Alibaba Cloud
Elasticsearch

Operation and Maintenance

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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.	Danger: 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.	Warning: 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.	Notice: 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.	Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK.
Courier font	It is used for commands.	Run the `cd / d  C :/ windows` command to enter the Windows system folder.
Italics	It is used for parameters and variables.	`bae  log  list -- instanceid` *Instance_ID*
[] or [a|b]	It indicates that it is a optional value, and only one item can be selected.	`ipconfig` *[-all|-t]*

Style	Description	Example
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich` *{stand | slave}*

Contents

1 Smart O&M system

Overview

Alibaba Cloud Elasticsearch Smart O&M is a smart maintenance system based on Alibaba Cloud Elasticsearch. This feature is designed to check the health status of Elasticsearch instances, detect potential risks, and provide suggestions.

Smart O&M helps Alibaba Cloud Elasticsearch users resolve maintenance issues, reduce service usage and maintenance costs, keep their Elasticsearch instances safe and healthy, and simplify their work.

Smart O&M alpha testing is currently available in all domestic regions.

Supported regions

The Smart O&M system supports the following regions:

- China (Hangzhou)
- China (Shanghai)
- China North 1 (Qingdao)
- China (Beijing)
- China (Shenzhen)

Cluster overview

1. Log in to the Elasticsearch console.
2. Click the name of an Elasticsearch instance to go to the Elasticsearch instance information page.
3. On the left-side navigation pane, click Intelligent Maintenance to view relevant tabs.

- The first time you activate Intelligent Maintenance, you must grant Intelligent Maintenance access permissions to the basic cluster information and logs. However, Intelligent Maintenance does not have access to the cluster data.
- After Intelligent Maintenance is activated, it will diagnose the cluster every early morning and generate diagnostic reports.
- The cluster overview feature shows the health status of the cluster in the last seven days to help you learn the status of the cluster.

Health diagnosis

In addition to periodical diagnosis every early morning, you can use Diagnose Now to manually diagnose your cluster. By default, you can use this feature to diagnose clusters up to five times per day. Each diagnostic process takes about three minutes.

After diagnosis is complete, you will receive a diagnostic report, allowing you to view the latest status of the cluster. By default, Intelligent Maintenance diagnoses all indexes on a cluster against all diagnostic items. You can choose to specify the diagnostic items and indexes. A maximum of 10 indexes can be selected each time.

Reports

The reports feature allows you to view the 20 most recent diagnostic reports.

Diagnostic results

Intelligent Maintenance uses red, yellow, and green to indicate the health status of a cluster.

· RED: Indicates a severe issue or risk that may affect the usage of the cluster and requires immediate attention. If you do not resolve this issue, data loss or cluster crash may occur.
· YELLOW: Indicates a moderate issue that may affect the usage of the cluster and requires prompt attention.
· GREEN: Indicates that the cluster is healthy.

2 Online operation and maintenance

Elasticsearch cluster provides many statistics, in which the cluster health is the most important index. Cluster health has three statuses: Red, Yellow, and Green.

Cluster health can be checked using the following command:

```
curl  - u   user   name : password   http :// domain : 9200 / _cluster / health
```

Cluster health

Color	Status	Remarks
Red	Some major fragments are unavailable.	unavailable The cluster contains unavailable major fragments, meaning that one or more indexes have major fragments `unassigned`.
Yellow	All major fragments are available, but some replicated fragments cannot be used.	One or more replicated indexes have major fragments `unassigned`.
Green	All major and replicated fragments are available	All indexes of the cluster are healthy and all fragments are `assigned`.

> 📋 **Note:**
>
> To ensure that your Elasticsearch cluster status is Green, all major and replicated fragments must be always available.

Troubleshooting

Cluster status is yellow

If the cluster is in the Yellow state, the password change or upgrade operation will take a long time.

You are suggested to perform the operation when the cluster health is in the Green state. The reason why the cluster health status is Yellow is that some replicated

fragments of indexes are unassigned. You need to check the problematic indexes in the cluster.

Index status query command

```
curl  - u   user    name : password    http :// domain : 9200 / _cat /
 indices
# Find    out    the    problemati  c   index    name . If    the
 reason   is    that    the    number_of_  replicas    is    larger    than
   amount_Nod  e  -  1 ,
# change    the    number_of_  replicas    of    the    problemati  c
 index .
```

Index status recovery command

```
curl  - XPUT  - u   user    name : password    http :// domain : 9200
/ problemati  c   index    name / _settings  - H  ' Content - Type :
 applicatio  n / json ' - d  '{" index ":{" number_of_  replicas ":(
 amount_Nod  e  -  1 )}'
# For    example , if    the    number   of    requested    instance
 nodes   is    3   but    the    number_of_  replicas    of    an    index
 is    also    3 ,   the    cluster    health    status    is    yellow .
# Change    the    number_of_  replicas    of    the    problemati  c
 index    to    2 .
```

📋 **Note:**

After finishing the operations (restart/scale-up/custom setting) on the instance, set the number_of_replicas according to the number of instance nodes. This improves the reliability and stability of the Elasticsearch service.