Log Tank Service

Developer Guide

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 01

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HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

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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 LTS in Huawei Cloud User- built Systems (Password- free Login)	All functions on the LTS console	The iframe can be embedded into the O&M system of the enterprise and login through the enterprise authenticatio n system is allowed.	Low. Front- end iframe embedding is required.	Enterprise authenticatio n system
Interconnecti ng with the Grafana Plug-in	Dashboard and alarm functions of Grafana	Supported. Log stream data is ingested to Grafana.	None	Grafana's permission management system

2 Embedding LTS in Huawei Cloud Userbuilt Systems (Password-free Login)

Introduction

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.

Scenario

- 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 to log 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.

Procedure

Perform steps 1 to 5 to create an identity broker and an agency, which are closely related to the IAM service. After the operations on IAM are complete, perform steps 6 to 8 to embed the log page.

- 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 permission in global service to the user group. This permission can only be switched 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**.

D NOTE

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.
 - 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, select the LTS ReadOnlyAccess permission (read-only permission of LTS, which can only query LTS data but cannot modify LTS settings), and click **Next**, as shown in the following figure.

Figure 2-1 Selecting a policy/role

Stelet PolicyRate (2) Select Scope (3) Filiati		
Assign selected permissions to lam_for_lts.	Ce	sate Policy
View Selected (3) Copy Permission: from Anather Project	All policies/roles • All services • Fazzy search • ITS ReadOnlyAccess	×Q
PolicyRole Name	Type	
□ v LT3 ReseChapAccess This read-only permissions to all Log Tests service resources.	System-defined policy	

- 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.)
 - 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**.



}

}

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_f8530fd2e48e21cc953d48988219b639
x-request-id: f8530fd2e48e21cc953d48988219b639
x-subject-token
MIIRSQYJKoZIhvcNAQcCollROjCCETYCAQExDTALBalahkaBZQMEAqEwaq9bBgkahkiG9w0BBwGgag9MBIIPSHsidG9r;
a3ivRMc3TudvocOQBg+4-QIhbppckgY1M3LS7pFv0vW2rGJEPAvrK9V+tb5zBaH5RwE1rfMl99PxmsGSFhLh9EUH6WMr9:
+Zk1Y26HpaQgrrTkKOG9+PYPRw02ktSvgPaDioeWIMivF-5T0Ng3BT3srVfWZb3uPWihM0Ls2r6w==
x-xss-protection: 1; mode=block;

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**, as shown in the following figure.

 Yelle
 Yelle

 X-Auto-Token
 MIRSOY //AZTIN-0HAD-CORROCCETYCAGE-0TALByghtyBZOMEAgEng5b8Bylghx069x058BirG9x058Bir

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.



Obtain the temporary access key from the response body, as shown in the following figure.

Figure 2-3 Obtaining a temporary access key

```
    credential: {
        access: "ZMC5PD5C5IE5V10X4JCE",
            expires_at: "2023-09-27T07:33:18.912000Z",
            secret: "IOA5hKWDuxLYN3uJLUOGqB9g2RDvOFdkRty32h7X",
            securitytoken: "gQpjbi1ub3J0aC00iZMdAa3kx9GOIg0zTTob5wvpFPee-hVQjagvQfE_6
            XhCXSmJw79obJuQVHeLA0SGiPTey_40BI-5OmBwDuYXgLixMcTIS4XoXBAxqo4hYR
            QGvl4heEj3X834BlpfOApOBLA1433er9ViO6Gz_qio48jXSSyPBQ2i993320D3lBWUA0n
            XEIJtk5OpIOYWWU56DmPHNDvaX1AwxwTzsXGg29dLW27L-RVVp6wN9WGvbgWKJ
            iQkAjAMnx6_ajfmcptquc7ibB1JsoF8vB5baQ8eOKpsSypCqLiSY7vhWgicykmmKUcW_1
            uNqz24LzPaxaUZEv9sMeJK9MIq7dfccachmDw5wXGGwQQzIV8bT2GZr15xd0qipVbM:
            RdefvTQWYon1Qzc3pL5pkw7Qn491FN9rJqpG6lkXiSJihyMY6smZEmBVpRQd75CHUI
            1E6YRCvEkQxtCtmqolLuRDzd6-IpEjEKEutLR_fHLPGeOvCmkAklytgkCag-_zFneRlvhH
            U19ttPcyVRxsbppknFbox2jVGWyrlHI4GvvfEfZbOYAQ0jIPgGCtfxwGaUm8slQCyyBPjP4
            XK8UDV8uioCv5QNMkjXLCXiAaW7bshSITqn66b9LCOp36q_CvqfCn2XgWmMzHP2vN
        }
```

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

API type: POST

ł

}

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).



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

Figure 2-4 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/ison: 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: MIIEEgYJKoZIhvcNAQcCoIIEAzCCA-
  8CAQExDTALBglghkgBZQMEAgEwgglkBgkqhkiG9w0BBwGggglVBIICEXsibG9naW50b2tlbil6eyJkb21haW5
  mDmgm7xaRF7MPveGMBMj8worNmn8r+NCkfKGYUpxgHbCFIdnaFbI9YGZWCBbNyul1zTcdIXjK-YZrB5iLs(
  WcdOcOAQWEFVTju9iGnCn6ve3ESULb5+61FQGtkoQ7dxITjobYLmL5rjnmHSsnKmvbll5eJpsFGddV1nTFG
  WDq8ZzMtpZRe8B5NTvOwXvCq5KBBeup+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}

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.

Table 2-1 URL parameters

D NOTE

- 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. The following table 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}

Paramete r	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. 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**.

<body>
<iframe src="*target_urt*" width="100%" height="96%" id="ltsIframePage"></iframe>
</body>

----End

LTS URL

 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 2-2 Parameters

Paramet er	Mand atory	Туре	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}&isFoldLabe l={isFoldLabel}&hideStreamName={hideStreamName}&showK8sFilter={showK8sFilter}&clusterId={clus terId}&hideBarChart={hideBarChart}&hideTabs={hideTabs}&condition={condition}

Table 2-3	Parameters
-----------	------------

Paramet er	Man dator y	Туре	De fau lt Val ue	Description
regionId	Yes	String	No ne	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.
groupld	Yes	String	No ne	Log group ID.
topicld	Yes	String	No ne	Log stream ID.
epsld	No	String	No ne	ID of the enterprise project of a log stream. If there is no enterprise project, the value is 0 .
hideHead er	No	Boolea n	fals e	Whether to hide the list on the left and the horizontal log stream list on the top. If yes, set this parameter to true . NOTE This parameter takes effect only for iframe embedding.
fastAnaly sisCollaps ed	No	Boolea n	fals e	Whether to collapse quick analysis. If yes, set this parameter to true .
hideDash board	No	Boolea n	fals e	Whether to hide the dashboard creation icon. If yes, set this parameter to true .
hideFeed back	No	Boolea n	fals e	Whether to hide the comment button. If yes, set this parameter to true .
isFoldLab el	No	Boolea n	tru e	Whether to display the label field in a new line in the log table. If yes, set this parameter to true .
hideStrea mName	No	Boolea n	fals e	Whether to hide the log stream name. If yes, set this parameter to true .
showK8s Filter	No	Boolea n	fals e	Whether to display the container log filter criteria. For container log search, you can set this parameter to true .

Paramet er	Man dator y	Туре	De fau lt Val ue	Description
clusterId	No	String	No ne	Cluster ID. This parameter is mandatory only when showK8sFilter is set to true .
hideBarC hart	No	Boolea n	fals e	Whether to collapse the log quantity statistics chart by default. If yes, set this parameter to true .
hideTabs	No	Boolea n	fals e	Whether to hide the Raw Logs , Visualization , and Real-Time Logs tabs. By default, the tabs are not hidden. To hide them, set this parameter to true .
hideShar e	No	Boolea n	fals e	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.
condition	No	String	No ne	 Log search criteria, for example, name:a and age:12 and addr:xx. 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}

Paramet er	M an da to ry	Ty pe	De fau lt Val ue	Description
regionId	Ye s	Str ing	No ne	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.
groupId	Ye s	Str ing	No ne	Log group ID.
topicId	Ye s	Str ing	No ne	Log stream ID.
epsId	N o	Str ing	No ne	ID of the enterprise project of a log stream. If there is no enterprise project, the value is 0 .
hideHead er	N o	Bo ole an	fals e	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	N o	Str ing	No ne	SQL query statement, for example, SELECT count (*).

4. The basic URL of the dashboard page is as follows. https://console-intl.huaweicloud.com/lts/?

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}

Parame ter	M an da to ry	Туре	De fau lt Val ue	Description	Example Value
regionId	Ye s	Strin g	No ne	Region ID. After logging in to the console, obtain the region ID from the address bar of the browser.	region=xx-xx-xx

Table 2-5 Parameters

Parame ter	M an da to ry	Туре	De fau lt Val ue	Description	Example Value
dashboa rdld	N o	Strin g	No ne	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
hideDas hboardLi st	N o	Boole an	fals e	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=tr ue
showCur rentdash boardGr oup	No	Boole an	fals e	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.	showCurrentdash- boardGroup=true

Parame ter	M an da to ry	Туре	De fau lt Val ue	Description	Example Value
streamld	N o	Strin g	No ne	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.	streamld=xxxxx
streamD isabled	N o	Boole an	fals e	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

Parame ter	M an da to ry	Туре	De fau lt Val ue	Description	Example Value
filter	N	Strin g	No ne	Filter parameter. The value is the name of the filter to be selected and the selected item. 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 (,). Add this parameter when the keys and values of some filters need to be selected by default on the embedded dashboard page.	filter=key1:value1,valu e2;key2:value3,value4
readonly	N O	Boole an	fals e	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. Add this parameter when you only need to display the dashboard and do not need the operation permission.	readonly=true

Parame ter	M an da to ry	Туре	De fau lt Val ue	Description	Example Value
autoFres h	N o	Strin g	No ne	Scheduled refresh interval. The default value is "".	autoFresh=1m
				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).	

3 Interconnecting with the Grafana Plug-

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.

NOTE

- 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-Beijing1, CN North-Beijing4, CN East-Shanghai1, CN East-Shanghai2, CN Southwest-Guiyang1, CN-Hong Kong, AP-Bangkok, and AP-Singapore. It is also available to whitelisted users in regions AP-Jakarta and CN South-Shenzhen. It is not available in other regions.

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\pluginsbundled\internal\input-datasource** directory.
 - 4. Restart the Grafana service.

NOTE

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.

NOTE

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**.

් ර		Configuration Organization Main Org
+		
88		No data sources defined
Ø		
ô		E Add data source
۲	2Configuration	I ProTip: You can also define data sources through configuration files. Learn more
Ū	😫 Data sources	
	옷 Users	
	A Teams	
	11 Preferences	
	of API keys	



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. NOTE 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 Streamld	ID of the log stream with structuring configured. NOTE 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. NOTE 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.	-

 Table 3-1 Parameters



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.

← jsx080201 /	← jsx080201 / Edit Panel					
		Table view Fill	Actual ④ Last 5 minute	85 Y Q J		
		Panel Title ~				
140 120 100				 hostld hostName test1 test2 		
80 60						
40 20 0			•			
15:06:00 15:06:30	0 15:07:00 15:07:30 15:08:00	15:08:30 15:09:00 15:09	1:30 15:10:00 15:10:30	2021-10-25 15:10:46 test3 0		
Data source	E Query 1 ∑ Transform 0 A lert 0 Data source Image: hws-lts-grafana-datasource-plug ✓ O > Query options MD = auto = 909 Interval = 200ms Query inspector					
Query Text ③	select *					
Y - column 💿	test3	X - column [time]	time			
+ Query						

NOTE

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**.

NOTE

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-Beijing1, CN North-Beijing4, CN East-Shanghai1, CN East-Shanghai2, CN Southwest-Guiyang1, CN-Hong Kong, AP-Bangkok, and AP-Singapore. It is also available to whitelisted users in regions AP-Jakarta and CN South-Shenzhen. It is not available in other regions.

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 ²²² 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**.

Ø		Configuration organization: Main Org.
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+		
88		No data sources defined
Ø		
Ó		Add data source
٢	2 Configuration	<i>Q</i> ProTip: You can also define data sources through configuration files. Learn more
Ū	Data sources	
	유 Users	
	A Teams	
	♥ Plugins	
	the Preferences	
	o [⊀] API keys	



Data Sources / hws-lts-grafana-datasource-plugin-1 Type: hws-lts-grafana-datasource-plugin					
Name hws-Its log service detai					
EndPoint	lts.cn-north-4.myhuaweicloud.com				
projectId	037bcc73	streamId	0aa714(
AccessKeyld	829ID\$	SecretAccessKey	ZPXf4dF		
Back Explo	re Delete 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 .	-
projectld	Project ID of an account. NOTE 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 Streamld	ID of the log stream with structuring configured. NOTE 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.	-
Accesskeyld/ SecretAccessKey	User access credential. NOTE 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.

						Table view	v 🌒 🕅	Actual)Last 5 minutes 🗸 🔾
Panel Title ~									
0.500									
0 10:43:00	10:43:30	10:44:00	10:44:30	10:45:00	10:45:30	10:46:00	10:46:30	10:47:00	10:47:30
— mycount									
Query 1 1 Transform 0 Q. Alert 0									
Data source The source-plugin-1 V O Vuery options MD - auto - 1326 Interval - 200ms									
									© ⊗ û ∷
Query Text 🕕	select count(*) as myCount,_time group by_time								
Y - column 💿	myCount				X - column [tim	e]time			
Log Streams	system-trace								
+ Query + E	Expression								

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

NOTE

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