



Red Hat Process Automation Manager 7.2

Getting started with case management

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Abstract

This document describes how to create and test an example IT orders case project in Red Hat Process Automation Manager 7.2. The procedures in this document are based on the IT_Orders sample case project included in Business Central.

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PREFACE

As a business rules and processes developer, you can use case management assets in Business Central to create unpredictable and ad hoc case processes. Case workers or process administrators can also use Business Central for case management and execution. Red Hat Process Automation Manager provides example projects with example business assets directly in Business Central as a reference. This document describes how to create and test an example IT orders project based on the **IT_Orders** sample project included in Business Central.

Prerequisites

- Red Hat JBoss Enterprise Application Platform 7.2.0 is installed. For installation information, see [Red Hat JBoss EAP 7.2.0 Installation Guide](#) .
- Red Hat Process Automation Manager is installed and configured with Process Server. For more information see [Installing and configuring Red Hat Process Automation Manager on Red Hat JBoss EAP](#).
- Red Hat Process Automation Manager is running and you can log in to Business Central with the **kie-server**, **user**, and **admin** roles.

CHAPTER 1. CASE MANAGEMENT

Case management is an extension of Business Process Management (BPM) that enables you to manage adaptable business processes.

BPM is a management practice for automating tasks that are repeatable and have a common pattern, with a focus on optimization by perfecting a process. Business processes are usually modeled with clearly defined paths leading to a business goal, often with a starting point that is structurally connected to build an end-to-end flow of work and data. This requires a lot of predictability, usually based on mass-production principles. However, many real-world applications cannot be described completely from start to finish (including all possible paths, deviations, and exceptions). Using a process-oriented approach in certain cases may lead to complex solutions that are hard to maintain.

Case management provides problem resolution for non-repeatable, unpredictable processes as opposed to the efficiency-oriented approach of BPM for routine, predictable tasks. It manages one-off situations when the process cannot be predicted in advance. Case definition usually consists of loosely coupled process fragments that can be connected directly or indirectly to lead to certain milestones and ultimately a business goal, while the process is managed dynamically in response to changes that occur during run time.

In Red Hat Process Automation Manager, case management includes the following core process engine features:

- Case file instance
- A **Per case** runtime strategy
- Case comments
- Milestones
- Stages
- Ad hoc fragments
- Dynamic tasks and processes
- Case identifier (correlation key)
- Case lifecycle (close, reopen, cancel, destroy)

A case definition is always an ad hoc process definition and does not require an explicit start node. The case definition is the main entry point for the business use case.

A process definition can still be introduced as a supporting construct of the case and can be invoked either as defined in the case definition or dynamically to bring in additional processing when required. A case definition defines the following new objects:

- Activities (required)
- Case file (required)
- Milestones
- Roles
- Stages

1.1. MILESTONES

Milestones are a special service task that can be configured in the case definition designer by adding the milestone node to the process designer palette. When creating a new case definition, a milestone configured as **Adhoc autostart** is included on the design palette by default. Newly created milestones are not set to **Adhoc autostart** by default.

Case management milestones generally occur at the end of a stage, but they can also be the result of achieving other milestones. A milestone always requires a condition to be defined in order to track progress. Milestones react to case file data when data is added to a case. A milestone represents a single point of achievement within the case instance. It can be used to flag certain events, which can be useful for Key Performance Indicator (KPI) tracking or identifying the tasks that are still to be completed.

Milestones can be in any of the following states during case execution:

- **Active** - The condition has been defined on the milestone but it has not been met.
- **Completed** - The milestone condition has been met, the milestone has been achieved, and the case can proceed to the next task.
- **Terminated** - The milestone is no longer a part of the case process and is no longer required.

While a milestone is available or completed it can be triggered manually by a signal or automatically if `Adhoc autostart` is configured when a case instance starts. Milestones can be triggered as many times as required, however, it is directly achieved when the condition is met.

1.2. CASE FILES

A case instance is a single instance of a case definition and encapsulates the business context. All case instance data is stored in the case file, which is accessible to all process instances that might participate in the given case instance. Each case instance and its case file is completely isolated from the other cases. Only case instance participants can access the case file.

A case file is used in case management as a repository of data for the entire case instance. It contains all roles, the object, the data map, and any other data. The case can be closed and reopened at a later date with the same case file attached. A case instance can be closed at any time and does not require a specific resolution in order to be completed.

The case file can also include documentation in the form of embedded documentation, references, PDF attachments, web links, and other options.

1.3. COMMENTS

In case management, comments facilitate collaboration within the case instance, and allow case workers to easily communicate with each other to exchange information.

Comments are bound to the case instance. Case instances are part of the case file, so you can use comments to take action on the instances. Basic text-based comments can have a complete operations set, similar to CRUD (create, read, update, and delete).

1.4. CASE ROLES

Case roles provide an additional layer of abstraction for user participation in case handling. Roles, users, and groups are used for different purposes in case management.

Role

Roles drive the authorization for the case instance, and can be used for user activity assignments. A user or one or more groups can be assigned to the owner role. The owner is whoever the case belongs to. Roles are not restricted to a single set of people or groups as part of case definition. Use roles for task assignment instead of assigning a specific user or group in order to ensure the case remains dynamic.

Group

A group is a number of people who are able to carry out a particular task or have a set of specified responsibilities. You can assign any number of people to a group and assign any group to a role. You can add or change members of a group at any time, so you should never hard code a group to a particular task.

User

A user is an individual who can be given a particular task when you assign them a role or add them to a group.

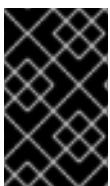
The following illustrates how the preceding case management concepts apply to a hotel reservation.

- Role = **Guest**
- Group = **Receptionist, Maid**
- User = **Marilyn**

The role assignment (**Guest**) affects the specific work of the case and is unique to all case instances. The number of users or groups that can be assigned to a role is limited by the **Case Cardinality**, which is set during role creation in the process designer and case definition. For example, the hotel reservation case has only one guest while the **IT_Orders** sample project has two suppliers of IT hardware.

When the roles are defined, case management must ensure that these are not hard coded to single set of people or groups as part of case definition and that they can differ for each case instance. This is where case role assignments become important.

Role assignments can be assigned or removed when a case starts or at any time when a case is active. Although roles are optional, use roles in case definitions to maintain and organized workflow.



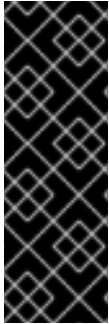
IMPORTANT

Always use roles for task assignments instead of actual user or group names. This ensures the case remains dynamic and actual user or group assignment can be made as late as possible.

Roles are assigned to users or groups and authorized to perform tasks when a case instance is started.

CHAPTER 2. IMPORTING AND REVIEWING THE IT_ORDERS SAMPLE PROJECT

Before you create your own case management project, import and review the existing **IT_Orders** sample case management project in Business Central. This sample project contains predefined case management assets as a reference for your own case projects.




IMPORTANT

The business process application example includes features that are Technology Preview only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs), might not be functionally complete, and are not recommended for production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process. For more information about Red Hat Technology Preview support, see [Technology Preview Features Support Scope](#).

Procedure

Go to the **IT_Orders** sample project to view the predefined assets.

1. Log in to Business Central and click **Menu** → **Design** → **Projects**.

2. Click  in the upper-right corner of the screen and select **Try Samples**.

3. Select **IT_Orders** and click **Ok**.

The **Assets** view of the project opens. Select each example asset to explore how the project is designed to achieve the specified goal or workflow. You can refer back to the **IT_Orders** sample project assets as needed when you create your own case project.

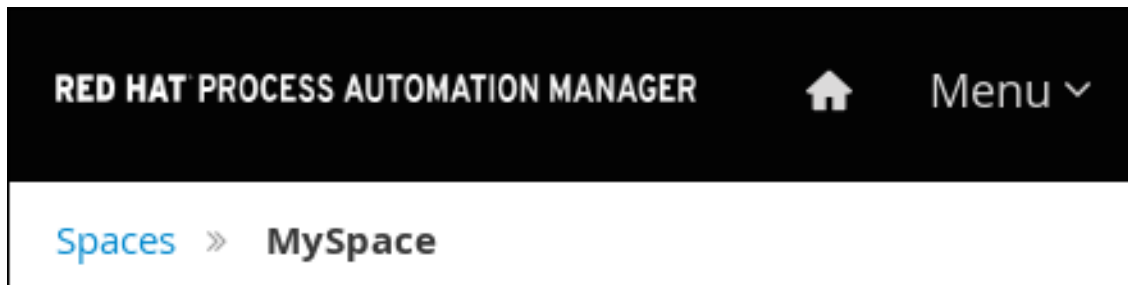
CHAPTER 3. CREATING A NEW IT ORDERS CASE PROJECT

A case project is a type of project in Business Central that is configured for case management. Business Central includes an example **IT_Orders** sample project with predefined case management assets as a reference. You can create your own IT Orders case project similar to this sample project as a tutorial.

Procedure

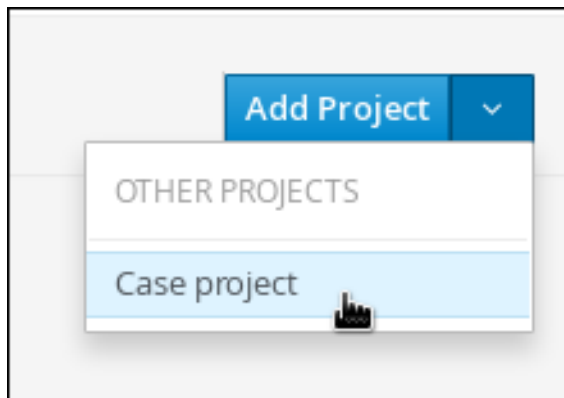
1. Log in to Business Central and go to **Menu → Design → Projects**.
Business Central provides a default space called **MySpace**, as shown in the following image. You can use the default space to create and test example projects.

Figure 3.1. Default spaces



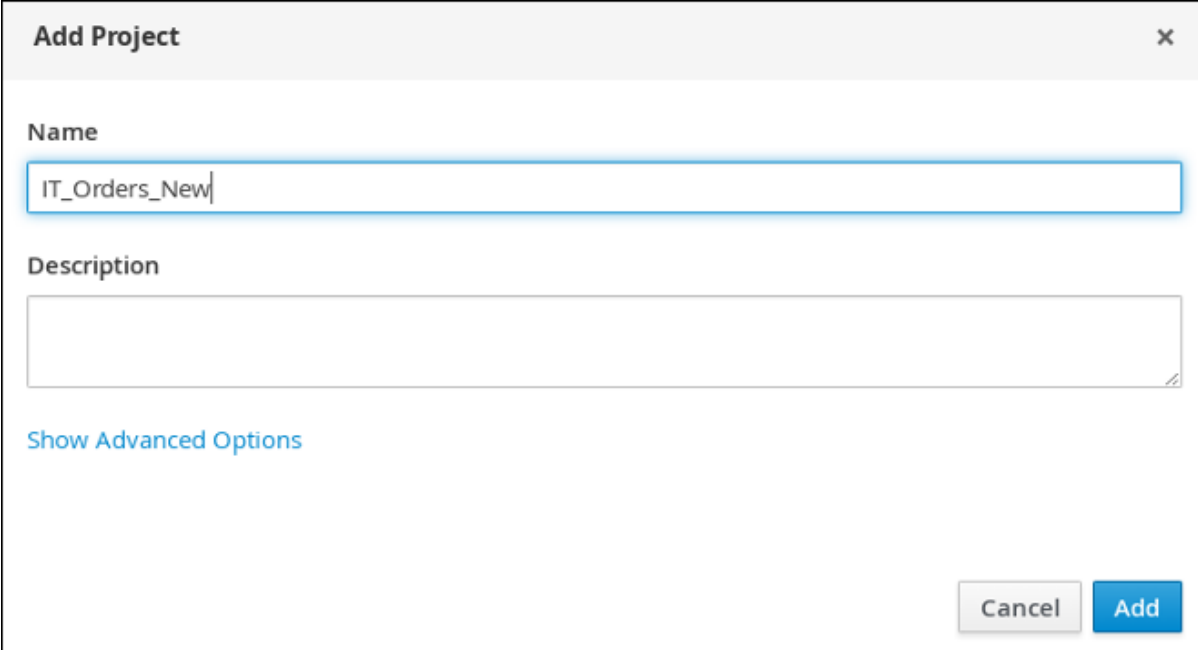
2. Click **Add Project → Case project**.

Figure 3.2. Case project menu



3. Enter **IT_Orders_New** in the **Name** field.
4. Click **Add**.

Figure 3.3. Add Project window



Add Project ✕

Name
IT_Orders_New

Description

[Show Advanced Options](#)

Cancel Add

The **Assets** view of the project opens.

CHAPTER 4. DATA OBJECTS

Data objects are the building blocks for the rule assets that you create. Data objects are custom data types implemented as Java objects in specified packages of your project. For example, you might create a **Person** object with data fields **Name**, **Address**, and **DateOfBirth** to specify personal details for loan application rules. These custom data types determine what data your assets and your decision services are based on.


4.1. CREATING THE ITORDERSERVICE DATA OBJECT

The `ITOrderService` data object specifies the data type that will be used to define the IT Orders variables.

Prerequisites

- The `IT_Orders_New` project is created.

Procedure

1. Click **Add Asset** → **Data Object**.
2. In the Create new Data Object wizard, enter the following values:
 - Data Object: **ITOrderService**
 - Package: **com.myspace.it_orders_new**
3. Click **Ok**.
4. Click  next to the **Package** pull-down menu to specify a new package for the data object.
5. Input **org.jbpm.demo.it_orders.services**
6. Click **Add**.
7. Click **Save** → **Yes, Move**, and then click **Save** to confirm your changes.

4.2. CREATING THE SURVEY DATA OBJECT

The Survey data object contains data fields, such as **deliveredOnTime** and **missingEquipment**. You will use the data and values when you design your case.

Prerequisites

- The `IT_Orders_New` project is created.

Procedure

1. In Business Central, go to **Menu** → **Design** → **Projects** and click `IT_Orders_New`.
2. Click **Add Asset** → **Data Object**.
3. In the **Create new Data Object** wizard, enter the following values:

- **Data Object: Survey**
 - **Package: org.jbpm.demo.it_orders**
4. Click **Ok**.
 5. Add the **Survey** data object constraints.
 - a. Click **add field**.
 - b. Enter the following values:
 - **Identifier: comment**
 - **Label:** Leave empty
 - **Type: Sting**
 - c. Click **Create and continue**, and then enter the following values:
 - **Identifier: deliveredOnTime**
 - **Label:** Leave empty
 - **Type: Boolean**
 - d. Click **Create and continue**, and then enter the following values:
 - **Identifier: missingEquipment**
 - **Label:** Leave empty
 - **Type: String**
 - e. Click **Create and continue**, and then enter the following values:
 - **Identifier: satisfied**
 - **Label:** Leave empty
 - **Type: Boolean**
 - f. Click **Create**.
 6. Click **Save**, and then click **Save** to confirm your changes.

Figure 4.1. Survey data object details

The screenshot displays the 'Survey.java - Data Objects' interface. At the top, there is a navigation bar with tabs for 'Model', 'Overview', and 'Source'. Below this, the 'Survey' data object is shown. On the left, a table lists the fields with their identifiers, labels, types, and delete buttons. On the right, the 'Survey'- general properties are displayed, including fields for Identifier, Label, Description, Package, and Superclass.

Identifier	Label	Type	
comment		String	Delete
deliveredOnTi...		Boolean	Delete
missingEquip...		String	Delete
satisfied		Boolean	Delete

'Survey'- general properties

Identifier: Survey

Label:

Description:

Package: org.jbpm.demo.it_orders

Superclass: java.lang.Object




CHAPTER 5. CREATING THE PLACE ORDER SUBPROCESS

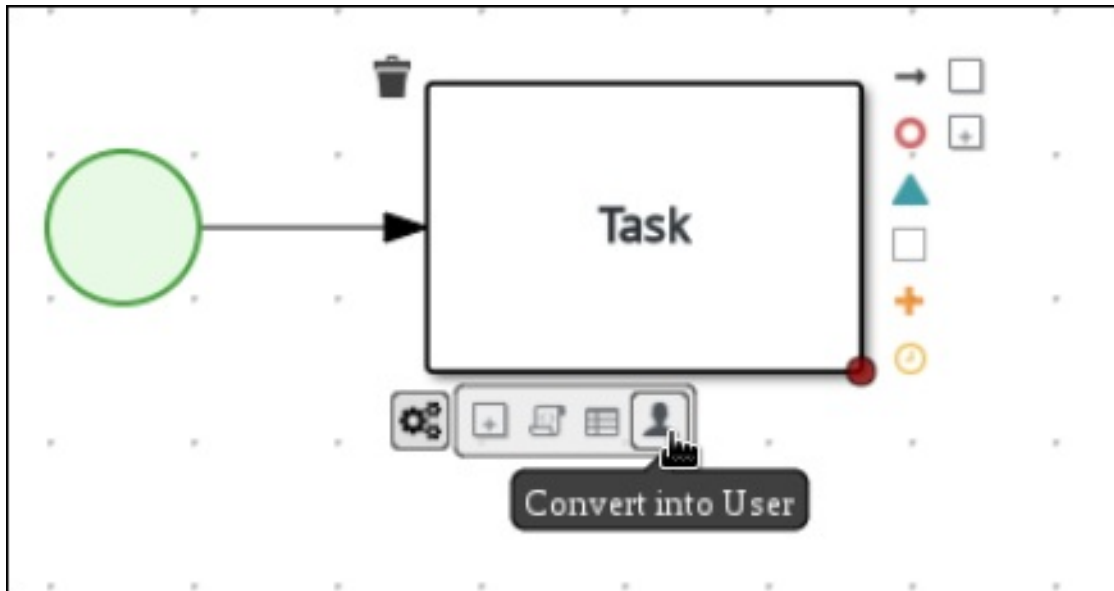
Create the Place order subprocess, which is a separate business process that is carried out by the supplier. This is a reusable process that occurs during the course of case execution as described in [Chapter 6, *Designing the case definition*](#).


Prerequisites

- You have created a new case in Business Central. For more information, see [Chapter 3, *Creating a new IT Orders case project*](#).
- You have created the data objects. For more information, see [Chapter 4, *Data objects*](#).

Procedure

1. In Business Central, go to **Menu → Design → Projects → IT_Orders_New**.
2. From the project menu, click **Add Asset → Business Process**.
3. In the **Create new Business Process** wizard, enter the following values:
 - **Business Process:** **place-order**
 - **Package:** Select **com.myspace.it_orders_new**
4. Click **Ok**. The diagram editor opens.
5. Click an empty space in the canvas, and in the upper-right corner, click the **Diagram properties**  icon.
6. Scroll down and expand **Process Data** and click  in the **Process Variables** section and enter the following values:
 - **Name:** **Caseld**
 - **Data Type:** **String**
 - a. Click  to add another variable:
 - **Name:** **Requestor**
 - **Data Type:** **String**
7. Click the start event and create an outgoing connection from the start event to a task and convert the new task to a user task.



8. Click the user task and in the **Diagram Properties** panel, input **Place order** in the **Name** field.
9. Expand **Implementation/Execution** and select **supplier** from the **Groups** menu.
10. Click  in the **Assignments** field and add the following new conditions in the **Place order Data I/O** window.

Place order Data I/O ✕

Data Inputs and Assignments + Add

Name	Data Type	Source	
<input type="text" value="_hwSpec"/>	org.jbpm.documer ▼	caseFile_hwSpec ▼	
<input type="text" value="orderNumber"/>	String ▼	Caseld ▼	
<input type="text" value="requestor"/>	String ▼	Requestor ▼	

Data Outputs and Assignments + Add

Name	Data Type	Target	
<input type="text" value="ordered_"/>	Boolean ▼	caseFile_ordered ▼	
<input type="text" value="info_"/>	String ▼	caseFile_orderInfo ▼	

11. Click **Save**.
12. Select the **Skippable** check box and enter the following in the **Description** field:
Approved order #{Caseld} to be placed
13. Create an outgoing connection from the **Place order** user task and connect it to an end event.



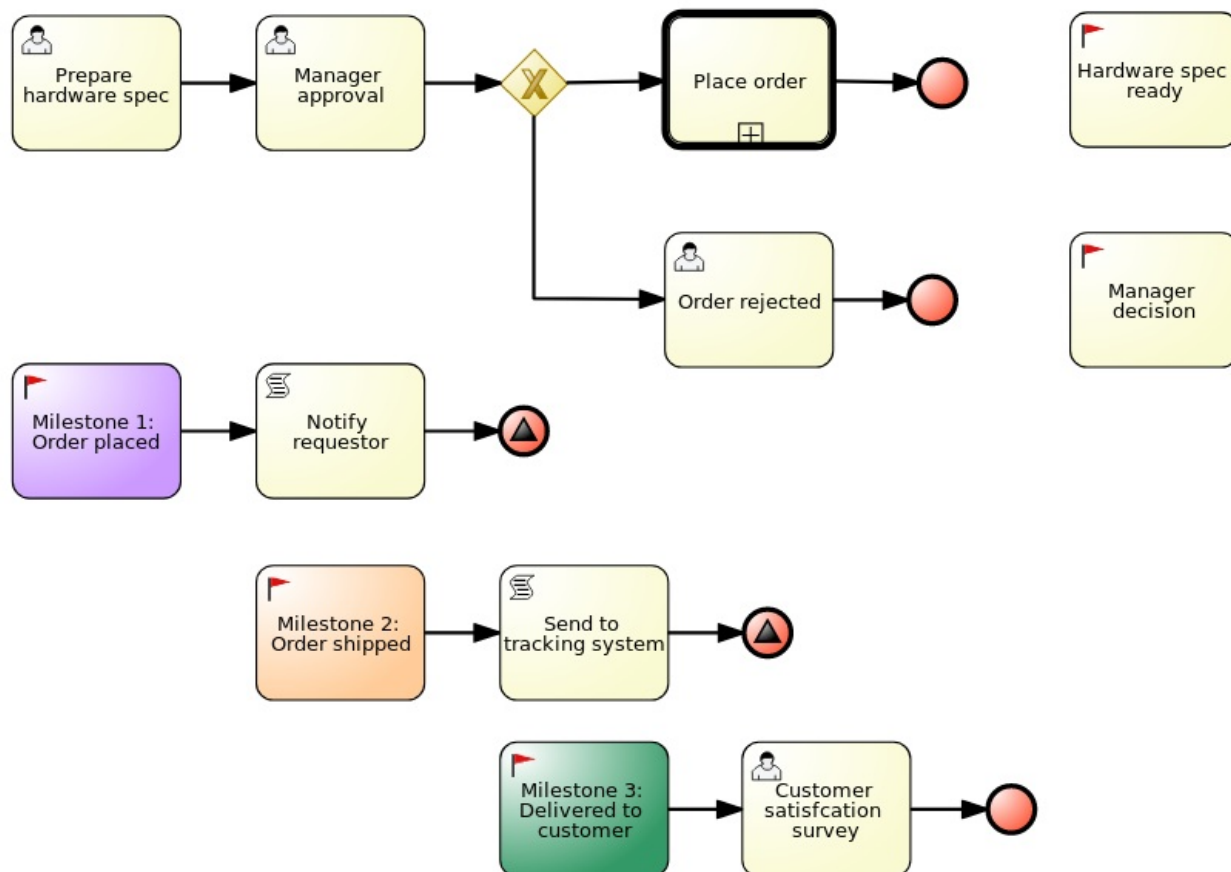
14. In the diagram editor, click **Save**, and then **Save**, to confirm your changes.

CHAPTER 6. DESIGNING THE CASE DEFINITION

You design cases using the process designer in Business Central. Case design is the basis of case management and sets the specific goals and tasks for each case. The case flow can be modified dynamically during run time by adding dynamic tasks or processes.

The **IT_Orders** sample project in Business Central includes the following **orderhardware** business process case definition. In this procedure, you will create this same case definition to familiarize yourself with the case definition design process.

Figure 6.1. orderhardware business process case definition



Prerequisites

- You have created a new case in Business Central. For more information, see [Chapter 3, Creating a new IT Orders case project](#).
- You have created the data objects. For more information, see [Chapter 4, Data objects](#).
- You have created the Place order subprocess. For more information, see [Chapter 5, Creating the Place order subprocess](#).

Procedure

1. In Business Central, go to **Menu** → **Design** → **Projects** and click **IT_Orders_New**.
2. Click **Add Asset** → **Case Definition (legacy)**.
3. In the **Create new Case definition** window, add the following required information:



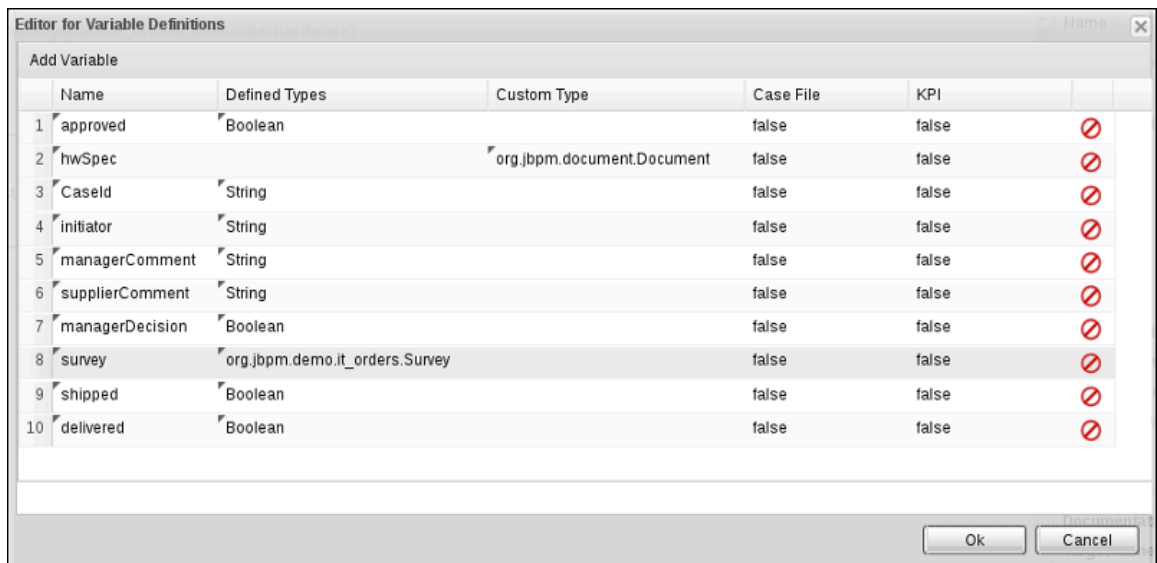










- **Case Definition:** Input **orderhardware**. This is usually the subject of the case or project that is being case managed.
 - **Package:** Select **com.myspace.it_orders_new** to specify the location that the case file is created in.
4. Click **Ok** to open the process designer.
 5. Define process-level and case-level variables.
 - a. Click  to view the **Project Explorer**.
 - b. Click **BUSINESS PROCESSES (LEGACY) → orderhardware**.
 - c. Click  on the right side of the designer to open the **Diagram properties** panel.
 - d. Click the down arrow in the **Variable Definitions** field to open the **Editor for Variable Definitions**.
 - e. Click **Add Variable**, and input the following values and click **Ok**:

Figure 6.2. IT Orders variables



	Name	Defined Types	Custom Type	Case File	KPI	
1	approved	Boolean		false	false	
2	hwSpec		org.jbpm.document.Document	false	false	
3	CaseId	String		false	false	
4	initiator	String		false	false	
5	managerComment	String		false	false	
6	supplierComment	String		false	false	
7	managerDecision	Boolean		false	false	
8	survey	org.jbpm.demo.it_orders.Survey		false	false	
9	shipped	Boolean		false	false	
10	delivered	Boolean		false	false	

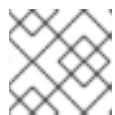
6. Define the roles involved in the case.
 - a. Click the down arrow in the **Case Roles** field to open the **Editor for Case Roles**
 - b. Click **Add Case Role**, and input the following values and click **Ok**:

Figure 6.3. ITOrders Case Roles

	Case Role	Case Cardinality	
1	owner	1	⊘
2	manager	1	⊘
3	supplier	2	⊘

- **owner:** The employee who is making the hardware order request. The role cardinality is set to **1**, which means that only one person or group can be assigned to this role.
- **manager:** The employee's manager; the person who will approve or deny the requested hardware. The role cardinality is set to **1**, which means that only one person or group can be assigned to this role.
- **supplier:** The available suppliers of IT hardware in the system. The role cardinality is set to **2**, which means that more than one supplier can be assigned to this role.

7. Define the work item to be triggered when a new case starts.



NOTE

By default, the process designer includes a **Milestone** object.

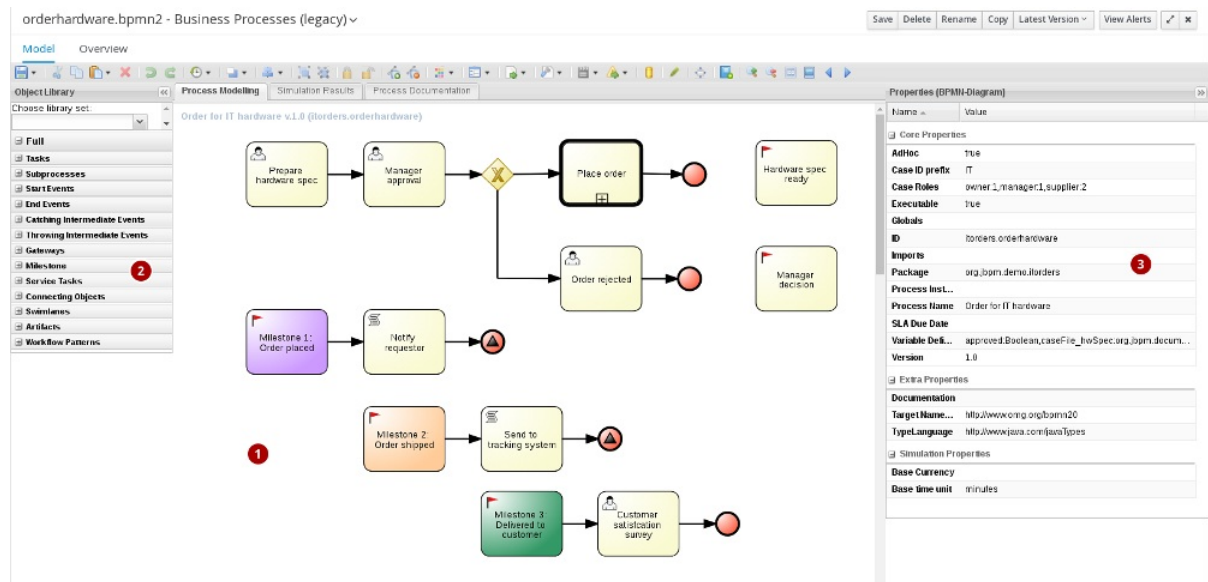
8. Click **Add Asset** → **Business Process (legacy)**.

9. Enter the following values:

- **Business Process:** **orderhardware**
- **Package:** Select **com.myspace.it_orders_new**

10. Click **Ok** to open the **Business Process (legacy)** editor. The following image shows the different panels that comprise the editor.

Figure 6.4. Business Process (legacy) editor



1: The canvas where you build your process diagram. Drag elements from the **Object Library** to the canvas to design your process.


2: The **Object Library**.

3: The **Properties** panel displays the properties of the selected element. If no element is selected, the panel contains process properties.

6.1. CREATE THE MANAGER APPROVAL BUSINESS PROCESS

The manager approval process determines whether or not the order will be placed or rejected.

Procedure

1. In the process designer, expand **Tasks** in the **Object Library** and drag a new **User** task on the canvas.
2. Click the new user task and in the upper-right corner, click  to open the **Properties** panel.
3. Input **supplier** in the **Groups** field, **Prepare hardware spec** in the **Name** field, and **PrepareHardwareSpec** in the **Task Name** field.
4. Enter the following in the **Description** field:
Prepare hardware specification for #{initiator} (order number #{CaseId})
5. Click the down arrow in the **Assignments** field, add the following new conditions in the **Prepare hardware spec Data I/O** window, and click **Save**.

Prepare hardware spec Data I/O
✕

Data Inputs and Assignments + Add

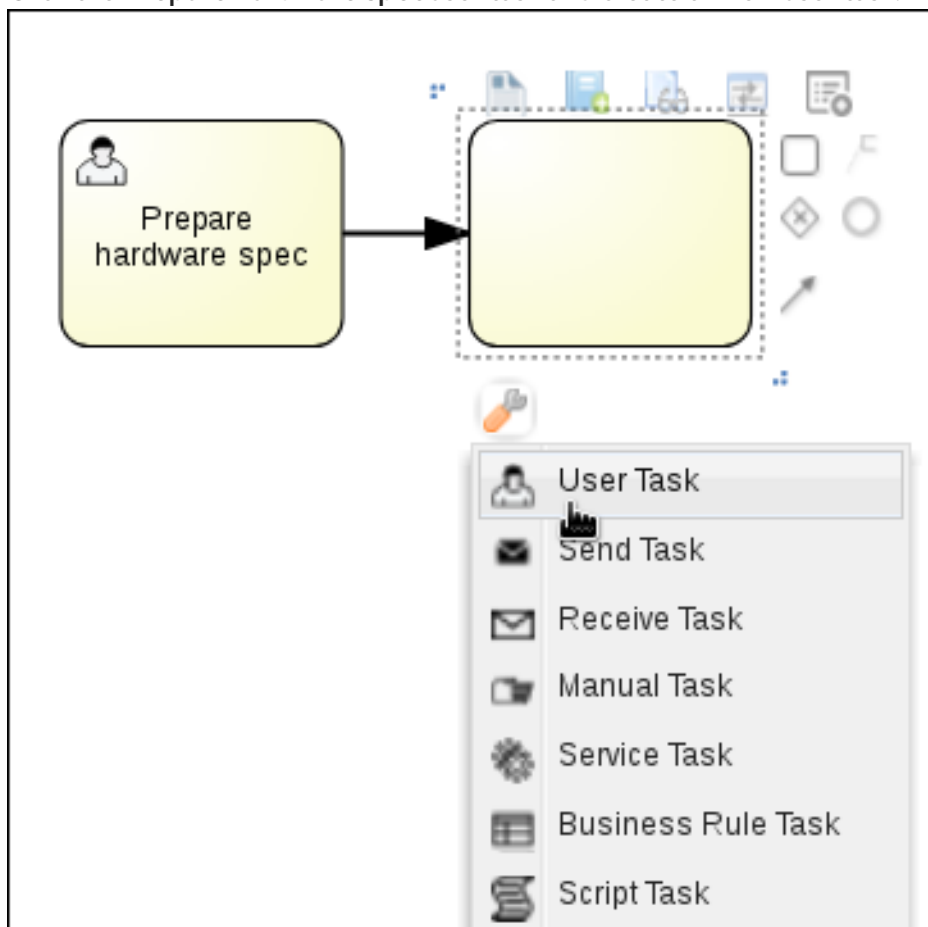
Name	Data Type	Source	
orderNumber	String ▼	Caseld ▼	🗑️
requestor	String ▼	initiator ▼	🗑️

Data Outputs and Assignments + Add

Name	Data Type	Target	
hwSpec_	org.jbpm.documer ▼	caseFile_hwSpec ▼	🗑️
supplierComment_	String ▼	caseFile_supplierC ▼	🗑️

Cancel Save

6. Click the **Prepare hardware spec** user task and create a new user task.



7. Click the new user task and in the upper-right corner, click  to open the **Properties** panel.

8. Input **manager** in the **Actors** field, **Manager approval** in the **Name** field, and **ManagerApproval** in the **Task Name** field.
9. Enter **Approval request for new hardware for #{initiator} (order number #{Caseld})** in the **Description** field:
10. Click the down arrow in the **Assignments** field, add the following new conditions in the **ManagerApproval Data I/O** window, and click **Save**.

Manager approval Data I/O ✕

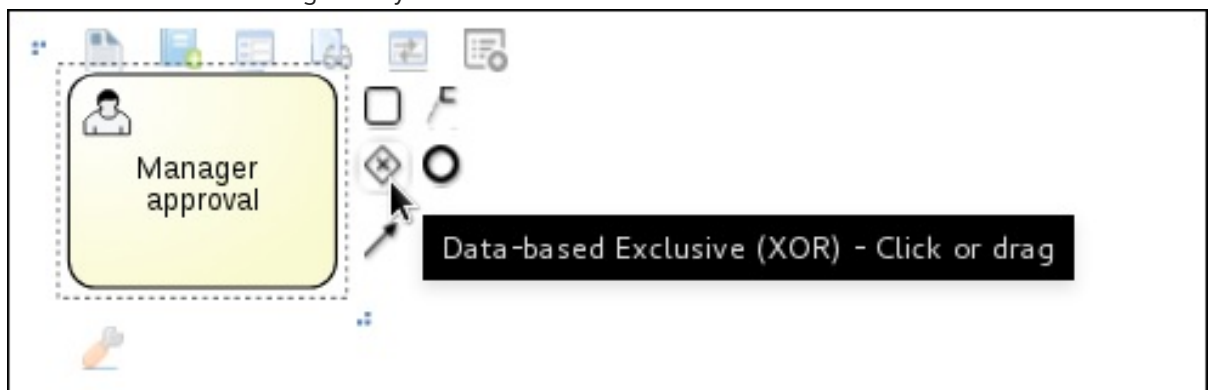
Data Inputs and Assignments + Add

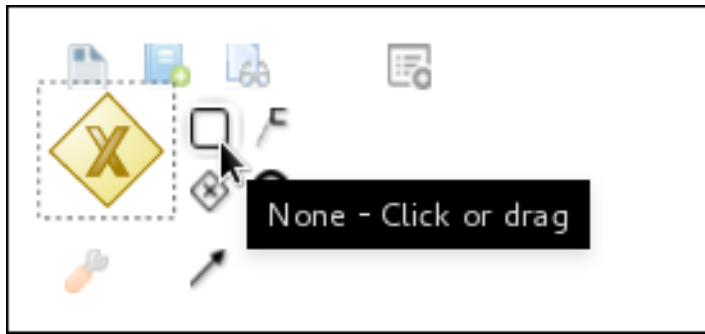
Name	Data Type	Source	
<input type="text" value="_hwSpec"/>	org.jbpm.documer ▼	caseFile_hwSpec ▼	
<input type="text" value="orderNumber"/>	String ▼	Caseld ▼	
<input type="text" value="requestor"/>	String ▼	initiator ▼	


Data Outputs and Assignments + Add

Name	Data Type	Target	
<input type="text" value="approved_"/>	Boolean ▼	approved ▼	
<input type="text" value="managerComment_"/>	String ▼	caseFile_manager(▼	
<input type="text" value="approved_"/>	Boolean ▼	caseFile_managerf ▼	

11. Click the **Manager approval** user task and create a Data-based Exclusive (XOR) gateway, and then click the exclusive gateway and create a new task.







12. Click the new task, and then click  to open the **Properties** panel.
13. Input **Sub-Process** in the **ActivityType** field and **Place order** in the **Name** field.
14. Click the down arrow in the **Called Element** field, select **place-order.bpmn** from the **Asset Name** column, and click **Save**.
15. Click the down arrow in the **Independent** field and select **false**.
16. Click the down arrow in the **Assignments** field and add the following new conditions in the **Place order Data I/O** window.

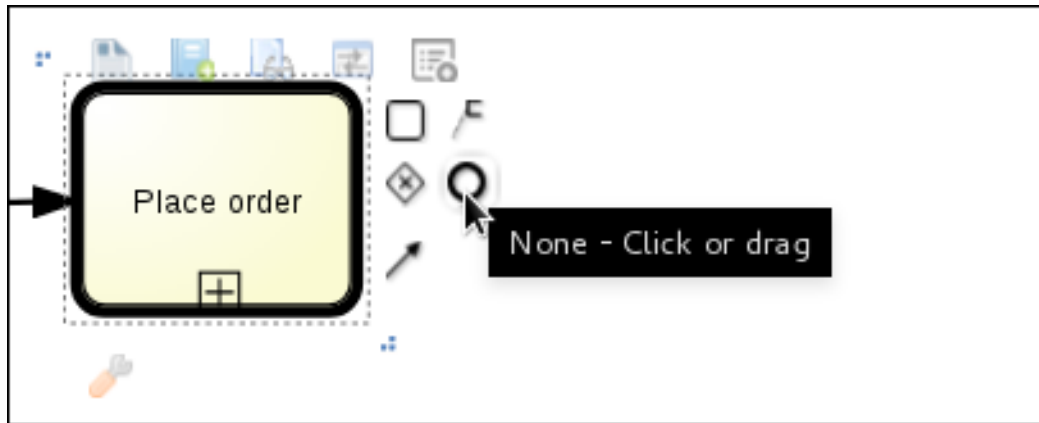
Place order Data I/O ×

Data Inputs and Assignments + Add

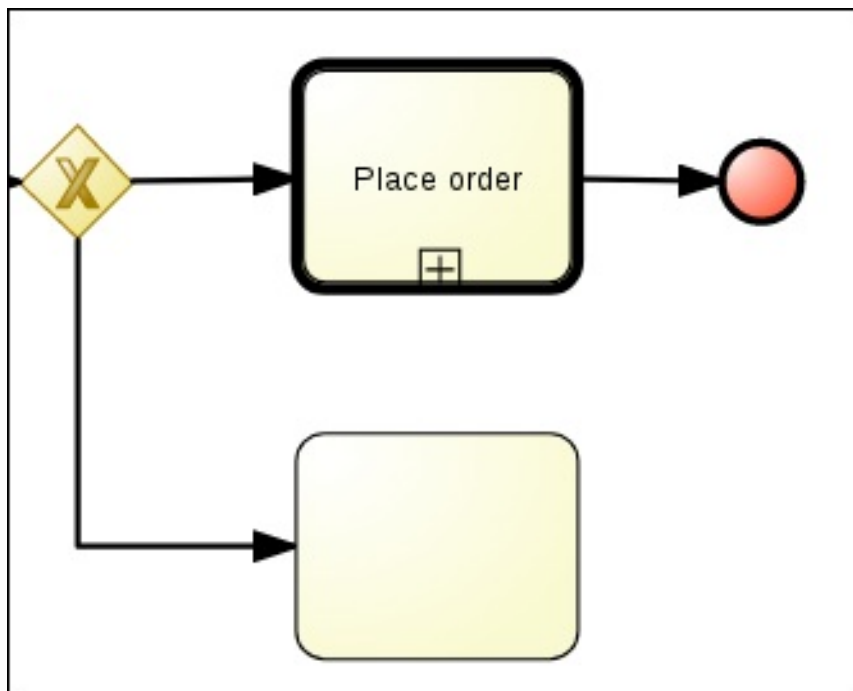
Name	Data Type	Source	
<input type="text" value="Caseld"/>	String ▼	Caseld ▼	
<input type="text" value="Requestor"/>	String ▼	initiator ▼	


Data Outputs and Assignments + Add

17. Click the connection from the exclusive gateway to the **Place order** task and add the following in the **Expression** field, and click **Save**.
return KieFunctions.isTrue(approved);
18. Click the **Place order** user task and create an end event.



19. Click the exclusive gateway and create a new user task and drag the new task to align it below the **Place order** task.



20. Click the new user task and in the upper-right corner, click  to open the **Properties** panel.
21. Input **owner** in the **Actors** field, **Order rejected** in the **Name** field, and **OrderRejected** in the **Task Name** field.
22. Enter **Order #{Caseld} has been rejected by manager** in the **Description** field, click the down arrow in the **Assignments** field, and add the following new conditions in the **Order rejected Data I/O** window.

Order rejected Data I/O
✕

Data Inputs and Assignments + Add

Name	Data Type	Source	
<input type="text" value="_reason"/>	String ▼	caseFile_managerC ▼	✕
<input type="text" value="_supplierComment"/>	String ▼	caseFile_supplierC ▼	✕

Data Outputs and Assignments + Add


Cancel Save

23. Click the connection from the exclusive gateway to the **Order rejected** task, add **return KieFunctions.isFalse(approved);** in the **Expression** field, and click **Save**.
24. Click the **Place order** user task, create an end event, click **Save**, and then **Save** to confirm your changes.

6.2. CREATE THE HARDWARE SPEC READY MILESTONE

Create a **Hardware spec ready** milestone that is reached when the required hardware specification document is completed.

Procedure

1. In the process designer, expand **Milestone** in the **Object Library** and drag a new milestone on the canvas and place it on the right side of the **Place order** end event.
2. Click the new milestone and in the upper-right corner, click  to open the **Properties** panel.
3. Input **Hardware spec ready** in the **Name** field.
4. Select **true** from the **Adhoc autostart** menu.
5. Click the down arrow in the **Assignments** field and add the following new conditions in the **Hardware spec ready Data I/O** window.
Add **CaseData(data.get("hwSpec")) != null** by selecting **Constant** from the **Source** menu.

Hardware spec ready Data I/O [X]

Data Inputs and Assignments [Add]

Name	Data Type	Source	
Condition	String	org.kie.ap...	[Trash]

Data Outputs and Assignments [Add]


[Cancel] [Save]

6. Click **Save**.

6.3. CREATE THE MANAGER DECISION MILESTONE

This milestone is reached when the **managerDecision** variable has been given a response.

Procedure

1. In the process designer, expand **Milestone** in the **Object Library** and drag a new milestone on the canvas below the the **Notify requestor** script task.
2. Click the new milestone and in the upper-right corner, click  to open the **Properties** panel.
3. Input **Manager decision** in the **Name** field.
4. Select **true** from the **Adhoc autostart** menu.
5. Click the down arrow in the **Assignments** field and add the following new conditions in the **Manager decision Data I/O** window.
Add **CaseData(data.get("managerDecision")) != null** by selecting **Constant** from the **Source** menu.

Manager decision Data I/O [X]

Data Inputs and Assignments [Add]

Name	Data Type	Source	
Condition	String	org.kie.ap...	[Trash]

Data Outputs and Assignments [Add]


[Cancel] [Save]

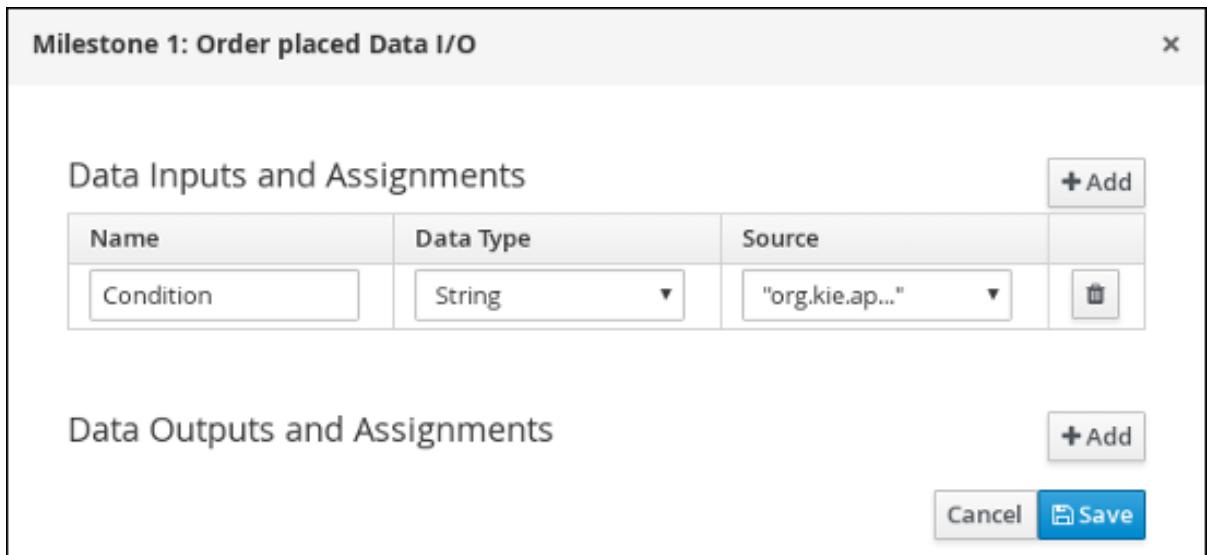
- Click **Save**.

6.4. CREATE THE ORDER PLACED MILESTONE

This milestone is reached when the **ordered** variable has been given a response.

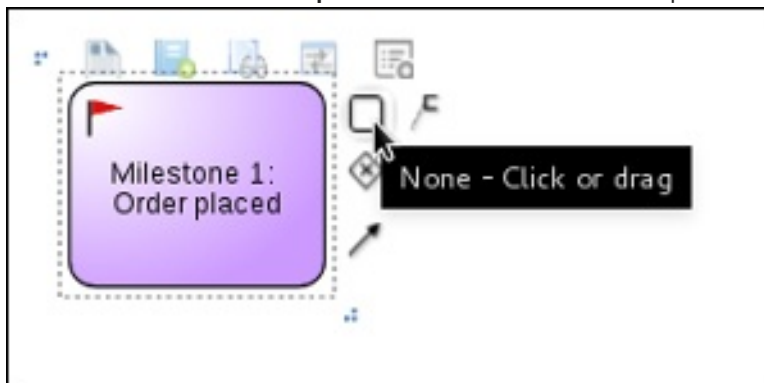
Procedure

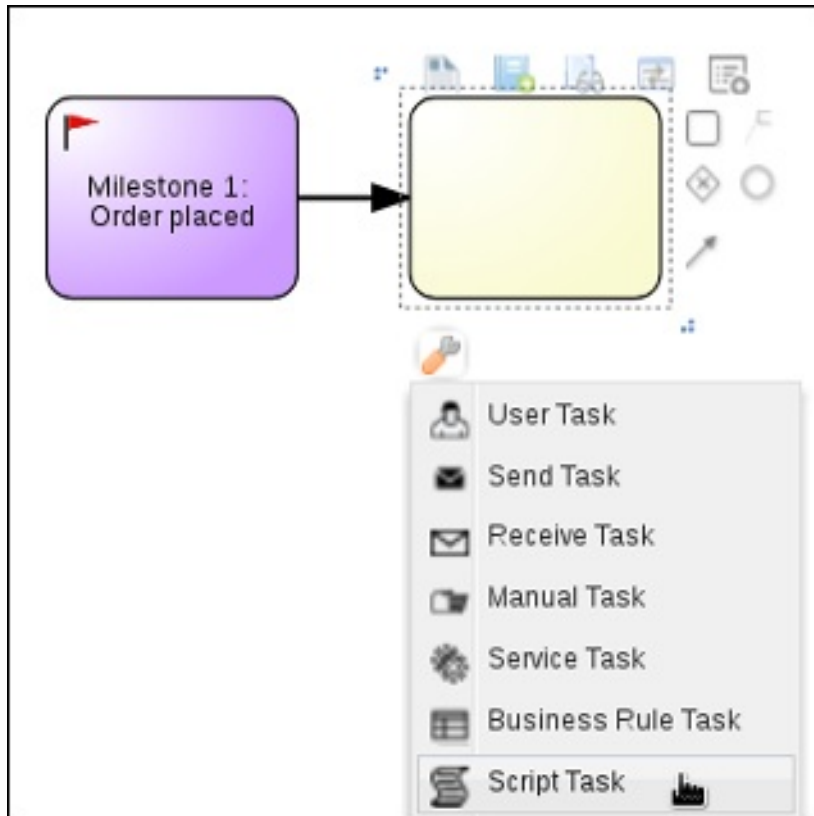
- In the process designer, click the default **Milestone** object.
- In the upper-right corner, click  to open the **Properties** panel.
- Input **Milestone 1: Order placed** in the **Name** field.
- Select **true** from the **Adhoc autostart** menu.
- Click the down arrow in the **Assignments** field to add a new condition in the **Milestone 1: Order placed Data I/O** window.
- Click the **Source** column drop-down, select **Constant**, and input **org.kie.api.runtime.process.CaseData(data.get("ordered") == true)**. This means that a case variable named **ordered** exists with the value **true**.




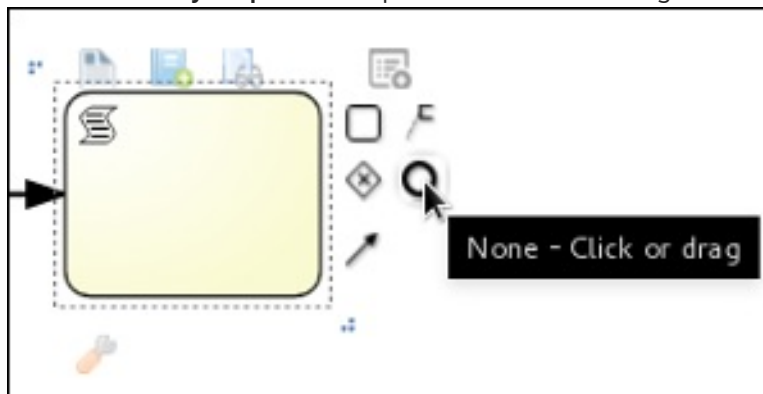
Name	Data Type	Source
Condition	String	"org.kie.ap..."

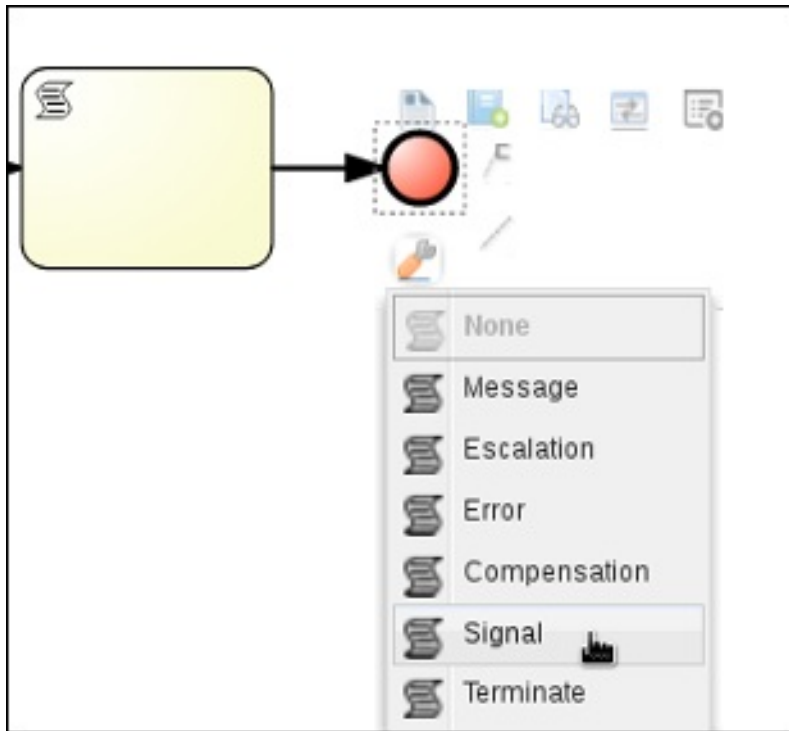
- Click **Save**.
For more information about milestones, see [Section 1.1, "Milestones"](#).
- Click **Milestone 1: Order placed** and create a new script task.






9. Click the new script task and in the upper-right corner, click  to open the **Properties** panel.
10. Input **Notify requestor** in the **Name** field.
11. Click the down arrow in the **Script** field, input **System.out.println("Notification::Order placed");**, and click **Ok**.
12. Click the **Notify requestor** script task and create a signal end event.








13. Click the signal event and click  to open the **Properties** panel.
14. Click the down arrow in the **Signal Scope** field, select **Process Instance**.
15. Click the down arrow in the **SignalRef** field, input **Milestone 2: Order shipped**, and click **Ok**.

6.5. CREATE THE ORDER SHIPPED MILESTONE

The condition for this milestone is that a case file variable named **shipped** is **true**. **Adhoc autostart** is not enabled for this milestone. Instead, it is triggered by a signal event when the order is ready to be sent.

Procedure



1. In the process designer, expand **Milestone** in the **Object Library** and drag a new milestone on the canvas below the the **Notify requestor** script task.
2. Click the new milestone and in the upper-right corner, click  to open the **Properties** panel.
3. Input **Milestone 2: Order shipped** in the **Name** field.
4. Select **false** from the **Adhoc autostart** menu.
5. Click the down arrow in the **Assignments** field to add a new condition in the **Data Inputs and Assignments** window.
6. Click the **Source** column drop-down, select **Constant**, and input **org.kie.api.runtime.process.CaseData(data.get("shipped")) == true**. This means that a case variable named **shipped** exists with the value **true**.
7. Click **Save**.
8. Click **Milestone 2: Order shipped** and create a new script task.

9. Click the new script task and in the upper-right corner, click  to open the **Properties** panel.
10. Input **Send to tracking system** in the **Name** field.
11. Click the down arrow in the **Script** field, input **System.out.println("Order added to tracking system");**, and click **Ok**.
12. Click the **Send to tracking system** script task and create a signal end event.
13. Click the signal event and click  to open the **Properties** panel.
14. Click the down arrow in the **Signal Scope** field, select **Process Instance**.
15. Click the down arrow in the **SignalRef** field, input **Milestone 3: Delivered to customer**, and click **Ok**.

6.6. CREATE THE DELIVERED TO CUSTOMER MILESTONE

The condition for this milestone is that a case file variable named **delivered** is **true**. **Adhoc autostart** is not enabled for this milestone. Instead, it is triggered by a signal event after the order has successfully shipped to the customer.

Procedure

1. In the process designer, expand **Milestone** in the **Object Library** and drag a new milestone on the canvas below the the **Send to tracking system** script task.
2. Click the new milestone and in the upper-right corner, click  to open the **Properties** panel.
3. Input **Milestone 3: Delivered to customer** in the **Name** field.
4. Select **false** from the **Adhoc autostart** menu.
5. Click the down arrow in the **Assignments** field to add a new condition in the **Milestone 2: Order shipped Data I/O** window.
6. Click the **Source** column drop-down, select **Constant**, and input **org.kie.api.runtime.process.CaseData(data.get("delivered")) == true**. This means that a case variable named **delivered** exists with the value **true**.
7. Click **Save**.
8. Click **Milestone 3: Delivered to customer** and create a new user task.
9. Click the new user task and in the upper-right corner, click  to open the **Properties** panel.
10. Input **owner** in the **Actors** field.
11. Click the down arrow in the **Assignments** field to add data input and output assignments in the **Milestone 3: Delivered to customer Data I/O** window as shown below. For the output **Data Type** column, select **Constant**, and input **org.kie.api.runtime.process.CaseData(data.get("delivered")) == true**.

Customer satisfaction survey Data I/O
✕

Data Inputs and Assignments +Add

Name	Data Type	Source	
<input type="text" value="orderNumber"/>	<input style="border: none; border-bottom: 1px solid #ccc;" type="text" value="String"/> ▼	<input style="border: none; border-bottom: 1px solid #ccc;" type="text" value="CaseId"/> ▼	✕

Data Outputs and Assignments +Add

Name	Data Type	Target	
<input type="text" value="survey_"/>	<input style="border: none; border-bottom: 1px solid #ccc;" type="text" value="Survey [org.jbpm.c"/> ▼	<input style="border: none; border-bottom: 1px solid #ccc;" type="text" value="caseFile_survey"/> ▼	✕

Cancel Save

12. Click **Save**.
13. Input **Customer satisfaction survey** in the **Name** field.
14. Input **CustomerSurvey** in the **Task Name** field.
15. Click the **Customer satisfaction survey** user task and create an end event.
16. Click **Save**, and then **Save** to confirm your changes.

The IT Orders case can be closed after all milestone sequences are completed. However, due to the ad hoc nature of cases, the case could be reopened if, for example, the order was never received by the customer or the item is faulty. Tasks can be re-triggered or added to the case definition as required, even during run time.

For more information about ad hoc processes, see [Chapter 8, Ad hoc and dynamic tasks](#).

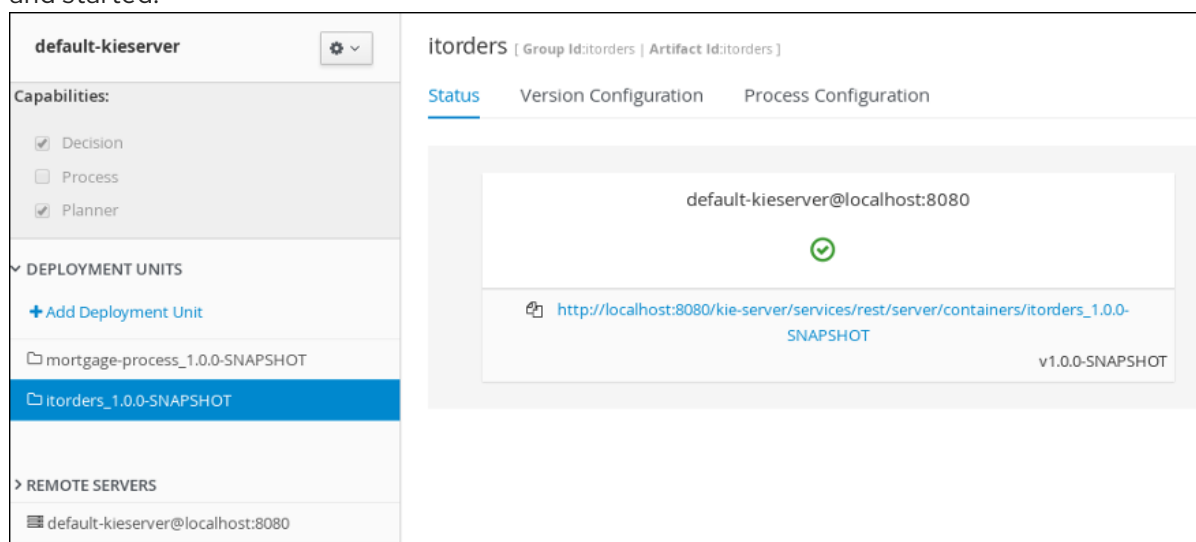
CHAPTER 7. DEPLOYING AND TESTING THE IT ORDER CASE PROJECT

Prerequisites

- You have a running Process Server instance connected to Business Central. For more information see [Installing and configuring Red Hat Process Automation Manager on Red Hat JBoss EAP](#).
- You have created a new case in Business Central. For more information, see [Chapter 3, Creating a new IT Orders case project](#).
- You have created the data objects. For more information, see [Chapter 4, Data objects](#).
- You have created the Place order subprocess. For more information, see [Chapter 5, Creating the Place order subprocess](#).
- You have designed the Order for IT hardware case. For more information, see [Chapter 6, Designing the case definition](#).

Procedure

1. In Business Central, go to **Menu** → **Design** → **Projects** and click **IT_Orders_New**.
2. Click **Deploy**.
3. Click **Ok** in the **Build and Deploy** window.
4. Go to **Menu** → **Process Definitions** → **View Process Instances** → **Create a New Process Instance**.
5. Go to **Menu** → **Deploy** and click **Execution Servers** and verify that a new container is deployed and started.



6. Use the Case Management Showcase application to start a new case instance. For instructions about using the Showcase application, see [Using the Showcase application for case management](#).

CHAPTER 8. AD HOC AND DYNAMIC TASKS

You can use case management to carry out tasks in an ad hoc way, rather than following a strict end-to-end process. Tasks can also be added to a case dynamically during run time when required.

Ad hoc tasks are defined in the case modeling phase. Ad hoc tasks that are not configured as **Adhoc autostart** are optional and may or may not be worked on during a case. Therefore, they must be triggered by a signal event or by Java API to be available to be worked on during a case.

Dynamic tasks are defined during the case execution and are not present in the case definition model. Dynamic tasks address specific needs that arise during the case. They can be added to the case and worked on at any time using a case application, as demonstrated in the Red Hat Process Automation Manager Showcase application. Dynamic tasks can also be added by Java and Remote API calls.

Dynamic tasks can be user or service activities, while ad hoc tasks can be any type of task.

Dynamic processes are any reusable sub-process from a case project.

Ad hoc nodes with no incoming connections can be configured with the **Adhoc autostart** property, which is a property of the node itself. These tasks are triggered automatically when the case instance is started.


8.1. ADDING AD HOC TASKS

Ad hoc tasks are optional tasks that are configured in a case definition. Because they are ad hoc, they must be triggered in some way, usually by a signal event or Java API call.

Prerequisites

- A case project has been created in Business Central.
- The **IT_Orders_New** case project has been created in Business Central.
- A case definition has been created.

Procedure

1. In Business Central, go to **Menu → Design → Projects** and **IT_Orders_New**.
2. Click the **IT_Orders_New** case project **Business Process (legacy)** asset.
3. In the process designer, click  to open the **Object Library** on the left of the design palette.
4. From the list, select a task that you want to add to the case definition as an ad hoc task. For example, you might want to add a user task to fill out a warranty claim if goods that are received are faulty. A warranty claim may or may not need to be completed during the course of the case, but it is available to be performed in an ad hoc way if required.
5. Configure the ad hoc task properties in the **Properties** panel on the right.
6. Trigger the task during run time using a Java API call. For example, the **Order rejected** ad hoc task is triggered by the following API call: **CaseService.triggerAdHocFragment**

8.2. STARTING DYNAMIC TASKS AND PROCESSES

You can add dynamic tasks and processes to a case during run time. Dynamic actions are a way to address changing situations, where an unanticipated change during the case requires a new task or process to be incorporated into the case.

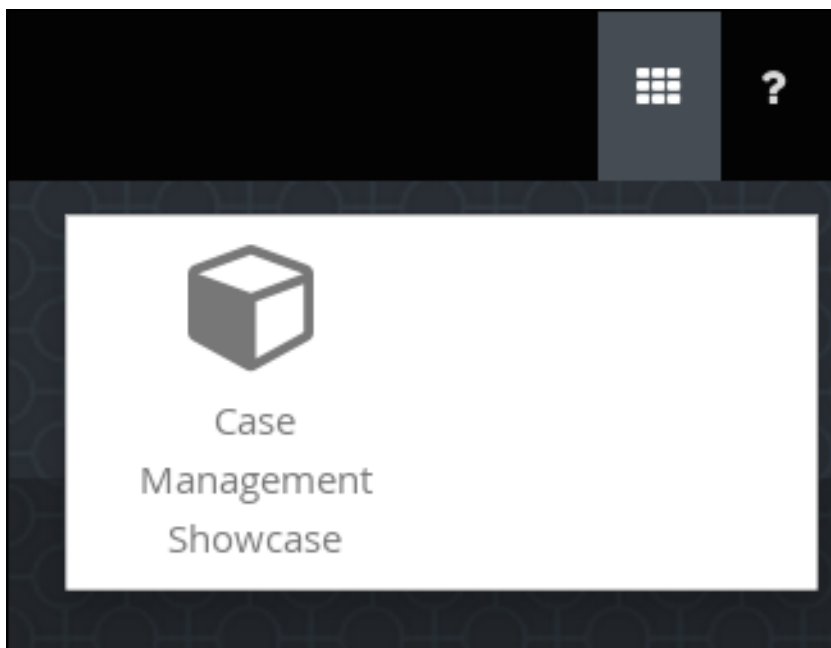
Use a case application to add a dynamic task during run time. For demonstration purposes, the Business Central distribution includes a Showcase application where you can start a new dynamic task or process for the IT Orders application.

Prerequisites

- The Process Server is deployed and connected to Business Central.
- The IT Orders project is deployed to Process Server.
- The Showcase application **.war** file has been deployed alongside Business Central.

Procedure

1. With the **IT_Orders_New** project deployed and running in the Process Server, in a web browser, navigate to the Showcase login page <http://localhost:8080/rhpam-case-mgmt-showcase/>. Alternatively, if you have configured Business Central to display the **Apps launcher** button, use it to open a new browser window with the Showcase login page.




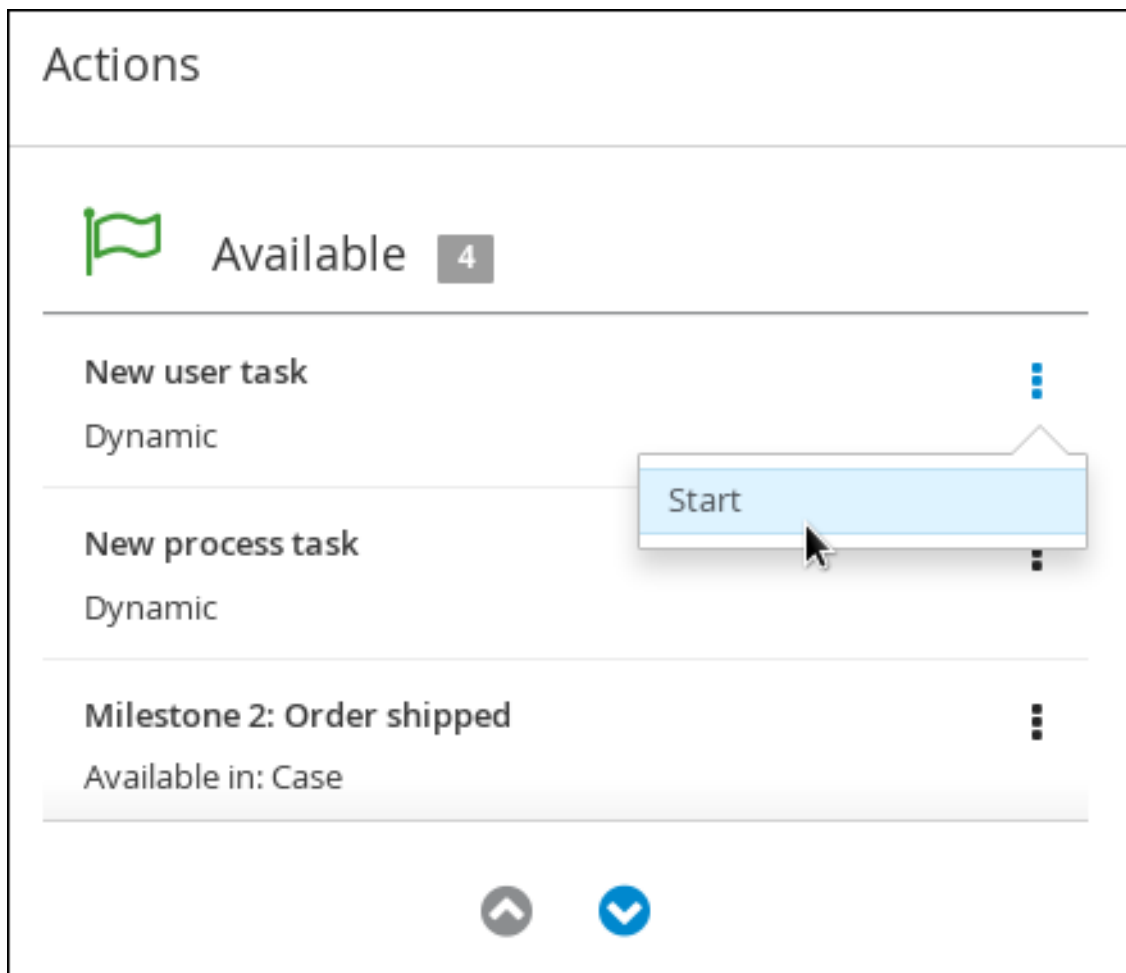
2. Log in to the Showcase application using your Business Central login credentials.
3. Select an active case instance from the list to open it.
4. Under **Overview** → **Actions** → **Available**, click the  button next to **New user task** or **New process task** to add a new task or process task.

Figure 8.1. Showcase dynamic actions



- To create a dynamic user task, start a **New user task** and complete the required information:

Name*	<input type="text" value="NewDynamicTask"/>
Description	<input type="text"/>
Users	<input type="text" value="wbadmin"/>
Groups	<input type="text"/>
Stage	<input type="text" value="Nothing selected"/>

- To create a dynamic process task, start a **New process task** and complete the required information:

New process task [X]

Name*

Process id*

Stage

Cancel Add Task

5. To view a dynamic user task in Business Central, click **Menu → Track → Task Inbox**. The user task that was added dynamically using the Showcase application appears in the **Task Inbox** of users assigned to the task during task creation.

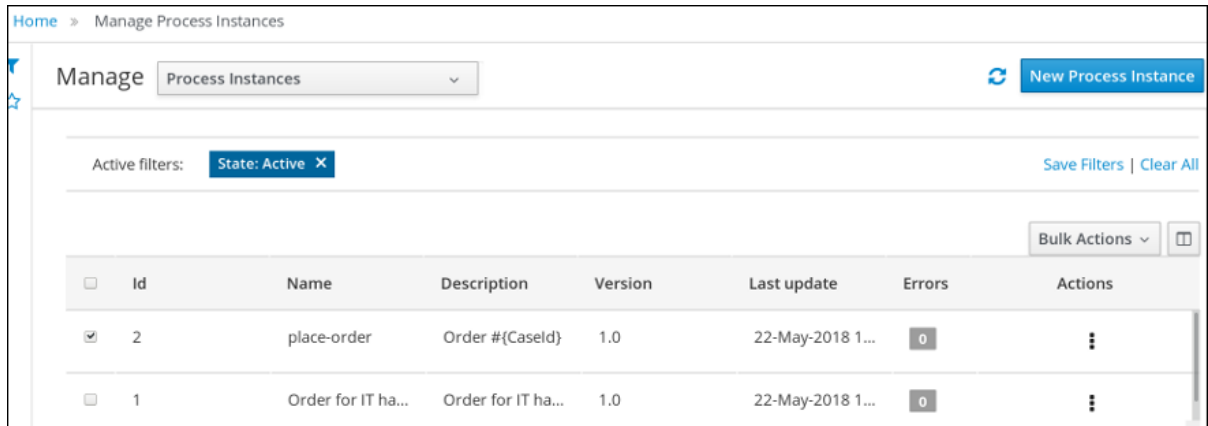
Task Inbox [Refresh]

Active filters: **Status: Ready, InProgress, Reserved** [X] [Save Filters](#) | [Clear All](#)

Task	Process Definition Id	Status	Created On	Actions
NewDynamicTask	itorders.orderhardwa...	Reserved	22-May-2018 19:20:38	[More]

10 Items [v] [Navigation icons] 1 of 1

- a. Click the dynamic task in the **Task Inbox** to open the task. A number of action tabs are available from this page.
 - b. Using the actions available under the task tabs, you can begin working on the task.
 - c. In the Showcase application, click the refresh button in the upper-right corner. Case tasks and processes that are in progress appear under **Overview → Actions → In progress**
 - d. When you have completed working on the task, click the **Complete** button under the **Work** tab.
 - e. In the Showcase application, click the refresh button in the upper-right corner. The completed task appears under **Overview → Actions → Completed**.
6. To view a dynamic process task in Business Central, click **Menu → Manage → Process Instances**.



- a. Click the dynamic process instance in the list of available process instances to view information about the process instance.
- b. In the Showcase application, click the refresh button in the upper-right corner. Case tasks and processes that are in progress appear under **Overview** → **Actions** → **In progress**

8.3. CLOSING A CASE IN THE SHOWCASE APPLICATION

A case instance is complete when no more activities need to be performed and the business goal has been achieved. After a case is complete, you can close the case to indicate that the case is complete and that no further work is required. When you close a case, consider adding a specific comment about why you are closing the case. If needed, you can reopen the case later with the same case ID.

You can use the Showcase application to close a case instance at any time. From Showcase, you can easily view the details of the case or leave a comment before closing it.

Prerequisites

- You are logged in to the Showcase application and are the owner or administrator for a case instance that you want to close.

Procedure

1. In the Showcase application, locate the case instance you want to close from the list of case instances.
2. To close the case without viewing the details first, click **Close**.
3. To close the case from the case details page, click the case in the list to open it. From the case overview page you can add comments to the case and verify that you are closing the correct case based on the case information.
4. Click **Close** to close the case.
5. Click **Back to Case List** in the upper-left corner of the page to return to the Showcase case list view.
6. Click the drop-down list next to **Status** and select **Canceled** to view the list of closed and canceled cases.

CHAPTER 9. CANCELING OR DESTROYING A CASE

Cases can be canceled if they are no longer required and do not require any case work to be performed. Cases that are canceled can be reopened later with the same case instance ID and case file data. In some cases, you might want to permanently destroy a case so that it cannot be reopened.

Cases can only be canceled or destroyed using an API request. Red Hat Process Automation Manager includes the Swagger client, which includes endpoints and documentation for REST API requests. Alternatively, you can use the same endpoints to make API calls using your preferred client or Curl.

Prerequisites

- A case instance has been started using Showcase.
- You are able to authenticate API requests as a user with the **admin** role.

Procedure

1. Open the Swagger REST API client in a web browser:
localhost:8080/kie-server/docs
2. Under **Case Instances :: Case Management**, open the **DELETE** request with the following endpoint:
/server/containers/{id}/cases/instances/{caseId}

You can cancel a case using the **DELETE** request. Optionally, you can also destroy the case using the **destroy** parameter.

3. Click **Try it out** and fill in the required parameters:

Table 9.1. Parameters

Name	Description
id	itorders
caseId	IT-0000000001
destroy	true (Optional. Permanently destroys the case. This parameter is false by default.)

4. Click **Execute** to cancel (or destroy) the case.
5. To confirm the case is canceled, open the Showcase application and change the case list status to **Canceled**. If the case has been destroyed, it will no longer appear in any case list.

CHAPTER 10. ADDITIONAL RESOURCES

- *[Designing and building cases for case management](#)*
- *[Using the Showcase application for case management](#)*
- *[Getting started with business processes](#)*

APPENDIX A. VERSIONING INFORMATION

Documentation last updated on Friday, May 22, 2020.