Making a free JIRA Scheduler

The main purpose here is to utilize the Linux Cron facility to Transition Issues, rather than using the almost useless JIRA builtin services, or buying an expensixe cron/scheduling plugin for JIRA

The solution is pretty flexible for all issue types, by making the "--step "Initiate" a parameter instead of hardcoded, all issuetypes can be transitioned.

Prerequsites

Linux User

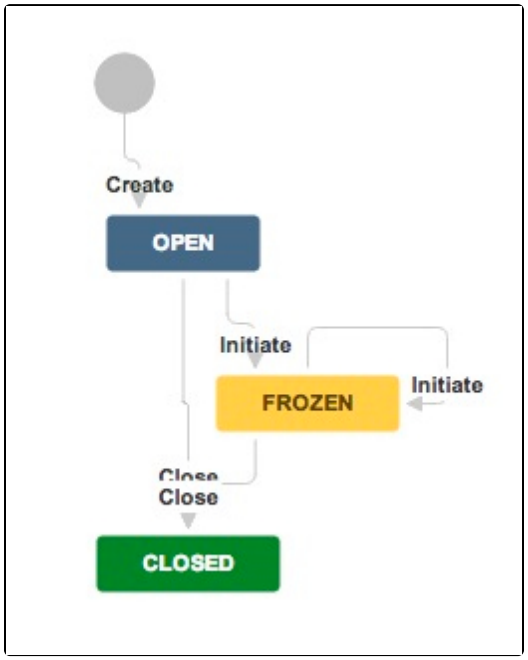
All scripts and the crontab stuff assumes that there is a "jira" user with access to /opt/jira-cron/

iq processor

jq command-line JSON processor must be available to the scripts

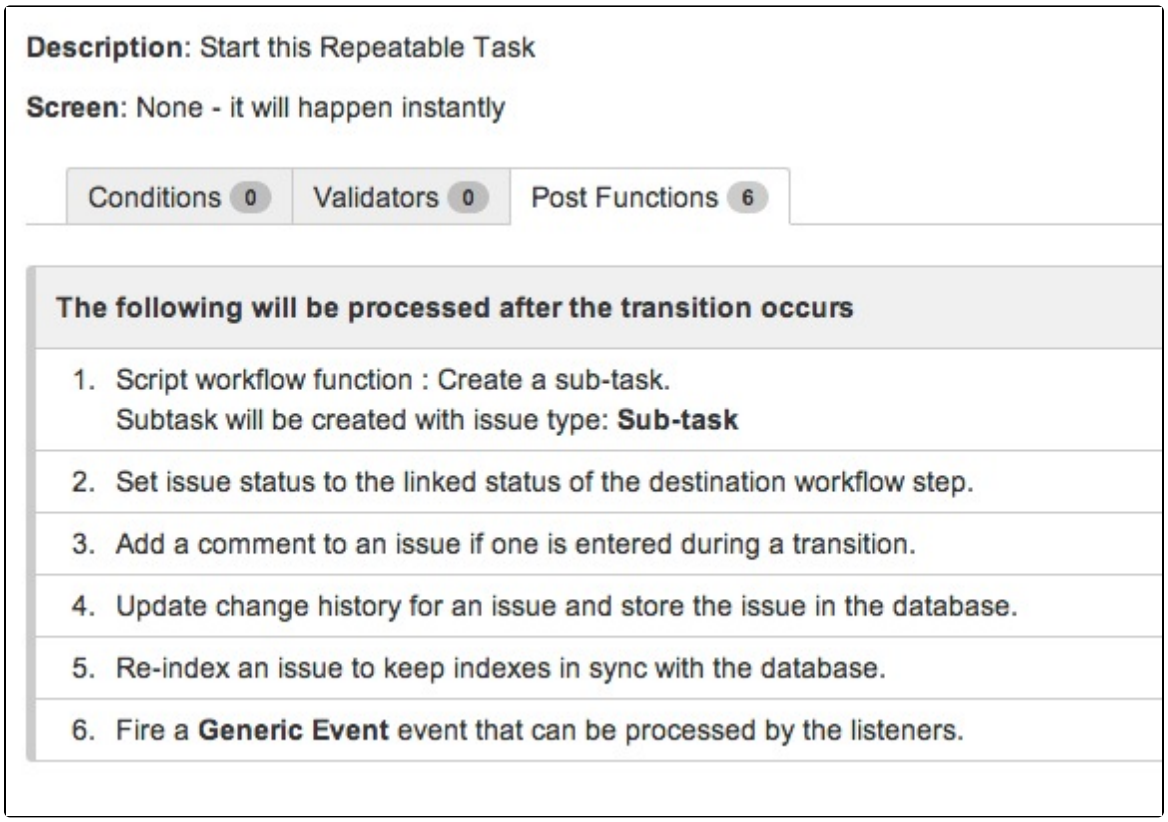
https://stedolan.github.io/jq/Workflow

My IssueType is called "Repeatable Task" and has a very small workflow:



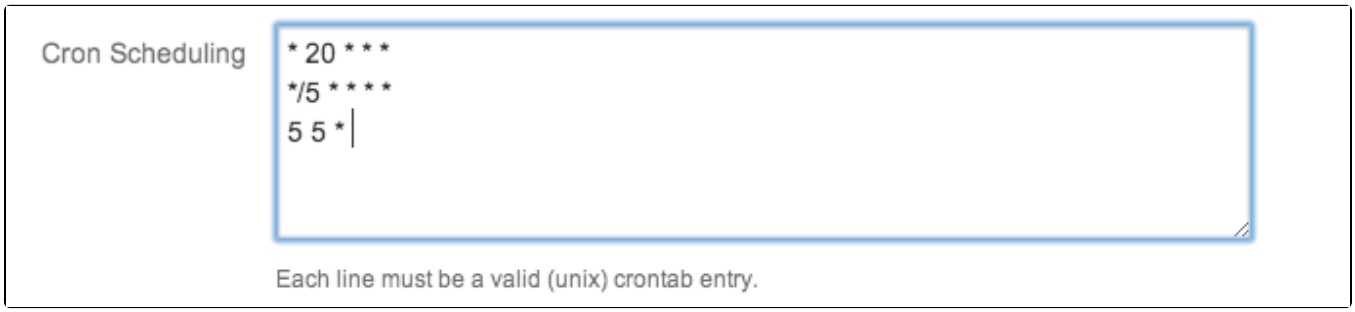
Upon the Transition of **Initiate** (id 61), the Post Function:

- Creates a copy of the Issue as a subtask
- Sets the the issue back to Status "Frozen"



A custom Field for crontab values

The Issuetype has a custom field called "Cron Scheduling" (Text Field (single line)), as this will hold the schedules for the Issue:



In the script, the field has the JIRA identifier customfield_12821 - You must change this to fit Your field.

Location

I have my stuff in /opt/jira-cron

```
user@myserver:/opt/jira-cron$ ls -l
total 152
-rw-rw-rw- 1 jira root 121906 2014-04-02 13:39 jiraMakeCrontab.log
-rwxr-xr-x 1 root root   1454 2014-04-02 13:44 jiraMakeCrontab.sh
-rw-rw-rw- 1 jira root  18132 2014-04-05 05:00 jiraTransitionIssue.log
-rwxr-xr-x 1 root root    909 2014-02-17 11:51 jiraTransitionIssue.sh
user@myserver:/opt/jira-cron$
```

The usefull Scripts

Make the crontab script

The scripts makes and enables a crontab for the "jira" user. It search for issues that satisfies:

Issuetype=Repeatable Task

Status=Frozen

Cron Scheduling has a value

jiraMakeCrontab.sh

```
#!/bin/bash

rm /tmp/crontab > /dev/null 2>&1

cd /opt/jira-cron/

IFS=$(echo -en "\n\b")
TODAY=`date +%Y-%m-%d.%H:%M:%S`

TransitionScript="/opt/jira-cron/jiraTransitionIssue.sh"
JIRAFilter="issuetype%20%3D%20%22Repeatable%20Task%22%20AND%20status%20in%20%28Frozen%29%20%20and%20%22Cron%
20Scheduling%22%20IS%20NOT%20NULL&maxResults=999"
JIRAUSER=""
JIRAPASS=""

#echo https://jira.server.dk/rest/api/2/search?jql=$JIRAFilter

CURLOPT_HEADER=0
export CURLOPT_HEADER
curl -D -k -u $JIRAUSER:$JIRAPASS -X GET -H "Content-Type: application/json" https://jira.server.dk/rest/api/2
/search?jql=$JIRAFilter > /tmp/issuelist.json

IssueTotal=`cat /tmp/issuelist.json | ./jq-linux64 '.total'`
echo "$TODAY Total: $IssueTotal" >> /opt/jira-cron/jiraMakeCrontab.log

Count=0
for IssueId in `cat /tmp/issuelist.json | ./jq-linux64 '.issues[] .id'`
do

  Count=$(($Count + 1))

  IssueId=`echo $IssueId | sed "s/\"//g"`
  curl -D -k -u $JIRAUSER:$JIRAPASS -X GET -H "Content-Type: application/json" https://jira.server.dk/rest/api/2
/issue/$IssueId > /tmp/issue.json

  IssueKey=`cat /tmp/issue.json | ./jq-linux64 '.key'| sed "s/\"//g"`
  #IssueStatus=`cat /tmp/issue.json | ./jq-linux64 '.fields.status.name'i | sed "s/\"//g"`
  cat /tmp/issue.json | ./jq-linux64 '.fields.customfield_12821' | sed "s/\"//g" | sed "s/\\\r//g" | sed "s
/\\\n/;/g" | sed "s/\\\t/ /g" > /tmp/cronfield.json

  for CronEntry in `cat /tmp/cronfield.json | tr ";" "\n"`
  do

    echo "$CronEntry $TransitionScript $IssueKey > /dev/null 2>&1" >> /tmp/crontab
    echo "$TODAY Added ($Count): $cronEntry $TransitionScript $IssueKey to /tmp/crontab" >> /opt/jira-cron
/jiraMakeCrontab.log

  done

  echo "" >> /tmp/crontab

done

#Replace JIRA Users crontab
if [ ! -f /tmp/crontab ]
then

  echo "" > /tmp/crontab

fi

crontab /tmp/crontab
```

The final line, making the JIRA crontab, can be extended with an error handler.

After running the script; - the /var/spool/cron/crontabs/jira (on Ubuntu LTS) should look like this:

```
#Crontabs for SUPPORT-513
* * 1 * * /opt/jira-cron/jiraTransitionIssue.sh SUPPORT-513 >> /opt/jira-cron/jiraTransitionIssue.log 2>&1

#Crontabs for HOMEPAGE-3846
0 5 2 * * /opt/jira-cron/jiraTransitionIssue.sh HOMEPAGE-3846 >> /opt/jira-cron/jiraTransitionIssue.log 2>&1

#Crontabs for HOMEPAGE-2933
0 0 1 * * /opt/jira-cron/jiraTransitionIssue.sh HOMEPAGE-2933 >> /opt/jira-cron/jiraTransitionIssue.log 2>&1

#Crontabs for PROJECTTOOLS-2467
0 5 5 * * /opt/jira-cron/jiraTransitionIssue.sh PROJECTTOOLS-2467 >> /opt/jira-cron/jiraTransitionIssue.log 2>&1
```

Make the Transition Script

Make sure the "jira" user has executeable acess to this. The TRANSITIONJSON defines the **Initiate** Transition (id 61)

jiraTransitionIssue.sh

```
#!/bin/bash

IFS=$(echo -en "\n\b")
TRANSITIONJSON='{"transition": {"id": "61"}}'
JIRAUSER=""
JIRAPASS=""
CURLOPT_HEADER=0
export CURLOPT_HEADER

cd /tmp

IssueKey=$1

if [ $IssueKey != '' ]
then

  curl -D header.txt -u $JIRAUSER:$JIRAPASS -X POST --data $TRANSITIONJSON -H "Content-Type: application/json"
https://jira.server.dk/rest/api/2/issue/$IssueKey/transitions
  rm header.txt

else

        echo "No IssueKey as parameter"

fi
```

The Master Cron

To make the JIRA users crontab on a regular basis, I use /etc/crontab on Ubuntu:

```
0 20 * * * jira /opt/jira-cron/jiraMakeCrontab.sh
```

Troubleshooting

Make sure the crontab is functioning, look in /var/log/syslog for tings like:

Cron reloading the new crontab for JIRA user:

```
Apr  5 13:28:50 myserver crontab[12857]: (jira) REPLACE (jira)
Apr  5 13:29:01 myserver cron[4946]: (jira) RELOAD (crontabs/jira)
```

Transitions via jira users cron entries:

```
Apr  5 05:00:01 myserver: CRON[1563]: (jira) CMD (/opt/jira-cron/jiraTransitionIssue.sh HOMEPAGE-2467 >> /opt
/jira-cron/jiraTransitionIssue.log 2>&1)
```

FIELD and STATE variables in the script files

Remember to change the variables to Your setup