

Log Tank Service

Developer Guide

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1 Console Usage Overview

Log Tank Service (LTS) allows you to use the LTS console in multiple ways, including logging in to the LTS console from the Huawei Cloud official console, embedding LTS in Huawei Cloud users' self-built systems (password-free login), and interconnecting with the Grafana plug-in.

Usage Overview

Usage	Function Support	Login Without Huawei Account	Development Workload	Account Permission
Huawei Cloud console	All LTS functions	Not supported	None	Huawei Cloud IAM
Embedding the LTS Log Query Page into a User-built System	All functions on the LTS console	The iframe can be embedded into the O&M system of the enterprise and login through the enterprise authentication system is allowed.	Low. Front-end iframe embedding is required.	Enterprise authentication system
Interconnecting with the Grafana Plug-in (Default Mode)	Dashboard and alarm functions of Grafana	Supported. Log stream data is ingested to Grafana.	None	Grafana's permission management system

2 Embedding the LTS Log Query Page into a User-built System

Log query pages can be embedded into your systems. You can use the federation proxy mechanism of Identity and Access Management (IAM) for custom identity broker and embed a login link to your systems so you can view LTS logs in your systems without logging in to the Huawei Cloud console.

Application Scenarios

- With this function, you can log in to LTS from a user-built system without entering a password. However, you still need to enter a username and password when logging in to the Huawei Cloud LTS console.
- You can quickly integrate the query and analysis capabilities of LTS in external systems (such as an internal O&M or operations system).
- You do not need to manage multiple Huawei Cloud IAM users, facilitating log data sharing and viewing.

Embedding the LTS Log Query Page into a User-built System

Create an identity broker and an agency in IAM, and then embed the LTS log query page into your system.

Step 1 Log in to the IAM console, for example, as **DomainA**.

Step 2 Create an IAM user group (for example, **GroupC**) on the **User Groups** page and grant the **Agent Operator** permissions in global service to the user group. Users granted these permissions can only switch to the delegated account to access the authorized services. For details, see [Creating a User Group and Assigning Permissions](#).

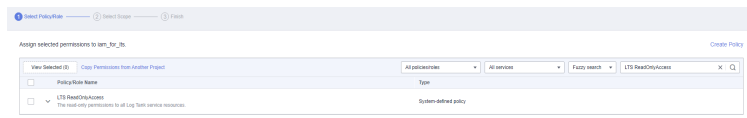
Step 3 Create an IAM user (for example, **UserB**) on the IAM console and add the user to **GroupC** by referring to [Adding Users to a User Group](#).

Ensure that the IAM user can use LTS through **programmatic access** or **on the console**. For details about how to change the IAM user access mode, see [Modifying IAM User Information](#).

Step 4 In the navigation pane, choose **Agencies**. Then, click **Create Agency** in the upper right corner.

Step 5 Configure agency parameters.

1. For example, set **Agency Name** to **iam_for_lts**, **Agency Type** to **Account**, **Delegated Account** to **DomainA**, and **Validity Period** to **Unlimited**, and click **Next**.
2. Set the minimum authorization scope by selecting the **LTS ReadOnlyAccess** permissions, which grant users read-only access to query LTS data without the ability to modify LTS settings, and click **Next**.

Figure 2-1 Selecting a policy/role

3. Specify the authorization scope, select **Region-specific projects**, select the corresponding region as required, and click **OK**.

Step 6 Use tools such as Postman to obtain the **X-Subject-LoginToken** parameter. (The following figures are for reference only.)

1. Obtain the **X-Subject-Token** of **UserB** using the account and password.

API type: POST

API URL: Enter **https://Endpoint/v3/auth/tokens**, select the user-defined format for the parameters, and enter the following parameters: **name** indicates the tenant name, username, and tenant name from top to bottom, and **password** indicates the user password.

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of IAM, see [Regions and Endpoints](#).

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "domain": {
            "name": "xxxxxxx"
          },
          "name": "xxxxxx",
          "password": "xxxxxxx"
        }
      }
    },
    "scope": {
      "domain": {
        "name": "xxxxxxx"
      }
    }
  }
}
```

Obtain the **X-Subject-Token** field in the response header.

Figure 2-2 Response

General
Request URL: https://iam.myhuaweicloud.com/v3/auth/tokens
Request Method: POST
Status Code: 201

Response Headers:
cache-control: no-cache, no-store, must-revalidate
connection: keep-alive
content-length: 5482
content-type: application/json; charset=UTF-8
date: Tue, 26 Sep 2023 07:29:37 GMT
expires: Thu, 01 Jan 1970 00:00:00 GMT
pragma: no-cache
server: CloudWAF
strict-transport-security: max-age=31536000; includeSubdomains;
x-content-type-options: nosniff
x-download-options: noopen
x-frame-options: SAMEORIGIN
x-iam-trace-id: token_cn-north-4_null_f8530fd2e48e21cc953d448988219b639
x-request-id: f8530fd2e48e21cc953d448988219b639
x-subject-token
MIIRSQYJKoZihvcNAQcCoIIROJCCETCYCAQEXDTALBgIghkgBZQMEAgEwg99bBgkqhkiG9w0BBwGggg9MBIIPSHsidG9r:
a3JvRmc3TudvocOQBq+4-QIhbppckgY1M3LS7pFv0vW2rGJEPAYrK9V+tb5zBaH5RwE1rfMl99PxmSGSFhLh9EUH6WMM9:
+Zk1Y26HpaQqrrTKKOG9+PYPRW02ktSvgPaDJoeWIMiyF-5T0Ng3BT3srVFWZb3uPWjhM0Ls2r6w==
x-xss-protection: 1; mode=block;

2. Obtain the temporary access key based on the **X-Subject-Token** obtained in **1**.

Add the **X-Auth-Token** field to the request header and set its value to the value of **X-Subject-Token** obtained in **1**.

Figure 2-3 Obtaining a temporary access key

Key	Value
X-Auth-Token	MIIRSQYJKoZihvcNAQcCoIIROJCCETCYCAQEXDTALBgIghkgBZQMEAgEwg99bBgkqhkiG9w0BBwGggg9MBIIPSHsidG9r: a3JvRmc3TudvocOQBq+4-QIhbppckgY1M3LS7pFv0vW2rGJEPAYrK9V+tb5zBaH5RwE1rfMl99PxmSGSFhLh9EUH6WMM9: +Zk1Y26HpaQqrrTKKOG9+PYPRW02ktSvgPaDJoeWIMiyF-5T0Ng3BT3srVFWZb3uPWjhM0Ls2r6w==

API type: POST

API URL: Enter **https://Endpoint/v3.0/OS-CREDENTIAL/securitytokens**, select the user-defined format for the parameters, and enter the following parameters: **agency_name** indicates the agency name, **domain_name** indicates the tenant name, **duration_seconds** indicates the token expiration time (in second), and **name** indicates the username.

```
{
  "auth": {
    "identity": {
      "methods": [
        "assume_role"
      ],
      "assume_role": {
        "agency_name": "iam_for_lts",
        "domain_name": "xxxxxx",
        "duration_seconds": 86400,
        "session_user": {
          "name": "xxxxxx"
        }
      }
    }
  }
}
```

Obtain the temporary access key from the response body.

Figure 2-4 Obtaining a temporary access key

```
{
  - credential: {
    access: "ZMC5PD5C5IE5V10X4JCE",
    expires_at: "2023-09-27T07:33:18.912000Z",
    secret: "IOA5hKWDuxLYN3uJLUOGqB9g2RDvOFdkRty32h7X",
    securitytoken: "gQqjbi1ub3J0aC00iZMdAa3kx9GOlg0zTTob5wvpFPee-hVQjagvQfE_ε
XhCXSmJw79obJuQVHeLA0SGiPTey_4OBI-5OmBwDuYXgLiXMcTIS4XoXBAxqo4hYR
QGvI4heEj3X834BlpfOApOBLA1433er9ViO6Gz_qio48jXSSyPBQ2i993320D3IBWUA0r
XEIJtk5OplOYWU56DmPHNDvaX1AwxwTzsXGg29dLW27L-RVvp6wN9WGvbgWKJ
iQkAjAMnx6_ajfmcptquc7ibB1.JsoF8vB5baQ8eOKpsSypCqLiSY7vhWgicykmmKUCW_)
uNqz24LzPaxaUZEv9sMeJK9MIq7dfccachmDw5wXGGwQZzIV8bT2GZr15xd0qipVbM
RdefvTQWYon1Qzc3pL5pkw7Qn491FN9rJqpG6IkXiSJihyMY6smZEmBVpRQd75CHUI
1E6YRCvEkQxtCtmqolLuRDzd6-lpEjEKEutLR_fHLPGeOvCmkAklytgkCag-_zFneRlvhr
U19ttPcyVRxsbppknFbox2jVGVyrlHI4GvvfEfZbOYAQ0jIPgGCtfwGaUm8slQCyyBPjP+
XK8UDV8uioCv5QNMkjXLCXiAaW7bshSITqn66b9LCOp36q_CvqfCn2XgWmMzHP2vI
  }
}
```

3. Obtain the login **X-Subject-LoginToken** based on the temporary access key obtained in 2.

API type: POST

API URL: Enter **https://Endpoint/v3.0/OS-AUTH/securitytoken/logintokens**, select the user-defined format for the parameters, and enter the following parameters: The values of **access**, **secret**, and **id** are the values of **access**, **secret**, and **securitytoken** returned in 2, respectively. **duration_seconds** indicates the token expiration time (in second).

```
{
  "auth" : {
    "securitytoken" : {
      "access" : "xxxxxx",
      "secret" : "xxxxxx",
      "id" : "xxxxxx",
      "duration_seconds" : 43200
    }
  }
}
```

Obtain the **X-Subject-LoginToken** field in the response header.

Figure 2-5 Obtaining X-Subject-LoginToken

```

General:
Request URL: https://iam.myhuaweicloud.com/v3.0/OS-AUTH/securitytoken/logintokens
Request Method: POST
Status Code: 201

Response Headers:
cache-control: no-cache, no-store, must-revalidate
connection: keep-alive
content-length: 529
content-type: application/json; charset=UTF-8
date: Tue, 26 Sep 2023 07:34:56 GMT
expires: Thu, 01 Jan 1970 00:00:00 GMT
pragma: no-cache
server: CloudWAF
strict-transport-security: max-age=31536000; includeSubdomains;
x-content-type-options: nosniff
x-download-options: noopen
x-frame-options: SAMEORIGIN
x-iam-trace-id: token_cn-north-4_null_dfa3dffde609d11e6f9f5d2bdc669f7e
x-request-id: dfa3dffde609d11e6f9f5d2bdc669f7e
x-subject-logintoken: MIIIEEgYJKoZIhvcNAQcCoIIEAzCCA-
8CAQExDTALBgIghkgBZQMEAgEwgglkBgkqhkiG9w0BBwGggglVBIIICEXsibG9naW50b2tlibl6eyJkb21haW5l
mDmgm7xaRF7MPveGMBMj8worNmn8r+NCKfKGYUpXgHbCFIdnaFbl9YGZWCBBNyul1zTcdlXJK-YZrB5lLs(
WcdOcOAAQWEFVTju9iGnCh6ve3ESULb5+61FQGtkoQ7dxlTjobYlML5rjnmHSsnKmvblI5eJpsFGddV1nTFC
WDq8ZzMtpZRe8B5NTvOwXvCq5KKBBeup+e6EXGZ2S6uT7THuXYFRuQBIGCJLRsHsC4ovw54yAKNOzvTR
x-xss-protection: 1; mode=block;
    
```

Step 7 Construct a proxy URL based on the **X-Subject-LoginToken** obtained in **3** to complete password-free login.

The rules for constructing a proxy URL are as follows:

```

https://auth.huaweicloud.com/authui/federation/login?
service={target_console_url}&logintoken={logintoken}&idp_login_url={enterprise_s
ystem_loginURL}
    
```

Table 2-1 URL parameters

Parameter	Description
{target_console_url}	URLEncode encoding result of the LTS address description. For details, see LTS URL .
{logintoken}	URLEncode encoding result of X-Subject-LoginToken obtained in 3 .
{enterprise_system_login URL}	(Optional) URLEncode encoding result of the customer's page address. When the loginToken verification fails, the page is displayed.

- The preceding three parameters must be encoded using URLEncode. Otherwise, password-free login may fail.
- To perform URLEncode encoding, open a browser, press **F12** to enter the developer mode, select **console**, enter **encodeURIComponent("*")**, and press **Enter** to view the returned URLEncode value. * indicates the information to be encoded.

The value of *{target_console_url}* is the URLEncode code of the URL of the LTS frontend service. The URL before encoding is as follows. [Table 2-2](#) describes the parameters.

```
https://console-intl.huaweicloud.com/lts/?  
region={regionId}&cfModuleHide=header_sidebar_floatlayer#/lts/  
logEventsLeftMenu/events?  
groupId={groupId}&topicId={topicId}&epsId={epsId}&condition={condition}
```

Table 2-2 Parameters

Parameter	Description
{regionId}	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.
{groupId}	Log group ID.
{topicId}	Log stream ID.
{epsId}	ID of the enterprise project of a log stream. If there is no enterprise project, the value is 0 .
{condition}	Log search criteria, for example, name:a and age:12 and addr:xx . <ul style="list-style-type: none">• Optional• The format of a single keyword is <i>key:value</i>.• Separate keywords with and.• A keyword cannot contain semicolons (;) or colons (:).• A keyword that contains special characters (+, =, ?, #, %, and &) must be converted into a hexadecimal value, that is, an ASCII code starting with % (%2B, %3D, %3F, %23, %25, and %26).

Step 8 After the preceding steps are complete, you can log in to LTS from your user-built system without entering a password.

Use the following iframe embedding. The value of **src** is the proxy URL obtained in [Step 7](#).

The iframe embedding function requires that browsers allow third-party cookies. The setting procedure varies with browsers. For the Chrome browser, choose **Settings > Privacy and security > Third-party cookies > Allow third-party cookies**.

```
<body>  
  <iframe src="target_url" width="100%" height="96%" id="ltsiframePage"></iframe>  
</body>
```

----End

LTS URL

1. The basic URL of the Log Tank Service (LTS) homepage is as follows.

```
https://console-intl.huaweicloud.com/lts/?  
region={regionId}&cfModuleHide=header_sidebar_floatlayer#/cts/manager/groups
```

Table 2-3 Parameters

Parameter	Mandatory	Type	Description
regionId	Yes	String	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.

2. The basic URL of the log search page is as follows.

```
https://console-intl.huaweicloud.com/lts/?
region={regionId}&cfModuleHide=header_sidebar_floatlayer#/cts/logEventsLeftMenu/events?
groupId={groupId}&topicId={topicId}&epsId={epsId}&hideHeader={hideHeader}&fastAnalysisCollapsed
={fastAnalysisCollapsed}&hideDashboard={hideDashboard}&hideFeedback={hideFeedback}&isFoldLabel
={isFoldLabel}&hideStreamName={hideStreamName}&showK8sFilter={showK8sFilter}&clusterId={clus
terId}&hideBarChart={hideBarChart}&hideTabs={hideTabs}&condition={condition}
```

Table 2-4 Parameters

Parameter	Mandatory	Type	Default Value	Description
regionId	Yes	String	None	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.
groupId	Yes	String	None	Log group ID.
topicId	Yes	String	None	Log stream ID.
epsId	No	String	None	ID of the enterprise project of a log stream. If there is no enterprise project, the value is 0 .
hideHeader	No	Boolean	false	Whether to hide the list on the left and the horizontal log stream list on the top. If yes, set this parameter to true . This parameter takes effect only for iframe embedding.
fastAnalysisCollapsed	No	Boolean	false	Whether to collapse quick analysis. If yes, set this parameter to true .
hideDashboard	No	Boolean	false	Whether to hide the dashboard creation icon. If yes, set this parameter to true .
hideFeedback	No	Boolean	false	Whether to hide the comment button. If yes, set this parameter to true .

Parameter	Mandatory	Type	Default Value	Description
isFoldLabel	No	Boolean	true	Whether to display the label field in a new line in the log table. If yes, set this parameter to true .
hideStreamName	No	Boolean	false	Whether to hide the log stream name. If yes, set this parameter to true .
showK8sFilter	No	Boolean	false	Whether to display the container log filter criteria. For container log search, you can set this parameter to true .
clusterId	No	String	None	Cluster ID. This parameter is mandatory only when showK8sFilter is set to true .
hideBarChart	No	Boolean	false	Whether to collapse the log quantity statistics chart by default. If yes, set this parameter to true .
hideTabs	No	Boolean	false	Whether to hide the Log Search , Log Analysis , and Real-Time Logs tabs. By default, the tabs are not hidden. To hide them, set this parameter to true .
hideShare	No	Boolean	false	Whether to hide the sharing button. By default, the button is not hidden. To hide it, set this parameter to true . This parameter is available only in CN North-Beijing4.
keepOnline	No	Boolean	false	Whether to keep the login state. If you want to stay logged-in and do not log out, set this parameter to true .
condition	No	String	None	Log search criteria, for example, name:a and age:12 and addr:xx . <ul style="list-style-type: none"> • Optional • The format of a single keyword is <i>key.value</i>. • Separate keywords with and. • A keyword cannot contain semicolons (;) or colons (:). • A keyword that contains special characters (+, =, ?, #, %, and &) must be converted into a hexadecimal value.

3. The basic URL of the visualized log search page is as follows.

```
https://console-intl.huaweicloud.com/lts/?
region={regionId}&cfModuleHide=header_sidebar_floatlayer#/cts/logEventsLeftMenu/events?
visualization=true&groupId={groupId}&topicId={topicId}&epsId={epsId}&sql={sql}
```

Table 2-5 Parameters

Parameter	Mandatory	Type	Default Value	Description
regionId	Yes	String	None	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.
groupId	Yes	String	None	Log group ID.
topicId	Yes	String	None	Log stream ID.
epsId	No	String	None	ID of the enterprise project of a log stream. If there is no enterprise project, the value is 0 .
hideHeader	No	Boolean	false	Whether to hide the list on the left and the horizontal log stream list on the top. If yes, set this parameter to true .
sql	No	String	None	SQL query statement, for example, SELECT count (*).

4. The basic URL of the dashboard page is as follows.

```
https://console-intl.huaweicloud.com/lts/?
region={regionId}&cfModuleHide=header_sidebar_floatlayer#/cts/manager/dashboard?
dashboardId={dashboardId}&hideDashboardList={hideDashboardList}&showCurrentdashboardGroup={
showCurrentdashboardGroup}&streamId={streamId}&streamDisabled={streamDisabled}&readOnly={re
adonly}&filter=key1:value1,value2;key2:value3,value4&autoFresh={autoFresh}
```

Table 2-6 Parameters

Parameter	Mandatory	Type	Default Value	Description	Example Value
regionId	Yes	String	None	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.	region=xx-xx-xx

Parameter	Mandatory	Type	Default Value	Description	Example Value
dashboardId	No	String	None	ID of the dashboard to be displayed. The default value is "". Add this parameter when you want to display a dashboard by default.	dashboardId=xxxxxxx
hideDashboardList	No	Boolean	false	Indicates whether to hide the dashboard drop-down list box. By default, the drop-down list box is not hidden. To hide it, set this parameter to true . Set this parameter to true when you want to hide the dashboard drop-down list box.	hideDashboardList=true
showCurrentdashboardGroup	No	Boolean	false	Indicates whether to display only the dashboard of the current group or template. The default value is false . Set this parameter to true when you want to display only the dashboard of the current group or template. Note: If hideDashboardList is set to true , this parameter is invalid.	showCurrentdashboardGroup=true

Parameter	Mandatory	Type	Default Value	Description	Example Value
streamId	No	String	None	Log stream ID: The default value is "". This parameter applies only to dashboard templates. Add this parameter when you want to select a specified log stream by default.	streamId=xxxxxx
streamDisabled	No	Boolean	false	By default, log streams can be selected from the log stream drop-down list. If you set this parameter to true , log streams cannot be selected from the drop-down list. This parameter applies only to dashboard templates. Add this parameter when you want to disable the log stream drop-down list.	streamDisabled=true

Parameter	Mandatory	Type	Default Value	Description	Example Value
filter	No	String	None	<p>Filter parameter. The value is the name of the filter to be selected and the selected item.</p> <p>key1 and key2 indicate the filter names. value1 and value2 indicate the values to be selected for key1. value3 and value4 indicate the values to be selected for key2. Separate filters by semicolons (;), and selected items by commas (,).</p> <p>Add this parameter when the keys and values of some filters need to be selected by default on the embedded dashboard page.</p>	filter=key1:value1,value2;key2:value3,value4
readonly	No	Boolean	false	<p>Indicates whether the scenario is read-only. In the read-only scenario, operation-related buttons are hidden, for example, creating a filter and adding, modifying, or deleting a dashboard.</p> <p>Add this parameter when you only need to display the dashboard and do not need the operation permission.</p>	readonly=true

Parameter	Mandatory	Type	Default Value	Description	Example Value
autoFresh	No	String	No	<p>Scheduled refresh interval. The default value is "".</p> <p>Add this parameter when you need to specify the default scheduled refresh interval. Currently, the refresh interval can be 0m (irregular refresh), 1m (scheduled refresh per 1 min), 5m (scheduled refresh per 5 min), or 15m (scheduled refresh per 15 min).</p>	autoFresh=1m

3 Interconnecting with the Grafana Plug-in (Default Mode)

3.1 Interconnecting with the Grafana Plug-in (Windows)

Grafana is a cross-platform open-source measurement analysis and visualization tool. It can query collected data, display the data in a visualized manner, and notify users in a timely manner.

LTS-Grafana is a plug-in of Grafana. It can analyze and display LTS data in a visualized manner.

Prerequisites

- **You have installed Grafana.**
 - The Grafana version must be 9.0.0 or later.
 - In Windows, you are advised to install Grafana on a non-system disk. Otherwise, you may not have the permission to open the **Grafana configuration file**.
 - After Grafana is installed, enter **localhost:3000** in the address box of the browser. The initial account and password are both **admin**.
- Download the **LTS-Grafana plug-in package**.
- The LTS-Grafana plug-in can be used only after the visualization function is enabled on the LTS console.

NOTE

Currently, this function is available to all users in regions CN South-Guangzhou, CN North-Beijing4, CN East-Shanghai1, CN East-Shanghai2, CN-Hong Kong, CN Southwest-Guiyang1, AP-Singapore, CN North-Beijing1, and AP-Bangkok. It is also available to whitelisted users in regions CN South-Shenzhen, ME-Riyadh, and AP-Jakarta.

Installing the LTS-Grafana Plug-in

Step 1 Install the LTS-Grafana plug-in.

1. Go to the Grafana installation directory, for example, **GrafanaLabs\grafana\data\plugins**.
2. Decompress the downloaded LTS-Grafana plug-in package to the **current location**. In this way, the file **lts-grafana-plugin** can be extracted.
3. Copy the file **lts-grafana-plugin** to the **GrafanaLabs\grafana\plugins-bundled\internal\input-datasource** directory.
4. Restart the Grafana service.

In **Task Manager**, choose **Services**, right-click **Grafana**, and choose **Restart** from the shortcut menu to restart the Grafana service.


Step 2 Modify the Grafana configuration file.

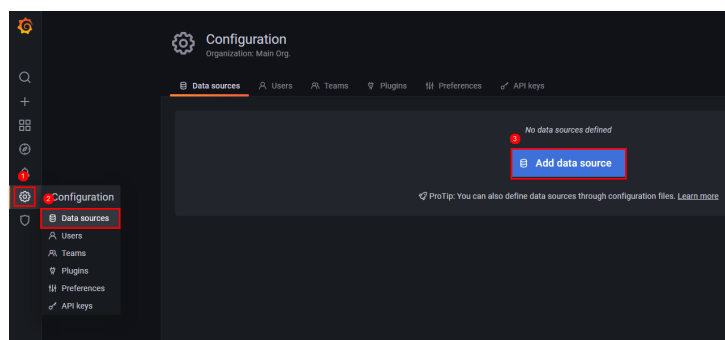
1. Open the configuration file.
 - **Installation directory\GrafanaLabs\grafana\conf\defaults.ini**
2. Configure **allow_loading_unsigned_plugins**.
`allow_loading_unsigned_plugins = hw-hws-lts-grafana-datasource-plugin`
3. Restart the Grafana service.

----End

Adding a Data Source

Step 1 Enter **localhost:3000** in the address box of the browser to log in to the Grafana service. The initial account and password are both **admin**.


Step 2 In the navigation pane on the left, click  and choose **Data sources**. On the **Data sources** page that is displayed, click **Add data source**.

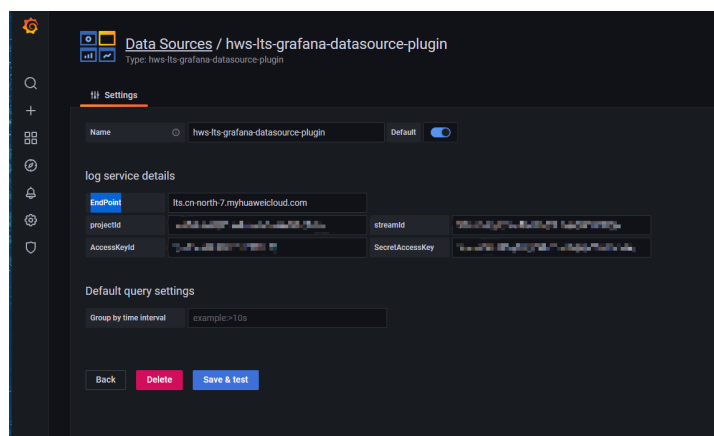


Step 3 Configure the data source.

Table 3-1 Parameters

Parameter	Description	Example Value
Name	Plug-in name, which can be customized.	hws-lts-grafana-datasource-plugin


Parameter	Description	Example Value
EndPoint	Select an endpoint based on your region. For details, see Regions and Endpoints .	-
projectId	Project ID of an account. Log in to the LTS console, move the cursor to the account name and choose My Credentials > API Credentials . On the API Credentials page, copy the project ID of the region.	-
Log StreamId	ID of the log stream with structuring configured. Log in to the LTS console and choose Log Management . Click  of the target log group and hover your cursor over the target log stream to copy its ID.	-
AccessKeyId/ SecretAccessKey	User access credential. Log in to the LTS console, move the cursor to the account name and choose My Credentials > Access Keys . On the Access Keys page, copy the access key ID.	-

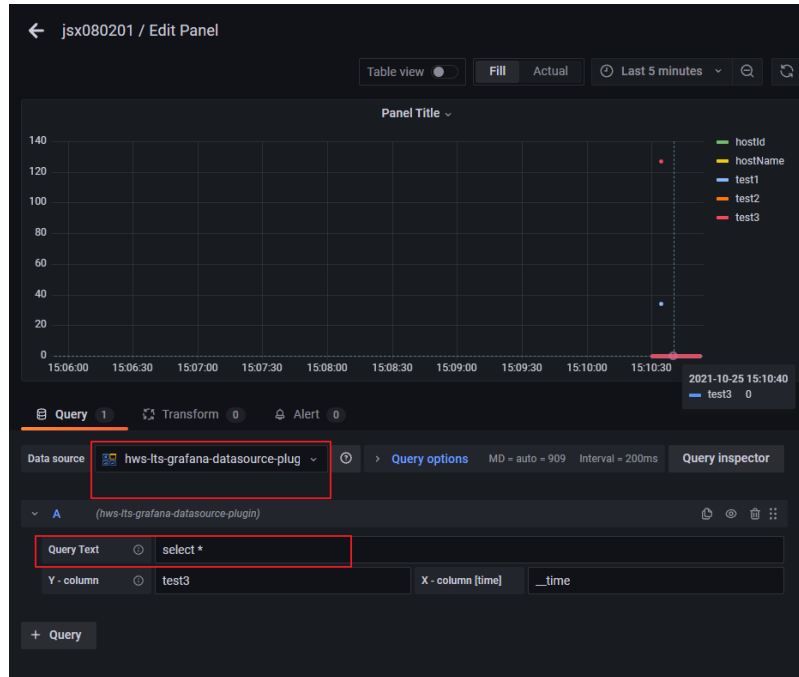



Step 4 Click **Save & test**.

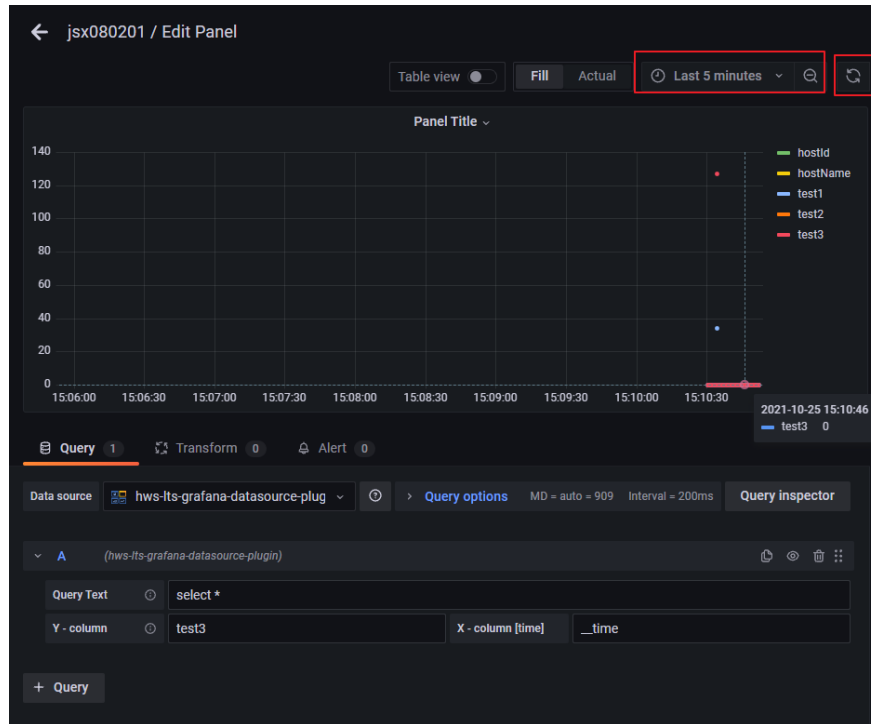
----End

Adding a Dashboard

- Step 1** In the navigation pane on the left, click  and choose **Dashboards**. On the **New dashboard** page, click **add an empty panel**.
- Step 2** On the **New dashboards** page, select **hws-lts-grafana-datasource-plugin** and enter the corresponding SQL statement.



- Step 3** Select the corresponding time in the upper right corner and click  to refresh and display the latest data.



Follow the following rules when configuring parameters of the LTS-Grafana plug-in:

- For table data, set the **x-column** parameter to **table**.
- For single-value data, set the **x-column** parameter to **single**.
- For charts that contain dimension columns, set the **x-column** parameter to the time column field and **y-column** to **col1:col2**. **col1** indicates the aggregation column, and **col2** indicates the data column.
- For bar charts, set the **x-column** parameter to **bar** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.
- For pie charts, set the **x-column** parameter to **pie** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.

----End

3.2 Interconnecting with the Grafana Plug-in (Linux)

Grafana is a cross-platform open-source measurement analysis and visualization tool. It can query collected data, display the data in a visualized manner, and notify users in a timely manner.

LTS-Grafana is a plug-in of Grafana. It can analyze and display LTS data in a visualized manner.

Prerequisites

- You have installed Grafana. For details, see [Grafana official documentation](#). The Grafana version must be 9.0.0 or later.

- Download the [LTS-Grafana plug-in package](#).
- The LTS-Grafana plug-in can be used only after the visualization function is enabled on the LTS console.

 **NOTE**

Currently, this function is available to all users in regions CN South-Guangzhou, CN North-Beijing4, CN East-Shanghai1, CN East-Shanghai2, CN-Hong Kong, CN Southwest-Guiyang1, AP-Singapore, CN North-Beijing1, and AP-Bangkok. It is also available to whitelisted users in regions CN South-Shenzhen, ME-Riyadh, and AP-Jakarta.

Installing the LTS-Grafana Plug-in

Step 1 Run the following command to decompress the LTS Grafana plug-in package to the Grafana plug-in directory:

- Grafana installed using YUM or RPM:

```
unzip LTS-Grafana-OBS-Static.1.0.10.zip -d /var/lib/grafana/plugins
```
- Grafana installed using a .tar.gz file:
{PATH_TO} indicates the Grafana installation path, and *{VERSION}* indicates the Grafana version.

```
unzip LTS-Grafana-OBS-Static.1.0.10.zip -d {PATH_TO}/grafana-{VERSION}/plugins-bundled/internal/input-datasource
```

Step 2 Modify the Grafana configuration file.

- Open the configuration file:
 - Grafana installed using YUM or RPM: `/etc/grafana/grafana.ini`
 - Grafana installed using a .tar.gz file: `{PATH_TO}/grafana-{VERSION}/conf/defaults.ini`
- Configure the **allow_loading_unsigned_plugins** parameter in the **[plugins]** section of the configuration file.

```
allow_loading_unsigned_plugins = hw-hws-lts-grafana-datasource-plugin
```

Step 3 Restart Grafana.


- Run the **kill** command to stop the Grafana process.
- Run the following commands to start Grafana:
 - Grafana installed using YUM or RPM:

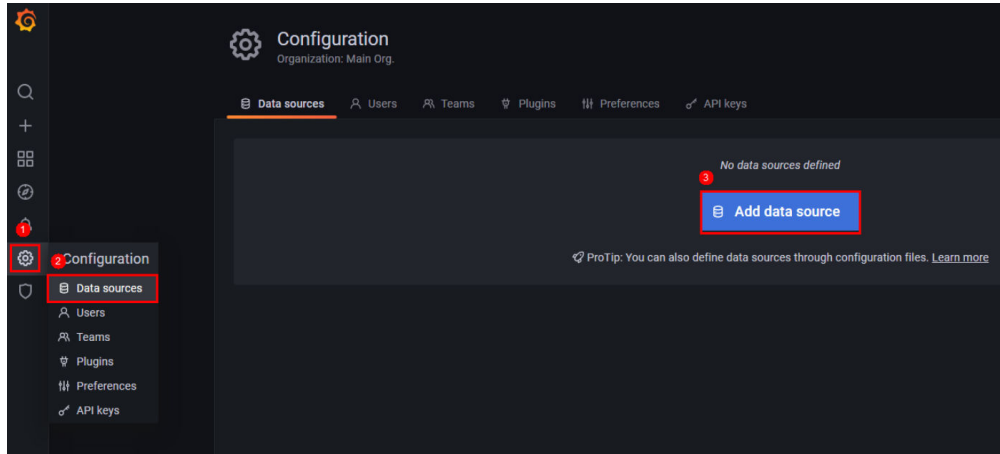
```
systemctl restart grafana-server
```
 - Grafana installed using a .tar.gz file:

```
./bin/grafana-server web
```

----End

Adding a Data Source

Step 1 In the navigation pane on the left, click  and choose **Data sources**. On the **Data sources** page that is displayed, click **Add data source** to add a data source and select **hws-lts-grafana-datasource-plugin**.



Step 2 Configure the data source and click **Save & test**.

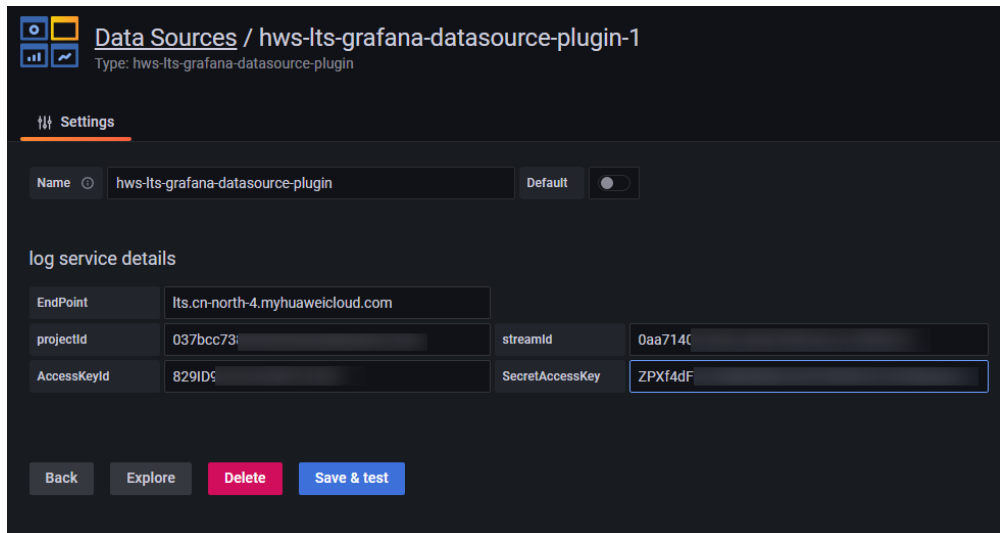



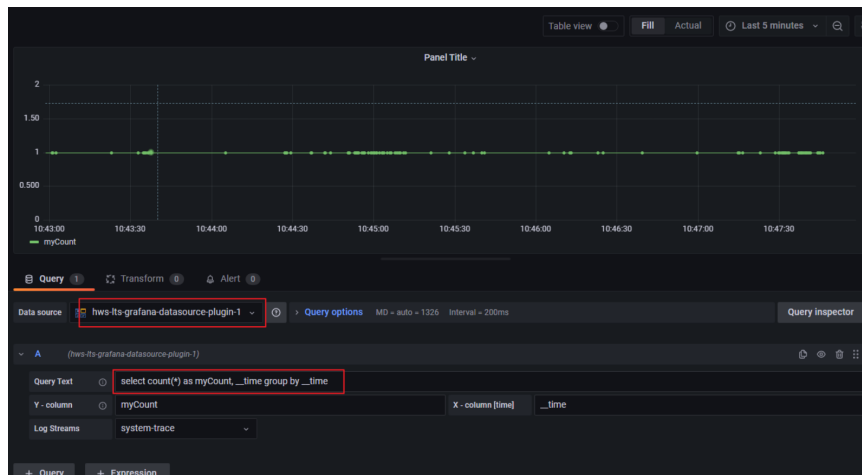
Table 3-2 Parameters


Parameter	Description	Example Value
Name	Plug-in name, which can be customized.	hws-lts-grafana-datasource-plugin
EndPoint	Select an endpoint based on your region. For details, see Regions and Endpoints .	-
projectId	Project ID of an account. Log in to the LTS console, move the cursor to the account name and choose My Credentials > API Credentials . On the API Credentials page, copy the project ID of the region.	-

Parameter	Description	Example Value
Log StreamId	ID of the log stream with structuring configured. Log in to the LTS console and choose Log Management . Click  of the target log group and hover your cursor over the target log stream to copy its ID.	-
AccessKeyId/ SecretAccessKey	User access credential. Log in to the LTS console, move the cursor to the account name and choose My Credentials > Access Keys . On the Access Keys page, copy the access key ID.	-

Step 3 Add a dashboard.

1. In the navigation pane on the left, choose **Dashboards**. On the **New dashboard** page, click **add an empty panel**.
2. On the **New dashboards** page, select **hws-lts-grafana-datasource-plugin** and enter the corresponding SQL statement.



3. Select the corresponding time in the upper right corner and click  to refresh and display the latest data.

Follow the following rules when configuring parameters of the LTS-Grafana plug-in:

- For table data, set the **x-column** parameter to **table**.
- For single-value data, set the **x-column** parameter to **single**.
- For charts that contain dimension columns, set the **x-column** parameter to the time column field and **y-column** to **col1:col2**. **col1** indicates the aggregation column, and **col2** indicates the data column.

- For bar charts, set the **x-column** parameter to **bar** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.
- For pie charts, set the **x-column** parameter to **pie** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.

----End

4 Interconnecting with the Grafana Plug-in (Pipe Character)

4.1 Interconnecting with the Grafana Plug-in (Windows)

Grafana is a cross-platform open-source measurement analysis and visualization tool. It can query collected data, display the data in a visualized manner, and notify users in a timely manner.

LTS-Grafana is a plug-in of Grafana. It can analyze and display LTS data in a visualized manner.

Prerequisites

- **You have installed Grafana.**
 - The Grafana version must be 9.0.0 or later.
 - In Windows, you are advised to install Grafana on a non-system disk. Otherwise, you may not have the permission to open the **Grafana configuration file**.
 - After Grafana is installed, enter **localhost:3000** in the address box of the browser. The initial account and password are both **admin**.
- Download the **LTS-Grafana plug-in package of the pipe character version**.
- LTS-Grafana can be used only after the pipe character function has been enabled on the LTS console.

Currently, this function is applicable only to regions LA-Mexico City², CN East-Shanghai¹, AP-Singapore, CN North-Beijing⁴, CN South-Guangzhou, and CN East-Qingdao.

Installing the LTS-Grafana Plug-in

Step 1 Install the LTS-Grafana plug-in.

1. Go to the Grafana installation directory, for example, **GrafanaLabs\grafana\data\plugins**.

2. Decompress the downloaded LTS-Grafana plug-in package to the **current location**. In this way, the file **lts-grafana-plugin** can be extracted.
3. Copy the file **lts-grafana-plugin** to the **GrafanaLabs\grafana\plugins-bundled\internal\input-datasource** directory.
4. Restart the Grafana service.
In **Task Manager**, choose **Services**, right-click **Grafana**, and choose **Restart** from the shortcut menu to restart the Grafana service.


Step 2 Modify the Grafana configuration file.

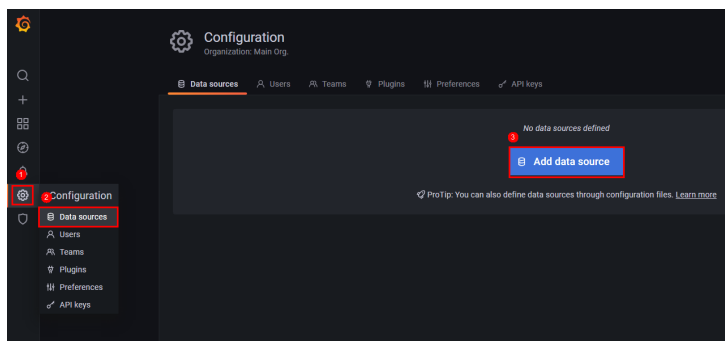
1. Open the configuration file.
– **Installation directory\GrafanaLabs\grafana\conf\defaults.ini**
2. Configure **allow_loading_unsigned_plugins**.
allow_loading_unsigned_plugins = hw-hws-lts-grafana-datasource-plugin
3. Restart the Grafana service.

----End

Adding a Data Source

Step 1 Enter **localhost:3000** in the address box of the browser to log in to the Grafana service. The initial account and password are both **admin**.


Step 2 In the navigation pane on the left, click  and choose **Data sources**. On the **Data sources** page that is displayed, click **Add data source**.

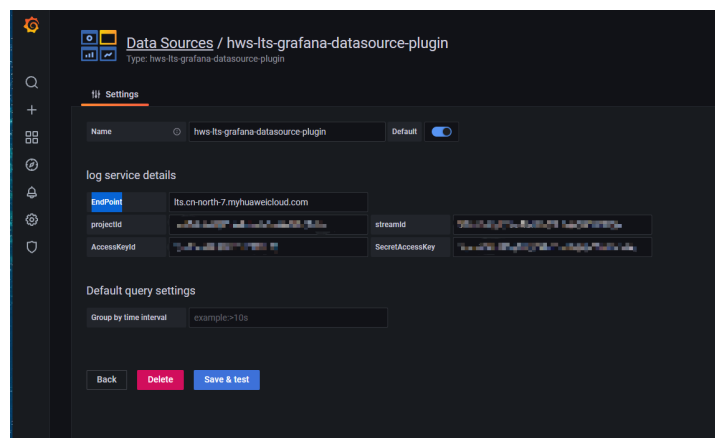


Step 3 Configure the data source.

Table 4-1 Parameters

Parameter	Description	Example Value
Name	Plug-in name, which can be customized.	hws-lts-grafana-datasource-plugin
EndPoint	Select an endpoint based on your region. For details, see Regions and Endpoints .	-


Parameter	Description	Example Value
projectId	Project ID of an account. Log in to the LTS console, move the cursor to the account name and choose My Credentials > API Credentials . On the API Credentials page, copy the project ID of the region.	-
Log GroupId	ID of the log group with structuring configured. Log in to the LTS console. On the Log Management page, hover the cursor over the target log group to copy its ID.	-
Log StreamId	ID of the log stream with structuring configured. Log in to the LTS console and choose Log Management . Click  of the target log group and hover your cursor over the target log stream to copy its ID.	-
AccessKeyId/ SecretAccessKey	User access credential. Log in to the LTS console, move the cursor to the account name and choose My Credentials > Access Keys . On the Access Keys page, copy the access key ID.	-



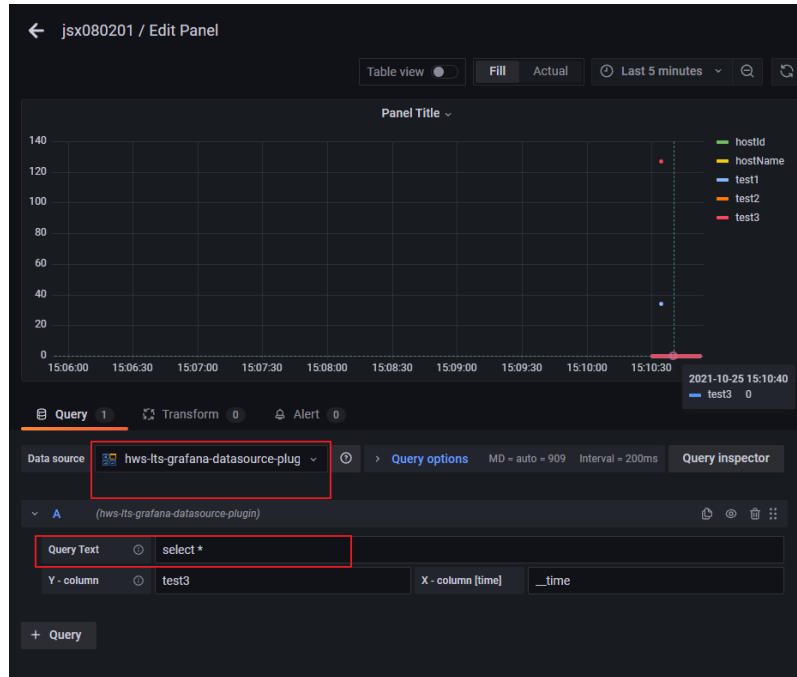
Step 4 Click **Save & test**.


----End

Adding a Dashboard

Step 1 In the navigation pane on the left, click  and choose **Dashboards**. On the **New dashboard** page, click **add an empty panel**.

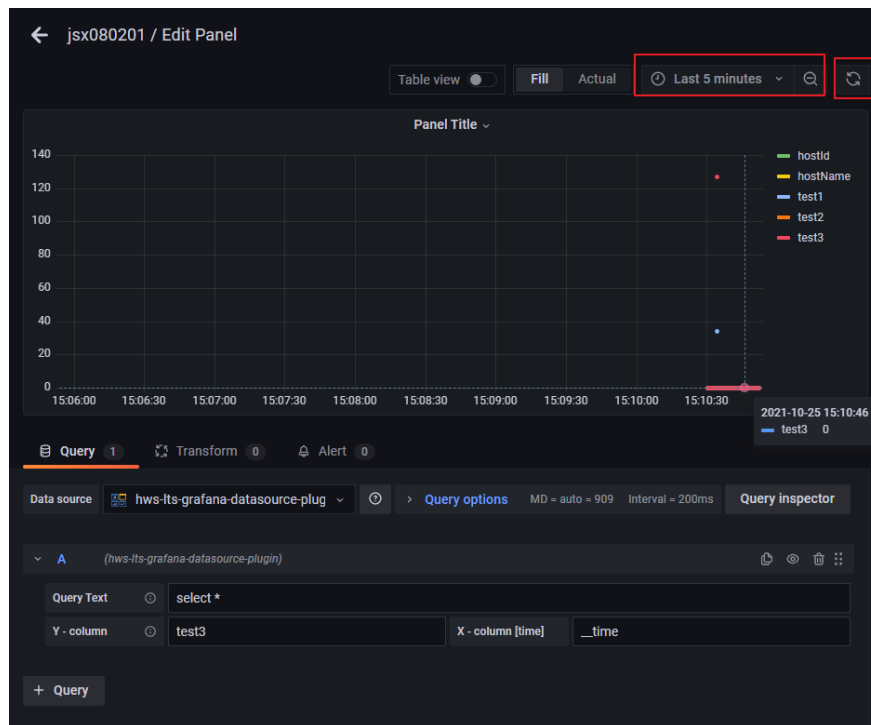
Step 2 On the **New dashboards** page, select **hws-lts-grafana-datasource-plugin** and enter the corresponding SQL statement.



Step 3 Select the corresponding time in the upper right corner and click  to refresh and display the latest data.

Follow the following rules when configuring parameters of the LTS-Grafana plug-in:

- For table data, set the **x-column** parameter to **table**.
- For single-value data, set the **x-column** parameter to **single**.
- For charts that contain dimension columns, set the **x-column** parameter to the time column field and **y-column** to **col1:col2**. **col1** indicates the aggregation column, and **col2** indicates the data column.
- For bar charts, set the **x-column** parameter to **bar** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.
- For pie charts, set the **x-column** parameter to **pie** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.



----End

4.2 Interconnecting with the Grafana Plug-in (Linux)

Grafana is a cross-platform open-source measurement analysis and visualization tool. It can query collected data, display the data in a visualized manner, and notify users in a timely manner.

LTS-Grafana is a plug-in of Grafana. It can analyze and display LTS data in a visualized manner.

Prerequisites

- You have installed Grafana. The Grafana version must be 9.0.0 or later. For details, see [Grafana official documentation](#).
- Download the [LTS-Grafana plug-in package of the pipe character version](#).
- LTS-Grafana can be used only after the pipe character function has been enabled on the LTS console.

Currently, this function is applicable only to regions LA-Mexico City2, CN East-Shanghai1, AP-Singapore, CN North-Beijing4, CN South-Guangzhou, and CN East-Qingdao.

Installing the LTS-Grafana Plug-in

Step 1 Run the following command to decompress the LTS Grafana plug-in package to the Grafana plug-in directory:

- Grafana installed using YUM or RPM:

```
unzip LTS-Grafana-OBS-Static.2.0.1.zip -d /var/lib/grafana/plugins
```
- Grafana installed using a .tar.gz file:

`{PATH_TO}` indicates the Grafana installation path, and `{VERSION}` indicates the Grafana version.

```
unzip LTS-Grafana-OBS-Static.2.0.1.zip -d {PATH_TO}/grafana-{VERSION}/plugins-bundled/internal/  
input-datasource
```

Step 2 Modify the Grafana configuration file.

- Open the configuration file:
 - Grafana installed using YUM or RPM: `/etc/grafana/grafana.ini`
 - Grafana installed using a .tar.gz file: `{PATH_TO}/grafana-{VERSION}/conf/defaults.ini`
- Configure the `allow_loading_unsigned_plugins` parameter in the `[plugins]` section of the configuration file.

```
allow_loading_unsigned_plugins = hw-hws-lts-grafana-datasource-plugin
```

Step 3 Restart Grafana.


- Run the `kill` command to stop the Grafana process.
- Run the following commands to start Grafana:
 - Grafana installed using YUM or RPM:

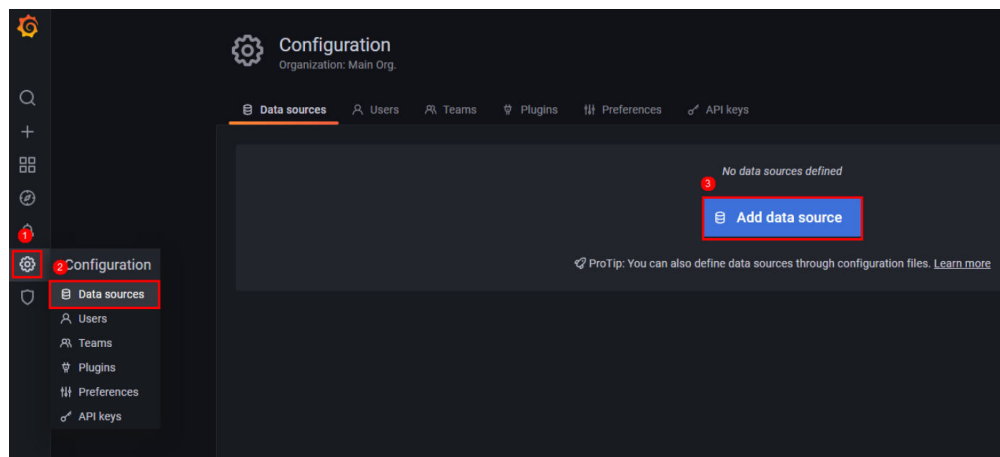
```
systemctl restart grafana-server
```
 - Grafana installed using a .tar.gz file:

```
./bin/grafana-server web
```

----End

Adding a Data Source

Step 1 In the navigation pane on the left, click  and choose **Data sources**. On the **Data sources** page that is displayed, click **Add data source** to add a data source and select `hws-lts-grafana-datasource-plugin`.



Step 2 Configure the data source and click **Save & test**.

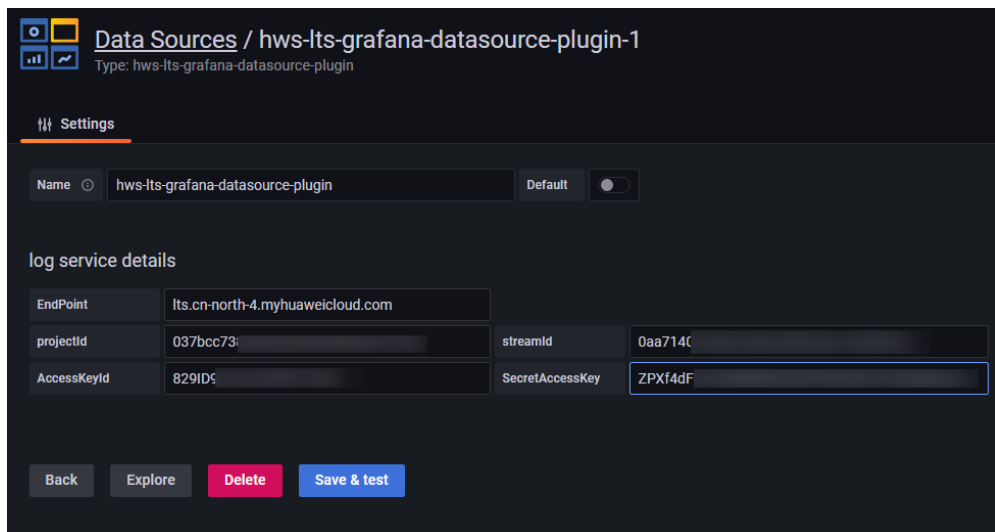



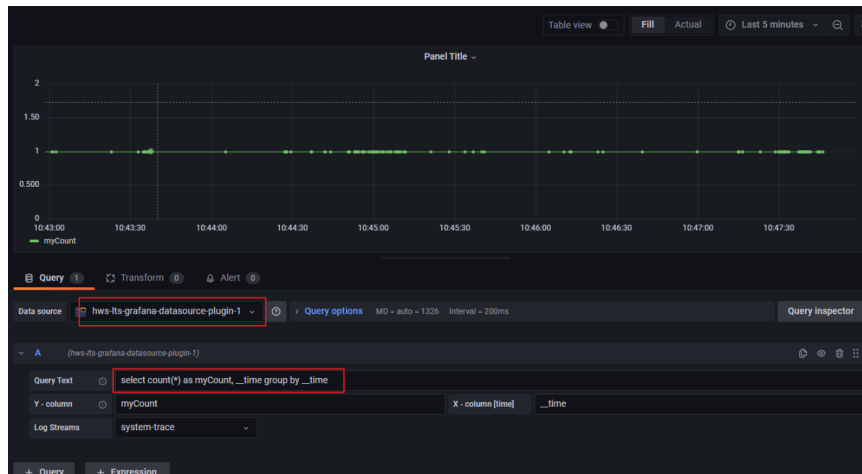
Table 4-2 Parameters


Parameter	Description	Example Value
Name	Plug-in name, which can be customized.	hws-lts-grafana-datasource-plugin
EndPoint	Select an endpoint based on your region. For details, see Regions and Endpoints .	-
projectId	Project ID of an account. Log in to the LTS console, move the cursor to the account name and choose My Credentials > API Credentials . On the API Credentials page, copy the project ID of the region.	-
Log GroupId	ID of the log group with structuring configured. Log in to the LTS console. On the Log Management page, hover the cursor over the target log group to copy its ID.	-
Log StreamId	ID of the log stream with structuring configured. Log in to the LTS console and choose Log Management . Click  of the target log group and hover your cursor over the target log stream to copy its ID.	-

Parameter	Description	Example Value
AccessKeyId/ SecretAccessKey	User access credential. Log in to the LTS console, move the cursor to the account name and choose My Credentials > Access Keys . On the Access Keys page, copy the access key ID.	-

Step 3 Add a dashboard.

1. In the navigation pane on the left, choose **Dashboards**. On the **New dashboard** page, click **add an empty panel**.
2. On the **New dashboards** page, select **hws-lts-grafana-datasource-plugin** and enter the corresponding SQL statement.



3. Select the corresponding time in the upper right corner and click  to refresh and display the latest data.

Follow the following rules when configuring parameters of the LTS-Grafana plug-in:

- For table data, set the **x-column** parameter to **table**.
- For single-value data, set the **x-column** parameter to **single**.
- For charts that contain dimension columns, set the **x-column** parameter to the time column field and **y-column** to **col1:col2**. **col1** indicates the aggregation column, and **col2** indicates the data column.
- For bar charts, set the **x-column** parameter to **bar** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.
- For pie charts, set the **x-column** parameter to **pie** and **y-column** to **col1,col2**. **col1** indicates the category column, and **col2** indicates the data column.

----End