

## Alerts

An alert is an event that is considered especially noteworthy and is triggered by a selected role. Alerts are displayed with an badge when they appear in a list of events. You can configure the Alert Publisher to send notifications by email or by SNMP trap to a trap receiver.

Service instances of type HDFS, MapReduce, and HBase (and their associated roles) can generate alerts. Alerts can also be configured for the monitoring roles that are a part of the Cloudera Management Service.

The settings to enable or disable specific alerts are found under the Configuration tab for each service that pertains.

### Managing Alerts

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

The AdministrationAlerts page provides a summary of the settings for alerts in your clusters. The left column lets you select by alert type (Health, Log, or Activity) and with the right column you can select the service type. In the case of Health alerts, you can look at alerts for Hosts as well. You can select an instance of a service to view the alert settings for that service.

Health/Log/Activity Alert Settings Depending on your selection in the left column, the right column displays the list of alerts that are enabled or disabled for the selected service type.

To change the alert settings for a service, click Edit next to the service name. This will take you to the Configuration tab for the service. From here you can enable or disable alerts as needed.

Recipients You can also view the list of recipients configured for the enabled alerts.

#### Configuring Alert Delivery

When you install Cloudera Manager you can configure the mail server you will use with the Alert Publisher. However, if you need to change these settings, you can do so under the Alert Publisher section of the Services configuration tab. Under the Alert Publisher role of the Cloudera Manager Management Service you can configure email or SNMP delivery of alert notifications and you can also configure a custom response to an alert.

#### Viewing Which Alerts are Enabled and Disabled

Minimum Required Role: Cluster Administrator (also provided by Full Administrator)  
Select AdministrationAlerts.

### Configuring Alert Email Delivery

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

#### Sending A Test Alert E-mail

Select the AdministrationAlerts tab and click the Send Test Alert link.

#### Configuring the List Of Alert Recipient Email Addresses

- Click ClustersCloudera Management Service.
- Select the Configuration tab.

- Select ScopeAlert Publisher.
- Select CategoryMain.
- Locate the Alerts: Mail Message Recipients property or search for it by typing its name in the Search box.
- Configure the Alerts: Mail Message Recipients property. Use the + icon to add new recipients.
- Click the Save Changes button at the top of the page to save your settings. To apply this configuration property to other role groups as needed, edit the value for the appropriate role group. See the topic Modifying Configuration Properties Using Cloudera Manager.
- Restart the Alert Publisher role.

#### Configuring Alert Email Properties

- Display the Cloudera Management Service status page.
- Click the Configuration tab.
- Select ScopeAlert Publisher.
- Select CategoryMain to see the list of properties. To receive email alerts, you must set (or verify) the following settings:
  - Enable email alerts
  - Email protocol to use.
  - Your mail server hostname and port.
  - The username and password of the email user that will be logged into the mail server as the “sender” of the alert emails. Important: If a password contains special characters such as @, #, \$, %, ^, &, and , then enclose the password inside the RAW() method. For example, *RAW(pass@word)*.
  - A comma-separated list of email addresses that will be the recipients of alert emails.
  - The format of the email alert message. Select json if you need the message to be parsed by a script or program. To apply this configuration property to other role groups as needed, edit the value for the appropriate role group. See the topic Modifying Configuration Properties Using Cloudera Manager.
- Click the Save Changes button at the top of the page to save your settings.
- Restart the Alert Publisher role.

#### Configuring Alert SNMP Delivery

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

Enabling, Configuring, and Disabling SNMP Traps

- Before you enable SNMP traps, configure the trap receiver (Network Management System or SNMP server) with the Cloudera MIB.
- Do one of the following:
  - Select Clusters Cloudera Management Service.
  - On the HomeStatus tab, in Cloudera Management Service table, click the Cloudera Management Service link.
- Click the Configuration tab.
- Select ScopeAlert Publisher SNMP.
- Select CategorySNMP
  - Enter the DNS name or IP address of the Network Management System (SNMP server) acting as the trap receiver in the SNMP NMS Hostname property.
  - In the SNMP Security Level property, select the version of SNMP you are using: SNMPv2, SNMPv3 without authentication and without privacy (noAuthNoPriv), or SNMPv3 with authentication and without privacy (auth NoPriv) and specify the required properties:
    - \* SNMPv2 - SNMPv2 Community String.
    - \* SNMPv3 without authentication (noAuthNoPriv) - SNMP Server Engine Id and SNMP Security UserName.
    - \* SNMPv3 with authentication (authNoPriv) - SNMP Server Engine Id, SNMP Security UserName, SNMP Authentication Protocol, and SNMP Authentication Protocol Pass Phrase.
  - You can also change other settings such as the port, retry, or timeout values. To apply this configuration property to other role groups as needed, edit the value for the appropriate role group. See the topic *Modifying Configuration Properties Using Cloudera Manager*.
- Click Save Changes when you are done.
- Restart the Alert Publisher role.

To disable SNMP traps, remove the hostname from the SNMP NMS Hostname property (`alert.snmp.server.hostname`).

#### Viewing the Cloudera MIB

1. Do one of the following:
  - Select Clusters Cloudera Management Service.
  - On the HomeStatus tab, in Cloudera Management Service table, click the Cloudera Management Service link.
2. Click the Configuration tab.
3. Select ScopeAlert Publisher SNMP.
4. Select CategorySNMP.
5. Locate the SNMP NMS Hostname property and click the? icon to display the property description.
6. Click the SMNP Mib link. *Related Information Modifying Configuration Properties Using Cloudera Manager*

## Configuring Custom Alert Scripts

You can configure the Alert Publisher to call a user-provided script in response to an alert. Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

You can configure the Alert Publisher to run a user-written script in response to an alert. Pass a single argument to the script that is a UTF-8 JSON file containing a list of alerts. The script runs when the Alert Publisher service is running and must have read and execute permissions for the cluster. Only one instance of a script runs at a time. The standard out and standard error messages from the script are written to the Alert Publisher log file.

You use the Alert Publisher: Maximum Batch Size and Alert Publisher: Maximum Batch interval properties to configure the Alert Publisher delivers alerts.

To configure the Alert Publisher to deliver alerts using a script:

- Save the script on the host where the Alert Publisher role is running.
- Change the owner of the file to cloudera-scm and set its permissions to read and execute:

```
sudo chown cloudera-scm:cloudera-scm path_to_script
sudo chmod u+rx path_to_script
```

- Open the Cloudera Manager Admin console and select ClustersCloudera Management Service.
- Click the Configuration tab.
- Select ScopeAlert Publisher.
- Enter the path to the script in the Custom Alert Script property.
- Enter a Reason for change, and then click Save Changes to commit the changes. A sample Python script is available that parses the alert file and sends alerts to different email addresses based on the content of the alert. See Sample Custom Alert Script on page 113.

### Sample JSON Alert File

When a custom script runs, it passes a JSON file that contains the alerts. For example:

```
[ {
  "body" : {
    "alert" : {
      "content" : "The health test result for MAPREDUCE_HA_JOB_TRACKER_HEALTH has become bad: JobTracker summary: myCluster.com (Availability: Active, Health: Bad). This health test reflects the health of the active JobTracker.",
      "timestamp" : {
        "iso8601" : "2015-06-11T03:52:56Z",
        "epochMs" : 1433994776083
      },
      "source" : "http://myCluster.com:7180/cm/eventRedirect/89521139-0859-4bef-bf65-eb141e63dbba",
      "attributes" : {
```



```

ker: 3. Concerning TaskTracker: 0. Total TaskTracker: 3. Percent healthy: 10
0.00%. Percent healthy or concerning: 100.00%.\",\ntestName\": \"MAPREDUCE_TA
SK_TRACKERS_HEALTHY\", \"eventCode\": \"EV_SERVICE_HEALTH_CHECK_GOOD\", \"sever
ity\": \"INFORMATIONAL\"} \" ],
\"SERVICE_DISPLAY_NAME\" : [ \"MAPREDUCE-1\" ]
}
}

},
\"header\" : {
\"type\" : \"alert\",
\"version\" : 2
}
}, {
\"body\" : {
\"alert\" : {
\"content\" : \"The health test result for JOB_TRACKER_SCM_HEALTH has bec
ome bad: This role's process exited. This role is supposed to be started.\",
\"timestamp\" : {
\"iso8601\" : \"2015-06-11T03:52:56Z\",
\"epochMs\" : 1433994776083
},
\"source\" : \"http://myCluster.com:7180/cmfeventRedirect/67b4d1c4-791b
-428e-a9ea-8a09d4885f5d\",
\"attributes\" : {
\"__persist_timestamp\" : [ \"1433994776173\" ],
\"ALERT_SUPPRESSED\" : [ \"false\" ],
\"HEALTH_TEST_NAME\" : [ \"JOB_TRACKER_SCM_HEALTH\" ],
\"SEVERITY\" : [ \"CRITICAL\" ],
\"ROLE\" : [ \"MAPREDUCE-1-JOBTRACKER-10624c438dee9f17211d3f33fa899957\"
],
\"HEALTH_TEST_RESULTS\" : [ {
\"content\" : \"The health test result for JOB_TRACKER_SCM_HEALTH has
become bad: This role's process exited. This role is supposed to be started
.\",
\"testName\" : \"JOB_TRACKER_SCM_HEALTH\",
\"eventCode\" : \"EV_ROLE_HEALTH_CHECK_BAD\",
\"severity\" : \"CRITICAL\"
} ],
\"CLUSTER_DISPLAY_NAME\" : [ \"Cluster 1\" ],
\"HOST_IDS\" : [ \"75e763c2-8d22-47a1-8c80-501751ae0db7\" ],
\"ALERT\" : [ \"true\" ],
\"ROLE_TYPE\" : [ \"JOBTRACKER\" ],
\"CATEGORY\" : [ \"HEALTH_CHECK\" ],
\"BAD_TEST_RESULTS\" : [ \"1\" ],

```

```

"SERVICE_TYPE" : [ "MAPREDUCE" ],
"EVENTCODE" : [ "EV_ROLE_HEALTH_CHECK_BAD", "EV_ROLE_HEALTH_CHECK_GOOD", "EV_ROLE_HEALTH_CHECK_DISABLED" ],
"ALERT_SUMMARY" : [ "The health of role jobtracker (nightly-1) has become bad." ],
"CLUSTER_ID" : [ "1" ],
"SERVICE" : [ "MAPREDUCE-1" ],
"_uuid" : [ "67b4d1c4-791b-428e-a9ea-8a09d4885f5d" ],
"CLUSTER" : [ "Cluster 1" ],
"CURRENT_COMPLETE_HEALTH_TEST_RESULTS" : [ {"content\":"The health test result for JOB_TRACKER_SCM_HEALTH has become bad: This role's process exited. This role is supposed to be started.\","testName\":"JOB_TRACKER_SCM_HEALTH\","eventCode\":"EV_ROLE_HEALTH_CHECK_BAD\","severity\":"CRITICAL\"}," {"content\":"The health test result for JOB_TRACKER_UNEXPECTED_EXITS has become good: This role encountered 0 unexpected exit(s) in the previous 5 minute(s).\","testName\":"JOB_TRACKER_UNEXPECTED_EXITS\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_FILE_DESCRIPTOR has become good: Open file descriptors: 244. File descriptor limit: 32,768. Percentage in use: 0.74%.\","testName\":"JOB_TRACKER_FILE_DESCRIPTOR\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_SWAP_MEMORY_USAGE has become good: 0 B of swap memory is being used by this role's process.\","testName\":"JOB_TRACKER_SWAP_MEMORY_USAGE\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE has become good: This role's Log Directory (/var/log/hadoop-0.20-mapreduce) is on a filesystem with more than 20.00% of its space free.\","testName\":"JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_HOST_HEALTH has become good: The health of this role's host is good.\","testName\":"JOB_TRACKER_HOST_HEALTH\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_WEB_METRIC_COLLECTION has become good: The web server of this role is responding with metrics. The most recent collection took 49 millisecond(s).\","testName\":"JOB_TRACKER_WEB_METRIC_COLLECTION\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_GC_DURATION has become good: Average time spent in garbage collection was 0 second(s) (0.00%) per minute over the previous 5 minute(s).\","testName\":"JOB_TRACKER_GC_DURATION\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\"}," {"content\":"The health test result for JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE has become disabled: Test disabled because role is not configured to dump heap when out of memory. Test of whether this role's heap dump directory has enough free space.\","testName\":"JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE\","eventC

```

```

ode\":"EV_ROLE_HEALTH_CHECK_DISABLED\","severity\":"INFORMATIONAL\}" ] ,
"CURRENT_HEALTH_SUMMARY" : [ "RED" ],
"PREVIOUS_HEALTH_SUMMARY" : [ "GREEN" ],
"MONITOR_STARTUP" : [ "false" ],
"ROLE_DISPLAY_NAME" : [ "jobtracker (nightly-1)" ],
"PREVIOUS_COMPLETE_HEALTH_TEST_RESULTS" : [ "{\"content\":"The health test result for JOB_TRACKER_SCM_HEALTH has become good: This role's status is as expected. The role is started.\",\"testName\":"JOB_TRACKER_SCM_HEALTH\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_UNEXPECTED_EXITS has become good: This role encountered 0 unexpected exit(s) in the previous 5 minute(s).\",\"testName\":"JOB_TRACKER_UNEXPECTED_EXITS\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_FILE_DESCRIPTOR has become good: Open file descriptors: 244. File descriptor limit: 32,768. Percentage in use: 0.74%.\",\"testName\":"JOB_TRACKER_FILE_DESCRIPTOR\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_SWAP_MEMORY_USAGE has become good: 0 B of swap memory is being used by this role's process.\",\"testName\":"JOB_TRACKER_SWAP_MEMORY_USAGE\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE has become good: This role's Log Directory (/var/log/hadoop-0.20-mapreduce) is on a filesystem with more than 20.00% of its space free.\",\"testName\":"JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_HOST_HEALTH has become good: The health of this role's host is good.\",\"testName\":"JOB_TRACKER_HOST_HEALTH\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_WEB_METRIC_COLLECTION has become good: The web server of this role is responding with metrics. The most recent collection took 49 millisecond(s).\",\"testName\":"JOB_TRACKER_WEB_METRIC_COLLECTION\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_GC_DURATION has become good: Average time spent in garbage collection was 0 second(s) (0.00%) per minute over the previous 5 minute(s).\",\"testName\":"JOB_TRACKER_GC_DURATION\","eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\","severity\":"INFORMATIONAL\}"", "{\"content\":"The health test result for JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE has become disabled: Test disabled because role is not configured to dump heap when out of memory. Test of whether this role's heap dump directory has enough free space.\",\"testName\":"JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE\","eventCode\":"EV_ROLE_HEALTH_CHECK_DISABLED\","severity\":"INFORMATIONAL\}" ] ,
"SERVICE_DISPLAY_NAME" : [ "MAPREDUCE-1" ],
"HOSTS" : [ "myCluster.com" ]
}
}

```



```

},
"header" : {
  "type" : "alert",
  "version" : 2
}
}, {
  "body" : {
    "alert" : {
      "content" : "The health test result for JOB_TRACKER_UNEXPECTED_EXITS
has become bad: This role encountered 1 unexpected exit(s) in the previous 5
minute(s).This included 1 exit(s) due to OutOfMemory errors. Critical thres
hold: any.",
      "timestamp" : {
        "iso8601" : "2015-06-11T03:53:41Z",
        "epochMs" : 1433994821940
      },
      "source" : "http://myCluster.com:7180/cmfeventRedirect/b8c4468d-08c
2-4b5b-9bda-2bef892ba3f5",
      "attributes" : {
        "_persist_timestamp" : [ "1433994822027" ],
        "ALERT_SUPPRESSED" : [ "false" ],
        "HEALTH_TEST_NAME" : [ "JOB_TRACKER_UNEXPECTED_EXITS" ],
        "SEVERITY" : [ "CRITICAL" ],
        "ROLE" : [ "MAPREDUCE-1-JOBTRACKER-10624c438dee9f17211d3f33fa8999
57" ],
        "HEALTH_TEST_RESULTS" : [ {
          "content" : "The health test result for JOB_TRACKER_UNEXPECTED_
EXITS has become bad: This role encountered 1 unexpected exit(s) in the prev
ious 5 minute(s).This included 1 exit(s) due to OutOfMemory errors. Critical
threshold: any.",
          "testName" : "JOB_TRACKER_UNEXPECTED_EXITS",
          "eventCode" : "EV_ROLE_HEALTH_CHECK_BAD",
          "severity" : "CRITICAL"
        } ],
        "CLUSTER_DISPLAY_NAME" : [ "Cluster 1" ],
        "HOST_IDS" : [ "75e763c2-8d22-47a1-8c80-501751ae0db7" ],
        "ALERT" : [ "true" ],
        "ROLE_TYPE" : [ "JOBTRACKER" ],
        "CATEGORY" : [ "HEALTH_CHECK" ],
        "BAD_TEST_RESULTS" : [ "1" ],
        "SERVICE_TYPE" : [ "MAPREDUCE" ],
        "EVENTCODE" : [ "EV_ROLE_HEALTH_CHECK_BAD", "EV_ROLE_HEALTH_CHECK
_GOOD", "EV_ROLE_HEALTH_CHECK_DISABLED" ],
        "ALERT_SUMMARY" : [ "The health of role jobtracker (nightly-1) has
become bad." ],

```

```

"CLUSTER_ID" : [ "1" ],
"SERVICE" : [ "MAPREDUCE-1" ],
"_uuid" : [ "b8c4468d-08c2-4b5b-9bda-2bef892ba3f5" ],
"CLUSTER" : [ "Cluster 1" ],
"CURRENT_COMPLETE_HEALTH_TEST_RESULTS" : [ {"content\":"The health test result for JOB_TRACKER_SCM_HEALTH has become bad: This role's process exited. This role is supposed to be started.\",\"testName\":"JOB_TRACKER_SCM_HEALTH\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_BAD\", \"severity\":"CRITICAL\"}", {"content\":"The health test result for JOB_TRACKER_UNEXPECTED_EXITS has become bad: This role encountered 1 unexpected exit(s) in the previous 5 minute(s). This included 1 exit(s) due to OutOfMemory errors. Critical threshold: any.\",\"testName\":"JOB_TRACKER_UNEXPECTED_EXITS\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_BAD\", \"severity\":"CRITICAL\"}", {"content\":"The health test result for JOB_TRACKER_FILE_DESCRIPTOR has become good: Open file descriptors: 244. File descriptor limit: 32,768. Percentage in use: 0.74%.\",\"testName\":"JOB_TRACKER_FILE_DESCRIPTOR\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_SWAP_MEMORY_USAGE has become good: 0 B of swap memory is being used by this role's process.\",\"testName\":"JOB_TRACKER_SWAP_MEMORY_USAGE\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE has become good: This role's Log Directory (/var/log/hadoop-0.20-mapreduce) is on a filesystem with more than 20.00% of its space free.\",\"testName\":"JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_HOST_HEALTH has become good: The health of this role's host is good.\",\"testName\":"JOB_TRACKER_HOST_HEALTH\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_WEB_METRIC_COLLECTION has become good: The web server of this role is responding with metrics. The most recent collection took 49 millisecond(s).\",\"testName\":"JOB_TRACKER_WEB_METRIC_COLLECTION\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_GC_DURATION has become good: Average time spent in garbage collection was 0 second(s) (0.00%) per minute over the previous 5 minute(s).\",\"testName\":"JOB_TRACKER_GC_DURATION\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":"INFORMATIONAL\"}", {"content\":"The health test result for JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE has become disabled: Test disabled because role is not configured to dump heap when out of memory. Test of whether this role's heap dump directory has enough free space.\",\"testName\":"JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE\", \"eventCode\":"EV_ROLE_HEALTH_CHECK_DISABLED\", \"severity\":"INFORMATIONAL\"} ] ,
"CURRENT_HEALTH_SUMMARY" : [ "RED" ],
"PREVIOUS_HEALTH_SUMMARY" : [ "RED" ],
"MONITOR_STARTUP" : [ "false" ],

```

```

"ROLE_DISPLAY_NAME" : [ "jobtracker (nightly-1)" ],
"PREVIOUS_COMPLETE_HEALTH_TEST_RESULTS" : [ "{\"content\":\"The health test result for JOB_TRACKER_SCM_HEALTH has become bad: This role's process exited. This role is supposed to be started.\",\"testName\":\"JOB_TRACKER_SCM_HEALTH\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_BAD\", \"severity\":\"CRITICAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_UNEXPECTED_EXITS has become good: This role encountered 0 unexpected exit(s) in the previous 5 minute(s).\",\"testName\":\"JOB_TRACKER_UNEXPECTED_EXITS\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_FILE_DESCRIPTOR has become good: Open file descriptors: 244. File descriptor limit: 32,768. Percentage in use: 0.74%.\",\"testName\":\"JOB_TRACKER_FILE_DESCRIPTOR\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_SWAP_MEMORY_USAGE has become good: 0 B of swap memory is being used by this role's process.\",\"testName\":\"JOB_TRACKER_SWAP_MEMORY_USAGE\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE has become good: This role's Log Directory (/var/log/hadoop-0.20-mapreduce) is on a filesystem with more than 20.00% of its space free.\",\"testName\":\"JOB_TRACKER_LOG_DIRECTORY_FREE_SPACE\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_HOST_HEALTH has become good: The health of this role's host is good.\",\"testName\":\"JOB_TRACKER_HOST_HEALTH\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_WEB_METRIC_COLLECTION has become good: The web server of this role is responding with metrics. The most recent collection took 49 millisecond(s).\",\"testName\":\"JOB_TRACKER_WEB_METRIC_COLLECTION\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_GC_DURATION has become good: Average time spent in garbage collection was 0 second(s) (0.00%) per minute over the previous 5 minute(s).\",\"testName\":\"JOB_TRACKER_GC_DURATION\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_GOOD\", \"severity\":\"INFORMATIONAL\"}\", \"{\"content\":\"The health test result for JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE has become disabled: Test disabled because role is not configured to dump heap when out of memory. Test of whether this role's heap dump directory has enough free space.\",\"testName\":\"JOB_TRACKER_HEAP_DUMP_DIRECTORY_FREE_SPACE\", \"eventCode\":\"EV_ROLE_HEALTH_CHECK_DISABLED\", \"severity\":\"INFORMATIONAL\"}"]],
"SERVICE_DISPLAY_NAME" : [ "MAPREDUCE-1" ],
"HOSTS" : [ "myCluster.com" ]
},
},
"header" : {

```

```
"type" : "alert",
"version" : 2
}
} ]
```

## Sample Custom Alert Script

You can use this sample script to respond to an alert by sending emails based on the content. The Sample Custom Alert Script provided below provides an example of how custom alert script is implemented. This example uses a Python script, which includes multiple routing rules called the script is called, it parses the alert JSON file using a path provided by the Alert Publisher Templates, it sends out alerts to different email addresses based on the content of the alert. The script requires an SMTP server (defined by its host and port) and an email address to send. You need to set these parameters in the script.

There are multiple Alert Templates in the sample script as examples. Pick the ones you need to create new templates.

Python should be always available on your hosts because hosts managed by Cloudera Manager require Cloudera Manager Agent to run. Because the Alert Publisher is not able to execute python script, it is needed to execute the main Python script.

### Bash Script

This Bash script is required to execute the Python script.

```
# © 2022 by Cloudera, Inc. All rights reserved.
# Scripts and sample code are licensed under the Apache License,
# Version 2.0
#!/bin/bash
```

```
python /bin/script_test/main.py $1
```

### Python script

Setting up the Python script

To use the Python script, you will need to provide the values described below.

- SMTP hostname:

```
host = "mailserver.mycompany.com"
```

- SMTP port:

```
port = 25
```

- Sender email address:

```
sender_address = "noreply@mycompany.com"
```

- Values for the AlertTemplate(email, attribute\_key, attribute\_value, remove\_after) method:
  - Email addresses:

```
AlertTemplate("admin@mycompany.com", "SEVERITY", "CRITICAL", False)
```

Specify two or more recipients using this format:

```
AlertTemplate("admin@mycompany.com, admin2@mycompany.com", "SEVERITY",
"CRITICAL", False)
```

- An `attribute_key` and `attribute_value` containing the rules that your alert should match for the email to be sent:

```
AlertTemplate("admin@mycompany.com", "SEVERITY", "CRITICAL", False),
```

To use Regular Expression matching for your alerts, use "REGEX" as the `attribute_key`:

```
AlertTemplate("admin@mycompany.com", "REGEX", '.*content': "This is a
test alert that was generated.*', False)
```

A None `attribute_key` and `attribute_value` pair indicates a default template, which should be used for all alerts. You can use this when there's no matching `AlertTemplate`, but you still do not want to send an alert.

- `remove_after`: Set this argument to True if you want the alert to not be sent, even if further Alert Templates match the alert:

```
AlertTemplate("admin@mycompany.com", "SEVERITY", "CRITICAL", True),
```

Sample Python script

You can copy this script and modify it for your deployment.

```
# -*- coding: utf-8 -*-
# © 2022 by Cloudera, Inc. All rights reserved.
# Scripts and sample code are licensed under the Apache License,
# Version 2.0

#!/usr/bin/env python2
from __future__ import print_function

import sys
import smtplib
import json
import re

from email.mime.text import MIMEText
from email.mime.multipart import MIMEMultipart

class AlertReader(object):
    def __init__(self, file_path):
        self.alerts = []
        self.file_path = file_path

    def read_alert(self):
        alert_file = open(self.file_path, "r")
        data = json.load(alert_file)
        for alert in data:
            self.alerts.append(alert["body"]["alert"])
        print("Done reading " + self.file_path)
```

```

def print_alerts(self):
    print(self.alerts)

def alert_as_string(alert):
    return json.dumps(alert)

class AlertTemplate(object):
    def __init__(self, email, attribute_key, attribute_value, remove_after):
        self.email = email
        self.attribute_key = attribute_key
        self.attribute_value = attribute_value
        self.remove_after = remove_after
    """
    A None attribute_key and attribute_value pair
    indicates a default template, which should be
    applied to all alerts. You can use this when
    there's no matching AlertTemplate, but you still
    don't want to lose the Alert.

    Put these AlertTemplates to the end of your
    AlertTemplate list to catch all remaining alerts.
    But if only one of the attribute_key or attribute_value is None,
    that is an invalid state.
    """
    if (self.attribute_key is None) != (self.attribute_value is None):
        raise ValueError("AlertTemplate is in invalid state, "
            "one of attribute_key or attribute_value is N
            one.")

    def does_apply(self, alert):
        if self.attribute_key == "REGEX":
            alert_string = alert_as_string(alert)
            search_result = re.search(self.attribute_value, alert_string)
            return search_result is not None
        if self.attribute_key == "CONTENT":
            if self.attribute_value in alert["content"]:
                return True
            return False
        if self.attribute_key is None and self.attribute_value is None:
            return True
        try:
            if self.attribute_value in alert["attributes"][self.attribute
                _key]:
                return True
        except KeyError:
            print("There's no match for attribute_key: " + self.attribute_ke
                y)
            return False

```

```

def to_string(self):
    return "AlertTemplate[" + \
    str(self.attribute_key) + ": " + \
    str(self.attribute_value) + ", " + \
    str(self.email) + "]"

class EmailSender(object):
    def __init__(self, smtp_host, smtp_port, sender):
        self.server = smtplib.SMTP(smtp_host, smtp_port)
        self.sender = sender

    def send_email_to_recipients(self, alerts, alert_templates):
        print("Processing alerts to send emails.")
        for alert in alerts:
            for alert_template in alert_templates:
                if alert_template.does_apply(alert):
                    """
                    With a template with no email address, you usually want
                    to exclude
                    a type of alert from the processed alert list. Use None
                    to email address
                    with remove_after = True if you want an alert to be remo
                    ved from the
                    list of alerts sent.
                    These templates should be in the beginning of the temp
                    late list.
                    """
                    if alert_template.email is not None:
                        self.send_email(alert_template, alert)
                        print(create_message_text(alert_template, alert))
                        print("Sending alert based on " + alert_template.to_str
                              ing())
                    if alert_template.remove_after:
                        break
            print("All alerts are processed.")
        def send_email(self, alert_template, alert):
            message = MIMEText(create_message_text(alert_template, alert),
                                "plain")
            message["Subject"] = "Cloudera Alert"
            message["From"] = self.sender
            message["To"] = alert_template.email
            self.server.sendmail(self.sender, alert_template.email.split(","), m
                                essage.as_string())

        def create_message_text(alert_template, alert):
            out = alert_template.to_string()

```

```

out += " firing for: \n"
out += alert_as_string(alert)
return out

if __name__ == '__main__':
    """
    SMTP server parameters:
        • email where the emails sent from
        • file name, where the alerts are coming from. This is provided by the script
          interface. Alert templates:
        • email address to send email to when the alert contains the specified key
          with the specified value.
        • Set remove_after to True if you don't want the alert sent to other
          recipients, even if the template is matching. Because of this, it is
          required that the recipients list is in a specific order. """
    host = "mailserver.mycompany.com" # SMTP server host name
    port = 25 # SMTP Server port
    sender_address = "noreply@MyCompanyMailServer" # Email address to send emails from
    # The file's name which contains the alerts is provided by the script framework
    if len(sys.argv) < 2:
        print("Please provide a file path for alerts. Usually this comes from the script framework.")
        exit(2)
    file_name = sys.argv[1]
    alert_reader = AlertReader(file_name)

    recipients = []
    try:
        recipients = [AlertTemplate(None, None, None, True), # This template matches every alert
        # This template matches to all alerts which matches to the given regex pattern
        AlertTemplate("admin@mycompany.com", "REGEX", '.*content: "This is a test alert that was generated.*', False),
        # This template matches only for issues with critical severity
        AlertTemplate("admin@mycompany.com", "SEVERITY", "CRITICAL", False),
        # This template matches only for Kafka related issues
        AlertTemplate("kafka_admin@mycompany.com", "SERVICE_TYPE", "KAFKA", True),
        # This template matches only for Kafka Broker related issues
        AlertTemplate("user1@gmail.com", "ROLE_TYPE", "KAFKA_BROKER", True),
        # This template matches only for a specific host's alerts
        AlertTemplate("admin2@mycompany.com", "HOSTS", "myhost", True),

```



```

# This template matches for a specific cluster's alert
s
AlertTemplate("admin3@mycompany.com", "CLUSTER", "Cluster 1", True),
# This template matches for a specific health test message
AlertTemplate("admin@mycompany.com", "CONTENT", "This is a test alert that was generated by user request from "
"Cloudera Manager", True)]
except ValueError as error:
    print(error)
    exit(2)

alert_reader.read_alert()
alert_reader.print_alerts()
email_sender = EmailSender(host, port, sender_address)
email_sender.send_email_to_recipients(alert_reader.alerts, recipients)

```

## Alert email routing

In multi-tenant or large-cluster environments, routing specific alerts to the right person is a key part of deployment. With Alert email routing, you can define the alert rules in Cloudera Manager to route alerts to selected email addresses and avoid sending all alert notifications to one or more email addresses. Alert rules are defined based on user profiles, clusters, hosts, services, roles, host groups, role types, role groups, role types, the severity of the alert, priority, and specific health test results. A host group is a collection of hosts or services or roles respectively to which the same alert rule applies. Some of the use cases for Alert email routing are as follows:

- You can create a role group that includes all the secondary roles such as Data Nodes. When configuring an alert rule for this role group, you can include the email addresses of the experts of these roles so that they receive email notifications only about the critical alerts of the secondary roles. You can even silence the alerts of the non-critical roles of this group and react more quickly to the critical alerts.
- You can create a service group that includes all the storage services such as HDFS and HBase. When configuring an alert rule for this service group, you can include the email addresses of your storage experts who should receive email notifications only about the alerts of the storage services.
- You can create a host group that includes the hosts that are in the same rack such as Rack1. When configuring an alert rule for this host group, you can include the email addresses of the cluster administrator of these hosts who should receive email notifications only about the alerts of Rack1.
- If the cluster operator does not need email notifications about a health test that is often in a bad state and is not critical for the operation, then

the operator can define an alert rule to silence the alerts of that health test. You can configure the following parameters for Alert email routing:

- User profiles - A user profile defines a user or a user group who should receive email alerts.
- Host groups - A host group defines a subset of hosts. You can use this group as one logical unit for email alerting.
- Service groups - A service group defines a subset of services. You can use this group as one logical unit for email alerting.
- Role groups - A role group defines a subset of roles. You can use this group as one logical unit for email alerting.
- Alert rules - An alert rule ensures certain hosts or services or roles or health test alerts are sent to only selected email addresses.

### Configuring user profiles for email alerts

You can configure a user profile using Cloudera Manager. A user profile defines a user or a group of users who should receive email alerts. You can create any number of user profiles.

Before you begin

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

#### Procedure

1. Log into Cloudera Manager as an Administrator.
2. Go to Clusters Cloudera Management Service Configuration.
3. Select Alert Publisher from the SCOPE drop-down menu and select Main from the CATEGORY drop-down menu.
4. Locate the User profiles for email alerting property or search for it by typing its name in the Search box.
5. Configure the User profiles for email alerting property. Click Add Another to add a new user profile.
6. Enter a unique name for the user profile in the Key field.
7. Enter the comma-separated list of email addresses in the Value field.
8. Click Save Changes at the bottom of the page to save your settings.
9. Restart the Alert Publisher role. For more information, see Starting, Stopping, and Restarting Role Instances.

### Configuring host groups for email alerts

You can configure a host group using Cloudera Manager. A host group defines a subset of hosts. Alerts by hosts are sent to the cluster administrator who manages these hosts. You can create any number of host groups.

Before you begin

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

### Procedure

- Log into Cloudera Manager as an Administrator.
- Go to Clusters Cloudera Management Service Configuration.

### Cloudera Manager Alerts

- Select Alert Publisher from the SCOPE drop-down menu and select Main from the CATEGORY drop-down menu.
- Locate the Host groups for email alerting property or search for it by typing its name in the Search box.
- Configure the Host groups for email alerting property. Click Add Another to add a new host group.
- Enter a unique name for the host group in the Key field.
- Enter the comma-separated list of host names in the Value field. Important: If you do not enter a valid host name, then you might encounter a validation error. In case of an empty list, all managed hosts are considered as a host group.
- Click Save Changes at the bottom of the page to save your settings.
- Restart the Alert Publisher role. For more information, see Starting, Stopping, and Restarting Role Instances.

### Configuring service groups for email alerts

You can configure a service group using Cloudera Manager. A service group defines a subset of services that you need email alerts. You can create any number of service groups.

#### Before you begin

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

### Procedure

1. Log into Cloudera Manager as an Administrator.
2. Go to Clusters Cloudera Management Service Configuration.
3. Select Alert Publisher from the SCOPE drop-down menu and select Main from the CATEGORY drop-down menu.
4. Locate the Service groups for email alerting property or search for it by typing its name in the Search box.
5. Configure the Service groups for email alerting property. Click Add Another to add a new service group.
6. Enter a unique name for the service group in the Key field.
7. Enter the comma-separated list of service names in the Value field. Important: If you do not enter a valid service name, then you might encounter a validation error. In case of an empty list, all managed services are considered as a service group.
8. Click Save Changes at the bottom of the page to save your settings.
9. Restart the Alert Publisher role. For more information, see Starting, Stopping, and Restarting Role Instances.

## Configuring role groups for email alerts

You can configure a role group using Cloudera Manager. A role group defines a subset of roles sent to the experts who manage these roles. You can create any number of role groups.

Before you begin

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

### Procedure

- Log into Cloudera Manager as an Administrator.
- Go to Clusters Cloudera Management Service Configuration.
- Select Alert Publisher from the SCOPE drop-down menu and select Main from the CATEGORY drop-down menu.
- Locate the Role groups for email alerting property or search for it by typing its name in the Search box.
- Configure the Role groups for email alerting property. Click Add Another to add a new role group.
- Enter a unique name for the role group in the Key field.
- Enter the comma-separated list of role names in the Value field. Important: If you do not enter a valid role name, then you might encounter a validation error. In case of an empty list, all managed roles are considered as a role group.
- Click Save Changes at the bottom of the page to save your settings.
- Restart the Alert Publisher role. For more information, see Starting, Stopping, and Restarting Role Instances.

### Related Information

Starting, Stopping, and Restarting Role Instances

## Configuring alert rules for email alerts.....

You can configure an alert rule using Cloudera Manager. An alert rule ensures certain hosts health test alerts are sent to only selected email addresses. You can create any number of alert rules.

Before you begin

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

### Procedure

1. Log into Cloudera Manager as an Administrator.
2. Go to Clusters Cloudera Management Service Configuration.
3. Select Alert Publisher from the SCOPE drop-down menu and select Main from the CATEGORY drop-down menu.

4. Locate the Alert rules for email alerting property or search for it by typing its name in the Search box.
5. Configure the Alert rules for email alerting property. Click Add Another to add a new alert rule.
6. Select the severity level of the alert from the list of severity levels (Warning, Critical, or Both). Important: For Health Alert Threshold, you must select the Concerning parameter to ensure the email alerts are sent with the warning severity. To select this parameter, from the Cloudera Manager home page, navigate to Clusters Cloudera Management Console Configuration and in the search bar, type Health Alert Threshold.
7. Enter the priority value for the alert rule in the Priority field. Important: The alert rule with the lowest priority value is processed first. The priority value must be a non-negative integer.
8. Specify the values in the User Profiles, Clusters, Hosts, Services, Roles, Host Groups, Service Groups, Service Types, Role Groups, Role Types, and Health Tests fields as needed. You must enter the values atleast in one of these fields to create a matching alert rule. Important: If the User Profiles field remains empty, then no users receive email notifications about the alerts. You can enter any number of predefined user profiles in the User Profiles field. If there is more than one user profile, then email alerts are sent to more addresses. You must set the Alert: Mail From Address parameter according to the mail server hostname. Otherwise, the emails may not sent to an external email service.
9. Click Save Changes at the bottom of the page to save your settings.
10. Restart the Alert Publisher role. For more information, see Starting, Stopping, and Restarting Role Instances.

## Enabling Configuration Change Alerts

You can set configuration change alerts to be service-wide, or on specific roles for the service.

### About this task

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

### Procedure

1. Click a service, role, or host.
2. Click the Configuration tab.
3. Click the Monitoring category.
4. Check the Enable Configuration Change Alerts checkbox.
5. Enter a Reason for change, and then click Save Changes to commit the changes.
6. Click the Cloudera Manager logo to return to the Home page.

7. Click the icon that is next to any stale services to invoke the cluster restart wizard.

## Enabling HBase Alerts

You can enable region or Hbck alerts for the HBase service.

About this task

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

Procedure

1. Go to the HBase service.
2. Click the Configuration tab.
3. Select Scope HBase service\_name (Service-Wide).
4. Click the Monitoring category.
5. Set one of the region or Hbck alerts:
  - Hbck Region Error Count
  - Hbck Error Count
  - Hbck Alert Error Codes
  - Hbck Slow Run
  - Region Health Canary Slow Run
  - Canary Unhealthy Region Count
  - Canary Unhealthy Region Percentage
6. Enter a Reason for change, and then click Save Changes to commit the changes.
7. Click the Cloudera Manager logo to return to the Home page.
8. Click the icon that is next to any stale services to invoke the cluster restart wizard.

## Enabling Health Alerts

You can enable alerts when the health of a role or service crosses a threshold.

About this task

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Administrator)

Procedure

1. Select Clusterscluster\_name or open the page for a role.
2. Click the Configuration tab.
3. Select Scoperole\_name or service\_name (Service-Wide).
4. Click the Monitoring category.
5. Check the Enable Health Alerts for this Role or Enable Service Level Health Alerts checkbox, depending on whether you are configuring a role or a service.

6. Enter a Reason for change, and then click Save Changes to commit the changes.
7. Click the Cloudera Manager logo to return to the Home page.
8. Click the icon that is next to any stale services to invoke the cluster restart wizard.

## Modifying the Health Threshold

You can configure the threshold for when a health alert is raised.

About this task

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

Procedure

1. Select AdministrationAlerts.
2. Click to the right of Health Alert Threshold.
3. Select ScopeEvent Server.
4. Click the Main category.
5. Select the Bad or Concerning option.
6. Enter a Reason for change, and then click Save Changes to commit the changes.
7. Click the Cloudera Manager logo to return to the Home page.
8. Click the icon that is next to any stale services to invoke the cluster restart wizard.

## Configuring Alerts Transitioning Out of Alerting Health Threshold

You can configure an alert when a service or role instance transitions from an alerting to a threshold.

About this task

Minimum Required Role: Limited Cluster Administrator (also provided by Full Administrator and Super Administrator)

Procedure

1. Select AdministrationAlerts.
2. Click to the right of Alert on Transitions out of Alerting Health.
3. Select Scoperole\_name or service\_name (Service-Wide).
4. In the category Event Server Default Group, check the Alert on Transitions out of Alerting Health checkbox.
5. Enter a Reason for change, and then click Save Changes to commit the changes.
6. Click the Cloudera Manager logo to return to the Home page.
7. Click the icon that is next to any stale services to invoke the cluster restart wizard.

## Configuring Log Alerts

You can configure an alert when a daemon emits a log message that matches a specified regular expression. For more information, see [Configuring Log Alerts](#).

Related Information

[Configuring Log Alerts](#)

## Configuring Alert Delivery

You can configure alerts to be delivered by email or sent as SNMP traps.

If you choose email delivery, you can add to or modify the list of alert recipient email addresses. For more information, see [test alert email](#).

Note: If alerting is enabled for events, you can search for and view alerts in the Events table. If you have not configured email notification, you will not have email notification configured.