



TIBCO® BPM Enterprise

Client User Guide

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TIBCO® BPM Enterprise

You can connect to TIBCO® BPM Enterprise and perform the functions you need to complete your daily tasks.

For example, you can:

- view the work items in your work list.
- create work views so that only the desired work items are displayed.
- open work items and complete and submit the forms that are displayed.
- start cases and business services.
- perform case actions.
- view audit trails.

User Access

By default, all functions, buttons, and menu selections that are available, are displayed, even though you may not be able to use those functions because of your access privileges.

Access to functions is controlled by system actions. System actions are modeled in the organization model that is built in TIBCO Business Studio™ - BPM Edition. See *TIBCO Business Studio - BPM Edition Application Designer's Guide* for more information. Some functions are controlled by a single system action, some are controlled by multiple system actions, whereas some are not controlled by system actions at all.

You must be logged in as a user that has privileges with the correct system actions assigned to them. If you do not have the correct privileges to use a particular function, an exception is displayed that includes an Authorization Failed message.

Accessing TIBCO BPM Enterprise Work Manager

To access Work Manager, you must use the login URL.

Procedure

1. Type the following URL into your browser.

```
protocol://host:port/apps/login/index.html
```

where:

- *protocol* is the communications protocol being used, either http or https. This was determined at installation.
 - *host* is the DNS name or IP address of the server hosting the TIBCO BPM Enterprise runtime.
 - *port* is the port being used. The default value is **80**.
2. Log in with a valid TIBCO BPM Enterprise username and password.

Note:

- Out-of-the-box, TIBCO BPM Enterprise recognizes the username “tibco-admin” with a password of “secret”.
- If there is no activity for 30 minutes, an Inactivity Warning message is displayed warning you that you are about to be logged out.

3. Click .

4. Click **Work Manager**.

Business Services

A business service is a set of actions that accomplishes some sort of business function. For example, a business service could be designed to handle an incoming insurance claim.

Business services are *stateless*, meaning that if it consists of many forms, and you enter data into some forms, then cancel the business service (by clicking on the **Cancel** button on a form) before completing the business service, none of the data you entered on the previous forms is saved.

If a business performs a *stateful* action, that is, something that cannot be reversed (for example, writing to a database, starting a process instance, and so on.), typically it will be the last action performed by the business service.

The example business service described above is just one simple example. Depending on how it is designed, a business service may consist of the following types of actions:

- **Display forms** - Multiple forms may be displayed in sequence. When a business service includes multiple forms, the user that starts the business service will be the one to work through all of the forms — as soon as the user submits one form, the next one in the sequence is displayed. Note, however, that if there is an action of some sort in-between forms (database access, script execution, etc.), there may be a delay in displaying the next form. If this occurs, a shaded mask is shown over the previous form, and a "Waiting for response" message is displayed.
- **Start process instances** - One or more instances of processes may be started by a business service resulting in one or more work items being sent to the appropriate users to process them.

If a business service starts process instances that result in work items, you can see those in the process instance and work item lists, respectively.

This stateful type of action would typically be done as the last action in the business service.

- **Calling REST Services** - For information on how to call REST Services, see "Calling REST Services" in the *TIBCO® BPM Enterprise Administrator's Guide*.
- **Scripts** - Scripts can perform various functions, such as calculations, validation, etc.
- **Logical branching** - The flow of the business service may branch in various ways,

depending on its design.

Business Services

Business services enable you to view information about the business services in your list.

You can categorize your business services, depending on your requirements. Categories are specified in TIBCO Business Studio - BPM Edition at design-time.

The business service list that is initially displayed is a snapshot of the business services available at that time. You can refresh the list to get the most recent list of business services from TIBCO BPM Enterprise.

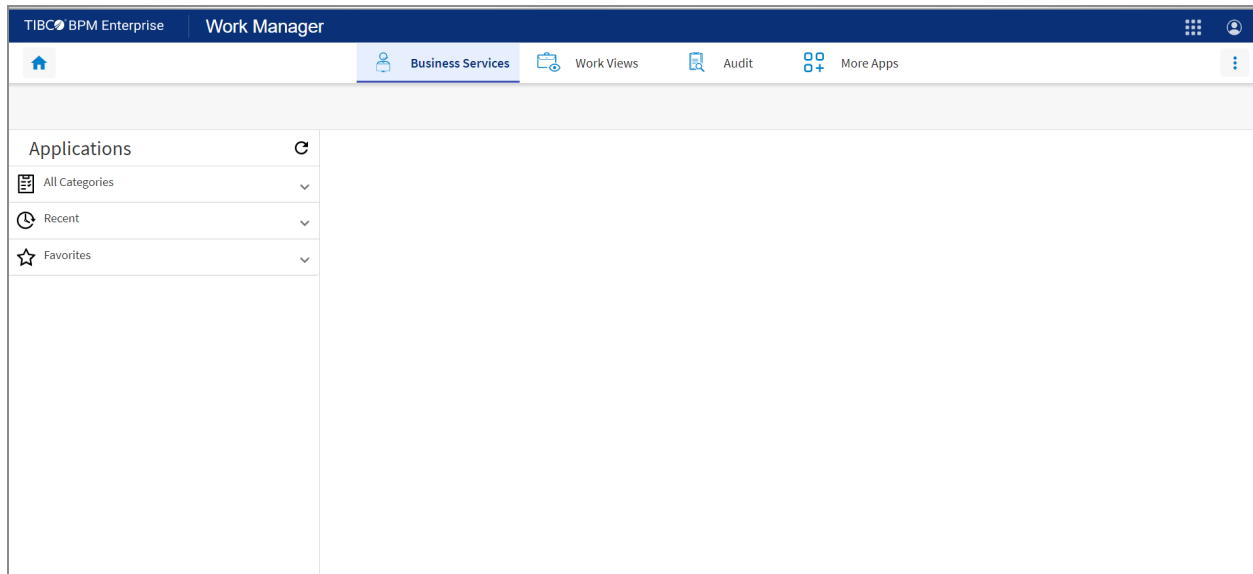
Categories

You can store your business services by category. As the number of business services grows, you can increase the number of categories you have so you can organize your business services as effectively as possible. You can specify a category for a business service in TIBCO Business Studio - BPM Edition at design-time. Business Services allows you to view your categories.

You can:

- Display all your categories.
- Display a list of your most recently viewed business services.
- Store business services as favorites.

Initially, all categories are displayed by default.



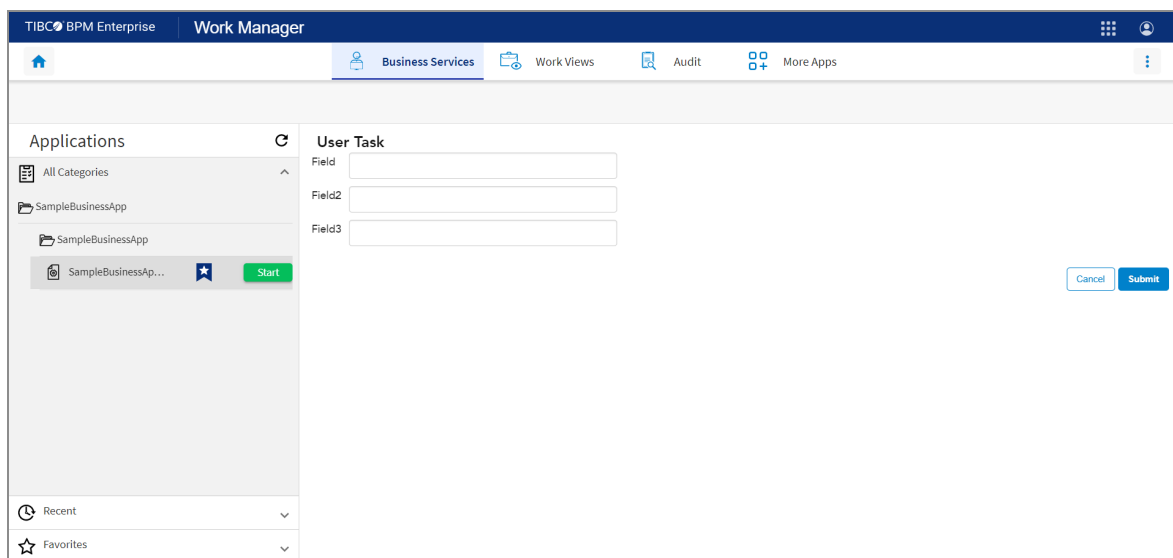
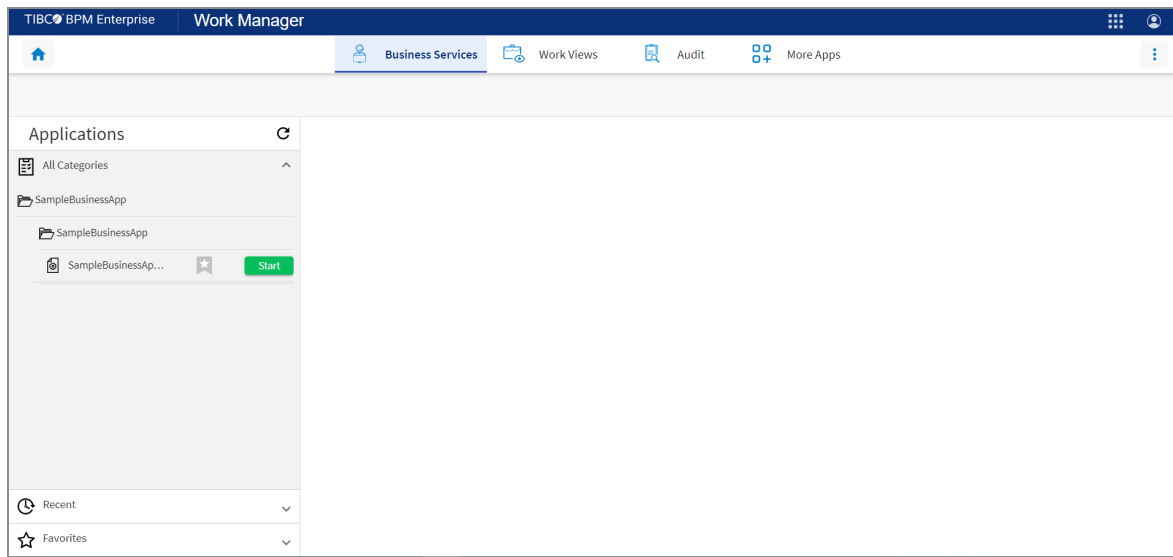
Starting a Business Service

The business service does not generate work items. The user who starts the business service provides the information required by the business service and then the business service starts an instance of a process.

When you start a business service, the first form in the business service is displayed. The business service is considered complete when the final form has been completed.

Procedure

1. Select the business service you want to start.



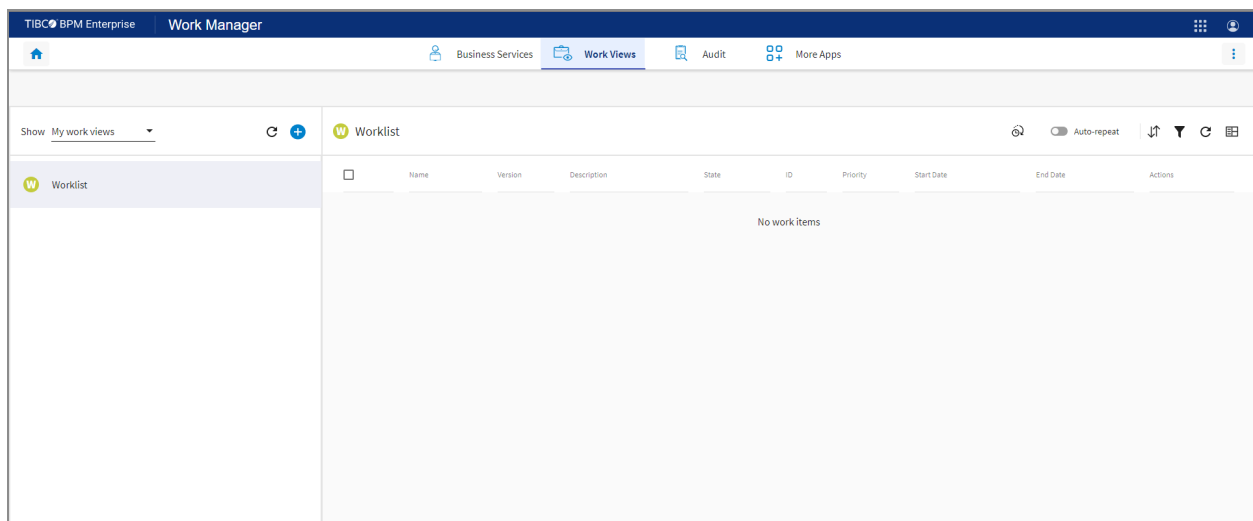
2. Select **Start**.
3. Complete the information in the forms and select **Submit**.

Work Views

Use Work Views to display your work lists and work views.

- Work List - displays all the work items that you can work on. See [Work Items](#) for more information.
- Work Views - Work views allow you to apply filter and/or sort parameters so that only the desired work items are listed in the work view.

When you first log in, your work list is displayed, but no work views are defined.



Work View Permissions

You can assign permissions to your work view when you create it using the work view wizard.

You can make your work views available to, either:

- individual users
- specific organizational recipients. If you assign an organizational recipient permission to a work view, all the child organizational recipients in the parent recipient inherit that permission, but the individual user must have the **View Work List** system action

for the child organizational recipients. See [Creating Work Views](#).

Depending on how permissions have been assigned, a user can have the following access to a work view:

Description	Permissions
Owner	The user who created the work view. The Owner can view, edit and delete a work view. The Owner can specify authors and users of the work view. Note that if you are the owner of a work view, you cannot remove it from your work view list. You always see the work views that you are an owner of.
Authors	Authors can view, edit and delete the work view. Authors can also specify users of the work view. To display your editable work views, select the Editable work view from the Work views dropdown list. See Accessing Work Views .
Users	Users can only view the work view. A user cannot specify any access to the work view. If you have been specified as a User of a work view, the work view is automatically displayed in your Work View list.

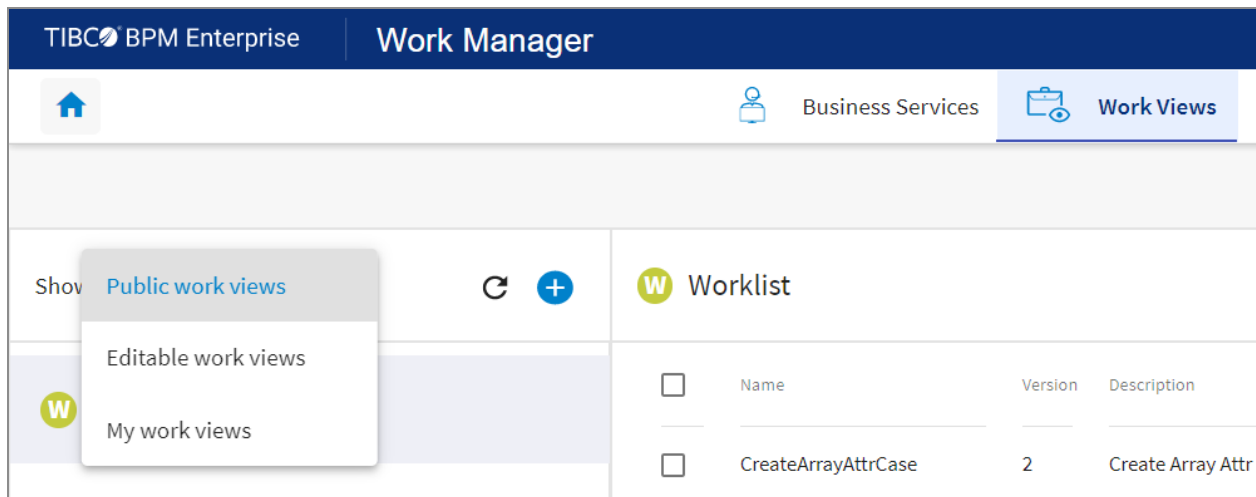
Public Work Views

Work views can be either public or private. Private work views can only be viewed by you or others you specify. Public work views can be viewed by every TIBCO BPM Enterprise user.

You must also have the **View Work List** system action to view a public work view. However, you cannot edit a work view unless you are the owner or an author of the work view. See [Work View Permissions](#) for more information about assigning permissions to work views.

You can specify whether or not a work view is public when you create it using the work view wizard. See [Creating Work Views](#).

To view public work views, select **Public** from the **Work View** dropdown.



Creating a Work View for an Organizational Entity

You can create different work views of your work list. However, if you want to create a work view of a work list belonging to a resource in an organization model, you must have the **View Work List** system action for the work list you require.

Similarly, if you want to grant another user access to a work view of a work list belonging to an entity in an organization model, that user must have the **View Work List** system action for the work list you want them to have access to. See [Work View Permissions](#) for more information about granting permissions to work views.

You can create work views for:

- an individual resource
- an organization unit, group, or position.

Note:

- When creating a work view of an organizational entity, you can specify that the work view shows work items that are either allocated or offered to the organizational entity.
- When viewing a work view for an organizational entity, you will only be able to see work items that are allocated or offered directly to that entity. You cannot see the work items for other entities in that organizational entity. For example, if you have created a work view for Group1 and Group1A is also a member of Group1, you must create a separate work view for Group1A. (You must also have the **View Work List** system action for Group1A).
- If a work view is for an organizational entity, that is, it is not your work list, you cannot open or complete work items in that view. This is because TIBCO BPM Enterprise always requires a user to process work items in their work view. If you access a work item from your work view and allocate it to another user, it would move from your work list to the other user's work list.

System actions are modeled in the organization model that is built in TIBCO Business Studio - BPM Edition. See *TIBCO Business Studio™ - BPM Edition Application Designer's Guide*.

Accessing Work Views

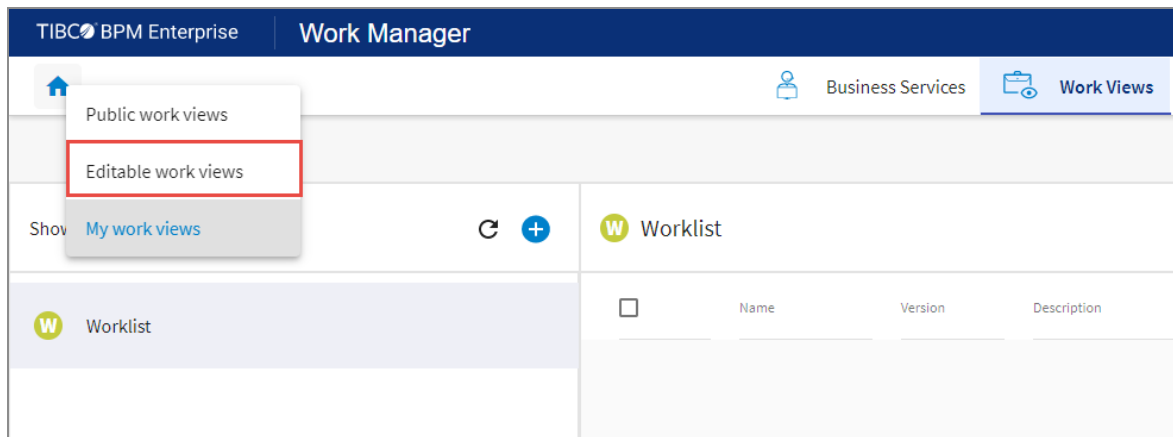
You can select the types of work view you want to display.

From the **Work views** dropdown list, select one of the following views:


- **Public work views** - To view public work views. For more information, see [Public Work Views](#).

Note: To view a public work view, the **View Work List** system action must be assigned you.

- **Editable work views** - To view work views that you are an author or owner of. See [Work View Permissions](#).
- **My work views** - To view work views from your work item list.



Creating Work Views

The **Create work view** wizard enables you to create work views. To start the **Create work view** wizard, first click .

In this wizard, you can:

- Enter the [Enter Work View Details](#) for your work view, for example, the work view name and, optionally, its description. The name field is a mandatory field in the **Details** screen.
- Select the [Choose a Target](#) organizational entity whose work items you want to view. This is not a mandatory screen, and you can bypass it.
- Select the work item [Specify the Work Item Columns](#) you want to display. Columns screen is also not a mandatory screen, and you can bypass it. See [Work Item Columns](#) for more information.
- Configure any [Configure Work View Filter](#) criteria, depending on your requirements. Filter is not a mandatory screen, and you can bypass it too.
- Configure any [Configure Sorting Order for the Work View](#) criteria, depending on your requirements. This is not a mandatory screen, and you can bypass it.
- Configure the [Specify the Users](#) of the work view. This is not a mandatory screen, and you can bypass it.
- Configure the [Specify the Authors](#) of the work view. This is not a mandatory screen, and you can bypass it.

Enter Work View Details

The Create work view screen allows you to enter the details for your work view, the work view name and, optionally, its description.

TIBCO BPM Enterprise Work Manager

Create work view

Details Target Columns Filter Sort Users Authors Summary

Name *
My Test View
Max 64 characters 12/64

Description
Max 255 characters 0/255

Make this view public ☐

Cancel Finish Next >

Procedure

1. (Required) In the **Name** field, type a name for your work view.
2. (Optional) In the **Description** field, type a description of your work view.
3. (Optional) Select the **Make this view public** if you want to make the work view public.
See [Accessing Work Views](#).
4. Click **Next** to continue.

Note: You can click **Finish** from any of the Create work view screens to bypass the remaining screens and complete the work view configuration.

Choose a Target

The Target screen is used to choose the organizational entity or resource whose work items appear in the view.

Procedure


1. From the **Type of view** dropdown, select one of the following options:

The screenshot displays the 'Create work view' interface in TIBCO BPM Enterprise Work Manager. The top navigation bar includes the TIBCO logo and 'Work Manager'. Below the breadcrumb trail, the 'Tasks in my worklist' tab is selected, showing a list of organizations: Organization1, QA, and DEV. The 'Resources' section is empty, and the 'Selected target' section shows 'None selected'. At the bottom, there are buttons for 'Back', 'Cancel', 'Finish', and 'Next'.


- **Tasks in my worklist.** Select this if you are configuring a view of your work list.

You can share this with other authorized users, if needed.

- **An entity in the org model.** Select this if you are creating a work view for a particular organizational entity, that is, an organization unit, position, or resource.

 **Note:** This option is only available if you have the **Browse Model** and **Resource Admin** system actions.

Work Manager checks to ensure that each entity you select when creating the work view can view the work list. Each entity must have the **View Work List** system action. If any entities do not have this permission, the view is not created. For more information, see [Work View Permissions](#).

 **Note:** Organizations are modeled in TIBCO BPM Enterprise Administrator. See the *TIBCO® BPM Enterprise Administrator's Guide* for more information.


- **All work items.** Select this if you are creating a work view to view all work items in the system. You must have the **View Global Work List** system action for this option to be available.


If you selected **Tasks in my worklist** or **All work items**, click **Next** to continue and proceed to [Specify the Work Item Columns](#).

If you selected **An entity in the org model**, proceed to step 2.

2. From the **Version** dropdown, select the version number of the organization model where the organizational entity resides.
3. From **Organizations**, drill down to the desired organizational entity.

When you select an organizational entity, any resources that are mapped to the organizational entity are listed in the **Resources** list.

4. To select resources, select the organizational entity to which the resource is mapped, then either click  to the right of the resource name in the **Resources** list or select the resource in the **Resources** list.

Click  at the bottom of the **Selected target** list.

To select the organizational entity as the target, select the organizational entity in

the **Organizations** list, click **+** to the right of the organizational entity name, or click **≡+** at the bottom of the **Selected target** list.

If you have selected a resource as the target, the new work view will contain only the work items that are offered to that resource. In this case, proceed to step 6.

Note: You can remove an entity or resource from the **Selected target** by hovering the mouse pointer over the entity or resource and clicking **-**.

5. If you selected **An entity in the org model**, from the **Type of work items**, select either:
 - **Offered.** Select this if you want to see work items that are offered to the organizational entity.
 - **Allocated.** Select this if you want to see work items that are allocated to the organizational entity.
6. Click **Next** to continue.

Specify the Work Item Columns

The Columns screen allows you to specify which work item columns to display.

For more information, see [Work Item Columns](#).

The columns that are shown by default in the work item list are listed in **Selected columns**. Specify additional columns by moving them from **Available columns** to **Selected columns**. To remove columns from the work item list, move them from **Selected columns** to **Available columns**.

You can also select a column in the **Selected columns** list, then click or to move the column up or down in the list to specify the order in which the columns must appear in the work item list.



Configure Work View Filter


The Filter screen allows you to specify filter criteria.

You can select any of the following criteria:


- A rule. Select a rule when you are filtering based on one or two criteria. For example, all work items with a specific end date and in a specific state.
- A ruleset. You can group filter criteria in a ruleset to create more complex expressions using a ruleset. When combining filter criteria, you are essentially combining logical ANDs and ORs in a single expression. A ruleset that is added that is subordinate to another rule or ruleset is enclosed in parentheses when the system builds the filter syntax; this means that the subordinate ruleset is evaluated separately, then its result is used to evaluate the parent rule or ruleset.

Procedure

1. Add a rule or a ruleset, depending on your requirements, by clicking  **Rule** or  **Ruleset**, respectively.
2. Select **AND** or **OR**, depending on your requirements.

 **Note:** You can use the filter string at the top of the dialog to view your filter expression.

3. From the dropdown, select the column that you want to configure the filter for.

 **Note:** By default work item attribute columns display as Attribute 1, Attribute 2, and so on. However, if a facade was applied at design-time in TIBCO Business Studio - BPM Edition, work item attribute names are displayed as defined in the facade.

4. Select the operator you want to use.

Operators allow you to choose how the specified value is to be compared to the actual values in the column. You can specify equal, not equal, less than, and so on. The default is "equal".

5. Enter the value for the items you want to be returned.

How you enter a value depends on the data type for the column you have selected.

For example, to display all work items whose start date is before Oct. 1, 2020, select "Start date", choose "less_than", then choose Oct. 1, 2020 from the value field date picker. (For information on how to configure rules, see [DateTime Data Types](#) and [Value Data Types](#).)

Once you have created your rules, the filter string at the top of the dialog displays the actual filter string that is passed to TIBCO BPM Enterprise.

- Repeat these steps for each item that you want to set filter criteria for.

Note: To remove a rule or ruleset, select the **X** to the right of the Rule or Ruleset. You can also remove all specified rules by selecting **Reset**.

Configure Sorting Order for the Work View

The Sort screen allows you to optionally specify sort criteria for the work view.

Note: If you click **Next** without specifying any sort criteria, the data is returned in an arbitrary order from TIBCO BPM Enterprise.

The screenshot shows the 'Create work view' dialog in TIBCO BPM Enterprise Work Manager. The 'Sort' tab is active, indicated by a blue icon and label. The dialog has a breadcrumb trail at the top: Details, Target, Columns, Filter, Sort, Users, Authors, Summary. Below the breadcrumb, there are two main sections: 'Available columns' and 'Selected columns'. The 'Available columns' list contains the following items: ID, Start Date, End Date, Priority, Distribution Strategy, Application Name, Process Instance ID, Attribute1, and Attribute2. The 'Selected columns' area is empty. At the bottom of the dialog, there are five buttons: 'Back' (with a left arrow), 'Cancel', 'Reset', 'Finish', and 'Next' (with a right arrow).

Procedure

- From **Available columns**, select the column you want to sort on.

The column moves to **Selected columns**.

2. From **Selected columns**, select the column again to configure whether the column is sorted in ascending or descending order.

Specify the Users

The Users screen in the **Create new view** wizard is used to optionally specify the users who will have access to the work view. You can choose specific users (resources), or organization units, positions, or groups (in which case, users mapped to those organizational entities will have access to the view).

See [Work View Permissions](#) for more information.

Note: If you click **Next** without specifying any users, no users are defined.

Note: Each user must have the correct **View Work List** system action. If any users do not have this permission, the view is not created. A list of users that do not have the required permissions are shown when attempting to complete the page.

The screenshot displays the 'Create work view' wizard in TIBCO BPM Enterprise Work Manager. The 'Users' step is active, showing options to select users for the work view. The interface includes a progress bar at the top, a search bar, and three main sections: Organizations, Resources, and Selected users. The 'Organizations' section lists 'Organization1', 'QA', and 'DEV'. The 'Resources' section prompts the user to 'Select an organization to view resources'. The 'Selected users' section shows 'None selected'. Navigation buttons at the bottom include 'Back', 'Cancel', 'Finish', and 'Next'.

Procedure

1. From the **Version** dropdown, select the version number of the desired organization model.
2. From **Organizations**, drill down to locate the desired resources or organizational entities.
3. Choose the resources or organizational entities whose resources are to be users of the work view.
 - To select resources, select the organizational entity to which the resource is mapped, then either click **+** to the right of the resource name in the **Resources** list or select the resource in the **Resources** list. Click **+👤** at the bottom of the **Selected users** list.
 - To select organizational entities, select the organizational entity in the **Organizations** list, then either click **+** to the right of the organizational entity name, or click **≡+** at the bottom of the **Selected users** list.

If you choose an organization or organization unit, all positions that are subordinate to that organizational entity are moved to the **Selected users** list.

If you decide that you no longer want a resource or organization entity to be a user of this work view, you can remove them from the **Selected users** list by selecting **-** to the right of the name.

Specify the Authors

The Authors screen in the **Create new view** wizard allows you to specify the users who will be authors of the work view. You can choose specific users (resources), or an organization unit, position, or group (in which case, users mapped to that organizational entity will be authors of the view).

For more information, see [Work View Permissions](#).


Note: If you click **Next** without specifying any authors, no authors are defined.

Procedure

1. From the **Version** dropdown, select the version number of the desired organization model.
2. From **Organizations**, drill down to locate the desired resources or organizational entities.
3. Choose the resources or organizational entities whose resources are to be authors of the work view.
 - To select resources, select the organizational entity to which the resource is mapped, then either click **+** to the right of the resource name in the **Resources** list or select the resource in the **Resources** list. Click **+👤** at the bottom of the **Selected authors** list.
 - To select organizational entities, select the organizational entity in the **Organizations** list, then either click **+** to the right of the organizational entity name, or click **≡+** at the bottom of the **Selected authors** list.

If you choose an organization or organization unit, all positions that are subordinate to that organizational entity are moved to the **Selected authors** list.


If you decide that you no longer want a resource or organization entity to be a user

of this work view, you can remove them from **Selected authors** list by selecting  to the right of the name.

Editing Work Views

You can edit your work views at any time.


Procedure

1. Select the work view you want to edit.
2. Ensure that **Editable work views** is selected in the **Work Views** pane.
3. Click  > **Edit**.

Removing Work Views from Your Work View List

You can remove work views from your work view list.

Procedure

1. Select a work view.
2. Ensure that **Editable work views** is selected in the **Work Views** pane.
3. Click  > **Delete**.

Manual Ad-hoc Task

What is an ad-hoc task in BPME?

An ad-hoc task is a standalone task in a business process that is performed after the business process instance starts in BPME. You can have several ad-hoc tasks in a process. One ad-hoc task can be executed multiple times. The preconditions for ad-hoc tasks added

in Studio determine when they become available for execution by the permitted users. An ad-hoc task might not be triggered at all during the entire course of the process instance. An ad-hoc task is not part of the flow of events, so it does not have an incoming or outgoing flow during the lifetime of a process.

What is a manual ad-hoc task in BPME?

An ad-hoc task can be invoked manually when the preconditions are enabled. However, the appropriate privileges should be added to the user to start and cancel that task.

Manual ad-hoc tasks create a work-item or call a subprocess. For more details, see *TIBCO Business Studio™ - BPM Edition Modeling Guide*.

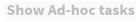





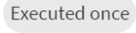
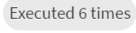
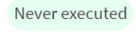





How to execute manual ad-hoc tasks?



You can define manual ad-hoc tasks for all the processes, including the processes that use case data (except for page-flows.) If a manual ad-hoc task is defined in a process, you can execute it from the following options:

- Process Manager in Administrator
- Case Manager (in case the processes use case data)
- Work Views in Work Manager
- Work Item form

The following table contains information about each ad-hoc task.

Option	Description
Ad-Hoc Task Name	The name of the ad-hoc task is defined in the process in TIBCO Business Studio at design-time.
Process Instance ID	The ID of the process instance from which the ad-hoc task is performed.
Case ID	The case ID associated with the ad-hoc task. (Only applies to the Case Manager).
Process Name	The name of the process from which the ad-hoc task is performed.

Option	Description
	Disabled option to display an ad-hoc task.
	Enabled option to display an ad-hoc task after you select the check box before a work item, case id, or process instance id.
	The ad-hoc task has not started.
	The ad-hoc task is currently running.
	The ad-hoc task can be started multiple times.
	The ad-hoc task has been completed.
	Additional details of an ad-hoc task that has been completed. This indicates that the task has run once. This task may have been configured to run once or multiple times.
	Additional details of an ad-hoc task that has been completed. This task has been configured to run multiple times. Currently, it has run 6 times.
	Additional details of an ad-hoc task that has not been completed. This task might have been configured to run once or multiple times. But, it has either just started, or not started at all.
	The ad-hoc task is disabled and might not be executed. For example, there might be a precondition for this task that is not satisfied and so is not started.
	Click this to start an ad-hoc task that can be started multiple times.
	Click this to start an ad-hoc task that can be started once.
	Select this to cancel the ad-hoc task currently in progress.
	Manual ad-hoc task

Option	Description
	Automatic ad-hoc task
	Note: You cannot start an automatic ad-hoc task manually.
	Refresh the information in the dialog or current window.

Execute Manual Ad-hoc Tasks


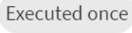

You can execute the manual ad-hoc tasks by performing the following steps:

Before you begin

Ensure that the following conditions are met:

- The user who executes a manual ad-hoc task is assigned the *startAndCancelAdHocActivity* system action privileges to view the ad-hoc windows. Privileges might be applied to each ad-hoc task that is required to start an instance.
- The process instance is started.

Procedure


1. Select the **Start** icon  **Start** to start the ad-hoc activity.
When an ad-hoc activity is started, its status changes to **Status:In progress**.
You can select the **Cancel** option at any time to cancel the ad-hoc activity.
2. Process the work item. For more information, see [Processing Work Items](#).
3. Once the work item is complete, the ad-hoc activity displays either  or  **Start**, depending on whether or not the activity can be executed again.
4. You can refresh the page at any time by clicking the **Refresh** icon.
5. Select **Close** to close the ad-hoc activity page.

Work Items

A work item relates to a task in a case. Depending on your work item, you might need to open the work item and enter data on a form, forward the work item to another user or group, save it so you can work on it later, or complete the work item so that you can move the case on to the next task.

Work Item Columns

You can view information about your work items, like its status, priority, and target date.

You can select which columns are displayed by selecting .

Tab	Description
ID	A unique number identifying the work item.
Name	The name of the user activity within the process template that generated the work item.
Version	Identifies the version of the process template.
State	The work item's current state. See Work Item State
Start date	The scheduled date and time specified for the work item. Example: 2008-08-30 15:00:00. If no scheduled date and time has been specified for the work item, the column is empty.
End date	The end date and time specified for the work item. Example: 2008-08-30 15:00:00. If no end date and time has been specified for the work item, the column is empty.
Description	The label of the user task associated with the work item. This is specified in TIBCO Business Studio - BPM Edition at design-time.
Priority	The priority is a numeric value indicating the relative importance of the work item. You can sort your work list by setting the work item priority. Also, scripts and processes can check the priority value and perform actions based

Tab	Description
	on a work item's priority. For more information, see Changing Work Item Priority .
Distribution Strategy	<p>A distribution strategy determines how a work item should be distributed to the resources in your team. The distribution strategy is configured at design-time. The distribution strategy can be one of the following:</p> <ul style="list-style-type: none"> • offer - the work item is offered to you to work on. The work item may be offered exclusively to you or it may be offered to a group of users, any of whom can open and work on it. • allocate - the work item given to you only. You can change a work item that is allocated to you back to an Offered state so other users can work on it.
Application Name	The name of the application that generated the work item.
Process Instance ID	A unique number specifying the instance of the process that generated the work item.
Attribute 1 - Attribute 40	<p>These fields are used to contain data that is associated with a work item. They are specified in TIBCO Business Studio - BPM Edition. Once these fields are specified, they can be used to filter the work items in your work item list.</p> <p>Note: If a Work List Facade is deployed, attributes are displayed showing the display names.</p>

Work Item State

The status of a work item determines what stage it has reached in the process. A work item can have various states.

The following table describes the possible states and their meanings:

State	Description
Offered	<p>The work item is being offered to you to work on. When a work item is in an Offered state, you can:</p> <ul style="list-style-type: none"> • open and work on the work item (while it is open, its state changes to Opened), • allocate the work item to yourself, causing it to be removed from all other user's work lists, • allocate the work item to another user, causing it to be removed from all work lists other than the user's to which it was allocated, or • skip the work item, causing it to be submitted and the process to advance to the next task (all required fields must be filled in).
Allocated	<p>A work item with an allocated state appears only in your work list. Work items can be allocated to a specific user in the following ways:</p> <ul style="list-style-type: none"> • by the system when it is initially distributed, • you can allocate a work item to yourself, • you can allocate a work item to another user.
Created	<p>The work item has been created, but not yet enabled. The functionality needed to get a work item to this state has not been implemented.</p>
Opened	<p>The work item is currently opened and allocated to the user who opened it. The work item is removed from the work item lists of other users to whom the work item has been offered.</p>
Pended	<p>This occurs when you open a work item, perform some work on it, then close it without submitting it. Once it is in this state, the work item appears only in your list. Note that a work item does not go into a Pended state if Re-offer work item strategy is set in the process template. If this is set then, if you close a work item without submitting it, the work item is reoffered to the offer set. For more information, see <i>TIBCO Business Studio - BPM Edition Application Designer's Guide</i>.</p>
PendHidden	<p>The filter criteria can be changed to view this state. See Displaying Visible Hidden Work Items.</p>

State	Description
Suspended	The process template that these work items are associated with has been suspended. The work items will only be processed when the process template is resumed.

Changing Work Item Priority

All work items have a priority. Setting the work item priority enables you to sort your work list by priority. Also, scripts and processes can check the priority value and therefore perform actions based on a work item's priority.

The priority is a numeric value indicating the relative importance of the work item. By default, the work item priority is 50. The valid range for work item priority is 0 - 100. You must enter a value in this range or an error is displayed.


Note: To change the priority of a work item, you must log in as a user that has a privilege with one or all of the following system actions assigned to it.

- **changeAllocatedWorkItemPriority**-This system action enables a user to change priority on work items with a status of Allocated and that is allocated to you.
- **changeAnyWorkItemPriority**-This system action enables a user to change the priority on all work items.

This means if you want to change the priority of a work item in your work list whose status is Allocated, but it is not allocated to you, then you must also have authorization for the **changeAnyWorkItemPriority** system action.

Note: System actions are configured in the Organization Modeler in TIBCO Business Studio - BPM Edition.

Procedure

1. From Work Views, select  > **Change priority** from the work item whose priority you want to change.

2. From Work item priority, select one of the following:

i Note: For each of these options you must set the priority to a numeric value within the valid range for work item priority. The valid range is 0 - 100.

- You can:
 - Select **Absolute** and enter a specific numeric value in the box.
 - Select **Offset**. Enter a specific numeric value in the box and then use the arrows to offset a work item priority by a specific numeric value. For example, an employee is away on holiday and you want to offset the priority on all their work items by 20.

Displaying Visible Hidden Work Items


You can display hidden items by using the Worklist Filter dialog.

There are two reasons why work items in your work item list may be hidden.


- They are work items that are associated with a process instance that has been suspended (see "Suspending a Process Instance" in the *TIBCO® BPM Enterprise Administration Guide*).
- They are work items that have been pended, that is, a timer has been set to make them hidden until a specified date/time, or for a specified period (see [Pending Work Items](#)).

You can display hidden work items in your work item list by configuring a filter expression.

Procedure

1. Select  to display the Worklist Filter dialog.
2. Add a rule.
3. In the first column, select **Visible** from the dropdown.
4. Make sure the operator is **equals**.
5. In the second column, select **False** from the dropdown.
6. Select **Save**.

The hidden work items are displayed.

To remove the filter, select  to display the Worklist Filter dialog, and then select **Reset**.

Filtering Work Items

You can configure filter criteria for work items in your work list. This allows you to filter the list of work items so that only some of the work items are shown. Filtering allows you to display only the work items you are interested in. For example, you may only be interested in work items that arrived in the work item list after a specific date.

You can filter on all the available work item columns and their data types. See [Work Item Columns](#) for more information.



Note: You cannot use wildcard characters when specifying filter criteria in **Work views**.

For more information, see [Configure a Worklist Filter](#).

Configure a Worklist Filter


The Worklist filter dialog allows you to specify filter criteria.


You can select which columns are displayed by selecting **Column**. See [Work Item Columns](#). However, you can further refine the list of work items that are displayed by configuring a work list filter.

You can select either:


- a rule. Select a rule when you are filtering on one or two criteria. For example, all work items with specific end date and in a specific state.
- a ruleset. You can group filter criteria in a ruleset to create more complex expressions using a ruleset. When combining filter criteria, you are essentially combining logical ANDs and ORs in a single expression. A ruleset that is added that is subordinate to another rule or ruleset is enclosed in parentheses when the system builds the filter syntax; this means that the subordinate ruleset is evaluated separately, then its result is used to evaluate the parent rule or ruleset.

Procedure

1. Select  to display the Worklist Filter dialog.
2. Select **AND** or **OR**, depending on your requirements.

 **Note:** You can use the filter string at the top of the dialog to view your filter expression.

3. Add a rule or a ruleset, depending on your requirements.
4. From the dropdown, select the column that you want to configure the filter for.

 **Note:** By default work item attribute columns display as Attribute 1, Attribute 2, and so on. However, if a facade was applied at design-time in TIBCO Business Studio - BPM Edition, work item attribute names are displayed as defined in the facade.



5. Select the logical operator you want to use.

The dialog allows you to select a logical operator. Logical operators allow you to choose how the specified value is to be compared to the actual values in the column. You can specify equal to, not equal to, less than, etc. The default is "equal to".

6. For each column, use the value field to enter the value for the items you want to be returned.

How you enter a value depends on the data type for the column you have selected. For example, to display all work items whose start date is before Oct. 1, 2010, select the Start Date column, choose the “LessThan” logical operator, then choose Oct. 1, 2010 from the value field date picker. See [DateTime Data Types](#) and [Value Data Types](#) for information on how to configure rules for each work item column. Once you have created your rules, the filter string at the top of the dialog displays the actual filter string that is passed to TIBCO BPM Enterprise.

7. Repeat these steps for each item that you want to set filter criteria for.

 **Note:** To remove a rule or ruleset, select the  to the right of the Rule or Ruleset. You can also all specified rules by selecting **Reset**.

Value Data Types

When configuring filter criteria, the value entered in the **Value** field must match the data type for the attribute selected.

The following describes the valid data types:

Data Type	Description
Number	Consists of one or more of the numbers 0-9. Used for things like work item ID and priority. The data entry field for numeric values will not allow you to enter any characters other than numbers.
String	Consists of any number of letters, numbers. Used for things like process instance ID and work item description. Filtering on text is case-sensitive.
Date	Dates can be entered by using the “date picker” on the filter data-entry dialog. Times, if specified, must be entered manually. If you enter a date, but not a time, it assumes “all times” for the specified date. All times use the 24-hour clock. For more information about entering dates and times in the Filter data entry dialog, see DateTime Data Types .
Enumeration	Select a valid entry from the dropdown.

DateTime Data Types

When configuring filter criteria for the dates attribute, ensure that you enter dates using the date picker to choose the required date. The selected date will automatically appear in the date field.

Allocating Work Items Overview

A work item can be allocated to a specific user. This means that the work item is supposed to be worked on by that specific user - the work item only appears in your list with a state of Allocated.

A work item can be allocated to a specific user by TIBCO BPM Enterprise when the work item is created. When a process is defined in TIBCO Business Studio - BPM Edition, a distribution strategy is specified for each user task (each work item results from a user task in a business process). The distribution strategy specifies how to distribute, at runtime, a work item that is generated from the user task.

The distribution strategy will be one of the following:

- Offer - This means the work item is being offered to you to work on. Note that depending on how the user task that resulted in the work item was defined, the work item may be offered exclusively to you, or it may be offered to a group of users, any of whom can open and work on it.

If a work item is offered to a group of users, and you open and work on it (for example, you enter or change some data in the work item), the work item is removed from the work list of all other users.

- Allocate - This means the work item was given only to you to work on.

There are also functions available in Work Views that allow you to allocate a work item to yourself or another user.



You can also change a work item that is allocated to you back to an Offered state so that other users can work on it.

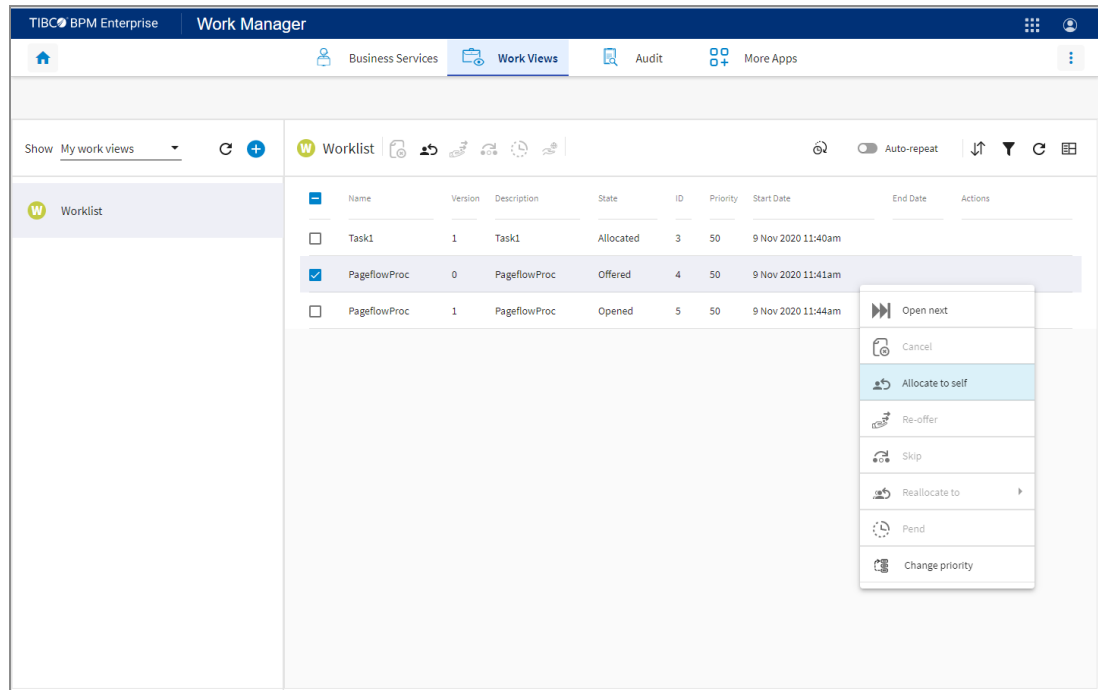
Allocating Work Items To Yourself

You can allocate one or more work items to yourself. It changes the work item's state to Allocated so that only you can work on them. The work items are removed from the lists of all other users.

You can only do this if the work items are currently being offered to you; that is, their state is Offered.

Procedure

1. Select one or more work items in the work item list that currently have a state of Offered.
2. Allocate the work item(s) to yourself, as follows:
 - If you have selected a single work item, you can either click  in the work list header bar, or click  > **Allocate to self**.



- If you have selected multiple work items, click  in the work list header bar.

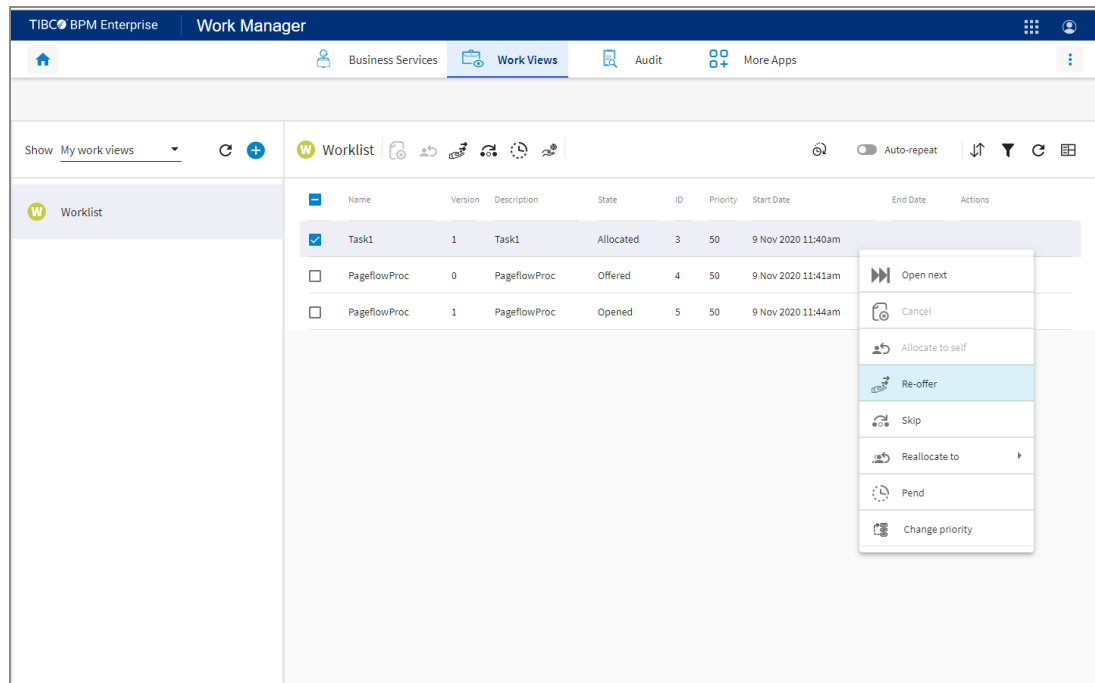
Re-Offering Work Items


This function allows you to change work items that are currently allocated to you (state = Allocated) back to an Offered state. They are offered to the users to whom they were originally offered.

Procedure

1. Select one or more work items in the work item list that currently have a state of Allocated or Pended.
2. Re-offer the work item(s) to yourself, as follows:
 - If you have selected a single work item, you can either click

 in the work list header bar, or click **:** > **Re-offer**.



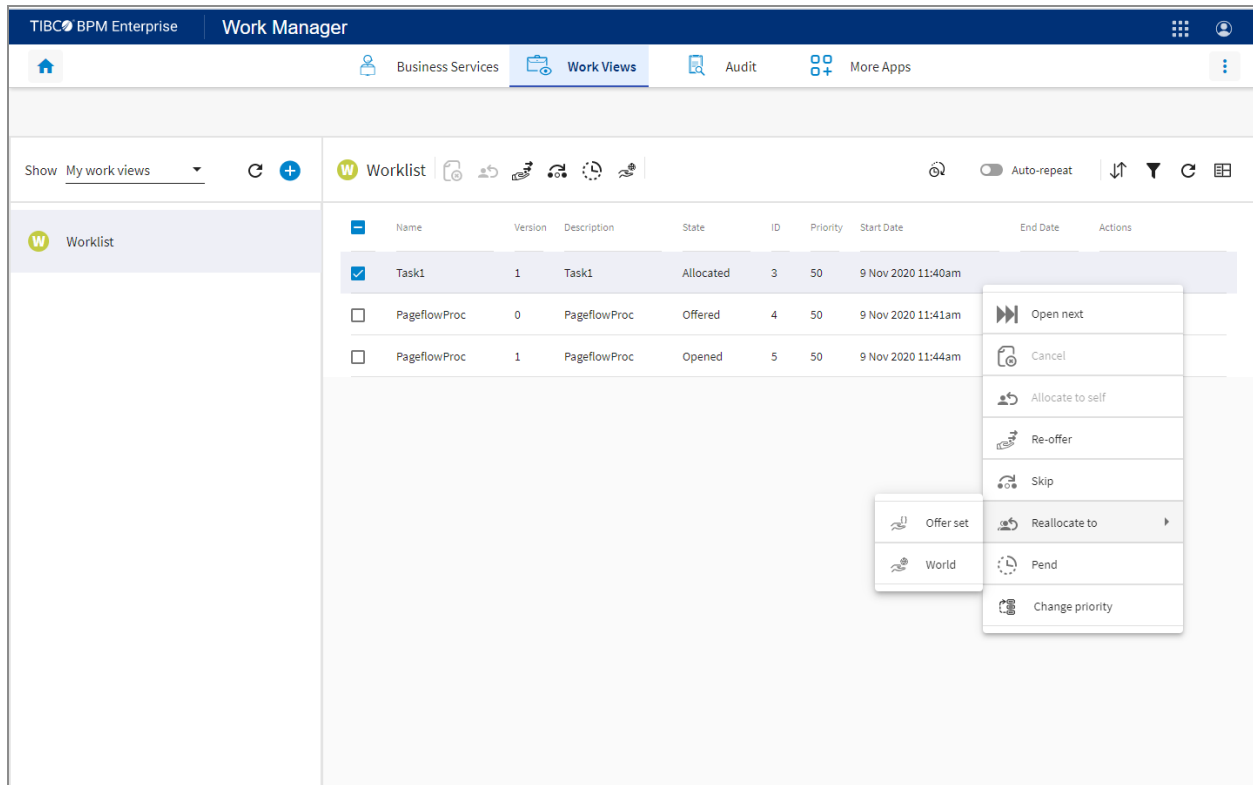
- If you have selected multiple work items, click  in the work list header bar.

The work item state changes to Offered, and it reappears in the work item list of the users to whom it was originally offered.

Reallocating Work Items to Another User

This function is used to reallocate a work item, which is currently allocated to you, to another user. It removes the work item from your work item list, then adds it to the Inbox of the user to whom you have reallocated it, with a state of Allocated.

You can choose the user to whom you want the work item to be reallocated either from:



- the original "offer set", that is, the group of users to whom the work item was originally offered, or
- the "world", that is, all available users.

Reallocate Work Item to Offer Set

The Reallocate to Offer Set function is used to reallocate a work item to the original offer set, that is, the group of users to which the work item was originally offered.

The work item you want to reallocate must be in your work list with a state of Allocated or Pended. After reallocating, the work item is removed from your work list.

Procedure

1. Select a work item in your work list.
2. Select **⋮ > Reallocate to > Offer Set**.
3. Select the user you want to allocate the work item to.
4. Optionally select **Revert data**.

If you select this option it causes any data that has been entered or modified in the work item before allocating it to revert to its original value. (If any data in the work item has been entered or modified, the work item will have a state of Pended.)


5. Click **Reallocate**.

Result


The work items appear in the work list of the user that you selected, with a state of Allocated.


Reallocating Work Items to the World

The Reallocate to World function is used to reallocate a work item to any available user.

 **Note:** To use this function, you must be logged in as a user with a privilege that has both the **Reallocate WorkItem To World** and **Resource Admin** system actions assigned to it.



Procedure

1. Select a work item in the work item list that currently has a state of Allocated or Pended.
2. Select  > **Reallocate to** > **World**. The Workitem Reallocate dialog is displayed, which is used to choose the user to whom you would like to allocate the work item.

 **Note:** You may not be able to see all resources mapped to a particular position because there may be resources mapped to a position that was created in an LDAP container for which you don't have visibility, (because of an organization relationship). In these cases, you will not see that resource when viewing the position. (This applies only to positions, not to groups.)


For more information, see the "Container Organization Relationships" section in the *TIBCO® BPM Enterprise Administration Guide*

3. From the **Version** dropdown, select the version of the organization model that contains the resource you want to allocate the work item to.

4. From **Organizations**, drill down to an organizational entity on the left to which the resource has been mapped.
5. Either click  to the right of the resource name in the **Resources** list or select the resource in the **Resources** list, then click  on the bottom of the **Selected** list.

6. Optionally select **Revert data**.

If you select this option it causes any data that has been entered or modified in the work item before allocating it to revert to its original value. (If any data in the work item has been entered or modified, the work item will have a state of Pended.)

If you decide that you no longer want the work item to be allocated to this user, you can remove them from the **Selected** list by selecting .

7. Select **Reallocate**.

Result

The work item appears in the work item list of the resource that you selected, with a state of Allocated.

Processing Work Items Overview

A work item represents a task in a business service. Typically, a work item has a form associated with it that must be opened and filled out (some forms only display information and do not have fields to fill out). You can save the work item in your work item list so that it can be opened again and completed at a later time. When the form is completed, the work item is submitted so that the business service can progress, possibly resulting in another work item that represents the next task in the process.

Double-click a work item to open it.



Note: For work items associated with page flows, no preview is displayed.

Opening Work Items

You can open work items in the following ways:

- From the work item list, double-click the work item you want to open. (Single-clicking shows the work item in a preview pane.)
- Click the **Open** link in the **Actions** column.
- When you have finished working on a work item, click **⋮ > Open Next**. This causes the next available work item to be opened in the work item list, where available means a work item that is not locked or suspended.

i Note: You cannot open multiple work items.


Opening a work item causes Opened to be shown as the **State**. The work item is allocated to the user who opened it and is removed from the work item lists of other users to whom the work item has been offered.

i Note: An error is thrown when a user tries to open a user-defined form. User-defined forms cannot be displayed. If you want to use user-defined forms, you must provide your form identifier and render your forms.

Auto-Repeat

Work Views provides an auto-repeat feature that causes the next available work item to be automatically opened after you've submitted a work item, where "available" means a work item that is not locked or suspended. This allows you to process work items in succession without manually opening each one.

To turn on the auto-repeat feature, drag the **Auto-repeat** slider to the right.

The auto-repeat feature works as a toggle — drag the **Auto-repeat** slider to the right and left turns it on and off. When auto-repeat is turned on, the slider is highlighted .

The auto-repeat toggle is persisted. If you log out and log in again, you do not need to reset auto-repeat.

Piling

When a user task is defined in a process template, the designer specifies whether or not work items generated from that user task should be piled. If they are piled, when you submit a work item generated by that user task, TIBCO BPM Enterprise searches through

your work list to see if there are any other work items from that user task. If it finds one, it automatically opens it. If there are no more work items, you are returned to Work Views.

This means that if your job entails processing a certain type of work item, TIBCO BPM Enterprise automatically opens work items of that type, without requiring you to continually select work items from your work item list — as if you are working on a pile of work items.

Filling in a Work Item Form

The form that appears when you open a work item is specific to your process template. You create forms that relate to your specific business.

Your company will instruct you in properly filling out the forms that they have designed.

Press **Tab** to move from field to field on the form.

Some fields may include a dropdown menu from which you can select the valid options—they contain - **Select** - and an arrowhead. Click the field to display the options you can choose from.

A date picker may be available to enter dates in date fields. Click the **calendar** icon next to the date field. A calendar is displayed from which you can choose a date; clicking a date in the calendar causes it to be entered in the field.

Work Item Data Modified By Other Users or System Actions

A work item's data may be modified either by the system or another application. The change made by the system or another application can include changes to data in fields, or other aspects of the work item, such as a deadline date.

How the work item is modified depends on:

- how you have configured your process definition in TIBCO Business Studio - BPM Edition. The modification of work item data is configured using the **Overwrite data already modified in work item** checkbox. See *TIBCO Business Studio - BPM Edition Application Designer's Guide* for more information.
- whether the work item form is open or closed when the work item data is modified.

If the work item form is closed and you have made one or more changes to one or more fields on the form, then:

- If the **Overwrite data already modified in work item** checkbox is selected, when the work item is modified, any data that has been updated by you (and the other fields rescheduled for update) are overwritten with the new data.
- If the **Overwrite data already modified in work item** checkbox is not selected then, any changes you have made to a form remain but the other fields are modified. For example, say you have a form that contains two fields (field1 and field2) and you update field1. If the work item is then rescheduled with changes to both field1 and field2, then only field2 is modified. The changes that you have made to field1 remain.

If a work item is modified while you have it open, when you click **Submit** or **Close**, a **Data out of Sync** message displays.

If the **Overwrite data already modified in work item** checkbox described above was not selected in TIBCO Business Studio - BPM Edition, you have the following options:

- **Override.** Click this if you want to finish updating the work item. In this case, the changes that you have made to the form remain, and the changes that have been made by TIBCO BPM Enterprise are lost.
- **Reload.** Click this if you want to reload the form with the new changes displayed. In this case, any changes that you have made to the form are lost. You can then decide whether to re-enter the data or submit it as it is, depending on your requirements.
- **Cancel.** Click this if you want to cancel the changes you have made to the work item form. In this case, all the data you have entered is lost but the changes made by TIBCO BPM Enterprise are retained.

If the **Overwrite data already modified in work item** checkbox was selected in TIBCO Business Studio - BPM Edition, the **Override** option is not available.

Saving Work Items

Saving a work item causes any information you have entered to be saved, then the work item is closed (and unlocked) and placed back in the work item list with a state of Pended. The work item is then available to be opened and completed at a later time.

To save and close a work item, select **Save** from the form.

Submitting Work Items

Submitting a work item means that you have finished with it. If there are any fields designated as “required”, they must be filled in before you can submit the work item.


Submitting the work item causes any information you’ve entered to be saved, then the work item is closed (and unlocked) and removed from the work item list. The process instance advances to the next task in the process, possibly resulting in another work item appearing in someone’s work item list.

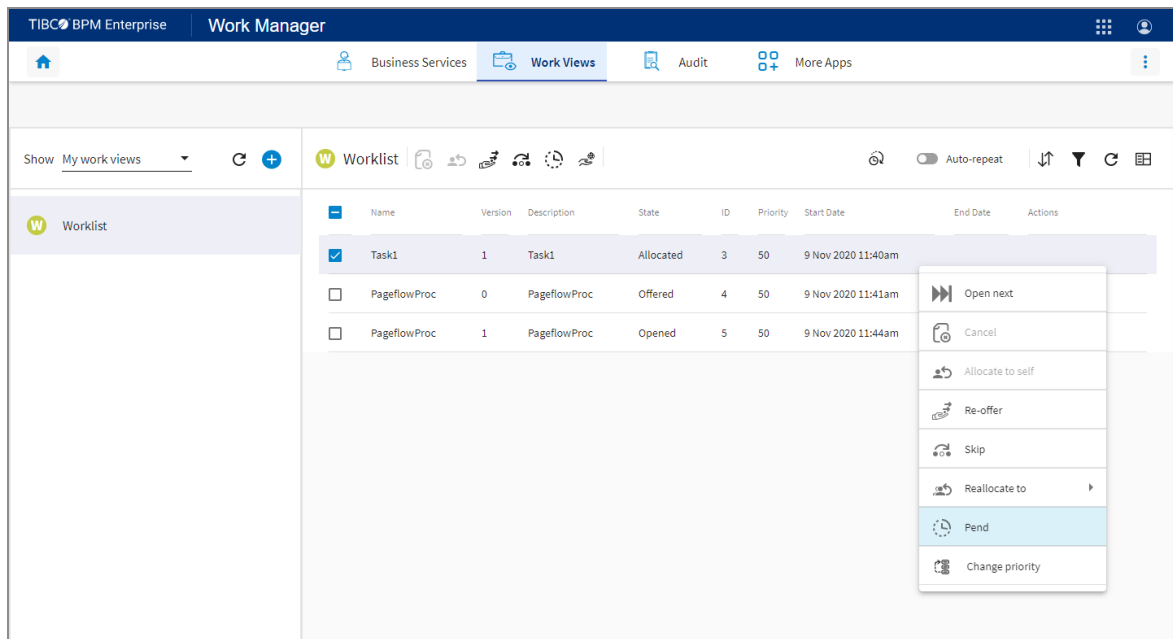
To submit a work item, select **Submit**.

Pending Work Items

Work items can be *pending*, which causes them to be hidden in the work item list until a specified date/time, or period of time has expired. The work item becomes visible again when the date/time occurs, or the period of time expires. Work items can be pending only if they have a state of Allocated.

Procedure

1. Choose the work items to be pending in one of the following ways:
 - Select one or more work items, then click  in the header bar.
 - Select a single work item, then select **⋮ > Pend**.



2. On the Pend work item dialog, select the appropriate radio button, depending on whether you want to specify a specific date and time, or a period of time.
3. Specify the date/time or period of time, then click **Pend**.

The pended work items become hidden in your work view.

For information about an option to view work items in a Pendhidden state, see [Displaying Visible Hidden Work Items](#).

Unpending Work Items

To unpend work items, first display work items that have a PendHidden state -- see [Displaying Visible Hidden Work Items](#). Then use the [Pending Work Items](#) function to set the pend time offset to 0.

Skipping Work Items



You can select one or more work items in your work item list and "skip" them. This marks the work items as complete, removes them from the work item list, and causes the process to advance. It has the same effect as opening the work items and submitting them.

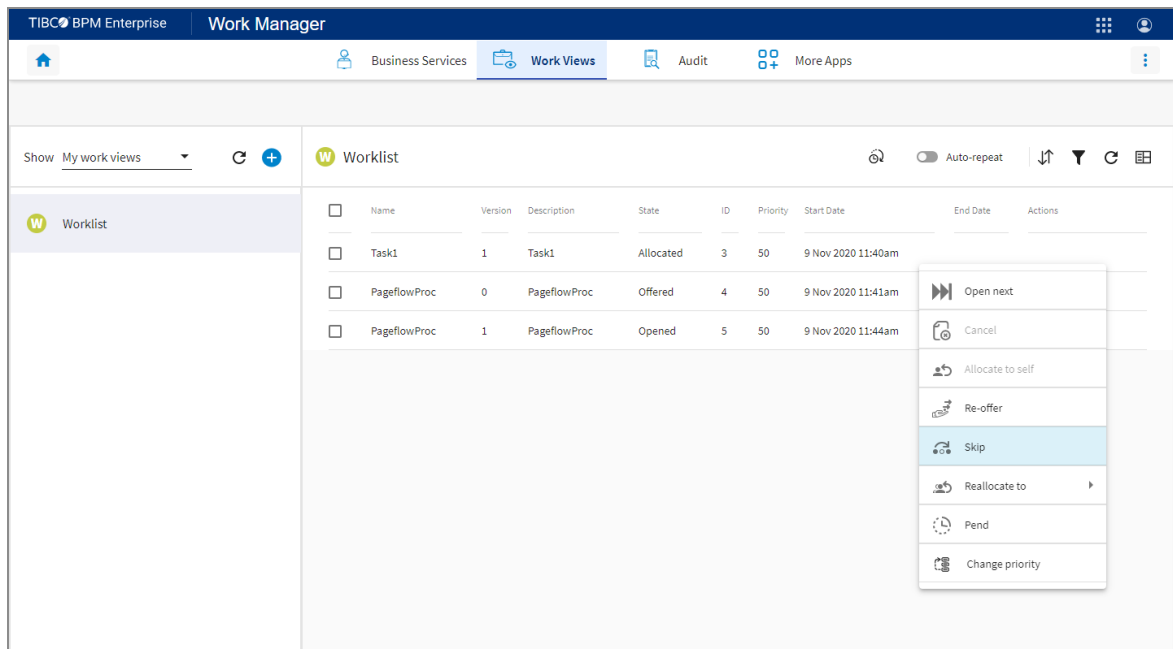
To be able to skip a work item, the following must all be true:

- the work item cannot have any required data fields that are not filled in.
- the work item's state must currently be Allocated.

Procedure

1. Choose the work items to be skipped in one of the following ways:

- Select one or more work items, then click  in the header bar.
- Select a single work item, then select  > **Skip**.



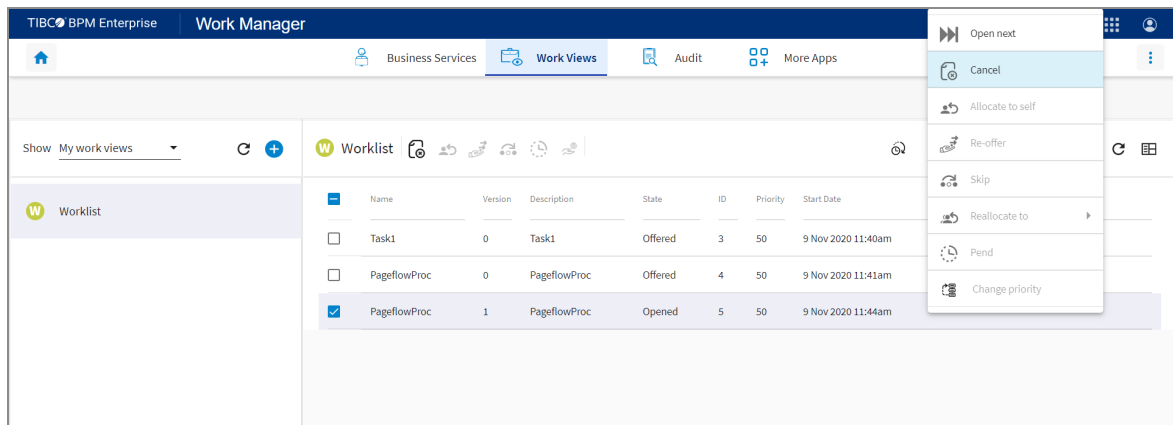
When the work item is successfully skipped, it is submitted and removed from your work item list.

Canceling Changes

Once a work item is opened and data is entered or changed, you can cancel those entries/changes and return the work item to the state it was in when the work item was opened.

This can be done in two ways:

- From the work item form - select **Cancel**. The work item is closed and returned to the work item list without saving the changes.



- From the work item list - select **Cancel**. This can be used by an Administrator to forcibly close a work item left open by another user. It causes any data entered or changed by the user who opened the work item to be lost.

OpenWorkItem Application

TIBCO BPM Enterprise provides the **openworkitem** application that allows a user to open a work item directly without accessing the UI. You can open a work item using a link by passing specific parameters in the URL, instead of accessing the UI and selecting the relevant options from a list.

TIBCO BPM Enterprise uses the **openworkitem** application when a work item is assigned/allocated to a user via an email. When you click the link, the login screen opens. On authentication, the work item assigned/allocated to you opens.

Configuring the openworkitem application

```
protocol://host:port/apps/openworkitem/#/workItemId?username=BPM username
&auth0=plain text BPM password
&auth1=Base64 BPM password
&displayConfirmation=true|false
```

The parameters are described in the following table:

Parameters

Parameter Name	Description
<i>protocol</i> (required)	The communications protocol used by TIBCO BPM Enterprise that is defined during installation. You can set it to http or https.
<i>host</i> (required)	This is the DNS name or IP address of the server that hosts TIBCO BPM Enterprise.
<i>port</i> (required)	The port that is used by TIBCO BPM Enterprise. By default, it is 8080.
<i>workItemId</i> (required)	The numerical ID assigned to the work item that should be opened (for example, 15). <i>Workitemid</i> is passed as the URL path parameter.
<i>username</i>	The TIBCO BPM Enterprise login name.
<i>auth0</i>	The TIBCO BPM Enterprise login password, as plain text.
<i>auth1</i>	The TIBCO BPM Enterprise runtime login password, as a Base64-encoded string. You need a Base64 encoder to encode the password.
<i>displayConfirmation</i>	A boolean value, that has been configured as true or false. If set to true, a confirmation message is shown on completion of the work item.



Note: If a parameter contains spaces, it must be URL encoded.



Note: You can configure the **openworkitem** application to close the browser, or leave it open, after the work item is submitted, canceled, or closed.

Examples

Example of opening a work item with the **openworkitem** application:

```
http://Host:Port/apps/openworkitem/#/15
```

Example of opening a work item with the **openworkitem** application with login credentials and display confirmation defined:

```
http://Host:Port/apps/openworkitem/#/15?username=tibco-admin&auth0=secret&displayConfirmation=true
```

Events

The **openworkitems** application will generate load, cancel, close, and submit events using `window.postMessage`. The properties of the event message are explained in the following table:

Event	Event message	Event description
Load	eventName: FORM_LOAD data: workitem data formUrl: URL for the form	This event is triggered when work item form is loaded.
Cancel	eventName: FORM_CANCEL data: workitem data	This event is triggered when the form is canceled by clicking on the cancel button on the form.
Close	eventName: FORM_CLOSE data: workitem data	This event is triggered when the form is closed by clicking on the close button on the form.
Submit	eventName: FORM_SUBMIT completed: true false. The value is set to true if the work item is completed. data: workitem data	This event is triggered when the form is submitted by clicking on the submit button on the form.

StartBizApp

The StartBizApp is available as part of TIBCO BPM Enterprise. It enables you to start business services by providing the appropriate URL. It can render TIBCO Forms and also

supports the complete functionality of static and dynamic sub-processes. It hides all the complexity of the multitude of calls to the server.

StartBizApp is accessed via a URL (for clarity, the URL is shown with each parameter on a separate line):

```
protocol: //host:port/StartBiz/StartBiz.html
?module=module name
&process=process name
&version=version number
&payload=payload
&username=BPM username
&auth0=plain text BPM password
&auth1=Base64 encoded BPM password
```

The URL parameters are explained in the following table:

Parameter Name	Description
<i>protocol</i> (required)	The communications protocol that is used by StartBizApp: either http or https. This was determined at installation.
<i>host</i> (required)	The DNS name or IP address of the server that hosts the BPM runtime.
<i>port</i> (required)	The port that is used by StartBizApp. The default is 8080.
<i>module</i> (required)	The module defines the module name of the business service that needs to be started. The module can be found in the tool tip of the Business services list in the business service view of the Work Manager application. The value must be URI-encoded.
<i>process</i> (required)	The name of the business service process.
<i>version</i> (required)	The version number of the business service, in the format of <i>major.minor.micro .[qualifier]</i> . If you do not specify a qualifier, then the latest deployed version of the application is used. You can also pass the major version of the business service. So, if the version of the business service is

Parameter Name	Description
	1.0.0, you can pass the major version 1 to pick the latest with the in-range of that major version.
payload	The JSON payload that is passed to the business service.
username	The BPM runtime login name.
auth0	The BPM runtime login password, as plain text.
auth1	The BPM runtime login password, as a Base64-encoded string. You need a Base64 encoder to encode the password.



Important: If a parameter contains spaces, it must be URL-encoded.

Examples

Example URL for starting a business service:

```
http://<server>:<port>/apps/startBiz/#/?module=%2FStartBizTest%2FProcess%20Packages%2FStartBizTest.xpdl&process=StartBizTestProcessStartEvent&version=1.0.0.20201102172014627
```

Example URL that includes payload as a business service:

```
http://<server>:<port>/apps/startBiz/#/?module=%2FWRM-11617%2FProcess%20Packages%2FWRM-11617.xpdl&process=WRM11617ProcessCatchMessageEvent&version=1.0.0.20201103112343808&payLoad={"body":{"inouts":[{"name":"numLoops","simple":["7"]}]]}
```

Events

The **StartBizApp** application will generate load, cancel, close, and submit events using `window.postMessage`. The properties of the event message are explained in the following table:

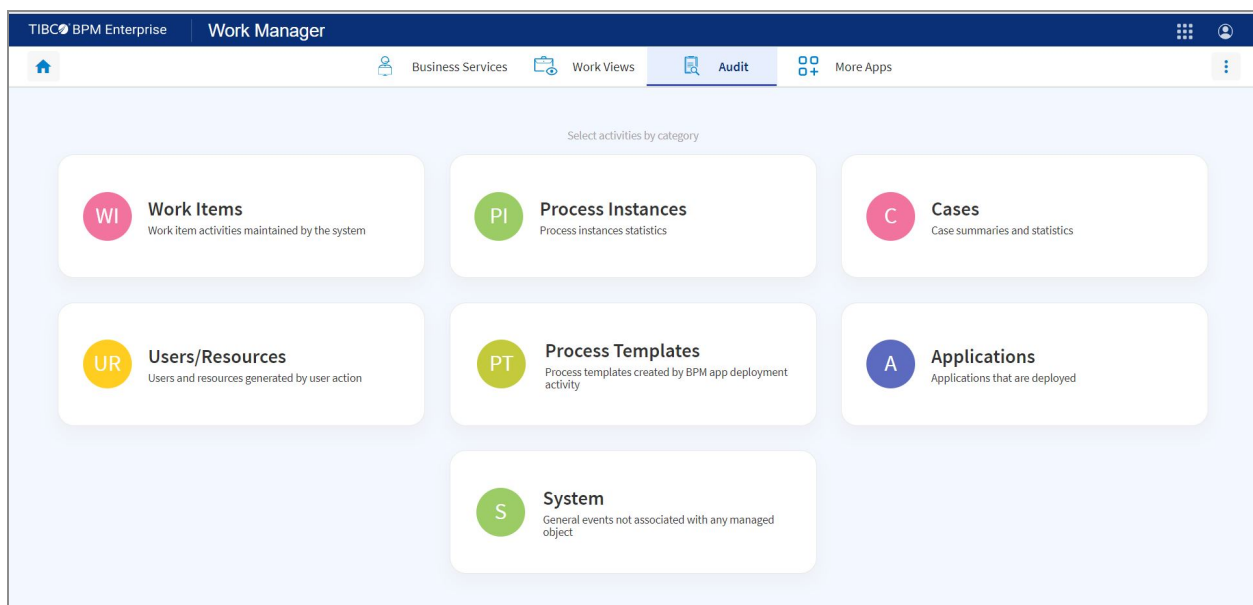
Event	Event message	Event description
Load	eventName: FORM_LOAD data: workitem data formUrl: URL for the form	This event is triggered when the work item form is loaded.
Cancel	eventName: FORM_CANCEL data: workitem data	This event is triggered when a form is canceled by clicking on the cancel button on the form.
Submit	eventName: FORM_SUBMIT completed: true false. The value is set to true if the work item is completed. data: workitem data	This event is triggered when the form is submitted by clicking on the submit button on the form.

Auditing

Auditing allows you to view events so that you can see what has occurred with a particular work item, process instance, user, case, process template, and so on. The type of events that are audited include opening a work item, submitting a work item, suspending a process instance, and so on.

Events have attributes that contain information about the event. Some examples are Creation Time and Description. Some attributes are common to all events, and some are unique to a particular type of event. The audit event categories are:

- WorkViews
- Process templates
- Process Instances
- Cases
- Users / Resources
- System
- Application



When you select a process instance, for example, the events are displayed. Click an event to display the attributes that apply to that event.

Process Instances ▾						
Filter by						
Start Date	Completion Date	State	Show Results	Find Instance	Save	
Process Instance ID	Priority	User	State	Status Changed On	Start Date	Event Links
p0a20d2	NORMAL	tibco-admin	STARTED	14 Mar 2024 4:34:15 PM	14 Mar 2024 4:34:15 PM	Referenced work items
p0a20d0	NORMAL	tibco-admin	CANCELLED	14 Mar 2024 9:29:22 PM	14 Mar 2024 9:29:22 PM	Referenced work items
p0a20d8	NORMAL	tibco-admin	CANCELLED	14 Mar 2024 9:29:20 PM	14 Mar 2024 9:29:20 PM	Referenced work items
p0a20cw	NORMAL	tibco-admin	COMPLETED	14 Mar 2024 2:38:41 PM	14 Mar 2024 2:37:32 PM	Referenced work items
p0a20cv	NORMAL	tibco-admin	COMPLETED	14 Mar 2024 2:32:55 PM	14 Mar 2024 2:30:55 PM	Referenced work items
p0a20cu	NORMAL	tibco-admin	COMPLETED	14 Mar 2024 2:28:36 PM	14 Mar 2024 2:26:36 PM	Referenced work items
p0a20ct	NORMAL	tibco-admin	CANCELLED	14 Mar 2024 2:42:30 PM	14 Mar 2024 2:03:06 PM	Referenced work items

You can filter the list of events. For information, see [Filtering Audit Events](#). Some events provide links to related lists of events. For example, from a list of events for a work item, you can link to a list of related work items.



Note: You can now find an instance in the Process Instances audit view to see the audit information of a particular process instance by entering the ID of the process instance.

Filtering Audit Events

You can specify filter criteria to display the audit events you are interested in.

Before you begin

You must be logged in as a user that has privileges with the correct system actions assigned to them.

Procedure

1. From Audit, select the required event category.
2. The filter criteria you can select depends on the event category you choose. For example, in Work items, you can filter on a work item's completion date, scheduling date, and current state.
3. Once you have selected your filter criteria, select **Show Result**.
4. Optionally, select **Save Result** if you want to save your filter.

Saving a Filter Criteria

TIBCO BPM Enterprise allows you to save a filter that has been configured.

After you have created a filter, use the following steps to save the filter.

Procedure

1. Click **Save**.

2. Add a name to the filter.

The filter is saved in preferences.

Result

The next time you need to apply the same filter criterion, you can choose the filter from the Saved Filters dropdown to view the audit events based on the saved filter criteria.

Choosing a Saved Filter

TIBCO BPM Enterprise allows you to choose a saved filter in the Audit Events view.

Procedure

1. From Audit, select the required event category.

The selected event category view is displayed.

2. Choose the filter from the **Saved Filters** dropdown to view all the predefined filters.


3. Choose the required predefined filters.

You can see a list of all the required audit events.

Editing a Filter

TIBCO BPM Enterprise allows you to edit a saved filter in the Audit Events view.


Procedure

1. From Audit, select the required event category.
The selected event category view is displayed.
2. Click the **Manage Filters** button.
3. Click  for the predefined filter that you want to edit.
4. Click **Edit**

Deleting a Filter

TIBCO BPM Enterprise allows you to delete a saved filter in the Audit Events view.

Procedure

1. From Audit, select the required event category.
The selected event category view is displayed.
2. Click the **Manage Filters** button.
3. Click  for the predefined filter that you want to delete.

Work Items

< Back to Work Items

Audit Details of 6

Event ID	Message ID	Creation Time	Severity
143	BRM_WORKITEM_OPENED	10 Nov 2020 6:43pm	Audit
142	BRM_WORKITEM_ALLOCATED_TO	10 Nov 2020 6:43pm	Audit
135	BRM_WORKITEM_REVERT	10 Nov 2020 6:32pm	Audit
134	BRM_WORKITEM_OPENED	10 Nov 2020 6:32pm	Audit
132	BRM_WORKITEM_OPENED	10 Nov 2020 6:31pm	Audit
121	BRM_WORKITEM_OPENED	10 Nov 2020 6:25pm	Audit
120	BRM_WORKITEM_ALLOCATED_TO	10 Nov 2020 6:25pm	Audit
119	BRM_WORKITEM_REVERT	10 Nov 2020 6:25pm	Audit
118	BRM_WORKITEM_OPENED	10 Nov 2020 6:25pm	Audit
117	BRM_WORKITEM_ALLOCATED_TO	10 Nov 2020 6:25pm	Audit

Event Details for ID 143

< Previous

Next >

X

All Attributes

Additional Attributes

Attribute Name	Attribute Value
eventId	143
messageCategory	Workitem
messageId	BRM_WORKITEM_OPENED
message	Opened Work Item.
severity	Audit
creationTime	10 Nov 2020 6:43pm
managedObjectId	6
principalId	tibco-admin
principalName	tibco-admin
managedObjectVersion	7

4. Click **Delete**

View the Audit Event Details

TIBCO BPM Enterprise allows you to view the audit event details in the Audit Events view.

All the actions performed by the users are events, which can be viewed using audit events. To view details of an audit event, follow these steps:

Procedure

1. From Audit, select the event category you are interested in, for example, click **Work Item**.

Work Item ID	Activity Name	User	First Offer Time	State	Event Links
6	InputDetails	tibco-admin	10 Nov 2020 6:24pm	OPENED	Related work items
5	Task2	tibco-admin	10 Nov 2020 6:19pm	COMPLETED	Related work items
4	PageflowProc	tibco-admin	10 Nov 2020 6:18pm	COMPLETED	Related work items
3	Task1	tibco-admin	10 Nov 2020 6:18pm	COMPLETED	Related work items
2	InputDetails	tibco-admin	10 Nov 2020 6:07pm	CANCELLED	Related work items
1	InputDetails	tibco-admin	10 Nov 2020 6:03pm	CANCELLED	Related work items

The selected event category view, in this case, the Work Item view is displayed.

2. Click the Work Item Id for which you need to view the details.
You will see a list of all the events that come under that Work Item Id along with the other details.
3. Click the event id, to view additional details about the attributes of each event.
An Event Details pane opens on the right of the screen with all the required details about the selected event Id.

Case Manager

You can use Case Manager to manage and manipulate your case data. Case data is business data that is centrally managed by TIBCO BPM Enterprise and can therefore be accessed and updated by multiple TIBCO BPM Enterprise process applications.

Business data is structured data that contains information about real-world entities or business concepts that an organization needs to manipulate. For example, Customer, Order, Orderline, Claim, or Policy.

Case data:

- has a case state (for example, if it's an 'Order' case, then the case state might be: *Placed, Picked, Packed, Dispatched, or Delivered*)
- has data with case properties
- can have case-relevant documents associated with it
- can be referenced by a set of processes or work items that are responsible for making state changes to it.
- has its audit history, independent of any processes or work items that operate on it.

Any TIBCO BPM Enterprise application can interact with a case data model to create, use data and have associated cases, which are also known as linked cases. TIBCO BPM Enterprise application, in this context, is a TIBCO BPM Enterprise process, defined in TIBCO Business Studio - BPM Edition, and deployed to the TIBCO BPM Enterprise runtime.

Some of the operations that you can perform with the Case Manager include:

- Search cases, including performing ad-hoc searches.
- Perform case actions.
- View the work items associated with cases.
- View process instances associated with cases.
- View events that have taken place for a selected case.

You can also manage case documents from the Case Manager. You can store and retrieve documents related to a case. These documents are stored in "case folders", which are related to the case data, in a Content Management System (CMS). There is one case folder

for each case; the folder is automatically created when the case is created. When a case is in scope in a case management application user interface, the case folder is also available, so that not only do you get to see the details of the "order", you also have access to the documents associated with the order (for example, order-update email, purchase order document, custom product specification, and so on).

Using Case Manager, you can manage and manipulate case data in the following ways:

- display and update case objects in forms or pageflows.
- view and manage any documents associated with the case data.
- use case data to find in-progress work items or process instances that are associated with a particular case.
- locate a particular case and perform case state-specific actions on it.
- update case objects on an ad-hoc basis, independent of any enterprise process update - for example, a customer reporting a change of address.

To access Case Manager, see [Accessing Case Manager](#).

i Note: You must log in as a user who has privileges with the correct system actions assigned to the user account.

Accessing Case Manager

Access the Case Manager as follows:


Procedure

1. Enter the following URL in your browser:

```
protocol://host:port/apps/login
```

where:

- *protocol* is the communications protocol being used, either http or https. This was specified at installation.

- *host* is the DNS name or IP address of the server hosting the TIBCO BPM Enterprise runtime.
 - *port* is the port being used. The default value is 80.
2. Log in with a valid TIBCO BPM Enterprise username and password.
 3. Click .
 4. Click **Case Manager**.

Performing Case Actions

You can select a case in Case Manager and perform any case action that has been defined for that case.

A case action is an action that can be performed on a case when it is in a particular state. Case actions are designed within the context of the business process itself. For example, a claim may have these defined states: *Reported*, *Reviewed*, *Submitted*, and *Completed*.

Once a claim is reported, it may need to be reviewed by a claims adjuster. Once you have selected your case in Case Manager, you can select the Review case action and progress the claim to the next task in your business process.

Case states are a special type of attribute that can be defined for a case class. A Case action is a type of business service defined for a case class. Case states are defined when creating your case data model in TIBCO Business Studio - BPM Edition . Case Actions are defined when you create your Process Project in TIBCO Business Studio - BPM Edition. These are then made available in a specific state or states. For more information, see *TIBCO Business Studio - BPM Edition Application Designer's Guide*.

Procedure

1. Select a case type to view a list of cases of that type.

ID1	Name	State1
2	Test-2	Mid
1	Test-1	Start

Only cases which are in the Non-Terminal state are displayed.

2. Select the case you are interested in.

If required, use **Search** to identify your case. See [Using Search](#).

Note: You cannot select multiple cases. You can only perform a case action on one case at a time.

The cases actions that are available for the case are displayed.

Note: The case actions you see, if any, are entirely dependent on what state the case is in, and the permissions you have.

3. Select the case action you want to perform.

Depending on how your process template is defined, either

- The action defined by the case action is performed, or
- A form displays. The content of the form depends on how your process template has been defined. Select **Submit** to submit the form and perform the action on the case, or select **Cancel** or **Close** to close the form without performing any action.

The screenshot displays the TIBCO BPM Enterprise Case Manager interface. At the top, the title bar reads 'TIBCO BPM Enterprise' and 'Case Manager'. Below this, the 'Case details' section shows a process flow with four states: 'FIRST', 'Second', 'Third' (highlighted in green with a checkmark), and 'Last'. To the right of the flow are buttons for 'Update State', 'View Data', and 'Multiple Update A...'. Below the flow is a 'Modify Data' section with various input fields: 'caseBomType' (set to 'MyState'), 'autoCaseIdentifier1' (set to '3'), 'Date attribute1' (set to 'Nov 10, 2020'), 'Date Time attribute2' (set to 'Nov 10, 2020 04:33:43 PM'), 'Number attribute3' (set to '123'), 'attribute4' (set to 'attr-4'), and 'attribute5' (set to 'attr-5'). At the bottom right of the form are 'Cancel' and 'Submit' buttons. On the right side of the interface, there is a sidebar with expandable sections: 'Work Items', 'Linked cases', 'Documents', and 'Audit'.

Using Search

You can perform a search, based on the attributes that have been specified as searchable for a case type in TIBCO Business Studio - BPM Edition.

You can only select one case type for each search.


Before you begin

To perform a search and to view the case, you must have the **Read Case Data** system action.

Procedure

1. Select a case type to view a list of cases of that type.

Note: This list only shows the cases that are not in a terminal state.

2. In the **Search** box, enter the value you want to search on and select .

This is a case insensitive text-based search.

autoCaseIdentifier1	Date attribute1	Date Time attribute2	attribute4	MyState
3	10 Nov 2020 12:00am	10 Nov 2020 4:33pm	attr-4	Third
2	10 Nov 2020 12:00am	10 Nov 2020 4:33pm	attr-4	Third
1	10 Nov 2020 12:00am	10 Nov 2020 4:33pm	attr-4	Third



Note: You can define maximum 30 searchable attributes for any case class, this includes attributes from non-case classes composed directly or indirectly from the case class.

Managing Work Lists Associated With Cases

You can select a case in the Case Manager and view the work items that are using that case data. You can view information about the work item such as its name, description, ID, priority, and so on. You can also perform some actions on the work item. For example, you can open the work item and submit it, or allocate the work item to another resource.

Before you begin

You must be logged in as a user that has privileges with the correct system action assigned to view the work lists.

Procedure

1. Select a case type to view a list of cases of that type.
2. Select the case you are interested in.

If there are a large number of cases, you can use search to find the case. See [Using Search](#).

- From the right-hand pane, select the down arrow next to **Work items** to expand the work item list.

The work items display a summary of the case data that this work item is accessing. Summary case data is configured at design-time.

- Double-click the work item you want to open.
- You can perform actions on a work item. See [Processing Work Items Overview](#) and [Allocating Work Items Overview](#) for more information.

Case details

States: **Placed** (checked) → Confirmed → Dispatched → Returned

FootballEquipment data

caseState1	Placed
EquipmentType	Football
EquipmentBrand	nike
EquipmentOrderID	12
EquipmentQuantity	3
attribute1	2020-11-10
DateTimeZone	2020-11-10T11:14:35.000Z

updateEquipmen...

Work items

- 62 - ViewFootballOrder (Offered | Medium Priority)
- 63 - UserTask3 (Offered | Medium Priority)
- 64 - UserTask5 (Offered | Medium Priority)
- 65 - ViewandEditUserTask (Offered | Medium Priority)
- 66 - UserTask4 (Offered | Medium Priority)
- 67 - UserTask6 (Offered | Medium Priority)

Note: If, because of an action performed by another user, the case data associated with the work item has gone into a terminal state before you have completed the action you want to perform, the following message is displayed:

"This case version has not been updated".

This is because a case in a terminal state cannot be updated.

Managing Linked Cases

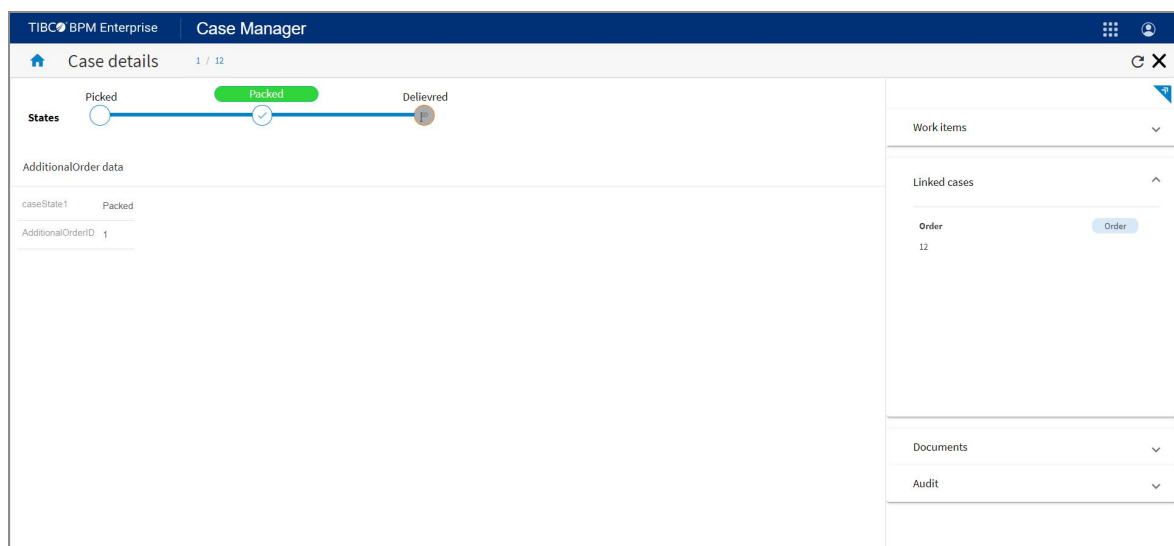
You can view the cases of case types that are linked. For example, for a customer, you can view all orders for that customer. Cases are linked at design-time in TIBCO Business Studio - BPM Edition.

Before you begin

You must be logged in as a user that has the **readCases** system action assigned to view the linked cases.

Procedure

1. Select a case type to view a list of cases of that type.
2. Select the case you are interested in.
If there are a large number of cases, you can use search to find the case. See [Using Search](#).
3. From the right-hand pane, select the down arrow next to **Linked cases** to expand the list of linked cases.
4. Select a case identifier to display the linked case's details.

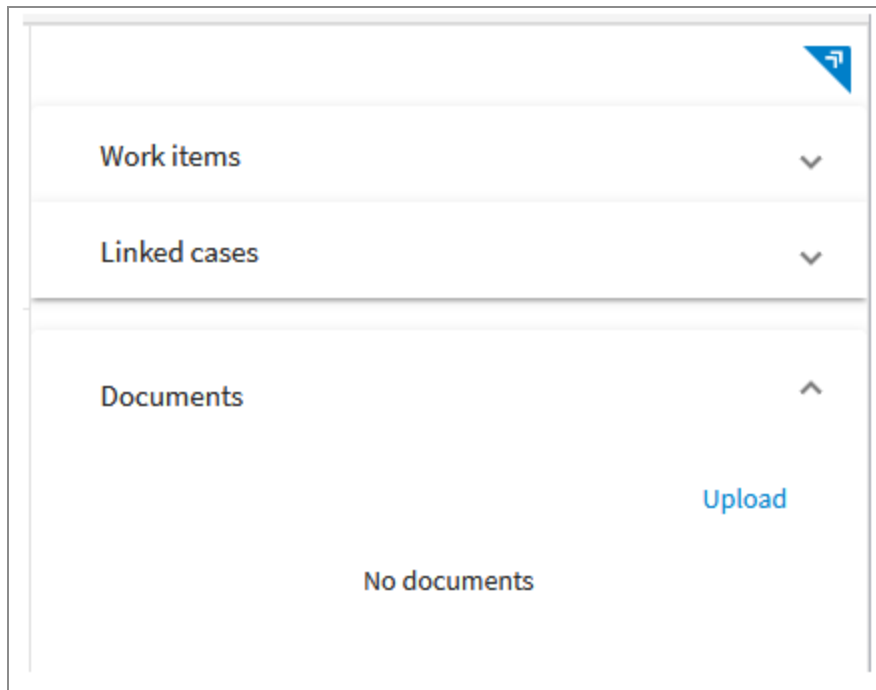


Managing Case Documents

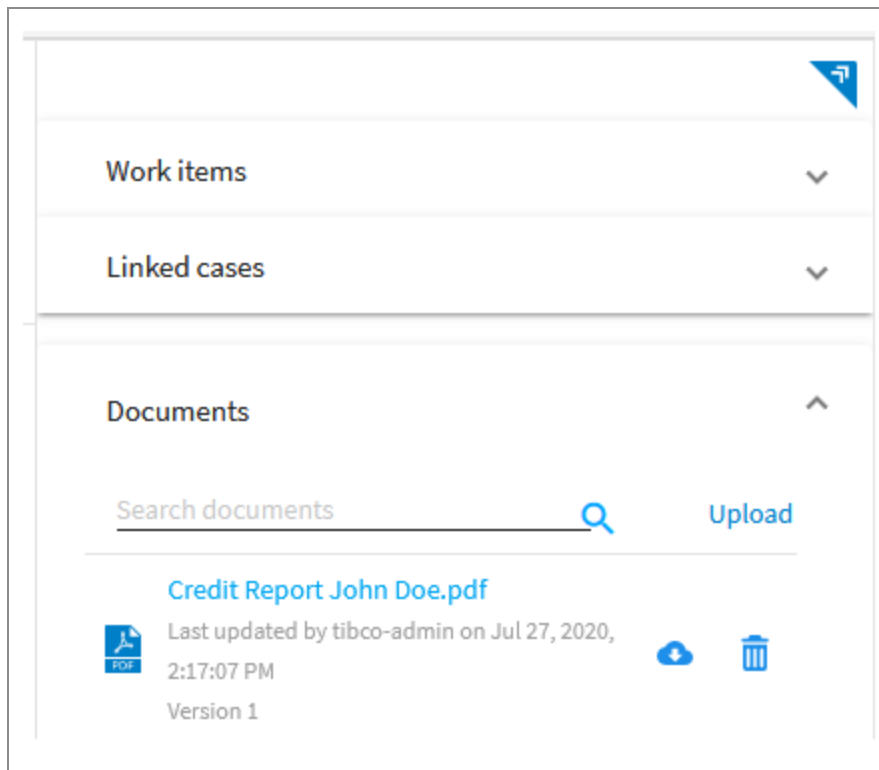
Documents that are relevant to a case can be uploaded and attached to a case for future reference. The documents are stored in an internal content repository.



When a case object is created in TIBCO BPM Enterprise, a *case folder* is automatically created for the case, to which case documents can be uploaded. Documents can be uploaded to a case folder in the following ways:

- **Using the UI in Case Manager** - When a case is accessed in Case Manager, the right pane contains a **Documents** section, which represents the case folder:

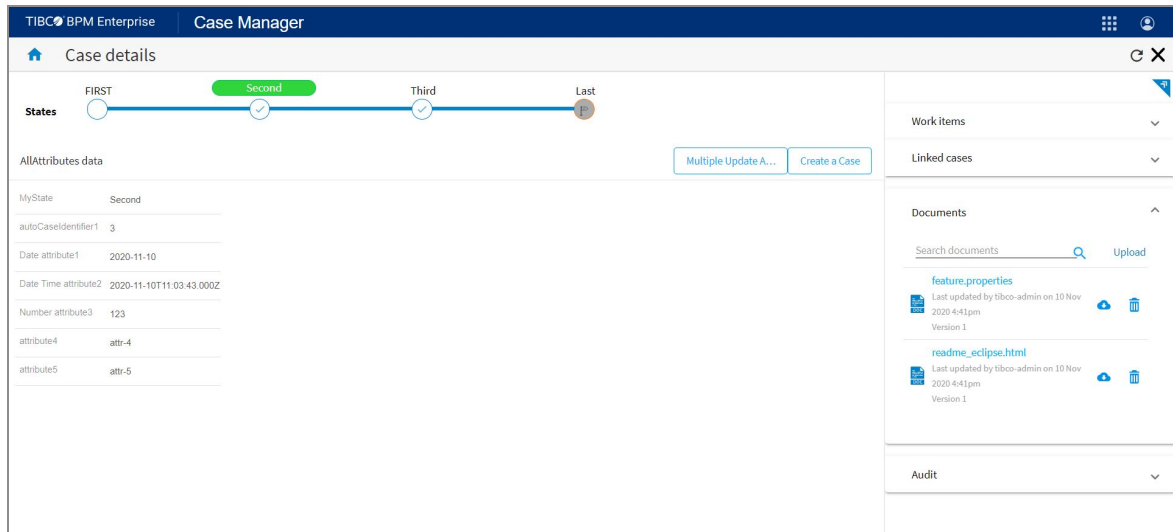


Click **Upload** to add a document to the case folder. After uploading a document, it appears as follows:



If you have the appropriate permissions, you can download a case document that has been uploaded by clicking , or delete it by clicking .

- **Using the Web Resource Management Service API** - Documents can also be uploaded to a case folder using methods available in the Web Resource Management Service API. You can view the methods available in the API by using the API Explorer. For information about accessing the API Explorer, see "REST API" in the *TIBCO® BPM Enterprise Developer's Guide*.



Case Folder System Actions

The following system actions are used to control permissions for case documents:

- Case Document Administration - This system action is needed to upload or delete a case document.
- Case Document User - This system action is needed to view case documents that have been uploaded to a case folder.

For more information about system actions, see "System Actions" in the *TIBCO Business Studio - BPM Edition Application Designer's Guide*.

Auditing Case Data

You can view an audit trail of your case data.

Procedure

1. Select a case type to view a list of cases of that type.
2. Select the case whose data you want to audit.
If required, use **Search** to find your case. See [Using Search](#).
3. From the right-hand pane, select the down arrow next to **Audit** to view the audit trail for the case data.

The screenshot displays the TIBCO BPM Enterprise Case Manager interface. The top navigation bar includes the TIBCO BPM Enterprise logo and the 'Case Manager' title. The main section is titled 'Case details' and features a state transition diagram with four states: FIRST, Second (highlighted in green), Third, and Last. Below the diagram, the 'AllAttributes data' section lists various attributes and their values. On the right, a sidebar contains sections for 'Work items', 'Linked cases', 'Documents', and 'Audit'. The 'Audit' section shows a log of case state changes.

Case details

States

FIRST → **Second** → Third → Last

AllAttributes data

MyState	Second
autoCaseIdentifier1	3
Date attribute1	2020-11-10
Date Time attribute2	2020-11-10T11:03:43.000Z
Number attribute3	123
attribute4	attr-4
attribute5	attr-5

[Multiple Update A...](#) [Create a Case](#)

Audit

- created case in state **FIRST** on 10 Nov 2020 4:34pm
- tibco-admin **case state changed**, new state is **SECOND** on 10 Nov 2020 4:39pm

Calendar

A calendar is used to hold information about work times, which can then be used in scheduling work and calculating deadlines. With the Calendar functionality, you can create multiple calendars for use with TIBCO BPM Enterprise. This allows you to handle work times and deadlines for locations in different time zones, for groups with different working hours, and so on. The working and non-working times defined in these calendars are used when performing deadline calculations. For example, when TIBCO BPM Enterprise schedules a user task, it uses the calendars to calculate the duration or any deadlines associated with the work time. Calendars are created, not deployed, in TIBCO BPM Enterprise at runtime.

i Note: To view and create calendars, you must be logged in as a user who is assigned appropriate privileges with the correct system actions. These are described in Required System Actions.

You can maintain the following information in calendars:

- Working days and times: These are the number of working hours and days.
- Exceptions: These are exceptions to your normal working days and times. For example, a one-off exclusion like a company lunch, or exclusions that are repeated over a defined period, like a regular company meeting.
- Available working hours: These are defined as your working hours minus exceptions. For example, if your normal working hours are seven hours a day, but you have a two-hour company meeting scheduled on a particular day then, on that day, you have five available working hours.

When you navigate to the Calendar functionality for the first time, a default system calendar is already defined. However, no working days or times are specified. This system calendar applies to the whole TIBCO BPM Enterprise. You can use the system calendar to define the working days, working time, and any exclusions in your system calendar.

However, if you want to define working hours and calculate deadlines for locations in different time zones or organizational units with different working hours, you can define base and overlay calendars and apply them to an organizational entity. If no base or overlay calendars are defined by default, TIBCO BPM Enterprise uses the system calendar to calculate working hours.

For more information on how to configure your calendars depending on your organization, see [Calendar Example](#).


Accessing TIBCO BPM Enterprise Calendar

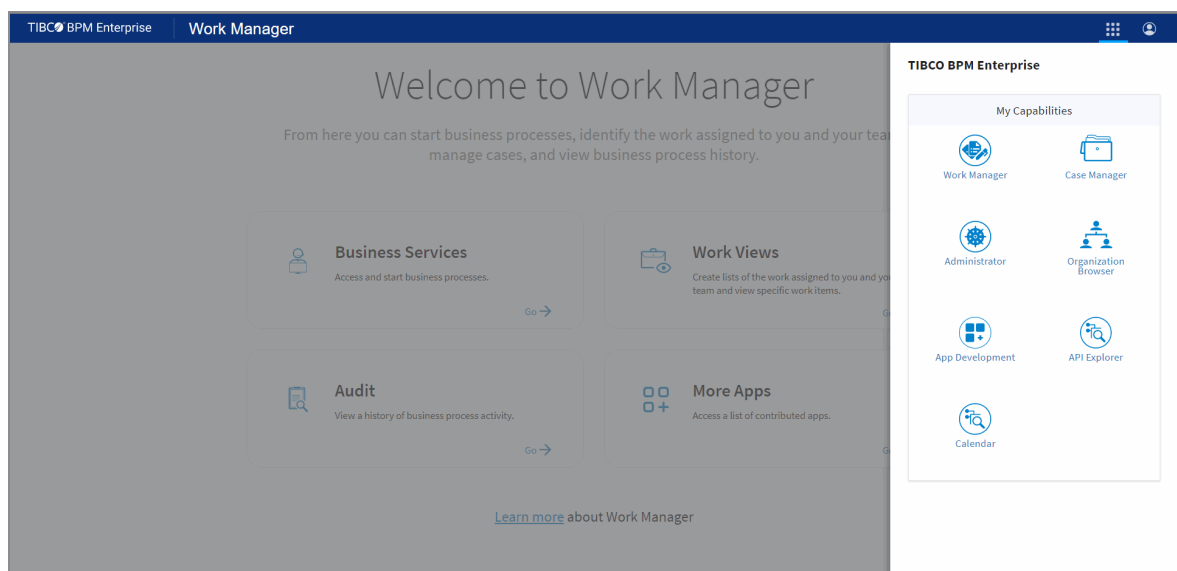
To access Calendar, you must use the login URL.

Procedure

1. Type the following URL into your browser.

```
protocol://host:port/apps/login/index.html
```

- Here, *protocol* is the communications protocol that is used (http or https. This is determined at installation.
 - *host* is the DNS name or IP address of the server hosting the TIBCO BPM Enterprise runtime.
 - *port* is the port that is used. (**Default: 80**)
2. Login with a valid TIBCO BPM Enterprise username and password. Note that your account must have **System Administrator** system action for you to access the calendar.
 3. To access **Calendar**, click the App Switcher .



4. In the **App Switcher** menu, click **Calendar**.

Base Calendars

Base calendars maintain basic information regarding working times (for example, hours in the standard working week). You can use base calendars to define different working hours for particular organization units or for locations in different time zones.

Note the following considerations before using the Base Calendar:

- You must map a base calendar to an organizational entity before you can use it.



Note: Base calendars cannot be mapped to resources.

- Base calendars are mapped to organizational entities using their alias. So you can define an alias either:
 - before you map a base calendar to an organizational entity, or
 - when mapping a base calendar to an organizational entity.
- A base calendar can be mapped to multiple organizational entities.
- An organizational entity can only have one base calendar mapped to it at any time.
- You can remap a base calendar to a different organizational entity at any time.



Note: TIBCO BPM Enterprise uses the latest calendar mapping. So if you remap a calendar while a process is deployed, then it does not adversely affect the process.

- Though working hours are time zone neutral, a base calendar is associated with a particular time zone. In other words, when specifying working hours, you should specify your working hours according to your time zone. TIBCO BPM Enterprise then interprets those hours according to the time zone you have specified.
- If the base calendar's time-zone value changes, the future entries that are displayed are adjusted to the new timezone. However, the earlier entries are not adjusted. So if you define the start of the working week as 08:00 on Monday, it is still 08:00 on Monday even if the time zone of the calendar changes.


Overlay Calendars

Overlay calendars define non-working time *exclusions* (for example, public holidays) which can be applied to one or more base calendars at runtime. You should use overlay calendars for exclusions that are repeated over a defined period, like a regular company meeting.


An overlay calendar is timezone-neutral, and so inherits the time zone from the base calendar it is applied to.

Note the following considerations before using the Overlay Calendar:

- You must map an overlay calendar to an organizational entity.

 **Note:** Overlay calendars cannot be mapped to resources.

- Overlay calendars are mapped to organizational units using their alias. You can define an alias either,
 - before you map an overlay calendar to an organizational entity, or
 - when mapping an overlay calendar to an organizational entity.
- An overlay calendar can be mapped to multiple organizational entities.
- An organizational entity can only have one overlay calendar applied to it at any time.
- You can remap an overlay calendar to a different organizational entity at any time.

 **Note:** TIBCO BPM Enterprise uses the latest calendar mapping. So if you remap a calendar while a process is deployed, then it does not adversely affect the process.

Calendar Aliases (References)

TIBCO BPM Enterprise uses calendar aliases at runtime to identify the calendars that should be used. With Calendar aliases, you can take into consideration the varying work patterns across the organization. By default, if no calendar alias is mapped, TIBCO BPM Enterprise uses the system calendar.

i Note: Calendar aliases are called “references” in TIBCO Business Studio - BPM Edition and TIBCO BPM Enterprise.

A calendar reference is assigned in TIBCO Business Studio - BPM Edition. Perform the following steps to use different calendars from the system calendar:

- Specify the calendar reference to be used when defining your processes in TIBCO Business Studio - BPM Edition.
- You can create a calendar alias in the following ways:
 - using the **Calendar Aliases** option in the left collapsible pane of the Calendar capability. See [Calendar Aliases](#).
 - when you map the calendar to an organizational entity. See [Assigning Calendars to Organizational Entities](#).
- Map the calendar to an organization entity, making sure you specify the calendar alias when defining the mapping.

Note the following considerations about the Calendar Aliases:

- If an alias is not present in TIBCO BPM Enterprise, you can still create a calendar reference in your process. You can specify an alias in TIBCO Business Studio - BPM Edition and then create it in TIBCO BPM Enterprise. See [Calendar Aliases](#).
- A calendar can have more than one alias.
- You can map a calendar to multiple organizational entities using the same alias.
- You can remap aliases to organizational entities at any time.

i Note: TIBCO BPM Enterprise uses the latest calendar mapping. So if you remap a calendar while a process is deployed, then it does not adversely affect the process.

Calendar Time Zones

In TIBCO BPM Enterprise, each base calendar has a specified timezone (see the `time-zone` parameter to `saveCalendar`). This enables you to use different base calendars that apply to different locations of the world. Overlay calendars do not specify a timezone so an overlay can be applied to any base calendar without any conversion.

TIBCO BPM Enterprise stores all date-time entries, whether on a base or an overlay calendar, with a timezone of UTC attached. This does not mean that they are necessarily intended to represent UTC times. In effect, times are treated as timezone-neutral. For example, working hours entered as 08:00 to 17:00 on a base calendar with its timezone set to PST (UTC minus 8 hours) are stored as 08:00 to 17:00, not as 16:00 to 01:00 UTC. In most cases, this is completely transparent to the user, but you need to be aware of how TIBCO BPM Enterprise handles timezones and date-time values if you are making calls directly to the API.

Changing a base calendar's time-zone value does not cause any adjustments to existing or future calendar entries. So if you define the start of the working week as 08:00 on Monday, it is still 08:00 on Monday even if the time zone of the calendar changes.

The start date-time values and end date-time values are timezone-neutral. When the system calculates the deadline, it applies the timezone specified when configuring the base calendar.

Time should be specified in this way for both base and overlay calendars. This enables the entries to be applied as if they were timezone-neutral any overlay calendar can be applied on top of any base calendar.

Exclusions in Calendars

Calendar exclusions, or non-working hours, are exclusions in a standard working day. You can define exclusions in both your base calendars and your overlay calendars, depending on your requirements.

- You can create exclusions directly in your system or base calendars. These can be either one-off events that do not occur all the time, like, an unexpected company meeting, or exclusions that repeat over a defined period.
- Create overlay calendars for exclusions that repeat over a defined period. For example, you can define such exclusions as:
 - Every Friday from 14:00 to 18:00
 - The first Monday of the month, for the next six months

These exclusions are defined using a recurrence rule that sets out how the start date and time of each occurrence of the exclusion is calculated. The rule is given in the standard notation set out in <http://tools.ietf.org/html/rfc5545>.

How Calendars are Resolved

When determining how to calculate deadlines, TIBCO BPM Enterprise traverses the organization model, from the given organization entity, for example, a group and then works up the hierarchy of groups, organization units, locations, organizations, and so on, until the first overlay calendar is identified. The first overlay calendar identified is applied to the first base calendar identified, and the working hours identified.

i Note: If no calendars are identified, then the default system calendar is used.

Required System Actions

To access calendars in TIBCO BPM Enterprise, login as the user that has System Administrator system actions assigned. To perform each of the functions listed below, a system action is required.

Function	readCalendar	writeCalendar	deleteCalendar
New Base Calendar	Yes	Yes	No
New Overlay Calendar	Yes	Yes	No
Open Calendar	Yes	No	No
Copy Calendar	Yes	Yes	No
Calendar Aliases	Yes	Yes	No
Map to Organization Model	Yes	Yes	No
Specify Working Hours	Yes	Yes	No
Specify Exclusions	Yes	Yes	No
Delete Calendar	Yes	Yes	Yes

i Note: If you assign privilege to an organizational entity like a group or location, all the child organizational entities in the parent entity inherit that privilege, unless an individual user does not have the correct system actions assigned

Calendar Example

When you navigate to the Calendar functionality for the first time, a default system calendar is already defined. However, no working days or times have been specified. You can use the system calendar to define your working hours and exceptions. However, you can also define base and overlay calendars which you can use to define working hours and calculate deadlines for locations in different time zones, organizational units with different working hours, and so on.

For example, if your company is based in several time zones, then you may wish to configure your calendars as follows:

1. Amend the System calendar to specify the working days and times for your organization. See [Displaying the Calendar](#).
2. Specify the calendar alias to be used when defining your processes in TIBCO Business Studio - BPM Edition .
3. Create a base calendar for each organizational entity whose hours differ from the standard working hours and times. See [Creating Base Calendars](#).
4. Map the base calendars to the organizational entity, ensuring you specify an alias for the mapping. See [Assigning Calendars to Organizational Entities](#).
5. Create an overlay calendar for any exclusions, if required. You may want more than one overlay calendar, depending on how many exclusions you have. See [Creating Overlay Calendars](#).
6. Map the overlay calendars to the organizational entity, ensuring you specify an alias for the mapping. See [Assigning Calendars to Organizational Entities](#).

Displaying the Calendar

When you first navigate to the Calendar application, the default system calendar is displayed. It is organized as follows:

- The system calendar displays your current working hours. Note that:
 - The very first time you login, the system calendar is displayed. No working days or times are specified. See [Specifying Working Days Times](#).
 - When the system calendar is initially displayed:
 - the GMT time zone is displayed.
 - the calendar displays the current month.
 - the current date is also highlighted.
 - When you specify working days or times, or exclusions, the calendar displays both. Click **Working Hours** to see the configured working hours for the displayed calendar.
 - The system calendar uses a 12-hour clock for working hours.
 - Calendars can be displayed by day, week, or month, depending on your requirements. Use the **View** dropdown. You can view previous or future periods (day, week, or month) by clicking on the left and right arrow icons in the upper-left part of the calendar gadget.
 - When you create base and overlay calendars, the latest base or an overlay calendar you have created is displayed. To display an existing calendar, see [Opening Calendars](#).
- The date picker allows you to view the working or non-working hours of selected dates. Depending on whether you are viewing the system calendar by day, week, or month, the date picker allows you to select a specific day, week, or month.

Specify Working Days and Hours

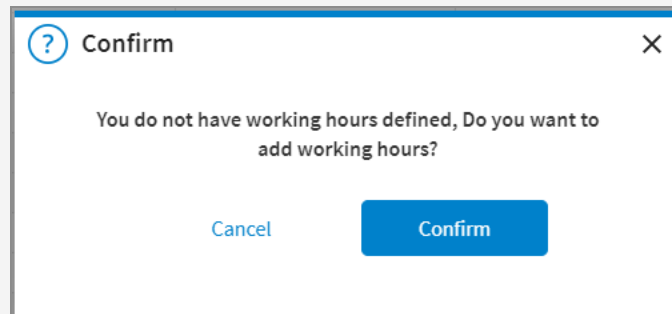
You can specify working hours and working days in any calendar that is open. Perform the following steps to specify the working days and hours in a calendar.

Procedure

1. Open the calendar in which you want to specify the working days and hours. To know how to open a specific calendar, see [Opening Calendars](#).
2. Click **Working hours** at the top of the screen.

i Note: When you open **Working hours** for the first time, a dialog box with the following message appears:

You do not have working hours defined, Do you want to add working hours?



3. When you click **Confirm**, the following **Add Working Hours** dialog box is displayed.

Working hours

M

T

W

T

F

S

S

Monday	09:00 AM ▾	to	05:00 PM ▾	⊕
Tuesday	09:00 AM ▾	to	05:00 PM ▾	⊕
Wednesday	09:00 AM ▾	to	05:00 PM ▾	⊕
Thursday	09:00 AM ▾	to	05:00 PM ▾	⊕
Friday	09:00 AM ▾	to	05:00 PM ▾	⊕

Cancel

Save

- Click the drop-down menu to select the start time and end time.
- Click **+** to add the working time slots.
You can specify as many working time slots as required for each day of the week.
- Repeat the above steps to specify the time-spans for all the working days you want to add.
- Click **Save** to add working hours to the calendar. Working hours display in green, as shown below:

SYSTEM ▾		<div>Not available</div> <div>Working hours</div>				
	Sunday Aug 8	Monday Aug 9	Tuesday Aug 10	Wednesday Aug 11	Thursday Aug 12	Friday Aug 13
12 AM						
1 AM						
2 AM		2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	
3 AM						
4 AM						
5 AM						
6 AM						
7 AM						
8 AM						
9 AM						

The Working hours page is composed of a grid that shows the current week starting with Sunday.



Note: You can add and edit working hours, and days by clicking anywhere in the current week grid.

8. Click **Not Available** at the top to go back to the original **Calendar** view.

Edit and Delete Working Hours

You can edit or delete your working hours at any time. However, TIBCO BPM Enterprise uses the latest calendar mapping so you should make sure that if you edit or delete your working hours while a process is deployed that it does not adversely affect the process.

Procedure

1. To edit or delete your working hours in a calendar, click **Working Hours**.

The Work Hours calendar for the current week is displayed with the work hours highlighted in green, as shown below:

SYSTEM ▾		Not available Working hours				
	Sunday Aug 8	Monday Aug 9	Tuesday Aug 10	Wednesday Aug 11	Thursday Aug 12	Friday Aug 13
12 AM						
1 AM						
2 AM		2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	2:00 AM - 9:30 AM	
3 AM						
4 AM						
5 AM						
6 AM						
7 AM						
8 AM						
9 AM						

2. Click anywhere in the time grid to open the **Working hours** dialog.

Working hours

M

T

W

T

F

S

S

Monday	09:00 AM ▾	to	05:00 PM ▾	⊕
Tuesday	09:00 AM ▾	to	05:00 PM ▾	⊕
Wednesday	09:00 AM ▾	to	05:00 PM ▾	⊕
Thursday	09:00 AM ▾	to	05:00 PM ▾	⊕
Friday	09:00 AM ▾	to	05:00 PM ▾	⊕

Cancel

Save

- You can edit or delete the working hours with the following options:
 - Click + to add the working hours.
 - Click the weekday icon to add or delete the working hours for that day.
- Click **Save**.

Create Calendar Exclusions

You can create exclusions directly in your calendars. Exclusions can be one-off events, such as unexpected company meetings, or events that repeat over a defined period.

Procedure

- To add an exclusion to the calendar, click today's date, or any future date in the

calendar, as required.

2. The **Add non-working hours** dialog box displays.

Add non-working hours [X]

Reason *

Starts on
5/20/2021 [Calendar Icon] ☐ All day

Start time [Dropdown] End time [Dropdown]

☐ Repeat

[Cancel] [Add]

i Note: To calculate deadlines, create exclusions on working days.

3. Enter a description for the exclusion in the **Reason** field. This is a required field.
4. Either click **All Day**, if the exclusion spans over the entire day (for example, a holiday), or enter the **Start time** and **End time** for the exclusion (for example, a company lunch) in the respective fields.
5. Select **Repeat**, only if this exclusion is going to occur every day, week, month, or year. If it is a one-off event, leave this field unselected. If you select **Repeat**, the **Add non-working hours** dialog box displays as follows:


Add non-working hours

×


Reason *


Monthly Meeting with CEO

Starts on

5/19/2021 

☐ All day

Start time 

End time 

☒ Repeat


Daily

Weekly


Monthly

Yearly

Repeats

1  Days

Starts on

5/19/2021 

Ends

Never

Set end date

Set number of occurrences

Cancel

Add

- a. Select whether the non-working hours need to be repeated daily, weekly, monthly, or yearly.
 - b. From the **Repeats** drop-down, select how often the exclusion is repeated. For example, **Daily**, **Weekly**, **Monthly**, or **Yearly**, depending on what you selected. If you select:
 - **Daily**, and select, **3** from the **Repeats** dropdown, it means that the exclusion repeats once every 3 days.
 - **Weekly**, it will repeat on the same day of the week that you have selected for the first exclusion.
 - **Monthly**, it will repeat on the same day of the month that you have selected for the first exclusion.
 - **Yearly**, it will repeat on the same day of the year that you have selected for the first exclusion.
 - c. Click in the **Starts on** box to display a date picker that you can use to select the start date of the exclusion.
 - d. While defining when the exclusion ends, you can do one of the following:
 - Select **Never**, if the exclusion never ends.
 - Select **Set end date** to display a date picker that you can use to define a specific end date for the exclusion.
 - Select **Set number of occurrences** and enter a numeric value in the **Enter number of occurrence** field, if the exclusion ends after it has occurred a certain number of times.
6. Click **Add**. The exclusion is added to your Calendar.
 7. Repeat the above steps to add more non-working hours for all required working days.
 8. Click **Cancel** to go back to the **Calendar** gadget.

Edit and Delete Exclusions

You can edit and delete your exclusions at any time. However, TIBCO BPM Enterprise uses the latest calendar mapping, so if you edit or delete your exclusions while a process is deployed, it does not adversely affect the process.

As soon as the exclusion is updated, it appears on the calendar. On deleting an exclusion, the calendar appears without that exclusion.

Procedure

1. In the open calendar, click the exclusion that you want to update.
2. The **Edit Exclusion** dialog displays.

Add non-working hours


×

Reason *

Lunch

Starts on

5/19/2021

 ☐ All day

Start time

01:30 PM

End time

02:00 PM

☒ Repeat

Daily

Weekly

Monthly

Yearly


Repeats

1

Days

Starts on

5/19/2021



Ends

Never

Set end date

Set number of occurrences

Cancel

Delete

Update

3. You can perform one of the following steps:

- make the changes you require and click **Update**
- click **Delete** to delete the exclusion

View Exclusions

When you have finished specifying your working days, your system calendar is updated to show the hours you have specified. By clicking **Day**, **Week**, or **Month** you can choose whether to display the working hours daily, weekly, or monthly, depending on your requirements.

The following example shows the exclusions in the month view.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
			Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting
			Lunch	Lunch	Lunch	Lunch
			Snacks	Snacks	Snacks	Snacks
23	24	25	26	27	28	29
Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
Snacks	Snacks	Snacks	Snacks	Snacks	Snacks	Snacks
30	31	1	2	3	4	5
Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting	Daily Status Meeting
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
Snacks	Snacks	Snacks	Snacks	Snacks	Snacks	Snacks



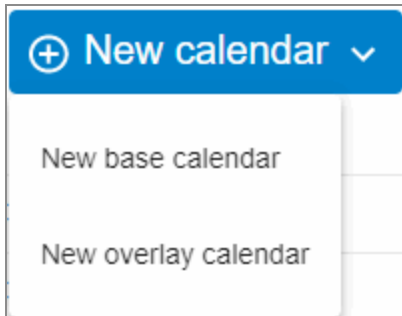
Note:

- The default view is monthly.
- Today's date is shown in green.
- Exclusions are shown in red.

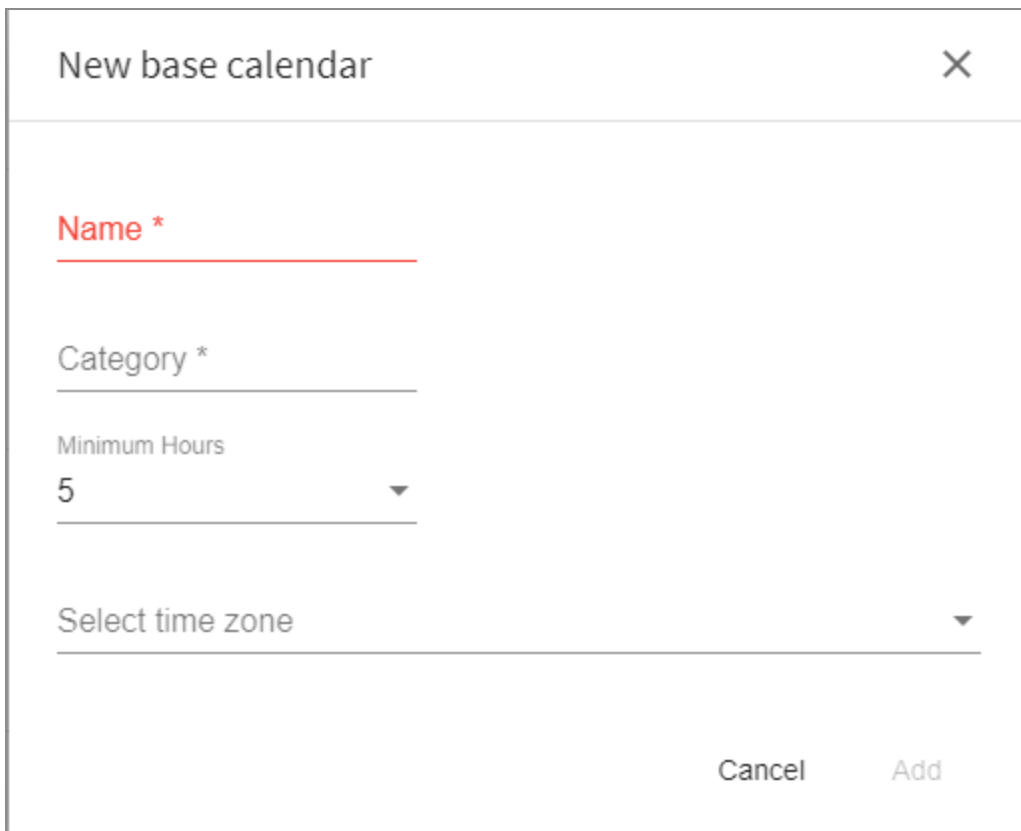
Create Base Calendars

Procedure

1. In the Calendar capability, click **+ New Calendar**.



2. Click **New Base Calendar** in the New Calendar dropdown. The **New Base Calendar** dialog box displays.

The dialog box is titled 'New base calendar' with a close button (X) in the top right corner. It contains four input fields: 'Name *' (with a red asterisk), 'Category *', 'Minimum Hours' (with a dropdown arrow showing '5'), and 'Select time zone' (with a dropdown arrow). At the bottom right, there are two buttons: 'Cancel' and 'Add'.

3. The **New Base Calendar** dialog box contains the following fields:
 - **Name:** The name of the new base calendar. This is a mandatory field.

- **Category:** A category for the new base calendar. Calendars are grouped by category when opening and duplicating calendars. See [Opening Calendars](#) and [Duplicate Calendars](#). This is a mandatory field.
- **Minimum hours:** This should be set to the minimum hours that constitute a working day in your organization. This is because, when calculating a deadline, a start date-time and duration must be given. If the duration does not include hours, minutes, or seconds, then the duration is assumed to be 'working days'. For example; the duration "P3D" is assumed to be 3 Working Days and not 72 hours. If the duration is "PT72H", then it is taken to be 72 hours, not 3 Working Days.

When calculating a deadline using units of 'Working Days', if the number of available hours in the day are less than this defined minimum value, that day is not included. The calculation moves on to the next available day, where again the number of available hours is compared.

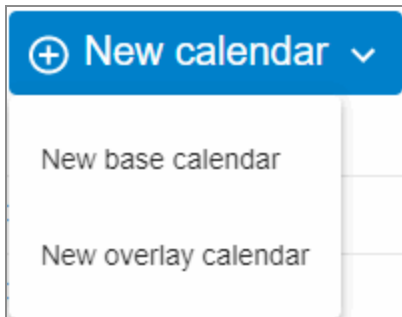
If the duration is specified in months, then the start date is used to determine how many days are in the months.

- **Timezone:** the timezone for this calendar, for example, GMT. Once you have selected a time zone, a field automatically appears with the relevant time zone IDs. Choose the time zone ID required.
4. Click **Add** to create the new base calendar or **Cancel** to cancel your changes.
 5. Once you have created your base calendar, you can specify the working days, times, and exclusions. See [Specify Working Days and Hours](#).
 6. Once you have created your base calendar you must map it to an organizational entity before you can use it. See [Assigning Calendars to Organizational Entities](#).

Creating Overlay Calendars

Procedure

1. From the Calendar capability, click + **New Calendar**.



2. Click **New Overlay Calendar** in the New Calendar dropdown. The **New Overlay Calendar** dialog box displays.

A dialog box titled 'New overlay calendar' with a close button (X) in the top right corner. It contains two text input fields: 'Name *' and 'Category *'. The 'Name *' field has a red underline. At the bottom right, there are two buttons: 'Cancel' and 'Add'.

3. Complete the dialog box as follows:

i Note: You must complete all the fields in the dialog box to create a new base calendar.

- **Name:** The name of the new overlay calendar. This is a mandatory field.
- **Category:** A category for the new overlay calendar. Calendars are grouped by category when opening and duplicating calendars. This is a mandatory field. See [Opening Calendars](#) and [Duplicate Calendars](#).

4. Click **Add** to create the new overlay calendar or **Cancel** to cancel your changes.

5. Once you have created your overlay calendar, you can specify the exclusions in the same way you did for the system calendar. See [Create Calendar Exclusions](#).
6. Map the overlay calendar to an organizational entity to use it. See [Assigning Calendars to Organizational Entities](#).

Assigning Calendars to Organizational Entities

If you want to define different calendars for organizational units, then you must create a base calendar or an overlay calendar to define the working hours and exclusions. See [Create Base Calendars](#) and [Creating Overlay Calendars](#).

Once you have created your base and overlay calendars, you must map them to the organizational entities that they apply to.

Note that:

- Base and overlay calendars cannot be mapped to resources.
- Base and overlay calendars are mapped to organizational entities using their alias. This means you must specify an alias for base and overlay calendars when mapping them to an organizational entity. You can perform one of the following actions:
 - Create the calendar alias using the **Calendar aliases** option. See [Calendar Aliases](#).
 - Create the alias when you map the calendar to an organizational entity. See [Assigning Calendars to Organizational Entities](#).
- You can change an existing alias when you define the mapping.
- An organizational entity can either have one base calendar or overlay calendar mapped to it, at any time. It cannot have both.
- Calendars can be mapped to multiple organizational entities.
- You can remap calendars to different organizational entities at any time.



Note: TIBCO BPM Enterprise uses the latest calendar mapping so you must ensure that if you remap a calendar while a process is deployed that it does not adversely affect the process.

Procedure

1. Map Calendar to an Organizational Entity.
2. Click **Map to Org Model**. The **Assign aliases to organizations and users** dialog box displays.

Assign aliases to organizations and users

Version: 1 ☐ Show entity names

Criteria Selector

Organizations	Resources	Aliases
<ul style="list-style-type: none"> > TestBATOrg > TestGroup_Auto 	Select an organization to view resources	Select a Org to view it's aliases


Done

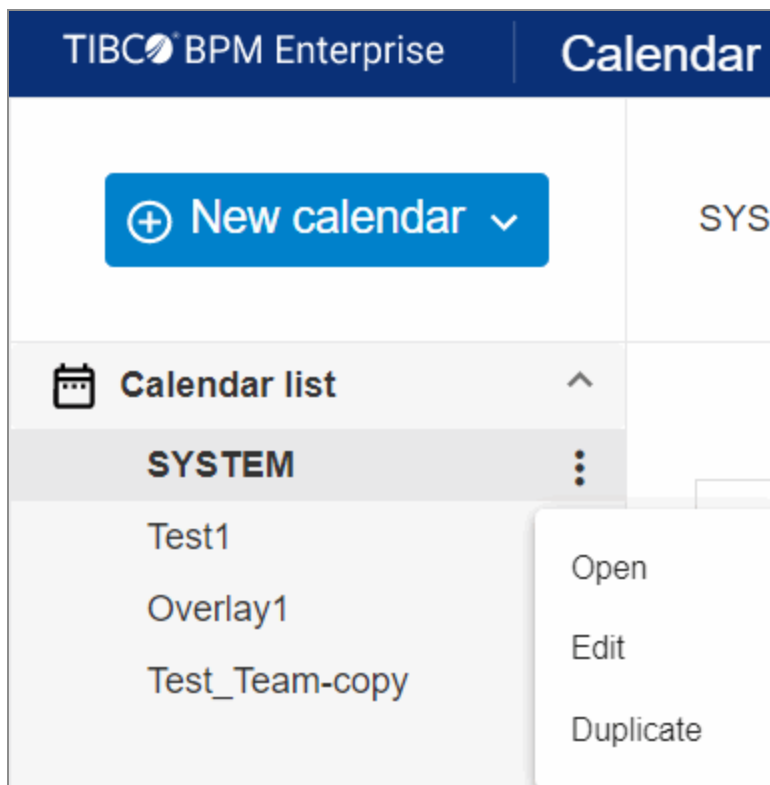
3. Select the version number of the organization model where the organizational entity resides.
4. Click the organization model in the left-hand pane to drill down to the organizational entity you want to select. Click an organizational entity in the left pane to see the resource list in the middle pane. If you assign an alias to an organizational entity like a group or an organizational unit, all the child organizational entities in the parent entity inherit that alias.
5. Select **Show entity names** checkbox, to display the internal name of the organizational entity, instead of its label. By default, the organizational entity's label is displayed.
6. Click to return to the main window.

Opening Calendars

When you define a new calendar, the latest calendar you defined is displayed.

Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar list**.
2. In the list of calendars that displays, click to select the calendar you want to open.
3. Click  on the calendar name. A drop down with the available options displays.




4. Click **Open**. The calendar is displayed in the center of the Calendar screen.

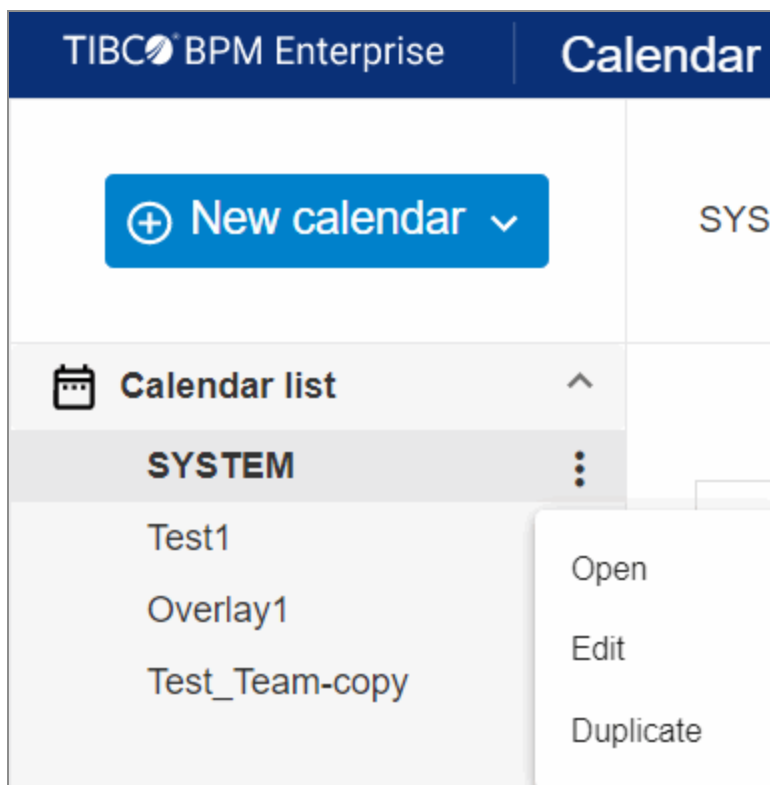
Duplicate Calendars

If you are creating multiple calendars that share particular properties, you can duplicate your calendar.

i Note: When duplicating a calendar, only exclusions from the current date and beyond are copied. Exclusions that have expired are not copied.

Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar list**.
2. In the list of calendars that displays, click the calendar you want to duplicate.
3. Click  on the calendar name.



4. Click **Duplicate** from the dropdown.

Duplicate Calendar

Name *
Test

Category *
base

Minimum Hours
5

Select time zone
(UTC +05:30) India Standard Time

Time zone IDs
Asia/Calcutta

Cancel Add

5. Complete the **Duplicate Calendar** dialog as follows:

Note: You must complete all the fields in the dialog box to create a new duplicate calendar.

- **Name:** The name of the new base calendar. This is a mandatory field. By default, the original calendar name is displayed.
- **Category:** A category name for the new duplicate calendar. This is a mandatory field.
- **Minimum hours:** This should be set to the minimum hours that constitute a working day in your organization. This is because, when calculating a deadline, a start date-time and duration must be given. If the duration does not include hours, minutes, or seconds, then the duration is assumed to be 'working days'. For example; the duration "P3D" is assumed to be 3 Working Days and not 72 hours. If the duration is "PT72H" then it is taken to be 72 hours, not 3 Working Days.

When calculating a deadline using units of 'Working Days', if the number of available hours in the day being considered is less than this defined minimum value, that day is not included. The calculation moves on to the next available

day, where again the number of available hours is compared.

If the duration is specified in months, then the start date is used to determine how many days are in the months.


- **Timezone:** the timezone for this calendar, for example, GMT. Once you have selected a time zone, the box below is automatically populated with the time zone IDs for that time zone.

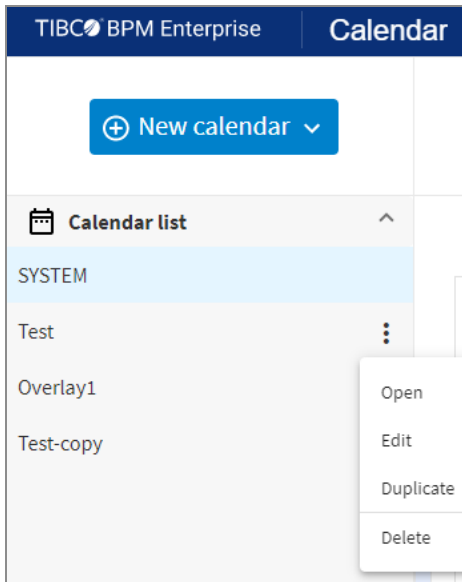
6. In the **Category:** box, enter a category name for your new calendar.
7. Click **Add** to create the new duplicate calendar or **Cancel** to cancel the action.
8. Update working days, times, and exclusions, as required.

Edit Base Calendars

Depending on your requirements, you can edit an existing base calendar's minimum hours, timezones, and timezone IDs. Note that you cannot edit existing overlay calendars.

Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar list**.
2. A list of calendars is displayed. Click to select the calendar you want to edit.
Note that by default, the system calendar is selected.
3. Click . A drop-down with the available options displays.



4. Click **Edit**. The **Edit <Calendar Name>** dialog box is displayed.

5. Update the fields as required. Click **Update**.

For information on minimum hours, timezones, and timezone IDs, see [Create Base Calendars](#).

Calendar Aliases

You must define aliases for your calendars. TIBCO BPM Enterprise uses aliases when identifying which calendar should be used for an organizational entity.

If no aliases are defined, then TIBCO BPM Enterprise uses the system calendar. This means that if you want an organizational entity to use a specific base or overlay calendar then you must map them to the organizational entity and specify the calendar alias as part of the mapping.

i Note: You can also create a new calendar alias or modify an existing alias when you map a calendar to an organizational entity. The alias does not have to exist before you define the mapping. See *Assigning Calendars to Organizational Entities*.

- i Note:**
- You can define as many aliases as you like.
 - The calendar's name can be used as an alias.
 - The system calendar can have an alias.
 - A calendar can have more than one alias.
 - You cannot map a calendar alias to more than one calendar. For example, if you assume you have an alias called UK mapped to a calendar called Call Centre UK and you remap the UK alias to a calendar called Returns UK, TIBCO BPM Enterprise removes the mapping between the UK alias and Call Centre UK and instead maps the UK alias to the calendar called Returns UK.
 - You can add, modify or delete an alias.

Adding a Calendar Alias

Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar aliases**.
2. In the **Assign alias to calendar** dialog box, select the **Calendar** that you want to

create an alias for. If there are any **Aliases** already defined for this calendar, they are shown in the right-hand pane.

In the **Aliases** box, click the **+Add new alias**. Type an alias name for the calendar and click the checkmark. The alias is added.

3. Repeat these steps to create as many aliases as you require.

Click  to close the **Assign alias to calendar** dialog box.

Mapping a Calendar Alias to a new Calendar


Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar aliases**.
2. In the **Assign alias to calendar** dialog box, select the **Calendar** whose alias you want to map. The aliases currently defined for this calendar are shown in the **Aliases** pane. To add a new alias, see [Adding a Calendar Alias](#).
3. Select the alias you want to map.
4. The right hand-pane changes to Remap Aliases with Select a calendar to remap test. Click the Calendar list. A list of available calendars that the calendar alias can be mapped to is displayed. Select the calendar you want the calendar alias to be mapped to and click **Submit**. The calendar alias is remapped.

Click  to close the **Calendar aliases** dialog box.

Deleting a Calendar Alias

Procedure

1. In the left collapsible pane of the Calendar screen, click **Calendar aliases**.
2. In the **Assign alias to calendar** dialog, select the **Calendar** whose alias you want to delete. The aliases currently defined for this calendar are shown in right-hand **Aliases** pane.
3. Select the alias you want to delete and click **Delete**. The alias is deleted.
4. Click  to close the **Calendar Aliases** dialog.

Deleting Calendars

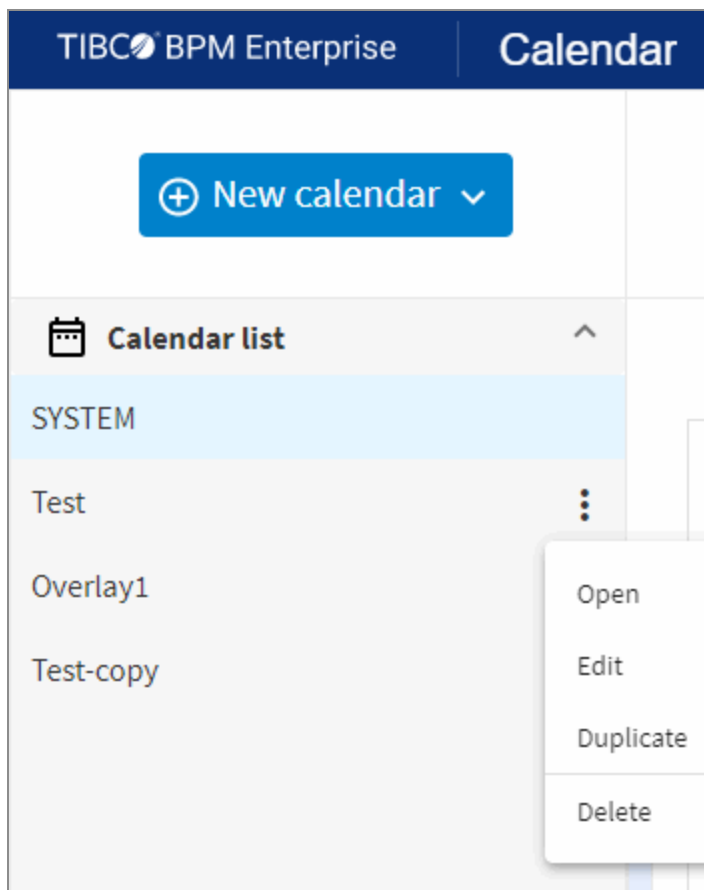
TIBCO BPM Enterprise allows the user to delete a specific calendar. Once you have deleted a calendar, it is permanently removed from TIBCO BPM Enterprise.

**Note:**

- You cannot delete the system calendar.
- You cannot delete a calendar with aliases. Remap or remove the aliases to delete the calendar.

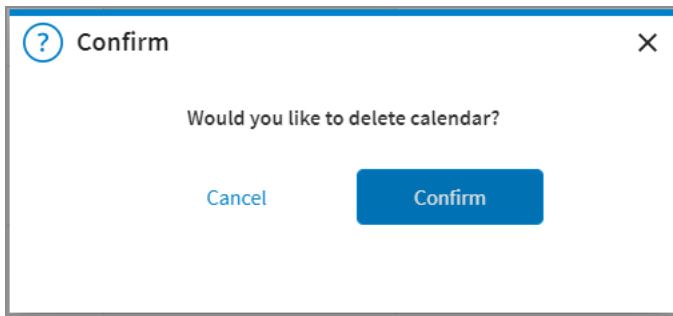
Procedure

1. In the left collapsible pane of the Calendar capability, click **Calendar list**.
2. In the list of calendars that displays, click to select the calendar you want to delete.



3. Click  on the calendar name. A dropdown with the available options displays.

4. Click **Delete**. The **Confirm** dialog is displayed with the following message.



5. Click **Confirm** to delete the calendar or **Cancel** to cancel the operation.
6. Repeat these steps for all the calendars you want to delete.

Spotfire Visualizations

You can view data from TIBCO® BPM Enterprise and create visualizations in TIBCO Spotfire®, for example, bar charts and scatter plots. This enables you to quickly and easily identify trends, patterns, and relationships in your data.

A default view is provided in the TIBCO BPM Enterprise database that you can use in TIBCO Spotfire. You can also create your view, based on the default view, if you want to visualize data for a particular case type, for example.

cdm_cases View

A default view is created in the TIBCO BPM Enterprise database that you can use to view TIBCO BPM Enterprise case data in TIBCO Spotfire.

The default view is called `cdm_cases`. The following table describes the columns available in `cdm_cases`.

Column	Description
<code>case_identifier</code>	A unique alphanumeric value identifying this case.
<code>casereference</code>	The reference to the case object. The case reference also contains the version. This is updated with every new version of the case object.
<code>unversioned_casereference</code>	A unique version number that stays the same throughout the lifecycle of the case object.
<code>type</code>	The case type is the fully qualified name of the case class.
<code>version</code>	The version of the case model.
<code>state</code>	The state of the case.

Column	Description
casedata	The data associated with the case.
is_active	If the case is still active.
creation_ timestamp	The date and time the case was created.
modification_ timestamp	The date and time the case was modified.
completed_ case_duration	The duration of the case.
application_ name	Name of the application that generated the case.
application_id	A unique alphanumeric value identifying the application.
application_ version	The version of the application.

Using cdm_cases View in TIBCO Spotfire

You can use the `cdm_cases` view to create visualizations in TIBCO Spotfire.

You must have:

- installed TIBCO Spotfire Analyst
- installed TIBCO Spotfire Server
- created some user accounts on your TIBCO Spotfire Server.

From your TIBCO Spotfire client, create a data connection to the TIBCO BPM Enterprise database.



Note: Obtain the database credentials from your system administrator for the TIBCO BPM Enterprise database.

Once you have a data connection to the TIBCO BPM Enterprise database, you can begin visualizing the data in TIBCO Spotfire.

For more information on how to do this, see the documentation provided with TIBCO Spotfire.

Event Collector Overview

Event Collector is one of the components of TIBCO BPM Enterprise. It collects and correlates data on business process events.

External services can access the data in the central event database either by using the query API supplied, or by directly querying the database tables and views.

To facilitate direct read access to the central event database, this guide describes the Event Collection database tables and views. As well as using this reference guide, you should study the database tables and views to see how the schema has been implemented by the manufacturers of the different databases supported.



Warning: Access to the Event Collector database tables and views must be **read-only**. You must not try to insert or modify any data in the tables or views. Any attempt to do so could have unforeseen consequences on the behavior of TIBCO BPM Enterprise.



Note: When modifying rules files (ec-probe and ec-event) note the following:

- Rules must have globally unique names.
- Check that channels are defined as `channel name='abcde' target='target' qualifier='abcde'` (the qualifier is optional).



Note: This database schema may change from version to version of TIBCO BPM Enterprise.

Private Database Tables

Some database tables in the Event Collector Schema are private. This means they are used internally by the Event Collector and you should not try to access them.

The following database tables in the Event Collector Schema are private.

- ec_event_case_ref
- sc_processinstance_status_case_ref
- sc_workitem_status_case_ref

ec_event

The ec_event table holds information about events that have been registered with the Event Collector.

Column Name	Description
event_id	The identifier of the event.
message_category	The category of the message.
message_id	The identifier of the message.
message	The description of the event.
severity	The severity of the event - one of the following: <ul style="list-style-type: none">• TRACE• DEBUG• INFO• SERVICE• AUDIT• WARN• ERROR• FATAL
event_timestamp	The time stamp at which the event occurred.

Column Name	Description
managed_obj_id	Valid values for this attribute depend on the value of the messageCategory attribute.
principal_id	The unique identifier of the security principal associated with the event.
principal_name	The name of the security principal associated with the event.
managed_obj_name	Valid values for this attribute depend on the value of the messageCategory attribute.
managed_obj_version	Valid values for this attribute depend on the value of the messageCategory attribute.
managed_obj_type	Valid values for this attribute depend on the value of the messageCategory attribute.
managed_obj_status	Status of the managed object.
managed_obj_url	Valid values for this attribute depend on the value of the messageCategory attribute.
managed_obj_details	Valid values for this attribute depend on the value of the messageCategory attribute.
parent_obj_id	Valid values for this attribute depend on the value of the messageCategory attribute.
app_name	For BX (Process Services) events, this is the name of the application that generated the event. For BRM (Business Resource Management Services) events, this is the name of the process that generated the event.
wi_schedule_start	Scheduled start date of the work item associated with the event.

Column Name	Description
wi_schedule_end	Scheduled end date of the work item associated with the event.
wi_org_ent_list	Offer set for the work item. This is the GUID, entity type, and model version, separated by the tab character. Multiple entities are separated by the newline character.
wi_priority	Priority of the work item associated with the event.
ext_message	Extended message for the message. This will generally contain more information. For example, the failure reason for a failed activity.
retry_time	The time when the failed activity will be retried again.
resource_id	Identifier of the resource associated with the event.
resource_name	Name of the resource associated with the event.
entity_id	Identifier of the organization model entity associated with the event.
entity_type	Type of the organization model entity associated with the event. This must be one of the following values: <ul style="list-style-type: none"> • ORGANIZATION • ORGANIZATIONAL_UNIT • GROUP • POSITION • PRIVILEGE • CAPABILITY • RESOURCE • LOCATION • ORGANIZATION_TYPE

Column Name	Description
	<ul style="list-style-type: none"> • ORGANIZATIONAL_UNIT_TYPE • POSITION_TYPE • LOCATION_TYPE • ORGUNIT_RELATIONSHIP_TYPE • POSITION_HELD • ORGUNIT_RELATIONSHIP • ORGUNIT_FEATURE • POSITION_FEATURE • PARAMETER_DESCRIPTOR
channel_id	Unique identifier of the presentation channel associated with the event.
app_act_name	Name of the process activity associated with the event. For example, StartEvent, ScriptTask, DBTask, gateway, Success, Failure.
app_act_model_id	The design time identifier of the process activity: the unique identifier of the process activity associated with the event from the model.
app_act_instance_id	The runtime identifier of the process activity: the unique identifier of the process activity associated with the event from the activity instance.
sys_action_comp_id	Identifier of the component that requested a system action check. (Typically this is "BRM".)
sys_action_id	Unique identifier of the requested system action.
root_proc_ins_id	Identifier of the upper-most parent process.
parent_proc_ins_id	Identifier of the parent process associated with the event.
parent_act_	Identifier of the parent activity associated with the event.

Column Name	Description
ins_id	
sub_proc_ins_id	Identifier of the sub-process associated with the event.
sub_proc_name	Name of the sub-process associated with the event.
process_priority	Priority of the process instance associated with the event.
module_name	The process package name of the deployed process associated with the event. (This is not set for BRM (Business Resource Management Services) events.)
prior_step_id	Identifier of the previous activity (to the one associated with the event).
sub_proc_ver	Version of the sub-process associated with the event.
model_major_version	Major version number of a case data model.
model_version	Version number of a case model.
role_name	The role name given to a link between two case data classes.
iteration	
iteration_id	
host_task_name	
host_task_	

Column Name	Description
type	
interrupts_ main_flow	
attribute1	Value (integer) of this custom work attribute
attribute2	Value (text) of this custom work attribute
attribute3	Value (text) of this custom work attribute
attribute4	Value (text) of this custom work attribute
attribute5	Value (decimal) of this custom work attribute
attribute6	Value (date-time) of this custom work attribute
attribute7	Value (date-time) of this custom work attribute
attribute8	Value (text) of this custom work attribute
attribute9	Value (text) of this custom work attribute
attribute10	Value (text) of this custom work attribute
attribute11	Value (text) of this custom work attribute
attribute12	Value (text) of this custom work attribute
attribute13	Value (text) of this custom work attribute
attribute14	Value (text) of this custom work attribute
attribute15	Value (integer) of this custom work attribute
attribute16	Value (decimal) of this custom work attribute

Column Name	Description
attribute17	Value (decimal) of this custom work attribute
attribute18	Value (decimal) of this custom work attribute
attribute19	Value (date-time) of this custom work attribute
attribute20	Value (date-time) of this custom work attribute
attribute21	Value (text) of this custom work attribute
attribute22	Value (text) of this custom work attribute
attribute23	Value (text) of this custom work attribute
attribute24	Value (text) of this custom work attribute
attribute25	Value (text) of this custom work attribute
attribute26	Value (text) of this custom work attribute
attribute27	Value (text) of this custom work attribute
attribute28	Value (text) of this custom work attribute
attribute29	Value (text) of this custom work attribute
attribute30	Value (text) of this custom work attribute
attribute31	Value (text) of this custom work attribute
attribute32	Value (text) of this custom work attribute
attribute33	Value (text) of this custom work attribute
attribute34	Value (text) of this custom work attribute

Column Name	Description
attribute35	Value (text) of this custom work attribute
attribute36	Value (text) of this custom work attribute
attribute37	Value (text) of this custom work attribute
attribute38	Value (text) of this custom work attribute
attribute39	Value (text) of this custom work attribute
attribute40	Value (text) of this custom work attribute
additional_attribs	Value (text) of this custom work attribute

sc_processinstance_status

The sc_processinstance_status table stores measures about process instances.

Column	Description
process_instance_id	Unique identifier of this process instance.
instance_id	Numeric decoded value of above
parent_proc_ins_id	Unique id of the parent process instance, if applicable
root_proc_ins_id	Unique id of root process instance ID, if applicable, may be same as previous column
priority	Priority of this process instance.

Column	Description
user_id	Resource of the user that started or interacted with the process.
status	Status of this process instance.
status_ changed	Time stamp of the last status change of this process instance.
cur_activity	The task that is currently executing within the process.
cur_activity_ start	The start time of the current task.
start_time	Start time of this process instance.
end_time	Completion time of this process instance.
exec_millis	Total time taken (in milliseconds) by this process instance between its start_time and end_time .
proc_tpl_id	Unique identifier of the process template. It includes the process template name, module name, and module version. This is stored in the sc_proc_template .
type	Identifier of array in the ec_array table that holds the case references.
attribute1	The fixed-point number (0 decimals) value of custom work attribute 1 for this process instance.
attribute2 - attribute4	The text values of custom work attributes 2 to 4, respectively, for this process instance.
attribute5	The floating-point number value of custom work attribute 5 for this process instance.
attribute6 - attribute7	The date time and timezone values of custom work attributes 6 and 7, respectively, for this process instance.

Column	Description
attribute8 - attribute 14	The fixed-point number (0 decimals) value of custom work attributes 8 to 14, respectively, for this process instance.
attribute15	The integer value of custom work attribute 15 for this process instance.
attribute16 - attribute18	The floating-point number values of custom work attribute16 - attribute18, respectively, for this process instance.
attribute19 - attribute20	The date time and timezone values of custom work attributes19 - attribute20, respectively, for this process instance.
attribute21 - attribute40	The text value of custom work attribute21- attribute40, respectively, for this process instance.

sc_proc_template

The sc_proc_template table holds information about process templates.

Column	Description
proc_tpl_id	Unique ID of the process template
proc_tpl_name	Process template name.
module_name	Module name that the process template belongs to.
module_version	Version of the module.
status	Status of the template. (For example, DEPLOYED, or UNDEPLOYED)
deployed_time	Date and time when the process is deployed.
undeploy_start_time	Date and time when the process undeployment action is triggered.
undeployed_time	Date and time when the process undeployment action is completed.

Column	Description
active_millis	Total time for which the process template is deployed in milliseconds.
app_id	Unique ID of the deployed application from which this template appears.

sc_workitem_activity

The sc_workitem_activity table holds information about user activity.

Column	Description
work_item_id	The work item associated with this user activity.
workitem_activity_version	Current numeric version (say, 0, 1, or 2) of the work item indicates the number of times it has been changed.
user_id	Resource associated with this work item.
action_start	Start date and time for this user activity.
action_end	End date and time for this user activity.
action_dur	Total duration (in milliseconds) for this user activity.
wi_status	Status of the work item.
user_action	The user action for this work item.

sc_workitem_status

The sc_workitem_status table holds information about work items and their usage.

Column	Description
work_item_id	Unique identifier of this work item.
process_instance_id	Identifier of the parent process instance from which this work item was generated.
activity_name	Name of the activity from which the work item was derived.
activity_ins_id	Instance identifier of the activity from which the work item was derived. This value is unique even if the activity is executed multiple times - for example, as part of a loop.
org_entities	JSON array of org entities that are GUIDs, names, and types.
user_id	Resource associated with this work item.
comp_user_id	Resource completing this work item.
schedule_start	Scheduled start date and time (in UTC) for this work item.
schedule_end	Scheduled end date and time (in UTC) for this work item.
first_offer_time	First time that this work item was offered or allocated.
first_open_time	First time that this work item was opened.
last_open_time	Last time that this work item was opened.
completion_time	Completion time of this work item.
active_dur	Total duration (in milliseconds) that this work item was active - that is, the time between its first_offer_time and its completion_time , disregarding any intermediate states.
wait_dur	Total duration (in milliseconds) that this work item was waiting - that is, the

Column	Description
	time between its first_offer_time and its first_open_time .
action_dur	Total duration (in milliseconds) that this work item was being actioned - that is, the time between its first_open_time and its completion_time .
work_time_dur	Total working time duration (in milliseconds) for this work item, that is, the cumulative time between its first and last form submission activities.
status	Status of this work item.
status_ changed	Time that the status of this work item was last changed.
priority	Priority of the work item.
work_group_id	The ID of the work resource pattern this work item belongs to, if there is one.
attribute1	The fixed-point number (0 decimals) value of custom work attribute 1 for this work item.
attribute2 - attribute4	The text values of custom work attributes 2 to 4, respectively, for this work item.
attribute5	The floating-point number value of custom work attribute 5 for this work item.
attribute6 - attribute7	The date time and timezone values of custom work attributes 6 and 7, respectively, for this work item.
attribute8 - attribute 14	The text value of custom work attributes 8 to 14, respectively, for this work item.
attribute15	The fixed-point number (0 decimals) value of custom work attribute 15 for the event.
attribute16 -	The floating-point number values of custom work attribute16 - attribute18,

Column	Description
attribute18	respectively, for the event.
attribute19 - attribute20	The date time and timezone values of custom work attributes19 - attribute20, respectively, for the event.
attribute21 - attribute40	The text value of custom work attribute21- attribute40, respectively, for the event.
generic_attr_id	Identifier of future generic attributes. If there are no generic attributes, the value is NULL.

sc_processinstance_failedactivity

The sc_processinstance_failedactivity table holds information about activities that have been registered by the Event Collector.

Column	Description
activity_id	The activity id within the process.
activity_idx	The activity index, or order of activity execution, within the process.
process_instance_id	The ID of the process instance that owns the failed task.
activity_name	The name of the activity.
activity_type	The type of the activity.
activity_status	Activity status.
activity_retry	The time when the activity will be retried again.
retry_count	The retry count for this activity.
activity_start	The start time for this activity.

Column	Description
activity_finish	The end time for this activity.
activity_notes	Activity notes which could include the reason for the failure of the task.

sc_userresource

The sc_userresource table holds information about activities that have been registered by the Event Collector.

Column	Description
user_id	Unique ID of the user_id.
user_name	The name of the user.
display_name	The display name of the user.
description	The description for the user.
status	The current status of the user, whose values are CREATED or DELETED.
start_date	The datetime the user is created.
end_date	The datetime the user is deleted.
last_updated	The datetime the user is last updated
active_millis	How long the user was active (in milliseconds) before being deleted.
container_id	The ID of the LDAP container that the user belongs to.

sc_app_status

The sc_app_status table holds information about activities that have been registered by the Event Collector.

Column	Description
app_id	The ID of the deployed application.
app_package_id	The application package ID. For example, com.example.mypackage
app_name	The name of the application.
app_version	The application version. For example, 1.0.0.12349865
status	The application status. For example, DEPLOYED, UNDEPLOYING, UNDEPLOYED.
deployed_time	The datetime, the application is deployed.
undeploy_start_time	The datetime, the undeploy application is triggered.
undeployed_time	The datetime, the undeploy application is completed.
active_millis	The time (in milliseconds) the undeployed application is active.
app_type	The type of application. For example, data, globalsignal, organization, process

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