jBPM Work Items and Timers

Mgr. Marián Macik, Principal Software Quality Engineer

April 2024

TOPICS COVERED
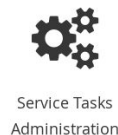
❏ Work Item Handlers
  ❏ What is a Work Item (WI)?
  ❏ Work Item Handler (WIH) installation
  ❏ Example #1 - Email WIH configuration
  ❏ Example #2 - REST WIH configuration

❏ Timer nodes
  ❏ Start, Catch intermediate
  ❏ Boundary intermediate
  ❏ Example #3 - Timer nodes

WORK ITEM

❏ Work Item is an implementation of a domain-specific service (REST call to an external service, email, integration with Google, Dropbox…).
❏ In other words it is "a piece of work that needs to be done" as a part of a business process.
❏ Work Items are executed using Work Item Handlers which are pluggable into the jBPM (Java classes implementing a Work Item Handler interface).
  ❏ Anybody can implement its own WIH in case it doesn't yet exist.
❏ WIH "tells" the jBPM engine how to handle the process node with a particular work item, i.e. how to send an email, call a REST service, upload a file to Dropbox…
❏ Plenty of Work Items available in jBPM Work Items repository (already preinstalled in jBPM).

Red Hat

WORK ITEMS INSTALLATION

❏ First, you have to enable work item for whole Business Central.
  ❏ Click on the wheel in the upper right corner.
  ❏ Select **Custom Tasks Administration**.
    ❏ Enable the service task you want.
❏ Some work items are enabled and available by default:
  ❏ BusinessRuleTask
  ❏ DecisionTask
  ❏ Email
  ❏ JMSSendTask
  ❏ Rest
  ❏ ServiceTask
  ❏ WebService

WORK ITEMS INSTALLATION

❏ Now you can install it to your project.
   ❏ In project **Settings/Custom Tasks**, click on Install button.
   ❏ Fill in needed parameters, they vary with each work item.

WORK ITEMS INSTALLATION

❏ You should see your work item handler declared in **Settings/Deployments/Work Item Handlers.**
  ❏ If it is not there, press the **Reset** button to refresh the user interface
  ❏ Don't press the **Save** button before you can see Work Item Handler as on the picture

General Settings	General Settings	Work Item handlers
General Settings	General Settings	
Dependencies	Marshalling Strategies	
KIE bases	Global	
External Data Objects	Event listeners	
Validation	Required roles	
Custom Tasks	Remoteable classes	
Deployments	Task event listeners	
Persistence	Configuration	
Branch Management	Environment entries	
Save Reset	Work Item handlers	

Work Item handlers

Name	Value	Resolver type	Parameters
IFTTTCall	new org.jbpm.process.workitem.ifttt.IFTTTWorkitemHandler("123")	MVEL ⌄	Parameters (0)

⊕ Add Work Item Handler

Example #1: EMAIL WORK ITEM CONFIGURATION

- ❏ Configuration for GMail:
    - ❏ new org.jbpm.process.workitem.email.EmailWorkItemHandler(**"smtp.gmail.com"**, **"587"**, **"testMail@gmail.com"**, **"testPassword"**, **"true"**)
    - ❏ Don't forget the last parameter "true". This will instruct Business Central to use secure TLS connection, which is needed for GMail.
    - ❏ In GMail account, don't forget to enable access for less secure apps. - This does not work after May 30, 2022. Instead, turn on 2-factor authentication and use App Passwords as a password in your WIH configuration.
- ❏ Configuration for MailSlurper (**download version 1.14.1**):
    - ❏ Change **wwwPort** to **8180** in config.json (or any other available port on your system) so it doesn't clash with Business Central 8080 port
    - ❏ You can skip credentials creation, it's not needed
    - ❏ new org.jbpm.process.workitem.email.EmailWorkItemHandler(**"localhost"**, **"2500"**, **"user"**, **"password"**)

Red Hat

Example #2: REST WORK ITEM CONFIGURATION

❏ Configuration:
   ❏ new org.jbpm.process.workitem.rest.RESTWorkItemHandler(**"user"**, **"password"**, **classLoader**)
   ❏ User and password can be empty, i.e. **""**, if no authentication is needed
   ❏ classLoader is a special variable needed for jBPM to see our domain object, i.e. Person
   ❏ If you need other options, please have a look at the source code and choose the appropriate constructor for your needs

Example #2: REST WORK ITEM CONFIGURATION

❏ You need your domain object, i.e. Person, to be remotable - able to be marshalled/unmarshalled to/from JSON/XML

TIMERS

❏ Timer nodes are useful for situations when our domain relies on specific time events, durations or deadlines
  ❏ We need to create a new process instance on a specific date or in specific intervals (Start)
  ❏ A product is painted and paint needs to dry before moving onto another stage in a factory (Catch intermediate)
  ❏ A task has to be completed in 24 hours, otherwise we need to escalate to a manager (Boundary intermediate)
❏ ISO8601 format for specifying time events

Start   Catch intermediate   Boundary intermediate

THANK YOU

in linkedin.com/company/red-hat

▶ youtube.com/user/RedHatVideos

f facebook.com/redhatinc

🐦 twitter.com/RedHat

Red Hat