

**EventGrid**

# User Guide

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# 1 Getting Started with EG

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EventGrid (EG) is a serverless event bus service for standard and centralized access of Huawei Cloud services and custom or SaaS applications. You can build a loosely coupled, distributed event-driven architecture to flexibly route events via CloudEvents.

## Prerequisites

1. You have [registered a Huawei Cloud account and enabled Huawei Cloud services](#).
2. Your account has permission to use EG. For details about how to authorize an account and bind permissions to it, see [2.1 Creating a User and Granting EG Permissions](#).

## Logging In to the EG Console

**Step 1** Log in to Huawei Cloud console.

**Step 2** Click  and select a region.


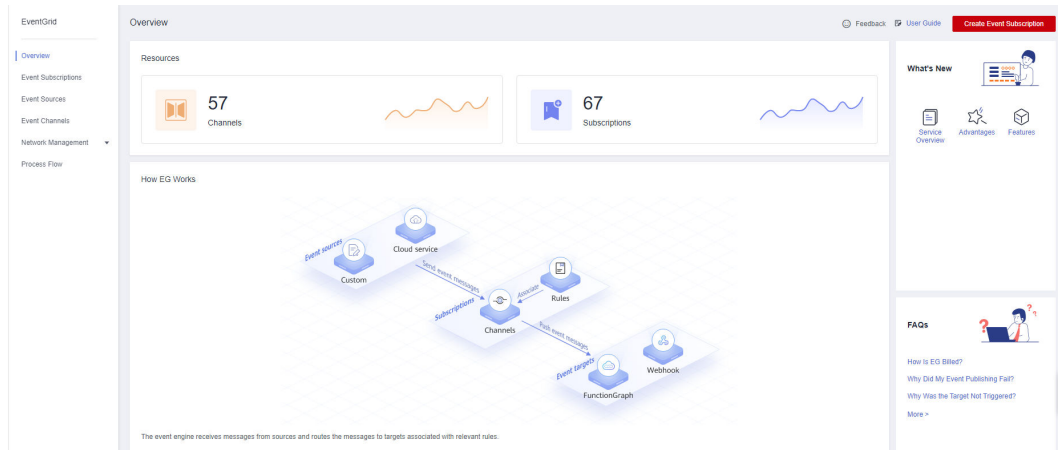
**Step 3** Click  in the upper left, and choose EventGrid from the service list to go to the EG console.

Figure 1-1 EG console



----End

# 2 Permissions Management

---

[2.1 Creating a User and Granting EG Permissions](#)

[2.2 Custom Policies](#)

## 2.1 Creating a User and Granting EG Permissions

This section describes how to use **Identity and Access Management (IAM)** to implement fine-grained permissions control for your EG resources. With IAM, you can:

- Create IAM users for employees based on the organizational structure of your enterprise. Each IAM user has their own security credentials to access EG resources.
- Grant only the permissions required for users to perform a specific task.
- Entrust an account or cloud service to perform professional and efficient O&M on your EG resources.

If your account does not require individual IAM users, skip this section.

This section describes the procedure for granting permissions (see [Figure 2-1](#)).

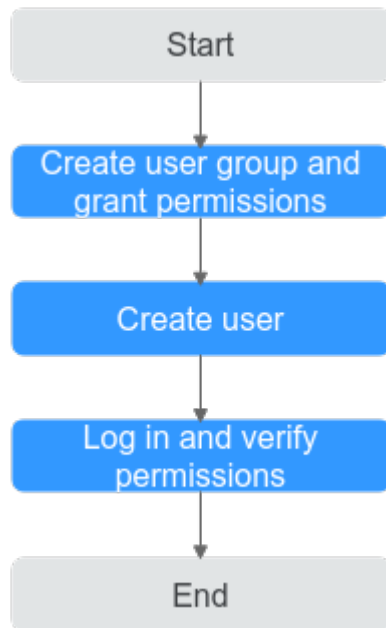
### Prerequisites

Learn about the permissions (see [System-defined roles and policies supported by EG](#)) supported by EG and choose policies according to your requirements.

For the permissions of other services, see [System Permissions](#).

## Process Flow

**Figure 2-1** Process for granting EG permissions



1. **Create a user group and assign permissions.**  
Create a user group on the IAM console, and assign it the read-only permissions for EG.
2. **Create an IAM user and add them to the user group.**  
Create a user on the IAM console and add the user to the group created in **Step 1**.
3. **Log in** and verify permissions.  
Log in to the EG console as the created user, and verify that the user only has read permissions for EG.

## 2.2 Custom Policies

Custom policies can be created to supplement the system-defined policies of EG.

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

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

For details, see [Creating a Custom Policy](#). The following section contains examples of common EG custom policies.

### Example Custom Policies

- Example 1: Allow user to delete event sources



```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "eg:sources:delete",
        "eg:sources:list"
      ]
    }
  ]
}
```

- Example 2: Deny event source 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 include 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 **EG FullAccess** policy to a user but also forbid the user from deleting event sources. Create a custom policy to disallow event source deletion and assign both policies to the group the user belongs to. Then the user can perform all operations on EG except deleting event sources. The following is an example of a deny policy:

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Deny",
      "Action": [
        "eg:sources:delete"
      ]
    }
  ]
}
```

# 3 Event Sources

---

- [3.1 Introduction](#)
- [3.2 Cloud Service Event Sources](#)
- [3.3 Creating an Event Source](#)
- [3.4 Deleting a Custom Event Source](#)

## 3.1 Introduction

Event sources include Huawei Cloud services, custom applications, and SaaS applications. They produce events and publish them to EG.

EG supports the following event sources:

- Cloud service: Huawei Cloud services publish specific types of events to EG through predefined channels. The events are filtered with rules and then routed to targets. For details about the supported cloud service event sources, see [3.2 Cloud Service Event Sources](#).
- Custom
  - Custom applications publish events to EG through custom channels. The events are filtered with rules and then routed to targets.
  - Custom event sources include DMS for RabbitMQ and DMS for RocketMQ.

---

 **CAUTION**

EG does not encrypt the information in event sources. If your events contain sensitive information, encrypt it for security.

---

## 3.2 Cloud Service Event Sources

This section describes the cloud service event sources supported by EG, and depicts how to view their predefined event types.

## Cloud Service Event Source List

The following table lists the cloud service event sources supported by EG.

**Table 3-1** Cloud service event sources

Cloud Application Engine (CAE)	Database and Application Migration (UGO)	Classroom	Content Moderation
Virtual Private Cloud (VPC)	CodeCheck	GaussDB NoSQL	API Gateway (APIG)
Data Warehouse Service (DWS)	CloudDeploy	Identity and Access Management (IAM)	EventGrid (EG)
Huawei Cloud Ubiquitous Cloud Native Service (UCS)	Scalable File Service (SFS)	CloudIDE	Face Recognition Service (FRS)
Cloud Service Engine (CSE)	Direct Connect	Data Lake Visualization (DLV)	NAT Gateway
Workspace	IoT Device Access (IoTDA)	Distributed Message Service (DMS)	Knowledge Graph (KG)
IoT Edge	Log Tank Service (LTS)	CloudBuild	Object Storage Migration Service (OMS)
Cloud Backup and Recovery (CBR)	Message & SMS (MSGSMS)	Elastic IP (EIP)	Cloud Trace Service (CTS)
Cloud Search Service (CSS)	Video Analysis Service (VAS)	Data Admin Service (DAS)	Bare Metal Server (BMS)
CloudTest	VPC Endpoint (VPCEP)	Cloud Storage Gateway (CSG)	Virtual Private Network (VPN)
Enterprise Router (ER)	Recommender System (RES)	Cloud Server Backup Service (CSBS)	Content Delivery Network (CDN)
Container Guard Service (CGS)	Situation Awareness (SA)	CodeHub	CloudTable
Volume Backup Service (VBS)	CloudSite	Cloud Phone (CPH)	Cloud Performance Test Service (CPTS)
Intelligent EdgeCloud (IEC)	FunctionGraph	Server Migration Service (SMS)	Tag Management Service (TMS)

Conversational Bot Service (CBS)	Relational Database Service (RDS)	Domain Name Service (DNS, Region)	Storage Disaster Recovery Service (SDRS)
Voice Call	Application Performance Management (APM)	Application Orchestration Service (AOS)	Data Ingestion Service (DIS)
Database Security Service (DBSS)	HiLens	Cloud Data Migration (CDM)	Multi-Site High Availability Service (MAS)
CloudPipeline	Image Recognition	OBS Application Service	Object Storage Service (OBS)
Intelligent EdgeFabric (IEF)	SoftWare Repository for Container (SWR)	Distributed Cache Service (DCS)	Auto Scaling (AS)
Vulnerability Scan Service (VSS)	Graph Engine Service (GES)	Data Lake Insight (DLI)	Cloud Container Instance (CCI)
CodeArts Req	Document Database Service (DDS)	Data Replication Service (DRS)	ModelArts
Distributed Database Middleware (DDM)	Simple Message Notification (SMN)	ServiceStage	CodeArts
Blockchain Service (BCS)	Application Operations Management (AOM)	MapReduce Service (MRS)	Cloud Bastion Host (CBH)
Host Security Service (HSS)	Web Application Firewall (WAF)	Elastic Load Balance (ELB)	Elastic Volume Service (EVS)
ROMA Connect	Cloud Container Engine (CCE)	Image Management Service (IMS)	Elastic Cloud Server (ECS)

## Viewing Event Types

- Step 1** Log in to the EG console.
- Step 2** In the navigation pane, choose **Event Sources**.
- Step 3** On the **Cloud Service** tab, click the desired event source.
- Step 4** View the event types and description in the **Event Types** area, as shown in [Figure 3-1](#).

**Figure 3-1** Event types

### View Cloud Service Event Source

---

**Basic**

ID	490523ca-9487-4085-a2e7-64d3ea7e1e03
Name	Object Storage Service (OBS)
Description	A stable, secure, and easy-to-use service that lets you inexpen...
Channel	default
Created	Jan 22, 2022 08:59:51 GMT+08:00
Updated	Jan 22, 2022 08:59:51 GMT+08:00

**Event Type**

Event Type	Description
OBS:CloudTrace:SystemAction	System operation
OBS:CloudTrace:ConsoleAction	Console operation
OBS:CloudTrace:ObsSDK	OBS bucket operation using SDK
OBS:CloudTrace:ApiCall	API calling
OBS:CloudTrace:Others	OBS bucket operation not using SDK

----End

## 3.3 Creating an Event Source

### 3.3.1 Custom Application

Create a custom application event source.

#### Prerequisites

(Optional) You have [created an event channel](#).

## Procedure

- Step 1** Log in to the EG console.
- Step 2** In the navigation pane, choose **Event Sources**.
- Step 3** Click **Create Event Source**.
- Step 4** Set event source information by referring to [Table 3-2](#).

**Table 3-2** Custom application event source parameters

Parameter	Description
Type	Two types are available: <ul style="list-style-type: none"><li>• <b>Existing</b>: Select an existing custom event channel.</li><li>• <b>New</b>: Create an event channel.</li></ul>
Channel	<ul style="list-style-type: none"><li>• If <b>Type</b> is set to <b>Existing</b>, select an existing custom event channel.</li><li>• If <b>Type</b> is set to <b>New</b>, enter a channel name and description. The channel cannot be modified once the event source is created.</li></ul>
Name	Event source name. The name cannot be modified once the event source is created.
Description	Describe the event source.
Type	Select <b>Custom application</b> .

- Step 5** Click **OK**.

View this event source on the **Custom** tab.

 **NOTE**

- Only the event source description can be modified. To modify it, click **Edit** in the row that contains the desired event source.
- To view details about a custom event source, click its name in the custom event source list.

----End

## Follow-Up Procedure

(Optional) [5.1 Creating an Event Subscription](#)

### 3.3.2 DMS for RocketMQ

Create a DMS for RocketMQ event source.

## Prerequisites

- (Optional) You have [created an event channel](#).

- You have purchased a DMS for RocketMQ instance. The instance contains topics and is in the **Running** state. For details, see [Buying an Instance](#).
- You have [created a private endpoint](#) with the same VPC and subnet as the RocketMQ instance.
- You have configured the **default** security group with rules for the RocketMQ instance. For details, see [How Do I Configure a Security Group for an Event Source?](#)

## Creating a RocketMQ Event Source

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Sources**.

**Step 3** Click **Create Event Source**.

**Step 4** Set event source information by referring to [Table 3-3](#).

**Table 3-3** RocketMQ event source parameters

Parameter	Description
Type	Two types are available: <ul style="list-style-type: none"><li>• <b>Existing</b>: Select an existing custom event channel.</li><li>• <b>New</b>: Create an event channel.</li></ul>
Channel	<ul style="list-style-type: none"><li>• If <b>Type</b> is set to <b>Existing</b>, select an existing custom event channel.</li><li>• If <b>Type</b> is set to <b>New</b>, enter a channel name and description.</li></ul> The channel cannot be modified once the event source is created.
Name	Event source name. The name cannot be modified once the event source is created.
Description	Describe the event source.
Type	Select <b>DMS for RocketMQ</b> . <b>NOTE</b> You will be prompted to create an agency when creating your first DMS for RocketMQ event source. For details, see <a href="#">10 Authorization</a> .
Instance	Select a RocketMQ instance. <b>Self-hosted RocketMQ</b> indicates your own RocketMQ.
Topic	Topic of the RocketMQ instance.
Consumer Group	Consumer group of the RocketMQ instance.
Username	Required if ACL has been enabled for the RocketMQ instance.
Secret Key	Required if ACL has been enabled for the RocketMQ instance.

Parameter	Description
VPC	Available only when you selected <b>Self-hosted RocketMQ for Instance</b> .
Subnet	Available only when you selected <b>Self-hosted RocketMQ for Instance</b> .
Connection Address	Available only when you selected <b>Self-hosted RocketMQ for Instance</b> . Enter the connection address of your own RocketMQ.
SSL	Available only when you selected <b>Self-hosted RocketMQ for Instance</b> . Specify whether to enable SSL. <b>NOTE</b> SSL cannot be modified if your RocketMQ is running. But you can delete the event source and configure it again with SSL setting.
ACL	Available only when you selected <b>Self-hosted RocketMQ for Instance</b> . Specify whether to enable ACL.

**Step 5** Click **OK**.

View this event source on the **Custom** tab.

 **NOTE**

- Only the event source description can be modified. To modify it, click **Edit** in the row that contains the desired event source.
- To view details about a custom event source, click its name in the custom event source list.

----End

## Follow-Up Procedure

(Optional) [5.1 Creating an Event Subscription](#)

## 3.4 Deleting a Custom Event Source

Delete a custom event source that will no longer be used.

### Procedure

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Sources**.

**Step 3** On the **Custom** tab, click **Delete** in the row that contains the desired event source.

**Step 4** Click **Yes**.

----End



# 4 Event Channels

---

Event channels receive events from event sources.

EG supports the following event channels:

- Cloud service: A channel automatically created by EG to receive events from cloud services. This channel cannot be modified. **Events generated by cloud service event sources can only be published to this channel.**
- Custom: Channels you create to receive events from custom sources.

## Creating an Event Channel

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Channels**.

**Step 3** Click **Create Event Channel**.

**Step 4** Enter a channel name and description, and click **OK**.

View this channel in the **Custom** area.

### NOTE

- Only the event channel description can be modified. To modify it, click **Edit** in the row that contains the desired event channel.
- To view details about a custom event channel, click its name in the custom event channel list.

----End

## Deleting an Event Channel

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Channels**.

**Step 3** Click **Delete** in the row that contains the desired event channel.

### NOTE

If the event channel to delete is associated with sources and subscriptions, disassociate it first.

**Step 4** Click **Yes**.

----End

## Publishing Events

Publish events to a channel.

By publishing events, check whether an event source, channel, and target have been connected, whether the configured rules are valid, and whether events can be sent to the target.

### Prerequisites

You have [created a subscription](#) with a [custom event channel](#), [custom application event source](#), and custom target.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Channels**.

**Step 3** Click **Publish Event**.

**Step 4** Configure the parameters described in the following table.

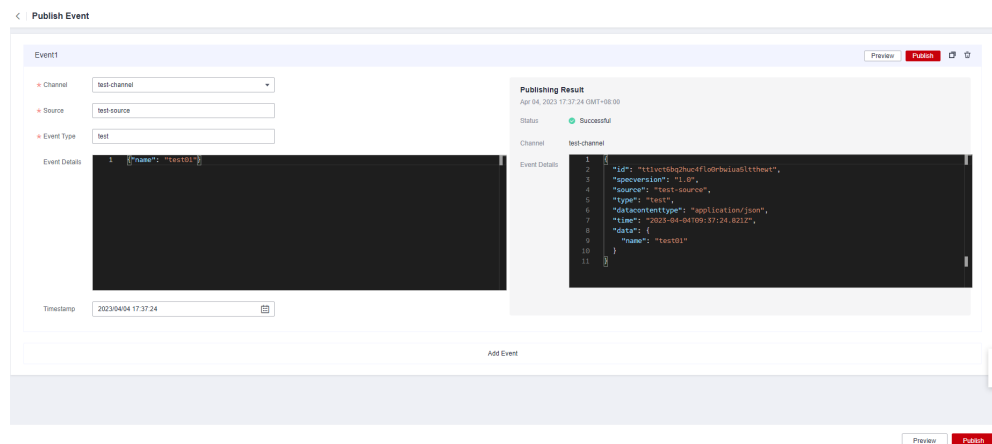
**Table 4-1** Parameters for publishing events

Parameter	Description
Channel	Select a channel.
Source	Enter a custom application event source.
Event Type	Enter an event type.
Event Details	Enter event content in JSON format.
Timestamp	Select a timestamp.



**Step 5** Click **Preview** to preview the event.

**Step 6** Click **Publish**. If the event is successfully published, a result similar to that in [Figure 4-1](#) is displayed.

**Figure 4-1** Publishing an event



**NOTE**

- To publish more events, click **Add Event**.
- You can publish one or more events at a time.
- To clone an event, click .
- To delete an event, click .

----End

# 5 Event Subscriptions

[5.1 Creating an Event Subscription](#)

[5.2 Editing an Event Subscription](#)

[5.3 Deleting an Event Subscription](#)

## 5.1 Creating an Event Subscription


Event subscriptions bind event sources, channels, and targets, and route events of sources to targets based on specified rules.

A subscription can be bound with up to five targets.

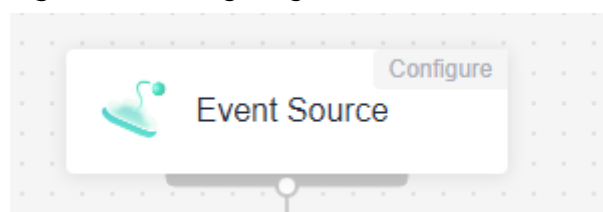
### Prerequisites

- (Optional) You have [created an event source](#).
- You have set an event target.

### Procedure

- Step 1** Log in to the EG console.
- Step 2** In the navigation pane, choose **Event Subscriptions**.
- Step 3** Click **Create Event Subscription**.
- Step 4** Click  next to the default subscription name.
- Step 5** Enter a new subscription name and description, and click **OK**.
- Step 6** Configure an event source.
  1. Click **Event Source**, as shown in [Figure 5-1](#).

**Figure 5-1** Configuring an event source



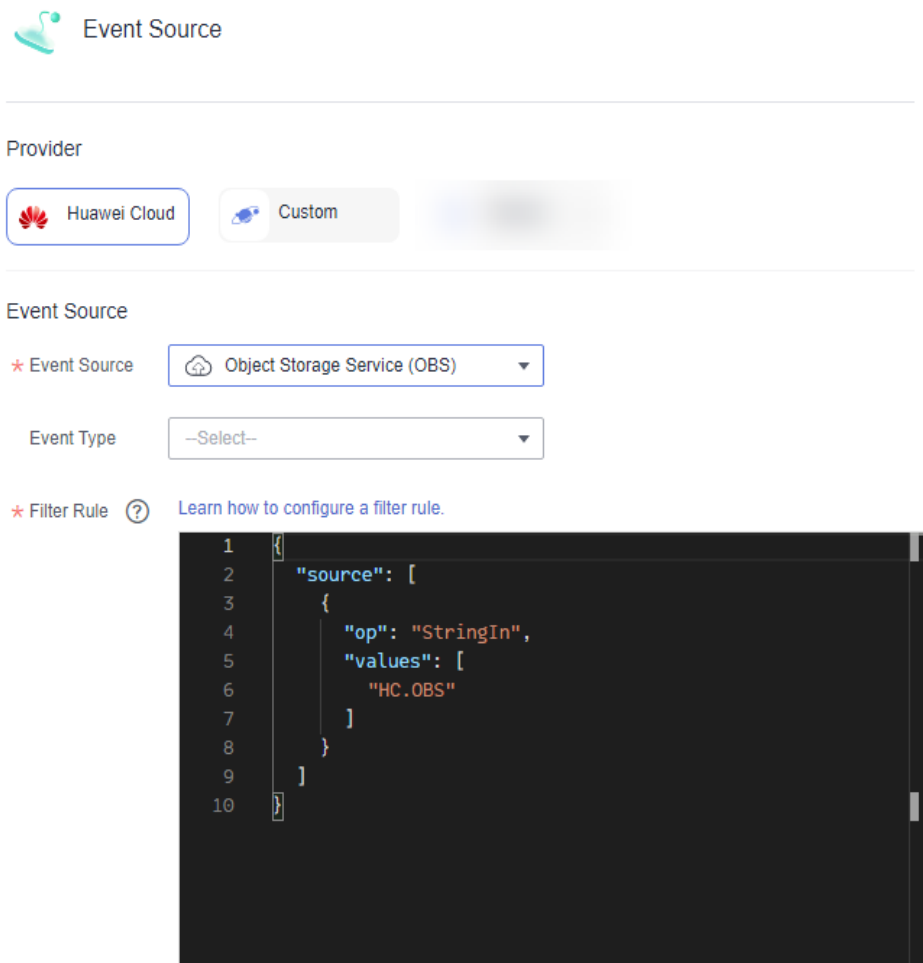
2. Select an event source provider.
  - **Huawei Cloud:** Huawei Cloud service event source
  - **Custom:** custom event source
3. Set event source parameters.

When selecting **Huawei Cloud**, set the parameters listed in [Table 5-1](#).

**Table 5-1** Cloud service event source parameters

Parameter	Description
Event Source	Select a cloud service event source.
Event Type	(Optional) Select a predefined event type.
Filter Rule	Enter an event filter rule. Only events that match these filter rules will be routed to the associated targets. For more information about filter rules, see <a href="#">7.2 Filter Rule Parameters</a> and <a href="#">7.3 Example Filter Rules</a> .

**Figure 5-2** Configuring a cloud service event source

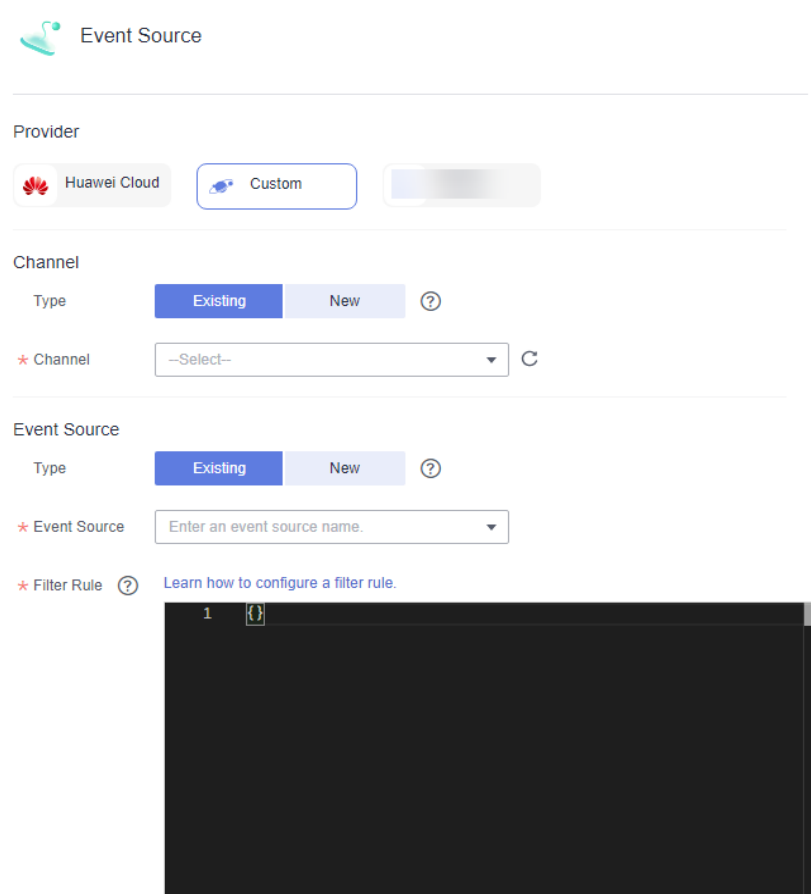


When selecting **Custom**, set the parameters listed in [Table 5-2](#).

**Table 5-2** Custom event source parameters

Parameter	Description
<b>Channel</b>	
Type	Two types are available: <ul style="list-style-type: none"> <li>- <b>Existing</b>: Select an existing custom event channel.</li> <li>- <b>New</b>: Create an event channel.</li> </ul>
Channel	<ul style="list-style-type: none"> <li>- If <b>Type</b> is set to <b>Existing</b>, select an existing custom event channel, for example, <b>channel</b>.</li> <li>- If <b>Type</b> is set to <b>New</b>, enter a channel name.</li> </ul>
Description	Set this parameter only when <b>Type</b> is set to <b>New</b> . Describe the custom event channel.
<b>Event Source</b>	
Type	Two types are available: <ul style="list-style-type: none"> <li>- <b>Existing</b>: Select an existing custom event source.</li> <li>- <b>New</b>: Create an event source.</li> </ul>
Event Source	<ul style="list-style-type: none"> <li>- If <b>Type</b> is set to <b>Existing</b>, select a custom event source associated with the custom event channel you specify, for example, <b>channel</b>.</li> <li>- If <b>Type</b> is set to <b>New</b>, enter a source name.</li> </ul>
Description	Set this parameter only when <b>Type</b> is set to <b>New</b> . Describe the custom event source.
Filter Rule	Enter an event filter rule. Only events that match these filter rules will be routed to the associated targets. For more information about filter rules, see <a href="#">7.2 Filter Rule Parameters</a> and <a href="#">7.3 Example Filter Rules</a> .

**Figure 5-3** Configuring a custom event source



4. Click **OK**.

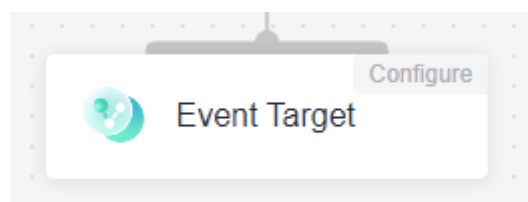
**Step 7** Configure an event target.

**NOTE**

A subscription can be bound with up to five targets.

1. Click **Event Target**, as shown in **Figure 5-4**.

**Figure 5-4** Configuring an event target



2. Select an event target provider.
  - **Huawei Cloud:** Huawei Cloud service event target
  - **Custom:** custom event target

3. Set event target parameters.

When selecting **Huawei Cloud**, set the following parameters.

- **Event Target:** Select an event target.

If you set **Event Target** to **FunctionGraph (function computing)**:

- **Function:** Select the function to trigger. If no function is available, create one by referring to section "Creating a Function".
- **Version/Alias:** Choose to specify a version or alias.
- **Version:** Select a version of the function. By default, **latest** is selected.
- **Alias:** Select an alias of the function.

If you set **Event Target** to **Distributed Message Service (DMS) for Kafka**:

- **Connection:** Select a [DMS for Kafka connection](#).
- **Topic:** Select a message topic.
- **Enable:** Whether to enable the message key function.
- **Transform Type:** Defines how message keys are used. There are two options:
  - **Variables:** Keys are variable values from CloudEvents-compliant events.
  - **Constants:** Keys are specified constants. All messages will be sent to the same partition.

For more information about the transform types, see [7.4 Event Content Transformation](#).

**Rule:**

- **Transform Type:** EG transforms CloudEvents-compliant events for targets. The following three types are supported:
  - **Pass-through:** Directly route CloudEvents-compliant events to the target.
  - **Variables:** Route variables in CloudEvents-compliant events to the target.
  - **Constants:** Route constants in events to the target.

For more information about the transform types, see [7.4 Event Content Transformation](#).



**Figure 5-5** Configuring a Huawei Cloud service event target

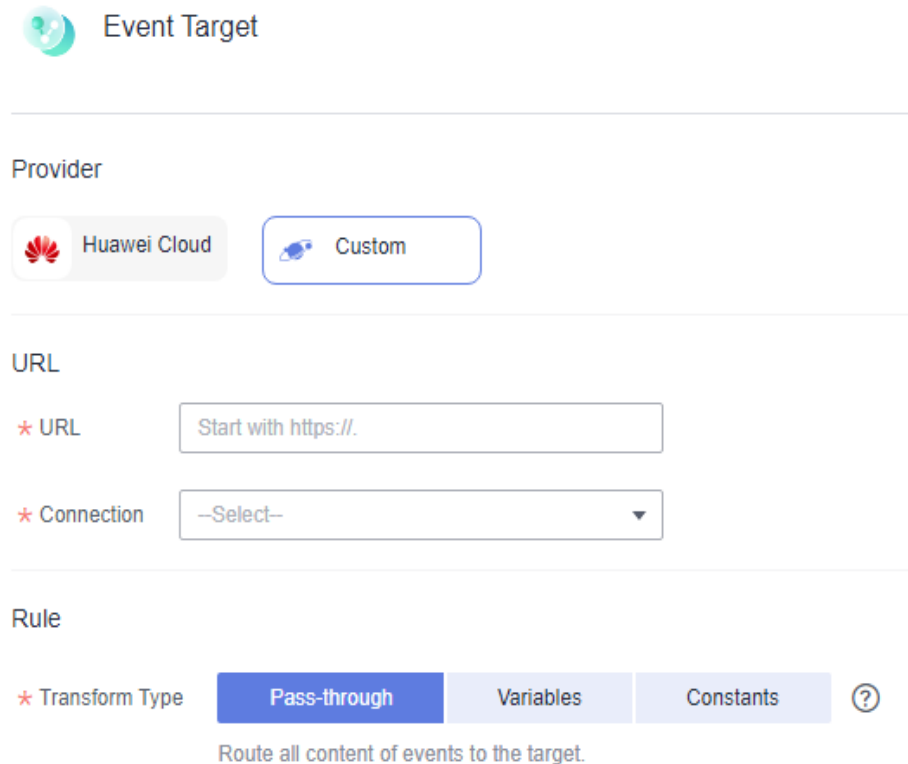
The screenshot shows the 'Event Target' configuration page. At the top, there is a header 'Event Target' with a green circular icon. Below this, the 'Provider' section has two buttons: 'Huawei Cloud' (selected, with a red Huawei logo) and 'Custom' (with a blue globe icon). The 'Event Target' section contains three dropdown menus: 'Event Target' (selected: 'FunctionGraph (function computing)'), 'Function' (selected: '--Select--'), and 'Version' (selected: '--Select--'). The 'Rule' section has three tabs: 'Pass-through' (selected, highlighted in blue), 'Variables', and 'Constants'. A help icon (?) is next to the tabs. Below the tabs, the text reads: 'Route all content of events to the target.'

When selecting **Custom**, set the following parameters.

- **URL:** Enter the URL of an event target.
- **Connection:** Select a custom or the default connection.
- **Transform Type:** EG transforms CloudEvents-compliant events for targets. The following three types are supported:
  - **Pass-through:** Directly route CloudEvents-compliant events to the target.
  - **Variables:** Route variables in CloudEvents-compliant events to the target.
  - **Constants:** Route constants in events to the target.

For more information about the transform types, see [7.4 Event Content Transformation](#).

**Figure 5-6** Configuring a custom event target



**Event Target**

Provider

Huawei Cloud Custom

URL

\* URL Start with https://

\* Connection -Select-

Rule

\* Transform Type Pass-through Variables Constants (?)

Route all content of events to the target.

4. Click **OK**.

**Step 8** Click **Save**.

The subscription is enabled by default once created.

----End

## 5.2 Editing an Event Subscription

Modify the description, status, event source, and event target of a subscription.

### Modifying the Description

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Subscriptions**.

**Step 3** Click **Configure** in the row that contains the desired subscription to go to the details page.

**Step 4** Click the edit icon next to the default subscription name.

**Step 5** Modify the description and click **OK**.

----End

## Changing the Status

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Subscriptions**.

**Step 3** Click **Disable** or **Enable** in the row that contains the desired subscription.

----End

## Changing the Event Source

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Subscriptions**.

**Step 3** Click the name of the desired subscription to go to the details page.

**Step 4** Click the event source card.

**Step 5** Modify the event source parameters.

### NOTE

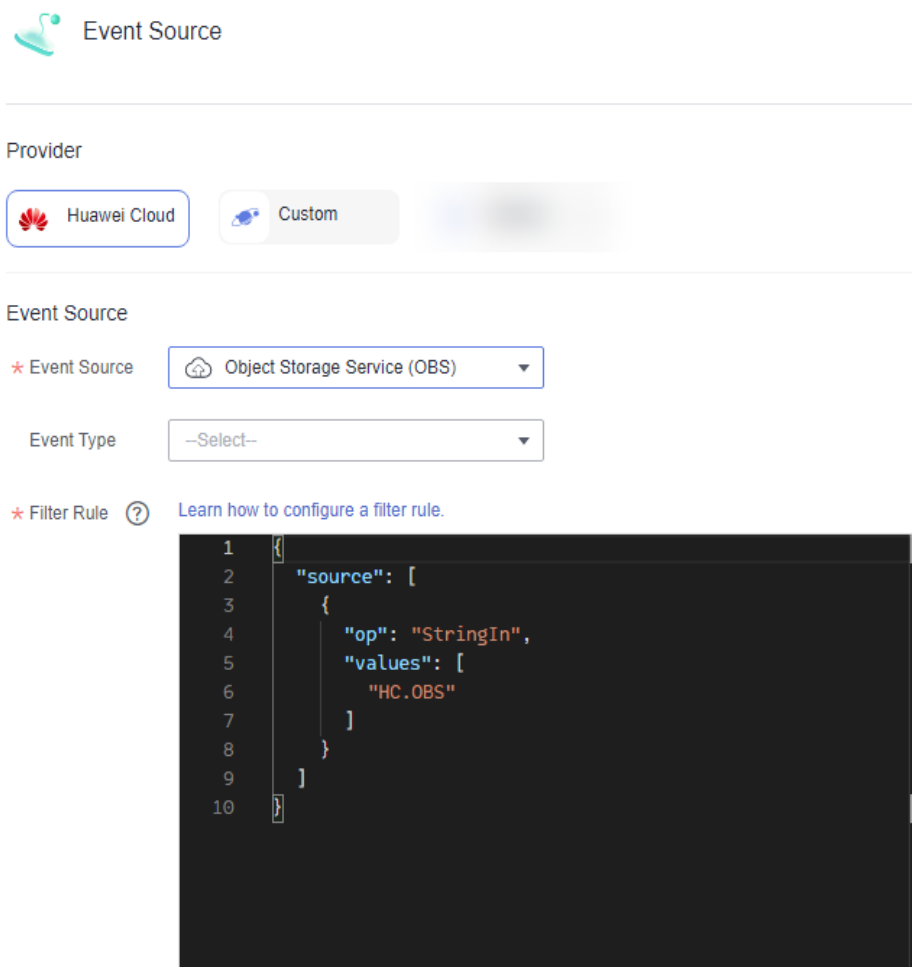
The event source provider cannot be changed.

When selecting **Huawei Cloud**, set the parameters listed in [Table 5-3](#).

**Table 5-3** Cloud service event source parameters

Parameter	Description
Event Source	Select a cloud service event source.
Event Type	(Optional) Select a predefined event type.
Filter Rule	Enter an event filter rule. Only events that match these filter rules will be routed to the associated targets. For more information about filter rules, see <a href="#">7.2 Filter Rule Parameters</a> and <a href="#">7.3 Example Filter Rules</a> .

**Figure 5-7** Configuring a cloud service event source



When selecting **Custom**, set the parameters listed in [Table 5-4](#).

**NOTE**

The bound custom event channel cannot be changed.

**Table 5-4** Custom event source parameters

Parameter	Description
<b>Event Source</b>	
Type	Two types are available: <ul style="list-style-type: none"> <li>● <b>Existing</b>: Select a custom event source associated with the custom event channel.</li> <li>● <b>New</b>: Create an event source.</li> </ul>
Event Source	<ul style="list-style-type: none"> <li>● If <b>Type</b> is set to <b>Existing</b>, select a custom event source associated with the custom event channel specified in the <b>Channel</b> area.</li> <li>● If <b>Type</b> is set to <b>New</b>, enter a source name.</li> </ul>

Parameter	Description
Description	Set this parameter only when <b>Type</b> is set to <b>New</b> . Describe the custom event source.
Filter Rule	Enter an event filter rule. Only events that match these filter rules will be routed to the associated targets. For more information about filter rules, see <a href="#">7.2 Filter Rule Parameters</a> and <a href="#">7.3 Example Filter Rules</a> .

**Figure 5-8** Configuring a custom event source

**Event Source**

---

**Provider**

Huawei Cloud
  Custom

---

**Channel**

Type:  Existing  New [?](#)

\* Channel:

---

**Event Source**

Type:  Existing  New [?](#)

\* Event Source:

\* Filter Rule [?](#) [Learn how to configure a filter rule.](#)

```

1  {
2    "source": [
3      {
4        "op": "StringIn",
5        "values": [
6          "test_sources_203"
7        ]
8      }
9    ]
10 }
```

**Step 6** Click **OK**.

**Step 7** Click **Save**.

----End



## Changing the Event Target

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Subscriptions**.

**Step 3** Click the name of the desired subscription to go to the details page.

**Step 4** Change the event target or add another one.

- Click the event target card to change the event target.
- Click  to add an event target.
- Click  to delete an event target.

**Step 5** Set the event target provider and relevant parameters.

When selecting **Huawei Cloud**, set the following parameters.

- **Event Target:** Select an event target.

If you set **Event Target** to **FunctionGraph (function computing)**:

- **Function:** Select the function to trigger. If no function is available, create one by referring to section "Creating a Function".
- **Version/Alias:** Choose to specify a version or alias.
- **Version:** Select a version of the function. By default, **latest** is selected.
- **Alias:** Select an alias of the function.

If you set **Event Target** to **Distributed Message Service (DMS) for Kafka**:

- **Connection:** Select a [DMS for Kafka connection](#).
- **Topic:** Select a message topic.
- **Enable:** Whether to enable the message key function.
- **Transform Type:** Defines how message keys are used. There are two options:
  - **Variables:** Keys are variable values from CloudEvents-compliant events.
  - **Constants:** Keys are specified constants. All messages will be sent to the same partition.

For more information about the transform types, see [7.4 Event Content Transformation](#).

**Rule:**

- **Transform Type:** EG transforms CloudEvents-compliant events for targets. The following three types are supported:
  - **Pass-through:** Directly route CloudEvents-compliant events to the target.
  - **Variables:** Route variables in CloudEvents-compliant events to the target.
  - **Constants:** Route constants in events to the target.

For more information about the transform types, see [7.4 Event Content Transformation](#).

**Figure 5-9** Configuring a Huawei Cloud service event target

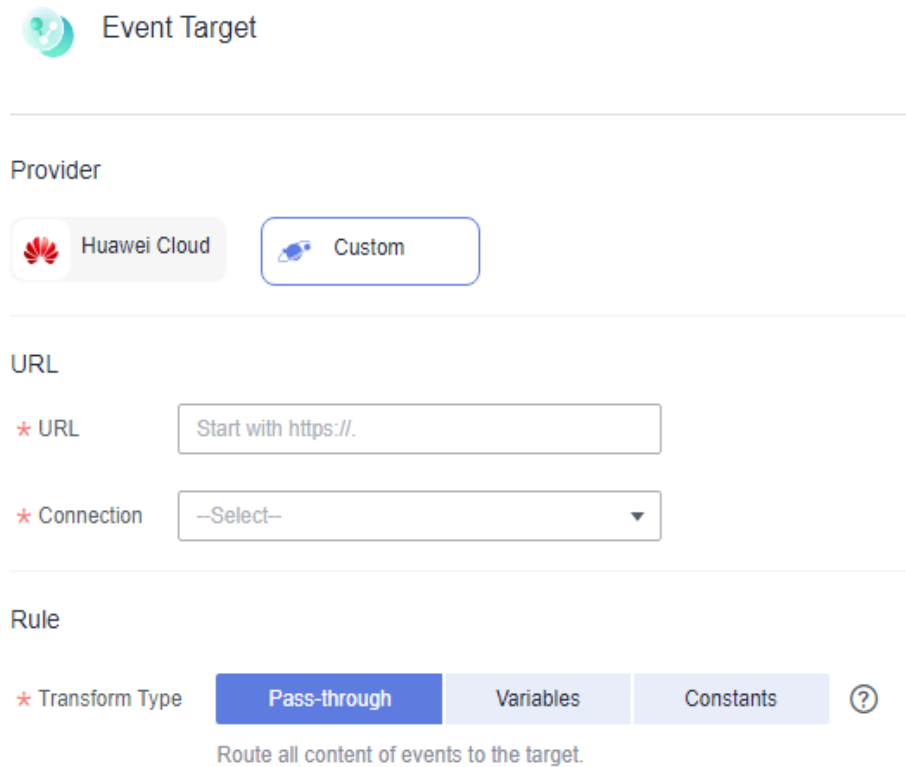
The screenshot shows the 'Event Target' configuration page. At the top, there is a green circular icon with a white question mark and the text 'Event Target'. Below this, the 'Provider' section has two buttons: 'Huawei Cloud' (selected, with a red Huawei logo) and 'Custom' (with a blue globe icon). The 'Event Target' section contains three dropdown menus: 'Event Target' (selected: FunctionGraph (function computing)), 'Function' (selected: -Select-), and 'Version' (selected: -Select-). The 'Rule' section has three tabs: 'Pass-through' (selected, highlighted in blue), 'Variables', and 'Constants' (with a help icon). Below the tabs is the text 'Route all content of events to the target.'

When selecting **Custom**, set the following parameters.

- **URL:** Enter the URL of an event target.
- **Connection:** Select a custom or the default connection.
- **Transform Type:** EG transforms CloudEvents-compliant events for targets. The following three types are supported:
  - **Pass-through:** Directly route CloudEvents-compliant events to the target.
  - **Variables:** Route variables in CloudEvents-compliant events to the target.
  - **Constants:** Route constants in events to the target.

For more information about the transform types, see [7.4 Event Content Transformation](#).

**Figure 5-10** Configuring a custom event target



**Event Target**

Provider

Huawei Cloud Custom

URL

\* URL Start with https://.

\* Connection --Select--

Rule

\* Transform Type Pass-through Variables Constants ?

Route all content of events to the target.

**Step 6** Click **OK**.

**Step 7** Click **Save**.

----End

## 5.3 Deleting an Event Subscription

Delete an event subscription that will no longer be used.

### Procedure

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Event Subscriptions**.

**Step 3** Click **Delete** in the row that contains the desired event subscription.

**Step 4** Click **Yes**.

----End



# 6 Events

Events are data that complies with specific specifications. Events that event sources publish to EG must comply with the CloudEvents specification. For more information about CloudEvents, see [CloudEvents 1.0](#).

EG supports the following events:

- Huawei Cloud service: events produced by Huawei Cloud service event sources
- Custom: events produced by custom event sources connected to EG with SDKs

## Example Event

The following is an example of an event published to EG:

```
{
  "events":[{"id": "4b26115b-778e-11ec-833e-cf74*****",
    "specversion": "1.0",
    "source": "HC.OBS",
    "type": "object:put",
    "datacontenttype": "application/json",
    "subject": "xxx.jpg",
    "time": "2022-01-17T12:07:48.955Z",
    "data": {
      "name": "test01",
      "state": "enable"
    }
  }]
}
```

[Table 6-1](#) describes the parameters in this example.

**Table 6-1** Event parameters

Parameter	Type	Required	Example Value	Description
id	String	Yes	4b26115b-778e-*****-833e-cf74af	Event ID, which identifies an event
specversion	String	Yes	1.0	Version of the CloudEvents specification

Parameter	Type	Required	Example Value	Description
source	String	Yes	HC.OBS	Event source that produces the event
type	String	Yes	object:put	Event type related to the event source
datacontenttype	String	No	application/json	Content format of the <b>data</b> parameter Only <b>application/json</b> is supported.
subject	String	No	xxx.jpg	Event subject
time	Timestamp	No	2022-01-17T12:07:48.955Z	Time when the event was produced
data	Struct	No	<pre>{   "name": "test01",   "state": "enable" }</pre>	Content of the event in JSON format

# 7 Event Rules

---

- [7.1 Introduction](#)
- [7.2 Filter Rule Parameters](#)
- [7.3 Example Filter Rules](#)
- [7.4 Event Content Transformation](#)

## 7.1 Introduction

Event rules define how to filter and transform events.

- **Filter:** By configuring **filter rules** in a subscription, specify what events will be routed to the relevant target. For more information about **filter rules**, see [7.2 Filter Rule Parameters](#) and [7.3 Example Filter Rules](#).
- **Transform:** By configuring the **transform type** in a subscription, determine how to transform events for the relevant target. For more information about event content transformation, see [7.4 Event Content Transformation](#).

## 7.2 Filter Rule Parameters

Only events that match your filter rules will be routed to the associated targets. These filter rules must have the same structure as the events.

This section describes the restrictions of filter rules as well as the operators, condition expressions, and matching fields.

### Restrictions

Event filter rules must meet the following requirements:

- Top-level fields can only be **source**, **type**, **subject**, or **data**.
- Top-level fields must include **source**, and **source** only supports the **StringIn** operator.
- The **data** field allows max. 5 subfields, and each can have max. 5 levels.

- Each field can have max. 5 conditions in an OR relationship.
- Multiple fields are ANDed with each other.
- A field that appears more than once at the same level will be used where it appears the last time.

## Operators

**Table 7-1** lists the operators that can be used in event filter rules.

**Table 7-1** Operators

Operator	Input Value	Condition Value	Description
StringIn	String/ String[]	String[] values	Check if the input value matches any condition value.
StringNotIn	String/ String[]	String[] values	Check if the input value does not match any condition value.
StringStarts With	String/ String[]	String[] values	Check if the input value prefix matches any condition value.
StringNotStarts With	String/ String[]	String[] values	Check if the input value prefix does not match any condition value.
StringEnds With	String/ String[]	String[] values	Check if the input value suffix matches any condition value.
StringNotEnds With	String/ String[]	String[] values	Check if the input value suffix does not match any condition value.
NumberIn	Number/ Number[]	Number[] values	Check if the input value matches any condition value.
NumberNotIn	Number/ Number[]	Number[] values	Check if the input value does not match any condition value.
NumberLessThan	Number/ Number[]	Number value	Check if the input value is less than the condition value.
NumberNotLessThan	Number/ Number[]	Number value	Check if the input value is greater than or equal to the condition value.
NumberGreaterThan	Number/ Number[]	Number value	Check if the input value is greater than the condition value.
NumberNotGreaterThan	Number/ Number[]	Number value	Check if the input value is less than or equal to the condition value.
NumberInRange	Number/ Number[]	Number[][] values	Check if the input value is within any condition value range.
NumberNotInRange	Number/ Number[]	Number[][] values	Check if the input value is not within any condition value range.

Operator	Input Value	Condition Value	Description
IsNull	-	None	Check if the input value is null or undefined.
NotNull	-	None	Check if the input value is neither null nor undefined.
IsTrue	Boolean	None	Check if the input value is true.
IsNotTrue	Boolean	None	Check if the input value is false.

## Condition Expressions

[Table 7-2](#) lists the condition expressions that can be used in event filter rules.

**Table 7-2** Condition expressions

Field Name	Type	Required	Description
op	String	Yes	Operator
value	JSON Type	No	Condition value
values	JSON Array	No	Condition value range

## Matching Fields

[Table 7-3](#) lists the matching fields that can be used in event filter rules.

**Table 7-3** Matching fields

Field Name	Condition Value Type	Example
source	JSON array	Event source. The condition value is in the JSON array. This field can only be used with the StringIn operator. Example: [{"op": "StringIn", "values": ["HC.OBS"]}]
type	JSON array	Event type. The condition value is in the JSON array. Example: [{"op": "StringIn", "values": ["object:put"]}]
subject	JSON array	Event body. The condition value is in the JSON array. Example: [{"op": "StringEndsWith", "values": [".jpg"]}]

Field Name	Condition Value Type	Example
data	JSON object	Event data. The condition value is in the JSON object, and can be nested in max. 5 layers. Example: {"state": [{"op": "StringIn", "values": ["running"]}]}

## 7.3 Example Filter Rules

This section provides examples of filter rules of all matching types.

These matching types are available:

- [Exact Match](#)
- [Exclusion Match](#)
- [Prefix Match](#)
- [Prefix Not Matching](#)
- [Suffix Match](#)
- [Suffix Not Matching](#)
- [Value Range Match](#)
- [Null Match](#)
- [Non-null Match](#)
- [True Match](#)
- [Non-true Match](#)

### Exact Match

Filter events that exactly match a specified string. As shown in the following table, events whose **source** is **HC.OBS** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } ]}</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }] }</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } ]}</pre>

Filter events that exactly match a specified number. As shown in the following table, events whose **age** in **data** is **10** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "age": 10     }   }] }</pre>	<pre>{   "source": [{"op": "StringIn",     "values": ["HC.OBS"]}   ],   "data": {     "age": {       "op": "NumberIn",       "values": [10]     }   } }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "age": 10     }   }] }</pre>

## Exclusion Match

Filter events that do not match a specified string. As shown in the following table, events whose **type** is not **object:get** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>	<pre>{   "source": [{"op": "StringIn",     "values": ["HC.OBS"]}   ],   "type": [{"op": "StringNotIn",     "values": ["object:get"]}   ] }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>

Filter events that do not match a specified number. As shown in the following table, events whose **age** in **data** is not **11** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "age": 10     }   } }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data": {     "age": {       "op": "NumberNotIn",       "values": [11]     }   } }</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "age": 10     }   } }] }</pre>

## Prefix Match

Filter events whose prefix matches a specified value. As shown in the following table, events whose **type** starts with **object:** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "type": [{     "op": "StringStartsWith",     "values": ["object:"]   } ]</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>

## Prefix Not Matching

Filter events whose prefix does not match a specified value. As shown in the following table, events whose **source** does not start with **HC** are matched.



Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "source": [{     "op": "StringNotStarts- With",     "values": ["HC"]   }] }</pre>	None

## Suffix Match

Filter events whose suffix matches a specified value. As shown in the following table, events whose **subject** ends with **jpg** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "subject": [{     "op": "StringEndsWith",     "values": ["jpg"]   }] }</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>

## Suffix Not Matching

Filter events whose suffix does not match a specified value. As shown in the following table, events whose **subject** does not end with **txt** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "subject": [{     "op": "StringNotEndsWith",     "values": ["txt"]   }] }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>

## Value Range Match

Filter events that match a specified value range. As shown in the following table, events whose **size** in **data** is less than **20** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data": {     "size": {       "op": "NumberLessThan",       "value": 20     }   } }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   }] }</pre>

As shown in the following table, events whose **size** in **data** is greater than or equal to **2** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   } }] }</pre>	<pre>{   "source": {     "op": "StringIn",     "values": ["HC.OBS"]   },   "data": {     "size": {       "op": "NumberNotLessThan",       "value": 2     }   } }</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   } }] }</pre>

As shown in the following table, events whose **size** in **data** is greater than **9** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   } }] }</pre>	<pre>{   "source": {     "op": "StringIn",     "values": ["HC.OBS"]   },   "data": {     "size": {       "op": "NumberGreaterThan",       "value": 9     }   } }</pre>	<pre>{   "events": [{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   } }] }</pre>

As shown in the following table, events whose **size** in **data** is less than or equal to **9** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":10     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{"     "size":{"       "op": "NumberNotGreater- Than",       "value":9     }   } }</pre>	None

As shown in the following table, events whose **size** in **data** is from 1 to 20 are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":10     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{"     "size":{"       "op": "NumberInRange",       "values":[         1,         20       ]     }   } }</pre>	<pre>{   "events":[{"     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":10     }   }] }</pre>

As shown in the following table, events whose **size** in **data** is less than 1 or greater than 20 are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":10     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{"size":{"op": "NumberNotInRange",     "values": [       [         1,         20       ]     ]   }} }</pre>	None

## Null Match

Filter events with a null value or undefined field. As shown in the following table, events whose **size** and **age** in **data** are **null** or undefined are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": null     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{"size":{"op": "IsNull"}},   "age":{"op": "IsNull"} }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":null     }   }] }</pre>

## Non-null Match

Filter events whose certain field is not **null**. As shown in the following table, events whose **size** and **name** in **data** are not **null** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": 10     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{     "size":{       "op": "IsNotNull"     },     "name":{       "op": "IsNotNull"     }   } }</pre>	<pre>{   "events":[{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size":10     }   }] }</pre>

## True Match

Filter events whose certain field is **true**. As shown in the following table, events whose **size** and **name** in **data** are **true** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": true,       "state": "enable",       "size": true     }   }] }</pre>	<pre>{   "source": [{     "op": "StringIn",     "values": ["HC.OBS"]   }],   "data":{     "size":{       "op": "IsTrue"     },     "name":{       "op": "IsTrue"     }   } }</pre>	<pre>{   "events":[{     "id": "4b26115b-778e-11ec- *****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": true,       "state": "enable",       "size":true     }   }] }</pre>

## Non-true Match

Filter events whose certain field is not **true**. As shown in the following table, events whose **name** in **data** is not **true** are matched.

Event from Source	Filter Rule	Matched Event
<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": null     }   }] }</pre>	<pre>{   "source": [{"op": "StringIn",     "values": ["HC.OBS"]}   ],   "data":{"name":{"op": "IsNotTrue"}   } }</pre>	<pre>{   "events":[{"id": "4b26115b-778e-11ec-*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:00.955Z",     "data": {       "name": "test01",       "state": "enable",       "size": null     }   }] }</pre>

## 7.4 Event Content Transformation

EG transforms CloudEvents-compliant events so that they can be processed by specified targets.

Supported transform types: pass-through, variables, constants.

### Pass-through

Directly route CloudEvents-compliant events to the target. Example:

Before Transformation	Transform Type	After Transformation
<pre>{   "events":[{"id": "4b26115b-73e-cf74a*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:48.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>	<p>Pass-through</p>	<pre>{   "events":[{"id": "4b26115b-73e-cf74*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:48.955Z",     "data": {       "name": "test01",       "state": "enable"     }   }] }</pre>

### Variables

Route variables in CloudEvents-compliant events to the target by using a template. Example:

Before Transformation	Transform Type	After Transformation
<pre>{   "events": [{     "id": "4b26115b-73e- cf74a*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:48.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>	<p><b>Variable</b> {"name": "\${data.name}"}</p> <p><b>Template</b> My name is \${name}</p> <p><b>NOTE</b> If the event target is <b>FunctionGraph (function computing)</b>, the template must be in JSON format. Example: {"name": "\${name}"}</p>	<p>My name is test01</p> <p><b>NOTE</b> If the event target is <b>FunctionGraph (function computing)</b>, the transformation result is as follows: {"name": "test01"}</p>

## Constants

Route constants in events to the target. Example:

Before Transformation	Rule	After Transformation
<pre>{   "events": [{     "id": "4b26115b-73cf74a*****",     "specversion": "1.0",     "source": "HC.OBS",     "type": "object:put",     "datacontenttype": "application/ json",     "subject": "xxx.jpg",     "time": "2022-01-17T12:07:48.955Z",     "data": {       "name": "test01",       "state": "enable"     }   } }] }</pre>	<p><b>Constant</b> test01</p> <p><b>NOTE</b> If the event target is <b>FunctionGraph (function computing)</b>, the rule must be in JSON format. Example: {"name": "test01"}</p>	<p>test01</p> <p><b>NOTE</b> If the event target is <b>FunctionGraph (function computing)</b>, the transformation result is as follows: {"name": "test01"}</p>

## More Examples

- After you set a DMS for RabbitMQ or DMS for RocketMQ **event source** for a subscription, messages will contain the **context** field in **data** after being transformed to CloudEvents-compliant events. If you set the transform type to **Variables** for the **event target**, the rule must also contain the **context** field. Example:



Before Transformation	Transform Type	After Transformation
<pre>{   "type":   "ROCKETMQ:CloudTrace:Rocket mqCall",   "data": {     "context": {       "name": "test01",       "state": "enable"     }   },   "source": "zhang_roc",   "time":   "2023-02-01T10:47:07Z",   "datacontenttype":   "application/json",   "specversion": "1.0",   "id":   "2f885496-570c-4925-82fd- d1ad09*****",   "subject": "ROCKETMQ:cn- north-7:eec88b34-9470-483e-89 61-edb168*****/ 0de095e33e00d36e2fd2c0019a** ****:ROCKETMQ:zhang_roc" }</pre>	<p><b>Variable</b> {"name": "\$.data.context.name"} <b>Template</b> My name is \${name}</p>	<p>My name is test01</p>

# 8 Event Targets

---

Event targets are destinations that receive and process events.

EG supports the following event targets:

- Huawei Cloud services connected to EG.
- Custom event processing services

# 9 Network Management

[9.1 Connections](#)

[9.2 Endpoints](#)

## 9.1 Connections

You can use the default connection for a public webhook, or a custom one (with specified VPC and subnet) for a private webhook.

Custom connections can also be based on DMS for Kafka.

 **NOTE**

- A client or proxy client provides a webhook URL to receive data from a specified server. The client updates accordingly once the server pushes data to the URL.
- Webhook URLs must support TLS 1.2 and secure encryption algorithms.

### Creating a Webhook Connection

Before creating a connection, ensure that you have VPC permissions.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Connections**.

**Step 3** Click **Create Connection**.

 **NOTE**

When you create your first connection, your authorization will be required and an agency will be automatically created. For details, see [10 Authorization](#).

**Step 4** Configure the connection by referring to [Table 9-1](#).

**Table 9-1** Connection parameters

Parameter	Description
Type	Select <b>WEBHOOK</b> .

Parameter	Description
Name	Connection name. The name cannot be modified once the connection is created.
Description	Describe the connection.
VPC	Select a VPC. The VPC cannot be changed once the connection is created.
Subnet	Select a subnet. The subnet cannot be changed once the connection is created.

**Step 5** Click **OK**.

----End

## Creating a DMS for Kafka Connection

Before creating such a connection, ensure that you already have a DMS for Kafka instance.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Connections**.

**Step 3** Click **Create Connection**.

### NOTE

When you create your first connection, your authorization will be required and an agency will be automatically created. For details, see [10 Authorization](#).

**Step 4** Configure the connection by referring to [Table 9-2](#).

**Table 9-2** Kafka connection parameters

Parameter	Description
type	Select <b>DMS for Kafka</b> .
Name	Connection name. The name cannot be modified once the connection is created.
Description	Describe the connection.
Instance	Select a Kafka instance.

Parameter	Description
SASL_SSL Authentication	Available when SASL_SSL authentication is enabled for the Kafka instance. Select an authentication mechanism. <ul style="list-style-type: none"><li>• <b>PLAIN</b>: a simple username and password verification mechanism.</li><li>• <b>SCRAM-SHA-512</b>: uses the hash algorithm to generate credentials for usernames and passwords to verify identities. SCRAM-SHA-512 is more secure than PLAIN.</li></ul>
Username	Available when SASL_SSL authentication is enabled for the Kafka instance. Enter a username.
Password	Available when SASL_SSL authentication is enabled for the Kafka instance. Enter a password.
Acknowledgments	Number of acknowledgments the producer requires the server to return before considering a request complete. <ul style="list-style-type: none"><li>• <b>None</b> means 0. The producer will not wait for any acknowledgment from the server at all. The record will be immediately added to the socket buffer and considered sent.</li><li>• <b>Leader only</b> means 1. The leader will write the record to its local log but will respond without awaiting full acknowledgement from all followers.</li><li>• <b>All</b> means all or -1. The leader will wait for the full set of in-sync replicas to acknowledge the record. This is the strongest available guarantee because the record will not be lost as long as there is just one working replica.</li></ul>

**Step 5** Click **OK**.

----End

## Editing a Connection

Only the description of a connection can be modified.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Connections**.

**Step 3** Click **Edit** in the row that contains the desired connection.

**Step 4** Modify the description and click **OK**.

----End

## Deleting a Connection

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Connections**.

**Step 3** Click **Delete** in the row that contains the desired connection.

 **NOTE**

If the connection to delete is associated with subscriptions, disassociate it first.

**Step 4** Click **Yes**.

----End

## 9.2 Endpoints

An endpoint is an EG access address for you to push events from a custom source.

EG supports the following endpoints:

- Public endpoints: fixed public domain names for specific regions

**Table 9-3** Public endpoints

Region	Primary Domain Name	Secondary Domain Name
EU-Dublin	events.eu-west-101.myhuaweicloud.eu	-

- Private endpoints: EG private domain names you create for pushing custom events

### Creating a Private Endpoint

Before creating a private endpoint, ensure that you have DNS and VPCEP permissions.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Endpoints**.

**Step 3** Click **Create Endpoint**.

**Step 4** Configure the endpoint by referring to [Table 9-4](#).

**Table 9-4** Endpoint parameters

Parameter	Description
Name	Endpoint name. The name cannot be modified once the endpoint is created.
VPC	Select a VPC. The VPC cannot be changed once the endpoint is created.

Parameter	Description
Subnet	Select a subnet. The subnet cannot be changed once the endpoint is created.
Description	Describe the endpoint.

**Step 5** Click **OK**.

---

**NOTICE**

- Creating an endpoint will generate a VPC endpoint with fees. Delete the created endpoint when you no longer need it.
  - The VPC and subnet cannot be changed once the endpoint is created.
- 

----End

## Editing a Private Endpoint

Modify the description of an endpoint.

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Endpoints**.

**Step 3** Click **Edit** in the row that contains the desired endpoint.

**Step 4** Modify the description and click **OK**.

----End

## Deleting a Private Endpoint

**Step 1** Log in to the EG console.

**Step 2** In the navigation pane, choose **Network Management > Endpoints**.

**Step 3** Click **Delete** in the row that contains the desired endpoint.

**Step 4** Click **Yes**.

 **NOTE**

If the related DNS and VPCEP resources have been deleted, the private endpoint may fail to be deleted. In this case, contact EG O&M personnel.

----End

# 10 Authorization

When you use EG's private network event targets and private network message event sources, your authorization will be required and an agency will be automatically created.

**Table 10-1** Agency information

Agency Name	Authorizer	Authorized	Service to Access and Required Permission	Function
EG_DELEGATE_FG_AGENCY	User	FunctionGraph	VPC: VPC Administrator DNS: DNS ReadOnlyAccess	<ul style="list-style-type: none"> <li>• Create RabbitMQ and RocketMQ custom event sources</li> <li>• Create subscriptions with a private HTTPS endpoint.</li> </ul>
EG_AGENCY	User	EventGrid	EG: EG Publisher	Create RabbitMQ and RocketMQ custom event sources

## Authorization Scenarios

1. When [you create your first connection](#), your authorization will be required. If you agree to authorize, an agency named **EG\_DELEGATE\_FG\_AGENCY** will be automatically created in IAM. View this agency on the IAM console.



**Table 10-2** Permissions of EG\_DELEGATE\_FG\_AGENCY

Permission	Description
VPC Administrator	Required for FunctionGraph to connect to VPC when you create a connection.
DNS ReadOnlyAccess	Required for FunctionGraph to connect to VPC when you create a connection.

2. When [you create your first DMS for RabbitMQ or DMS for RocketMQ event source](#), your authorization will be required. If you agree to authorize, agencies named **EG\_DELEGATE\_FG\_AGENCY** and **EG\_AGENCY** will be automatically created in IAM. View these agencies on the IAM console.

**Table 10-3** Permissions of EG\_DELEGATE\_FG\_AGENCY and EG\_AGENCY

Permission	Description
VPC Administrator	Required for FunctionGraph to connect to VPC when you create a DMS event source.
DNS ReadOnlyAccess	Required for FunctionGraph to connect to VPC when you create a DMS event source.
EG Publisher	Required for EG to publish messages to a channel when you create a DMS event source.

# 11 Event Monitoring

## [11.1 Supported Metrics](#)

## [11.2 Viewing Monitoring Data](#)

## 11.1 Supported Metrics

### Introduction

This section describes the monitoring metrics and dimensions of EG. View these metrics on the EG console.

### Metrics

**Table 11-1** Event delivery metrics

ID	Name	Description	Value Range	Monitored Object	Raw Data Monitoring Period (Minute)
num	Invocations	Number of times event delivery attempts are made. Unit: count	$\geq 0$	Event subscription	1
success_num	Successful Invocations	Number of times events are finally delivered. Unit: count	$\geq 0$	Event subscription	1

ID	Name	Description	Value Range	Monitored Object	Raw Data Monitoring Period (Minute)
process_time	Processing Time	Average time spent processing all event deliveries in a period. Unit: ms	$\geq 0$ ms	Event subscription	1
invoke_time	Invocation Duration	Average time spent delivering events in a period. Unit: ms	$\geq 0$ ms	Event subscription	1
fail_num	Failed Events	Number of events that fail to be delivered without needing a retry attempt. Unit: count	$\geq 0$	Event subscription	1
retry_success_num	Successful Retries	Number of events that are successfully delivered after retry attempts. Unit: count	$\geq 0$	Event subscription	1
retry_fail_num	Failed Retries	Number of events that still fail to be delivered after retry attempts. Unit: count	$\geq 0$	Event subscription	1

**Table 11-2** Event access metrics

ID	Name	Description	Value Range	Monitored Object	Raw Data Monitoring Period (Minute)
num	Invocations	Number of times event access attempts are made. Unit: count	$\geq 0$	Event channel	1

ID	Name	Description	Value Range	Monitored Object	Raw Data Monitoring Period (Minute)
success_num	Successful Invocations	Number of times events are finally accessed. Unit: count	$\geq 0$	Event channel	1
process_time	Processing Time	Average time spent processing all event accesses in a period. Unit: ms	$\geq 0$ ms	Event channel	1
invoke_time	Invocation Duration	Average time spent sending events to the storage in a period. Unit: ms	$\geq 0$ ms	Event channel	1
event_size	Event Size	Average size of events accessed in a period. Unit: KB	$\geq 0$ bytes	Event channel	1



## Dimensions


Key	Value
subscription_id	Event subscription ID
channel_id	Event channel ID


## 11.2 Viewing Monitoring Data

EG monitors event subscriptions and channels, and allows you to query event access and delivery information without any configuration.

### Procedure

- Step 1** Log in to the management console.
- Step 2** Click  in the upper left and select a region.
- Step 3** Click  in the upper left and choose **Middleware > EventGrid**.

- Step 4** On the **Event Subscriptions** page, click  in the row that contains the desired subscription, and view the event delivery monitoring data.
- View the monitoring data of a single event target.
  - View the monitoring data of the last hour, last 4 hours, last 24 hours, last 7 days, or a custom time range.
  - Specify a period (1 minute, 5 minutes, or 20 minutes) and method (average, maximum, or minimum).

- Step 5** On the **Event Channels** page, click  in the row that contains the desired channel, and view the event access monitoring data.
- View the monitoring data of a single event source.
  - View the monitoring data of the last hour, last 4 hours, last 24 hours, last 7 days, or a custom time range.
  - Specify a period (1 minute, 5 minutes, or 20 minutes) and method (average, maximum, or minimum).

----End

# 12 Auditing

## [12.1 EG Operations Recorded by CTS](#)

## [12.2 Viewing Traces on the CTS Console](#)

## 12.1 EG Operations Recorded by CTS

Operations related to EG can be recorded with Cloud Trace Service (CTS) for query, audit, and backtracking.

**Table 12-1** EG operations that can be recorded by CTS

Operation	Resource Type	Trace
Create event channel	channel	CreateChannel
Update event channel	channel	UpdateChannel
Delete event channel	channel	DeleteChannel
Create event source	source	CreateEventSource
Update event source	source	UpdateEventSource
Delete event source	source	DeleteEventSource
Create event subscription	subscription	CreateSubscription
Update event subscription	subscription	UpdateSubscription
Delete event subscription	subscription	DeleteSubscription
Enable or disable event subscription	subscription	OperateSubscription
Create connection	connection	CreateConnection
Edit connection	connection	UpdateConnection
Delete connection	connection	DeleteConnection

Operation	Resource Type	Trace
Create endpoint	endpoint	CreateEndpoint
Edit endpoint	endpoint	CreateEndpoint
Delete endpoint	endpoint	CreateEndpoint

## 12.2 Viewing Traces on the CTS Console

View EG traces by referring to [Querying Real-Time Traces](#)