



TRUCKMILK MANUAL

Jobs executor

June 2019

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1. Introduction

This document explains how to use the Truckmilk Page.

2. Usage

The page may be use in different context:

3. Installation

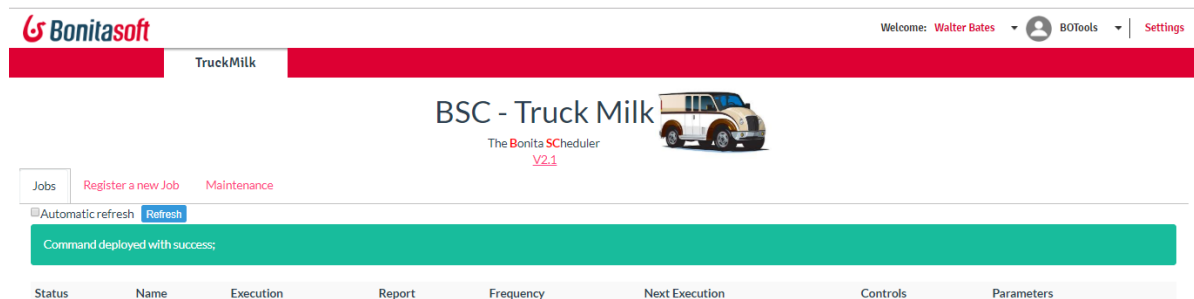
3.1. Get the resource

Download the page from the community,

3.2. Install the page

Then install the page as a Resource and reference it in a Profile or Application.

Access the page.



The first access, you should see a banner to explain the command is deployed with success

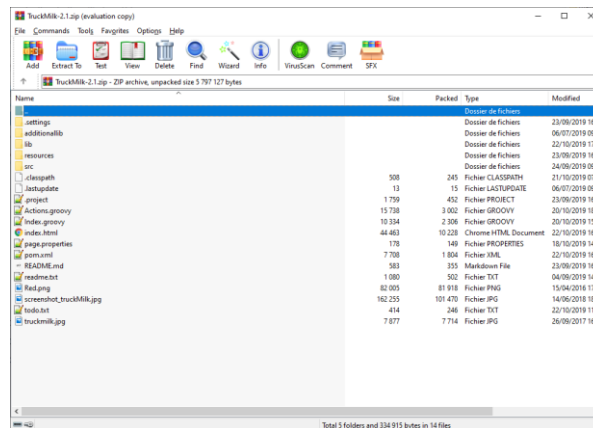
A Bonita Command is a JAVA Class deployed on the server. This allow the controller to check and start new jobs even if user is disconnected.

On a Cluster environment, each node will install the command. Command is saved in the database, and is backup when you back up the Bonita database

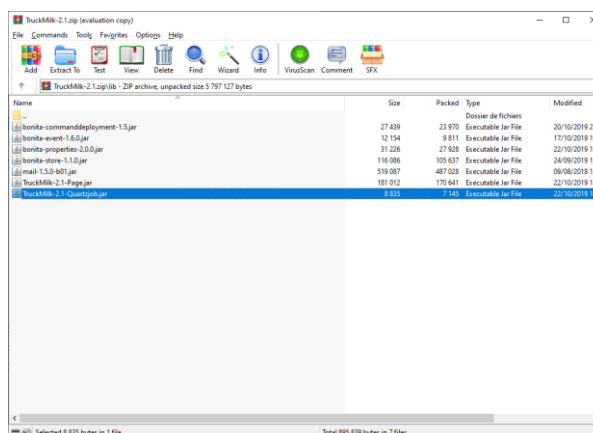
The second step consist to install the Quartz Job JAR file.

3.3. Install the Quartz

Unzip the Truck milk ZIP file.



Access the lib directory



Copy the jar name “TruckMilk<version>-Quartzjob.jar” under the path

`<BONITASERVER>/server/webapps/bonita/WEB-INF/lib`

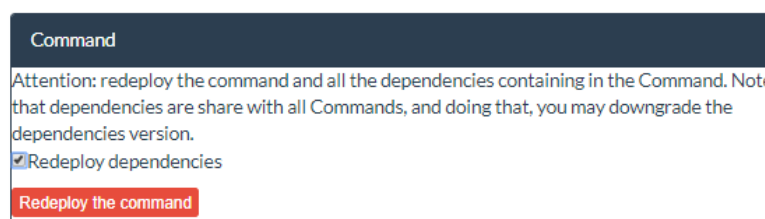
- You can copy it on your Bonita Studio: path is `<STUDIO>/workspace/tomcat/server/webapps/bonita/WEB-INF/lib`
- On a Cluster, you have to copy this file on each node.

Restart your server (on a studio, go to Server / Restart Web Server)

Then, access the page. Go to the tab “Maintenance” and click on START

3.4. Force a complete installation

Dependencies are shared between command. If you need to be sure to deploy dependencies associated to the command, the Command Deployment, in the tab **Maintenance**, can be used



4. De installation

To desinstall the page:

4.1. Stop the Quartz job

Go to the page, tab Maintenance, and select “Stop”.

The quartz job is stopped.

4.2. Remove the page

You can then remove the page in the Administration / resource

4.3. Advanced setup

Nota: to remove completely the page, you can do theses action:

- Use a tool to access commands (like Command Manage, available on the community) and remove the truckmilk command.
- Remove the Quartz file

Go to

```
<BONITASERVER>/server/webapps/bonita/WEB-INF/lib
```

And remove the file “TruckMilk<version>-Quartzjob.jar”. You should need first to stop the server. On a cluster, this operation has to be done on each node.

- You can check the Quartz Table in the server to verify the jobs is correctly removed in tables qrtz_cron_triggers, qrtz_triggers, qrtz_job_details. You can purges theses tables;

```
Select * from qrtz cron triggers where trigger name='trgMilktruckJob 1';  
Select * from qrtz_triggers where trigger_name = 'trgMilktruckJob_1';  
Select * from qrtz_job_details where job_name = 'trgMilktruckJob_1';
```

It's not recommended to purge these table. It's better to use the API.

5. Use jobs

Truck Milk execute jobs. This chapter explain how to create a jobs, then access all parameters

5.1. Create a job

Click on the tab **Register a new Job**

Choose the Plug In in the list of existing Plug in. Give then a name. The name must be unique (it's not possible to register two jobs with the same name).

Access the **Jobs** tab: job is visible in the list. By default, jobs are deactivated.

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge		Reports	0 0/10 * 1/1 * ? *		Now, Activate, Delete job	

5.2. Schedule

The scheduler part specify the frequency of execution. Visit <https://www.freeformatter.com/cron-expression-generator-quartz.html> to help you to calculate the frequency.

Click on the icon and setup the value

Click on Update to validate the change.

Note 1: the default value, 0 0/10 * 1/1 * ? * *, means:

At second: 00, every 10 minutes starting at minute: 00, every hour, every day starting on the 1st, every month


Note 2: Frequency apply only when the job is activated.

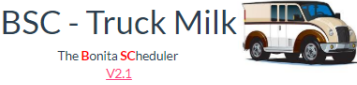
5.3. Parameters

Jobs executing a Plug in. Each Plug in has parameters.

Each plug in has main parameters: name, description.



The identifiant is generated by Truck milk when you created the jobs and is usable on log file.

Click on  and gives the value



[Jobs](#)
[Register a new Job](#)
[Maintenance](#)

☐ Automatic refresh
 [Refresh](#)

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge			0 0/10 * 1/1 * ? *		Now Activate  Delete job	<div> <div>Parameters</div> <div> <input type="checkbox"/> Detailed explanation </div> <div> <div>Name</div> <div>Get list of cases to purge</div> </div> <div> <div>Plug In</div> <div>Purge Archived Cases: get List (no purge)</div> </div> <div> <div>Identifiant</div> <div>1571952358582</div> </div> <div> <div>Description</div> <div></div> </div> <div> <div>Explanations</div> <div></div> </div> <div> <div>Delay in days</div> <div>10</div> </div> <div> <div>Maximum in report</div> <div>10000</div> </div> <div> <div>Maximum in minutes</div> <div>3</div> </div> <div> <div>Process filter</div> <div> Add </div> </div> <div> <div>Separator CSV</div> <div>,</div> </div> <div> <div>Report</div> <div>No document</div> </div> <div> Update </div> </div>

Different parameters exist:

- Integer,
- List of processes
- List of data
- Text

Click on Update to validate the change.

You can check the “Detailed explanation” to have more information parameter per parameter.

Parameters

☒ Detailed explanation

Name
Get list of cases to purge

Plug In
Purge Archived Cases: get List (no purge)

Identifiant
1571952358582

Description

Explanations

Delai in days
10
Only cases archived before this delay are in the perimeter

Maximum in report
10000
Job stops when then number of case to delete reach this limit, in order to not create a very huge file

Maximum in minutes
3
Job stops when the execution reach this limit, in order to not overload the server.

Process filter
Only processes in the list will be in the perimeter. No filter means all processes will be in the perimeter. Tips: give 'processName;version' to specify a special version of the process, else all versions of the process are processed
Add

Separator CSV
,
CSV use a separator. May be ; or ,

Report
No document
List is calculated and saved in this parameter

Update

5.3.1. Document Input parameter

A plug in may want a document as a parameter (Plug in “Purge Archived Case: Purge from list” for example)

When a job with this kind of parameters is detected, a new box appears. Select then the job and parameter and drag and drop the document to upload it on server.

Welcome: **Walter Bates**
BOTools
Settings

TruckMilk

BSC - Truck Milk
The Bonita Scheduler V2.1

Jobs
Register a new Job
Maintenance

☐ Automatic refresh
Refresh

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge		Reports	0 0/10 * 1/1 * ? *		Now	Activate Delete job
INACTIF	Purge from list		Reports	0 0/10 * 1/1 * ? *		Now	Activate Delete job

Upload file
Purge from list (Input List (CSV))
Drop your file here

5.3.2. Test parameters

In some Plug in, you may have some tools to help you. Then, a button is visible.

Analyse a specific case

Caseld

Give a caseld and an explanation will be return to describe what was done for this caseld
[Execute AnalyseCaseld](#)

5.4. Execute it once

To verify parameters or have an immediate start, you can click on the button “**Now**”.

Jobs is then registered to be executed.

Status is moved to “**Pending Start**”.

Welcome: **Walter Bates**

BOTools

Settings

TruckMilk

BSC - Truck Milk

The Bonita Scheduler V2.1

Jobs

Register a new Job

Maintenance

Automatic refresh

Refresh

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge		Reports	0 0/10 * 1/1 * ? *		Abort	Activate
PENDING - START							Delete job

Then, job status change to “**Executing**”. An estimation time to finish is calculated to end when it is possible (mainly for plug in who may need time to execute).

Welcome: **Walter Bates**

BOTools

Settings

TruckMilk

BSC - Truck Milk

The Bonita Scheduler V2.1

Jobs

Register a new Job

Maintenance

Automatic refresh

Refresh

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge		Reports	0 0/10 * 1/1 * ? *	2019-10-24 15:00:00	Abort	Activate
EXECUTING							Delete job

0% Finish at (00:00:00)

“**Abort**” button may be use at any time to ask the job to finish immediately. Each Plug in test regularly the status, and stop during the process, at a safe point (jobs is not killed).

When execution finish, status change to “**Success**”.

TruckMilk

BSC - Truck Milk

The Bonita Scheduler V2.1

Jobs Register a new Job Maintenance

☒ Automatic refresh Refresh

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
INACTIF	Get list of cases to purge	success 2019-10-24 15:03:02	Reports	0 0/10 * 1/1 * ? *	2019-10-24 15:10:00	Now	Activate

Note: status may be **SuccessNothing**. That indicate the job runs but have nothing to do. If you asked for the list of cases to purge, and the list is empty, then the plug In return a “Sucessnothing” status. Idea is to keep then only the real execution.

5.5. Activate / Deactivate

Activate a job by clicking on the Activate button. Truck Mil calculate the next Execution date.

TruckMilk

BSC - Truck Milk

The Bonita Scheduler V2.1

Jobs Register a new Job Maintenance

☒ Automatic refresh Refresh

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
ACTIF	Get list of cases to purge	success 2019-10-24 15:03:02	Reports	0 0/10 * 1/1 * ? *	2019-10-24 15:10:00	Now	Deactivate

At any time, you can deactivate a job.

5.6. Access the report

Report are accessible for each job by clicking on **Reports**.

All executions are visible, with a status.

BSC - Truck Milk
The Bonita Scheduler V2.1

Jobs: [Register a new Job](#) [Maintenance](#)

Automatic refresh [Refresh](#)

Status	Name	Execution	Report	Frequency	Next Execution	Controls	Parameters
ACTIF	Get list of cases to purge	SUCCESS 2019-10-24 15:14:02	Reports	0 0/10 * 1/1 * ? *	2019-10-24 15:20:00	Now Deactivate Delete job	

Report

Last execution: 2019-10-24 15:14:02
Next execution: 2019-10-24 15:20:00
Status: success
report: [Download this Document](#)

History

Date	Status	Item processed	Execution time (ms)	Details
2019-10-24 15:14:02	SUCCESS	2	42	Title Level Parameters
2019-10-24 15:03:02	SUCCESS	2	46	Title Level Parameters

Note 1: when the Plug-in produce a document, you can download it. Only the last generated document is saved.

Note 2: the history keeps only the **Success** and **Error** execution. If the Plug-in return a **SuccessNothing**, it is not saved in the list, to keep history with real information.

Note 3: Only the last ten executions are kept.

6. Embeded plug in

6.1. Delete case

The Plug-in delete cases, archived or not. A list of processes can be set as parameters, else all processes. Use this plug in when its necessary to purge a lot of cases.

Deletion of the case may not work due to a transaction timeout: to delete a process, Bonita Engine open a transaction, then delete all cases. When there are too much case to remove, transaction may fail. Secondly, this operation may need a lot of time to be finished.

The parameter "Maximum cases deletion" is used to specify the maximum number of case to delete. When the number is reach, the job finish, it will re-start at the next execution, so cases may be removed "page per page" to avoid any overloading on the server.

6.2. Email User tasks

This Plug in calculated, for a user, all visible tasks, i.e., all tasks visibles in the portal, in "my tasks".

Then, one (and only one) email is send to the user, with the list of all tasks.

Plug in required a User Profile as parameters: all users registered in the profile will receive an email if they have active tasks.

The content of email may be defined, using place holder:

- Assignedtask list all tasks assigned to the user

- Pendingtasks contains all tasks assigned (except the assigned tasks)

For example, the content may be

```
Your assigned task <br>{{assignedtasks}}<p>Your pending tasks:<br>{{pendingtasks}}
```

Nota: this plug in need the Email JAR file installed. Check tab [Maintenance / Information](#) to verify that the JAR is correctly installed.

6.3. Ping

Ping Plug In is here for test usage

6.4. Purge Archived Case

This Plug-in purge archived case. A delay may be set in parameter, to purge case with three months delay for example.

6.5. Purge Archived Case: Get List

This Plug In calculated a list of cases to purge, but not purge them. The list is a CSV file, containing the caseid, the process name. A status column is ready to be fulfilled.

A delay can be set in parameter, and a list of processes.

Example of CSV:

```
caseid;processname;processversion;archiveddate;status
5149;ExpenseNote;1.0;18/10/2019 15:02;
5150; ExpenseNote;1.0;18/10/2019 15:02;
5151;VacationRequest;1.0;18/10/2019 15:02;
```

6.6. Purge Archived Case: Purge from List

This Plug In works with the previous plug In. it accepts the same list, and check the status of each line. If the status is DELETE, then the case is removed.

Example of CSV to upload:

```
caseid;processname;processversion;archiveddate;status
5149;ExpenseNote;1.0;18/10/2019 15:02;DELETE
5150; ExpenseNote;1.0;18/10/2019 15:02;
5151;VacationRequest;1.0;18/10/2019 15:02;DELETE
```

6.7. Replay Failed Tasks

Replay Fail task re-execute all tasks in a Failed mode. The number of retry, and the delay between two tentative are parameters.

Note: the Bonita Engine must accept to replay a failed task. Only the Enterprise or Performance subscription allow that.

6.8. SLA

Tasks must have some due date to be executed (example, execute the task in 10 days). Before the delay is reach, different actions may be necessary:

- Send a reminder after 6 days (i.e. at 60% of the delay) to all users who can execute the task
- Send a second reminder after 9 days (90%)
- Send a alert reminder if the delay is over than 1 days (110%)
- Assign the task to a different person if the delay is over 13 days (130%)

A design in the process is possible to reach these operations, based on “non interruptible boundary event”. When process have a lot of human tasks, and rules are important, the design may become very complex. Secondly, if a rule change (add a new trigger, change the trigger at 90 to 80%), the process must be redeployed.

This Plug In does theses operations and can be update at any time.

The SLA operation is based:

Rules SLA	TaskName	Percent Threshold	Action
	<input type="text"/>	<input type="text"/>	<input type="text"/> remove

- A task's name. If this parameter is empty, the rule is applied on all tasks
- A Percent Threshold. This parameter is active only if the task has a Due Date. Then, the percentage is calculated between the Start Date and the Due Date. When the due date is reach, the percent is 100%. It's possible then to apply a rule over 100% (due date expired)
- Action: multiple actions are possible. Click on detail Explanation to have a list of explanation. Main actions are EMAILUSER, EMAILACTOR, EMAILCANDIDATE, ASSIGNUSER, ASSIGNSUPERVISOR

7. Maintenance

The Maintenance tab group some operations:

7.1. Information

This panel contains main information on the Scheduler.

Information

Quartz Job Up and running

Cause: The Quartz Job is up and running

Heart beat information

Last Heart Beat[24/10/2019 15:01:00], Next[undefined]

Cause: Last heart beat, and next one

Mail Not deployed

Plugin:Emails users tasks

Cause: Mail library are not deployed

Consequence: Emails can't be send

Action: Copy activation-1.1.jar and mail-1.5.0-b01.jar in the LIB folder (example, /lib folder)

Mail Not deployed

Plugin:SLA

Cause: Mail library are not deployed

Consequence: Emails can't be send

Action: Copy activation-1.1.jar and mail-1.5.0-b01.jar in the LIB folder (example, /lib folder)

☒ Details

Jobs

☐ Show


Reset

Jobs

Scheduler

Type: QUARTZ

Info: The QUARTZ engine embeded in Bonita is used to schedule the monitoring. Copy bonita-truckmilkquartzjob-client.jar to the Web Application server (webapp/bonita/WEB-INF/lib for a tomcat) and restart the server.


 ACTIF

Stop

Reset

Change the scheduler

Command

Attention: redeploy the command and all the dependencies containing in the Command. Note that dependencies are share with all Commands, and doing that, you may downgrade the dependencies version.

☐ Redeploy dependencies

Redeploy the command

8. Build a new plug in

This part explains how to develop a new Plug In. Don't hesitate to create and send to the community any new plug in. This plug in will be available then on any new release of the page and is maintained. Please note the plug in must be general (don't hard code any process name, any information, use parameters).

8.2. Clone the repository

Clone the github repository

https://github.com/Bonitasoft-Community/page_truckmilk

You can import the process under Eclipse.

8.3. Compile, deploy locally

To compile the page, just execute

```
mvn install
```

This order

- Download all needed component from Maven
- Compile the JAVA and generate a JAVA library
- Generate the page resource (a ZIP file, containing all libraries, HTML, resources)
- Deploy the page locally on your server, using localhost:8080 and walter.Bates to realize the job (if you need to deploy on a different server, with a different user name, modify the pom.xml)
- Create a profile named BOTools, and reference the page in this profile

To test the page, click again on the page in the menu bar: Bonita reload the page then.

8.4. Create a new plug in

A Plug In is a JAVA classes.

By convention, create the class under `org.bonitasoft.truckmilk.plugin`. Start it by "Milk.... This class should extend the class `MilkPlugIn`.

Then reference the new class in the `MilkPlugInFactory`, method `collectListPlugIn()` : this is the condition for the new plug in to appears in the list of "new job to register".

Look the Plug In "ping" (`MilkPing.java`). This is an example.

In the plug in, you should define:

- `getDefinitionDescription()` : you define the description, name, description, plus the list of parameters
- `execute()` : the core of the plug in
- `checkPlugInEnvironment()` : you can use any detection in this method to verify the environment. Do you have access to all Java Library?
- `checkJobEnvironment()`: here the check according the job. You have access of all parameters of the job. For example, the parameters give a Data source value. Can you connect to this data base?

8.5. Using parameters

8.6. Advancement

8.7. State of the art

- Don't hard code any value in the plug in. Use parameters. For example, if your plug-in has a delay to calculate the scope (delay when a process was deployed, delay when a case was archived), don't hard code this delay, ask it as a parameters.
- Use parameters. Your plug in works on process? Add a parameter to filter the scope of processes. If the parameter is empty, then check all processes
- Use the correct parameters type: for a process, use `ARRAYPROCESS`, not `STRING`.

- If your plug in is very heavy (for example, purge cases can need time if you want to purge 100 000 cases), then use the `setAvancement()` method. Administrator will see the advancement and can stop it.
- For a long running, ask as a parameter a maximum operation, or a maximum time to process. Then, you will not execute a “4 days works”, and the administrator can configure the treatment to run only 3 hours every night for example.
- Think big. Keep in mind your plug in can work on a large panel of input, so you have to create a robust plug in. use the `setAdvancement()`, allow the work to be stop after a certain number of items.
- Use the BEvent library. To report information, error, prefer the BEvent library. A BEvent contains the error title, plus the consequence and action to fix it. Who is the best person to document the “what to do”? The developer when he references the error. It’s a (little) more works for the developer, but really help the administrator. Then, because each BEvent has a unique number, it’s easy to find in the code where is the error.

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