jBPM Work Items and Timers

Mgr. Marián Macik, Senior Quality Engineer

April 2023



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



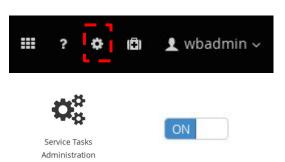
WORK ITEM

- 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 <u>jBPM Work Items repository</u> (already preinstalled in jBPM).



WORK ITEMS INSTALLATION

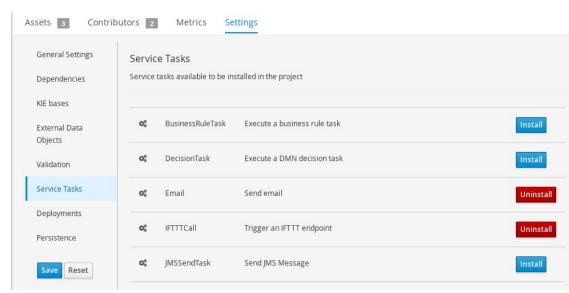
- First, you have to enable work item for whole Business Central.
 - Click on the wheel in the upper right corner.
 - ☐ Select Service Tasks Administration.
 - ☐ Enable the service task you want.
- Some work items are enabled and available by default:
 - BusinessRuleTask
 - DecisionTask
 - ☐ Email
 -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





WORK ITEMS INSTALLATION

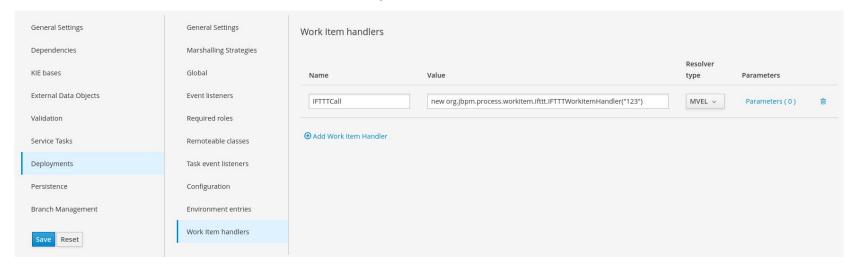
- Now you can install it to your project.
 - In project Settings/ServiceTasks, click on Install button.
 - Fill in needed parameters, they vary with each work item.





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





Example #1: EMAIL WORK ITEM CONFIGURATION

- Configuration for GMail:
 new org ibon process workitem email EmailWorkIte
 - 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 <u>enable access for less secure apps</u>. This does not work after May 30, 2022. Instead, turn on 2-factor authentication and use <u>App Passwords</u> as a password in your WIH configuration.
 - Configuration for MailSlurper:
 - 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")



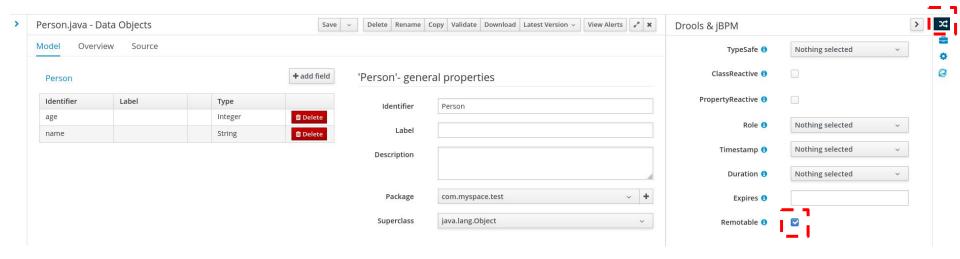
Example #2: REST WORK ITEM CONFIGURATION

- 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 <u>source code</u> 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





Boundary intermediate



THANK YOU

- in linkedin.com/company/red-hat
- youtube.com/user/RedHatVideos
- facebook.com/redhatinc
- twitter.com/RedHat

