ADAMS

Advanced **D**ata mining **A**nd **M**achine learning **S**ystem

Module: adams-event

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Chapter 1

Flow

The following actors are available:

- *TriggerEvent* – control actor for triggering an event found below an *Events* standalone.
- *Cron* – standalone for scheduled events. See 2 for more details.
- *DelayedEvent* – standalone that executes its sub-flow after a predefined number of milli-seconds.[1]
- *DirWatch* – standalone that watches a directory for file events (create, change, delete).[2]
- *Events* – standalone similar to *CallableActors*, used for grouping events.
- *ExternalStandalone* – is a triggerable event and can be added to the *Events* standalone.
- *Flow* – a flow itself is a triggerable event as well.
- *LogEvent* – standalone that allows listening to global logging events and processing of the received log records.
- *QueueEvent* – standalone that allows listening to a queue (ArrayList) located in internal storage and process items as soon as they become available.
- *VariableChangedEvent* – standalone that allows listening to changes to a specific variable.

[1]adams-event-delayed_event.flow
[2]adams-event-watch_dir.flow

Chapter 2

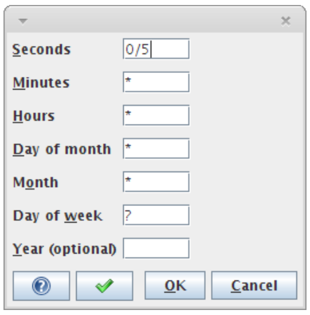
Cron jobs

Cron jobs are a very convenient way of performing background jobs that are only executed once in a while at specific times. For instance, a “clean up” job could run once every night, or a “backup” job every Friday night.

The *Cron* standalone can be used to *trigger* and execute these jobs. You can either place the actors that the job consists of below the *Cron* itself[1] or place them under a *Flow* control actor inside the *Events* standalone and call this event then using the *TriggerEvent* control actor.[2]

Since the cron jobs get executed at fixed times, we need to have a flow that is running forever, unless stopped by the user (or the cron job itself). This can be implemented using the *WhileLoop* control actor with an enclosed *Sleep actor*. To simplify this setup, there is already a sub-flow template available that generates such a flow: *EndlessLoop*.

The format for the cron job execution is not very intuitive when you look at it for the first time. In order to make it easier, you can use the editor that ADAMS offers (see Figure 2.1). This editor allows you to check the current input as well as opening a web page with a detailed description of the format (see [2]).



Seconds	0/5
Minutes	*
Hours	*
Day of month	*
Month	*
Day of week	?
Year (optional)	

Figure 2.1: The editor for entering the execution time of a cron job.

[1]adams-event-displaying_directory_contents1.flow
[2]adams-event-displaying_directory_contents2.flow

2.1 Customizing scheduler

The Quartz Job Scheduler[3], which is used by cron jobs, can be further customized by supplying a custom properties files. This property file has to be on the classpath, with a name of `quartz.properties` or `quartz.props`.

Here are the default settings for version 1.8.6 of the library (located in `org/quartz/quartz.properties`):

```
org.quartz.scheduler.instanceName = DefaultQuartzScheduler
org.quartz.scheduler.rmi.export = false
org.quartz.scheduler.rmi.proxy = false
org.quartz.scheduler.wrapJobExecutionInUserTransaction = false
org.quartz.threadPool.class = org.quartz.simpl.SimpleThreadPool
org.quartz.threadPool.threadCount = 10
org.quartz.threadPool.threadPriority = 5
org.quartz.threadPool.threadsInheritContextClassLoaderOfInitializingThread = true
org.quartz.jobStore.misfireThreshold = 60000
org.quartz.jobStore.class = org.quartz.simpl.RAMJobStore
```

To avoid update checks at start up time, set the following property:

```
org.quartz.scheduler.skipUpdateCheck = true
```

Bibliography

[1] *ADAMS* – Advanced Data mining and Machine learning System
`https://adams.cms.waikato.ac.nz/`

[2] *Cron format* – detailed explanation of format
`http://www.quartz-scheduler.org/docs/tutorials/crontrigger.html`

[3] *Quartz Job Scheduler* – a richly featured, open source job scheduling library that can be integrated within virtually any Java application.
`http://www.quartz-scheduler.org/`