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1 https://www.signavio.com/privacy/
2 https://www.signavio.com/legal-info/
3 https://www.signavio.com/contact/
Chapter 1

First steps with Signavio Process Manager

Signavio is a web application. This means you access your Signavio Process Manager workspace by logging into your account on the Signavio server. You can find out how to register and login in the chapter How to register/login at Signavio (page 706).

This chapter provides an overview of the features of Signavio Process Manager. If you are already familiar with Process Manager, you can use the content overview to jump to the chapter that is relevant to you.

1.1 The Explorer

After logging in, the Explorer (page 22) opens in your browser. It allows you to navigate through diagrams and files stored in your Signavio workspace. Here you can create new diagrams and publish (page 119) them in the Collaboration Hub (page 396) or share them by other means. As Signavio supports open standards, importing diagrams from other systems (page 574) is easy. In the Explorer (page 22), you can adjust your personal settings. Administrators can also configure workspace settings here.

The Signavio Explorer with expanded diagram preview/activity feed panel
1.2 The Editor

The Editor (page 163) can be accessed by opening a diagram (page 232) or creating a new one (page 232). Using the Editor, you can create and edit all kinds of supported diagrams.

![Diagram of the Editor](image)

The Editor with open attributes panel

Besides BPMN 2.0, Signavio supports the Decision Model and Notation (DMN 1.0) (page 322), enterprise architecture diagrams (ArchiMate 2.1) (page 376), Event-driven Process Chains (EPC) and many other notations.

1.3 QuickModel

The QuickModel (page 305) application gives you the possibility to create simple BPMN-diagrams within seconds by use of a spreadsheet-like interface. Diagrams created in this application can be edited in the Editor like any other diagram to add complexity or update the process.
Creating a diagram in the QuickModel application

1.4 The Dictionary

The Dictionary (page 428) allows you to manage and re-use specific modeling elements. It also allows you to ensure all your modelers are using the same terms and elements in your organization-specific modeling environment.
The Dictionary, shown here with the Roles category open

1.5 Collaboration Hub

The Collaboration Hub (page 396) provides access to your published process landscape. Readers and commenters can access the Collaboration Portal via a browser certificate (page 470) or Directory Services and/or Microsoft SharePoint integration (page 602).
Collaboration Hub

1.6 The Diagram and Revision Comparison Tool

The diagram and revision comparison tool (page 48) helps you to keep track of changes.
1.7 BPMN and DMN Simulation

With Signavio, you can simulate BPMN (page 277) and DMN (page 374) diagrams to analyze key performance indicators and bottlenecks and apply your business decision logic directly within the tool. The DMN test lab (page 369) helps you to continuously check whether your decision logic is consistent with your initial requirements.

A diagram being simulated

1.8 Support

Our team is constantly improving and extending Signavio Process Manager. You will find the latest version number and our release notes at http://www.signavio.com/release-notes/.

Do you have any questions about working with Signavio Process Manager?

Our support team will be happy to help you!

Please contact the Signavio Support Team at: support@signavio.com

You can also send a support request within the Explorer or Editor, as shown below:
In the Explorer, Signavio can be contacted via the ‘Help’ menu.

Or you can use the envelope button in the Editor’s toolbar to contact us.
Chapter 2

What kind of Signavio user am I?

The following chapters explain the different user types of Signavio. If you already know in what way you would like to use the software, you can select the topic that is relevant for you in the menu on the left.

2.1 I am a business process (BPMN) modeler

Learn how to collaboratively model business processes in **BPMN (Business Process Model and Notation)** or **EPC (Event-driven Process Chains)** with Signavio Process Manager. In addition to BPMN and EPC, Signavio supports all popular open modeling languages for business users.

In the chapter *Business Process Model and Notation (BPMN)* (page 230), you can learn more about the notation and about creating, editing and working with Business Process Model diagrams.

2.2 I am a business decision modeler

Use the Signavio Decision Manager to model business decisions in a structured and formalized manner all stakeholders can easily understand using the **Decision Model and Notation (DMN)**. Integrate your DMN diagrams seamlessly into your BPMN process landscape.

In the chapter *Decision Model and Notation (DMN)* (page 322), you can learn more about creating, editing and managing decision diagrams.
2.3 I am an enterprise architecture modeler

Use the Signavio ArchiMate Edition to create a visual, business domain-crossing description of your enterprise architecture. Employ ArchiMate together with your BPMN process landscape.

In the chapter ArchiMate (page 376), you can learn more about creating and editing Enterprise Architecture diagrams.

2.4 I'd like to create a process diagram, but don't know BPMN very well

Learn how to use the QuickModel to create valid BPMN processes through a spreadsheet-like interface. Create your first processes in just a couple of minutes or add and maintain element attributes in a fast and well-structured manner.

In the chapter QuickModel (page 305) you can learn how to use the application to quickly create BPMN diagrams.
2.5 I am a Collaboration Hub user

Get to know Signavio Collaboration Hub: view process diagrams and discuss them with your colleagues. In the chapter Collaboration Hub (page 396), you can learn how to use the Collaboration Hub to work on diagrams together with colleagues and external stakeholders.
2.6 I want to review and approve diagrams before they are released

Make use of Signavio’s Approval Workflows to ensure that diagrams have been approved by specific users or user groups before they are published in Collaboration Hub.

In the chapter Approval workflows (page 98), you can learn how to start and work with approval workflows.

2.7 I am a Signavio workspace administrator

Learn how to configure your workspace in order to get the most out of Signavio Process Manager and to maximize the benefit considering the unique needs of your organization.

Moreover, learn how to integrate Signavio into your organization’s IT infrastructure and enable smooth and hassle-free process, business decision and enterprise architecture documentation, utilizing your existing IT systems to the fullest extent.

As a workspace administrator, you will find information about configuring the software in the Workspace administration (page 452) section of the manual.
Chapter 2. What kind of Signavio user am I?

Please invite users to your workspace. For each invited user, you can select a type of license and user groups. You can also edit the user groups and their access rights later.

Email:  

User groups: Add user groups

Edition:  
- Enterprise Plus Edition
  Available / Used licenses: 10 / 1

- Collaboration Hub
  Available / Used licenses: 100 / 0

If you need new user accounts please go to Purchase.

Send invitation
Chapter 3

The Explorer

The Explorer is the central configuration and management tool in Signavio Process Manager. From here you can open and create diagrams (page 25), manage files, embed (page 53) and download (page 139) diagrams, start Approval Workflows (page 98) and configure your profile (page 32), among other things. The settings for Workspace Administration (page 452) are maintained in the Explorer.

3.1 Basic functions

The Explorer is the entry and management point of Signavio Process Manager. In the Explorer you can manage folders and diagrams, create new diagrams, export diagrams, generate reports, as well as publish and embed diagrams. You can also edit your profile settings and manage the administrative aspects of your workspace. You can access the Editor, Collaboration Hub and other functions in the software via the Explorer.

From the Explorer view you have access to all tools that Signavio Process Manager offers.

The Signavio Explorer: Creating a new diagram

The Explorer is structured as follows:

- View
The central area displays the file contents of the selected folder. Double-click diagrams in the Editor to open them. Unread diagram comments are displayed as small speech bubbles attached to the corresponding files. You can switch between the icon view (page 23) and the list view (page 24). At the bottom of the central view is the activity feed and the diagram preview.

- **Menu**

  The toolbar with a dropdown menu allows you to access different functionalities. Read more in chapter The Explorer menu (page 25).

- **Search function**

  The search function is a useful tool to quickly find diagrams. In addition to the full text search, the advanced search function offers you a method to add specific search criteria. You can find a detailed description in the Using the advanced search function and smart folders (page 34) chapter.

- **Folder tree**

  The folder tree on the left allows you to quickly navigate within your workspace. Read more at Working with folders and diagrams (page 41).

- **Diagram details**

  The notification and activity feed allows you to view and manage the history of a diagram and to modify notification settings of diagrams and folders. By pressing the space bar you can open the preview panel (page 47) and the version overview (page 127) of a diagram at the bottom.

- **Personal profile**

  You can customize the Explorer by adjusting your personal profile settings (page 32) according to your needs.

### 3.1.1 The Explorer view

**The icon view**

In this view, diagrams and folders are represented as icons. For diagrams, a small preview is provided that allows you to find the diagram you are looking for faster.

Details about a selected diagram can be found at the bottom of the Explorer in the activity panel (page 47).

When working on diagrams collaboratively—for example, in the Collaboration Hub—it is possible to comment on diagrams and diagram elements. Unread comments that were created by users who are not members of your workspace will be marked with a little speech bubble symbol in the Explorer.
Unread comments are also displayed in the icon view

To view your colleagues' comments, open the respective diagram in the Editor. To read more about commenting, go to the chapters Adding comments in Collaboration Hub (page 411) or Working with comments in the Editor (page 114).

The list view

Diagrams and folders are listed along with additional information about each file. Selecting an element activates the diagram preview in the preview panel at the bottom if the panel is extended.

Sort list entries

Clicking the title of a row sorts the elements by the respective column.

Managing the list view

You can individually configure which of the diagram attributes are shown as columns in the table view. All attributes on diagram level and the attributes Revision, Last Change, Last Author and Published are available.

To configure the list view, proceed as follows:

1. Click Setup, then Edit general configuration. A dialogue box will open.
2. In the Explorer section, you can edit the table columns preferences. Click Add attribute to add another attribute to the list view.

You can rearrange the order of the attributes using the arrow icons and configure the size and the position of the attribute column. To delete an attribute from the list view click the trash button.

3. Click Save to save your settings. The list view is updated with the attributes you have configured.
**Refreshing the Explorer view**

After saving a diagram in the Editor (after renaming it, for example), the Explorer view may not be up-to-date anymore. In this case, a dialog asking you to refresh pops up.

![Refresh dialog](image)

**Note to refresh the Explorer view**

Sometimes, you may want to refresh the Explorer manually. Use the **Refresh** button in the top right corner of the Explorer.

![Refresh button](image)

**Manually refresh the view if the system does not register a change**

**Display of the current path**

In both the list and in the icon view, you see the file path on top of the list. If you want to jump to a parent folder, click the corresponding folder name.

The following example shows how to jump back to the ‘Shared documents’ folder:

![Shared documents](image)

**Use the diagram path for quick navigation**

### 3.1.2 The Explorer menu

**New**

In the dropdown header **New**, you can create new folders and diagrams. The new folder will appear at the location that is currently open in the Explorer. If you choose to create a new diagram, a blank
canvas on which you can model the kind of diagram you selected will open in the Editor in a new tab. The menu item QuickModel opens a new BPMN 2.0 diagram in the QuickModel application (page 305).

The menu item QuickModel opens a new BPMN 2.0 diagram in the QuickModel application (page 305).

Edit

Here, you can open the Editor or the QuickModel application to edit diagrams, simulate BPMN (page 277) and DMN (page 374) diagrams and test DMN diagrams (page 369). To gain an overview of activities about a specific diagram you can display comments on diagrams in Collaboration Hub and compare versions of diagrams (page 48). The folder content currently displayed in the Explorer can be moved, copied, deleted, and renamed. BPMN 1.2 diagrams can also be migrated to the newer BPMN 2.0 format.

Import/Export

You can import and export (page 574) files in Signavio Process Manager. This means you are able to upload files to your Signavio workspace and also download diagrams from your workspace onto your
computer in different formats.

**Reporting**

The **Reporting** menu allows you to create *different kinds of reports* (page 63) about diagrams. This enables business users to analyze their process hierarchy offline with decision makers and analysts, regardless of their familiarity with BPMN modeling.
Share

With the Share menu, you can use your Shared Documents folder to publish diagrams to Collaboration Hub and share documents in a variety of ways with your colleagues.

Approval workflows Approval workflows (page 99) are evaluating processes that diagrams have to go through before they are automatically published to Collaboration Hub. You can start approval workflows as well as edit published diagrams. Approval workflows are managed and executed in Workflow Accelerator. If you are interested in further functionalities of Workflow Accelerator, you can get more information here: https://www.signavio.com/products/workflow-accelerator/.

Note: To use approval workflows in the On Premise Edition, the Workflow Accelerator application will have to be installed alongside Process Manager on your server.

Invitations to comment/edit The second section of the menu lets you invite modelers to edit. You can also use it to invite Collaboration Hub users and external stakeholders to comment on diagrams.

Invite to comment You can invite anyone to comment on a diagram—all you need is their email address. They will receive an email with a link that leads directly to the corresponding diagram in the commenting view. Unregistered users can view and comment only on the specific diagrams they were invited to.
The menu item **Manage feedback invitations** lets you revoke any invitations to comment on a diagram.
Invite modeler to edit  You can invite modelers registered in your workspace to edit a diagram. As all modelers are able to edit all diagrams in the Shared documents folder by default, this function serves as notification to let fellow modelers know a diagram needs their attention. You can clarify the reason why you are pointing a modeler towards a certain diagram by editing the text of the email in the invitation dialog. The link you send leads directly to the diagram, open and ready to be edited in Signavio Process Manager.  

![Invite modelers to edit dialog](image)

The option to Invite to fill out QuickModel follows the same basic concept, only instead of the Editor, the link leads to the diagram in the QuickModel (page 305) application.

Collaboration Hub  In this menu section, you can view diagrams in Collaboration Hub, publish and unpublish diagrams, and invite users to open diagrams in Collaboration Hub.

Preview in Collaboration Hub  Collaboration Hub offers a structured and detailed overview on diagrams. Before publication, you can check how a Collaboration Hub user would see the diagram. This option can also be useful for modelers who need to to become familiar with complex diagrams before editing them. Also, Collaboration Hub provides a full screen view (page 412) for diagrams.

Publish to Collaboration Hub  You can select one or several diagrams or folders and publish (page 119) them in Collaboration Hub. The corresponding diagrams will be visible for Collaboration Hub users and modelers in the folder tree of Collaboration Hub on the left. They will not be accessible for colleagues who have been invited to comment on a specific diagram by email but do not possess a browser certificate or a Signavio account.
Unpublish from Collaboration Hub  You can use this option to remove a diagram from Collaboration Hub's folder tree for certificate based users. However, modelers that are logged in at Signavio will still be able to see it when they go to Collaboration Hub. Also, this option has no influence on feedback invitations. If you would like to revoke those as well, please click on the menu item Manage feedback Invitations and remove the corresponding e-mail addresses from the list.

Invite to Collaboration Hub  If you click this option, you can send an invitation to Collaboration Hub to any e-mail address. If this option is available in your version of Signavio, you can send a browser certificate with the email. After the certificate has been installed in the corresponding browser, the invitee will have access to the Signavio Collaboration Hub and all published diagrams in your workspace.
Embed diagram  With the dialog that opens, you can *embed the corresponding diagram into external systems* (page 53) like webpages or wikis in several ways, from simple HTML to Microsoft SharePoint.

### 3.1.3 Personal profile settings

You can use personal profile settings to customize Signavio Process Manager according to your needs. Profile settings are centrally managed in the *My profile* dialog, which can be accessed via *Setup - My profile*. 

In the ‘My profile’ dialog you can customize your user profile

**Hint:** If you have registered multiple workspaces with the same email address, the settings for password, language and user name will apply globally for all these workspaces. The settings or information about licenses, groups, tips, and subscriptions apply to the current workspace.

**Global settings**

Global settings apply to all the workspaces you are registered with.

In the My profile dialog, you can add or edit the following information:
### Local settings and information

Local settings and information apply only to the workspace you are currently working in.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edition</td>
<td>This entry tells you what Signavio licenses you are registered for. If you need additional licenses, please contact your administrator.</td>
</tr>
<tr>
<td>Groups</td>
<td>The user groups you are a member of are listed here. Administrators can add and delete users to user groups as explained at Managing user groups (page 459).</td>
</tr>
<tr>
<td>Display today's top tip automatically</td>
<td>Activate the checkbox if you would like to see a new tip every day after login.</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>All your subscriptions are listed here. You can delete those that are no longer needed by clicking Remove. By default, new users are automatically subscribed to weekly email updates about changes to the 'Shared documents' folder.</td>
</tr>
</tbody>
</table>

### 3.1.4 Search functions

Signavio Process Manager has many functionalities to help you manage large processes repositories. The search function is a useful tool to quickly find diagrams. In addition to the full text search, the advanced search option offers you a method to search more purposefully by adding specific search criteria. You can save your search as a smart folder for easy reference in the future.

#### Full text search

The full-text search enables you to not only search for diagram titles or attributes of diagrams and elements but also for any term within an element label. Additionally, comments, revision information and even the content of uploaded files are included in the search results. By using the Wildcard option...
(*) instead of terms, you can search for any character sequence. Search for a **linked Dictionary entry** by entering the complete Dictionary entry name in the search mask.

To execute a search, type the search term into the search mask and hit **Enter**.

For example, searching for *order* will return all diagrams having *order* in its title as well as all diagrams containing a label that contains *order*.

![Image of search results](image)

**Note:** To quickly find what you're looking for, enter specific keywords and not whole sentences into the search function. If you are searching for multiple words that should be an exact match, put the term in quotes (for example: "enterprise resource planning system").

It is also possible to use the following operands:
### Search operands

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wildcard (</strong>)**</td>
<td>The search will include all terms containing all included wildcard-separated character sequences. <strong>Sample:</strong> A search with the term ‘regis*’ will list words like “registration” and “registering”. A search with the term ‘lab*’ will consider the term in both British English (“labour”) and American English (“labor”).</td>
<td></td>
</tr>
<tr>
<td><strong>AND</strong></td>
<td>The search will only consider diagrams containing all terms that you connect with the <strong>AND</strong> command. <strong>Sample:</strong> A search with the term ‘Registration AND SaaS’ will list diagrams containing the terms “Registration” and “SaaS”, but no diagrams including only one of these terms.</td>
<td></td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td>The search will consider all diagrams containing one of the terms that you connect with the <strong>OR</strong> command. <strong>Sample:</strong> A search with the term “SaaS OR Software-as-a-Service” will consider diagrams containing one of the terms “SaaS” and “Software-as-a-Service”, as well as diagrams containing both of these terms.</td>
<td></td>
</tr>
</tbody>
</table>
| **NOT** | The search will **not** consider diagrams containing the term you put after the **NOT** command. **Sample:** A search with the term “Registration NOT SaaS” will consider all diagrams that contain the term registration, and don't contain the term “SaaS”.

| **Phrases** | Terms in quotation marks “” The search with a term in quotation marks will only consider the exact term. **Sample:** A search with the term “user manual” will consider only diagrams containing the exact phrase “user manual”, but not diagrams containing the words “user” and “manual” in a different order. |

**Hint:** It is possible to combine the advanced search commands in one query.

### Advanced Search

The advanced search allows you to pinpoint your search query to include specific attributes in addition to search terms.

In the Explorer, these **attributes** are:

- single-line text
- multi-line text
- date
- drop-down box
- number
- boolean
- dictionary-URL
- diagram-URL
- document-URL

**Hint:** The advanced search in the Explorer considers attributes on diagram and element level.

To execute an advanced search, proceed as follows:

1. Click the **Advanced Search** icon next to the search box.
2. From the drop-down list, select the attribute you want to use. Select All if you're not interested in a specific attribute.

3. Type in the search term and click Search. The search results are displayed.

4. If necessary, you can add additional search criteria, which will allow you to filter the search results by diagram properties and values. The following filter criteria can be used:
   - Element name
   - Last modified
   - Last author
   - Revision comment
   - Publishing date
   - Publishing state
   - Commenting state
   - Signavio ID
   - Type (diagram, file, folder, or comment)
5. Click **Add & Search** to start the filter the search result.

![Add & Search](image)

**Smart Folder**

**Smart Folder** is a function which allows you to save your advanced searches. Use it and repeat frequently used searches with one click.

To save the search query as a **smart folder**, proceed as follows:

1. Execute an advanced search as described above. The **Create smart folder** dialog opens.

![Advanced Search](image)

3. Label the smart folder (you can also add a description, but this is optional).

![Create Smart Folder](image)

4. Finally, confirm the action by clicking **Save**. Now, you can access the smart folder through the **Smart Folders** directory in the navigation panel of the Signavio Explorer.
**Important:** The content of a smart folder changes dynamically according to the content of your workspace. In our example, the smart folder will show one diagram less after the term “order” has been deleted from all “Description” attributes of a diagram.

**Deleting a smart folder**  Deleting a smart folder works the same way as deleting a normal folder.

**Search results**

**Grouped in categories** Search results are sorted into groups according to where in the process they were found. There are three categories:

- found in diagram
- found in diagram elements
- found in comments.

For a better overview, you can collapse categories using the **minus**-icon under the category name:
The search results are displayed in different categories
If there are many results, they may be listed on more than one page. Navigate through the pages using the arrow shaped buttons at the top of the page:

Sometimes it is useful to use the list view instead of the icon view. In the list view, the results will not be sorted into groups. But you will have more information about location, description, revision version, date of last change, last author and file type of each diagram listed.

Switching to the list view

Showing a diagram at its location To go to the folder in which a search result item is located, select the item and click Go to parent:
Returning to the default Explorer view

To leave the search and return to the default Explorer view, select any of the folders in the folder tree on the left.

3.1.5 Working with folders and diagrams

Folders allow you to organize and structure your workspace, even if you have a large number of diagrams.

Diagrams placed in Shared documents can be viewed and edited by all users of a workspace. Workspace administrators can enable the My documents folder which is private. Other users can’t view or edit them. In the The ‘Shared documents’ and ‘My documents’ folders (page 43) section, you can learn more about how to work with these folders.

Notes on working with multiple users and workspaces can be found in the Managing users and access rights (page 455) section.

The folder structure

The main workspace folder is Shared documents The My documents folder can additionally be enabled by a workspace admin.

Within these folders, you can create subfolders (page 43) to organize your diagrams.
Select a folder in the folder structure to see its content

Clicking the arrow next to the folder/s name or on folder/s name itself will collapse or extend the folder. This way, you can quickly switch between folders and still keep track, even if you have an extensive folder structure.

Expand or collapse a folder by clicking the arrow in front of its name

If the name of a folder is cut off due to the width of the folder column, the full name will appear when hovering over it with your mouse. You can also extend the folder column by dragging its border line to the right:

Extend the folder structure column
The ‘Shared documents’ and ‘My documents’ folders

Note: With the 12.8.0 release workspace administrators can choose to disable the My documents folder for every user in the workspace. This prevents documents from being inaccessible. It also fosters collaboration by restricting drafts to Shared documents. For new tenants the folder My documents is disabled by default but can be enabled by an administrator under Setup > Edit general configuration.

Each registered user has a main folder: Shared documents. Additionally, administrators can enable the folder My documents.

You can move diagrams from one folder to another using the move functionality (page 44).

My documents  Workspace administrators can enable the My documents folder for all users under Setup > Edit general configuration. Diagrams in this folder and its subfolders are private. Other users can’t view or edit them.

Shared documents  This folder contains diagrams you can work on alone and together with other modelers.

There are two ways to collaborate with colleagues: joint modeling within your workspace, and inviting colleagues to comment on diagrams.

• Only colleagues who are registered in your workspace are able to actually edit diagrams. Find out more about defining access rights to diagrams and the Dictionary at Managing access rights (page 462).

• Each person invited to comment on a diagram is able to do so - also those who have no Process Manager account. In the Inviting process stakeholders to comment on a diagram (page 108) chapter, you will learn how to invite process stakeholders to comment on a diagram.

Creating a new folder

To create a new folder, proceed as follows:

1. If you want to create a subfolder, first navigate to the folder in which you want to locate the new folder.

2. In the menu bar, click New > Folder. A dialog pops up, in which you can enter the folder name.
3. Specify the folder name and then click **OK**. The new folder is now visible in the folder structure.

**Renaming a folder or diagram**

1. Open the directory containing the folder or diagram you want to rename and select it. The name and the description are displayed in the lower panel of the Explorer.
2. In the menu bar, click **Edit > Change name/description**. The corresponding dialog box opens.
3. You can now edit the name and description.
4. Optionally, enter a new description.
5. To save your settings, click **Change name/description**.

**Moving folders and diagrams**

1. Select the folder or diagram you want to move to a different location.
2. In the menu bar, click **Edit > Move**. The corresponding dialog box opens.
3. Now select the new folder.
4. Click **Move** to complete the moving operation. The view of the folder will then be updated.
5. Finally, click **Move**. The folder or diagram is moved to the selected location.

**Copying diagrams**

**Hint:** You can only copy diagrams and groups of diagrams, not entire folders.

1. Select the diagram you want to copy. To copy several diagrams at once, hold the **Ctrl** key while selecting them. Or, draw a selection frame around the diagrams.
2. In the menu bar, click **Edit** and then **Copy**. The **Copy** dialog opens.
3. Select which folder you'd like to place the copy in.
4. Optionally, you can select one of the following options by activating the corresponding checkbox:
   • **Copy linked models, too** Please note that BPMN call activities are not copied.
   • **Copy all revisions of the diagram**

   **Note:** For system performance reasons, only one option can be selected.

5. Click **Copy**. The copied file is then located in the selected target folder.

**Removing folders or diagrams**

1. Select the folder or diagram to be removed in the main area of the Explorer. To select multiple folders, keep **Ctrl** pressed while selecting, or draw a selection frame around them.
2. In the menu bar, click **Edit > Delete**. A confirmation dialog appears.
3. Click **Yes** to delete the selected object.

   **Hint:** The selected objects are moved only in the recycle bin, from which you can restore objects if necessary. Objects will be permanently deleted after you empty the recycle bin.

4. To delete objects permanently, select the **Trash** folder in the folder navigation. All objects in the recycle bin are displayed.
5. Select the objects you want to delete permanently.
6. In the menu bar, click **Remove**. A confirmation dialog appears.
7. Confirm by clicking Yes. The selected items are permanently deleted.

**Restoring diagrams and folders**

Diagrams and folders that have been deleted are moved to Trash folder. If you do not explicitly remove them from there, they can be restored.

To restore a diagram or folder from the Trash folder, proceed as follows:

1. Go to the Trash folder. It can be found in the folder tree on the left.
2. Select the files you want to restore.
3. Click Restore in the menu bar.

**3.1.6 Viewing diagram details**

The notification and activity feed allows you to view and manage version history, and to edit notification settings for diagrams and folders. If you have selected one or more diagrams or folders, the feed is displayed as a lower bar in the Explorer. When you select a diagram file, the diagram, along with the date and author of the most recent changes, is displayed:
The notification and activity panel provides diagram details

Notification settings

As soon as changes to a diagram or folder are made, notifications are sent at configurable intervals as emails. In the notification and activity feed, you can configure the notification settings of the selected diagrams or folder.

The following options are available:

- daily
- weekly
- monthly
- cancel subscription

Options for the notification settings

Preview and version history

The activity feed allows you to get a preview of the selected diagram and to view and manage the version history. You can find detailed information about this feature in the chapter *The notification and activity feed* (page 127).

3.1.7 Comparison view

With the diagram and revision comparison tool, you can track changes in diagram revisions. While the activity feed in the Explorer gives you all the comments made on revisions of diagrams, the comparison view displays two diagram revisions next to each other with all the changes marked according to their nature: alterations, deletions and additions. Here, you can compare any two revisions of a diagram to another. This can be helpful when you are working collaboratively with your colleagues (page 105) and need to approve or implement the changes someone else has made to a process.
In addition, you can compare two different diagrams with each other. This is useful when you are checking your workspace for duplicates after you imported multiple diagrams (page 574), for example.

The diagram and revision comparison tool

Opening the diagram comparison tool

There are three ways to open the comparison tool:

• Via the menu bar

In the Explorer, select a diagram. (If you want to compare two different diagrams, select both of them.) Then click **Edit** and then **Compare revisions/diagrams** in the top dropdown menu.

Opening the comparison tool in the Explorer

• Via the activity feed

It is also possible to use the Explorer’s activity feed to open the comparison tool. Select a diagram revision in the feed and then click **Open to Compare**.
Opening the comparator via the activity feed

• Via the Editor

You can switch directly from the Editor to the comparison tool by selecting **Diagram comparison** in the dropdown menu on the top right. Make sure that the latest version of the diagram is saved before switching tools. To get back to the Editor, you will have to open the diagram in the Explorer again.

Switch between the different tools

Display options

By using the zoom slider in the top left-hand corner you can change the diagram size. This is helpful for when you have a very large diagram that you want to view at a glance.

The zoom slider in the comparison tool

In addition, you can move diagram snippets by holding down the left mouse button and dragging the map in the desired direction.

By default, navigating through the diagrams is synchronized in both windows - if you zoom into one diagram, the other diagram will zoom in, too. You can deactivate this feature by unchecking **Synchronized scrolling**.
Deselection of 'Synchronized scrolling'

Selecting a revision

The comparison view shows the revision history of each diagram. To switch to a different revision, proceed as follows:

1. Select the desired revision number from the dropdown menu on the top left.

2. Alternatively, you can click **Choose revisions/diagrams** to select a different diagram for comparison. The corresponding dialog box opens. Now all diagrams of the workspace with all their revisions are displayed.

3. Now you can choose between all diagrams and their revisions.

4. Click **Compare**.
Diagram information displayed in the comparison tool

The diagram comparison shows structural and logic differences between diagrams or diagram revisions. Some of these differences can be easily seen when changing the sequence flow of a diagram. Other changes, like altering an attribute or adding a dictionary entry to an element, would not be visible when simply comparing two diagrams. Thus, all changes in the diagrams or diagram revisions are marked as follows. Hover the mouse on the icon in the right upper corner of an element to get more detailed information:

The following table lists all possible changes.

<table>
<thead>
<tr>
<th>Change (image)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="New element" /></td>
<td><strong>New elements</strong>: An element has been added to the diagram.</td>
</tr>
<tr>
<td><img src="image" alt="Changed attribute" /></td>
<td><strong>Changed attribute</strong>: The element’s attribute(s) has/have been changed.</td>
</tr>
<tr>
<td><img src="image" alt="Changes in the dictionary" /></td>
<td><strong>Changes in the dictionary</strong>: A dictionary entry has been added, removed or changed on this element.</td>
</tr>
<tr>
<td><img src="image" alt="Changes in roles" /></td>
<td><strong>Changes in roles</strong>: The role the element was assigned to has changed.</td>
</tr>
<tr>
<td><img src="image" alt="Deletions" /></td>
<td><strong>Deletions</strong>: An element has been removed from the diagram.</td>
</tr>
</tbody>
</table>

At the bottom of the window, you can view information about how many changes of the same kind have occurred.

If there are many changes, you may want to turn off some change notes. For example, when a lane is deleted, the role mapping changes all of the elements, which can lead to very long change notes. In this case, you can turn off all references to changed roles. To do so, use the selection at the bottom of the view.
By disabling the checkbox ‘Changed role’ you can turn off all references to changed roles

3.2 Embedding diagrams in external systems

With Process Manager, you can publish single diagrams to any intranet or Internet website using the embedding feature. This chapter describes how to embed a diagram into a blog post or web page.

If you want to embed diagrams in your Microsoft SharePoint system, you can simply integrate the whole Collaboration Hub into Microsoft SharePoint using a web part (see Microsoft SharePoint Integration (page 602)).

Of course, you can embed diagrams in other systems that Process Manager supports.

Read more about:

- Enabling diagram embedding (page 53)
- Embedding diagrams as a picture (page 55)
- Embedding diagrams with HTML code (page 56)
- Embedding diagrams in MediaWiki (page 59)
- Embedding diagrams in Microsoft SharePoint wiki pages (page 61)
- Embedding diagrams as a Google gadget (page 61)
- Supported blog and content management systems (page 62)

3.2.1 Enabling diagram embedding

If you want to share diagrams publicly, enable diagram embedding.

To enable diagram embedding, proceed as follows:

1. First, select the diagram you want to embed in the Explorer.
2. Then select in the menu Share the Embed diagram entry. The Embed diagram dialog opens.
3. If you have not already done, enable embedding by clicking **Share diagram for read-only access**. The read-access for this diagram is now activated.

You have now several options to embed the diagram:

- as an interactive element (embedding)
- as a simple image
- as a Google gadget
- in MediaWiki.
To embed diagrams in your Microsoft SharePoint system, you can simply integrate the whole Collaboration Hub into Microsoft SharePoint using a so-called webpart (page 602).

To embed a diagram in an external system, you have to explicitly allow the embedding. This can be reverted later on - in this case, all existing integrations of Signavio diagrams will be deactivated.

Diagrams can be published on web pages by embedding them with HTML.

Several use cases for embedding are listed and explained in the following chapters.

Disabling diagram embedding

Embeddings of diagrams can be disabled at any time by withdrawing read access for these diagrams. This can also be set in the Embed diagram dialog. Click the link Stop sharing the diagram for read-only access:

![Embed dialog](image)

Revoking read access disables all embeddings.

Via this link all embeddings (simple image, HTML, Google gadgets, and MediaWiki) become inactive, so that your diagram are no longer viewed on pages which previously have linked such a link.

### 3.2.2 Embedding diagrams as a picture

The following paragraph explains how to embed diagrams as a picture (.png). Embedded diagrams will automatically show the latest version, so there is no need to embed it again each time the diagram is updated.

To embed a diagram as a picture, proceed as follows:

1. First, select the diagram you want to embed in the Explorer.
2. Then select in the menu Share the Embed diagram entry. The Embed diagram dialog opens.
3. In the tab Simple image a link to the picture representation is provided. Everyone who has access to this link can view the diagram, but not edit or comment.
4. Copy the link for embedding a diagram as simple picture.

The link contains a picture (.png) of the diagram.

### 3.2.3 Embedding diagrams as HTML code

You can embed a diagram using a HTML code snippet in a website or blog as an interactive element. The advantage of this method over a picture export is that the most current version of the diagram is always available on your page.

The following paragraph explains how to embed diagrams as an HTML code snippet into a blog or a web page like Blogger, TypePad, or WordPress.

To embed a diagram in your website or blog, proceed as follows:

1. First, select the diagram you want to embed in the Explorer.
2. Then select in the menu Share the **Embed diagram** entry. The **Embed diagram** dialog opens.
3. Open the **Embedding** tab and then copy the HTML code snippet.
4. Paste the copied snippet in the desired location of the HTML code of your page or blog posts.

5. If the diagram is not shared for read access yet, click **Share document for read-only access**.
   
   If you click **Stop sharing the diagram for read-only access** in the embedding menu, the diagram will not be available on the web page and on any other pages it was embedded in.

6. Click **list of supported blog and wiki systems** (page 62) to get an overview of supported systems.

**Note:** The embedded diagram does not allow navigation to linked diagrams or linked documents. If you need the viewers to be able to navigate to linked diagrams and documents, please use Collaboration Hub.

**Chapter 3. The Explorer**

**The diagram preview**

To embed your diagram optimally in your website, you have to option to alter the diagram's size and then to check size and aspect ration in a preview.

1. Specify the desired **Width** and **Height**. By default, it is set to **auto**, so the size of the interactive element adapts to the system it is embedded in.

2. Click **Preview** to check the changes.
In the preview of the generated HTML code is displayed in addition to the interactive element. A zoom slider and scrollbars are added automatically.
3.2.4 Embedding diagrams in MediaWiki

The Signavio Embed Extension for MediaWiki was developed independently from Signavio by Hauke Priibnow. It provides the possibility to embed diagrams in MediaWiki easily. The corresponding

Use the generated HTML code to embed the diagram in your wiki or blog:

```html
<script type="text/javascript" src="https://editor.signavio.com/mashup/signavio.js"></script>
<script type="text/plain">
{
  url: "https://editor.signavio.com/p/model/3454458536864566e5d0c9be5988f3928fc36",
  authHeader: "6e6ebc071d9e8eb7f0ee42343ed5b116b18b58158d0a62ed7b37c7ff84a931_650ef1c398e4991",
  overflowX: "fit",
  overflowY: "fit",
  width: 640,
  zoomSlider: true,
  linkSubProcesses: false
}
</script>
```
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developers page can be found at http://www.mediawiki.org/wiki/Extension:SignavioEmbed.
Note: Signavio Embed was developed for MediaWiki 1.15.

Installing the Signavio Embed Extension
Please follow these steps:
1. Create the following ﬁle and folder:

[installdir]/extensions/SignavioEmbed/SignavioEmbed.php
where

installdir stands for the directory MediaWiki is installed in and which contains the ﬁle
LocalSettings.php.
2. Copy the code from http://www.mediawiki.org/wiki/Extension:SignavioEmbed/code into the ﬁle
and save the changes.
3. Add following lines to the ﬁle LocalSettings.php that is contained in the installation directory of
MediaWiki:
require_once("$IP/extensions/SignavioEmbed/SignavioEmbed.php");
// set this to true if you want to enable the function to link sub diagrams:
$sigemLinkSubDiagrams = false;

Embedding a diagram
Follow these steps:
1. Activate embedding on the site the diagram is to be embedded in.
2. Add an empty Signavio tag to your wiki page:
<signavio></signavio>

3. Open the Explorer, select Share - Embed diagram and click the link that locks the pop-up settings
to conﬁrm sharing. Go to the tab MediaWiki and copy the code that is shown:

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Copy the code for embedding a diagram in MediaWiki.

4. Add the code into the Signavio tag.
5. Save the wiki page. The diagram will be embedded as an interactive element.

### 3.2.5 Embedding diagrams in Microsoft SharePoint wiki pages

The following paragraph explains how to embed single diagrams in Microsoft SharePoint wiki pages. Microsoft SharePoint wiki ignores JavaScript parts in HTML code like many wikis/content management systems. So if you insert the code and save, JavaScript parts will be automatically removed. The insertion of the HTML code directly into the wiki is not possible. You can however add a webpart to the wiki page that contains the HTML/JavaScript code.

Proceed as follows:

1. Go to the wiki page and click **Edit page** on the upper right side under **Website actions**.
2. Click **Add Webpart** and add a **Content Editor Webpart**.
3. Edit this Webpart and insert the HTML / JavaScript code as **Source code**.

**Hint:** The exact procedure can differ depending on the Microsoft SharePoint version you use.

### 3.2.6 Embedding diagrams as a Google gadget

Google gadgets can be embedded as interactive elements in various applications. Process Manager can create URLs for diagrams that can be embedded into Google gadgets.

To embed a diagram, proceed as follows:

1. First, select the diagram you want to embed in the Explorer.
2. Then select in the menu **Share the Embed diagram** entry. The **Embed diagram** dialog opens.
3. Open the tab **Google**.

*Copy the code from the 'Google'-tab.*

5. If read access has not been activated yet, click **Share diagram for read-only access**.

   If you click **Stop sharing the diagram for read-only access** the diagram will not be available on the web page and on any other pages it was embedded in. To read more about how to create a and manage Google gadgets on a web page, please go to the Google gadget support website at https://support.google.com/sites/answer/153306?hl=en.

### 3.2.7 Supported blog and content management systems

You can embed Signavio diagrams in all blog and content management systems that allow the embedding of HTML snippets.

For example:

- SharePoint Wiki
- Google Gadget
- Jira\(^4\)
- Confluence\(^5\)
- MediaWiki

You can also embed a diagram view of the Collaboration Hub in 3rd-party applications. These applications include:

- Microsoft SharePoint
- Confluence

and any system that allows embedding of **HTML iframes**\(^6\).

---


3.3 Reporting

Process Manager allows you to create various customizable reports in the form of spreadsheets or as PDF files. This enables business users to analyze your process hierarchy offline, and in formats decision makers and analysts are already familiar with. The standard reports that are accessible via the Explorer’s Reporting dropdown menu cover most business use cases. If you require a special kind of report that is not provided by the tool, you can ask one of your workspace administrators to create a custom template.

<table>
<thead>
<tr>
<th>Reporting Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process documentation (PDF)</td>
</tr>
<tr>
<td>Process documentation (Word)</td>
</tr>
<tr>
<td>Governance report</td>
</tr>
<tr>
<td>Process cost analysis (XLS)</td>
</tr>
<tr>
<td>Resource consumption analysis (XLS)</td>
</tr>
<tr>
<td>Modeling conventions (XLS)</td>
</tr>
<tr>
<td>Responsibility assignment matrix / RACI (XLS)</td>
</tr>
<tr>
<td>Responsibility handovers matrix (XLS)</td>
</tr>
<tr>
<td>Documents usage matrix (XLS)</td>
</tr>
<tr>
<td>IT system usage matrix (by diagrams) (XLS)</td>
</tr>
<tr>
<td>IT system usage matrix (by roles) (XLS)</td>
</tr>
<tr>
<td>Process characteristics with element details (XLS)</td>
</tr>
<tr>
<td>Process model metrics (XLS)</td>
</tr>
<tr>
<td>Risks &amp; controls report (XLS)</td>
</tr>
<tr>
<td>User/Group assignment</td>
</tr>
</tbody>
</table>

*The reporting menu*

**Important:** Many of the reports access default dictionary categories during the generation process. In case you suspect that your dictionary configuration causes problems during the generation of a report, take a look at the chapter *Defining custom categories for dictionary entries* (page 545).

**Process documentation and templates**

It is possible to export process documentation documents as PDF and Microsoft Word files. Process documentation documents are comprehensive documents that contain both diagram graphics as well as relevant diagram attributes, such as description and responsibilities.

As a workspace administrator, you can create individual templates for process documentation reports. A guide on how to create new templates can be found in the corresponding chapter of this manual. Once created, a custom template can then be selected during the creation of a process documentation report.

**Read more about:**
- *Process documentation reports* (page 64)
- *Creating and managing process documentation templates* (page 559)

**Analysis**

Signavio Process Manager provides a possibility to set key performance indicators (KPI) in event-driven process chains (EPC) and BPMN 2.0 process diagrams, which allows detailed process analyses.

**Read more about:**
- *Quantitative process analysis* (page 86)
• Creating process cost analysis reports (page 87)
• Creating resource consumption analysis reports (page 91)

Furthermore, qualitative reports can be created for BPMN 2.0 diagrams and EPC:

• Responsibility handovers matrices (page 69)
• IT-system usage matrices (page 71)
• Job profile reports (page 75)
• Risks and controls report (page 76)
• Modeling conventions reports (page 78)
• Document usage matrices (page 79)

Process model metric and process characteristics

A process model metric contains information about the usage of diagram element types and can be created for any diagram type:

• Process model metrics (page 84)

To create a summary of element details that are used in your BPMN 2.0 or EPC diagrams, read the following chapter:

• Process characteristics report (page 82)

User and group assignment

Workspace administrators can create reports that list for each user the groups the user is a member of:

• Generating user group reports (page 95)

Governance report

Workspace administrators can access usage data of your workspace with the governance report. For example, you can see at a glance how many process models have been created.

• Viewing governance reports (page 96)

3.3.1 Generating process documentation reports

Process Manager allows you to generate process documentation reports. These reports are comprehensive documents that contain all your diagrams, including all element descriptions and dictionary entries.

You can generate these reports as either PDFs or Microsoft Word documents.

To generate a process report, follow these steps:

• Click Process Documentation (PDF) or Process Documentation (Word) in the Reporting menu of the Explorer’s top drop-down menu.

• A configuration wizard appears, where you can select the diagrams that are to be included in the process documentation:

  Change the diagram selection

  – Select the diagrams that should be included in the process documentation:
Select the diagrams you want to include in the process documentation

- It is also possible to use a filtering functionality to select diagrams. Click **Add filter** to open the corresponding dialog:

```
Add a filter to find diagrams faster
```

The example below creates a filter for Business Process Diagrams that are stored in the folder **Shared documents** and have the word “supply” in their title.

Choose the folder “Shared documents” from the upper drop down list. Tick **Diagram type** and select **Business Process Diagram (BPMN 2.0)** from the drop down list on the right (**Diagram type equals Business Process Diagram (BPMN 2.0)**). To filter for the word “supply” in the diagram title, tick **Name** and type in a search term, e.g. **supply** on the right:

```
Adjust the filter
```

- Click **OK**. Diagrams that are found in the filter will be selected for the process documentation report.

- Select whether diagrams that are linked in the chosen diagrams shall be included. By default, no additional diagrams will be included. If **Linked subprocesses of the first level** is chosen, only
those diagrams connected directly to those selected before will be included in the documentation, whereas **Linked subprocesses of all levels** includes all reachable diagrams.

In this case, every linked subprocess is supposed to be exported

- Click **Define Export options**.
- A second page appears where you can configure the documentation.
  - Choose a template. If you already created process documentation templates (page 559), those can be used when generating a process documentation. Otherwise, the **Signavio Template** is selected by default.

  ![Signavio Process Manager - User Guide, Release 13.0.0](image)

**Template**

- Select **Signavio**
- Predefined templates

  ![Signavio Process Manager - User Guide, Release 13.0.0](image)

**Configuration**

Selecting a template for the report

**Hint:** The template Signavio matches the default process documentation template that was included in newly created workspace until version 5.1 of Signavio Process Manager.

- Choose the template language (only if multiple languages are defined for your workspace)
  - The chosen language will be applied to the process documentation template as well as the diagrams that are included in the export.

  ![Signavio Process Manager - User Guide, Release 13.0.0](image)

**Language**

- **German**
  - Germany
- **English**
  - USA

Title:

Choose a template language

- Configure diagram information
You can now enter information about the diagram, e.g. the author or organization. In the Enterprise edition, it is also possible to remove the Signavio logos:

**Template**

Please select the template which should be used for the process documentation.

- Basic template

**Language**

- English

**Configuration**

- **Title**: Process documentation
- **Organization**: Signavio
- **Author**: Astrid Thomschke
- **Date**: 10.07.2012
- **Version**: 1.0.0
- **Split diagrams across pages**: Fit to one page

**Introduction:**

**Show Signavio logo**: ✔️

---

**Hint**: The option “Remove Signavio logos” is deactivated for customized templates. Instead, the headers of customized templates can be configured when *editing the template* (page 559).

- Click **Generate documentation** and the PDF or Word file will be generated. If you are exporting less than 20 diagrams, this should only take a few seconds. If you are exporting a larger group of diagrams, this might take more than a minute.

- (For Microsoft Word documents only) A dialog window indicating that the table of contents will not be up-to-date when opening the generated document appears. Click **OK** and follow the steps described below after the export finished.
Updating the Table of Contents in Microsoft Word

The table of contents (page 2) in the generated report needs to be updated manually.

<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BPMN 1.2 process (BPMN 1.2)</td>
</tr>
<tr>
<td>2. Value chain: Obtainment (Value Chain)</td>
</tr>
<tr>
<td>3. Create creditor (Business Process Diagram (BPMN 2.0))</td>
</tr>
<tr>
<td>4. Order-to-supply (Business Process Diagram (BPMN 2.0))</td>
</tr>
<tr>
<td>5. Purchase requisition-to-order (Business Process Diagram (BPMN 2.0))</td>
</tr>
<tr>
<td>6. Purchase requisition-to-order (EPK) (Event-driven process chain (EPC))</td>
</tr>
<tr>
<td>7. supply-to-payment (Business Process Diagram (BPMN 2.0))</td>
</tr>
</tbody>
</table>

Due to hidden action fields, the page numbers have to be updated by selecting the whole table of contents and pushing the F9 button.

Alternatively, the action fields can be updated one-by-one by right-clicking them and selecting Update Field.
Select ‘Update Field’ from the context menu

3.3.2 Generating responsibility handovers matrices

If there are different roles or organizations participating in one process, the process flow will be handed over from one participant to another at well-defined places. Those roles are represented as pools and lanes in BPMN 2.0 process diagrams. Event-driven process chains (EPC) use attached roles, positions and organizations.

Handover of responsibilities in a BPMN diagram

However, a responsibility handover can be either a sequence or an information flow.
The functionality described here creates an XLS file for each diagram that is included in the report. The responsibility handovers matrix calculation considers pools and lanes and, in case of EPC, attached roles, as well as links to organizational dictionary entries.

This chapter explains how to generate a responsibility handovers matrix for a BPMN 2.0 process diagram. However, the process is the same with EPC.

- (optional) Select a diagram
- Click **Reporting**, then **Responsibility handovers matrix (XLS)** in the top drop-down menu.

![Create a responsibility handovers matrix](image)

- The system opens the **Responsibility handovers matrix (XLS)** dialog.
- If a diagram was selected during step one, it will already be selected. You can also select additional diagrams to be included.
Click **Start analysis**.

Open the new document. An assignment matrix will be shown, displaying who hands over which responsibilities to whom.

![An example of a responsibility handovers matrix](image)

**Hint:** If custom attributes linking to organizational dictionary entries were defined, those will be included in the calculation as well.

### 3.3.3 Generating IT system usage matrices

BPMN 2.0 process diagrams and event-driven process chains provide the possibility to attach IT systems to a task. With BPMN, those IT systems can be tagged as an input or output.

The **IT system usage matrices** report creates an assignment matrix that shows which IT systems data is read from during an activity, and which IT system data is written to. You can choose whether the
assignments refer to roles or diagrams. The functionality also includes IT systems that were linked as dictionary entries from a custom defined attribute.

This article explains how to generate an IT system usage matrix for a BPMN 2.0 process diagram. However, those steps will work with EPC diagrams as well.

1. Select a diagram (optional).

2. Click **Reporting** and choose **IT system usage matrix (by diagrams) (XLS)** or **IT system usage matrix (by roles) (XLS)**.

3. The **IT system usage** dialog opens.

4. If a diagram was selected during step 1, it will be selected in this dialog, too. It is now possible to extend or change the selection.
5. Click **Start analysis**.

6. Open the created document e.g. with Microsoft Excel. The IT systems will be highlighted in red.
<table>
<thead>
<tr>
<th>Diagram</th>
<th>Activity</th>
<th>ERP system</th>
<th>SAP ERION</th>
<th>Workflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Purchase requisition-to-order</td>
<td>Specify and quantify need</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>10</td>
<td>Save purchase requisition</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Check purchase requisition</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Create Creditor</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Create order template from purchase requisition</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Release &amp; trigger order</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Take item from warehouse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>supply-to-payment</td>
<td>Check Invoice formally</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Write Invoice objectively right</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>18</td>
<td>Remove Invoice</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Trigger payment</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An example of an IT systems usage report
An example of an IT systems usage report (roles)

**Hint:** If custom attributes linking to organizational dictionary entries were defined, those will also be included in the calculation.

### 3.3.4 Generating job profile reports

Signavio Process Manager enables you to automatically create job profiles based on your documented process landscape. Job profile reports allow you to view all activities that an organizational role is involved in at one glance.

In contrast to the diagram-centered RACI report, the job profile report creates a role-specific matrix over all workspace diagrams with the click of a button. To create a job profile, select the corresponding role in the Signavio dictionary and click **Import/Export**, then **Export Job Profile Report** in the top drop-down menu of the dictionary.
A spreadsheet (.XLS) file can be downloaded. The file contains a responsibility assignment (RACI) matrix of the selected role over all processes in your workspace:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Report</td>
<td>Job Profile Report</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Date</td>
<td>21.08.2015</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Time</td>
<td>15:37:34</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>User</td>
<td>John Doe</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Workspace</td>
<td>Signavio</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Diagram</th>
<th>Activity</th>
<th>Head of Human Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Receipt of Application</td>
<td>Applicant verified</td>
<td>R</td>
</tr>
<tr>
<td>9</td>
<td>Receipt of Application</td>
<td>Invite to job interview</td>
<td>I</td>
</tr>
<tr>
<td>10</td>
<td>Receipt of Application</td>
<td>Prepare employment agreement</td>
<td>X</td>
</tr>
<tr>
<td>11</td>
<td>Receipt of Application</td>
<td>Carry out job interview</td>
<td>R, I</td>
</tr>
<tr>
<td>12</td>
<td>Receipt of Application</td>
<td>Send employment contract</td>
<td>X</td>
</tr>
<tr>
<td>13</td>
<td>Receipt of Application</td>
<td>Send rejection</td>
<td>I</td>
</tr>
<tr>
<td>14</td>
<td>Receipt of Application</td>
<td>Rejection sent</td>
<td>R</td>
</tr>
</tbody>
</table>

*A job profile report.*

### 3.3.5 Generating risks management reports

**Note:** This feature is available in the *Enterprise Edition.*

With Process Manager’s integrated risk management feature, process modelers now have the ability to define risks and controls directly at any step of a process within the process model. These risks and controls can be defined and then associated with the corresponding activities.

To obtain an overview of potential risks and related controls, an automatic report can be generated. This report summarizes all information about the risks and controls in the selected process models.

To generate the report, click **Reporting**, then **Risks & controls report** in the top drop-down menu in the Explorer.
Select the diagrams you want to include. Expand the selection menu **Show additional attributes in the report** to select additional attributes that the report should include along with the risk management attributes.

**Note:** It is not possible to include table attributes. You cannot select risk management attributes on diagram level as the report includes them by default.

Then, click **Start analysis:**

Configure the risk management report
An Excel sheet (.xls) will be generated:

A risks and controls report

### 3.3.6 Generating modeling convention reports

In addition to the checks in the Editor, a modeling convention Excel report—containing details of one or multiple processes—can be created in the Explorer.

To create an Excel report, click **Reporting** then **Modeling conventions (XLSX)** in the Explorer’s top drop-down menu:

Create a modeling conventions report.

Now select the diagram(s) and modeling convention you want to include:
Select the diagram(s) and the convention for the report

Click **Start analysis**. An Excel spreadsheet containing information about violations of modeling conventions will be generated:

An example of a modeling convention report.

### 3.3.7 Generating document usage matrices

Data objects can be attached to an activity in BPMN 2.0 and denoted as input or output. In EPCs, documents can be attached to functions. The **Document usage** report creates an XLS file for one or many diagrams describing the assignment of documents to tasks. Moreover, linked dictionary entries representing a document are included in the report.

**Hint:** If custom attributes that link to dictionary entries representing documents are defined, those will...
also be included in the calculation.

This chapter explains how to generate a document usage matrix for a BPMN 2.0 process diagram. The steps will work with EPC as well.

- (optional) Select a diagram
- Click Reporting and click Document usage matrix (XLS):

![Diagram of Reporting with Document usage matrix (XLS) highlighted]

Click 'Document usage matrix (XLS)'

- The Document usage dialog opens.
- If you selected a diagram during step 1, this is selected by default. If you want to include other diagrams into the report, it is possible to select them here.
Trigger the export of the report.

- Click **Start analysis**.
- Open the generated document (in this example, using Microsoft Excel). Documents will be highlighted with a red background.
### Generating process characteristics reports

**Note:** Process characteristics reports are available for the following diagram types:
- BPMN 2.0
- DMN 1.1
- ArchiMate
- EPC
- Value chain
- Organization chart

Process characteristics reports are spreadsheets (.XLS files) that contain an overview of elements and attribute values that are found in the selected diagram(s). Attributes without values are not listed in the
document usage matrix could look like.

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Activity</th>
<th>Invoice</th>
<th>Purchase requisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase requisition-to-order</td>
<td>Specify and quantify need</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Save purchase requisition</td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td></td>
<td>Check purchase requisition</td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td>Create Creditor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create order template from purchase requisition</td>
<td></td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td>Release &amp; trigger order</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take item from warehouse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply-to-payment</td>
<td>Check Invoice formally</td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td>Write Invoice objectively right</td>
<td></td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td>Remove Invoice</td>
<td></td>
<td>Input</td>
<td>Output</td>
</tr>
<tr>
<td>Trigger payment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Documents that were attached to an element as a BPMN attribute can be either 'Input' or 'Output' documents and will be marked accordingly. For EPC, an information flow can be directed using the **Information Flow** attribute.
To create process characteristics follow these steps:

1. Open the Explorer and click Reporting, then Process characteristics with element details (XLS):

   Opening the process characteristics export dialog

2. Now, you can redefine the diagram selection. Click Export options to configure which elements and attributes you want to include in the report:

   Configuring export options
3. Click **Start analysis** to generate and download the report.

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Element</th>
<th>Description</th>
<th>External Documents</th>
<th>Process Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order-to-Payment</td>
<td>check purchase invoice formally</td>
<td>Format check of the finance department. If there are problems with the integrity of the purchase invoice, a corrected invoice needs to be requested.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>check for actually correct purchase invoice</td>
<td>The invoice needs to be checked for factual correctness, e.g. correctly delivered goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>approve purchase invoice</td>
<td>The approval is done by the respective department head via the workflow system. An approval is only required if the threshold invoice value is exceeded.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>trigger payment</td>
<td>The payment to the supplier is triggered through the ERP system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*An example process characteristics report*

3.3.9 Generating process model metrics

With process model metrics it is possible to generate statistics for your diagrams. These statistics include:

- the diagram type
- the number of elements in the diagram
- the number of connectors in the diagram
- the number of gateways and their type in the diagram
- the number of subprocesses linked from and processed linking to the diagram
- the number of dictionary links (including links in custom attributes)
- the number of process elements that are not assigned to a person, role or organization
- the number of responsibility handovers
- the publishing state
- the date of the last editing
- the path to the diagram

This chapter explains how to generate a process model metric for a BPMN 2.0 process diagram. These steps will work with EPC as well.

- (optional) Select a diagram.
- Click **Reporting** and **Process model metrics (XLS)** in the top drop-down menu.
The menu entry for creating process model metrics

- The **Process model metrics** dialog opens up.
- If a diagram was selected during step 1, it will now be selected by default. It is possible to change or extend that selection here.

Start the analysis
• Click **Start analysis**.

• Open the generated document.

### 3.3.10 Creating quantitative process analysis reports

Process Manager enables you to run quantitative analyses of your processes. After setting KPI on diagram elements, process cost analyses and resource consumption analyses can be created for BPMN 2.0 process diagrams and event-driven process chains (EPC).

A **process cost analysis** assigns process costs to processes and tasks and lists them in cost centers. Based on the key process indicators set, the tool creates a table that shows costs for certain tasks and named cost centers.

The **resource consumption analysis** allows for the computing of time consumption per task or process.

Both analyses consider the execution probability and frequency before computing the actual resource consumption or costs.

To learn more about this procedure, see the chapters **Setting Key Performance Indicators (KPI)** (page 264), **Creating resource consumption analysis reports** (page 91) and **Creating process cost analysis reports** (page 87).

![Create a quantitative process analysis report](image-url)
3.3.11 Creating process cost analysis reports

Note: This feature is available in the Enterprise Edition.

Process cost analysis reports show the computing costs that arise in a process. They display the costs, tasks, and cost centers in a table.

To create a process cost analysis for one or multiple diagrams, follow these steps:

- Click Reporting in the upper drop-down menu.
- Click Process cost analysis (XLS).

![Menu entry for exporting a process cost analysis](image)

- The Quantitative analysis dialog opens. Here you can select a diagram for analysis:
Choosing diagrams for the report

- Click **Next**.
- Now you can set the analysis options:
Process cost analysis is already selected. To also include linked subprocesses into the calculation, tick Include subprocesses in calculation on the bottom of the dialog. If tasks have been embedded in lanes, the element Additional participant was used (BPMN) or an organization was attached to a function (EPC), the resource consumption can also be included into the cost analysis calculation. Enable it by ticking the box use resource consumption attributes for the calculation (if provided).

Include or exclude resource consumption information in the report

- If this possibility is enabled, the next dialog lets you determine the resources' costs:
• Click **Start Calculation**. If the diagram contains any structural or logical mistakes, the system will inform you about that.

• Click **Start Calculation**. If the diagram contains any structural or logical mistakes, the system will inform you about that. If errors occur, the program will ask you to go back to check the diagram in the Editor. Click **Open diagram** to do so and check the steps described at the beginning of this chapter:

If there are no errors, an XLS file will be generated. Click the link to open or save the file.

The file contains the analysis. The values are based on functions, so changing one value may change the values in other fields accordingly.
If multiple diagrams were included in the report, one new tab will be created for each diagram in the Microsoft Excel file. An additional tab will be created as a front page that shows the data for the processes.

### 3.3.12 Creating resource consumption analysis reports

**Note:** This feature is available in the **Enterprise Edition**.

A resource consumption analysis allows for the calculating of time consumed in a process or a task. It can help you find complex and time consuming tasks and plot out the resource consumption of process participants.

To create a resource consumption analysis for one or multiple diagrams, follow these steps:

- Select the diagram in the Explorer.
- Click **Reporting** in the upper drop-down menu.
- Click **Resource consumption analysis (XLS)**.

![The menu entry for exporting a Resource consumption analysis](image)

- The **Quantitative analysis** dialog opens. At first, you can adjust the diagram selection:
Select the diagrams to be included in the report

- Click **Next**.
- You can now choose the analysis options:
Resource consumption analysis is already selected. To also include linked subprocesses in the calculation, select **Include subprocesses in calculation**.

- You can now add more information about the processes:
**Personal allowance** describes the delay during the execution that happens for personal reasons (breaks etc.). **Technical allowance** describes delays that happen for technical reasons (e.g., starting software, etc.). Based on the attributes **Nominal value of work days / year** and **Nominal value of work hours / day**, the full-time units are calculated.

You can also configure if the allowances and nominal values are supposed to be kept for the next analysis.

- Click **Start Calculation**. If the diagram contains any structural or logical mistakes, the system will inform you about that. If errors occur, the program will ask you to go back to check the diagram in the Editor. Click **Open diagram** to do so and check the steps described at the beginning of this chapter:

An error message is displayed if there are syntax errors in the included diagrams.

If there are no errors, an XLS file will be generated. Open it with a program such as Microsoft Excel. Click the link to open or save the file.

This file contains the analysis. The values are based on functions, so changing one value may change the values in other fields accordingly.

If multiple diagrams were included in the report, one new tab will be created for each diagram in the Excel file. An additional tab will be created as a front page that shows the data for the processes.
3.3.13 Generating user group reports

**Note:** To generate a user group report, you need to have workspace administration privileges.

The user group report lists which group each user is included in.

To generate the report, open the Explorer and click **Reporting**, then **User group/assignment**:

![User Group Assignment](image)

Generates a user group report: scale: 60%

Now, your browser downloads the report as an .xls file.

For each user, the report annotates all user groups the user is a member of as a direct member. User groups that contain other user groups the user is a member of are annotated as indirect member:

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Report: User to User Group Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Date: 23.10.2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Time: 09:14:10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>User: John Smith</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Workspace: ACME Inc (John Smith)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>User</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>John Smith</td>
<td><a href="mailto:john.smith@acme.org">john.smith@acme.org</a></td>
<td>direct member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>John Doe</td>
<td><a href="mailto:john.doe@acme.org">john.doe@acme.org</a></td>
<td>direct member</td>
<td>indirect member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Anna Miller</td>
<td><a href="mailto:anna.miller@acme.org">anna.miller@acme.org</a></td>
<td>direct member</td>
<td>indirect member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Frank Kane</td>
<td><a href="mailto:frank.kane@acme.org">frank.kane@acme.org</a></td>
<td>direct member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Max Musker</td>
<td><a href="mailto:max.musker@acme.org">max.musker@acme.org</a></td>
<td>indirect member</td>
<td>indirect member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Erina Müller</td>
<td><a href="mailto:erina.mueller@acme.org">erina.mueller@acme.org</a></td>
<td>direct member</td>
<td>indirect member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*User group report*
3.3.14 Viewing governance reports

New in version 11.2.0.

The governance report provides an overview of the user activity in your workspace. Here, you can get aggregate metrics (for example, the number of unpublished diagrams) that you can use to draw conclusions regarding the success of your process modeling initiative.

**Note:** The feature “Governance report” is available only for users with the **Enterprise Edition**. To access the governance report, you also need administration rights for the workspace.

To view a governance report, proceed as follows:

1. Open the Explorer and click under **Reporting** the menu entry **Governance report**.

2. The **Governance report** dialog opens. Each tile in the dialog displays a different usage metric.
The ‘Governance report’ dialog

3. Click the tile with the desired value to access detailed information—for example, diagrams marked “Not published”.

4. In a new browser tab, the results list of an advanced search with the filter “publication state is not published” is displayed. All models with the corresponding publication status are listed here.

The governance report’s usage metrics

**Important**: Please note that the aggregates in the governance reports also consider diagrams you don’t have permission to access. In contrast, your current access rights are of course taken into account for the linked search.

---

**The Governance Report**

<table>
<thead>
<tr>
<th>Diagram Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPMN 1.2</td>
<td>18</td>
</tr>
<tr>
<td>Business Decision Diagram (BPMN 1.2)</td>
<td>150</td>
</tr>
<tr>
<td>BPMN 2.0</td>
<td>6</td>
</tr>
<tr>
<td>Conversation Diagram (BPMN 2.0)</td>
<td>1</td>
</tr>
<tr>
<td>Event-driven process chain (EPC)</td>
<td>1280</td>
</tr>
<tr>
<td>Organization Chart</td>
<td>41</td>
</tr>
<tr>
<td>System Architecture Diagram (SNM)</td>
<td>2</td>
</tr>
<tr>
<td>Value Chain</td>
<td>470</td>
</tr>
</tbody>
</table>

**Publishing state**

- Not published: 3,669
- Published in older revision: 32
- Published in head revision: 222

**Overall Impressions**

- Last year: 12,537
- Current year: 24,404
- Last month: 3,719
- Current month: 1,673

**Unique Users**

- Overall: 200

---

**Detailed information of a governance report**

[Image 1: Governance report dialog]

[Image 2: Governance report usage metrics]

Chapter 3. The Explorer
In the overview, the following usage metrics are available:

<table>
<thead>
<tr>
<th>Data</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagrams</td>
<td>The total number of diagrams in your workspace is shown in brackets. The number of diagrams grouped by <strong>publishing state</strong> and <strong>type</strong> (value chain, organization chart, etc.) is shown in the respective tile.</td>
</tr>
<tr>
<td>Comments</td>
<td>The total number of existing comments is shown in brackets. The number of comments grouped by <strong>commenting state</strong> is shown in the respective tile.</td>
</tr>
<tr>
<td>Dictionary items</td>
<td>The total number of existing dictionary items is shown in brackets. The number of dictionary items grouped by <strong>publishing state</strong> and <strong>dictionary category type</strong> (events, requirements, etc.) is shown in the respective tile.</td>
</tr>
<tr>
<td>Files</td>
<td>The total number of existing files is shown in brackets. The number of file grouped by <strong>publishing state</strong> and the <strong>type</strong> (.PDF, .JPG, etc.) is shown in the respective tile.</td>
</tr>
<tr>
<td>Collaboration Hub</td>
<td>The number of <strong>Page visits</strong> represent a single user opening any published object (diagram, file, or Dictionary item) in the Collaboration Hub. Every time someone opens one of these items in Collaboration Hub, it is counted as a view and will be shown in the report—it does not matter how it is accessed. Time ranges are based on calendar month and year, starting from the 1st day of the previous month at 00:00:00 and counting up until the last day of the current month at 23:59:59. Times are based on local server time. On the EU server, it is in CEST, on the US server it is in EST and on the Australian server it is in AEST. <strong>Unique users</strong> refers to the total amount of visitors to Collaboration Hub in the given time span. It will only be displayed once more than 10 users have accessed Collaboration Hub, due to data protection. If a single user visits Collaboration Hub several times in the given time span, only their first visit is reflected in the unique users count.</td>
</tr>
</tbody>
</table>

### 3.4 Approval workflows

Approval workflows enable you to control validation of diagrams before publishing. Approval workflows ensure that decision makers and/or BPM experts review and approve the quality and factual correctness of a diagram before it is published in the **Collaboration Hub** (page 396) or deployed to a workflow execution system, like **Workflow Accelerator**.

---

**Important:** Please note that the installation of Workflow Accelerator is mandatory in addition to Signavio Process Manager. The approval workflow functionality can only be activated if Workflow Accelerator was successfully installed. Please follow the instructions in the Workflow Accelerator administrators manual.

To define and run approval workflows, Signavio Process Manager is seamlessly integrated with Workflow Accelerator, a platform developed and provided by Signavio.

The following chapters provide information about:

- As a modeler, read more at *Working with approval workflows* (page 99).
- In case you want to learn about how to configure approval workflows, continue at *Managing approval workflows* (page 497).

### 3.4.1 Working with approval workflows

Approval workflows make sure that diagrams have been approved by a list of users before they are published in the Collaboration Hub (page 396).

Approval workflows can be configured to automatically publish an approved diagram to Collaboration Hub, or to send rejected diagrams back for editing. In the Explorer, a rejected diagram is marked with a red X, an approved diagram with a green check mark and a published diagram with a globe symbol.

This section explains how to start an approval workflow for a diagram, and also how you can accomplish approval tasks.

If you want to configure approval workflows, read more at *Managing approval workflows* (page 497) and contact your workspace administrator to receive the corresponding license.

**Hint:** Workflow Accelerator is much more than just a tool to execute diagram approvals. You can automate all kinds of other processes as well. If you are interested in a Workflow Accelerator subscription, contact sales@signavio.com.

### Start an approval workflow

In this section, you will learn how to start an approval workflow for diagrams.

**Note:** You can start approval workflows for diagrams of all types.

1. To start an approval workflow, select the diagram you want to have approved in the Explorer.
2. In the menu bar select *Share* and then *Start approval workflow*. The corresponding dialog box will open.
3. In case there is more than one approval workflow for your workspace, select the approval workflow you want to start from the dropdown menu and then click **Start**.

4. You receive a message that the approval workflow has been started successfully. This hint dialog also contains a link to the appropriate workflow instance.

5. Click the link to open the workflow instance in Workflow Accelerator.
Sample: Jane Doe needs to approve the diagram.

If the diagram is approved, you can see that the approval status of the diagram has been updated in the Explorer.

Processing an approval task

This section describes how you work as a recipient of an approval workflow task.

As soon as a modeler requests an approval from you, you will receive an email with a link to the case in Workflow Accelerator.

1. Click the link to open the approval task. The approval task opens in Workflow Accelerator.
2. Check whether the corresponding diagram fulfills your requirements.

3. Click the **Show comments** link to open the diagram in Signavio’s **commenting view** (page 114).

4. Click the **Compare revisions** link to get a better overview over recent changes via the **revision comparison** (page 48).

5. Open the Explorer to access further functions:

   - To open the diagram again, double-click it or select it and click **Show comments**, then **Compare revisions/diagrams**.
   - To check whether a diagram complies with **modeling conventions** (page 48), select it and click **Modeling conventions**.
   - The report is especially helpful when you conduct a formal approval with focus on BPMN quality.
   - To point a colleague to a diagram, select the diagram you want to share and click **Invite to Collaboration Hub** (page 126).
• **Start approval workflow** triggers a new approval workflow case for the selected diagram.

• **To get an overview of all pending approval workflows, you can either click Show started approval WFs.**
  
  **Show started approval WFs** provides a basic overview in the Signavio Explorer, whereas **Open approval task list** opens a more detailed, filterable view in Workflow Accelerator.

6. Once you have finished the review, go back to the approval case in Workflow Accelerator to approve or reject the change.

In the Explorer, a rejected diagram is marked with a red X, an approved diagram with a green check mark, and a published diagram with a globe symbol:

![Image showing rejected, approved, and published diagrams]

**Shared documents » Core Processes » Level 3 & 4: Procurement of Parts**

- **Determine discount**
- **Procure parts**
- **Receipt of Goods**

A rejected diagram is marked with a red X, an approved diagram with a green check mark and a published diagram with a globe symbol.

**Processing open approval tasks**

1. In the menu bar, select **Share** and then **Open approval task list**.

   You will be redirected to your Workflow Accelerator workspace. Here you can see your tasks:

   ![Image of task list]

2. Click a task to open it.

3. Click the corresponding buttons to complete the task.

---

In the menu bar, select \textit{Share}, then \textit{Show started approval WFs}. A dialog with an overview of running (and completed) approval workflows opens.

- If you have selected a diagram before opening the dialog, all approval workflows for this diagram will be displayed.
- If you have selected a folder, all approval workflows for diagrams in the selected folder will be displayed.
- If you haven't selected anything, all approval workflows of the folder that is open will be displayed.

5. Optionally, you can activate the check box \textit{Show completed approval workflows} to include completed workflows in the list.

The entries are sorted by creation date. Approval requests that are in progress are shown first, followed by completed approval requests.
3.5 Collaboration

Organizational process innovation is driven by many people: employees, customers, and suppliers. If you want to take advantage of your full innovation potential, you should include all these people in your process design. They do not need extensive training in modeling languages. The collaborative features of Signavio Process Manager will quickly enable them to contribute.

In Signavio Process Manager, there are several ways to enable collaborators to contribute to your business process and business decision landscape.

Fellow modelers in your workspace can by default edit and comment on all diagrams in the workspace’s **Shared documents** folder. You can also *invite modelers to edit* (page 106) to call attention to a diagram. They can also preview diagrams in the **Collaboration Hub** (page 396), which also provides a reader-friendly diagram presentation, with its full screen view (page 412) and detailed documentation.

Stakeholders who do not have access to your workspace can be invited to comment on diagrams. The modeler simply needs to *send an invitation* (page 108) from the Explorer’s **Share** menu to grant access. For external persons, the link acts as a key to Collaboration Hub where unregistered stakeholders can see and comment on diagrams. **Certificate-based** (page 419) Collaboration Hub users can additionally see all published diagrams of the corresponding workspace in the folder tree on the left. The stakeholders click a link they receive by email that allows them to see and comment on diagrams.

**Exporting diagrams** (page 574) and sharing, saving or printing them is another collaborative option for modelers. This way, diagrams can be transferred between Signavio workspaces (SGX) and Signavio and other modeling softwares (BPMN 2.0 conform XML), saved locally, and sent by email (PDF, SVG or PNG) or printed out.

**Embedding diagrams in websites or Microsoft SharePoint-based systems** (page 53) is another way of collaborating for more advanced users.

Find out more about:

* Inviting modelers to edit a diagram* (page 106)
• Inviting process stakeholders to comment on a diagram (page 108)
• Granting read-only access to diagrams (page 119)
• Organizing diagrams (page 127)
• The notification and activity feed (page 127)
• Inviting people to access a diagram in Collaboration Hub (page 126)
• Publishing diagrams in Collaboration Hub (page 119)
• Translating diagrams into other languages (page 132)
• Working with comments (page 114)
• Executing processes in Workflow Accelerator (page 138)

In the comments section, collaborators who are not deeply involved in the modeling process can leave comments to improve a diagram.

3.5.1 Inviting modelers to edit a diagram

After you created or updated a diagram you might want to notify your fellow modelers and invite them to further refine the diagram. Or if you noticed that a diagram has not been updated for a long time, you might want to invite your colleagues to check its actuality and have it updated if necessary.

Hint: To be able to edit a diagram directly in the Editor, users must be registered in your workspace. Persons who are not registered can use the commenting feature in Collaboration Hub (page 108) to contribute indirectly.

With the feature Invite modeler to edit you can send registered workspace users an invitation to edit diagrams. Unless configured otherwise, all modelers in your workspace can edit diagrams that are stored in the Shared documents folder. If you try to open a diagram while it is being edited by a colleague in the Editor, a warning will be displayed. You can still edit the diagram, but if you save, you will override the changes made by your colleague(s).
**Invite colleagues to edit a diagram.**

To send an invitation email, proceed as follows:

1. First select a diagram.
2. Click **Share**, then **Invite modeler to edit** in the menu bar. The dialog **Invite modeler to edit** opens.

3. Click the arrow to get to the next page.
4. All registered users with editing rights are displayed on the left. Select the people you want to invite.
5. Customize the invitation message (optional).
6. Click **Send** and an invitation email will be sent to all selected users.

**Hint:** You cannot grant additional access rights to people using this dialog. It only sends notifications. If you want to add more people to your workspace, please ask your system administrator. To discuss your diagram(s) with colleagues, you can also *invite them to comment* (page 108).

### 3.5.2 Inviting process stakeholders to comment on a diagram

One of the most powerful tools in collaborative process design is inviting process stakeholders to review and comment on diagrams. This functionality allows you to get a large number of contributors involved. They do not need to be modeling experts to work with you in Collaboration Hub.

This way, you can invite people who have a deep understanding of the business process and can contribute to proper process documentation and process innovation without having to be familiar with Signavio software.

A special feature of Signavio's comment-functionality is that the commentators do not need to be registered users in your workspace. You can invite anybody via email to comment on your diagrams.

**Hint:** This section describes how you can invite colleagues who are not users of Signavio Process Manager to comment on diagrams. To take advantage of the Process Manager in the long term, however we recommend that you use reading and commenting access rights in *Collaboration Hub* (page 396).

**Important:** Be careful when granting commenting access. The diagram access links included in the email invites can be used by anyone who has access to the invitation email.

To send an invitation email, take the following steps:

1. Select the diagram(s) you want to share (optional).
2. Click **Share**, then **Invite anyone for feedback** in the menu bar. The dialog that allows you to invite commentators opens.
3. If you didn't select a diagram in step one, you will reach the selection page first. Select one or multiple diagrams. You can go back to this page any time by clicking Choose diagrams.

4. Type in the email addresses of all colleagues you want to invite. Multiple entries can be separated by commas, semicolons or line breaks.
5. Create optionally a simplified view for your colleagues. The next paragraph *Simplified views on diagrams* (page 110) contains more information on this topic.

**Hint:** If you have selected more than one diagram, this option will not be available.

6. Tick the box **Send a copy to me** if you want to receive a copy of the invitation email.
7. Customize the invitation message.
8. Click **Send** and the invitation emails will be sent out, containing a web link that will take your colleagues to the commenting mode in the Signavio software.

The stakeholders will now receive an email with a link. Clicking this link will allow them to view and access the diagram in Collaboration Hub. The link works as a key to Collaboration Hub.

**Simplified views on diagrams**

When inviting a colleague to comment on a diagram, it is possible to create simplified views. Simplified views can ease reading a diagram, especially if the colleague you invited is not a modeling expert. You can also hide irrelevant information, to making viewing diagrams easier.

**Creating while inviting** As described above, simplified views can be created while inviting colleagues to comment on a diagram.

1. Click **Selection of a simplified view** or check the box in front of it. The **Selection of a simplified view** dialog opens.
2. In the **Create simplified view** tab, you can simplify the diagram view by hiding element types. As soon as an element type gets chosen or dismissed, the preview refreshes.
3. If you have created your desired view, click on OK to return to the **Invite anyone for feedback** dialog.
4. Follow the steps to invite to comment as described above (page 108).

**Creating a stakeholder-specific view** You can create simplified diagram views in the Editor before you invite stakeholders to comment.

1. Open the diagram in the Editor.
2. In the attribute panel, click **Create new view** under Views. The dialog **View configuration** opens.

3. If no views have been created for this diagram, you can now configure a simplified view by selecting which element types you’d like to be hidden. As soon as an element type gets chosen or dismissed, the preview refreshes.
4. Now specify a name for the simplified view. If desired, you can also include a description.
5. If there are already existing simplified views for this diagram, choose a view from the drop-down menu.
6. Click **OK**.

**Withdrawing commenting rights**

Use the **Manage access rights** dialog to view the collaborators that were invited to comment on a diagram.

1. Click **Share** then **Manage feedback invitations** in the menu bar.

2. The **Manage feedback invitations** dialog opens. All email addresses that have received an email invitation are listed. If you want to remove commenting rights for a particular person, click **Remove** next to the corresponding email address. A confirmation dialog box appears.

3. Click **Yes** to confirm the deletion.

If you are an **administrator**, you can also manage invitations to comment in the **Security center**.

1. Click **Setup** then **Manage users & access rights** in the menu bar. The settings dialog box opens.

2. Click the **Access Rights** tab. The invitations can be found at **Additional access rights** at the bottom of the dialog.

3. Select a diagram on the left. Click **Remove** next to the email address whose access rights you want to revoke.
More information about security settings can be found in the *Managing users and access rights* (page 455) section.

### 3.5.3 Working with comments

Signavio Process Manager allows you to write comments for diagrams and diagram elements. These comments can contain hints about process optimization or modeling details. Comments are accessible in Collaboration Hub, the Explorer and the Editor.

Using comments helps simplify discussions about modeling details and process optimization, while avoiding misunderstandings that can happen when collaborating with many stakeholders or working on a process over a long period of time.

Comments are usually created in Collaboration Hub, as it is designed for presenting and discussing diagrams with every participant within the process. Comments may contain information about modeling mistakes or optimization points, or simply questions about diagram and process details. A modeler is informed about unread comments every time he enters the Explorer and can directly access and edit them in the Editor.

This chapter describes how to handle comments in the Editor. Modelers can comment and view comments on published and unpublished diagram revisions in the Editor. The most convenient way for modelers to add comments on a published diagram revision is to switch to and comment in *Collaboration Hub* (page 396). Users with a Collaboration Hub license can comment and view comments on published diagram revisions only in Collaboration Hub.

**Hint:** Collaboration Hub allows access to a set of published diagrams. To restrict the reading and commenting access to only one diagram, it is recommended to work with the Comments view.
Collaboration Hub allows you to systematically publish your process landscape. If you would like to collaborate with colleagues during the construction of a process, it is recommended to invite people to comment instead of publishing the diagram as published diagrams can be changed and commented on by everyone with workspace access.

Identifying unread comments

The Explorer marks each diagram that was recently commented on with speech bubbles at the top right corner of the diagram icon:

The number next to the speech bubble indicates the number of unread comments. Open the diagram in the Editor to read and, if required, adopt requested changes in the diagram. Each element in the diagram that was recently commented on will again be marked with a little speech bubble and the number of unread comments:

Comment on a modelling element

In the Editor, an unread comment sticks to a modeling element.

Comment on the diagram

In the Editor, comments that concern the whole diagram will be displayed in the upper left corner:

A comment on the whole diagram

Note: If a comment is marked as read it will be invisible. To find a comment again, you have to click the Comments button in the top toolbar in the Editor. Deleted comments cannot be retrieved this way.
Factoring in comments

Click a speech bubble to see the comments for a diagram element. An extended speech bubble shows all unread comments on the element.

Sample

![Image](image)

Accepting a comment

To accept a comment, click the link **Factor in** right below it. Its badge will then get a green color:

![Image](image)

*This comment was already accepted.*

To revert a status update, click the status again.

When you save the diagram again, the new status of the comments will be noted. The next time a collaborator views the diagram e.g. in the Collaboration Hub, they will be able to see that their comment was accepted. Also, the comment is now considered as read and the comment count on the diagram will go to its former number.

Rejecting comments

Sometimes a suggestion in a comment cannot be integrated or a whole comment is rejected, which means it should neither be marked as accepted nor be deleted. In such cases the comments state can be set to **ignored**:
Rejecting a comment

Comments that were ignored will be marked with a gray badge. After adjusting the comments state, save the diagram to make the new state accessible for your collaborators. To revert the comment status, click **Ignore** again.

Removing comments

Unwanted comments can only be deleted in the Editor. Open the speech bubble containing the unwanted comment and click the link **Delete** below it:

Confirm the warning by clicking **Yes**. The comment will be removed permanently.

Viewing comments that were already read

Unlike Collaboration Hub, the Editor only displays new comments by default. Comments that were already read and are archived as either **accepted** or **ignored**, thus invisible. To display read comments in the Editor, use the “Comments”-Button in the Editor’s upper toolbar:

The ‘Comments’-button in the menu bar of the Editor.
A speech bubble will then be attached to every diagram element:
Speech bubbles that contain unread comments are displayed thicker.
Click a speech bubble to extend it and display the comments attached to the element.

Adding comments

Besides reading or setting a comment-state, the Editor allows adding comments as well.
To write comments in the Editor, use the Comments-button of the toolbar to see a speech bubble at the top right of every element. Click the speech bubble attached to the element you want to comment on to open a new text field.

The lower part of the bubble contains a text field:
Enter the comment into the textfield and click Submit:

Add a comment in the Editor.
The comment will immediately be created and will also be accessible for users in Collaboration Hub, even without saving the diagram.

### 3.5.4 Granting read-only access to diagrams

Signavio allows you to share diagrams with collaborators in read-only mode. For **read only** access without the commenting option, create a link to send to your colleagues via the **embedding** function.

The system allows you to generate a link to a PNG-picture representation of your diagram.

Open the embedding menu.

1. Click **Share**, then **Embed diagram** in the menu bar.
2. If the embedding function for this diagram has been activated, you can copy the link in the **Simple image** tab using the key combination **CTRL+C**.
3. Now you can paste this link in an email and send it to the desired recipient.

When opening the diagram via this link, the most recent version of it will be displayed.

**Hint:** To revoke link access and at the same time stop all sharing and embedding of a diagram, click **Stop sharing the diagram for read-only access** in the **Embed diagram** window.

### 3.5.5 Publishing diagrams in Collaboration Hub

Every modeler who has the corresponding rights to publish a diagram can publish it in Collaboration Hub. You can also define and use approval workflows to publish diagrams. Read about this in the chapter **Approval workflows** (page 497).

Apart from diagrams, pictures and files stored in your Signavio file storage can be made available in Collaboration Hub too. Publishing those files is similar to publishing diagrams. Depending on your configuration settings, you might need to explicitly publish dictionary entries. Read more about publishing dictionary entries at: **Publishing dictionary entries** (page 442).

**Hint:** Administrators can grant users the right to **publish**, **edit** or **delete** diagrams in the **Shared documents** folder. Please contact an administrator and ask them for the corresponding rights if you
cannot access these options. You can learn how to grant access rights in the chapter *Defining access rights* (page 462)

To publish a diagram, proceed as follows:

1. In the menu bar, click **Share** then **Publish to Collaboration Hub**. The corresponding dialog box opens.

![](image)

2. Select the diagrams you want to publish.
3. To publish an older revision of the diagram or to revert changes to a published diagram, use the activity feed of the diagram. Select a diagram and click **Expand** in the lower left corner of the Explorer. Alternatively, you can hit the **space bar** on your keyboard.

4. In case the feed tab is not opened by default, click the **Feed** button.
5. The activity feed will now be displayed. Select the revision you want to publish.

6. Now, click **Publish revision**. A confirmation dialog box opens.

7. Proceed by clicking **Yes**. Now, your diagram is published to Collaboration Hub.
Note: Just one revision of a diagram can be published. To publish multiple revisions, save a copy of the diagram and then publish the corresponding revision.

Revoke a published diagram

To revoke a published diagram, proceed as follows:

1. Select one diagram or several diagrams at once, which you want to unpublish.
2. Click in the menu bar Share and then Unpublish from Collaboration Hub. The selected diagrams are now unpublished.

To revoke a single published diagram, you can also use its activity feed.

1. Select a diagram and click Expand in the lower left corner of the Explorer. Alternatively, you can hit the space bar on your keyboard.
2. In case the feed tab is not opened by default, click the **Feed** button.

3. Subsequently, select the publish event in the activity feed.

4. Click **Unpublish**.
Now, the diagram will no longer be available in Collaboration Hub.

Opening a diagram’s published revision

It is often useful to know what the published version of a particular diagram looks like in Collaboration Hub. To find this out, select the diagram in the Explorer and click **Share - Open published version**:}

*Open the currently published version in Collaboration Hub.*
3.5.6 Inviting users to access a diagram in Collaboration Hub

In many situations, you may want to point one or several readers to a specific diagram in Collaboration Hub.

**For this purpose, you can send emails containing the link to a diagram in Collaboration Hub** and further information via the Signavio Explorer.

To invite users to access published diagrams in Collaboration Hub, proceed as follows:

1. First, select a published diagram.
2. Click **Share**, then **Invite to Collaboration Hub** in the menu bar.

3. Subsequently, you can insert the email addresses of the recipients.

4. Edit the message text (optional).
5. You can also choose to send a copy of the invitation email to yourself.
6. If you have **administrator rights** (page 452) in the workspace, you can attach the authentication certificate for **certificate-based access** (page 419) to Collaboration Hub.
7. Now, click **Send**. The invitation message is sent to the selected email addresses.
Hint: You can also use this feature to encourage somebody to have a look at Collaboration Hub in general. Open the Invite to Collaboration Hub dialog without selecting a diagram. The link in the email will lead to the entry point of Collaboration Hub.

3.5.7 Organizing diagrams

Signavio offers a variety of functionalities for organizing diagrams.

Find out more about

- *Working with folders* (page 41)
- *Full-text search* (page 34)
- *Getting detailed information* (page 47)
- *Migrating diagrams from BPMN 1.2 to BPMN 2.0* (page 300)
- *Working with modeling conventions* (page 203)
- *Displaying attribute visualization layers* (page 196)

The diagram preview provides information about a diagram and its revisions in the Explorer.

3.5.8 The notification and activity feed

Once you have *created diagrams* (page 232) and then *updated* (page 166) or changed them at least once, you have the option to see what was changed by whom at what time in the activity panel.

When you select folders or diagrams, the Explorer displays the activity panel at the bottom of the screen:
The activity panel provides diagram details.

Notification configuration

In the activity panel, you can set how frequently you receive email updates about specific diagram(s) or folder(s). If you subscribe to a folder, you will receive updates regarding all the diagrams and sub-folders contained within. You can daily, weekly or monthly notifications. Alternately, you can unsubscribe from notifications entirely.

Manage email notifications about updates of the selected diagram or folder.

**Hint:** Your notifications will be sent in a single email.

Additional functions

The activity panel provides a preview of the diagram/folder as well as detailed information and management options regarding its version history.

To access this preview, proceed as follows:

1. Select a diagram/folder.
2. Click Expand in the lower left corner of the Explorer. Alternately, you can use the space bar on your keyboard:
3. The panel expands, providing a visual overview of the diagram:

![Diagram](image)

4. To view the activity feed and manage the change and version history of the diagram, click the **Feed** button. The activity feed will now be displayed.
5. Hovering over the timeline provides you with specific time spans.

6. To gain a visual overview over an activity, click the **Activity description**.
The visualization will highlight the elements that have been changed.

7. The overview also provides links to publish (page 119) or comment (page 108) the revision and to switch to the diagram comparison (page 48).

8. If the selected revision is not the latest revision of the diagram, it is also possible to restore the revision:

9. To get a more detailed view on an activity set, it can be opened to show all its single activities by clicking the dots on the grey stripe at the right side. Each activity will be displayed separately:
10. To hide the panel again, hit the **space bar** or click **Collapse**.

### 3.5.9 Translating diagrams

**Note:** This feature is available in the **Enterprise Edition**.

You can model your diagrams in multiple languages. This allows viewers and modelers who do not understand your standard diagram language to collaborate with you.

Multilingualism is a feature which is available in the Editor, Collaboration Hub and in the Dictionary. You need to **to configure languages in the Explorer** (page 485) to use this feature.

The following explains how to translate a diagram and the modeling elements. Note that you need to have already defined your desired language in the Explorer.

**Changing the language**

When creating a new diagram, it will be displayed in the default language of the workspace. To change the default language, read the **Customizing the workspace** (page 493) chapter.

The current language of a diagram can be switched in the Editor via the little flag symbol on the right side of the upper toolbar:

The language is switched from **English** to **German**.

**Hint:** If the **flag** symbol is not visible for you, it is possible that there are no languages defined for your workspace. As a workspace administrator, you can define a set of available languages in the Explorer’s configuration dialog, which is described in the chapter **Customizing the workspace** (page 493).
Select one of the available languages. The diagram will adapt to the language immediately and may look like the following:

*The highlighted elements have not been translated into English, yet.*

Diagram elements that were already translated are displayed will be displayed normally. In our example, the task ‘Problem lösen’ was already translated. If the label was formatted, this formatting will be kept.

Diagram elements that are not yet translated are highlighted in red. In this example, the incoming message event ‘Received Invoice’ is only available in English (thus, the “en_us” in brackets).

The following chapter describes how diagram elements can be translated.

**Translating diagrams**

Translating diagrams means defining a translation for each diagram element in each required language, which can include all element labels and documentation.

This chapter describes how diagrams can be translated into other languages. This is especially useful when multiple people are involved on the translation, each translated into one language. Later in this chapter, you will learn how to translate a diagram in different languages at the same time.

The following example shows a translation from English to German:

1. First, select which language you want to translate. Proceed as explained above. Elements that were not yet translated are highlighted in red.

2. Double-click an element to define its label.
3. Click somewhere on the canvas to accept the new label. The translation will now be stored in the attribute panel on the right.

4. In the attribute panel, you can also add documentation in the current language. Translate the remaining diagram elements in the same way. After saving the diagram, it will be accessible in all languages of the workspace.

**Translating diagrams into multiple languages at the same time**

Sometimes, a modeler might want to define a diagram in multiple languages while modeling the diagram. In this case, it is recommended to have the required languages set available while modeling.

1. Add languages to the diagram via the language tool of the Editor toolbar.
2. Select all the languages you want to work with in your diagram. They will appear in the attribute panel on the right hand side.

3. Now you translate diagram elements into the desired languages simultaneously in the attribute panel by simply entering the translations into the corresponding columns and lines.

4. To view the result in the other languages, switch the display language on the flag icon in the toolbar.
Migrating diagrams to a different language

You can migrate the contents of a diagram from one language to another. This is especially helpful when switching between dialects of a specific language (for example, British English to American/Canadian English), or if the diagram was created in the wrong language and you want to correct this.

**Hint:** When opening a diagram, the system will ask you for the diagram language if no default is defined.

To migrate a diagram into another language, proceed as follows:

1. Click the flag symbol, then **Migrate diagram to a different language** in the top toolbar on the right. The corresponding dialog box opens.

2. Now choose the source and the target language for the migration. You can choose between all languages that are defined for the workspace.

3. Optionally, you can delete information in the source language. Activate the checkbox **Delete original texts** to do so.

4. Click **OK**. A confirmation prompt is displayed.
5. Click **Yes** to confirm.

In this example a diagram was created without language definitions. The content was defined in German. As the workspaces’ default language is English, the diagram was configured to be in English when the language tools were activated. The content is now supposed to be migrated from German to English and the German contents are supposed to be removed.

**Translating diagram, folder and file names**

**Important:** Please keep in mind that translations that you make within the framework of this feature are only visible in Collaboration Hub.

1. Select the the name of a diagram, folder or file name you want to translate in the Explorer.
2. Open the **Edit** menu and click **Change name/description** (for files and folders) or **Rename** (for diagrams).

3. Now you can add translations of the name in all available languages.
4. Click **Change name/description** respectively **Rename** to save your settings.

### 3.5.10 Executing processes in Workflow Accelerator

**Hint:** Workflow Accelerator is a workflow execution platform targeted at business users who want to perform intuitive and professional automation of personalized processes. To make use of the Workflow Accelerator integration, you need to have purchased **Workflow Accelerator** licenses. For more information, contact sales@signavio.com.

To switch from the Signavio Explorer to your task list in Workflow Accelerator, click **Workflow Accelerator - Open workflows in Workflow Accelerator**:  

![Workflow Accelerator](http://www.signavio.com/products/workflow/)
Open your task list in Workflow Accelerator.
If the process has not been deployed to Workflow Accelerator and you are the workspace owner, you can deploy the process (page 601).
For more information about process execution, please refer to the Workflow Accelerator User Guide.50
If you like to read about process design for Workflow Accelerator, please refer to the section Process design (page 600).

3.6 Downloading/exporting diagrams

This chapter describes how to export diagrams - for example as PDF files or images - to save them on your computer and send them via email or use them in presentations or documentation.

- Exporting or “Printing” diagrams as PDF documents (page 139)
- Exporting diagrams as images (page 147)
- Exporting diagrams as Signavio archive (SGX) files (page 149)
- Exporting dictionary entries (page 151)
- Exporting BPMN diagrams as BPMN 2.0 XML files (page 153)
- Exporting DMN diagrams as DMN 1.1 XML files (page 154)
- Exporting diagrams as XML (page 155)
- Exporting DMN diagrams as drools rules (page 156)
- Exporting diagrams to RedHat JBoss BRMS projects on GitHub (page 159)

For more advanced export and import options, please refer to the chapter importing/exporting diagrams and uploading files (page 574) in the section Workspace Administration (page 452).

3.6.1 Exporting and printing diagrams as PDF documents

You can export diagrams to PDF in the Editor, Explorer and Collaboration Hub. In the Editor and Collaboration Hub, this works via the printing dialog.
To export or print diagrams to PDF documents, proceed as follows:

1. Exporting diagrams as PDFs in the Explorer
   To export diagrams in the Explorer, first select the diagram(s) or folder(s) you want to export. Then, click Import/Export in the toolbar, then Export PDF in the top drop-down menu. Note that when you export a folder, all the diagrams within it will be exported as a single PDF file.

Hint: In case you want to export a diagram that you have just been editing the Explorer, make sure to save it before you export it. Otherwise the latest changes will not appear in the PDF file(s).

2. **Exporting/printing diagrams as PDFs in the Editor**

To export diagrams in the Editor, you use the printing dialogue. In the toolbar, click the **Print** button in the upper left corner:

**Hint**: When exporting from the Editor, even recent changes that have not been saved will be included in the diagram.

3. **Exporting diagrams as PDFs in Collaboration Hub**

To export diagrams in Collaboration Hub, you use the printing dialogue. Click the **Print** button in the top right corner:
Export a diagram in Collaboration Hub

**Note:** In Collaboration Hub the PDF export options **Show additional information** and **Logo** are not available.

Configuring PDF export options

You can configure your exporting settings in the print dialogue. Note that this **only** applies to the Explorer and Editor, **not** Collaboration Hub. A configuration dialog appears for you to set the printing preferences:

![Diagram configuration dialog](Diagram.png)

Configure the printing preferences and print the diagram(s)

The following list provides an overview over the printing preferences:
General

- **Language:** If you have multiple languages configured for your workspace, you can select the language the diagram(s) will be printed in.

- **Print in black and white:** Choose between a colored print out (check-box ‘not checked’) or a black-and-white print out (check-box ‘checked’).

- **Show additional information:** If you want to display printing attributes or diagram attributes directly in the PDF document (for example, the date or page number), activate this check box and click the Configure link:

  ![Configure link](image)

  You can now select up to three attributes for each of the displayed positions. To select an attribute, click the drop down menu at the position of your choice and click the respective entry:

  ![Add up to 3 attributes](image)

  Click **Own attribute** if you want to select a diagram attribute. A dialog will appear, helping you to select one of all available diagram attributes:

  ![Business Process Diagram](image)

  **Selecting the custom attribute ‘external documents’**

  After selecting attributes, the print preview will look similar to this:
Selecting attributes you want to print out to the PDF file

You can always edit and remove selected attributes.

• **Paper size**: You can select one of 11 paper sizes for your PDF:

```
Paper size:
Stretch small diagrams to whole page:
--- Logo
Logo:
Use original size:
--- Orientation
Landscape:
Portrait:
Diagram rotation:
Diagram orientation:
```

Select the paper type, e.g. A3

**Orientation**
• Landscape/Portrait:

• Diagram orientation (1): Choose whether the diagram orientation should be managed automatically, or if it should not differ from the internal diagram orientation. We recommend to use Automatic as the preference in most cases.

• Diagram orientation (2): In case Always has been selected under Diagram Orientation (1), you can now select whether the orientation should always be clockwise or counterclockwise:

```
Diagram orientation:
- Always

Diagram orientation:
- Counter-clockwise
- Clockwise
- Counter-clockwise
```

Distribution

• Single page / Multiple pages: Choose whether you want to have a diagram fitted to one page or - if necessary - distributed over several pages.

A single paged PDF print can look like this, for example:

![Purchase Requisition-to-Purchase Order diagram](image)

When printing a diagram over multiple pages, the size will be automatically adjusted, so that the diagram width is taking all available space in the PDF. The diagram length is adjusted in relation to the width.

**Hint:** If printing a multi-page diagram, we recommend that you export a single page PDF and configure the printer to print the diagram on multiple pages.

Attribute visualization

• Rule sets: Here, you can activate rule sets of the attribute visualization manager. In our example, execution times will be visualized:
In this example, execution times will be visualized in the print out.

- **Risks and controls**: If activated, risks and control attributes are visualized as configured in the risk and control manager.
- **Show attachment icon**: If activated, attachments are visualized by a paper clip icon.

**Selected Diagrams**

- Here you can change the diagram(s) you have selected previously. In order to so, click **Configure**:

Reselect the diagram(s) you want to print out

**Add custom logo**:

It is possible to add a custom logo (e.g. your corporate logo) to the PDF printout. Simply click the **Add custom logo** link in the upper right corner of the print preview:

**Add a custom logo**

Now you can choose between uploading a new file and choosing an image that already exists in your workspace:
Save as defaults

Activate this check box if you want to save the preferences as the default printing settings for your workspace. This check box is only displayed if you are logged in as a user with administrator privileges.

**Important:** The settings are only saved as default, if a PDF is created. When canceling the dialog, the preferences will be discarded.

Once you have configured the export options, click **Create PDF**:

Create a PDF containing the selected diagram(s).

A PDF document containing the diagram(s) is downloaded/displayed in your browser.

Exporting stakeholder specific views

If stakeholder-specific views were defined for a BPMN diagram, you can select one of them for the export. You can also decide to include subprocesses and choose the diagram language - if more than one is defined. If you would like to know more about how to create selective, stakeholder specific views of BPMN diagrams, see the chapter **Creating views** (page 267).
Select a view.

- Click Export. The exported diagram will be downloaded by your browser.

### 3.6.2 Exporting diagrams as images

You can export diagrams as PNG or SVG images. For most common cases, we recommend using the PNG file format.

The PNG export functionality generates a pixel graphic (image). The export is useful if you want to embed diagrams into a document, spreadsheet, or presentation.

The SVG export functionality generates a vector graphic which is supported by most web browsers.

Proceed as follows to export a diagram as a PNG or SVG:

- Select the Import / Export, then PNG (pixel graphics), or SVG (vector graphics) in the top drop-down menu of the Signavio Explorer.
Export a diagram as a PNG file.

Export a diagram as an SVG file.

- If there have been stakeholder-specific views assigned to the diagram, you can select the one you want to export. Furthermore, you can decide which language you want to export (if you have a multilingual workspace):
Select a view.

- Click Export.

Now, the image will be downloaded by your browser.

### 3.6.3 Exporting diagrams as Signavio archive (SGX) files

The export functionality for Signavio archives (SGX) provides a possibility to exchange diagrams and entire folders between workspaces or save them locally on your machine.

SGX is a Signavio specific file format. It cannot be imported into non-Signavio systems.

To e.g. send a diagram to a colleague who is not registered in your workspace but has their own Signavio workspace, it is possible to export it as SGX and send them an email containing the file. Then, they can import the SGX file (page 583) into their workspace. After the import, your colleague will be able to view, comment and edit their copy of the diagram.

A possibility to exchange diagrams within one workspace is provided by the "Shared documents" folder. For frequent collaboration with colleagues, we recommend to add them to your workspace (page 455) if possible.

To export a Signavio archive (SGX) containing diagrams and folder, proceed as follows:

- (optional) Select one or more diagrams or folders.
- Click Import / Export, then Export Signavio archive (SGX) in the top drop-down menu of the Signavio Explorer.
Export a diagram as SGX.

- A dialog opens and provides the possibility to choose the diagrams and folders that should be added to the archive. Dictionary entries that are used in the exported diagrams will be added to the archive by default. The SGX export also includes all specific views that were created for a diagram.

In case you want to export the whole revision history of the diagram, uncheck **Export only the latest revision of each diagram** at the bottom of the dialog.

To read more about the version history, please see the chapter *Version history* (page 127). - where?
Select the diagrams you want to export.

- Click **Export**. The archive will be downloaded via the download functionality of the web browser.

### 3.6.4 Exporting dictionary entries

You can export dictionary entries to excel files. This is useful whenever you want to print the dictionary, review entries offline or import dictionary entries into other systems.

Proceed as follows to export dictionary entries:

Open the dictionary and click **Import/Export - Export Excel**: 
Export dictionary entries.

A dialog opens and you can select the entries you want to export. As an example, if you selected “S” previously, only the entries beginning with S are displayed and you can export them by selecting the exporting method Export entries with the selected initial. You can choose to export the whole dictionary, a chosen category, (e.g. Organization Units like in the example) or, if the search field was used previously, only those entries that were found. If you have multi-language support activated for your workspace, you need to select what language you want to export to. If you want to export to several languages, you must export to each language individually.

Select an export method and click Export:

Choose if you want to export all entries or merely a subset.

Depending on your browser settings your browser will now prompt for the download or simply store the export file in your download folder. You can then open the file, e.g. with Microsoft Excel ®:
3.6.5 Exporting diagrams as BPMN 2.0 XML files

The BPMN 2.0 standard includes an XML notation. It allows for the platform-independent exchange of BPMN 2.0 diagrams. To get more information about this XML standard or about the BPMN 2.0 specifications, go to http://www.bpmn.org.

Signavio Process Manager allows the export of business process diagrams (BPMN 2.0), conversation diagrams (BPMN 2.0) and choreography diagrams (BPMN 2.0) to BPMN 2.0 XML.

To export a BPMN 2.0 diagram, proceed as follows:

• Select the diagram you want to export.

• Click Import / Export, then Export BPMN 2.0 XML in the top drop-down menu of the Signavio Explorer.

![Export diagrams to BPMN 2.0 XML.](image)
• Choose the diagram language and if subprocesses should be exported along with the diagram, if applicable, in the dialog that opens.

• Click Export. The exported diagram will be downloaded by your browser.

Exporting stakeholder specific views

If stakeholder-specific views were defined for a BPMN diagram, you can select one of them for the export. You can also decide to include subprocesses and choose the diagram language - if more than one is defined. If you would like to know more about how to create selective, stakeholder specific views of BPMN diagrams, see the chapter Creating views (page 267).

Select a view.

• Click Export. The exported diagram will be downloaded by your browser.

3.6.6 Exporting Diagrams as DMN 1.1 XML

DMN 1.1 specifies the DMN 1.1 XML standard. It enables the platform-independent exchange of DMN diagrams. For more information about DMN 1.1, please go to http://www.omg.org/spec/DMN/

Signavio Process Manager allows you to export DMN diagrams as DMN 1.1 XML files:

• Select the diagram you wish to export in the Signavio Explorer

• Click Import / Export, then export DMN 1.1 XML.
The menu entry for the DMN 1.1 XML export.

- The dialog that opens informs you about the success of the export procedure.
- Click the link below the notification to download the XML file.

After a successful export, click the link to download the file.

### 3.6.7 Exporting diagrams as XML

The XML representation of a diagram lets you use the full diagram information in other tools.

The unstandardized XML export functionality is only available for diagrams that are not supported by the BPMN 2.0 specification. In case you want to export diagrams in BPM 2.0 compliant XML, please use the standardized BPMN 2.0 XML export (page 153) instead.

To export a diagram as an XML document, proceed as follows:

- Select the diagram you want to export.
- Click **Import / Export**, then **Export Signavio XML** in the top drop-down menu of the Signavio Explorer.
The XML export is available for diagrams that cannot be exported to BPMN 2.0 XML.

- The browser will now download the exported diagram as an XML-file.
- The XML-format produced is a special form of RDF and will have the following structure (example excerpt):

```xml
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" ...>
  <rdf:Description rdf:about=""/>
  <rdf:Description rdf:about="http://purl.org/NET/erdf/extract"/>
  <rdf:Description rdf:about="#sid-A302E7F1-73E4-4AF1-A885-E2F8483EC3DD">
    <type xmlns="http://oryx-editor.org/">StartNoneEvent</type>
  </rdf:Description>
</rdf:RDF>
```

You can use XML transformation tools to generate other XML formats from the Signavio XML format.

### 3.6.8 Exporting DMN diagrams as drools rules

Signavio Process manager enables you to model decision logic with the easy-to-use Editor and to subsequently export DMN diagrams as DRL files to transfer them into the open source business rules management solution Drools (http://www.drools.org/). Thus, you can easily transfer DMN diagrams into automated business logic.

You can either export multiple diagrams, one diagram, or just one decision table and its sub-decisions. The Signavio Drools export supports four different export types: Production, Development, Test, and Cases. In contrast to the Production, Development adds additional comments and logging behavior.

You can select which diagram revision to export.

Permissions for the Drools export can be limited to users of specific user groups.

In order to export decision logic to Drools, open the Explorer. Select one or multiple diagrams and go to Import/Export, then Export Drools:
Select one or multiple diagrams and go to ‘Import/Export’, then ‘Export Drools’.

Now you can adjust your selection and set the following export properties:

- **Export revision**
  You can choose whether to export the latest revision of the diagram that has been saved in the Editor or the latest revision that was published in Collaboration Hub.

- **Export mode**
  - The option **Production mode** exports the decision logic to drools. It does not include comprehensive comments, support for detailed logging, and test cases.
  - **Development mode** provides additional comments and logging behavior.
  - **Development mode + test cases** provides additional test cases in the form of .csv files (one .csv file for each top level decision). The .csv files contain all combinations of all relevant sub-decisions.
In the export dialog, you can configure the export options in detail.

Click Export to trigger the export process.

Alternatively, you can export a decision table and its sub-decisions directly from the Editor.

In the Editor, open a decision table and click Import/Export in the top-right corner of the dialog. There you can choose between generating the Drools export or the test cases (as described above):

Click 'Import/Export' in the decision table dialog.

Before starting the export, you can choose whether to include related sub-decisions (if applicable):
Choose if you want to include related sub-decisions.

As soon as the files are generated, you can download them in your browser:

3.6.9 Exporting diagrams to RedHat JBoss BRMS projects on GitHub

**Note:** This feature is available in the **Enterprise Edition**.

Signavio allows you to export process and decision models directly to RedHat JBoss BRMS projects at GitHub. Like this, you can seamlessly integrate diagrams that have been modeled with Signavio into your JBoss BRMS projects.

Process models are exported and uploaded as BPMN 2.0 XML files and all linked decision models are exported and uploaded as DRL files.

To start an export, select a BPMN diagram in the Signavio Explorer and click **Import/Export - Export RedHat files to GitHub**:
Open the JBoss BRMS export dialog.

**Hint:** You need to select exactly one diagram. The export will include all linked DMN and BPMN diagrams.

In case you haven't configured the GitHub integration, yet, you need to authorize Signavio to push to your GitHub repositories. Otherwise, you may proceed at *Pushing diagrams to JBoss BRMS projects* (page 161).

Now, click **Authorize**.

**Click 'Authorize'.**

Subsequently, you will be forwarded to GitHub, where you need to grant Signavio permission to push to your repositories:
Authorize application

SPE/SDM (Production) by @nicpeters would like permission to access your account

Review permissions

Repositories
Public and private

Organization access
Organizations determine whether the application can access their data.

![Signavio Icon]

Authorize application

SPE/SDM (Production)

Signavio Process Editor Signavio Decision Manager Production Environment

Visit application's website

Learn more about OAuth

Authorize Signavio to push to your GitHub repositories.

Re-enter your password to confirm. Upon successful authorization, the following page will be displayed:

Signavio Authorization Succeeded

Signavio is now allowed to push files into your repository on your demand. We will never push or read information from your repository without an explicit action.

You can close this site now to go back to the signavio explorer and finish the upload.

You successfully authorized Signavio to push to your repositories.

Now you can go back to the Signavio Explorer and export the diagram(s) to GitHub.

Pushing diagrams to JBoss BRMS projects

As described above, to start an export, select a BPMN diagram in the Signavio Explorer and click Import/Export - Export RedHat files to GitHub.

Now, configure the following parameters:

- The repository you want to push to
- The project path (within the repository)
- The name of the Java package that will be created

Click Upload to push the files to your repository:
Click ‘Upload’.

The files are pushed by your user to the default branch (for example master). The commit message is signavio upload.

An information dialog will inform you about the successful export.
Chapter 4

Modeling diagrams

This section explains the use of the Editor with different notations.

- In the chapter Basic modeling with the Editor (page 163), you can learn basic modeling features that are the same in every notation. If you are unfamiliar with process modeling, we recommend that you start here and then continue to the chapter about the notation you will be using.

- Value chains (page 214) often represent an internal top level of complex process hierarchies. In contrast, customer journey maps (page 222) depict a customer’s perspective on a product or service that contains specific touch points that link customer experience with process architecture.

- The chapter Business Process Model and Notation (BPMN) (page 230) explains how to model BPMN diagrams in the Editor.

- The QuickModel (page 305) application lets you model BPMN 2.0 diagrams without requiring BPMN knowledge. In addition, QuickModel’s spreadsheet-like interface is very convenient for systematically filling in attribute values of BPMN elements.

- The chapter Decision Modeling and Notation (DMN 1.0) (page 322) helps you model decision diagrams in the Signavio Decision Manager. It is also possible to simulate decisions and define and execute test case for DMN decision logic.

- Enterprise architecture diagrams enable you to visualize your corporate IT system architecture within and across business domains. You can learn how to model in the chapter ArchiMate (page 376).

- In addition, Process Manager supports a set of other notations (page 394) that are of lesser importance in practical process management scenarios.

4.1 Basic modeling with the Editor

The following chapters explain the basic features necessary to create and edit diagrams in Signavio Process Manager:

- Editing diagrams (page 164)
- Formatting labels (page 184)
- Referencing documents (page 187)
- Creating process hierarchies (page 197)
- Working with modeling conventions (page 203)
- Key combinations (short cuts) in Signavio (page 207)
4.1.1 Editing diagrams

This section explains the basic modeling functions of the Editor. If you are already familiar with this and like to learn about modeling in a specific notation or setting, you can refer to the following chapters:

- Getting started as a BPMN modeler (page 231)
- Creating and editing DMN diagrams (page 328)
- QuickModel (page 305)
- Using the dictionary (page 428)
- Creating and editing ArchiMate diagrams (page 378)

Creating a new diagram

To create a new diagram, proceed as follows:

1. Open the Explorer.
2. Click New in the Explorer’s top drop-down menu.
3. Click the diagram type you would like to create a new diagram of.
4. The Editor opens in a new tab, showing the blank canvas of a new diagram. You can now start to add modeling elements (page 167).

Opening diagrams

To open a diagram, proceed as follows:

1. Open the Explorer.

2. To open a diagram, double-click the diagram you want to edit. Alternatively, you can select the diagram and click Edit diagram under Edit in the top drop-down menu.

3. The Editor opens in a new browser tab or window.

4. Once the Editor is loaded, you can edit the diagram.
Saving diagrams

1. Open the diagram in the Editor.
2. Click the Save button in the toolbar or use the key combination Ctrl+S to open the Save dialog.

3. The Save dialog opens:

You can add revision comment to explain what you changed regarding the previous version. These comments will be visible in the version overview so you and your colleagues can track the changes you made to the different versions of a diagram. You can also adjust the title and the location of the diagram. Depending on the diagram type and your workspace configuration, the dialog may include a modeling convention check (page 203).

4. Finally, click Save.

Save a copy  The Save as functionality allows you to save a copy of the current diagram, optionally with a different name. The new diagram will be created in the same folder. To save a copy of a diagram, proceed as follows:

1. Open the diagram in the Editor.
2. Click the Disc icon in the toolbar and select Save a copy.

Important: If you want to edit the copy, follow the link that is displayed after saving. The diagram that is still open in the same browser tab is the original.
Changing a diagram’s title

On the upper left corner, you see the title of the diagram. If you click it, the editing is enabled. You can also change the title when saving (page 166) the diagram.

Adding elements

You have already created a new diagram (page 164) or opened an existing diagram (page 165).

Now, there are multiple ways to add modeling elements to a diagram:

- Drag and drop elements from the shape repository on the left side.
- Once there are elements in the diagram, you can use the interactive shortcut menu to add more elements.
- You can copy and paste elements

Adding elements using drag & drop  The shape repository in the left column of the Editor displays all modeling elements available in the current modeling language (here: BPMN 2.0). To change the shape repository’s subset, click the subset that is currently activated above the shape repository and choose another one.

In case the amount of the BPMN 2.0 elements exceeds a certain number, the elements are grouped (e.g. activities, gateways, swimlanes, etc.).

1. Choose the element in the shape repository that you want to add to your diagram. Click and hold the mouse button on the element and drag the element to a position on the diagram where you want to drop it. The green icon shows you where you can drop the element. This might depend on whether an element can be added to another element. For instance, a BPMN pool cannot be added to a task.
2. You can label most elements. Double-click the element and a text box will appear if it can be labeled.

3. Optionally, you can position the label of some elements (for example, BPMN gateways, and events), as well as connectors freely on the drawing area.

Adding elements using the interactive context menu  You add elements by using the interactive shortcut menu. Depending on the currently selected shape, the menu suggests which modeling element might be added next.

Note: The currently activated subset of modeling elements influences the elements you can add through the interactive shortcut menu. If the element you want to add doesn't appear in the interactive shortcut menu, this could be due to the wrong subset being active on the left hand list of available elements.

1. Select an element in the diagram (for example, a task). The shortcut menu appears on the right side of the element.
2. Click the icon of the element you want to add (for example, another task or an end event). The new element appears in the diagram.

3. If you want to position a newly created element yourself, you can also click the icon and drag the element to the desired position. To facilitate the alignment of the existing elements, orientation lines appear.

**Note:** The type of connector that is created between the selected element and the newly created element will be determined automatically.

**Copying elements** The Copy functionality simplifies creating many similar elements with complex but similar values. It also allows to re-use parts of old diagrams by copying some of their elements and pasting them into a new diagram.

1. Select the element you want to copy. Use the Shift or Ctrl key combinations to select multiple elements.

2. Use the combinations Ctrl + C to copy, Ctrl + X to cut and Ctrl + V to paste elements.
**Hint:** Using this functionality to copy elements between different diagrams may take a while, as they are copied to the server first. Also, an Internet connection is required for copying elements between diagrams, but not for copying elements inside one diagram.

**Moving elements** You can move elements easily to a new position using drag & drop. To simplify the alignment, dotted orientation lines will appear and snapping to other elements will be activated.

*Dotted orientation lines simplify the alignment of elements.*

**Samples**

If the new position of your element is not valid because it breaks containment rules, it is signalized by red or green markers. The following two examples show how this works.
While modeling a BPMN-diagram, a task is supposed to be dropped into a pool. As a BPMN pool can include a task, green markers appear at the corners of the pool.

While modeling a BPMN-diagram, a pool is supposed to be dropped into a task. As a task cannot include a pool, red markers appear at the corners of the task.

Hitting special keys while moving an element affects the "move"-functionality:

- **Alt** or **Ctrl**: Move without automatic snapping and orientation lines
- **Shift**: Move along a horizontal or vertical line

These functionalities can also be combined. If you press **Shift+Alt** or **Shift+Strg** and hold while moving, you can move along a horizontal or vertical, without that orientation lines appear.

### Changing element type

The transformation functionality allows you to switch easily from one element type to another. In BPMN, for instance, you can turn

- a task into a subprocess
• a plain start event into a message start event
• a collapsed pool into an expanded pool

To transform an element, proceed as follows:
1. Select the element you want to transform.
2. Click the transform shape/wrench icon below the element.
3. Select the type you want to change the element to.

Hint: Some changes that affect the appearance and behavior of a modeling element but not its actual type can be performed in the attribute editor (page 255) on the right. E.g., if a canceling intermediate timer event has to be changed to a non-canceling intermediate timer event (with a dotted border), the attribute cancel activity has to be set to false.

Editing attributes

Modeling elements often come with a range of properties you can edit, called attributes. Some of these variables may influence the visual appearance (e.g. the background color or label of an element), other ‘invisible’ attributes are necessary to understand a process or to execute it. Such are for example an elements description, a linked dictionary entry or the decision logic defined for a decision in a DMN diagram. These properties can be altered in the attribute panel on the right. It can be expanded by clicking the gray bar labeled Attributes on the right side of the Editor window.

Open the attribute panel.
Most visual attributes can also be altered in the Editor’s top tool bar, though the attribute panel usually provides more options. You can also define diagram-wide attributes in the panel by clicking any empty space within the editing area. The principle according to which attribute values are set, is always the same.

In our example, we want to set the loop type of a BPMN Task:

1. Open the attribute panel on the right side of the Editor by clicking the black bar.
2. Select the loop type attribute and select the loop type, e.g. **Standard** for a looped task or **MI Parallel** for a multiple instances task.

![Attributes Panel Example](image)

3. Unselect the attribute and the change will take effect. You will see the loop or multi instance icon in the task shape.

4. To change diagram-wide attributes, click any empty space within the editing area and then go to the attributes panel.

**Hint:** The upper section of the attribute panel contains custom attributes which can be individually defined by your workspace administrators. Custom attributes can be defined, edited and removed via the Define notations/attributes (page 533) dialog.

5. The attributes are divided into categories. You can hide the content to get a better overview by clicking on the minus symbol next to the category name.

![Diagram Example](image)

6. You can also sort the attributes in alphanumerical order to find a required attribute more easily.
To do so click on the head of the column **Attribute**. The small triangle indicates whether the elements are sorted descending or ascending.

---

**Removing elements**

1. Select the modeling elements you want to remove.
2. Click the **Del**-key on your keyboard or click the **Delete** button in the toolbar.

**Hint:** You can select multiple elements by either using the **Ctrl** key on your keyboard or by drawing selection frames on the canvas.

---

**General functions**

**Undo / Redo** You can undo the last action made to a diagram by clicking the **Undo** button. **Redo** functionality is available via the **Redo** button.
Undo an editing action.

Alternatively, you can use the key combinations Ctrl + Y, and Ctrl + Z.

Resizing the canvas  If you move your cursor over the edges of the canvas, left and right arrows will appear.

Click those arrows to shorten or extend the canvas. This allows you to create more complex and bigger diagrams. Use the zoom (page 175) functionality to fit a large diagram to the screen.

**Hint:** Shortening the canvas is impossible if there are elements in the affected area.

Zooming  When you create extensive diagrams, they can become too big to be displayed in your screen. Signavio's zooming feature simplifies editing larger diagrams, especially when using a device with a relatively small screen.

To zoom in and out, simply click the corresponding button in the top toolbar.

*The “Zoom in” button enlarges the view.*
The “Zoom out” button reduces the view.
To return to the standard zoom level and see the diagram in its default size, click the button Zoom to the standard level.

Display the diagram in its default size.
Click Zoom to fit the model size in order to have the whole diagram canvas displayed in your browser.

Display the whole diagram.
You have now acquired basic modeling skills in Signavio Process Manager, you can continue to the chapters BPMN modeling (page 230), DMN modeling (page 322), ArchiMate (page 376) or Value Chains (page 214) to learn about a specific notation or continue to the next chapter if you would like to know more about process editing and formatting diagrams.

4.1.2 Formatting diagrams

After adding and connecting elements of a diagram, you may want to format it to gain a more clear-cut picture and to adapt it your organization’s design standards. The Signavio Process Manager provides the possibility to re-align and resize elements and to change their color, size, title, border and background style.

Arranging Elements

In some cases it is helpful to re-arrange elements to achieve a well-ordered and structured element distribution.

The corresponding button set in the toolbar simplifies this process.

This section explains the behavior of these functions using the following starting point:
Select the elements you want to rearrange and open the respective menu in the toolbar.

- Alignment middle:

Alignment middle.

The **alignment middle** button aligns all selected elements in a horizontal row:
Elements are aligned.

- Alignment Center:

![Alignment Center button](image)

Alignment center

The **Alignment Center** button aligns all selected elements in a vertical row:

![Alignment example](image)
• Distribute elements horizontally:

Distribute elements

The **Distribute elements horizontally** button equalizes the horizontal distances between elements:

Elements are distributed

• **Distribute elements vertically:**
Distribute elements

The **Distribute elements vertically** button equalizes the vertical distances between elements:

---

Elements are rearranged

Selecting all elements of one type

When editing complex diagrams, it can be useful to select all elements of a certain type in order to edit one or more of their attributes at once.

To do so, select one element and press `Ctrl + I` on your keyboard. All elements of the same type will now be selected and you can easily adjust their attributes, e.g. their color:
Select all elements of the type "task" using ‘Ctrl + I’ and change their color.

If elements of different types have been selected, Ctrl + I will select all elements of these types.

Formatting elements

Element design  You can change an element’s attribute values in the attribute panel to alter its appearance:

• You can change the **label**, either by clicking the element or the attribute **name**.
• You can alter the **background color** and the **border color** of an element by choosing a new color in the corresponding attribute value or by manually altering the hexadecimal value. As seen in the previous section, you can also change an element’s color in the Editor’s toolbar.

Change the color of an element.
In the section **More attributes**, you can check or uncheck the box **flat design** to remove the color gradient of an element.

![Diagram showing check box for flat design](image)

*The difference between a task with color gradient and in flat design.*

You can also **reshape** elements by changing their size and their shape by stretching or staunching them into different directions, as described in the following section.

**Resizing elements**  All elements that contain labels or other elements, like Tasks or Swimlanes, can be resized. Other elements, like Gateways or Events, cannot be resized. To resize an element, proceed as follows:

- Select the modeling element you want to resize.
- Click and drag the three blue dots at the lower right corner of the modeling element.

![Diagram showing resizing elements](image)

**Resize elements.**

By selecting multiple modeling elements and clicking the **Same Size** button in the toolbar, all modeling elements can be resized to the size of the biggest of the selected elements.

![Toolbar with Same Size button](image)
Align the size of elements.
Dotted orientation lines simplify the alignment of diagram elements on other element sizes during resizing.

Dotted orientation lines help adjusting element sizes.
Pressing certain key combinations while resizing an element affects the functionality:

- **Alt**: Resize without automatic snapping and orientation lines
- **Ctrl**: Resize to every direction
- **Shift**: Keep the aspect ratio while resizing

It is possible to combine these functions.

Removing formatting   Element styles can be easily removed from an element, so it returns to its default style. Select the element and click the **Remove formatting** button:

Remove formatting to restore the default style.

Copying formatting   If an existing diagram was edited, e.g. if an element was added, you may want to adapt its style. This can easily be done via the **Copy formatting** button:
The task ‘Check purchase requisition’ was added and is supposed to adapt the unified style.

Choose an element to copy the style from and click the **Copy formatting** button. The next element you click will adapt the style immediately.

**Formatting labels using the Editor’s toolbar**

The corresponding formatting tools can be found on an additional toolbar, which is expanded by clicking the **Formatting options** button:

*The toggle button in the Editor toolbar opens or closes the label editor.*

Click this button again to hide the formatting toolbar.

**Hint:** The attribute editor on the right and the shape repository on the left are not required for this ‘fine-tuning’. Hide them by clicking the corresponding arrow to create more space on the canvas.

The examples of this chapter only consider labels of task elements. Title, border- and background color of other element types are edited in the same way.

Select one or more elements and open the **formatting options** toolbar.
Change the appearance of all selected elements.
Click the corresponding tool symbol to edit the label:

- **Change size**
  
  ![Change size icon](image)

- **Bold print**
  
  ![Bold print icon](image)
• Italic print

• Text color

• Border and icon color

• Background color

To undo or redo, use the corresponding toolbar buttons, the key combination Ctrl + Z or Ctrl + Y or click the corresponding formatting button again.
4.1.3 Referencing documents

In Signavio Process Manager, you can reference uploaded or third-party hosted documents. This enables business users to have detailed background information, e.g. regulations and specifications, directly at hand when they view processes in Collaboration Hub.

There are two ways of linking documents to diagrams:

- In case you want to access the document from different process elements and/or diagrams, we recommend you to reference them from dictionary entries.
- To make the document accessible exclusively from one diagram, use a custom attribute of the type Document/URL. Both functionalities are explained here.

We recommend the usage of web links of the form http://[domain]/[file] to reference documents. If this is impossible and a document has to be referenced from a network storage, please note our hints for Referencing documents on network shares (page 193).

Referencing documents using the dictionary

**Hint:** We recommend that you create dictionary entries for your document definitions. From these entries, you can then reference documents that are in your online document management system or on your network drive. You can manage dictionary entries in a central repository and re-use them throughout your process landscape. This decreases the overhead of managing document definitions significantly. If you haven’t used the dictionary, yet, read more about the dictionary at *The Dictionary* (page 428) and follow the instructions further below. Because Signavio Process Manager is a process management system and not a document storage, we recommend you to use the document upload feature only in exceptional cases. To manage your documents, please use a document management system.

To reference a document in a dictionary entry, proceed as follows:

1. Open the dictionary from the Explorer. You will find it below the directory tree on the left side.
2. Now, there are two options:
   (a) Create a new entry through clicking on **New entry**.
   (b) Open an existing entry by selecting it and clicking on **Edit**.
3. Under **Attached Documents**, you can label the link and store the location. If you want to link a document from the intranet, see *Referencing documents on network shares* (page 193)

   **Note:** This functionality only allows to link documents. The documents are not stored in the model repository. Please ensure that all users can access the corresponding URLs.
Open the dialog by clicking **Setup** and then **Define notations/attributes**.

![Define notations/attributes](image)

Choose a specific subset and a modeling element, and click **Add custom attribute**.

![Add a custom attribute to the process element 'task'](image)

Insert a name and a description for the attribute. Set the **data type**, in this case **Document/URL**.
Select **As list** to enable the possibility of linking multiple pictures or documents to one element.

**Creating links to pictures and documents in the Signavio file storage**

You can link pictures and documents from the file storage to diagrams and diagram elements. Such links can be established via custom attributes typed as link/URL (see above). To link a file, select the diagram element that you want to link. If no element is selected, the whole diagram will be linked. Choose the attribute that keeps a link/URL from the attribute editor and open the link dialog by clicking the three dots:

*A document will be added to the attribute 'Document'.*

If the attribute was not declared to keep a list of links, a dialog will appear that allows selecting the file you want to link:

*Select a file.*

If an attribute link already exists, it will here be given as default. See below how to link lists of documents and files.

---

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Choose whether to upload a new file or link a file that was already uploaded to your file storage. It is also possible to link a file from a network storage here by choosing the last of the three options. Please read about linking files on a network storage at Referencing documents on network shares (page 193).

If the custom attribute was defined as list, following dialog will appear first:

List attributes allow attaching multiple documents or pictures to one attribute.

It allows editing existing links in the list via Edit or deleting them by clicking Remove. Please note that removing a link from this list does not remove the file in the file storage.

Click Add a new document. The same link dialog as described above will appear.

Follow one of the following instruction sets to link a picture or document:

1. **Upload a picture or document**:
   - Select the first option to upload a new file and click Browse:

```
Upload a new file/picture:
Browse...
Target Folder: End-to-end process parts
```

```
Choose a file/picture from your file storage:

- Shared documents
- My documents
```

- Select a file.
- A dialog appears that allows you browsing through your local file system. Select the file you want to upload and commit your selection. The file information will be passed to the upload dialog.
• Select the folder of your Signavio workspace in which the file is supposed to be stored. By default, the folder that keeps the diagram you are currently editing is selected, to change this directory, expand the drop down list and click **Select different folder:**

![Select different folder](image)

• Choose the target folder and click **OK:**

![Folder selection](image)

Only existing folders in the workspace can be chosen as upload target.

2. **Reference a file that was already uploaded**

• Select the second option and browse through your workspace to find the file in your Signavio file storage:
3. Reference a web resource or a file on a network storage

- Select the last option and enter a name for the link as well as the URL or path information:

```
Label: Floormap
URL: https://www.example.com/intern/
```

Add a link that refers to a web resource.

After selecting the file or web resource you want to link, click Save (or Add, if the attribute is a list). The link will then be established or, if the attribute was defined as list, be added to the list. In this case, commit the list of links by clicking Save in the list overview dialog.

Hint: If you chose to upload a file, this may take a moment.

Referencing documents on network shares

Hint: To link files on a network share special web browser specific settings have to be configured for web-based applications like the Explorer. Not that Internet Explorer and Google Chrome only allow linking documents on network shares but not in the local file system.

You can link a document at path G:\MyPath\MyDocument.doc that is stored at a network share using the following URL:

```
file://G:/MyPath/MyDocument.doc
```

Important: Most web browsers have security mechanisms in place that prohibit accessing links on
local file systems. For this reason you might not be able to access the documents by clicking the link.

The following instruction sets explain how to configure your browser to allow accessing the files:

**Mozilla Firefox users:**

- Close all windows of Mozilla Firefox
- Open the following file using a text editor.
  - **Windows:**
    ```
    C:\Documents[YourWindowsUsername]\Application Data\Mozilla\Firefox\Profiles\[YourFirefoxProfile]\prefs.js
    ```
  - **Unix:**
    ```
    home/[YourUnixUsername]/.mozilla/firefox/xv7ftnh.default/prefs.js
    ```
- Add the following three lines to the end of the file and save it:

```javascript
user_pref("capability.policy.localfilelinks.checkloaduri.enabled", "allAccess");
user_pref("capability.policy.policynames", "localfilelinks");
```

**Note:** If you use an on premise installation of Signavio Process Manager, replace https://editor.signavio.com http://academic.signavio.com https://app-us.signavio.com https://app-au.signavio.com with the URL of your system in the example above.

With those settings it is possible to link documents on network shares and on the local storage.

**Internet Explorer users:**

- Click the gear symbol in the upper right corner and choose *Internet Options*. The Internet options dialog open. Switch to the tab *Security* and click *Trusted Sites*:

---

Chapter 4. Modeling diagrams
The trusted sites settings

- Click Sites:

To display all trusted sites for the zone, click 'Sites'. A window is opened containing a list of trusted sites. If you already opened Signavio Process Manager, the website signavio.com will already be entered into the upper text field. If not, enter it manually.

**Important:** For the On Premise Edition, the URL of the Process Manager system differs. Replace https://editor.signavio.com with the URL of your on premise server.

- Click OK:
Signavio Process Manager will be added to the trusted sites.

- Signavio Process Manager will now be added to the list of trusted sites. Click OK to return from the Internet options menu.

**Note:** If you are using Microsoft Edge you can only configure trusted sites by opening Internet Explorer and adjusting the settings as described above. Internet Explorer's trusted site settings will apply to Microsoft Edge as well.

**Google Chrome users:**

You can install the Chrome Extension *Local Link*, which creates a copy of a linked document each time you activate the link. However, this does not support editing the document. With those settings it is possible to link documents on network shares, but not on from local storage.

### 4.1.4 Displaying attribute visualization layers

Important attributes can be configured to be displayed in distinguished visualization layers. The configuration procedure of these layers is described in the chapter *Managing attribute visualization layers* (page 516).

In Signavio, attribute visualization layers can be configured and displayed for BPMN and Archimate diagrams, Value Chains and Organization Charts.

To display a visualization layer click the corresponding button in the upper toolbar:

![Visualization layer buttons](image)

Now, icons (or the corresponding attributes' properties) will appear next to the tasks in the diagram and provide you with an overview over the attribute properties:
4.1.5 Creating process hierarchies

Depending on the level of detail, process diagrams can become very complex. Huge diagrams are hard to understand and to handle. Therefore, dividing a process into parts, especially via hierarchies, is an important concept for managing complexity.

Signavio Process Manager allows users to define process hierarchies through the use of subprocesses (in the case of BPMN) or process interfaces (in the case of EPC) and through linking to other diagrams. The following explanations are going to use BPMN subprocesses for illustration. The same functionality is also available for EPC.

Refining a subprocess in a separate diagram

- Select the subprocess you want to refine.
- Click the + symbol.

The colored icons provide information about the attributes.
The "+"-symbol opens the “Establish link”-dialog

- The “Establish link” dialog opens.

![Establish link dialog](image)

- The input field on the top shows the name of the subprocess. By using this field you can edit the diagram title.
- Choose the diagram type. BPMN will be pre-selected whenever you are about to refine a BPMN subprocess.
- Click Link Diagram
- A new diagram with the specified name will be created and the Editor will show up in a new browser tab or window. You can now start editing the diagram (page 164).

### Linking an existing diagram to a subprocess

To link an existing diagram to a subprocess, proceed as follows:

- Select the subprocess you want to link an existing diagram to.
- Click the + symbol at the bottom of the shape and the “Establish link” dialog will pop up.
Select Use existing diagram

- Browse through the folder structure and select the diagram you want to link. On the right you see a preview of the diagram.
- Click Link Diagram.

Hint: If the preview is too small, you can enlarge the Establish link dialog. This will also resize the preview.

Moving diagram parts to a new process

When BPMN diagrams get too large, you may want to move a part of it into a linked subprocess. In such a case, you condense groups of process elements in collapsed subprocesses:

- Select the process part which is supposed to be moved, click the change type button out of the interactive shortcut menu on the left bottom and choose Collapsed subprocess:
The selected area will be copied to a new process and be replaced by a collapsed subprocess containing the new diagram.

- As the diagram might be changed significantly, a warning occurs. Confirm the warning:

A warning appears as process semantics may be manipulated.

- Add a title for the subprocess and choose whether to edit it now or later:

Creating the linked subprocess will establish a new subprocess.
• The process will be moved to a new diagram. It is now represented as a collapsed subprocess:

![Diagram](image)

*A collapsed subprocess will represent the process part that has been moved to another diagram*

The new diagram will be created in the same folder as the old one. Refresh the Signavio Explorer to see it.

**Linking a web document to a subprocess**

Instead of linking a diagram to a collapsed subprocess you can also link an online document.

• Select the subprocess you want to link the online document to.
• Click the + symbol at the bottom of the shape and the **Establish link** dialog will open.
• Choose **Use web link**.
• Paste the URL to the input field and click the **Link Diagram** button.

**Opening a linked diagram**

Once you have created a refinement or linked an existing diagram, you can navigate to that diagram from the subprocess.

• Select the subprocess and click the + symbol.
• A preview panel appears. Click **Open** to open the diagram in a separate browser tab.

**Hint**: If you e.g. are using Internet Explorer 6 to 8, you will be warned that the Editor is not supported in your web browser. For more information about browser compatibility, see [http://www.signavio.com/browser-compatibility/](http://www.signavio.com/browser-compatibility/).

![](image)

**Open the referenced diagram**

**Hint**: The preview will also be shown for linked web documents.

**Editing a link**

Select a subprocess and click the +- symbol.

The preview appears. Click **Edit link**.

• The **Establish link** dialog opens. Now, you can link to a new created diagram, an existing diagram or a web document.
Removing a link

- Select the subprocess and click the + icon.
- The preview panel appears. Click Remove link

**Hint:** After having removed a link you can set a new link or create a refinement by clicking the + icon again. This will open the Establish link dialog.

### 4.1.6 Working with modeling conventions

**Note:** This feature is available in the Enterprise Edition.

The **modeling convention** feature enables users to check if diagrams stick to certain rules regarding notation set, labeling, process structure and diagram layout. This check can be displayed while modeling (or saving). Additionally, a modeling conventions report can be generated. The **Classic Edition** offers the Signavio Best Practices modeling convention. In the **Enterprise Edition** you can also create custom modeling conventions for your workspace.

Modeling conventions help business process modelers with sticking to a reasonable and consistent modeling style.

To learn more about this topic, go to the chapter *Managing modeling conventions* (page 521).

While modeling a diagram in the Editor, the infringement of modeling conventions may be checked using the dialog in the upper toolbar:

![Check modeling conventions dialog](image)

The result of the check will look like this:
**The result of the modeling convention check is displayed.**

The infringements are shown in the diagrams as exclamation marks attached to the corresponding elements. Moving the mouse over these exclamation marks will display a short information text. Additionally to the illustration in the process diagrams, the information is summarized in a chart below the process diagram.

To gain an overview over the modeling conventions, click **Open guideline:**

A detailed explanation chart containing modeling guideline infringements will show up:

<table>
<thead>
<tr>
<th>Signavio Best Practice</th>
<th>Description</th>
<th>Default value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning at decision</strong></td>
<td>Check if the diagram is in line with best practices.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at edge relations</strong></td>
<td>Check if all edges are needed, each instead of merging into each other.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at all nodes</strong></td>
<td>Check if the diagram is clear of all nodes.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at initial sequence flow or artifact</strong></td>
<td>Check if the diagram is clear of initial sequence flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at end sequence flow or artifact</strong></td>
<td>Check if the diagram is clear of end sequence flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at interaction nodes</strong></td>
<td>Check if all nodes are needed.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at self loop and loop behavior on one element</strong></td>
<td>Check if all loop node on either clipping or merging.</td>
<td></td>
</tr>
<tr>
<td><strong>Warning at interaction relations</strong></td>
<td>Check if all relations are needed, and the diagram is clear of unnecessary details.</td>
<td></td>
</tr>
<tr>
<td><strong>End of process group and sub-diagram</strong></td>
<td>Check if all relations are needed, and the diagram is clear of unnecessary details.</td>
<td></td>
</tr>
<tr>
<td><strong>Valid</strong></td>
<td>Check if all relations are needed, and the diagram is clear of unnecessary details.</td>
<td></td>
</tr>
</tbody>
</table>

*excerpts of the explanation chart of the Signavio Best Practice modeling convention*

Another way to display this chart is selecting **Help - Modeling Conventions** in the top drop-down menu of the Signavio Explorer.*
In addition to the convention check in the editor, an automatic check before saving a diagram may be necessary (depending on your work space settings). This check is integrated into the save dialog:

Pressing the **Play** button will lead you to the same view as the convention check dialog in the toolbar does.

**Modeling conventions report**

In addition to the checks in the **Editor**, a modeling convention Excel report containing details of one or multiple processes can be created in the **Explorer**.

In order to create a report open the **Reporting** menu in the **Explorer** and go to **Modeling conventions** (XLSX):
Create a modeling conventions report.

Then, select the diagram(s) and modeling conventions you want to include:

Select the diagram(s) and the conventions for the report.
Now, click **Start analysis**. An XLSX containing an overview over violations of modeling conventions will be generated. It will look like this:

<table>
<thead>
<tr>
<th>Report:</th>
<th>Modeling Conventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>04.02.2013</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00:05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Folder</th>
<th>Diagram</th>
<th>Architecture</th>
<th>Notation</th>
<th>Naming</th>
<th>Process</th>
<th>Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Purchase Requisition-to-Purchase Order</td>
<td>OK</td>
<td>3 Hints</td>
<td>3 Warning</td>
<td>OK</td>
<td>4 Warnings</td>
</tr>
<tr>
<td></td>
<td>Delivery-to-Payment</td>
<td>OK</td>
<td>4 Hints</td>
<td>3 Warning</td>
<td>OK</td>
<td>3 Warnings</td>
</tr>
<tr>
<td></td>
<td>Purchase Order-to-Delivery</td>
<td>OK</td>
<td>8 Hints</td>
<td>OK</td>
<td>OK</td>
<td>2 Warnings</td>
</tr>
</tbody>
</table>

**An example of a modeling convention report**

### 4.1.7 Key combinations (short cuts) in Signavio Process Manager

Signavio Process Manager has been created for fast and effective modeling. These key combinations can help you save time editing diagrams:

- Saving diagrams: **Ctrl + S**
- Copying elements: **Ctrl + C**
- Cutting elements: **Ctrl + X**
- Inserting: **Ctrl + V**
- Removing elements: **Del**
- Resize an element in every direction: **Ctrl + drag element connector**
- Resize an element without snapping: **Alt + drag element connector**
- Keep the aspect ratio while resizing an element: **Shift + drag element connector**
- Move an element without snapping: **Alt oder Ctrl + drag**
- Move an element along a straight line: **Shift + drag**
- Undo/Redo: **Ctrl + Z** bzw. **Ctrl + Y**
- Select all elements of one type: **Ctrl + I**
- Change the zoom factor of a diagram: **Ctrl + Plus / Ctrl + Minus**
- Restore original size of the diagram: **Ctrl + o** (Zero)
- Create or remove free space by clicking and dragging: **Ctrl + M**
- Select multiple elements: **Ctrl/Shift + click**
- Select all elements: **Ctrl + A**
- Open diagram preview in Explorer: **Space**
- Open diagram: **Double click diagram**
4.1.8  Custom graphics

New in version 12.1.0.

Users with Enterprise or Enterprise Plus licenses can upload custom graphics for use in customer journey maps (page 222), value chains (page 214), and BPMN 2.0 diagrams (page 230). Uploaded files must be in .SVG format and individually no larger than 20 KB.

The following elements can be customized:

Customer journey maps
  • Persona
  • Touchpoint
  • Moment of truth
  • Customer
  • Decoration

Value chains
  • Process
  • Collapsed process

BPMN 2.0 diagrams
  • IT System
  • Additional Participant

Custom graphics are tied to the workspace to which they are uploaded—if you have multiple workspaces and want to use custom graphics in each, you must upload them separately to each workspace.

**Hint:** Custom graphic files do not count towards the file limit for a workspace.

To upload custom graphics, do the following:

1. Create or save the image you want to use as an .SVG file.
2. In Process Manager, navigate to the Setup button in the toolbar. Select Define notations/attributes from the drop-down menu. The Define notations/attributes dialog will open.
3. In the Modeling language section, select either customer journey map, value chain, or BPMN 2.0 diagram.
4. In the **Diagram element types** section, select the element type you want to set the custom graphic for. Note that not all elements are able to be customized.
5. In the **Custom attributes** section, click the **Custom Graphics** tab. Click the **Add** button. The **Upload Custom Graphic** dialog will open, with details about the upload requirements for .SVGs.

![Custom Graphics Tab](image)

6. Click **Choose File** and select the file you want to upload. The **Name** field will by default be filled with the file name. A preview of the image will be displayed below. Edit the name if you want, and then click **Add**.
7. Process Manager will perform a validation while your file uploads, to make sure it fits all requirements (see “Validation criteria” section below).
   - If the validation is successful, your custom graphic will be displayed in a list in the Custom Graphics tab.
   - If the validation fails, a dialog will be displayed, showing you the original image and what the image will look like after being scrubbed. If the scrubbed image is fine, click Add scrubbed image.
   - If the validation fails, it may also be that the uploaded .SVG does not meet our requirements.
8. Your custom graphic will be displayed in a list in the Custom Graphics tab, where you can now set and use it for modeling.

Validation criteria

.SVG is a flexible, powerful file format. However, this flexibility makes it vulnerable to security exploits. To prevent possible security problems, Process Manager will check each .SVG file you try to upload and scrub anything potentially malicious from the file. It will then show you a preview dialog, so you can see the differences between the original and scrubbed file. If the scrubbed file is acceptable to you, you can then continue with the upload.
The requirements for .SVG files are:

- The root element of the .SVG must contain the required attributes either width and height or viewBox. The width and height attributes must be absolute size.
- The attributes of the .SVG file must not contain JavaScript in attributes
- The elements and attributes of the .SVG file must not contain URLs
- The .SVG file must not exceed the size limit of 20 KB
- The .SVG file must not exceed the supported complexity of 2000 anchor points

Here is the list of allowed tags and attributes for .SVG files:

**Tags:** "svg", "style", "g", "path", "ellipse", "circle", "polygon", "rect", "line", "polyline", "defs", "clipPath", "mask", "use", "radialGradient", "linearGradient", "stop"


**Modeling with custom graphics**

Once uploaded, custom graphics can be used in customer journey maps, value chains, and BPMN 2.0 diagrams.

To use custom graphics in a model:

1. Open your existing customer journey map, value chain, or BPMN diagram, or create a new one from scratch, in the Editor.
2. Select an element you have defined a custom graphic for.
3. In the **Attributes** panel, click the arrow next to the **Image** field.

4. Select your custom graphic from the drop-down menu.
5. Your element will now change from the default graphic to the custom graphic you defined. Models with custom graphics can be imported, exported and published to Collaboration Hub the same as standard models.

### 4.2 Value chains

For high-level perspectives on your process landscape, BPMN does not always offer the right level of abstraction. In such cases, you should typically employ value chain diagrams.

Value chain diagrams can provide an intuitive overview of your organization's processes. Each element of the value chain diagram depicts a process or process group of a specific organizational unit.

When creating a value chain diagram, it is recommendable to put some thought into its design. As there is neither a formal specification nor a set of syntax rules, you can be creative. The focus, however, should be on easy readability. Readers should be able to navigate to “their” processes as fast as possible and immediately recognize the position of their department in the bigger picture of the process landscape.

Read more about creating and editing value chains in the following chapter:

- *Creating and editing Value Chains* (page 215)
- *Designing Value Chains* (page 218)
A Value Chain diagram, created with Signavio.

### Creating & editing Value Chains

You can create Value Chains in the Signavio Explorer like any other diagram and edit them in the Editor. This chapter explains the Value Chain Elements and their alignment options on the diagram canvas. To learn about modeling diagrams with the Editor, please go to the chapter *Basic modeling with the Editor* (page 163).

Creating a Value Chain diagram

To create a new Value Chain diagram, click **New**, then **Value Chain** in the top drop-down menu of the Signavio Explorer. The Editor opens with a blank modeling canvas, ready for you to edit the diagram.
Create a new Value Chain Diagram.

Editing Value Chains

As soon as the blank canvas is loaded in the Editor, you can start adding elements from the Shape Repository on the left.

Start adding elements from the Shape Repository.
You can use the following elements from the shape repository to model your Value Chain diagram:

Process A Process displays a business process within your organizations. Processes and/or Collapsed Processes can be linked with one another to form a chain.
Collapsed Process   A **Collapsed Process** is a **Process** element that contains a Subprocess. A new or existing diagram can be linked to the element as Subprocess by clicking the + symbol as depicted below.

Process Link   A Process Link is used to create a hierarchy within a Value Chain diagram.

Group   Several elements can be grouped by using this element to display that they belong together.

Text Note   A Text Note can be used to comment on a Process or another element.

Association   An Association an be used to connect Text Notes to other elements

If you would like to know more about modeling with the Editor, please go to the chapter *Modeling diagrams with the Editor* (page 163).
4.2.2 Designing Value Chains

You have created and labeled all your elements. Now you wish to adapt the design of your new Value Chain. You can change the color and shape of Value Chain elements. To change the design of several elements at once, click on one of the elements, then hold the \texttt{Ctrl}-key while you click on all the other elements that will then be added to the selection. When you have selected all elements you wish to alter, let go of the Ctrl-key and proceed as you would when designing a single element. The different design options in Signavio Process Manager are explained below.

Aligning Value Chains

While working with Value Chains it is possible to change the alignment of single or multiple elements. Use the interactive shortcut menu and click the \textbf{Turn} button in the lower left corner:

![Align Value Chains](image)

\textit{Align Value Chains.}

Also, as process elements may be overlapping, it is possible to change their order by bringing them to the front or sending them to back using the buttons in the toolbar:

![Bring to Front](image)

\textit{Bring a process element to the front.}

\textbf{From left to right, the four alignment buttons}

- Bring an element to the front
- Send an element to the back
- Lift an element one level
- Lower an element one level

Changing color and shape of Value Chain elements

\textbf{Formatting labels} To change the design of a label, click the \textbf{Format Text}-button in the upper toolbar of the Editor and select the setting you wish to change. You can find more information about label design at \textit{Formatting labels} (page 184) in the section \textit{Basic modeling with the Editor} (page 163).
Choose a font color for the selected elements

**Aligning labels** To change the text direction of a label, select the corresponding element and open the attribute panel on the right side in the Editor. To change text alignment, click the attribute **Text direction** and choose a setting.

_CHANGE THE TEXT DIRECTION OF A LABEL IN THE ATTRIBUTE PANEL._

**Changing the shape of an element** To alter the size and shape of an element, click its bottom right corner, drag it into the shape you desire. The element will align to the new shape.
Altering the shape and size of a Process element

The newly shaped element in its final design.

Changing element colors  When designing Process elements, you can switch between gradient color and a plain single-colored design by clicking the attribute Flat Design and unchecking the box.

If you like plain color, you can switch to 'Flat Design'.
To change an elements color, select it and open the attribute panel on the right. There, select a new value for the attribute(s) **Color** and/or **Border color** by clicking it and selecting a color-square. Alternatively, you can define a hexadecimal value in case the color needed is not listed.

Choose a new color for the selected elements.

Alternatively, you can select a hexadecimal value.
A Value Chain designed with Signavio.

4.3 Customer journey maps

New in version 11.7.0.

Customer journey maps (CJMs) provide customer-centered entry points to your business process landscape. CJMs are high-level intuitively readable diagrams that focus on the customer experience instead of internal processes. They help you understand how your customers perceive your products and services in the context of their everyday lives and how their key decisions, which for example lead to a purchase or churn, are motivated.

Read more about customer journey maps:

• What are customer journey maps? (page 222)
• Creating and editing customer journey maps (page 227)
• Integrating customer journey maps into your process landscape (page 229)

4.3.1 What are customer journey maps?

Customer journey maps are graphical representations of the steps a customer absolves when interaction with your organization. They can include a wide variety of information, including things like critical decisions, touchpoints, departments involved, IT systems, or any other points that are specific to your organization. When creating a customer journey map, you model your organization from the outside in. Hence, customer journey maps provide customer-centered entry points to your business process and/or enterprise application landscape.

Find out how to use custom graphics (page 208) in customer journey maps.
Customer journey map elements

The following sections explain the customer journey map elements you can use in Signavio Process Manager.

Persona  Personas represent typical customers. A persona's attributes and their associated *banners* (page 226) define their motivations, goals and pain points, as well as typical characteristics like preferred media channels and IT savviness.

A female and a male persona.

Personas can be either female or male, depending on their *gender* attribute.

Customer  A customer element represents a persona at a specific step of a customer journey. You can configure customer elements to express their feelings and attitudes as gestures, for example as a *thumbs up*.

A customer.

As personas, customers can be either female or male, depending on their *gender* attribute.

Outcome  Outcomes define what your customers are trying to get out of their experience. For example, an outcome of the customer journey of a banking customer might be *obtain loan*. Outcomes can be either successes (hoisted flag) or failures (flag on the ground).
Successes and failures.

**Step**  Steps (connected through *paths* (page 224)) show the sequence of events at a high level and form the backbone of a customer journey map around which supporting elements are arranged.

A sequence of steps.

**Path**  Paths connect different *step* (page 224) to define the flow of a customer journey.

**Touchpoint**  Touchpoints represent steps where your customer comes into direct contact with your brand. Each touchpoint relates to at least one of your business processes and roles or IT systems. Touchpoints can be either physical (for example: a cash desk) or virtual (for example: social media).
Different touchpoints

**Moment of truth**  Moments of truth are key decision points that can make or break your business's chance for succeeding with the customer. They are either barriers (requiring customer empowerment) or signposts (requiring a customer decision).

*Moments of truth: barriers and signposts.*
**Trigger**  Triggers start a customer journey. They can be either *ideas* (inspiration-driven) or *demands* (driven by need).

![A trigger.](image)

**Text**  Text labels describe specific customer journey map elements or element groups.

![A text describing a customer's thoughts at a specific journey step.](image)

**Banner**  Banners are post-it-style notes that contain important textual information about a customer journey map element or about the customer journey in general. The icon and default color of a banner depends on the elements *type* attribute, which can be *idea* (light bulb), *demand* (bell) or *goal* (flag).

![Banners of different types.](image)
Decoration  Decoration elements provide additional visual information to support specific process steps. For example, a package decoration element might indicate a delivery.

Different decoration elements.

4.3.2  Creating and editing customer journey maps

To create a new customer journey map, open the Explorer and click New - Customer journey map:

Creating a new customer journey map.

The system opens the Editor with an empty diagram canvas in a new tab. You can work on the customer journey map like a diagram of any other type.
A customer journey map diagram in the Editor.

For more information on how to create and edit diagrams in Signavio Process Manager, read *Basic modeling with the Editor* (page 163).

**Grouping and ungrouping customer journey maps**

**Hint:** In order to create groups, you must include one step element.

Grouping customer journey map elements makes it easier to model your process landscape, because it lets you move multiple elements together as though they were one single element.

You can group elements in one of three ways. In the Editor:

- Select a set of elements and click the group icon in the left bottom corner of the selection rectangle.
- Select a set of elements and click the group button in the toolbar.
- Select a set of elements and press the shortcut “Ctrl + G”

To ungroup elements, do one of the following in the Editor:

- Select a group and click the ungroup icon in the left bottom corner of the selection rectangle.
- Select a group and click the ungroup button in the toolbar.
- Select a group and press the Shortcut “Ctrl + Shift + G”

After grouping elements in the Editor, open your customer journey map in Collaboration Hub. Click on each group and you will see all information about each element in the group displayed in the annotation.
Navigating through customer journey maps

If you publish to or preview your customer journey map in Collaboration Hub, you can use the arrow keys on your keyboard to navigate through each step.

To do so, either select a step with your mouse, or simply press the right arrow key on your keyboard. The step you selected will be highlighted, while the rest of the map will be greyed out.

If your step contains grouped elements, an information panel with information about each element will also be displayed for the highlighted step.

4.3.3 Integrating customer journey maps into your process landscape

In customer journey map diagrams, touchpoints (page 224) depict interaction points between your organization and your (potential) customers. In other words, touchpoint elements are entry points to your process and application landscape. When creating touchpoints in customer journey maps, you should reference the business process diagrams, roles and/or IT systems that are involved in the corresponding customer interaction.

Creating custom attributes for the touchpoint element

To allow referencing process diagrams and - in the form of dictionary (page 428) entries - roles and IT systems, create a set of custom attributes (page 538) for the touchpoint element type. We recommend creating the following custom attributes:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Is list?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process links</td>
<td>Links to the business processes the customer triggers/interacts with</td>
<td>Diagram link</td>
<td>X</td>
</tr>
<tr>
<td>IT systems</td>
<td>Links to the IT systems through which the (potential) customer has contact</td>
<td>Dictionary link</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>with the brand or organization</td>
<td>(Category: IT systems)</td>
<td></td>
</tr>
<tr>
<td>Roles</td>
<td>Links to the roles through which the (potential) customer has contact with</td>
<td>Dictionary link</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>the brand or organization</td>
<td>(Category: organizational units)</td>
<td></td>
</tr>
</tbody>
</table>

Creating a custom attribute to reference IT systems.
Referencing diagrams and dictionary entries at touchpoint elements

To reference a diagram or dictionary entry at a touchpoint, select the touchpoint element in the Editor and open the attribute panel. Select the attribute you want to edit - for example Process links - and add the reference:

![Establish link](image)

Adding a process reference to a touchpoint element.

4.4 Business Process Model and Notation (BPMN)

The following chapters provide detailed information on how to use the Signavio Process Manager for modeling BPMN 2.0 diagrams. To learn about the BPMN 2.0 standard, go to the chapter What is BPMN. If you are yet unfamiliar with process modeling, we recommend you start with the chapter Basic modeling with the Editor (page 163), then move on to Editing BPMN (page 231) to learn BPMN specific modeling functions. More advanced functions are explained in the chapters Setting BPMN attributes (page 255) and and Creating Views (page 267). It is also possible to compare (page 48) diagrams or diagram revisions and simulate BPMN diagrams (page 277).

To get started, please choose one of the following chapters:

- What is BPMN? (page 231)
- BPMN modeling (page 231)
- Setting BPMN attributes (page 255)
- Responsibility assignment according to RACI (page 260)
- Setting key performance indicators (KPIs) (page 264)
- Creating views (page 267)
- Risk Management (page 273)
- The BPMN simulation tool (page 277)
- Migrating diagrams to BPMN 2.0 (page 300)
- Converting EPC diagrams to BPMN 2.0 (page 300)
- FIM attributes for the public administration (page 302)
4.4.1 What is BPMN?

The Business Process Modeling Notation (BPMN) is the de-facto standard for business process modeling. It is an industry standard released by the Object Management Group (OMG) and supported by a wide range of vendors and consultants. The current version BPMN 2.0 allows you to define activities, control flow, data flow, organizational dependencies and system dependencies of business processes.

Signavio Process Manager supports BPMN 2.0 in full, including all modeling constructs and attributes. The syntax rules of BPMN are enforced by the Editor. Signavio is committed to BPMN, was and remains involved in the standardization process and, promotes BPMN in industry and academia.

BPMN elements

If you are interested in more details about BPMN, take a look at our BPMN element overview at https://www.signavio.com/bpmn-introductory-guide/.

Note: Signavio Process Editor Manager the custom elements IT system\(^\text{11}\) and additional participant\(^\text{12}\). These elements are extensions of the BPMN standard and as such standard-compliant. Many of our customers find these additional elements a convenient alternative to pools and lanes to model humans or systems involved in particular aspects of a business process. If desired, you can deactivate these elements (page 534), so your user can only create elements the BPMN standard supports by default.

4.4.2 BPMN modeling

This section describes how to create and edit BPMN diagrams in Process Manager. If you like to learn about the basic modeling functions first, please go to Editing diagrams (page 164) in the Basic Modeling section of the manual.

\(^{11}\) https://www.signavio.com/bpmn-introductory-guide/#IT-Systems

\(^{12}\) https://www.signavio.com/bpmn-introductory-guide/#Additional-participant
Creating a new BPMN 2.0 diagram

- Click **New**, then **Business Process Diagram (BPMN 2.0)** in the top drop-down menu of the Explorer.

![New Business Process Diagram](image1)

- The Editor will open in a new browser tab. Now you can start adding modeling elements.

In case you would like to edit an existing diagram, just double-click the diagram in the Editor. Alternatively, you can select the diagram and click **Edit**, then **Edit diagram**:

![Edit Diagram Menu](image2)

Editing BPMN diagrams

To add the first element to the diagram canvas, select it from the shape repository on the left side of the Editor, drag it onto the diagram canvas and drop it there:
The green or red status icon indicates whether or not it is possible to drop the element at the current location. This might depend on whether an element can be added to another element. For example, a Data Object cannot be added to a Task.

The shape repository contains all modeling elements that are available in the selected subset. To change the shape repository subset, click the drop-down menu above the shape repository. The elements are grouped into element types (in activities, gateways, roles, etc.). Once you get started, you can add elements using the interactive context menus of existing elements. Depending on the shape currently selected, the menu suggests which modeling element might be added next.

**Hint:** The subset of modeling elements you have selected influences the elements you can add through the interactive context menu. If the element you want to add doesn't appear in the interactive context menu, it probably does not exist in the current subset—simply switch to a subset that contains the needed element.

In order to make use of the interactive context menu, proceed as follows:

- Select an element on the diagram canvas (for example a Start Event). The interactive context menu appears right of the element.
- Click the icon representing the element you want to add (e.g. a task).
- The new element appears in the diagram.

If you want to define the position of the newly created element yourself, you can also click the icon and drag the element to the desired position:
Hint: The type of connector that is created between the selected element and the newly created element is determined automatically. In BPMN, the connector will usually be a sequence flow. When adding text annotations or data objects, it will be an association. In case the flow crosses pool boundaries, it will be a message flow.

If you want to duplicate one or multiple existing elements, you can simply select them and click the copy button in the upper toolbar:

Use the paste button to insert the elements:

To cut and paste elements, use the cut and paste buttons:

Instead of using the buttons, you can also use the keyboard shortcuts “Ctrl + C” “Ctrl + V” and “Ctrl + X”.

The copy functionality makes it easy to create similar elements with complex but similar values. It also lets you re-use parts of old diagrams by copying some of their elements and pasting them in a new diagram.

Hint: Copying elements between different diagrams may a few minutes, as the elements are copied to the server first. An Internet connection is required for copying elements between diagrams, but not for copying elements within one diagram.

Once you created an element in your diagram, you can label it:
If you want to edit the label of an existing element, double-click it in order to open the text box. You can edit the element's attributes by using the attribute panel on the right:

The position of labels and connectors can be changed via drag and drop:
Working with pools and lanes

Pools and lanes are modeling constructs in BPMN that allow for the assignment of organizational units, people or systems to activities. As the concept of pools and lanes is BPMN-specific, readers concentrating on other modeling notations may skip this chapter.

Adding pools and lanes to a diagram  Like with other modeling elements, the panel on the left is used to add new pools and lanes to a diagram. In most cases, a pool represents a company and lanes subdivide this company, e.g. into roles or departments.

Pools can either be collapsed or expanded. Collapsed pools cannot contain modeling elements, as they represent an abstract organizational unit or system. Expanded pools can contain lanes to further subdivide the pool. Those lanes can be subdivided further into sublanes.

This chapter explains how to add and edit expanded pools and lanes.

**Hint:** If you are using the subset BPMN (complete) you will find pools and lanes in the rubric swimlanes.

Pools and lanes are added via the modeling element **Pool/Lane**:

- Select the **Pool/Lane** entry in the shape repository on the left side.

\[\text{The Pool/Lane modeling element is context sensitive and becomes either a pool or a lane, depending on the area it will be dropped on.}\]

\[\text{The Pool/Lane modeling element is context sensitive and becomes either a pool or a lane, depending on the area it will be dropped on.}\]

- Drag the element to the desired position. The Editor helps you by highlighting possible positions. It also decides automatically whether the new element will be a pool or a lane:
  - Create a new pool with two lanes:
    - Drag the element to a spot on the canvas where no pool can be found. The information **Create new pool** will appear next to the cursor.
A pool is created whenever the pool/lane element is dropped into an area that does not already contain a pool.

- Create an additional lane beneath an already existing lane

Drag the element to the upper or lower border of another lane. The border will be highlighted in green and an alert will show up, explaining where the lane will be added.

A lane is added between 'Central purchasing' and 'Department'.

If you want to add a lane above, move the cursor to the upper border. To add a lane below, target the lower border.

- Create a sublane that splits an existing lane into two sublanes

When moving a Pool/Lane element over the body of a lane it will be colored green. To divide a lane into two sublanes, position the new lane here:

Before: The 'Central purchasing' needs to be subdivided into two organizational units.
AFTER: THE SUBLANES HAVE BEEN CREATED AND CAN BE NAMED NOW.

- Drop the element onto the canvas at its new position.
- Insert a title for the lane or pool created.

Renaming pools and lanes  To change a role's title, double-click its head at the left border. A text field appears:

A pool or lane is named by double-clicking its header.

Here you can add the new name. To create a line break, use the Enter key. To apply your changes, click the area outside the text field.

Reordering lanes within a pool  Lanes can be moved within a pool. If a lane is moved, its semantic content (i.e. tasks, gateways etc.) will be moved with it.

There are two possibilities to move lanes:

- Drag & Drop
  Click the head of a role and drag the lane to its new position, holding the mouse button pressed. Possible new positions will be marked green in the same way as described above.
The lane 'Department B' has to be moved above 'Department A'. Both will stay sublanes of 'Central purchasing'.

To move a lane up a level, move the cursor onto the head of its parent:

The lane 'Department B' has to be moved between 'Central purchasing' and 'Department'.

**Hint:** Existing lanes can be moved, but not in a way that they subdivide another lane into two separate lanes.

When selecting a lane by clicking its head, arrows will appear on its left border. The arrows can be used to move a lane into a certain direction:

- The lane will be exchanged with the one above, but will stay on the same level:

- The lane will be exchanged with the one below, but will stay on the same level:
The lane will be outdented, i.e. moved beneath the lane that currently contains it. It will be positioned above if the arrow on the upper border is used, and below, if the arrow on the lower border is used:

The lane will be indented, i.e. become a sublane of one of its neighbors. It will be added to the one above, if the arrow on the upper border is used, and below, if the arrow for the lower border is used:

Example: Moving a new lane as a sublane into an existing lane

In the following example, the role ‘Releaser’ will be added to the **Central purchasing**, which will then be divided into **Department A**, **Department B** and **Releaser**.

The lane **Releaser** was selected and the **indent** arrow will be used:

The releaser is supposed to become part of the central purchasing.

The lane was moved into the “Central purchasing”. This can be redone later on by using the “outdent”-arrow:
The lane ‘releaser’ is supposed to be removed from the pool ‘central purchasing’.

**Resizing pools and lanes**  To resize elements, proceed as follows:

- Click the header of the pool or lane you want to resize.
- Click the three dots in the lower right or upper left corner of the element and drag it to a new position in order to perform the resizing.

The size of a pool is adjusted in the same way as the task size.

Resizing of a pool / lane affects the parent and child pool / lanes in the following way:

- Resizing a pool: The new width is propagated to all contained lanes. Changing the height of the pool results in changing the height of all contained lanes, the height distribution is kept though.
- Resizing a lane: The new width is propagated to the parent pool and all lanes contained in it. Changing the height results in moving the lanes below it up or down.

**Working with connectors**

To connect two elements in your diagram, you can also use the interactive context menu. Proceed as follows:

- Select the element the connector should start from.
- Click the arrow icon in the shortcut menu and drag it to the target element. The red and green colors indicate whether the selected target is valid. For example, two start events cannot be connected in BPMN.
- A connector will be created. The type of the connector will be automatically selected in compliance with the BPMN 2.0 specification:
To insert an element into an already existing process flow, drop it onto the connector at the desired position:

In case you lack space for dropping the element onto the connector, you can make use of the create/remove space tool, read more at Creating more space - shortening and stretching diagrams (page 251).

Connector layouting is an essential aspect as well-structured diagrams are more comprehensible for the readers. The Editor does connector layouting automatically but you can also adjust the layout yourself.
Adding connectors between existing elements  If you want to connect two elements in your diagram you can also use the interactive shortcut menu.

- Select the source element.
- Click the **arrow icon** in the shortcut menu and drag it to the target element. The red and green colors will give you a hint which elements can be connected. E.g. two start events cannot be connected in BPMN.
- A connector will be created. The connector type depends on the types of the elements you have connected. E.g., two BPMN tasks will be connected through a sequence flow and two pools will be connected through a message flow.

Dropping a new element on an existing connector  It is possible to position an element between two existing elements. Drag it from the shape repository to the connector between the existing elements. If adding the element at this position is allowed in BPMN, a green frame will appear around the connector. Drop the element onto the connector.

You may use this functionality together with the **stretching connectors** (page 167) functionality.

Automatic layouting of connectors  The connector layouting feature helps you to create well-structured diagrams. Signavio Process Manager provides automatic layouting for connectors.

The auto-layout function is triggered...
• ...whenever a connector is created.
• ...whenever a element that is target or source of a connector is moved or re-sized.

Moving, adding and removing bending points

By moving the cursor over a connector, bending points of that connector are displayed. You can drag a bending point to another location in order to re-shape the connector:

A red dot appears whenever you move your cursor over a connector. To bend it, just click the red dot and drag it to its new position. Drop it there:
To remove a bending point you only need to drag it onto a straight connection between the two neighboring bending points or elements or directly on one of the neighboring bending points:
**Adding and removing bending points** A red dot appears whenever you move your cursor over a connector. To bend it, just click the red dot and drag it to its new position. Drop it there.

![Diagram showing bending and removing bending points](image)

*Bending points can be moved per drag & drop.*

To remove a bending point you only have to drag it onto a direct connection between the two neighbored bending points or elements.

![Diagram showing bending and removing bending points](image)

*Bending points can be removed by dragging them onto a direct connection between its neighbors.*

**Moving connector segments** Connector segments can be moved vertically or horizontally to improve the visual appearance of a diagram. To do so, move the cursor over the connector segment and a yellow rectangle will appear in its center. Drag and drop the yellow rectangle to move the connector to its new position.

![Diagram showing moving connector segments](image)
**Labeling connectors** While tasks and events usually should carry label, this only applies to certain connectors. For example, sequence flows in BPMN can carry a conditional expression and message flows can carry the name of the message to be transferred.

In order to label a connector, proceed as follows:

- Double-click on the connector you want to label or edit. An input field appears.
- Type in the label:
As soon as you deselect the connector, the label will appear next to it.

You can now move the connector descriptor to another position to visualize logical connections to an element. Click the label and drag it to its new position:

Dragging a connector label close to its connector, will cause the label to align automatically.

Creating attached intermediate events/boundary events

**Hint:** The BPMN specification uses the term *boundary event* instead of *attached intermediate event*. According to the BPMN specification, attached intermediate events with the activated check box attribute *Cancel activity* are *interrupting attached intermediate events*.

**Catching** BPMN intermediate events can be attached to a task. Those events can occur during the execution of a task and either cancel it or are handled afterwards.

To create an attached intermediate event, drag a catching intermediate event to a task and drop it there. When hovering over a task with an intermediate event, the task will be displayed either with a green border or in red brackets. A green border indicates that the intermediate event can be attached to it:
Some intermediate events, like the link intermediate event, cannot be attached to a task, which is indicated with red corners:

By default, an attached intermediate event will cancel the task it is attached to. To make it a non-canceling event, select an attached intermediate event, open the attribute Editor on the right and deactivate the option **Cancel activity**:

Canceling events are displayed with a solid border whereas the border of non-canceling events is a dotted line:
Some start events can be marked as canceling or non-canceling as well.

Changing the type of modeling elements  The transformation functionality lets you switch easily from one element type to another.

In BPMN, you can transform, for example...

• ...a task into a subprocess.
• ...a plain start event into a message start event.
• ...a collapsed pool into an expanded pool.

In order to change the type of an element, proceed as follows:

• Select the element you want to transform.
• Click the wrench icon below the element.
• Select the type you want to change the element to:

Hint: Some changes that affect the appearance and behavior of a modeling element but not its actual type can be done in the attribute Editor on the right. E.g., if a canceling intermediate timer event has to
be changed to a non-canceling intermediate timer event, the attribute **cancel activity** has to be set to **false**.

**Creating more space - shortening and stretching diagrams**  You can easily stretch the diagram size to create compact diagrams or to create space for additional elements. Proceed as follows:

• Activate shortening/stretching by clicking the toolbar button or using the shortcut **Ctrl + M**.

• Click **and hold** the left mouse button on the place in the diagram where you want to create or remove free space:

• Move your cursor to shorten or stretch the connector. All connectors with the same alignment on the same horizontal line will change their size, too. This works horizontally and vertically. All connectors are hidden during this step.
• Release the mouse button.
Deactivate shortening/stretching by clicking on the corresponding toolbar button or using the shortcut Ctrl-M again.

Changing the process flow orientation  By default, BPMN diagrams are aligned horizontally. The alignment can be changed if a vertical process flow is preferred. To change the alignment in a diagram, open the Editor and make sure that no element on the canvas is selected. Expand the attribute Editor on the right and change the value of the attribute Diagram orientation:
Hint: If there are pools and lanes on the canvas, their orientation will be changed as well. For all other elements, the auto-layouting function will be triggered. This can change the diagram layout significantly. In order to prevent an accidental re-layouting of the whole diagram, the changes to the diagram orientation have to be confirmed explicitly.

Checking diagram syntax

You can check your BPMN process diagram or EPC for syntactical correctness using the **Check Syntax** button.

Errors will be highlighted. Move your cursor over one of these crosses to get more information about the error:
The reason for the syntax error is explained by the tool.

4.4.3 Setting BPMN attributes

The Attributes panel allows you to access and set attribute values for diagrams. This chapter focuses on BPMN attributes.

Using the Attributes Panel for changing attribute values

Modeling elements often come with a range of attributes you can edit. Some of them may influence the visual appearance (e.g. loop type for BPMN tasks), others don’t.

To set the **loop type** of a task, proceed as follows:

- Open the properties panel on the right side of the Editor by clicking on the arrow button.
- Select the **loop type** attribute and select the loop type, e.g. **Standard** for a looped task or **MI Parallel** for a multiple instances task.
Set the task's loop type

- Unselect the attribute and the change will take effect. You will see the loop or multi-instance icon in the task shape.

**Hint:** The upper section of the attribute Editor contains custom attributes which can be individually defined by your workspace administrators. Custom attributes can be defined, edited and removed via the Define notations/attributes (page 533) dialog. For BPMN processes, some custom attributes are pre-defined but can simply be removed.

The attributes are divided into categories. Their content can be hidden by clicking the - symbol next to them.

![Custom Attributes](image)

A category can also be collapsed or expanded by clicking on its name.

It is possible to give the attributes an alphabetical order to find them more efficiently. Clicking the head of the Name column sorts the attributes depending on their descriptor and category.
Attributes with visual effects

BPMN comes with a whole range of attributes that you can explore using the properties panel. Some of them actually have a visual effect. The following list provides an overview about the most important ones.

- **Name** (all elements): Serves as main label of the element. You can also change it by double-clicking the element.

- **Loop type** (task, subprocess): The default value **None**. **Standard** indicates that the activity is looped, visualized by a small loop icon. **MI Parallel** and **MI Sequential** indicate that the activity will be executed multiple times in parallel, respectively sequential, visualized by a small multi instance icon.

- **Task type** (task) Defines explicitly, what kind of activity will be executed. This can be manually but also sending or receiving. The type will be shown in the left upper corner of the task.

- **Is for compensation** (task, subprocess): If set to true, the activity can serve as compensation activity for another activity, visualized by a small compensation marker.

- **Is a transaction** (subprocess): If set to true, the activity has transactional properties, visualized by a double frame.

- **Is ad hoc** (subprocess): If set to true, there are special execution semantics for the tasks contained in the subprocess. Visualization is provided by an ad hoc marker.

- **Is a call activity** (task, subprocess, event-subprocess): A call activity has a thick border and keeps
a link to a globally defined (sub-)process. The control flow is assigned to the called process, but non-standard start events are ignored.

- **Subprocess reference** (subprocess, event-subprocess): This reference can contain a URL pointing to the definition of the subprocess. Typically, the URL points to another BPMN diagram in the repository.

- **Is multi instance participant** (pool): Multiple similar organizations or process participants can be contacted during a process. E.g., project proposals might be requested by a multiple companies.

- **Condition type** (sequence flow): E.g. after a gateway, one sequence flow may be a default flow that is followed whenever no other condition is true. This is marked by a slash.

- **State** (data object): States can further refine the life cycle of data objects. E.g. you could distinguish 'new', 'completed' and 'rejected'. You are free to choose any state labels.

- **Input/Output** (data object): Data objects can be read during a process, but they can also be written. An input or output arrow in the left upper corner will mark a data object as in- or output.

Subprocesses, event-subprocesses and pools can be collapsed and expanded. Also, it is possible to customize elements by editing the attributes **border color** and **background color** in the attribute Editor.

**Documentation of an element**

It is possible to leave documentation for each element of a diagram to store more detailed information about it. For example, if an infrequent task is not self-explanatory and requires instructions, additional information can be saved as documentation.

**Hint:** An element’s documentation can also be read and printed from Collaboration Hub. Read more about this feature at [Accessing detailed information and comments](#) (page 408).

Select documentation attribute and click the three dots beneath the documentation.

The documentation text editor will open:

```
Fill in information for the ‘documentation’ attribute.
```
Hints: Office stock

The office stock can be found in the main building on the 4th floor, room 4711.

Attention - Due to the current renovation of the main building, the elevator has to be used to reach the office stock.

Usage

Remember to scan the products with one of the devices provided to always keep our database up-to-date.

Further information

The following products (listed by number) are not kept in the office stock but have to be requested:

- writing materials

Edit the text using the toolbar buttons. Use the shortcuts to model even faster:

- Save changes: Ctrl + S
- Copy diagram elements: Ctrl + C
- Paste diagram elements: Ctrl + V
- Remove diagram elements: Del
- Resize element symmetrically in all directions: Drag edge, Ctrl
- Resize element without snapping to grid: Drag edge, Ctrl + Alt
- Resize element with keeping aspect ratio: Drag edge, Shift
- Move element without snapping to grid: Drag element, Ctrl or Alt
- Select all elements of a specific type: Select element(s), Ctrl + I
- Zoom in/out in diagram: Ctrl + -, Ctrl + +, middle mouse wheel
- Stretch diagram: Ctrl + M, move pressed mouse
- Undo: Ctrl + Z
- Redo: Ctrl + Y
- Select multiple elements: Ctrl + left click, Shift + left click
- Expand the Explorer’s activity feed: Space bar
- Open a diagram: Double click a diagram
### 4.4.4 Responsibility assignment according to RACI

RACI is a possibility to represent responsibilities for an activity.

The following abbreviations are used:

- **R** for responsible: performs the activity
- **A** for accountable: approves
- **C** for consulted: is consulted for the activity
- **I** for informed: is informed about the activity

Similar to the key values, responsibilities can be attached to elements of a diagram. The responsibility assignment according to RACI can only be used for BPMN 2.0 process diagrams and event-driven process chains (EPC).

#### Setting responsibilities in BPMN 2.0 process diagrams

Lanes and the element *Additional participant* can be used in BPMN 2.0 to set responsibilities. A lane for example is responsible for each task it contains.

---

**Lanes represent basic responsibilities in a BPMN 2.0 business process diagram.**

In this case, the central purchasing is responsible for the tasks ‘Check purchase requisition’, ‘Create Creditor’ and ‘Create order template from purchase requisition’.

The element "Additional participant" can be associated with a task. This association element contains the attribute **Responsibilities** that can be used to assign responsibilities. To assign a responsibility, select the corresponding connector between task and participant, expand the **Attributes** column and assign one of the four RACI responsibilities. It will appear as connector label in the diagram.
Configuring the responsibilities for an additional participant

Hint: If custom attributes are defined for an element linking an organization or a position, those attributes will be included into the calculation as well.

Using custom attributes to assign responsibilities

As an alternative to using pools, lanes or additional participants, responsibilities can be directly assigned at the respective tasks. However, it is necessary to define special custom attributes.

In order to proceed, open the Explorer and create one or more of the following custom attributes of the type dictionary link for the element type task:

```
Name: responsible
Description: 
Data type: Dictionary link
Only for: Organizational Units
```

responsible
The attributes must have the English or German names that are defined in this manual. It is convenient to limit the dictionary links to the category Organizational Units, as shown in the Screenshots above. More general information on how to create and manage custom attributes can be found at Defining custom attributes (page 538).

You can now open diagrams in the Editor and assign roles to tasks via the tasks’ custom attributes:
Set the organizational unit “Department head” as “informed”.

The hereby assigned responsibilities will be taken into account when the RACI report is created.

**Setting responsibility assignments in EPC**

Responsibility assignments can be set for an attribute via its connection to an organization or position. Select the connector, open the attribute Editor and choose the desired responsibility:

**Creating the RACI spreadsheet**

After placing responsibility assignments on diagram elements, follow those steps:

- Select the diagram in the Explorer
- Click **Reporting** and choose **Responsibility assignment matrix / RACI (XLS)**.

*the menu entry for creating a responsibility assignment matrix*
A dialog opens up. Choose the diagrams which a responsibility assignment matrix is supposed to be created for.

- Click **Start analysis**.
- Open the generated XLS file, e.g. with Microsoft Excel®

### 4.4.5 Setting key performance indicators (KPIs)

Key performance indicators have to be set for a quantitative analysis. The indicators can be set for task execution probabilities and frequency. They also inform about cost and execution time.

Diagrams have to be structurally and semantically correct to create a quantitative analysis. Signavio provides tools that allow you to check the corresponding properties of process diagrams.

KPIs can be set for each element in the **Attributes** section on the right in the Editor. Simply select an element, then click the two arrows above **Attributes** to extend the section on the right. The KPI values for the corresponding analyses are set under **Cost and Resource Analysis** and **More Attributes**. Simply click the corresponding headlines to expand the KPI settings. When you are finished setting the KPI values for one element, simply click the next element in the central section and add the corresponding values on the right. When you are finished adding the necessary values to all elements, you can click the arrows on the left of the grey 'Attributes' header to close the **Attributes** menu and proceed with the calculation.

The following attributes are key values for the process cost and resource consumption analyses:

- **Frequency (per year): Start Event**

  Denotes how often a process is started via this entry point. Multiple start events that represent alternative entry points for the process are allowed.

  e.g. “1000”
• **Execution (minutes): Task (BPMN), Function (EPC)**
  Denotes how long it takes on average to complete the task. This value is required for a resource consumption analysis.
  
  e.g. “2.5”

• **Execution costs (currency): Task (BPMN), Function (EPC)**
  Denotes the costs that come up during the activity. This key value is required for a process cost analysis.
  
  e.g. “5”

• **Probability: Sequence Flow**
  Denotes the probability for choosing this sequence flow after a decision gateway/XOR-connector. This is supposed to be a value between 0 and 1.

  **Important:** ‘20%’ has to be denoted with ‘0.2’

  e.g. “0.2”

• **Cost center: Task (BPMN), Function (EPC)**
  This is an optional value and represents the cost center for the activity costs.
  
  e.g. “KS 1008”

• **Apply in calculation: All elements**
  Uncheck to exclude an element from the analysis.
  
  “yes” / “no”

**Hint:** Floating point numbers are accepted either in the form of “2.5” or “2,5” but will be automatically converted to the notation of “2,5”.

**Checking completeness**

After setting the KPI, you can trigger a check for completeness to ensure that all required values are present for analysis.

Click the **Cost and resource analysis check** in the upper toolbar of the Editor.

![Check the diagram for KPI completeness.](image)

This check might take several seconds.
Some elements may now be marked with one of the following icons:

- The white exclamation mark on orange denotes that key values are missing for an element. It is also attached to elements that will be ignored during an analysis, as it is not logically contained in those measurements. (For example, a sending intermediate message event will be ignored during an analysis.)

  This does not interfere with the analysis calculation, but some of the calculations may not be able to run properly due to missing data.

- The white exclamation mark on red denotes a heavy structural or logical mistake. Additionally, some modeling elements preventing an analysis are marked with this symbol—for example, a complex gateway cannot be included in a process analysis.

  This sign marks that an element interferes with the analysis calculation.
  Hover over one of these symbols to get more details about the problem that occurred.

---

Get information about an error
An analysis calculation can be triggered only after all severe mistakes (indicated in red) have been removed.

After removing them, switch to the Explorer.

### 4.4.6 Creating views

When process models become more complex, the readers often get confused by the amount of information. The view functionality allows you to hide certain process parts and to control the information given to certain readers.

Typical examples for using specific views of diagrams are:

- A process model contains functional activities as well as parts that are solely relevant for the technical realization of the process. The reader, however, has to focus on the functional parts.
- A process model contains different variations of one process, but the reader is only supposed to see one variation.
- A process model contains not only the ‘happy path’ - the path a process would usually take - but also a number of exceptions. However, the reader only needs to see the ‘happy path’.

The **views** feature allows users to create as many views as needed. The tools for creating, editing, removing and getting information about a view can be found by extending the **attribute editor** and scrolling to **Views**.

View settings are being adjusted for the selected elements

Here you can add and see all existing views.

There are two possibilities of editing views: The **views configuration** is a special dialog to edit one view at a time, whereas it is possible to edit many views at a time in the Editor.

**Creating and editing views**

New views are created from within the **attribute panel**. Extend it from the right border and scroll to **Views**.

If the **Views** are not extended, click the “+” symbol in front of it or the title itself:
Expand the ‘Views’ section in the attribute editor on the right

Now you can see all existing views. To gain more space, collapse the other categories of the attribute editor, e.g. the Main Attributes, by clicking on its title or the minus-symbol.

Create a new view by clicking on Create new view or the button in front of it:

Selected elements are visible in following views:

- Management
- Central Purchasing
- IT

To open the views configuration for an existing view, click its name:
The **view configuration** opens:

The **view configuration** contains two previews: one showing the original diagram and the other one showing the result. The original view also provides the possibility of adding or removing certain elements from the resulting view.

Read more about how to edit a view at *Editing a view using the views configuration* (page 270).

**Navigating the view configuration**

Click and drag a preview to scroll to other areas of the diagram. You can also make use of the zoom slider to gain a better overview of the diagram:
By default, navigating the previews works simultaneously—if you zoom into the original view, the resulting view will zoom in, too. This also works for scrolling.

To deactivate the synchronization, remove the hook from **Synchronous Scrolling**:

Editing a view using the views configuration

The views configuration provides many tools to adapt a view to your requirements.

It is possible to:

- Name and describe a view: Fill in the fields in the upper right corner

```
Name: Central Purchasing  Description: colleagues of the central purc
```

A name and a description can be added for each view

- Show or hide an element: In the original view, every element has a checkbox attached to its upper right corner. An element is included in the current view if the checkbox is green and checked—a red, non-checked checkbox excludes an element from the view.

```
Check purchase requisition
```

This element will be included in the view...
To include or exclude it in or from the view, you need to set or remove the hook from an element. The resulting preview on the right will refresh immediately.

- Configure pools: Pools can be configured even further. Each pool has a text field attached to the middle of its bottom. A drop down list appears when clicking on it. Choose one of the four options:
  - **Pool is opened**: The pool and its content will be included in the view. However, it is still possible to define the view options for all its elements contained.
  - **Pool collapsed**: The pool is displayed as a “black box”, the process contained is not shown.
  - **Only content**: No roles that are defined by the pool and its lanes will be shown, but only the contained process including additional process participants. Also, message flows attached to the pool will be hidden.
  - **Pool is hidden**: Neither the pool nor its content will be included in the view. Also, message flows attached to the pool will be hidden.

- Hide all elements of one type: To e.g. create a view without any IT-specific details, it is possible to hide all IT-systems. Also, comments, data objects and roles can be hidden. To hide one of these element groups, remove the hook in front of it at the top of the views configuration:

```
[ ] Comments
[ ] Dataobjects
[ ] IT-Systems
[ ] Roles
```

*Exclude all IT-systems from the view by deselecting the option above the preview*

You can also adjust the view configuration by (de)activating the following check boxes:

- **Data objects**: Include data objects, data storages and messages.
- **IT Systems**: Include IT systems.
- **Roles**: Include pools, lanes, collapsed pools and additional participants.
- **Reduce free space**: Remove empty space that was occupied by elements not included in this view.

After configuring the view according to your requirements, click **Save changes**.

**Duplicating a view**

Sometimes, two different views on a diagram are almost the same. In those cases, it is possible to use an existing view to create a duplicate view. Open the template view, apply the changes and click **Save as duplicate...** to create the new view.
Save as duplicate’-button in the view configuration dialog

Add a name for the view and click OK:

Enter a name for the copy

The duplicate will be created and can be found with the others in the attribute editor.

Removing a view

To remove an existing view, click its title in the attribute editor to open it in the views configuration. Then click the “Delete view” button:

Delete a view

Confirm the following dialog box. The view will then be removed.

Editing views from within the Editor

It is possible to include or exclude diagram elements from one or multiple views while editing a diagram–without opening the views configuration. This makes it fast and easy to edit existing views.

• Choose one or multiple elements.
Changes in the include option can be applied to single or multiple elements

- Behind each view that is stored in the attribute editor, checkboxes will appear. Those can be empty, checked or, if multiple elements were selected, colored green:

Only some of the selected elements are included in the view, but not all.

Checked
All selected elements are included in the view.

Empty
None of the selected elements is included in the view.
  - Check or uncheck the boxes, to add/remove the elements selected from one of the views.

Exporting views

You can download specific views by exporting a diagram as an image, PDG or a BPMN 2.0 XML file and choosing a specific view in the process. The SGX export contains all views that were created for a diagram. If you would like to know more about exporting diagrams, please go to the chapter Downloading/exporting diagrams (page 139).

4.4.7 Risk Management
Note: This feature is available in the Enterprise Edition.

In this article, you will learn how to define custom risk management tables in the Dictionary.

Creating risks and controls in the Editor

In Signavio Process Manager, you can document the risks and controls directly in your process landscape. This is obtained via the element attribute.

Important: To use this feature, you need to configure it first (page 531).

To add a risk to a diagram element, proceed as follows:

1. Select the element.
2. Click the Edit button to open the Risks and Controls dialog.

   Open the risks attribute

3. Enter the name for the risk. While typing a name, the system automatically proposes possible names of existing risks.

   Suggestions pop up as you type

Important: If you use an already existing risk attribute from the Dictionary, you can change locally the corresponding value. Please be aware that this could lead to inconsistency and should be avoided.
For more detailed information refer to the chapter *Overwriting locally dictionary entries* (page 433).

4. If you decide to create a new risk, you can now fill in the risk definition.

![The risk definition](image)

5. For each risk, you can add controls:

![Add a control](image)

6. Click the **risks and controls** button in the upper toolbar to visualize controlled and uncontrolled risks:
Display controlled and uncontrolled risks on the diagram canvas

To create an overview over all risks and controls, you can create risk management Excel reports (page 76).

Editing risks and controls in the Dictionary

When you need to update a specific risk or control, you can do this centrally in the Dictionary. The update will affect all diagrams that reference this risk or control immediately.

Of course, you can also add new risks and controls in the Dictionary (see Using the Dictionary in the Editor (page 428)).

To add risks and controls to the Dictionary, open the Dictionary and create new entries of the type Risk or Control:

Create a new risk in the Dictionary

To ensure your risks and controls definitions are updated when a process changes, you can employ approval workflows (page 98) that enforce a review by a risk management specialist before a process
revision is published in Collaboration Hub or otherwise released into a production environment.

4.4.8 BPMN Simulation

The BPMN simulation tool allows you to visualize process runs and to analyze processes based on configurable one-case and multiple-case scenarios in order to gain information about cost, cycle times, resources and bottlenecks.

Note: Modeling users who merely have read access to a diagram can still use its BPMN simulation. However, such users can't manage its simulation scenarios (page 283).

Simulating BPMN diagrams can help to increase process awareness and can answer specific questions like:

- How much does a process run cost on average?
- How are costs distributed over roles / tasks?
- How much would 10% more of case X instead of case Y affect the cost?
- Where is the bottleneck in this process?
- How much of everyone's time is consumed in this process?
- How would 20% more requests affect the cycle time?
- Would an additional risk analyst speed up the cycle time?

Important: The simulation works with BPMN 2.0 diagrams only.

The simulation tool offers the following modes:

The step-by-step simulation mode allows you to step through the process element by element and to focus completely on the process flow.

Step-by-step simulation

The step-by-step simulation function allows you to go through the process element by element and to focus completely on the process flow.

The step-by-step simulation can be started immediately, without any preparations.

To start the step-by-step simulation, click the Play button in the lower left corner of the diagram canvas:

Afterwards, you can click through the process flow step-by-step:
When passing an exclusive (XOR) gateway, you can determine the subsequent sequence flow:

To restart the step-by-step simulation, click the **Restart** button:

The one-case simulation mode allows you to simulate one specific case and to analyze costs and time consumption for this case.

**One-case simulation**

**Note:** This function is available in the **Enterprise Edition**.

The one-case simulation function allows you to simulate one specific case and to analyze costs and time consumption for this case.
Before running the one-case simulation, you might want to configure the scenario on which the simulation is based. You can find more information about scenarios in the chapter Manage scenarios (page 283).

To run the one-case simulation, select a scenario and click the Play button:

The BPMN Simulator will automatically go through the process flow step-by-step.

When passing an exclusive (XOR) gateway, you can determine the subsequent sequence flow or wait for the system to decide (based on the probabilities given) which way to choose. The simulation will continue and choose a path automatically when the timer symbol on the top right of the element has run full circle:

Either wait for the system to choose a way or select the desired subsequent sequence flow

During the simulation, the simulation tiles display the overall costs, cycle time and resource consumption at the current position in the process (left column) and of the complete previous run (right column). The bottleneck tile is only relevant for n-case simulation.
The tiles display costs, cycle time and resource consumption.

It might be necessary to explain the difference between cycle time and resource consumption: cycle time refers to the amount of time between start and completion of a process while resource consumption is used as a term for the overall time process participants committed to process execution.

For detailed quantitative information, click More in the corresponding tile:

In case the simulation speed is faster or slower than needed, you can click the Pause button...

...and use the Step button to go through the each process element manually:
To restart the simulation, click the Restart button:

This feature is available in the Enterprise Edition.

The multiple-cases simulation mode allows you to simulate multiple process runs taking into account configured probabilities and analyzing quantitative data and bottlenecks.

Multiple-case simulation

*Note:* This feature is available in the Enterprise Edition.

The multiple-cases simulation function allows you to simulate multiple process runs taking into account configured quantitative figures and analyzing quantitative data and bottlenecks.

Before running the n-case simulation, you might want to configure the scenario on which the simulation is based. You can find more information about scenarios in the chapter Manage scenarios (page 283).

Additionally, you can configure the period of time the simulation should cover. To do so, proceed as follows:

Click Duration:

Now type in the desired number of days and click Save:

To run the multiple-cases simulation, select a scenario and click the Play button:

The BPMN Simulator will now analyze the selected scenario and display the results in the process diagram and on the simulation tiles.
The simulation tiles display the overall costs, cycle time, resource consumption and bottlenecks of the current simulation scenario run (left column) and of the previous run (right column).

The Multiple-Cases Simulation Dashboard

It might be necessary to explain the difference between cycle time and resource consumption:

- **Cycle time** refers to the amount of time the process start and process completion while **resource consumption** is used as a term for the overall time process participants committed to process execution.

For detailed quantitative information, click the more link on the corresponding tile:

The simulation dashboard contains detailed quantitative information.

To restart the simulation, click the Restart button:
To simulate the run through all process instances of the previously calculated scenario, click the **Play** button on the lowest simulation tile:

In the diagram, waiting instances are displayed as blue dots placed above the ingoing sequence flow:

Running instances are displayed as blue dots within the border of a task and already executed instances as a stack next to corresponding task:

For creating and managing simulation scenarios, refer to the following section:

**Managing simulation scenarios**

**Note:** This chapter explains functionality that is available in the **Enterprise Edition**.

Before running a one-case or n-case simulation, you might want to configure the data that the simulation is based on.

This can be done via **simulation scenarios**.
When a diagram is initially opened in the simulator, it already contains one scenario based on the Cost & Resource Analysis attributes of the diagram:

### Scenarios

<table>
<thead>
<tr>
<th>Task</th>
<th>Execution costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Specify and quantify requirements</td>
<td>€3.00</td>
</tr>
<tr>
<td>2. Complete a purchase order</td>
<td>€0.70</td>
</tr>
<tr>
<td>3. Check purchase order</td>
<td>€3.00</td>
</tr>
<tr>
<td>4. Create vendor</td>
<td>€15.00</td>
</tr>
<tr>
<td>5. Create order template from purchase order</td>
<td>€0.10</td>
</tr>
<tr>
<td>6. Approve purchase order</td>
<td>€5.00</td>
</tr>
<tr>
<td>7. Receipt of Goods</td>
<td>€5.00</td>
</tr>
<tr>
<td>8. Adjust order status</td>
<td>€3.00</td>
</tr>
<tr>
<td>9. Retrieve parts from storage</td>
<td>€3.00</td>
</tr>
</tbody>
</table>

With the help of scenarios you can manage different data sets for simulating one process.

The Cost & Resource Analysis attributes can be defined in the Graphical Editor view:

For executing simulations, it is more convenient to manage this data directly in simulator. Thus you can edit the scenario data by simply clicking on the corresponding fields:
The scenario data is categorized by four different tabs:

- The **Costs** tab contains granular costs of activities.
- The **Time** tab contains granular execution durations of activities.
- The **Frequency** tab contains frequency and probabilities of start events, of junctions after gateways and of boundary events.
- The **Resources** tab allows you to define availabilities and costs of process participants in great detail.

For each role you can define costs per hour...

---

Define costs per hour.

...as well as a detailed work schedule for each role.

Click a role’s work schedule in order to adjust it:
Open the work schedule.

Now you can define detailed work times for any number of resources: In the example below, the role is fulfilled by two full-time (40 hours/week) employees and one part-time employee (only Mondays and Tuesdays).

Let’s create the schedule for the part-time employee:

Click the dots to open the detailed schedule dialog.

Now you can define the working hours of the worker per day:

Define working hours per day.

For our example, we set the working hours of Mondays and Tuesdays from 09:00 to 17:00:
After going back to the Resources overview, you can see that three employees are now available for this role, in total for 96 (2*40 + 16) hours a week:

<table>
<thead>
<tr>
<th>Role</th>
<th>Work schedules</th>
<th>Costs / hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Approver</td>
<td>1 resource, 24:00 hours per week</td>
<td>€35.00</td>
</tr>
<tr>
<td>2. Central Purchasing</td>
<td>3 resources, 96:00 hours per week</td>
<td>€50.00</td>
</tr>
</tbody>
</table>

Three employees work in total for 96 hours per week in this role.

In the Time tab of the Scenario menu at the bottom, you can define task execution times as distribution functions.

This helps you to simulate non-deterministic task execution times. For example, if a clerk typically needs approximately between five and ten minutes to reply to an email.

Go to the Time tab and click the ‘...’ behind the pre-defined execution time of the corresponding task:

Open the time distribution dialog.

Set the time distribution for the task and click Accept to confirm.
Set the time distribution during the task.

The option **Constant** lets you define an execution time that has a specific probability. With the help of several probability-constant mappings, you can create a discrete probability distribution.

Alternatively (or in addition), you can define **uniformly distributed** or **normally distributed** execution times.

**Hint:** We recommend a **Normal distribution** in case the task execution times are likely to concentrate around a certain value. In many scenarios, this is a reasonable approximation. For example, a sales manager needs most likely around 30 minutes to conduct a web demo for a prospective customer.

You can configure a **Uniform distribution** in case the task execution times are equally distributed within a range of two values.

To save a scenario, press **Ctrl + S** or select the **Save scenario** button on the very left side:

Alternatively, you can click the **Play/Rereshall** button - the following dialog will pop up:
Click “Save” and continue to save the edited scenario and to execute the simulation.

You can create a additional scenario by clicking on the Plus - button in the scenario tab bar:

Now you can choose between creating a scenario based on the Cost & Resource Analysis attributes (Create from template: None) or to use the data of another scenario as a starting point:

When starting a new simulation, you can now select the desired scenario from the drop down menu:

You can export the results of the multiple case simulation as an XLS spreadsheet.
### Exporting simulation results

You can export the results of *multiple-case simulations* (page 281) as XLS (Microsoft Excel) files. This makes it easy to share the results with colleges and other stakeholders. To export the results, click the Excel Export button below the simulation tiles:

![Excel Export](image)

*Click the export button to download an XLS file containing detailed information about current (and previous) simulation run.*

An Excel (XLS) file will be created and downloaded.

If more than one simulation scenario has been executed, the Excel file contains the following eleven tabs with tables and diagrams:

**Note:** If you are using Microsoft Excel 2010, please make sure to deactivate the Protected View (click Enable Editing) to make sure the spreadsheet is displayed correctly.

- The Overview tab contains general information about the runs:

<table>
<thead>
<tr>
<th>Used scenario</th>
<th>Duration in days</th>
<th>Total cycle time</th>
<th>Resource consumption</th>
<th>Bottlenecks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario: Should</td>
<td>5d</td>
<td>5d 11:50h</td>
<td>5d 11:52h</td>
<td></td>
</tr>
<tr>
<td>Scenario: Is</td>
<td>5d</td>
<td>10d 10:06h</td>
<td>7d 03:08h</td>
<td>Department</td>
</tr>
</tbody>
</table>

*The ‘Overview’ tab*
• The **Costs** tab provides the reader with minimum, maximum and average costs of the simulation runs and task executions:

The following table shows the costs caused by every activity of your process:

<table>
<thead>
<tr>
<th>Task</th>
<th>Used scenario</th>
<th>Duration in days</th>
<th>Completed instances</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>check purchase invoice</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>280</td>
<td>1.87€</td>
<td>1.87€</td>
<td>1.87€</td>
<td>533.87€</td>
</tr>
<tr>
<td>formally</td>
<td>Scenario: Is</td>
<td>5d</td>
<td>242</td>
<td>1.87€</td>
<td>1.87€</td>
<td>1.87€</td>
<td>451.73€</td>
</tr>
<tr>
<td>check for factually</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>285</td>
<td>13.00€</td>
<td>13.00€</td>
<td>13.00€</td>
<td>3,705.90€</td>
</tr>
<tr>
<td>correct purchase</td>
<td>Scenario: Is</td>
<td>5d</td>
<td>239</td>
<td>25.50€</td>
<td>25.50€</td>
<td>25.50€</td>
<td>6,111.53€</td>
</tr>
<tr>
<td>approve purchase invoice</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>82</td>
<td>17.47€</td>
<td>17.47€</td>
<td>17.47€</td>
<td>1,432.27€</td>
</tr>
<tr>
<td>trigger payment</td>
<td>Scenario: Is</td>
<td>5d</td>
<td>70</td>
<td>17.47€</td>
<td>17.47€</td>
<td>17.47€</td>
<td>1,222.67€</td>
</tr>
<tr>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>285</td>
<td>8.17€</td>
<td>8.17€</td>
<td>8.17€</td>
<td>2,327.50€</td>
</tr>
<tr>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>239</td>
<td>8.17€</td>
<td>8.17€</td>
<td>8.17€</td>
<td>1,951.83€</td>
</tr>
</tbody>
</table>

**Excerpt of the 'Costs' spreadsheet**

Values that are especially high are highlighted according to the scheme displayed below the calculation table in the sheet:

<table>
<thead>
<tr>
<th>Legend</th>
<th>All values are relative to the highest value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latest run</td>
<td>Previous run</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>&gt;87.5%</td>
<td>&gt;87.5%</td>
</tr>
<tr>
<td>&gt;75%</td>
<td>&gt;75%</td>
</tr>
<tr>
<td>&gt;62.5%</td>
<td>&gt;62.5%</td>
</tr>
<tr>
<td>&gt;50%</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>&lt;=50% or smallest value</td>
<td>&lt;=50% or smallest value</td>
</tr>
</tbody>
</table>

*High values are highlighted according to the legend.*

The same scheme applies to the other calculation tables as well.

• The **Costs charts** tab visualizes the cost relation of the executed tasks:
Costs of each task in relation to total costs

- The cycle time of a process instance measures the time between process start and process completion. The **Total cycle time** tab shows process instance cycle times and activity execution times:

<table>
<thead>
<tr>
<th>Task</th>
<th>Used scenario</th>
<th>Duration in days</th>
<th>Completed instances</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Total cycle time</th>
</tr>
</thead>
<tbody>
<tr>
<td>check purchase invoice</td>
<td>Scenario: Should</td>
<td>2d</td>
<td>249</td>
<td>00:02h</td>
<td>00:02</td>
<td>00:02h</td>
<td>09:33h</td>
</tr>
<tr>
<td>check for factually correct</td>
<td>Scenario: Should</td>
<td>1d</td>
<td>249</td>
<td>00:15h</td>
<td>00:15</td>
<td>00:15h</td>
<td>2d 23:15h</td>
</tr>
<tr>
<td>purchase invoice</td>
<td>Scenario: Should</td>
<td>1d</td>
<td>249</td>
<td>00:30h</td>
<td>00:30</td>
<td>00:30h</td>
<td>4d 23:45h</td>
</tr>
<tr>
<td>approve purchase invoice</td>
<td>Scenario: Should</td>
<td>2d</td>
<td>249</td>
<td>00:20h</td>
<td>00:20</td>
<td>00:20h</td>
<td>1d 03:20h</td>
</tr>
<tr>
<td>trigger payment</td>
<td>Scenario: Should</td>
<td>1d</td>
<td>249</td>
<td>00:05h</td>
<td>00:05</td>
<td>00:05h</td>
<td>22:45h</td>
</tr>
</tbody>
</table>

Excerpt of the “Total cycle time” spreadsheet

- The **Total cycle time charts** tab is visualizing the data of the **Total cycle time** tab:
cycle time of each task in relation to total cycle time

- The Resource consumption tab contains information about the time the different Resources (lanes) where occupied with a task and sets their workloads in relation to each other.

The execution of a process instance might be delayed due to a shortage of resources:
When an activity is ready for execution but all resources are already allocated,
the execution has to wait. The following table shows activities that were delayed:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Used scenario</th>
<th>Duration in days</th>
<th>Consumed Time</th>
<th>Workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>2d 23:15h</td>
<td>59.47%</td>
</tr>
<tr>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>4d 23:49h</td>
<td>99.97%</td>
</tr>
<tr>
<td>Finance</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>1d 09:17h</td>
<td>27.78%</td>
</tr>
<tr>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>1d 03:59h</td>
<td>23.35%</td>
</tr>
<tr>
<td>Department head</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>1d 03:20h</td>
<td>22.81%</td>
</tr>
<tr>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>23:20h</td>
<td>19.47%</td>
</tr>
</tbody>
</table>

Excerpt of the 'Resource consumption' spreadsheet

- The Resource consumption charts tab is visualizing the data of the Resource consumption tab:
Resource consumption of each task in relation to total resource consumption

- The Bottlenecks tab contains information about process bottlenecks (if existent):

<table>
<thead>
<tr>
<th>Resource</th>
<th>Task</th>
<th>Used scenario</th>
<th>Duration in days</th>
<th>Total waiting time</th>
<th>Waiting instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>check for factually correct purchase invoice</td>
<td>Scenario: Should</td>
<td>5d</td>
<td>00:00h</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scenario: Is</td>
<td>5d</td>
<td>3d 07:07h</td>
<td>2</td>
</tr>
</tbody>
</table>

The 'Bottlenecks' tab

The Bottlenecks charts tab is visualizing the data in the Bottlenecks tab.

- The 10th and 11th tab contain information about the scenario properties:
### Costs and Duration

<table>
<thead>
<tr>
<th>Task</th>
<th>Execution costs</th>
<th>Execution time</th>
</tr>
</thead>
<tbody>
<tr>
<td>check purchase invoice formally</td>
<td>0.20€</td>
<td>00:02h</td>
</tr>
<tr>
<td>check for factually correct purchase invoice</td>
<td>0.50€</td>
<td>00:15h</td>
</tr>
<tr>
<td>approve purchase invoice</td>
<td>0.80€</td>
<td>00:20h</td>
</tr>
<tr>
<td>trigger payment</td>
<td>4.00€</td>
<td>00:05h</td>
</tr>
</tbody>
</table>

### Frequency and probabilities

<table>
<thead>
<tr>
<th>Start event</th>
<th>Frequency/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>from Purchase Order- to-Delivery</td>
<td>399</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gateway</th>
<th>Decision</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>invoice amount &gt; $5000</td>
<td>70.00%</td>
<td></td>
</tr>
<tr>
<td>invoice amount ≤ $5000</td>
<td>30.00%</td>
<td></td>
</tr>
</tbody>
</table>

### Resource

<table>
<thead>
<tr>
<th>Role</th>
<th>Number of resources</th>
<th>Costs/hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td></td>
<td>50.00€</td>
</tr>
</tbody>
</table>

**Note:** In case there are problems with displaying the charts in the report, please check if you have opened the report with a program that allows editing Excel diagrams. If this is not the case, we recommend you to open the program with one of the more recent versions of Microsoft Excel.

If you’re not sure what specific metrics in the simulation results mean, please refer to our metrics overview section.

**BPMN simulation - result metrics**

This article explains the metrics of the multiple case simulation (page 281)'s results.

We use the following simplified vacation request handling process to produce example metrics.
A vacation request handling process

We have one Team Lead resource available at a cost of 60€ per hour. The execution costs are:

- 1€ per activity, plus
- 60€ * #hours of human work needed to execute the activities.

The execution times are:

- 10 minutes for Assess vacation request,
- 5 minutes for Explain rejection.

Consequently, the activity Assess vacation request costs 11€ and takes 10 minutes. The activity Explain rejection costs 6€ and takes 5 minutes.

The process has two flow variants:

- variant 1: vacation is granted,
- variant 2: vacation is rejected.

Variant 1 occurs in 80% of the cases, costs 11€ and takes 10 minutes. Variant 2 occurs in 20% of the cases, costs 17€ and takes 15 minutes.

Costs The simulation tool calculates average, minimum, maximum, and total costs. The tool determines all cost types based on the simulation result. If you run a simulation of our example process with exactly one case that takes process variant 2, each cost amounts to 17€.

Cycle time The simulation tool calculates average, minimum, maximum and total cycle times. As for the costs, the simulation tool determines the cycle times based on the simulation result. If you run a simulation of our example process with exactly one case that takes process variant 2, each cycle time amounts to 15 minutes.

Note: The total cycle time can exceed the simulation time span. This can happen for two reasons:

- Your resources can't handle cases fast enough and process instances 'pile up'.

Chapter 4. Modeling diagrams
The cases that occur in the last hours/minutes of your simulation time frame exceed this frame before they are completed.

**Resource consumption**  The resource consumption lists the *consumed time* and the *workload* for each process resource.

The *consumed time* is the total time a resource spends on executing activities. For example, if your simulation result contains 80 cases of variant 1 and 20 cases of variant 2, the *Team Lead* resource consumption is $80 \times 10 \text{ minutes} + 20 \times 15 \text{ minutes} = 1100 \text{ minutes}$.

The *workload* is the percentage of the available time a resource is occupied with executing activities. Given the example above, a simulation time frame of one week and a resource availability of 40 hours per week, the workload of the *Team Lead* resource is $1100 / (40 \times 60) = 37\%$ (approx.) (given no case exceeds the simulation time frame).

**Bottlenecks & waiting times**  A *bottleneck* occurs when a resource’s limited availability increases the waiting times of cases. In our example, a bottleneck occurs at *Assess vacation request* as soon as a new case starts while the Team Lead is still handling a previously started case. Then, adding additional Team Leads will reduce *waiting times* and *cycle times*.

*Waiting times* describe how long cases are idle because no resource is available to execute the current activity. In our example scenario, only one resource is available to handle process activities. Consequently, waiting times occur when a new case is started before all previous cases have been terminated.

In case you encounter problems with the BPMN simulation tool, please check the *troubleshooting* chapter.

**Troubleshooting issues with the BPMN simulation feature**

In order for a simulation to be executed, some necessary conditions must be fulfilled:

- The syntax of the diagram has to stick to BPMN 2.0 syntax rules. The process flow must not be interrupted, for example:

  ![Diagram](image)

  *The diagram must not infringe BPMN 2.0 syntax rules*

- To check if a diagram sticks to BPMN 2.0 syntax rules, you can also use the syntax check in the graphical Editor.

  ![Syntax check](image)

  *Check syntax rules in the graphical Editor*
- Elements that affect the process flow, but cannot be clearly specified regarding their impact on the process flow, must not be used.

Such elements are - for example - inclusive gateways and non-interrupting boundary events.

The BPMN simulation feature does not support inclusive gateways

To go to the BPMN simulation tool, select a model in the Explorer and click Edit, then Simulate BPMN Diagram:

Alternatively, you can switch from the editing, QuickModel or diagram comparison view to the BPMN Simulator. Click the drop-down menu next to your user name on the top right and select Simulation, you will be directed to the simulator:
Now the BPMN simulation tool is displayed:

You can now choose between step-by-step simulation:

![Step by Step](image)

, one-case simulation:

![One Case](image)

and multiple-cases simulation:

![Multiple Cases](image)
4.4.9 Migrating diagrams to BPMN 2.0

Signavio provides a possibility to migrate BPMN 1.2 business process diagrams to BPMN 2.0. This may be interesting for you if you want to reuse old diagrams modeled in BPMN 1.2 with new elements from BPMN 2.0.

The diagram content will not be changed during this procedure.

Use the following steps:

- Select the diagram you want to migrate.
- Click **Edit**, then **Migrate to BPMN 2.0** in the top drop-down menu of the Signavio Explorer.

![Migrate a BPMN 1.2 diagram to BPMN 2.0.](image)

The diagram can now be edited and saved as a BPMN 2.0 diagram.

4.4.10 Converting EPC diagrams to BPMN 2.0

Signavio Process Manager allows you to automatically convert Event-driven Process Chains (EPCs) to BPMN 2.0 diagrams.

To convert one or multiple diagrams, open the Signavio Explorer, select the corresponding diagram(s) and go to **Edit - Migrate EPC to BPMN 2.0**.
Open the EPC to BPMN conversion dialog.

Now, you can decide whether to convert Position/Roles and Organizations to BPMN 2.0 Pools and Lanes. The system handles the assignment to Pools/Lanes via the custom Relation attribute Responsibility. To properly assign a function to a Positions/Role or Organization, you need to set the corresponding attribute value to responsible:

Specify the responsibility type.

The system will create empty Pools/Lanes for all Positions/Roles and Organizations that lack a corresponding responsibility assignment.

If you don’t activate the corresponding checkbox, the system will convert Position/Roles and Organizations to the Signavio-specific BPMN extension Additional Participant instead.

Click Migrate to proceed:
Configure the converter and start the conversion.

**Warning:** EPC and BPMN 2.0 are not entirely congruent notations. The following EPC elements cannot clearly be mapped to BPMN 2.0 elements and are ignored by the converter:

- Letter
- Email
- Fax
- Phone
- Entity
- Form
- Resource

If you use these elements in your EPC diagrams, we strongly recommend you to review and edit the generated BPMN 2.0 diagrams after the conversion.

4.4.11 FIM attributes for the public administration

**Important:** This article introduces the FIM-BPMN-extensions, which are relevant for the German public administration. The plugin for the Signavio Editor is accessible on request.
The German Federal Ministry of the Interior created a BPMN extension for structuring BPMN-diagrams: the so called FIM attributes (trans. Federal Information Management). These attributes equip processes in departments and sectors of the public administration with reference attributes, to compare them with more clarity on a national level.

This refers mostly to common activity types like receive information or decide: These are activities that occur commonly in the processes of the public administration, but different local authorities have different ideas of implementing them. For example: Many local administrations use different forms to receive information for public services, although on the basis of these information they have to decide over the same factual matters. The FIM initiative strives to standardize the processes to reduce bureaucratic expenditure – and uses therefore the instruments of process management:

In the BPMN extension, these processes are ordered into groups through FIM. the reference activity groups are marked with different labels on the right top corner of the activity (subprocess). In consequence, the FIM-Groups are easy to recognize.

The principle of the FIM initiative is: “Same content should always be described alike.”

You can also use the add-on outside of the public administration context: It is a useful tool to structure sub-processes and to standardize content that belongs to the same reference group.

Adding an FIM attribute

1. Choose a collapsed sub process in the Editor and drop it onto the canvas.
2. Select the activity and open the attribute menu on the right side. Choose now under main attributes, reference activity groups the correct FIM attribute from the drop-down menu.
Choosing a FIM-attribute

Overview of the FIM-attributes

Of course the attribute labels can be used flexible, but in general they refer to:

1. **Receive information** describes the arrival of new information or documents.
2. **Provide information** describes the forwarding of information or documents, especially to external participants (e.g. civilians or (other) enterprises).
3. **Check formally** describes proving something on the basis of procedural law.
4. **Check materially** describes proving something on the basis of substantive law.
5. **Decide** refers to a decision based on an expert assessment.
6. **Create** e.g. a new document.
7. **Execute participation** involves an external participant into the process.
8. **Execute other activity** is optional, und can be used if no other type applies.

A list of all FIM-attributes

More information on how to create subprocesses are available under creating process hierarchies (page 197).

Creating attributes for FIM reference activities

To create attributes for FIM reference activities, proceed as follows:

1. Open the Explorer and select Setup - Define notations/attributes.
2. Select Business Process Diagram (BPMN 2.0) as the modeling language and Collapsed Subprocess as the element type and click Add in the Custom attributes section. Now, you can define the attribute name and type.

Read more at Notationen und Attribute verwalten (page 533).
4.4.12 Frequently asked questions

How can I add a second lane to a pool?

Lanes can be dragged from the column on the left. If you are using an extended view, lanes can be found under Swim Lanes. Drag & drop the lane onto the head of a pool and a new lane will be created. You find more information about pools and lanes at Handling pools and lanes (page 236).

How can I change the orientation of a diagram (horizontal/vertical)?

You can change the orientation of a diagram in the attribute column under Main Attributes. Simply click the set value (horizontal or vertical) of the attribute Diagram Orientation and change it correspondingly. The Editor will automatically re-align the elements in the diagram after you confirm.

How can I link a document to a task?

Custom attributes (page 516) can be defined for each modeling element. Open the Explorer, click Setup and choose Define notations/attributes. Now, select a subset (e.g. Business Process Diagram (BPMN 2.0) and BPMN (complete)), the diagram element type (e.g. Task) and click Add custom attribute. Name the attribute and choose the data type Link/URL. Click Create.

Whenever a diagram is opened in the Editor, you can select a task and link a document to it using the attribute Editor.

For further information, you can also go to the following chapters:

• Frequently asked questions: General information (page 715)
• Frequently asked questions: Collaboration Hub (page 426)
• Frequently asked questions for workspace administrators (page 694)

4.5 QuickModel

QuickModel allows fast process capturing and completion. It supports a table based modeling approach where you can add information by filling a table. The graphical diagram representation will automatically be created by the system, which enables you to fully concentrate on the diagram information.

QuickModel can help you with your work on diagrams in many areas:

• It enables you to create diagrams even if you are unfamiliar with modeling conventions. With QuickModel you create diagrams by adding information to a table instead of adding elements to a diagram, with no special knowledge of the modeling language being required. The resulting diagram will be BPMN 2.0 compliant.
• You can edit diagram information even faster as the system does the graphical modeling. You can implicitly edit the graphical representation by changing the workflow order, whereas modeling actions like rearranging the diagram will be executed by the application.
• Diagram information can be displayed clearly in a table and process information can be added even faster than in the Graphical Editor.

Note: After logging into Collaboration Hub, users with a Hub license can open QuickModel through the Explorer by clicking the logo in the top left corner of the application.
Read more:

- **Capturing processes with QuickModel** (page 306)
- **Completing diagram data with QuickModel** (page 313)
- **Connecting dictionary entries to activities in QuickModel** (page 317)
- **Tutorial: Modeling for beginners - The QuickModel tool** (page 318)

The **QuickModel application**

4.5.1 Capturing processes with QuickModel

QuickModel enables you to capture processes in a fast and well-structured manner. Information is simply added to a table and a diagram is automatically created from the information you put in.

The following chapter explains process capturing with QuickModel in-depth.

QuickModel can be used to capture linear processes, which contain a workflow with a well defined order of activities.

With the application you can also make modeling complex processes much faster by simply recording the main path first. Complex structural information like parallel tasks or exclusive gateways you can add later in the Graphical Editor.

The QuickModel Editor helps to manage BPMN attributes in a fast and well structured manner.

To capture a new process with QuickModel, open the Signavio Explorer and click **New**, then **QuickModel** in the top drop-down menu:
Create a new process diagram with QuickModel.

The QuickModel application will open in a new tab:

**New Process**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start: &quot;PO received&quot;</td>
<td></td>
</tr>
<tr>
<td>End: &quot;Product shipped&quot;</td>
<td></td>
</tr>
</tbody>
</table>

*Show more process attributes*

**Activities**

<table>
<thead>
<tr>
<th>What?</th>
<th>Who?</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a new BPMN diagram in QuickModel*

The QuickModel window consists of three sections, top to bottom:

- **Process details** are displayed at the top of the window. They contain information about the process as a whole (attributes on diagram level).
• Activities are listed in the middle. The workflow order in the diagram will be the same as displayed here.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Who?</td>
<td>How?</td>
</tr>
<tr>
<td>1</td>
<td>Add arrival date to document</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Make 3 copies of document</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Inform department head about mail</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Scan activities</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Put scan into corresponding folder</td>
<td></td>
</tr>
</tbody>
</table>

The order of lines in the table under 'what' (1, 2, 3, 4, 5) is the same as the order of the tasks in the diagram

• A diagram preview is displayed at the bottom. The preview is automatically generated by the application.

Adding tasks

• Start with adding a process trigger (start event) that initiates the process and an end event that concludes it, if applicable.

Add a trigger/start event.

• Add tasks that are executed during the process. To do so, select the first cell in the table directly below What?:

Signavio Process Manager - User Guide, Release 13.0.0
Activities

Select the first cell to add a task.

To ease the navigation in the table, the row and column name of the currently selected cells are always highlighted.

- Type in the activity name and press Enter. The diagram preview will refresh and show a start event, the task and an end event:

The task is automatically added to the diagram.

- Continue adding tasks in the same way. As the activity list grows, the diagram preview may scroll out of view. To always keep it in view, you can use the pin on the upper right:

You can pin the diagram preview to the bottom of the window.

This will pin the preview to the bottom of the window. You can adjust the diagram size via the slider on the left or resize the preview window itself:
Resize the graphical diagram view.

To add more information about activities (to fill in additional attributes), use the tabulator key instead of Enter. Instead of the next line for a new task, the next column will be selected and allows you to enter detailed information:

Activities

<table>
<thead>
<tr>
<th>Add activity above</th>
<th>Remove activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Who?</td>
</tr>
<tr>
<td>1 Add arrival date to document</td>
<td>Receptionist</td>
</tr>
<tr>
<td>2 Make 3 copies of document</td>
<td></td>
</tr>
</tbody>
</table>

Navigate to the next column after labeling a task to define roles for the tasks.

To add information to previous activities, select the corresponding cell by clicking or navigating to it with the arrow keys. To extend information about an activity, double click the cell instead of simply typing the information or press Enter.

If you forgot an activity in between, select the next activity in the workflow and click Add activity above:

Activities

<table>
<thead>
<tr>
<th>Add activity above</th>
<th>Remove activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Who?</td>
</tr>
<tr>
<td>1 Add arrival date to document</td>
<td>Receptionist</td>
</tr>
<tr>
<td>2 Make 3 copies of document</td>
<td></td>
</tr>
</tbody>
</table>
Adding an activity inbetween existing tasks.
This will add a new, empty row.
• After adding all activities, you can add a process result in the process details area:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Specify and quantify requirements</td>
<td>Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Complete a purchase order</td>
<td>Department</td>
<td></td>
<td>ERP System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Check purchase order</td>
<td>Central Purchasing</td>
<td></td>
<td>ERP System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Create order template from purchase order</td>
<td>Central Purchasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Approve purchase order</td>
<td>Approver</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Receive of goods</td>
<td>Central Purchasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Label the end event/process result.
The diagram preview in the bottom will refresh constantly. Answering the question **Who?** will add pools and lanes, adding IT Systems to the table will create them accordingly in the preview:

A process diagram, created with the QuickModel Editor.
After creating your new diagram with QuickModel, you can **switch directly to the Editor** to add complex elements, such as gateways.
To switch directly to the Editor, click the corresponding menu item.

If you did not save your QuickModel diagram (page 312) yet, a dialog will appear. If you want to save and switch to the Editor, click Yes, and open the Editor

Removing tasks and information

To remove a task, select the corresponding line and click Remove activity

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Add arrival date to document</td>
<td>Receptionist</td>
</tr>
<tr>
<td>2</td>
<td>Make 3 copies of document</td>
<td>Intern</td>
</tr>
<tr>
<td>3</td>
<td>Inform department head about mail</td>
<td>Intern</td>
</tr>
</tbody>
</table>

Remove an activity.

To remove single information, select a cell and hit Del on your keyboard. The cell content will be removed but the task will remain.

Saving a diagram

Add a name for the process at the top of the window before saving:

Label the process.

Then, add a process description. If you click on the field Documentation in the Process details section, a text Editor will appear that also allows formatting the text:
Add a process description.
Add your information and hit OK. The process description will later help readers of the process to get an idea of the process without diving into its structure.

Finally, click Save in the QuickModel toolbar:

Save the diagram.
The diagram will be saved and be accessible in the Signavio Explorer after refreshing.
For advanced QuickModel functions, please read Completing diagram data with QuickModel (page 313)

4.5.2 Completing diagram data with QuickModel
QuickModel cannot only be used to capture processes. The table view also allows getting a quick overview of all the process information.

- You can add key process indicators (KPIs) very quickly due to the table view.
- New custom attributes can be created immediately by adding a new column to the Activities table.
- Process diagram information can be checked for completeness very easily.

Opening an existing diagram with QuickModel
There are different ways to display a diagram with QuickModel:

- You are in the Signavio Explorer. Select the diagram and select Edit QuickModel from the Edit menu:
Open a diagram in QuickModel from the Explorer.

- You already opened the diagram in the Editor. There is a toggle button in the top right corner that allows switching to the QuickModel view instantly:

Switch from the Editor to QuickModel.

Simply click **Graphical Editor** and select **QuickModel** in the top right drop-down menu.

**Important:** When switching views, unsaved changes have to be saved first. If you have unsaved changes that you want to discard, close the Editor without saving and open the diagram in QuickModel from the Explorer.

Using that menu you can easily toggle between the Editor and QuickModel.

Completing diagram information

To learn how to use the QuickModel application's basic functions, please go to [Capturing processes with QuickModel](#) (page 306).

**Hint:** Some diagrams contain non-linear processes, for example decisions or parallel workflows (gateways) or multilevel roles. You can open these diagrams in QuickModel to edit and complete those diagrams but it is not possible to edit them structurally, for example to add or remove tasks or roles. These buttons appear grayed. Columns that are not editable are marked with a star symbol.
If you edited a diagram in the Editor before, some attributes may be ‘read only’ in QuickModel.

Show or hide (custom) attributes

Usually, the main attributes are displayed in the activities area, but you can easily add or hide columns that contain (custom) attributes.

- Click the tool symbol on the top right of the activities list:

Open the attribute display settings.

- A dialog will appear that allows you to choose the attributes to be displayed in the table:

Configure the attributes that are displayed in QuickModel for this diagram.

Hint: QuickModel allows editing activities as well as linked subprocesses. The section custom attributes allows selecting attributes that were individually defined for both
element types.

- After choosing a number of attributes to be displayed, click **OK**.

The view will be updated accordingly.

You can define custom attributes to add domain specific information. The chapter *Configuring notations and attributes* (page 533) offers more information for workspace administrators about the usage and creation of custom attributes in the whole workspace.

Custom attribute information **on process level**, if defined, will be accessible with **show more process attribute**.

*Display custom attributes in the process details view.*
Add your domain specific information here.

**Adding (custom) attribute values in QuickModel**

Some information may have been left blank during process modeling. This can happen, for example, if you want to capture very fast or if the information was simply not available at the time of the first modeling process.

In QuickModel, the table in the **Activities** window allows completing this information easily:

- Use the arrow keys to select the right cell or simply click it.
- Activate the editing mode by pressing enter or, if you want to replace information that is already there, simply start typing. Depending on the attribute type there are different ways of adding information. If you have a number of dictionary entries for roles, these can be picked in the corresponding attributes.
Selecting a role for the custom attribute ‘consulted’

• After adding a value, confirm it by pressing Enter. The value will then be inserted into the cell.

Depending on the attributes defined and their data type, which can, for example, be a list, a boolean value or simply text, the application will automatically provide the right input form for you to provide the attribute value.

It is possible to copy data and paste it into other cells. Simply select one or more cells (by pressing Ctrl or Shift while selecting) and press Ctrl + C Select the target cell or multiple target cells and press Ctrl + V to insert the data.

Undo and redo actions

Use the arrow symbols in the toolbar to redo and undo actions:

![Undo and Redo Action Icons]

Undo or redo an action.

You can also press Ctrl + Z (undo) and Ctrl + Y (redo).

4.5.3 Connecting dictionary entries to activities in QuickModel

Like in the Editor, you can connect dictionary entries to tasks in the QuickModel application. This can be done with the task or its attributes.

Dictionary entries allow applying naming conventions more easily, finding connections between diagrams and capturing information even faster using the auto completion.

Start typing a task name in the What? column and the auto completion will suggest a list of dictionary entries that are related to the text you entered:

![Auto Completion Suggestion]

The auto completion functionality suggests dictionary entries.

Choose the dictionary entry you want to link to the task by clicking it or selecting it with the arrow keys and pressing Enter. The task will be will be linked to the dictionary entry. You can now edit the name of the task, the dictionary entry will stay linked to it.

Linked information will get a small dictionary icon:
The task ‘Create Order template’ is connected to a dictionary entry. 

You can also connect single attribute values to dictionary entries. Whenever you add textual information to an attribute the auto completion will suggest dictionary entries in the same way:

An attribute is referencing a dictionary entry.

Hint: Attributes referencing dictionary entries are fixed links to the entry, you cannot edit the attribute's name.

4.5.4 Tutorial: Modeling for beginners with QuickModel

With the QuickModel tool, Signavio provides an easy start to business process modeling with BPMN 2.0. Here, you create a BPMN process by filling a table with information about the process. The tool models a BPMN 2.0 conform diagram that can later be altered in the Editor.
QuickModel can also be useful for fast modeling - for example if you want to sketch out a lot of different diagrams. Simply create the basic structure of the diagram in QuickModel, then switch to the Editor to add more complex structures.

You don't need any knowledge about BPMN to work with QuickModel. The tool, however, does have limitations: you will only be able to define one diagram path. 'Branches' (Gateways) and sub-processes need to be added in the Editor later. We recommend modeling either the 'happy path' - the path the process follows if no obstructions or errors occur. You can add information about branches and other diagram details in the documentation so that an experienced modeler can add them to the diagram in the Editor later.

To create a diagram in QuickModel, click **New - QuickModel** in the Signavio Explorer. The QuickModel tool will open in a new browser tab.

In the tool, proceed as follows:

- First, name the process by clicking the pen symbol in the header of the application.
- Start creating the diagram by defining a start- and an end event in the corresponding form fields in the 'Process details' section on the right side.
Add a trigger/start event.

- Now, you can add Tasks to the table. Create a task by entering its label into the first column. You can add a Task at any position in the model by selecting the corresponding row in the table and then clicking the Add activity above button above the column header. To remove a Task, click Remove activity. When you added your first task, the tool will start modeling the changes you make to the diagram in real time in the 'Diagram preview' section.

Add an activity between existing tasks.

Remove an activity.

- In the other columns of the table, you can add element characteristics (so-called 'attributes') and other information. You can for example add an IT System or a Data Object (any kind of document) that may be needed to complete a Task. If visible in the diagram, this information will also be added to the model by the tool automatically. You can configure the columns that are displayed by clicking the wrench symbol on the top right of the 'Activities' section.
Configure the attributes that are displayed in QuickModel for this diagram.

- If dictionary entries are defined, suggestions will be displayed as soon as you start filling a field. If you click an entry, the corresponding field will be automatically filled and linked to the this dictionary entry. If your organization uses the Signavio Dictionary, it should contain definitions for the most-used elements and attributes. Like this, all modelers in Signavio use the same pre-defined terms. You can learn more about the Dictionary in the chapter *The Dictionary* (page 428).

![](image)

**The Dictionary is automatically suggesting fitting entries as you type.**

- The label of the framing element (‘Pool’) that encompasses the model is defined in the ‘Organization’ form field at top left in the ‘Process Details’ section. The Pool represents the organization that owns and executes the process. Pools can contain ‘Lanes’ that represent actors. Actors can be people, positions or departments within an organization. They define, who can or should perform a Task. If you would like to define actors for certain Task elements, define them in the ‘Who?’ column of the table. We recommend to put positions, roles or departments instead of the name of a person as responsibilities of people within organizations change.
Define a role (in this case a department).

When you are done creating the diagram and you checked the model that the tool created, provide a description of the diagram in the ‘Documentation’ form field of the ‘Process Details’ section at the top. If necessary, also define what needs to be added or changed in the model to add complexity like branches (‘Gateways’), additional attributes or linked sub-processes.

Save the diagram so that it can be completed in the Editor.

4.6 Decision Model and Notation (DMN)

Note: The decision modeling features are available in the Enterprise Plus Edition.

The Decision Model and Notation (DMN) enables you to document decision processes in a structured and formalized way that stakeholders involved can easily understand. DMN and BPMN models can be integrated seamlessly into one another. This way, you can employ DMN directly within your existing business process landscape.

Read more about DMN:

- What is DMN? (page 322)
- Creating and editing DMN diagrams (page 328)
- Defining decision logic (page 340)
- Using advanced literal expressions (functions in DMN decision elements) (page 351)
- Comparing DMN diagrams and revisions (page 366)
- The DMN Test lab (page 369)
- DMN simulation (page 374)

4.6.1 What is DMN?

The Decision Model and Notation (DMN) enables you to document decision processes in a structured and formalized manner. You find the DMN specification document at http://www.omg.org/spec/DMN/1.0/. With DMN, you can document structured decision-making processes, which can be traced and understood by business users, as well as by IT specialists.
Although DMN is an independent notation, it is designed to enable linking DMN to BPMN diagrams. This can be of great value, as DMN complements BPMN perfectly when it comes to modeling complex design processes. DMN modeling helps you to prevent messy BPMN decision process structures like the one sketched out below:

Sample: decision process in BPMN.

DMN element structures are called **Decision Requirements Graphs (DRG)**. They form **Decision Requirements Diagrams (DRD)**.

This article explains the different elements of a decision requirement graph.

**Elements**

There are four different core elements in DMN:

- **Decisions**,
- **Input data**,
- **Business knowledge models**,
- **Knowledge sources**.

These elements are described below.
**Decision**  A ‘decision’ element.

**Decisions** depict a point where an output is determined from one or several inputs, making use of decision logic. Decisions may require one or multiple business knowledge model elements.

**Input data**  An ‘input data’ element.

Input Data elements contain information which is used by one or several decision and/or business knowledge model elements.

**Business knowledge model**  A ‘business knowledge model’ element.

**Business knowledge models** are functions providing logic for one or multiple decision elements.

**Knowledge source**  A ‘knowledge source’ element.

A Knowledge Source depicts an authority, which has to be considered during a decision or business model function.
### Requirements (connectors)

DMN connectors in the Signavio Process Manager.

There are three types of connectors in DMN. All of these connectors establish a requirement relationship: The element the connector is pointing to requires the input of the connector's source. Thus, in DMN connectors are drawn from the receiving (or requiring) element to the starting point, contrary to connectors in BPMN diagrams, which are drawn from the source to the target element.

<table>
<thead>
<tr>
<th>Requirements (connectors)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information requirement</strong></td>
<td>An information requirement connector starts at a data input or decision element and points to the decision element that requires the information.</td>
</tr>
<tr>
<td><strong>Knowledge requirement</strong></td>
<td>A knowledge requirement connector starts at a business knowledge model and points to a decision or a business knowledge model.</td>
</tr>
<tr>
<td><strong>Authority requirement</strong></td>
<td>An authority requirement points from an input data element to a dependent knowledge source or from a knowledge source to any dependent decision requirement graph element.</td>
</tr>
</tbody>
</table>

### Decision tables

A decision table contains always a collection of rules. It transforms **inputs** according to the **rules** into **outputs** and can be depicted like this:

<table>
<thead>
<tr>
<th>U</th>
<th>Inputs Risk Category</th>
<th>Outputs Credit Contingency Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[HIGH, DECLINE, MEDIUM, LOW, VERY LOW]</td>
<td>Number</td>
</tr>
<tr>
<td>1</td>
<td>HIGH, DECLINE</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>MEDIUM</td>
<td>0.7</td>
</tr>
<tr>
<td>3</td>
<td>LOW, VERY LOW</td>
<td>0.8</td>
</tr>
</tbody>
</table>

*Sample: A decision logic table in the Editor.*

### Hit policies

Hit policies determine the semantics of a decision table and prescribe how rules must be structured. For example, multiple rules that lead to different results may apply to one specific set of input values. This is why you need to specify a hit policy for each decision table.

There are two variants:

- **Single hit policies** Single hit policies considers exactly one rule. However, this rule can produce multiple outputs.

- **Multi hit policy** Multi hit policies aggregate outputs as sums/ lists.

The desired hit policy for the decision table is specified in the upper left corner with the respective initial letter (sample: **P** stands for **priority**).

Furthermore, you can configure different **completeness** requirements:
• A complete decision table is only valid if it considers all possible inputs. We recommend using complete decision tables in most scenarios, because they prevent that problems occur while executing the decision, if the decision modeler didn't consider an input that is then occurring in practice.

• An incomplete decision table is valid even if it doesn't consider all possible inputs.

Single hit policies The following subsections explain all single hit policies with the help of practical examples.

Unique Hit Policy (U) One input combination is covered by exactly one rule. Unique (single) is the default hit policy in Signavio’s DMN editor.

Example
Depending on the current season, a retailer decides which product group he offers at a reduced price. Only one product group can be offered, since only one season exists at the same time.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Season</td>
<td>Product group</td>
</tr>
<tr>
<td>Spring</td>
<td>garden equipment</td>
</tr>
<tr>
<td>Summer</td>
<td>beverages</td>
</tr>
<tr>
<td>Autumn</td>
<td>clothes</td>
</tr>
<tr>
<td>Winter</td>
<td>food</td>
</tr>
</tbody>
</table>

Any hit policy (A) Multiple rules cover the same combination of input values. However, this overlap is only allowed if the overlapping rules have the same output.

Example
If a credit applicant is under 18 years and is already in debt, the application is rejected. Otherwise he obtains a credit.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Debt</td>
</tr>
<tr>
<td>&lt; 18</td>
<td>yes</td>
</tr>
<tr>
<td>&gt;= 18</td>
<td>no</td>
</tr>
</tbody>
</table>

Priority hit policy (P) Rules can overlap with different outputs. To determine the resulting output, outputs are ordered according to priority. Outputs are always in list form. The value with the lower list index is prioritized.

Example
In a decision table, the logic determines at what age customers get certain discount vouchers. For customers over 18 years sports equipment vouchers and for all over 3 years toys vouchers are issued. Both rules apply to a 30-year-old customer. Because the output ‘sports equipment’ has a higher priority, the customer will get a voucher for this. Consequently, the output list has to be [sports equipment, toys, clothing].

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Voucher for</td>
</tr>
<tr>
<td>&gt; 18</td>
<td>Sports equipment</td>
</tr>
<tr>
<td>&gt; 3</td>
<td>Toys</td>
</tr>
</tbody>
</table>
| <     | Clothing
**First hit policy (F)**  Rules might overlap. But only one rule fires: The first hit policy simply assumes an ordering of the rules - they are evaluated from top to bottom. As soon as one rule fires, the output of that rule is used as result of the decision. Once rule hits, no other rule is checked.

**Example**

In a decision table, the logic determines at what age customers get certain discount vouchers. For customers over 18 years clothing vouchers and for all over 3 years sports equipment vouchers are issued. Both rules apply to a 30-year-old customer. Because the rule for 18-year-old customers is at the top of the decision table, this rule serves as the basis for the decision. The customer receives a voucher for clothing.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Voucher for</td>
</tr>
<tr>
<td>&gt; 18</td>
<td>Clothing</td>
</tr>
<tr>
<td>&gt; 3</td>
<td>Sports equipment</td>
</tr>
<tr>
<td>&lt;</td>
<td>Toys</td>
</tr>
</tbody>
</table>

**Multi hit policies**  When using multi hit policies, multiple rules can fire for one set of data inputs. Multi hit tables either return a set or aggregate as the final result of the decisions. The following subsections explain all multi hit policies with the help of practical examples.

**Collect hit policy (C)**  By default, the collect hit policy collects the outputs of matching rules, but can be configured to determine the sum, minimum, maximum or count of matching outputs instead.

**Example**

An online shop adds a discount coupon to specific orders. The discount depends on the total sum of an order. In the decision table below, the outcome differs depending on the variant of the applied collect hit policy. Given a 250$ purchase order,

- the **default** collect hit policy returns two coupons (5%, respectively 25% discount) in no particular order,
- the **sum** collect hit policy returns one coupon with 30% discount,
- the **maximum** collect hit policy returns one coupon with 25% discount,
- the **minimum** collect hit policy returns one coupon with 0% discount and disappoints the customer in our scenario,
- the **count** collect hit policies returns 2, which doesn't provide relevant information in our scenario.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total order sum</td>
<td>Discount coupon</td>
</tr>
<tr>
<td>&lt;= 50$</td>
<td>0%</td>
</tr>
<tr>
<td>&gt; 50$</td>
<td>5%</td>
</tr>
<tr>
<td>&gt; 200$</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Output order hit policy (O)**  Results are ordered by the priority of the output values.

**Example**

An online shop adds small gifts to orders. The gifts a customer receives depend on the total order sum. If the order sum is 50$ or lower, the customer receives a discount coupon. If the order sum exceeds 50$, the customer receives a small pack of high-quality coffee in addition to the coupon. With an output order hit policy, for the total order sum of 250$ the table below will return the result [Coffee, Discount coupon], sorted according to the order of the specified output list.
<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total order sum</td>
<td>Gift = [Coffee, Discount coupon]</td>
</tr>
<tr>
<td>-</td>
<td>Discount coupon</td>
</tr>
<tr>
<td>&gt; 50$</td>
<td>Coffee</td>
</tr>
</tbody>
</table>

**Rule order hit policy (R)**  Results are ordered by the order of matching rules.

**Example**

When applying a rule order hit policy to the table above, an input of 250$ will return the result [Discount coupon, Coffee], sorted according to the order of the applying rules.

**Decision Requirements Diagram (DRD)**

A complete decision requirements graph could for example look like this:

![Decision Requirements Diagram](image)

*Example: DMN diagram.*

### 4.6.2 Creating and editing DMN diagrams

This chapter explains DMN modeling with Signavio Process Manager. You can find more general instructions on how to edit diagrams in the chapter *Basic modeling with the Editor* (page 163).

**Creating and editing DMN diagrams**

To create a DMN diagram, proceed as follows:

1. Open the Explorer and select **New - Business Decision Diagram (DMN 1.0):**
Your browser will open the editor with a blank DMN canvas in a new tab.

A new DMN diagram in the Editor.

2. Once you have created or opened a DMN diagram, you can simply drag and drop an element from the shape repository on the left onto the canvas:
3. You can also use the interactive context menu of an already existing element to create new DMN elements.

4. Label the element.

5. Add attributes to the element. A decision can typically be described by a question - answer scheme. By default, there are attributes on decision element level for documenting this scheme for each decision:
6. To save the diagram, click the **Save** button in the upper left corner of the Editor.

**Copying elements and element groups**  For faster modeling, it can be helpful to copy elements or interconnected element groups. If you copy an interconnected group of DMN elements in the Editor contained decision tables and attributes are copied as well.

In our example, we determine a customer discount and subsequently calculate the purchase price of products with an additional discount and normally priced products separately to be able to have the values displayed separately on the bill:
These elements are almost identical and can be copied during the modeling process to save time. As both ‘Product value’ input elements have the same input range, only the label has to be altered here.

1. To copy elements, select them, then click the Copy button.

2. Then click the Paste button in the Editor’s toolbar.

3. Now, rearrange the elements as needed and alter decisions and names, then connect them to other elements if necessary.

Note: You can also copy elements from one diagram to another. For this, we recommend you to open the corresponding diagrams in different browser tabs. This procedure is especially helpful when you split one complex model into multiple, better understandable parts.
Creating complex input data elements

In many cases, it is impractical to model each data input parameter as a separate element. Instead, you can create complex data input elements.

For example, the Data Input element Order can contain the attributes Purchase value and Customer status.

1. To configure a data input element as complex, set the value of the attribute Type definition to Complex type:

2. Now, click the Edit button next to Attribute to open the configuration dialog.

3. In the configuration dialog, you can add attributes and define their properties. For each attribute, you need to define the name and the type. Depending on the type, you can define further properties.
4. Click **Save** to confirm the changes.

After configuring the complex input data element, the attributes are available in the Decision Table editor, for example as *Order.Purchase value*:

Creating sub decisions

In many situations, a decision depends on one or multiple sub decisions. In such a case, you can daisy-chain decision elements or transform **Data Input** elements into **Decisions** as depicted below:
In case you transform a data input, a new data input is automatically created and attached to the sub decision:

In our example, when opening the Decision Table, its output is already defined. All you need to do is create possible additional inputs and map them to output values.

**Multi Instance Decisions**  Multi instance decisions (an extension of the DMN standard) are (sub)decisions, which are executed several times (once per entry/object of a list) and serve as data input
for a higher level decision. Multi instance decisions are similar to a for-loop in a computer program. In the example below, each position of the purchase agreement is validated to determine the validity of the entire agreement.

In this sample the decision is made for each position.

To create a multi instance decision, proceed as follows:

1. Select **DMN 1.0 (Complete)** from the shape repository.

2. Click **Multi Instance Decision** and drag the element onto the canvas.
3. Reference a list of data inputs, or a data input object that contains such a list.

4. Define the internal decision logic of the multi instance decision. The referenced objects are no lists.
5. Open the configuration dialog of the **Iteration** attribute to configure the multi instance decision.

6. Specify the input list and aggregation function.

In our example, all positions have to be valid.
7. Finally, the multi instance decision can be referenced by a higher level decision.

![Diagram showing multi instance decision]

**Linking BPMN diagrams to DMN diagrams**

You can easily link DMN diagrams to tasks in BPMN diagrams.

1. Once you have created the Task in the BPMN diagram, change the Task type to **Business Rule**.

![Task attributes with Business Rule selected]

2. Now, select the attribute **Decision reference**: 

![Decision reference attribute selected]
3. Alternatively, you can click the arrow in the upper left corner of the Task. The dialog Establish link opens.

4. You can either create a new DMN diagram or link an already existing one.

4.6.3 Defining decision logic

To obtain a decision, you must provide a decision logic in your DMN diagram. The decision logic is defined in a decision table. In decision tables, columns are used for input and output data, while the rows define decision rules.

In this section you will learn how to define decision logic.
To create a decision logic table, proceed as follows:

1. Select the decision element from the shape repository and drop it on the canvas as described above.

2. To deposit a decision logi, open the decision table, click the table icon in the upper left corner of the element. The Decision logic dialog opens.

3. In the tab Decision Table you can define the decision logic through creating inputs and mapping them to outputs. First, click New Input to give the input a label.

4. Now, define the type of the input by clicking Text and selecting the type of your choice, e.g. Enumeration of Values.

5. In case you chose ‘enumeration’, you need to define possible values.
6. If you chose **Enumeration of values** as your input/output, you can sort the values by clicking the **move up** and **move down** buttons at the right of the value. Additionally, you can have the values sorted automatically in alphanumerical order by clicking the **Sort values** button:

7. More inputs and outputs can be created by clicking **Add Input**, or **Add Input** and then **Add Output**, respectively:

Once you have defined a new input, the input is added as an **input data** element to the canvas:
8. Now, create a rule by clicking **Add rule**.

9. Now, define the relation between input and output: to do this, operators and input values are set. Double-click on the respective line.

The following table describes the available comparison operators.
### Decision table operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
<th>Available for types</th>
</tr>
</thead>
<tbody>
<tr>
<td>equal (for dates: on)</td>
<td>Returns true if the input value equals the value specified in the corresponding decision table field.</td>
<td>Enumeration, text, number, Boolean, hierarchy, date, lists of all types</td>
</tr>
<tr>
<td>not equal (for dates: not on)</td>
<td>Returns true if the input value does not equal the value specified in the corresponding decision table field.</td>
<td>Enumeration, text, number, Boolean, hierarchy, date, lists of all types</td>
</tr>
<tr>
<td>less (for dates: before)</td>
<td>Returns true if the input value is less than the value specified in the corresponding decision table field.</td>
<td>Number, date</td>
</tr>
<tr>
<td>less or equal (for dates: until)</td>
<td>Returns true if the input value is less or equal than the value specified in the corresponding decision table field.</td>
<td>Number, date</td>
</tr>
<tr>
<td>greater (for dates: after)</td>
<td>Returns true if the input value is greater than the value specified in the corresponding decision table field.</td>
<td>Number, date</td>
</tr>
<tr>
<td>greater or equal (for dates: from)</td>
<td>Returns true if the input value is greater or equal than the value specified in the corresponding decision table field.</td>
<td>Number, date</td>
</tr>
<tr>
<td>contains (for numbers: included)</td>
<td>Returns true if the input value contains the value specified in the corresponding decision table field.</td>
<td>Text, number</td>
</tr>
<tr>
<td>not contains (for numbers: not included)</td>
<td>Returns true if the input value does not contain the value specified in the corresponding decision table field.</td>
<td>Text, number</td>
</tr>
<tr>
<td>begins with</td>
<td>Returns true if the input value begins with the value specified in the corresponding decision table field.</td>
<td>Text</td>
</tr>
<tr>
<td>ends with</td>
<td>Returns true if the input value ends with the value specified in the corresponding decision table field.</td>
<td>Text</td>
</tr>
<tr>
<td>element of</td>
<td>Returns true if the input value is also in the list of the corresponding decision table field.</td>
<td>Enumeration, text, number, hierarchy, date</td>
</tr>
<tr>
<td>not element of</td>
<td>Returns true if the input value is not in the list of the corresponding decision table field.</td>
<td>Enumeration, text, number, hierarchy, date</td>
</tr>
<tr>
<td>elements of and contains only</td>
<td>Returns true if the input list contains only items the list in the corresponding decision table field contains as well.</td>
<td>Lists of all types</td>
</tr>
<tr>
<td>contains any of</td>
<td>Returns true if the input list contains at least one item the list in the corresponding decision table field contains.</td>
<td>Lists of all types</td>
</tr>
<tr>
<td>contains none of</td>
<td>Returns true if the input list does not contain any item the list in the corresponding decision table field contains.</td>
<td>Lists of all types</td>
</tr>
<tr>
<td>valid</td>
<td>Returns true if the input value is defined (not empty) and valid. For example, if you only consider numeric values equal or greater than zero, all numeric values less than zero and all non-numeric values are not valid.</td>
<td>Enumeration, text, number, Boolean, hierarchy, date</td>
</tr>
<tr>
<td>not valid</td>
<td>Returns true if the input value is defined (not empty), but invalid. For example, if you only consider numeric values equal or greater than zero, all numeric values less than zero and all non-numeric values are invalid.</td>
<td>Enumeration, text, number, Boolean, hierarchy, date</td>
</tr>
</tbody>
</table>

---

**Valid vs. Not Valid**

- **Valid**: An input value is defined (not empty) and valid. This means the value meets all defined criteria, such as being a number greater than zero or a specific date range.
- **Not Valid**: An input value is defined (not empty), but invalid. This means the value does not meet the defined criteria, such as being a negative number or an invalid date.

---

**Example Usage**

For instance, if you are using a decision table to validate dates, you might have rules like this:

- If the date is on or after a certain date, return true.
- If the date is before that date, return false.
- If the date is equal to or after that date, return true.
- If the date is not equal to that date, return false.
- If the date is equal to or after that date, return true.
- If the date is not equal to that date, return false.

These rules help ensure that dates are used correctly within the context of your process.
10. Select input values:

   ![Input values selection](image)

11. Optionally, you can add documentation to the new rule in the column **Annotations**.

   ![Decision table with annotations](image)

**Importing decision rules**

You might have parts of your decision rules already defined in a spreadsheet. Then, you can import these decision rules into your DMN decision table, for example as a list of comma-separated values.

1. Open the decision table editor and click **Import/Export - Text Import** in the top-right corner:

   ![Import/Export dialog](image)

2. Now, you can insert a set of decision rules, for example by copy and paste. In the example below, we import a set of rules to determine a customer discount:
Import the decision rules.

The rules need to comply with the following structure:

- Depending on the delimiter you choose, the entry fields of a decision table rows (rule) need to separated by a tab, semicolon or comma. Relational operators like = and <= must be part of the field they relate to.
- For each rule, you need to start a new line.
- The import only supports the following literal expressions:
  - not(value)
  - not(value1, ..., valueN)
  - !=value

For example, not(Premium, Gold, Platinum) can exclude all customers with corresponding bonus cards.

Note: An import doesn't overwrite existing rules. After you have imported the rules, they are appended to the decision table.

<table>
<thead>
<tr>
<th>U</th>
<th>Customer status</th>
<th>Loyalty card</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Standard, Premium, Gold)</td>
<td>Boolean</td>
<td>(0%, 30.00%)</td>
</tr>
<tr>
<td>1</td>
<td>Standard</td>
<td>=</td>
<td>false</td>
</tr>
<tr>
<td>2</td>
<td>Standard</td>
<td>=</td>
<td>true</td>
</tr>
<tr>
<td>3</td>
<td>Premium</td>
<td>=</td>
<td>false</td>
</tr>
<tr>
<td>4</td>
<td>Premium</td>
<td>=</td>
<td>true</td>
</tr>
<tr>
<td>5</td>
<td>Gold</td>
<td>=</td>
<td>-</td>
</tr>
</tbody>
</table>

The rules are appended to the decision table.

Defining a literal expression as decision logic

As an alternative to the logic defined in the decision table for more experienced users, you can define a literal expression. Literal expressions represent pre-defined logical algorithms or rules that can be used to automatically create output results for decisions, often but not necessarily in a formal expression language. They are most commonly used in cases where the output of a decision is a the result of complex calculations or logical algorithms, or when the logic of the decision does not have much variation in their outputs with regards to its inputs.

Literal expressions are written in FEEL, the ‘friendly enough expression language’ specified as part of the DMN standard, which you can download along with examples for literal expression use cases at http://www.omg.org/spec/DMN/1.0/PDF.
Read more about literal expressions in the chapter *Using literal expressions instead of decision tables* (page 355).

**Important:** If a literal expression is defined, it **supersedes** the decision logic in the **decision table.**

Referencing a decision of another DMN diagram

You have also the possibility to reference a decision logic of another DMN diagram.

1. Switch to the **Link** tab. The **Establish link** dialog opens.

2. Now, identify the target diagram and select a decision element.
Warning: In an older version of the Decision Manager you could reference a diagram without specifying a decision. Such a reference is semantically incomplete and cannot be interpreted by the Simulation and Test Lab.

Referencing decisions in business knowledge models

When a business knowledge model links to a decision, referencing decision elements can reuse its logic. Such a reference is called a boxed invocation.

Boxed invocations provide decision logic and input type information as a generic function, whereas decisions that are referenced in DMN elements simply link to a decision and apply not only the input data types, but the specific input data objects.

In the following example, an insurance premium is calculated based on the applicant's and their spouse's risk level. For both persons, the same decision logic determines separate risk levels. A reference via a business knowledge model allows calling the linked decision model with different data inputs. In contrast, a direct link to a decision diagram would fail to distinguish between the two data sources.
Reuse decision logic via business knowledge models.

You can reference decisions in business knowledge models in the same way you link them in decision elements (page 347). To apply a business knowledge model's decision logic, proceed as follows:

1. Open the referencing decision.
2. Switch to the Invocation tab.
3. Set up a mapping between the referencing and the invoked decision's input data:

   ![Decision Table Diagram]

   *Apply a business knowledge model in a decision element.*

Configuring hit policies and completeness

With the help of hit policies (page 325) you define how your decision table manages inputs that are handled by several rules and inputs for which no rules are defined.
There are single hit policies and multiple hit policies. Single hit policies produce one result per input, while multiple hit policies produce an array of outputs, which is then aggregated according to an aggregation scheme.

The completeness settings define whether your table is producing outputs for every possible input. For further details, please consult the DMN specification document: http://www.omg.org/spec/DMN/1.0/PDF/

To define the hit policies and the aggregation and completeness settings, proceed as follows:

1. Click the UC label in the upper left corner of the table (UC stands for unique hit policy and a complete table).

2. In the Decision logic dialog, you can configure the hit policy, aggregation and completeness settings.

3. Click Save to save your settings.

Verifying decision tables Signavio Process Manager offers an automatic verification feature for decision tables to automatically check the completeness and consistency of rules.

To execute the automatic verification check, click the Verify button in the upper right corner of the decision table dialog:
Verify the decision table.

In our example, one combination of input values is not covered by a decision rule:

![Decision Table]

The verification function found an error: For one input combination, no rule exists.

4.6.4 Using advanced literal expressions (functions in DMN decision elements)

In case you have modeled your first DMN diagram, you are already familiar with DMN expressions for decision logic, e.g. in the form of a simple smaller than statement. These expressions are explained in the chapter Creating and editing DMN diagrams (page 328).

You might remember that you selected the corresponding operator from a drop-down list in the Decision Table Editor.
The ‘operator’ drop-down list

In many cases, these basic operators are not sufficient.

A simple example is determining a discount based on the total value of a list of purchased objects.

To determine the sum, we need to use Signavio’s advanced literal expressions. The expressions are based on FEEL, the friendly enough expression language specified as part of the DMN standard, which you can download as PDF at http://www.omg.org/spec/DMN/1.0/PDF.

Read more about:

- Using literal expressions in Decision Tables (page 352)
- Using literal expressions instead of Decision Tables (page 355)

The single commands can be used in combination, like in the following example:

Product((1 - DiscountRate) * Sum(ListOfItemPrices))

In the example, we calculate the total purchase sum of a list of items, considering a discount. The variables used here correspond to the data types defined in Input Data element's attributes and can be set when simulating the DMN diagram.

The documentation of all available expressions can be found at Documentation of all literal expressions (page 357).

Of course, you can also use standard operators (+, -, *, /, and or) within literal expressions.

Consequently, the example above can be expressed more concisely:

(1 - DiscountRate) * Sum(ListOfItemPrices)

Using literal expressions in Decision Tables

In our example, we want to determine - as already mentioned above - a discount based on the total value of all purchased items.
First, create the **Purchased items** Data Input element. The input should be a list of **numbers** of the type **currency**:

![Image of purchased items Data Input element]

Create a Data Input element and configure it according to the screenshot.

Now create a Decision, connect it to the data input and label it **Determine discount**. Click the **table** icon in the upper left corner of the Decision element to open the Decision Table Editor.

![Diagram of purchased items and determine discount]

Create a Decision, reference the Data Input element and open the decision table editor.

To activate the literal expression input, click the header and delete the input reference in the table:
Delete the input reference to be able to insert a literal expression.

Type in =. An overview over available variables and functions is displayed:

After inserting an initial `=` sign, available variables and functions are displayed.

Suggestions appear as you type. Type in `Sum` and select the `Sum` function. Then, insert the variable `PurchasedItems` as a parameter of `Sum`: 
Insert the literal expression 'Sum(PurchasedItems)'.

Now, the decision logic's Input Data is the sum of all purchased items. You can define the decision logic as usual (see: Editing diagrams (page 164)).

Please mind the first hit policy (page 349) in our example:

<table>
<thead>
<tr>
<th>F</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>= Sum(PurchasedItems)</td>
<td>Discount</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>1</td>
<td>&lt; 150</td>
<td>0.00 %</td>
</tr>
<tr>
<td>2</td>
<td>≥ 500</td>
<td>10.00 %</td>
</tr>
<tr>
<td>3</td>
<td>≥ 150</td>
<td>5.00 %</td>
</tr>
</tbody>
</table>

**Decision logic for determining a discount based on the total sum of purchased items**

**Using literal expressions instead of Decision Tables**

You can also use literal expressions instead of Decision Tables.

For example, you can split a decision into two daisy-chained elements, one with a decision table and another one with literal expression logic.
‘Calculate total sum’ and ‘Determine discount’ as two separate Decision elements.

- The first element calculates the total sum of purchased items.
- The second element determines the discount based on the total sum.

We can model the first decision without using a decision table.

Open the decision table editor and switch to the **Literal expressions** tab. There, insert the literal expression to calculate the sum of items:

```
Sum('Purchased items')
```

Open the ‘Literal expression tab’ and insert the literal expression.

Now, the decision element returns the sum of items as a Data Output and can be referenced by the following Decision element.

If we create complex literal expressions, we can define variables - so called **boxed contexts** and reference them in our decision function:
Manage complex expressions with boxed contexts.
This improves the readability of our literal expressions.

**Important:** If a **literal expression** is defined, it **supersedes** the decision logic in the **decision table**.

**Documentation of all literal expressions**
This section lists all available literal expressions, grouped by operation type.

**Arithmetic operations**

**Abs**

Abs(number): NUMERIC

Returns the absolute value of a number.

**Example:** Abs(-5) returns 5.

**Count**

Count([num1, num2, num3]): NUMERIC

Returns the number of elements of the given list.

**Example:** Count(["item1", "item2", "item3"]) returns 3.

**Round**

Round(number, digits): NUMERIC

Returns a number rounded to the corresponding number of digits.

**Example:** Round(3.44,1) returns 3.4.
Ceiling
Ceiling(number): NUMERIC
Returns a number rounded up to the next integer.
Example: Ceiling(1.3) returns 2.

Floor
Floor(number): NUMERIC
Returns a number rounded down to the next integer.
Example: Floor(1.6) returns 1.

Integer
Integer(number): NUMERIC
Returns the integer part of a number.
Example: Integer(1.34) returns 1.

Modulo
Modulo(dividend, divisor): NUMERIC
Returns the remainder of the dividend divided by the divisor.
Example: Modulo(4, 3) returns 1.

Percent
Percent(number): NUMERIC
Returns the number divided by 100.
Example: Percent(10) returns 0.1.

Power
Power(base, exponent): NUMERIC
Returns the base raised to the power of the exponent.
Example: Power(2, 3) returns 8.

Product
Product([factor1, factor2, factor3]): NUMERIC
Returns the product of a list of factors.
Example: Product([2, 3, 4]) returns 24.

RoundDown
RoundDown(number, digits): NUMERIC
Returns a number rounded down to the corresponding number of digits.
Example: RoundDown(1.3674, 2) returns 1.36.
RoundUp

RoundUp(number, digits):NUMERIC
Returns a number rounded up to the corresponding number of digits.

Example: Abs(1.344, 2) returns 1.35.

Sum

Sum([number1, number2, number3]):NUMERIC
Returns the sum of a list of values.

Example: Sum([1, 2, 3, 4, 5]) returns 15.

Date & time operations

Day

Day(datetime):NUMERIC
Returns the day part of a datetime.

Example: Day(2015-12-24T12:15:00.000+01:00) returns 24.

DayAdd

DayAdd(datetime, days to add):DATE
Returns the date plus the provided number of days.

Example: DayAdd(2015-12-24T12:15:00.000+01:00, 1) returns 2015-12-25T12:15:00.000+01:00.

DayDiff

DayDiff(datetime1, datetime2):NUMERIC
Returns the amount of full days between two dates.

Example: DayDiff(2015-12-24T12:15:00.000+01:00, 2015-12-25T12:15:00.000+01:00) returns 1.

Date

Date(year, month, day):DATE
Returns a date using the standard parameters of a date: year, month, day

Example: Date(2015, 12, 25) returns 2015-12-25.

DateTime

DateTime(day, month, year, hour, minute, second, hourOffset):DATE
Returns the dateTime using the standard parameters of a data time. The last parameter ‘hourOffset’ is optional.

Example: DateTime(25, 12, 2015, 12, 15, 0, 1) returns 2015-12-24T12:15:00.000+01:00.
Hour

Hour(datetime):NUMERIC
Returns the hour part of a datetime.

**Example:** Hour(2015-12-24T12:15:00.000+01:00) returns 12.

HourDiff

Hour(time):NUMERIC
Returns the amount of full hours between two dates.

**Example:** HourDiff(2015-12-24T12:15:00.000+01:00, 2015-12-24T14:15:00.000+01:00) returns 2.

Minute

Minute(time):NUMERIC
Returns the minute part of a datetime.

**Example:** Minute(2015-12-24T12:15:00.000+01:00) returns 15.

MinutesDiff

MinutesDiff(datetimes1, datetimes2):NUMERIC
Returns the amount of full minutes between two dates.

**Example:** MinutesDiff(2015-12-24T12:15:00.000+01:00, 2015-12-24T13:15:00.000+01:00) returns 60.

Month

Month(datetime):NUMERIC
Returns the month part of a datetime.

**Example:** Month(2015-12-24T12:15:00.000+01:00) returns 12.

MonthAdd

MonthAdd(datetime, months_to_add):DATE
Returns the datetime plus the number of months.

**Example:** MonthAdd(2015-10-10T12:15:00.000+01:00, 1) returns 2015-11-10T12:15:00.000+01:00.

MonthDiff

MonthDiff(datetime1, datetime2):NUMERIC
Returns the amount of full months between two dates.

**Example:** MonthDiff(2015-10-10T12:15:00.000+01:00, 2015-11-10T12:15:00.000+01:00) returns 1.
Now

\texttt{Now()}: \texttt{DATE}

Returns current datetime.

\textbf{Example}: \texttt{Now()} could have returned 2015-11-10T12:15:00.000+01:00.

Today

\texttt{Today()}: \texttt{DATE}

Returns the current date.

\textbf{Example}: \texttt{Today()} could have returned 2015-11-10.

Weekday

\texttt{Weekday(datetime)}: \texttt{NUMERIC}

Returns a number (1 to 7) representing the day of the week.

\textbf{Example}: \texttt{weekday(2016-02-09T12:15:00.000+01:00)} returns 3.

Year

\texttt{Year(datetime)}: \texttt{NUMERIC}

Returns the year part of a datetime.

\textbf{Example}: \texttt{Year(2016-02-09T12:15:00.000+01:00)} returns 2016.

YearAdd

\texttt{YearAdd(datetime, years_to_add)}: \texttt{DATE}

Returns the datetime plus the number of years.

\textbf{Example}: \texttt{YearAdd(2016-02-09T12:15:00.000+01:00, 1)} returns 2017-02-09T12:15:00.000+01:00.

YearDiff

\texttt{YearDiff(datetime1, datetime2)}: \texttt{NUMERIC}

Returns the amount of \texttt{full} years between two dates.

\textbf{Example}: \texttt{YearDiff(2016-02-09T12:15:00.000+01:00, 2017-02-09T12:15:00.000+01:00)} returns 1.

List operations

Append

\texttt{Append(list, element)}: \texttt{LIST}

Adds the element to a copy of the provided list. Returns the manipulated copy.

\textbf{Example}: \texttt{Append([2.5, 5.8, 4.3], 6.7)} returns [2.5, 5.8, 4.3, 6.7].
AppendAll

AppendAll(list1, list2): LIST

Adds all elements from the second provided list to a copy of the first one. Returns the manipulated copy.

Example: AppendAll([2.5, 5.8, 4.3], [2.1, 3.5, 7.4]) returns [2.5, 5.8, 4.3, 2.1, 3.5, 7.4].

Zip

Zip(attributes, values1, ..., valuesN): LIST

Assembles a list of objects out of a list of attributes and multiple lists of values.

Example: Zip(["id", "value"], [23a3e98, c45da1b], [40, 120]) returns [{id: 23a3e98, value: 40}, {id: c45da1b, value: 120}].

Important: Before version 10.11.0 of the Decision Manager, the values were passed to the function as a list of lists, for example:

Zip(["id", "value"], [[23a3e98, c45da1b], [40, 120]])

Literal expressions that used the old Zip function have been automatically transformed to the new syntax.

NotContainsAny

NotContainsAny(list1, list2): BOOLEAN

Determines whether list1 contains any element of list2.

Example: NotContainsAny(["item1", "item2"], ["item2", "item3"]) returns false.

ContainsOnly

ContainsOnly(list1, list2): BOOLEAN

Determines whether list1 contains only elements of list2.

Example: ContainsOnly(["item1", "item2"], ["item2", "item3"]) returns false.

AreElementsOf

AreElementsOf(list1, list2): BOOLEAN

Determines whether list2 contains all elements of list1.

Example: AreElementsOf(["item2", "item3"], ["item1", "item2", "item3"]) returns true.

Remove

This expression is available only in the Literal Expressions Editor (not in the Decision Table Editor).

Remove(list, element): LIST

Removes the specified element from the specified list.

Example: Remove(["item1", "item2"], "item1") returns ["item2"].
RemoveAll

This expression is available only in the Literal Expressions Editor (not in the Decision Table Editor).

RemoveAll(list1, list2): LIST
Removes all elements of list2 from list1.

Example: Remove(["item1", "item2", "item3"], ["item1", "item2"]) returns ["item3"].

Statistical operations

Avg

Avg([number1, number2, number3]): NUMERIC
Returns the average of the values of the given list.

Example: Avg([3, 5]) returns 4.

Max

Max([number1, number2, number3]): NUMERIC
Returns the maximum value of the given list.

Example: Max([5, 4, 10]) returns 10.

Median

Median([number1, number2, number3]): NUMERIC
Returns the median value of the given list.

Example: Median([2, 5, 10, 12, 34, 35]) returns 11.

Min

Min([number1, number2, number3]): NUMERIC
Returns the minimum value of the given list.

Example: Min([5, 4, 10]) returns 4.

Mode

Mode([number1, number2, number3]): NUMERIC
Returns the most frequently occurring value of the given list. Returns the first (most left) most frequent value, if several values occur most frequently (e.g. two values appear each two times).

Example: Mode([1, 2, 4, 4, 5, 6]) returns 4.

Text handling
Concat

Concat([text1, text2, text3]):TEXT
Returns the concatenation of the given list of text values.

Example: Concat(["Hello ", "World", "]") returns "Hello World!".

IsAlpha

IsAlpha(text):BOOLEAN
Determines whether the text contains only alphabetic characters (A-Z, a-z). Umlauts and similar characters (e.g. Ä, Å, ß) must not be included.

Example: IsAlpha("abodefg5") returns false.

IsAlphanumeric

IsAlphanumeric(text):BOOLEAN
Determines whether the text contains only alphanumeric characters (A-Z, a-z, 0-9). Umlauts and similar characters (e.g. Ä, Å, ß) must not be included.

Example: IsAlphanumeric("abodefg5") returns true.

IsNumeric

IsNumeric(text):BOOLEAN
Determines whether the text is a valid number containing only plus or minus sign, digits, commas, and decimal points.

Example: IsNumeric("2.3.5") returns false

IsSpaces

IsSpaces(text):BOOLEAN
Determines whether the text contains only spaces.

Example: IsSpaces(" ") returns true.

Len

Len(text):NUMERIC
Returns the number of characters in a text string.

Example: Len("five") returns 4.

Lower

Lower(text):TEXT
Returns the text string with all letters converted to lowercase.

Example: Lower("UPPER") returns upper.
Trim

Trim(text):TEXT
Returns the text string with all spaces removed except single spaces between words.

Example: Trim("Hello World! ") returns "Hello World!".

Upper

Upper(text):TEXT
Returns the text string with all letters converted to uppercase.

Example: Upper("lower") returns "LOWER".

Number

Number(text):NUMERIC
Returns the numerical value represented in the text string. Only a period (.) is allowed as a separator.

Example: Number("5") returns 5.

Number

Number(text, default_value):NUMERIC
Returns the numerical value represented in the text string. Only a period (.) is allowed as a separator. Returns default_value if unable to convert text into number.

Example: Number("5.5", 10) returns 10 (Number("5.5", 10) returns 5.5).

Mid

Mid(text, start, num_chars):TEXT
Returns the character sequence of the length num_chars from the corresponding starting position of a text string.

Example: Mid("Hello World!", 6, 5) returns "World".

Left

Left(text, num_chars):TEXT
Returns the character sequence of the length num_chars from the start of a text string.

Example: Left("Hello World!", 5) returns "Hello".

Right

Right(text, num_chars):TEXT
Returns the character sequence of the length num_chars from the end of a text string.

Example: Right("Hello World!", 7) returns "World!".
Text

Text(num, format_text): TEXT

Returns a numeric value as a text string in a specific format. The format is specified by the placeholders # and 0 and a decimal point ..

Example: Text(1, "#.000") returns "1.000".

TextOccurrences

TextOccurrences(find_text, within_text): NUMERIC

Returns the number of occurrences of find_text within within_text.

Example: TextOccurrences("can", "Can you can a can as a canner can can a can?") returns 6.

Contains

Contains(text, substring): BOOLEAN

Determines whether text contains the substring.

Example: Contains("Hello World!", "o World") returns true.

StartsWith

StartsWith(text, prefix): BOOLEAN

Determines whether text starts with the prefix.

Example: StartsWith("Hello World!", "Hello") returns true.

EndsWith

EndsWith(text, suffix): BOOLEAN

Determines whether text ends with the suffix.

Example: EndsWith("Hello World!", "!") returns true.

Logical operators

Not

Not(boolean): BOOLEAN

Negates the input boolean.

Example: Not(true) returns false.

4.6.5 Comparing DMN diagrams and revisions

The Signavio diagram comparison tool allows you to easily compare two diagrams, as well as different revisions of one diagram. In the revision comparison, details about all changes in a diagram over time are documented.

To open the comparison tool, select a diagram (or, in case you want to compare two different diagrams and not revisions: two diagrams) and click Edit, then Compare revisions/diagrams in the top drop-down menu of the Signavio Explorer.
Click 'Edit' - 'Compare revisions/diagrams'.

The diagram comparison view appears. The drop-down menu allows you to switch between diagram revisions:

The diagram comparison.

In case you would like to load a different diagram for comparison, click **Choose revisions/diagrams** in the upper right corner of the tool, will be able to select both diagrams to be compared in the dialog that opens:
Click ‘Choose revisions/diagrams’.

Clicking the pen icon of a changed element gives you detailed information about the adjusted element properties.

To narrow down the changes, you can deactivate one or multiple check boxes in the panel below the canvas and exclude changes made to attributes or to specific element types:

Deactivate a check box to exclude changes made to attributes or to specific element types.

To learn more about the basic usage of the diagram and revision comparison tool, please read the chapter Comparing Diagrams (page 48). The following section explains how to extract DMN-specific information from the comparison tool.

Comparing Data Inputs

To view the changes made to a Data Input element, select the element to see the exact changes. In our example, a Data Input element of the type Enumeration was replaced by a Decision element:

Clicking the pen icon displays the adjusted element properties in detail.

Comparing Decision Tables

To view the changes made to a Decision Table, select the element to access an overview of the changes. Then, click the compare link to compare the tables:

Click the ‘compare’ link...

In the tables, all changes are highlighted:
...and open the decision table comparison.

4.6.6 The DMN Test lab

The DMN Test lab enables you to define and run test cases in order to check whether a DMN diagram fulfills certain requirements.

This is helpful in order to ensure that diagrams are still consistent with initial decision logic after being extended or to control the correctness of specific input combinations and outputs in complex diagrams.
**Calculate Discount**

![Diagram of a decision model with nodes for Calculate discount, Customer status, and Loyalty card]

### Test Cases

<table>
<thead>
<tr>
<th>Customer status</th>
<th>Loyalty card</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*The DMN Test lab*

To open the Test lab, select the diagram you want to test in the Explorer and click **Edit**, then **Test DMN diagram** in the top drop-down menu:

![Dropdown menu with Test DMN diagram option highlighted]

Alternatively, you can open the DMN diagram in the Editor and switch to the Test lab via the drop-down menu in the upper right corner and vice versa:
Switch from the Editor to the DMN Test lab.

Creating test cases

In order to create a new test case, proceed as follows:

• Create a new test case by clicking the ‘#’ sign left of the test cases table:

Create a new test case

• Click one of the test case’s columns to define all its values. A drop-down dialog opens and you can enter the necessary information. Then, click **Apply**:

Specify the input data of your test case.

• Now, click the column that shows the calculated value in red in the **Result** column on the right and specify the expected output value(s):
**Test Cases**

<table>
<thead>
<tr>
<th>Customer status</th>
<th>Loyalty card</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Yes</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Specify the expected output value(s)**

After you have created all necessary cases, you can save them by clicking the **Save** button.

**Note:** To delete a test case, it must be saved first. Simply click onto the number of the saved test case(s) you would like to remove, then click **Save**.

**Test Cases**

<table>
<thead>
<tr>
<th>Customer status</th>
<th>Loyalty card</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Yes</td>
<td>30%</td>
</tr>
<tr>
<td>Premium</td>
<td>Yes</td>
<td>20%</td>
</tr>
<tr>
<td>Standard</td>
<td>Yes</td>
<td>10%</td>
</tr>
<tr>
<td>#</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Delete a test case.**

Each test case is automatically executed as soon as a parameter is changed.

In the following simple case, **no value** is given for the expected result as indicated by the **red X** on the left in the **result** column. In the second case, the actual discount **corresponds** with the expected result as indicated by the **green check mark** icon. In the third case, the expected **result is different** from the actual result, as indicated, again, by the **red X**.
### Test Cases

<table>
<thead>
<tr>
<th>Customer status</th>
<th>Loyalty card</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Yes</td>
<td>☑️ - 30%</td>
</tr>
<tr>
<td>Premium</td>
<td>Yes</td>
<td>☑️ 20%</td>
</tr>
<tr>
<td>Standard</td>
<td>Yes</td>
<td>☑️ 15% 10%</td>
</tr>
<tr>
<td>#</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Undefined, passing and failing test cases

**Inspecting test cases in the simulation tool**

Often, you want to find out why a test case is producing a certain output. With the DMN simulation tool (page 374) you can inspect a decision's behavior, for example to see exactly which rules fire for your input data set. To open the simulation tool, select a test case and click **Inspect in Simulation**:

![Simulation tool interface]

#### Open a test case in the simulation tool.

Then, the simulation tool applies the input data of your test case automatically.

#### Importing and exporting test cases

**Important:** You need to save test cases in order to be able to export them.

It is possible to export and import test cases as JSON (JavaScript Object Notation) files. This enables you to keep the test cases when transferring diagrams between Signavio workspaces. To be able to import or export test cases, all cases that were created before must be saved first. In order to export test cases for a diagram, open the Test lab and click the **Export** button in the test management interface:

![Export button in test management interface]

**Export test cases.**
A .json file containing the test cases will be downloaded. For importing test cases click the **Import** button in the test management interface:

![Save Import Export](image)

Import test cases.

Now, select the .json file you want to import and click **Open**.

### 4.6.7 DMN simulation

The decision management extension of Signavio Process Editor allows you to model, manage and better understand complex business decisions. In the DMN simulation tool, you can simulate business decisions by applying data to the rules that are defined in a decision diagram. The simulation tool helps you to understand dependencies between sub-decisions and to identify scenarios for which no rules have been established. Thus, this tool is a powerful addition to your Business Decision Management initiative and makes business decisions and decision logic understandable for everyone.

**Note:** The DMN Simulation is also available as an additional feature in the Collaboration Hub. Read more at *Simulating DMN diagrams in Collaboration Hub: The Decision Assistant* (page 418).

To open the DMN simulation tool, select the diagram in the Explorer and click **Edit - Simulate DMN diagram**:

![Simulate DMN diagram](image)

*Open the DMN simulation tool from the Explorer.*

Alternatively, you can open the diagram in the Editor and use the dropdown menu in the upper right corner to switch from the **Graphical Editor** to the **Simulation** tool:
Switch from the Editor to the DMN simulation tool.

Now, you can start using the simulation tool.

Simulate business decisions.

Select a decision in the diagram, either by clicking on it or by using the dropdown menu in the top right corner. Then, scroll to the Inputs section and fill in the data of your simulation scenario. The Outputs section shows the decision output as computed by the simulation tool. The Wildcard mode toggle affects the evaluation semantics. Wildcard mode turned on means that empty input values are replaced with wildcards, which will, for example, match all conditions in decision tables. When turned off, empty input values will remain undefined during evaluation.

Note: If the Wildcard mode is activated and one or multiple input parameters are not defined, the
simulation tool will determine the set of possible output values. This is helpful, for example, if in specific application scenarios some input values remain unknown.

The progress bars in the decision elements indicates the extent to which data inputs are defined so far. When scrolling down, you can see a decision table overview that highlights the rules that apply in the current scenario:

### Determine discount

<table>
<thead>
<tr>
<th>U</th>
<th>Inputs</th>
<th>Outputs</th>
<th>Annotatons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Determine custom... (Standard, Premium)</td>
<td>Purchase value ≥ 0 €</td>
<td>Determine discount 0% ... 15%</td>
</tr>
<tr>
<td>1</td>
<td>Standard</td>
<td>&lt; € 1,000</td>
<td>0.00%</td>
</tr>
<tr>
<td>2</td>
<td>Standard</td>
<td>≥ € 1,000</td>
<td>10.00%</td>
</tr>
<tr>
<td>3</td>
<td>Premium</td>
<td>&lt; € 1,000</td>
<td>5.00%</td>
</tr>
<tr>
<td>4</td>
<td>Premium</td>
<td>≥ € 1,000</td>
<td>15.00%</td>
</tr>
</tbody>
</table>

*The rules that apply to the provided input data are highlighted in green.*

### 4.7 ArchiMate

**Note:** This feature is available in the **Enterprise Edition**.

In Process Manager, you can model enterprise architecture diagrams in the ArchiMate notation, an open enterprise architecture modeling language for describing, analyzing, and visualizing enterprise architectures within and across business domains.

**Read more**

- *What is ArchiMate?* (page 377)
- *Creating and editing ArchiMate diagrams* (page 378)
An ArchiMate 3.0 diagram in the Editor.

4.7.1 What is ArchiMate?

**Note:** This feature is available in the Enterprise Edition.

ArchiMate is an open enterprise architecture modeling language for describing and visualizing enterprise architectures within and across business domains.

Developing enterprise architecture descriptions enables you to base requirements and stakeholder concerns regarding your IT and business systems on formal and uniform models.

ArchiMate is a lightweight but comprehensive language that enables you to define the architecture of your business and IT systems using a service oriented view model. It allows you to see your process architectures over time. This is helpful in many areas, such as transformation and migration planning.

The complete ArchiMate specification can be found here:

http://pubs.opengroup.org/architecture/archimate3-doc/
4.7.2 Creating and editing ArchiMate diagrams

**Note:** This feature is available in the Enterprise Edition.

To create an ArchiMate diagram, open the Explorer and click **New**, then **ArchiMate 3.0** in the top drop-down menu:
Create a new ArchiMate diagram

Your browser will open a new tab with the ArchiMate diagram canvas, with the shape repository on the left:

You find the shape repository on the left side of the canvas

You can switch between different ArchiMate element sub sets using the drop-down menu in the shape repository on the left:
You can switch between different ArchiMate element sub sets

Now simply drag and drag element onto the canvas:

Drag and drop elements onto the canvas

You can also use the interactive context menu:

Make use of the interactive context menu

To save the diagram, click the Floppy Disc icon in the upper left corner of the Editor.
More detailed instructions on how to edit diagrams can be easily derived from the *BPMN modeling instructions in this user manual* (page 230).

**Linking ArchiMate to BPMN diagrams**

You can easily link BPMN diagrams to ArchiMate's **Business Process** objects. Once you have created the business process object in ArchiMate, click it and select the attribute **Business process reference**:

![Select the 'Business process reference' attribute](image)

Alternatively, you can click the arrow in the upper right corner of the Business Process object:

![Click the arrow](image)

Now, a dialog opens from which you can either create a new diagram or link an existing one:
Using the dictionary with the ArchiMate Editor

Within the ArchiMate Editor it’s easy to make use of Signavio’s dictionary (page 428):

Reference a dictionary entry

The dictionary is modeling language-independent, meaning you can access entries you created from BPMN diagrams in ArchiMate and vice versa.
4.8 Case Management Model and Notation (CMMN)

**Hint:** The Signavio Support Team (support@signavio.com) can activate Signavio Process Manager’s CMMN support on request.

CMMN is a relatively new notation, first published in 2014, that was created to allow more flexibility in the business process landscape. Signavio supports CMMN version 1.1.

### 4.8.1 About CMMN

In a business process that has variation, it may be more efficient for a case worker to determine the sequence in which to perform a set of tasks. For example, a hotel guest may always go through the same process when checking in and checking out, while the regularly tasks to clean the room may vary from day to day.

![CMMN model for maintaining a hotel room](image)

In general, many BPM scenarios include actions that may diverge from the common sequence flow, within a framework of set tasks. CMMN supports the flexibility of these workflows. The notation is designed for scenarios when a case worker can decide in what order tasks or sequence flows shall be performed. A CMMN sequence flow may be triggered by an event (event listener), a state (milestone) or with an action (task).

### 4.8.2 CMMN in Signavio Process Manager

In Signavio Process Manager, you can model the standard framework of the corresponding process in a BPMN diagram and then link a BPMN sub-process to a CMMN diagram that defines flexible sequences. You can also change a task in a BPMN diagram to a sub-process that links to a CMMN model, to define a number of flexible actions more accurately.

You can seamlessly integrata CMMN into BPMN and DMN-diagrams, to complement your existing process landscape. CMMN allows you to more accurately model highly variable processes, such as working with patient files or managing customer support processes.

The following chapters explain the notation and how to use it in detail:
Creating and editing CMMN diagrams

You can create CMMN diagrams in the Signavio Explorer like any other diagram and edit them in the Editor. This chapter explains the CMMN Elements and their alignment options on the modeling canvas. See Basic modeling with the Editor (page 163) to learn about modeling diagrams with the Editor.

Creating a CMMN diagram To create a new CMMN diagram in the Explorer, on the New menu, select Case Management Diagram (CMMN 1.0). The Editor opens with a blank modeling canvas, ready for you to edit the diagram.

Editing CMMN diagrams Starting with a blank canvas in the Editor, you can add elements from the Shape Repository on the left.

Case plan items You can use the following elements from the shape repository to model your CMMN diagram.

Case plan model The case plan model contains the case model. The case plan model encloses the whole diagram. You can place the element first and resize it with the growing diagram by dragging its lower right corner, or you can model the case and place the case file element when you have finished adding and connecting the other diagram elements.
To label the file, enter a name into the 'naming slip' at the top left of the element. You can also attach an exit criterion to the case plan model to indicate that the incoming sequence flow ends and completes the case.

![CMMN diagram, enclosed in a 'case plan model'](image)

**Task** Tasks are the central elements in CMMN and BPMN notations. A task models a single action that needs to be performed. In addition to the ordinary task, there are five different types of task elements in CMMN:

1. **Non-blocking human task**
2. **Blocking human task**
3. **Process task**
4. **Decision task**
5. **Case task**

The model can depict each task as an ordinary task element or as a discretionary task, which is not obligatory and may be performed at the case worker’s discretion.

- **A non-blocking human task** does not stop the sequence flow. In the case model, the task does not take any time to perform. The task is complete at the same moment it starts, and the sequence flow continues unstopped. All other tasks are ‘blocking’ by default.
A 'non-blocking human task'

- A **blocking human task** stops the sequence flow until it is completed.

A 'blocking human task'

- A **process task** links to a BPMN diagram. To link a diagram, click the symbol in the upper left corner of the element. To learn more, see *Integrating CMMN diagrams* (page 393).

A 'process task'

- A **decision task** links to a DMN diagram. To link a diagram, click the symbol in the upper left corner of the element. To learn more, see *Integrating CMMN diagrams* (page 393).
A ‘decision task’

- A **case task** links to another CMMN diagram. To link a diagram, click the symbol in the upper left corner of the element. To learn more, see *Integrating CMMN diagrams* (page 393).

A ‘case task’

**Discretionary task**  Every task type mentioned above also exists as **discretionary task** in the CMMN 1.1 definition. This means that the case worker may decide whether to perform the task for that case.

In Process Manager, you can create a **discretionary task** by creating an ordinary task of the necessary type, for example a **non-blocking human task** and defining it as discretionary. Select the corresponding task and open the **Attributes** panel on the right. Click the **Discretionary** attribute and activate the checkbox.
When checking the box, the ordinary task transforms into a discretionary task.

**Stage**  
Stages divide cases into subdivisions. You can group sequence flows, tasks and/or (sub-)stages into a stage.

- You can also define a stage as a discretionary stage. Select the corresponding stage and open the Attributes panel on the right. Click the discretionary attribute and activate the checkbox.
- An expanded stage can contain sequence flows of tasks and/or (sub-)stages. You can change a stage’s size by dragging its bottom-right corner.
- A collapsed stage is linked to another CMMN diagram. In contrast to tasks, collapsed stages’ linked diagrams may also just contain single sequence flows that do not define a whole case.

![An expanded stage.](image)
Milestone  Milestones are sub-goals within the process model. They indicate that a certain point or stage within a case has been reached or completed.

Sentries  You can attach the diamond shaped entry criterion and exit criterion symbol (called 'sentries') to any task, milestone, stage or case file. There, they define dependencies or the direction of the sequence flow. Sentries do not need to be attached to other elements - they may also stand alone within a sequence flow.

• The entry criterion indicates that the incoming sequence flow(s) directly attached to the sentry is/are necessary to be finished before the sequence flow can continue.

• The exit criterion indicates when a plan item is complete and in what direction(s) the sequence can continue. A sequence can continue when the following action is available or a data object has been created. An exit criterion attached to a case plan model indicates that the arriving sequence flow closes the case.

In this example, the claim analysis starts when a claim with more than €100,000 has arrived and the claim information document is available. The check finishes when a claims evaluation report has been created:
The entry and exit criteria mark the beginning and the end of this stage

You can attach several sentries of one type to an element. Each sentry defines its own entry or exit criteria for its element. Two or more sentries of one type attached to one element define a logical 'or' relationship, while several sequence flows attached to one sentry form a logical 'and' relationship.

If all workflows of one entry criterion have arrived at the element, the corresponding task can be performed. If several criteria have to be met, more than one sequence flow can be attached to one sentry element. Similarly, you can attach several exit criteria to an element. All sequence flows that exit one sentry will be executed, unless a discretionary task follows.

Event listeners  A listener waits for something to happen, usually to then trigger a new sequence flow.

- A event listener waits for an event to occur.
- A timer event listener waits for a certain amount of time to pass, or until a defined time.
- A user event listener waits for user input, such as a completed form in a web user interface.

The event listener, timer event listener and user event listener elements (left to right)

Case file item  A case file item represents a data file or document that contains information that is relevant to the case, such a patient file. Use a connector to attach a case file item to another element, to show that the other element’s execution uses its data. It can also function as a trigger or a result and thus can stand at the beginning or at the end of a sequence.
A case file item related to a task

Other elements

Connectors  A connectors between CMMN elements defines a relation. An entry criterion or exit criterion defines the sequence flow direction or association.

- A simple connector links different (non-discretionary) elements togther.
- A discretionary association links a discretionary task to another CMMN element.
- An annotation association links a text annotation to another CMMN element.

A connector, a discretionary association and an annotation association (top to bottom)

Plan fragment  A plan fragment contains a group of elements that exist outside the cases’ runtime. Plan fragments are discretionary, as indicated by the dotted lines. Also, elements contained inside the plan fragment may contain sentries or be part of a sequence flow, but a sentry or sequence flow may not be attached to a plan fragment. A plan fragment essentially contains everything that has no other place but needs to be in the case model.
A plan fragment containing three tasks

Planning table  A planning table signifies that discretionary tasks are present. A collapsed planning table indicates that discretionary tasks are not displayed, whereas an expanded planning table indicates they are shown.

A (collapsed) planning table (default) signifies that collapsed (or hidden) discretionary tasks are present in the diagram. The hidden tasks are not modeled in Process Manager. Instead, the modeler attaches the planning table to a stage, human task (only) or case plan model to signify that (hidden) discretionary tasks are available.

To hint that modeled, visible discretionary tasks are available in the corresponding stage or plan fragment, add an expanded planning table to the element by unchecking the box defining the collapsed attribute in the attribute panel.

Text Annotation  A text annotation contains additional textual information about the diagram, an element or a group of elements.
**CMMN Attributes**  The following attributes can be set in the attribute panel by checking or unchecking the value of the corresponding element. When the value is enabled, an icon will appear on the corresponding element or the elements appearance will change, as depicted below.

- The **discretionary** attribute can be set for all kinds of tasks and stages. If the attribute is activated, the task/stage may be performed if the case worker decides it is necessary. Plan fragments are by default discretionary, this cannot be changed as it is a pre-defined condition in CMMN.

- The **autocomplete** attribute can be set for stages and case plan models.

- The **manual activation** attribute can be set for all kinds of stages and tasks. If the attribute is activated, the corresponding element has to be triggered manually.

- The **repetition** attribute can be set for milestones, stages and tasks. If the attribute is activated, the case worker will evaluate if the task needs to be repeated every time it is finished. If the result is 'yes', the task will be repeated.

- The **required** attribute can be set for milestones, stages and tasks. If the attribute is activated, the corresponding action needs to be completed for the sequence flow to continue or the containing element to be completed.

![Unactivated and activated attributes in process manager (left to right): discretionary, manual activation, repetition, required, autocomplete](image)

**Integrating CMMN diagrams**

You can seamlessly integrate CMMN diagrams with DMN and BPMN diagrams in your process landscape. You can, for example, embed a CMMN model in a BPMN process by use of the BPMN sub-process as depicted below. This allows you to model the static part of a process in BPMN and only depict the flexible part in a CMMN model.

**Linking to a diagram in a CMMN model**  To add a diagram link to a CMMN model, first add the corresponding CMMN element:

- **Process Task** - to link to a BPMN diagram
- **Decision Task** - to link to a DMN diagram
- **Case Task** - to link to a CMMN diagram

Click the symbol in the top left corner of the diagram element and select a diagram of the corresponding type in the dialog that appears or choose to create a new one. Click **Link diagram** to confirm.

If you chose to create a new diagram, the editor opens in a new tab, ready for you to edit the new diagram. After modeling the new diagram, save both the new one and the CMMN model the new diagram is now linked to.
Linking to a CMMN model in a BPMN model  To add to CMMN model link to a BPMN diagram, add a **collapsed subprocess** and click the ±-symbol at the bottom of the element. In the dialog that opens, choose a CMMN model or create a new one by choosing **Case Management Diagram (CMMN 1.0)** at the top under **Create new diagram**. Click **Link diagram** to confirm.

If you chose to create a new diagram, the editor opens in a new tab, ready for you to edit the new diagram. After modeling the new diagram, save both the new one and the CMMN model the new diagram is now linked to.

You can also link CMMN diagrams in value chains the same way to create complete process levels that also show in Collaboration Hub. For more information on diagram hierarchy levels in your process landscape, see **Creating process hierarchies** (page 197).

### 4.9 Further notations

Process Manager supports a comprehensive set of modeling notations. This article lists the ones that are typically not relevant for the most common use cases.

#### 4.9.1 Organizational charts

Organizational charts outline the internal structure of a company. Illustrating a company this way shows the internal hierarchy and how each role relates to others in the same organization.

#### 4.9.2 Choreography diagrams

Choreography diagrams depict the details of complex collaboration between process participants. This allows for an analysis of how information is exchanged and how participants coordinate their actions. Choreography diagrams are part of the BPMN standard, but are not widely used. We recommend staying with BPMN process diagrams.
For more information on Choreography diagrams, see the OMG BPMN specification document\textsuperscript{13}.

### 4.9.3 Conversation diagrams

Conversation diagrams focus on communications between process participants. They allow for the viewing of relationships at a glance. Conversation diagrams are part of the BPMN standard, but are not widely used. We recommend sticking to BPMN process diagrams when modeling process participant interactions.

For more information on Collaboration diagrams, see the OMG BPMN specification document\textsuperscript{14}.

### 4.9.4 Event-driven process chains

Event-driven process chains (EPC) are used to model business processes. EPCs capture and visualize processes, but are unlike BPMN—not executable. EPCs generally focus on the lower levels of the process hierarchy (operational sequences of processes). While EPCs were popular in some European countries in the late 90s and early 2000s, they have now been eclipsed by BPMN, which is more appealing to both business users and technical experts. We don’t recommend using EPCs.

For more information on EPCs, see this page\textsuperscript{15}.

### 4.9.5 UML use case diagrams

Use case diagrams are used to view what actions can be performed collaboratively between systems and users. They are a part of the UML (Unified Modeling Language) standard. The Signavio Support Team can activate UML use case diagrams for your Signavio Process Manager workspace on request.

For more information on UML use case diagrams, see this page\textsuperscript{16}.

### 4.9.6 UML class diagrams

Class diagrams show the properties, methods, and relationships of a system’s classes. They are commonly used to describe object-oriented programming code. They are a part of the UML (Unified Modeling Language) standard. The Signavio Support Team can activate UML class diagrams for your Signavio Process Manager workspace on request.

For more information on UML class diagrams, see this page\textsuperscript{17}.

\textsuperscript{13} \url{http://www.omg.org/spec/BPMN/2.0.2/PDF}
\textsuperscript{14} \url{http://www.omg.org/spec/BPMN/2.0.2/PDF}
\textsuperscript{15} \url{https://www.wu.ac.at/erp/webtrainer/epc-webtrainer/theory/}
\textsuperscript{16} \url{https://www.uml-diagrams.org/use-case-diagrams.html}
\textsuperscript{17} \url{https://www.uml-diagrams.org/class-diagrams-overview.html}
Chapter 5

Collaboration Hub

Collaboration Hub is one of the most powerful tools Signavio Process Manager provides for collaborative work. It allows viewing and discussing diagrams together with colleagues.

You can decide who will have access to Collaboration Hub and which diagrams will be published. To give colleagues access to Collaboration Hub, they don’t need a user account to the Signavio system.

Sometimes Collaboration Hub is also called Publisher. Both terms describe the same functionality.

Read more:

- *Introduction to Collaboration Hub* (page 397)
- *Basic functionality of Collaboration Hub* (page 402)
- *Acessing detailed information and comments* (page 408)
- *DMN diagrams in Collaboration Hub* (page 413)
- *Installing browser certificates* (page 419)
- *Process level pyramid and bread crumb panel* (page 423)
- *Viewing diagrams as an external stakeholder* (page 425)
- *Frequently asked questions* (page 426)

Welcome to the Collaboration Hub

Here, you can view diagrams and use the comments feature to discuss them with your colleagues.

This entry page allows you to:

- View and navigate the entry diagram that provides an overview over your process landscape.
- Search for diagrams and other objects or go to them via the repository and dictionary tree.
- View recent changes made to the process landscape at one glance.

By the way, this text appears because your workspace administrator hasn’t specified the description attribute of your entry diagram, yet.

Type a search...

*The model view of Collaboration Hub*
5.1 Introduction to Collaboration Hub

Collaboration Hub is a powerful tool for collaborative process and decision management. It serves as the access point to your process landscape for non-modelers and enables users to view diagrams and diagram details and to leave comments for other viewers and modelers.

**Hint:** The way you enter Collaboration Hub depends on your Signavio edition and system configuration. Read more add *Entering Collaboration Hub* (page 708).

5.1.1 The structure of Collaboration Hub

Collaboration Hub contains three areas: the **title bar** with the **diagram header**, the central area displaying **diagram information** and the **navigation panel** on the left.

The header provides basic information, like the user name (or guest for certificate-based authentication), the diagram title and parent diagrams:

![Diagram header example]

**The header provides basic information.**

The navigation panel on the left gives you access to the ‘Home page’ and the Search function and lists every diagram that is accessible for the user in a folder tree. It also lists all dictionary categories, which can be used to navigate to dictionary entries. Hub users can only see diagrams that are published.

![Navigation panel example]
The navigation panel

The Home page, available at the top in the navigation panel, is the entry page to Collaboration Hub as a Hub user. It shows an entry diagram (if specified), and shows the text defined in the diagram-level attribute Description of the entry diagram or a default Signavio text. It also gives you the option to search for key words amongst the published diagrams, files and dictionary entries in the search field. The Recent Updates header lists all recently published changes in diagrams, files and Dictionary items chronologically.

For Dictionary items applies that, if automatic publishing mode is enabled, they are shown in the list when they were last updated. In manual publishing mode, the Dictionary items are shown at the time they were manually published.

The 'Home' page of Collaboration Hub

The Search page gives you the option to search for key words amongst the published diagrams, files and dictionary entries. You can activate the advanced search by clicking the little arrow right of the search field. Here, you can define additional search parameters:

The advanced search in Collaboration Hub.

Signavio Process Manager - User Guide, Release 13.0.0
If the ‘Home’ page is deactivated, the ‘Search’ page will also be unavailable. Instead, a simple search panel will be displayed at the top of the navigation panel in Collaboration Hub.

The central diagram view provides detailed information about the diagram. It is divided into three tabs:

- **Process Attributes**
- **Activities**
- **Diagram**

The **Process Attributes** tab contains an overview over the diagram’s rank in your process hierarchy and the process activities as well as core attributes on diagram level, like for example **Documentation** and **Process triggers**:
The 'Process Attributes' tab

The Activities tab contains detailed information about activities. Activities can be filtered by role:
Processing mail at ACME

The ‘Activities’ tab

The Diagram tab contains a visual representation of the diagram:
The 'Diagram' tab

5.2 Basic functionality of Collaboration Hub

5.2.1 Diagram navigation

As a Collaboration Hub user, you can switch between diagrams by using the navigation bar on the left of Collaboration Hub.
Hint: Hub users without a modeling license only see folders, which contain diagrams that are shared with them.

5.2.2 Search function

You can also search for published diagrams, files and dictionary entries using the Collaboration Hub's Search:

An initially executed search takes only the titles of diagrams, folders and dictionary entry, as well as the titles of uploaded files into account. If you use the advanced search function, also the attributes you
specified are screened.

**Note:** If you use the advanced search function, also the attributes you specified are screened. Also, only the advanced search function supports queries with incomplete words (for example requirement when searching for requirement).

Keep in mind, that when searching for dictionary entries the models using a specific entry are not listed in the search results. To get these models, you can click on the corresponding dictionary entry and all the models that contain the entry are displayed.

**Note:** To gain accurate search results as quickly as possible, enter specific keywords and not whole sentences into the search function. If you are searching for multiple words that should be an exact match, put the term in quotes (for example: "enterprise resource planning system").

**Advanced search**

If you want to obtain more precise search results, you can use the advanced search function. Here, you can specify attribute types in addition to a search term. The search will then consider the selected search criteria.

Possible **attribute types** are:

- Boolean
- drop down list
- single-line text
- multi-line text
- dictionary link.

**Note:** You can only select attributes that have been configured as visible in the **Collaboration Hub's configuration dialog** (page 495).

After you have executed a search, you can click the **Share**-Icon to access a link that allows you to share the search results with colleagues.
5.2.3 Viewing dictionary entries

You can select dictionary entries from the tree view on the left:

Click the dictionary entry to display it. At **Linking Diagrams**, you can display all diagrams referencing the dictionary entry:
5.2.4 Navigating to related objects

From the Process Attributes tab, you can easily navigate to related objects, for example to dictionary entries about roles involved or to a diagram up the hierarchy pyramid:

Navigate to the parent diagram in the hierarchy pyramid.

The Diagram view allows viewing linked diagrams as well. Within a diagram, those links are symbolized by a little + or linking intermediate events. Clicking such a link opens the diagram in the Collaboration Hub view.

Switching languages

Diagrams can be available in several languages that are well defined for a workspace. While creating a diagram, it can be translated into those languages which will also be available in Collaboration Hub.

It is possible to switch between languages through the desired language from the drop-down list in the toolbar:
Adjust the language of Collaboration Hub.

The view will be refreshed and the diagram will appear in the desired language. If possible, Collaboration Hub language will be adapted, too, i.e. descriptions will be displayed in the target language.

**Hint:** Some diagrams may not be fully translated into the desired language. Elements that were not translated will be displayed in the diagram’s default language.

When entering the Collaboration Hub preview, you will always see the view of Collaboration Hub that your readers will see. With publishing modules activated in the software-as-a-service version, switching languages will only be possible if the Publishing Module for Microsoft SharePoint is available. Still, diagrams with multiple languages can be created in the Editor.

### 5.2.5 Zooming

In case a diagram does not fit on the screen, the zoom slider in the upper left corner allows you to change the zoom level.

![Zoom slider](image)

**The zoom slider**

### 5.2.6 Scrolling

Just like you know it from PDF viewers or from Google Maps, you can click and drag the diagram.

### 5.2.7 Default and Compact views

Furthermore, you can change between different views of the diagram.

The **Default** view displays all diagram elements, whereas the **Compact** view hides IT-systems, data objects and text annotations.
Switch to a view through clicking the respective button in the upper right corner over the diagram canvas:

![Diagram Canvas](image)

Switch to the 'Compact' view.

5.2.8 Printing

To print the diagram click the **Printer** button in the upper right corner of Collaboration Hub.

![Printer Button](image)

Print a diagram.

Additional information about printing diagrams to PDF documents can be found in the chapter *Printing diagrams as PDF documents* (page 139).

5.3 Accessing detailed information and comments

By clicking on elements in the diagram, you can display element details.

5.3.1 Viewing details about diagram elements

In the **Diagram** tab, clicking on a diagram element opens a pop up window with detailed information about the element.

An info tab shows title and description of the element:
If you click the **Question mark** icon in the upper right corner of an element, the page will auto scroll to the BPMN key at the bottom of the page:

---

The link leads to information about the corresponding element in the BPMN key.
The **Activities**-tab provides an overview over all activities (tasks) in a list-based view:
Processing mail at ACME

Workflow information displayed in the ‘Activities’ tab

Linked documents can be directly accessed:

Documents and pictures can be linked through custom attributes or dictionary entries.

5.3.2 Viewing and adding comments

The Comments section at the bottom of each tab lets you view and add comments. The system marks new comments with a red vertical line/circle and factored in comments with a green vertical
line/checkmark. The **Filter by** dropdown box allows you to limit the displayed comments according to the following filter options:

- **All**  Displays all comments
- **New**  Displays all comments that have not been factored in, yet
- **Own**  Displays only comments you have added yourself

To comment, type a comment into the text box and click **Submit**:

```
Comments (2)

Filter by: All

4 minutes ago at Diagram
  John Doe: We still need to specify the ERP system components that are involved here.

1 minute ago at Diagram
  Joan Smith: And link the correct DMN diagram!

I'll contact our enterprise architect, John!

Submit
```

**Hint**: If a diagram element is selected while you are writing a comment, the comment will be attached to the corresponding element. If no element is selected, the comment will refer to the diagram in general.

### 5.3.3 The full-screen diagram view

If you would like to see a more complex diagram in full-screen mode in Collaboration Hub, go to the **diagram tab** and click the **Full-Screen button**.

```
Verify applicant
```

To view the diagram in full screen mode, click this button
To go back to Collaboration Hub from full-screen mode, click Escape (Esc).

5.3.4 Staying informed about changes (subscription)

As a modeling user, if you would like to stay informed about a diagram you are currently viewing in Collaboration Hub, you can simply click the bell symbol to receive information about all changes that will be made to the diagram in the future.

Important: If you have already subscribed to the folder the diagram is saved in, you will not be able to change this setting in Collaboration Hub.

5.3.5 Sharing a link to a diagram

To share a diagram with colleagues, click the Share button in the top right corner of Collaboration Hub, copy the URL and send it via your preferred communication channel:

5.4 DMN diagrams in Collaboration Hub

Collaboration Hub is one of the most powerful tools the Signavio provides for collaborative work. It allows viewing and discussing diagrams together with colleagues.
You can decide who will have access to Collaboration Hub and which diagrams will be published. To give colleagues access to the Collaboration Hub, they don't even need a user account to the Signavio system. You find detailed description of Collaboration Hub at Collaboration Hub (page 396).

To publish DMN diagrams in Collaboration Hub, select one or multiple diagrams in the Signavio Explorer and go to Share - Publish to Collaboration Hub:

![Image of Signavio Explorer with Share - Publish to Collaboration Hub option]

Click “Publish to Collaboration Hub”

Subsequently, you can adjust the selection of diagrams you want to publish. Click Publish to confirm the action:
Click “Publish”.

In Collaboration Hub, there are two different views on DMN diagrams:

- The default **Overview** tab displays the decision diagram, as well as attributes on diagram level and comments:
The “Overview” tab displays the diagram, attributes on diagram level and comments. Through clicking a diagram element, you can view attributes on element level:

The diagram shows a decision tree for verifying an applicant. The process starts with checking the applicant's letter of application, followed by evaluating overall skills. The decision is made based on the evaluation, with options for acceptable or unacceptable decisions. Comments are available at various points in the diagram.
Select an element to display details.
You can also print the diagram as a PDF document:

### Overview

---

### Decisions

Click the “Print” button in the upper right corner to print the diagram as a PDF document.
Further information about printing diagrams can be found in the section *Printing diagrams as PDF documents* (page 139).

- A click the Decisions tab displays a list of all decision elements:

### Overview

---

### Decisions

Switch to the “Decisions” tab.
Select an element label in order to display attributes on element level, as well as the detailed decision table:
Select a decision to display element details including the decision table.

5.4.1 Simulating DMN diagrams in Collaboration Hub: The Decision Assistant

It is possible to simulate Decisions defined in DMN diagrams in Collaboration Hub. If this feature is activated, you find the Decision Assistant tab next to the Diagram tab:

The 'Decision Assistant' tab in Collaboration Hub.

In the Decision Assistant tab, you can now choose or enter the values needed in order to calculate the decision:
**Calculate Discount**

<table>
<thead>
<tr>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Inputs**

<table>
<thead>
<tr>
<th>Customer Status</th>
<th>Loyalty Card</th>
<th>Calculate discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>Boolean</td>
<td>0%</td>
</tr>
<tr>
<td>Standard</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Premium</td>
<td>Yes</td>
<td>20%</td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td>30%</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Decision Assistant</th>
<th>Diagram</th>
<th>Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Put in or choose the corresponding values.**

The Assistant will calculate the remaining possible results in real time until all values are set:

<table>
<thead>
<tr>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**The output will change accordingly.**

### 5.5 Installing the browser certificate

The installation of the browser certificate for Collaboration Hub is one possibility to give users read access to all diagrams that have been published to Collaboration Hub. Users have also the possibility to leave comments for these diagrams. If you need such a certificate, please contact your workspace administrator.

If you are a modeler and grant access to a diagram with the **Invite anyone for feedback** function, these users do not need any certificates. In this case, you send only a link to the comment view, which contains an authentication key.
This section explains how to download and install the certificate on different operating systems and browsers for access to Collaboration Hub.

**Note:** When using the SaaS version, this feature is available through the purchase of Collaboration Hub licenses.

### 5.5.1 Information for workspace administrators

- **Activating certificate-based access**
  You can learn how to activate certificate-based access to Collaboration Hub in the chapter *Creating certificates for Collaboration Hub access* (page 470)

- **Alternative certificate import**
  If access to Collaboration Hub should be provided for your staff on a large scale, we recommend an update mechanism using Windows and Edge, Internet Explorer or Google Chrome. For example, the update mechanism can recall the `certutil -f -user -p pw-importpfx pfad` command. See chapter *Importing a Signavio certificate via command line* (page 471).

  A list of useful `certutil` commands can be found at https://technet.microsoft.com/en-us/library/cc732443(v=ws.11).aspx.

- **Microsoft SharePoint**
  It is also possible to embed Collaboration Hub into a Microsoft SharePoint installation by installing it as Microsoft SharePoint App. For more information, read the following chapter: *Installing the Signavio Microsoft SharePoint App* (page 602).

- **Installation for all common browsers**
  Except for Firefox, all common browsers use the central certificate storage of their corresponding operating system to manage certificates, therefore you only need to install the certificate on your system instead of your browser. Even though most browsers also have a separate certificate management, we recommend to install certificates in the operating system based certificate storage.

### 5.5.2 Getting the required certificate and password

In any case, you will need the certificate file `signavio-'YourOrganization'.p12` and the certificate password to install a certificate. There are two different possibilities for this purpose:

- If you are logged into the workspace, click in the Explorer under *Setup* the menu entry *Manage Collaboration Hub authentication*. The management dialog opens. Click *Download certificate.*
If you have received an email with the certificate, you can use the attached certificate.

5.5.3 Central installation in Windows or MacOS

The central installation of certificates for Windows as of XP and MacOS is executed as follows:

1. Open the certificate file (typically with the following naming convention: signavio-'YourOrganisation'.p12) that you have downloaded or received from your workspace administrator. The certificate installation wizard will lead you through the following steps.

2. After successful installation, you can access Collaboration Hub via the URL https://editor.signavio.com/intra/portal (European Server), respectively https://app-us.signavio.com/intra/portal (US server). Depending on the browser you use, the system will display a dialog in which you need to confirm the use of the installed certificate.

3. Confirm the action to get to Collaboration Hub.

**Hint:** If you are logged in as modeler in Signavio Process Manager, you will be directed to Collaboration Hub as a logged-in user.

5.5.4 Installing a certificate in Firefox or Chrome

According to IT policies in your organization, you may need administrator privileges to execute this task. The installation processes in Chrome and Firefox are similar.

1. In both browsers, click the **menu** button top right, then click **Settings**.

2. Depending on the browser, perform the following steps:

   **Chrome**

   • Click **Advanced options** to extend the menu.
- Open the **Manage certificates** dialog by clicking the corresponding option under **HTTP/SSL**

**Firefox**

- Click **Advanced** at the bottom of the navigation panel on the left, switch to the tab **Certificates**.
- Click **View certificates**, then go to the tab **Personal**.

3. In both browsers, click **Import** and then choose the corresponding certificate file.

4. Enter the certificate password. If the browser has a master password, you may have to enter it as well to confirm.

5. Confirm by clicking **Ok**. The certificate is now installed.

6. You can now access Collaboration Hub via [https://editor.signavio.com/intra/portal](https://editor.signavio.com/intra/portal) (European Server), [https://app-us.signavio.com/intra/portal](https://app-us.signavio.com/intra/portal) (US server) or [https://app-au.signavio.com/intra/portal](https://app-au.signavio.com/intra/portal) (Australian server). Depending on the browser you use, the system will display a dialog, in which you need to confirm the use of the installed certificate.

**Hint:** If another Signavio user is logged in as modeler in your browser, you will be directed to Collaboration Hub as a logged-in user.

### 5.5.5 Trusted sites (Windows)

If you add the web address of Collaboration Hub to the trusted sites, you will no longer be asked to confirm the installed certificate every time you want to access Collaboration Hub.

**Note:** The concept of trusted sites only exists in Windows for the browsers Internet Explorer, Edge and Chrome, who all use the settings of the operating system.

In Firefox there is also a method to turn off the confirmation before the use of the certificate. For more information, see [https://support.mozilla.org/en-US/kb/advanced-panel-settings-in-firefox#w_certificates-tab](https://support.mozilla.org/en-US/kb/advanced-panel-settings-in-firefox#w_certificates-tab).

To add a site to the trusted sites, proceed as follows:

1. Open the **Windows Settings**.
2. Choose **Internet options**. You can also use the search field on the **Settings** site. The dialog **Internet options** opens.
3. Go to the tab **Privacy**.
4. Click **Sites**.
6. Click **Allow** and confirm with **OK**. Collaboration Hub website is now added to the trusted sites on Chrome, Internet Explorer and/or Edge.

### 5.5.6 Installation on iPad

You can use Signavio also on mobile devices such as the iPad, for example. Collaboration Hub is an is easy-to-use application that is particularly suitable for mobile use.

If the Collaboration Hub certificate is installed on the iPad, it can be used without login.
1. First, you need the certificate with password. In the chapter *Getting required certificate and password* (page 420) you can read how to get.

2. As soon as you open the certificate, the Profile Manager of your iPad automatically opens.

3. Now, follow the instructions of the Profile Manager to install the certificate.

### 5.6 Process level pyramid and breadcrumb panel

The process level pyramid and the breadcrumb panel provide an overview of a diagram’s place within the overall process landscape.

The **process level pyramid** is displaying the **hierarchy level** of the current diagram:

![Process Level Pyramid Diagram](image)

*The process level pyramid visualizes the position of the diagram within the overall process hierarchy.*

Clicking a higher pyramid level will navigate you to the corresponding diagram level.

The **breadcrumb panel** displays the diagram **hierarchy path** from a top level diagram to the current diagram.

Clicking one of the bread crumbs (hierarchy levels) leads you to the corresponding diagram:

```
> Level 1 - Value Chain ACME AG > Level 2 - Process Area: Order Processing > Procure parts
```

*Receipt of Goods*

![Breadcrumb Panel Example](image)

*Navigate to a parent diagram via the breadcrumb panel.*

**Note:** The process level pyramid is available for BPMN 2.0 and value chain diagrams. You can deactivate it in the *attribute visibility configuration settings* (page 495) for Collaboration Hub.

#### 5.6.1 Calculation of hierarchies/paths

The process level/diagram path calculation algorithm works as follows:

- The shortest path from the current diagram to any top level diagram (a diagram that is not referenced as a sub process) is calculated. Cycles are excluded (e.g. when two diagrams are referencing each other as sub processes).

- In case there are several shortest paths, a random choice will be made among them.

- All diagrams that are on the shortest path will be displayed in the breadcrumb panel as the diagram path.
5.6.2 Possible issues and troubleshooting:

In some cases, you might wonder why the process level pyramid is showing the diagram in a higher level than you expect. Then, your diagram path in the bread crumbs panel will always be shorter than you regard as correct.

In such cases, you typically have hierarchy structure similar to the example below. In the example, each process element stands for a diagram (either value chain or process) in the process hierarchy that is documented in Signavio Process Manager:

![Process Diagram](image)

A process hierarchy as sketched out in this diagram can cause confusion: Both 'Value Chain A' and 'Value Chain B' are top level diagrams. Accordingly, all processes are regarded as second level diagrams.

As you can see, the one process map seems to be located below the top level diagram. However, this process map technically has no parent diagram. Thus, the hierarchy/path calculation algorithm regards this diagram as top level and its child diagrams as second level, accordingly.

To address the issue, we recommend to integrate all process landscapes diagrams, which might e.g. provide department-specific overviews, properly in the hierarchy. In our example, this means to create a reference from the top level value chain to the supposedly second level value chain diagram:
In this sketch, ‘Value Chain B’ is a second level diagram. Accordingly, ‘Process A’ and ‘Process B’ are second level diagrams, whereas ‘Process C’ and ‘Process D’ are third level diagrams.

Another but not so elegant alternative is not to publish the supposedly second level value chain diagram, if this makes sense for your use case: The calculation algorithm is considering only published diagrams, so the value chain will be ignored.

5.7 Viewing diagrams as an external stakeholder

External stakeholders without Collaboration Hub Access as described in the previous chapter can be invited to comment (page 108) in the Share menu of the Signavio Explorer. They will receive a link that leads to the diagram in the Team Collaboration view via email. Only one diagram-link can be provided in one email. If a person should receive read-access to a number of diagrams, we recommend to use Collaboration Hub.

In the Team Collaboration View, you can display different overlays, save the diagram as PDF and print it, activate or deactivate email notifications for when the diagram is altered and switch the language of the view. By clicking onto the diagram you can view information about elements or post a comment on an element or on the whole diagram. In the sidebar on the right, you can view diagram information, a legend of used elements and a list of the diagram’s comments.
5.8 Frequent asked questions

5.8.1 What is the difference between Collaboration Hub and the Collaboration Hub preview?

When a user has logged into a workspace via a Process Manager account, they will always see the Collaboration Hub preview, which is also displayed in the headline of Collaboration Hub. This preview displays all diagrams of the workspace the user has access to, including those that are not published yet. The portal preview (page 710) is typically entered via the Explorer's drop-down menu entry that links to https://editor.signavio.com/p/portal (Europe), https://app-us.signavio.com/p/portal (US) or https://app-au.signavio.com/p/portal (Australia).

Unlike logged in users, guests of Collaboration Hub (page 708) can only see diagrams that were published in Collaboration Hub, so a guest enters the actual Collaboration Hub. To enter Collaboration Hub as a guest, a visitor has to install a matching browser certificate (page 419) and must not be logged in. They can then open Collaboration Hub at https://editor.signavio.com/intra/portal (Europe), https://app-us.signavio.com/intra/portal (US) or https://app-au.signavio.com/intra/portal (Australia).

The Introduction to Collaboration Hub (page 397) chapter gives a more precise explanation of the difference between Collaboration Hub and Collaboration Hub preview.
5.8.2 I am using Collaboration Hub with the Signavio SharePoint Connector and I can’t print out diagrams. What can I do?

To solve this problem, go to your Internet Explorer’s preferences and add the Signavio URL to your browser’s security zone. When using our Software-as-a-Service version, the URL is https://editor.signavio.com (Europe), https://app-us.signavio.com/ (US), or https://app-au.signavio.com/intra/portal (Australia).


5.8.3 My browser does not display Collaboration Hub correctly. What can I do?

Simply open the URL http://www.signavio.com/browser-compatibility/. A detailed description of supported browsers can be found there and the site will automatically checks whether you browser supports Signavio. If your browser does not fully support our software, we recommend you switch to one of the listed browsers to fully utilize Signavio.

If your browser is fully supported but there are still issues with our software, see the Possible issues: JavaScript & cookies (page 712) chapter.

5.8.4 I want to integrate Signavio Collaboration Hub with Microsoft SharePoint and/or my Active Directory. How can I do this?

There are multiple ways to integrate Collaboration Hub with your Active Directory and/or your SharePoint intranet. How to integrate Collaboration Hub mainly depends on whether you are using Signavio as Software-as-a-Service or On-Premise, installed on your server.

In the Integrating Collaboration Hub with Microsoft SharePoint (page 602) chapter you can learn about all the possible options and their applications.

5.8.5 How can I disable the ‘confirm certificate’ pop-up in Internet Explorer when using Collaboration Hub?

If you have access to Collaboration Hub via a certificate-based authentication, each time you access Collaboration Hub a query from Internet Explorer pops up to select a certificate, even though there is only one certificate. You can prevent the request from Internet Explorer.

In the Internet Explorer settings under Internet Options, add the Collaboration Hub page to the list of ‘trusted sites’. Also adjust the zone settings in the Security tab accordingly. For a detailed instruction see http://windowsitpro.com/security/preventing-ie-prompts-client-certificate.

For further information, you can also go to the following chapters:

- Frequently asked questions: General information (page 715)
- Frequently asked questions: BPMN (page 305)
- Frequently asked questions for workspace administrators (page 694)
Chapter 6

The Dictionary

The Dictionary is the central object management repository in Signavio. A dictionary entry represents an object that is relevant for one or more of your processes. It allows you to **manage and re-use specific modeling elements** - it also helps you make sure all your modelers are using the same terms and the same elements in your organization-specific modeling environment.

The dictionary is a crucial component to achieve a consistent and well-structured business objects management in your diagrams.

This section explains the main features of the Signavio Dictionary.

**Read more:**

- *Using the dictionary* (page 428)
- *Managing the dictionary* (page 435)
- *Merging dictionary entries* (page 443)
- *Referencing external data sources* (page 444)

### 6.1 Using the Dictionary in the Editor

Most of the Dictionary functionalities can be used directly from the Editor. This includes creating new dictionary entries, referencing existing dictionary entries, and reading properties of already referenced entries. In this chapter you will learn how to work with the Dictionary from the Editor.
Hint: A description of access rights of the Dictionary can be found in the *Managing access rights* (page 462) section.

### 6.1.1 Creating new dictionary entries

To add, delete, or publish a dictionary entry, you need the corresponding access rights. Workspace administrators can grant users *publish*, *write*, or *delete* rights for the Dictionary. Please contact an administrator and ask them for the corresponding rights if you cannot access entries in the dictionary. Workspace administrators can find instructions on how to grant rights for dictionary users in the chapter *Managing access rights* (page 462).

Generally, you can add new dictionary entries in the *Dictionary application* (page 439). As you may need to add new dictionary entries while modeling, particularly in the beginning of a project, you have the option to add new dictionary entries directly from the Editor:

1. Type in the label of a diagram element (for example: “Check purchase order”).
2. Click the *book icon* in the lower left corner of the element. The *New entry* dialog will open.

![Image of new entry dialog](image)

3. A category for the dictionary entry is automatically preselected, depending on the type of modeling element. You can change the category using the dropdown menu.
4. Type in a short description of the dictionary entry. You can format the text here, just like any other text editing software.

The entry will be created in the language that is currently chosen for the diagram. To translate the entry later, open it in the Dictionary (see Working with the Dictionary (page 435)).

5. Optionally, you can add documents to a dictionary entry. Insert an identifier and the URL of the document in the corresponding input fields. To add multiple documents, use the + symbol next to the URL field. If you want to link to files on network drives, follow the instructions under Referencing documents (page 187).

6. Click Create and the new entry will be created. The diagram element will now reference the new dictionary entry.

6.1.2 Auto-completion

Once the Dictionary contains entries, the auto-completion feature allows you to reuse these entries when creating new elements.

By default, only dictionary entries whose category type matches the element type pop up in the auto suggestions. This behavior can be changed by a workspace administrator (see Editor settings (page 483)).

1. Start typing in a label for the diagram element. While you type, dictionary entry suggestions will appear below the element.

Hint: The auto-completion feature supports wildcards (*). For example, typing C*0 may return the entries C10, CF0 and CEO.

2. You can select an entry by using the arrow key on your keyboard. Press Enter to choose the selected entry. Alternatively, you can select an entry with your mouse.

Once you have referenced a dictionary entry, the entry's title will be copied into the element's label and the attribute values of the dictionary entry are adopted.
6.1.3 Reusing dictionary entries via drag & drop

You can also use the search function for dictionary entries in the Editor. It can be accessed through the shape repository. In order to reuse an object from the dictionary, use the search box below the element repository.

1. Enter the desired search term. Search results will appear as you type.
2. If necessary, you can apply a filter to include specific dictionary categories only.

3. Now, you can drag and drop the element onto the diagram canvas. The dictionary entry is already referenced and dictionary attributes are displayed directly at the element.
6.1.4 Publishing dictionary entries

**Hint:** Publishing rights for dictionary entries must be specifically granted for every user by a workspace administrator.

If a dictionary entry is set to **manual publishing mode** and has been altered without being republished, the Editor will display a warning message:

![Unpublished changes in dictionary entries](image)

To avoid this, make sure you publish the current entry dictionary along with the diagram you're creating.

6.1.5 Displaying dictionary entries

Once an element references a dictionary entry, you can navigate to the entry.

1. Click the **book icon**. A popup window displays the dictionary entry.

![Diagram](image)

2. Click **Remove link** to remove the connection to the Dictionary. This is especially useful for establishing a connection to a different dictionary entry.
3. Click **Open in dictionary**. A new browser tab will open with the full dictionary entry, including its description, attached documents and a list of all diagrams that reference this dictionary entry.

6.1.6 Overwriting locally dictionary entries

If you would like to individually specify a value for the current process context during modeling, you can locally overwrite attribute values that are prescribed by a referenced dictionary entry.

**Important:** You should however take care when doing this: local modifications are not applied in the Dictionary. Generally speaking, such an approach will cause that corresponding element properties can be no longer managed centrally in the Dictionary and causes inconsistencies between elements that reference the same dictionary entry. Furthermore, there is currently no way to check which dictionary entries have local versions in diagrams.

To change locally the value of an attribute of the Dictionary and to undo if necessary, proceed as follows:

1. First, select the element in your diagram with the attribute that is defined by a linked dictionary entry.
2. Click on the value of the attribute you want to modify locally. A warning message appears to point out that local changes do not affect the dictionary entry.

3. Click **OK** to continue. Depending on the attribute value, an additional editing dialog opens.
Enterprise resource planning (ERP) is a business management software—usually a suite of integrated applications—that a company can use to collect, store, manage and interpret data from many business activities.

4. Now enter the desired attribute value. If the new value is applied, the attribute is marked accordingly (yellow book icon).

<table>
<thead>
<tr>
<th>Main Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Documentation</td>
</tr>
<tr>
<td>Background color</td>
</tr>
<tr>
<td>Border size</td>
</tr>
</tbody>
</table>

Attention: The attribute value defined by the linked dictionary item has been overwritten locally.

**Hint:** It is not possible to overwrite a dictionary attribute value with its default value.

5. To undo the local change of an attribute value, click the corresponding book icon. The dialog **Dictionary entry** opens. Here, you see the local element value compared to the dictionary value.
6. Click **Revert** to set the value of the Dictionary as the value of the element attribute.

7. Close the dialog.

6.2 Working with the Dictionary

The Dictionary allows you to search, view, create, edit, delete, and publish dictionary entries.

To open the Dictionary, click the corresponding folder in the navigation tree on the left side in the Explorer. The Dictionary opens in a new browser tab.

Open the dictionary via the folder tree on the left of the Explorer

Select a dictionary entry. Its full description, a list of attached documents and a list of diagrams referencing that entry will be displayed.
Display a dictionary entry

**Hint:** To add, delete or publish a dictionary entry, you need the corresponding access rights. Workspace administrators can grant users **publish**, **write** or **delete** rights for the Dictionary. Please contact an administrator and ask them for the corresponding rights if you cannot access the option you need. As an administrator, you will have to grant yourself publishing rights because they are not activated by default. You can learn how to grant dictionary access rights in the chapter *Managing access rights* (page 462).

### 6.2.1 Navigating the Dictionary

You can navigate the Dictionary by using the dictionary categories.

1. Click the category that you want to display (for example, 'Roles').
2. Use the alphabet links at the top to navigate to the entry you are looking for faster.

### 6.2.2 Finding out where a dictionary entry is used

To find out where a specific dictionary entry is referenced in your process landscape, select the entry and click **Show usages**. A dialog opens and displays the type and name of the referencing elements, as well as the names of the referencing diagrams. Clicking **Load next** allows you to view links to the referencing elements to analyze the whole chain of references:
6.2.3 Switching the language

If there are multiple languages activated for your workspace, it is possible to switch between them by clicking on the language symbol.

Dictionary entries that have not been translated into the currently selected language will be displayed in their default language and marked with a country flag.

6.2.4 Full-text search

You can find specific entries by using the full-text search.

1. Type the word(s) you are looking for into the search field.
2. Hit Enter on your keyboard. The search results will be listed. The order indicates the entries’ relevance regarding the search. For example, an entry with your search terms in the title will rank higher than one with the terms only in the description.
Browse the Dictionary as you are accustomed to in the Explorer

6.2.5 The activity feed

Similar to the activity feed in the Signavio Explorer, the dictionary feed allows you to manage revisions.

In the dictionary feed, you can manage revisions of dictionary entries

The revision feed opens automatically once you select a dictionary entry. When selecting a revision in the feed, you can trigger the following activities:

- **Restore**
  Will restore your entry to a previous version. Note that this does not delete revisions, but allows you to switch between them.

- **Publishing**
  Will make this revision available in the Collaboration Hub. By default, the newest revision is automatically published upon creation.

- **Unpublishing**
  Will revoke the revision’s publication in Collaboration Hub.

**Hint:** The buttons to publish and unpublish revisions will only be active in categories, whose Publishing Mode has been set to Manual. Under Defining custom categories for dictionary entries (page 545) you find more information.
6.2.6 Managing dictionary entries

Creating new dictionary entries

To create a new dictionary entry, proceed as follows:

1. Click **New** in the top toolbar. The **New Entry** dialog will open.

2. In the **New Entry** dialog box, make the following configuration:

   - **Category**
     - A number of possible attributes can be defined for a dictionary entry. Start with selecting a category for the entry, as the category may affect the custom attributes that can be defined for the entry. Read more about the configuration of dictionary categories in the document *Defining custom categories for dictionary entries* (page 545).

   - **Language**
     - Select the desired language in the dropdown menu. Attribute values of dictionary entries can be defined in multiple languages. Please make sure that the title of the entry is defined in at least one language. You can link dictionary entries by their name by beginning to type the title of the entry that is supposed to be linked and choosing it from the auto-completion drop-down menu. This is useful if a dictionary entry contains other dictionary entries in its title. For example, the dictionary entry **Prepare loan application for check by risk manager** can reference **loan application** and **risk manager** as further entries. Readers - in especially Collaboration Hub users - can now easily navigate to these entries via the established references.

   - **Title**
     - Enter the name of the dictionary entry (mandatory).

   - **Description**
     - Enter a short description. You can format this description, as you already know it from common writing programs or the Editor.

   - **Relevant documents**
     - To attach documents, edit the attribute **Attached documents**, as described *later in this chapter* (page 441).

3. Click **Create** to save the dictionary entry.
Editing dictionary entries

To edit an existing dictionary entry, follow these steps:

1. Choose the dictionary entry you want to edit and click **Edit**. The edit dialog for dictionary entries appears.

2. Now you can edit the dictionary entry.

3. Click **Save**.

**Hint:** If the category of the dictionary term you are trying to edit is set to automatically update when making changes, the diagram elements that refer to this entry will be updated automatically. This will create new versions of the diagram. If there are many diagrams affected, it may take the Process Manager up to 30 seconds to save your changes. For more information see: *Creating a new category* (page 546).

Deleting dictionary entries

To delete an existing dictionary entry, proceed as follows:
1. Select the dictionary entry you want to delete.
2. Click the Delete button in the top toolbar. A confirmation dialog will tell you about the diagrams that will be affected.

3. Click Yes to confirm deletion. If you don't want to delete the entry after all, click No.

Referencing documents

You can reference external documents for a dictionary entry while creating or editing it.

1. Select a dictionary entry and then click Edit. The Edit entry dialog box opens.

2. Scroll to the attribute Relevant documents and select Add a new document. The dialog Link files/pictures opens.

3. Select a file from your Signavio team directory. Alternatively, you can upload a new file/picture from your local file storage.
4. Click Add. The selected file is added to the dictionary entry.
**Important:** Please take the *notes on referencing documents* (page 187) into account.

**Publishing dictionary entries**

If a dictionary entry is set to **manual publishing mode** and has been altered without being republished, an appropriate warning notice will appear, when the dictionary entry is used in the Editor.

If this is the case, make sure that the current dictionary entry is also published when publishing the diagram.

To publish a dictionary entry, proceed as follows:

1. First select the entry you want to publish.
2. Open the activity feed at the bottom by clicking **Expand**.

3. Click the desired revision of the dictionary entry in the activity feed. An information dialog box opens.
4. **Click Publish.** The dictionary entry is now published in Collaboration Hub.

### 6.3 Merging dictionary entries

The Dictionary allows you to keep all the terms that are often used in your diagrams in one easy-to-reference place. However, over time the use of terms can change, entries with a similar meaning but different description might be added, and extraneous copies of existing entries might be created when many modelers work together. Duplication can also happen when importing Signavio archive (.SGX) files, because entries from these files will automatically be added to the Dictionary. Regardless of the source, merging dictionary entries will help you keeping the Dictionary in good condition.

The following example shows the merging of the entries **ACME AG** and **ACME Inc.**, so that there is only one entry for the German and the English naming convention of the company.

- Open the Dictionary and choose the category the entries can be found in.
- Choose the first dictionary entry you want to merge. (If desired, you can select multiple entries at once.)
- Click the toolbar button **Merge Dictionary Entries**.

The merge button in the dictionary toolbar
• Enter the name of the second dictionary entry into the field **Add Dictionary Entry**. Use the auto-completion here. You can merge as many entries as you want using this method.

Use the auto-completion to add more entries

• Choose the elements to be added to the resulting entry. Attached documents, linked dictionary items, and links are added to the target entry automatically.

Select the fields that will be included in the resulting entry

• Click **Merge** and confirm the warning.
• The entries are merged. The resulting entry will be displayed, and can now be edited.

### 6.4 Referencing external data sources

**Note:** To be able to reference external data sources, you need to implement and configure the corresponding interface first. Read more at *Managing external data sources* (page 549).

Once an external service has been set up, it can be selected in the Dictionary under **Simple Type - External Enumeration of Values**.

In the Dictionary, all categories that can be used to define input data can have dictionary entries that make use of external data. To be able to define input data for a category, the check-box **Use as DMN input data** has to be activated.

To reference an external data source in a dictionary item, use **Simple Type** in the **Type Definition** field and choose **ExternalService** as **Value Domain**. Now, the field **Service** allows you to select one of the services that have been registered:
Reference an external service from a dictionary entry.

When the dictionary item is used in a decision table, the service response will determine the data type, for example enumeration or hierarchy.

6.5 Tutorial: Dictionary best practices

This tutorial describes best practices on how to make use of the Dictionary as a business process/business decision modeler.

By reading this tutorial you will learn how to...

- ...reference and create dictionary objects directly from the modeling canvas.
- ...drag & drop existing dictionary entries as modeling elements from the element repository onto the canvas.
- ...manage changes to diagram elements.

Following these best practices will increase your modeling speed as well as the consistency and completeness of your process landscape.

Let’s start by creating a new process as part of our example process landscape.

First, we create a pool for our company. The pool ACME AG can be dropped from the dictionary entry repository on the left side of the modeling canvas. It is directly available under Frequently used dictionary items:
Drag & drop from the element the dictionary entry repository

In the attribute panel on the right-hand side we can see that element attributes have been filled in automatically, based on the attribute values of the dictionary item:

The attribute values are fetched from the referenced dictionary entry

Subsequently, we want to add the organizational role Approver as a lane.

We are not sure if a corresponding dictionary entry exists, so we simply start to fill in the corresponding label. As we type, the dictionary entry Approver is suggested as a reference.

We select the entry to assign it to the lane:
Select the dictionary entry you want to reference

**Hint:** If the default Dictionary settings have not been changed, only dictionary items that match the corresponding element type are suggested. In our case, only organizational units and IT systems are suggested and e.g. no events or activities. IT systems can be referenced from pools and lanes because they are similar to organizational units in their ability to execute tasks. For example, the task ‘Send email’ can be executed by both an employee and an IT system.

Now we add a start event and name it **Employment contract received**

We can assume that this event is only occurring in this one diagram, so we don’t need to create a dictionary entry for it.

We don’t create a new dictionary entry for the ‘Employment contract received’ event

Subsequently, we create the task **Review employment contract**. No dictionary entry is suggested by the system. Let’s now assume that we need to create the same task in a different process later on. Thus, we create a new dictionary entry by clicking the dictionary icon at the lower left corner of the element:
Create a new dictionary entry

The dictionary entry is now available in the dictionary element repository.

The document **employment contract** already exists:

Reference the dictionary item 'employment contract'

Now, we want to link the IT system that the approver needs to use. We don't know which system to use exactly, so we use the filter function of the dictionary element repository to gain an overview over our IT systems:

Filter the dictionary for IT systems

We identify **Personnel System** as the correct IT System and drag it onto the modeling canvas:
We can refer to the steps described above to continue adding elements to our model. Generally, we recommend to **re-use dictionary entries wherever it makes sense** and to create or reference dictionary entries for all elements that are likely to be re-used. This prevents duplicates and inconsistent information in your Signavio workspace.

However, when revising the process, we find that the role **Approver** is too generic for our purpose:

*The dictionary entry does not provide specific information*

To adjust the element, we have three options:

- Edit the element **(not recommended)**:

  We can edit the attribute documentation and adjust it to a more specific description.

  Before editing the attribute, a warning will appear:

  A warning is displayed, as element attribute and dictionary item attribute will no longer be consistent

After the attribute was edited, a warning icon next to the attribute indicates that the value is not consistent with the corresponding value of the referenced dictionary item:
The warning sign indicates the inconsistency between element attribute and dictionary item attribute. However, this procedure is not recommended, as it makes it very hard to detect the difference between the approver in our current lane and other lanes referencing the approver object. Moreover, it is no longer possible to centrally manage the attribute value via the Dictionary.

6.5.1 Adjust the dictionary entry:

We can click the dictionary item and select **Open in dictionary**:

Open the dictionary entry

Now, we can click **Edit** and adjust the dictionary entry our needs:

Adjust the dictionary entry

This option is recommended if the dictionary entry is generally not correct or lacks information. This does not apply in our case.
6.5.2 Create a new dictionary entry **(recommended in our case):**

As our approver is a human resource/legal specialist, we need to add more specific information. However, we can assume that the approver reference in other diagrams doesn't match our new specification. In that case, we will need to click the dictionary icon next to the entry and select **Remove link:**

![Dictionary Entry](image)

**Remove the dictionary reference**

We confirm the action and rename the lane with a more specific term, for example **Legal approver** (HR). Subsequently, we add a new dictionary entry:

![Diagram](image)

**Create a new dictionary entry for our contract approver**

**Hint:** Generally, we recommend you to **avoid inconsistencies between dictionary entries and referencing elements** and to **avoid re-purposing dictionary entries because of one specific reference.** In such cases, the creation of a new Dictionary is usually the best alternative.
Chapter 7

Workspace administration

Administrators manage workspace settings and user access. They also make sure that even with many users, the workspace remains well structured and clean.

The first user registering for a Signavio workspace is by default an administrator.

As administrators have extensive rights and can make profound changes to your Signavio workspace, we recommend IT-skilled users familiar with the Signavio software and BPMN should be in charge. It is important to communicate and document changes in workspace settings among your administrative team, so that all administrators are up to date and can give accurate responses to user queries.

The ‘Setup’ menu in an ordinary user account

The ‘Setup’ menu in an administrator’s account in the Enterprise Edition

To add or remove administrator permissions, add/remove the user to/from the user group Administrators. You can follow the instructions in the chapter Managing user groups (page 459).

An administrator has the following special privileges:

- Managing users and access rights (page 455)
- Configuring general software settings (page 481)
To get started as a Signavio Process Manager workspace administrator, have a look at our **configuration overview** (page 453). You find an overview of the most popular integration scenarios at **System integration scenarios** (page 687). A description of the Process Manager APIs is available at **API access to the Signavio Process Manager** (page 690). You can also refer to our **Admin FAQ** (page 694).

### 7.1 Overview - Preparing your Process Manager workspace

This article guides you through the configuration settings of your Signavio Process Manager workspace. Because some configuration and access rights management settings depend on each other, we recommend you follow the steps in this tutorial in the provided order. To obtain detailed information on a configuration set, open the corresponding links.

1. **Configure general settings**

   First, open the **general configuration** (page 481). There, you can configure the name of your workspace and the workspace owning organization, as well as currency and subscription settings. Moreover, you can (de)activate a set of links to help and training resources, or add links to custom webpages.

2. **Configure language settings**

   If your organization wants to **manage contents in multiple languages** (page 132), you need to **configure these languages in your workspace settings** (page 485). To avoid unnecessary confusion, we recommend to only configure your workspace for multiple languages if you are sure you will actually use them. When activating multiple languages for your workspace, you also need to set a default language, which determines, for example, the content that is displayed to a modeler who opens a diagram in the editor. Choose this language wisely to make the life of your users easier. In most international organizations, the default language should be English.

3. **Configure notation/attributes**

   You can configure all modeling notations you plan to use to optimally fit your organization's needs. To control complexity in your diagrams, you can **create element subsets** (page 533). In our blog post [Making Your Stakeholders’ Lives Easier with BPMN Subsets](https://www.signavio.com/post/bpmn-subsets/) you can learn more about how element subsets help facilitate communication about your process landscape. For each notation element type, you can **configure custom attributes** (page 538) that allow you to add additional information to elements of the corresponding type. For example, you might want to add an attribute to the BPMN lane element that points to a description of the role or IT system the lane represents.

4. **Configure dictionary settings**

   The **The Dictionary** (page 428) allows you to centrally manage definitions for objects like documents and IT systems to reuse them throughout your process landscape. You can create your own
dictionary categories (page 546) that help you structure the dictionary entries according to your wishes and configure custom attributes for dictionary categories (page 538). To learn more about the Dictionary, also consider our blog post Using the Signavio Dictionary to facilitate consistency and reusability of object definitions.\(^9\)

5. Configure modeling guidelines

Signavio Process Manager can check automatically if your process and decision diagrams follow specific modeling conventions (page 203). You can configure these conventions to fit your organization's requirements, as described at Managing modeling conventions (page 521). To learn more about how modeling conventions help you improve your diagrams read our blog post Improving Process Models with Modeling Conventions.\(^{10}\)

6. Configure attribute visualization

The attribute visualization feature (page 196) allows you to highlight attributes to which specific rules apply, for example tasks that exceed an execution cost limit. As a workspace administrator, you can configure custom attribute visualization rules (page 516). To learn more about the benefits of attribute visualization, read our blog post Visualizing Business process KPIs.\(^{21}\)

7. Collaboration Hub configuration

The Collaboration Hub (page 396) provides an intuitive interface for users to view and comment on diagrams. You can configure Collaboration Hub (page 489) to adjust its layout to your requirements and select which attributes and visualization layers should be available.

8. Configure process documentation templates

With process documentation reports (page 64) you can generate a comprehensive overview of your process landscape as a PDF document, for example to provide documentation to external stakeholders like auditors. You can create templates (page 559) for these reports to specify what information you want to include and how to present it.

9. Configure approval workflows

If you are using Signavio Process Manager together with Signavio Workflow Accelerator, you can configure approval workflows (page 497) to ensure diagrams have been reviewed by the right people before they are published in Collaboration Hub or made available to specific stakeholders or systems like workflow engines.

Important: If you use approval workflows to publish diagrams in Collaboration Hub, ensure you revoke the publishing rights of your users to prevent they publish unapproved diagrams.

10. Configure security settings

You can adjust the workspace's security settings (page 466) to set up an IP address whitelist and configure password policies.

11. Configure access rights

Before you roll out Signavio Process Manager to your users, you need to create and implement a concept for user and access rights management (page 455). Hereby, consider the following:

- There are two types of users, modeling users and Collaboration Hub users.
- By default, every modeling user has access to all documents in the Share documents folder. To restrict access rights of users, you can assign them to a user group (page 459) with limited access permissions already when you invite them to join your Process Manager workspace (page 455). To restrict access rights based on organizational roles, we recommend setting up a folder structure that reflects the different access rights variations. Then, create user groups with access rights that are tailored to your organizational requirements.


\(^{10}\) https://www.signavio.com/post/improving-process-models-with-modeling-conventions/

\(^{21}\) https://www.signavio.com/products/workflow-accelerator/
• **Collaboration Hub users** only have access to diagrams that have been explicitly published (page 119) in Collaboration Hub. The way you can manage access rights for Collaboration Hub users on a more granular level depends on your usage scenario:

  - If the users authenticate via an Active Directory- or SAML-based mechanism, you can manage access rights of Collaboration Hub users based on their Active Directory user groups or names, respectively their SAML identities.
  - If you roll out an authentication certificate to your Collaboration Hub users, all users will have access to all published diagrams.

Read more about the different ways to manage access to Collaboration Hub at [*Configuring access to Collaboration Hub*](page 472).

### 7.2 Managing users and access rights

Signavio Process Manager possesses comprehensive user and access right management options. The following chapter describes user, user group and access rights management in detail.

#### 7.2.1 Managing users

In this chapter you will learn how to manage users who are invited to collaborate in your workspace.

**User types**

In Signavio Process Manager, there are two types of user licenses, *modeling users* (page 455) and *Hub users* (page 455).

**Modeling users**  Modeling users have the full functionality of your Signavio Process Manager edition you purchased available, and additionally access to Collaboration Hub. You find an overview of the features that are available per edition on the [Signavio website](https://www.signavio.com/products/process-manager/).

**Hub users**  The main application for Hub users is *Collaboration Hub* (page 396). Hub users have access to a limited feature set in Process Manager:

  - They can create folders, as well as create and edit BPMN diagrams in QuickModel.
  - They can use the *diagram comparison tool* (page 48).
  - They can *export* (page 139) diagrams as PNG, SVG, and PDF files.
  - They can *create reports* (page 63).
  - They have read access to the *dictionary* (page 428).
  - They can use the *discussion and sharing features* (page 105).

You can also use feature sets to add additional feature restrictions on Hub users.

**Note:** This type of Hub user is by default available to new customers. If you registered your workspace before version 11.11.0 (January 2018) and want to use this type of Collaboration Hub license, contact the Signavio Support Team at [support@signavio.com](mailto:support@signavio.com).
Inviting new users

First, you send an invitation email to the users you want to invite. After a user registered via the link in the invitation mail, his user data is added to the system and his access rights settings are configurable. Once a user has accepted your invitation and logged into the workspace, you can manage access rights (page 462).

**Important:** If you are using the On-Premise Edition, you can register new users via a web form available at the local URL of the Signavio Process Manager (https://mydomain/p/register).

Adding new users requires additional licenses (page 694), you need to purchase them accordingly. All licenses are linked to a specific workspace, which means that no additional workspaces are created by inviting new users. Users who already own a workspace need a license created by you to be able to access your workspace. Optionally, you can add the user to one or more user groups. This is necessary if you want to prevent the user from having access to the workspace's entire Shared Documents folder and write access to the entire dictionary. You can read more about user groups and access rights in the chapters Managing user groups (page 459) and Managing access rights (page 462).

To add a new user, proceed as follows:

1. Click Setup, then Manage users & access rights in the top dropdown menu of the Explorer. The user management dialog opens.
2. Switch to the New users tab.
3. Enter the email address of the user you want to invite to your workspace.
4. Optionally, click Add user groups to assign the user to a group (page 459) already now.
5. Now select one license option for the user invited. You typically can select between your Process Manager license type and a Collaboration Hub license. The license you choose for the new user will be bound to the email address you send an invitation to. The new user will have to register with the same email address to use the license.
6. Click Send invitation.

![Invite a user into the workspace.](image-url)
An invitation email will be sent to the specified email address. The email address appears on the left side in the Open invitations area.

**Hint:** Inviting a colleague into your workspace means giving them access to all diagrams in the Shared documents folder by default. However, they will not be able to configure the workspace (e.g. inviting other users), as long as they have not been added to the 'Administrators’ group. How to manage access rights and user groups will be explained in the next chapters manage access rights (page 462).

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### Revoking an invitation

**Note:** As the registration process in the On-Premise Edition is based on a web form, this functionality is not available there.

In some cases you want to cancel an invitation sent to a user. Proceed as follows to revoke an invitation:

1. Select an email address in the Open invitations area.
2. Click the Cancel symbol above the list.

---

### Removing access of registered users

Consider the following information if you want to remove registered users from your workspace:

- If the removed user is member in one or multiple workspaces, these workspaces are not affected: the user is still able to log into workspaces he is not removed from, because user data are still available here.

- When removing a user from the workspace, his My Documents folder and all contained diagrams will be deleted irreversibly. The user should be informed to be able to export any files he may want to keep.

- All diagrams and documents the user has created in the Shared documents folder are still available. This also applies to comments and changes of the user.

- Comments and changes that the user made in the Shared documents folder can still be traced back to this user. The user name is displayed as author of changes or comments.

- If the user is removed and he tries to log into your workspace, he receives the error message that the user name and password combination is incorrect.

To remove a user from your workspace, follow these steps:
1. Click **Setup**, then **Manage users & access rights** in the top dropdown menu of the Signavio Explorer. The user management dialog box opens.

2. Go to the **Users** tab, select the user you want to remove in the list on the left.

3. Then click the **Remove** symbol above the list. The user will be removed from your workspace.

**Note:** The user will be removed without receiving a notification about it. The next time they try to log in, they will be informed that username and password are incorrect.

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**The Monthly Concurrent mechanism**

**Important:** Monthly concurrent licenses are no longer available with our current licensing mechanism. This section is only relevant for users who purchased monthly concurrent licenses prior to April 2017.

It is possible to purchase licenses that can be assigned according to the **Monthly Concurrent** mechanism. This allows registering more users in a workspace than licenses were purchased. Each month, the license-user-assignment is reset, with the benefit that the limited number of licenses can be assigned to different users each month.

The licenses are assigned based on the first-comes-first-served algorithm: Each month, the number of modelers is limited by the number of licenses in the workspace. With each new month, license assignment is reset so they are available again. Each user that logs in at the beginning of the month then gets one of the free licenses, as long as free licenses are available.

**Note:** A license that was already assigned during the current month can only be freed before the end of the month by deleting one user with an assigned license from the workspace. To make sure that some users can always log in to their workspace, you can force assigning a license to them by selecting the **Force access** option in the user configuration dialog. This option is automatically set for users that are member of the administrators group.

If assigning a license to a user is forced, this user will be marked with a little star in the overview at the left border. A users who did not log in during the current month will be grayed.

The following example illustrates those states:
Log in states of work space users

One license each is automatically assigned to both John Smith and James Brown.
Jane Young has already logged in this month, so one license was assigned to her.
Lisa Johnson did not log in yet. As her access is not forced, no license was assigned to her.
All together there are 3 licenses assigned, one each to John Smith, Jane Young and James Brown.

7.2.2 Managing user groups

When dealing with a large number of users, Signavio’s user group functionality allows you to manage access rights more easily.

Creating a new user group

To create a new user group, proceed as follows:

1. In the Explorer, click under Setup the Manage Users & access rights entry. The user management dialog opens.
2. Open the User groups tab.
3. Click the **Add** icon above the group list. A dialog box opens where you can define a name for the user group.

![Add Group Dialog](image)

4. Type in the user group name and then click **OK**. The new user group is created and appears in the user groups list.

![Add Group](image)

### Configuring a user group

After you have created a new user group, you can define subordinate groups, so that a hierarchy can be created. This can be very helpful if you want to share diagrams with specific groups of users. Furthermore, you can add users to this group or change the group name. In this way, users can be appointed to administrators by adding them to the respective group (see below).

1. First, select the group from the list that is supposed to be edited.

![Groups List](image)
2. Optionally, edit the name of the user group and click **Change**. The name will be updated.

![User Group Management](image.png)

3. Now you can add users to the group. Open the dropdown list, all users and user groups registered in the system are shown. Alternatively, type in the user name and use the auto-completion.

4. Select the desired user or group name and then click **Add**. The user name appears immediately in the list of users/groups. You can add multiple users or groups to a group. Note that you cannot add groups to the **Administrators** group. If you want to grant administrator rights to users, add single users to the **Administrators** group. Adding a group to the **Administrators** group will not grant the rights of an administrator to the users of the group.

![Add User/Group](image.png)

**Hint:** In the user group management dialog, you can also manage access rights to specific feature packages via the user group management dialog. Read more at *Managing access rights to feature sets* (page 464).

**Appointing workspace administrators** In Signavio Process Manager, administrators manage workspace settings and user access. They also make sure that even with many users, the workspace remains well structured and clean.

If an administrator adds users to the **Administrators** group, they will have the same rights as the administrator. However, they won’t be able to access or manage the content in the modelers’ **My documents** folders.

As administrators have extensive rights and can make profound changes to your Signavio Process Manager workspace, IT-skilled users familiar with the system and BPM(N) should be in charge.

**Deleting user groups**

To delete a user group, proceed as follows:

1. Select the user group you want to remove.
2. Click the **Remove** icon above the group list.
3. As the group will be permanently deleted, you have to confirm this with Yes in the warning dialog box.

### 7.2.3 Managing access rights

Signavio offers you the ability to assign different access rights to your diagrams as well as dictionary entries for users and user groups. To manage permissions to the folders and files other than the **Shared documents** folder you must be a member of the **Administrators** group.

Folders and models inherit their permissions from the parent folders. Assuming you have started with the typical configuration containing a **Shared documents** folder, all modelers have access to all folders and individual models by default. Initially, all modelers (not to be confused with Collaboration Hub readers) are able to read, write, delete or publish in all folders and models that have been created in the **Shared documents** folder with the exception of the **My documents** folder. By default, any models or folders created in a user’s **My documents** are set as ‘private’, this means they are not readable by any other user on the system.

The following section describes how to define access rights to diagrams and dictionary entries. It is also possible to manage access rights to specific feature sets. This enables you to give each modeler group access to the exact feature sets they require to perform their tasks. Read more about this feature at **Managing access rights to feature sets** (page 464).

#### Defining access rights

Access rights are assigned additively in Signavio Process Manager. This means that if you define access rights to a folder, the users will have access to all of the subfolders and contained diagrams.

**Hint:** If you grant diagram access to a user who has no access to the containing folder, only the diagram path will be shown to this user. He has no access to other diagrams in this folder.

Administrators can grant users the rights to **publish**, **edit** or **delete** diagrams in the **Shared Documents** folder. If this option is not available, contact your administrator. Please keep in mind that the right to publish is disabled also for administrators by default. If necessary, enable this right for yourself.

To define access rights, proceed as follows:

1. Click **Setup**, then **Manage users & access rights** in the top drop-down menu of the Signavio Explorer. The user management dialog box opens.
2. Go to the **Access rights** tab. The tree structure on the left side contains all diagrams and folders in the “Shared documents”-folder and in the dictionary.
3. Select the element you want to define access rights for:
   • folder
   • diagram
   • dictionary

4. Choose a user or a user group you want to give access to the selected diagram or folder.

   **Important:** If a folder is selected, all its ‘child elements’, e.g. all diagrams in the corresponding folder, will inherit the access right defined.

5. Choose the access rights to be granted to the user or user group:
   • **Hub (H):** Allows the user to view published content in Collaboration Hub.
   • **Read (R):** Allows the user to view diagrams in the simulation tool, the revision comparison tool, the commenting view, and Collaboration Hub.
   • **Write (W):** Allows the user to edit and save content in the Editor/Dictionary.
   • **Delete (D):** Allows the user to delete and move content.
   • **Publish (P):** Allows the user to publish diagrams in Collaboration Hub.

   **Note:** Please keep in mind that the commenting feature in Collaboration Hub is a read access, since users who have been invited via the function **Invite anyone for feedback** can only add comments to a diagram, but are not allowed to edit it.

6. Finally click **Add**. The access rights that the user or user group include will appear in the access rights list.

   **Hint:** Revoking the publication of a diagram typically revokes the publication of referenced dictionary entries that are not referenced in any other published diagram. Consequently, you need
to have publishing permissions for the corresponding dictionary categories, if you want to revoke the publication of a diagram that references dictionary entries. This is not the case if the corresponding dictionary categories are configured to require a manual publishing of dictionary entries.

Removing access rights

To remove access rights, proceed as follows:

1. Click Setup, then Manage users & access rights in the top drop-down menu of the Signavio Explorer. The user management dialog opens.
2. Go to the Access rights tab. The tree structure on the left side contains all diagrams and folders in the “Shared documents”-folder and in the dictionary.
3. Select the desired folder or diagram an access right shall be removed from. A list appears on the right side with the users and the corresponding access rights.
4. Click Remove. If the Remove button is not visible, navigate to the parent folder, for which the specific access right has been granted, by clicking on its name in the Inherited from column and remove it from there.

<table>
<thead>
<tr>
<th>User/Group</th>
<th>Right</th>
<th>Inherit...</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>Jane Doe</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>Joan Doe</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>John Doe</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>John Smith</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>Jane Smith</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>Sales ACME</td>
<td>W, D</td>
<td></td>
<td>Remove</td>
</tr>
</tbody>
</table>

5. Confirm the action by clicking Yes in the dialog box.

7.2.4 Managing access rights to feature sets

In Process Manager, you to manage access rights to specific feature packages in the user group management dialog. Like this, you can give each modeler group access to the exact feature sets they require to perform their tasks. For example, this helps prevents users from uncontrolledly creating diagrams or dictionary entries in your workspace.

To manage feature sets of user groups, proceed as follows:

1. Open the Explorer and click Setup - Manage users & access rights. The user management dialog opens.
2. Go to the User groups tab.
3. Select the desired user group and activate or deactivate the features according to your requirements.
4. Click **Save feature sets** to confirm and save the changes.

The following table lists all feature sets you can (de)activate.

### Configurable feature sets

<table>
<thead>
<tr>
<th>Feature set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Manager - DMN requirements modeling</td>
<td>Allows users to <strong>create and edit DMN diagrams</strong> (page 328), but doesn’t allow creating and editing the <strong>decision logic</strong> (page 340) in such diagrams.</td>
</tr>
<tr>
<td>Decision Manager - complete</td>
<td>Allows users to <strong>create and edit DMN diagrams</strong> (page 328), including the contained <strong>decision logic</strong> (page 340).</td>
</tr>
<tr>
<td>Decision Manager - export Drools</td>
<td>Allows users to export decision tables and diagrams as <strong>Drools rules</strong> (page 156).</td>
</tr>
<tr>
<td>General - Dictionary import</td>
<td>Allows users to <strong>import dictionary entries from .xls(x) (Microsoft Excel)</strong> <strong>spreadsheets</strong> (page 589).</td>
</tr>
<tr>
<td>General - diagram import/export</td>
<td>Allows users to <strong>import and export diagrams</strong> (page 574).</td>
</tr>
<tr>
<td>General - reports (basic &amp; documentation)</td>
<td>Allows users to generate basic <strong>reports</strong> (page 63). Includes all reports with the exception of <strong>cost</strong> (page 87) and <strong>resource consumption</strong> (page 91) analysis reports.</td>
</tr>
<tr>
<td>General - reports (cost &amp; resources)</td>
<td>Allows users to generate <strong>cost</strong> (page 87) and <strong>resource consumption</strong> (page 91) analysis reports.</td>
</tr>
<tr>
<td>General - upload files</td>
<td>Allows users to <strong>upload files</strong> (page 574) to Signavio Process Manager.</td>
</tr>
<tr>
<td>Process Manager - edit processes</td>
<td>Allows users to create and edit diagrams. <strong>Note:</strong> To create and edit DMN diagrams, users need the feature set Decision Manager - DMN requirements modeling (without decision logic) or Decision Manager - complete.</td>
</tr>
</tbody>
</table>
7.2.5 Managing security settings

This chapter explains how to manage security settings for your Signavio Process Manager workspace. The security settings apply to every user in the administrated workspace and also to all future users.

**Important:** Users of the on premise edition cannot configure IP address filters.

To configure the security settings, click **Setup**, then **edit security configuration** in the top drop-down menu of the Signavio Explorer.

You can define the following settings in the configuration dialog **Edit security configuration**:

- **IP-based access restriction** (page 466)
- **password policies** (page 468)

These are precisely explained in the following sections.

**The IP address filter**

The IP address filter allows you to define a list of IP addresses that can access Process Manager and Collaboration Hub. If the filter is active, devices with unlisted IP-Addresses cannot access the workspace even with valid certificate or username/password combination. This can be very useful for example if you want to restrict access to your workspace or Collaboration Hub to one or several specific companies.

The operating administrator's IP address is added automatically, so if you are configuring the IP address list and are using a static IP address, you will get access from your current device automatically.

**Hint:** The IP address filter is based on IPv4, therefore IPv6 addresses cannot be added to the list of trusted IP addresses.

To define IP addresses for the whitelist, proceed as follows:

1. Click **Setup**, then **Edit security configuration** in the top drop-down menu of the Signavio Explorer. The configuration dialog box opens.

2. Select **Activate address filter**.

3. In a message dialog, you are asked to confirm the filter activation. Click **OK** to confirm.
4. Now you can add a number of IP addresses to the list of accepted addresses by clicking the Add button:

![Add button](image)

5. Enter an IP address into the text field. Note that only Internet IP addresses will be accepted. Local area network (LAN) IP addresses cannot be listed as those addresses depend on the local network configuration. Confirm the IP address:

![Add IPv4 address](image)

6. Click Save in the configuration dialog. The IP address filter is active now. It is possible to remove an IP address from the list of accepted addresses by selecting the address and clicking the Remove button:

![Remove button](image)

To completely deactivate the address filter, deselect the option.
Defining password policies

A password policy can be implemented to enforce the use of secure passwords. This allows you to prevent access security issues even if many users have access to your workspace.

Password policies apply whenever a user changes or initially chooses his password.

To define a password policy, follow these steps:

1. Click Setup, then Edit security configuration in the Signavio Explorer’s drop-down menu. The configuration dialog box opens.

2. Under Password policies, you will have multiple configuration options, which are explained below (see list Configuration options for password policy).

3. Click Save in the configuration dialog. The password policy is active now.

![Edit security configuration dialog]

The password policies define security requirements that apply to all users when choosing a password.

- **Complexity requirements**: A password must fulfill three of the four following requirements: It must contain at least one capital letter (A to Z), one lower case letter (a to z), one number (0 to 9) and one special character (/,\,%,&,$,#).

- **Consider user name**: The password must not contain the user’s first or last name.

- **Consider user name (strict)**: The password must not contain more than two letters that the user’s first or last name contains in the same order.

- **Minimum password age**: Forbids choosing a new password before the entered number of days have passed.

- **Maximum password age**: After the entered number of days have passed, the user must choose a new password.

- **Minimum password length**: Minimum number of characters a password must consist of.

- **Maximum password length**: The maximum number of characters a password can consist of.

- **Password history**: Forbids choosing one of a user’s last passwords. The entered value indicates how many passwords to remember and to prevent the re-election.
Configuration options for password policy

- **Complexity requirements**
  There are four complexity criteria that can be activated by checking the box *Complexity Requirements*. A valid password should
  1. contain at least one capital letter (A to Z).
  2. contain at least one lower case letter (a to z).
  3. contain at least one number (0-9).
  4. contain at least one special character (!, $, %, &, ?, #).

  If a password is set and three of those four criteria are met, it will be accepted. For example, the password “Signavio2016” would be accepted, as criteria 1, 2 and 3 are fulfilled. The password “signavio!” only fulfills the criteria 1 and 4 and would not be accepted.

- **Consider user name**
  It is possible to forbid the usage of passwords that contain the user name. If this option is activated, the user “JohnDoe” could not use the passwords “JohnDoe”, “JohnDoe123” or “johnDoe”. However, the password “John123” will be allowed. To completely forbid the usage of the user name in the password, the option *Consider user name (strict)* can be activated (see below).

  **Hint:** Upper case and lower case are not considered in the validation. Therefore, “oojohndoeoo” is not allowed as well.

- **Consider user name (strict)**
  This option forbids the usage of three or more letters in the same order in user name and password. The validation process is case insensitive. For example, the user “John Doe” could not use the password “John123” here. However, the password “Jojo” would be allowed.

- **Minimum/maximum password age (days)**
  A user can change his password, if the specified number of days since the last change has passed.

- **Maximum password age (days)**
  After the specified number of days has passed, a user is asked to choose a new password. When activating this option, the *password history* settings should be activated as well to prevent the usage of already used passwords (see below).

- **Minimum/Maximum password length (characters)**
  Define the minimum/maximum length of a password. Usually, longer passwords are more secure than shorter ones.

- **Password history**
  Enter the number of previous passwords that will be “remembered” and cannot be re-used by the user. For example, if the number is set to 5, the 5 last used passwords will be rejected as new password.

After having saved the password policy, users are informed accordingly when they change their password the next time and the new password does not conform with the policy.
If a user chooses a password that does not fulfill the password policies, he will see this information.

In this case, the password is too short, contains the user name and is not complex enough.

### 7.2.6 Creating certificates

**Important:** Please consider the certificate update (page 711) from December 15, 2016 to ensure a better encryption algorithm.

As a **workspace administrator** (page 461), you are able to create user certificates to grant read access to diagrams in Collaboration Hub.

In this chapter, the use of Collaboration Hub with **certificate in the Software-as-a-service** version of Signavio Process Manager is described. If you are using the on-premise version please read more about publishing in the chapter **Granting read access in the On Premise Edition** (page 119). To be able to create a certificate, the Collaboration Hub extension must be activated for your Signavio workspace. You can book Collaboration Hub with a number of licenses fitting to your organization via your Signavio contact.

Follow these steps to create a certificate:

1. In the Explorer, click in the Setup menu the Manage Collaboration Hub authentication entry. The corresponding dialog box opens.
2. If no certificate was created before, click **Create certificate**. This may take up to 30 seconds.

3. After the certificate creation has been completed, you can download it by clicking **Download certificate**. The dialog also provides you with the password for the certificate. You will need this password when installing the certificate (page 419). As a workspace administrator, you can go back to the Manage Collaboration Hub authentication dialog any time, for example to check the password and download the certificate.
You can also **deactivate** or **remove** a certificate in this dialog box. This can be useful if you do not have access to the machines of users whose Collaboration Hub access should be revoked.

**Important:** By deactivating or removing a certificate certified users can no longer access Collaboration Hub of your workspace. A removed certificate cannot be recovered - should you delete a certificate, a new certificate has to be created and then reinstalled on each device. To facilitate this, there is the possibility to **install certificates using certutil** (page 471).

### 7.2.7 Importing a Signavio certificates

**Important:** Please consider the **certificate update** (page 711) from December 15, 2016 to ensure a better encryption algorithm.

When using the SaaS version, this feature is available through the purchase of Collaboration Hub licenses. If you are using the On-Premise Edition please read more about publishing in the chapter** Granting read access in the On Premise Edition** (page 110).

On Windows systems the tool **certutil** provides a possibility to manage, save and restore your certificates. It is installed per default and eases the installation of certificates for multiple users because you have to execute one command only.

You can use the tool via command line if you are logged into a Windows system.

1. Hit the keys **Windows key + R** on your keyboard and enter `cmd` into the text field. The command line interface opens.

2. Enter `certutil -?`. An overview of the command appears, which lists all possible parameters for the execution the tool in your system language.
Hint: If the command certutil cannot be found in your system please contact your system administrator. You may have not enough access rights to install certificates.

3. Now install the downloaded certificate on your system by entering following command into the command line:

```
certutil -f -user -p \[password\] -importpfx \[path to the certificate\]
```

Sample

```
certutil -f -user -p keEb52kl -importpfx C:\Documents and Settings\All Users\Documents\Signavio.p12
```

The parameters have different meanings:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>-f</td>
<td>If the certificate is already installed, it will be replaced.</td>
<td></td>
</tr>
<tr>
<td>-user</td>
<td>Import the certificate for the user who is currently logged in.</td>
<td></td>
</tr>
<tr>
<td>[password]</td>
<td>Indicates that the certificate is protected by a password.</td>
<td>keEb52kl</td>
</tr>
<tr>
<td>-importpfx</td>
<td>A PFX-file is supposed to be imported. Different certificate types can be imported with -addstore or -importcert.</td>
<td></td>
</tr>
</tbody>
</table>
| [path to the certificate] | The path to the certificate. This can either be a shared network resource or, if the certificate was sent by email, a private resource. | ...\Documents\...

Hint: Alternatively you can use the command ‘certutil -f -user -importpfx [path the certificate] Protect’ which prompts for the password after confirmation.

### 7.2.8 Configuring access to Collaboration Hub

Collaboration Hub users have the ability to read and comment on diagrams published to Collaboration Hub.
Collaboration Hub

Collaboration hub users are not only (or at least not exclusively) managed in the Explorer under Setup. To enable Hub users access to diagrams, Collaboration Hub has to be configured correspondingly. In addition, diagrams have to be published explicitly.

Access right management variants for Collaboration Hub users

Depending on your edition and integration variant of Collaboration Hub, the access configuration may vary:

- Since version 11.11.0, you can manage Collaboration Hub users in the same way you manage users of Process Manager (page 455) (username/password-based).

**Note:**

- If you acquired the Collaboration Hub before the release of version 11.11.0 (January 2018), you can request the activation of username/password-based Collaboration Hub licenses by contacting support@signavio.com. Then, you can revoke the certificate and send out email invites to the persons who should register for Collaboration Hub. In case you have configured authentication via LDAP or SAML, a manual activation and migration is not necessary.
- The username/password-based authentication mechanism also supports fine-grained access rights management (page 462) for Collaboration Hub users.

- You are using the Signavio On-Premise Edition without Active Directory integration: In this case, you only have to make sure that Hub users can access the URL <serverurl>/intra/portal (if necessary contact your administrator). Once a diagram has been published, all Hub users can access and comment on it.

- You are using the Signavio On-Premise Edition with Active Directory integration: In this case, you have to configure the Active Directory integration component. It is then necessary to configure read access to Collaboration Hub. Read more under Manage read access rights (page 619).

- You are using Signavio in combination with the Microsoft SharePoint integration component either as Software-as-a-Service or as On-Premise Edition: More information on SharePoint integration can be found here Microsoft SharePoint Integration (page 602).

- You are using Signavio as Software-as-a-Service and Collaboration Hub with certificate-based publishing: Hub users are able to access Collaboration Hub after having installed the safety certificate in their browsers. Please refer to the chapters Creating certificates (page 470), Installing the browser certificate (page 419) and Entering Collaboration Hub (page 708).

- You are using Signavio as Software-as-a-Service and Collaboration Hub with SAML 2.0-based authentication: Hub users can authenticate via a third-party account using a SAML (Security
Assertion Markup Language) SSO service. Read more under *Enabling single sign-on via SAML* (page 474).

Once Collaboration Hub is configured correctly, published diagrams are available to all Hub users with access rights.

A detailed description on how to publish diagrams is available under *Publishing diagrams* (page 119).

### 7.2.9 Enabling single sign-on via SAML

**Single sign-on**

**Single sign-on (SSO)** is a mechanism whereby a single user authentication and authorization permits access to all systems where a user has access permission, without the need to enter multiple passwords.

**Security Assertion Markup Language (SAML)** is a standard used for single sign-on (SSO) that enables authentication and authorization between a *service provider* (SP) and an *identity provider* (IdP). The service provider (e.g., Signavio) agrees to trust the identity provider to authenticate users. In return, the identity provider generates an authentication assertion indicating that a user has been authenticated.

Signavio distinguishes between an *IdP initiated* authentication and an *SP initiated* authentication. When using IdP initiated authentication, users have to *initially log in* at their identity provider for authentication. Following this they can access a service provider by navigating from the IdP to the SP, e.g., via a link or an internal application.

When using SP initiated authentication, users that want to access a SP service are *redirected automatically* to their IdP. They log in at the IdP, are authenticated, and are automatically redirected back to their service provider. Read more about *IdP initiated versus SP initiated SSO*.

**Note:** SSO via SAML is available for SaaS workspaces only. It is not available for on-premise customers.

**Note:** Only administrators have the rights to enable SSO via SAML for a workspace.

**An example of using SSO for SAML**

A workspace administrator enables SAML authentication (IdP or SP initiated) for a workspace, and sets up Google as an IdP in Signavio Process Manager. The administrator also sets up Signavio as a valid SP for the company’s Google organization account. The administrator might also set up a Google application that allows users to access this Signavio workspace more easily. Users can then log into this workspace either via the Google application or via username/password (unless disabled). Once logged in, users can share content either by copying the URL in the browser or via the sharing function. The link includes either the workspace or the specific diagram ID.

Users that are not logged in when trying to access the shared content will be redirected to the IdP (Google in this scenario) to ensure they are logged in with their Google account. Or they shall be prompted to do so. After successful authentication, users are automatically logged into their Signavio account and can access the content that was specifically shared with them.

There are two options available for using SAML for Signavio Process Manager and Signavio Collaboration Hub:

- Use SAML SSO and username/password
- Use SAML and enforce SSO (set up by *Signavio Customer Support*).

The access via username/password will is not available anymore.

---


**Note:** An alternative to SAML based authentication is the **API license**. You can purchase this license from your sales representative and have it enabled by Signavio Customer Support.26

All IdPs that implement SAML are supported, e.g.:

- Microsoft Active Directory Federation Services
- Microsoft Azure AD
- Google SSO
- SAP ID Service

In principle, take these steps to enable SSO via SAML:

1. Configure SSO from the identity provider side as described in *Configuring SSO for an identity provider (IdP)* (page 475).
2. Enable SSO via SAML as described in *Enabling SAML-based authentication* (page 475).
3. Optionally, request SSO enforcement for your workspace from Signavio Customer Support27.

**Configuring SSO for an identity provider (IdP)**

The first step in setting up SAML SSO, is to configure it from the identity provider side.

Regardless of your identity provider, you will need the appropriate service provider (Signavio) XML metadata - or parts of it - during configuration:

- Metadata for APAC (app-au.signavio.com): APAC metadata download.
- Metadata for EMEA (editor.signavio.com): EMEA metadata download.

If you require assistance, you may find articles in our knowledge base, if we have dealt with your particular IdP before:

- Configuration of Microsoft Azure AD28
- Configuration of Microsoft Active Directory Federation Services (ADFS)29

**Enabling SAML-based authentication**

1. Click **Setup > Manage Collaboration Hub authentication**.
2. Select **SAML 2.0 based authentication** from the drop-down list box.

---

26 https://www.signavio.com/welcome-to-signavio-support/
27 https://www.signavio.com/welcome-to-signavio-support/
28 https://confluence.signavio.com/x/ogV8AQ
29 https://confluence.signavio.com/x/6gGwAQ
3. Select **Enable SAML 2.0 authentication**. If you choose this option, users will be authenticated via IdP (IdP initiated).

4. Optionally, you can select the option **Allow service provider initiated authentication**. If you choose this option, users will be authenticated via SP (SP initiated).

5. Copy and paste the XML metadata provided by your IdP into the field **XML Metadata**.

6. Optionally, you may specify a **Logout URL**. After a successful logout, the user will be redirected to the website which is defined in this field. If no URL is specified, the user is automatically redirected to the Signavio login page.

7. Confirm your selection by clicking **Create/Update** and close the dialog.

**Granting access rights for users that log into Collaboration Hub**

**Note:** This only applies to workspaces where the provisioning feature is not applied. Read more about **Using the auto provisioning feature** (page 477).

After enabling SAML-based authentication for your workspace, you will need to configure access rights for Collaboration Hub users.

1. Under **Setup**, click **Manage users & access rights**.

2. Switch to the **Read access** tab. This tab is only available if SAML-based authentication was previously enabled.

**Note:** In the **Read access** tab you can define a list of users who are allowed to access specific folders. If you don't want to specify folder-based permissions and grant full access to all users of Collaboration Hub, select the checkbox **General access for all SAML users** and close the dialog.

3. To add folder-based rights for one or more users, select the corresponding folder and specify the user data in the input field in the bottom left area of the dialog. For each user, the list entry needs to follow the structure `email_address first_name last_name`. Create a new line for each user you add to the list.

4. Click **Add** and close the dialog.
Using the auto provisioning feature

**Note:** The auto provisioning feature is currently only available upon request at [Signavio Customer Support](https://www.signavio.com/welcome-to-signavio-support/).

The auto provisioning feature ensures user accounts are created automatically without the need for registration. Auto provisioning requires single sign-on be enforced. You have to request SSO enforcement for your workspace from [Signavio Customer Support](https://www.signavio.com/welcome-to-signavio-support/).

Access rights for users that are automatically provisioned can be set via **Setup > Manage users & access rights** in the **User groups** tab. Auto provisioned users have the rights granted to all default groups. These users can then be placed in other user groups to grant them wider access.

Additionally, when provisioning users from an external user management system via SAML, their first and last names are extracted from the SAML response attributes. New users are created from this information, while existing users are updated the next time they log in via SAML.

**SAML response attributes to be set correctly in your IdP configuration:**

1. email
2. first_name
3. last_name
4. Name ID

### 7.2.10 Managing access to Collaboration Hub for Active Directory services

This chapter describes how to manage access rights for Active Directory users and user groups on Collaboration Hub.

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30 [https://www.signavio.com/welcome-to-signavio-support/](https://www.signavio.com/welcome-to-signavio-support/)
31 [https://www.signavio.com/welcome-to-signavio-support/](https://www.signavio.com/welcome-to-signavio-support/)
Note: A prerequisite is that you have integrated Collaboration Hub with your Microsoft Active Directory. For an overview of authentication options to Collaboration Hub, see Configuring access to Collaboration Hub (page 472).

Modeling users with the corresponding permissions have the possibility to publish diagrams to the Collaboration Hub (page 396).

If you have purchased and configured the corresponding module, you can set read access permissions for diagrams published in Collaboration Hub based on users and user groups in a shared domain. Signavio uses the Windows network account list to give users access to Collaboration Hub with their Windows network access credentials.

**Active Directory integration options**

- When using Signavio’s Software-as-a-Service version, you can integrate Signavio with your Active Directory through a Microsoft SharePoint Connector (page 602).
- When using Signavio’s On Premise Edition, you can integrate Collaboration Hub with Active Directory with or without Microsoft SharePoint. For further details, please read the Administrator Manual.

**Managing read access to Collaboration Hub**

As a user of the publishing module, you are able to determine fine-grained access to Collaboration Hub. You allow other users to see diagrams as well as folders in your workspace.

**Hint:** Granting read access to a diagram in Collaboration Hub does not enable Hub users to open the diagram in other applications like the Editor or Explorer.

You can grant read access to users that are logged into your domain. It is also possible grant access rights to entire user groups.

To define read access, proceed as follows:

1. In the Signavio Explorer, click in the Setup menu the Manage users & access rights entry. The user management dialog opens.
2. Switch to the Read access tab.
3. Select a folder or diagram in the left navigation column. The dialog shows the access rights connected to the object and, if existent, the folder the right was inherited from.

4. Navigate to the folder or diagram. There are two ways to add access rights for a user:
   - Type in a user name by using the search functionality - as soon as you start typing, a drop down list with matching users appears. Select the user name.
   - Click the input field and select a user name from the drop down list. To navigate the sites, use the arrows below the list.

5. Click Add. The user can now be found in the list of granted access rights.

Read access will be established for the user.
Removing read access

Follow the first three steps in the paragraph above and continue as follows:

1. Select the user you want to remove the read access from.
2. Click **Remove** next to the user name:

   ![Read access for 'End-to-end process parts':](image)

<table>
<thead>
<tr>
<th>User/Group</th>
<th>Inherited from</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>H-VU_WN3X8-TESTDC1</td>
<td>Obtained - Example</td>
<td></td>
</tr>
<tr>
<td>LdapUser</td>
<td></td>
<td>Remove</td>
</tr>
<tr>
<td>LdapUser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   **Remove read access.**

   **Hint:** If you cannot see the **remove** option for a diagram or folder, the read access right was inherited from a parent folder. Navigate to this folder by clicking its name in the column **Inherited from**.

3. Confirm the action with **Yes**.

   ![Confirm the action.](image)

   **Confirm the action.**

   ![The user management dialog in the Explorer](image)
7.3 Configuring general properties

You can configure the general settings for all modelers by opening the Explorer and clicking **Setup - Edit general configuration**:

![Setup menu with general configuration option highlighted]

Open the general configuration settings.

**Hint:** At *Configuring Collaboration Hub* (page 489) you can access a detailed description of configuration of Collaboration Hub.

The configuration dialog is subdivided into four sections.

- **Explorer** (page 482)
- **Editor** (page 483)
- **Help settings** (page 484)
- **General settings** (page 484)
7.3.1 Explorer settings

Configure the explorer settings.

**Name of this workspace**  Sets the name that shows up in the workspace selection for users who are members of multiple workspaces. By default, the name is the name of the organization you entered when registering the workspace, plus workspace owner's full name in parentheses.

**Organization owning this workspace**  Sets the name of your organization, which is displayed in diagrams you create with QuickModel and in most reports.

**Enable private folder 'My documents' for every user**  Enables the folder 'My documents' additionally to the folder 'Shared documents' for every user. Read more about *Working with folders and diagrams* (page 41).

**Currency**  Defines the default currency used in the simulation tool and in different reports.
Automatic subscription  Lets you define whether and when commentators’ email addresses should be added to an email subscription that informs them about changes in the corresponding documents.

Table columns  Defines what information the Explorer's list view is displaying. More detailed instructions are available under working with folders (page 41).

7.3.2 Editor settings

Configure the Editor settings.

Color palette  Enables you to customize the colors of the color palette that is accessible in the Editor. To adjust a color, overwrite one of the default hexadecimal values in the palette and press enter to see the color preview change.

Enforcing matching dictionary item types  By default, Signavio enforces mappings between BPMN elements and Dictionary category entries, as recommended by BPMN.

When the check box is enabled, the following BPMN element types only references Dictionary entries in the corresponding categories:

- **IT system** elements reference entries in the IT Systems category
- **Data object** elements reference entries in the Documents category
- **Task** elements reference entries in the Activities category
- **Pool/Lane** elements reference entries in the Organizational Units or IT Systems categories

This preselection keeps Dictionary entry references consistent and prevents an unsuitable usage of Dictionary entry references. However, this restriction can be disabled by clearing the Enforce matching dictionary item types check box.
7.3.3 Help settings

Configure the help settings.

Here, you can (de)activate a set of help options that show news and tips about our software and link to further information about Business Process and Business Decision Management.

By default, all options are activated. You can also define custom help options that can for example link to sites in your intranet. You can define these settings separately for the Explorer and Collaboration Hub.

7.3.4 General settings

Configure the general settings.

Enable the upload of documents/pictures  If this check box is activated, users can upload documents and pictures to the workspace.
7.4 Configuring language settings for all users

The Editor allows you to define the different languages that diagrams can be translated into. Whenever a diagram is created or edited, you can e.g. translate labels of modeling elements and element documentation to each language that is defined in the workspace. Your readers will then have the option to choose the suitable language on their own.

**Important:** Visitors of Collaboration Hub also have the possibility to switch between languages that are defined in the workspace. However, in the Software-as-a-Service version of Signavio Process Manager, this is only possible if the publishing module for Microsoft® SharePoint® is licensed in your workspace.

Follow these steps to extend the language scope of your workspace:

1. Open the Explorer and click **Setup**, then **Define languages**.

![Screen shot of Explorer with setup option highlighted.]

*The 'define languages' menu entry in the Explorer's top drop-down menu.*

2. The configuration dialog opens.
The language settings section in the configuration dialog

3. Choose the languages you want to add to your workspace from the drop-down list:
Select German (Germany) as a second language for the workspace.

5. After choosing all languages required, you can now prioritize them via the move up link. The language on position 1 will be the default language of your workspace, i.e. it will be chosen as the standard language for all diagrams that will be created with those settings.
Change the language order for the workspace.

6. After finishing all configurations, click **Save**:

Save the language settings.
Languages that were defined for a workspace can be removed later on. To remove a language from your workspace, go to Language settings in the configuration dialog and click Remove next to the language that is supposed to be removed:

Remove a language from the workspace.

### 7.5 Configuring Collaboration Hub

You can configure Signavio Collaboration Hub to be the perfect fit to your organization’s requirements:

- You can adjust the design of Collaboration Hub according to your corporate identity.
- You can customize layout and display options. Most importantly, you can customize whether and under which conditions attributes should be displayed in Collaboration Hub. This way, Hub users can immediately see the attributes that matter.

For specific instructions on how to proceed with the configuration, read the following sections.

#### 7.5.1 General

You can change the configuration of Collaboration Hub by clicking **Setup - Edit Collaboration Hub configuration** in the Signavio Explorer.
The configuration entry for Collaboration Hub

The following configuration options are available:

**Welcome header**

Here, you can configure the text that is displayed as the headline of the Collaboration Hub's 'Home' page. If no text is configured, *Welcome to Collaboration Hub* is displayed instead. You can configure a text for each language you *activated in your workspace settings* (page 485).

![Welcome header configuration](image)

*Configure the welcome text of Collaboration Hub's 'Home' page.*

**Entry Point**

Whenever a user accesses the general Collaboration Hub URL, the diagram you set here will be displayed. If you activated the *home page*, this diagram will be displayed there. We recommend to reference a *value chain* diagram that represents your process landscape.

![Entry point configuration](image)

*Select a diagram as entry point.*

**Important:** Remember to choose a published diagram as entry point. If you choose an unpublished diagram, your colleagues will see either the Collaboration Hub home page or an error message, depending on if you have activated the *home page* or not.

**Enable Collaboration Hub Homepage**

If this box is activated, Collaboration Hub will display the *'Home' page* as entry page. It shows an entry diagram (if specified), it also gives you the option to search for key words amongst the published diagrams and supplies information about recent changes in published diagrams. The text that is provided in the *Description* attribute of the entry diagram will be displayed next to the diagram on the entry page. If this attribute is undefined, a default Signavio text will be displayed.

The *'Search' page* provides you with the option to search for diagrams, files and dictionary entries. It also displays information such as the item's description and when it was last published. This page is only available if the *'Home' page* is activated in the Collaboration Hub configuration dialog. If deactivated, a search panel will be available in Collaboration Hub's navigation panel.
Activate the ‘Home’ page as entry point of Collaboration Hub.

Show diagram path navigation

Select if you would like Collaboration Hub to display the breadcrumb panel/hierarchy path of a diagram for Hub users and in the Collaboration Hub preview.

Choose if you want Collaboration Hub users to see the breadcrumb panel.
If this option is activated but the diagram is not linked to a hierarchy, the diagram path will be displayed in the breadcrumb panel instead.

The breadcrumb panel in Collaboration Hub

Comments

Choose whether you want to allow users of Collaboration Hub to see and/or leave comments.

Configure the comment access options for Collaboration Hub users.
Overlays

Here you can choose which of the *attribute visualization layers* (page 516) should be available in Collaboration Hub.

Choose which overlays should be available in Collaboration Hub.

The settings from left to right are:

- **Visible by default**
  
  The overlay is displayed when a user opens Collaboration Hub. Users can hide the overlay by deactivating it via a drop down menu.

- **Hidden by default**
  
  The overlay is hidden when a user opens Collaboration Hub. Users can show the overlay by activating it via a drop down menu.

- **Always hidden**
  
  The overlay is always hidden. Collaboration Hub users can't activate it.

Folder overview

Configure the default settings for the folder tree on the left of the Collaboration Hub:

The folder tree at the left side of Collaboration Hub is expanded by default.

Dictionary information in the folder overview

Configure whether the dictionary should be accessible via the folder tree. The option *Neither categories nor search results* additionally prevents dictionary categories and items from showing up in the search results.
By default, the dictionary is visible in the folder tree.

Default language settings

You can set the application language for Collaboration Hub. If the setting is on Automatic, the program will adopt the language settings of your Signavio workspace or, if you are not signed in, your browser.

Setting the default language all users

7.5.2 Appearance

Template

Select the color template. Besides the Signavio signature theme, there are several other color templates available:
Configuring Collaboration Hub template.

Using your own company logo

You can use your own company logo instead of the Signavio logo in the top left of the Collaboration Hub window. The logo on the loading screen can also be adapted. To switch to your own logo, click the corresponding select file button, select the picture file in the corresponding menu and click OK.

Adapt the top-left logo.

Adapt the loading screen.

If you would like to reset the logo to the default Signavio design, simply click the reset button.

In both cases, please make sure that the file is either in PNG, JPG or GIF format and is no larger than 500KB in size.

Link behind the logo

Specify the URL that is opened when clicking the logo in Collaboration Hub:

Specify the link of the logo in Collaboration Hub.

Embedding mode

When activated, Collaboration Hub does not have a header and its folder overview is collapsed, if it is embedded into an iframe (for example as part of a Microsoft SharePoint Web Part).
Choose if you want to activate the embedding mode.

7.5.3 Attributes

Layout configuration

In this menu, you can select the configuration of the tabs on the top right side in Collaboration Hub.

---ATTRIBUTES

Layout Configuration:
Choose how the portal pages should be layed out.

Use custom configuration:
Please decide if you want to use a custom attribute configuration instead of the predefined one. Below, you can choose which attributes are visible in the portal.

**Multi-tab (diagram first)**
The diagram image, attributes (the **Overview** tab) and activities are kept in separate tabs. By default, the **Diagram** tab is open.

**Multi-tab (overview first)**
The diagram image, attributes (the **Overview** tab) and activities are kept in separate tabs. By default, the **Overview** tab is open.

**One pager**
The diagram image, attributes and activities appear on the same page. The tab menu is no longer visible

Attribute visibility

If the check box **Use custom configuration** is activated, you can configure the attributes that should be displayed in Collaboration Hub. The default configuration is documented in the table below the select menus.

For customizing the view, proceed as follows:

- Activate the check box **Use custom configuration**:

---Activate ‘Use custom configuration’

- Select the notation you want to configure:
Select a notation.

- Choose whether you want to configure **Diagram attributes** or **Element attributes**:

![Diagram Attributes vs. Element Attributes](image)

Choose ‘Diagramm attributes’ or ‘Element attributes’

- For each attribute, configure whether it should be **visible**, visible if a value is assigned (**visible if set**) or **invisible**:

![Attribute Visibility](image)

Configure the visibility status of each attribute.

- Configure the **Visibility of linking/linked diagrams**: If ‘Use Custom Configuration’ is activated in Collaboration Hub configuration dialog, you can set the attribute(s) **Linking Diagrams** and/or **Linked Diagrams** visible to have all diagrams that are linked or linking to the diagram open in Collaboration Hub listed in the corresponding section. These linking/linked attributes are defined on diagram level.

![Diagram Visibility](image)

*Click the linked/linking diagram to open it in Collaboration Hub.*
You can switch to one of the linked or linking diagrams from Collaboration Hub’s overview tab by clicking its name. Any Collaboration Hub user may, however, also be able to navigate through the process levels by use of the diagram path (if activated), *process level pyramid and the breadcrumb panel* (page 423) or linked subprocesses.

All changes to the look and configuration of Collaboration Hub will be available for your colleagues after their next login.

## 7.6 Managing approval workflows

**Hint:** You need administrator rights in your Signavio Process Manager workspace to enable, disable, and manage workflow sharing. The Software as a Service Edition (SaaS) also requires you to be the workspace administrator.

Signavio Process Manager enables you to define and manage approval workflows for publishing diagrams. Approval workflows route a diagram to a predefined list of people, who need to approve that the diagram is ready to be published. This enables your organization to ensure the quality of all diagrams published in the Collaboration Hub (page 489).

You can define approval workflows in Signavio Workflow Accelerator. To define approval workflows, you need to purchase licenses for Signavio Workflow Accelerator in addition to your Signavio Process Manager licenses.

To use the approval workflow feature, click **Setup**, then **Manage approval workflows** in the top drop-down menu of the Explorer.

### 7.6.1 Activating the approval workflow feature

If you opened the settings as explained above and if approval workflows are inactive a dialog opens for you to activate the feature. Activate the check box below the short introduction text and click **Activate**.
Activate the approval workflow feature.

Click **Next** to confirm and start configuring the approval workflow preferences:

The activation was successful.

Now, you can manage your approval workflows.

### 7.6.2 Configuring Approval Workflows

**Hint:** In order to effectively use approval workflows, you should restrict your user's rights to publish diagrams in the Collaboration Hub. Read more about access rights management in the section *Managing users and access rights* (page 455).

Now that the approval workflow feature is active, click **Setup**, then **Manage Approval Workflows** in the top drop-down menu of the Explorer in order to open the following configuration dialog:
The approval workflow configuration dialog

The dialog enables you to:

- **Open your workspace in Signavio Workflow Accelerator**
  
  Clicking the link will open your Signavio Workflow Accelerator workspace in a new browser tab, so you can manage your tasks and processes (approval workflows) there.

- **Manage approval workflows**
  
  All approval workflows defined in Signavio Workflow Accelerator (and the default approval workflow) are listed as links in this section. To edit an approval workflow (page 506), click the corresponding link.

- **Deactivate the approval workflow feature**
  
  In case you want to stop using the approval workflow feature, you can deactivate it (page 516).

- **Synchronize users with Signavio Workflow Accelerator**
  
  After you created new users in Signavio Process Manager, you need to synchronize Signavio Process Manager with Signavio Workflow Accelerator, so your new users can be included in your approval workflows. Click Synchronize users now to create a Signavio Workflow Accelerator account for all your Signavio Process Manager users who did not have a Signavio Workflow Accelerator account before.

  An alert will ask you to confirm the synchronization:

  ![Synchronize users with Workflow Accelerator](image)
  
  Confirm the synchronization.

**Important:** If your organization is using Signavio Workflow Accelerator for approval workflows in Signavio Process Manager, synchronizing the workspace will delete Signavio Workflow Accelerator...
users who have been previously deleted in Signavio Process Manager.

- **Synchronize configuration with Signavio Workflow Accelerator**

You only need to click this button if there are problems with the configuration between your Signavio Process Manager and Signavio Workflow Accelerator workspaces—if the tenant ID is missing in Signavio Workflow Accelerator, for example. Most of the time, the configuration updates itself automatically when changes are made. However, if you *do* need to manually fix the configuration, click **Synchronize configuration now** to trigger a synchronization of all diagram states, Process Manager URLs and the Process Manager tenant ID.

An alert will ask you to confirm the synchronization:

![Synchronize configuration with Workflow Accelerator](image)

Confirm the synchronization.

### 7.6.3 Access control for approval workflows

If the option **Use workflow access permissions** is enabled, permissions for processes set in Signavio Workflow Accelerator are used for approval workflows.

![Manage approval workflows](image)

‘Use workflow access permissions’ checkbox

**“Start process” permission and “See process” permission**

When an approval workflow is created or edited in Workflow Accelerator, it is possible to restrict who can see or start a process.
For details on how to set these permissions in Workflow Accelerator, see Access control. 

- If a user is permitted to see but not start an approval workflow, that workflow is visible as disabled in the drop-down list. In case this user still tries to start the approval workflow, an error message is shown.
- If a user is not permitted to see a workflow, the workflow won’t be listed.

**Important:** If you enable the option Use workflow access permissions, every user who wants to start an approval workflow needs a Workflow Accelerator account. If a user tries to start an approval workflow while not having an account for Workflow Accelerator, an error message is shown.

### 7.6.4 Diagram states

You can also edit the diagram states within an approval workflow.

The table in the Diagram states tab contains all states a diagram can be in. Icon and name of a state are displayed in the Signavio Explorer as soon as the state has been triggered for the corresponding diagram. If the check box Publish is activated, a diagram will be automatically published in Collaboration Hub after the corresponding status has been triggered (for this, it is, of course, necessary that your workspace has a Collaboration Hub).

Edit the states by clicking the corresponding table fields:

![Diagram states](image)

Edit the states a diagram can have within an approval workflows

**Hint:** The Reset expiration column is only relevant if you want to configure expiry frequencies for approvals (page 503).

Changes in state configuration (as well as the deletion or creation of new states) are automatically transferred to Workflow Accelerator and are instantly available when selecting states in the Workflow Accelerator workspace.

Click the + icon to add a new state:

32 [https://docs.signavio.com/userguide/workflow/en/access.html](https://docs.signavio.com/userguide/workflow/en/access.html)
Add a new state.

To delete a state, click the trash button next to the corresponding column and confirm the action:

Delete a state...

...and confirm the action.

You can assign diagram attributes for process participant roles. This enables you to define the roles of participants in processes within Signavio Process Manager. Signavio Workflow Accelerator, you can then assign approval tasks to these roles.

For example, the default approval workflow process is assigning the task **business approval** to the process owner role. This means that the **business approval** for a process is automatically assigned to the user whom you have defined as the process owner in the corresponding attribute.

### 7.6.5 Participants

Configure the **Participants** attributes in the **Participants** tab.

Here, you can assign diagram attributes to Signavio Workflow Accelerator roles. This requires the creation of corresponding attributes on BPMN diagram level in Signavio Process Manager. Read more about custom attributes in the chapter **Configuring notations and attributes** (page 533).

Assign the attributes and save the configuration.
When creating or editing a business process diagram, you can now add the email addresses of the corresponding participants to these attributes.

![Attributes (BPMN: Diagram)](image)

Define process participants.

**Important:** With this feature, you can only use the email addresses the corresponding users used to register themselves in Signavio Workflow Accelerator.

When configuring approval workflows in Signavio Workflow Accelerator (see *Creating and editing approval workflows* (page 506)), you can assign responsibilities to the different participants.

### 7.6.6 Approval Expiration

In this tab you can set **expiry dates** for diagram approvals. Expiry dates ensure your diagrams are regularly re-checked, for example to fulfill compliance rules.

![Open the ‘Approval Expiration’ tab](image)

By default, the expiry frequency is set to **Never**.

- To define one static expiry frequency for all diagrams, set the drop-down menu **Select how the timespan is determined** to **Fixed period**.
Define a static fixed frequency for all diagrams

Next, define the expiry frequency in the field **Number of months**. In our example, the system triggers a new approval workflow after twelve months.

- To define the expiry frequency per diagram, set **Select how the timespan is determined** to **Custom attribute (type: number)**. Next select the attribute you want to use to configure the frequency. To configure custom attributes, see *Configuring notations and attributes* (page 533).

Next, define the expiry frequency in the field **Fallback value if attribute not set**. This field serves as the default value if a diagram's expiry frequency attribute value is empty.

In our example, the approval workflow is automatically triggered again after twelve months.

To select the workflow you want the system to trigger once a diagram approval expires, you need to switch to the **Diagram states** tab. Here you can define the states that are considered as approvals in the **Reset expiration** column.
Select the states

**Hint:** To use both expiring and non-expiring approvals, set up a specific approval workflow that triggers only states that the expiry function doesn't regard as approved. For example, create the states **Approved (expires)** and **Approved (no expiry)**. Activate the check box **Reset expiration** only for **Approved (expires)**. Workflows triggering this state will expire, workflows triggering **Approved (no expiry)** won't.

### 7.6.7 Reapprovals

To schedule reapprovals, set an expiry period in the **Approval Expiration** tab and mark at least one of the diagram states in the **Diagram states** tab as **Reset expiration**.

**Existing approvals**

Existing approvals are affected by changing the **Approval Expiration** or the **Diagram state** configuration.

**Approval Expiration**  If you change the expiration timespan, the new expiration period is used to schedule the reapproval.

**Example:** If a diagram was approved two months ago and you set the reapproval period to one month, the reapproval workflow is triggered immediately.

**Diagram state**  If you change the diagram state that resets the expiration, reapprovals only depend on the new states. De-selected states are no longer considered for already initiated expiry periods. For the newly selected states, the expiry period is calculated from the time this state was reached.

**Example:** You have two diagram states, **approved** and **rejected**. So far, **approved** was activating the approval expiration, now you want to change the diagram state to **rejected**. As soon as the diagram
state is changed, the reapprovals linked to approved are discarded by the system. The system also searches for revisions with the state rejected and recalculates the expiry period, starting from the date the diagram was set to rejected. This means that changing the diagram state does not immediately trigger the reapproval workflow, and that it may take less than the complete timespan for the reapproval workflow to be triggered.

### 7.6.8 Creating and editing approval workflows

You can edit approval workflows and add further approval workflow processes.

To create or edit an approval workflow, click Setup - Manage Approval Workflows in the top drop-down menu of the Explorer and click either Open workspace in Signavio Workflow Accelerator or click a link to an existing approval workflow:

![Open workspace in Signavio Workflow Accelerator workspace](image)

In case you did not select a specific workflow, you are redirected to your Signavio Workflow Accelerator workspace. Go to the Processes tab to see all existing processes, including your approval workflows:

![The ‘Processes’ tab provides an overview over existing processes](image)

Now, select an approval workflow for editing it:

![JD Approval](image)

or click New process to create a new approval workflow:
We will now assume you created a new approval workflow, so we can guide you through all the details of creating approval workflows in Signavio Workflow Accelerator. You can also edit all options explained here the same way when opening an existing workflow.

Enter a name for the approval workflow and hit Enter:

Setting the workflow trigger

If you have a Signavio Workflow Accelerator stand-alone license, you need to define Signavio approval as the trigger for the process.

Set 'Signavio approval' as trigger

In case you are using Signavio Workflow Accelerator as part of Signavio Process Manager Enterprise Edition, the approval workflow trigger is set automatically.

Creating actions

Next, go to the Actions tab:
Here you can create actions for the approval workflow and link them with each other. To create the first process element, click the **Start event** button:

**Sales Approval Workflow**

Add a start event to the process canvas

**Changing states**

Click the **Signavio** drop down and select **Change state** to create a new Signavio Process Manager task:
Create a new task to be executed by Signavio Process Manager system.

Connect start event and task, label the task and select to which state the model should be changed by the trigger:

The task will change the diagram state to ‘in progress’.

The states can be defined in Signavio Process Manager (see Diagram states (page 501)). When the task has been executed in Signavio Workflow Accelerator, Process Manager will automatically set the diagram, for which the approval workflow is executed, into this state.

Creating and assigning user tasks

Use the interactive context menu to create the first user task and name the task:
Assign the task to one or several of your Signavio Editor & Decision Manager users by clicking the + button below the Assignment tab and selecting a user:

Alternatively, you can assign the task to one of the process participant roles. This is recommendable for most cases, as it eases approval workflow management when having several process owners and participants within the different processes.
Assign using a role

<table>
<thead>
<tr>
<th>No role</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Create a new role" /></td>
</tr>
<tr>
<td><img src="image" alt="Select role" /></td>
</tr>
<tr>
<td><img src="image" alt="Key Account Manager" /></td>
</tr>
</tbody>
</table>

Adding fields for additional information

In the Form tab you can add several fields providing information about the to-be-approved diagram:

![Add a field](image)

To edit the field's information, like label and initial value, click the corresponding field and edit it in the pop-up on the right:
Finally, a form for a user task could look like this:

![Example of a form for a user task](image)

**Adding exclusive gateways**

Now, add an **exclusive gateway** followed by two (or more) Signavio Process Manager **Change state**
tasks:
Add an exclusive gateway followed by Signavio Process Manager tasks.

**Defining task labels**

Define task labels as well as the state changes the tasks will trigger. If you want to end the workflow after these steps, add **end events**: 

The gateway represents a user decision, meaning the user executing the previous task can decide which of the following tasks should be triggered.

When clicking the gateway you can define the labels of the dialog that will be displayed to the executing user when the corresponding decision is to be made:
To define the outcome or the possible process flows, simply name the task following a decision:

Name the task.

The possible sequence flows have been defined.

Setting automatic decisions

Alternatively, gateways can be resolved automatically.
Here, you need to select **Automatic decision** and define the conditions for gateway resolution:

Gateways can be resolved automatically.

**Hint**: In our example, it does not make sense to resolve the gateway automatically. However, you can refer to the above illustration as a reference for automated gateway resolution in a similar case.

**Publishing the process**

You have now created your first custom approval workflow.

Click **Publish to run this process**:

Publish the workflow.

The new approval workflow can now be started from the Signavio Explorer.
7.6.9 Deactivating the approval workflow feature

In order to deactivate the approval workflow feature open the Explorer and go to Setup - Manage approval workflows.

Now, the approval workflow management dialog opens. Click Deactivate:

![Deactivate approval workflow dialog](image)

Confirm the deactivation:

![Confirm deactivation dialog](image)

7.7 Managing notations, attributes and the dictionary configuration

You can configure notations and create custom diagram attributes according to your specific needs. Moreover, you can customize dictionary categories and attributes in order to ensure consistency and enable easy re-use of objects throughout your process landscape.

7.7.1 Managing attribute visualization layers

Attribute visualization layers allow you to display attributes directly on the diagram canvas using different icons and colors. You can create and configure custom rules that define the state of each visualization layer. For example, you can create a rule, that tasks with costs higher than $15 will be marked with a red icon, tasks with costs between $10 and $15 with a yellow icon and tasks with costs lower than $10 with a green icon.

Attribute visualization layers can be configured and displayed for the following diagram types:

- BPMN diagrams
• Value chain diagrams
• ArchiMate diagrams
• Organization charts

You can visualize attributes of the following elements:
* Node elements of a diagram
* Linked subprocesses on linking elements. For that, define the attribute for the element type and set a value for the attribute on the linked subprocess.

You cannot visualize attributes for edge elements (paths).

To create a new visualization layer, click **Setup**, then **Manage attribute visualization** in the Signavio Explorer.

The following dialog opens:

You can now add new attribute visualization layers.

Click **Add new layer**:
A new layer will be created.

Subsequently, you can change the name and the icon that will be displayed in Process Manager.

Select an icon.

You can either select an icon or select Property value. When selecting Property value, instead of the icon the value of the corresponding attribute will be displayed.

When enabling the check box Show Details, the attributes that are used for calculating the respective rules will be displayed next to the visualization icon. This option is only available for layers an icon has been assigned to.

Every layer can contain several rule sets.

To configure the rules on how the icons will be displayed, click Define rules and then Add new rules:

Add a new rule.

Proceed with defining the color the rule set will be assigned to.

You can either select one of the predefined colors out of the paintbox or set the color using the corresponding hexadecimal code:
Now you need to configure the rule(s) that correspond to the color.
A rule consists of three parts: **Property**, **Relation** and **Value**:

- **Property** a **Cost & Resource Analysis Attribute** or a **Custom Attribute** can be selected from the drop down menu:

![Property Menu](image1)

- **Relation** drop down menu contains (depending on the type of the selected attribute) several relational operators and/or Boolean statements:

![Relation Menu](image2)

So in the example case, the rule states: Display the execution time highlighted in red in case it is longer than 5 minutes:

![Rule Configuration](image3)

*In this example, the execution time of tasks is highlighted in red if the execution takes longer than five minutes.*

In case you want to connect several rules with an **AND** operator, click the **points** icon:

![AND Operator](image4)

Afterwards you can add more rules:
In this example, the execution time of tasks is highlighted in yellow if it is between (inclusive) three AND five minutes.

To connect rules with an OR operator, you need to create a second rule set within the same layer, using the same color.

Displaying attribute visualization layers in the Editor

Once a layer is created, it can be displayed by clicking the corresponding button in the upper toolbar of the Editor. Once you create a new layer, a new button that represents it will appear in the upper toolbar:

Activate one or more visualization layers.

It is possible to display more than one layer at once.

Now icons (or the corresponding attributes properties) will appear next to the tasks in the diagram and provide you with an overview over the attribute properties:

Visualize attribute properties.
Displaying attribute visualization layers in Collaboration Hub

In order to display visualization layers in Collaboration Hub, open Collaboration Hub, go to **Overlays** in the top toolbar and select the corresponding layer:

Select one or more visualization layers.

Elements to which the visualization layer's rule sets apply, will now be highlighted.

To display the attribute value, hover over corresponding symbol:

All elements to which the visualization layer's rule sets apply will be highlighted.

7.7.2 Managing modeling conventions

**Note:** This feature is available in the **Enterprise Edition**.

The **modeling convention** feature enables users to check if diagrams stick to certain rules regarding notation/(BPMN-language), labeling, process structure and diagram layout. This check can be displayed while modeling (or saving). Additionally, a modeling conventions report can be generated. The **Classic**

To manage modeling conventions in your work space you need to be a member of the Administrators group.

If you want to know more about working with modeling conventions, go to the corresponding chapter (page 203).

To access the modeling convention dialog open the Signavio Explorer and click Setup, then Define modeling conventions in the top drop-down menu.

The following dialog will pop up:

![Modeling Convention Dialog]

In this dialog you can manage the existing modeling conventions and create new ones.

This dialog offers an overview over the existing modeling conventions. Furthermore conventions can be (de-)activated:

- Globally for the whole work space
- And specifically, the check button in the Editor and the auto-check in the save dialog

Defining custom modeling rules and conventions

**Note:** This feature is available in the Enterprise Edition.

In addition to the Signavio Best Practice modeling convention, it is possible to define custom modeling rules and conventions, that fit exactly to your needs.

Custom rules can be defined to complement already existing modeling conventions, whereas defining a new convention means creating a customized set of rules, either from scratch or derived from an existing convention.
If you want to create a whole new modeling convention, select **Add custom modeling convention** in the upper right corner of the dialog:

![Add custom modeling convention](image)

Now you can choose between creating a new convention from the beginning or copying an existing convention:

![Create new convention dialog](image)

Afterwards, the new convention shows up as a new column in the convention table and you can now configure it by activating rules and adjusting the importance of rules and other parameters:
The new modeling convention is saved after closing the dialog and is now included in the convention checks if activated (default setting).

To add a custom rule, click **Add new custom rule** in the corresponding section of the convention's table:

![Add new custom rule dialog](image)

A dialog will appear. Here you can insert the name and description of your new custom rule:

![Add new custom rule](image)

Create a custom rule

After clicking **Create**, the new rule appears in the modeling convention dialog, where it can be edited by clicking on the small pen-icon:

![Custom rule in model](image)

Important: These custom rules cannot be checked automatically by our system. They need to be checked manually.

In addition to creating this kind of custom rules, you can define custom mandatory attributes. If a process diagram contains empty mandatory attributes, this will be reported by the modeling convention check.

To define mandatory attributes within an existing modeling convention, open the modeling convention dialog and click **Add new rule** under **2.2 Definition of mandatory attributes**:

![Add new rule](image)

In the following dialog, you can now select the attributes you want to be mandatory:
Select the attributes you want to be mandatory.

After saving the configuration, the attribute set will be added to the modeling convention table.

To change the selection of mandatory attributes or to delete the mandatory attribute set, click the small pen icon.

### 7.7.3 Managing risks and controls (deprecated)

**Note:** This feature is available in the **Enterprise Edition**.

**Important:** This article describes the deprecated basic version of the risks and controls feature. An extended new feature that allows you to customize risk and control tables and to manage risks and controls in the Dictionary is also available. We recommend to use the new feature, since the outdated version will not be supported in the long term. Read more about **Managing risks and controls definitions** (page 531).
With Signavio’s integrated risk management feature, process modelers can define risks and controls directly at any process step during modeling. These risks and controls can be defined and associated with the corresponding activities. For easy identification, they can also be highlighted in a graphical representation.

Creating custom attributes to manage risks and controls

In order to define risks and controls for certain process elements you need to create a custom attribute of the type *Risks and controls*:

1. Go to **Setup**, then **Define notations/attributes** in the top drop-down menu of the Signavio Explorer.

   ![Add custom attribute](image)

   *Adding the attribute ‘Risks and Controls’*

2. Click on the desired modeling language/diagram type on the left, then choose the element in the middle column, for example a **Task** in a **Business Process Diagram (BPMN 2.0)**.

   **Attention** The (un-)checked boxes only define whether the elements are activated for the selected modeling language set or not. You choose language and element by highlighting (clicking) their name.

3. Click the **Add** button to add custom attribute of the type **Risk and Controls**:  

   ![Add custom attribute](image)
Create a custom attribute of the type Risk and Controls for the process element ‘Task’.

Create such an attribute for all kind of process elements you want to manage risks for. Now you can continue and define risks and controls in process diagrams.

Defining and managing risks and controls in the diagram

1. To define risks and controls for certain process elements, open the desired diagram and select the process element you want to manage the risks for.
   If not open already, open the attribute drawer on the right.
2. Then select the attribute that was created to manage risks and controls, for example Risks and controls:

   ![Image of process element with attributes]

   Select a task and open the risk table.

   Now you see a table like this (the table can be customized on request, see below):

   ![Image of risk table]

   Create a new risk.

3. Click the plus symbol to add a new risk and fill in the fields:

   ![Image of risk addition]

   Name the risk and fill out the other fields

4. When selecting the Controls field, a second table will pop up. In this table you can fill in one or multiple controls for the corresponding risk:
Adding a new control and assigning it to the risk

The following lists explain the attributes of the default risk and controls tables:

**Risks:**

- Risk: Descriptive label of the risk entry, e.g. ‘Contract contains wrong numbers’
- Controls: Table with control measures for the risk, see below
- Cause: Brief description of the cause of the risk, e.g. ‘Miscalculation’
- Consequence: Brief description of the risk’s consequence ‘Financial damage due to incorrect contract terms’
- Risk probability (without controls): Assessment of the chance that the **uncontrolled** risk occurs, e.g. ‘High’
- Extent of damage (without controls): Assessment of the occurring damage, given that the **uncontrolled** risk occurs, e.g. ‘High’
- Risk probability (residual risk): Assessment of the chance that the **controlled** risk occurs, e.g. ‘Low’
- Extent of damage (residual risk): Assessment of the occurring damage, given that the **controlled** risk occurs, e.g. ‘High’

**Controls:**

- Control: Descriptive label of the control, e.g. ‘Review terms and corresponding calculation’
- Control aim: Brief description of the control aim, e.g. ‘Prevent miscalculations’
- Type of control: Categorization of the type of control, e.g. ‘Review’
- Documentation: A detailed description of how to perform the control
- Responsible: The person or role in charge of the control, e.g. ‘Sales Manager’
- Control frequency: The frequency of control performance, e.g. relative to process runs: ‘100%’
- Status: The implementation status of the control, e.g. ‘As-Is’
- When you finished defining risks and controls click **Apply** to go back to the diagram itself. Please make sure to save the diagram before you close the tab.
- To gain an overview over the risks you can now click the risk and control button in the top panel:
Display risks and highlight uncovered risks with a red fire icon.

Displaying risks and controls in Collaboration Hub

In order to display risks and controls in Collaboration Hub, open Collaboration Hub and go to **Overlays** - **Risks and Controls** in the **Diagram** tab:

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Process Attributes</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Process Attributes" /></td>
<td><img src="image" alt="Activities" /></td>
</tr>
</tbody>
</table>

- **Overlays (2 active)**
- **Linked documents**
- **Risks and Controls**
- **Comments**
Elements to which risks have been assigned will now be highlighted.

If there is no control assigned to an existing risk, you will see the red Fire icon. Otherwise, the green Checked symbol will be displayed.

To display details of a risk, select the corresponding element:

Display risk details. To expand/collapse details click the plus/minus symbol.

Creating risks and control reports

Signavio enables you to create XLS risks and control reports. You find more information at Generating risks management reports (page 76).

Customize the risks and controls tables

Signavio offers customization of the risks and controls tables.

In order to implement such a customization, we need the following data for each column in the risks and the controls table:

- Name (heading)
- Default content and/or drop-down values, if necessary. Note: You can define default values for drop-down boxes.
- The type of content (multi-line text, number, Boolean or drop-down box)

In case you want to use customized risks and controls tables, you can order a customized risks and controls feature through our support team. For this, or if you have further questions, please contact our support team at:

Email: support@signavio.com
Phone: +49 (0) 30-856 21 54-21
7.7.4 Managing risks and controls definitions

With the centralized risks and controls management feature you can configure custom risks and controls data types and manage risk and control objects in the Dictionary.

In this way, you can ensure your risks and controls are consistent throughout your process landscape and facilitate re-use of those already defined.

To configure the risks and controls settings in your workspace, proceed as follows:

**Create dictionary categories for risks and controls.**

1. In the Explorer, click **Setup – Define notations/attributes**:

   ![The notation and attributes settings.](image)

2. Switch to the **Dictionary** tab and create two new categories; one for risks…
Create a risk category.

... and one for controls.

Create a control category.

3. Set the type of the category respectively to Risks/Controls. To customize your risks and controls definition, add additional attributes to these categories. The attributes resemble the table headers
in your risks or controls tables, for example severity, control interval, or responsibility.

**Note:** Note that the Collaboration Hub (page 396) only supports the following custom attribute types in risk management tables:

- Single line text
- Drop-down box
- Number

Custom attributes of other types won’t be displayed in risk management tables in Collaboration Hub.

**Configure ‘Risk Management’ element attributes.**

1. In the same dialog, switch to the Modeling Language tab and create a custom Risk Management attribute.

2. When configuring the attribute, reference the newly created Risk and Control categories.

3. Now you can start to define risk and controls (page 273) for diagrams in your process landscape.

### 7.7.5 Configuring notations and attributes

You can configure which diagram types and diagram elements modelers can use in your workspace and which properties diagram elements have.

Users need to be members of the **Administrators** group to change these settings. For more information on user groups, see: **User Groups** (page 459).
To edit the notation and attribute settings, open the Explorer and click **Setup - Define notations/attributes**:  

You can define subsets for each diagram type and enable/disable diagram elements in these subsets. In addition, it is possible to define custom attributes for diagram elements.

**Defining a notation element subset**

Follow these steps to define a custom subset:

1. Select the modeling language you want to define a subset for:
Add a new subset for BPMN 2.0 diagrams.

2. Click **Add subset**.

3. Enter the subset's name. Activate the checkbox **Group diagram element types** if the shape repository in the Editor should list the diagram elements grouped by type. Click **Save**:

Create a subset.

4. The subset will be displayed in the left column of the dialog.
A new subset has been created.

5. You can deactivate diagram elements for the subset in the central column by deactivating the corresponding checkboxes. By default, every element is activated. When you create small subsets, it's easier to deselect all elements by clicking Uncheck all and then add all elements you need:

![Diagram element types]

Deselect all diagram elements by clicking ‘Uncheck all’.

![Diagram element types]

Deactivate elements you want to exclude from the subset.

Copying a subset

Besides creating new subsets you also have the possibility to duplicate subsets and extend them afterwards.

1. Select the subset you want to duplicate.
2. Click Copy subset in the head of the Modeling languages column.
Copy a subset.

3. You can now activate or deactivate additional diagram elements of the subset in the central column by (un)checking the respective boxes.

Editing/removing a subset

It is not possible to edit or remove default subsets. However, you can edit or remove custom subsets. To edit/remove a subset, proceed as follows:

1. Select the subset you want to edit/delete.
2. Click **Edit subset**:

   ![Modeling language](image)

   *Edit a subset.*

   You can now edit the subset name and change the element grouping preferences.

   If you want to delete the subset click **Remove subset** and confirm the process by clicking **Yes** in the confirmation dialog.
Defining custom attributes

You can define custom attributes for diagram elements and dictionary categories. These attributes work in the same way as the attributes that exist in a modeling notation by default and can also be displayed in Collaboration Hub.

To create a custom attribute, proceed as follows:

1. Select a diagram type or a dictionary category.
2. Select the diagram element or category you want to add an attribute for. Press Shift or Ctrl to select more than one element/category.
3. Click Add.

Add a custom attribute.

4. Decide whether you want to create a new custom attribute or reuse an attribute you already added to a different diagram element or dictionary category.

5. To reuse a custom attribute, select it from the dropdown list:
Reuse an existing attribute.

To create a new attribute, enter a name and a description for the custom attribute. You can enter a name and description for every language you have activated in your workspaces. Choose the data type for the attribute between single-line text, multi-line text, dictionary link, date, number, dropdown box, link/URL, Boolean, diagram link and table. You can create most of those types as list attributes by activating the checkbox As list.
Configure a new attribute.

**Note:** After creating a custom attribute, you cannot edit its data type and its ‘As list’ option any more.

6. Click **Create**.

Configuring custom date attributes

You have the option of customizing the date attribute in Signavio Process Manager. Doing so allows you to decide in what format the timestamp is displayed on diagrams, tasks, and dictionary categories. By default, the format is `m/d/Y` (e.g., 09/01/2017).

Some of the most useful format options are:

- **j**: current day of the month, without zeroes (e.g., 1)
- **d**: current day of the month, with zeros (e.g., 01)
- **D**: abbreviated day of the week (e.g., Wed)
- **l**: full day of the week (e.g., Wednesday)
- **F**: current month name (e.g., February)
- **M**: abbreviated current month name (e.g., Feb)
- **n**: current month in numerals without leading zeroes (e.g., 2)
- **y**: current month in numbers with leading zeroes, (e.g. 02)
- **Y**: current year, in two digits (e.g., 18)
- **Y**: current year, in four digits (e.g., 2018)
- **a**: lowercase am and pm
- **A**: uppercase AM and PM
- **g**: 12 hour format without leading zeroes
- **h**: 12 hour format with leading zeroes
- **G**: 24 hour format without leading zeroes
- **H**: 24 hour format with leading zeroes
- **i**: minutes, with leading zeroes (e.g., 05)
- **s**: seconds, with leading zeroes

Using the date of Friday, September 1st, 2017 at 3:05 pm as our example, here are some sample formats:

- **y-m-d** will be displayed as 17-09-01
- **y/m/d** will be displayed as 17/09/01
- **F j, Y** will be displayed as September 1, 2017
- **g:i:s A** will be displayed as 3:05:00 PM
- **l, F d, Y g:i:s A** will be displayed as Friday, September 01, 2017 3:05:00 PM
- **F j, Y, g:i a** will be displayed as September 1, 2017, 3:05 pm
Changing the order of custom attributes

In case there have been several custom attributes created for one diagram element type, you can define their order.

Simply select the respective attribute and use the arrow buttons to move it up or down.

![Custom attributes](image)

*Change the order of custom attributes.*

Viewing custom defined attributes for diagram elements

Proceed as follows to view information about attributes that are already defined for an element type:

1. Select the diagram type.
2. Select the diagram element of which you want to show the attributes. It is possible to select multiple elements using the Shift or Ctrl key.
3. The attributes are shown in the right column of the dialog. If you selected more than one element, only those attributes which were defined for all of the selected elements are shown.
4. Select one of the attributes.
5. At the bottom of the right column you can see details about the selected attributes.
Select a custom attribute.

Editing custom defined attributes

Select an attribute and click **Edit attribute**, to change its information:

*Edit the custom attribute 'Additional Information'.*

The **Edit attribute** dialog shown above will open. Here you can edit the attribute name and description, but not the data type.

Removing custom attributes from an element

Proceed as follows to remove a custom attribute from an element:

1. Select a diagram type.
2. Select the diagram element you want to remove the attribute from. You can also select more than one element.
3. Choose the attribute you want to delete. If you selected more than one element, only attributes they have in common are displayed.

4. Click **Remove attribute**.

5. Confirm by clicking **Yes** in the confirmation dialog. If the attribute is found in other diagram elements as well, you can choose whether you want to delete it from all elements or just from the one currently selected.

---

### Defining default colors and font formats for element types

You can define custom default shape & font formats for element types. These formatting attributes are defined for all notation subsets - if you change, for example, the background color of the task element, the system alters all BPMN subsets accordingly. Of course, you can still overwrite these settings when formatting an Element in the Editor as described in the chapter **Formatting Elements** (page 181).

The following default formatting options are available:

- **Font size**  
  *Default:* 12

- **Font bold**  
  *Default:* False

- **Font italic**  
  *Default:* False

- **Font color**  
  *Default:* #000000 (black)

- **Background color**  
  *Default:* #fffc (yellow)

- **Border color**  
  *Default:* #000000 (black)

- **Solid color (no gradient)**  
  *Default:* False

Proceed as follows to change the default format of an element:

1. You can change the default format settings in the **Modeling Languages** tab of the notations/attributes configuration dialog:

2. Switch to the **Default Formats** tab and select an element type. In our example, we want to highlight the labels of all collapsed subprocesses of your BPMN diagrams in pink by default:
Select the element you want to define the default format for and switch to the 'Default formats' tab.

3. Select the setting you want to adjust and click Edit or double click the setting - in our case **Font color**:

Click ‘Edit’.

4. Adjust the settings accordingly. Here, we use the drop-down menu to select the color of our choice or insert the respective hexadecimal value:

*Pick a color of your choice. You can also insert the corresponding hexadecimal value.*
5. Click **Apply** to save the changes. All existing elements of the corresponding type in the diagrams of your workspace will now be adjusted. Process Manager will use the changed format for new diagrams as well.

When opening a diagram containing one or more corresponding elements, an information dialog will pop up, informing you that the elements have been changed:

![Image showing a dialog with the message: The default formats of some elements have changed since the last time the diagram has been edited. The new default formats have been applied automatically. You can revert these changes with "undo".]

Press **Ctrl + Z** or click the **Undo** button in case you want to revert the changes.

### 7.7.6  Defining custom categories for dictionary entries

**Note:** This feature is only available for customers with an **Enterprise** license.

You can define attributes for dictionary entries, just as you can define them for diagrams. You can also define **custom dictionary (sub-) categories**.

**Hint:** Please consider the section **Dictionary Access Rights** (page 462) to learn more about this topic.

#### Category types

Category types have two purposes:

- They are used by the system when creating reports (e.g., RACI, document usage or process documentation reports) in order to identify objects of a certain category.
- They act as filters when dictionary references are suggested while modeling in the Signavio Editor. For example, dictionary entries of the type ‘IT System’ are only suggested when the user attempts to label an IT System element. Entries that are **not defined** (not attached to any element type) will be suggested for any element.

Category types can be defined for both root level categories and child categories. Available category types are:

- **Organization** Organizational entities, that can be used to assign responsibilities for actions. Examples would be whole organizations (e.g. ‘ACME Inc.’), organizational units or departments (e.g. ‘Finance’), roles (e.g. ‘Chief Financial Officer’) or even external process participants like partners, suppliers, government institutions or customers.
- **Document** Anything that can hold information and that is used or created during processes. This may be physical documents (e.g. printed applications), digital files (e.g. PDF forms), entries in databases or variables in a computer program.
- **IT-System** Anything that can process documents or data, from standard software programs, individualized applications and custom scripts to hardware systems, like individual server instances, data centers and hand-held devices, to integrated systems like fully-configured application servers, scanners, printers or personal computers.
• **Event** Anything that can trigger a process, happen during execution or as the result of a process. Events are usually described by defining the situation or state reached once the event has occurred, e.g. “Customer order received” or “Goods sent”.

• **Activity**  Actions that are performed within processes. Actions usually connect all other types of objects: they are performed by organizational units or roles, may read and create documents or data, may use IT-systems, may cause events and should usually achieve certain goals.

• **Goal**  The reasons behind why processes are executed at all and why they are designed the way they are: business goals to be achieved, key performance indicators to be met or stakeholders to be satisfied.

• **Requirement**  Typically descriptions of the differences between as-is and to-be processes or IT-systems, e.g. change requests, functional or non-functional specifications or tickets in a requirements management system.

• **Others**  Categories with this type have no defined meaning attached to them and will thus be recommended to users for diagram elements that do not match more specific types. One example is the BPMN **group** element.

**Creating a new category**

To create dictionary categories, proceed as follows:

1. Click **Setup**, then **Define notations/attributes** in the top dropdown menu of the Signavio Explorer.

2. Click the **Dictionary** tab on the top bar of the dialog. The area to configure the dictionary attributes opens. All categories are listed on the left side of the dialog.

3. If you want to create a sub-category, select first the parent category.
**Hint:** Please note that sub-categories can't be parent category of other categories, therefore a category path is always one or two levels deep.

4. Click **Add**. In the corresponding dialog box, perform the following settings:
<table>
<thead>
<tr>
<th>Preference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Specify a name for the category (mandatory)</td>
</tr>
<tr>
<td>Parent category</td>
<td>Specify the parent category via the dropdown menu.</td>
</tr>
<tr>
<td>Use for data modelling</td>
<td>Activate the checkbox if you want to use the category for DMN input data (see Managing input/output data for DMN diagrams in the dictionary (page 554)).</td>
</tr>
<tr>
<td>Publishing mode</td>
<td>Determines whether (new revisions of) dictionary entries should be published in Collaboration Hub manually or automatically upon creation.</td>
</tr>
<tr>
<td></td>
<td>• manually: an updated dictionary entry has to be explicitly published before the most recent version is displayed in Collaboration Hub. This enables strict quality assurance (see also Publishing dictionary entries (page 442)).</td>
</tr>
<tr>
<td></td>
<td>• automatically: a new dictionary entry (update) is displayed in Collaboration Hub as soon as the entry is saved.</td>
</tr>
<tr>
<td>Note:</td>
<td>After enabling manual publishing, you need to explicitly grant users the right to publish dictionary entries, as described at Managing access rights (page 462).</td>
</tr>
<tr>
<td></td>
<td>On change, linking diagrams are</td>
</tr>
<tr>
<td></td>
<td>• updated automatically: diagrams referencing dictionary entries of the corresponding category are updated automatically upon changes.</td>
</tr>
<tr>
<td></td>
<td>• unpublished: the changes can be approved manually. You can control whether the updated dictionary entry is still matching the context of the referencing diagrams.</td>
</tr>
<tr>
<td>Color</td>
<td>Select a color for the category.</td>
</tr>
<tr>
<td>Typ of category</td>
<td>Select a category type.</td>
</tr>
</tbody>
</table>

5. Finally, click Create. The new category is applied.
6. To edit, remove or rearrange categories, select the appropriate entry in the category bar.
7. Click the corresponding icon in the toolbar.
8. To deactivate a custom category, uncheck the respective checkbox between the category’s color and it’s name.

Managing custom attributes for dictionary entries You can manage custom attributes of dictionary categories in the same way you manage custom attributes of elements. Read more at Defining custom attributes (page 538).

7.7.7 Managing external data sources

Important: The external data sources interface for DMN data objects is available for your On Premise installation on request. In case you want to activate the interface, please contact the Signavio Support Team by email at support@signavio.com.

In the Signavio Decision Manager, you can use to define the data types of input columns in DMN model decision tables.

For the data types string lists (enumerations) and hierarchies, you can set up external services to retrieve corresponding data objects.

This section explains the implementation and configuration of such a service.

Architecture

The following diagram shows the system architecture of the external data source interface:
The architecture of the external data source integration service

The component on the left represents the Signavio system. The right part of the diagram represents a third-party service with access to the to-be transferred data. It may contain a bridging application that reformats third party data so the Signavio Decision Manager can read it.

There are two options to set up a service so that third party data can be accessed by the Signavio Decision Manager.

The options are represented by the two outgoing request/response channels in the diagram.

- **Direct access**: For this, the service URL defined in the Signavio Decision Manager has to be accessible via HTTP(S) GET requests. The service response needs to match the Signavio data format. See how to match the format below (page 550).

- **The Range Accessor Service**: Signavio offers a reference web application that can either be used as an adapter to map data from existing services or to build up an entirely independent data service. To use this web app provided by Signavio, you need to calibrate Signavio accordingly. Read more at how to implement the Range Accessor Service (page 551).

**Direct Third Party Access: Data Format**

The Signavio system needs the response of an external service request to comply to the following JSON structure:

```json
<response> ::= <enumResponse> | <hierarchyResponse> | [<enumItem>]*
<enumResponse> ::= { type: "enumeration", enumItems: [<enumItem>]* }
<enumItem> ::= { id:<String>, title:<String> }
<hierarchyResponse> ::= { type: "hierarchy", hierarchyItems: [<hierarchyItem>]* }
<hierarchyItem> ::= { id:<String>, title:<String>, children: [<hierarchyItem>]* }
```
The response is either declared as an enumeration or hierarchy and contains a type definition and items.

The following examples serve as references for the data structures necessary.

**Example enumeration:**

```json
{  
  type: "enumeration",  
  enumItems: [  
    {id:"firstPlace", title:"Gold medal"},  
    {id:"secondPlace", title:"Silver medal"},  
    {id:"thirdPlace", title:"Bronze medal"}  
  ]
}
```

The enumeration response is a JSON object with a type declaration and a JSON array of enumeration items. Each item is a JSON object with the mandatory attributes **id** and **title**. Any other attributes will be ignored.

**Example hierarchy:**

```json
{  
  type: "hierarchy",  
  hierarchyItems: [{  
    id: "am",  
    title: "America"  
  }, {  
    id: "eu",  
    title: "Europe",  
    children: [{  
      id: "uk",  
      title: "United Kingdom"  
    }, {  
      id: "de",  
      title: "Germany",  
      children: [{  
        id: "berlin",  
        title: "Berlin"  
      }]  
    }, {  
      id: "fr",  
      title: "France"  
    }]  
  }, {  
    id: "as",  
    title: "Asia"  
  }]
}
```

The hierarchy response is a JSON object with a type declaration and an array of hierarchy items. Each item is an object with the mandatory attributes **id** and **title** attribute and the optional attribute **children**. **children** is an array having the same format as hierarchy items. Any other attributes will be ignored.

**Important:** The **id** value must not contain any whitespace characters and the value of the **title** attribute has to start with an alphabet letter.

**Range Accessor Service**

Signavio offers a reference web application that can either be used as an adapter to map data from existing services or to build up an entirely independent data service.
To use this service, extend the `AbstractExternalValueRange` class (using a non-abstract class) and dispatch the `RangeServingServlet`. This can facilitate the reuse of an existing service. The service can be called and the data can be mapped to the specified data format.

In either way, the output has to comply with the data format as specified above. The sample web app `Signavio Range Accessor Service` contains (among others) the following files and folders (packages) of interest:

- `RangeServingServlet.java` (com/signavio/rangeservice/servlet)
- `AbstractExternalValueRange.java` (com/signavio/rangeservice/conversion/)
- `public byte[] getValues(HttpServletRequest req) throws JsonProcessingException {...}`.

The subclasses in the example subpackage serve as simple examples of service implementations for enumeration and hierarchy providers.

- `AbstractRangeExchange.java` (com/signavio/rangeservice/util/exchange/)

**Important:** No other files, folders and jar files should be changed, deleted or moved to ensure proper functionality. Some of them are only of interest at compile time, some at runtime.

### Creating external data sources

To make use of an external service, it has to be registered in the corresponding Signavio workspace. Open the Signavion Explorer and click **Setup - Define notations/attributes** in thethe Signavio Explorer and choose the **Dictionary** configuration tab, then click the link in the explanatory header text:

*Click the link to open the management dialog for external data sources.*

Now, click **Add**:
Click 'Add' to register a new service.

A service consists of a name, a unique URL and a caching configuration:

- **Name**
  
  The name is used as the identifier in the Signavio dictionary.

- **URL**
  
  This is the service URL accessible by an HTTP GET request responding with data in the Signavio data format (page 550) as specified above.

- **Cache**
  
  It is possible to cache the data temporarily. If activated and configured, the referenced service will not be queried for the caching period, as the system will use the cached values.

  It is highly recommended to activate caching. Otherwise, the service data will be newly requested each time the dictionary entry is loaded. Without caching, if the service is temporarily unavailable, the request the Signavio Decision Manager is making to the service will timeout and the data will be unavailable until the request is answered.

Click **Add** to register the service:

To learn how to reference external services when modeling data objects in the Dictionary, read more at Referencing external data sources (page 444).
7.7.8  Managing input- and output data for DMN Data Input elements

The Signavio Dictionary enables you to manage the objects of your business process landscape. A detailed description of the Signavio dictionary can be found under Terms management with the Dictionary (page 428).

Specifically for DMN, the Dictionary implements extended functionality for the management of input data and output objects.

In order to enable input/output data management with the dictionary, open the Signavio Explorer and click Setup, then Define notations/attributes in the top drop-down menu.

Open the notation/attribute management dialog.

Switch to the Dictionary tab and create a new category (click Add category). The category needs to have the check box Use for data modeling activated (you can also activate this check box when editing an existing category):

Add a new category and activate the check box ‘Use for data modeling’.

Now you can create data input/output objects in the Dictionary.

In order to do so, open the Dictionary (the last item in the Explorer’s folder tree):
Open the Dictionary.

In the dictionary, select a category that supports data modeling and click **New entry**:

Select a dictionary category and click ‘New entry’.

In the following dialog, you can label and describe the data object:
It is important to define the **Type Definition** of the data input:

**Choose the type definition.**

- A **Simple Type** can be an enumeration of values, plain text, a number or a Boolean value:

**a ‘Simple Type’ definition**
• **Complex Type** allows you to reference one or several dictionary items and to add simple data types like plain text, numbers, Booleans or enumerations.

To reference a dictionary item, fill in a label for the reference, start typing the entry’s name into the corresponding field and select a suggestion from the list:

Reference a dictionary item as part of a ‘Complex Type’ definition.

To add a simple data type, fill in a label for the type, click the + icon next to the second column and select a data type from the list:

Create a local type as part of a ‘Complex Type’ definition.

• **Not specified** allows you to specify the data type in the DMN Editor.

Click **Create** to create the specified data object:

Click ‘Create’.

Now, you can reference the newly created data input in decision tables and data input elements:
Reference a dictionary entry in a decision table.
You can also add input data from a DMN diagram to the dictionary.
Simply select the element and click the Dictionary item in the lower left corner of the element:

Create a dictionary entry based on the data input element.
Select the correct category (make sure to use a category that supports DMN data modeling) and click Create:

Click ‘Create’.
Now, the data input is saved in the Dictionary and can be re-used in the Editor. When labeling a data input element, automatic suggestions will help modelers with re-using already existent data inputs:

Reference an existing data object.

7.7.9 Managing and creating process documentation templates

Process documentation are comprehensive documents that can include diagrams as well as all element descriptions, and dictionary entries. They are created in Microsoft Word or PDF format.

You can create custom templates that suits your organization's needs and later generate a process documentation based on such a template.

Through this function you have the possibility, for example,

• to create an overview of all BPMN 2.0 process diagram tasks in your diagrams.
• to create a matrix with all dictionary entries linked in the diagrams.
• to create a detailed overview of the element usage in your diagrams.

Not only the content of process documentations can be configured, but also their visual properties. Process documentation templates are stored in the Process documentation templates folder. This folder will appear in the folder tree on the left side of the Explorer if you activate the process documentation templates as described below.

Activating the process documentation templates

Follow these steps to activate the Process documentation templates folder in the Signavio Explorer’s navigation panel:

1. Select in the menu bar under Setup the Show process documentation templates entry.
2. Select in the navigation on the left the **Process documentation templates** folder.

Creating a new template

1. To create a template, navigate to the template overview by selecting **Templates** in the folder tree on the left side of the Explorer.
Hint: If the template folder is not shown in the folder tree, you can activate the display (page 559) as described above.

2. Select in the menu bar under New the Process documentation template entry.

3. Alternatively, you can also create example template and then customize this according to your needs. This allows you to retain many details that are included in the default template.

To create and edit new templates, you are directed to the Editor. Here, you can define the document structure, edit header and footer or specify diagram details. In the following sections you will learn how to configure your template.

Working with templates

Editing templates is similar to editing diagrams - elements are placed on the canvas via drag & drop and be customized via attributes, which you can edit on the right side in the attribute editor. The alignment of the elements is done mostly automatically.

If you create a new template the following default sections are applied automatically:

- cover page
- table of contents, which automatically updates itself in accordance with each edit.
- content pages, containing the actual process documentation.

You can then adjust the sections as needed, add new pages, or remove one of the standard sections.
1. To delete a section, first select the element to delete, and then click in the menu bar **Delete**.
2. In the panel on the left, under **Document Structure** all available elements are listed. To add an element, add an element, drag it on the canvas while holding the left mouse button.
3. You can format labels of elements in the menu bar. Select the element and then click the **text format** button. Here, you can define font size and color. This can be useful to distinguish between various pieces of information that are displayed as a list from each other, or to highlight certain information.

![Image of the Signavio Process Manager - User Guide](image)

**General attributes** Many shapes have similar general attributes that can be set in the attribute panel. These will be explained here. Other, shape specific attributes will be explained in the section about the corresponding shape.

- **Color** - You can change the background color of a section, sometimes also the color of a label. You can either choose a color from the color picker or define a hexadecimal value.
- **Label** - Many shapes have a label that will stand in front of a value (for example 'Organization: [name of organization]'). You can define whether a label should be displayed (check/uncheck the box 'Show label') and what the label should be by configuring the corresponding attributes.
- **Show Label** - Define if the label shall be displayed for the element by checking or unchecking the box.
- **Hide page header/footer** - Available in the More Attributes section of all sections - check or uncheck the box to hide the header or footer for the whole section.
- **Display** - Here you can choose whether you would like the information to be displayed in a list or in a table.

**Importing/exporting templates** If you want to use an already applied template in an other Signavio workspace, you can export it here. Templates are exported as **Signavio archive SGX** file and can easily imported in another workspace for reuse.

1. Select the template file you want to export.
2. Click in the menu bar **Import/Export** and then the **Export Signavio archive (SGX)** entry. The corresponding dialog opens.
3. By default, the latest revision of each template will be exported. However, you can disable this option.
4. Click **Export**. The selected template is downloaded as SGX-file.

**The cover page**

By default, when you create a new template, the first section is the cover page.
Cover page attributes  The cover page has a header and a footer, two spaces for content and the document title in the center of the page.

You can configure the following attributes for the cover page section by clicking onto the page and opening the attribute panel:

- **Title** - Configure the title of a process documentation (per default, it is set to *Process Documentation*).
- **Subtitle** - An explanatory subtitle (in the example below it is “Business processes 2012”)
- **Show a separator** - When a subtitle is given, it can be separated optically by a horizontal line.
- **Alignment** - The title and subtitle can be aligned left, right or center. This option only affects the text on the cover page.

Template parameters  In addition you can define template parameters for the cover page. Each template parameter shape, available in the Document Structure header in the shape repository, contains information about the process documentation file in general.

Template parameters can contain one of the following variables:

- **Author**
- **Organization** (default)
- **Date** or
- **Version**.

In the attribute panel, you can define which kind of information should be displayed. The data is automatically retrieved and added every time when you create the actual documentation. You can also change the parameter label (for example, 'author') and determine whether this should be displayed before the value.

1. Drag the desired template parameter from the palette on the cover page.

2. Configure its type in the attribute editor.
Adding an image  You can insert an image of your choice into the cover page. The image can be selected from the workspace or uploaded from your computer. The corresponding element can be found in the modeling palette under Static contents.

1. To add an image drag the Image element from the Static Contents section of the shape repository to the cover page.
2. Select a picture from your computer or from the Signavio workspace by clicking the Edit button of the attribute Image. The dialog Edit: Image, link a file/picture opens.

4. Click Save to insert the image.

Sample cover
The table of contents

The table of contents is created and updated automatically. When you create comprehensive templates, this update may take a little while. In this case we recommend to deactivate the automatic updating during modeling by unchecking the box of the attribute Preview.

Deactivating the live preview of the table of contents.
If you enable the preview again, the contents is updated.

The process documentation

The process documentation pages are configurable and can be adapted to your needs.

Configuring the header and footer  For each of the three sections, you can design a separate header and footer. Thus, you can specify for example page numbers and at the same time prevent that they appear on the cover and in the table of contents.

1. Click at the top or at the bottom of a page (if there is no header or footer, you can drag the corresponding element from the palette to the page).
2. In the **header and footer** section you will find all the elements that you can specify. Drag the required element to the desired location.

3. In the attribute editor, configure the display of each element.

**Important:** Each section’s header and footer must be designed separately.

The following elements and configurations can be dropped into a header or footer:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page number</td>
<td>In the attribute panel, check the box <strong>Continue numbering</strong> to continue counting from a previous section. Otherwise, the numbers for this section will start at 1. Change the attribute value for <strong>Style</strong> to switch from Arabic to Roman numbers, for example.</td>
</tr>
<tr>
<td>Date</td>
<td>Displays the documentation creation date.</td>
</tr>
<tr>
<td>File name</td>
<td>Displays the name of the file that is generated when exporting the documentation, for example, ‘Process_Handbook_Order-to-Delivery’.</td>
</tr>
<tr>
<td>Version</td>
<td>Displays the version of the process documentation, for example, 1.0.0.</td>
</tr>
<tr>
<td>Modified</td>
<td>Displays the last modification date.</td>
</tr>
<tr>
<td>Text</td>
<td>Write a text you want to display in the header or footer into the attribute editor.</td>
</tr>
<tr>
<td>Image</td>
<td>Here you can put a logo or a small picture. Upload it or choose from your workspace.</td>
</tr>
</tbody>
</table>

**Sample footer**

```
<file name> <no> <DD.MM.YYYY>
.VERSION last updated: <Modified date>
```

**A footer template**

**Hint:** Configuring the header is not possible in the trial edition.

**Chapters and sections** Before you can add any variable elements to the content section, you need to add a **chapter/section** element.

If you drop another chapter into a chapter, a sub-chapter will be created. If you drop a chapter below another chapter, a new chapter will be created. In case you don’t need an elaborate chapter structure, you can simply place a **per Diagram** or a **Folder structure** element. These are needed as a container for information elements on diagram and element level. Chapters and sub-chapters can be named and will be numbered and added to the table of contents automatically.

When you added a chapter, you can place static information elements. These elements do not need a container. Static information can be defined in the attribute panel and does not change with the diagrams a handbook includes.

A static attribute can for example be a disclaimer, a chapter overview, an image or a table. You can put text directly into the table by double clicking it. Note that a table can contain a header or a footer.

You can enforce page breaks, for example after large chapters, by placing a **Page Break** element.

When configuring the display of dynamic diagram information, you can either use a chapter per diagram with the **Per Diagram** element or use the **Folder Structure** element to create a chapter per folder (with a sub chapter for each diagram). In any case, the order of the diagrams is aligned to the folder structure.

1. Create a chapter by dragging a **Chapter/Section** element from the shape repository to the template.
2. To divide this chapter into sub-chapters, drag another **Chapter/Section** element on it.

3. In a chapter, you can drag different static elements whose values are set during the modeling of the template. Such elements do not need any containers.

4. In the attribute editor, you can choose between the numbering style of the chapters (Arabic numbers (default), Roman numbers or bullet points) for the whole section. You can also define if the corresponding chapter should be listed in the table of contents and if the numbers are displayed or hidden.

It is possible to create dynamic content based on the diagrams a process documentation is created for. Dynamic content is kept in the **Per Diagram** or **Folder Structure** element.

Dynamically created chapters will get a small loop symbol on their upper right corner in the template. You can easily combine static and dynamic chapters by for example, dragging a **Chapter/Section** element onto a **Per Diagram** element.

**Sample chapter ‘Introduction’**

A chapter can contain different elements. For example, the chapter “Introduction” could contain a free text element as the introduction text. Drag the **Text** element from the section **Static Content** in the shape repository to a chapter. Add free text to the introduction template.

**Sample ‘Complete overview of the individual diagrams’**

In the following example, a graphic for all diagrams is displayed in the chapter “Overview of individual diagrams”:

1. Drag the container element to the appropriate chapter.
2. Diagram Overview

2.1 <Diagram title>

**Hint:** For each diagram, the container element will later create a new section.

2. Then drag the element **Diagram Image** from the section **Diagram Details** to the **Per Diagram**-element.

3. In the attribute editor, you can restrict what diagram type to be inserted (if for example only BPMN 2.0 process diagrams should be documented, disable all other chart types).
Diagram details  In addition to a graphical representation, you can represent numerous information on the diagram as a whole, such as the diagram attribute and modeling elements of a certain type. The subitems indicate the specific attributes for each template element that can be defined:
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about the diagram</td>
<td>Displays one of the diagram attributes <strong>Author</strong>, <strong>Diagram type</strong>, <strong>Last modified</strong>, <strong>Link</strong>, <strong>Path</strong>, <strong>Revision number</strong>, <strong>Last author</strong>, <strong>Publishing status</strong>, <strong>Publishing date or Authors</strong> (all people who worked on the diagram), which can be chosen in the attribute panel. You can add more than one shape to display different attributes.</td>
</tr>
<tr>
<td>Diagram image</td>
<td>Creates an image of the diagram. The following attributes can be defined:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Rotate</strong>: defines if the diagram image should be rotated 90 degrees if it is too large to fit.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Orientation</strong>: defines in which direction a diagram should be rotated.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Stretch over multiple pages</strong>: if activated, a diagram is printed in its original size, over multiple pages if necessary.</td>
</tr>
<tr>
<td>Attribute on diagram level</td>
<td>Select an attribute (or more in 'Multiple choice'), which value should be presented for each diagram (for example process description).</td>
</tr>
<tr>
<td></td>
<td>• <strong>Attribute</strong>: Specify which attribute to be displayed in the browser.</td>
</tr>
<tr>
<td>Process participants</td>
<td>Displays all roles of a diagram. Pool/lanes, additional owner and organizations that are linked through a dictionary entry are included here.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Lanes in diagram</strong>: Specify whether lanes should apply as process participants.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Additional process participants</strong>: Select which process participants should be taken into account in the overview (depending on their RACI property).</td>
</tr>
<tr>
<td></td>
<td>• <strong>Omit pools</strong>: Specifies whether pools should be included in the overview.</td>
</tr>
<tr>
<td>Data objects</td>
<td>Lists all used data objects of a diagram.</td>
</tr>
<tr>
<td>IT Systems</td>
<td>Lists all used IT systems of a diagram.</td>
</tr>
<tr>
<td>Process trigger</td>
<td>Lists all start events of a diagram.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Only named events</strong>: Specifies whether events that have no name, should be listed as process triggers.</td>
</tr>
<tr>
<td>Process results</td>
<td>Lists all end events of a diagram.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Only named events</strong>: Specifies whether events that have no name, should be listed as process results.</td>
</tr>
<tr>
<td>Linked dictionary entries</td>
<td>Displays all dictionary entries linked in the diagram regardless of their category. Entries that are linked via a diagram element as well as links via own attributes are considered.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Categories</strong>: Select from which categories dictionary entries should be included in the overview. To enable a better overview in the list view, you can create a heading for each of these categories in the form of a sub-chapter.</td>
</tr>
<tr>
<td>Document revisions</td>
<td>This overview displays all versions of the diagram including the creator and revision comment.</td>
</tr>
</tbody>
</table>
Element details  Information shapes on element level require another kind of sorting shape as diagram elements will be listed in a certain way here. You have to choose between a table or a list view. If you add for a table, for each new information a column will be added for the table.

1. Add a Table of Process Elements or a List of Process Elements to the documentation template. To change the layout later, alter the value of the Display as-attribute.

2. The new element will function as a frame to display element-based information. Now you can add content to the table/list and define their attributes.

3. The columns 'Name' and 'Responsible' are created by default. Now you can drag and drop 'Element Details' elements into the table/list. A column will be added for each new element.

Note: In list view, subitems are added instead of columns that you can also select and edit.

4. If you want to delete a column, select it and click the Delete button in the menu bar of the Editor, or alternatively use the delete key on your keyboard.

5. If you have selected an Attribute on element level or Attribute on element level (Multiselection), specify now a column header (attribute Title in the attribute editor) and select the attributes to be viewed.

6. In the attribute editor, click the Edit button. In the dialog that opens, select the corresponding attribute for each modeling element. The elements Process participants, Data objects, IT systems and Used dictionary entries provide information about the named item regarding the listed elements.

7. Configure the appearance and content of the table (or list) in the attribute editor.

Table column elements  The following elements can be dragged into a table as a column:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute on element level</td>
<td>Select an attribute whose value will be listed for each element in the diagram. A dialog will open, allowing you to configure the selection.</td>
</tr>
<tr>
<td>Attribute on element level (multiselection)</td>
<td>Select multiple attributes whose value will be listed for each element in the diagram. A dialog will open, allowing you to configure the selection.</td>
</tr>
<tr>
<td>Process participants</td>
<td>Insert a column that displays the element's process participants (organizations, departments or additional participants).</td>
</tr>
<tr>
<td>Data objects</td>
<td>Insert a column that displays the data objects that are connected to the element.</td>
</tr>
<tr>
<td>IT systems</td>
<td>Insert a column that displays the IT systems connected to the element.</td>
</tr>
<tr>
<td>Linked dictionary entries</td>
<td>Insert a column that displays all the dictionary entries linked to the element.</td>
</tr>
<tr>
<td>Element type</td>
<td>Insert a column that displays the element type.</td>
</tr>
</tbody>
</table>

The resulting table could look as follows:

Sample tables

<table>
<thead>
<tr>
<th>Name</th>
<th>Responsible</th>
<th>External Document</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample: element overview table

Chapter 7. Workspace administration
Sample list

1. Element 1
   - Name
   - Responsible
   - External document

   ...

n. Element n

Sample: element overview list

Sample exported table

This example table contains the name, the responsible role and documents that are connected to each element of the diagram:

<table>
<thead>
<tr>
<th>Name</th>
<th>Responsible</th>
<th>External Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Check amount and quality</td>
<td>Warehouse</td>
<td></td>
</tr>
<tr>
<td>4 Received Invoice</td>
<td>Warehouse</td>
<td></td>
</tr>
<tr>
<td>5 supply-to-payment</td>
<td>Warehouse</td>
<td></td>
</tr>
<tr>
<td>6 No supply within supply time</td>
<td>Warehouse</td>
<td></td>
</tr>
<tr>
<td>7 Call Supplier</td>
<td>Warehouse</td>
<td>- List of suppliers</td>
</tr>
<tr>
<td>8 Call from Supplier</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>9 Solve problem</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>10 ACME AG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Department</td>
<td>ACME AG</td>
<td></td>
</tr>
<tr>
<td>12 Supplier</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An exported element overview table

Table and list-specific attributes

You can configure the following properties of a table/list of process element shapes in the attribute panel:

- **Diagram element types**: choose elements that are supposed to be displayed for each modeling language or notation.
• **Numbered**: define whether the elements should be numbered.
• **Ignore unnamed elements**: select whether to ignore or list unnamed elements.
• **Sorting**: element information can be sorted by diagram and process flow or alphanumerically by element type and label.
• **Display as**: Choose between list and table.

**Defining multiple languages for templates**

It is possible to define multiple languages for diagrams in Process Manager. This feature is also available for templates.

If multiple languages are defined for you workspace, a little flag symbol in the upper right corner of the template editor will allow switching the language of the template content.

![Image of language selection]

**Change the content language.**

Elements that are not available in the selected language will be highlighted. By clicking their title, you can translate them.

![Image of Prozessdokumentation]

**Missing translations are highlighted in a different color.**

The original language will be displayed in the attribute editor. You can translate the elements here.

![Image of attribute editor]

**The subtitle is translated in the attribute editor.**

If templates were defined in multiple languages you can choose the desired language each time a process documentation is created.
7.8 Importing/exporting diagrams and uploading files

The export features allow you to use your diagram data outside of Signavio Process Manager and to transfer diagram data between Signavio workspaces/instances.
Moreover, you can import diagrams, e.g. to use data of legacy systems and upload other relevant file to the Signavio workspace.

Importing diagrams

The import functionality allows transfer data from other workspaces or 3rd party software to Signavio Process Manager.

Read more

- Importing BPMN 2.0 XML diagrams (page 580)
- Importing Signavio archive (SGX) files (page 583)
- Importing XPDL 2.1. diagrams (page 584)
- Importing ARIS Markup Language (AML) diagrams (page 585)
- Importing Microsoft Visio diagrams (page 586)
- Importing the APQC Process Classification Framework (page 587)
- Importing dictionary entries (page 589)
- Importing a set of dictionary items as a JAR file (page 594)

Exporting diagrams

You can export diagrams into various formats. For example, you can create diagrams in Signavio and export them as BPMN 2.0 XML in order to execute them with jBPM.

Read more

- Exporting BPMN 2.0 diagrams as XML files (page 153)
- Exporting diagrams as PDF files (page 139)
- Exporting images (PNG or SVG files) (page 147)
- Exporting Diagrams as Signavio (SGX) files (page 149)
- Exporting Diagrams as XML files (page 155)
- Exporting DMN diagrams as drools rules (page 156)
- Exporting dictionary entries (page 151)
- Exporting diagrams to RedHat JBoss BRMS projects on GitHub (page 159)

Uploading files

It is possible to upload documents and pictures to your Signavio file storage.

Read more:

7.8.1 Uploading documents and pictures

Signavio Process Manager allows you to upload documents and pictures into your Signavio file storage. These files can be linked to diagrams and, when published in Collaboration Hub, are accessible to colleagues with read access.

If the Signavio file storage is enabled for your workspace, its size and the maximum uploadable file size are displayed in the workspace configuration dialog accessible via the top drop-down menu of the Signavio Explorer in the header Setup. To configure those limits according to your requirements, please contact the Signavio Support at support@signavio.com
This chapter contains information about uploading pictures and documents to your file storage and maintaining your storage. It is also possible to

- activate or deactivate the functionality (page 481) as a workspace administrator.
- create custom attributes (page 533) to allow linking files via diagrams and diagram elements.
- link pictures and documents (page 187) via diagrams and diagram elements.
- view pictures and documents in the Collaboration Hub (page 408).

Uploading a document or picture to the Signavio file storage

To upload a file, open the folder of your workspace you want to upload a file to. Click Import / Export, then Upload document/picture in the top drop-down menu of the Signavio Explorer.

Upload a document or picture.
A dialog appears that allows accessing your Signavio file storage:

The upload dialog
Click **Choose File** to search for the file you want to upload:

![Choose File dialog](image)

**Select the file you want to upload.**

The upload dialog of your operating system opens. Navigate to the file you want to upload and confirm your selection. Please note that there must be enough free space left in your file storage to upload the whole file. Also, make sure not to exceed the maximum file size - by default, the maximum file size is 5 MB.

After confirming your selection, the upload dialog will update immediately:

![Upload dialog after selection](image)

**After setting the options, click upload.**

In case you want to change the folder the document should be saved in, click the drop-down arrow and subsequently **Choose another folder**:

![Choose another folder](image)
Change the folder the document will be uploaded to.

Now you can select any folder in your Signavio workspace. After selecting the new target folder, click OK:

Select the new target folder.

Click Save. Depending on the file size, this may take a moment. As soon as the upload is completed, the file will be displayed in the corresponding folder.

The information panel on the bottom of the Explorer allows editing the file name or adding a documentation:
Edit the document’s name.

**Hint:** If you try to upload a file that exceeds the maximum file size or the storage space of your workspace, following dialog will appear:

*The document/picture is too big or would exceed the size of your Signavio file storage. Please delete unused files or contact the Signavio Support to order additional storage.*

If the file quota is exhausted or the size limit for a single file is exceeded, a warning will be shown.

In those cases, you can try to upload a smaller version of the file or delete unused pictures or documents from your file storage. If this is impossible, contact your workspace administrator or Signavio33, to increase your storage space.

**Updating a document or picture**

A file in the Signavio file storage is updated by uploading a newer version of the file. Each link to this file will then go to the updated version as well.

To update a picture or document, go to the Explorer. navigate to the file and select it. Click **Import / Export**, then **Update picture** if you selected a picture or **Update document** if you selected a document in the top drop-down menu of the Signavio Explorer.

33 support@signavio.com
Update a picture.

The upload dialog appears. Click **Browse** again to select the new file version and upload it as described above.

A new file version will now be created. The *information panel at the bottom of the Explorer* (page 47) allows viewing and reverting those versions.

**Downloading pictures and documents**

Of course, it is possible to download documents from your Signavio workspace.

Select the document or picture in the Explorer. Click **Import / Export**, then **Download document** in the top drop-down menu of the Signavio Explorer.
Download a document.

**Hint:** If you selected a picture, choose **Download picture** from the menu.

The **import/export** menu in the Signavio Explorer provides the possibility to export diagrams into and import them from various formats.

### 7.8.2 Importing BPMN 2.0 XML diagrams

**This feature is only available on request during the 30-day trial period.**

The BPMN 2.0 standard includes an XML notation. It enables the platform independent exchange of BPMN 2.0 diagrams. To get more information about the BPMN 2.0 specifications, go to [http://www.bpmn.org](http://www.bpmn.org).

In Signavio Process Manager you can update your BPMN 2.0 model by importing a new XML file. The import will update each process and subprocess in your model, and will create a new diagram if a subprocess does not exist.

Follow those steps to import a BPMN 2.0 XML diagram:

- Click **Import / Export**, then **Import BPMN 2.0 XML** in the top drop-down menu of the Signavio Explorer.
Menu entry for importing BPMN 2.0 XML files

- A dialog opens. Click Choose File, select the XML file you want to import and click Import.

Select the XML file. It has to be comply with the BPMN 2.0 XML standard.

- The diagram will be imported.

In case the imported file is not standard-compliant, it is possible that not all elements can be imported or the whole import fails due to errors in the BPMN 2.0 XML file. In these cases, a warning dialog describing the issues that will occur during the import, appears:

In case the imported diagram is not standard-compliant, the system displays errors and warnings.
If **Errors** occurred, the diagram will not be imported - **Warnings** only inform you about diagram elements that may not be displayed after the import, but the diagram will still be imported.

Below you find an example of standard compliant BPMN 2.0 XML:

```xml
<xml version="1.0" encoding="UTF-8"?>
<definitions ...>
    <process id="sid-0" ...>
        ...
        <task id="sid-1" name="Verify BANF">
            <incoming>sid-A</incoming>
            <outgoing>sid-B</outgoing>
        </task>
        ...
    </process>
    <bpmndi:BPMNDiagram id="sid-1234-56789"/>
        ...
    <bpmndi:BPMNShape bpmnElement="sid-0" ...>
        <omgds:Bounds height="452.0" width="624.0" x="15.0" y="36.0"/>
    </bpmndi:BPMNShape>
        ...
</bpmndi:BPMNDiagram>
</definitions>
```

**BPMN 2.0 XML example code**

Apart from information about the file (e.g. the BPMN 2.0 Specification used), information about the process flow and graphical information about each element used (bpmndi) are required.

E.g., if the bpmndi part is missing, the import will fail with the following error:

<table>
<thead>
<tr>
<th>Errors (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error Type</strong></td>
</tr>
<tr>
<td>Missing BPMN-DI</td>
</tr>
</tbody>
</table>

**Errors occurred. In those cases, the diagram(s) cannot be imported.**

If only some elements were not given bpmndi information, the import will continue but show following warnings:

<table>
<thead>
<tr>
<th>Errors (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning Type</strong></td>
</tr>
<tr>
<td>Missing BPMN-DI Element</td>
</tr>
</tbody>
</table>
Warnings occur e.g. if graphical information is missing. However, the diagram can still be imported, but the elements without graphical information will be left out.

When opening the diagram, those elements will be missing.

Sometimes the import of BPMN 2.0 XML files is impossible due to errors unknown to the System (e.g. because the imported file was not valid BPMN 2.0 XML). Please contact the support@signavio.com in such cases.

7.8.3 Importing Signavio archive (SGX) files

**Note:** During the 30 day trial, this feature is available on request.

The import functionality for Signavio archives (SGX) provides a possibility to import diagrams that were previously exported to the Signavio-specific SGX format (page 149).

In order to import an SGX file, proceed as follows:

1. Open the Signavio Explorer and click Import / Export - Import Signavio archive (SGX).

   ![Import Dialog](image)

   *Open the SGX import dialog.*

2. Now, click **Choose File**, choose the archive and click **Import**.
Select the file to you want to import.

The archive may contain dictionary entries used in the diagrams. Tick **Import dictionary entries** to import them with the diagrams. The dictionary entries will be added to your workspace's dictionary - also if a similar entry already exists. For example, if the dictionary entry “invoice” already exists and the imported SGX also contains an entry “invoice”, both entries will exist in your workspace's dictionary after the import.

There are two ways to avoid redundant entries:

- Tick **Overwrite existing dictionary entries with the same title**. Be careful: entries that are overwritten cannot be restored. Also, be aware that you might unintentionally create duplicate dictionary entries if you do not choose this option. Removing or merging double dictionary entries is possible, but can only be done manually and may take time.
- If the overwrite-option is deactivated, we recommend you to check for and if necessary remove redundant entries later. Read more at **Merging dictionary entries** (page 443).

3. The diagrams and folders contained in the archive are imported now.

### 7.8.4 Importing XPDL 2.1. diagrams

The XML Process Definition Language (XPDL) was specified by the Workflow Management Coalition (WfMC) to provide a language for specifying workflows. You find more information about XPDL at [www.wfmc.org](http://www.wfmc.org).

**Note:** The XPDL import is not enabled by default. The customer support team will enable it on request.

With Signavio Process Manager, it is possible to import diagrams from XPDL files into your workspace, also if they were created using a different modeling tool.

To import an XPDL 2.1. diagram, proceed as follows:

- Click **Import / Export**, then **Import of XPDL 2.1** in the top drop-down toolbar of the Signavio Explorer.
Open the XPDL 2.1 import dialog.

- Click **Choose File**, select the XPDL file and click **Import**.

Select the file you want to import.

Now, the diagram will be imported into your Signavio workspace.

### 7.8.5 Importing ARIS Markup Language (AML) diagrams

The ARIS® Markup Language (AML) is the XML export format of the software tool ARIS®. Signavio Process Manager allows importing Event-driven Process Chains (EPC), Organization Charts and Value Chains from ARIS® into your workspace.

To import diagrams from ARIS to Signavio Process Manager, you need to export the diagrams in ARIS to the ARIS® XML format.

Then, follow these steps:

- Click **Import/Export**, then **Import ARIS® markup language** in the top drop-down menu of the Explorer.
Open the import dialog.

- Click **Choose File**, select the XML file you want to import and click **Import**:

Select the file you want to import.
Now, the diagram contained in the XML file will be imported.

### 7.8.6 Importing Microsoft Visio diagrams

**Note:** This feature is only available on request. Contact Signavio Customer Support\(^5\) for more details.

With a couple of mouse clicks, you can import diagrams you created with Visio - Microsoft's drawing tool - into Signavio Process Manager. Like this, you can switch to a fully-fledged BPM suite without re-modeling your business process diagrams.

The importer supports both BPMN 2.0 and EPC diagrams.

To import Visio diagrams, proceed as follows:

\(^5\) https://www.signavio.com/welcome-to-signavio-support/
1. Open the Explorer and click **Import / Export > **Import Visio.**

![Import Visio dialog](image)

*Open the Visio diagram import dialog.*

2. Select the files you want to import, specify whether you will import BPMN 2.0 or EPC diagrams and click **Import.**

![Import Visio dialog](image)

*Specify the import options and start the import.*

**Important:** The importer supports .vdx, .vsd and .vsdx files, as well as .zip archives that contain such file types. Elements that are not part of the BPMN 2.0 standard, respectively not EPC-compliant, will be ignored.

Now, the diagrams will be imported into your workspace.

### 7.8.7 Importing the APQC Process Classification Framework

The APQC Process Classification Framework provides you with standardized business process landscape. Hereby, the focus on the framework lies on structure and categorization - the **what?** - and not on details of process flow or activity - level the **how?**.

Using the APQC framework to structure your process landscapes allows you to compare your processes and process performance metrics with other organizations and to follow well-established BPM best practices, for example.

**The representation of the APQC framework in Signavio Process Manager**

The **hierarchy structure** of the APQC framework is represented by a **folder tree** in Signavio Process Manager.
In each parent folder (a folder that is not on the lowest level in the hierarchy tree), there is a Value Chain diagram that provides an overview over the folder content. The diagram’s Description attribute contains the corresponding APQC glossary term.

APQC Metrics are imported as dictionary entries with the custom attributes Metric Category, Metric Id and Unit. The corresponding entries belong to the APQC-specific category Metrics.

**Important:** A set of example metrics is imported when registering an APQC trial workspace. To import further metrics, you need to make use of the standard dictionary entry import (page 589).

Registering a APQC trial workspace


In case you already have a Signavio workspace, please contact our Signavio Support Team at support@signavio.com to activate the APQC importer.

Importing the APQC spreadsheet

To import the APQC framework into your workspace, process as follows:

1. **Download the framework as a Microsoft Excel spreadsheet from the APQC web site**.  
   You might want to modify the spreadsheet, especially in case you want to import only part of the framework.

2. Open the Signavio Explorer and go to Import/Export - Import APQC Excel:

   ![Import/Export dialog]

   *Open the APQC import dialog.*

3. Select APQC framework Excel spreadsheet and click **Import:**

   ![Selecting Excel spreadsheet]

---


---

Chapter 7. Workspace administration 588
Select the spreadsheet and start the import.

**Important:** The framework will be imported into the folder that is **open in the Explorer** when the import is triggered.

The import might take several minutes.

Now, you are able to use the APQC framework as the basis of your business process management initiative in Signavio:

Use the APQC framework as the basis of your business process management initiative in Signavio.

### 7.8.8 Importing dictionary entries

Signavio supports the import of dictionary entries from Microsoft Excel (XLS or XLSX) files. The file needs to be structured like this:
Necessary structure of a spreadsheet that is to be imported into Signavio.

The column headers mark the dictionary attributes. In case you want to import multiple languages, you might want to add the language code to the column headers. Please notice that the column header text doesn't need to be equal to the attribute name in Signavio, as the mapping will be configured later on.

Each spreadsheet of the Excel file represents one dictionary category. Subcategories are treated the same way as main categories. When importing multiple categories, it is necessary to repeat the import process for each category. Each record of a spreadsheet represents one dictionary entry.

In order to gain the spreadsheet template, you can export dictionary entries as an Excel file (page 151) and use the export file as a reference for the import file structure.

In order to import dictionary entries, click the entry Dictionary at the bottom of the folder tree on the left in the Signavio Explorer. The Dictionary opens:

Navigate to the Dictionary.

Now, click Import/Export, then Import Excel in the drop-down menu:
Open the import dialog.
You will be asked to select the spreadsheet from your computer. Click Choose File:

Click ‘Choose File’.
Select the file you want to upload. Please make sure the file is a Microsoft Excel file with the file extension XLS or XLSX. Note that the file import is limited up to 500 records per Excel spreadsheet. If you want to import more records, split them into several spreadsheets.

Click Open:
Select the file you want to import.

Now, click Import:

Click ‘Import’.

The import configuration dialog opens.

Here, you need to select whether you want to update dictionary entries, to create new entries or to create new entries and to update existing entries:

1) Choose mode of import:
   - Update existing entries only, ignore other rows
   - Create new entries for all rows
   - Update existing entries and create new ones

2) Please select which Excel sheet to import into which Dictionary category:
Select between update, create or both.

Next, you need to select the to-be imported spreadsheet and to define the mappings between spreadsheet and the Signavio dictionary. Please note that the Id mappings are only relevant in case you want to update existing entries:

2) Please select which Excel sheet to import into which Dictionary category:

<table>
<thead>
<tr>
<th>Excel sheet:</th>
<th>Dictionary category:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Einziges Tabellenblatt</td>
<td>Organizational Units</td>
</tr>
</tbody>
</table>

3) Please select by which Excel column and which Dictionary identifier should be used to match existing entries (not relevant for create-only imports):

<table>
<thead>
<tr>
<th>Identifier column in Excel:</th>
<th>Matching identifier in Dictionary:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Description (en_US)</td>
</tr>
</tbody>
</table>

4) Attribute mappings:

- Title
- Description
- Location
- Support-URL

---

Map spreadsheet column headers to Signavio dictionary attributes.

Click **Import** to start the automatic import process.

As soon as the import has been executed, you will receive a summary as well as a download link to the imported Excel file, which contains the details of the import process:
A summary of the import will be displayed.

7.8.9 Importing a set of dictionary items as a JAR file

This feature is available on request.

The JAR import feature allows you to import Java classes as dictionary items to use them as data models in the Signavio Decision Manager.

Thereby, the attributes and relationships of the classes are created as decision input/output data types.

Preparation and requirements

Before you import the JAR, make sure the target dictionary category supports data modeling (see: Creating a new category (page 546)).

The classes in your JAR need to fulfill the following requirements:

- Classes need the @XmlType annotation.
- Attributes need to be of one of the following data types:
  - String
  - Boolean (and boolean)
  - Number (all subclasses) and int, double, byte, long, float
- Nested classes (from the same JAR)
- Collections of the above mentioned data types (no generic collections, as Set<? extends Number>)

Examples

The following example shows a Java class that is valid for the import:

```java
package sandbox.jarClasses;
import java.util.Set;
import javax.xml.bind.annotation.XmlType;

@XmlType
public class Relationship {

    private Person man;
    private Person woman;
    private Set<Person> children;
    private boolean broken;

    public Person getMan() {
        return man;
    }

    public void setMan(Person man) {
        this.man = man;
    }

    public Person getWoman() {
        return woman;
    }

    public void setWoman(Person woman) {
        this.woman = woman;
    }

    public Set<Person> getChildren() {
        return children;
    }

    public void setChildren(Set<Person> children) {
        this.children = children;
    }

    public boolean isBroken() {
        return broken;
    }

    public void setBroken(boolean broken) {
        this.broken = broken;
    }
}
This example can’t be imported, because the class lacks the @XmlType annotation:

```java
package sandbox.jarClasses;

public class NotValid extends Relationship {
    private int justANumber;

    public int getJustANumber() {
        return justANumber;
    }

    public void setJustANumber(int justANumber) {
        this.justANumber = justANumber;
    }
}
```

### Importing the JAR

To import a JAR, proceed as follows:

1. Open the Dictionary and click **Import / Export - import JAR**:

   ![Import JAR dialog]

   *Open the import dialog.*

2. Select the JAR file and click **Import**:
**7.9 Embedding Signavio diagrams in 3rd-party systems**

There are several possibilities to make Signavio diagrams available in 3rd-party systems:

For such use cases, we recommend to make embed Signavio Collaboration Hub to seize Signavio's collaboration support to the fullest extent:

- *Embedding Collaboration Hub via an iframe* (page 597)
- *Integrating Collaboration Hub with Microsoft SharePoint* (page 602)

Moreover, you can embed single Signavio diagrams...

- *in a website as a picture (weblink)* (page 55)
- *in a website or blog (HTML-code)* (page 56)
- *as a google gadget* (page 61)
- *in a MediaWiki* (page 59)
- *in a Microsoft SharePoint wiki* (page 61)

### 7.9.1 Embedding Collaboration Hub via an iframe

Collaboration Hub can be embedded in third-party systems via an inline frame (iframe). When using an internal wiki, the Collaboration Portal can be embedded to provide direct access for authorized users. Like this, users can access the interactive functionality of Collaboration Hub alongside traditional documentation systems, such as Atlassian Confluence.

**Hint:** Learn how to integrate an iFrame into a Confluence documentation.³⁷

In case you are using Microsoft SharePoint, you can integrate Signavio Collaboration Hub using a SharePoint WebPart. (page 603)

The access control rules that normally apply to Collaboration Hub also apply to an embedded instance:

- A user who is logged in will see the Collaboration Hub preview, i.e. every diagram of the workspace he can access, as well as his private diagrams.
- A user who is not logged in but has installed the matching the Collaboration Hub certificate will see the published diagrams.
- In case Collaboration Hub is integrated with your Directory Service, a user will be able to see diagrams they have read access to.
- A user who is neither logged in nor has installed the Collaboration Hub certificate will receive an SSL connection error.

To embed a Collaboration Hub in a website or wiki via iframe, add an iframe tag and insert Collaboration Hub URL as its source. Please make sure to use a URL of the form https://editor.signavio.com/intra/portal (European Server), https://app-us.signavio.com/intra/portal (US server) or https://app-au.signavio.com/intra/portal (Australian server). It is also possible to define a diagram that is displayed by default. To define a default diagram, its diagram identifier can be added to the URL in the form “#/model/[diagram id]”. The example iframe below defines such a start diagram. To find the correct link, open the corresponding diagram in Collaboration Hub and copy its URL.

**Hint:** When defining a start diagram, make sure that the corresponding diagram has been published to Collaboration Hub in the correct revision. Otherwise, Collaboration Hub guests that are not logged in will not be able to see it.

On iframe that embeds Collaboration Hub can look like this, for example:

```html
<iframe src="https://editor.signavio.com/intra/portal#/model/273j5d0mf3174c3b8b9439fn5k2a8b0f" width="90%" height="90%"
name="Signavio Collaboration Hub">
</iframe>
```

Embedded into an empty html page, the iframe could look like this:
This is what an embedded Collaboration Hub looks like on an empty page.

### 7.10 Integrating Signavio Process Manager with Workflow Accelerator

**Hint:** To make use of this feature, you need Workflow Accelerator licenses. For more information, contact sales@signavio.com.

With the Workflow Accelerator integration, you combine the intuitive and powerful modeling, analytics and simulation tools of Signavio Process Manager with a business user-friendly execution system. Due to Workflow Accelerator’s low code/zero code approach, deployments and configuration can be easily managed by people without comprehensive software development or administration skills.

#### 7.10.1 Setup

To establish a link between Signavio Process Manager and Workflow Accelerator, open the Signavio Explorer, select a diagram you want to deploy and click **Workflow Accelerator - Execute in Workflow Accelerator**.

---

Click 'Workflow Accelerator' - 'Execute in Workflow Accelerator.'

If the integration has not been set up, an activation dialog is displayed. Activate the check box at the bottom of the dialog and click **Activate**:

![Activate Dialog]

**Setup the Workflow Accelerator integration.**

Now, a new dialog will guide you through the deployment of your first process as described at *Process deployment* (page 601).

### 7.10.2 Process design

You can design Workflow Accelerator processes like any other processes, as described at *Editing BPMN diagrams* (page 232).

However, we recommend you to inform yourself about the BPMN elements that are supported by Workflow Accelerator. Let’s take a look at a simple document approval process:

---

A document approval process that can be executed in Workflow Accelerator.

As you can see, the process consists of only basic BPMN elements.

We recommend you to stick to the following elements for your first Workflow Accelerator processes:

- Pools/Lanes
- Simple Start and End Events
- Exclusive and Parallel Gateways
- User and System Tasks
- Sequence Flows

When designing a process, it often helps to make use of Signavio's collaboration (page 105) and simulation (page 277) features.

For example, to increase process awareness and encourage feedback, you can publish the diagram in the Collaboration Hub (page 396).

### 7.10.3 Process deployment

To transfer a process to Workflow Accelerator, select it in the Signavio Explorer and click **Workflow Accelerator - Execute in Workflow Accelerator**.

In case the process contains elements that are not supported by Workflow Accelerator, a warning will appear. If these elements are supposed to be relevant for process execution, you should adjust the process accordingly.

Subsequently, select the diagram language the process should have in Workflow Accelerator and click **Transfer**.
Transfer the process to Workflow Accelerator.

7.10.4 Adjusting deployed processes

Sometimes you will find it necessary to adjust the process after a couple of test runs in Workflow Accelerator. This is, of course, easily possible.

There are two approaches to adjust a deployed process:

- You adjust the process in Signavio Process Manager and re-deploy it as described above at Process design (page 600).
- You adjust the process directly in Workflow Accelerator as described at http://docs.workflow.signavio.com/en/latest/processes.html. Then, you can use the Execute in Workflow Accelerator function in the Signavio Explorer to transfer the changes back to Signavio Process Manager.

For more information about process execution, please refer to the section Executing processes in Workflow Accelerator (page 138) and the corresponding chapter in the Workflow Accelerator User Guide.

7.11 Microsoft SharePoint Integration

Signavio Process Manager offers you the possibility to integrate Collaboration Hub as Web Part in a Microsoft SharePoint installation.

Note: If you are using our On Premise Edition, please follow the instructions in the administration manual.

Important:

- Integrating Signavio Collaboration Hub with Microsoft SharePoint 2013 requires your SharePoint system to support TLS version 1.1 or 1.2. Learn how to activate TLS 1.1/1.2 support at https://technet.microsoft.com/library/mt773991.aspx.
- Since Microsoft stopped supporting Microsoft SharePoint 2007 and 2010 on October 9, 201241, respectively on October 13, 201542, it is getting increasingly difficult to provide Collaboration Hub for these SharePoint versions.

40 http://docs.workflow.signavio.com/en/latest/cases.html###starting-a-new-process-case
41 https://support.microsoft.com/en-us/lifecycle?pi=1373
As we want to keep Collaboration Hub up to date and to provide the best features possible, we stopped supporting Microsoft SharePoint 2007 and 2010 on April 1, 2017.

Depending on your integration scenario, you can choose between Certificate-based and Windows Azure/Active Directory-based authentication.

- **Certificate-based authentication**
  
  The Signavio SharePoint App authenticates as a “guest user” against Signavio, using the Signavio security certificate. Every diagram published in your Signavio Collaboration Hub will be visible for every user who has access to the respective Microsoft SharePoint page(s).

- **Windows Azure/Active Directory-based authentication**
  
  The Signavio SharePoint App authenticates as the accessing Active Directory user against Signavio via LDAP. The access rights of each Active Directory user and user group can be configured in the Signavio Explorer.

In case you use SharePoint Server 2013/2016, proceed at Integrating Collaboration Hub with Microsoft SharePoint 2013/2016 (page 603) to learn how to establish the integration with either certificate-based or Active Directory-based authentication.

In case you use SharePoint Online, proceed at Integrating Collaboration Hub with Microsoft SharePoint Online (page 614) to learn how to establish the integration with either certificate-based or Active Directory-based authentication.

Further information

In case you experience problems when setting up the integration with Microsoft SharePoint, please consider the section Troubleshooting the Microsoft SharePoint integration (page 631).

Read more about configuring entry point diagrams (page 629) for your SharePoint sites.

### 7.11.1 Integrating Collaboration Hub with Microsoft SharePoint 2013/2016

**Note:** This section explains the Microsoft SharePoint 2007-2016 integration with certificate-based authentication. An overview over the different SharePoint integration variants is accessible at Integrating Collaboration Hub with Microsoft SharePoint (page 602).

If you are using our On-Premise Edition, please follow the instructions in the administration manual.

**Important:** Since Microsoft® stopped supporting Microsoft SharePoint 2007 and 2010 on October 9, 2012\(^{43}\), respectively on October 13, 2015\(^{44}\), it is getting increasingly difficult to provide Collaboration Hub for these SharePoint versions.

As we want to keep Collaboration Hub up to date and to provide the best features possible, we stopped supporting Microsoft SharePoint 2007 and 2010 on April 1, 2017.

In case you experience problems during the integration, please read Troubleshooting the Microsoft SharePoint integration (page 631).

To integrate Collaboration Hub with SharePoint Server, the following steps are necessary:

- **Installing the Signavio Connector Web Service (AD-based access, SharePoint 2013/2016)** (page 604) (only for Active Directory-based authentication)

- **Downloading the Signavio Collaboration Hub SharePoint App** (page 609)

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\(^{43}\) [https://support.microsoft.com/en-us/lifecycle/search/?p=11373](https://support.microsoft.com/en-us/lifecycle/search/?p=11373)

\(^{44}\) [https://support.microsoft.com/en-us/lifecycle/search/?p=4944](https://support.microsoft.com/en-us/lifecycle/search/?p=4944)
• **Manage read access rights** (page 619) (only for Active Directory-based authentication)

• **Installing the Signavio App on Microsoft SharePoint 2013/2016** (page 611)

• **Configuring the SharePoint 2013/2016 App** (page 612)

**Installing the Signavio Connector Web Service (AD-based access, SharePoint 2013/2016)**

The web service is required for SaaS systems to gain access to Active Directory data within a local domain. The web service files can be downloaded here: [https://editor.signavio.com/sharepoint/signavio_ldap_access.zip](https://editor.signavio.com/sharepoint/signavio_ldap_access.zip)

To install the web service on your Microsoft SharePoint system, proceed as follows:

1. Open the file `Web.Config` and configure the values of `serverurl` and `base`. `base_DN` refers to Active Directory folders, which are used to search for users and user groups. In case several folders need to be added, separate them with a `|` during the configuration.

   ![Active Directory Configuration](image1)

   The `base_DN` folder values can be defined like the following examples:

   - `OU=Groups,OU=AAA,OU=Organization,DC=adtest,DC=local`
   - `OU=Users,OU=AAA,OU=Organization,DC=adtest,DC=local`
   - `OU=Groups,OU=BBB,OU=Organization,DC=adtest,DC=local`
   - `OU=Users,OU=BBB,OU=Organization,DC=adtest,DC=local`
   - `OU=Groups,OU=CCC,OU=Organization,DC=adtest,DC=local`
   - `OU=Users,OU=CCC,OU=Organization,DC=adtest,DC=local`

   In **Active Directory**, there are two types of folder icons. Regular folders use the syntax `CN=foldername` and Organization Unit folders (as shown in the example) use a syntax like `OU=foldername`.

2. In order to use a specific user name and password to access the Active Directory instead of an Application Pool identity, uncomment the `username` and `password` fields and fill them accordingly. Note that the user name must have a domain prefix, e.g. TEST\User.
3. Copy the **signavio_ldap_access** folder to the **wwwroot** directory, which is (by default) `C:\inetpub\wwwroot`. Make sure that the **NetworkService** account has read access to the folder (by default that is the case).

4. Open the IIS manager and select **Application pools** from the expandable list on the left. Right click the Signavio application pool and select **Add Application Pool**: 

   ![Application Pools](image)

   *This page lets you view and manage the list of application pools on applications, and provide isolation among different applications.*

5. Enter the following parameters for the new Application Pool:
:: Name: signavio_ldap_access

Net Framework-version: 4.0.X

Managed Pipeline mode: Classic Start Application pool: Yes

6. Right click the newly created Application Pool and select **Extended options**. Under **Process Model**, check that the identity is **NetworkService**. If not, edit the field's value by selecting **NetworkService** from the first drop-down list and press **OK**:
7. Right click Sites in the menu on the left and select Add Website..:
8. Enter the following parameters:

**Add Website**

- **Site name**: signavio_ldap_access
- **Application pool**: signavio_ldap_access (select from the list)
- **Physical path**: C:\inetpub\wwwroot\signavio_ldap_access
- **Port**: 33333
- **Hostname**: leave empty

**Start Website immediately**

![Add Website form](image)

**Parameters:***
- **Site name**: signavio_ldap_access
- **Application pool**: signavio_ldap_access (select from the list)
- **Physical path**: navigate to the signavio_ldap_access folder (default path: C:\inetpub\wwwroot\signavio_ldap_access)
- **Port**: choose a suitable port, which is not used by other websites, e.g. 33333
- **Hostname**: leave empty

9. Enter `http://<your_ip>:<port>/setup.asmx` into the web-browser, for example `http://192.168.1.1:33333/setup.asmx`. The browser will notify about the status of the service. If the page is displayed and the Active Directory connection is marked with **OK**, the connector URL and the Security Token will be displayed.
**Downloading the Signavio Collaboration Hub SharePoint App**

Open the Explorer to download Signavio Collaboration Hub SharePoint App. Make sure you are logged in as a workspace administrator and follow these steps:

1. Click **Setup**, then **Manage Collaboration Hub authentication** in the top drop-down menu of the Signavio Explorer.
2. Select from the dropdown menu the desired authentication method:
   - For Active Directory-based authentication, select **LDAP based authentication** as the authentication mode and the correct SharePoint version. Insert the URL of the connector web service, as well as its security token before downloading.
   - For certificate-based authentication, select **Certificate based authentication** as the authentication mode and the correct SharePoint version.
3. Click **Save and Test**. In case the test terminates with an error, check your configuration settings.
4. Click **Download SharePoint Webpart**.

**Hint:** The dialog also provides the download of a Collaboration Hub certificate that can be installed in a web browser. Read more about the certificate-based publishing in the chapter *Creating certificates* (page 470).

Depending on your web browser configuration it will now be stored the Microsoft SharePoint App in your download directory or prompt for the download.

**Manage read access rights**

In this chapter you will learn how to manage read access rights on Collaboration Hub for Active Directory users and user groups. To enable directory service-based (AD, Windows Azure) authentication, it is necessary to grant diagram access rights to domain users or user groups. Via the read access configuration dialog, you can configure exactly which user or user group can get access to specific diagrams or folders in Signavio.

**Important:** In case you set up certificate-based authentication, you can ignore this section.

In case you set up Active Directory-based authentication and you do not configure access rights to any published diagram, a user will see an empty Collaboration Hub.

To grant read access, proceed as follows:
1. Open the Explorer. We recommend you to use a different browser or your browser’s incognito mode, to avoid session conflicts, see SharePoint displays the Signavio login page, although the authentication mechanism was configured correctly (page 633).

2. Click in Setup menu the Manage users & access rights entry.

3. Open the Read access tab in the Manage users & access rights dialog.

![Manage users dialog]

4. Choose a folder or diagram in the left navigation column. The dialog shows the access rights connected to the object. If the right has been assigned to a parent directory the corresponding folder is displayed as well.

![Folder access rights]

5. If you have marked the desired folder, then you can specify the user you want to grant access for. Type in a user name by using the search functionality - as soon as you start typing, a drop down list appears containing the user names found. Select the user name. Alternatively click the input field and choose a user name from the drop down list. To navigate through the sites, use the arrow at the bottom of the list.
Hint: Opening the read access dialog and searching for a user or user group can serve as a test of the directory service integration. If an existing user does not appear, something went wrong during the setup.

6. Click the **Add** button. The user can now be found in the list of granted access rights.

Revoking read access

You can also remove assigned read permissions. Follow the instructions 1 to 3 of the previous section and then proceed as follows:

1. Select the user you want to remove from the list of users with read access.
2. Click **Remove** right next to the user name.

Hint: If the read access is inherited from the parent directory, the delete option is not displayed. Navigate to the appropriate folder using the **inherited from** column and delete the permission here.

3. Confirm by clicking the **Yes** button in the warning message box.

Installing the Signavio App on Microsoft SharePoint 2013/2016

This chapter describes how to install the Signavio Collaboration Hub SharePoint App on Microsoft SharePoint 2013/2016.
**Important:** Please configure your Active Directory service **before** you install Collaboration Hub SharePoint App.

In case you want to setup certificate-based authentication, please skip this step and proceed at [Downloading the Signavio Collaboration Hub SharePoint App](page 609).

Copy the file `SignavioViewer2013_2016.wsp`, which is provided via the Explorer (page 609) into a directory of your choice on the Microsoft SharePoint server. Install the Microsoft SharePoint solution as described in the corresponding Microsoft SharePoint manual. The following section gives a short introduction into the installation of the Signavio SharePoint App on various versions of Microsoft SharePoint servers. The argument `SharePointServerURL` represents the Microsoft SharePoint server’s web application URL.

To install the webpart for Microsoft SharePoint Server, open the management shell of Microsoft SharePoint, navigate to the directory containing the file `SignavioViewer2013_2016.wsp` and execute the following commands:

1. Upload the SharePoint Solution package using the following command:

   ```
   Add-SPSolution -LiteralPath {PATH_TO_WSP}
   ```

   **Sample**

   ```
   Add-SPSolution -LiteralPath C:\Users\Administrator\Desktop\SignavioViewer2013_2016.wsp
   ```

2. Install the solution on SharePoint. **Please mind the version number in the code examples:**

   ```
   Install-SPSolution -Identity {} -WebApplication {SharePoint 2013 Server URL} -GACDeployment
   ```

   **Sample**

   ```
   ```

3. Check the status of the installation by using the SharePoint Central Administration:

   ```
   ```

   **Sample**

   ```
   ```

   In case there are problems during the installation, please have a look at [Troubleshooting the Microsoft SharePoint integration](page 631).


**Configuring the SharePoint 2013/2016 App**

Once you have installed the Microsoft SharePoint app on your server you can add Signavio Collaboration Hub to the desired web page.

1. Click under **Page** the **Edit page** entry.

2. Via **Add webpart** you can embed the installed component.
3. For this purpose, activate the Signavio Collaboration Hub Web Part option and then click the Add button.

4. Click Edit to add the Signavio URL to the Signavio section on the right side. This either directs to the Signavio server or defines an URL to a specific start diagram (URL from the Collaboration Hub preview):

5. In addition, you have the possibility to make the settings for the component layout, such as title or the dimensions:
6. Optionally, you can perform advanced settings, such as page description or insert a link to a help page.

You find more information about embedding a webpart on the following page: http://office.microsoft.com/de/HAo10097463.aspx.

Removing the Signavio App

With Microsoft SharePoint 2013/2016 the web part can be removed via the solution manager of the central administration.

1. First, go to the system settings in the central administration.
2. Retract the web part and then remove it.
3. Alternatively, you can retract and delete the web part on the Microsoft SharePoint administration shell using the following commands:

   Uninstall-SPSolution -Identity signavioviewer.wsp -WebApplication <SharePointServerURL>
   Remove-SPSolution -Identity signavioviewer.wsp

7.11.2 Integrating Collaboration Hub with Microsoft SharePoint Online

**Note:** This section explains the Microsoft SharePoint Online integration with Windows Azure-based or certificate-based authentication. An overview over the different SharePoint integration variants is accessible at Microsoft SharePoint Integration (page 602).

In case you experience problems during the integration, please read Troubleshooting the Microsoft SharePoint integration (page 631).

To integrate Collaboration Hub with SharePoint Online, the following steps are necessary:

- Configuring Microsoft Azure Active Directory (page 615) (only for Active Directory-based authentication)
• Downloading the Signavio Collaboration Hub SharePoint App (page 617)
• Manage read access rights (page 619) (only for Active Directory-based authentication)
• Installing the Signavio SharePoint App on Microsoft SharePoint Online/365 (page 621)
• Activating the app part (page 626)

Configuring Microsoft Azure Active Directory

Note: Signavio currently only supports Microsoft Azure Cloud US. We do not support Microsoft Cloud Deutschland.

Important: Please configure your Active Directory service before you install the Collaboration Hub SharePoint App.

In case you want to setup certificate-based authentication, please skip this step and proceed at Downloading the Signavio Collaboration Hub SharePoint App (page 617).

The Signavio system needs to have read access to your Windows Azure Active Directory. Microsoft offers Cmdlets for the Microsoft PowerShell to configure external application rights to your Windows Azure Active Directory.

To configure the Microsoft Azure Active Directory, proceed as follows:


2. Open a PowerShell and import the MSOnline module:

   ```powershell
   import-module MSOnline
   import-module MSOnlineExtended -Force
   ``

3. Login with your SharePoint Online administrator account:

   ```powershell
   $msolcred = get-credential
   connect-msolservice -credential $msolcred
   ```

4. Create a new service principal that represents the Signavio Process Editor application in your Windows Azure Active Directory. Ensure that SYMMETRIC_KEY is created as well as AppPrincipalId. The ObjectID is used in a later step.


   ```powershell
   New-MsolServicePrincipal -ServicePrincipalName @"{principal name/domain}"
   -AppPrincipalId "{A GUID}" - DisplayName "{Display Name}"
   -Type Symmetric -Usage Verify
   ```

   Example:

   ```powershell
   New-MsolServicePrincipal -ServicePrincipalName @"editor/signavio.com"
   -AppPrincipalId "f59264af-bf33-47c2-a010-94f2a323ab58"
   -DisplayName "Signavio Process Manager" -Type Symmetric -Usage Verify
   ```

Output:
The following symmetric key was created as one was not supplied {SYMMETRIC_KEY}

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName</td>
<td>Signavio Process Manager</td>
</tr>
<tr>
<td>ServicePrincipalNames</td>
<td>{editor/signavio.com, f592d4af-bf33-47c2-a010-94f2a323ab58}</td>
</tr>
<tr>
<td>ObjectId</td>
<td>ddadd653-bda2-4f1f-87d2-22a180563a34</td>
</tr>
<tr>
<td>AppPrincipalId</td>
<td>f592d4af-bf33-47c2-a010-94f2a323ab58</td>
</tr>
<tr>
<td>TrustedForDelegation</td>
<td>False</td>
</tr>
<tr>
<td>AccountEnabled</td>
<td>True</td>
</tr>
<tr>
<td>Addresses</td>
<td>{}</td>
</tr>
<tr>
<td>KeyType</td>
<td>Symmetric</td>
</tr>
<tr>
<td>KeyId</td>
<td>b1b56bcc-63dc-4d80-8320-55bd3cd79a07</td>
</tr>
<tr>
<td>StartDate</td>
<td>23.09.2013 16:58:19</td>
</tr>
<tr>
<td>EndDate</td>
<td>23.09.2014 16:58:19</td>
</tr>
<tr>
<td>Usage</td>
<td>Verify</td>
</tr>
</tbody>
</table>

5. Apply the role **Service Support Administrator** to the service principal (has read access to the Windows Azure Active Directory):

``` Powershell
Add-MsolRoleMember -RoleName "Service Support Administrator"
-RoleMemberObjectId {ObjectID} -RoleMemberType ServicePrincipal
```

**Example:**

``` Powershell
Add-MsolRoleMember -RoleName "Service Support Administrator"
-RoleMemberObjectId ddadd653-bda2-4f1f-87d2-22a180563a34
-RoleMemberType ServicePrincipal
```

6. Now get your **TenantId**:

``` Powershell
#(get-msolcompanyinformation).objectId
```

TenantId, SymmetricKey, and AppPrincipalId are required for downloading the Signavio Collaboration Hub SharePoint App, see next chapter **Downloading the Signavio Collaboration Hub SharePoint App** (page 617).

**Updating expired Azure Active Directory credentials**

**Important:** The credentials for establishing the connection to Azure Active Directory expire after one year. In case you don't update the credentials, **searching for users in the 'Manage read access' dialog will not be possible.**

To update the credentials, proceed as follows:

1. Look up the credentials for your **service principal**:

   ``` Powershell
   .code-block: none
   Get-MsolServicePrincipalCredential -ServicePrincipalName "editor/signavio.com"
   ```

2. Enter your **symmetric key**.

3. If the credentials have indeed expired, update with the following command. The command returns a new **symmetric key**.

   ``` Powershell
   .code-block: none
   New-MsolServicePrincipalCredential -ServicePrincipalName "editor/signavio.com"
   ```

4. Now add the key to the configuration via the **Manage Collaboration Hub certificate** dialog.
Downloading the Signavio Collaboration Hub SharePoint App

Please open the Explorer to download Signavio Collaboration Hub SharePoint App. Make sure you are logged in as a workspace administrator and follow these steps:

1. Click in the Setup menu the Manage Collaboration Hub authentication entry. If you have not created a certificate yet, a warning dialog opens.
2. In the warning dialog, click on Create certificate.

![Image of the Manage Collaboration Hub authentication window]

- Windows Azure Active Directory based authentication

To have read access to all published process diagrams, you need a client certificate. Here you can create, download or manage such certificates. You can roll out the certificates to all users, who then have read access to all published diagrams without having to login. For further information please read the user guide.

The LDAP support of the Signavio Microsoft SharePoint component requires you to define the URL to the Microsoft SharePoint connector service. This will be used to request available groups and users from the internal Active Directory for single sign on to the Microsoft SharePoint component. If the URL changes, it has to be reconfigured here.

Windows Azure Tenant Id
Principal ID
Symmetric Key

Before you can download the Signavio Microsoft SharePoint component, you have to configure the authentication mode as well as the Microsoft SharePoint version being used.

SharePoint Version
SharePoint 365
Create/Update Webpart

Here you can download a preconfigured Microsoft SharePoint component which you than can install to your intranet.

Download SharePoint Webpart/App
Certificate

Password: 54P9aov
Expires: 27.10.2026 14:10
Download certificate (deactivate, remove)
3. **Select the authentication mode from the drop down menu:**
   
   - Certificate based authentication
   - LDAP based authentication
   - Windows Azure Active Directory based authentication

   Depending on your selection, you have to perform further configuration.

4. If you select **Certificate based authentication** as authentication mode, use **SharePoint 365** as SharePoint version. You can then download SharePoint Webpart/App.

5. If you select **Windows Azure Active Directory based authentication** as authentication mode, insert the **Windows Azure Tenant ID**, the **Principal ID** and the **Symmetric Key**. Click **Save and Test**. In case the test terminates with an error, check your configuration settings. Click **Download SharePoint Webpart/App**.

6. Depending on your web browser configuration the download starts or a download dialog box is displayed.

7. Unpack the downloaded .zip-file with an application of your choice, e.g. with the standard Windows tool. The unzipped folder contains the following files:
   
   - **SignavioViewer365.app** - the Signavio App for Microsoft SharePoint
   - **SignavioViewer365config.csv** - the configuration file for the Signavio App.
Manage read access rights

In this chapter you will learn how to manage read access rights on Collaboration Hub for Active Directory users and user groups. To enable directory service-based (AD, Windows Azure) authentication, it is necessary to grant diagram access rights to domain users or user groups. Via the read access configuration dialog, you can configure exactly which user or user group can get access to specific diagrams or folders in Signavio.

**Important:** In case you set up certificate-based authentication, you can ignore this section.

In case you set up Active Directory-based authentication and you do not configure access rights to any published diagram, a user will see an empty Collaboration Hub.

To grant read access, proceed as follows:

1. Open the Explorer. We recommend you to use a different browser or your browser's *incognito mode*, to avoid session conflicts, see *SharePoint displays the Signavio login page, although the authentication mechanism was configured correctly* (page 633).
2. Click in Setup menu the *Manage users & access rights* entry.
3. Open the *Read access* tab in the *Manage users & access rights* dialog.

4. Choose a folder or diagram in the left navigation column. The dialog shows the access rights connected to the object. If the right has been assigned to a parent directory the corresponding folder is displayed as well.
5. If you have marked the desired folder, then you can specify the user you want to grant access for. Type in a user name by using the search functionality - as soon as you start typing, a drop down list appears containing the user names found. Select the user name. Alternatively click the input field and choose a user name from the drop down list. To navigate through the sites, use the arrow at the bottom of the list.

---

**Hint:** Opening the read access dialog and searching for a user or user group can serve as a test of the directory service integration. If an existing user does not appear, something went wrong during the setup.

6. Click the **Add** button. The user can now be found in the list of granted access rights.

---

**Revoking read access**

You can also remove assigned read permissions. Follow the instructions 1 to 3 of the previous section and then proceed as follows:

1. Select the user you want to remove from the list of users with read access.
2. Click **Remove** right next to the user name.
**Hint:** If the read access is inherited from the parent directory, the delete option is not displayed. Navigate to the appropriate folder using the **inherited from** column and delete the permission here.

3. Confirm by clicking the **Yes** button in the warning message box.

**Installing the Signavio SharePoint App on Microsoft SharePoint Online/365**

In this section, you will learn how to install the Signavio Collaboration Hub SharePoint App for Microsoft SharePoint Online/365. To install the Signavio SharePoint Online App on a SharePoint site, proceed as follows:

1. Access the SharePoint administrator interface by clicking on the **Apps** button in SharePoint Online:

   ![Office 365 Apps](image)

2. Select the **Admin** tile:

   ![Admin tile](image)

3. In the navigation area, select the **SharePoint** entry under **ADMIN**:
4. Go to apps and open the **App Catalog**.
In the navigation area, select **Apps for SharePoint** and then click **New**. You may need to create a new site here.
6. Click **new item** and then upload the **SignavioViewer365.app** file. Disable the check box **Add as a new Version to existing files**:

7. Finally click on **OK**.

**Adding the app part**

To add the app part to a SharePoint Online site, proceed as follows:
1. Access the SharePoint site, to which you want to add the Signavio SharePoint app part, e.g. https://COMPANY.sharepoint.com/.

2. Under **Settings**, select the **Site contents** entry:

3. Select **Add an app**:

4. Click **SignavioViewer365App** and then check **Trust it** in the pop up dialog.

5. Now, a one-time configuration is necessary. Click on the newly installed app to start the configuration:
6. Upload the **SignavioViewer365config.csv** from the zip-file you downloaded before and click **Save**. The file contains information about the server address, a certificate and a password to identify your Signavio workspace:

**Configure the Signavio Portal Viewer for SharePoint 365/Online:**

Please upload the configuration file (SignavioViewer365config.csv) that you downloaded from Signavio in combination with this app.

![Choose File](SignavioView...config.csv)

![Save](SignavioView...config.csv)

Subsequently, Signavio Collaboration Hub will open.

**Activating the app part**

To activate an app part on a teamsite in SharePoint Online, proceed as follows:

1. First, select the **page** tab on the page on which the app part should be displayed.
2. Click **Edit**.
3. Switch to the **Insert** tab.
4. Click **App Part**.
5. Select the entry **Signavio Collaboration Hub for SharePoint Online**.
6. Click **Add**.
7. Optionally, you can define an entry-point diagram for the Signavio SharePoint app part. Open the configurations menu of the app part and edit the field **entry point**. You can get the respective URL through the **portal preview** of the entry point diagram in the Signavio Explorer - for example: https://editor.signavio.com/p/portal/#/model/39e3b4b9134544b98ae4291545cd7928

![Signavio Portal for SharePoint 365](Link)

*Insert the entry point URL (in the lower left corner).*

It is possible to add the app part multiple times in your SharePoint, for example in different pages, and add a different entry-point to each instance. You do not need to upload the configuration again.
Removing or updating the Signavio SharePoint App

**Important:** To properly install a new version of the Signavio SharePoint App, the previously installed app must be completely removed.

To remove or reinstall the app, proceed as follows:

1. Open your App Catalog in SharePoint Online:

![Signavio App Catalog](image)

   **Getting started with your app catalog site**

2. Select the appropriate app and then click on **More - Delete**:

![Apps for SharePoint](image)

   **Apps for SharePoint**

   ![Product ID](image)
3. In the navigation area, open the **Site contents**:

4. Select the app and then click **Remove** in the context menu. The app is moved to the recycle bin.

5. The app must now be removed from your recycle bin. To do this, open the **recycle bin**:
The recycle bin should contain two apps. If this is not the case, ensure you followed the procedures correctly. Delete both Apps.

6. Now, the app has to be removed from the SharePoint Administration's second-stage recycle bin. For this purpose, open the Recycle bin and then the second-stage recycle bin45:

7. Remove both apps from the second-stage recycle bin.

8. If you want to update the app, reinstall it as described at Installing the Signavio SharePoint App on Microsoft SharePoint Online/365 (page 621).

9. When the new app is installed, update all sites that reference the app.

7.11.3 Defining the entry point diagram

You are able to define an entry point diagram that is displayed when a user opens Collaboration Hub via a SharePoint site.

45 https://support.office.com/de-de/article/5fa924ee-16d7-487b-9a0a-021b9062d14b
Important: In case you configured Active Directory-based authentication, please ensure the readers have access to the entry point diagram.

- In case you want to configure one entry point diagram that is displayed in all SharePoint pages, you can set a general Collaboration Hub configuration property (page 489) in your Signavio workspace.
- In case you want to configure an entry point diagram for one specific SharePoint page you can set the corresponding property when configuring Signavio Collaboration Hub App for this site (page 612).

This feature is supported by SharePoint 2013/2016 only.

7.11.4 Updating SharePoint authentication certificate

Note: This article is only relevant if you use the SharePoint integration with the software-as-service version of Signavio Process Manager.

As described in detail at Updating your Collaboration Hub certificates to SHA-256 with RSA encryption (page 711), we will change the required authentication certificates to SHA-256 with RSA-encrypted certificates on December 15, 2016.

You need to update the certificates in your SharePoint Web Part by then. Otherwise, the Web Part will no longer be able to authenticate against the Signavio SaaS server.

Updating the certificate in SharePoint Online

To update the certificate on SharePoint Online, proceed as follows:

1. Remove the app as described at Removing or updating the Signavio SharePoint App (page 627).
2. Reinstall the app as described at Integrating Collaboration Hub with Microsoft SharePoint Online (page 614).

Important: To update the app, you need to download the new App in the Signavio Explorer.

Updating the certificate in SharePoint Server 2013/2016

To update the certificate in SharePoint Server 2013/2016, proceed as follows:

1. Open the Explorer and click under Setup the Manage Collaboration Hub authentication entry.
2. In the Manage Collaboration Hub authentication dialog, click Download certificate.
**Important:** Make sure you download the **new certificate** and not the old one you find in the section *Management of old certificates.*

3. Remember or document the password of the new certificate, you will need it later.
4. In Microsoft SharePoint, open the Signavio web part configuration.
2. Upload the new certificate and insert the new password:

3. Click **OK** to save the new configuration.

### 7.11.5 Troubleshooting the Microsoft SharePoint integration

This chapter provides an overview over complications administrators might experience when enabling the integration of the Signavio Collaboration Hub with Microsoft SharePoint.
Microsoft SharePoint 2010/2016 Installation errors

**Error:** The commands to install, deploy, uninstall or remove the SharePoint solution do not work.

**Solution:** Make sure the Windows Service SharePoint Administration is up and running. By default, the startup options of this service are set to **manual**.

**Error:** Invalid authentication token/cannot resolve host

**Solution:** If your SharePoint system setup allows you to make changes to the web.config file of your SharePoint application (the default location is C:\inetpub\wwwroot\wss\VirtualDirectories\80), please make your that the useDefaultCredentials flag is set to true. By using this configuration the SignavioViewer can make use of the system's proxy configuration that Internet Explorer is using as well.

On the SharePoint server, go to **Configuration - SharePoint - SafeControls - SafeControl** and ensure the entry looks as follows:

```xml
<SafeControl Assembly="SignavioViewer2013" Version=1.0.0.0 Culture=neutral PublicKeyToken="e6770998a80d4130"
 Namespace="SignavioViewer2013.SignavioVisualWebPart" TypeName="*" Safe="True" />
```

Furthermore, check the following entry: **Configuration - system.web - trust**:

```xml
<trust level="Full" originUrl=”” />
```

**Sharepoint app cannot perform requests to the Signavio server**

**Error:** When the SharePoint app tries to authenticate against the connected workspace on the Signavio server, it displays the error "unable to connect to the remote server".

**Solution:** If you configured the IIS server SharePoint is running on using Integrated Security without anonymous access and the impersonation feature is turned on, the Signavio SharePoint App might not be able to perform requests to any server outside the local network.

The suggested solution is to disable impersonation and to allow the account running the SharePoint application pool internet access.

The following blog post describes the problem in-depth: [http://weblogs.asp.net/owscott/iis-windows-authentication-and-the-double-hop-issue](http://weblogs.asp.net/owscott/iis-windows-authentication-and-the-double-hop-issue)

**Sharepoint security token issue** **Error:** An operation failed because the following certificate has validation errors

```plaintext
Subject Name: CN=SharePoint Security Token Service, OU=SharePoint, O=Microsoft, C=US
Issuer Name: CN=SharePoint Root Authority, OU=SharePoint, O=Microsoft, C=US
Thumbprint: 50928B849FD8AFD29A6562B6E19F4E93397F6CC
```

**Solution:** The local root certificate might have been deleted. Make sure to set the certificate in place.


**The read access management dialog does not load users and user groups**

**Error:** The Manage users - Read access dialog reports that the SharePoint Connector is not available.

**Solution:** Activate the loading of mixed content in your Internet Explorer configuration settings under Internet options - Security - Custom level (Internet zone).
The user's Collaboration Hub remains empty

**Error:** The user's Collaboration Hub remains empty

**Solution:** Probably, you haven't granted access to any published diagram, yet. Read about how to grant read access at *Manage read access rights* (page 619).

SharePoint displays the Signavio login page, although the authentication mechanism was configured correctly

**Error:** When opening the page that contains the Web Part, the Signavio login page is displayed instead of Collaboration Hub.

**Solution:** In your browser, please check if you are logged in as Signavio modeler or workspace administrator. If so, log out and reload the SharePoint page.

Authentication Certificate

If you use the Signavio SharePoint App with the software-as-a-service version of Signavio Process Manager, please update the authentication certificate by December 15, 2016.

### 7.11.6 Configuring SharePoint Search

The SharePoint search allows users to search for documents which are uploaded into SharePoint and then associated with diagram elements or dictionary entries in Signavio Process Manager. The full text search is performed using the Explorer or advanced search in Collaboration Hub.

**Note:** Please note that the SharePoint search integration described here is independent of the SharePoint webpart integration.

1. Open the Explorer to configure the SharePoint search.
2. Select in the *Setup* menu the *Manage SharePoint search* entry.
3. **Make the following settings in the Manage SharePoint search dialog:**

   - **Search endpoint:** Specify the URL of the SharePoint API endpoint.
   - **User name:** Specify the Windows user name.
   - **Password:** Enter the corresponding password.
   - **Workstation:** Optionally, you can specify a computer name.
   - **Active Directory domain:** Optionally, you can specify a domain.

4. Confirm your settings by clicking on the **Save** button.

**Note:** Please keep in mind that the performance of the full text search in Collaboration Hub depends on the performance of your SharePoint server.

### 7.12 Signavio for SAP Solution Manager 7.1

**Important:** As SAP will discontinue standard support plans for Solution Manager 7.1 by the end of 2017, we recommend **upgrading to version 7.2** (page 678) as soon as possible.

Engaging business users is a key success factor for SAP implementation projects and ongoing system operations. Signavio is the perfect business-facing interface for SAP Solution Manager. In the following
chapters, you can learn how to integrate Signavio with the SAP Solution Manager and how to configure and work with the integration:

### 7.12.1 Engage business users with Signavio for SAP Solution Manager

Getting business and IT stakeholders on the same page is vital for SAP projects. Solution Manager is the tool of choice for documenting SAP deployments and serves as a single source of truth on the technical side. In order to get business users involved in all phases of the project, you need a collaborative and business user-friendly environment that smoothly integrates with Solution Manager.

**Signavio and SAP Solution Manager for maximum success**

Use SAP®'s reference process content to kick start your project. Modify the process content using QuickModel and the intuitive graphical BPMN 2.0 Editor. Get everyone involved in process design and synchronize your process repository with Solution Manager. All you need is an active connection between your Signavio account and your local Solution Manager instance (free behind-the-firewall connector available for download).

Here you can download a white paper on integrating Signavio with the SAP Solution Manager. Please contact us if you are interested in an On-Premise option for the free Solution Manager Edition.

**Maximize the benefit from your SAP® investment through Signavio’s Solution Manager Integration**

Signavio allows you to maximize the benefit from your SAP® investment, as Signavio’s Solution Manager Integration Component enables you to:

- Leverage SAP®’s reference process content as starting point for business discussions.
- Involve stakeholders in all phases of the project.
- Establish business / IT alignment for maximum insight into business requirements.
- Speed up projects and increase acceptance.
- Decrease test management overhead.
- Guide roll-outs.

### 7.12.2 Installing the Signavio SAP Solution Manager 7.1. Connector

The SAP Solution Manager is the central tool for introducing and running SAP applications. Through integrating the SAP Solution Manager with Signavio, you gain an intuitive business process oriented view on your SAP application landscape.

**License and software requirements**

- A SaaS or ON-PREMISE installation of Signavio Process Manager
- The Signavio license must be enabled for the Signavio SAP Solution Manager Connector integration
- SAP Solution Manager 7.1 SP10 or a higher support package
- Operating System: Windows Server 2008/2012 64 bit or Debian stable 64 bit (or a similar Linux distribution)
Hardware requirements of the Signavio SAP Solution Manager 7.1 Connector

- 64-bit processor architecture (AMD64/x64/x86_64)
- 1 CPU core
- 1GB RAM
- 1GB of free hard disk space

We recommend you to install the Signavio SAP Solution Manager 7.1 Connector on the same server/virtual machine as the SAP Solution Manager 7.1.

Network/firewall/proxy requirements

The connector must perform outgoing calls to https://editor.signavio.com, https://app-us.signavio.com or https://app-au.signavio.com to the server/virtual machine, on which your on premise installation of Signavio Process Manager is deployed. The network port 443 (default port for HTTPS connections) is used.

System landscape overview

**System landscape**

The Signavio connector for SAP Solution Manager is installed in your data center. We recommend to install it on the same machine as the Solution Manager. The connector establishes a secure connection to the Signavio back end system. As the connector establishes an HTTPS polling connection, your firewall is only required to allow outgoing traffic.
**Hint:** It is possible to connect multiple SAP Solution Manager instances to one Signavio workspace. Then, you need to setup a connector for each of these instances.

**Configuring SAP Solution Manager for Signavio**

Now, the SAP Solution Manager needs to be configured for the integration with Signavio.

- Check of Solution Manager’s version. Signavio supports the SAP Solution Manager version 7.1 SP 10 and later. For SP 10 and SP 11, you need to apply the following SAP Note:
  
  **1984144 - BSI-Service-Interface update:** [http://service.sap.com/sap/support/notes/1984144](http://service.sap.com/sap/support/notes/1984144)

- The Signavio SAP Solution Manager 7.1 Connector uses the BSI Enterprise Services (SOAP web service) to communicate with the SAP Solution Manager. This web service has to be enabled and configured before the connector can work properly:
  - Log into your SAP GUI and start transaction se80.
  - Search for the package BSI_SERVICE_API:

  ![Object Navigator](image)

  **ABAP Development Workbench / BSI Service API**
  
  - Open the enterprise service BSIPROJECTDIRECROYINTERFACE.
  - Start the SOAMANAGER from the upper tool bar:
Start the “SOAMANAGER”.

- Create a new service binding in SOAMANAGER:

Go to the configurations tab and click create. Confirm the action through clicking Apply Settings:
Create a new service binding.

Choose HTTP basic authentication to secure the connection between the SAP Solution Manager and the Signavio connector:

Select "User ID/Password" under “Transport Channel Authentication”.
- Open the tab Transportation Settings and find the URL of the service binding. Please store the URL for later usage when configuring the connector.

Configure the communication user’s access rights in SAP Solution Manager

This section describes how to create a communications user for SAP Solution Manager.

The Signavio SolMan Connector requires an user account on the SAP Solution Manager system to communicate and leverage the BSI SOAP web services.

This users account should meet the following requirements:

- **Communication data user only**
  This user account should not have the rights to log into a SAP GUI session.

- **Sufficient access rights to read and modify business blueprint projects and the attached content**

- **Limited access rights to certain blueprint projects that should be excluded from the integration with Signavio**

The next steps are to create a special role that can be used by the service user used by the Signavio SAP Solution Manager Connector. Aligned with that role there is a new authorization profile created to define the access rights of the connector. The access rights of the connector’s user should be limited to the blueprint projects that are actually considered for the integration with Signavio.

The following authorization objects are required:
• S_PROJECT
• S_SERVICE
• AI_SA_TAB
• S_IWB

The required authorization objects can be traced with transaction code ST01.

Open transaction Role Management PFCG:

Open transaction Role Management “PFCG”.

Create a new single role e.g. ZSIGNAVIOCONNECTOR. Then click Single Role:
Create a new role.
On the next screen enter a profile name in the Authorizations tab or click **Generate a profile name**.

*Generate a profile name.*
Afterwards, click Change Authorization Data:

Change authorization data.

Click the button Manually in the tool bar.

A pop-up dialog will be opened. There, add S_PROJECT and S_SERVICE:
Adjust authorizations.

The item **Check at Start of External Services** needs full permissions. A click next to the yellow triangle will set it * (full authorization):
Grant full authorization.  
Confirm the action:

![Assign Full Authorization for Subtree](image)

Confirm the action.  
The section **Project Management: Project authorization** provides the possibility to define which blueprint projects should be accessible by the account used by the Signavio SAP Solution Manager Connector.  

It is possible to define read, write and delete permission separately. This is, for example, relevant when there is an existing blueprint project in SAP Solution Manager that should be accessible via Signavio, but is not supposed to be changed by the business departments.  

To grant full permission, click the yellow * button:

![Change role: Authorizations](image)

Grant full permission.  
Alternatively, use the edit icon to define detailed access control for specific projects:
Use the edit icon to define detailed access control for specific projects.

Now, you can define permissions in detail:

Configure permissions in detail.

The object AI_SA_TAB is used to limit the access to certain tabs of the Solution Manager business blueprints.
STRUCT, TRANSACT, SAPDOCU and CUSTDOCU should be activated:

The S_IWB authorization object is used to access the knowledge warehouse used by SAP Solution Manager to store and access documents. Signavio is using the knowledge warehouse to store the link to a Signavio diagram related to a structure element (e.g. business process) in a SAP Solution Manager blueprint. This authorization object is also required to upload documents from Signavio to SAP Solution Manager.
Before this profile can be used by any role it has to be activated by clicking the red/white circle button. 

**Generate profile:**
Click “Generate profile”.

Use the transaction SU01 to create a communication data user using the role ZSIGNAVIORCONNECTOR:
Create a communication data user.

Assign the role `ZSIGNAVIOCONNECTOR`:
Assign the role "ZSIGNAVIOCONNECTOR".
As a result, in Signavio you will only have access to the defined blueprint projects:
Select a SAP Solution Manager project in Signavio.

Read more about configuring projects at *Importing data from SAP Solution Manager into Signavio* (page 660).

**Configuring access rights required for the integration in Signavio**

In Signavio’s *Manage users & access rights dialog* you can restrict the features available to members of a particular user group.

You might want to enable the import / export functionality for SAP Solution Manager only to a limited number of users in your Signavio workspace or even restrict the access to a specific project folder in Signavio.

The feature set *Solution Manager Import / Export* includes all functionality required to perform an import or export of content from/to Solution Manager. It does not include the administration part to install a new connector. Users of the *Administrators* group always have the functionality of the *Solution Manager Import / Export* feature set available.

**Hint:** The Signavio connector itself requires a user having the *Solution Manager Import / Export* feature set available as well. We recommend assigning a separate user not used by any human user to the Signavio connector.
Installing the Signavio SAP Solution Manager Connector

To integrate Signavio with the SAP Solution Manager, follow the instructions in the following subsections.

Adding a Solution Manager connector to your Signavio workspace

To add a Solution Manager connector to your Signavio workspace, proceed as follows:

- Open the Signavio Explorer as a workspace administrator.
- Go to Setup - Manage SAP® Solution Manager®
- Click Add connector:

  ![Add connector](image)

- Fill out the configuration dialog, according to the following description:

  **Connector Name:** This is just a human readable name to identify the Signavio SAP Solution Manager 7.1 Connector installation later during the setup and when configuring access rights.

  **Connector URL:** This is the URL where the connector installation can reached after startup. You will most likely put it on the server on which your SAP Solution Manager 7.1 is running. Only HTTPS is supported. E.g.: https://172.16.1.15:8083/
• Click **Add SolMan Connector**:

![Add SolMan Connector](image)

Run the SAP Solution Manager Connector configuration dialog in Signavio

**Important:** There is no need to make this URL available through your firewall for incoming requests. Only outgoing request to the Signavio server must be performed in case of a Signavio Software-as-a-Service subscription.

• The connector will now appear in the configuration overview dialog. Click **Edit**:

![Edit Connector](image)

Click ‘Edit’.

• You’ll see that the fields **OAuth client id** and **OAuth secret** have been filled in automatically. Please make sure copy and save these values, as you will need them later on.

• Click the link to download the connector’s binaries (**solman71connector_v2.zip**):
Download the Signavio SAP Solution Manager 7.1. Connector. Later, this file needs to be accessed by the server administrator.

Configuring the Signavio connector

Downloading and extracting the connector

- Extract the connector’s binary file (`solman71connector_v2.zip`) to a location of your choice (e.g. /usr/sap/SolMan/DVEBMGS00/work/signavio)
- Open the file `solmanconnector.properties` and make required configurations for:
  - `connector name` and `url`
  - `Oauth id` and `Oauth secret`
  - `SAP Solution Manager BSI Service endpoint url`
  - `SAP user` and `password` to be used by the connector
  - Proxy configuration (**optional**):
    - `proxy.host`
    - `proxy.schema`
    - `proxy.port`

Downloading and extracting the SAP JVM 8.1  The Signavio SAP Solution Manager connector requires to download and extract SAP's JVM version 8.1.

To download the SAP JVM 8.1, open the following link and select the correct version for your operating system:

https://tools.hana.ondemand.com/

Unzip the downloaded archive.

The expected extraction result is the folder `sap_jvm_8` with the following content:
The content of the folder “sapjvm_8”.

Now, copy the folder `sapjvm_8` to the installation directory of the Signavio SAP Solution Manager connector.

**Running the connector**

- Run the connector:
  - On **Linux**:
    - **Start up**
      
      Execute the `startup.sh` script to start the connector. Add this to your `init.d` script to support restarts of the VM.
    
    **Shutdown**
    
    `.shutdown.sh` will close the connector.
  - On **Windows**:
    - **Start up**
      
      Execute the `startup.bat` script to start the connector.
    
    **Shutdown**
    
    `shutdown.bat` will close the connector.
    
    **Run as a windows service**
    
    `service.bat install`
    
    `service.bat remove`
    
    You can also start/stop the connector via `SolManConnectorService.exe`.

- Run the setup:

  In this step the connector establishes an Oauth connection to the Signavio Process Manager and asks for the a Signavio user to authenticate against Signavio Process Manager.

  Proceed as follows:

  - Open `https://SOLMANCONNECTOR_HOST:PORT/setup`
  - Click **Authorize Signavio SAP® Solution Manager® 7.1 Connector**
  - Login to the Signavio account under which the connector should perform its work.
  - In case you are already logged in with a different account in the same browser, you might want to log out first.
  - The following web page will be displayed:
Authorization request

You are logged into the workspace Signavio as Sven Wagner-Boysen (sven.wagner-boysen@signavio.com).

The application Signavio's SAP Solution Manager connector is requesting access to your Signavio account:

- Access and modify your data in Signavio that is related to the SAP® Solution Manager® integration (e.g. diagrams)

Do you grant the access?

[Grant] [Deny]

Grant authorization.

Click Grant to allow the Signavio SAP Solution Manager Connector to connect with Signavio Process Manager.

7.12.3 Managing SAP Solution Manager projects in Signavio

Once you have established the connection between Signavio and SAP Solution Manager and enabled access to blue print projects on SAP Solution Manager's side, you can start to manage project configurations in Signavio.

Adding a project

Open the Signavio Explorer and go to Setup - Manage SAP® Solution Manager®:
Open the Solution Manager project configuration dialog in Signavio.

Select a connector:

Select a connector.

Now, click Add project:

Click ‘Add project’.

Select a project from the list that appears. You may use the search field to filter the list:

Select a project.
The project has been added to your Signavio workspace.

**Configuring a project**

To configure a project, select it once again:

![Signavio Process Manager - User Guide, Release 13.0.0](image)

*Open the project configuration*

You can configure the following three properties:

![Signavio Process Manager - User Guide, Release 13.0.0](image)

**The project configuration**

1. **Node ordering**: If you select Signavio as node ordering, process steps will be re-ordered according to the sequence flows of the corresponding BPMN 2.0 diagrams in Signavio Process Manager. Otherwise, the order will be kept as-is in SAP Solution Manager.

2. **Mappings**: Here, you can configure how SAP capabilities, logical components, transactions and documentation are represented in Signavio.

   - You can configure **capabilities** to be represented as dictionary entries or not at all. If you activate capability representation, you can define custom attributes on task level of the type **dictionary link** that reference **capabilities**. Moreover, you can specify an attribute that links from the capability category to the category you create for **modules** and from there to the category you create for **applications**.

   - You can select a custom attribute on task level of the type **single line text** to represent the **logical component** of the **process step mapping** and define a default value, for example the logical component **SAP ECC**.

   - For the **transaction mapping**, you can select the following custom attributes on task level (again of the type of the type **single line text** that contain transaction information: **Logical component**, **processing type**, **transaction code** and **transaction type**. Again, you can define default values for some of these attributes.

   - For the **documentation mapping**, you can specify custom attributes on diagram level for **general documentation** and **project documentation**. In addition, you can define the **documentation type**.
**Hint:** We recommend to create custom attributes especially for the representation of these SAP-specific properties. You find more information on how to create custom attributes at *Defining custom attributes* (page 538).

**Manage mappings.**

3. **Attribute mappings:**

Here, you can create and edit custom mappings between attributes of your SAP Solution Manager project and Signavio. To create a new mapping, click **Add mapping**:

**Click ‘Add mapping’.**

Now, select a an attribute from the SAP Solution Manager project on the left and map it to a Signavio attribute - on either task, BPMN diagram, or value chain diagram level, depending on the attribute you picked. Then, click **Add attribute mapping**.
Create a new attribute mapping.
To edit or delete a custom attribute mapping, select it from the list, re-configure it and click **Edit mapping**, respectively click **Delete mapping**:

![Image of attribute mapping](image)

Delete an attribute mapping.

Deleting a project

To delete a project, open the project configuration as described above and click **Delete project**:

![Image of delete project](image)

Delete a project.
To prevent an accidental deletion, you will be asked to type in the project's name and confirm the action.

7.12.4 Importing data from SAP Solution Manager into Signavio

Signavio leverages the data access points of SAP Solution Manager’s business blueprints (transaction code SOLAR01 / SOLAR02) to read data from SAP Solution Manager.

Reading a business blueprint project includes the following items:

- Structure type: **Project**
- Attributes:
  - Name
  - SAP default and custom attributes
Detailed Information:
- Attached logical components

• Structure type: Scenario
Attributes:
- Name
- SAP default and custom attributes

Detailed Information:
- SAP and project documentation

• Structure type: Process
Attributes:
- Name
- SAP default and custom attributes

Detailed Information:
- Transactions
- SAP and project documentation

• Structure type: Process step
Attributes:
- Name
- SAP default and custom attributes

Detailed Information:
- Transactions
- SAP and project documentation
- Logical component
- Shortcuts are not supported

When importing SAP Solution Manager data into Signavio, you can either start with an empty project in Signavio (page 661) or (re-)synchronize an existing process landscape (page 665) with a SAP Solution Manager project.

Starting with an empty project in Signavio

The following section describes how to load content from SAP Solution Manager into Signavio for business-focused editing.

If you import content from SAP Solution Manager’s business blueprints into Signavio, these structures are created on the Signavio side:

• The Solution Manager’s project level is mapped to a separated folder in Signavio and a value chain diagram listing the contained business scenarios. Folder and value chain diagram are labeled with the project’s name.

• Each business scenario results in a sub folder of the project folder in Signavio and a value chain diagram listing the business processes of this business scenario.

• Each business process results in a BPMN 2.0 diagram contained in the corresponding scenario folder. Every process step is imported as a BPMN 2.0 task. All detailed content such as the logical components, structure attributes, transaction codes or relevant documents are attached to the the BPMN 2.0 task as well.
• For each capability, an entry in the *Signavio Dictionary* (page 428) is created.

**Example import dialog sequence**

This section provides an example sequence of how to import data into an empty Signavio folder.

The screen shot below shows the business blueprint view of a project in SAP Solution Manager. The use case for the following example is to make parts of the project available in Signavio for further editing and business related documentation.

*The Business Blueprint view of a project in SAP Solution Manager*

To import content from SAP Solution Manager into an empty folder in Signavio, create a new folder to store the content of the Solution Manager project.

In the Signavio Explorer, go to **New - Folder**, type in a label for the folder and click **OK**: 

*Create a new folder.*

Open the import configuration dialog in order to load content from SAP Solution Manager into Signavio. To do so, select **Import / Export - Import from SAP® Solution Manager**: 

---

Chapter 7. Workspace administration
Open the import dialog.

Now, select a connector and a project and click **Link with project:**

Link the folder to a SAP Solution Manager project.

The next dialog displays the whole structure of the project in SAP Solution Manager down to the level of business processes. It offers the possibility to narrow the current import action down.

Every checked item and all of its children are considered for the import. You can limit the import to single business processes as well as to select business processes from different business scenarios. Select the processes you want to import and click **Run import:**

Select the processes you want to import.

While the import is executed, status updates are displayed. Once the import succeeded, you can close the dialog:
The import succeeded.

After the import has been finished successfully, the project folder in Signavio contains the data from the selected SAP Solution Manager processes. Below, you see a Value Chain diagram containing links to all processes of a business scenario. The scenario value chain diagram is in turn referenced by the project value chain diagram:

The value chain diagram of an imported business scenario.

The Signavio Editor offers a separate section for SAP Solution Manager-relevant attributes in the attributes pane:
**SAP transactions are displayed as attributes.**

Opening the attribute Editor for transaction codes displays the detailed transaction configuration of a process step:

![Detailed transaction configuration of a process step](image)

---

**Load SAP Solution Manager data into an existing landscape (integration / re-import)**

There are situations in which content exists in the Signavio Process Editor that had been synced with Solution Manager before changes have been made on the Solution Manager side.

Signavio offers the possibility to trigger the import action again for existing content to be rather updated than newly created.

If the import is triggered into existing synced content in Signavio, the following operations are supported:
• Renaming of Solution Manager project, business scenarios, business processes, process steps (structure elements)
• Adding new structure elements
• Adding, removing, editing transaction codes linked to structure elements
• Adding, removing, changing documents linked to structure elements
• Changing the logical component of a process step
• Editing structure attributes

If structure elements are removed, they are not removed on the Signavio landscape.

To retrieve content updates from Solution Manager, the import action has to be triggered in Signavio Process Manager. Therefore, it is necessary to navigate to the folder of the previous import.

As the Signavio system remembers the previous import to that folder, the synced Solution Manager project is already pre-selected. It is not possible to import a second Solution Manager project into that folder or one of its subfolders.

In the Signavio Explorer, select **Import / Export - Import from SAP® Solution Manager®**: 

![Import from SAP Solution Manager](image)

Open the import dialog.

Now, select the content from SAP Solution Manager that should be imported/updated in Signavio and click **Run import**:

![Run import](image)

Select the content that should be imported/updated in Signavio and re-run the import.

Changes can be, for example:

• A business process has an additional process step.
• A business scenario is new/ was not imported before.

All content that was added in Signavio Process Manager diagram between the two Solution Manager import actions remains. Only Solution Manager-relevant attributes like structure attributes, transaction codes, logical components or documents are updated.

---

Chapter 7. Workspace administration
### 7.12.5 Exporting data from Process Manager to SAP Solution Manager

Signavio offers the possibility to transfer business focused process definitions, improvements and change requests to the IT-focused SAP Solution Manager.

Solution Manager’s business blueprints are based on a strict hierarchy for structure elements (project, business scenarios, business processes, process steps). However, Signavio offers the possibility to push the relevant content in the formats of BPMN 2.0 and value chain diagrams to SAP Solution Manager.

Mapping Signavio diagram content to SAP Solution Manager’s business blueprints works as follows during pushing it:

- Signavio content → Business blueprint element
- Value chain diagram → Business scenario
- BPMN 2.0 task → Process step
- BPMN 2.0 subprocess → Process step or all sub-tasks become process steps
- BPMN 2.0 diagram → Business process
- Custom attribute (configuration required) → Logical component, transaction code, knowledge warehouse document

#### Exporting to an empty SAP Solution Manager Project

This section describes how to transport business processes from Signavio to SAP Solution Manager.

If you start with an empty business process blueprint project in SAP Solution Manager, it is very important to configure the project properly in Solution Manager. Especially all logical components used in the Signavio Process Manager must be available in the Solution Manager project.

Pushing content from Signavio Process Manager to SAP Solution Manager follows some simple rules to create the hierarchical structures in SAP Solution Manager:

- Every selected folder and value chain is treated as a business scenario in SAP Solution Manager. If a folder and a value chain describe the same scenario, the value chain is preferred.
- Every selected BPMN 2.0 diagram is considered a business process for SAP Solution Manager. If a BPMN 2.0 diagram is linked within a BPMN 2.0 process, it is integrated into the parent business process on SAP Solution Manager.

#### Example import dialog sequence

The following screenshots and texts show an example sequence of how to push data into an empty SAP Solution Manager Project:

To trigger the export of content from Signavio Process Manager to SAP Solution Manager, navigate to the folder containing the BPMN 2.0 process diagrams that are relevant for the business blueprint project in SAP Solution Manager. In the Signavio Explorer, go to **Import / Export - Export to SAP® Solution Manager**.
Go to ‘Import / Export’ - ‘Export to SAP® Solution Manager®’.  
If there has never been content pushed to the SAP Solution Manager before, the current folder is treated as the project folder for this business blueprint project.

**Note:** A folder in Signavio Process Manager can only be linked with exactly one business blueprint project.

Select a connector and a business blueprint project and click **Link with project**:

**Establish a link to a business blueprint project.**

Now, the link between a Signavio folder a SAP Solution Manager project is established. The next step is to review and redefine the scope of the export to SAP Solution Manager.

Select all value chain, BPMN 2.0 diagrams and folder that should be exported to SAP Solution Manager. **Click Check:**
Configure the scope of the export.

Once the export preparation and check terminated, you can review the changes that have been made in Signavio. This is especially helpful when you execute a re-export.

Click **Dry run** to perform a pseudo export, that *simulates* the actual one:

Perform a dry run of the export.

After the dry run, changes that will be applied to the current state of the project in SAP Solution Manager are displayed. Review the changes and click **Export** to apply them:
Start the export.

The export dialog keeps you informed about the state of the export. Once the export is finished, warnings and errors will be displayed (if there are any).

The project was successfully exported.

Note: A typical problem occurs if a logical component was used for a process step (a BPMN 2.0 task in Signavio Process Manager, but was not assigned to the business blueprint project in SAP Solution Manager beforehand. After the missing logical component was changed accordingly in the Signavio Editor or the missing logical component was assigned to the blueprint project in Solution Manager and the export can be executed successfully.

Now, you can work with the project in SAP Solution Manager:
View the project in the SAP GUI.

Extending an existing SAP Solution Manager Project

As business processes underly continuing changes for improvements, the content in the SAP Solution Manager business blueprint needs to be continuously updated. Pushing content from Signavio to SAP Solution Manager is a simple sequence of steps. Most of the settings will be reused from the last import or export action with SAP Solution Manager.

If content already exists in a SAP Solution Manager business blueprint, the following rules apply:

- No structure nodes (business scenario, business process or process step) are deleted.
- Changes of structure node names or the assigned logical component are considered.
- New structure nodes are added as defined by the BPMN 2.0 diagrams, value chain diagrams and the folder structure in Signavio.
- Assigned transaction codes, documents and attributes are merged. In case of conflicts, the value change provided by the Signavio content overwrites the content change in SAP Solution Manager.

For instructions on how to conduct the export, please have a look at the section Exporting to an empty SAP Solution Manager Project (page 667) above.

7.12.6 Display SAP Solution Manager project references in the Signavio Explorer

To configure the display of SAP Solution Manager Business Blueprint Project in the Signavio Explorer, you need to add the column Linked Solution Manager Project to the Explorer's list view.

The column displays a reference to the linked Business Blueprint Project in SAP Solution Manager.

Note: The column is not visible if the icon view (page 23) is activated. To view it, switch to the list view (page 24).
Open the **Edit general configuration** dialog in the setup menu of the Signavio Explorer:

![Edit general configuration dialog](image)

*Click ‘Setup’ - ‘Edit general configuration’.*

Scroll to the section **Table columns** and add the column **Linked SolMan Project**:

![Table columns configuration](image)

*Add a column to link to SAP Solution Manager.*

Now, you can see the link to SAP Solution Manager directly in the Explorer of your Signavio workspace:
The links to SAP Solution Manager are displayed in the Signavio Explorer.

### 7.12.7 Use case examples

**Overcome the three-level limit of business blueprints in SAP Solution Manager**

Business blueprints in SAP Solution Manager 7.1 focus on a strict 3-level hierarchical structure (business scenario - business process - process step). It is not required to limit the business process structure in Signavio to 3 levels. In Signavio, it is possible to use any structure to organize business processes. We encourage you to use BPMN 2.0 subprocess links to achieve the desired level of detail on each level of your business process structure.

In this example, a five-level structure is used. Us usual, level 1 to 3 contain business scenarios, business processes and process steps as usual. Level 4 summarizes some steps of level 3 in more detail by using subprocess links. Level 5 describes some manual steps that do not need to be documented in the business blueprint project in SAP Solution Manager.

The dialog **Export to SAP Solution Manager** helps you to select the corresponding levels in your business process hierarchy to push their content to the connected business blueprint project in SAP Solution Manager.
Select the levels you want to push to the connected business blueprint.

As a result, all content below level 3 in Signavio is flattened to level 3, meaning all BPMN 2.0 tasks on Signavio level 4 become process steps in SAP Solution Manager. These are in this example Load relevant documents and Run report generation:

'Load relevant documents' and 'Run report generation' become process steps in SAP Solution Manager.

7.12.8 Updating the Signavio SAP Solution Manager Connector

To update the Signavio SAP Solution Manager Connector, proceed as follows:
• **Stop the Signavio SAP Solution Manager Connector**: Run the `shutdown.sh` script under Linux. Under Windows you can either execute the script `shutdown.bat` or stop the Windows service through Windows **Services** GUI. The scripts can be found in your Signavio SAP Solution Manager Connector installation repository.

• **Backup the following configuration files**:
  - `solmanconnector.properties`
  - `signavio.oauthtoken`
  - `log4j.properties` (in case you have changed the properties in this file)
  - `connector.keystore`

• **Download the update**:
  Log into your Signavio workspace as an administrator and download the latest Signavio SAP Solution Manager Connector under **Setup - Manage SAP® Solution Manager**.

• **Update the installation files**:
  Replace the files in your installation directory with the files you just downloaded.

• **Reapply the backed up files**

• **Start the Signavio SAP Solution Manager Connector**:
  To do so, run the `startup.sh` script under Linux. Under Windows you can either execute the script `startup.bat` or start the Windows service through the Windows **Services** GUI. The scripts can be found in your Signavio SAP Solution Manager Connector installation repository.

7.12.9 **Troubleshooting the integration with the SAP Solution Manager**

This section offers solutions to known issues that can occur when installing and configuring the Signavio SAP Solution Manager Connector.

**The setup page is empty/blank**

Please check the recent log file of the SolMan connector at `logs/solmanconnector.log`.

You might find this exception error statement:

```
2015-01-07 17:18:53,577 ERROR (SolManRequestExceptionFilter.java:43) - Error in request
java.net.UnknownHostException: <SignavioURL>
```

The problem could be caused by the following:

• **Your network connection might require a proxy to make outgoing requests to the Signavio server** (see above).

• **The URL of the Signavio server cannot be resolved to an IP address (130.0.75.51) via DNS**.
Please try to solve the issue as follows:
Check check if the network port is already used by another application:

- On Windows CMD: `netstat -aon | more`
- On Unix bash: `netstat -aon | grep LISTEN`

Check if the BS1* web service of SAP Solution Manager reports detailed errors.

The Signavio Connector for SAP Solution Manager leverages several SOAP web services of SAP Solution Manager. In case the Signavio Connector for SAP Solution Manager reports a problem using one if this web service we can check SAP Solution Manager’s error log to investigate the root cause of this error.

Below you find an example excerpt of the connector log:

```
2015-01-30 10:40:32,467 ERROR (SolmanTaskHandler.java:103) - Unexpected exception
    ...ConnectException: Connection refused
```

The SAP transaction code SRT_UTIL provides access to the error log:

```
Enter the transaction code 'SRT_UTIL'.

Click Error log to open the log:
```
Configuration of a firewall or SSL proxy

If your network security team has configured a SSL firewall proxy, it might happen that the SSL connection to the Signavio server is intercepted for security scanning. In some cases the SSL proxy adds its own SSL certificate to the certificate chain and therefore the Signavio connector for SAP Solution Manager cannot validate the SSL handshake as the proxy's certificate is unknown to the connector.

At logs/solmanconnector.log you will find a message similar to this:

```
2015-01-20 14:13:34,009 ERROR (SolManRequestExceptionFilter.java:43) - Error in request javax.net.ssl.SSLHandshakeException: sun.security.validator.PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target...
Caused by: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target
```

To activate Java SSL debug output for the connector, the last line of the startup script has to be modified:

Start the **Signavio SAP Solution Manager 7.1 Connector**:

```
%JAVA_HOME%/bin\java.exe -Djavax.net.debug=ssl:handshake:verbose -jar solman71connector.jar
```

This will create debug output on the command line, which helps to identify the untrusted SSL certificate.

Shortened example output:
There are two possible solutions:

- Change the configuration of the SSL proxy/firewall to allow trace from Signavio connector for SAP Solution Manager to the Signavio server.
- Add the SSL certificate as a trusted certificate to the Java keystore of the connector:

  ```bash
  keytool.exe -import -trustcacerts -file fortinet.cer -keystore connector.keystore
  ```

The keytool can be found in `sapjvm_8\bin`.

### The Connector does not start because the SAP JVM 8.1 cannot be found

Make sure you downloaded the SAP JVM 8.1 and unpacked it in the installation directory Signavio Solution Manager Connector.

Read more at *Downloading and extracting the SAP JVM 8.1* (page 654).

**Hint:** In case you installed the SAP JVM somewhere else, you can adjust the corresponding paths in the `startup`, `shutdown` and (for Windows) `service` scripts.

You find more information about the SAP JVM in the *SAP Documentation*.\(^{46}\)

## 7.13 Signavio Process Manager for SAP Solution Manager 7.2

New in version 11.10.0.

**Note:** This feature is available on request and only available on `editor.signavio.com`\(^{47}\). We will activate the feature on `app-us.signavio.com`\(^{48}\) and `app-au.signavio.com`\(^{49}\) as soon as possible.

Engaging business users is a key success factor for SAP implementation projects and ongoing system operations. Signavio Process Manager is the perfect business-facing interface for SAP Solution Manager. This article explains how to integrate Signavio Process Manager with SAP Solution Manager 7.2.

### 7.13.1 SAP Solution Manager 7.2

The latest version of SAP Solution Manager offers a set of advantages over its predecessor:

- A more business process-oriented perspective makes solution management more approachable for business users.
- The three-level restriction for process hierarchies was removed. This simplifies the integration setup with Signavio Process Manager, for example.

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\(^{46}\) https://help.sap.com/doc/saphelp nw74/7.4.16/en-US/7d90b4ef17452289f91288cbdbd77/frameset.htm

\(^{47}\) https://editor.signavio.com

\(^{48}\) https://app-us.signavio.com

\(^{49}\) https://app-au.signavio.com
• A stronger focus on rapid deployment solutions further reduces the configuration overhead of SAP roll-outs.

• Instead of an old-fashioned transaction-based user interface, Solution Manager comes with two intuitive web-based graphical user interfaces: Solution Landscape and Solution Documentation.

As SAP will discontinue standard support plans for Solution Manager 7.1 by the end of 2017, we recommend upgrading to version 7.2 as soon as possible.

### 7.13.2 Features

Signavio Process Manager for SAP Solution Manager supports the following features:

- Export (from Process Manager to Solution Manager) of:
  - folders,
  - sub folders as scenarios,
  - BPMN diagrams as processes,
  - task as process steps,
  - custom attributes.

- Import (from Solution Manager to Process Manager) of executable transactions as Dictionary entries.

### 7.13.3 Setting up the integration with SAP Solution Manager 7.2

In contrast to Process Manager’s integration setup for Solution Manager 7.1, software as a service (SaaS) customers no longer need to install a connector application to enable communications between Process Manager and Solution Manager. Establishing the integration between Process Manager and Solution Manager 7.2 requires the following setup steps:

- Configuring SAP Solution Manager (page 679)
- Configuring Process Manager (page 681)
- Exporting BPM projects to SAP Solution Manager (page 685)

Configuring SAP Solution Manager

To successfully prepare SAP Solution Manager for the integration with Process Manager, first configure your systems to allow communications with Process Manager and then set up the solution you want to integrate.

**Network & firewall requirements** Ensure your security settings allow incoming requests from Signavio Process Manager to your SAP Solution Manager instance (to the URL/port you need to specify later). The IP address of the Solution Manager integration service is 130.0.76.232 for editor.signavio.com⁵⁰. You can optionally use a reverse proxy⁵¹ to shield your Solution Manager instance. The following diagram visually explains communications between Process Manager and your Solution Manager:

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⁵⁰ https://editor.signavio.com
⁵¹ https://en.wikipedia.org/wiki/Reverse_proxy
Basis administration  Activate Process Management in SAP Solution Manager as described in the SAP solution administration documentation\(^2\).

Important:

- Ensure that in the list of gateway services for Process Management, the following services are activated:
  - AGS_GBC_ODATA_BPMN_SRV (Graphical Component BPMN Gateway Service),
  - AGS_GBC_ODATA_GOM_SRV (GBC GOM Gateway Service),
  - PROCESSMANAGEMENT (SAP Solution Manager APIs for third party tool integration).

Solution administration

Note: SAP recommends that you use exactly one solution for the production scope of your SAP Solution Manager.

Set up the solution you want to integrate:

- Open the Solution Administration, either through the GUI or by executing the transaction soladm.
- Create new solution or select an existing one.

\(^2\) https://help.sap.com/viewer/60943ADF3FF4483B62C568BB8A87D17/7.2.05/en-US/ca87f55473b5f51ee10000000a44470.html
Creating a new solution

- Select the branch you want to use for the integration.

Leave the browser tab open or document **solution** and **branch name** otherwise. You will need them when configuring the integration with Solution Manager on Signavio Process Manager side.

**Note:** You will also need the SAP solution administration later when configuring the **attribute mappings** (page 683).

Configuring Process Manager

To prepare Process Manager for the integration with Solution Manager, first configure the connection and then define attribute mappings, as well as transaction import/export settings.

**Setting up the connection to SAP Solution Manager** To set up the integration between Process Manager and Solution Manager 7.2, open Process Manager’s **Explorer** and select **Setup**, then **Manage SAP Solution Manager 7.2**:
A new tab opens. Point to your Solution Manager endpoint, which typically is
<solutionManagerURL>:<port>sap/opu/odata/sap/PROCESSMANAGEMENT/.  
<solutionManagerURL> stands for the base URL of your SAP Solution Manager instance and <port> for its port number. Enter
your credentials and insert the solution and branch name of your solution:

Configuration

Configure the connection settings of the Solution Manager instance.

<table>
<thead>
<tr>
<th>URL of the Solution Manager Instance</th>
<th>Solution name</th>
<th>Branch name</th>
</tr>
</thead>
<tbody>
<tr>
<td>solutionManagerURL/ProcessManagement</td>
<td>TEST</td>
<td>IMPORT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Username</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Password</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Configuring the connection

Note:

- Your Solution Manager instance needs to accept incoming requests on the port specified in the URL from Signavio Process Manager’s Solution Manager integration service. The IP address of this service is 130.0.76.232 for editor.signavio.com⁵³.
- We recommend creating a new branch specifically for the Process Manager import.

Click Save.

Using self-signed certificates   You can use self-signed certificates with your connection configuration. Once uploaded, this certificate will be trusted on every request sent to Solution Manager.

Self-signed certificates must be in the SSL X509 format encoded with Base64 (this happens by default when exporting certificates from a web browser). Make sure your certificate is in the following format:

——BEGIN CERTIFICATE——

followed by the content of the certificate on a new line. Then, on another new line, finish the certificate with

——END CERTIFICATE——

⁵³ https://editor.signavio.com
To upload your certificate, just click the ‘Select a certificate’ button next to ‘SSL Certificate’ in the Configure tab.

If necessary, upload your self-signed SSL (XS09) certificate to authenticate with the SAP Solution Manager instance. (More information can be found in the user guide.)

### Configuring attribute mappings

You can configure attribute mappings that specify how content structures in Process Manager are aligned to the ones in Solution Manager. To configure the mappings, switch to the Attribute mappings tab. In this tab, define the Solution Manager attribute that stores the Collaboration Hub link to exported processes. You can optionally configure mappings between custom Process Manager attributes (page 538) and Solution Manager attributes.

Select an SAP Solution Manager attribute that is then used to store a link to the diagram in Signavio Collaboration Hub.

Configure attribute mappings between Signavio Process Manager and SAP Solution Manager.

The attribute mapping dialog

The following Process Manager attribute types are supported:

- **Boolean**
- **number**
- **single-line text**
- **multi-line text**
- **drop-down (enumeration)**
- **Dictionary link**

In order to guarantee compatibility, if the Signavio attributes are defined as lists, the mapped Solution Manager 7.2 attributes have to be of the type **multivalue**.

Read more about how to configure attributes in Solution Manager on the SAP blog⁵⁴.

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of available executable transactions from Solution Manager as Dictionary entries and use them in your process models.

To configure and run transaction imports and exports, switch to the **Executable transactions** tab. For the import, select a **custom dictionary category** (page 538) of the type **other**. We recommend that you create a category specifically for this purpose and restrict write access to this category to members of the **administrators** group. Click **Import Transactions** to start the import.

**Note:** We recommend triggering the transaction import to Process Manager **before** you start modeling your processes. This allows you to re-use the transactions Solution Manager defines right away in your process models.

Executable transactions are not exported to SAP Solution Manager. Instead, **links to the transaction definition in Solution Manager** are exported with any BPMN task that contains transaction references. Configure a **custom attribute** (page 538) of the type **Dictionary link (list)** for the element type **task** of BPMN diagrams that you will use to reference transactions in business processes. Restrict the attribute to only support Dictionary entries of the category you configured for the transaction import above. We recommend that you create an attribute specifically for this purpose.

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**Import**

Select a target dictionary category of type “other” to be used for the import of executable transactions and import the transactions into the selected category.

**Note:** To avoid unintentional changes to imported dictionary items, we highly recommend to remove all write access rights to this dictionary category for all users, except administrators.

**Export**

Select a custom attribute you configured in Signavio Process Manager for linking BPMN tasks to executable transactions. This attribute has to be of type “Dictionary link (as list)”; must be defined for BPMN 2.0 tasks and must link to the dictionary category you selected above.

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After you have configured the transaction import/export settings, close the configuration tab and switch back to the **Explorer**.

Now you can export data from Process Manager to SAP Solution Manager.
Exporting BPM projects to SAP Solution Manager

Select the folder you want to export and select **Import/Export - Export to SAP® Solution Manager® 7.2**.

Opening the export tab.

**Note:** You cannot export single diagrams.

Again, a new tab opens.

Click **Start**:

Export

Initiate an export of the selected folder to transfer Signavio processes to the SAP® Solution Manager®

Starting the export.

The user interface will provide you with feedback on the status of the export.

After a successful export, the selected folders and processes are available in Solution Manager.
7.13.4 Troubleshooting

Troubleshooting setting up the integration

If you have problems setting up the integration, proceed as follows to test the availability of the Process Management Gateway Service (typically `sap/opu/odata/sap/PROCESSMANAGEMENT`):

- In the SAP GUI, execute the SAP Gateway Client transaction `/IWFND/GW_CLIENT`.
- Then send a GET request against `sap/opu/odata/sap/PROCESSMANAGEMENT/?$format=json`.

You also need to ensure this request is accepted when made from the origin Signavio Process Manager’s integration service.

Troubleshooting exporting BPM projects

If you want to export BPM projects to SAP Solution Manager, proceed as described in Exporting BPM projects to SAP Solution Manager (page 685).

Note that you cannot export single models. Alternatively, select folders that contain the models to be exported. Every model and every subfolder within this folder will be exported.

Troubleshooting exporting models that link to other models

If you want to export a model that links to another model by a collapsed subprocess, the linked model (which the link targets) must be within the same (top level) folder as the model you want to export. Additionally, make sure that the linked model and the main model are always exported together to ensure that the linked data is consistent.

Troubleshooting deleting items

You cannot delete SAP Solution Manager items in Signavio Process Manager. Deleted items in Signavio Process Manager will still be present in the SAP Solution Manager after an export. If you want to delete an item, e.g. a model, a directory, an attribute - you must delete it on the SAP Solution Manager side.

Troubleshooting adding, removing or changing the link of an Dictionary item

Adding, removing or changing the link of an Dictionary item on the side of the Signavio Process Manager will not adjust the link in the Solution Manager once it has been exported with a different state before. If you want to add, remove or change a link of a Dictionary item delete the task within Signavio Process Manager and create a new task with the desired link. Also delete the outdated item that has been used previously on the side of SAP Solution Manager. Export it afterwards to SAP Solution Manager.

Troubleshooting an export fails

The Signavio Process Manager is only able to act as connector to the Solution Manager. This connection is not able to verify the constraints of Solution Manager attributes, e.g. a limit of size. When an attribute is mapped that contains a value that is longer than this size maximum, the export fails. If so, check the attribute constraints.
7.14 System integration scenarios

While Process Manager is a powerful tool in itself and in combination with other applications of the Signavio Business Transformation Suite55, many organizations facilitate its benefits by integrating it with third-party or custom systems of their enterprise application landscape. This document provides an overview of common integration scenarios.

7.14.1 Migrating content from other process modeling tools

If you have already modeled some of your processes with a different tool, you want to import your diagrams in Signavio Process Manager without cumbersome manual copy-and-paste. Signavio Process Manager supports the open standard BPMN 2.0 XML for process diagram interchange, but you can also import diagrams of most popular proprietary formats. Read more in the import/export (page 574) overview of this user guide.

7.14.2 Synchronizing data between Process Manager and enterprise architecture and document management systems

Many customers want to exchange data between Signavio Process Manager and enterprise architecture and document management systems, either as a one-time transfer of enterprise application or document definitions, or to setup continuous synchronization process. Depending on the requirements, there are different options for an integration:

- For a one-time transfer of data to Signavio Process Manager, you export the data from your tool in any spreadsheet-like format and use our spreadsheet import (page 589) to generate the corresponding dictionary entries.
- For the architecture management tool LeanIX, a special interface is available that allows a seamless synchronization of LeanIX and Signavio Process Manager data. Read more in the corresponding LeanIX documentation article56.
- For Microsoft SharePoint, we offer a search integration (page 633) that allows you to search for documents that have been uploaded in SharePoint and then associated with diagram elements or dictionary entries in Signavio Process Manager.
- For custom integrations, you can utilize Signavio Process Manager REST API to automate data synchronization with third-party systems. To license the Signavio Process Manager API, contact our Sales Team at sales@signavio.com.

7.14.3 Facilitating access to Collaboration Hub

The Collaboration Hub (page 396) is the single source of truth about your process landscape for all people who contribute to your organization. Consequently, it should be easily accessible and integrated with other systems that provide your employees with crucial information.

Read more about
- Single sign-on (page 688) to Collaboration Hub,
- integrating Collaboration Hub with Microsoft SharePoint (page 602).

You can also embed Collaboration Hub through an iframe57 into any intranet or content management system. Read more at Embedding Collaboration Hub via an iframe (page 597).

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56 https://leanix.zendesk.com/hc/en-us/articles/202000055
7.14.4 Integrating Process Manager with project management systems and wikis

Many organizations use multiple systems for knowledge management in addition to Signavio Process Manager, for example ticket tracking/project management systems and wikis. You find instructions on how to embed diagrams in third-party systems at Embedding diagrams in external systems (page 53).

If you have very specific requirements, consider licensing the Signavio Process Manager API, which consists of the following two components:

- The REST API allows you to retrieve data from Signavio Process Manager via a popular and well-established data exchange pattern.
- The MASHUP API allows you to manipulate the visual properties of embedded diagrams with custom JavaScript.

7.14.5 Single sign-on

Users find it inconvenient to manage authentication credentials for every system in your enterprise application landscape. Enabling single sign-on⁵⁸ improves user experience (less time spent on login procedures and password recoveries) and enhances security (less tempted to use easy-to-guess passwords or write passwords on post-its). Signavio Process Manager supports SAML-based (page 474) single sign-on. Signavio Collaboration Hub supports both SAML- and Active Directory-based (page 477) sign-on.

7.14.6 Integrating Process Manager with ERP systems

Many customers use Signavio Process Manager to get the most out of their ERP implementation projects. Integrating Process Manager with your ERP system ensures your process definitions are always in sync with your ERP system’s reality.

Signavio Process Manager for SAP Solution Manager

Engaging business users is a key success factor for SAP implementation projects and ongoing system operations. Signavio Process Manager is the perfect business-facing interface for SAP Solution Manager. Read more about integrating Signavio Process Manager with SAP Solution Manager at Signavio for SAP Solution Manager 7.1 (page 634).

Custom API integration

If you use a different ERP system, you can implement a custom integration using Process Manager’s REST API. REST APIs⁵⁹ are programming language-independent and follow a popular and well-established data exchange pattern. This simplifies the implementation for your IT department, because your engineers don’t need to learn a new programming language or paradigm. To license the Signavio Process Manager API, contact our Sales Team at sales@signavio.com.

7.14.7 Integrating Process Manager with business process execution (BPX) engines

Business process execution (BPX) engines allow you to execute the process models you create with Signavio Process Manager. Because process execution is based directly on BPMN 2.0 (or DMN 1.1) diagrams, BPX engines close the communication gap between business and IT in combination with

⁵⁹ https://en.wikipedia.org/wiki/Representational_state_transfer
collaborative process modeling tools. Generally, you can integrate Signavio Process Manager with any BPX engine that supports BPMN 2.0 XML. Below we list some of the most popular engines.

**Signavio Workflow Accelerator**

Signavio provides its own workflow execution platform Signavio Workflow Accelerator\(^6\), which enables business users to automate workflows, while keeping IT involvement at a minimum. Read more in the chapter Integrating Signavio Process Manager with Workflow Accelerator (page 599) of the Signavio Process Manager user guide. We recommend using Signavio Workflow Accelerator for automating workflows with human participation.

**Camunda**

Camunda\(^6\) provides a Java-based platform for automating business processes and business decisions. In the Camunda documentation\(^6\) you can learn more about deploying diagrams you created in Signavio Process Manager to Camunda's business process execution environment. Because process automation with Camunda requires extensive Java development expertise, we recommend an integration primarily for high-scalability process automation in a scenario where software development resources are both available and inevitable necessary.

**RedHat JBoss BPM/BRMS Suite**

Similar to Camunda, RedHat JBoss BPM/BRMS Suite is recommendable to automate IT-heavy, high-volume processes. To get started with setting up an integration of Signavio Process Manager and RedHat JBoss BPM/BRMS Suite, read the following articles:

- Exporting diagrams to RedHat JBoss BRMS projects on GitHub (page 159)
- From Design to Execution with JBoss BPM Suite & Signavio Process Manager\(^6\) (written by Red Hat Evangelist Eric Schabell)

### 7.14.8 Generating custom reports

The reporting (page 63) functionality of Signavio Process Manager can provide you with detailed insights into diagram and usage metrics. For example, the Governance Report view (page 96) offers an overview of usage statistics and helps you confirm your process management initiative is really taking off. To create highly customized reports, you can use process documentation templates (page 559) or aggregate data of process characteristics reports (page 82) with spreadsheet software like Microsoft Excel. We recommend creating custom reports by utilizing the Signavio REST API only in scenarios with very specific requirements that cannot be fulfilled otherwise.

### 7.14.9 Translating Signavio Process Manager content with external tools and services

If you are part of an internationally operating organization, you might want to document at least some of your processes in multiple languages. Of course, Signavio Process Manager supports the creation of multi-lingual content - see Translating diagrams (page 132). However, some customers prefer to outsource the content translations to a third party, who does not have direct access to the Process Manager workspace. In such a scenario, you can setup a custom integration - for example with a translation management system - through Process Manager’s REST API. To license the Signavio Process Manager API, contact our Sales Team at sales@signavio.com.

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\(^6\) http://docs.workflow.signavio.com/en/latest/introduction.html
\(^6\) https://camunda.com/
\(^6\) https://docs.camunda.org/get-started/cycle/roundtrip-signavio/
\(^6\) http://www.schabell.org/2015/06/design-to-execution-with-jboss-bpmsuite-signavio.html
7.15 API access to the Signavio Process Manager

Signavio Process Manager offers access to the following APIs:

1. A RESTful HTTP(S) API (page 690) that allows you to integrate your systems and third-party systems with the Signavio application server.

2. A JavaScript Mash-up API (page 693) that allows you to interactively integrate the graphical representation of Signavio diagrams into other web applications' front ends.

This section provides an overview of these APIs. For more information on common integration scenarios, see System integration scenarios (page 687).

Note: Using the Signavio Process Manager APIs requires an explicit API license. You need to purchase this license in addition to your Process Manager user licenses. This document provides an overview of the capabilities of Process Manager APIs. The full API documentation is only available for customers who purchased an API license.

The following diagram illustrates how to access Signavio Process Manager with the REST API and the Mash-up API.

![Diagram showing API access]

Overview of the system integration landscape

7.15.1 The Signavio Process Manager REST API

The REST API provides access to Process Manager resources via HTTP.

A RESTful API uses HTTP methods like GET, POST, PUT and DELETE to create, access and manipulate HTTP resources. The Signavio REST API is a client-server API for creating, updating and retrieving all diagram, folder and dictionary data. Most HTTP response resource representations use the JSON format.

JSON is a lightweight, human-readable general purpose data format. All popular programming languages can process JSON, either natively or via mature third-party libraries.

---

65 [http://json.org/](http://json.org/)
We also provide a collection of requests you can import into the Postman\textsuperscript{66} HTTP client. With Postman, you can execute requests to get to know the API and generate code snippets\textsuperscript{67} to transfer them to your API development project.

REST API coverage

You can use the REST API to work with folders and diagrams. You can:

- List folders and their contents
- Create, rename, move and delete folders
- Search folders and diagrams. Searching supports filtering by result type and paging search results.
- List a diagram's revisions
- Fetch a specific diagram revision in JSON, BPMN 2.0 XML, SVG and PNG formats
- Create, update, rename, move, copy, publish and delete diagrams
- Import diagrams from BPMN 2.0
- Check BPMN 2.0 diagram syntax

You can also use the REST API to work with the Dictionary and set-up. You can:

- List Dictionary categories and fetch category details
- Create, update and delete Dictionary categories
- Search for Dictionary entries by category, initial letter of the entry name, or full text. Searching supports sorting and paging search results.
- Fetch Dictionary entries
- Create, update and delete Dictionary entries
- Create custom attributes
- Create custom data types (requires the Enterprise Plus Edition of Process Manager)

Example - generating custom reports

If your organization has specific reporting requirements, you might want to leverage the REST API to create custom spreadsheet reports or JavaScript dashboards. This section explains how to get started.

\textbf{Important:} Process Manager provides a comprehensive set of configurable reports by default. Before you implement a custom report that leverages the REST API, check first if the default reporting capabilities cover your organization’s needs. You can find an overview of all reports in the Process Manager user guide.

To generate a custom report, you can generally apply the following three-step approach:

1. \textbf{Retrieve the corresponding metadata.}

   First, send one or more requests to the Process Manager server to retrieve an overview of the objects your report will cover. Depending on the scope of your report, either execute a search or traverse a folder. These requests return metadata about the objects your report will cover. Parse the JSON object the server returns to store object IDs and, optionally, other properties such as names.

\textsuperscript{66} https://www.getpostman.com/
\textsuperscript{67} https://www.getpostman.com/docs/postman/sending_api_requests/generate_code_snippets
2. **Retrieve all relevant objects.**

   For each object ID you retrieve, send a GET request for the corresponding resource URL to return the full object. Transform these objects into the data structures your report will contain.

3. **Generate report in the desired format.**

   Finally, transform the data into the desired business user-friendly format. For example, use a spreadsheet creation library to generate a report that end users can open as a Google Spreadsheet or Microsoft Excel document.

The example below uses the Python XlsxWriter library to generate a custom report that lists the name, ID and number of elements for each diagram in a given folder (including its sub-folders).

```python
import requests, xlsxwriter, json

from conf import *
from authentication.authenticate import authenticate

# ID of the folder that should be covered by the report
dir_ID = '<dir_ID>'
dir_url = base_url + '/p/directory'
diagram_url = base_url + '/p/revision'
auth_data = authenticate()

# set credentials, response format
cookies = {'JSESSIONID': auth_data['jsesssion_ID'], 'LBROUTEID': auth_data['1b_route_ID']}
headers = {'Accept': 'application/json', 'x-signavio-id': auth_data['auth_token']}

# recursively collects all diagrams (IDs) in a folder and its sub folders
def retrieve_diagram_meta_data(top_level_dir_id):
    diagrams = {}
    print('retrieving dir with ID {0}...'.format(top_level_dir_id))
    get_dir_request = requests.get(dir_url + '/' + top_level_dir_id, cookies=cookies, headers=headers)
    folder_json = json.loads(get_dir_request.text)
    for j_object in folder_json:
        if j_object['rel'] == 'dir':
            local_dir_id = j_object['href'].replace('/directory/', '')
            retrieve_diagram_meta_data(local_dir_id)
        elif j_object['rel'] == 'mod':
            diagram_id = j_object['rep']()['revision'].replace('/revision/', '')
            diagram_name = j_object['rep']()['name']
            diagrams[diagram_id] = {
                'name': diagram_name
            }
    return diagrams

# recursively collects all diagrams with given IDs
def retrieve_diagram_info(diagrams):
    for id in diagrams:
        print('retrieving diagram with ID {0}...'.format(id))
        get_diagram_request = requests.get(diagram_url + '/' + id + '/json', cookies=cookies, headers=headers)
```

---

68 [http://xlsxwriter.readthedocs.io/](http://xlsxwriter.readthedocs.io/)
```python
j_diagram = json.loads(get_diagram_request.text)

#elements = len(j_diagram['childShapes'])

def generate_report():
    workbook = xlsxwriter.Workbook('Signavio_Process_Manager_Report.xlsx')
    bold_format = workbook.add_format({'bold': True})
    text_wrap_format = workbook.add_format({'text_wrap': True})

    worksheet = workbook.add_worksheet()
    worksheet.set_column('A:B', 30, text_wrap_format)
    worksheet.set_column('C:C', 20, text_wrap_format)

    worksheet.write('A1', 'Name', bold_format)
    worksheet.write('B1', 'ID', bold_format)
    worksheet.write('C1', 'Number of elements', bold_format)

    for index, id in enumerate(diagrams):
        print(f'adding diagram with id {index}...')
        worksheet.write('A' + str(index + 2), index + 2, diagrams[id]['name'])
        worksheet.write('B' + str(index + 2), id)
        worksheet.write('C' + str(index + 2), len(diagrams[id]['childShapes']))

    workbook.close()

diagrams = retrieve_diagram_meta_data(dir_ID)
retrieve_diagram_info(diagrams)
generate_report()
```

7.15.2 The Signavio Process Manager Mash-up (JavaScript) API

The Signavio Mash-up API is a JavaScript library for embedding Signavio models in third-party web applications. It provides a configurable read-only view of diagrams and makes it possible to highlight shapes and to add custom functionality.

![Diagram](https://example.com/signavio-diagram.png)

**Using the Mash-up API: screen shot of an embedded Signavio diagram**
7.16 Purchasing additional licenses

Our website provides a detailed overview of the different features and license types at https://www.signavio.com/products/process-manager/. If you want to purchase or upgrade licenses, please contact the Signavio Sales Team at sales@signavio.com.

7.17 Frequently asked questions

7.17.1 How can I remove a user from my workspace and what are the consequences?

In the Explorer menu bar, click Setup, then Manage users to open the User management dialog (page 455). Select a user in the left column and click Remove user.

When you delete users from a workspace, the system doesn't send out a notification email. The next time the deleted user tries to log in, the system will show an incorrect username-password combination error.

With the deletion of a user, all diagrams and files in the user's My Documents folder are deleted as well. The diagrams and files the user created in or uploaded into the Shared Documents folder remain, as well as comments and changes the user made to other diagrams. Also, dictionary entries the user has created or edited remain.

7.17.2 What are the possibilities to integrate Process Manager and Collaboration Hub with Microsoft SharePoint, Active Directory and SAML?

You find an overview of all common integration scenarios at System integration scenarios (page 687).

7.17.3 We use the Microsoft SharePoint component of the Signavio Collaboration Hub. Why is it not possible to print diagrams?

This problem can be solved by adding Signavio Process Manager to the trusted sites of Internet Explorer. If you use Signavio Process Manager in the software-as-a-service version, the corresponding URL is https://editor.signavio.com (European server), respectively https://app-us.signavio.com (US server) or https://app-au.signavio.com (Australian server).

In the section Trusted sites (Windows) (page 422), you find detailed information on how to set trusted sites.

For further information, you can also go to the following chapters:

- Frequently asked questions: General information (page 715)
- Frequently asked questions: BPMN (page 305)
- Frequently asked questions: Collaboration Hub (page 426)
Chapter 8

Process Intelligence

Note: Signavio Process Intelligence requires a separate license.

Signavio Process Intelligence enables business users to run in-depth process analysis. As a product of Signavio's Business Transformation Suite, Signavio Process Intelligence can serve as a core facilitator of data-driven change.

8.1 Getting started with Process Intelligence

This section explains how to get started analyzing processes with Signavio Process Intelligence:

1. Defining your business challenge
   Before you start using Process Intelligence, clearly define the business challenge you are trying to solve. At Application scenarios (page 705), you will find examples for questions Process Intelligence can help answer.

2. Uploading your data
   To deliver actionable insights, Process Intelligence needs your process data. Once you know what problem you want to solve, you need to upload your event and case data to Process Intelligence. Read more at Uploading data (page 695).

3. Analyzing your process
   After you have uploaded the data, you can use Process Intelligence's intuitive investigation view to analyze your data. Read more at analyzing your process (page 699).

8.2 Uploading data

8.2.1 Data identification

To find solutions to your business challenges, it is vital to identify the required data correctly. There are two common approaches to process data identification:

- Process-oriented data identification
  Define the beginning and end of your process and all tasks and events in between.

- Business object-oriented data identification
Identify business documents that are involved in the process - for examples orders or invoices - and follow the lifecycle of these documents.

Once you have defined the scope of the data with one of the approaches, you can extract the data from the corresponding databases of your application landscape.

Data log types

There are two types of data logs which serve different purposes and should therefore be extracted separately.

- **Event log**
  The event log lists the core properties of all events that occurred as part of the specified process. The event log is necessary for a process investigation.

- **Case attribute log**
  The case attribute log lists the core properties for each case (instance) of the specified process. These properties, like for example case creator, apply to a case in general, and are not dependent on specific events. The case attribute log is optional for a process investigation.

8.2.2 Data requirements

This is how you should provide the event and case attribute logs so that Process Intelligence can import the data:

The **event log** needs to contain the following properties for each event:

- **Case ID**: The unique identifier of the case the event is assigned to. For event logs, this ID may appear repeatedly, it is possible to have multiple events per case ID.
- **Activity**: The name of the event (for example Invoice received).
- **End Timestamp**: The exact date and time when the event was finished. The timestamp format must be the same for all timestamps in a column.

**Note**: In each of the three mandatory columns, every cell must contain a value in the expected data format, otherwise the import will fail.

The following table shows an example of an event log:

<table>
<thead>
<tr>
<th>Case ID</th>
<th>Activity</th>
<th>End Timestamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>100430031000112060012015</td>
<td>Create FI invoice by vendor</td>
<td>2014-11-20T00:00:00.000</td>
</tr>
<tr>
<td>100430031000112060012015</td>
<td>Post invoice in FI</td>
<td>2014-11-20T00:00:00.000</td>
</tr>
<tr>
<td>100430031000112060012015</td>
<td>Clear open item</td>
<td>2015-01-12T23:59:59.000</td>
</tr>
</tbody>
</table>

In addition to the three required columns, the event log may have additional attribute columns. Unlike attributes in the case attribute log, these additional attributes are only associated with one event, not the complete case.

These columns may contain empty cells, but all cells of one attribute column must have the same data format or the import will fail.

The **case attribute log** can list additional properties that provide more details about cases in a process. This log must also contain the Case ID column. Here every row has a unique case ID, because the information in the other columns is related to a specific case.
Like for the event log, every cell in the case ID column must contain a value in the expected data format, otherwise the import will fail. The remaining columns may contain empty cells, but all entries in one attribute column must have the same data format.

The data is checked automatically for empty cells and unexpected formats.

The following table shows an example of a case attribute log:

<table>
<thead>
<tr>
<th>Case ID</th>
<th>Invoice due date</th>
<th>Invoice value</th>
<th>Material group</th>
</tr>
</thead>
<tbody>
<tr>
<td>100430031000112060012015</td>
<td>2015-11-06T14:32:37.000</td>
<td>175.38</td>
<td>A001</td>
</tr>
<tr>
<td>100430031000112070012015</td>
<td>2015-06-10T06:45:38.000</td>
<td>0.41</td>
<td>-</td>
</tr>
<tr>
<td>100430031000112080012015</td>
<td>2015-06-19T14:48:50.000</td>
<td>0.20</td>
<td>-</td>
</tr>
</tbody>
</table>

Each log type needs to be uploaded as a separate file. If you provide the data as a **CSV** file, the CSV's delimiter can be defined.

Below you see an excerpt of an event log:

<table>
<thead>
<tr>
<th>Case ID;Activity;Timestamp</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>100430031000112060012015;Create FI invoice by vendor;2014-11-20T00:00:00.000</td>
<td>Create FI invoice by vendor</td>
</tr>
<tr>
<td>100430031000112070012015;Post invoice in FI;2015-01-08T14:26:02.000</td>
<td>Post invoice in FI</td>
</tr>
<tr>
<td>100430031000112080012015;Clear open item;2015-01-12T23:59:59.000</td>
<td>Clear open item</td>
</tr>
</tbody>
</table>

This is an excerpt of a case attribute log:

<table>
<thead>
<tr>
<th>Case ID;invoice due date;invoice value;material group</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>100430031000112060012015;2015-11-06T14:32:37.000;175.38;A001</td>
<td>Invoice due date;Invoice value;Material group</td>
</tr>
<tr>
<td>100430031000112070012015;2015-06-10T06:45:38.000;0.41</td>
<td>Invoice due date;Invoice value;Material group</td>
</tr>
<tr>
<td>100430031000112080012015;2015-06-19T14:48:50.000;0.20;</td>
<td>Invoice due date;Invoice value;Material group</td>
</tr>
</tbody>
</table>

Creating your process

You always upload data to a specific process.

- If you have not previously created a process in Signavio Process Intelligence, click the **Upload new process data button**.
- If you already have existing processes, but want to upload data for a new process, click the **New process button** in the upper right-hand corner of the *All processes* screen.
- If you want to upload new data for an existing process, select the process from your process list on the *All processes* screen and click **Process settings** in the upper left-hand corner of the navigation menu.

When you're creating a new process, you're prompted to name this process. Use a name related to the business process the data originates from (i.e. "Procure-To-Pay").

Next, you will see the **Process settings** page. Here you can select the files you want to upload.

Select the files to be imported by dragging and dropping them to the import area or by clicking **browse.**

---

Note: When using zip files, each zip file may only contain one file.

Defining data types for your data file

Next you need to define the data types for the data you want to upload.

Import data

Define the data types in the column headers.

For columns containing timestamps, you can either select a matching timestamp format from the drop down menu, or specify your format in the text field above the dropdown menu. Sample is a responsive example of your chosen timestamp format and must match the actual timestamps in your data.

The remaining (optional) columns are set to Choice by default. Other data and column type options are listed in the Type dropdown menu.

Hint: Setting the Type to Ignore means that no data from this column is uploaded. You can set problematic columns to Ignore and upload this data later, rather than cancelling the whole import.

After you have defined the data types, click Import in the lower left corner of the screen. You are redirected to the Process settings page while your file is imported.
You can check the status of your file in the Status column. Failed uploads are marked with an X, successful uploads are marked with a checkmark. Click the X for details.

<table>
<thead>
<tr>
<th>Status</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗</td>
<td>HospitalBilling_test-2.csv</td>
</tr>
</tbody>
</table>

**Note:** Data cannot be imported partially. If an import fails, no data from this data set was imported.

It’s not possible to make any changes to already imported data, altered data has to be uploaded again.

### Deleting process data

To delete process data, click **Process settings** in the navigation bar on the left-hand side. From there, click the trash can icon next to the name of the file you want to delete. This will delete the file, but not the process itself.

If you want to delete all of your process data at once, click the **Delete process** button on the bottom left-hand side of the screen. This deletes the Process from the Process list, including all data files and investigations associated with it.

A confirmation dialog appears.

**Important:** Deleted data is not archived. If you delete process data and later decide you need it again, you’ll need to re-upload it.

### 8.3 Process data analysis

In Signavio Process Intelligence, an analysis view that explains a specific process insight is called an **investigation**. After you have **uploaded your data** (page 695), you can create a new investigation
by clicking **New investigation** and entering a name for your analysis. You can create multiple investigations per process. Using this, you can clearly distinguish between different business challenges.

### 8.3.1 Filters

Filters help you create a view on an aspect of your process data that you're most interested in. You can apply filters on a widget, chapter or document level, which allows you to structure your investigation as you desire. Once done, you can then click the + sign on the right-hand side of your chapter titles to apply one or multiple filters to your process data.

After applying a filter, you can see the absolute number and the percentage of cases the filter includes in the top right corner of the investigation or chapter.

You can create multiple filters per investigation. These are then combined by a logical **AND** operator.

**Widgets** organize and visualize information about your process. For example, the process discovery widget provides insights about the sequence flows and distribution of a process' variants (traces). To create a new widget, click the **Add widget** button at the bottom of your investigation, select a widget type and specify further widget configuration options (depending on the widget type), then click **save**.

The filters and available **widget types** (page 701) allow you to drill down into specific process aspects and create comprehensive analyses. We recommend using a range of widgets to document exactly how you derive your analysis results. This makes it easier communicate the results later on.
8.3.2 Widget types

Here is an overview of all widgets currently available for use in Signavio Process Intelligence.

Activity list

The activity list widget shows all the activities in your process. This widget is divided into two sections: conforming activities and non-conforming activities. This lets you see at a glance what the activities in your process are actually doing, compared to your model. Each section gives you the number of cases that fit each category, along with the percentage.

Bar chart

Use this widget to generate a bar chart from your data. This is useful for situations such as visualizing your cases by issue type for an investigation about support times. You can choose to aggregate your data by choice, duration or currency. Aggregation functions are COUNT, SUM, AVG, MIN or MAX.

Data grouping can also be done by choice, duration or currency. You can choose the orientation of your graph, as well as add a name. You can also add a threshold line or region indicators to your graph. To do so, first create your bar chart. Then, click the three dots in the upper right corner of the widget. Hover over “Threshold” and select none, line, two regions or three regions. From there, you can set the values you want for your thresholds and regions.

Cases table

This widget generates a table with case information you select.

Histogram

Use a histogram widget to show the distribution of of duration attributes—you can see at a glance how much time cases take to complete. You can select the data aggregation source (cycle time or duration) as well as how cases are grouped. You can also add a threshold line or region indicators to your graph. To do so, first create your histogram. Then, click the three dots in the upper right corner of the widget. Hover over “Threshold” and select none, line, two regions or three regions. From there, you can set the values you want for your thresholds and regions.

Diagram

You can use this widget to display diagrams from your Signavio Process Manager workspace. This is helpful if, for example, you're investigating an issue-to-resolution process, and want to display your customer journey map in your investigation.

Process discovery widget

Use this widget to start your investigation into your processes. It generates a process model from the event log data, visualizing the most important behavior of your process. It also has a Google Maps-like feature that lets you zoom in or out on your process model. You can choose to have your model focus on either occurrences or cycle time. The resulting model lets you focus on the most important aspects of your data by giving an overview of multiple variants at once, and lets you see what activities tend to happen the most after each other.

The numbers on the right-hand side represent how many activities and sequence flows in your process are represented in the current model. 100% activities would mean the model is showing all activities
of all cases in your data set. When you view your data in the process discovery widget, the algorithm looks for activity sets with the highest frequency. These activities are the most important ones in your process. For example, if you model has 60% activities shown, it means that the other 40% are not relevant or important to what aspect of your process you are investigating.

You can increase or decrease the amount of activities and sequence flows in your model by using the sliders. The complexity of the model will be adjusted accordingly. By default, the sliders are set at the bottom, with no activity number displayed. The number of edges between activities changes according to connections between activities. Meanwhile, the thickness of the lines indicate either the amount of cases or the amount of time between events when analyzing by occurrence or cycle time.

**Process variant widget**

Variants are helpful to see what pathways are followed through your process. On the left-hand side of the process variant widget, your pathways are displayed as colored lines. The thickness of these lines depends on how you're viewing the variants: by occurrence or duration. For occurrence view, the thickness of the line indicates how many selected variants are in your process. In duration view, line thickness indicates how long a pathway takes. Regardless of which view you're using, you can click on the lines to see details of the duration and number of occurrences in your case. The line color changes depending on if the variants conform or don't conform to your process.

Sorting can be done by criteria such as increasing or decreasing number of cases or length of duration. You can also sort by case attribute, including currency amount.

On the right-hand side of the widget is the number of variants in your process. The numbers in this table change depending on what attribute you've chosen. You can choose to view this attribute by number of cases, or percentage by clicking the button in the upper right corner. If you want to drill down into specific cases for a certain variant, you can change the filter. Click either the clock or the wallet icon and select a different attribute from the drop down menu.

Finally, you can also export your selected variants as a BPMN model in Signavio Process Manager. Click the 'Open as BPMN' link. Signavio Process Manager will open in a new tab, and display your model in the Editor. Remember to save your model before closing the tab.

**Process conformance widget**

Similar to the process variant widget, but the process conformance widget maps variants against a BPMN model of a process. This way, you can see what your actual process is like compared to your process model. You must first map your investigation to a BPMN model to use this widget.

**Spreadsheet**

Use the spreadsheet widget to create an Excel spreadsheet of your data in your investigation. The usual calculations (SUM, ADD, COUNT, MULTIPLY) apply.

**Funnel diagram**

The funnel diagram widget displays a visualization of traffic as it moves through your process. It is based on Sankey diagrams. To use this widget, you must first link it to a process diagram.

In this widget, the traffic patterns in your data are displayed as blue lines. Line width indicates how much traffic is following that particular pathway. Click the - or + buttons to add or remove additional pathways from the display.

You can track where customers enter and leave your process by looking at the circles at the end of each line. A circle with a triangle indicates where traffic enters your process, while a circle with a square

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70 [https://developers.google.com/chart/interactive/docs/gallery/sankey](https://developers.google.com/chart/interactive/docs/gallery/sankey)
indicates where traffic exits. Circles with numbers show the same thing, but where traffic enters and exits your process outside of the main traffic pattern. You can choose to toggle on or off the number of cases following each pathway.

**Time series**

The time series widget displays developments in your process over time. For example, you can view cycle time over days and weeks, the amount of cases during a certain duration, the volume of help requests, and so on. You can also add a threshold line or region indicator to the widget. To do so, first create your time series widget. Then, click the three dots in the upper right corner of the widget. Hover over “Threshold” and select none, line, two regions or three regions. From there, you can set the values you want for your thresholds and regions.

**Text**

The text widget allows you to add rich text sections to your investigation. This can be helpful to, for example, explain your initial assumptions or to interpret a data chart.

**Value**

The value widget aggregates case data. For example, it can be used to show the average purchase value of a subset of the cases of a process. You can also select one of two threshold display modes: two region (for differentiating between good and bad) or three region (displays a configured value next to a bullet chart). The following aggregation functions are available:

- **SUM**
- **COUNT**
- **AVG**
- **MIN**
- **MAX**

**Variable importance**

Similar to the bar chart widget, the variable importance widget generates a bar chart related to variables you choose. For example, if you choose to sort by currency, you can see all the variables in your process that have a strong relation to that variable.

### 8.4 Signavio Process Intelligence API

#### 8.4.1 Overview

This API allows you to upload your data to Signavio Process Intelligence at a desired interval—either only once, or continuously on a regular basis. To upload your data, it must be .xes files, the standard process mining format. You can find out more about .xes formatting [here](https://fluxicon.com/blog/2010/09/intro-to-xes/).
8.4.2 Authorization

Authentication is done via OATH 2 tokens. To authenticate, navigate to the “Process data settings” page in Process Intelligence. Click the “API Access” tab. Click the “Create new token” button. It will generate an access token for you to copy and paste as a password. Include this access token in the authorization header.

8.4.3 Environments

We recommend using our production environment to test your API integration. Simply delete any data you upload to our server after the fact.

The URLs for our production environment are:

- https://editor.signavio.com (Europe server)
- https://app-us.signavio.com (US server)
- https://app-au.signavio.com (Australia server)

8.4.4 Endpoints

Upload XES file

POST {{pwx-data-url}}/g/api/pidata/subjects/{subject-slug}/upload/xes

This object lets you upload your files to Process Intelligence. It passes the file parameter (must be an .XES file).

Sample request:

```bash
curl -X POST
https://editor.signavio.com/g/api/pidata/subjects/{subject1-1}/upload/xes
-H 'authorization: Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.
    eyJzdWIiOiJzdmVuLndhZ25lci1ib3lzZW5Ac2lnbmF2aW8iLCJiIjpmYWxzZSwiaXNzIjoic2lnbmF2aW8iLCJldWkiOiJhMmYyYjZiZTJjMDg0ZmY5OTY4MGEyYWZhOGY3ZTJhOCIsImlhdCI6MTUzMDY4OTE2N30.
    vyglC53kP47nZaeQ9ZWhdrqi1Q4xhA_B8IbeGubDUs'
-H 'cache-control: no-cache'
-H 'content-type: multipart/form-data'
-F file=@/xes_sample.xes
```

8.4.5 Status codes

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>OK - Your .XES file was successfully uploaded and processed</td>
</tr>
<tr>
<td>400</td>
<td>File Missing - You haven’t attached a file</td>
</tr>
<tr>
<td>500</td>
<td>Application Error - Something went very wrong</td>
</tr>
</tbody>
</table>

8.5 What is process intelligence?

The processes that run in your organization continuously leave traces of data behind in places such as your ERP and CRM systems. Process intelligence is all about analyzing this data to gain insight into exactly how your processes run.

For example, you can use process intelligence to:

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Chapter 8. Process Intelligence 704
• identify the root causes of poorly performing processes
• detect and visualize compliance violations
• monitor process performance and act on critical cases and performance bottlenecks

8.6 Application scenarios

Let’s have a brief look at some scenarios that can serve as triggers for your process intelligence initiative:

• You manage a set of production plants. Although the plants use identical facilities, resources and processes, some plants are far more productive than others. You want to find out why and optimize operations based on your findings.

• You run a customer services center and notice a growing set of high value customers are not receiving timely support to fix seemingly trivial issues. You need to identify why your support process runs poorly in these cases.

• You are a risk manager in a financial organization. In the past, auditors raised concerns because in rare cases, overly risky transactions slipped through your fingers. Now, you want to identify such cases before the transactions are executed, but you are struggling to find the resources necessary to identify complex cases of non-compliant behavior.

Traditionally, you would solve these problems by hiring a group of business consultants and/or data analysts who manually investigate process management issues, kicking off a high-cost data crunching project. These approaches cost you a tremendous amount of money and time – it might take months before you start seeing results. As an agile alternative, you can employ Signavio Process Intelligence – standard software for business users – that automatically analyzes process data according to your unique requirements. You can get your first Signavio Process Intelligence results within a week.

Read more:

• Getting started with Process Intelligence (page 695)
• Uploading data (page 695)
• Process data analysis (page 699)
Chapter 9

Technical notes

This chapter explains technical details about Signavio Process Manager. In case your problem cannot be solved by these pages please contact your workspace administrator or write to our support at support@signavio.com

9.1 How to register/login at Signavio

Signavio is a web application. This means you access your Signavio Process Manager workspace by logging into your account on the Signavio server.

Go to http://www.signavio.com and click the Try it button in the upper right corner of the page to register for the software. Alternatively, if you received an invitation email to the Signavio software, you can click the link in the email to get to the page. If you are using the On Premise of Signavio, please get the local URL from your workspace administrator.
**Hint:** If you register for a trial account with an email address that has been invited to join a Signavio workspace, this license will be automatically added to your new account.

**Note:** To optimize worldwide availability, we provide two Software-as-a-Service systems:

- [https://app-us.signavio.com/](https://app-us.signavio.com/) is hosted in the USA.
- [https://editor.signavio.com](https://editor.signavio.com) is hosted in Germany.
- [https://app-au.signavio.com](https://app-au.signavio.com) is hosted in Australia.

When you register to create your workspace, you can decide which system you want to use.

Please fill out all fields and confirm by clicking **Try Signavio**

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**Important:** To register with the license that has been purchased for you, you have to use the e-mail address you received your invitation at.

If you have a Signavio account, please go to [https://editor.signavio.com](https://editor.signavio.com) (European Server), [https://app-us.signavio.com](https://app-us.signavio.com) (US server) or [https://app-au.signavio.com](https://app-au.signavio.com) (Australian server) to log in. Enter the email address and password you used at registration into the respective fields and click **Login**. If you are using the On-Premise Edition of Signavio Process Manager, please get the local URL from your workspace administrator. If the login was successful, the Signavio Explorer will load in your browser. You can learn about the basic functions of Signavio in the chapter **General introduction** (page 10).
9.2 Entering Collaboration Hub

The way you access Collaboration Hub depends on your configuration settings. If you are not sure which setting your organization is using, please contact the person in charge.

**Note:** Since version 11.11.0 newly registered workspaces receive a set of Collaboration Hub licenses that can be assigned to email addresses directly through the user management dialog. If you registered your workspace before version 11.11.0 (January 2018) and want to use this type of Collaboration Hub license, contact the Signavio Support Team at support@signavio.com.

- If you use Collaboration Hub with certificate-based authentication, read more at *Entering Collaboration Hub with a certificate (Software-as-a-Service)* (page 708). This is the most common case if you use our software-as-a-service offer.

- If you use Collaboration Hub without Active Directory integration as part of an *On Premise* installation on a local server, read more at *Accessing Collaboration Hub without authentication (On Premise)* (page 709).

- If you use Collaboration Hub with Microsoft SharePoint, you will access Collaboration Hub as an embedded part of your SharePoint portal.

- If you access Collaboration Hub via SAML Single-Sign-On, read more at *Logging into Collaboration Hub via SAML (Software-as-a-Service)* (page 709).

- As a modeling user of Signavio Process Manager, you can use the *Collaboration Hub preview* (page 710). To share specific diagrams with stakeholders who don't have a Signavio account, use the *invite to comment feature* (page 108).

9.2.1 Entering Collaboration Hub with a certificate (Software-as-a-Service)

As soon as you have installed the *portal certificate* (page 419), opening the URL https://editor.signavio.com/intra/portal (European Server), https://app-us.signavio.com/intra/portal (US server) or https://app-au.signavio.com/intra/portal (Australian server) leads you to Collaboration Hub.

**Access Collaboration Hub.**

If there is no valid certificate installed, a corresponding error message will be displayed.

**Hint:** If you require certificate access to Collaboration Hub, please inform your workspace administrator. If you are a workspace administrator and you wish to activate the certificate-based
access to Collaboration Hub, see the chapter Creating certificates for Collaboration Hub access (page 470).

9.2.2 Accessing Collaboration Hub without authentication (On Premise)

If you are using the Signavio On Premise Edition without Active Director or SAML integration, you can simply open the URL of Collaboration Hub, http://<ServerURL>/p/portal. <ServerURL> stands for the base URL of your Signavio On Premise system. An explicit login is not necessary.

Ask your administrator for the exact address.

9.2.3 Logging into Collaboration Hub as an Active Directory user (On Premise)

To log into Collaboration Hub as an Active Directory user, proceed as follows:

1. Open the URL http://<ServerURL>/p/portal. <ServerURL> stands for the base URL of your Signavio On Premise system. Ask your administrator for the exact address. Use the usual login credentials of your domain.

2. For the login, type your credentials for the Active Directory domain.

3. If you are currently not in the domain of the Signavio system, specify the domain name in front of the user name. Please comply with the following format: Enterprise\Username.

4. Click OK to login.

9.2.4 Logging into Collaboration Hub via SAML (Software-as-a-Service)

To access Collaboration Hub via SAML Single-Sign-On, ask your Signavio workspace administrator for the exact URL.
Open the URL in your browser to access Collaboration Hub. 
In case you are not authenticated, the SAML authentication provider will handle further steps.

9.2.5 The Collaboration Hub preview

By using the Collaboration Hub preview, modelers have an intuitive read and commenting view on diagrams. the Collaboration Hub preview is especially helpful to quickly navigate diagrams or dictionary entries, for example during a meeting.

1. To access the Collaboration Hub preview, click Share - Preview in Collaboration Hub.

2. The Collaboration Hub preview opens. If you have selected a diagram, Collaboration Hub will show this diagram. Otherwise, the default entry diagram or homepage is shown.
9.3 Updating your Collaboration Hub certificates to SHA-256 with RSA encryption

**Important:** This article is only relevant if you use Collaboration Hub with certificate-based authentication.

Until December 15, 2016, Collaboration Hub users of Signavio’s software-as-a-service system can authenticate using an SHA-1 encrypted client certificate. As SHA-1 is a deprecated encryption algorithm, on January 1, 2017, Microsoft Windows and major browsers - most importantly Microsoft Internet Explorer, Mozilla Firefox and Google Chrome - will stop accepting SHA-1 certificates.

Thus, Signavio will change the required authentication certificates to SHA-256 with RSA-encrypted certificates **December 15, 2016**.

Until then, you can download both the SHA-1 encrypted certificate and the SHA-256 with RSA-encrypted certificate through the *download dialog* (page 470) in the Signavio Explorer.

**Important:** Please make sure all Collaboration Hub users have installed the new certificate by December 15, 2016. From this date on, authenticating with an old SHA-1 encrypted certificate will fail, if the authenticating browser has no new SHA-256 encrypted certificate installed. Until December 15, 2016, you need to have the **old SHA-1 encrypted certificate** installed.

To ease the transition, your users can have both the new and the old certificate in their browsers.

For more information on how to install certificates, please read *Installing the browser certificate* (page 419) and *Importing a Signavio certificates* (page 471).

9.4 Supported browsers

Signavio Process Manager supports all popular browsers. If you experience problems with Signavio Process Manager, you may be using an outdated browser that is not fully compatible with our system. The following web page provides a detailed list of supported browsers and assesses the compatibility of your browser automatically:

http://www.signavio.com/browser-compatibility

**Note:** If the page indicates that your browser **seems to be** compatible, some features may not be fully supported. We recommend you switch to a browser that fully supports all features, to have an optimal user experience.

**Important:** Since Microsoft stopped supporting Internet Explorer 9 and 10 for most platforms on **January 12, 2016**[^22], it is getting increasingly difficult for Signavio to provide a state-of-the-art user experience while supporting these browsers. As we want to continue innovating and provide the best features and user experience possible, we will stop supporting Microsoft Internet Explorer 9 and 10 on December 31, 2017. If you use Internet Explorer 9 or 10, we recommend switching to one of the following browsers as soon as possible:

- **Google Chrome**[^23]
- **Microsoft Edge**[^24]

[^23]: https://www.google.com/chrome/browser/desktop/index.html
9.5 Possible issues: JavaScript & cookies

Signavio Process Manager requires JavaScript to run. Cookies are required to authenticate your browser during the login. If one of those functionalities is disabled, problems will occur.

- When trying to login, you are redirected to the login page again, even if the username and password entered are valid. In this case, cookies are deactivated in your browser.
- Instead of Signavio Process Manager, a blank page is displayed. In this case, JavaScript is deactivated.

**If you are using Linux/OSX/Windows 7 or higher and your browser is up to date, JavaScript and cookies should be activated by default.**

**Important:** To change these settings, you may need administrator rights on your account. Please contact your system administrator if you cannot access and/or change the settings described in this chapter.

If you have the printed version of this manual, please check how to activate JavaScript and/or cookies in your browser’s online user guide.

The links to the corresponding webpages are provided below.

### 9.5.1 Activating JavaScript for all browsers

https://support.microsoft.com/en-US/gp/howtoscript

### 9.5.2 Activating Cookies

To use Signavio Process Manager, you need to have **Cookies** activated.

Read more about cookies at:

- **Internet Explorer:**
  

- **Firefox:**
  

- **Chrome:**
  
  https://support.google.com/chrome/answer/95647?hl=en

- **Safari:**
  

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75 https://www.mozilla.org/en/firefox/new/

9.6 Supported Languages

Signavio Process Manager is available in the following languages:

- Chinese (simplified/traditional)
- Dutch
- English
- French
- German
- Japanese
- Korean
- Russian
- Spanish

To change the language for your account, follow the instructions in the chapter *Personal profile settings* (page 32).

Of course, you can create Diagrams in any language you like.

The Signavio user manual is available in English, German and French.

9.7 The BPM Academic Initiative

The BPM Academic Initiative\(^{77}\) is a joint program of Signavio and several international universities to support business process management in academic teaching and research. As part of the Academic Initiative, Signavio allows students and teachers to use the academic process modeling platform at [academic.signavio.com]\(^{78}\) for free, given the purpose is non-commercial and non-productive.

Please note the following differences between Signavio’s academic platform and the commercial offering:

- It is illegal to use Signavio’s academic platform for commercial or productive purposes.
- All content users create on the academic platform may be made publicly available for research purposes (if requested, anonymized).
- Signavio doesn’t provide any performance or availability guarantees for the academic platform. Signavio may deploy code to the academic platform before it is deemed mature enough for our commercial systems.
- The focus of the academic platform is process modeling. Many advanced process management and collaboration features are not available. The same applies to document uploads and interfaces for system integrations.
- While Signavio generally handles requests from users of our academic platform, questions and issues of paying customers are given a higher priority. Signavio doesn’t commit to responding to inquiries of users of the academic platform within a specific timeframe.

If you accidentally registered for the Academic Initiative at [academic.signavio.com]\(^{79}\), please create a new account for one of the following systems:

- [editor.signavio.com]\(^{80}\) (Europe)
- [app-us.signavio.com]\(^{81}\) (Americas)

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\(^{77}\) [https://www.signavio.com/bpm-academic-initiative/](https://www.signavio.com/bpm-academic-initiative/)

\(^{78}\) [https://academic.signavio.com](https://academic.signavio.com)

\(^{79}\) [https://academic.signavio.com](https://academic.signavio.com)

\(^{80}\) [https://editor.signavio.com](https://editor.signavio.com)

\(^{81}\) [https://app-us.signavio.com](https://app-us.signavio.com)
If you want to transfer your data from the academic platform to one of our production systems, contact the Signavio Support Team at support.signavio.com.

9.8 Frequently asked questions

9.8.1 How can I quickly display diagrams without opening the Editor?

The fastest option is to use the diagram preview (page 47). Select a diagram in the Explorer and hit the space bar or use the arrow symbol at the bottom left of the main window to expand the preview section. The Collaboration Hub preview (page 710) allows you to quickly navigate the diagrams of your workspace. To open the Collaboration Hub preview, open the Explorer and select Share - Preview in Collaboration Hub.

9.8.2 How can I disable email notifications?

By default, the system informs you about every change made to a diagram you are working on in a team. There are multiple ways to disable notifications:

- Select the diagram in the explorer, open the activity feed (press the space bar) and click Don’t notify me.
- Open your profile settings under Setup - My profile in the Explorer and scroll down to the notification settings to adjust them.

9.8.3 My browser does not display Signavio’s applications correctly. What can I do?

- Please ensure your browser supports Signavio. You find more information in the chapter Supported browsers (page 711).
- After a system update, in rare cases it is necessary to refresh the internal storage (cache) of your browser.
  
  For this, open the application in your browser and use one of the following commands (depending on your operating system):
  - Windows: Ctrl + F5
  - Apple: Cmd + R
  - Linux (typically): F5

For further information, you can also go to the following chapters:

- Frequently asked questions: BPMN (page 305)
- Frequently asked questions: Collaboration Hub (page 426)
- Frequently asked questions for workspace administrators (page 694)
Chapter 10

Frequently asked questions

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  - Windows: Ctrl + F5
  - Apple: Cmd + R
  - Linux (typically): F5

For further information, see the following chapters:
• *Frequently asked questions: BPMN* (page 305)
• *Frequently asked questions: Collaboration Hub* (page 426)
• *Frequently asked questions for workspace administrators* (page 694)
Chapter 11

Today’s top tips

Today’s top tip is displayed every day when you first open the Explorer:

![Today’s top tip](image)

_Each day, a new tip is displayed._

You can also re-open the current hint of the day via the Explorer’s help menu:

![Help menu](image)

_Re-open the tip via the help menu._
You can (de-)activate the automatic display of tips under your profile settings:

![My profile](image)

You can (de-)activate the automatic display of hints in your profile settings.

### 11.1 Overview of all tips

This section provides an overview over all tips.

#### 11.1.1 Create free space (Ctrl + M)

Add or remove additional horizontal or vertical space between diagram elements

Read more at *Creating more space - shortening and stretching diagrams* (page 251).
11.1.2 Create diagrams

Signavio supports the popular notations BPMN, DMN and ArchiMate, as well as other diagram formats.

![Business Process Diagram (BPMN 2.0)](image)

Read more at *Creating a new diagram* (page 232).

11.1.3 Import diagrams

Signavio supports all popular interchange formats, i.e. BPMN 2.0.

![Import / Export](image)

Read more at *Exporting and importing diagrams* (page 574).

11.1.4 Reporting

Create comprehensive and insightful reports based on your process diagrams.
Read more at Reporting (page 63).

11.1.5 Collaborate

Publish your processes in the Collaboration Portal and share them with your colleagues.

Read more at The Collaboration Portal (page 396).

11.1.6 Modeling convention and syntax check

Check if your diagrams comply with official standards or modeling conventions.

Read more at Checking diagram syntax (page 254).
11.7 Printing diagrams

Read more at *Exporting and printing diagrams as PDF documents* (page 139).

11.8 Revert changes

No worries if you make a mistake: Use undo/redo (Ctrl + Z and Ctrl + Y).

Read more at *Undo / Redo* (page 174).

11.9 Style diagram elements

Adjust the size, color or font style of diagram elements - according to your corporate design.

Read more at *Formatting labels* (page 184).

11.10 Copy & paste

You can easily copy (Ctrl + C) content from one diagram and paste it into another one (Ctrl + V).
Read more at *Copying elements* (page 169).

### 11.1.11 Comment on diagrams

Provide and receive feedback directly at the relevant diagram element in Signavio.

Read more at *Working with comments* (page 114).

### 11.1.12 Do you have questions?

Click the mail button in the Editor - our support specialists are always happy to help.

Read more at *Support* (page 15).

### 11.1.13 User guide

You can find all information you need in our comprehensive user guide.
11.1.14 Use the interactive context menu

Change element types, reference dictionary items or create the next diagram element without leaving the canvas.

Read more at *Adding elements using the interactive context menu* (page 168).

11.1.15 Switch between editing tools

Use QuickModel, e.g. for systematically filling out attributes and manage changes using the revision comparison.

Read more at *QuickModel* (page 305).
11.1.16 Drag & drop from the dictionary

You can easily re-use dictionary objects through dragging and dropping them from the pane below the shape repository.

Read more at Tutorial: Dictionary best practices (page 445).

11.1.17 Preview diagrams in the Explorer

Select a diagram in the Explorer and hit the spacebar.

Read more at Additional functions (page 128).

11.1.18 Stay up to date with changes in diagrams

Use the Activity Feed's version history to learn what has been changed in a diagram.
Read more at *Additional functions* (page 128).

**11.1.19 Use the context menu to transform elements**

Click the wrench symbol at the bottom left of an element to change its type.

Read more at *Adding elements using the interactive context menu* (page 168).

**11.1.20 Customize Collaboration Hub**

Configure Collaboration Hub to optimally support your organization's requirements.

Read more at *Configuring Collaboration Hub* (page 489).

**11.1.21 Execute your processes with Signavio**

Transfer your process to Workflow Accelerator and execute them there. No programming skills required!
Read more at *Executing processes in Workflow Accelerator* (page 138).

### 11.1.22  Embed diagrams

If you use embedding instead of downloading a static picture, the diagram is always up-to-date across systems, like in your project management system.

Read more at *Embedding diagrams in external systems* (page 53).

### 11.1.23  Business-user friendly modeling

Use QuickModel's spreadsheet-like interface to quickly create simple diagrams or to specify element attributes.

Read more at *Tutorial: Modeling for beginners with QuickModel* (page 318).

### 11.1.24  Create entry point diagrams to your process landscape

Use value chain diagrams to set up a high-level overview of your process.

Read more at *Creating & editing Value Chains* (page 215).
11.1.25 Enterprise architecture modeling

Use ArchiMate to integrate your process landscape with your enterprise architecture.

Read more at ArchiMate (page 376).

11.1.26 Signavio eLearning courses

Sign up for one of our eLearning courses and improve your process and decision management skills.

11.1.27 Read our Applied BPM & BDM Blog

On our Applied BPM & BDM Blog, our experts explain common use cases and challenges of Business Process and Business Decision Management with the help of practical examples.

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[83] https://mooc.house/channels/signavio
[84] https://www.signavio.com/post/regulatory-compliance/
11.1.28 Read our Corporate Blog

Learn about latest business transformation trends on our Corporate Blog85.

Featured Posts

15 February 2017  
Compliance & Customer Experience: Exploring APAC's Regulatory Compliance Context  
This is the first in a four part blog series exploring regulatory compliance opportunities.

14 February 2017  
Compliance today: a Nuisance or a Necessity?  
Breaches in compliance are meticulously tracked and prosecuted by regulatory authorities. Many...

11.1.29 Signavio on YouTube

Learn more about Business Process and Decision Management on our YouTube channel86.

11.1.30 Signavio white papers

We frequently publish white papers that explain current trends and common business transformation challenges.

85 https://www.signavio.com/signavio-blogs/corporate-blog/
86 https://www.youtube.com/user/signavio
You find an overview of all white papers on our website.87

11.1.31 Simulate business processes

Use the BPMN simulation tool to identify KPIs and bottlenecks in different process variants. Read more at BPMN Simulation (page 277).

11.1.32 Signavio Process Intelligence

Analyze your actual process data and automatically compare it with your process models to identify non-compliant process variants, for example. Read more on our website.88

87 https://www.signavio.com/resources/white-papers/
Chapter 12

Acknowledgements

Signavio uses open source software. We thank everyone involved in the open source community.

In addition, Signavio is using the following non-open source components:

- **XMLmind XSL-FO Converter** Copyright © 2002-2009 Pixware SARL

In order to contribute and give back to the community, Signavio is actively supporting open source projects and libraries, i.e. the DMN initiative [OneDecision.io](http://onedecision.io). For further projects, feel free to take a look at our GitHub pages:

Signavio: [https://github.com/signavio](https://github.com/signavio) Workflow Accelerator: [https://github.com/effektif](https://github.com/effektif)

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89 [http://onedecision.io/](http://onedecision.io/)