

# 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 **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/Service Tasks**, click on Install button.
  - Fill in needed parameters, they vary with each work item.

The screenshot shows a web interface for project settings. At the top, there are tabs for 'Assets' (3), 'Contributors' (2), 'Metrics', and 'Settings' (selected). The left sidebar contains a list of settings categories: 'General Settings', 'Dependencies', 'KIE bases', 'External Data Objects', 'Validation', 'Service Tasks' (highlighted), 'Deployments', and 'Persistence'. At the bottom of the sidebar are 'Save' and 'Reset' buttons. The main content area is titled 'Service Tasks' and contains the text 'Service tasks available to be installed in the project'. Below this is a table of service tasks:

Icon	Task Name	Description	Action
⚙️	BusinessRuleTask	Execute a business rule task	Install
⚙️	DecisionTask	Execute a DMN decision task	Install
⚙️	Email	Send email	Uninstall
⚙️	IFTTCall	Trigger an IFTTT endpoint	Uninstall
⚙️	JMSSendTask	Send JMS Message	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 navigation menu with 'Deployments' selected. 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 parameters '( 0 )'. Below the table is a button labeled '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](#).
- ❑ 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
  - ❑ Create [credentials](#)
  - ❑ `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

Person.java - Data Objects

Save Delete Rename Copy Validate Download Latest Version View Alerts

Model Overview Source

Person + add field

Identifier	Label	Type	
age		Integer	Delete
name		String	Delete

'Person'- general properties

Identifier: Person

Label:

Description:

Package: com.myspace.test

Superclass: java.lang.Object

Drools & jBPM

TypeSafe: Nothing selected

ClassReactive:

PropertyReactive:

Role: Nothing selected

Timestamp: Nothing selected

Duration: Nothing selected

Expires:

Remotable:

# 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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