

Rational Integration Tester



# Reference Guide for Business Process Management Systems

*Version 8.0.0*



**Note**

Before using this information and the product it supports, read the information in “Notices” on page 20.

This edition applies to version 8.0.0 of Rational Integration Tester and to all subsequent releases and modifications until otherwise indicated in new editions.

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# About this Publication

## **Contents**

### **Intended Audience**

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### **Contacting IBM Support**

This guide describes how to configure and run IBM® Rational® Integration Tester with various Business Process Management systems (BPMS). This document explains how to create a connection to the a supported BPM engine from Rational Integration Tester and make full use of the capabilities to start, process, and end tasks as well as process and change work items.

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## Intended Audience

This document is intended to be read by those with a fair understanding and exposure to the concepts involved in both testing and development and in enterprise integration.

## Scope

This document covers BPM testing in Rational Integration Tester. If you wish to familiarize yourself with the BPM system in use, please refer to the documentation supplied by your BPM provider.

Users of this document are assumed to have some experience using Rational Integration Tester and some of its core functions such as Tagging, Data Validation, creating reports, and running tests. Please refer to *IBM Rational Integration Tester Getting Started Guide* and *IBM Rational Integration Tester Reference Guide* for more information.

## Typographical Conventions

The following typographical conventions are observed throughout this document:

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Type	Usage
Constant Width	Program output, listings of code examples, file names, commands, options, configuration file parameters, and literal programming elements in running text.
<i>Italic</i>	Document title names in statements that refer you to other documents. Also used to highlight concepts when first introduced.
<b>Bold</b>	Menu items in graphical user interface windows (such as Microsoft Windows-based or UNIX X Window applications) from which you select options or execute macros and functions.  Submenus and options of a menu item are indicated with a “greater than” sign, such as <b>Menu &gt; Submenu</b> or <b>Menu &gt; Option</b> .

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## Contacting IBM Support

To contact IBM Support, see: [www.ibm.com/contact/us/en/](http://www.ibm.com/contact/us/en/)

# Requirements

## **Contents**

**TIBCO iProcess**

**My webMethods**

This chapter describes the system and software requirements for using the BPM plugin with Rational Integration Tester. Information is provided for the BPM systems that are currently supported.

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## 1.1 TIBCO iProcess

This section describes the requirements for using the BPM plugin with TIBCO iProcess.

### 1.1.1 Software Prerequisites

The BPM plugin works with TIBCO iProcess engine (and SPO server) versions i10.0 and higher.

- TIBCO iProcess Server Objects (Java) must be installed on the local Rational Integration Tester machine so that the client libraries are available. Please refer to your TIBCO documentation for more information.
- Users and roles will need to be configured by the iProcess administrator to grant Rational Integration Tester users with permission to process cases and work items.

**NOTE:** You may need a new Rational Integration Tester licence key to access the iProcess functionality. Please contact IBM Sales or Support if you require assistance.

### 1.1.2 Libraries

The following files are required before using the iProcess plugin with Rational Integration Tester:

- `ssoRMI.jar`
- `ssoJNI.dll`

Both files can be found in the root of the TIBCO iProcess Server Objects (Java) package installation.

**NOTE:** `ssoRMI.jar` must be configured using the Library Manager, under the **Workflow and BPM** plugin. The location of the file will vary depending on your installation. For more information, refer to *IBM Rational Integration Tester Installation Guide*.

**NOTE:** `ssoJNI.dll` must reside in the system `PATH`. If you need to modify the `PATH`, right-click on **My Computer**, select **Properties** and select **Environment Variables** under the **Advanced** tab.

Once the required configuration changes have been made, Rational Integration Tester should be restarted.

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### 1.1.3 iProcess Server Settings

Follow the steps below to configure the iProcess Server (physical resource) in Rational Integration Tester.

1. Open an existing project or create a new one.
2. In the Logical View of Architecture School, add a **BPM Domain** (from the **General** menu or context menu option) to the top-level view or to an existing component.
3. Provide a meaningful name for the domain when prompted.
4. Switch to the Physical View and add a **TIBCO iProcess Server**.
5. Double-click the new **iProcess Server** to open it for editing.
6. Configure the server properties according to the table below:

---

Field	Description
Host	The name of the computer where the iProcess engine is installed.
Node	The name assigned to the iProcess Server engine node.
Port	The server port where the iProcess engine is running.
Username	An existing iProcess user ID to send when connecting to the iProcess engine.
Password	The password required for the specified user name.

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**NOTE:** If desired, you can click the **Discover** button to have Rational Integration Tester scan the network for any iProcess nodes that are running.

7. Click **Test Connection** to test the connection from Rational Integration Tester to the iProcess engine.
8. If successful, click **OK** to save the configuration and close the dialog. If unsuccessful, verify the connection settings and try again.

**NOTE:** The logical **BPM Domain** must be bound to the physical **iProcess Server** in the current environment.



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## 1.2 My webMethods

This section describes the requirements for using the BPM plugin with My webMethods from Software AG.

Currently, Rational Integration Tester's BPM plugin supports webMethods version 7.1, 8.0, and 8.2.

**NOTE:** You may need a new Rational Integration Tester licence key to access complete My webMethods functionality. Please contact IBM Sales or Support if you require assistance.

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### 1.2.1 Libraries

The following table contains the files – including their default locations – that are required before using My webMethods with Rational Integration Tester:

webMethods BPMS Version	File	Default Location
v7.1, v8.0, and v8.2	conf	C:\<wm-root>\common
	glue.jar	C:\<wm-root>\common\lib
	wm-caf-bpm.jar	C:\<wm-root>\common\lib
	wm-caf-client.jar	C:\<wm-root>\common\lib
	wm-caf-jsf.jar	C:\<wm-root>\common\lib
	wm-wsclient.jar	C:\<wm-root>\common\lib
	commons-logging.jar	C:\<wm-root>\common\lib\ext
	javax.servlet.jar	C:\<wm-root>\common\lib\ext
	jaxen-core.jar	C:\<wm-root>\common\lib\ext
	jaxen-dom.jar	C:\<wm-root>\common\lib\ext
	jaxrpc-api.jar	C:\<wm-root>\common\lib\ext
	jsf-api.jar	C:\<wm-root>\common\lib\ext
	saxpath.jar	C:\<wm-root>\common\lib\ext
	wss4j.jar	C:\<wm-root>\common\lib\ext
	xercesImpl.jar	C:\<wm-root>\common\lib\ext
	xmlsec.jar	C:\<wm-root>\common\lib\ext
v8.0 and v8.2	wm-caf-bpm-common.jar	C:\<wm-root>\common\lib
	wm-caf-client.jar	C:\<wm-root>\common\lib
	wss4j.jar	C:\<wm-root>\common\lib
	jaxen.jar	C:\<wm-root>\common\lib\ext
	servlet-api.jar	C:\<wm-root>\common\lib\ext

The location of the files can be configured for specific provider versions under the webMethods BPMS group using the Library Manager. For more information, refer to *IBM Rational Integration Tester Installation Guide*.

Once the required configuration changes have been made, Rational Integration Tester should be restarted.

---

### 1.2.2 My webMethods Server Settings

Follow the steps below to configure the My webMethods Server (physical resource) in Rational Integration Tester.

1. Open an existing project or create a new one.
2. In the Logical View of Architecture School, add a **BPM Domain** (from the **General** menu or context menu option) to the top-level view or to an existing component.
3. Provide a meaningful name for the domain when prompted.
4. Switch to the Physical View and add a **My webMethods Server** from the Software AG entry in the toolbar or the context menu.
5. Double-click the new **My webMethods Server** to open it for editing.
6. Configure the server properties according to the table below:

---

Field	Description
Server	The host name or IP address and port (server:port) of the My webMethods server to which you want to connect.
Username	The user name to send for connecting to the My webMethods server (a user with privileges to create actions).
Password	The password for the specified user name.
Domain path	The full path to the webMethods deployment directory, the contents of which will be scanned by Rational Integration Tester to locate schemas or task definitions. The deployment directory can be shared for this purpose, or it can be copied locally for use by Rational Integration Tester.  <b>NOTE:</b> If using a remote path that requires authentication, the connection must be established and the authentication provided outside of Rational Integration Tester before you can continue. Rational Integration Tester provides no method of entering a user name and password for server authentication.

---

7. Click **Test Connection** to test the connection from Rational Integration Tester to the server.
8. If successful, click **OK** to save the configuration and close the dialog. If unsuccessful, verify the connection settings and try again.

**NOTE:** The logical **BPM Domain** must be bound to the physical **My webMethods Server** in the current environment.

# BPM Test Actions

## **Contents**

### **Overview**

### **Start Case**

### **Retrieve Case**

### **Close Case**

### **Retrieve Task**

### **Modify Task**

### **Trigger Event**

This chapter describes the test actions that let you work with tasks and cases in the BPM systems supported by Rational Integration Tester.

---

## 2.1 Overview

Using the test actions available in Rational Integration Tester, it is possible to move a task through its step definitions without any human intervention. For example, iProcess step form fields (Staffware form fields) can be updated with new data using the Modify Task action. Rational Integration Tester can also simulate actions in 3rd party systems (for example, BusinessWorks or a web service) upon which iProcess might have dependencies, such as receiving triggers or creating cases.

The following BPM actions are available in Rational Integration Tester tests:

- [Start Case](#)
- [Retrieve Case](#)
- [Close Case](#)
- [Retrieve Task](#)
- [Modify Task](#)
- [Trigger Event](#)

**NOTE:** When connecting to a My webMethods server, only the **Retrieve Task** and **Modify Task** actions are supported.

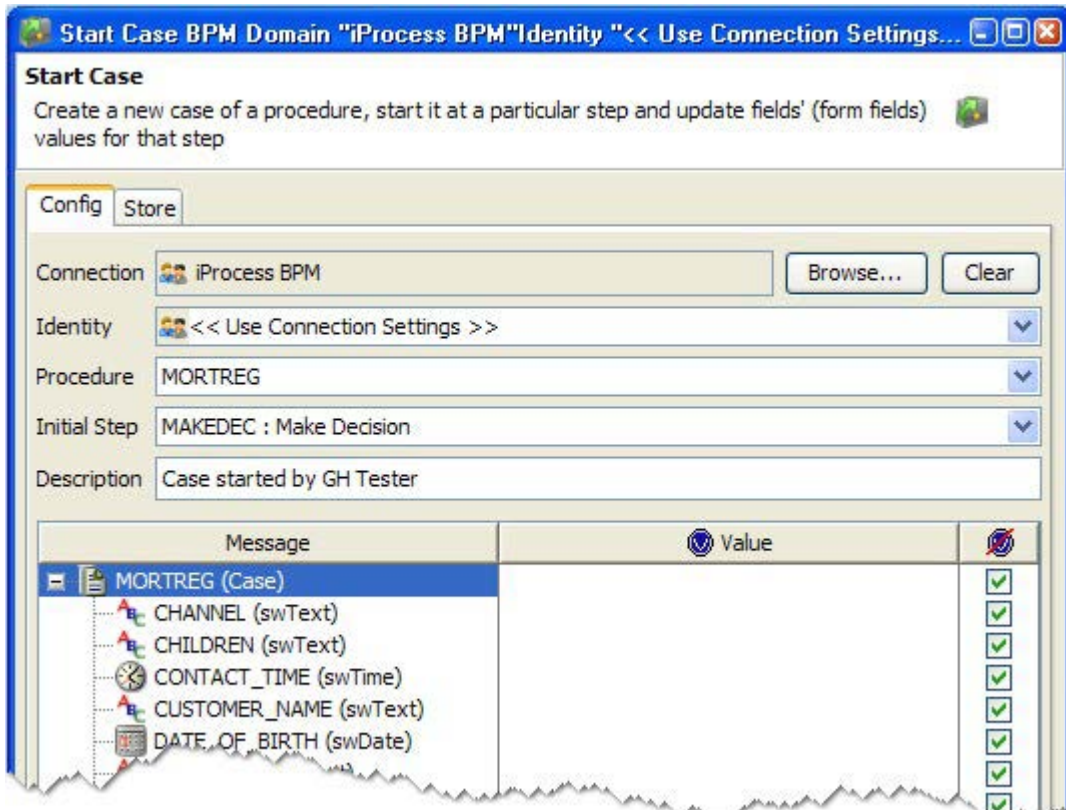
**NOTE:** No action in Rational Integration Tester directly modifies case data, the data is only retrieved. Three actions, however, can alter the state of data in the BPM engine: Start Case, Modify Task, and Trigger Event.

**NOTE:** For more information about tests and test actions, see the *IBM Rational Integration Tester Reference Guide*.

---

## 2.2 Start Case

To start a case in Rational Integration Tester, use the **Start Case** action.



Under the **Config** tab, set the general properties of the action as described below:

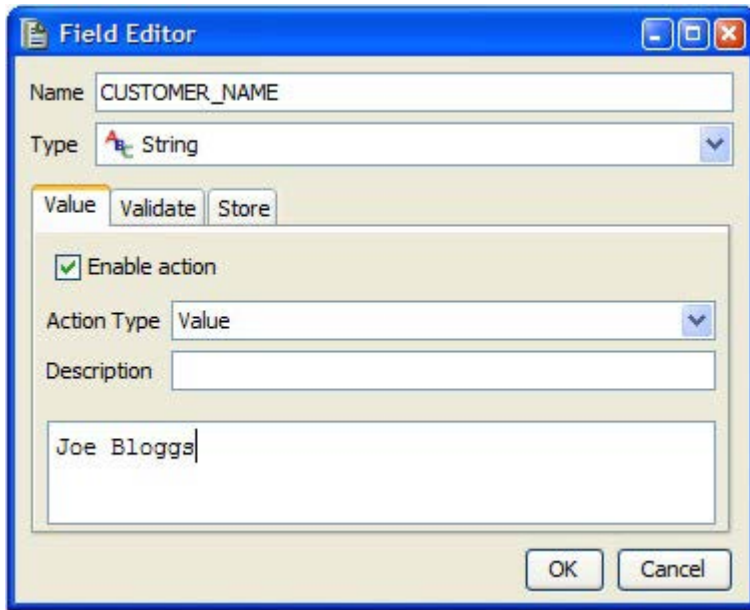
---

Option	Definition
Connection	Use <b>Browse</b> to select the BPM node (configured in Rational Integration Tester's Architecture School) that contains the procedure you want to test.
Identity	Select the ID of the user who will access the procedure (this user ID will often be reused throughout the entire test), or select <b>&lt;&lt;Use Connection Settings&gt;&gt;</b> to apply the user name and password configured in the physical server artefact.
Procedure	Select the specific procedure you want to access. Once a procedure has been selected, its message schema should appear (below) as the body of the message – all message fields in the selected procedure can be validated.
Initial Step	Select the step (in the selected procedure) where you want the case to start.
Description	Enter an optional description of the action.

---

---

To build the contents of the message, double-click any of the schema child elements to open the **Field Editor** dialog.

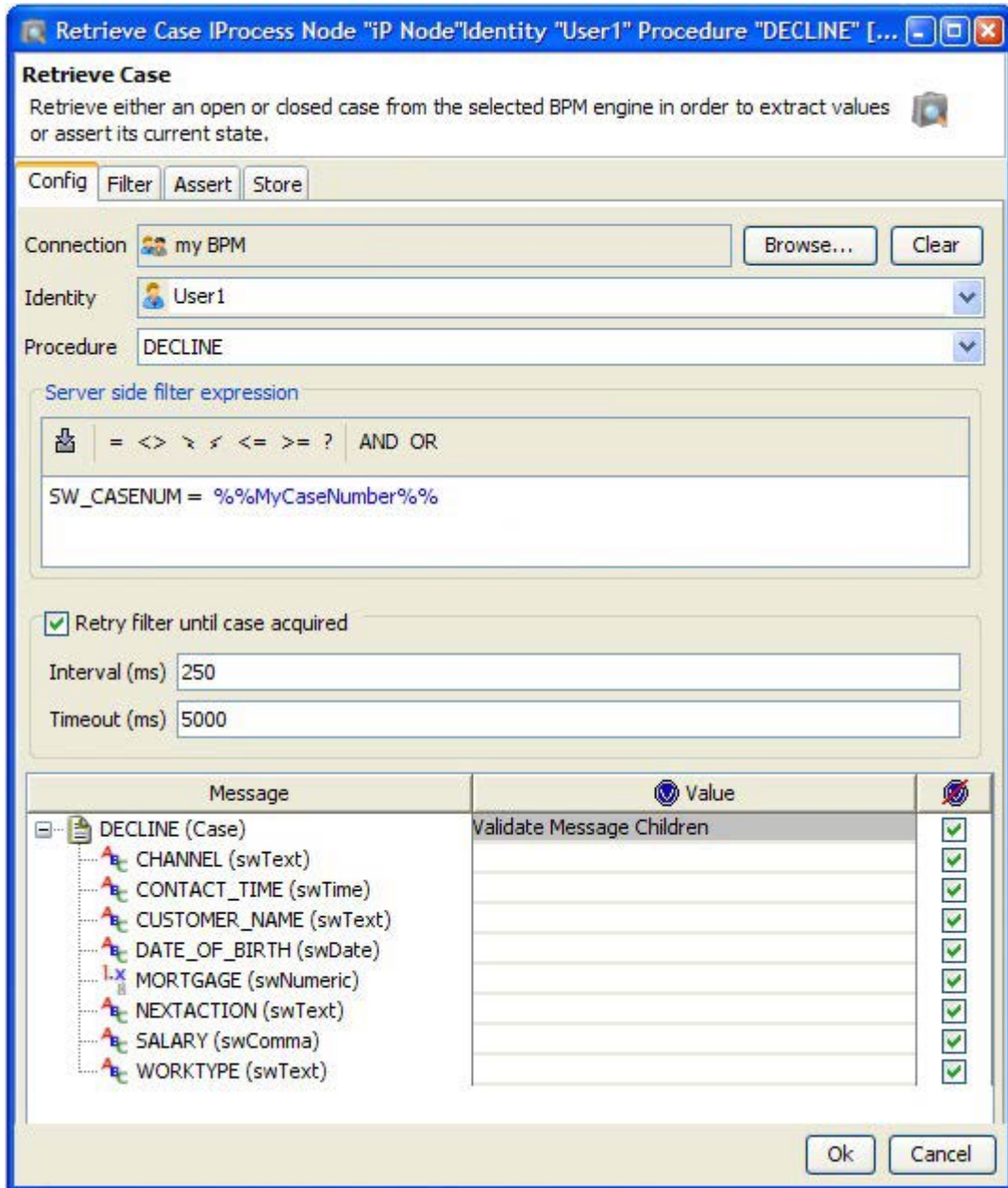


**NOTE:** Custom text or tags can be used to populate the message. For more information about tagging, as well as the **Validate** and **Store** tabs, please refer to the *IBM Rational Integration Tester Reference Guide*.

Under the **Store** tab, you can select fields from the case header or the procedure and store them in a tag. For example, when starting a case, you can store the case number to more easily retrieve a task from that specific case later on.


## 2.3 Retrieve Case


To retrieve a case in Rational Integration Tester, use the **Retrieve Case** action.



**Retrieve Case**  
Retrieve either an open or closed case from the selected BPM engine in order to extract values or assert its current state.


Config Filter Assert Store

Connection  my BPM Browse... Clear

Identity  User1

Procedure DECLINE

Server side filter expression

 = <> > < <= >= ? AND OR

SW\_CASENUM = %%MyCaseNumber%%

☒ Retry filter until case acquired

Interval (ms) 250

Timeout (ms) 5000

Message	Value	
DECLINE (Case)	Validate Message Children	<input checked="" type="checkbox"/>
CHANNEL (swText)		<input checked="" type="checkbox"/>
CONTACT_TIME (swTime)		<input checked="" type="checkbox"/>
CUSTOMER_NAME (swText)		<input checked="" type="checkbox"/>
DATE_OF_BIRTH (swDate)		<input checked="" type="checkbox"/>
MORTGAGE (swNumeric)		<input checked="" type="checkbox"/>
NEXTACTION (swText)		<input checked="" type="checkbox"/>
SALARY (swComma)		<input checked="" type="checkbox"/>
WORKTYPE (swText)		<input checked="" type="checkbox"/>


Ok Cancel



---

Under the **Config** tab, set the general properties of the action as described below:

---

Option	Definition
Connection	Use <b>Browse</b> to select the BPM node (configured in Architecture School) that contains the procedure and case you want to retrieve.
Identity	Select the ID of the BPM user who will access the procedure, or select <b>&lt;&lt;Use Connection Settings&gt;&gt;</b> to apply the user name and password configured in the physical server artefact.
Procedure	Select the specific procedure you want to access.
Server side filter expression	Enter boolean expressions to filter the list of cases that are returned from the BPM server to Rational Integration Tester. You can use a range of values, dates, or a combination of both. Click the  icon to insert fields from the BPM server.
Retry filter until case acquired	Enable this option to continue polling the BPM server for the desired case, setting the polling interval and ultimate timeout period (both in milliseconds).

---

To populate the contents of the message, double-click any of the schema child elements to open the **Field Editor** dialog (see additional details about this in [Start Case](#)).

Under the **Filter** tab you can filter the cases that are returned to Rational Integration Tester based on the content of the message header (case metadata fields, such as creation time, active case, and so on) and body (case content, a super set of all the fields found in every 'step' of the case). Only those cases that meet the filter criteria can be validated or stored.

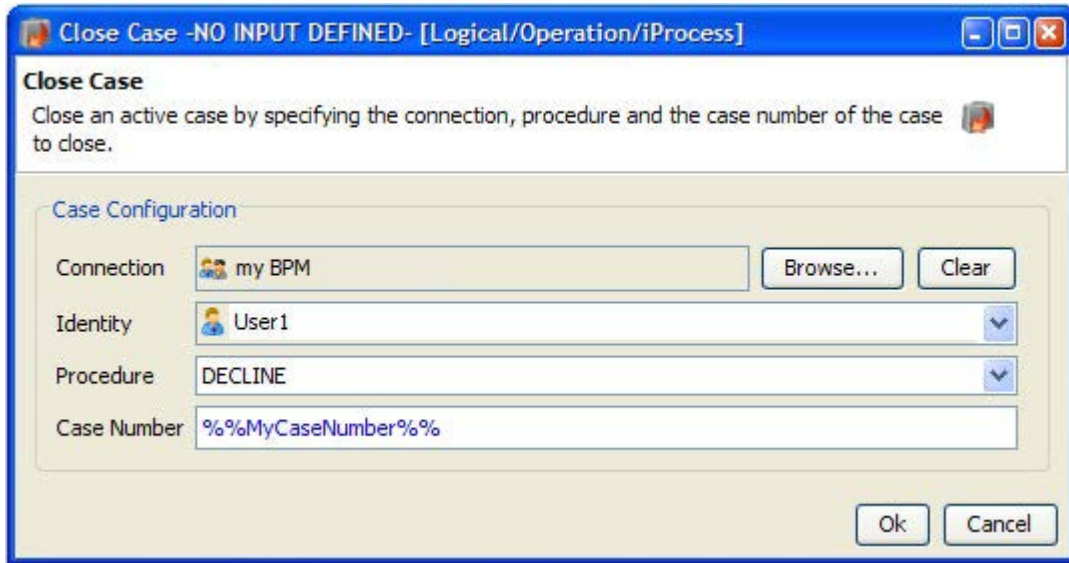
Under the **Assert** tab you can configure the validation settings for the message header and body.

Under the **Store** tab you configure the store settings for the message header and body.

---

## 2.4 Close Case

A case is closed automatically in iProcess after reaching the last step. However, if you want to test how the system will react to a case being closed prematurely, you can use the **Close Case** action.



The image shows a Windows-style dialog box titled "Close Case -NO INPUT DEFINED- [Logical/Operation/iProcess]". Inside, there's a section titled "Close Case" with a brief instruction: "Close an active case by specifying the connection, procedure and the case number of the case to close." Below this is a "Case Configuration" section with four fields: "Connection" (text box with "my BPM" and "Browse..." and "Clear" buttons), "Identity" (dropdown menu with "User1"), "Procedure" (dropdown menu with "DECLINE"), and "Case Number" (text box with "%%MyCaseNumber%%"). At the bottom right are "Ok" and "Cancel" buttons.

Specify the case to close using the available options, as described below:

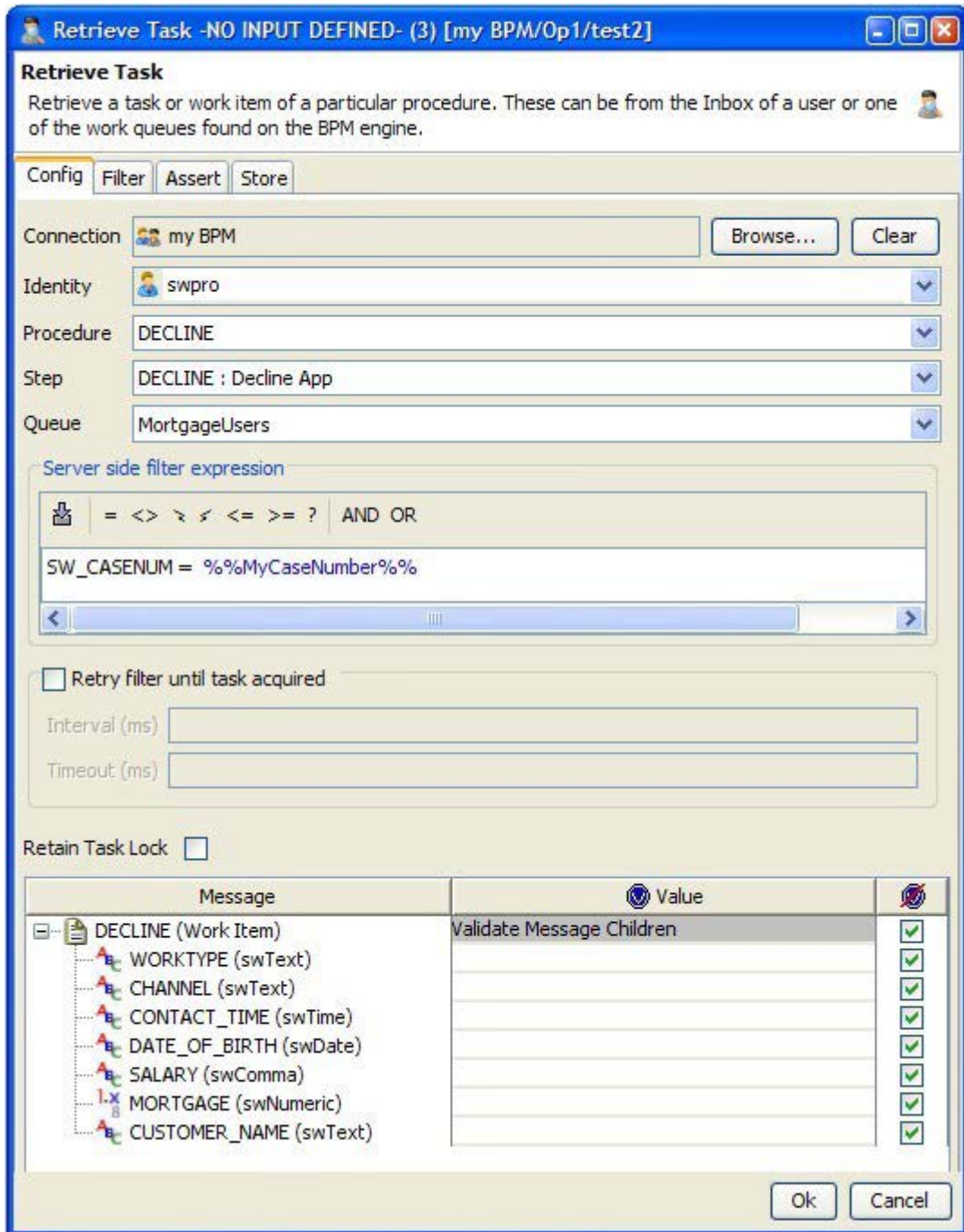
---

Option	Definition
Connection	Use <b>Browse</b> to select the BPM node (configured in Architecture School) that contains the desired procedure.
Identity	Select the ID of the BPM user who opened the case, or select << <b>Use Connection Settings</b> >> to apply the user name and password configured in the physical server artefact.
Procedure	Select the specific procedure you want to access.
Case Number	Enter the case number that you want to close. If you opened the case earlier and stored the case number in a tag, you can simply enter the tag here.

---

## 2.5 Retrieve Task

To retrieve a task from a specific queue, use the **Retrieve Task** action.




The dialog box is titled "Retrieve Task -NO INPUT DEFINED- (3) [my BPM/Op1/test2]". It has a "Retrieve Task" section with a description: "Retrieve a task or work item of a particular procedure. These can be from the Inbox of a user or one of the work queues found on the BPM engine." Below this are tabs for "Config", "Filter", "Assert", and "Store". The "Config" tab is active, showing fields for "Connection" (my BPM), "Identity" (swpro), "Procedure" (DECLINE), "Step" (DECLINE : Decline App), and "Queue" (MortgageUsers). There is a "Server side filter expression" section with a text box containing "SW\_CASENUM = %%MyCaseNumber%%". Below this are checkboxes for "Retry filter until task acquired" and "Retain Task Lock". At the bottom is a table with columns "Message" and "Value".

Message	Value
DECLINE (Work Item)	Validate Message Children
WORKTYPE (swText)	
CHANNEL (swText)	
CONTACT_TIME (swTime)	
DATE_OF_BIRTH (swDate)	
SALARY (swComma)	
MORTGAGE (swNumeric)	
CUSTOMER_NAME (swText)	

---

Under the **Config** tab, set the general properties of the action as described below:

---

Option	Definition
Connection	Use <b>Browse</b> to select the BPM node (configured in Architecture School) that contains the procedure and task you want to retrieve.
Identity	Select the ID of the BPM user who will access the procedure, or select <b>&lt;&lt;Use Connection Settings&gt;&gt;</b> to apply the user name and password configured in the physical server artefact.
Procedure	Select the specific procedure you want to access.
Step	Select the step (in the selected procedure) that contains the desired task.
Queue	Select the specific queue that contains the task.
Server side filter expression	Enter boolean expressions to filter the list of tasks that are returned from the BPM server to Rational Integration Tester. You can use a range of values, dates, or a combination of both. Click the  icon to insert fields from the BPM server.
Retry filter until work item acquired	Enable this option to continue polling the BPM server for the desired task, setting the polling interval and ultimate timeout period (both in milliseconds).
Retain Work Item Lock	Enable this option if you want to place a lock on the desired task after it has been successfully retrieved. When locked, the task can not be affected by any other user.

---

To populate the contents of the message, double-click any of the schema child elements to open the **Field Editor** dialog (see additional details about this in [Start Case](#)).

Under the **Filter** tab you can filter the tasks that are returned to Rational Integration Tester based on the content of the message header (task metadata, such as creation time, created by, and so on) and body (task field data, sometimes called Staffware form fields or custom fields). Only those tasks that meet the filter criteria can be validated or stored.

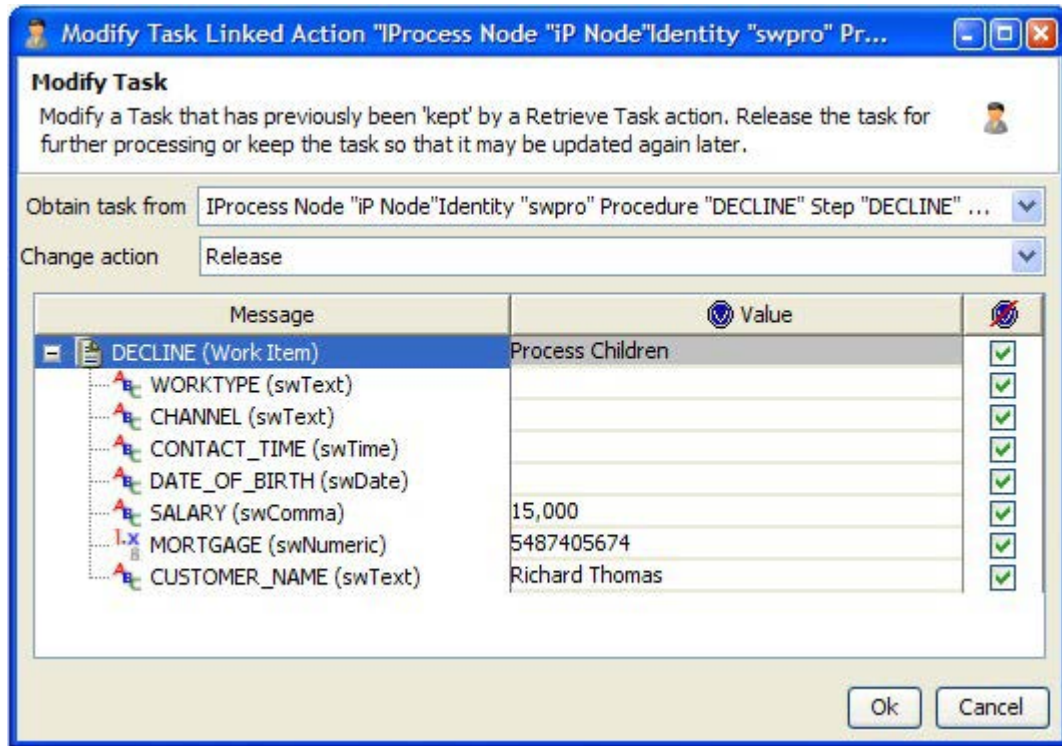
Under the **Assert** tab you can configure the validation settings for the message header and body.

Under the **Store** tab you configure the store settings for the message header and body.

---

## 2.6 Modify Task

The **Modify Task** action is used to update data in a task that has been locked by an earlier **Retrieve Task** action.



Select the task to process under the **Obtain work item from** menu.

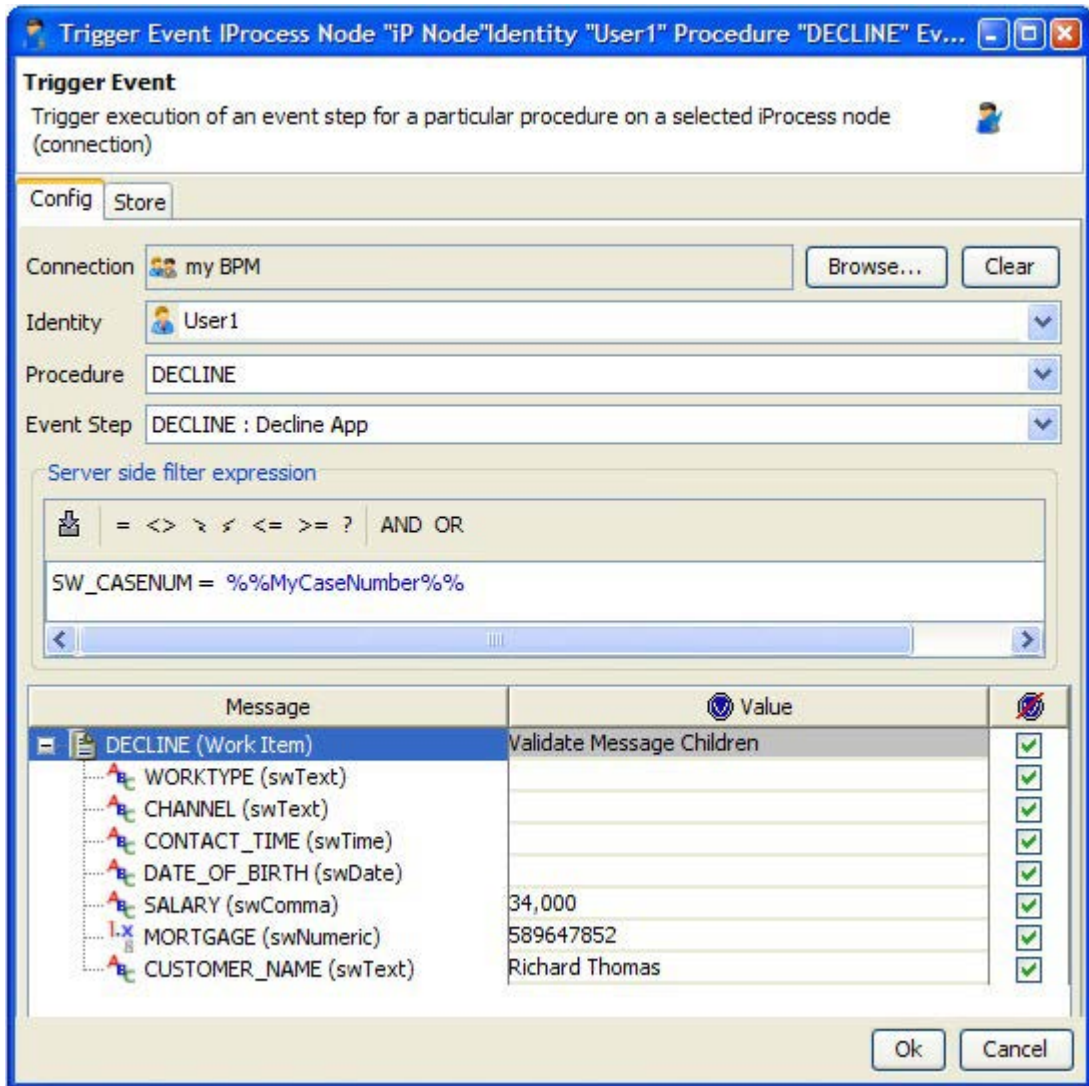
**NOTE:** If no tasks have been previously retrieved and locked, then none will appear under this menu for processing.

Next, select the action to take on the task after updating: **Keep** updates the data but does not move the procedure to the next step, and **Release** updates the data and moves the procedure to the next step.

In the lower portion of the dialog, you can update the fields in the task.

## 2.7 Trigger Event


You can use the **Trigger Event** action to process a specific step in a procedure and update case data, if desired. After processing, the step is released.




The dialog box is titled "Trigger Event IProcess Node 'iP Node' Identity 'User1' Procedure 'DECLINE' Ev...". It has two tabs: "Config" and "Store". The "Config" tab is active.

**Trigger Event**  
Trigger execution of an event step for a particular procedure on a selected iProcess node (connection)

**Config** | **Store**


Connection:  my BPM Browse... Clear

Identity:  User1 ▼


Procedure: DECLINE ▼


Event Step: DECLINE : Decline App ▼

**Server side filter expression**

 = <> > < <= >= ? AND OR

SW\_CASENUM = %%MyCaseNumber%%

**Message** | **Value** | 


Message	Value	
DECLINE (Work Item)	Validate Message Children	<input checked="" type="checkbox"/>
WORKTYPE (swText)		<input checked="" type="checkbox"/>
CHANNEL (swText)		<input checked="" type="checkbox"/>
CONTACT_TIME (swTime)		<input checked="" type="checkbox"/>
DATE_OF_BIRTH (swDate)		<input checked="" type="checkbox"/>
SALARY (swComma)	34,000	<input checked="" type="checkbox"/>
MORTGAGE (swNumeric)	589647852	<input checked="" type="checkbox"/>
CUSTOMER_NAME (swText)	Richard Thomas	<input checked="" type="checkbox"/>

Ok Cancel

---

Under the **Config** tab, set the general properties of the action as described below:

---

Option	Definition
Connection	Use <b>Browse</b> to select the BPM node (configured in Architecture School) that contains the procedure and step event you want to trigger.
Identity	Select the ID of the BPM user who will access the procedure, or select <b>&lt;&lt;Use Connection Settings&gt;&gt;</b> to apply the user name and password configured in the physical server artefact.
Procedure	Select the specific procedure to access.
Event Step	Select the specific step (in the selected procedure) to update.
Server side filter expression	Enter boolean expressions to filter the cases that are returned from the BPM server to Rational Integration Tester. You can use a range of values, dates, or a combination of both. Click the  icon to insert fields from the BPM server.

---

To update case data, double-click any of the schema child elements to open the **Field Editor** dialog (see additional details about this in [Start Case](#)).

Under the **Store** tab you configure the store settings for the message header (case metadata fields, such as creation time, active case, and so on) and body (case content, a super set of all the fields found in every 'step' of the case).



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# Glossary

The following table below lists some of the key terms used in this document, and provides a description of each.

Term	Description
Field	A bit of data constituent to a message. Most fields are scalar and therefore unitary, equivalent to data attributes. Vector fields are an aggregation of fields both scalar and vector, and are usually referred to as Messages. See also Message.
Message	A unit of information made up of a header consisting of meta-information and a body consisting of the message data.
Host	The computer on which a software process runs.
Publisher-Subscriber	A messaging paradigm whereby a messaging network consists of Publishers and Subscribers.
Transport	Informally, the messaging software in use. For instance, TIBCO Rendezvous, TIBCO ActiveEnterprise, IBM WebSphere® MQ (JMS).
Publishing	Making a message (data) available on a message channel.
Subscribing	Receiving a stream of messages (data) on a given message channel.
Subject	A user-meaningful name for identifying messages on TIBCO transports. For example, the subject EQ.IBM might identify all pricing data about IBM stocks, while EQ.IBM.N might identify price data from the New York Stock Exchange only. See also: JMS queue, JMS topic.
Server	A host computer on a network shared by more than one user.
Subject	A user-meaningful name for identifying data objects. For example, the subject EQ.IBM might identify all pricing data about IBM stocks, while EQ.IBM.N might identify price data from the New York Stock Exchange only.



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