

jBPM Work Items and Timers

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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).

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.

The screenshot shows the 'Settings' page of a Red Hat project. At the top, there are navigation links: 'Assets' (2), 'Change Requests' (0), 'Contributors' (1), 'Metrics', and 'Settings' (underlined). The left sidebar contains a list of settings categories: 'General Settings', 'Dependencies', 'KIE bases', 'External Data Objects', 'Validation', 'Custom Tasks' (highlighted), 'Deployments', 'Persistence', and 'Branch Management'. At the bottom of the sidebar are 'Save' and 'Reset' buttons. The main content area is titled 'Custom Tasks' and contains the text 'Custom tasks available to be installed in the project'. Below this is a table of tasks:

Task Name	Description	Action
BusinessRuleTask	Execute a business rule task	Install
DecisionTask	Execute a DMN decision task	Install
Email	Send email	Uninstall
IFTTTCall	Trigger an IFTTT endpoint	Uninstall
JMSSendTask	Send JMS Message	Install
Rest	Perform a Rest call	Install

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

The screenshot shows the 'Work Item handlers' configuration page in a web application. The left sidebar contains a list of settings categories, with 'Deployments' highlighted. The main content area displays a table of work item handlers. One handler is listed with the name 'IFTTCall', a value of 'new org.jbpm.process.workitem.ifttt.IFTTTWorkitemHandler("123")', a resolver type of 'MVEL', and zero parameters. Below the table is a link to 'Add Work Item Handler'. At the bottom left of the sidebar, there are 'Save' and 'Reset' buttons.

Name	Value	Resolver type	Parameters
IFTTCall	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")`

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

The screenshot displays the Red Hat Developer console interface for configuring a data object named 'Person'. The interface is divided into several sections:

- Person.java - Data Objects:** A header bar with a 'Save' button and a dropdown menu, and buttons for 'Delete', 'Rename', 'Copy', 'Validate', 'Download', 'Latest Version', and 'View Alerts'.
- Model Overview:** A tabbed interface with 'Model', 'Overview', and 'Source' tabs. The 'Model' tab is active, showing a table of fields for the 'Person' object.
- Person Fields Table:**

Identifier	Label	Type	
age		Integer	Delete
name		String	Delete
- 'Person'- general properties:** A form for configuring the object's properties.
 - Identifier: Person
 - Label: (empty)
 - Description: (empty)
 - Package: com.myspace.test
 - Superclass: java.lang.Object
- Drools & jBPM:** A sidebar for configuring Drools and jBPM settings.
 - TypeSafe: Nothing selected
 - ClassReactive:
 - PropertyReactive:
 - Role: Nothing selected
 - Timestamp: Nothing selected
 - Duration: Nothing selected
 - Expires: (empty)
 - Remotable: (highlighted with a red dashed box)

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



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