

How to set External Sumologic for logging using Log4j2 Appender in CH

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The goal of this document is to provide you with detailed steps of Sumologic logging using Log4j2 Appender and Validate testing using POC.

1. Pre-requisites

- JDK Version 1.8
- Anypoint Studio 7.x.x
- Sumologic Access
- Anypoint Platform access

2. How to setup HTTP Logs and metrics source on Sumologic

- To configure an HTTP Logs and Metrics Source: In the Sumo Logic web app, select Manage Data > Collection > Collection.
- On the Collectors page, click Add Source next to a Hosted Collector.

Edit Collector: sumoTest

Name *

sumoTest

Description

Testing data collector

Category

Unless overwritten by Source metadata, the Collector will set the Source category of all messages to this value.

Fields/
Metadata

+Add Field

Time Zone

(GMT-05:00) America/New_York

Unless overwritten by Source time zone, the Collector will set the Source time zone of all messages to this value.

Cancel

Save

- Select HTTP Logs & Metrics.
- Enter a Name to display for the Source in the Sumo web application. The description is optional.

[Collectors and Sources](#) > **Edit Source: TestHTTP**

Name*

TestHTTP

Maximum name length is 128 characters.

Description

Source Host

Host name for the system from which the data is being collected. This is optional, as not all data sources have host names. This will override the default set in the "Host Name" field at the Collector level. This data is queried using the "_sourceHost" key name.

Source Category

Category metadata to use later for querying, e.g. prod/web/apache/access. This data is queried using the "_sourceCategory" key name.

Fields/Metadata

+Add Field

▼ Advanced Options for Logs

Enable Timestamp Parsing

☒ Extract timestamp information from log file entries

Time Zone

☒ Use time zone from log file. If none is detected use:

Use Collector Default

☐ Ignore time zone from log file and instead use:

Use Collector Default

Timestamp Format

☒ Automatically detect the format
☐ Specify a format

Enable Multiline Processing

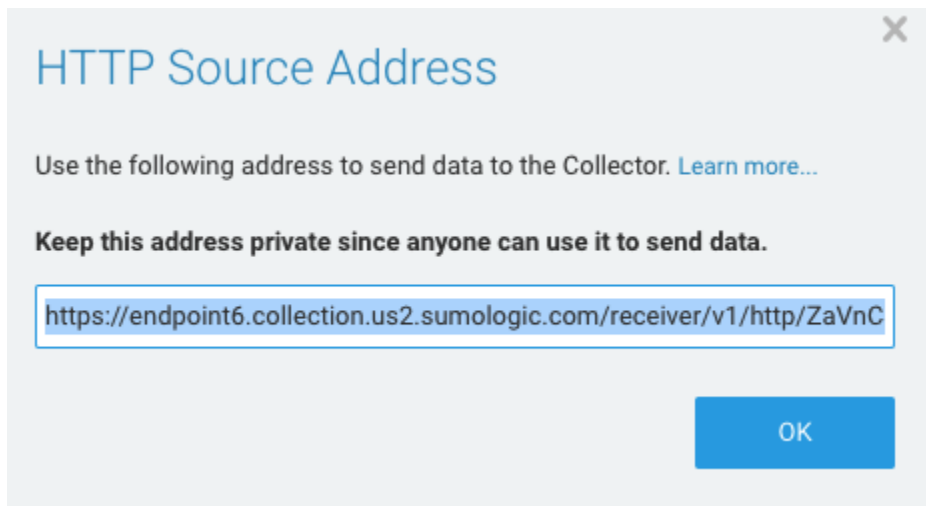
☒ Detect messages spanning multiple lines

☒ Infer Boundaries - Detect message boundaries automatically

Please note, Infer Boundaries may not be accurate for all log types.

☐ Boundary Regex - Expression to match message boundary e.g. (?<R\)(\r+)

- When you are finished configuring the Source click **Save**
- Source Host and Source Category, enter any string to tag the output collected from the source



3. Implementing with Log4j2 Appender installation steps

- ❑ Below Dependency library can be added to your project using Maven Central to a POM file

```
<dependency>
  <groupId>com.sumologic.plugins.log4j</groupId>
  <artifactId>sumologic-log4j2-appender</artifactId>
  <version>1.1</version>
</dependency>
</dependencies>
```

- ❑ Open the src/main/resources/log4j2.xml and add sumologic appender as below and ensure the URL is HTTP resource URL to hook up with

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <configuration status="info" name="sumologic" packages="com.sumologic.log4j">
3
4 <!--These are some of the loggers you can enable. There are several more
5 you can find in the documentation. Besides this log4j configuration, you
6 can also use Java VM environment variables to enable other logs like network
7 (-Djavax.net.debug=ssl or all) and Garbage Collector (-XX:+PrintGC). These
8 will be append to the console, so you will see them in the mule_ee.log file. -->
9
10 <Appenders>
11 <RollingFile name="file"
12   fileName="${sys:mule.home}${sys:file.separator}logs${sys:file.separator}sumologic.log"
13   filePattern="${sys:mule.home}${sys:file.separator}logs${sys:file.separator}sumologic-%i.log">
14   <PatternLayout>
15     pattern="%-5p %d [%t] [processor: %X{processorPath}] event: %X{correlationId}] %c: %m%n" />
16   <SizeBasedTriggeringPolicy size="10 MB" />
17   <DefaultRolloverStrategy max="10" />
18 </RollingFile>
19
20 <SumologicAppender
21   name="SumoAppender"
22   url="https://endpoint6.collection.us2.sumologic.com/receiver/v1/http/ZaVnC4dhaV2nX2eHW3MUP0ITp0JLkhX6pMkzEDsw5AeLL456_V81bbT5URq8ZB75hNqzTGRy8Xmb3pqVa0VK9WKZ2KZA51pj1250IbzDZ"
23   <PatternLayout pattern="%d{yyyy-MM-dd HH:mm:ss,SSS Z} [%t] %-5p %c - %m%n" />
24 </SumologicAppender>
25 </Appenders>
26
27 <Loggers>
28
29 <!-- Http Logger shows wire traffic on DEBUG. -->
30 <!--AsyncLogger name="org.mule.service.http.impl.service.HttpMessageLogger"
31   level="DEBUG" / -->
32 <AsyncLogger name="org.mule.service.http" level="WARN" />
33 <AsyncLogger name="org.mule.extension.http" level="WARN" />
34
35 <!-- Mule logger -->
36 <AsyncLogger
37   name="org.mule.runtime.core.internal.processor.LoggerMessageProcessor"
38   level="INFO" />
39
40 <AsyncRoot level="INFO">
41   <AppenderRef ref="file" />
42   <AppenderRef ref="SumoAppender" />
43 </AsyncRoot>
44 </Loggers>
45 </Configuration>
46
47
```

HTTP Source Address

Use the following address to send data to the Collector. [Learn more...](#)

Keep this address private since anyone can use it to send data.

https://endpoint6.collection.us2.sumologic.com/receiver/v1/http/ZaVnC

OK

- ❏ Add appender ref as below

```
<!-- Mule logger -->
<AsyncLogger
  name="org.mule.runtime.core.internal.processor.LoggerMessageProcessor"
  level="INFO" />

<AsyncRoot level="INFO">
  <AppenderRef ref="file" />
  <AppenderRef ref="SumoAppender" />
</AsyncRoot>
```

<Loggers>

```
<!-- Http Logger shows wire traffic on DEBUG. -->
<!--AsyncLogger name="org.mule.service.http.impl.service.HttpMessageLogger"
  level="DEBUG" / -->
<AsyncLogger name="org.mule.service.http" level="WARN" />
<AsyncLogger name="org.mule.extension.http" level="WARN" />
<AsyncLogger name="com.test.appender" level="INFO">
  <AppenderRef ref="AzureEventHub" />
</AsyncLogger>
```

4. How to Enable Custom Log4j Configurations in CloudHub

- After you configure the Log4j appender, deploy the application to CloudHub and follow these steps to disable CloudHub logs
- From Anypoint Platform, select Runtime Manager >> Click Applications in the left menu.
- Click the Type column to display the details pane for the application.
- Click Manage Application.
- In the Settings page, click Disable CloudHub logs as below

sumologictest Stop ▼ 🔔

Application File
 Choose file ▼ Get from sandbox

Last Updated: 2022-01-12 6:45:21PM
 App url: sumologictest.us-e1.cloudhub.io

Runtime	Properties	Insight	Logging	Static IPs
Runtime version 4.3.0 ▼	Worker size 0.1 vCores ▼		Workers 1 ▼	
<p><small>To use Monitoring and Visualizer with this version, you may need to enable the agent after deploying. Learn how</small></p> <p><small>2+ workers are recommended for added reliability. Learn More</small></p>				
<p>Region US East (N. Virginia) ▼</p> <p> <input checked="" type="checkbox"/> Automatically restart application when not responding <input type="checkbox"/> Persistent queues <input type="checkbox"/> Encrypt persistent queues <input checked="" type="checkbox"/> Disable CloudHub logs </p> <p><small>ⓘ CloudHub logs have been disabled for this application. Please check your own application logging system for this application's logs.</small></p> <p><input checked="" type="checkbox"/> Use Object Store v2</p>				

Apply Changes

- In the Disabling CloudHub logs confirmation window, select the checkboxes to verify that you want to disable CloudHub logs as below

Disabling CloudHub logs

✕

☒ I realize that disabling Cloudhub logs means MuleSoft support will no longer be able to view logs for this application or help debug issues with this application.

☒ I have configured my own logging for this application, and will use that instead of the CloudHub logs to debug any issues with this application.

Apply Changes

- Click Apply Changes.
- Review your application settings to ensure they are correct.
- Click Apply Changes to restart your application.

- After your application starts, logs start flowing to your custom Log4j appender and are viewable on your target logging system - Sumologic

sumologictest | Live Console

① CloudHub application logs have been disabled. Only system logs are available. For application worker logs, please check your own application logging system.

Q Search Advanced

18:45:21.618	01/12/2022	Deployment	system	SYSTEM	Application queued to be deployed...
18:45:26.093	01/12/2022	Deployment	system	SYSTEM	Deploying application to 1 workers in us-east-1 region(s).
18:45:26.291	01/12/2022	Deployment	system	SYSTEM	Provisioning CloudHub worker in region=us-east-1...
18:45:34.588	01/12/2022	Deployment	system	SYSTEM	Starting CloudHub worker at 54.174.93.122 ...
18:46:32.579	01/12/2022	Deployment	system	SYSTEM	Worker(54.174.93.122): Starting your application on mule=4.3.0-20211222 Release date 01-04-2022 (MM-dd-yyyy) ...
18:46:51.940	01/12/2022	Deployment	system	SYSTEM	Worker(54.174.93.122): Your application has started successfully.
18:46:52.440	01/12/2022	Deployment	system	SYSTEM	Your application is started.

5. Testing and Validaiton of POC

- Deploy the app to cloud hub and system deployments logs shown as below



① CloudHub application logs have been disabled. Only system logs are available. For application worker logs, please check your own application logging system.

Search

Advanced

18:45:21.618	01/12/2022	Deployment	system	SYSTEM	Application queued to be deployed...
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18:46:51.940	01/12/2022	Deployment	system	SYSTEM	Worker(54.174.93.122): Your application has started successfully.
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- Test the EP of the app from postman as below

http://sumologictest.us-e1.cloudhub.io/sumo

GET http://sumologictest.us-e1.cloudhub.io/sumo

Params Authorization Headers (6) Body Pre-request Script Tests Settings

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
Key	Value	Description		

Body Cookies Headers (4) Test Results

Status: 200 OK Time: 56 ms Size: 114 B Save Response

Pretty Raw Preview Visualize Text

1

- Application logs would be displayed as below in sumologic for successful connection

The screenshot shows the SumoLogic web interface with a timeline view of logs. The timeline at the top shows a period from 6:35 PM to 6:49 PM on 01/12/2022. Below the timeline, a table of messages is displayed. The table has columns for #, Time, and Message. The messages are categorized by 'Name: Http Input' and 'Category: Http Input'. The messages contain detailed log data, including host information, name, category, and a long message body that appears to be a cookie header or similar data. The interface also includes a search bar, a 'LogReduce' button, and a 'LogCompare' button. The bottom of the interface shows a 'Switch to Classic Table' button and an 'Expand All' button.

#	Time	Message
16	01/12/2022 6:47:26.974 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:26.974 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALBCORS=42xkpujavySTPjci0YVYjdB12o5mWZC50aJg0NBUVSA+ZDKENxL603ABhUd0d070Tm9s8jz2KpAXKXy10vOKXq2amwGAA640CvEa5hu428r1FFbf; Expires=Wed, 19 Jan 2022 23:47:26 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:26 GMT
17	01/12/2022 6:47:26.973 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:26.973 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALB=42xkpujavySTPjci0YVYjdB12o5mWZC50aJg0NBUVSA+ZDKENxL603ABhUd0d070Tm9s8jz2KpAXKXy10vOKXq2amwGAA640CvEa5hu428r1FFbf; Expires=Wed, 19 Jan 2022 23:47:26 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:26 GMT
18	01/12/2022 6:47:16.717 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:16.717 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALB=yfmxvEhHE2N1C+FK42Bnz5Fa7uCu9yZ8g3JN1W7W0E2D8Xh+Hq6Ck; Expires=Wed, 19 Jan 2022 23:47:16 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:16 GMT
19	01/12/2022 6:47:16.718 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:16.718 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALB=yfmxvEhHE2N1C+FK42Bnz5Fa7uCu9yZ8g3JN1W7W0E2D8Xh+Hq6Ck; Expires=Wed, 19 Jan 2022 23:47:16 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:16 GMT
20	01/12/2022 6:47:06.476 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:06.476 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALBCORS=FnB2oUn3YAZu8fG2hVTZGFNS3cBqFm6jckih8q45F3x8Bz9PLNT3CHveJN15W+frDtAS8Phc3tJXnoXBJfU4RtkQ+QycPKEONR5UyNjngnF0i8I4EdnZTLV; Expires=Wed, 19 Jan 2022 23:47:06 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:06 GMT
21	01/12/2022 6:47:06.476 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:47:06.476 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALB=FnB2oUn3YAZu8fG2hVTZGFNS3cBqFm6jckih8q45F3x8Bz9PLNT3CHveJN15W+frDtAS8Phc3tJXnoXBJfU4RtkQ+QycPKEONR5UyNjngnF0i8I4EdnZTLV; Expires=Wed, 19 Jan 2022 23:47:06 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:47:06 GMT
22	01/12/2022 6:46:56.231 PM -0500	Host: 54.174.93.122 Name: Http Input Category: Http Input 2022-01-12 23:46:56.231 +0000 [SumoBufferFlusherThread] WARN org.apache.http.client.protocol.ResponseProcessCookies - Invalid cookie header: "Set-Cookie: AMSALBCORS=gn5f7YidtaUa3P3FRw7Zco1PBLVrJMcFLNfKwNzYI9dYVC2GeeR/1rVdPR12gBnq/P3QK3pIBQ+ST8V61Hw84ZsafdyogmLEyDLYCNLdMy3pnY8u; Expires=Wed, 19 Jan 2022 23:46:56 GMT; Path=/; SameSite=None; Secure". Invalid 'expires' attribute: Wed, 19 Jan 2022 23:46:56 GMT

6. Related Documentation/Helpful Resources

1. <https://help.sumologic.com/03Send-Data/Sources/02Sources-for-Hosted-Collectors/HTT>
2. <https://docs.mulesoft.com/runtime-manager/custom-log-appender>
3. <https://github.com/SumoLogic/sumo-log4j-appender>