. Such an event may be caused by DDoS attacks. | Replace the EIP to prevent services from being affected.<br><br>Locate and deal with the fault. | Services are impacted.                                        |
|              | EIP unblocked                 | unblockEIP   | Critical       | The EIP was unblocked.                                                                                                                        | Use the previous EIP again.                                                                     | None                                                          |
|              | EIP traffic scrubbing started | ddosCleanEIP | Major          | Traffic scrubbing on the EIP was started to prevent DDoS attacks.                                                                             | Check whether the EIP was attacked.                                                             | Services may be interrupted.                                  |

| Event Source | Event Name                  | Event ID        | Event Severity | Description                                                     | Solution                            | Impact                       |
|--------------|-----------------------------|-----------------|----------------|-----------------------------------------------------------------|-------------------------------------|------------------------------|
|              | EIP traffic scrubbing ended | ddosEndCleanEip | Major          | Traffic scrubbing on the EIP to prevent DDoS attacks was ended. | Check whether the EIP was attacked. | Services may be interrupted. |

| Event Source | Event Name             | Event ID                 | Event Severity | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Solution                                                                                                           | Impact                                        |
|--------------|------------------------|--------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
|              | QoS bandwidth exceeded | EIPBandwidthRuleOverflow | Major          | <p>The used QoS bandwidth exceeded the allocated one, which may slow down the network or cause packet loss. The value of this event is the maximum value in a monitoring period, and the value of the EIP inbound and outbound bandwidth is the value at a specific time point in the period.</p> <p><b>egressDropBandwidth:</b> dropped outbound packets (bytes)</p> <p><b>egressAcceptBandwidth:</b> accepted outbound packets (bytes)</p> <p><b>egressMaxBandwidthPerSec:</b> peak outbound bandwidth (byte/s)</p> <p><b>ingressAcceptBandwidth:</b> accepted inbound packets (bytes)</p> <p><b>ingressMaxBandwidthPerSec:</b> peak inbound bandwidth (byte/s)</p> | Check whether the EIP bandwidth keeps increasing and whether services are normal. Increase bandwidth if necessary. | The network becomes slow or packets are lost. |

| Event Source | Event Name | Event ID | Event Severity | Description                                                   | Solution | Impact |
|--------------|------------|----------|----------------|---------------------------------------------------------------|----------|--------|
|              |            |          |                | <b>ingressDropBandwidth</b> : dropped inbound packets (bytes) |          |        |

**Table 6-8** Advanced Anti-DDoS (AAD)

| Event Source | Event Name                   | Event ID                 | Event Severity | Description                                                                                                                               | Solution                                                                                                                                                                                     | Impact                       |
|--------------|------------------------------|--------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| AAD          | DDoS Attack Events           | ddos AttackEvents        | Major          | A DDoS attack occurs in the AAD protected lines.                                                                                          | Judge the impact on services based on the attack traffic and attack type. If the attack traffic exceeds your purchased elastic bandwidth, change to another line or increase your bandwidth. | Services may be interrupted. |
|              | Domain name scheduling event | domainNameDispatchEvents | Major          | The high-defense CNAME corresponding to the domain name is scheduled, and the domain name is resolved to another high-defense IP address. | Pay attention to the workloads involving the domain name.                                                                                                                                    | Services are not affected.   |

| Event Source | Event Name       | Event ID        | Event Severity | Description                                                        | Solution                                                                                                                                                                                                                                                                                                      | Impact                       |
|--------------|------------------|-----------------|----------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|              | Blackhole event  | blackHoleEvents | Major          | The attack traffic exceeds the purchased AAD protection threshold. | A blackhole is canceled after 30 minutes by default. The actual blackhole duration is related to the blackhole triggering times and peak attack traffic on the current day. The maximum duration is 24 hours. If you need to permit access before a blackhole becomes ineffective, contact technical support. | Services may be interrupted. |
|              | Cancel Blackhole | cancelBlackHole | Informational  | The customer's AAD instance recovers from the black hole state.    | This is only a prompt and no action is required.                                                                                                                                                                                                                                                              | Customer services recover.   |

**Table 6-9** Elastic Load Balance (ELB)

| Event Source | Event Name                              | Event ID             | Event Severity | Description                                                                                                                                         | Solution                                              | Impact                                                                                                                                                               |
|--------------|-----------------------------------------|----------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ELB          | The backend servers are unhealthy.      | healthCheckUnhealthy | Major          | Generally, this problem occurs because backend server services are offline. This event will not be reported after it is reported for several times. | Ensure that the backend servers are running properly. | ELB does not forward requests to unhealthy backend servers. If all backend servers in the backend server group are detected unhealthy, services will be interrupted. |
|              | The backend server is detected healthy. | healthCheckRecovery  | Minor          | The backend server is detected healthy.                                                                                                             | No further action is required.                        | The load balancer can properly route requests to the backend server.                                                                                                 |

**Table 6-10** Cloud Backup and Recovery (CBR)

| Event Source | Event Name                   | Event ID     | Event Severity | Description                      | Solution                                              | Impact               |
|--------------|------------------------------|--------------|----------------|----------------------------------|-------------------------------------------------------|----------------------|
| CBR          | Failed to create the backup. | backupFailed | Critical       | The backup failed to be created. | Manually create a backup or contact customer service. | Data loss may occur. |

| Event Source | Event Name                                     | Event ID                | Event Severity | Description                                        | Solution                                                               | Impact                    |
|--------------|------------------------------------------------|-------------------------|----------------|----------------------------------------------------|------------------------------------------------------------------------|---------------------------|
|              | Failed to restore the resource using a backup. | restorationFailed       | Critical       | The resource failed to be restored using a backup. | Restore the resource using another backup or contact customer service. | Data loss may occur.      |
|              | Failed to delete the backup.                   | backupDeleteFailed      | Critical       | The backup failed to be deleted.                   | Try again later or contact customer service.                           | Charging may be abnormal. |
|              | Failed to delete the vault.                    | vaultDeleteFailed       | Critical       | The vault failed to be deleted.                    | Try again later or contact technical support.                          | Charging may be abnormal. |
|              | Replication failure                            | replicationFailed       | Critical       | The backup failed to be replicated.                | Try again later or contact technical support.                          | Data loss may occur.      |
|              | The backup is created successfully.            | backupSucceeded         | Major          | The backup was created.                            | None                                                                   | None                      |
|              | Resource restoration using a backup succeeded. | restorationSucceeded    | Major          | The resource was restored using a backup.          | Check whether the data is successfully restored.                       | None                      |
|              | The backup is deleted successfully.            | backupDeletionSucceeded | Major          | The backup was deleted.                            | None                                                                   | None                      |
|              | The vault is deleted successfully.             | vaultDeletionSucceeded  | Major          | The vault was deleted.                             | None                                                                   | None                      |

| Event Source | Event Name          | Event ID             | Event Severity | Description                             | Solution                                                                                       | Impact                 |
|--------------|---------------------|----------------------|----------------|-----------------------------------------|------------------------------------------------------------------------------------------------|------------------------|
|              | Replication success | replicationSucceeded | Major          | The backup was replicated successfully. | None                                                                                           | None                   |
|              | Client offline      | agentOffline         | Critical       | The backup client was offline.          | Ensure that the Agent status is normal and the backup client can be connected to Huawei Cloud. | Backup tasks may fail. |
|              | Client online       | agentOnline          | Major          | The backup client was online.           | None                                                                                           | None                   |

**Table 6-11** Relational Database Service (RDS) — operations

| Event Source | Event Name                   | Event ID        | Event Severity | Description                                                   |
|--------------|------------------------------|-----------------|----------------|---------------------------------------------------------------|
| RDS          | Reset administrator password | resetPassword   | Major          | The password of the database administrator is reset.          |
|              | Operate DB instance          | instanceAction  | Major          | The storage space is scaled or the instance class is changed. |
|              | Delete DB instance           | deleteInstance  | Minor          | The DB instance is deleted.                                   |
|              | Modify backup policy         | setBackupPolicy | Minor          | The backup policy is modified.                                |



| Event Source | Event Name                             | Event ID               | Event Severity | Description                            |
|--------------|----------------------------------------|------------------------|----------------|----------------------------------------|
|              | Modify parameter group                 | updateParameterGroup   | Minor          | The parameter group is modified.       |
|              | Delete parameter group                 | deleteParameterGroup   | Minor          | The parameter group is deleted.        |
|              | Reset parameter group                  | resetParameterGroup    | Minor          | The parameter group is reset.          |
|              | Change database port                   | changeInstancePort     | Major          | The database port is changed.          |
|              | Primary/standby switchover or failover | PrimaryStandbySwitched | Major          | A switchover or failover is performed. |

**Table 6-12** Document Database Service (DDS)

| Event Source | Event Name                   | Event ID                | Event Severity | Description                                                                                     | Solution                                                                               | Impact                           |
|--------------|------------------------------|-------------------------|----------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------|
| DDS          | DB instance creation failure | DDSCreateInstanceFailed | Major          | A DDS instance fails to be created due to insufficient disks, quotas, and underlying resources. | Check the number and quota of disks. Release resources and create DDS instances again. | DDS instances cannot be created. |

| Event Source | Event Name            | Event ID                                      | Event Severity | Description                                                                                                                                                                                                                                                                                                                                                                                                                                | Solution                 | Impact                                                                                        |
|--------------|-----------------------|-----------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------|
|              | Replication failed    | DDSA<br>bnormalRe<br>plicationStat<br>us      | Major          | <p>The possible causes are as follows:</p> <p>The replication delay between the primary instance and the standby instance or a read replica is too long, which usually occurs when a large amount of data is being written to databases or a large transaction is being processed. During peak hours, data may be blocked.</p> <p>The network between the primary instance and the standby instance or a read replica is disconnected.</p> | Submit a service ticket. | Your applications are not affected because this event does not interrupt data read and write. |
|              | Replication recovered | DDSR<br>eplica<br>tionStat<br>usR<br>ecovered | Major          | The replication delay between the primary and standby instances is within the normal range, or the network connection between them has restored.                                                                                                                                                                                                                                                                                           | No action is required.   | None                                                                                          |

| Event Source | Event Name            | Event ID               | Event Severity | Description                                                                                                                                           | Solution                                                                     | Impact                                   |
|--------------|-----------------------|------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|
|              | DB instance failed    | DDSFaultyDBInstance    | Major          | This event is a key alarm event and is reported when an instance is faulty due to a disaster or a server failure.                                     | Submit a service ticket.                                                     | The database service may be unavailable. |
|              | DB instance recovered | DDSDBInstanceRecovered | Major          | If a disaster occurs, NoSQL provides an HA tool to automatically or manually rectify the fault. After the fault is rectified, this event is reported. | No action is required.                                                       | None                                     |
|              | Faulty node           | DDSFaultyDBNode        | Major          | This event is a key alarm event and is reported when a database node is faulty due to a disaster or a server failure.                                 | Check whether the database service is available and submit a service ticket. | The database service may be unavailable. |
|              | Node recovered        | DDSDBNodeRecovered     | Major          | If a disaster occurs, NoSQL provides an HA tool to automatically or manually rectify the fault. After the fault is rectified, this event is reported. | No action is required.                                                       | None                                     |

| Event Source | Event Name                             | Event ID                  | Event Severity | Description                                                                       | Solution                                                                                                     | Impact                                                                       |
|--------------|----------------------------------------|---------------------------|----------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
|              | Primary/standby switchover or failover | DDSPrimarySwitched        | Major          | A primary/standby switchover is performed or a failover is triggered.             | No action is required.                                                                                       | None                                                                         |
|              | Insufficient storage space             | DDSRiskyDataDiskUsage     | Major          | The storage space is insufficient.                                                | Scale up storage space. For details, see section "Scaling Up Storage Space" in the corresponding user guide. | The instance is set to read-only and data cannot be written to the instance. |
|              | Data disk expanded and being writable  | DDSDataDiskUsageRecovered | Major          | The capacity of a data disk has been expanded and the data disk becomes writable. | No further action is required.                                                                               | No adverse impact.                                                           |

**Table 6-13** GaussDB NoSQL

| Event Source  | Event Name                         | Event ID                   | Event Severity | Description                                                  | Solution                                                                                                                                                         | Impact                          |
|---------------|------------------------------------|----------------------------|----------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| GaussDB NoSQL | DB instance creation failed        | NoSQL CreateInstanceFailed | Major          | The instance quota or underlying resources are insufficient. | Release the instances that are no longer used and try to provision them again, or submit a service ticket to adjust the quota.                                   | DB instances cannot be created. |
|               | Specifications modification failed | NoSQL ResizeInstanceFailed | Major          | The underlying resources are insufficient.                   | Submit a service ticket. The O&M personnel will coordinate resources in the background, and then you need to change the specifications again.                    | Services are interrupted.       |
|               | Node adding failed                 | NoSQL AddNodesFailed       | Major          | The underlying resources are insufficient.                   | Submit a service ticket. The O&M personnel will coordinate resources in the background, and then you delete the node that failed to be added and add a new node. | None                            |
|               | Node deletion failed               | NoSQL DeleteNodesFailed    | Major          | The underlying resources fail to be released.                | Delete the node again.                                                                                                                                           | None                            |

| Event Source | Event Name                         | Event ID                                 | Event Severity | Description                                       | Solution                                                                                                                              | Impact                       |
|--------------|------------------------------------|------------------------------------------|----------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|              | Storage space scale-up failed      | NoSQL ScaleUpStorageFailed               | Major          | The underlying resources are insufficient.        | Submit a service ticket. The O&M personnel will coordinate resources in the background and then you scale up the storage space again. | Services may be interrupted. |
|              | Password reset failed              | NoSQL ResetPasswordFailed                | Major          | Resetting the password times out.                 | Reset the password again.                                                                                                             | None                         |
|              | Parameter group change failed      | NoSQL UpdateInstanceParameterGroupFailed | Major          | Changing a parameter group times out.             | Change the parameter group again.                                                                                                     | None                         |
|              | Backup policy configuration failed | NoSQL SetBackupPolicyFailed              | Major          | The database connection is abnormal.              | Configure the backup policy again.                                                                                                    | None                         |
|              | Manual backup creation failed      | NoSQL CreateManualBackupFailed           | Major          | The backup files fail to be exported or uploaded. | Submit a service ticket to the O&M personnel.                                                                                         | Data cannot be backed up.    |
|              | Automated backup creation failed   | NoSQL CreateAutomatedBackupFailed        | Major          | The backup files fail to be exported or uploaded. | Submit a service ticket to the O&M personnel.                                                                                         | Data cannot be backed up.    |

| Event Source | Event Name            | Event ID                  | Event Severity | Description                                                                                                                                           | Solution                                                                     | Impact                                   |
|--------------|-----------------------|---------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|
|              | Faulty DB instance    | NoSQL FaultyDBInstance    | Major          | This event is a key alarm event and is reported when an instance is faulty due to a disaster or a server failure.                                     | Submit a service ticket.                                                     | The database service may be unavailable. |
|              | DB instance recovered | NoSQL DBInstanceRecovered | Major          | If a disaster occurs, NoSQL provides an HA tool to automatically or manually rectify the fault. After the fault is rectified, this event is reported. | No action is required.                                                       | None                                     |
|              | Faulty node           | NoSQL FaultyDBNode        | Major          | This event is a key alarm event and is reported when a database node is faulty due to a disaster or a server failure.                                 | Check whether the database service is available and submit a service ticket. | The database service may be unavailable. |
|              | Node recovered        | NoSQL DBNodeRecovered     | Major          | If a disaster occurs, NoSQL provides an HA tool to automatically or manually rectify the fault. After the fault is rectified, this event is reported. | No action is required.                                                       | None                                     |

| Event Source | Event Name                             | Event ID                      | Event Severity | Description                                                                                                                                                                              | Solution                                                                                                                                                                            | Impact                                                                                                    |
|--------------|----------------------------------------|-------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|              | Primary/standby switchover or failover | NoSQL Primary StandbySwitched | Major          | This event is reported when a primary/standby switchover is performed or a failover is triggered.                                                                                        | No action is required.                                                                                                                                                              | None                                                                                                      |
|              | HotKey occurred                        | HotKey Occurs                 | Major          | The primary key is improperly configured. As a result, hotspot data is distributed in one partition. The improper application design causes frequent read and write operations on a key. | <ol style="list-style-type: none"> <li>1. Choose a proper partition key.</li> <li>2. Add service cache. The service application reads hotspot data from the cache first.</li> </ol> | The service request success rate is affected, and the cluster performance and stability also be affected. |



| Event Source | Event Name                            | Event ID                     | Event Severity | Description                                                                                                                          | Solution                                                                                                                                  | Impact                                                                            |
|--------------|---------------------------------------|------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|              | BigKey occurred                       | BigKey Occurs                | Major          | The primary key design is improper. The number of records or data in a single partition is too large, causing unbalanced node loads. | <ol style="list-style-type: none"> <li>1. Choose a proper partition key.</li> <li>2. Add a new partition key for hashing data.</li> </ol> | As the data in the large partition increases, the cluster stability deteriorates. |
|              | Insufficient storage space            | NoSQL RiskyDataDiskUsage     | Major          | The storage space is insufficient.                                                                                                   | Scale up storage space. For details, see section "Scaling Up Storage Space" in the corresponding user guide.                              | The instance is set to read-only and data cannot be written to the instance.      |
|              | Data disk expanded and being writable | NoSQL DataDiskUsageRecovered | Major          | The capacity of a data disk has been expanded and the data disk becomes writable.                                                    | No operation is required.                                                                                                                 | None                                                                              |

| Event Source | Event Name            | Event ID                | Event Severity | Description                                                                                                                                                                                                                       | Solution                                                                                                                                                                           | Impact                                                                                                                   |
|--------------|-----------------------|-------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|              | Index creation failed | NoSQL CreateIndexFailed | Major          | The service load exceeds what the instance specifications can take. In this case, creating indexes consumes more instance resources. As a result, the response is slow or even frame freezing occurs, and the creation times out. | Select the matched instance specifications based on the service load.<br>Create indexes during off-peak hours.<br>Create indexes in the background.<br>Select indexes as required. | The index fails to be created or is incomplete. As a result, the index is invalid. Delete the index and create an index. |
|              | Write speed decreased | NoSQL Stalling Occurs   | Major          | The write speed is fast, which is close to the maximum write capability allowed by the cluster scale and instance specifications. As a result, the flow control mechanism of the database is triggered, and requests may fail.    | 1. Adjust the cluster scale or node specifications based on the maximum write rate of services.<br>2. Measures the maximum write rate of services.                                 | The success rate of service requests is affected.                                                                        |

| Event Source | Event Name                            | Event ID                            | Event Severity | Description                                                                                                                                                                                                              | Solution                                                                                                                                                                                                   | Impact                                            |
|--------------|---------------------------------------|-------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|              | Data write stopped                    | NoSQL StoppingOccurs                | Major          | The data write is too fast, reaching the maximum write capability allowed by the cluster scale and instance specifications. As a result, the flow control mechanism of the database is triggered, and requests may fail. | <ol style="list-style-type: none"> <li>1. Adjust the cluster scale or node specifications based on the maximum write rate of services.</li> <li>2. Measures the maximum write rate of services.</li> </ol> | The success rate of service requests is affected. |
|              | Database restart failed               | NoSQL Restart DBFailed              | Major          | The instance status is abnormal.                                                                                                                                                                                         | Submit a service ticket to the O&M personnel.                                                                                                                                                              | The DB instance status may be abnormal.           |
|              | Restoration to new DB instance failed | NoSQL Restore ToNew Instance Failed | Major          | The underlying resources are insufficient.                                                                                                                                                                               | Submit a service order to ask the O&M personnel to coordinate resources in the background and add new nodes.                                                                                               | Data cannot be restored to a new DB instance.     |

| Event Source | Event Name                                 | Event ID                             | Event Severity | Description                                                                                        | Solution                                                                                                                                            | Impact                                                |
|--------------|--------------------------------------------|--------------------------------------|----------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|              | Restoration to existing DB instance failed | NoSQL Restore ToExistInstance Failed | Major          | The backup file fails to be downloaded or restored.                                                | Submit a service ticket to the O&M personnel.                                                                                                       | The current DB instance may be unavailable.           |
|              | Backup file deletion failed                | NoSQL DeleteBackupFailed             | Major          | The backup files fail to be deleted from OBS.                                                      | Delete the backup files again.                                                                                                                      | None                                                  |
|              | Failed to enable Show Original Log         | NoSQL SwitchSlowlogPlainTextFailed   | Major          | The DB engine does not support this function.                                                      | Refer to the <i>GaussDB NoSQL User Guide</i> to ensure that the DB engine supports Show Original Log. Submit a service ticket to the O&M personnel. | None                                                  |
|              | EIP binding failed                         | NoSQL BindEipFailed                  | Major          | The node status is abnormal, an EIP has been bound to the node, or the EIP to be bound is invalid. | Check whether the node is normal and whether the EIP is valid.                                                                                      | The DB instance cannot be accessed from the Internet. |
|              | EIP unbinding failed                       | NoSQL UnbindEipFailed                | Major          | The node status is abnormal or the EIP has been unbound from the node.                             | Check whether the node and EIP status are normal.                                                                                                   | None                                                  |

| Event Source | Event Name                         | Event ID                        | Event Severity | Description                                                                          | Solution                                                                                                      | Impact                                 |
|--------------|------------------------------------|---------------------------------|----------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------|
|              | Parameter modification failed      | NoSQL Modify ParameterFailed    | Major          | The parameter value is invalid.                                                      | Check whether the parameter value is within the valid range and submit a service ticket to the O&M personnel. | None                                   |
|              | Parameter group application failed | NoSQL ApplyParameterGroupFailed | Major          | The instance status is abnormal. As a result, the parameter group cannot be applied. | Submit a service ticket to the O&M personnel.                                                                 | None                                   |
|              | Failed to enable or disable SSL    | NoSQL SwitchSSLFailed           | Major          | Enabling or disabling SSL times out.                                                 | Try again or submit a service ticket. Do not change the connection mode.                                      | The connection mode cannot be changed. |

| Event Source | Event Name         | Event ID       | Event Severity | Description                                                                                     | Solution                                                                                                                                                                                                                                                                              | Impact                                                                                                   |
|--------------|--------------------|----------------|----------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|              | Row size too large | LargeRowOccurs | Major          | If there is too much data in a single row, queries may time out, causing faults like OOM error. | <ol style="list-style-type: none"> <li>Control the length of each column and row so that the sum of key and value lengths in each row does not exceed the preset threshold.</li> <li>Check whether there are invalid writes or encoding resulting in large keys or values.</li> </ol> | If there are rows that are too large, the cluster performance will deteriorate as the data volume grows. |

**Table 6-14** GaussDB(for MySQL)

| Event Source       | Event Name                 | Event ID                              | Event Severity | Description                                                                                                                                             | Solution                 | Impact            |
|--------------------|----------------------------|---------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------|
| GaussDB(for MySQL) | Incremental backup failure | TaurusIncrementalBackupInstanceFailed | Major          | The network between the instance and the management plane (or the OBS) is disconnected, or the backup environment created for the instance is abnormal. | Submit a service ticket. | Backup jobs fail. |

| Event Source | Event Name                             | Event ID                            | Event Severity | Description                                                                                                                                         | Solution                                                                        | Impact                                                     |
|--------------|----------------------------------------|-------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------|
|              | Read replica creation failure          | addReadonlyNodesFailed              | Major          | The quota is insufficient or underlying resources are exhausted.                                                                                    | Check the read replica quota. Release resources and create read replicas again. | Read replicas fail to be created.                          |
|              | DB instance creation failure           | createInstanceFailed                | Major          | The instance quota or underlying resources are insufficient.                                                                                        | Check the instance quota. Release resources and create instances again.         | DB instances fail to be created.                           |
|              | Read replica promotion failure         | activeStandbySwitchFailed           | Major          | The read replica fails to be promoted to the primary node due to network or server failures. The original primary node takes over services quickly. | Submit a service ticket.                                                        | The read replica fails to be promoted to the primary node. |
|              | Instance specifications change failure | flavorAlterationFailed              | Major          | The quota is insufficient or underlying resources are exhausted.                                                                                    | Submit a service ticket.                                                        | Instance specifications fail to be changed.                |
|              | Faulty DB instance                     | TaurusInstanceRunningStatusAbnormal | Major          | The instance process is faulty or the communications between the instance and the DFV storage are abnormal.                                         | Submit a service ticket.                                                        | Services may be affected.                                  |

| Event Source | Event Name                    | Event ID                             | Event Severity | Description                                                                                                                | Solution                                                                                 | Impact                                              |
|--------------|-------------------------------|--------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------|
|              | DB instance recovered         | TaurusInstanceRunningStatusRecovered | Major          | The instance is recovered.                                                                                                 | Observe the service running status.                                                      | None                                                |
|              | Faulty node                   | TaurusNodeRunningStatusAbnormal      | Major          | The node process is faulty or the communications between the node and the DFV storage are abnormal.                        | Observe the instance and service running statuses.                                       | A read replica may be promoted to the primary node. |
|              | Node recovered                | TaurusNodeRunningStatusRecovered     | Major          | The node is recovered.                                                                                                     | Observe the service running status.                                                      | None                                                |
|              | Read replica deletion failure | TaurusDeleteReadOnlyNodeFailed       | Major          | The communications between the management plane and the read replica are abnormal or the VM fails to be deleted from IaaS. | Submit a service ticket.                                                                 | Read replicas fail to be deleted.                   |
|              | Password reset failure        | TaurusResetInstancePasswordFailed    | Major          | The communications between the management plane and the instance are abnormal or the instance is abnormal.                 | Check the instance status and try again. If the fault persists, submit a service ticket. | Passwords fail to be reset for instances.           |



| Event Source | Event Name                             | Event ID                            | Event Severity | Description                                                                                                         | Solution                                                                                                                                                                   | Impact                                             |
|--------------|----------------------------------------|-------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|              | DB instance reboot failure             | TaurusRstartInstanceFailed          | Major          | The network between the management plane and the instance is abnormal or the instance is abnormal.                  | Check the instance status and try again. If the fault persists, submit a service ticket.                                                                                   | Instances fail to be rebooted.                     |
|              | Restoration to new DB instance failure | TaurusRestoreToNewInstanceFailed    | Major          | The instance quota is insufficient, underlying resources are exhausted, or the data restoration logic is incorrect. | If the new instance fails to be created, check the instance quota, release resources, and try to restore to a new instance again. In other cases, submit a service ticket. | Backup data fails to be restored to new instances. |
|              | EIP binding failure                    | TaurusBindEIPToInstanceFailed       | Major          | The binding task fails.                                                                                             | Submit a service ticket.                                                                                                                                                   | EIPs fail to be bound to instances.                |
|              | EIP unbinding failure                  | TaurusUnbindEIPFromInstanceFailed   | Major          | The unbinding task fails.                                                                                           | Submit a service ticket.                                                                                                                                                   | EIPs fail to be unbound from instances.            |
|              | Parameter modification failure         | TaurusUpdateInstanceParameterFailed | Major          | The network between the management plane and the instance is abnormal or the instance is abnormal.                  | Check the instance status and try again. If the fault persists, submit a service ticket.                                                                                   | Instance parameters fail to be modified.           |

| Event Source | Event Name                             | Event ID                                  | Event Severity | Description                                                                                                                                             | Solution                                                                                 | Impact                                               |
|--------------|----------------------------------------|-------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------|
|              | Parameter template application failure | TaurusApplyParameterGroupToInstanceFailed | Major          | The network between the management plane and instances is abnormal or the instances are abnormal.                                                       | Check the instance status and try again. If the fault persists, submit a service ticket. | Parameter templates fail to be applied to instances. |
|              | Full backup failure                    | TaurusBackupInstanceFailed                | Major          | The network between the instance and the management plane (or the OBS) is disconnected, or the backup environment created for the instance is abnormal. | Submit a service ticket.                                                                 | Backup jobs fail.                                    |

| Event Source | Event Name               | Event ID                    | Event Severity | Description                                                                                                                                                                               | Solution                                                                                                                                                                                                                | Impact                                                                                                                                                 |
|--------------|--------------------------|-----------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Primary/standby failover | TaurusActiveStandbySwitched | Major          | When the network, physical machine, or database of the primary node is faulty, the system promotes a read replica to primary based on the failover priority to ensure service continuity. | <ol style="list-style-type: none"> <li>1. Check whether the service is running properly.</li> <li>2. Check whether an alarm is generated, indicating that the read replica failed to be promoted to primary.</li> </ol> | During the failover, database connection is interrupted for a short period of time. After the failover is complete, you can reconnect to the database. |
|              | Database read-only       | NodeReadOnlyMode            | Major          | The database supports only query operations.                                                                                                                                              | Submit a service ticket.                                                                                                                                                                                                | After the database becomes read-only, write operations cannot be processed.                                                                            |

| Event Source | Event Name          | Event ID           | Event Severity | Description                                           | Solution                 | Impact |
|--------------|---------------------|--------------------|----------------|-------------------------------------------------------|--------------------------|--------|
|              | Database read/write | NodeReadWrite Mode | Major          | The database supports both write and read operations. | Submit a service ticket. | None.  |

**Table 6-15** GaussDB

| Event Source | Event Name           | Event ID           | Event Severity | Description                                                             | Solution                                                                                                                                                                        | Impact                                                                                                                                                        |
|--------------|----------------------|--------------------|----------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GaussDB      | Process status alarm | ProcessStatusAlarm | Major          | Key processes exit, including CMS/CMA, ETCD, GTM, CN, and DN processes. | Wait until the process is automatically recovered or a primary/standby failover is automatically performed. Check whether services are recovered. If no, contact SRE engineers. | If processes on primary nodes are faulty, services are interrupted and then rolled back. If processes on standby nodes are faulty, services are not affected. |

| Event Source | Event Name              | Event ID               | Event Severity | Description                                                                                                                                             | Solution                                                                                                                                                                        | Impact                                                                                                                                                                                                                                    |
|--------------|-------------------------|------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Component status alarm  | Component Status Alarm | Major          | Key components do not respond, including CMA, ETCD, GTM, CN, and DN components.                                                                         | Wait until the process is automatically recovered or a primary/standby failover is automatically performed. Check whether services are recovered. If no, contact SRE engineers. | If processes on primary nodes do not respond, neither do the services. If processes on standby nodes are faulty, services are not affected.                                                                                               |
|              | Cluster status alarm    | ClusterStatusAlarm     | Major          | The cluster status is abnormal. For example, the cluster is read-only; majority of ETCDs are faulty; or the cluster resources are unevenly distributed. | Contact SRE engineers.                                                                                                                                                          | If the cluster status is read-only, only read services are processed.<br>If the majority of ETCDs are faulty, the cluster is unavailable.<br>If resources are unevenly distributed, the instance performance and reliability deteriorate. |
|              | Hardware resource alarm | HardwareResourceAlarm  | Major          | A major hardware fault occurs in the instance, such as disk damage or GTM network fault.                                                                | Contact SRE engineers.                                                                                                                                                          | Some or all services are affected.                                                                                                                                                                                                        |

| Event Source | Event Name              | Event ID                             | Event Severity | Description                                                                                                                                                              | Solution                                                                                                                | Impact                                                                              |
|--------------|-------------------------|--------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              | Status transition alarm | StateTransitionAlarm                 | Major          | The following events occur in the instance: DN build failure, forcible DN promotion, primary/standby DN switchover/failover, or primary/standby GTM switchover/failover. | Wait until the fault is automatically rectified and check whether services are recovered. If no, contact SRE engineers. | Some services are interrupted.                                                      |
|              | Other abnormal alarm    | OtherAbnormalAlarm                   | Major          | Disk usage threshold alarm                                                                                                                                               | Focus on service changes and scale up storage space as needed.                                                          | If the used storage space exceeds the threshold, storage space cannot be scaled up. |
|              | Faulty DB instance      | TaurusInstanceRunningStatusAbnormal  | Major          | This event is a key alarm event and is reported when an instance is faulty due to a disaster or a server failure.                                                        | Submit a service ticket.                                                                                                | The database service may be unavailable.                                            |
|              | DB instance recovered   | TaurusInstanceRunningStatusRecovered | Major          | GaussDB(OpenGauss) provides an HA tool for automated or manual rectification of faults. After the fault is rectified, this event is reported.                            | No further action is required.                                                                                          | None                                                                                |

| Event Source | Event Name                   | Event ID                           | Event Severity | Description                                                                                                                                   | Solution                                                                                                                       | Impact                                   |
|--------------|------------------------------|------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
|              | Faulty DB node               | Taurus Node RunningStatusAbnormal  | Major          | This event is a key alarm event and is reported when a database node is faulty due to a disaster or a server failure.                         | Check whether the database service is available and submit a service ticket.                                                   | The database service may be unavailable. |
|              | DB node recovered            | Taurus Node RunningStatusRecovered | Major          | GaussDB(openGauss) provides an HA tool for automated or manual rectification of faults. After the fault is rectified, this event is reported. | No further action is required.                                                                                                 | None                                     |
|              | DB instance creation failure | Gauss DBV5 Create InstanceFailed   | Major          | Instances fail to be created because the quota is insufficient or underlying resources are exhausted.                                         | Release the instances that are no longer used and try to provision them again, or submit a service ticket to adjust the quota. | DB instances cannot be created.          |

| Event Source | Event Name               | Event ID                         | Event Severity | Description                                | Solution                                                                                                                                                         | Impact                                   |
|--------------|--------------------------|----------------------------------|----------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
|              | Node adding failure      | Gauss DBV5 ExpandClusterFailed   | Major          | The underlying resources are insufficient. | Submit a service ticket. The O&M personnel will coordinate resources in the background, and then you delete the node that failed to be added and add a new node. | None                                     |
|              | Storage scale-up failure | Gauss DBV5 EnlargeVolumeFailed   | Major          | The underlying resources are insufficient. | Submit a service ticket. The O&M personnel will coordinate resources in the background and then you scale up the storage space again.                            | Services may be interrupted.             |
|              | Reboot failure           | Gauss DBV5 RestartInstanceFailed | Major          | The network is abnormal.                   | Retry the reboot operation or submit a service ticket to the O&M personnel.                                                                                      | The database service may be unavailable. |



| Event Source | Event Name                             | Event ID                            | Event Severity | Description                                       | Solution                                                                     | Impact                                             |
|--------------|----------------------------------------|-------------------------------------|----------------|---------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------|
|              | Full backup failure                    | Gauss DBV5 FullBackupFailed         | Major          | The backup files fail to be exported or uploaded. | Submit a service ticket to the O&M personnel.                                | Data cannot be backed up.                          |
|              | Differential backup failure            | Gauss DBV5 DifferentialBackupFailed | Major          | The backup files fail to be exported or uploaded. | Submit a service ticket to the O&M personnel.                                | Data cannot be backed up.                          |
|              | Backup deletion failure                | Gauss DBV5 DeleteBackupFailed       | Major          | This function does not need to be implemented.    | N/A                                                                          | N/A                                                |
|              | EIP binding failure                    | Gauss DBV5 BindEIPFailed            | Major          | The EIP is bound to another resource.             | Submit a service ticket to the O&M personnel.                                | The instance cannot be accessed from the Internet. |
|              | EIP unbinding failure                  | Gauss DBV5 UnbindEIPFailed          | Major          | The network is faulty or EIP is abnormal.         | Unbind the IP address again or submit a service ticket to the O&M personnel. | IP addresses may be residual.                      |
|              | Parameter template application failure | Gauss DBV5 ApplyParamFailed         | Major          | Modifying a parameter template times out.         | Modify the parameter template again.                                         | None                                               |

| Event Source | Event Name                     | Event ID                                      | Event Severity | Description                                                                      | Solution                             | Impact                                                                  |
|--------------|--------------------------------|-----------------------------------------------|----------------|----------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------|
|              | Parameter modification failure | Gauss DBV5 UpdateInstanceParameterGroupFailed | Major          | Modifying a parameter template times out.                                        | Modify the parameter template again. | None                                                                    |
|              | Backup and restoration failure | Gauss DBV5 RestoreFromBackupFailed            | Major          | The underlying resources are insufficient or backup files fail to be downloaded. | Submit a service ticket.             | The database service may be unavailable during the restoration failure. |

**Table 6-16** Distributed Database Middleware (DDM)

| Event Source | Event Name                               | Event ID                | Event Severity | Description                                | Solution                                                                            | Impact                                  |
|--------------|------------------------------------------|-------------------------|----------------|--------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------|
| DDM          | Failed to create a DDM instance          | createDdmInstanceFailed | Major          | The underlying resources are insufficient. | Release resources and create the instance again.                                    | DDM instances cannot be created.        |
|              | Failed to change class of a DDM instance | resizeFlavorFailed      | Major          | The underlying resources are insufficient. | Submit a service ticket to the O&M personnel to coordinate resources and try again. | Services on some nodes are interrupted. |

| Event Source | Event Name                         | Event ID              | Event Severity | Description                                   | Solution                                                                                                                            | Impact                                  |
|--------------|------------------------------------|-----------------------|----------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|              | Failed to scale out a DDM instance | enlargeNodeFailed     | Major          | The underlying resources are insufficient.    | Submit a service ticket to the O&M personnel to coordinate resources, delete the node that fails to be added, and add a node again. | The instance fails to be scaled out.    |
|              | Failed to scale in a DDM instance  | reduceNodeFailed      | Major          | The underlying resources fail to be released. | Submit a service ticket to the O&M personnel to release resources.                                                                  | The instance fails to be scaled in.     |
|              | Failed to restart a DDM instance   | restartInstanceFailed | Major          | The DB instances associated are abnormal.     | Check whether DB instances associated are normal. If the instances are normal, submit a service ticket to the O&M personnel.        | Services on some nodes are interrupted. |

| Event Source | Event Name                      | Event ID                  | Event Severity | Description                                                                                                                                                                                                                                                                                 | Solution                                                                                                                                                                                                                                                       | Impact                                                 |
|--------------|---------------------------------|---------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|              | Failed to create a schema       | createLogicDbFailed       | Major          | <p>The possible causes are as follows:</p> <ul style="list-style-type: none"> <li>The DB instance account is incorrect.</li> <li>The DDM instance and its associated DB instances cannot communicate with each other because their security groups are not configured correctly.</li> </ul> | <p>Check the following items:</p> <ul style="list-style-type: none"> <li>Whether the DB instance account is correct.</li> <li>Whether the security groups associated with the DDM instance and its associated DB instance are correctly configured.</li> </ul> | Services cannot run properly.                          |
|              | Failed to bind an EIP           | bindEIPFailed             | Major          | The EIP is abnormal.                                                                                                                                                                                                                                                                        | Try again later. In case of emergency, contact O&M personnel to rectify the fault.                                                                                                                                                                             | The DDM instance cannot be accessed from the Internet. |
|              | Failed to scale out a schema    | migrateLogicDbFailed      | Major          | The underlying resources fail to be processed.                                                                                                                                                                                                                                              | Submit a service ticket to the O&M personnel.                                                                                                                                                                                                                  | The schema cannot be scaled out.                       |
|              | Failed to re-scale out a schema | retryMigrateLogicDbFailed | Major          | The underlying resources fail to be processed.                                                                                                                                                                                                                                              | Submit a service ticket to the O&M personnel.                                                                                                                                                                                                                  | The schema cannot be scaled out.                       |

**Table 6-17** Cloud Phone Server

| Event Source | Event Name               | Event ID               | Event Severity | Description                                                                                                                                                                                                                                                        | Solution                                                                                                            | Impact                    |
|--------------|--------------------------|------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------|
| CPH          | Server shutdown          | cph Server Os shutdown | Major          | <p>The cloud phone server was stopped</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul>                                                                                                                   | <p>Deploy service applications in HA mode.</p> <p>After the fault is rectified, check whether services recover.</p> | Services are interrupted. |
|              | Server abnormal shutdown | cph Server Shutdown    | Major          | <p>The cloud phone server was stopped unexpectedly. Possible causes are as follows:</p> <ul style="list-style-type: none"> <li>The cloud phone server was powered off unexpectedly.</li> <li>The cloud phone server was stopped due to hardware faults.</li> </ul> | <p>Deploy service applications in HA mode.</p> <p>After the fault is rectified, check whether services recover.</p> | Services are interrupted. |
|              | Server reboot            | cph Server Os Reboot   | Major          | <p>The cloud phone server was rebooted</p> <ul style="list-style-type: none"> <li>on the management console.</li> <li>by calling APIs.</li> </ul>                                                                                                                  | <p>Deploy service applications in HA mode.</p> <p>After the fault is rectified, check whether services recover.</p> | Services are interrupted. |

| Event Source | Event Name             | Event ID              | Event Severity | Description                                                                                                                                                                                                                                                                                   | Solution                                                                                                 | Impact                                      |
|--------------|------------------------|-----------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------|
|              | Server abnormal reboot | cph Server Reboot     | Major          | The cloud phone server was rebooted unexpectedly due to <ul style="list-style-type: none"> <li>OS faults.</li> <li>hardware faults.</li> </ul>                                                                                                                                                | Deploy service applications in HA mode.<br>After the fault is rectified, check whether services recover. | Services are interrupted.                   |
|              | Network disconnection  | cph Server Link Down  | Major          | The network where the cloud phone server was deployed was disconnected. Possible causes are as follows: <ul style="list-style-type: none"> <li>The cloud phone server was stopped unexpectedly and rebooted.</li> <li>The switch was faulty.</li> <li>The gateway node was faulty.</li> </ul> | Deploy service applications in HA mode.<br>After the fault is rectified, check whether services recover. | Services are interrupted.                   |
|              | PCIe error             | cph Server Pcie Error | Major          | The PCIe device or main board on the cloud phone server was faulty.                                                                                                                                                                                                                           | Deploy service applications in HA mode.<br>After the fault is rectified, check whether services recover. | The network or disk read/write is affected. |

| Event Source | Event Name    | Event ID                | Event Severity | Description                                                                                                                                                                                               | Solution                                                                                                 | Impact                                                                                                                                 |
|--------------|---------------|-------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|              | Disk error    | cph Server DiskError    | Major          | The disk on the cloud phone server was faulty due to <ul style="list-style-type: none"> <li>• disk backplane faults.</li> <li>• disk faults.</li> </ul>                                                   | Deploy service applications in HA mode.<br>After the fault is rectified, check whether services recover. | Data read/write services are affected, or the BMS cannot be started.                                                                   |
|              | Storage error | cph Server StorageError | Major          | The cloud phone server could not connect to EVS disks. Possible causes are as follows: <ul style="list-style-type: none"> <li>• SDI card faults</li> <li>• Remote storage devices were faulty.</li> </ul> | Deploy service applications in HA mode.<br>After the fault is rectified, check whether services recover. | Data read/write services are affected, or the BMS cannot be started.                                                                   |
|              | GPU offline   | cph Server GPUOffline   | Major          | GPU of the cloud phone server was loose and disconnected.                                                                                                                                                 | Stop the cloud phone server and reboot it.                                                               | Faults occur on cloud phones whose GPUs are disconnected. Cloud phones cannot run properly even if they are restarted or reconfigured. |

| Event Source | Event Name      | Event ID                | Event Severity | Description                                          | Solution                                                        | Impact                                                                                                                 |
|--------------|-----------------|-------------------------|----------------|------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|              | GPU timeout     | cph Server GpuTime Out  | Major          | GPU of the cloud phone server timed out.             | Reboot the cloud phone server.                                  | Cloud phones whose GPUs timed out cannot run properly and are still faulty even if they are restarted or reconfigured. |
|              | Disk space full | cph Server DiskFull     | Major          | Disk space of the cloud phone server was used up.    | Clear the application data in the cloud phone to release space. | Cloud phone is sub-healthy, prone to failure, and unable to start.                                                     |
|              | Disk readonly   | cph Server DiskReadOnly | Major          | The disk of the cloud phone server became read-only. | Reboot the cloud phone server.                                  | Cloud phone is sub-healthy, prone to failure, and unable to start.                                                     |



| Event Source | Event Name                   | Event ID                  | Event Severity | Description                                      | Solution                       | Impact                                                                       |
|--------------|------------------------------|---------------------------|----------------|--------------------------------------------------|--------------------------------|------------------------------------------------------------------------------|
|              | Cloud phone metadata damaged | cph Phone Metadata Damage | Major          | Cloud phone metadata was damaged.                | Contact O&M personnel.         | The cloud phone cannot run properly even if it is restarted or reconfigured. |
|              | GPU failed                   | gpu Abnormal              | Critical       | The GPU was faulty.                              | Submit a service ticket.       | Services are interrupted.                                                    |
|              | GPU recovered                | gpu Normal                | Informational  | The GPU was running properly.                    | No further action is required. | N/A                                                                          |
|              | Kernel crash                 | kernel Crash              | Critical       | The kernel log indicated crash.                  | Submit a service ticket.       | Services are interrupted during the crash.                                   |
|              | Kernel OOM                   | kernel Oom                | Major          | The kernel log indicated out of memory.          | Submit a service ticket.       | Services are interrupted.                                                    |
|              | Hardware malfunction         | hardware Error            | Critical       | The kernel log indicated <b>Hardware Error</b> . | Submit a service ticket.       | Services are interrupted.                                                    |
|              | PCIe error                   | pcie Aer                  | Critical       | The kernel log indicated <b>PCIe Bus Error</b> . | Submit a service ticket.       | Services are interrupted.                                                    |
|              | SCSI error                   | scsi Error                | Critical       | The kernel log indicated SCSI Error.             | Submit a service ticket.       | Services are interrupted.                                                    |

| Event Source | Event Name                                         | Event ID               | Event Severity | Description                                                                 | Solution                 | Impact                    |
|--------------|----------------------------------------------------|------------------------|----------------|-----------------------------------------------------------------------------|--------------------------|---------------------------|
|              | Image storage became read-only                     | partReadOnly           | Critical       | The image storage became read-only.                                         | Submit a service ticket. | Services are interrupted. |
|              | Image storage superblock damaged                   | badSuperBlock          | Critical       | The superblock of the file system of the image storage was damaged.         | Submit a service ticket. | Services are interrupted. |
|              | Image storage /.sharedpath/master became read-only | isolatedMasterReadOnly | Critical       | Mount point /.sharedpath/master of the image storage became read-only.      | Submit a service ticket. | Services are interrupted. |
|              | Cloud phone data disk became read-only             | cphDiskReadOnly        | Critical       | The cloud phone data disk became read-only.                                 | Submit a service ticket. | Services are interrupted. |
|              | Cloud phone data disk superblock damaged           | cphDiskBadSuperBlock   | Critical       | The superblock of the file system of the cloud phone data disk was damaged. | Submit a service ticket. | Services are interrupted. |

**Table 6-18** Layer 2 Connection Gateway (L2CG)

| Event Source | Event Name              | Event ID     | Event Severity | Description                                                                                | Solution                                                                                                            | Impact                                                                        |
|--------------|-------------------------|--------------|----------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| L2CG         | IP addresses conflicted | IPC onfl ict | Major          | A cloud server and an on-premises server that need to communicate use the same IP address. | Check the ARP and switch information to locate the servers that have the same IP address and change the IP address. | The communications between the on-premises and cloud servers may be abnormal. |

**Table 6-19** Elastic IP and bandwidth

| Event Source             | Event Name         | Event ID        | Event Severity |
|--------------------------|--------------------|-----------------|----------------|
| Elastic IP and bandwidth | VPC deleted        | deleteVpc       | Major          |
|                          | VPC modified       | modifyVpc       | Minor          |
|                          | Subnet deleted     | deleteSubnet    | Minor          |
|                          | Subnet modified    | modifySubnet    | Minor          |
|                          | Bandwidth modified | modifyBandwidth | Minor          |
|                          | VPN deleted        | deleteVpn       | Major          |
|                          | VPN modified       | modifyVpn       | Minor          |

**Table 6-20** Elastic Volume Service (EVS)

| Event Source | Event Name  | Event ID     | Event Severity | Description                                     | Solution                       | Impact |
|--------------|-------------|--------------|----------------|-------------------------------------------------|--------------------------------|--------|
| EVS          | Update disk | updateVolume | Minor          | Update the name and description of an EVS disk. | No further action is required. | None   |

| Event Source | Event Name              | Event ID     | Event Severity | Description                                                                                                      | Solution                                                 | Impact                                                  |
|--------------|-------------------------|--------------|----------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|
|              | Expand disk             | extendVolume | Minor          | Expand an EVS disk.                                                                                              | No further action is required.                           | None                                                    |
|              | Delete disk             | deleteVolume | Major          | Delete an EVS disk.                                                                                              | No further action is required.                           | Deleted disks cannot be recovered.                      |
|              | QoS upper limit reached | reachQoS     | Major          | The I/O latency increases as the QoS upper limits of the disk are frequently reached and flow control triggered. | Change the disk type to one with a higher specification. | The current disk may fail to meet service requirements. |

**Table 6-21** Identity and Access Management (IAM)

| Event Source | Event Name         | Event ID        | Event Severity |
|--------------|--------------------|-----------------|----------------|
| IAM          | Login              | login           | Minor          |
|              | Logout             | logout          | Minor          |
|              | Password changed   | changePassword  | Major          |
|              | User created       | createUser      | Minor          |
|              | User deleted       | deleteUser      | Major          |
|              | User updated       | updateUser      | Minor          |
|              | User group created | createUserGroup | Minor          |
|              | User group deleted | deleteUserGroup | Major          |
|              | User group updated | updateUserGroup | Minor          |

| Event Source | Event Name                | Event ID               | Event Severity |
|--------------|---------------------------|------------------------|----------------|
|              | Identity provider created | createIdentityProvider | Minor          |
|              | Identity provider deleted | deleteIdentityProvider | Major          |
|              | Identity provider updated | updateIdentityProvider | Minor          |
|              | Metadata updated          | updateMetadata         | Minor          |
|              | Security policy updated   | updateSecurityPolicies | Major          |
|              | Credential added          | addCredential          | Major          |
|              | Credential deleted        | deleteCredential       | Major          |
|              | Project created           | createProject          | Minor          |
|              | Project updated           | updateProject          | Minor          |
|              | Project suspended         | suspendProject         | Major          |

**Table 6-22** Key Management Service (KMS)

| Event Source | Event Name             | Event ID            | Event Severity |
|--------------|------------------------|---------------------|----------------|
| KMS          | Key disabled           | disableKey          | Major          |
|              | Key deletion scheduled | scheduleKeyDeletion | Minor          |
|              | Grant retired          | retireGrant         | Major          |
|              | Grant revoked          | revokeGrant         | Major          |

**Table 6-23** Object Storage Service (OBS)

| Event Source | Event Name            | Event ID           | Event Severity |
|--------------|-----------------------|--------------------|----------------|
| OBS          | Bucket deleted        | deleteBucket       | Major          |
|              | Bucket policy deleted | deleteBucketPolicy | Major          |
|              | Bucket ACL configured | setBucketAcl       | Minor          |

| Event Source | Event Name               | Event ID        | Event Severity |
|--------------|--------------------------|-----------------|----------------|
|              | Bucket policy configured | setBucketPolicy | Minor          |

**Table 6-24** Cloud Eye

| Event Source | Event Name                   | Event ID                  | Event Severity | Description                                                                                                                                                               | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|------------------------------|---------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cloud Eye    | Agent heartbeat interruption | agentHeartbeatInterrupted | Major          | The Agent sends a heartbeat message to Cloud Eye every minute. If Cloud Eye cannot receive a heartbeat for 3 minutes, <b>Agent Status</b> is displayed as <b>Faulty</b> . | <ul style="list-style-type: none"> <li>• Confirm that the Agent domain name cannot be resolved.</li> <li>• Check whether your account is in arrears.</li> <li>• The Agent process is faulty. Restart the Agent. If the Agent process is still faulty after the restart, the Agent files may be damaged. In this case, reinstall the Agent.</li> <li>• Confirm that the server time is inconsistent with the local standard time.</li> <li>• If the DNS server is not a Huawei Cloud DNS server, run the <b>dig domain name</b> command to obtain the IP address of <b>agent.ces.myhuaweicloud.com</b> which is resolved by the Huawei Cloud DNS server over the intranet and then add the IP address into the corresponding <b>hosts</b> file.</li> </ul> |

| Event Source | Event Name | Event ID | Event Severity | Description | Solution                                                                                  |
|--------------|------------|----------|----------------|-------------|-------------------------------------------------------------------------------------------|
|              |            |          |                |             | <ul style="list-style-type: none"> <li>Update the Agent to the latest version.</li> </ul> |

**Table 6-25** Enterprise Switch

| Event Source      | Event Name              | Event ID   | Event Severity | Description                                                                                | Solution                                                                                                            | Impact                                                                        |
|-------------------|-------------------------|------------|----------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Enterprise Switch | IP addresses conflicted | IPConflict | Major          | A cloud server and an on-premises server that need to communicate use the same IP address. | Check the ARP and switch information to locate the servers that have the same IP address and change the IP address. | The communications between the on-premises and cloud servers may be abnormal. |



**Table 6-26** Distributed Cache Service (DCS)

| Event Source | Event Name                                         | Event ID                       | Event Severity | Description                                                                                                                | Solution                                                                                                                                                                                                                         | Impact                                                                                                                                                                     |
|--------------|----------------------------------------------------|--------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCS          | Full synchronization during online migration retry | migrationFullResync            | Minor          | If online migration fails, full synchronization will be triggered because incremental synchronization cannot be performed. | To check whether repeated full retries occur, check whether the network connection to the source instance is normal and whether the source instance is overloaded. If full retry is repeatedly performed, contact O&M personnel. | The migration task is interrupted from the source instance, triggering full synchronization again. As a result, the CPU usage of the source instance may increase sharply. |
|              | Redis master/replica switchover                    | masterStandbyFailover          | Minor          | The master node was abnormal, promoting a replica to master.                                                               | Check the original master node and rectify the fault.                                                                                                                                                                            | None                                                                                                                                                                       |
|              | Memcached master/standby switchover                | memcachedMasterStandbyFailover | Minor          | The master node was abnormal, promoting the standby node to master.                                                        | Check whether services are normal. If the application is not recovered, restart the application to recover it.                                                                                                                   | The persistent connection of the instance is interrupted.                                                                                                                  |

| Event Source | Event Name             | Event ID                | Event Severity | Description                           | Solution                                                                                             | Impact                                                                                                                                                                                                                                                                  |
|--------------|------------------------|-------------------------|----------------|---------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Redis server exception | redisNodeStatusAbnormal | Major          | The Redis server status was abnormal. | Check whether services are affected. If yes, contact O&M personnel.                                  | The node status is abnormal. If the active node is abnormal, the active/standby switchover is automatically performed. The standby node is abnormal. If the client directly connects to the standby node for read/write splitting, the read operation will be abnormal. |
|              | Redis server recovered | redisNodeStatusNormal   | Major          | The Redis server status recovered.    | Check whether services are restored. If the application is not reconnected, restart the application. | The status of the Redis server returns to normal.                                                                                                                                                                                                                       |

| Event Source | Event Name                                | Event ID                        | Event Severity | Description                                                          | Solution                                                                                             | Impact                                                          |
|--------------|-------------------------------------------|---------------------------------|----------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
|              | Synchronization failure in data migration | migrateSyncDataFail             | Major          | Online migration failed.                                             | Configure the migrate task again and execute it. If the fault persists, contact O&M personnel.       | Data migration fails.                                           |
|              | Memcached instance abnormal               | memcachedInstanceStatusAbnormal | Major          | The Memcached node status was abnormal.                              | Check whether services are affected. If yes, contact O&M personnel.                                  | The DCS Memcached instance is abnormal and may be inaccessible. |
|              | Memcached instance recovered              | memcachedInstanceStatusNormal   | Major          | The Memcached node status recovered.                                 | Check whether services are restored. If the application is not reconnected, restart the application. | The status of the Memcached node returns to normal.             |
|              | Instance backup failure                   | instanceBackupFailure           | Major          | The DCS instance fails to be backed up due to an OBS access failure. | Try manual backup.                                                                                   | Automatic backup fails.                                         |

| Event Source | Event Name                       | Event ID                    | Event Severity | Description                                                                                                         | Solution                                                                                                       | Impact                                                                                                                                                                 |
|--------------|----------------------------------|-----------------------------|----------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Instance node abnormal restart   | instanceNodeAbnormalRestart | Major          | DCS nodes restarted unexpectedly when they became faulty.                                                           | Check whether services are restored. If the application is not reconnected, restart the application.           | The persistent connection of the instance is interrupted.                                                                                                              |
|              | Long-running Lua scripts stopped | scriptsStopped              | Informational  | Lua scripts that had timed out automatically stopped running.                                                       | Optimize the <b>lua</b> script to prevent execution timeout.                                                   | The execution of the lua scripts takes a long time and is forcibly interrupted. If the execution of the lua scripts takes a long time, the entire instance is blocked. |
|              | Node restarted                   | nodeRestarted               | Informational  | After write operations had been performed, the node automatically restarted to stop Lua scripts that had timed out. | Check whether services are normal. If the application is not recovered, restart the application to recover it. | The persistent connection of the instance is interrupted.                                                                                                              |

**Table 6-27** Intelligent Cloud Access (ICA)

| Event Source | Event Name                                  | Event ID                                | Event Severity | Description                                     | Solution                                                                 | Impact                              |
|--------------|---------------------------------------------|-----------------------------------------|----------------|-------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------|
| ICA          | BGP peer disconnection                      | BgpPeerDisconnection                    | Major          | The BGP peer is disconnected.                   | Log in to the gateway and locate the cause.                              | Service traffic may be interrupted. |
|              | BGP peer connection success                 | BgpPeerConnectionSuccess                | Major          | The BGP peer is successfully connected.         | None                                                                     | None                                |
|              | Abnormal GRE tunnel status                  | AbnormalGreTunnelStatus                 | Major          | The GRE tunnel status is abnormal.              | Log in to the gateway and locate the cause.                              | Service traffic may be interrupted. |
|              | Normal GRE tunnel status                    | NormalGreTunnelStatus                   | Major          | The GRE tunnel status is normal.                | None                                                                     | None                                |
|              | WAN interface goes up                       | EquipmentWanGoingOnline                 | Major          | The WAN interface goes online.                  | None                                                                     | None                                |
|              | WAN interface goes down                     | EquipmentWanGoingOffline                | Major          | The WAN interface goes offline.                 | Check whether the event is caused by a manual operation or device fault. | The device cannot be used.          |
|              | Intelligent enterprise gateway going online | IntelligentEnterpriseGatewayGoingOnline | Major          | The intelligent enterprise gateway goes online. | None                                                                     | None                                |

| Event Source | Event Name                                   | Event ID                                 | Event Severity | Description                                      | Solution                                                                 | Impact                     |
|--------------|----------------------------------------------|------------------------------------------|----------------|--------------------------------------------------|--------------------------------------------------------------------------|----------------------------|
|              | Intelligent enterprise gateway going offline | IntelligentEnterpriseGatewayGoingOffline | Major          | The intelligent enterprise gateway goes offline. | Check whether the event is caused by a manual operation or device fault. | The device cannot be used. |

**Table 6-28** Cloud Storage Gateway (CSG)

| Event Source | Event Name                                     | Event ID                        | Event Severity | Description                                                                                                 |
|--------------|------------------------------------------------|---------------------------------|----------------|-------------------------------------------------------------------------------------------------------------|
| CSG          | Abnormal CSG process status                    | gatewayProcessStatusAbnormal    | Major          | This event is triggered when an exception occurs in the CSG process status.                                 |
|              | Abnormal CSG connection status                 | gatewayToServiceConnectAbnormal | Major          | This event is triggered when no CSG status report is returned for five consecutive periods.                 |
|              | Abnormal connection status between CSG and OBS | gatewayToObsConnectAbnormal     | Major          | This event is triggered when CSG cannot connect to OBS.                                                     |
|              | Read-only file system                          | gatewayFileSystemReadOnly       | Major          | This event is triggered when the partition file system on CSG becomes read-only.                            |
|              | Read-only file share                           | gatewayFileShareReadOnly        | Major          | This event is triggered when the file share becomes read-only due to insufficient cache disk storage space. |

**Table 6-29** Enterprise connection

| Event Source | Event Name                                  | Event ID                               | Event Severity | Description                                     | Solution                                                                 | Impact                     |
|--------------|---------------------------------------------|----------------------------------------|----------------|-------------------------------------------------|--------------------------------------------------------------------------|----------------------------|
| EC           | WAN interface goes up                       | EquipmentWanGoesOnline                 | Major          | The WAN interface goes online.                  | None                                                                     | None                       |
|              | WAN interface goes down                     | EquipmentWanGoesOffline                | Major          | The WAN interface goes offline.                 | Check whether the event is caused by a manual operation or device fault. | The device cannot be used. |
|              | BGP peer disconnection                      | BgpPeerDisconnection                   | Major          | BGP peer disconnection                          | Check whether the event is caused by a manual operation or device fault. | The device cannot be used. |
|              | BGP peer connection success                 | BgpPeerConnectionSuccess               | Major          | The BGP peer is successfully connected.         | None                                                                     | None                       |
|              | Abnormal GRE tunnel status                  | AbnormalGreTunnelStatus                | Major          | Abnormal GRE tunnel status                      | Check whether the event is caused by a manual operation or device fault. | The device cannot be used. |
|              | Normal GRE tunnel status                    | NormalGreTunnelStatus                  | Major          | The GRE tunnel status is normal.                | None                                                                     | None                       |
|              | Intelligent enterprise gateway going online | IntelligentEnterpriseGatewayGoesOnline | Major          | The intelligent enterprise gateway goes online. | None                                                                     | None                       |

| Event Source | Event Name                                   | Event ID                                | Event Severity | Description                                      | Solution                                                                 | Impact                     |
|--------------|----------------------------------------------|-----------------------------------------|----------------|--------------------------------------------------|--------------------------------------------------------------------------|----------------------------|
|              | Intelligent enterprise gateway going offline | IntelligentEnterpriseGatewayGoesOffline | Major          | The intelligent enterprise gateway goes offline. | Check whether the event is caused by a manual operation or device fault. | The device cannot be used. |

**Table 6-30** Cloud Certificate Manager (CCM)

| Event Source | Event Name                          | Event ID                 | Event Severity | Description                                                                                               | Solution                                                                                           | Impact                                                                                                  |
|--------------|-------------------------------------|--------------------------|----------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| CCM          | Certificate revocation              | CCMRevokeCertificate     | Major          | The certificate enters into the revocation process. Once revoked, the certificate cannot be used anymore. | Check whether the certificate revocation is really needed. Certificate revocation can be canceled. | If a certificate is revoked, the website is inaccessible using HTTPS.                                   |
|              | Certificate auto-deployment failure | CCMAutoDeploymentFailure | Major          | The certificate fails to be automatically deployed.                                                       | Check service resources whose certificates need to be replaced.                                    | If no new certificate is deployed after a certificate expires, the website is inaccessible using HTTPS. |



| Event Source | Event Name                  | Event ID                        | Event Severity | Description                                                                                                | Solution                                                | Impact                                                                                                  |
|--------------|-----------------------------|---------------------------------|----------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|              | Certificate expiration      | CCMCertificateExpiration        | Major          | An SSL certificate has expired.                                                                            | Purchase a new certificate in a timely manner.          | If no new certificate is deployed after a certificate expires, the website is inaccessible using HTTPS. |
|              | Certificate about to expire | CCMcertificateAboutToExpiration | Major          | This alarm is generated when an SSL certificate is about to expire in one week, one month, and two months. | Renew or purchase a new certificate in a timely manner. | If no new certificate is deployed after a certificate expires, the website is inaccessible using HTTPS. |

# 7 Permissions Management

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## 7.1 Creating a User and Granting Permissions

**IAM** enables you to perform a refined management on your Cloud Eye service. It allows you to:

- Create IAM users for employees based on your enterprise's organizational structure. Each IAM user will have their own security credentials for accessing Cloud Eye resources.
- Grant different permissions to IAM users based on their job responsibilities.
- Entrust a Huawei Cloud account or cloud service to perform efficient O&M on your Cloud Eye resources.

If your Huawei Cloud account does not require individual IAM users, skip this topic.

This topic describes the procedure for granting permissions (see [Figure 7-1](#)).

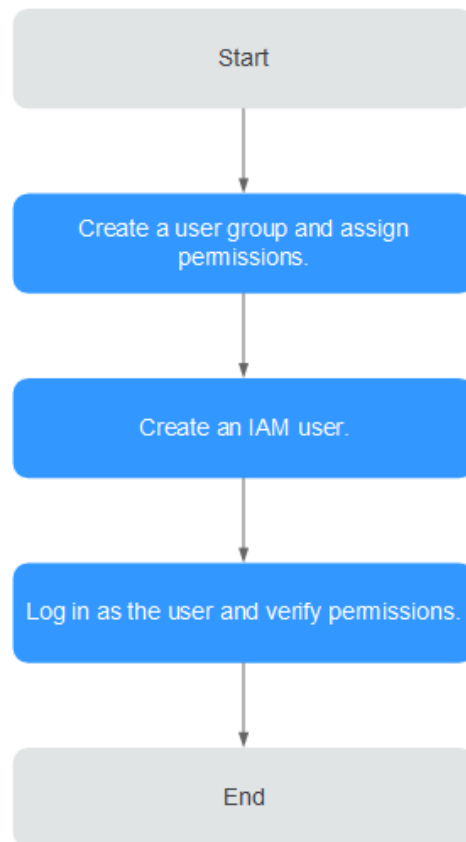
### Prerequisites

Before assigning permissions to a user group, you need to understand the Cloud Eye system policies that can be added to the user group and select a policy as required.

For details about the system policies supported by Cloud Eye and comparison between these policies, see [Permissions Management](#). For the permissions of other services, see [System Permissions](#).

## Process Flow

**Figure 7-1** Process for granting Cloud Eye permissions



1. **Create a user group and assign permissions.**

Create a user group on the IAM console, and attach the **CES Administrator**, **Tenant Guest**, and **Server Administrator** policies to the group.

**NOTE**

- Cloud Eye is a region-specific service and must be deployed in specific physical regions. Cloud Eye permissions can be assigned and take effect only in specific regions. If you want a permission to take effect for all regions, assign it in all these regions. The global permission does not take effect.
  - The preceding permissions are all Cloud Eye permissions. For more refined Cloud Eye permissions, see [Permissions Management](#).
2. **Create an IAM user.**  
Create a user on the IAM console and add the user to the group created in **1**.
3. **Log in** and verify permissions.  
Log in to the Cloud Eye console as the created user, and verify that the user only has the **CES Administrator** permissions.

## 7.2 Cloud Eye Custom Policies

Custom policies can be created to supplement the system-defined policies of Cloud Eye. For the actions that can be added to custom policies, see [Permissions Policies and Supported Actions](#).

You can create custom policies in either of the following two ways:

- Visual editor: Select cloud services, actions, resources, and request conditions. This does not require knowledge of policy syntax.
- JSON: Edit JSON policies from scratch or based on an existing policy.

For details, see [Creating a Custom Policy](#). This topic contains examples of common Cloud Eye custom policies.

### Example Custom Policies

- Example 1: Allowing users to modify alarm rules

```
{
 "Version": "1.1",
 "Statement": [
 {
 "Action": [
 "ces:alarms:put"
],
 "Effect": "Allow"
 }
]
}
```

- Example 2: Denying alarm rule deletion

A policy with only "Deny" permissions must be used in conjunction with other policies to take effect. If the permissions assigned to a user contain both "Allow" and "Deny", the "Deny" permissions take precedence over the "Allow" permissions.

The following method can be used if you need to assign permissions of the **CES FullAccess** policy to a user but you want to prevent the user from deleting alarm rules. Create a custom policy for denying alarm rule deletion, and attach both policies to the group the user belongs. Then the user can perform all operations on alarm rules except deleting alarm rules. The following is an example of a deny policy:

```
{
 "Version": "1.1",
 "Statement": [
 {
 "Action": [
 "ces:alarms:delete"
],
 "Effect": "Deny"
 }
]
}
```

- Example 3: Allowing users to have all operation permissions on alarm rules, including creating, modifying, querying, and deleting alarm rules

A custom policy can contain the actions of multiple services that are of the global or project-level type. The following is a policy with multiple actions:

```
{
 "Version": "1.1",
 "Statement": [
 {
 "Action": [
 "ces:alarms:put",
 "ces:alarms:create",
 "ces:alarms:delete"
],
 "Effect": "Allow"
 }
]
}
```

# 8 Quota Adjustment


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## What Is Quota?

Quotas can limit the number or amount of resources available to users, such as the maximum number of ECSs or EVS disks that can be created.

If the existing resource quota cannot meet your service requirements, you can apply for a higher quota.

## How Do I View My Quotas?

1. Log in to the management console.
2. Click  in the upper left corner and select the desired region and project.
3. In the upper right corner of the page, choose **Resources > My Quotas**.  
The **Service Quota** page is displayed.
4. View the used and total quota of each type of resources on the displayed page.

If a quota cannot meet service requirements, apply for a higher quota.

# 9 Services Interconnected with Cloud Eye

| Category | Service                                            | Namespace   | Dimension                                                                                                                                   |
|----------|----------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Compute  | Elastic Cloud Server                               | SYS.ECS     | Key: instance_id<br>Value: ECS ID                                                                                                           |
|          | ECS (OS monitoring)                                | AGT.ECS     | Key: instance_id<br>Value: ECS ID                                                                                                           |
|          | Bare Metal Server                                  | SERVICE.BMS | Key: instance_id<br>Value: BMS ID                                                                                                           |
|          | Auto Scaling                                       | SYS.AS      | Key: AutoScalingGroup<br>Value: auto scaling group ID                                                                                       |
| Storage  | Elastic Volume Service (attached to an ECS or BMS) | SYS.EVS     | Key: disk_name<br>Value: server ID-drive letter (sda is the drive letter.)                                                                  |
|          | Object Storage Service                             | SYS.OBS     | Key: bucket_name<br>Value: bucket name                                                                                                      |
|          | Scalable File Service                              | SYS.SFS     | Key: share_id<br>Value: file system name                                                                                                    |
|          | SFS Turbo                                          | SYS.EFS     | Key: efs_instance_id<br>Value: instance                                                                                                     |
| Network  | Elastic IP and bandwidth                           | SYS.VPC     | <ul style="list-style-type: none"> <li>• Key: publicip_id<br/>Value: EIP ID</li> <li>• Key: bandwidth_id<br/>Value: bandwidth ID</li> </ul> |

| Category | Service                 | Namespace | Dimension                                                                                                                                                                                                                                                                     |
|----------|-------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Elastic Load Balance    | SYS.ELB   | <ul style="list-style-type: none"> <li>• Key: lb_instance_id<br/>Value: ID of a classic load balancer</li> <li>• Key: lbaas_instance_id<br/>Value: ID of a shared load balancer</li> <li>• Key: lbaas_listener_id<br/>Value: ID of a shared load balancer listener</li> </ul> |
|          | NAT Gateway             | SYS.NAT   | <ul style="list-style-type: none"> <li>• Key: nat_gateway_id<br/>Value: NAT gateway ID</li> </ul>                                                                                                                                                                             |
|          | Virtual Private Network | SYS.VPN   | <ul style="list-style-type: none"> <li>• Key: connection_id<br/>Value: VPN connection</li> </ul>                                                                                                                                                                              |
|          | Cloud Connect           | SYS.CC    | <ul style="list-style-type: none"> <li>• Key: cloud_connect_id<br/>Value: cloud connection ID</li> <li>• Key: bwp_id<br/>Value: bandwidth package ID</li> <li>• Key: region_bandwidth_id<br/>Value: inter-region bandwidth ID</li> </ul>                                      |
|          | Direct Connect          | SYS.DCAAS | <ul style="list-style-type: none"> <li>• Key: direct_connect_id<br/>Value: connection</li> <li>• Key: history_direct_connect_id<br/>Value: historical connection</li> </ul>                                                                                                   |



| Category   | Service                     | Namespace | Dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------|-----------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | Global Accelerator          | SYS.GA    | <ul style="list-style-type: none"> <li>• Key: ga_accelerator_id<br/>Value: ID of the global accelerator</li> <li>• Key: ga_listener_id<br/>Value: ID of a listener added to the global accelerator</li> </ul>                                                                                                                                                                                                                                                        |
| Middleware | Distributed Message Service | SYS.DMS   | For details, see the information in the right column.                                                                                                                                                                                                                                                                                                                                                                                                                |
|            | Distributed Cache Service   | SYS.DCS   | <ul style="list-style-type: none"> <li>• Key: dcs_instance_id<br/>Value: DCS Redis instance</li> <li>• Key: dcs_cluster_redis_node<br/>Value: Redis Server</li> <li>• Key: dcs_cluster_proxy_node<br/>Value: Proxy in a Proxy Cluster DCS Redis 3.0 instance</li> <li>• Key: dcs_cluster_proxy2_node<br/>Value: Proxy in a Proxy Cluster DCS of Redis 4.0 or Redis 5 instance</li> <li>• Key: dcs_memcached_instance_id<br/>Value: DCS Memcached instance</li> </ul> |
| Database   | Relational Database Service | SYS.RDS   | For details, see the information in the right column.                                                                                                                                                                                                                                                                                                                                                                                                                |

| Category | Service                   | Namespace     | Dimension                                                                                                                                                                                                                                                                                                                                                                    |
|----------|---------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Document Database Service | SYS.DDS       | <ul style="list-style-type: none"> <li>• Key: mongodb_node_id<br/>Value: DDS node ID</li> <li>• Key: mongodb_instance_id<br/>Value: DDS DB instance ID</li> </ul>                                                                                                                                                                                                            |
|          | GaussDB                   | SYS.NoSQL     | For details, see the information in the right column.                                                                                                                                                                                                                                                                                                                        |
|          | GaussDB(for MySQL)        | SYS.GAUSSDB   | <ul style="list-style-type: none"> <li>• Key: gaussdb_mysql_instance_id<br/>Value: GaussDB(for MySQL) instance ID</li> <li>• Key: gaussdb_mysql_node_id<br/>Value: GaussDB(for MySQL) instance ID</li> <li>• Key: dbproxy_instance_id<br/>Value: GaussDB(for MySQL) Proxy instance ID</li> <li>• Key: dbproxy_node_id<br/>Value: GaussDB(for MySQL) Proxy node ID</li> </ul> |
|          | GaussDB                   | SYS.GAUSSDBV5 | <ul style="list-style-type: none"> <li>• Key: gaussdbv5_instance_id<br/>Value: GaussDB instance ID</li> <li>• Key: gaussdbv5_node_id<br/>Value: GaussDB node ID</li> <li>• Key: gaussdbv5_component_id<br/>Value: GaussDB component ID</li> </ul>                                                                                                                            |

| Category                | Service                   | Namespace     | Dimension                                                                                                                                                            |
|-------------------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enterprise Intelligence | Cloud Search Service      | SYS.ES        | Key: cluster_id<br>Value: CSS cluster                                                                                                                                |
|                         | ModelArts                 | SYS.ModelArts | <ul style="list-style-type: none"> <li>• Key: service_id<br/>Value: real-time service ID</li> <li>• Key: model_id<br/>Value: model ID</li> </ul>                     |
|                         | Data Lake Insight         | SYS.DLI       | <ul style="list-style-type: none"> <li>• Key: queue_id<br/>Value: queue instance</li> <li>• Key: flink_job_id<br/>Value: Flink job</li> </ul>                        |
| Security                | Web Application Firewall  | SYS.WAF       | <ul style="list-style-type: none"> <li>• Key: instance_id<br/>Value: dedicated WAF instance</li> <li>• Key: waf_instance_id<br/>Value: cloud WAF instance</li> </ul> |
|                         | Database Security Service | SYS.DBSS      | Key: audit_id<br>Value: instance                                                                                                                                     |

# A Change History

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| Released On | Description                               |
|-------------|-------------------------------------------|
| 2022-09-30  | This issue is the first official release. |