How to Enable Quartz Job Execution Log Interception In Applications

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1.   Purpose

This document describes the application logging configuration changes required to intercept log messages produced by executed Quartz scheduler jobs.

This document is relevant only to QuartzDesk Standard and Enterprise installations that use the QuartzDesk JVM Agent.

2.   Definitions

The following table lists all acronyms and shortcuts used throughout this document.

Acronym / Shortcut	Definition
JVM	Java Virtual Machine.

3. Enabling Log Message Interception

To intercept log messages produced by Quartz scheduler threads executing scheduled jobs, it is necessary to modify the logging configuration of applications that embed Quartz schedulers running on JVMs with the QuartzDesk JVM Agent.

The log message interception is currently supported for the following Java logging frameworks.

- Logback (http://logback.qos.ch)
- Log4j 1.x (http://logging.apache.org/log4j/1.2/)
- Log4j 2.x (http://logging.apache.org/log4j/2.x/)
- Java Util Logging (part of the standard Java API)

If an application uses an unsupported logging framework, then log messages produced by executed Quartz jobs will not be intercepted and some QuartzDesk features will be unavailable.

3.1 Logback

Add a new QUARTZDESK_JVM_AGENT appender to the application's logback configuration file (typically `logback.xml`).

```xml
<?xml version="1.0" encoding="UTF-8"?>
<configuration ...>

  ...

  <!--
    Appender that passes all received log events to the QuartzDesk JVM Agent for
    processing. Log events that are not produced by Quartz scheduler threads are
    silently ignored.
  -->
  <appender name="QUARTZDESK_JVM_AGENT"
            class="com.quartzdesk.api.agent.log.logback.LogbackInterceptionAppender">
    <filter class="ch.qos.logback.classic.filter.ThresholdFilter">
      <level>INFO</level>
    </filter>

    <layout class="ch.qos.logback.classic.PatternLayout">
      <pattern>[%date] %.-1level [%thread] [%logger:%line] - %msg%n</pattern>
    </layout>
  </appender>

  ...

  <root level="...">
    ...
    <appender-ref ref="QUARTZDESK_JVM_AGENT"/>
  </root>
</configuration>
```

3.2 Log4j 1.x

Add a new QUARTZDESK_JVM_AGENT appender to the application's log4j configuration file (typically `log4j.xml`).

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE log4j:configuration SYSTEM "log4j.dtd">
<log4j:configuration xmlns:log4j="http://jakarta.apache.org/log4j/" ...>

  ...

  <!--
    Appender that passes all received log events to the QuartzDesk JVM Agent for
    processing. Log events that are not produced by Quartz scheduler threads are
    silently ignored.
  -->
  <appender name="QUARTZDESK_JVM_AGENT"
            class="com.quartzdesk.api.agent.log.log4j.Log4jInterceptionAppender">
    <param name="threshold" value="INFO"/>

    <layout class="org.apache.log4j.EnhancedPatternLayout">
      <param name="conversionPattern" value="[%d{ISO8601}] %!.1p [%t] [%C:%L] -
%m%n"/>
    </layout>
  </appender>

  ...

  <!--
    All >= WARN messages from all libraries should be logged.
  -->
  <root>
    <priority value="..."/>
    ...
    <appender-ref ref="QUARTZDESK_JVM_AGENT"/>
  </root>

</log4j:configuration>
```

3.3   Log4j 2.x

Add a new QUARTZDESK_JVM_AGENT appender to the application's log4j configuration file
(typically `log4j2.xml`).

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<configuration ... strict="false">

  ...

  <appenders>

    ...

    <!--
      Appender that passes all received log events to the QuartzDesk JVM Agent for
      processing. Log events that are not produced by Quartz scheduler threads are
      silently ignored.
    -->
    <QuartzDeskJvmAgent name="QUARTZDESK_JVM_AGENT">
      <PatternLayout pattern="[%d{ISO8601}] %-5p [%t] [%C:%L] - %m%n"/>
      <filters>
        <ThresholdFilter level="info"/>
      </filters>
    </QuartzDeskJvmAgent>

    ...

  </appenders>

  <loggers>

    ...

    <!--
      All >= WARN messages from all libraries should be logged.
    -->
    <root level="...">
      ...
      <appender-ref ref="QUARTZDESK_JVM_AGENT"/>
    </root>

  </loggers>

</configuration>
```

3.4   Java Util Logging

Add a new `com.quartzdesk.api.common.log.jul.JulInterceptionHandler`
handler to the list of logging handlers in the application's Java Util logging configuration file
(typically `logging.properties`).

```
...

# Handlers
handlers = ..., com.quartzdesk.api.common.log.jul.JulInterceptionHandler

...

#
# Handler that passes all received log events to the QuartzDesk JVM Agent for
# processing. Log events that are not produced by Quartz scheduler threads are
# silently ignored.
#
com.quartzdesk.api.agent.log.jul.JulInterceptionHandler.level = INFO
com.quartzdesk.api.agent.log.jul.JulInterceptionHandler.formatter = ...
#com.quartzdesk.api.agent.log.jul.JulInterceptionHandler.filter = ...

...
```