

# Alibaba Cloud Log Service

## Preparation

Issue: 20190802

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# Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 <b>Danger:</b> Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 <b>Warning:</b> Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 <b>Notice:</b> Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
<b>Bold</b>	It is used for buttons, menus, page names, and other UI elements.	Click <b>OK</b> .
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[ ] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand   slave}</code>



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# 1 Preparation

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Log Service provides multiple log collection methods. You can use Log Service to collect Elastic Compute Service (ECS) logs, local server logs, IoT device logs, and other cloud product logs.

Before using Log Service, you must first make the following preparations.

## Procedure

### 1. Activate Log Service

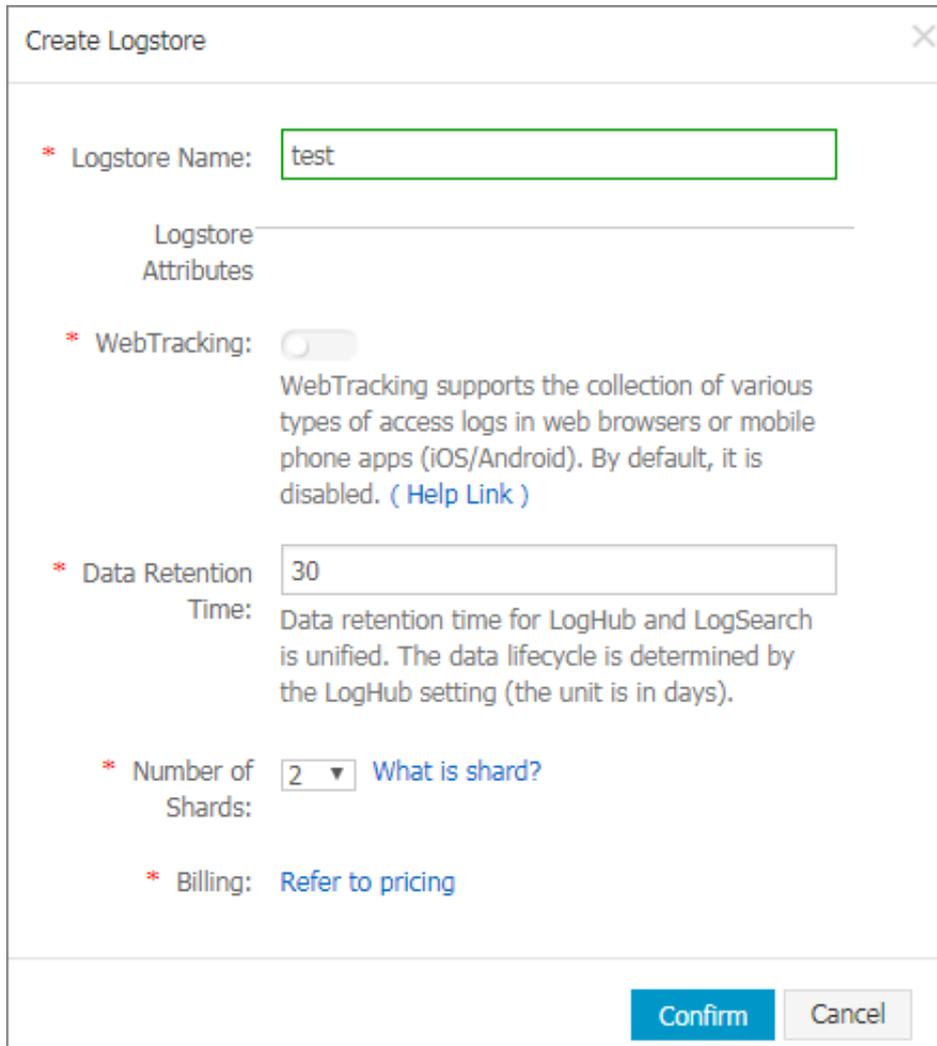
Log on to the [Log Service product page](#) with your registered Alibaba Cloud account. Click Get it Free. The system automatically redirects to the purchase page. Select the I agree with Log Service Agreement of Service check box and then click Enable Now to activate Log Service.

### 2. Ceate and enable AccessKey (for API/SDKs ).

An AccessKey is required to collect logs by using Logtail. Before using Log Service, you must create an AccessKey.

In the [Log Service console](#), hover your mouse over your avatar in the upper-right corner. Select accesskeys from the drop-down list . Click Continue to manage

AccessKey in the appeared dialog box. The Access Key Management page appears. Create an AccessKey and check whether the created AccessKey is enabled.



Create Logstore

\* Logstore Name: test

Logstore Attributes

\* WebTracking:  WebTracking supports the collection of various types of access logs in web browsers or mobile phone apps (iOS/Android). By default, it is disabled. ([Help Link](#))

\* Data Retention Time: 30 Data retention time for LogHub and LogSearch is unified. The data lifecycle is determined by the LogHub setting (the unit is in days).

\* Number of Shards: 2 [What is shard?](#)

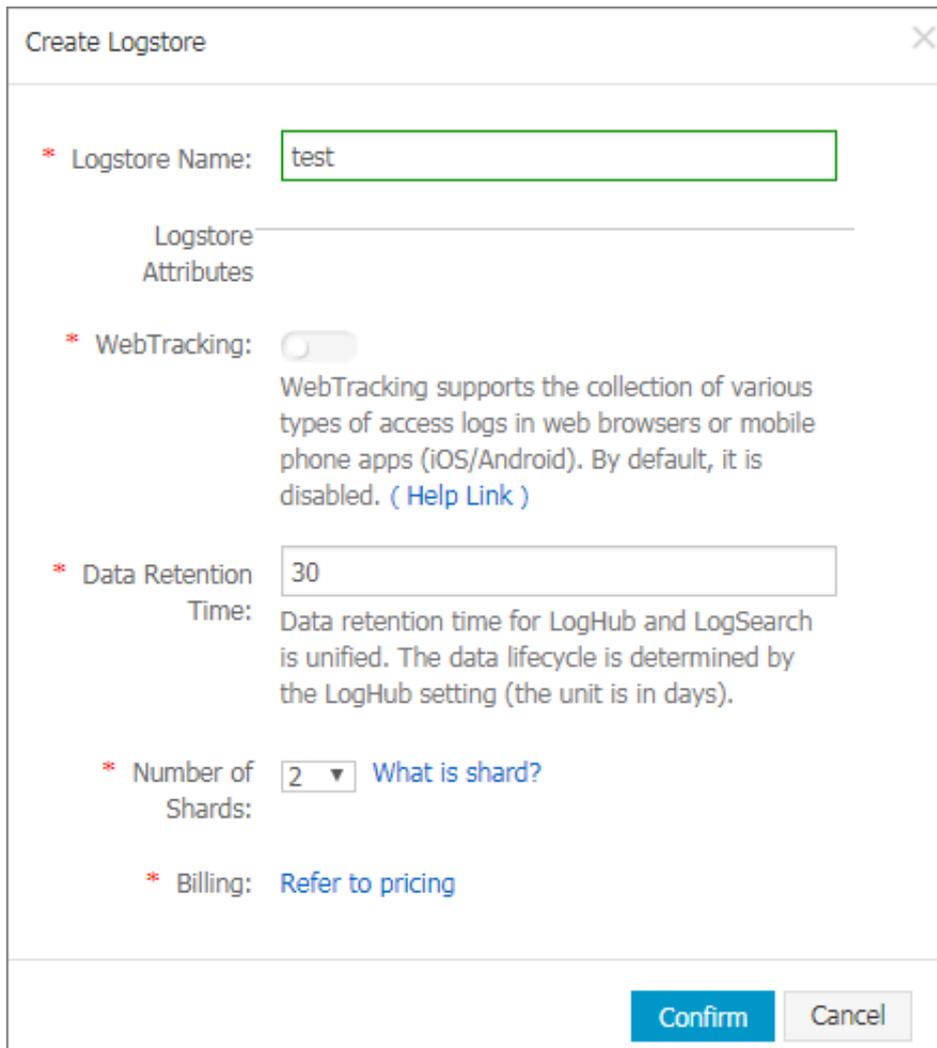
\* Billing: [Refer to pricing](#)

Confirm Cancel

### 3. Create a project

When you log on to the Log Service console for the first time, the system prompts you to create a project. You can also click **Create a project** in the upper-right corner.

You can also modify project description and delete a project. For more information, see [Manage projects](#).



The screenshot shows a 'Create Logstore' dialog box with the following fields and options:

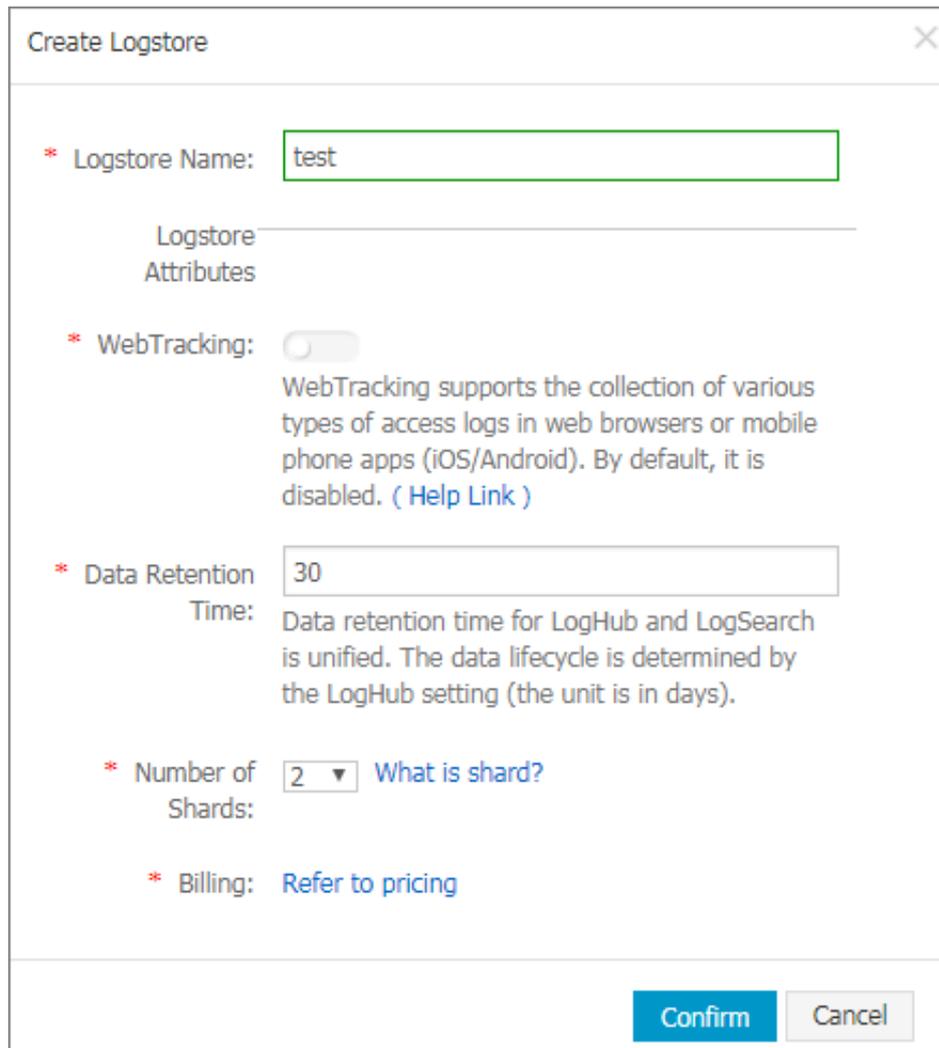
- Logstore Name:** A text input field containing the value 'test'.
- Logstore Attributes:** A section header.
- WebTracking:** A toggle switch that is currently turned off. Below it, text reads: 'WebTracking supports the collection of various types of access logs in web browsers or mobile phone apps (iOS/Android). By default, it is disabled. ( [Help Link](#) )'.
- Data Retention Time:** A text input field containing the value '30'. Below it, text reads: 'Data retention time for LogHub and LogSearch is unified. The data lifecycle is determined by the LogHub setting (the unit is in days).'
- Number of Shards:** A dropdown menu showing the value '2' and a link that says 'What is shard?'.
- Billing:** A link that says 'Refer to pricing'.

At the bottom right of the dialog, there are two buttons: 'Confirm' (in blue) and 'Cancel' (in grey).

#### 4. Create Logstore.

The system prompts you to create a Logstore after you create a project. You can also click the project name and then click **Create** in the upper-right corner. When creating a Logstore, you must specify how you are going to use these logs.

You can also modify or delete the Logstore. For more information, see [Manage a Logstore](#).



Create Logstore

\* Logstore Name:

Logstore  
Attributes

\* WebTracking:  WebTracking supports the collection of various types of access logs in web browsers or mobile phone apps (iOS/Android). By default, it is disabled. ([Help Link](#))

\* Data Retention Time:  Data retention time for LogHub and LogSearch is unified. The data lifecycle is determined by the LogHub setting (the unit is in days).

\* Number of Shards:  [What is shard?](#)

\* Billing: [Refer to pricing](#)

#### 5. Manage shards (optional)

When creating a Logstore, you can select the number of shards based on the volume and generation speed of your logs. You can also change the number of shards by splitting or merging shards when modifying the Logstore.

For more information about splitting and merging shards, see [Manage shards](#).

## 6. Perform RAM authorization (optional)

If you need to collect cloud product logs or post Log Service data to OSS or another product for storage and analysis, you must grant the relevant permissions for Log Service or other cloud products.

To use a sub-account to perform operations in Log Service, you must grant permissions to the sub-account in the Resource Access Management (RAM) console.

For more information about the authorization policies and procedure, see [Authorization - Overview](#).

## 2 Manage projects

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You can create and delete projects in the Log Service console.

### Create a project



#### Note:

- Currently, you can create projects only in the Log Service console.
- The project name must be globally unique among all Alibaba Cloud regions. If the project name that you entered already exists, the message This project name is already in use by other user, please change other name appears. You can enter another project name and try again.
- To create a project, you must specify the Alibaba Cloud region based on the source of the logs to be collected and other actual conditions. To collect logs from an Alibaba Cloud Elastic Compute Service (ECS) instance, we recommend that you create the project in the same region as the ECS instance. This speeds up log collection, and collects logs on the Alibaba Cloud intranet without occupying the Internet bandwidth of the ECS instance.
- After a project is created, its region cannot be changed, and the project cannot be migrated. Therefore, exercise caution when selecting the region of a project.
- You can create up to 50 projects in all Alibaba Cloud regions with an Alibaba Cloud account.

### Procedure

1. Log on to the [Log Service console](#).
2. Click Create Project in the upper-right corner.

3. Set Project Name and Region, select Enable Operations Log as required, and then click Confirm.

Parameter	Description
Project Name	<p>The name of the project. The project name can contain only lowercase letters, digits, and hyphens (-). It must start and end with a lowercase letter or digit and must be 3 to 63 bytes in length.</p> <p> <b>Note:</b> After a project is created, its name cannot be changed.</p>
Description	<p>The brief description of the project. After the project is created, the description is displayed on the Projects page. To modify the description after the project is created, go to the Projects page and click Modify in the Actions column.</p> <p> <b>Note:</b> The description is 0 to 64 bytes in length and does not support the following characters: &lt;&gt; " ' \.</p>
Region	<p>The Alibaba Cloud region where the project is located. The region cannot be modified after the project is created, and the project cannot be migrated among regions.</p>
Enable Operations Log	<p>Specifies whether Log Service records the operations, access, and metering logs of all resources in the project. This feature takes effect in 1 or 2 minutes after it is enabled.</p>

Parameter	Description
Log Storage	The location where logs are stored. This parameter appears when you select an Enable Operations Log check box. Valid values: <ul style="list-style-type: none"><li>• Current project</li><li>• Automatic creation (recommended ): specifies an automatically created project in the same region.</li></ul>

Figure 2-1: Create a project

### Modify a project

You can modify a project to modify the description of the project, enable or disable the service log feature, or modify the log storage location.

1. Log on to the Log Service console.
2. Find the target project. You can enter the project name in the search box in the upper-left corner of the Projects page and click Search.
3. Click Modify in the Actions column of the project.
4. In the dialog box that appears, modify the project configuration.



Note:

You cannot modify the project name or region.

Figure 2-2: Modify a project

### Delete a project

In some cases (for example, to disable the operations log feature or destroy all the logs in a project), you may need to delete the entire project.



Note:

After you delete a project, all its logs and configuration are permanently released and cannot be recovered. Therefore, exercise caution when deleting projects to avoid losing data.

1. On the Projects page, select the project to be deleted.
2. Click Delete in the Actions column.
3. In the dialog box that appears, select the reason for deletion.

If you select Other issues, describe the reason in the field below.

4. Click Confirm.

Delete Project ✕

 Once deleted, the project data cannot be restored. Do you want to delete the project?

\* Project Name: wdttestw

\* Please select the reason for deletion:

- Project name is wrong, refill
- Project area error, re-select
- Business factor, no longer need to analyze the log
- The Project is test data and needs to be emptied.
- Cost problem
- Do not know how to use
- Log collection failure
- other reasons

## 3 Manage a Logstore

A Logstore is a collection of resources created in a project. All data in a Logstore is from the same data source. The Logstore is a unit to query, analyze, and ship the collected log data. In the Log Service console, you can:

- [Create a Logstore.](#)
- [Modify Logstore configurations](#)
- [Delete a Logstore](#)

Create a Logstore.



Note:

- Each Logstore must be created in the certain Project.
- Up to 200 Logstores can be created for each Log Service Project.
- The Logstore name must be unique in the project.
- The data retention time can be modified after a Logstore is created. Click Modify at the right of the Logstore > on the Logstore List page, change the Data Retention Time and then click Modify.

1. On the Project List page, click the project name. Click Create to create a Logstore.

You can also click Create in the dialog box after creating a project.

2. Complete the configurations and click Confirm.

Configuration	Description
Logstore name	<p>The name can be 3–63 characters long, contain lowercase letters, numbers, hyphens (-), and underscores (_), and must begin and end with a lowercase letter or number. The Logstore name, which must be unique in the project where it belongs.</p> <div data-bbox="614 1720 678 1787" data-label="Image"> </div> <p>Note: The Logstore name cannot be modified after the Logstore is created.</p>
WebTracking	<p>Select whether or not to enable the WebTracking function . This function supports collecting log data from HTML, H5, iOS, or Android platform to Log Service. Disabled by default.</p>

Configuration	Description
Permanent storage	<p>Select whether or not to enable the Eternal save function.</p> <p>The Log Service allows to save the collected logs permanently. You can also disable the function and customize the Data Retention Time .</p>
Data Retention Time	<p>The time (in days) the collected logs are kept in the Logstore. It can be 1–3000 days. Logs are deleted if the Logs are deleted if the specified time is exceeded.</p> <p>If you disabled the Eternal save function, you need to customize the Data Retention Time .</p>
Number of shards	<p>The number of shards for the Logstore. Each Logstore can create 1–10 shards and each project can create at most 200 shards.</p>
Auto-split	<p>Select whether or not to enable the Auto-split function. It is enabled by default.</p> <p>When the data traffic exceeds the service capacity of the shard, enabling the Auto-split function will increase the number of shards automatically. For details, see <a href="#">Manage shards</a>.</p>
Maximum number of splits	<p>The maximum number after the maximum shard auto split, the maximum automatic split to 64 partitions can be supported.</p> <p>If you turn onAuto split shard function, you need to setMaximum number of splits.</p>

Configuration	Description
Log Public IP	<p>This function allows the server to automatically add the following information to the tag filed of the received logs:</p> <ul style="list-style-type: none"><li>· <code>__client_ip__</code> : refers to the Internet IP address of the device that generated the logs.</li><li>· <code>__receive_time__</code> : refers to the time (in the format of the Unix timestamp) when logs arrive at the server.</li></ul>

### Create Logstore ✕

\* Logstore Name:

Logstore Attributes

\* WebTracking:    
WebTracking supports the collection of various types of access logs in web browsers or mobile phone apps (iOS/Android). By default, it is disabled. ([Help](#))

\* Permanent Storage:    
To set the log storage duration, disable this function.

\* Shards:    
[What is shard?](#)

\* Automatic Sharding:    
This function automatically increases the number of shards when the data traffic exceeds the service capacity of the existing shards.

\* Maximum Shards:    
A maximum of 64 shards are supported.

Log Public IP:    
This feature logs the client public IP and the log arrival timestamp. ([Help](#))

\* Billing: [Refer to Pricing](#)

### Modify Logstore configurations

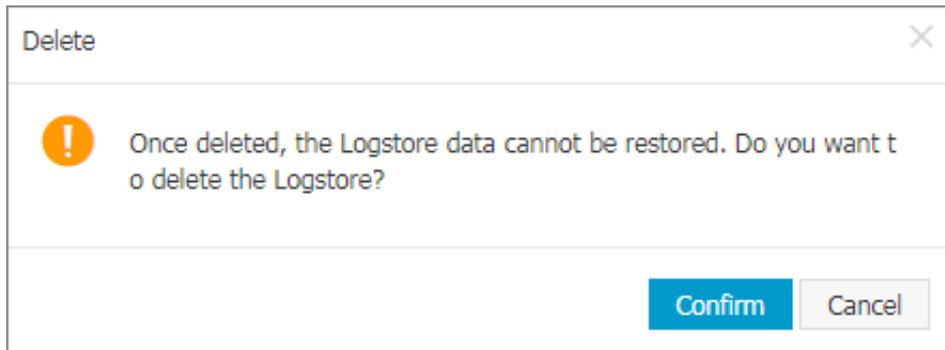
After a Logstore is created, you can modify the Logstore configurations as needed.

1. Log on to the Log Service console.
2. On the Project List page, click the project name.



- If the system prompts that you are not granted the corresponding permission when you use a primary account to delete a Logstore, you need to open a ticket.

1. Log on to the Log Service console.
2. On the Project List page, click the project name.
3. On the Logstore List page, click Delete at the right of the Logstore you are about to delete.
4. Click OK in the displayed dialog box.



## 4 Manage shards

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A Logstore stores logs in shards. It reads logs from and writes logs into a shard. Each Logstore can have several shards. You must specify the number of shards when creating a Logstore. After creating a Logstore, you can also split or merge shards to increase or decrease the number of shards.

For existing shards, you can:

- [Split a shard](#)
- [Automatically split shards](#)
- [Merge shards](#)
- [Delete a shard](#)

### Split a shard

Each shard can write data at 5 Mbit/s and read data at 10 Mbit/s. When the data traffic exceeds the service capacity of existing shards, we recommend that you add shards immediately. A shard can be split to scale out its service capacity.

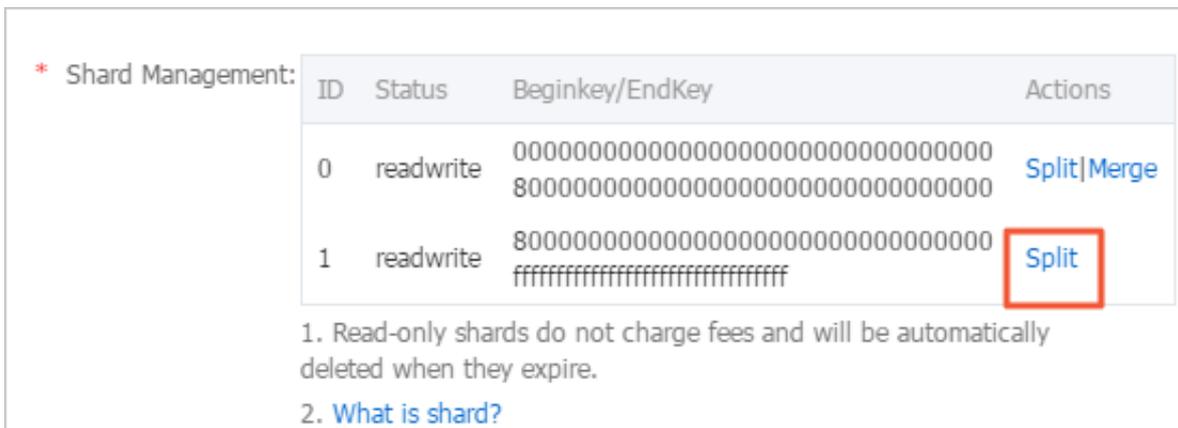
### Instructions

When splitting a shard, you must specify the ID of a shard in the read/write state and an MD5 value. The MD5 value must be greater than the BeginKey of the specified shard and less than the EndKey of the specified shard.

A split operation can split a shard into two shards. After the split operation, the original shard still exists and two more shards are added. After a shard is split, the status of the original shard is changed from read/write to read-only. In this shard, data can still be consumed, but new data cannot be written. The two new shards are in the read/write state and arranged behind the original shard in the shard list. The MD5 value range of these two shards covers that of the original shard.

1. Log on to the Log Service console.
2. On the Projects page, click the target project name.
3. On the Logstores page, find the target Logstore and click Modify in the Actions column.

- In the Shard Management section of the dialog box that appears, select a shard to be split and click Split in the Actions column.

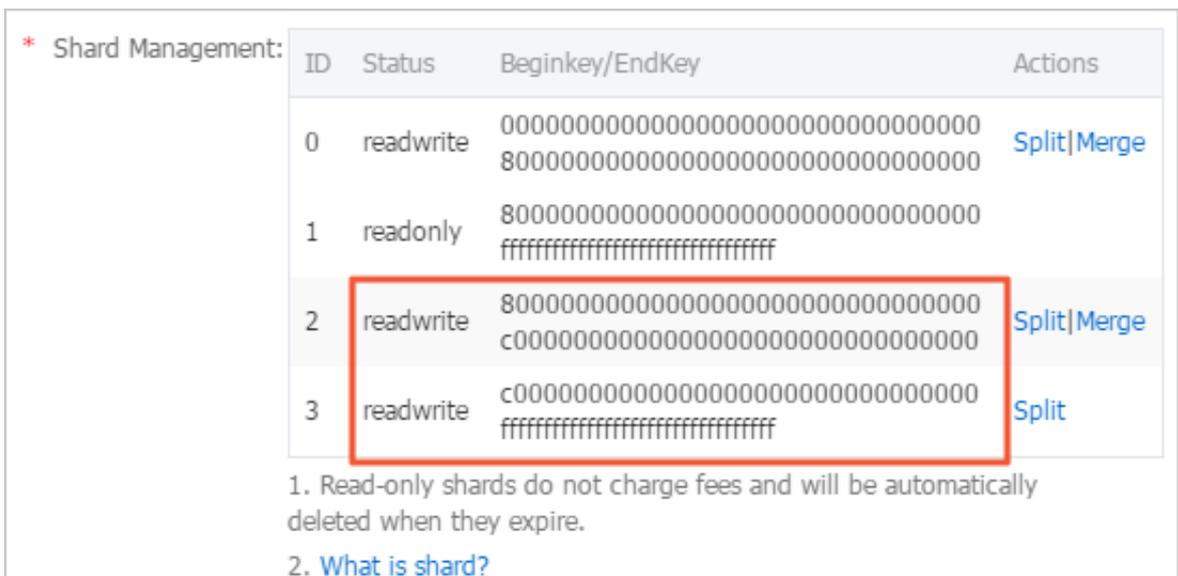


- Confirm the splitting position of the shard.

By default, a shard is evenly split. The splitting position is in the middle of the MD5 value range of the current shard. You can also select another value to specify the number of shards that the current shard is split into.

- Click Confirm and close the dialog box.

After the shard is split, the status of the original shard is changed from read/write to read-only. The MD5 value range of two new shards covers that of the original shard.



### Automatically split shards

#### Instructions

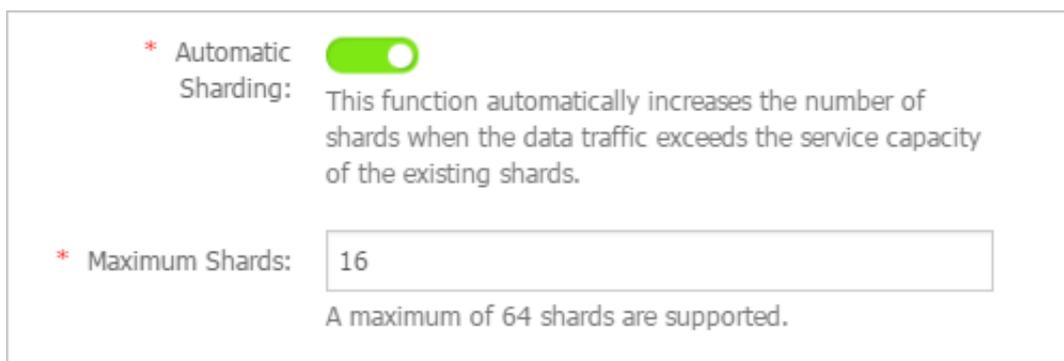
Apart from manual sharding, Log Service also supports automatic sharding. You can enable automatic sharding when creating or modifying a Logstore. You can also specify the maximum number of shards after automatic sharding.

After automatic sharding is enabled, shards are automatically split if the following conditions are met:

1. The data traffic exceeds the service capacity of existing shards and the situation lasts for more than 5 minutes.
2. The number of shards in the read/write state in the Logstore does not exceed the specified maximum number of shards.

 **Note:**  
New shards that were split in the last 15 minutes are not automatically split.

Figure 4-1: Automatically split shards



Parameter	Description
Automatic Sharding	The switch used to enable or disable automatic sharding. After this feature is enabled, the shards that meet the specified conditions are automatically split when the data traffic exceeds the service capacity of existing shards.
Maximum Shards	The maximum number of shards after automatic sharding. After automatic sharding is enabled, a shard can be split into a maximum of 64 shards.

## Merge shards

Shards can be merged to scale in their service capacity. You can merge shards whose MD5 value range is adjacent into a new shard in the read/write state. The MD5 value range of the new shard covers the total range of the original two shards. The original two shards are now in the read-only state.

### Instructions

When merging shards, you must specify a shard in the read/write state. You cannot specify the last shard in the read/write state in the shard list. The server automatically finds the shard whose MD5 value range is adjacent to that of the specified shard and merges these two shards. After the shards are merged, the status of the original shards is changed from read/write to read-only. In these shards, data can still be consumed, but new data cannot be written. In the meantime, a shard in the read/write state is generated and its MD5 value range covers the total range of the original two shards.

### Procedure

1. Log on to the Log Service console.
2. On the Projects page, click the target project name.
3. On the Logstores page, find the target Logstore and click Modify in the Actions column.

4. In the Shard Management section of the dialog box that appears, select a shard to be merged and click Merge in the Actions column. Then, close the dialog box.

\* Shard Management:

ID	Status	Beginkey/EndKey	Actions
0	readwrite	00000000000000000000000000000000 80000000000000000000000000000000	Split Merge
2	readonly	80000000000000000000000000000000 c0000000000000000000000000000000	
3	readonly	c0000000000000000000000000000000 ffffffffffffffffffffffffffffffff	
1	readonly	80000000000000000000000000000000 ffffffffffffffffffffffffffffffff	
4	readwrite	80000000000000000000000000000000 ffffffffffffffffffffffffffffffff	Split

1. Read-only shards do not charge fees and will be automatically deleted when they expire.  
2. [What is shard?](#)

After the shards are merged, the status of the original shards is changed from read/write to read-only. The MD5 value range of the new shard in the read/write state covers the total range of the original two shards.

\* Shard Management:

ID	Status	Beginkey/EndKey	Actions
0	readwrite	00000000000000000000000000000000 80000000000000000000000000000000	Split Merge
2	readonly	80000000000000000000000000000000 c0000000000000000000000000000000	
3	readonly	c0000000000000000000000000000000 ffffffffffffffffffffffffffffffff	
1	readonly	80000000000000000000000000000000 ffffffffffffffffffffffffffffffff	
4	readwrite	80000000000000000000000000000000 ffffffffffffffffffffffffffffffff	Split

1. Read-only shards do not charge fees and will be automatically deleted when they expire.  
2. [What is shard?](#)

### Delete a shard

The lifecycle of a Logstore, namely, the data retention period can be configured in the range of 1 to 3,000 days. Shards and log data in the shards are automatically deleted

after the specified data retention period expires. Shards in the read-only state are free of charge. You can also enable Permanent Storage to permanently store the log data in a Logstore. The shards and log data in the shards are never deleted automatically. For more information about how to modify the data retention period of log data, see [Manage a Logstore](#).

You can also delete a Logstore to delete all the shards in the Logstore.