

## Flink 1.11 之前

在 Flink 1.11 之前，Flink 使用的日志是 Log4j，配置文件 `log4j.properties` 中的内容如下：

```
1  # This affects logging for both user code and Flink
2  log4j.rootLogger=INFO, file
3
4  # Uncomment this if you want to _only_ change Flink's logging
5  #log4j.logger.org.apache.flink=INFO
6
7  # The following lines keep the log level of common libraries/connectors on
8  # log level INFO. The root logger does not override this. You have to
   manually
9  # change the log levels here.
10 log4j.logger.akka=INFO
11 log4j.logger.org.apache.kafka=INFO
12 log4j.logger.org.apache.hadoop=INFO
13 log4j.logger.org.apache.zookeeper=INFO
14
15 # Log all infos in the given file
16 log4j.appender.file=org.apache.log4j.FileAppender
17 log4j.appender.file.file=${log.file}
18 log4j.appender.file.append=false
19 log4j.appender.file.layout=org.apache.log4j.PatternLayout
20 log4j.appender.file.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss,SSS}
   %-5p %-60c %x - %m%n
21
22
23 # Suppress the irrelevant (wrong) warnings from the Netty channel handler
24 log4j.logger.org.apache.flink.shaded.akka.org.jboss.netty.channel.DefaultC
   hannelPipeline=ERROR, file
```

该配置文件会将 JobManager 和 TaskManager 的日志分别打印在不同的文件中，每个文件的日志大小一直会增加，如果想配置日志文件按大小滚动的话可以使用 `RollingFileAppender`，则要将配置文件改成如下：

```
1  # This affects logging for both user code and Flink
2  log4j.rootLogger=INFO, RFA
3
4  # Uncomment this if you want to _only_ change Flink's logging
5  #log4j.logger.org.apache.flink=INFO
6
7  # The following lines keep the log level of common libraries/connectors on
8  # log level INFO. The root logger does not override this. You have to
   manually
9  # change the log levels here.
10 log4j.logger.akka=INFO
11 log4j.logger.org.apache.kafka=INFO
12 log4j.logger.org.apache.hadoop=INFO
13 log4j.logger.org.apache.zookeeper=INFO
14
```

```

15
16 log4j.appender.RFA=org.apache.log4j.RollingFileAppender
17 log4j.appender.RFA.File=${log.file}
18 log4j.appender.RFA.MaxFileSize=256MB
19 log4j.appender.RFA.Append=true
20 log4j.appender.RFA.MaxBackupIndex=10
21 log4j.appender.RFA.layout=org.apache.log4j.PatternLayout
22 log4j.appender.RFA.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss,SSS} %t
   %-5p %-60c %x - %m%n
23
24 # Suppress the irrelevant (wrong) warnings from the Netty channel handler
25 log4j.logger.org.apache.flink.shaded.akka.org.jboss.netty.channel.DefaultC
   hannelPipeline=ERROR, RFA

```

## 为什么要在生产环境下将日志文件改成按照大小滚动呢？

无非是在生产情况下，流数据是非常大的，有的时候自己可能会通过 `print()` 打印出来流数据进来验证结果，有的时候可能是打印的日志记录做 debug 用，然后到生产忘记关了，结果到生产就全部将流数据打印出来，这种情况下，就会导致 TaskManager 的日志文件会非常大，那么我们打开 Web UI 查看可能就会很卡，这也就是为啥我们有时候打开 Web UI 查看日志的时候，非常卡顿，加载不出来的原因了，主要原因就是日志文件太大导致的。

当然有的同学可能会想着将 Flink 作业的日志发到 Kafka 做统一的收集，然后做一些日志分析告警和再消费发到 Elasticsearch 等去做日志搜索，如果是发到 Kafka，可以使用 `KafkaLog4jAppender`，日志文件配置如下：

```

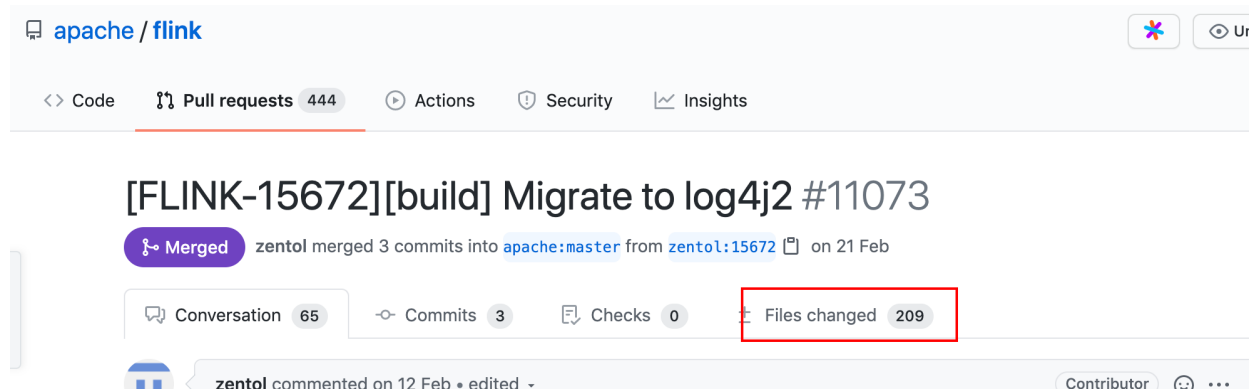
1 # This affects logging for both user code and Flink
2 log4j.rootLogger=INFO, kafka
3
4
5 # Uncomment this if you want to _only_ change Flink's logging
6 #log4j.logger.org.apache.flink=INFO
7
8 # The following lines keep the log level of common libraries/connectors on
9 # log level INFO. The root logger does not override this. You have to
   manually
10 # change the log levels here.
11 log4j.logger.akka=INFO
12 log4j.logger.org.apache.kafka=INFO
13 log4j.logger.org.apache.hadoop=INFO
14 log4j.logger.org.apache.zookeeper=INFO
15
16
17 # log send to kafka
18 log4j.appender.kafka=org.apache.kafka.log4jappender.KafkaLog4jAppender
19 log4j.appender.kafka.brokerList=localhost:9092
20 log4j.appender.kafka.topic=flink_logs
21 log4j.appender.kafka.compressionType=none
22 log4j.appender.kafka.requiredNumAcks=0
23 log4j.appender.kafka.syncSend=false
24 log4j.appender.kafka.layout=org.apache.log4j.PatternLayout
25 log4j.appender.kafka.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss} %-5p
   %c{1}:%L - %m%n
26 log4j.appender.kafka.level=INFO
27
28
29 # Suppress the irrelevant (wrong) warnings from the Netty channel handler

```

```
30 | log4j.logger.org.apache.flink.shaded.akka.org.jboss.netty.channel.DefaultC
    | hannelPipeline=ERROR, kafka
31 |
```

## Flink 1.11

在 Flink 1.11 中，将 Log4j 升级到了 Log4j2，可以通过查看 [FLINK-15672](#) 可以知道变更的文件很多，



新版本的日志配置文件还是叫 `log4j.properties`，配置如下所示，不清楚为啥 FLINK-15672 代码提交中改了很多地方的配置文件名为 `log4j2.properties`，但是 Flink 最后打包的 `conf` 目录下还是保持和之前一样的文件名，按道理不是也应该进行更改成 `log4j2.properties` 的吗？

```
1 | # This affects logging for both user code and Flink
2 | rootLogger.level = INFO
3 | rootLogger.appenderRef.file.ref = MainAppender
4 |
5 | # Uncomment this if you want to _only_ change Flink's logging
6 | #logger.flink.name = org.apache.flink
7 | #logger.flink.level = INFO
8 |
9 | # The following lines keep the log level of common libraries/connectors on
10 | # log level INFO. The root logger does not override this. You have to
    | manually
11 | # change the log levels here.
12 | logger.akka.name = akka
13 | logger.akka.level = INFO
14 | logger.kafka.name= org.apache.kafka
15 | logger.kafka.level = INFO
16 | logger.hadoop.name = org.apache.hadoop
17 | logger.hadoop.level = INFO
18 | logger.zookeeper.name = org.apache.zookeeper
19 | logger.zookeeper.level = INFO
20 |
21 | # Log all infos in the given file
22 | appender.main.name = MainAppender
23 | appender.main.type = File
24 | appender.main.append = false
25 | appender.main.fileName = ${sys:log.file}
```

```

26 appender.main.layout.type = PatternLayout
27 appender.main.layout.pattern = %d{yyyy-MM-dd HH:mm:ss,SSS} %-5p %-60c %x -
    %m%n
28
29 # Suppress the irrelevant (wrong) warnings from the Netty channel handler
30 logger.netty.name =
    org.apache.flink.shaded.akka.org.jboss.netty.channel.DefaultChannelPipel
    e
31 logger.netty.level = OFF

```

默认这个配置也是不会对日志文件进行按照大小滚动的，那么如果我们要保持和之前的效果一样（按照日志大小滚动日志文件）该怎么做呢？你可以更改配置文件的内容如下所示：

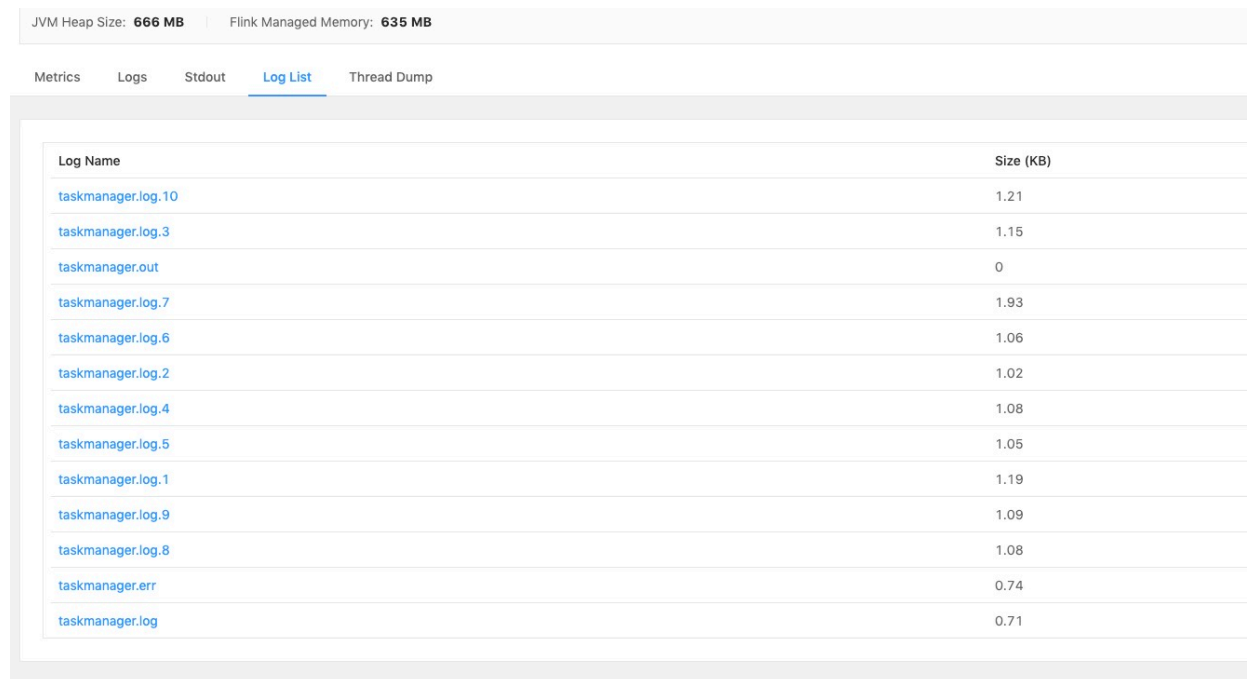
```

1  # This affects logging for both user code and Flink
2  rootLogger.level = INFO
3  rootLogger.appenderRef.rolling.ref = RollingFileAppender
4
5  # Uncomment this if you want to _only_ change Flink's logging
6  #logger.flink.name = org.apache.flink
7  #logger.flink.level = INFO
8
9  # The following lines keep the log level of common libraries/connectors on
10 # log level INFO. The root logger does not override this. You have to
    manually
11 # change the log levels here.
12 logger.akka.name = akka
13 logger.akka.level = INFO
14 logger.kafka.name = org.apache.kafka
15 logger.kafka.level = INFO
16 logger.hadoop.name = org.apache.hadoop
17 logger.hadoop.level = INFO
18 logger.zookeeper.name = org.apache.zookeeper
19 logger.zookeeper.level = INFO
20
21 # Log all infos in the given rolling file
22 appender.rolling.name = RollingFileAppender
23 appender.rolling.type = RollingFile
24 appender.rolling.append = false
25 appender.rolling.fileName = ${sys:log.file}
26 appender.rolling.filePattern = ${sys:log.file}.%i
27 appender.rolling.layout.type = PatternLayout
28 appender.rolling.layout.pattern = %d{yyyy-MM-dd HH:mm:ss,SSS} %-5p %-60c
    %x - %m%n
29 appender.rolling.policies.type = Policies
30 appender.rolling.policies.size.type = SizeBasedTriggeringPolicy
31 appender.rolling.policies.size.size = 200MB
32 appender.rolling.strategy.type = DefaultRolloverStrategy
33 appender.rolling.strategy.max = 10
34
35 # Suppress the irrelevant (wrong) warnings from the Netty channel handler
36 logger.netty.name =
    org.apache.flink.shaded.akka.org.jboss.netty.channel.DefaultChannelPipel
    e
37 logger.netty.level = OFF

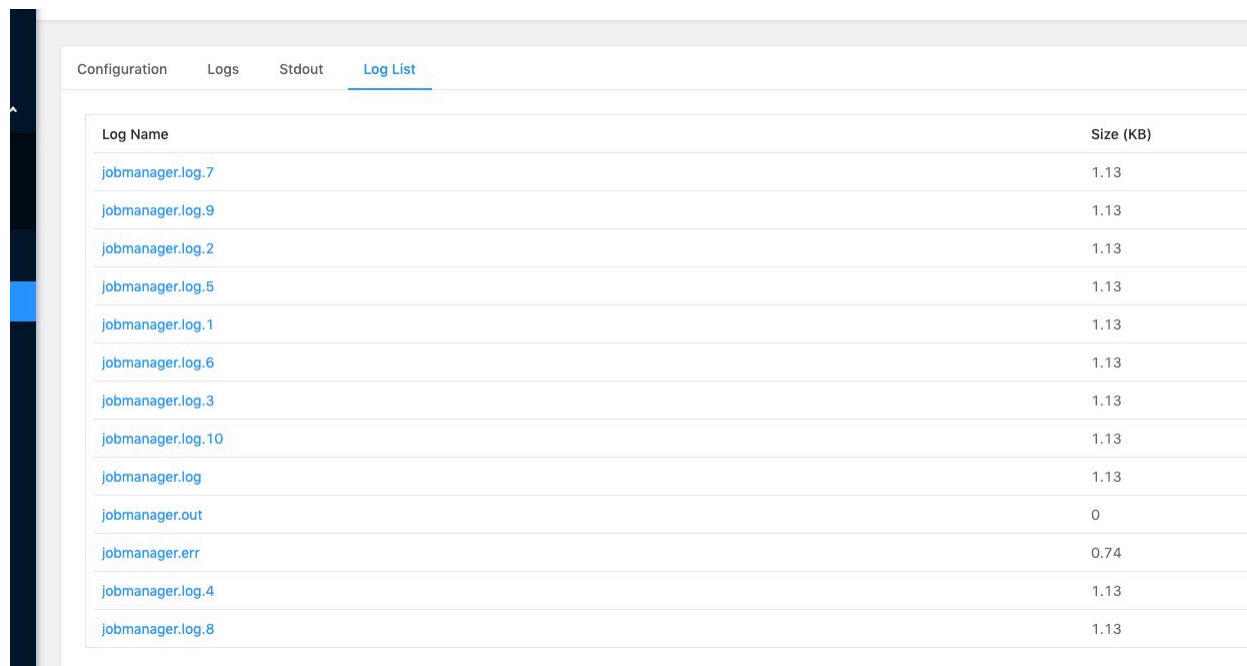
```

如果你升级到了 1.11 版本，不能继续沿用之前 1.11 之前的配置的那种日志文件滚动的配置了，需要做点变更。上面配置中表示日志文件以每隔 200MB 会进行切分，然后日志切分后的文件名是 `${sys:log.file}.%i`，以数字结尾。

1.11 进行了配置厚度的效果如下图所示：



JVM Heap Size: 666 MB   Flink Managed Memory: 635 MB	
Metrics Logs Stdout <u>Log List</u> Thread Dump	
Log Name	Size (KB)
<a href="#">taskmanager.log.10</a>	1.21
<a href="#">taskmanager.log.3</a>	1.15
<a href="#">taskmanager.out</a>	0
<a href="#">taskmanager.log.7</a>	1.93
<a href="#">taskmanager.log.6</a>	1.06
<a href="#">taskmanager.log.2</a>	1.02
<a href="#">taskmanager.log.4</a>	1.08
<a href="#">taskmanager.log.5</a>	1.05
<a href="#">taskmanager.log.1</a>	1.19
<a href="#">taskmanager.log.9</a>	1.09
<a href="#">taskmanager.log.8</a>	1.08
<a href="#">taskmanager.err</a>	0.74
<a href="#">taskmanager.log</a>	0.71



Configuration Logs Stdout <u>Log List</u>	
Log Name	Size (KB)
<a href="#">jobmanager.log.7</a>	1.13
<a href="#">jobmanager.log.9</a>	1.13
<a href="#">jobmanager.log.2</a>	1.13
<a href="#">jobmanager.log.5</a>	1.13
<a href="#">jobmanager.log.1</a>	1.13
<a href="#">jobmanager.log.6</a>	1.13
<a href="#">jobmanager.log.3</a>	1.13
<a href="#">jobmanager.log.10</a>	1.13
<a href="#">jobmanager.log</a>	1.13
<a href="#">jobmanager.out</a>	0
<a href="#">jobmanager.err</a>	0.74
<a href="#">jobmanager.log.4</a>	1.13
<a href="#">jobmanager.log.8</a>	1.13

从上面图中可以发现 1.11 对于查看日志比之前友好了不少，多个日志文件都有列表展示，而不再是之前只能查看单个日志文件了。

注：为了演示日志文件滚动的效果，测试的时候设置的日志 `appender.rolling.policies.size.size` 是 1KB