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Process Management

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Content

1 Process Management

This process enables you to manage your business processes in a holistic way: you can describe both business and IT perspective on processes, applications and system landscapes in one place. So business documentation and system reality are always synchronized.

For this holistic way of describing processes, SAP Solution Manager provides two key applications: Solution Administration and Solution Documentation.

- Solution Administration
  This application provides an overview over existing solutions. You can display and maintain solutions. Furthermore, you can create and define new solutions. It can be used by administrators to setup the environment for Solution Documentation.
  See Solution Administration [page 7].
- Solution Documentation
  This application houses the common directory for business processes and associated documentation (unification of template, implementation, upgrade, maintenance projects and solutions). It can be used by specialists like business analysts, process modelers and functional consultants.
  See Solution Documentation [page 38].

2 Project and Process Management Launchpad Group

Use

This Launchpad group is the access point for all the information and functions related to Project and Process Management.

Features

The group consists of the following tiles displayed by default:

Tile	Description
My Business Requirements	You get an overview over business requirements you are responsible for. For more information, see My Business Requirements.
Solution Documentation	You use Solution Documentation as single and central point of access for all Solution Documentation content. For more information, see Solution Documentation [page 38].
Solution Administration	You get an overview over your solutions. For more information, see Solution Administration [page 7].
Generate Libraries - Solution Documentation	You have access to the executable library and the development library. For more information, see Library Generation Cockpit [page 30].
Maintain Document Types - Solution Documentation	You have access to the central place to administer document types which are used for the solution or within branches of the process documentation. For more information, see Document Type Administration [page 29].
Scope and Effort Analyzer - Upgrade Planning	You analyze the scope of activities and effort before you start the physical deployment of Enhancement Packages (EHP) and Support Packages (SP). For more information, see Scope and Effort Analyzer.

Tile	Description
Requirements Management	You handle change processes for software innovations used throughout your business. For more information, see Requirements Management.
My Projects - Project Management	You get an overview over projects you are responsible for. For more information, see Project Management.
My Tasks - Project Management	You get an overview over project tasks you are responsible for. For more information, see Project Management.

The following tiles are not displayed by default:

Tile	Description
Applications	
Project Analytics - 360 Degrees	Project leads and project managers get an overview of the projects for which they are responsible. For more information, see Project Analytics - 360 Degree.
Executable Analysis	Development managers and process responsibles get an overview of their developments and processes for which they are responsible. For more information, see Executable Analysis Dashboard [page 149].
Project Analytics - Standard	Project leads get an overview of the phases and project progress in the SAP Solution Manager system. For more information, see Project Analytics - Standard.
Project Analytics - Change Cycles	You get an overview of the assignment of change cycles to projects in project management. For more information, see Project Analytics - Change Cycles.
Configuration and Settings	
Configuration - Project Management	To use project management, you need to set it up. For more information, see Setting Up Project Management.
Configuration - Process Management	To use process management, you need to set it up. For more information, see Solution Administration [page 7].
Configuration - Requirements Management	To use requirements management, you need to set it up. For more information, see Customizing for Solution Documentation Integration.

3 Solution Administration

Use

The solution administration provides an overview over existing solutions. You can display and maintain solutions. Furthermore, you can create and define new solutions.

A solution contains the complete business description, comprising the complete system landscape, all business processes and branches for the versioning of Solution Documentation. Only one solution should be used for the whole business, but it is possible to use several solutions, for example in large companies with several separated areas.

> → Recommendation
>
> As a starting point, familiarize yourself with the new terms and concepts related to process management in SAP Solution Manager. Even familiar terms already used in former releases may have different meaning in this release. See Basic Terms and Concepts [page 10].

Prerequisites

Configuration of Process Management in SAP Solution Manager Configuration

In *SAP Solution Manager Configuration*, you have to do the following:

- You have to configure all applications-relevant subscenarios in *Cross Scenario Configuration*.
- You have to configure all subscenarios in *Mandatory Configuration*.
  For a correct graphical representation of solutions, you have to configure the scenario *Infrastructure Preparation*, step *Enable Gateway Services*. In the list of gateway services for *Process Management* you have to activate the services `AGS_GBC_ODATA_BPMN_SRV` (Graphical Component BPMN Gateway Service), `AGS_GBC_ODATA_GOM_SRV` (GBC GOM Gateway Service), and `PROCESSMANAGEMENT` (SAP Solution Manager APIs for third party tool integration).
- You have to configure the scenario *Embedded Search* in order to establish the connection between Embedded Search and *TREX* or *SAP HANA*.
- You have to configure the process management in the scenario *Process Management*. Refer to the scenario documentation to learn more.

Features

The solution administration offers the following functions, related to the following areas:

- systems landscape related
  - You can define logical component groups.

    - You can assign technical systems.
    - You can define change control landscapes.
    - You can define sites.
- branch related
    - You can define branches.
    - You can assign a system landscape and logical component.
    - You can enable the change control.
- process and library related
    - document types
        - You can define the scope of relevant document types.
        - You can define document types.
        - You can define usage and completeness rules.
    - library generation
        - You can generate the executable library.
        - You can generate the development library.
    - SAP Best Practice Packages
        - You can download SAP Best Practice Packages from the *SAP Best Practices Explorer* (https://rapid.sap.com/bp/).
        - You can import SAP Best Practice Packages into a Solution/Branch.

Furthermore, you can trigger an update of the search index, a calculation of derived attributes and an update of the remote element text buffer. See Service Activities [page 32].

A selected solution with its branches is displayed in the table view. All details of this solution are displayed in the tabs below. Depending on the selected solution and branch, the following tabs are available:

Tab System Landscape

This tab displays in a graphical representation the main administrative information about the system landscape with their elements that are assigned to the solution: logical component groups, logical components, branches, sites, and system roles. Learn more in System Landscape [page 18].

Tab Branches

This tab display all information about branches. Learn more in Branches [page 18].

Tab Change Control Landscapes

This tab displays the change control landscapes that are a subset of the whole system landscape. These change control landscape are used for the setting of Change Request Management. You can create a new change control landscape via the context menu in the table of change control landscapes. Choose *New* and enter a name and a technical name for the new change control landscape. From the list of all logical components groups that belong to the system landscape, you can select the logical components groups that you want to assign to the change control landscape. With the radio buttons *All* and *In Scope* you can toggle the view of the logical components groups. With the option *All*, you can display all logical components groups that exist in the system landscape. You can mark the logical component that you want to use for the selected change control landscape with the indicator *Scope*. With the option *In Scope*, only the logical components groups are displayed that are assigned to the selected change control landscape.

See also Change Control Landscapes [page 24].

Tab Document Types

This tab displays the documents types that are assigned to the solution. You need document types if you want to use documents in the Knowledge Warehouse. You can create only documents with the document types that are listed here.

With the radio buttons *All* and *In Scope* you can toggle the view of the document types. With the option *All*, you can display all document types that are available. You can mark the document types that you want to use for the selected solution with the indicator *Scope*.

With the option *In Scope*, only the document types are displayed that are assigned to the selected solution.

If you need to create further document types for your solution, you open the document type administration via the entry *Document Type Administration* in the *Global Functions* menu. In the Document Type Administration [page 29], you can create and maintain all document types.

Tab Imports

This tab displays the imported content with its details. You can import content from a local file or from SAP Best Practices Packages via the link *Import*. The systems opens a new windows in which you can select the content you want to import. See Import and Export of Content [page 25].

Tab Properties

This tab displays the basic information of a solution: In the left area *Solution* you see the name, the technical name, date and time of creation, created by, date and time of change, changed by. You can change the name and the technical name of a solution. However, be careful when you change the technical name of a solution that is already used in authorization objects. Doing so could impact existing authorizations for users.

In the right area *Solution Settings* you see whether the site handling is enabled or disabled. With the link *Edit* you can open a dialog in which you can change this setting. Furthermore, the content languages for the Solution Documentation content are displayed. With the link *Edit* you can open a dialog in which you can add and remove further content languages. See for more information Multi Language Handling [page 57].

Further Functions in the *Global Functions* Menu:

- Create Solution
  You can create a Solution [page 17] .
- Export/Scheduled Exports
  You can export solution content and display scheduled exports (see Export and Import of Content [page 25]).
- Library Generation Cockpit
  You can open the Library Generation Cockpit [page 30].
- Service Avtivities
  You can open the Service Activities [page 32] dialog.
- Document Type Adminstration
  You can open the Document Type Administration [page 29].
- User Settings
  In the user settings, you maintain the visibility for branches and logical component groups in the system landscape graphic (see also System Landscape [page 18]). Furthermore, you can reset your user settings to default and delete your navigation history.

Navigating from Solution Administration to Solution Documentation

After finishing the setup of a solution in solution administration, you navigate to the Solution Documentation content of a selected branch via the link *Open*. The system opens a new window and displays the Solution Documentation content in the corresponding version.

Activities

You can start the solution administration via the SAP Solution Manager launchpad.

Displaying and Maintaining a solution

You can select an existing solution via drop down list for displaying and maintaining it.

Creating a new solution

You can create and define a new solution via the entry *Create Solution* in the *Global Functions* menu. (see also Creation of a Solution [page 17]).

3.1 Basic Terms and Concepts

At the beginning of your work with process management, it is important that you familiarize yourself with the Basic Terms [page 10] and Basic Concepts [page 15].

3.1.1 Basic Terms

In this chapter, you can familiarize yourself with the basic terms of Solution Documentation. The table below houses the most important terms and its short explanations.

Term	Definition
Solution Documentation	This is the complete documentation content of a solution, including the libraries and business processes. Each Solution Documentation version is a branch.

Term	Definition
Solution	This is the sum of a company's systems, applications and processes. It acts as a container for versions of Solution Documentation, one of which is the production version. From a process perspective, a solution covers all the company's business processes. From a system perspective, a solution covers all productive systems that are connected through interfaces. As solutions form independent areas with very limited access to functionality outside of themselves, there is typically only one productive solution per company. Even for an international multi-site company one solution will generally be sufficient. Multiple productive solutions typically cover the use case of a service provider running multiple productive solutions for different clients.
Deployment	Deployments can be used for template and implementation concepts in global roll-out scenarios. Deployments allow to define a deployment master which can be rolled-out. To manage deployments it is recommended to have a *Deployment Authoring Solution* for managing the deployment master and its releases, and a *Operational Solution* where all operational processes are managed.
System landscape	All systems of a company listed in the landscape management database (LMDB). In a solution, systems are added by adding logical component groups (see below). The term system landscape is used descriptively – there is no corresponding technical object of type system landscape.
Branch (incl. production branch)	Branches can be understood as "version contexts" of a solution. The currently productive solution is documented in the production branch. If you run a development environment in which you are setting up a new product version (which will be set productive in the future), maybe including own custom developments, you would represent this by a development branch for the systems in the development track. Typical maintenance activities such as implementation of SAP Notes would normally be handled in a separate maintenance branch, not in a development branch. By default, a newly created solution has a production and a maintenance branch.

Term	Definition
Logical component group	As a rule of thumb, a logical component group comprises all systems of a solution that have the same productive system and system type e.g. ABAP or Java. Hence for each ABAP based and for each non-ABAP based productive system you create a separate logical component group. For example, a solution could contain the logical component groups HR, ERP, CRM, BI, PI, BOBJ, PORTAL. As an important exception to the rule, companies with e.g. multiple ERP productive systems per site (country, plant) have to use only one ERP logical component group. Technically, logical component groups are created within solutions.
Logical component	A logical component is the "branch view" on a logical component group i.e. the subset of systems which belong, for example, to the production, maintenance or development tracks of your solution. Similar to SAP Solution Manager 7.1 a logical component is a vector of technical systems and system roles that usually correspond to a transport track of your landscape.
System role	Intended purpose of a system-client combination (ABAP) or system (Java) within a logical component, for example, Development, Test, or Production. Applications within SAP Solution Manager use the system role to determine which system to use for various operations. For example, an analysis of usage statistics needs to run on a production system. The limit of creating custom roles is to 52. Note: Apart from numbers you can also use all lower and upper case letters except C, D, E, F, P, S, T, V.

Term	Definition
Library	Collection of redundancy-free, reusable objects that you can reference from your solution to avoid duplicate content and reduce maintenance effort. Libraries are organized based on logical component groups and the application component hierarchy. You can use or create libraries for the following objects: • Executables (e.g. transactions, Web Dynpro applications, FIORI apps) • Development objects (custom classes, reports, tables) • Configuration units (IMG, BC-Sets) • Interfaces • Process steps For example, the process step library contains all process steps and documentation that is not dependent on a particular business context. You can then reuse these process steps as the basis of your business process documentation and add context-dependent information where necessary. You can fill the executable and the development libraries automatically in solution administration on solution level.
Executable	Executable objects used to perform certain tasks. For example, transactions or Web Dynpro applications. Executables are always objects which can be accessed or executed by a user.
Element	Structure nodes and object list items are called elements.

Term	Definition
Site	The site concept is relevant for companies that run one SAP product on separate productive systems, e.g. in different branch offices, countries or regions and where those productive systems have a lot in common regarding software logistics and Solution Documentation but are also used to support local features. For each site, productive systems may be supplied through local maintenance and development systems while they can also be connected to a common development system that handles software that is uniform across all locations. Similarly, for Solution Documentation, parts of the documentation can be the same across all sites, supplemented by special documentation written for individual sites. Technically, the site context selects during navigation within the application the relevant managed systems based on logical component group, site and system role. The site determines the appropriate logical component within a logical component group and the system role picks the right logical system. Furthermore, each Solution Documentation element can be linked to one or more site attributes in order to restrict their validity to those sites. An empty attribute value stands for documentation that is universally valid across all productive systems in a logical component group and is called *global*.
Scope	A scope defines a subset of the overall Solution Documentation within a solution, by means of restricting certain content scenarios or functions. Define a subset by selecting the root-elements of entire subtrees in the business processes area. Restrict content further by specifying filter criteria for designated attributes (like country or site). The used elements of the libraries are included automatically via the option "Include originals". The scope option "Show all" comprises the entire solution documentation.
Report	With reports, you can check the status of your Solution Documentation, for example the completeness of documentation or assignments of objects. You can define and execute your own reports in Solution Documentation based on reports that are delivered by SAP.

3.1.2 Basic Concepts

Use

In this chapter, you can familiarize yourself with the basic concepts of Solution Documentation.

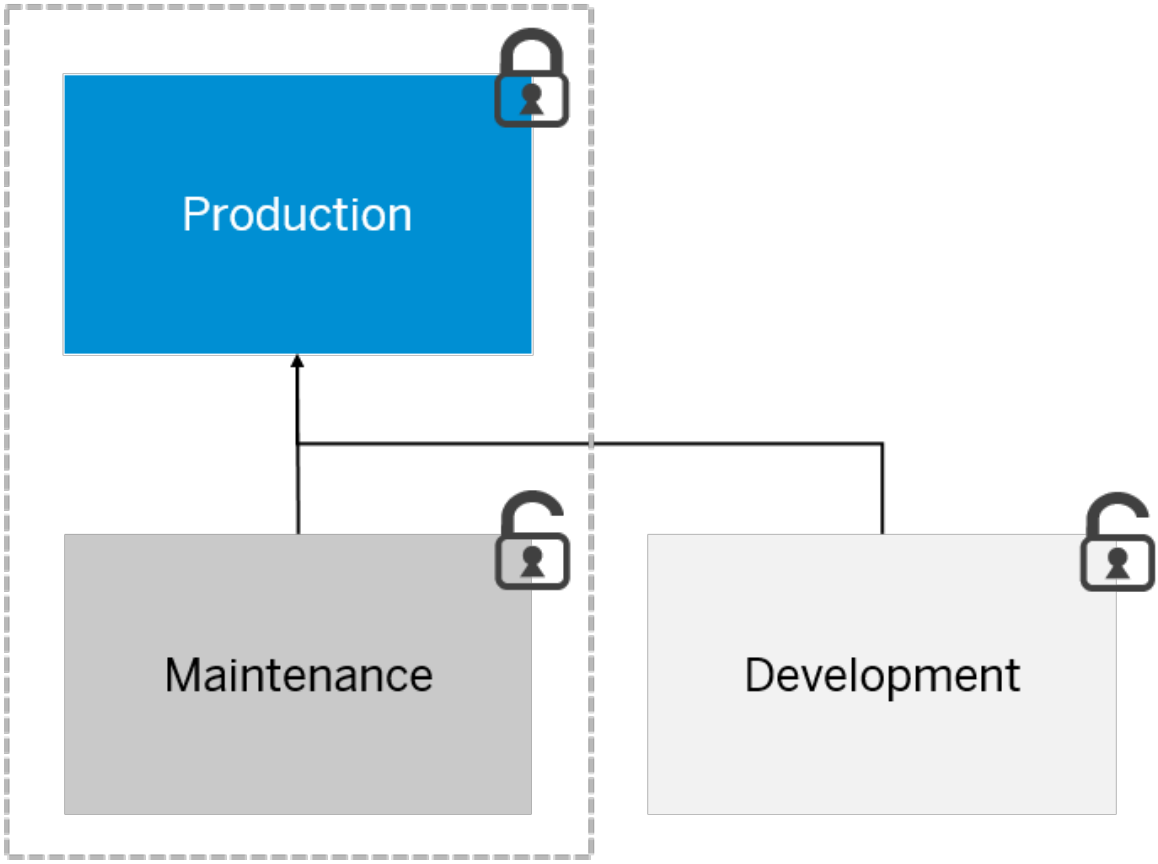
Libraries

- Process Step Library
  The process step library is a business oriented collection of re-usable process step originals used to assemble processes. It is grouped by functional domains that correspond to organizational structures (for example financial, production or sales). All process step originals should exist only once to obtain an overlap-free library structure.
- Executable Library
  The executable library is a functional oriented collection of re-usable executable originals used to facilitate process step originals with execution means. It is calculated using managed system usage data (performance database and usage and procedure logging). All executable originals are automatically grouped by logical component groups on the first level and on the following using the application software structure (application component hierarchy or development package).
- Development Library
  The development library is a functional oriented collection of re-usable development object originals to document executable customer enhancements. The development object originals are automatically grouped by logical component groups on the first level and on the following using the applications software structure (application component hierarchy or development package).
- Interface Library
  The interface library is a functional oriented collection of re-usable interface originals used to depict how system breaks are bridged. It is organized according to scenario and functional aspects and follows operational needs.
- Configuration Library
  The configuration library is a functional oriented collection of re-usable configuration units used to describe the configuration of single functions, complete applications, or processes. It is grouped by functional domains that correspond to organizational structures (for example financial, production or sales) and organized according to a process organization.

Lifecycle based on Branches

A branch represents a version of the Solution Documentation containing processes, libraries, and systems.

- The production branch represents the productive version of the entire Solution Documentation.
- The maintenance branch represents the editable version of the productive Solution Documentation. It provides an safe environment for performing changes.
- The development branch represents the development version for future Solution Documentation.



Relationship of Branches

There is always a production and a maintenance branch but customers can define as many additional branches as required. A child branch, like a maintenance branch, has always full visibility into the Solution Documentation of the parent, for example in the maintenance branch, all unchanged elements have the state of the production branch.

The branch setup should be driven by the customers system tracks and the planned customer releases.

More Information

Branches [page 18]

Lifecycle Based on Branches [page 62]

3.2 Solution

The solution is the root of the structure that contains all systems, processes, and solution documentation in your business. Therefore, the creation of the solution is the first activity.

Use

Within a solution, you define the logical component groups, which form the system landscape, and the branches, which form the version contexts in the solution lifecycle.

Prerequisites

You need the authorization (see also Authorization Concept [page 136]) for creating new solutions.

Activities

For the creation of a solution, proceed as follows:

1. Open the Solution Administration via the SAP Solution Manager launchpad..
2. Select *Create Solution* provided in the *Global Functions* menu in the upper right corner.
   The dialogue *Create Solution* opens.
3. Fill out the mandatory fields *Name* and *Technical Name*. The *Technical Name* is a unique name for the solution.
4. Click *OK* to create the solution.
   The system displays a success message with the name of your new solution. The new solution is visible in the drop-down list and in the table below with a production branch and a maintenance branch. With selecting the solution, the production branch or the maintenance branch, you can display the corresponding tabs like *Properties* and *System Landscape*.

Deletion of a Solution

You can also delete a solution that is no longer needed. In the solution adminstration, call the solution you want to delete and choose *Delete Solution* on the *Properties* tab. Confirm the deletion by marking the corresponding checkbox and choose *Delete*.

The deletion of a solution includes the removal of all solution content and the deletion of all solution components. The deletion performs all required deletion steps in the following order:

1. The change control landscapes are deleted.
2. All branches except the production branch are deleted (a child branch before its parent branch). The deletion of a branch also removes the local branch content.
3. The Solution Documentation content in the production branch is deleted.

4. The logical component groups are deleted.
5. Finally, the production branch and the solution are deleted.

The individual delete steps cannot be undone.

When a delete step cannot be performed, the deletion process stops, and the system displays the reason. In this case, eliminate the obstacle and start the deletion again.

3.2.1 System Landscape

In the system landscape, you define the branches, logical components, logical component groups, sites, and change control landscapes.

In this section, you learn more about the following essential elements of a system landscape:

- Branches [page 18]
- Logical Components and Logical Component Groups [page 20]
- Sites [page 22]
- Change Control Landscapes [page 24]

A graphical representation of the system landscape can be found in the *Solution Administration* on the *System Landscape* tab for a selected solution. This graphic displays the whole system landscape including logical component groups, logical components, sites, and branches and how they are related to each other.

3.2.1.1 Branches

Use

Branches are part of every solution and are located as subnodes below a solution (see also Basic Terms and Concepts [page 10]).

A solution can have different types of branches but must have the Production Branch at least. The structure of a newly created solution looks as follows:

1. production branch (obligatory – will be created automatically during solution creation and is in display mode only)
2. maintenance branch (optional – will be created automatically during solution creation). Changes in maintenance branch always have priority against changes in other branches like development branch. This means that conflicts have to be resolved in the respective branch, like development branch.
3. other branches (optional), for example operations branch. For the use of an operations branch see below.

The production branch is obligatory and can not be deleted. The maintenance branch can only be a child of the production branch and exists only once in a solution. It also must not have child branches. A branch contains the following properties: name, technical name, change control (not available on the production branch), sites on (not available on the production branch).

The development branch represents an independent version context where you can realize long term changes which are independent from short term changes in the maintenance branch.

The *Branch* tab contains the basic information of a branch. As a production branch is the upper node in the structure of branches, no information about the parent branch is available. The Change Control Management integration provides a close integration between Solution Documentation and Change Request Management (ChaRM). When the Change Management integration is enabled, you have to use always Change Documents for every change in the Solution Documentation content. If the Change Management Integration is disabled, you can change the Solution Documentation without control by change documents.

If you activate change control you are only able to maintain the branch content by selecting an existing change document where the changes are tracked. If you enable sites, you are able to separate your system landscape by different locations. The site setting is visible as soon as sites are enabled for the solution (properties tab).

We recommend to use a production branch for all activities concerning production, a maintenance branch for maintenance activities and a development branch for development activities. Maintenance and development branch are independent versions for changes of the solution. The production branch is the productive version of the Solution Documentation, where all productive content is stored. If you need to enhance or to change the Solution Documentation, you have to use create a new branch as a new version of the Solution Documentation.

Use of an Operations Branch for Business Process Monitoring

Basically, business process monitoring can not be set up in a production branch as it is locked, if a maintenance branch exists. As in the maintenance branch production systems are not included, it is not possible to set up monitoring for a production system directly.

The setup of monitoring in the maintenance branch would potentially need ChaRM documents and could be done for the maintenance system only. Also in other branches the setup of monitoring would be possible, but would be subject to lifecycle management as well.

Therefore, it is possible to create an *Operations Branch* for monitoring purposes. This branch is not subject to release and change management.

The operations branch is a dedicated editable branch used for monitoring purposes which refers to the production landscape. A solution can contain a single operations branch as a child branch of the production branch. The operations branch is a standard branch and has not an own operations branch type. The creation and editing of monitoring objects in the operations branch can be restricted by authorization.

To create an operations branch as child of a production branch you can either choose *Create* from the context menu or press the link *Create* above the branch table.

Use of a Branch in Project Management

A branch can be integrated with projects in project management. On project header level, a corresponding tab with integration data is available if the project type is active for SAP Solution Manager integration.

Activities

Create a Branch

To create a new branch you can either choose *Create* from the context menu or press the link *Create* above the branch table. A branch is always a child of another branch, so if you want to use the link above the branch table, you need to select the branch where the new one will be created underneath in advance. In the *Create* dialog, provide a suitable name and technical name and confirm your entries. Note that the technical name must be unique in the solution and must not include special characters. The maintenance branch can not have a child branch.

Change a Branch

You can edit the settings for a selected branch via the link *Properties* or via the corresponding entry in the context menu. In the *Change Properties* dialog, you can change the name and the technical name. Furthermore, you can toggle between enabled and disabled change control.

Delete a Branch

To delete a branch select the branch you want to delete from the branch list and choose the corresponding link above the branch table or select *Delete* from the context menu for the selected branch. The system displays a confirmation popup where you can confirm or cancel the deletion.

Note the following:

- The production branch can not be deleted.
- A branch can only be deleted if it has no child branches underneath and if there are no assignments to other applications, like Project Management, Business Process Monitoring, Change Request Management, or Test Workbench.
- If you have unreleased changes in your Solution Documentation, a corresponding message is displayed on the confirmation popup.

Related Information

Change Request Management
Business Process Monitoring
Managing Projects

3.2.1.2 Logical Components and Logical Component Group

Typically, a logical component group (LCG) comprises all systems of a solution that have the same productive system and system type. A logical component is the “branch view” on a logical component group, that is, the subset of systems that belong, for example, to the production, maintenance or development tracks of your solution.

Use

Logical components and logical component group are an important part of your system landscape. A logical component can be an attribute of objects. With this information and the system role function, the correct target system is determined - for example, the maintenance or development system.

Logical component groups are uniquely defined for each solution. You can’t assign a logical component group to several solutions. The unique identifier for a logical component group is the logical component group name. The name is unique for the whole system. You can’t change the name of an existing logical component group. However, you can create a new logical component group with the desired name, and merge the old one with it.

A new branch has always a default logical component assigned for each existing logical component group. Each site of each branch can either have its own logical component, or reuse an existing logical component of

its parents. As an exception, the production branch must always have its own logical component for site *Global*. This logical component can't be deleted and is automatically created during the creation of a logical component group.

You can't change the name of a logical component; it's is generated automatically. If a site gets its own logical component, a logical component is created with the description [Branch] + [Site].

You can enable site handling for solutions, logical component groups, and branches. If site handling is not activated, the site *Global* represents the whole branch and allows the maintenance of logical components.

Activities

Create a Logical Component Group

1. In Solution Administration (`SOLADM`), select *Maintain Logical Component Groups*.
2. In the dialog box, select *Create*.
3. Enter a name for your new Logical Component Group.
4. We recommend that you also enter a description and select a technical system type.
5. Confirm the dialog.
   The logical component group is created in the landscape management database (LMDB).

Change a Logical Component Group

1. In Solution Administration (`SOLADM`), select *Maintain Logical Component Groups*.
2. Select the logical component group you want to change, and select *Change*.
3. You can change the description and the technical system type. You can't change the name of the logical component group.

Merge Logical Component Groups

You can merge two logical component groups with report `R_MERGE_LCG`.

Delete a Logical Component Group

You can delete a logical component group only if it isn't used (for example, by a change control landscape or in the Solution Documentation). To find out if it is used in the Solution Documentation, navigate to each branch, switch to the list view, and filter the list by attributes that contain logical component groups.

1. In Solution Administration (`SOLADM`), select *Maintain Logical Component Groups*.
2. Select the logical component group you want to delete, and select *Delete*.
3. Confirm the dialog.
   The logical component group is deleted from the landscape management database (LMDB).

Create and Delete Logical Components

Logical components are created or deleted based on the logical component selection. If a branch no longer uses its own logical component, the assigned logical component is deleted from the logical component group.

You do this in the *Assign Technical Systems* dialog, where you select the logical component group and branch context, and specify the logical component for each site.

A logical component is created when the selected logical component from the available logical component list points to itself.

A logical component is deleted when another available logical component is selected as target.

Maintain Technical Systems for Logical Components

1. In Solution Administration (`SOLADM`), select *Assign Technical Systems*.
2. Select the logical component group and branch for which you want to assign one or more technical systems.
3. For each site, you can assign technical systems in several system roles.
   If you selected the technical system type during the creation of the logical component group, matching systems are suggested when you start typing in the field of the system role. Alternatively, you can use the value help.
4. Confirm the dialog.

If the selected logical component points to another branch-site-combination, you see the assigned technical systems from the target logical component for each system role.

Create a Branch

To create a new branch in Solution Administration (`SOLADM`), go to the *Branches* tab and select *Create*.

A new branch has always a default logical component assigned for each existing logical component group.

Enable Site Handling for a Solution and a Logical Component Group

Only if the solution is site-enabled, the site property is visible for logical component groups.

You activate site handling for a solution on the *Properties* tab.

You activate site handling for a logical component group in the dialog *Maintain Logical Component Groups*.

Enable Site Handling for a Branch

If you already have a logical component group with active site handling in your solution, you can also enable the site handling for a branch. To enable sites for a branch, use the context menu on the *Branches* tab. After activating sites, the branch has a default logical component that is assigned to each site that is defined in the solution.

Related Information

Basic Terms and Concepts [page 10]

3.2.1.3 Sites

Use

In a solution, sites (see Basic Terms and Concepts [page 10]) can be used to separate the system landscape by different locations. They are maintained in the solution administration on the *System Landscape* tab, as soon as the solution is site enabled.

In this chapter you learn how the site handling can be enabled and how the sites are maintained.

Activities

Activate Sites

As long as the site handling is not enabled for the solution, the solution administration does not show any properties regarding sites. To activate the site handling for branches and logical component groups you have to open the *Properties* tab in your solution. On the right hand side, select the link *Edit* to change the solution settings in the dialog *Change Settings*. In this dialog, enable the setting *Landscape with Sites*.

Activating sites has the following results:

- The function for sites is displayed on the *Properties* tab.
- On the *Branches* tab, you see in the table a new column indicating that site handling is enabled.
- On the *System Landscape* tab, the link *Maintain Sites* is available above the graphical overview.

In a branch with activated sites there is in the header a dropdown menu with quick info *Site* available (between the dropdown menus for branches and system roles). The first menu item always is *Global*.

Maintain Sites

On the *System Landscape* tab, you can open the site maintenance dialog by selecting the link *Maintain Sites*. The system displays a list with all defined sites. The site *Global* with no specific technical name is always available and can not be changed or deleted.

To create a new site, you can either choose *Create* from the context menu or select the link *Create* above the site table. In the *Create* dialog you have to fill the required fields for a site. Provide a suitable name and technical name. The technical name must be unique in the solution and must not include special characters like §, $ or %. Confirm your entries.

If you not maintained a sequence of sites before in the *Maintain Visibility* dialog with the *Move Up/Move Down* buttons, new sites are added to the list of sites in alphabetical order. If you already maintained a sequence of sites before in the *Maintain Visibility* dialog, new sites are added to the list of sites in alphabetical order below the last sequence-defined site.

Change Sites

To change the name for a site, select the site you want to change in the site list and press the corresponding link above the site table or choose *Change* from the context menu called on the corresponding site entry. The system opens the change dialog in which you can change the name of the site. Changing the technical name is not possible.

Delete Sites

To delete a site, select the site you want to delete from the site list and press the corresponding link above the site table or select *Delete* from the context menu called on the corresponding site entry. The system opens a confirmation popup where you can confirm or cancel the deletion. You can not delete the site *Global*.

3.2.1.4 Change Control Landscapes

Use

A change control landscape is the part of your complete system landscape that can be controlled by change request management. This is helpful when there is no need to control the complete solution but only parts of it. The change control landscape consists of a combination of logical component groups that you can define and maintain on the *Change Control Landscapes* tab for your selected solution in the *Solution Administration*.

Activities

Create a Change Control Landscape

On the *Change Control Landscapes* tab, call the context menu on any place in the empty change control landscape table and select *New*. The systems opens the dialog *Create Change Control Landscape* in which you can enter the name and the technical name of your new change control landscape. The technical name is a unique name for solutions and change control landscapes. Confirm your entries with *Ok*. Your new change control landscape appears in the table on the left hand side and can be selected. A table with the assigned logical component groups of the solution appears on the right hand side.

Edit a Change Control Landscape

Call the context menu on the change control landscape you want to change and choose the entry *Change*. The system opens the *Change Control Landscapes* tab on which you can change the name and the technical name. However, be careful when you change the technical name of a change control landscape that is already used in authorization objects. Doing so could impact existing authorizations for users.

Delete a Change Control Landscape

Call the context menu on the change control landscape you want to delete and choose the entry *Delete* and confirm the warning popup.

Scoping of Logical Component Groups

The table on the right hand side (displayed as soon as a change control landscape is selected) shows all logical component groups which belongs to the solution to which the change control landscape belongs to.

You can add logical component groups to the scope of a change control landscape by checking the *Scope* checkbox. Note that this checkbox is only visible if the table filter *All* is selected.

You can remove logical component groups from the scope of a change control landscape by unchecking the *Scope* checkbox or by selecting the context menu entry *Remove from Scope*. Note that this context menu entry is only available if the table filter *In Scope* is selected.

3.3 Export and Import of Content

In solution administration, you can export and import the business content of a Solution Documentation branch, for example, scenarios, processes, and library elements.

Note that the content element type “job documentation” is not yet supported by the export/import function.

Exporting Content to a File

Context

With the export function, you can export the branch content of a solution to a file in JSON format and store it locally. This file can be imported into a branch of another solution in the same or different SAP Solution Manager system.

The content to be exported is based on the following rules:

The export contains the following content:

- The Solution Documentation version as specified by the branch.
- The subset of the solution content as in the specified scope.
- If you select external object types, the corresponding external objects. External object types that aren’t selected are ignored (omitted) for the export.
- Diagrams are always included.

> **i Note**
>
> Test configurations cannot be imported into the same system from which they’ve been exported. If KW documents, TBOMs, or Test Configurations assigned in the branch content are selected for export, a transport request is created in addition, which transfers these objects into a different “target” SAP Solution Manager system.

If the solution contains *deployments* with previous imports (see below), a special export option *Map deployment to origin* is available. This export option means:

- An export can be used to re-export content that has been imported previously and adapted by changes and enhancements in the local solution. You can use such a re-export to retrofit the content adaptations by importing it to the original solution where the content has been defined.
- The deployment must be selected that is the basis of a re-export. A re-export based on a deployment maps the exported content to the original IDs contained in the previous import.
- In the standard export, no mapping is applied to the exported content.

Procedure

To export content, proceed as follows in solution administration:

1. In your solution, select *Global Functions* > *Export*. The system opens the dialog *Export content from* `solution description`.
2. Select the branch and the scope of the content you would like to export.
3. You can mark the *Include* options *KW documents*, *TBOMs*, *Test configurations*, and *Monitoring objects*.

The option *Map deployment to origin* is only available if the solution contains deployments with previous imports. The default 'Master' deployment is not proposed in this option.

4. You can either start the export immediately, or schedule a background export (for example, for large scopes like an entire branch).
   - To start the export immediately, choose *Export*.
   - To schedule the export, choose *Schedule*, enter the necessary data, and confirm with *OK*.
     The background job is generated, and you see a corresponding success message.
     Select *Global Functions* > *Scheduled Reports*.
5. When the export is finished, you can download the file and save the collected content as a `json` file locally.
   The default file name contains solution, branch, and scope titles.
   If you selected at least one of the *Include* options *KW documents*, *TBOMs* or *Test configurations* and the selected content has the required objects assigned, you see the name of the transport request at the top of the screen. Use transaction `SE09` to check whether this transport request of type *Transport of copies* is available and contains the corresponding object entries.

Importing Content from a File

Context

An import is used to enhance a solution with content that has been defined and exported at a different place. With the import function, you can import content from a file into a branch of another solution in the same or different SAP Solution Manager system.

If you have logical component groups in your target solution, you must do a mapping between the logical component groups of the source content and the logical component groups defined in your target solution.

> **i Note**
>
> A logical component group of the source content can only be assigned to exactly one logical component group of your target solution. You cannot assign several source logical component groups to the same target logical component group. You can merge two source logical component groups after importing, see SAP Note 2909686.

By default, the import gets the name of the file; you can change it. The import names are listed in the import overview table on the *Imports* tab. Imports are grouped by deployments. A deployment is an independent copy of the imported content and carries an own mapping of the landscape. That means the logical component groups of the content source must be mapped to corresponding logical component groups of the local target solution for each deployment. Multiple imports may use the same deployment. The default deployment of a solution is the master. The master deployment covers the entire solution and doesn't create any additional copies of imported content.

There are three deployment import options:

- **New deployment**
  If an independent copy of the content is needed, create a new deployment. A use case for several independent deployments is the global rollout where an imported content can be used and adapted independently for several deployments that represent regions/plants/markets. You can also map different deployments to different parts of the system landscape.
- **Update deployment**

In this option, an existing deployment is enhanced or modified with a new import. If there are new logical component groups in the imported content, the mapping is reused and enhanced. Any element that's already contained in the existing deployment is updated if it's also contained in the imported content. The typical use case of this option is that the imported content is available in a new version or there is complementary content to be used in the same deployment.

- **Update master**
  The default deployment of a solution is the master. The master deployment covers the entire solution and does not create any additional copies of imported content.

Procedure

To import content, proceed as follows in solution administration:

1. In your solution, go to *Imports* > *Import*. The system opens the dialog *Import content into* `solution description` - *Select Source*.
2. Select *Import from a local file*.
3. Select a file with Solution Documentation content and choose *Next* to continue. For example, you can upload local Excel files as initial upload of structure elements, assignments, documents, and attributes. For this upload, the Excel file must be saved as tab-delimited text file.
   If the selected file is invalid, you see an error message. Otherwise, the system opens the dialog *Import content into* `solution description` - *Select Target*.
4. Select a branch as target and an import option for deployments. In the mapping table, you can map the logical component groups of the source content to the logical component groups of your solution.
   If a branch with active change management integration is selected, you must choose a change document. If no change document is available, the dropdown list is empty and you can't continue with the content import.

   > → Recommendation
   >
   > SAP strongly recommends always using a dedicated import branch, which should be a child branch of the branch where the content is to be edited after the import. This ensures that no existing content is overwritten by the import, and that any wrongly imported content can be removed by discarding changes in the import branch.

5. If the preconditions for the content import are fulfilled, choose *Import*.
   The content import starts in a background job and you see a success message. The table in the *Imports* tab contains a new entry.

   > ℹ Note
   >
   > If you have performed multiple imports of the same content with different deployments (by selecting option *New deployment* for each import), an independent copy of content elements is created for each deployment. If the source file contains KW documents and you have done multiple imports with different deployments, each deployment receives its own set of documents. Although the documents at the same position of the imported content have the same attributes (like name, document type, status) and the same content, there are two separate documents. If you change an attribute in one document, this change is not reflected in the corresponding second document.

Importing Content from SAP Best Practices Packages

Context

You can also import *SAP Best Practices Packages (SAP BPP)* that have been put into the basket of the *SAP Best Practices Explorer* (https://rapid.sap.com/bp/). You can import an SAP Best Practices Package several times, however, in this case you should use different deployments. An import cannot be undone.

An SAP Best Practices Package contains specific business content that can be imported into a branch. It can contain, for example, scenarios, processes or library elements. By default, the import gets the name of the SAP Best Practices Package; you can change it. The import names are listed in the import overview table on the *Import* tab. Imports are grouped by deployments.

We recommend to have at least one logical component group in your target solution, because an SAP Best Practices Package can contain content that is assigned to a logical component group. If so, you must do a mapping between the logical component group defined in the SAP Best Practices Package and the logical component group defined in your target solution.

> **i** Note
>
> A logical component group of an SAP Best Practices Package can only be assigned to exactly one logical component group of your target solution. You cannot assign several source logical component groups to the same target logical component group. You can merge two source logical component groups after importing, see SAP Note 2909686

Procedure

To import an SAP Best Practices Package, proceed as described in section Importing Content from a File [page 26] but select import option *SAP Best Practices Packages*. Choose from SAP Best Practice Packages that are available for your solution.

If you selected a package that doesn't contain logical component groups, the mapping table is empty except for an explanatory text. If you selected a package that includes one or more logical component groups, you see each logical component group as a line in the table. If you selected several packages containing the same logical component group, they are combined so that only one row for one logical component group is displayed.

To finalize the mapping, the target logical component groups must be uniquely defined in the table. A logical component group of your solution cannot be the target for two different logical component groups of the SAP Best Practice Packages.

If the import was successful, the table in the *Imports* tab displays all successfully imported SAP Best Practices Packages.

Related Information

Deployment [page 29]

3.3.1 Deployment

A **deployment** is an independent copy of the imported content and carries its own mapping of the landscape.

This means, the logical component groups of the content source have to be mapped to the logical component groups of the local target solution, for each deployment.

Multiple imports may use the same deployment. The import overview is grouped by deployments, which include the following options:

- **Create deployment**: A new deployment should be created if an independent copy of the content is required. A use case for several independent deployments is the global rollout where imported content can be used and adapted independently for several deployments that represent regions/plants/markets. For different deployments, there is also the option of mapping them to different parts of the system landscape.
- **Update deployment**: In this option, an existing deployment is used to enhance or modify it with a new import. The mapping of the logical component is re-used and enhanced if there are new logical component groups in the imported content. Any element that is already contained in the existing deployment is updated if it is also contained in the imported content. The typical use case for this option is that the imported content is available in a new version or there is complementary content to be used in the same deployment.
- **Update master**: The default deployment of a solution is the master. The master deployment covers the entire solution and does not create any additional copies of imported content.

3.4 Document Type Administration

Use

The *Document Type Administration* is the central place to administer document types which are used for the solution or within branches of the process documentation. Document types are used generally to classify different Knowledge Warehouse documents. The settings you made in the *Document Type Administration*, control the availability of document types in the process documentation.

The interface of the *Document Type Administration* consists of two main parts. On the left side is the central selection table which contains all available document types in the system. The area on the right side contains the details and settings of the currently selected document type which is indicated by a highlighted line in the table. The central selection table is sorted by description.

Detail View of a Document Type

The detail view of a document type consists of three different tabs. Each displays different data:

- The *Properties* tab displays attributes of the document type like its description or the attached template.
- The *Usage* tab displays the global availability of document types. It is possible to limit or restrict the usage of a document type to a special area of the process documentation. For example, a document type could only be available inside the development group of process steps.
- The *Completeness Rules* tab defines rules which need to be fulfilled by the process documentation to be considered complete. For example, a process documentation could only be considered complete, if a document with this particular type is maintained inside the development group of a process step. However, completeness rules can only be defined for objects which are scoped in the *Usage* tab.

Searching

The *Document Type Administration* provides a free text search. You can search in the following columns: Description, Document Type and Status Schema. You use the wild card character "*". The search is not case sensitive.

Activities

Open Document Type Administration

In the *Global Functions* menu, you can use the entry *Document Type Administration* to open the document type administration in a new window.

Display a Document Type

You can select a document type by clicking on one line.

Edit a Document type

You can edit a document type in the edit mode. You start the edit mode by clicking on the *Pencil* button. All edit functions, like *New*, *Copy* or *Delete*, can be selected from a right-click context menu. This context menu is available only for document types inside the table.

3.5 Library Generation Cockpit

Use

In the *Library Generation Cockpit*, you have access to the executable library and the development library:

- In the executable library, you can create used transactions and programs from managed systems.
- In the development library, you can create the source code objects which are created or changed by the customer from managed systems.

The executable or development library is specified in a logical component group (LCG) for a specified branch. The structure in the executable or development library is build by the Application Component Hierarchy (ACH). Each source code object is assigned to a software package and this should be to an application component.

In the Library Generation Cockpit, you have an overview of all executable or development libraries of the solution. You can create new libraries and define the library generation runs to extend or refresh the executable or development library

In the extend case, source code objects from a managed system is created in the executable or development library. For the executable library, the transactions and program of a managed system which are used by a customer are found and created in the library. In the development library, all source code objects which are changed or created by the customer in the managed system is found and created.

In the refresh use case, all existing source code objects of a executable or development library are assigned to a ACH. This can be necessary if not all source code objects are assigned correctly, for example because of manual attachment

The entities in the executalbe and development library can be used to create the process step library which is used in the business processes.

To get the data from the managed systems, the managed system needs to be configured correctly. To get the usage data, you have to switch on the usage recording in the configuration for managed systems in SAP Solution Manager Configuration. Furthermore, the transfer into the BI of the SAP Solution Manager must be configured there. To get the customer objects, the scenario *Custom Code Managerment* must be configured.

Activities

Open the Library Generation Cockpit

In the *Global Functions* menu, you can use the entry *Library Generation Cockpit* to open the library generation cockpit for the selected solution.

Working with the Library Generation Cockpit

In the Library Generation Cockpit, there are different areas.

In the left part above the *Overview of Library Generations* you can select the library type, either *Executable* or *Development*. This is the basic selection for the library, executable or development, in which you want to work.

In the left part is the *Overview of Library Generations*. This shows the specified executable or development libraries which exist for the solution. You see in the first column all logical component groups (LCGs) of the solutions. In the next column you see either the branch where library content already was created by a library run or with *Add* function to create content in a branch. The *Status* column shows the status of the library generation runs. With the last column *Next Run*, it is possible to create a new run or change a defined one.

In the upper corner of the right part is the *Settings*. You can use this functionality to exclude application components. We recommend to exclude the application component *BC* (Basis components) from the extend generation of the executable library. Define in the *Type* table the source code object types which you want to generate in the extend of the development library. Define at least one type before you start the first extend run.

If you press *Add* in the column *Branch Technical Name* in the *Overview of Library Generations* you get a dialog to define the branch for which the library should be build. You can define here the managed system from where the data should come, the extend systems and/or the refresh system, the reccurence,the start date, and time of the generation runs.

If you choose in the column *Next Run* a date, the dialog with the defined system, reccurence, start date and time is shown, and you can change it.

A library generation run, that is started or is planned to start, also periodically, is always done by a job. You can see this jobs in the transaction `SM37`. Use the Library Generation Cockpit to cancel the runs, do not do this in SM37.

If you select in the column *Branch Technical Name* or *Status* a value, you see on the right side the upper part *Generation schedule* and the lower part *Generation status*, if library generations runs has been executed.

In the *Generation schedule* area, you can use *Actions* to perform several functions, like starting the generation immediately or deactivate the planned next run. In the *Generation status*, you can also start a library generation run again or hide the entry or ignore the status value. You can also display all logs of all generation runs of the libary and navigate into the job protocol of a specified run.

3.6 Service Activities

With this function, you can check or update the status of service activities.

You can use the following service activities:

- The service activity *Update Search Index* updates the search index.
- The service activity *Calculate Derived Attributes* calculates the values of derived attributes.
- The service activity *Update Remote Element Text Buffers* updates the buffer for the names of elements that can be assigned to the Solution Documentation Libraries in all content languages. See Updating the Remote Element Text Buffer [page 33].
- The service activity *Check Search Infrastructure* checks the status of all involved components as well as the correctness of the configuration. If problems are detected, documentation and direct tool access are provided in order to support the customer in the process of solving the corresponding issue.
- The service activity *Clear Deployments* clears all information relating to deployments in the current solution.
- The service activity *Clean Up Scheduled Exports and Reports* can be used to clean up the stored data from exports and reports scheduled in background.
- The service activity *Clean Unused Document* deletes orphan documents.
- The service activity *Check RFC Ping* automatically checks the RFC ping on all managed systems in a landscape. In case the status is red, the RFC ping check has failed and you need to check in transaction `SM59`. If the connection cannot be fixed, raise a ticket using component `BC-MID-RFC`.
- The service activity *Select Scope Usage for SOLDOC Library* lets you filter the list view and browser view of the library.
- The service activity *Check Imported JSON Content* checks the imported JSON file content for issues before importing into Solution Administration. You can choose the file and select specific check options. You can then view the results for each selected check option.
- The service activity *Import SAP Fiori Apps Reference Library* imports Fiori data from the SAP Fiori apps reference library to support the library generation and a value help.

Activities

In Solution Administration, you can call the dialog *Service Activities* in the *Global Functions* menu. Choose the service activity you want to perform by clicking the corresponding link. See the help buttons in the dialog for more information.

3.6.1 Updating the Remote Element Text Buffer

Use the remote text buffer to improve search performance, and as fallback if RFC connections fail.

Use

Use the *Remote Text Buffer* to improve the search performance, or as a fallback, for example, if the managed system is not available, no system can be determined in the selected system role, or the RFC ping call takes too long.

This buffer stores the descriptions of those external elements that use RFC.

Context

In Solution Documentation (transaction `SOLDOC`), you can add elements from managed systems to document business processes and, using the Library Generation Cockpit, to get usage and customer data for Test Suite (for TBOM and the Scope and Effort Analyzer).

These elements are saved under *Libraries* and are referenced under *Business Processes*.

For many element types that can be assigned to the Solution Documentation libraries, RFC connections fetch the descriptions from managed systems. Usually, one RFC connection fetches many descriptions at once; but for some types, such as IMG elements, each element is called by an individual RFC connection. This may slow down the performance of the following functions:

- SOLDOC List View
- SOLDOC Release Operation
- SOLDOC Reports
- Initial Indexing of a solution (branch)

> **i Note**
>
> To test the RFC destinations of a solution, use the program `R_RFC_PING_CHECK_4_SOLUTION`.

Restrictions

- You can only enable the remote text buffer if it was filled before.
- Data from systems that are no longer in the system landscape cannot be retrieved.
- The remote text buffer is disabled and must be filled again after the following operations:
  - Using the import functionality of `SOLADM`
  - Importing data with the Process Management API (Third-Party API)
  - Changing the system landscape

- If the external element identifier does not have the correct syntax or does not exist as entity in a managed system, it cannot be called. This might be the case for elements that were imported without system and without check against a managed system, or for content that was activated during the upgrade from SAP Solution Manager 7.1 to 7.2.

Activities

You can choose to enable the buffer for a solution, or just for a single user. Before you can enable the buffer, it must have been filled for the first time.

The remote text buffer is filled by batch job `SMUD_UPDATE_BUFFER`, which scans the systems belonging to a Logical Component Group (LGC) for all external elements of the assigned managed systems.

Filling the Buffer Manually

1. In Solution Administration (transaction `SOLADM`), select *Global Functions* > *Service Activities* > *Update Remote Element Text Buffer* >.
2. `SMUD_UPDATE_BUFFER` detects the external elements of a solution that use RFC. It also detects the managed systems assigned to each LCG and branch, thus calculating the system landscape. Then it scans the external elements of the LCG and, for each managed system, saves the element description in the buffer.
3. Go to transaction `SM37` and check the job log for errors, such as: no RFC destination is found for a system, or the RFC connection failed.
4. If there are any RFC errors, fix them and run the job again. Investigate if there is any data missing. Maybe you find that your system landscape is not complete, some systems are missing.

   > **i** Note
   >
   > The job log gives you statistical information about the scanned elements, such as:
   >
   > - “Amount external Elements”: the number of external elements that can use the buffer
   > - “Maximum possible Buffer”: the data volume that can be stored in the buffer
   > - “Missing Data”: the amount of buffer data that could not be determined
   >
   > In the job log, you can also see whether the remote text buffer is enabled for this solution, and the parameters that were applied.
   >
   > - The following program parameters are available:
   > - “LCG dependent”: Determines whether to use only RFCs of systems that belong to an LCG with assigned elements. If the constraint is removed, all systems are used.
   > - “External ID Syntax Check”: Get detailed information about entities for which buffer data could not be determined.
5. When the remote text buffer has been filled without errors, you can enable the buffer either for the solution, or for single users.

Filling the Buffer Automatically

We recommend scheduling job `SMUD_UPDATE_BUFFER` periodically (for example, once a month) with transaction `SM37` function *Repeat Scheduling*.

If elements are created in Solution Documentation (transaction `SOLDOC`), the buffer is filled automatically

Filling the Buffer After Operations That Disabled the Buffer

After the following operations, the buffer is disabled:

- Using the import functionality of `SOLADM`
- Importing data with the Process Management API (Third-Party API)
- Changing the system landscape

You must run the job `SMUD_UPDATE_BUFFER` again to save the description for the newly imported elements.

Enabling the Buffer for a Solution

If the buffer is enabled for a solution, the system uses buffer data and does not use RFC connections to get text data for the external elements. This may improve the performance for slow RFC connections, and it is helpful there is no RFC connection.

1. In Solution Administration (transaction `SOLADM`), go to *Properties*.
2. Under *Solution Settings*, find *Remote Text Buffer* and enable it.
3. Confirm your choice.

Enabling the Buffer for Single Users

When the remote text buffer is disabled for the solution, you can still enable it for single users: By adjusting the allowed RFC response time, you enforce using the buffer for a specific user. When the remote text buffer is enabled for the solution, it is always used, regardless of the user-specific RFC response time.

By default, the buffer is used if the ping takes longer than 100 ms. This default is changed with user parameter `SMUD_MAX_PING_TIME`.

To read all data from the buffer instead via RFC, set the value to `0`.

Related Information

Library Generation Cockpit [page 30]
My Tasks: TBOM Worklist
Scope and Effort Analyzer

3.6.2 Importing SAP Fiori Elements from the SAP Fiori Apps Reference Library

Prerequisites

To support the library generation and a value help using SAP Fiori elements, the function must collect the data that is reported online in the SAP Fiori apps reference library. The following data from the SAP Fiori apps reference library is required for each Fiori app: Fiori ID, primary OData service, semantic object and action, the application component, and the title.

Restrictions

- The SAP Fiori apps reference library does not contain all available SAP Fiori elements and these may not be up to date or complete.
- Only SAP Fiori elements that have a semantic object and semantic action are considered because they are used for identification in Solution Documentation.
- Only SAP Fiori elements that use an OData service are considered.
- Since we use the primary OData service to identify the usage data, only SAP Fiori elements which have a unique relationship to the OData service can be used.
- If some SAP Fiori elements are missing or the customers have developed their own SAP Fiori elements, a CSV file with the same structure can be created by the customers themselves and be imported. But the validity and correctness are the responsibility of the customer.

> **Example**
>
> Example for comma separated values for an own SAP Fiori element (the values are hypothetical):
>
> ```
> fioriId,AppName,ApplicationComponent,SemanticObject,SemanticAction,PrimaryODa
> taServiceName,PrimaryODataServiceVersion
> ```
>
> ```
> MY_CREA_INC,My Create Incident,SV-SMG-
> XX,Action,SMMyCreateIncident,AI_MY_CRM_GW_CREATE_INCIDENT_SRV,1
> ```

Use

To get the required SAP Fiori data from the SAP Fiori apps reference library, the user must read it from the SAP Fiori apps reference library URL.

1. To use the SAP Fiori elements import function in the Solution Administration app, open the Service Activities menu and choose *Import SAP Fiori Apps Reference Library*
2. Select the requested products and schedule the report `SMUD_FIORI_IMPORT` as a batch job with the name `SMUD_IMPORT_FIORI`. The report tries to get the data from the URL
3. If this is not possible, the failing is reported in the job log. Check the job log if the SAP Fiori value help shows no values or the library generation does not generate SAP Fiori executables.

If the download of the SAP Fiori data from the SAP Fiori apps reference library with the job is not successful, the SAP Fiori data must be downloaded first from the SAP Fiori apps reference library and imported with program `SMUD_FIORI_IMPORT`. To download the required data, complete the following steps:

1. Open the SAP Fiori apps reference library.
2. Select *All apps*.
3. Choose *Select all*.
4. Select the *List View* tab.
5. Open the *My Views* list. "Overview" is selected by default.
6. Select *Configuration Details*.
7. Under *Product Suite* and select the required product.
8. In the settings, tick *Select All*.

9. Choose *Download* and name the file.
10. Import the file into SAP Solution Manager using the report `SMUD_FIORI_IMPORT`.

> **i Note**
>
> With the imported Fiori data, there are two supported use cases:
>
> - The library generation can now recognize used SAP Fiori elements by mapping used OData services to the imported SAP Fiori data.
> - The value help is built with this imported SAP Fiori data.

4 Solution Documentation

Use

SAP Solution Manager provides various tools and methods for implementing and maintaining both SAP and customer solutions. The *Solution Documentation* model is based on a hierarchical structure, which uses a solution as the single, central point of access for all Solution Documentation content.

> → Recommendation
>
> As a starting point, familiarize yourself with the new terms and concepts related to process management in SAP Solution Manager. Even familiar terms already used in former releases may have different meaning in this release. See Basic Terms and Concepts [page 10].

Prerequisites

Configuration of Process Management in SAP Solution Manager Configuration

In *SAP Solution Manager Configuration*, you have to do the following:

- You have to configure all applications-relevant subscenarios in *Cross Scenario Configuration*.
- You have to configure all subscenarios in *Mandatory Configuration*.
  For a correct graphical representation of solutions, you have to configure the scenario *Infrastructure Preparation*, step *Enable Gateway Services*. In the list of gateway services for *Process Management* you have to activate the services `AGS_GBC_ODATA_BPMN_SRV` (Graphical Component BPMN Gateway Service), `AGS_GBC_ODATA_GOM_SRV` (GBC GOM Gateway Service), and `PROCESSMANAGEMENT` (SAP Solution Manager APIs for third party tool integration).
- You have to configure the scenario *Embedded Search* in order to establish the connection between Embedded Search and *TREX* or *SAP HANA*.
- You have to configure the process management in the scenario *Process Management*. Refer to the scenario documentation to learn more.

Features

Functional Highlights of the Solution Documentation

The Solution Documentation provides you, among others, with functional highlights in the following areas:

- **Usability**
  You use a modern browser-based user interface making the administration and documentation of SAP solutions simple, intuitive and business-focused, and you benefit from graphical process modeling.
- **Context-driven user interface**

There are almost no buttons in the user interface to add new elements. Just use the right mouse button at the location where you want to add the new element. The context menu offers all the functions that are allowed at the selected location or element.

- **Implicit Save of user entries**
  You do not need to save your entries with a "Save" button. Every change of an element is saved automatically when you select another element. Optionally, or if you want to finish your work without selecting another element, you can save your work manually with the "Save" button.
- **Re-Use**
  You can organize reusable documentation for business process steps and other entities such as transactions, development objects, and configuration activities in libraries. Reduce your content management effort by working on reusable documentation elements only once for multiple use in different end to end business processes.
- **Integration**
  You can take advantage of the concept of Solution Documentation as a single source of truth for all content related to business processes. A solitary solution will support all application lifecycle phases from implementation through to operations. Do away with creating solutions altogether when they are not needed, for example for sole use of basic SAP services, such as EarlyWatch Alert.
- **Versioning**
  You can simplify maintenance, new development and upgrades by using the version concept – branches. With this concept, you are part of the quantum leap in SAP release management.
- **Big Solutions**
  You can handle solutions of all shapes and sizes with multi-level hierarchies without limitations on the size and hierarchical complexity.
- **Custom Extensions**
  You can add extra structure levels and your own attributes by taking advantage of the flexible, model-based architecture of Solution Manager 7.2 to systematically extend SAP standards.

How Solution Documentation works

The Solution Documentation model is based on a hierarchical structure, which uses a unified **solution** concept as the single, central point of access for all Solution Documentation content. The solution comprises the description of your system landscape as well as the documentation of your business processes, interfaces, technical objects and your custom developments.

Thus, the **solution** concept stands in the center of the Solution Documentation. It is the sum of a company's system landscape, applications and processes. It acts as a container for versions of Solution Documentation, one of which is the production version. The terms *systems landscape*, *process* and *version* have the following meaning:

- **System Landscape**
  Logical Component Groups are groups of Logical Components. Logical components point to actual technical systems.
- **Process**
  A process is a set of logically related activities and executes functions in systems to achieve a business goal.
- **Version**
  Each Solution Documentation version is a branch containing processes, libraries, and systems.

You organize your Solution Documentation into the following different areas:

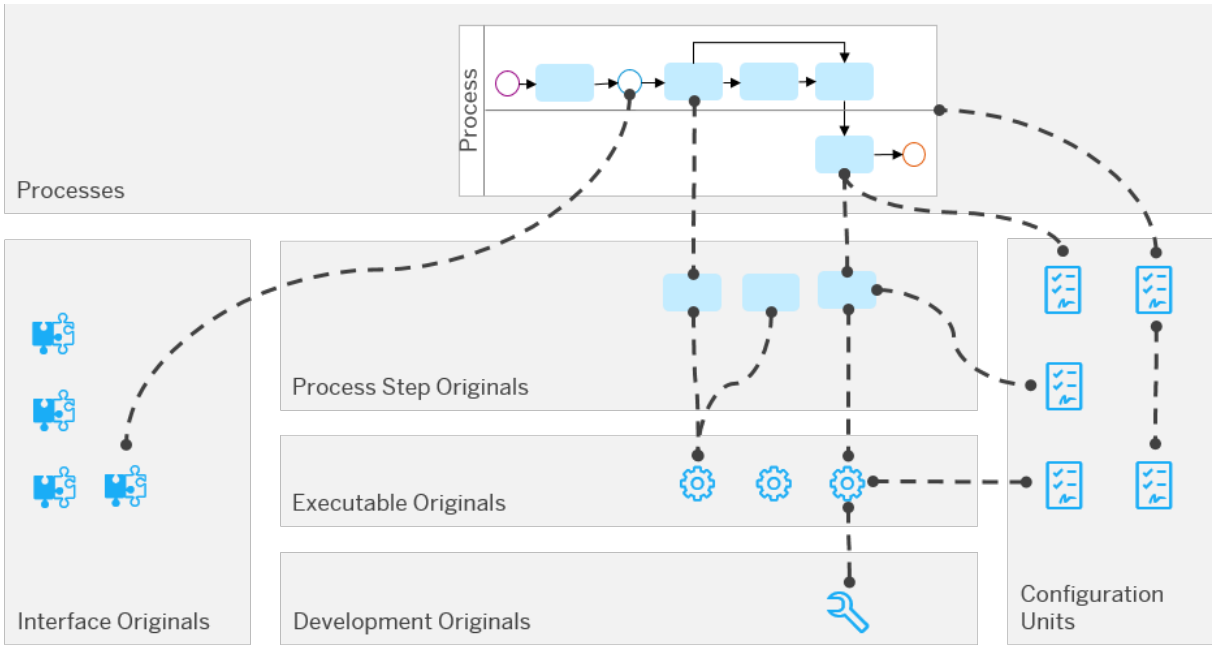
- **Libraries** of reusable documentation for technical objects, such as development objects, executables, and configuration activities

- **Library of business process steps** where you can reuse the documentation from the other libraries
- **Library of interfaces** where you document the interfaces used by your end to end processes
- **End to End Business Processes** where you model your scenarios and processes by reusing the process steps, interfaces, and technical objects from the libraries,

In detail, these areas of the Solution Documentation model provides the following features:

- **Developments and Executables Library**
  - Component-oriented container of technical objects and their documentation, e.g. Web Dynpro applications, transactions, custom reports etc.
  - Technical objects can be reused in different process steps and end-to-end processes
  - Libraries can be partially automatically generated based on usage statistics and structured by the application component hierarchy (ACH)
- **Process Step and Interface Library**
  - Function-oriented container of all process steps and their business-context independent documentation
  - Process steps can be reused in different end-to-end processes
  - Automated, on-demand generation of the library structure based on the ACH, which can be manually extended
- **Configuration Library**
  - Function-oriented container of configuration activities, grouped into reusable units
  - Configuration units can be reused for repeated configuration tasks
- **End to End Processes**
  - Business-oriented documentation of processes describing your end-to-end scenarios
  - Library elements, e.g. process steps, interfaces and technical objects, can simply be reused

The library concept enables you to re-use and to reference all the objects mentioned above whenever possible. This is the key to avoid redundant documentation.



Re-use and Referencing of Library Objects

Activities

You can start the *Solution Documentation* and *Solution Administration* via the SAP Solution Manager launchpad.

If you start Solution Documentation for the first time, the system displays a popup with all available solutions. Otherwise Solution Documentation starts directly with the last opened solution and the last opened branch. In a solution, you can switch to another solution via the solution selector in the *Global Functions* menu.

More Information

Activation of the Solution Documentation Content for Customers using already SAP Solution Manager 7.1

As of SAP Solution Manager 7.2, you manage your solutions using the Solution Documentation. To continue using your existing SAP Solution Manager projects, you need to activate your existing content in the Solution Documentation. You only need to activate ongoing projects and projects that you plan to use in the future. You can still display non-activated projects but you cannot edit them.

As a starting point, there is an overview section in the *SAP Community Network (SCN)* that covers all aspects of content activation, including a FAQ list and a blog with detailed information. See *SAP Solution Manager 7.2 Content Activation* (https://wiki.scn.sap.com/wiki/display/SM/SAP+Solution+Manager+7.2+Content+Activation).

For all activation-related activities, there is a comprehensive *Content Activation Guide* that provides you with all activation-relevant information.

You can find the latest version of the *Content Activation Guide* at the following location: https://help.sap.com/viewer/p/SAP_Solution_Manager > `<latest Version>` > *Installation and Upgrade* > *Content Activation Guide* > . Furthermore, you can use the following direct link: Content Activation Guide to access this guide.

If you do not want to use your existing SAP Solution Manager projects from former releases, you can skip all activation-related activities.

4.1 Introduction to the Solution Documentation UI

The Solution Documentation UI provides several ways to display and maintain the Solution Documentation content. You can switch between the *Browser* and the *List* representation of the data. Additionally, there is an integrated search, where-used and reporting functionality available. You can switch between these UI modes using the links *Browser*, *List*, *Search Result*, *Where Used List*, and *Reporting*.

While the *Browser* and the *List* representation are always selectable, the *Search*, *Where Used* and *Reporting* result lists are only available, after the functionality behind was triggered by the user.

The Browser Representation of the Solution Documentation Content

If the Solution Documentation UI is started via the SAP Solution Manager launchpad or via the link from the solution administration UI, the content is displayed in the Browser representation (indicated by an emphasized Link *Browser*).

In the upper part the structure elements are shown in a column browser. The first column contains the 2 top folders for the *Business Processes* data and the *Libraries*. On selecting one of those the second column gets visible containing the children of the selected top folder: *Folders*, *Scenarios*, *Master data*, and *Organizational Units*.

For each selected element, the lower part of the UI lists all elements assigned to the selected structure element. The bread crumb above the column browser always shows the path to the actually selected structure element and also provides a navigation functionality to a parent element within this path. The right part of the UI shows the attributes of the selected element.

The Solution Documentation structure in the Browser is also available as graphic: in the context menu of each structure element the action *Open Value Chain Diagram* provides the switch from column browser approach to graphical representation.

The List Representation of the Solution Documentation Content

This UI mode provides all elements within the sub-tree of the selected structure element (also visible in the bread crumb) as a flat list.

The Search Result in Solution Documentation

The user can trigger a basic search within the solution documentation by entering a search term in the input field on the upper right part of the UI. When the search is executed, the UI switches to the Search Result mode and shows the list of hits related to the search term. The search is restricted to the sub-tree of the selected structure element visible in the bread crumb.

The advanced search is available via the dropdown menu of the search icon. In the advanced search, more detailed search criteria can be defined to narrow the result, for example *type*, *group* or *person responsible*. For date fields, like *created at* or *last changed at*, you can use a calendar for date selection.

The Where Used List in Solution Documentation

For all element types which can be referenced from elsewhere in the solution documentation, the context menu offers the action *Where Used List*. All library types (executable originals, process step originals etc.), but also documents or processes can be used multiple. When the *Where Used List* is requested by the user, the result is loaded and the active UI mode switches to *Where Used List*.

The Reporting Result in Solution Documentation

In the *Global Functions* dropdown list, an entry *Reports* is available to execute a reporting within the Solution Socumentation. After the execution of a report the UI mode switches to *Reporting*.

The Filter Panel in Solution Documentation

On the left part of the UI there is a filter panel which can be expanded and collapsed. The filter panel offers the possibility to switch into a different layout providing a defined set of columns and filter aspects. The user can also change the current layout by adding filter aspects or filter the visible data by setting filters within a filter aspect. In the browser UI mode the filters as well as the statistical information is only related to the assigned elements of the selected structure element, but not towards the structure part in the column browser.

Personalization of selected Layouts

The layout (visible columns and selected filter aspects) used within the Solution Documentation is personalized. The actual layout personalization is stored user dependent for all modes of the Solution Documentation screens except reporting.

At restarting the Solution Documentation screen, the last used layout is loaded automatically. The last up to 10 used layouts are provided as last used list in the layout dialog drop down in the expandable filter panel area of

the screen. Additionally, the default layout is always available within the drop down list. An entry *More...* within the layout drop down provides a search functionality to switch into all available layouts. This is affects all public layouts as well as private layouts for the current user.

As the layouts to display a report result are report specific, for each single report result the selected layout is personalized to show the result at the next execution of the report. The layout drop down provides all available layouts for the current report, not only the 10 last used ones. For this reason no *More...* function is needed in reporting.

4.2 Working with Solution Documentation

In this section, you learn more about how to work with the Solution Documentation. Objective of this section is to understand the overview functions of the Solution Documentation, the display of the different views and the interaction between them.

Header

The header is displayed at the top of Solution Documentation. The header description displayed on the left-hand side contains the solution and the branch name.

Menu Global functions

The *Global functions* menu contains the following entries: *Solution*, *Reports*, *Scheduled Reports*, *Process Document*, *Diagram Entities*, *Settings*, *File Download*, *Show/Hide Drop Area*.

For further details, see the corresponding documents in this section.

Browser

If your branch is newly created or you are accessing an existing branch for the first time, only the first column of the hierarchy will be displayed. Otherwise the hierarchy for the last selected element will be displayed.

List

The link *List* is highlighted. All other links are displayed standard. The splitter between list and attribute panel is displayed. You can resize or collapse the splitter to the right. The elements are displayed in a list. Only those elements are displayed which are found in the hierarchy under the last selected structure element. The last

selected element is also displayed in the list and is explicitly selected. The attributes and the assignments for the selected element are displayed.

You can enhance the *List* view with the checkbox *Include Originals*. When you select the checkbox, the list gets enhanced by the subtrees of all library elements, which are referenced in the listed subtree. For example, if a process step reference is listed within the subtree, include originals means that the process step original is included in the list as well as an assigned executable reference and the executable original as well. When you deselect the checkbox, the list is reduced again. When you request the list for the process step library, this checkbox also includes, for example, referenced executable originals with their assigned test cases and documents.

Move elements of process steps to the corresponding originals in the process step library

If you have created documents without assigning them to a library, you can do this later, using one of the following possibilities:

- In the *List* view, select one or more documents and use the context menu to move them to the original.
- In transaction SE38, use report `RSMUD_MOVE_TO_ORIGINAL_BULK` with which you can move multiple documents to the respective library.

Search Result

Enter a search term in the search field in the header. Choose *Enter* or the search button *Basic Search*.

You can enhance the *Search Result* view with the checkbox *Include Originals*. When you select the checkbox, the list is enhanced by the search results within the subtrees of all library elements, which are referenced in the listed subtree.

There is only one personalization for the checkbox *Include Originals*, therefore the setting is valid for the list view, the basic, and the advanced search.

Where Used List

The *Where Used List* link is displayed in the header on the left-hand side after *Search Result*. If Solution Documentation is opened for the first time and where used is not executed, the link is displayed as disabled and *No where-used list executed* is displayed as a tooltip. The where used is triggered from the context menu and is available for library elements (for example process step or transaction) or elements used in the library (for example documents or test configurations).

Reporting

Select the link *Reporting* in the header. If the link *Reporting* is disabled execute a report.

Change Document

Select dropdown menu with quick info *Change Document* in the header (visible is the name of the currently selected change document). This dropdown menu is only available if the selected branch is change enabled. The *Change Document* link is only available if the selected branch is change-enabled.

Branch

Select dropdown menu with quick info *Branch* in the header (visible is the name of the currently selected branch). A list with all branches created for the selected solution is displayed.

Site

Select dropdown menu with quick info *Site* in the header (visible is the name of the currently selected site). This dropdown menu is only available if the selected branch is site enabled.

System Role

Select dropdown menu with quick info *System Role* in the header (visible is the name of the currently selected system role). If your branch is newly created or you are accessing an existing branch for the first time, the default system role is displayed. The name of the selected system role is displayed in the header.

Scope

Select dropdown menu with quick info *Scope* in the header (visible is the name of the currently selected scope).

History

The dropdown menu *History* contains a list of elements that have been selected recently (the latest selected elements come first). A structure element is added to the history if it is selected in the browser view only. Selecting an element in a *Value Chain Diagram* does not add the element to the list; navigating inside the diagram does, however. A diagram element (process diagram, interface diagram, or collaboration diagram) is added when it is opened (in browser view). In case of multiple selected elements, only the first selected element is added. The history list is limited to 30 entries. The history can be cleared via *Global functions* menu, item *Settings*, option *Delete navigation history*. When a diagram (value chain diagram, process diagram,

interface diagram, or collaboration diagram) is opened up, the suffix `[Diagram]` is added to the corresponding entry in the history list.

Favorites

The dropdown list *Favorites* can be used to navigate to elements that have been added as favorites.

Back in History

The *Back* button is located at the left hand side of the header. It allows to navigate one step back in the history list. When choosing *Back* the latest entry in the history list is deleted (popped from the list). If the history list is empty, the button *Back* is inactive.

Bread Crumb

The bread crumb is displayed in the lower area of the header and is available for the *Browser*, *List*, and *Search Result* view. It contains all selected structure elements including the root element *Solution*. In browser and list view, the bread crumb can be used for navigation and displays the navigation path to the last selected structure element. In search result view, the bread crumb displays the search path from the last selected structure element. In case of multiple selection of structure elements, only the first element from the selected elements will be considered for display.

Sorting function

On most of the UIs, you can adjust tables to your needs by choosing the individual column headers:

1. *Move Left*, *Move right* to move the selected column to the left or to the right.
2. *Remove* to remove the selected column from the list.
3. *Add* to add a column to the table.
4. *Sort ascending*, *Sort descending* to sort the listed items.
5. *No Sorting* to reset the sorting within the selected column back to its initial state.

Within the view of *Assign Orphan Documents* and *Select Default Folder for Library Original*, you can adjust tables to your needs by choosing the individual column headers:

1. *Sort ascending*, *Sort descending* to sort the listed items.
2. *No Sorting* to reset the sorting within the selected column back to its initial state.

4.2.1 Scope

A scope defines a subset of the overall Solution Documentation within a solution, by means of restricting certain content scenarios or functions.

Use

With a scope, you can narrow down the Solution Documentation content. A scope consists of:

- Structure element selection
- Filter settings
- "Include Originals" option

Scopes are solution specific and can be applied in any branch of a solution. Scopes are also used for the generation of process documents and for the execution of reports. Furthermore, they can be used in third party integration. Scopes can either have the visibility *Public* or *Private*. Public scopes are visible to all users, whereas private scopes are visible only to the user who created the scope.

How a Scope affects Solution Documentation Content

The structure element selection, the filter settings, and the option *Include Originals* of a scope determines the set of elements that are in scope and therefore are displayed in Solution Documentation when the scope is selected from the scope selector. An element is in scope if it is not excluded by structure element selection and not filtered out by filter settings. Structure element selection allows to select library structure elements, and filter settings also affect the library. If *Include Originals* option is set, library elements are also included into the scope.

In *Browser* mode, the entire substructure is included, whereas in *List* mode and *Search* mode (basic and advanced search) only those library elements are included that are referenced and the referencing elements are in scope. Library elements that are filtered out by filter settings, however, are not included by setting the *Include Originals* option. If option *Include Originals* in dialog *Scopes* is set, then in *List* mode and *Search Result* mode, the option is also available and can be used to restrict the list or search result content by deselecting the option.

Using scopes in the site context has the following behavior:

- In a branch with sites, the available site context depends on the selected scope.
  - If the selected scope has no site filter, then all sites (including *Global*) are provided in the site context list.
  - If the selected scope has a single value site filter, then the site context is automatically filled with this value and not changeable for the selected scope.
  - If the selected scope has a multiple value site filter, then the site context is restricted to these multiple values (including *Global*).
- If the selected site in the site context is different from *Global*, then single value site filter is automatically effective further restricting the selected scope filtering.

Activities

Using a Scope

The scope text of a selected scope is displayed in the header on the right-hand side. If the Solution Documentation is opened for the first time, the default scope *Show All* is displayed. After selecting another scope and loading the Solution Documentation again, the selected scope is displayed. The default scope *Show All* is always available and cannot be edited or deleted.

When you select the scope text, a menu opens with available scopes for the solution, that have the visibility *Public* or *Private* for your user. This menu list of available scopes is limited to the last ten selected scopes. Selecting the menu item *More* opens a dialog displaying all available scopes and allows to select a scope. For all available scopes, the owner and the visibility of the scopes are displayed.

The entries *New*, *Edit*, and *Delete* are also displayed in the menu list. If the default scope *Show All* is selected, only the action *New* is available as the default scope cannot be edited or deleted.

In a branch with enabled change control and if the change has a scope assigned, no other scope than the scope assigned to the change can be selected. In this case, only the entry *Edit* is available.

Creating a Scope

Selecting *New* from the menu list, opens the dialog *Scopes*. It contains the sections *Structure Selection*, *Filter*, and the checkbox *Include Originals*.

In section *Structure Selection*, the text *All included* is displayed; that means all structure elements are in scope. In section *Filter*, the text *No filters set* is displayed.

Selecting the link *Select Structures* in section *Structure Selection* open the dialog *Selection Mode*. The structure elements in the browser are displayed with checkboxes. The assignment list and the attributes are displayed for the selected element. In the browser, it is not allowed to perform any changes like editing attributes or assigning elements. Only including and excluding structure elements is possible by toggling the checkboxes of the structure elements. The checkboxes can take one of three states: *Explicit selected* (displayed as checkmark), *Unselected* (displayed empty), or *Implicit selected* (displayed as filled). An element is implicit selected if it is not explicit selected but is a predecessor (parent) of an explicit selected element. Explicit and implicit selected structure elements will be in scope. After taking some elements into scope in the browser, choose *OK*. The dialog *Selection Mode* is closed. In the section *Structure Selection* of the dialog *Scopes* the list of selected elements is displayed.

Selecting the link *Include All* in section *Structure Selection* removes the list of selected elements, and the text *All included* is displayed, which mean that all elements are in scope again.

Selecting the link *Add Filters* in section *Filter* displays filter options for scope-relevant attributes, like country or site. Initially, one row of filter options is provided. Additional lines can be added via the *Insert New Row* option. Filter options can be used to filter out elements (structure- and non-structure elements) from the scope. If you select, for example, *Country* as filter, only those elements are in scope that take the selected value for attribute *Country*.

If an element has no value for *Country* assigned, the value for *Country* of an element is inherited from the predecessor (parent) elements. Note that the attribute values for *Country* are inherited but also narrowed. For example, a process might take the values *France* and *Germany* but a process step of the process might take *France* only. An element is in scope, if it takes the attribute filter value(s), either directly assigned or inherited from its predecessor (parent) or if no value for the attribute is maintained for the element. The input help shows all available values for the scope-relevant attributes.

If none of the predecessors (parents) have an attribute value, there is nothing to inherit, and no value means valid for all. As soon as you maintain a specific value at a hierarchy level, an element (and all its children) that does not match the filter restriction are sorted out. Those elements with no attribute value maintained are not sorted out, so they are valid.

Select *Save* to save the created scope or *Cancel* to close the dialog *Scopes* dialog without saving.

Copying a Scope

Selecting *Copy* from the menu list opens the dialog *Copy Scope*. Enter a name for the scope copy and select the visiblilty of the scope copy. The default setting of visibility is *Private*. If you choose *Copy*, the scope copy is created and the scope copy is loaded.

Editing a Scope

Selecting *Edit* from the menu list opens the dialog *Scopes*. In section *Structure Selection*, the list of selected structure elements is displayed. If no structure element has been removed from the scope, the text *All included* is displayed. If no structure element is included in the scope (empty scope), an empty list of selected structure elements is displayed. In section *Filter*, the list of selected filter options is displayed. If the scope contains no filter, the text *No filters set* is displayed. The checkbox *Include Originals* is selected if the scope has been saved with this option. Make your changes and save your entries.

Deleting a Scope

Selecting *Delete* from the menu list for a scope opens a warning popup. Choose *OK* to delete the scope. The systems displays a success message and the default scope is loaded. The text *Show All* is displayed in the scope selector.

4.2.2 Filter Panel

The filter panel can be used for grouping and filtering the content in Solution Documentation.

The filter panel provides functions for grouping and filtering the content in Solution Documentation. The filter panel is available in all Solution Documentation views. The filter panel is part of the interface that can be defined by the user.

Add and remove filter levels

The Solution Documentation is always launched with the filter panel collapsed. You can expand it via icon *Expand filter panel*. The layout *Default Layout* is already selected without any filter aspects set.

The filter panel has the following functions and properties:

- The filter panel is displayed on the left-hand side of the elements list.
- You can add a filter aspect at level 1 via the dropdown menu *Filter by*.
- The dropdown menu provides all columns that are visible in the element list on the right. In the browser view, the filter panel only takes into account the current open tab of elements assigned to the selected structure element in the column browser.
- You can select a filter aspect, for example *Type*. Behind each listed filter value (for example type), a number provides the statistical information on how many elements of the corresponding type are in the list.
- In front of each type, a checkbox is displayed. The checkboxes are used as filter for the list. Per default, the checkboxes are empty, that means that the filter is not set.

- If one filter is selected via marking the checkbox the list is filtered accordingly.
- Below the types, a combo box *Filter by* allows the selection of a second level grouping and filtering aspect.
- You can select an additional aspect at level 2 for grouping via the combo box *Filter by* (for example *Change Status*, if column *Change Status* is added to the table). Then the statistical info about changed and unchanged respectively created and deleted elements (if personal setting *Show deleted Elements* is activated) is provided below.
- If you change an attribute of an *unchanged* element with aspect filter *Change Status* active, then the element is moved from *unchanged* to *changed* subset by implicit save. Note that for an element with status *created* no switch to *changed* is visible before the first release.)
- For each filter level you select from the Dropdown *Filter by* a new level appears below to allow the next selection again via *Filter by*.
- The above selected filter aspects are not provided in the next level filter selection again. This means: When filter *Type* is selected on level 1, the dropdown filters provided at *Filter by* on the second level does not provide the type filter anymore.
- If you want to delete filters already set in the filter panel, just choose the first entry *Remove Filters*. By this selection, the current level is reset and all levels which may be already selected below dissapears.

Use filter function

A checkbox in each filter line allows to filter the list. Setting one or more filters on a given aspect level does reduce the list to be provided to the filter aspects chosen in lower levels.

- Selecting one or more checkboxes means that the list is filtered for the given type/types. Only elements of the selected type(s) remain in the list.
- Filter checkboxes within then same level are combined with a logical OR. The filter criteria in different levels (type and second level grouping) are combined with logical AND to filter the visible list.
- Selecting all checkboxes means that the complete list is shown (same as no checkbox is marked at all).
- If at least one checkbox is marked, the number of list entries is given by the sum of counting numbers of all marked types.
- The statistical information within the types section of the filter panel is not affected by a change in the filter settings. It represents always the complete unfiltered list.

4.2.3 Where Used List

With the where used list, you can get an overview on the usages of the re-usable elements.

When creating Solution Documentation content, typically re-usable elements such as documents and elements contained in the libraries are assigned at multiple places in the content structure. By this approach redundancies in content definition are avoided to a large extent.

The re-use of elements may span across separated libraries, some examples are:

- a process refers to process step originals in the process step library
- a process step original refers to executable originals in the executable library
- an executable original refers to a (shared) test document

Although the Solution Documentation model facilitates the assignment of relevant content to the proper places, it might be useful to get an overview on the usages of the re-usable elements. Such an overview is obtained by the where-used-list function.

Re-usable elements are original elements in the libraries and (test) documents. A re-usable element may be assigned at multiple places. The where-used list of a re-usable element displays the entire context where the element is used in the entire Solution Documentation content.

The where-used list is built-up in the following way:

- The context comprises all direct usage places of the element. For each usage location, the entire path (i.e. all levels up to the root) is contained.
  For example, the where-used of a process step original contains the process step references, the enclosing processes, their enclosing scenarios and all enclosing folders.
- If a usage place is again a re-usable element, then the where-used list is enhanced for this element as well. For example, the where-used list of an executable original contains the executable references and if an executable reference is assigned at a process step original then the entire where-used list of this process step original is also contained in the where-used list of the transaction original.

The desired context information of a re-usable element can be received in the following way:

1. Call the where-used list for a re-usable element, for example the where-used list for a transaction original.
2. Include the type filter in the layout (if not yet included by default).
3. Select the desired context elements by type. For exmaple: Get all processes of the context: the filtered where-used list then displays all processes that directly or indirectly refer to the transaction original.

4.2.4 Reporting

The Solution Documentation user interface is primarily dedicated to browsing and editing use cases. The reports complement the Solution Documentation user interface and focuses on overview and analysis use cases.

In contrast to the Solution Documentation user interface, a report lists a specific aspect of the Solution Documentation content in a flat list and displays the requested information in designated columns. A report can refer to the entire content of a solution or can be limited to a specific scope.

There is a number of predefined reports that are provided by SAP. Additionally, you can create own reports that are based on these standard reports.

You can define and execute your own reports in Solution Documentation based on reports that are delivered by SAP. So, your own reports are adapted copies of the delivered reports. Especially the assignment of a scope to a report needs to be done in your customer system, as the Solution Documentation content is needed for the scope definition. The creation of a new report from scratch is not possible.

All reports need a configured search infrastructure. You can check this with the service activity *Check Search Infrastructure* in Service Activities [page 32].

Standard Reports

In the following, all standard reports delivered by SAP are listed and described.

The first group comprise reports that list an overview on all assigned elements within a specific group. These standard reports do not have any further selection criteria other than the assignment group. Further selection criteria may be added in own customer reports as described below.

- Configuration Assignments
  This report lists all assigned configuration elements. The list comprises the references to configuration units assigned within the business processes and libraries as well as the configuration objects assigned to the configuration units.
- Development Assignments
  This report lists all assigned development elements. The list comprises the references to development objects as well as the development object originals assigned to the development library folders.
- Diagram Assignments
  This report lists all assigned BPMN diagram elements. The list comprises process and collaboration diagrams assigned to processes and process variants as well as interface diagrams assigned to composite interface originals. This standard report does not list the universal diagrams. The universal diagrams may be added in an own customer report.
- Document Assignments
  This report lists all assigned documents. Since the same document may be assigned at multiple places the result list may contain multiple entries for the same document.
- End User Role Assignments
  This report lists all assigned end user roles.
- Executable Assignments
  This report lists all assigned executable elements. The list comprises the references to executable objects as well as the executable object originals assigned to the executable library folders.

The assignment reports provide an overview on the existing Solution Documentation content for each assignment group of interest. It might also be interesting to get an overview on missing assignments. For this purpose there is also a standard report:

- Completeness of Documentation
  This report lists all solution documentation elements that have a documentation group together with all assigned documents.
  The difference to the report 'Document Assignments' this report lists also all elements (for example processes) that have a document group but do not yet contain any document assignment. In the result list all of these elements are contained with empty columns for the document specific attributes (for example name or document type). The elements without documents can be filtered easily using these empty columns.
  Remark: The *Completeness of Documentation* report does not reflect the completeness rules as defined in the documentation administration. For this purpose, the check functionality indicates in the attribute 'Check result' if a document assignment is missing according to these rules.

By adapting this standard report in an own customer report, similar completeness reports may be created easily (for example **Completeness of Executable Assignments**).

- Solution Documentation Structure
  This report lists all structure elements of the Solution Documentation structure.
- Diagram Usages
  This report lists all diagram items contained a BPMN diagram (process, collaboration or interface diagram) together with its enclosing diagram element.
- Library Usage Analyzer
  This report lists all executable originals contained in the executable library together with a where-used counter. By filtering with counter 0, you can easily identify unused executable originals.
- Usage Analyzer (Process Steps or Interface)
  This report lists all process step originals contained in the process step library together with a where-used counter. By filtering with counter 0, you can easily identify unused process step originals.

- Related Documents
  This report lists all related documents together with the Solution Documentation element they are assigned to.
- Related Documents Complete
  This report lists all related documents together with the Solution Documentation element they are assigned to. In addition to the related documents report, all Solution Documentation elements are listed including those that have no assigned related document. In this case, the related document specific columns are empty (ID, type, title).
- TBOMs and Test Cases by Executables
  The report lists all executables within the selected scope. For each executable, the report shows the attributes that are relevant for TBOMs and test cases.

Functions in the Report dialog

In the *Global functions* menu in Solution Documentation, select the entry *Reports* to display the dialog box *Reports*. This dialog box provides an overview of all available reports, that have the visibility *Standard* (SAP delivered reports), *Public* (customer reports) or *Private* that are owned by your own user. Additionally, the owner of the report is displayed.

The dialog provides a search icon and an input field to provide a search term. A delete icon is available but inactive until a report is selected in the list. The deletion of reports owned by SAP is not possible. The dialog offers the following buttons: *Cancel*, *Open* to enter the report definition dialog box of the selected report, including a help button for further report information, and *Execute* to directly execute the selected report.

With *Cancel* you can close the dialog box. With *Execute* the dialog is closed as well and the report result is shown in Solution Documentation. With setting the indicator *Execute including all parent levels*, the report displays in the result list for every line all parents. Without this indicator, only the name, type and path of the first parent is displayed in the result list.

Changing a Report in the Report Definition Dialog

In the dialog box *Reports* select a report in the list and choose *Open*. This opens the report definition dialog box with the assigned scope and additional filter settings. As long as no own customer scope is assigned to the report in the current solution, the scope selection is set to *Show All* This scope covers the complete content of solution and branch. The default scope is also used when a customer scope was deleted or is not valid after a solution switch.

You can change the scope assignment via the dropdown functionality. All public scopes in the solution are offered as well as the private ones assigned to your user. You can change or add additional filters in the report context. In the left column attributes can be selected for filtering and in the right column values can be assigned.

You can save the changed report definition via the button *Save* or create a copy via *Save as*. For SAP reports only *Save as* is possible. Choosing *Save as* opens a dialog to enter a name of the report and the visibility (public or private).

Creating a Custom Scope in the Report Definition Dialog

When creating a new report or editing an existing one, the scope selection dropdown menu contains the entry *Create Custom Scope* or the entry *Edit Custom Scope* if a custom scope is already defined in the report. Selecting one of these entries opens the dialog box for scope definition where you can customize a scope. Confirming your entries with *OK* means that the customized scope definition is taken into the report indicated by the text *Customized*.

You can change the definition of a customized scope by selecting *Edit Custom Scope* from the scope selection dropdown menu. A custom scope is only available for the selected report and cannot be used for the execution of another report. Furthermore, a custom scope for a report cannot be used for the generation of a process document.

Executing a report

Before a report is executed, the frame link *Reporting* is inactive with the tooltip *No report executed*. To execute a report choose *Execute* in the report dialog box or in the report definition dialog box to get the report result. The dialog box for report definition will close and the report is executed with the actual settings concerning assigned scope and additional filters, but possible user adoptions are not saved automatically. The Solution Documentation switches into *Reporting* mode indicated by a bold blue link text *Reporting*.

In the *Reporting* mode the selected view does not filter the reporting result. For this reason, the view is hidden in the frame header and cannot be changed. Above the report result, a caption provides the name of the executed report and a link *Report Definition* to jump back to the report definition dialog box for the executed report. By clicking on this link, the report definition dialog box opens with all settings done by the user before the report was executed. You can now save the definition or apply needed changes.

Scheduling a background report

For scheduling a background report, choose *Schedule* in the dialog box *Reports* or in the report definition dialog box. The dialog box *Schedule Background Report* opens. The proposed name of the report is concatenated from solution, branch, report, and scope titles. You can start the report immediately or delayed. For a delayed start, choose date and time. With *OK*, the dialog is closed, the background job is generated, and the system shows a corresponding success message.

Download and open background report results

Select *Scheduled Reports* from *Global Functions* menu. The *Scheduled Reports* dialog is opened. It provides an overview of all reports scheduled for the background generation by you. Name, generation time and status are provided for the reports. As soon as a report is finished, it is possible to download the exported content into a local ZIP file. The default file name is concatenated from solution, branch, report and scope titles. Download and save the generated report as a local file and extract it.

You can open the extracted file with a corresponding program like Microsoft Excel.

4.2.5 Generating a Process Document

Use

With this function, you can generate a process document. A process document contains the complete content of a solution or parts of a solution based on a scope. You can download the process document as Word document. It is also possible to create download files for an offline browser, see Process Document Viewer [page 56].

Prerequisites

For the generation of a process document that contains not the complete solution but only parts of it, you need some different scopes.

You can create a scope with the entry *New* in the dropdown menu with quick info *Scope* in the header. You can create a scope with and without *Include Originals* marked and with and without a structure filter. The indicator *Include Originals* adds all library elements that are referenced by the business processes structure, and that is typically what you want to have in a process document if you do not want to see all library elements. You can use structure filters to select all structure nodes, for example assigned to certain persons responsible, sites, or countries.

You can also create a custom template with your company branding for the process document in SAP Solution Manager Configuration, at *Process Management* > *Customize Document Handling* > *Customize Document Templates*.

Activities

For the generation of a process document, proceed as follows:

1. Select *Process Document* entry in the *Global Functions* menu.
2. Select the output format: *Download as Microsoft Word Document* or *Download files for Offline Browser*. If you select the latter, see Process Document Viewer [page 56].
3. Select a scope.
4. If you also want related documents from Change Request Management to be part of the document choose the option *Include Related Documents*.
5. Select assignment group filters.
   - If you select assignment groups, all assignments of these groups will be added to the document.
   - If you select no assignment groups, only structure elements will be selected.
6. Select document settings.
   - The option *Process documentation relevant document types* delivers all documents that have a documentation type which is marked as process documentation relevant in document type maintenance in solution administration.
   - The option *Process documentation relevant documents* delivers all documents that are marked as process documentation relevant in the document attributes.

7. Select *Ok*.

The system generates a Word document with the following features:

- The first page contains solution and branch name, name of the creator, creation time, and the name of the scope
- It follows a table of contents with links to the chapters.
- The first chapter lists the system landscape.
- The second chapter lists the business process structure with element assignments.
- If available, also element assignments below element assignments are listed. In column browser view, these are displayed as tabs. They can be created, for example, below documents.
- If available, also related documents to an element are displayed in an own table with name and URL. Prerequisite is, that the corresponding BAdI implementation of BAdI BADI_SMUDE_LCO_REPORTING is active for the document type. You can customize this in *SAP Solution Manager Configuration*, scenario *Process Management* in step *Configure Solution Documentation Model*.
- All visible non-initial attributes of each element are listed, hidden attributes are not listed.
- If available, diagrams are included in the document as PNG file.
- If available, other documents are included in the document as URLs. When you click the URL, the document opens. If the document has been changed after the generation of the process document, you can not see these changes as the link always reflects the frozen state during process document generation.
- The third chapter shows the libraries. If the libraries are not part of the selected scope but the scope has *Include Originals* marked, you see only those library elements that are referenced from the business process structure and the assignments.

If errors occurred during the generation, all errors are listed in an additional message section.

If errors or warnings indicate, that there might be an issue with Enterprise Search, call *Solution Administration* and perform in the *Global Functions* menu ▶ *Service Activities* ▶ *Check Search Infrastructure* ▶.

4.2.5.1 Process Document Viewer

The process document viewer is an offline application offering a read-only access to an extract of the Solution Documentation.

Use

With the process document viewer, you can distribute specific business content documented in SAP Solution Manager with an offline application containing your process diagrams, attributes, and attached documents.

Features

After selecting the output format *Download files for Offline Browser* in the dialog *Process Document* and entering the necessary data, you can choose *OK* to start the download. Select a location where the folder of the offline application shall be stored. Navigate into this folder and select the file `index.html`. Open this file.

Note, that you need to disable the web security of your browser to be able to run the `index.html` file from your local disk. Refer to your browser documentation to enable browser execution from your local file.

The process document viewer application contains a master list and a navigation panel. From the master list, you can select individual processes that will be displayed in the navigation panel. Depending on the extraction selection, the process document viewer navigation panel contains several tabs:

- Diagrams tab
  This tab is displayed by default when selecting a process from the available ones in the master list. The Diagram tab contains a list of processes diagrams illustrating the relationships between the major components of the selected process. The displayed diagram is by default the first diagram figuring in the dropdown list.
- Fast Facts tab
  This tab provides all the information related to the process. It contains two sections:
  - Attributes: This section shows the information details of the process (like description, responsible, or site)
  - Related Documents: It displays the documents related to the selected process. Each document can be displayed in your browser by clicking on the corresponding object.
- Process variants tab
  This tab contains the variants defined for the selected processes. The tab remains empty if no process variants are defined.
- Process Steps tab
  This tab contains the list of process steps for the selected process. A process step is a single task in a causal work flow. From this tab, you can access to the business transactions and documents attached to each process steps.
- Attachments tab
  If available, attachments are included in this tab as links. The attachment type can be, for example, a word document or PDF.
- User Role tab
  This tab lists the different end user roles used by the process.
- Development tab
  It displays the name and the description of the used development objects by the process.

4.2.6 Multi Language Handling

Use

You can display and edit texts of a solution not only in the primary content language but also in secondary content languages. You can also translate texts from any language to any other. This is possible for the solution documentation structure and diagram element names and descriptions. However, Knowledge Warehouse documents don't support this function.

In *Solution Administration*, the available content languages in a solution are displayed on the *Properties* tab in the area *Solution Settings*.

In *Solution Documentation*, a language selector is visible in the header if more than one language is available. The content language doesn't change when you change the branch as the content language is solution-specific.

All tool texts (header texts, buttons, link texts, menus, labels) are displayed in logon language.

All structure elements, assignment names, some value helps on external objects, some attribute values, and diagram entity names and descriptions are displayed in the selected content language, if available. For some value helps and attribute values the logon language is used.

All structure elements, assignments, and diagram entity names and descriptions are tagged with their fallback language in brackets as suffix, if they are not available in the selected content language. The fallback language is determined by the sequence of content languages. Example: If the fallback language is English, texts have the abbreviation (EN) at the end. This information is visible in the browser, list, search result, where used list, reporting, process document, attributes panel, and in diagrams.

Activities

Add Languages

In solution administration, select the *Properties* tab. Select the *Edit* link at the field *Content Languages*. The systems opens a dialog on which you can add further content languages from a list of installed languages. You can sort them in the sequence in which you prefer to read texts. You can't remove the primary content language from the first line because this language is fix and determined when you created the solution. In Solution Documentation, the content languages of a solution are displayed in the same sequence as maintained in solution administration.

Translation

Select a content language different to the primary content language and different to the logon language with the language selector. Select a structure item and translate it into the content language simply by removing the language suffix and changing the name. All changed names and descriptions of structure items are saved in the selected content language. The language suffix disappears.

Open a diagram and translate some diagram entities into the content language by changing their name. All names and descriptions of diagram entities are saved in the selected content language.

If you create new structure elements and diagram entities, the default names for new structure elements are in the current selected content language.

Use of Translation Mode for missing translation

You can activate the *Translation Mode* by choosing the following function in the menu: *Global Functions* > *Settings* > *General* > *Translation Mode*. As a result, all language dependent texts in browser, diagram and attribute pane that do not exist in current content language are displayed in red color. On mouse-over of a colored text a quick-info shows the information *Translation missing*.

Mass Translation

Select more than one text to be translated with the mass translation function.

1. Select an element in the column browser or in the list browser.
2. Select a content language with *Content Language*.
   If the content is not in the selected target language, the texts are shown in red with their original language shown in brackets, for example: (EN).
3. Choose the text to be translated into the content language you have selected in step 2 and open the context menu.

You can translate the texts individually or with the mass selection (select more than one or all).

4. Choose *Translate*.
   The popup *Selection of Translated Items* opens and shows the list of items you have selected in step 3.
   In the *Translated Text* column, you see the translations suggested by the system.
   In the *Quality Index* column, you see the accuracy index of the translation (the higher the number, the more accurate the translation. A low number means that the system is not sure if the translation is correct).
   Recommendation: If you don't like a suggestd translation, do one of the following:
   - Deselect the item from the list.
   - Click into the suggested translation and directly edit the text.
5. Choose *Accept*.

Copy of elements in different content languages, e.g. a scenario with processes

If you copy elements in different content languages, as an example a scenario with processes, all languages are copied as well. If texts are not available in the content language, a fallback language is available for every text. The copied structure element itself (in our example the scenario) is created only in content language. No fallback texts are copied since the structure element that was copied is typically renamed after copying. If the structure element is not available in the content language a fallback language is used.

Use of Lifecycle operations and different Languages

If you use lifecycle operations like *Release*, *Revert*, *Mark Conflict as resolved* on structure elements in multiple languages, all available languages are released or reverted in these operations. Only changes in the primary content language are regarded as conflicts. Changes in other content languages never cause a conflict. However, you should release every text change in any of the content languages regardless of the selected and visible content language.

4.2.7 Setting up the SAP Translation Hub

Set up the SAP Translation Hub to benefit from automatic translation of structure elements.

Context

You want to be able to benefit from automatic translation of structure elements that are missing in your current language.

Procedure

1. Get the SAP Translation Hub licence in the SAP Store.
2. Enable the SAP Translation Hub service. For more information, see Enable the SAP Translation Hub Service.
3. Create a HTTP connection to get a token.
   a. Build the base URL of SAP Translation Hub. For more information, see Building Base URL of SAP Translation Hub.

b. Add `/translationhub/api` to the base URL:

   `https://sap<technical name of provider subaccount>-<technical name of subscription subaccount>.<region host>`**/translationhub/api**

c. Add `/v1/translate` to the URL:

   https://sap`<technical name of provider subaccount>-<technical name of subscription subaccount>.<region host>`/translationhub/api**/v1/translate**

> **i** Note
>
> For more information on how to access the translation API, see translate Method.

4. Open the created URL using the Firefox browser to download the required certificate. For the rest of the procedure to follow with Firefox, see the attachment of 2902416.

4.2.8 Viewing the History of an Element

You can display the history of an element via the context menu *Display History*.

In *Standard View* (button *Show Details* is visible), each line represents an element version. These lines are displayed in different colors in column *Changed At*. By selecting a line, the attributes of the element are displayed.

The *Detailed View* (button *Hide Details* is visible) offers detailed info about attribute changes.

Structure changes are changes in the set of child elements of the current element. You can exclude structure changes from the history list. This is the case, if button *Show Structure Changes* is visible. If the button *Hide Structure Changes* is visible, structure changes are displayed. You can navigate to the history of a child element by choosing the corresponding child element link in column *Old Value* or *New Value*. The navigation path to the currently displayed element is displayed and allows back navigation.

The option *Display: Visible Versions Only* restricts the display to those versions that are visible from within the current branch. Option *All Versions* shows versions of all branches, that means the complete history.

4.2.9 Drag and Drop of Documents

This function offers the possibility of creating and updating documents by uploading files from the user's computer using drag and drop.

Use

In the maintenance branch of a solution, you can display and hide a drop area for drag and drop of one document or many documents. This allows the upload of documents and the upload of new versions of documents. During the upload, you can perform the following mass changes:

- Change proposed document names
- Create and update documents
- Document type selection
- Assignment to documentation or test group

Activities

Showing and Hiding the Drop Area

The Solution Documentation offers a dedicated area where you can drop files from your computer. This area is hidden by default and can be shown on request using *Show Drop Area* of the menu *Global functions*.

When accessing the Solution Documentation for the first time with your user, no drop area is displayed and the menu *Global functions* contains the entry *Show Drop Area*. When choosing *Show Drop Area*, the drop area is displayed at the bottom of the screen, below the assignment list. When choosing *Hide Drop Area*, the drop area is hidden again. The next time you access the Solution Documentation with your user, the drop area is displayed or hidden corresponding to your last choice in the *Global functions* menu.

Availability of the Drop Area

The drop area is only available in the *Browser* view of the Solution Documentation.

The drop area is never shown in the views *List*, *Search Result*, *Where Used List* and *Reporting*. In these views, the entries *Show Drop Area* and *Hide Drop Area* of the menu *Global functions* are disabled. If the Solution Documentation is in read-only mode, the drop area is not shown. For example, the drop area is not shown in the production branch, as this branch is read-only.

Using Drag and Drop

You can drop files of your computer into the drop area. For example, with a Microsoft Windows computer you can drag files from your desktop or from the file explorer and drop them into the drop area of the Solution Documentation. When dropping files from your computer into the drop area, the dialog *Upload Documents* is displayed in the Solution Documentation.

Dialog *Upload Documents* - Overview

In the dialog *Upload Documents*, you can specify the information for the documents to be created or updated from the dropped files. The following fields are available for each dropped file:

- file name (read-only)
- document name
- document type
- element type
- action

The topmost row of the dialog allows mass maintenance for the fields *Document Type*, *Element Type* and *Action* of all files. The proposed *Document Name* is the file name without extension (for example: *Sales* if the dropped file was named *Sales.docx*. The values offered for the field *Document Type* comply with the document types in the scope for your solution. You can check the document types for your solution in solution adminstration on tab *Document Types*.

For values offered for the field *Element Type*, there are the following rules:

- The values comply with the element types allowed for the creation under the currently selected Solution Documentation element (you can compare with the element types offered in the context menu of the assignment list for the selected element).
- The values comply with the configuration of the document type administration for the selected document type. You can check this in solution administration, menu *Global Functions* in *Document Type Administration* by selecting the corresponding document type. In the tab *Usage* you can see under which element types a document or a test document of the selected document type can be created.
- The element type *Document URL* is only offered for dropped URL shortcut files.

For the field *Action*, the value *Create* is always available. The value *Update* is only available for files having a name and file type matching an existing document of the selected element. For example, if you drop the same file a second time under the same Solution Documentation element, the action *Update* will be available for this file.

Dialog *Upload Documents* - Proposals

The values proposed in the dialog *Upload Documents* for the dropped files depend on the available documents under the selected Solution Documentation element.

If you drop a file into the drop area, you can choose in the *Upload Documents* dialog the values for document type and element type. Leave the proposed document name unchanged and press *OK*. If you now drop the same file into the drop area again, the proposed action is *Update* and the values for document type and element type correspond to the ones you selected when you uploaded the file for the first time.

If you drop an URL shortcut into the drop area, the proposed value for the field *Element Type* is *Document URL*.

Creation and Update of Documents

When you choose the button *OK* in the dialog *Upload Documents*, the dropped files are uploaded and the corresponding Solution Documentation documents are created or updated matching the input you provided for their fields. A progress bar is displayed during the upload process. A success message is displayed after creating or updating the documents.

4.3 Lifecycle Based on Branches

Use

This section describes the mechanism how the Solution Documentation provides lifecycle versions for the Solution Documentation, that means: for the process structure, the attributes and the Knowledge Warehouse documents. This versioning mechanism is based on branches. A branch is a versioning context in which the Solution Documentation is maintained, developed further, or adapted. It has the following main features:

- Each solution has a production branch context.
- A branch may have one or more child branches, which can be used as separate versioning contexts. Use a release operation to bring the changes done in a child branch back to its parent branch.
- A maintenance branch can be defined as a single special child branch of the production branch.

This topic covers the general mechanism and the main concepts in an overview, and makes you familiar with the general lifecycle mechanism and with the features to view and evaluate changes.

If a maintenance branch exists for a production branch, then the production branch version is locked for changes and cannot be modified directly. In this case, the production branch version can only be changed via a

release of the maintenance branch or a release of another child branch. Although the production branch version cannot be edited, it can be displayed in the Solution Documentation.

Change Granularity

The granularity of changes that are handled and versioned in a branch context is as follows:

- For an element (a structure element displayed in the browser, or an assignment element displayed in the object list), the structure information is handled as a whole. The structure information comprises the element existence, the parent element to which the element is assigned and the order of the element with its siblings (same-level elements).
- Every attribute is handled separately. A multivalued attribute like countries is regarded as one attribute.
- A Knowledge Warehouse document is handled as a whole together with all document attributes.

Types of Conflict

Change Conflicts

A change conflict arises if the same element is changed in a child branch context, and later in the corresponding parent context. In this case, the change done in the child branch cannot be brought back automatically to its parent branch. The change conflict must be resolved first. For change-controlled branches, you can review potential conflicts in the *Check Overview* dialog. You can mark conflicts as resolved, and discard import conflicts. In the list of elements to be released, you can filter for elements with a change conflict using the *Release Check* column.

Maintenance Conflicts

The changes done in the maintenance branch are typically corrections, which have priority over other changes done in other branches. Therefore, there are special change rules concerning the maintenance branch. An open correction blocks the release of other changes for an element. If a correction has been done in the maintenance branch and has not been released, a change to the same element done in a parallel sibling branch cannot be released. A maintenance conflict cannot be resolved before the open correction has been released. As soon as the open correction has been released in the maintenance branch, the maintenance conflicts become regular conflicts, which can be resolved - and then the change can be released.

Visibility of Changes

A change that has been done in a branch context is not visible in its parent branch or in any of its sibling branches. The visibility of a change in a child branch may be hidden by a conflicting change in the child branch. All nonconflicting changes are immediately visible in the child branch. The conflicting changes are not directly visible in the child branch.

Change Status

The change status of each element is available via the list view or search result and can be used as a filter (choose *Group by* > *Change Status*). The change status refers to the status of the element in the current branch context. Possible status values are:

- *Changed*: The element has been changed in the branch.
- *Conflict*: There are conflicting changes for this element in the parent branch.
- *Unchanged*: The element has not been changed in the branch.
- *Created*: The element has been created in the branch and does not yet exist in the parent branch.
- *Deleted*: The element has been deleted in the branch and does still exist in the parent branch.
- *Maintenance Conflict*: The element has been changed in the branch as well as in the sibling maintenance branch of the parent branch.

To see more detailed information on the changes of the branch in the attributes panel, activate the options *Change Tracking Mode* and *Display Deleted Elements* in the settings.

Lifecycle Operations

The operations in *Element Change* affect only the selected element. The operations in *Subtree Changes* affect the element and all elements in the subtree.

- Release Changes: The element changes of the branch are applied to the parent branch.
- Discard Changes: The element changes of the branch are removed. Discarding the changes in the branch context means to go back to the version of the parent branch.
- Mark conflicts as resolved: The element version in a branch is marked as conflict free to the current version in the parent branch context. A conflict-free change can be released to the parent branch. Conflicts may not occur in a maintenance branch.

Rules for Lifecycle Operations

The following rules apply for lifecycle operations:

- You cannot release changes of elements with the status "conflict" or "maintenance conflict".
- You cannot discard changes of elements with the status "created", without discarding the changes for all sub-tree elements with the status "created".
- You cannot discard changes of original elements with the status "created", without discarding the changes for all reference elements with the status "created".
- Releasing the deletion of an element follows the same rules as the deletion of the element in the parent branch.

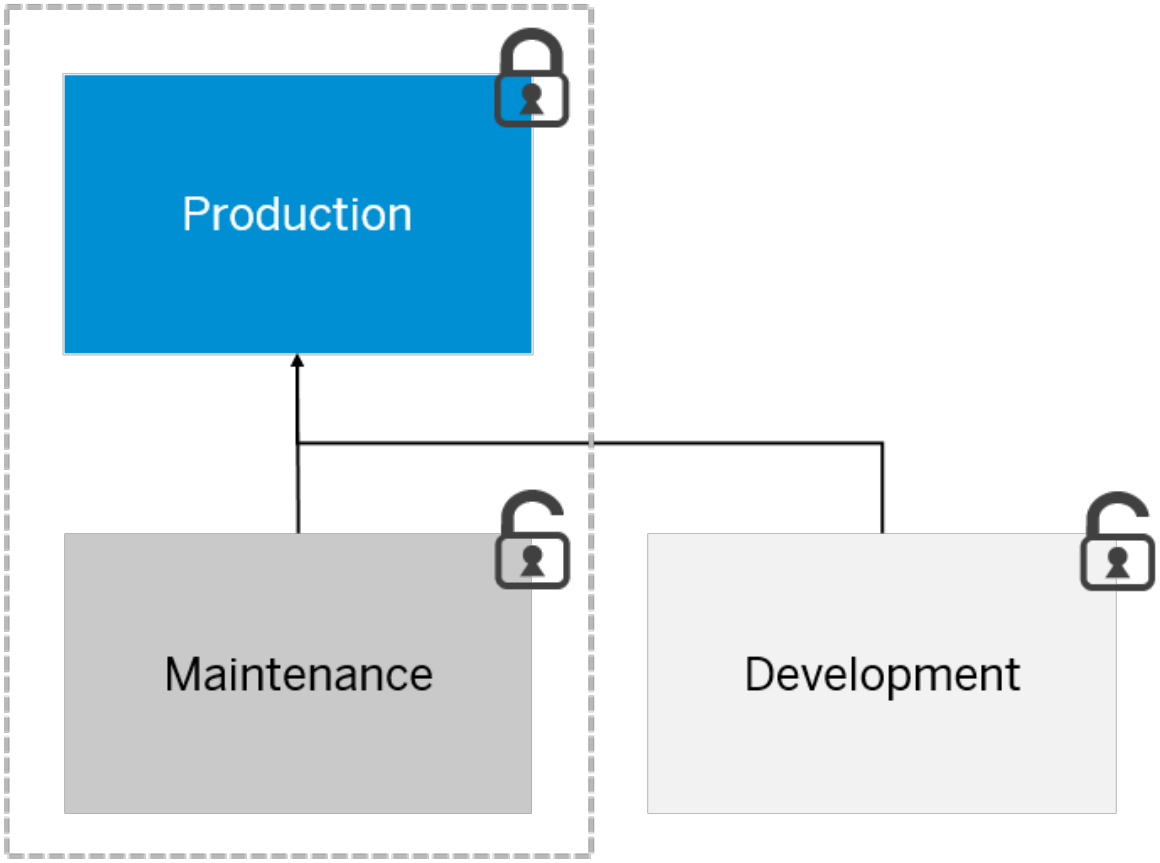
Related Information

Basic Terms and Concepts [page 10]
Lifecycle based on Branches: Examples [page 65]
Release Changes [page 69]

Discard Changes [page 73]

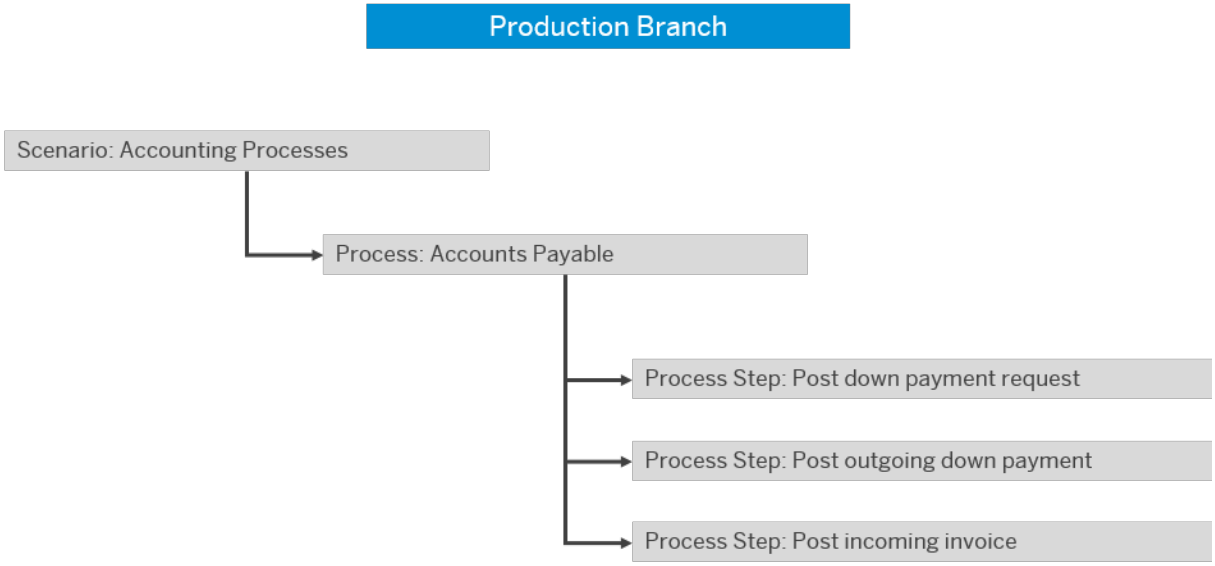
4.3.1 Lifecycle based on Branches: Examples

This topic explains the basic principles of the lifecycle based on branches with some examples. These examples are based on the following simple solution landscape with a production branch, a maintenance branch and a development branch:



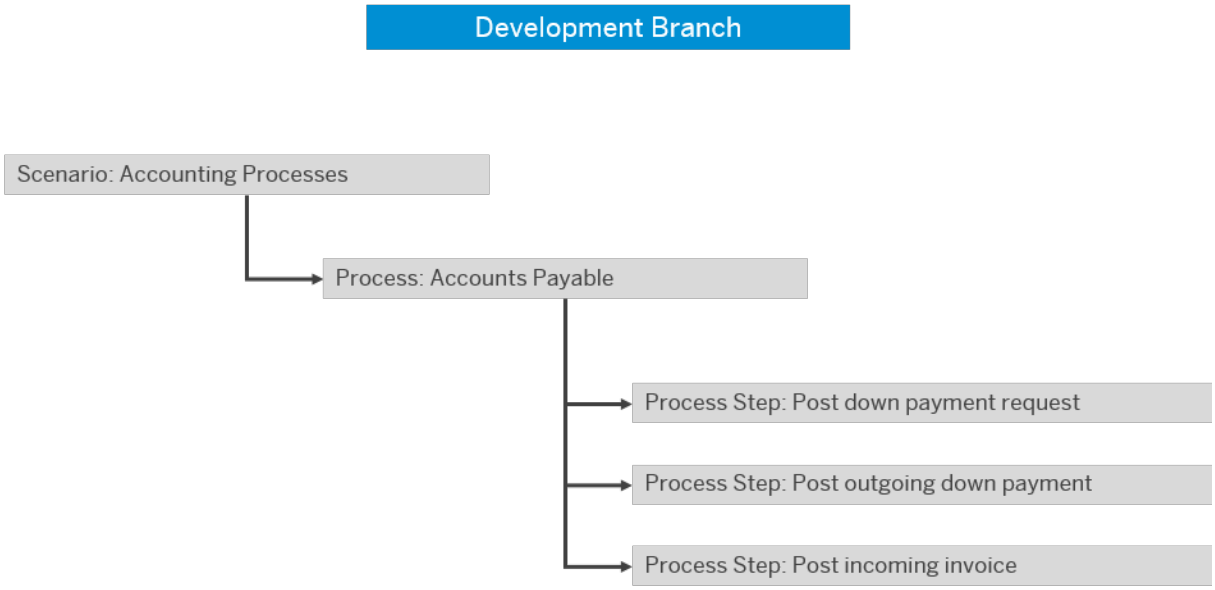
Simple Solution Landscape

As example for the Solution Documentation, we use the following scenario in the production branch with one process and three process steps:



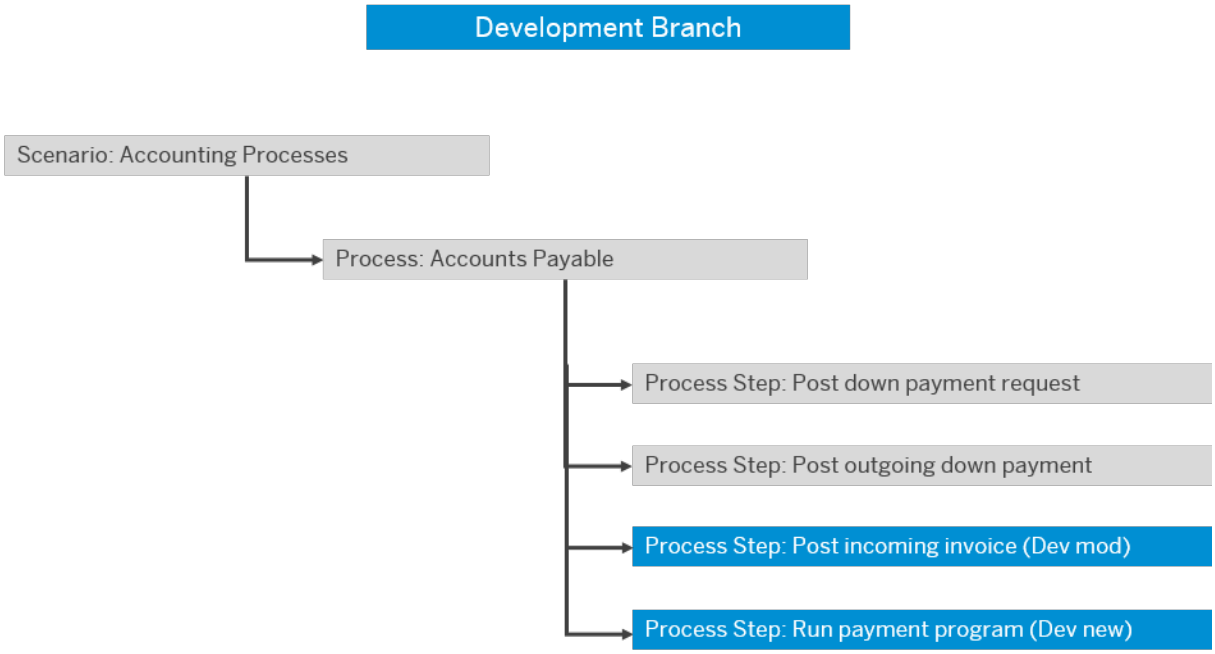
One scenario with one process and three process steps

Before any changes were made in the development branch, the content in the development branch does not differ from the production branch. In the following graphics, all unchanged elements have the same color like the elements in the production branch.



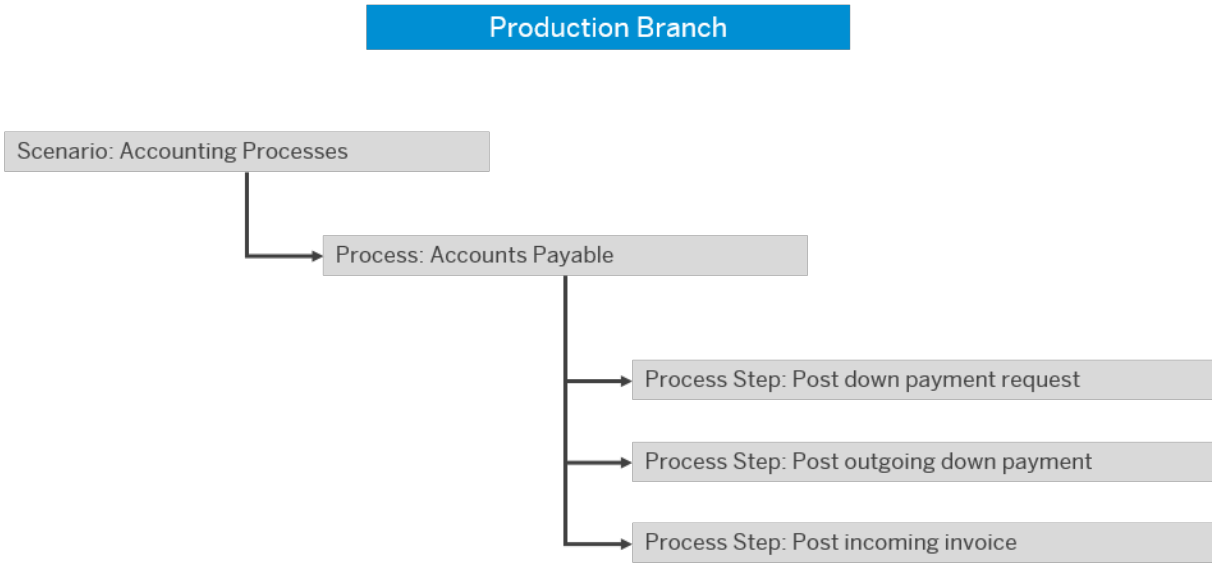
Development branch before changes

Now some changes are made in development branch. An existing process step is modified and a new process step is added. The unchanged elements have the color of the parent branch production. The changed elements in the branch have the color of the development branch.



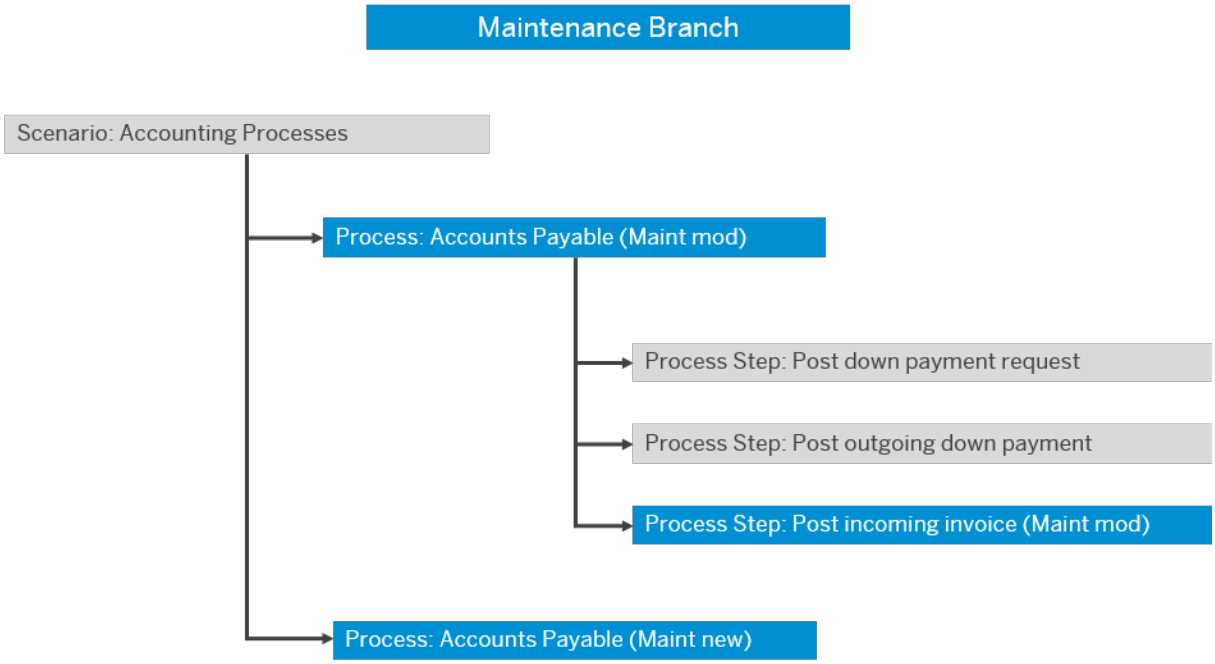
Development branch after changes

These changes in the development branch are not visible in the production branch:



Unchanged production branch after changes in the development branch

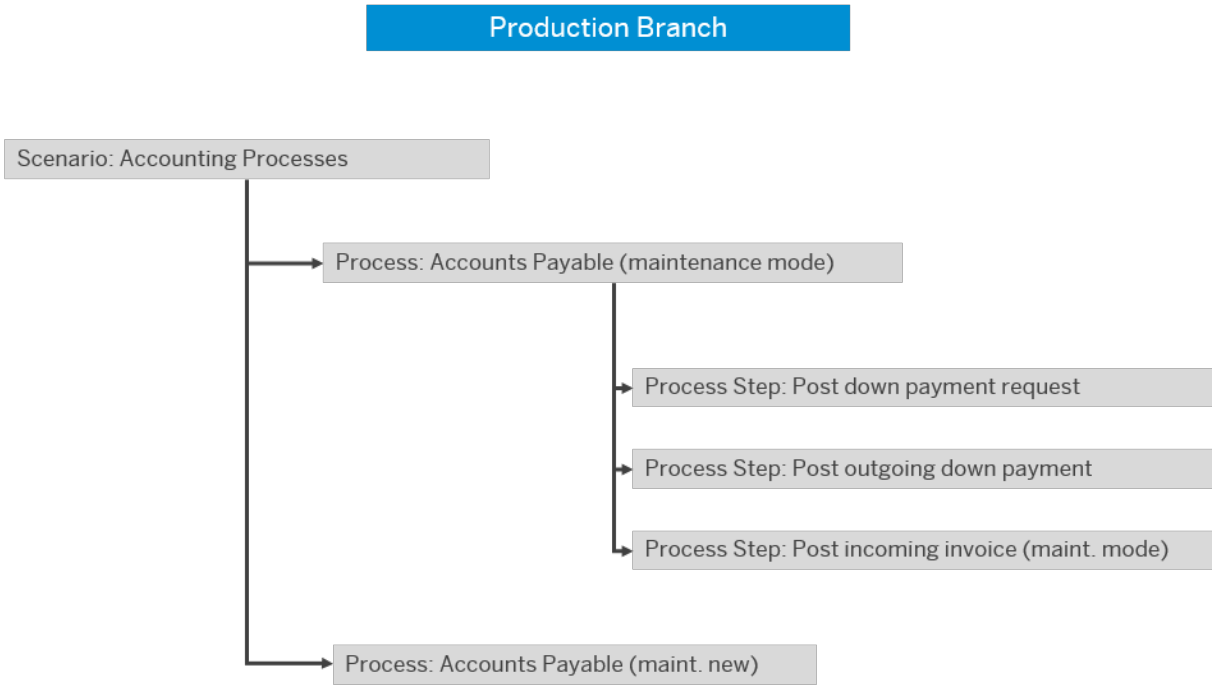
Then some changes are made in the maintenance branch. A process and a process step are modified and a new process is added:



Maintenance branch after changes

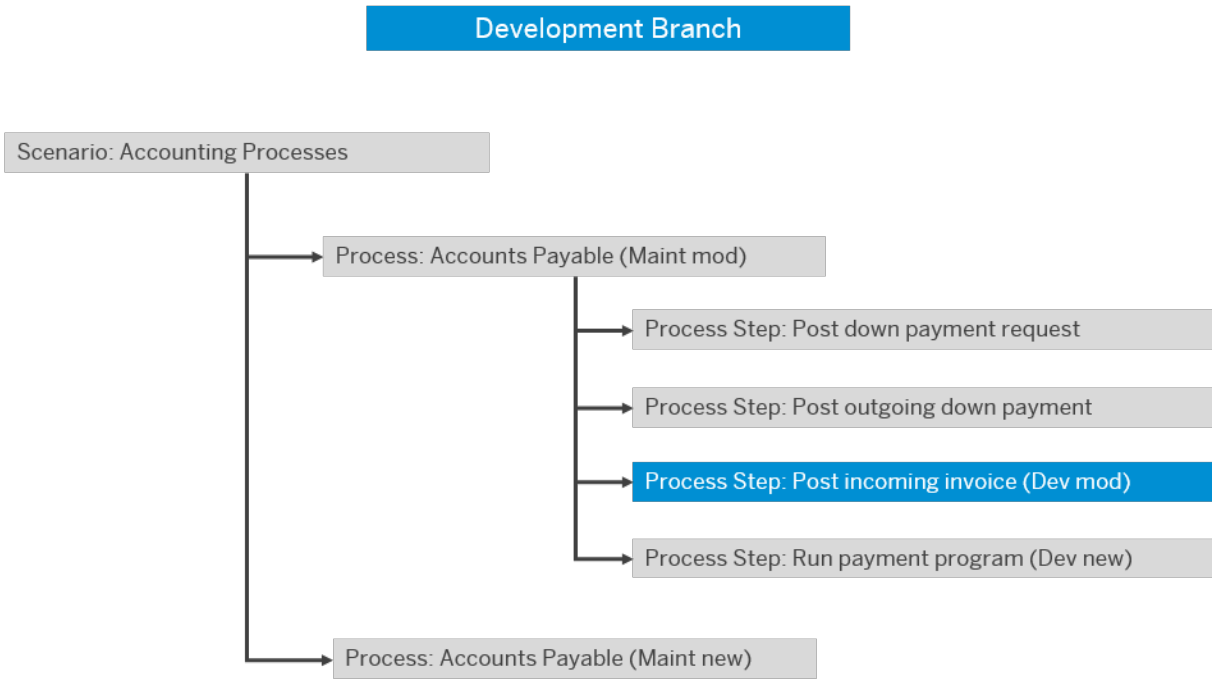
These changes of the maintenance branch are not yet visible in any other branch context.

Now the these changes in the maintenance branch have been released, and the production branch is updated:



Production branch after release

The non-conflicting changes that have been done in production branch are also visible in the development branch. The conflicting change of process step *Post incoming invoice* in the production branch is not visible in the development branch:



Development branch after conflicting changes in parent branch production

4.3.2 Release Changes

Features

You have several options to trigger a release changes operation:

- for individual elements or subtrees
- in the browser view, list view, or search result view, using the context menu
- for multiple selected elements

Use *Release Changes* to open the dialog box.

A release changes operation can have the following effects:

- The change status of the released elements is affected by a successful release. After the release, all released elements have the change status *Unchanged*.
- The visibility of elements is **not** affected by a successful release. That means that in the branch the same solution documentation content is visible after a successful release.
- The solution documentation content in the parent branch is updated. After the release, all released elements are visible in the parent branch.
- An attempt to perform a release changes operation fails if the release is not allowed. You get an error message and all elements and their change status remain unchanged.

Structure Changes

Changes may refer to elements or subtrees, and also to further parts of the solution documentation. These are for example:

- Structure changes like moving of elements, changed target elements of reference elements.
- Changes to external objects, like KW documents or diagrams.

A structure changes release operation has the following effects:

- An element move affects only the change status of the element moved. The change status of the new parent element is not affected.
- Special Case: The old parent of a moved element is deleted. If the deletion of the parent is to be released, then the moved element that belonged to the deleted parent must also be released.
- The release of a moved element moves the element into the parent branch (removing it from the child branch).
- Changing the target element of a reference element affects only the change status of the reference element: The change status of the new target element is not affected.
- The release of a reference element with a changed target changes the target also in the parent branch.

Extended Release Scope

The extended release scope function ensures that objects can only be released if this release causes no broken dependencies in the parent branch. Therefore, the release scope is automatically extended to the smallest consistent subset that can be released.

The extension is done by the following rules:

- The release changes operation extends the selected elements to a release scope containing the required dependencies.
- Only the minimal extended scope of the selected elements is released to the parent branch.
- The scope is extended by all parent elements with status *Created*.
- The scope is extended by all referred original elements with status *Created*.
- The scope is extended by the moved elements for its old deleted parent.
- The scope is extended by diagram dependencies.

Release Changes and Production Branch

In a production branch, you cannot release changes. There are two possible situations:

- If a maintenance branch exists for the production branch, the production branch cannot be changed directly. It can only be opened in read-only mode.
- If no maintenance branch exists for the production branch, the production branch can be changed in edit mode. All changes are immediately performed in the final production branch. All elements have always the change status *Unchanged*.

Dealing with Release Conflicts

A release changes operation cannot be performed successfully if there are conflicts in the (extended) release scope. There are three types of possible conflicts:

- Maintenance Conflicts (change status: *Maintenance Conflict*)
  A maintenance conflict may arise if there are unreleased changes in the maintenance branch. Each change to the same element in a sibling child branch of the production branch causes a maintenance conflict. The maintenance conflicts reflect the priority of changes in the maintenance branch over changes in the parallel normal branches.
  An element with a maintenance conflict cannot be released. The change in the non-maintenance branch must either be discarded or must wait until the maintenance branch change has been released.
- Change Conflicts (change status: *Conflict*)
  A change conflict arises if a change is done in a child branch to the parent branch version (the origin parent version), and afterwards the parent branch is also changed to a new parent version. This causes a change conflict because the origin parent version has been changed before releasing the open conflicting change in a child branch.
  An element with a change conflict cannot be released successfully.
- Deletion Conflicts (change status: *Deletion conflict*)
  The element to be deleted was changed in parallel sibling branches. For example, the description was changed, or one element was added (new document, ...).
  If you don't see any changes of the element in the sibling branches, then use the discard function to remove invisible elements (DOCUGRP, *GRP).
  If the element to be deleted is an original (other elements are referenced to them), there may be a reference to it in the sibling branch. Check this with the *Where Used* function in the sibling branch.

Integration of Change Management

If the change management integration has been enabled for a branch in the Solution Administration, then the release of changes in the branch is controlled in the change management and cannot be triggered directly in the Solution Documentation. In this case, in the properties tab of the branch the context menu does not provide the release changes operations for element changes and subtree changes. However, you can review potential conflicts with the *Check Overview* function.

Related Information

Release Changes Dialog Box [page 71]

4.3.2.1 Release Changes Dialog Box

In the context menu in Solution Documentation, you can choose for one or multiple elements the entry *Release Changes*.

With choosing *Release Changes*, the dialog box *Release Changes* opens and provides statistical information about the elements which will be propagated into the parent branch by the release operation for the selected elements. It contains the number of created, changed, deleted and unchanged elements.

The dialog box provides the info for the complete subtrees of all selected elements, for which the operation was requested. The checkbox *Include complete subtree* allows to switch between with and without subtree.

The dialog box offers three buttons to continue: *Show Details*, *Release Changes* and *Cancel*.

Release Changes **Button**

If the list of elements contains errors preventing the release operation, the *Release Changes* button is disabled. Otherwise it is enabled and by clicking on this button the release operation starts.

In case of errors, the dialog box provides all possible issues preventing the release. For each error, the number of affected elements is displayed and an explaining text on demand (choosing *?*).

Import and change conflicts can be solved in the dialog via the provided link, while maintenance conflicts can only be solved by releasing or discarding the competing changes in the maintenance branch.

Show Details **Button**

With *Show Details*, you can request the list of all elements which are to be propagated. With choosing this button, the dialog box is closed and the UI switches into view *Release Changes* indicated by the common link pattern above the list. In the *Release Changes* view, all elements for the requested release operation are listed. This list can be larger as the subtree(s) of the selected element(s) due to the following reasons:

- Referenced elements in the library are also taken - even when they are unchanged.
- Parent elements of the selection or refenced originals like folders are within the release list, if they do not yet exist in the parent branch.

The release list provides additional information regarding the layout selected by the user: The first column in the list is the *Release Check* column. Filter Aspect level 1 is the *Release Check* filter. These two additional settings are not changeable by the user and vanish if the *Release Changes* view is left.

The release list offers three links to the actions *Refresh*, *Continue* and *Cancel*:

- *Refresh* will reload the list. As the calculation of the release check column is very expensive, the release list is not updated after each action. The user needs to press refresh to see the result of his work in an actualized release list. Example: A document cannot be release because it is checked out. You need to check the document in, but the Release Check content still remains *Checked out*. After refresh, the release info is adopted (in the corresponding column and in the filter panel).
- *Continue* will reopen the *Release Changes* popup. If no error persists then the button *Release Changes* is enabled.
- *Cancel* will abort the requested release operation. The release changes list is left and the UI switches into the browser view. The link *Release Changes* is removed. At *Continue* in the list and pressing *Cancel* on the popup, the system response is the same.

Cancel **Button**

With *Cancel*, the dialog box closes without further action.

4.3.3 Discard Changes

You have several options for a discard change:

- A discard change may be triggered for individual elements or subtrees.
- A discard change may be triggered by the context menu in the browser view, list view or search result view.
- A discard change may be triggered for multiple selected elements.

With *Discard Changes*, the corresponding dialog box is opened, see Discard Changes Dialog Box [page 74].

A discard change can have the following effects:

- The changes in the branch are removed for the selected elements by a successful discard change. All selected elements are reverted to the version of the parent branch.
- Elements that you have created newly in the branch are deleted immediately by a successful discard change.
- Deleted elements in the branch which also exist in the parent branch are restored in the branch by a successful discard change.
- The change status of the selected elements is affected by a successful discard change. That means that all selected elements have the change status *Unchanged* after a successful discard change.
- The solution documentation content in the parent branch does not change.
- An attempt to perform a discard change fails if the execution is not allowed. For a failed discard changes, an error message is issued and all elements and their change status remain unchanged.
- In the production branch no discard change is available at all since there are either no changes allowed or all changes are performed finally without releasing them.

Discard Changes for an Element

A discard change for an element has the following effects:

- The changed elements are reverted to the parent branch version and then the change status is *Unchanged*.
- Newly created elements in the branch are deleted finally.

Discard Changes for subtree elements of an element

Discard change for an element has the following effects on its subtree elements:

- All changes of the subtree elements are removed from the branch.
- After successfully discarding the change of the element and its subtree elements, the change status of all remaining elements in the subtree is *Unchanged*.

You can also discard structure changes and thus the structure is reverted back to the parent branch version.

A discard change for a structure has the following effects:

- An element move affects only the change status of the element moved, the change status of the new parent element is not affected.
- The discard changes of a moved element moves the element back to the parent branch version.

- Changing the target element of a reference element affects only the change status of the reference element, the change status of the new target element is not affected.
- The discard changes of a reference element with a changed target changes the target back to the parent branch version.
- After successfully discarding the changes of an element the change status is always *Unchanged*.

Not allowed Discard Changes

A discard change may not be allowed for a specific selection of elements or subtrees. A discard change is forbidden if this would lead to dangling references in the solution documentation.

A discard change is not allowed if the element or one of its subtree elements are changed in a child branch.

If you try to perform a discard change, the system display an error message and nothing is changed.

4.3.3.1 Discard Changes Dialog Box

In the context menu in Solution Documentation, you can choose for one or multiple elements the entry *Discard Changes*.

With choosing *Discard Changes*, the dialog box *Discard Changes* opens and provides statistical information about the elements which will discarded by the operation for the selected elements. It contains the number of created, changed, deleted and unchanged elements.

The dialog box provides the infomation for the complete subtrees of all selected elements, for which the operation was requested. The checkbox *Include complete subtree* allows to switch between with and without subtree.

The dialog box offers three buttons to continue: *Show Details*, *Discard Changes* and *Cancel*.

Discard Changes **Button**

If the list of elements contains errors preventing the discard operation, the *Discard Changes* button is disabled. Otherwise it is enabled and by choosing this button the discard operation starts.

In case of errors, the dialog box provides all issues preventing discard. For each error, the number of affected elements is provided and an explaining text on demand (choosing *?*). Beside missing authorization it may be not possible to discard a new created element, when it is referenced by another element not in the list for discard.

Show Details **Button**

With *Show Details* you can request the list of all elements which are to be discarded. With chossing this button, the dialog box is closed and the UI switches into view *Discard Changes* indicated by the common link pattern above the list.

In the *Discard Changes* view all elements for the requested discard operation are listed.

The discard list provides additional information regarding the layout selected by the user: Column number 1 is the *Discard Check* column. Filter aspect level 1 is the *Discard Check* filter. These two additional settings are not changeable by the user and vanish in case the *Discard Changes* view is left.

The discard list offers 3 links to the actions *Refresh*, *Continue* and *Cancel*:

- *Refresh* will reload the list. As the calculation of the discard check column is very expensive, the discard list is not updated after each action. You need to press refresh to see the result of your work in an actualized discard list.
- *Continue* will reopen the *Discard Changes* popup. In case no error persists then the button *Discard Changes* is enabled.
- *Cancel* will abort the requested discard operation. The discard changes list is left and the UI switches into the browser view. The link *Discard Changes* is removed. At *Continue* in the list and pressing *Cancel* on the popup, the system response is the same.

Cancel **Button**

With *Cancel*, the dialog closes without further action.

4.3.4 Delete Operations

You have the following options for a delete operation:

- A delete operation may be triggered for multiple selected elements and always refers to the subtrees with the selected root elements.
- A delete operation may be triggered by the context menu in the browser view, list view, search result view or where-used-list.

Delete an Element

A delete operation always refers to the entire subtrees for all selected subtree root elements. The effect of a delete operation for an element depends on its change status:

- An element in a changeable production branch will be immediately deleted finally by a successful delete operation.
- An element with the change status *Created* will be immediately deleted finally by a successful delete operation.
- An element with any other change status (*Unchanged*, *Changed* or *Conflict*) will be marked for deletion which then is performed in the parent branch if the deleted element if released. This deletion has the following results:
  - The element gets the change status *Deleted*.
  - If the element has been changed before in the branch (change status *Changed* or *Conflict*) the branch changes are removed before marking the element for deletion. The removed branch changes cannot be restored again.

A subtree which is deleted may contain elements with different change status values.

The deletion of an element has the following effects:

- An element is deleted finally in a changeable production branch (i.e. no maintenance branch exists) by a delete.
  - The element does not appear as deleted element after the delete.

- An element with change status *Created* is deleted finally by a delete.
  - The element does not appear as deleted element after the delete.
- An element with any other change status (*Unchanged*, *Changed* or *Conflict*) is only marked for deletion.
  - The element appears as deleted element after the delete.
- Any changes in the branch to an element are removed finally by a delete.
  - The attribute values of a deleted element are those of the element in the parent branch.
  - The location of a deleted element is the location of the element in the parent branch.
  - The target element of a deleted reference element is the target element of the reference element in the parent branch.

Illegal Delete Operations

A delete operation may not be allowed for a specific selection of elements. This delete operation is forbidden if a selected element to be deleted is still used by other elements. There are two kinds of usages which have to be considered:

- An element cannot be deleted if it is used as reference target of a reference element. Such a usage may occur in the same branch where the delete operation is checked or in any child branch of it.
- An element cannot be deleted in a branch if in any child branch the subtree rooted by the element has been modified.

The illegal delete operation of an element has the following rules:

- An attempt to delete an element that is used as reference target in the current branch or a child branch is not allowed and an error message is issued.
- An attempt to delete an element that is changed in a child branch is not allowed and an error message is issued.

Visibility of Deletions

Elements which have been marked for deletion are visible as deleted elements in the branch of the deletion. In order to display the deleted elements the user setting *Display Deleted Elements* has to be active. If this setting is active all elements that have been marked for deletion are visible in the Solution Documentation in all views (browser view, list view, search result, where-use-list, change list) as read-only elements. In a child branch of a deletion the deletion is done immediately and the elements marked for deletion are not visible anymore independently of the user setting *Display Deleted Elements*.

The visibility of deletions has the following rules:

- If the user setting *Display Deleted Elements* is active then all elements that are marked for deletion are displayed in the UI in read-only mode and can be found by a search.
- If the user setting *Display Deleted Elements* is inactive then no element that is marked for deletion is displayed or can be found by a search.
- No element that is marked for deletion in the parent branch is displayed or can be found by a search in the child branch (independently of the user setting *Display Deleted Elements*).

Operations on Deleted Elements

The operations on deleted elements are limited to the lifecycle operations. Deleted elements cannot be edited or used otherwise in the solution documentation. A deleted element must not be used as a target element of a reference element.

Operations on deleted elements have the following rules:

- A deleted element is only available in read-only mode. The edit mode is not available in the attributes panel.
- The context menu does not provide any changing operation for a deleted element:
  - The operations *Delete*, *Change*, *Change Target*, *Copy* and *Move* are not available.
- A deleted subtree may not be extended:
  - The operation *New* is not available in the context menu in the browser for a deleted parent element.
  - If a deleted structure element without children is selected in the browser then no empty child column is displayed (as in read-only mode).
  - The operation *New* is not available in the context menu in the assignments list for a deleted parent element.
  - If a deleted element without children is selected in the assignment list then no + tab is provided in the assignments list header.
  - The child area of a deleted element does not provide the operations *Insert* or *Insert Copy*.
- The lifecycle operations are available for deleted elements:
  - The operations *Element Changes* > *Discard Changes* and *Subtree Changes* > *Discard Changes* are available for all root deleted elements in the context menu.
  - The operations *Element Changes* > *Discard Changes* and *Subtree Changes* > *Discard Changes* are not available for any non-root deleted element in the context menu.
  - The operations *Element Changes* > *Release Changes* and *Subtree Changes* > *Release Changes* are available for all deleted elements in the context menu.
- It is not possible to select a deleted element as reference target:
  - Deleted elements are not available as targets in a *New* > `<Reference Type>` or *Change Target* operation.
  - The deleted elements are not found by the provided search functions in these operations.
  - This rule refers to all references types, for example: *Process Step* `<Ref.>`, *Interface* `<Ref.>`, *Process* `<Ref.>`, *x*`<Exec.Ref.>`, *Alerting* `<Ref.>`.

Inconsistencies caused by Deleted Elements

Even if all rules for deletions are met there may be situations where inconsistencies may arise in a branch caused by deleted elements. There are two possible cases for an inconsistency in a child branch caused by a deleted element:

- Dangling References
  A child branch may contain a reference element with a deleted target element if the reference element has been created in the parent branch after the deletion of the target element. The creation of the reference element may be done by an explicit *New* operation, a *Discard Changes* operation or a *Release Changes*

operation from a parallel child branch. Dangling References cause errors for example in test plan generation and can be found with content check SMUDC_CHK_PLG_BROKEN_REF (*Find broken references*). Content Checks are activated in SAP Solution Manager Configuration, in *Process Management* > *Scheduling Content Checks*.

- Orphan Elements
  A child branch may contain an orphan element with a deleted parent element if the orphan element has been created in the parent branch after the deletion of the parent element. The creation of the orphan element in the parent branch may be done by an explicit *New* operation, an *Insert (Copy)* operation, a *Discard Changes* operation or a *Release Changes* operation from a parallel child branch.
  For deleting orphan elements, see also Deleting a Document [page 146].

It is possible to display and edit Solution Documentation even if it contains inconsistencies.

Release Changes for Deletions

A deletion in a child branch marks elements for deletion. Such deleted elements have to be released in order to perform the deletion in the parent branch. Release changes for deletions have the following rules:

- The release of deleted elements has the same effect in the parent branch as if the deletion is performed in the parent branch directly.
- An element in the parent branch is deleted finally if it is the production branch by a release of a deletion. The element does not appear as deleted element after the release of a deletion.
- An element in the parent branch with change status *Created* is deleted finally by a delete. The element does not appear as deleted element after the release of a deletion.
- An element in the parent branch with any other change status (*Unchanged*, *Changed* or *Conflict*) is only marked for deletion. The element appears as deleted element after the release of the deletion.
- Any changes in the parent branch to an element are removed finally by a release of a deletion.
  - The attribute values of a deleted element are those of the element in the next level parent branch.
  - The location of a deleted element is the location of the element in the next level parent branch.
  - The target element of a deleted reference element is the target element of the reference element in the next level parent branch.

Illegal Release Changes for Deletions

A release changes operation cannot be performed successfully if the release changes operation would cause illegal deletions in the parent branch. Such illegal delete operations are described in the corresponding chapter above. Illegal release changes for deletions have the following rules:

- The release of deleted elements has the same effect in the parent branch as if the deletion is performed in the parent branch directly.
- The release is only allowed if the corresponding deletion is allowed in the parent branch.
  - An attempt to delete an element in the parent branch that is used as reference target in the parent branch or a child branch is not allowed and the system shows an error message.
  - An attempt to delete an element in the parent branch that is changed in a child branch of the parent branch is not allowed and the system shows an error message.

Discard Changes for Deletions

The discard changes operation remove any marks for deletion for a deleted element. After a successful discard changes operation the selected elements do no longer contain any deleted elements. Each deleted element is replaced by the unchanged element from the parent branch. Discard changes for deletions have the following rules:

- The *Element Changes* > *Discard Changes* and the *Subtree Changes* > *Discard Changes* operation is available for all root deleted elements in the context menu.
- A successful discard changes operation of a deleted element removes the mark for deletion and thus makes the parent branch version visible again in the branch.
- After a successfully discarding the changes of a deleted element the change status of all elements in the subtree rooted by then element is *Unchanged*.

Illegal Discard Changes for Deletions

A discard changes operation cannot be performed successfully for a deleted element if the discard changes operation would lead to dangling references in the solution documentation. There are two possible situations:

- A discard changes operation is not allowed for a deleted reference element in the branch if the deleted reference element has a deleted element as reference target and the affected reference target element is not contained in the selection for the discard changes operation.
- A discard changes operation is not allowed for a deleted element in the branch if the deleted element has a deleted parent element that is not contained in the selection for the discard changes operation. Illegal discard changes for deletions have the following rules:
  - For a child element of a deleted element the context menu does not provide the operations *Element Changes* > *Discard Changes* or *Subtree Changes* > *Discard Changes*
  - The discard changes of a deleted reference element is not allowed if the target element is marked for deletion but not contained in the selection of the discard changes operation.

4.3.5 Change Tracking and Conflict Resolution

Change Tracking refers to changes in the Solution Documentation content done in a child branch context. The changes always refer to the corresponding parent branch version of the Solution Documentation.

Kinds of Changes

There are several kinds of changes which may be applied to the solution documentation content.

A change to a solution documentation element may be either:

- Creating a new element

- Modifying an existing element
- Deletion of an existing element

A modification of an existing element may be either:

- An attribute change:
  - Setting, modifying or deleting the value of a single-valued attribute
  - Adding a value, deleting a value or modifying a value of a multi-valued attribute
- A structure change:
  - An element is moved from one location in the structure to another.
  - The target of an reference element may be changed.
  - The sequence of the elements within a location may be changed.
- A change of an external object which supports branch versioning:
  - A KW document
  - A process or interface diagram
  - A job documentation

An element is regarded as changed if at least one of the modifications above have been applied to the element.

Changes without differences in child branch

Even if changes have been applied in a child branch there need not be differences for all modified aspects in the child branch compared to the corresponding parent branch versions. This may occur if by (several) changes in the child branch or by later changes in the parent branch the changed content does no longer differ between the child and the parent branch.

The changed elements are nevertheless regarded as changed concerning the change status. In such a situation the change tracking indicates a change but does not show any differences in the content.

Differences in child branch without changes

There may be cases where a specific attribute has a different value in the child branch compared with the parent branch version but the attribute has not been directly changed. Such situations may occur for derived attributes which are not directly maintained by the user but are calculated automatically depending on related content.

Identify and Display Changes

The changed elements may be filtered in the list view:

- Switch to list view by selecting *List* in the header.
- Select *Filter by* > *Change Status* in the filter panel.

Then the change status values are available for filtering. Possible status values are:

- *Changed*: the element has been changed in the branch.
- *Conflict*: There are conflicting changes for this element in the parent branch.
- *Unchanged*: The element has not been changed in the branch.
- *Created*: The element has been created in the branch and does not yet exist in the parent branch.
- *Deleted*: The element has been deleted in the branch and does still exist in the parent branch.
- *Maintenance Conflict*: The element has been changed in the branch as well as in the sibling maintenance branch of the parent branch.

The change status indicates the status of the element as a whole. The changes may be displayed in more detail in the attributes panel if the change tracking mode is switched on:

- Select icon *Settings* in the header.
- Select checkbox *Change Tracking Mode* in the popup.
- Select checkbox *Display Deleted Elements* in the popup.

Revise Changes

If the change tracking mode is switched on the changes may be inspected in detail in the attributes panel. In addition it is also possible to revise the attribute changes individually for each changed attribute. The attribute panel provides in edit mode for each changed attribute (without conflicts) a drop down list with two options:

- Keep Change
  - The default option *Keep Change* keeps the changed attribute version in the child branch. The option *Discard Change* removes the attribute change from the child branch and makes the parent version of the attribute visible in the child branch.
- Discard Change
  - The option *Discard Change* is not available for structure changes displayed in the attribute group *Relations*.

The *Revise Changes* function has the following rules:

- The option *Discard Change* removes the attribute change in the child branch.
- For an element that has only attribute changes in the child branch all changes may be discarded on attribute level in the attributes panel. The element gets the change status *Element is unchanged* after discarding all attribute changes and saving the element.
- For an element that has attribute changes as well as structure changes in the child branch only the attribute changes may be discarded in the attributes panel. The element keeps the change status *Element has changes* after discarding all attribute changes and saving the element.

Resolve Conflicts

There are two kinds of conflicts which may arise when changing the Solution Documentation content in different branches and which prevent that a conflicting change may be released to the parent branch. A release of such a change is only possible if the conflicts have been resolved before.

Change conflicts

A change conflict arises if after a change of a specific element in a child branch context the same element is also changed in the corresponding parent context. In this case the change done in the child branch cannot be brought back automatically to its parent branch. The change conflict has to be resolved before.

Only attribute changes and changes of external objects which supports branch versioning (e.g. KW documents and process diagrams) may be conflicting changes.

Maintenance conflicts

The changes done in the maintenance branch are typically corrections which have priority over other changes done in other branches. Therefore there are special change rules concerning the maintenance branch. An open

correction blocks the release of other changes for an element, i.e. if a specific element has been modified in the maintenance branch and the modification has not yet been released ("open correction") a change to the same element done in a parallel sibling branch cannot be released. A maintenance conflict cannot be resolved before the open correction has been released. As soon as the open correction has been released in the maintenance branch the maintenance conflicts become regular conflicts which can be resolved and then the change can be released.

The conflicts are displayed in more detail in the attributes panel if the change tracking mode is switched on. It is also possible to resolve change conflicts individually for each conflicting attribute. The attribute panel provides in edit mode for each change attribute with conflicts a drop down list with three options:

- Keep Unresolved Conflict
- Discard Change
- Mark Conflict as Resolved

The default option *Keep Unresolved Conflict* keeps the changed attribute version with the conflicts in the child branch. The option *Discard Change* removes the attribute change and also the conflict from the child branch and makes the parent version of the attribute visible in the child branch. The option *Mark Conflict as Resolved* keeps the changed attribute version and conflict from the child branch and thus turns the conflicting attribute change to a normal attribute change in the child branch.

The *Resolve Conflicts* function has the following rules:

- The option *Discard Change* removes the attribute change and the conflict in the child branch.
- The option *Mark Conflict as Resolved* removes the conflict and turns the conflicting change to a normal change in the child branch.
- For an element that has only attribute changes in the child branch all changes may be discarded on attribute level in the attributes panel. The element gets the change status *Element is unchanged* after discarding all attribute changes and saving the element.
- For an element that has conflicting attribute changes in the child branch all conflicts may be marked as resolved on attribute level in the attributes panel. The element keeps the change status *Element has changes* and the icon *Element has conflicting changes* is removed after marking all conflicts as resolved and saving the element.

4.4 Modeling

Modeling with SAP Solution Manager 7.2 means using Process Management tools to communicate goal-oriented information visually.

Use

Modeling enables you to use a range of simple graphic representations to map out any start-to-finish business process you can imagine.

Modeling applies to multiple internal aspects of a business, and it helps businesses focus on optimizing collaborative relationships. Overall, modifiable visual data to represent a process shows its usefulness in both planning and communicating specific steps to reach a goal.

Features

Modeling with SAP Solution Manager 7.2 gives you the opportunity to produce a variety of modeling diagrams. For an overview, see Diagram Type Reference - All Diagrams [page 135].

Additional Information

In order to use this modeling feature, you must first configure Process Management for SAP Solution Manager 7.2. For configuration instructions, see the Solution Documentation [page 38].

The graphical process modeling editor has many options and activities when building a diagram. For more information about available palette items and toolbar options, see Tooling Reference - Overview [page 101].

4.4.1 Universal Diagram

You can use this type of diagram to show a **graphical overview** of all of your related process and collaboration diagrams.

Use

From a universal diagram, you can navigate to other linked diagrams. Building a universal diagram is a way for you to simplify navigation through your process models, and to improve alignment with groups of business.

Concept Model Visualization - Example of a Universal Diagram

Universal Diagram

In this example, each shape can contain process and collaboration diagrams. For your universal diagram, shapes with (+) symbols at the bottom have subordinate diagrams attached to them, based on your menu selections when building the diagram. Select (+) to drill down to the respective lower modeling level.

Universal vs. Value Chain Diagram

The universal diagram differs from the value chain diagram in that you can custom build the universal diagram to best suit your target audience, whereas the value chain diagram is automatically-generated from the graphical process modeling editor's menu option.

Features

When you custom build a universal diagram, you can take advantage of the following universal diagram features:

- Present vertical bread crumb navigation. This means you can depict hierarchies, structures, order, groupings, and dependencies of process. In turn, this allows you to use the universal diagram to review or communicate the overall objective that the universal diagram depicts. In addition, you can use the universal diagram to focus in on a part of the overall objective.
- Unify and simplify a multi-phase project, where each phase warrants its own process and collaboration diagram. It links different process and collaboration diagrams together, and places any one particular process and collaboration diagram in proper context of the multi-phase project.

Additional Information

Tooling – Universal Diagram: Offers a palette with the most common overview-diagram modeling shapes. These shapes include a triangle, an oval, a chevron, and others. You can link shapes together or categorize some shapes by enclosing them in a larger shape. See Tooling – Universal Diagram [page 85]

4.4.1.1 Tooling – Universal Diagram

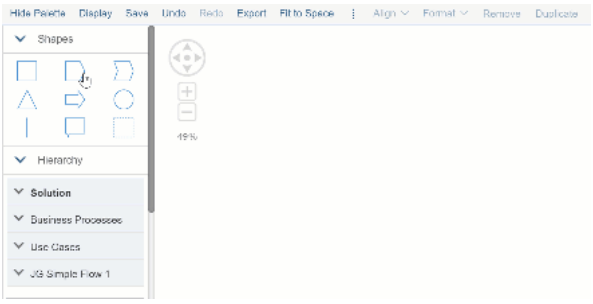
In this section, you can learn about featured activities when building the universal diagram.

Use

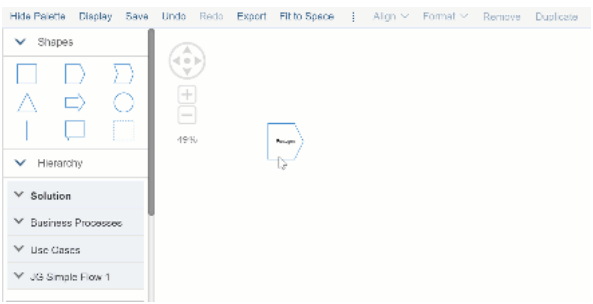
The universal diagram's tooling options allow for flexibility in diagram building. Unlike process and collaboration diagrams, you don't need to plan your diagram according to standard guidelines for structuring flow elements and connectors. You have the freedom to use the bread crumb palette, the context menu, and the application toolbar in order to build your universal diagram in a way that best represents your overall objective.

5 Five-Second Tooling Tips

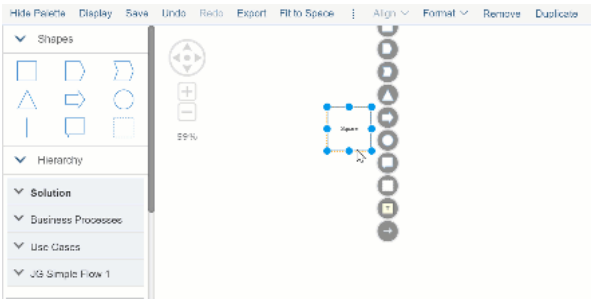
Featured activities for the universal diagram include:



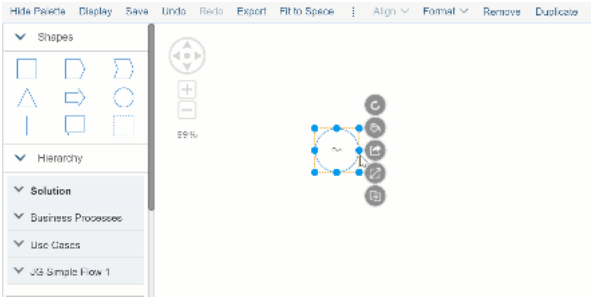
- Palette: Insert shape
  - Click on a shape from the palette.
  - Click inside the diagram to insert the shape. As a result, the shape is added to the diagram canvas.



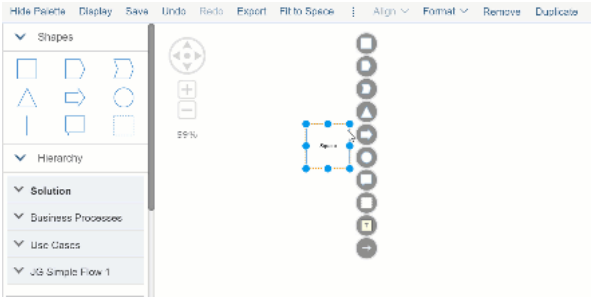
- Context menu: Add square (or other shape)
  - Select an object already present on the diagram canvas. The **context menu** appears.
  - Click on the square icon. As a result, the square is added to the diagram and both object and square are linked.
  - **Note:** These instructions can be applied to other shapes, the link, the textbox, and the notation icon found in the context menu.



- Context menu: Replace object
  - From the diagram canvas, select an object with a right mouse click. The secondary **context menu** appears.
  - Click on the replace icon. A list of shapes appears.
  - Select a shape. As a result, the selected shape is applied to the object and any text within the object remains unchanged.



- Context menu: Change color
  - Select an object already present on the diagram canvas and then make a right mouse click.
  - Choose the change color icon. A dialog box appears for a variety of color options.
  - Select a color from the dialog box. As a result, the color fills your selected object.



- Application toolbar: Remove object
  - From the diagram canvas, select an object.
  - Choose the remove option from the toolbar at the top of the display window. As a result, the object is removed from the diagram.
  - **Note:** If no object is selected, the toolbar's remove option is disabled.

Additional Information

For all toolbar functions and for reference charts covering available objects for your universal diagrams, see Tooling Reference - Overview [page 101].

4.4.2 Process and Collaboration Diagrams

You can use process and collaboration diagrams to **graphically depict a step-by-step business process**.

Use

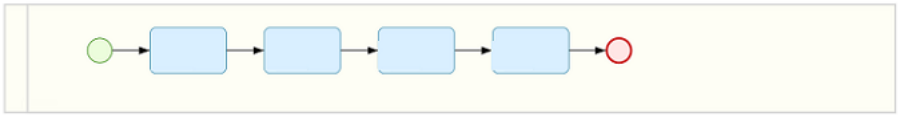
If you have a written plan of action to accomplish a goal, or if you are brainstorming actions that lead to a goal, use process and collaboration diagrams to provide supplementary visual information. This information enables you to see how a process works.

A diagram of this type connects one output to another output in a logical order. Such a diagram organizes relationships between roles and conditions to carry out specific actions. It shows a roadmap of how to get from the start point to the end goal.

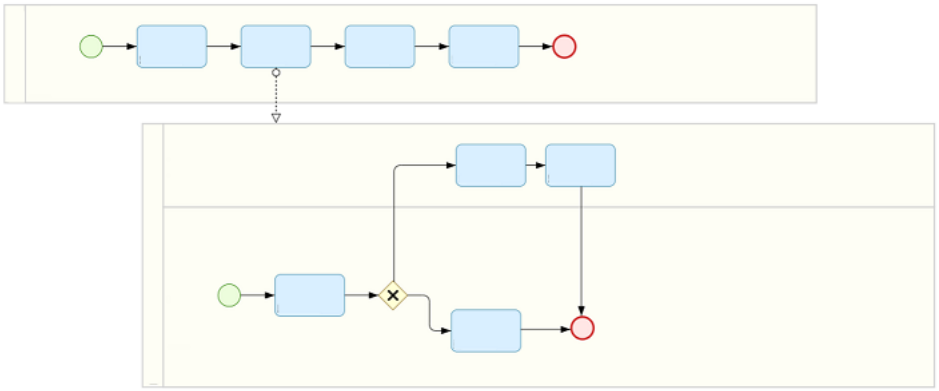
As a result of building process and collaboration diagrams, you help colleagues and business partners more easily grasp complex information. You prevent potential misunderstandings such as co-dependent versus concurrent actions that need to be taken at a particular time. As your diagram is modifiable, you can refine a process as needed.

Concept Model Visualization - Examples of Process and Collaboration Diagrams

Process Diagram



Collaboration Diagram



Features

Process and collaboration diagrams with SAP Solution Manager 7.2 generally feature *BPMN* elements for consistent and comprehensive modeling (as described in the **Tooling - Process and Collaboration Diagrams** section, link below). The diagrams offer easier integration with third-party BPMN modeling tools.

The specific features of your process and collaboration diagrams depend upon your modeling approach. For example, our recommended modeling approach is to customize modeling of process and collaboration diagrams based on the target audience and stakeholders. You can determine the level of detail your diagram features, and determine whether your business process features a business-driven top-down model or an IT-driven bottom-up model.

Related Information

By following the help topic links under process and collaboration diagrams, you can familiarize yourself with the primary process and collaboration diagram features:

- Basic Concepts [page 88]
- Business-Driven Modeling [page 92]
- IT-Driven Modeling [page 94]
- Interface Diagram [page 96]
- Management of Global Modeling Entities [page 97]
- Tooling – Process and Collaboration Diagrams [page 98]

4.4.2.1 Basic Concepts

When you manage your business processes with the graphical process modeling editor, you can simplify communication, increase consistency, and improve efficiency.

> **i** Note
>
> This topic contains two instructional videos. See Video: Drawing Basic Elements [page 89] and Video: Drawing Multiple Pools [page 91].

Introduction

To better build, read, or explain process and collaboration diagrams, keep in mind the following basic concepts.

Finished Product Perspective

The purpose of a diagram (also referred to as a flow chart) is to graphically depict a step-by-step business process. The steps lead to an end goal. Diagrams provide controlled flow-centric views on business processes.

In a simply-constructed diagram, you find one process mapped out inside one pool. This means that on the graphical process modeling editor's blank canvas, you must first overlay a pool before you can draw the individual steps of a process. Drawing a process in the graphical process modeling editor means either selecting and inserting a one palette object after the other, or adding objects from the context menu to form a flow chart. In either case, selected objects appear inside the pool. In this way, you draw the step-by-step process inside the pool. To see how this basic construction works, view the following video:

Video: Drawing Basic Elements

Open this video in a new window

For collaboration diagrams, your graphical process modeling editor's canvas can display more than one process. Visually, this means you see more than one pool on the canvas. White canvas space separates one pool from another.

By contrast, a process diagram contains one pool (and therefore one business process) only. The process diagram's palette does not contain additional pool options to add to the blank canvas.

Building Blocks

Clear understanding of processes, pools, and lanes help you to communicate complex information graphically. Here are explanations of the basic building block terms:

- *Canvas:* Refers to the graphical process modeling editor's white space. When you build a process and collaboration diagram, the initial view of main blank space is the canvas.
- *Connectors:* Form the lines in a flow chart. Connectors primarily serve to:
  - Link objects within a process. They link sequential actions or other contextual elements to each other. In an example business process, a connecter can link the step of **Confirm purchase order** to the next step of **Enter order into system**. A connector can also link the step of **Enter order into system** to a computer icon object that represents the relevant computer system, as a contextual element.
  - Display lines with arrow points to indicate the direction of the process flow, or the advancement towards the end point.
  - Link processes to one another. In this case, connectors cross the white canvas space between each pool. As a rule, one pool contains one process.
  - Represent direct links with solid lines.
  - Represent indirect links with dotted lines. For example, a dotted line that links a pool containing a current process to another pool containing a draft process, shows the conditional relationship between processes.
- *Diagram type:* Can be set for modeling by role or by system in the initial set-up dialog box.

- *By role - purpose:* This diagram's purpose is to convey standard process flow and process execution.
- *By system - purpose:* This diagram's purpose is to illustrate more technical use cases. These cases include technical dependencies, media breaks, or other IT-related matters. For example, if your model focuses on interfaces and you want to establish a process for interface monitoring, model your diagram by system-labeled lanes.
  Visually, the difference between diagram types means a difference between lane information and available modeling objects. See the description under *Lane (System)* for more information.

- *Lane (Role):* Represents a participant of a business process, who has a defined role to help carry out that process. Visually, a lane appears within a pool. An easy way to remember the distinction between the two is to picture a large rectangular swimming pool divided into narrow lanes for lap swimmers.
  - A pool can have just one lane or more than one lane. For multi-lane pools, you can imagine looking down on your lap swimming pool from above. Lanes run horizontally across a pool and share a border between them. For a simple diagram where one current process requires two roles, a single line splits the pool into two halves and divides the pool into two adjoining lanes.
  - A lane displays a label on the pool's left side, and a lane provides open process-building space extending from the label to the right-side border of the pool. This means that when you map out a process by inserting and linking objects together, you build this flow chart within a lane, which lies within a pool.
  - Since one pool contains one process, a multi-lane pool for a current or draft process depicts one flow chart that spans across all lanes. Groups of flow chart objects that correspond to a specific business role appear in that role's lane. For example, a current process requiring actions from both a **sales clerk** and a **warehouse clerk** displays a flow chart that extends across a **sales clerk** and a **warehouse clerk** lane within a multi-lane pool. The flow chart objects representing steps for **documenting a sale**, for this example, appear in the **sales clerk** lane. The flow chart objects representing steps for **fulfilling a sales order**, in this example, appear in the **warehouse clerk's** lane. Both groups of objects, linked together via connectors, show a flow of action that leads to one example process end goal of **delivering sold goods to the customer**.
- *Lane (System):* Functions as described under *Lane (Role)*, but with a system name for a lane heading. Lanes show how a *diagram type* can be modeled **by role** or **by system**:
  - *By system – pre-defined conditions:* When choosing to model a diagram with a pre-defined SAP business system, that system then uses *logical component group architecture* to determine the range of available pre-defined objects that can further populate the diagram's lane.
  - *By role – pre-defined conditions:* Choosing a role that represents a specific business process participant does not trigger a logical component group architecture response. This means that the selected lane's role does not then determine a range of available pre-defined objects. When attempting to draw multiple related process diagrams, consider manually establishing a list of roles beforehand. As a result, the separate process diagrams can share synchronized roles. This practice is also useful for drawing a single process, if drawn by multiple modelers.
- *Palette:* Holds all available diagram objects that can populate the canvas either directly, using a drag-and-drop action, or byway of entering supplementary information, if the selected object triggers a separate dialog box. The palette appears beside the graphical process modeling editor's canvas. Palettes offer different objects for different diagram types.
- *Pool:* Serves as the encompassing container that depicts a process.
  - One pool contains one process.
  - Each pool can contain one of three types of processes: Current, draft, or blackbox.
  - Before you can draw a process, you must overlay a pool on the graphical process modeling editor's canvas.
  - The canvas can hold more than one pool, and illustrates this with a blank space between pools.

- A pool can be divided by roles into lanes, with a single process extending across all lanes.
- A pool that contains multiple roles shows a single line to divide the lanes rather than a blank space between them. A blank space separates pools.
- To see how to build a collaboration diagram with multiple pools, view the following video:

Video: Drawing Multiple Pools

Open this video in a new window

- *Process:* Represents a task that is carried out, having a start point, and having steps to be undertaken to reach a defined end point. As an example in a general business-context, a process can be **fulfilling a non-electronic purchase order**.
  There are three types of processes: Current, draft, and blackbox, as described below. Graphically, the current process and the draft process depict flow charts of interconnected steps. The basic visual elements of a process and collaboration diagram are the blank canvas, the overlay of a pool, and the various objects and connectors of a process inside a pool. As such, the current and draft processes prove to be the primary visual focus of a process and collaboration diagram. Here are descriptions of the three types of processes:
  - *Current process:* Used to illustrate *known* steps for carrying out a task. This is the established process that needs to be represented graphically. This is the *most common* type of process found in a pool. It starts with a start event. The event leads to a step. Each step moves the process closer to reach a defined end point.
  - *Draft process:* Used to illustrate *proposed*, *pending*, or *unresolved* steps for carrying out a task. This can be drawn in its own pool and linked to another process on the canvas. For example, **comparing similar sales quotations** can be mapped out as a series of optional steps. This means the draft process in this example is not critical to carrying out the primary task depicted in the current process. A dotted line connector shows an optional link between a draft process and a current process.
  - *Blackbox process:* Used to illustrate *unknown* or little-known steps for carrying out a task. In effect, visually, the blackbox process is invisible. As with every process, it first requires a pool overlay on the canvas. A pool showing a blackbox process, however, remains blank. There is an assumed step-by-step process within this pool, but it cannot be fully represented graphically. As such, the blackbox process's pool is used as a *single lane visual placeholder* in conjunction with another process. For example, the specific steps **a customer takes to compare similar sales quotations** are unknown. Visually, this is represented with a descriptive pool overlay and no objects in the pool. As a result, the blackbox process acknowledges the customer's action to **compare similar sales quotations**, but the blackbox process cannot fully represent it. The blackbox process remains on the canvas via its blank pool to provide supplementary information to the current process.
- *Step:* Represents a single action that must be taken to advance a process towards its end point. Standard text for a step begins with a verb to describe the planned action. This action must be carried out to initiate another action. Visually, blue rectangles represent steps in a current and draft process. Steps can contain sub-steps and links to contextual references. Connectors link steps to other diagram objects.

> **i Note**
>
> The above terms are the basic building blocks for modeling a process. The graphical process modeling editor has many options and activities when building a diagram.

Built-in Checks

The graphical process modeling editor applies these primary built-in checks as you construct your diagram:

- To add process steps to a pool, the graphical process modeling editor requires you to first add a lane to the pool. Please mind the system's initial standard order of diagram building: Pool, lane, process icon. Consider inserting a starting point icon as your first process icon. After you begin to add process steps to your diagram, you still have the option to also add another lane or another process.
- An object deleted in its repository since you last saved the diagram appears greyed-out the next time the diagram is displayed.
- If, according to logical component group architecture settings, you attempt to insert a process step in a wrong system lane (diagram by system) or to attach it to a wrong system (diagram by role), the system does not complete the action.

Additional Information

Modeling elements are not only integrated with SAP Solution Manager, they are also managed by SAP Solution Manager.

- Through new process management capabilities, you can call for subject matter expert assistance to document a company's core business processes.

For more information about available palette items and toolbar options, see Tooling Reference - Overview [page 101].

4.4.2.2 Business-Driven Modeling

When you take a business-driven modeling approach to building your process diagram, you can map out new or potential process steps that are not otherwise documented.

Use

In terms of the graphical process modeling editor, a business-driven modeling approach means that to build your diagram you use *draft process* steps, which:

- Exist in the diagram only, without leveraging existing documentation nor links to libraries and back-end systems
- Allow you to focus on the process flow and process architecture
- Offer the opportunity to link to existing data sources at a later time

Prerequisites

Building a business-driven model requires an understanding of the terms and system functions covered in Basic Concepts [page 88].

Visualizing Opportunity with Your Process

When you take a business-driven modeling approach to building your process diagram, you can map out a future (to-be) **operational process** and link it to to-be **IT landscape activity**, all from the same set of data. Both process types deal with potential step-by-step information, which leads to an end goal.

Here are the initial steps to building a to-be **operational process** model:

1. Create a process or collaboration diagram, choosing the diagram type *by Role*.
2. In the set-up dialog box, choose *Pool / Draft Process*. As a result, a pool appears on the canvas. The pool is not bound to a defined process and does not employ *logical component group architecture* to detect modeling inconsistencies.
3. Navigate to the lane icon in the palette. Choose a desired role for each lane, and use a drag-and-drop action to insert them into the pool.
4. Navigate to the palette and add *BPMN* objects and connectors to the lane, using drag-and-drop actions.
    1. Consider adding a start event icon to mark the beginning point of your flow chart.
    2. Consider using free process steps only. Free steps are not subject to logical component group architecture.

Once you draft an **operational process**, you can make edits and adjustments as necessary. If your diagram becomes an established process, as typically defined by the business department, you can link other SAP Solution Manager process management tools to the process.

Linking this diagram to SAP Solution Manager process management tools is typically a joint responsibility between the business department, the responsible solution architect, and the respective application domain experts.

> **i Note**
>
> Before linking this diagram, consider copying the diagram so that you preserve the initial version.

Here are the initial steps to building a to-be IT landscape process, using elements from the same data:

1. Replace the draft pool created in the to-be operational process with a pool from your actual named corresponding process.
    1. As a result, you can view all documentation previously linked to the named process.
2. Link the pool to any represented process available in the process management environment, to include your current process, if applicable.
    1. Be sure to link any additional draft pools to their represented processes as well.
3. Replace draft process steps with actual process management process steps.
    1. Based on the actual named process you link to the pool, you can use the defined process steps available.
    2. As a result of replacing all process steps, you have all documentation, the executables, and links to the managed systems established.

Additional Information

For more information about available palette items and toolbar options, see Tooling Reference - Overview [page 101].

4.4.2.3 IT-Driven Modeling

When you take an IT-driven modeling approach to building your process and collaboration diagrams, you can map out already-documented process steps, which are linked to your underlying IT infrastructure.

Use

In terms of the graphical process modeling editor, an IT-driven modeling approach means that to build your diagram, you use *current process* steps, which:

- Are created directly in the process step library, and maintain links to the process step library.
- Link existing related documentation and back-end systems.

Prerequisites

Building an IT-driven model requires an understanding of the terms and system functions covered in Basic Concepts [page 88].

Working the Bugs out of Your Process

When you take an IT-driven modeling approach to building process and collaboration diagrams, you can map out a process with a diagram type **by role** or a diagram type **by system**.

By role: Although an IT-driven process modeling approach suggests by its name that you build this process only with the diagram type **by system**, you can also choose diagram type **by role**, considering:

- IT departments using this modeling approach need to collaborate with business departments at a later time.
- **By role** diagrams maximize collaboration efforts because business departments are principally familiar with **by role** diagrams.

Here are the initial steps to building with an IT-driven process modeling approach **by role**:

1. Create a process or collaboration diagram, choosing the diagram type *by role*.
2. In the set-up dialog box, choose *Current Process* and select a named process to define the pool. As a result, a pool appears on the canvas.

3. Navigate to the lane icon in the palette. Choose a defined role for each lane from the available options, and use a drag-and-drop action to insert them into the pool.
4. Navigate to the palette and add *BPMN* objects and connectors to the lane, using drag-and-drop actions. Your palette displays the available defined objects assigned to the current named process. As a result of adding a defined object, you can directly access its executables and documentation.
    1. Consider adding a start event icon to mark the beginning point of your flow chart.

> **i Note**
>
> To add process steps that are not defined as part of your current named process, you can create a new process step:
>
> - In the process
> - In the process step library
> - From an executable found in the executable library or in a managed system
>
> As a result of creating new process steps, you can assign an executable and documentation as needed, and you can leverage existing process steps.

By system: An IT-driven process modeling approach for a diagram type by system suits a primarily IT audience. This diagram type's purpose is to illustrate more technical use cases. These cases include technical dependencies, media breaks, or other IT-related matters.

- For example, if your model focuses on interfaces and you want to establish a process for interface monitoring, model your process with a diagram type **by system**. The diagram type **by system** enables you to easily see media breaks and to add interfaces to intermediate message events.

Here are the initial steps to building with an IT-driven process modeling approach **by system**:

1. Create a process or collaboration diagram, choosing the diagram type *by system*.
2. In the set-up dialog box, choose *Current Process* and select a named process to define the pool. As a result, a pool appears on the canvas.
3. Navigate to the lane icon in the palette. From the available options, choose a *logical component group* for each lane, since they represent the actual business systems. Use a drag-and-drop action to insert them into the pool.

    > **i Note**
    >
    > You can also create free components here, which are not based on the actual defined system landscape.

4. Navigate to the palette and add process steps to the lanes. This can be done manually one-by-one or using a bulk function and choosing to select all relevant process steps. As a result, the process steps are automatically distributed on the lanes according to their logical component group assignment.

    > **i Note**
    >
    > If a process step contrasts with the actual defined logical component group architecture of its encompassing lane, a red border highlights the process step.

Additional Information

For information about an IT-driven process with a diagram type **by system** that focuses on interfaces, see Interface Diagram [page 96].

4.4.2.3.1 Interface Diagram

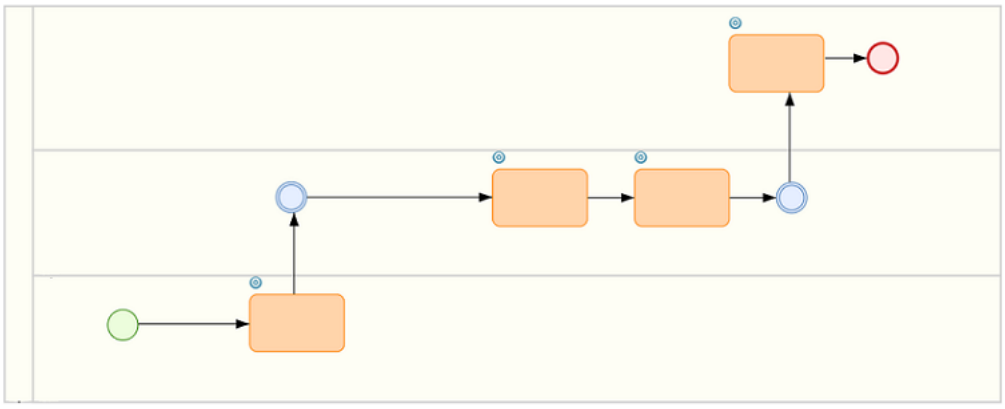
A single interface is self-contained and cannot be further deconstructed (without describing code). An interface diagram, therefore, shows modeling of composite interfaces.

Use

This type of diagram visualizes the flow of a complex integration scenario, meaning multiple systems' involvement and association via point-to-point connections/interfaces. Additional processing logic may take place within the involved systems, which can be described using *interface steps*.

Concept Model Visualization - Example of Interface Diagram

Interface Diagram



Features

Like all process and collaboration diagrams, interface diagrams feature *BPMN* elements to describe the sequence of interfaces and interfaces steps.

The interface library is a structured collection of interfaces that can be used and referenced directly within a diagram. A selected interface from the interface library:

- Details the technology type, communication profile, and technical settings, using a set of pre-delivered attributes that can be enhanced by custom content.
- Uses the *logical component group* architecture for further available defined elements for that interface.

The connection between two interface steps operating from two separate logical component groups can be achieved by adding an Intermediate Message Event (IME) to the graphic. In the visualization example above, they are the large light-blue circles. IMEs are the anchor points for additional diagram elements. IMEs attach interfaces to the composite interface.

You can also reference composite interfaces in business process diagrams. If you choose to limit exposure to all interface-level technical details in a business process diagram, you can **hide** the technical interface details by assigning both interfaces or composite interfaces to IMEs in the process diagram. As a result, all interface data remains available via in-diagram links.

Additional Information

For more information about available palette items and toolbar options, see Tooling Reference - Overview [page 101].

4.4.2.4 Management of Global Modeling Entities

For the modeling of your processes, you can use elements such as roles, free components, data stores, and data objects to describe responsibilities, process participants, or tools.

Use

Entities supplement a diagram by providing contextual information and links to related documentation and back-end systems. They are *managed solution-wide*, meaning that these elements do not only exist for a single diagram, but are shared across all diagrams.

Roles, data stores, and data objects are *BPMN* conventions and follow BPMN semantics.

Free components are SAP proprietary data and are used to represent business systems that play the same role as *logical component groups*. Free components differ from actual defined components in that free components are prospective elements and lack links to the physical system landscape.

Optimizing Moving Parts of Your Process

Access the global modeling entities maintenance dialog box byway of the global functions menu. This maintenance dialog box provides the option to create, release, merge, and to identify unused elements:

- Accessing the maintenance dialog box

- From the solution documentation, navigate to the *Branches* tab and open a branch.
- Choose the global functions icon and select *Diagram Entities*. As a result, the *Diagram Entities* window opens that serves as the global modeling entities maintenance dialog box.

- Filtering objects
  - From the *Diagram Entities* window, navigate to the filter field beside the search field.
  - Narrow the object list by selecting an option from the dropdown menu, such as *Role*. As a result of filtering the list to a specific object type, the list will adjust according to the displayed items.
- Creating objects
  - From the *Diagram Entities* window, navigate to the menu at the bottom of the list and choose *Create*. As a result, a dialog box appears.
  - In the dialog box, enter an element name, select an entity type, and choose *Create*. As a result, the new object appears on an unfiltered list (or filtered by the same entity type) in the *Diagram Entities* window.
  - *Note:* Global diagram entities can be defined centrally, or you can leave the decision to create new instances of these elements to the process modelers.
- Renaming objects
  - From the *Diagram Entities* window, navigate to an object's name field and select the name. Please note that only objects belonging to the current branch can be renamed.
  - Type a new name for the object and select *Enter* from the keyboard.
- Deleting objects
  - From the *Diagram Entities* window, navigate to an object's row and choose the delete icon. As a result, a dialog box appears. Please note that only objects belonging to the current branch can be deleted.
  - Choose *Delete*.
- Merging objects
  - From the *Diagram Entities* window, use the checkbox icon to select both objects.
  - Navigate to the menu at the bottom of the list and choose *Merge*. As a result, a dialog box appears.
  - Choose one entity as the target so that the unselected entity merges into the target entity.
  - Choose *Merge*. As a result, both objects merge into the target and the unselected entity disappears from the object list.
- Releasing to parent
  - From the *Diagram Entities* window, select an object row. As a result, the menu option *Release to Parent* at the bottom of the list becomes active.
  - Choose *Release to Parent*. As a result, the object's branch information changes to reflect the parent branch. The object becomes unavailable for selection to be renamed or deleted.

4.4.2.5 Tooling – Process and Collaboration Diagrams

Process and collaboration tooling options allow you to build your diagrams according to *BPMN* architecture.

Use

Use the palette, the context menu, and the application toolbar in order to build a flow chart that best represents your business processes.

Naming Conventions

Object Type	Icons	Conventional Logic	Example
Event		Noun followed by a verb in simple past	• Invoice received • Product shipped
Process Step		Verb in present tense followed by a noun or a phrase	Forward invoice
Gateway		Noun that can stand as an implied question. Alternatively, a short question with a question mark.	• Approval • Initial offer approved?
Flow Arrow		Label useful following a gateway	Yes
Data Object		Noun as a general reference, form number, or object name	• Quotation • QF-123
Data Store		Name of database	SAP S/4 HANA
Free System		Name of system	SAP Solution Manager

Modeling BPMN-Style

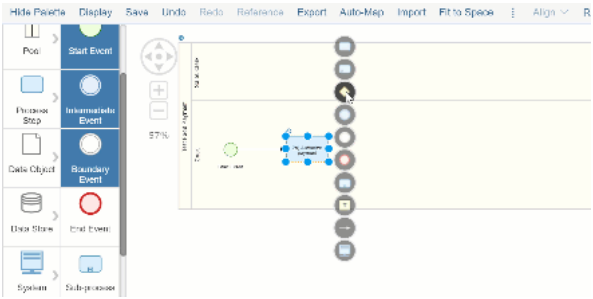
This SAP Solution Manager 7.2 modeling function uses *Business Process Model and Notation* (BPMN) 2.0 technology to allow for easily-manageable process diagram building. Within a graphical process editor, BPMN's design includes:

- An emphasis on step-by-step process logic
- Conditions that initiate steps
- Connectors between steps to show sequential or simultaneous activities
- Steps overlaying lanes that represent individual roles

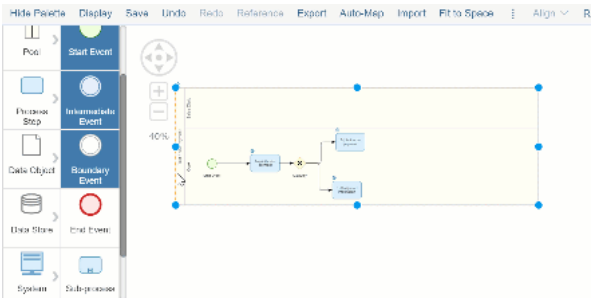
5 Five-Second Tooling Tips

Featured activities for process and collaboration diagrams include:

- Palette: Add process step
  - From the palette, choose the process step icon. This expands a process step dialog box.
  - Select a defined process step from the list and drag it onto the desired lane.
    Alternatively, left click an icon on the canvas. This expands a process step dialog box. Select a defined process step from the list.



- Context menu: Add gateway
  - Select a process step already present on the diagram canvas. The *context menu* appears.
  - Choose the gateway icon. As a result, the gateway is added to the diagram and both process and gateway are linked.



- Context menu: Add note
  - Select an object already present on the diagram canvas. The *context menu* appears.
  - Navigate to the menu at the bottom of the list and choose *Merge*. As a result, a dialog box appears.
  - Choose the note icon. As a result, the note is added to the diagram and both selected object and note are linked.

- Context menu: Add link
  - Select an object already present on the diagram canvas. The *context menu* appears.
  - Select the link icon, drag it to a second object contact point on the diagram, and release the pointer. As a result, the link connects the first object to the second object.

- Right-click options: Replace object
  - Use a right mouse click to select a process step already present on the diagram canvas. The right-click options menu appears.
  - Choose the replace object icon. A dialog box appears containing all available objects with the same type as the one to be replaced.
  - Choose an object name from the list. As a result, the new object selection replaces the old object and the old object's decorators.

Additional Information

The above commonly-used activities help you to start to customize your process and collaboration diagrams. While right-click options for a process step differ from a data object's options, for example, the execution principles remain the same. The graphical process modeling editor offers many options and activities when building a diagram.

For all toolbar functions and for reference charts covering available objects for your process and collaboration diagrams, see Tooling Reference - Overview [page 101].

4.4.3 Tooling Reference - Overview

See below for more information about tooling help.

Use

Within the tooling reference subsections, you can find collapsible charts for easy repeat reference. The charts cover available objects in process and collaboration diagrams (to include interface diagrams) and in universal diagrams.

Related Information

Our modeling help topics contain sections that describe tooling functions specifically for universal diagrams, as well as tooling functions for process and collaboration diagrams.

- To learn about featured activities when building universal diagrams, see Tooling – Universal Diagram [page 85]
- To learn about featured activities when building process and collaboration diagrams, see Tooling – Process and Collaboration Diagrams [page 98]

For your additional reference, there is a complementary tooling guide available for the graphical process editor. This guide shows you how icons and menu items appear in the graphical processing editor, and uses screenshots to help explain how to perform tooling functions. You can find the latest version here: https://help.sap.com/doc/601113b4a4a440258433e878d859598a/7.2.06/en-US/SOLMAN_SOLDOC_GRAPHIC_7206.pdf

4.4.3.1 Palette Reference - Process and Collaboration Diagrams

Graphical process editor users for SAP Solution Manager 7.2 can reference the following tables for a listing of palette icons and their variations.

4.4.3.1.1 Process and Collaboration Diagrams - Basic Palette

Items arranged as they appear in the first column top-to-bottom in the palette, then in the second column top-to-bottom in the palette.

Icon	Label	Note
	Lane	Represents a participant or system of a business process, one having a defined role to help carry out that process.
	Pool	Serves as the encompassing container that depicts a process. (Available for collaboration diagrams only.) • **Note:** When opening a new process diagram, a pool already occupies the canvas. The pool icon is not available in the palette.
	Process Step	Represents a single action that must be taken to advance a process towards its end point.
	Data Object	Represents a piece of information relevant to carrying out a business task. For example, a **purchase order slip** can be a key piece of information for the task of **receiving returned goods**.
	Data Store	Represents a database, or a holding of multiple pieces of information relevant to carrying out a business task.
	System	Represents a pre-determined and catalogued electronic device relevant to carrying out a business task.
	Free System	Represents an electronic device associated with carrying out a business task.
	Gateway	Used to split the process flow into more than one branch.
	Start Event	Serves as the catalyst, the point of setting the task in motion.
	Intermediate Event	Marks an occurance that happens in the course of a process.

Icon	Label	Note
	Boundary Event	Marks an occurance, linked to a process step, that can change the course of a process. A boundary event can also be labeled non-interrupting. A boundary event must be attached to a process step.
	End Event	Serves as the defining point in which a task is considered complete.
	Sub-Process	Represents a detailed sequence of actions to be taken to advance a process. Describes an action containing several steps within it.

4.4.3.1.2 Process and Collaboration Diagrams - Palette Variations

Options when selecting the arrow to the right of palette icons. Only palette icons in the first column have arrow options available.

Icon: Lane	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Pool	Right-Arrow Palette Option	Option Icon Label	Note
		Draft Pool	Used to show pending or unresolved process steps. When displayed on the canvas, the draft pool contains the following symbol in the corner: 
		Blackbox Pool	Used to illustrate unknown or little-known steps for carrying out a task. By design, this pool appears blank, and holds neither lanes nor individual icons.

Icon: Pool	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Process Step	Right-Arrow Palette Option	Option Icon Label	Note
		Draft Process Step	Represents a pending action that must be taken to advance a process towards its end point.
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Data Object	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Data Store	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: System	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Free System	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

4.4.3.1.3 Process and Collaboration Diagrams - Left-Click Menu

Available items when selecting an icon on the canvas with a left click.

Icon	Label	Note (Optional)
	Process Step	
	Draft Process Step	
	Gateway	
	Intermediate Event	
	Boundary Event	When attaching a boundary event to a process step, you can position the icon to attach anywhere along the border of the process step.
	End Event	
	Sub-process	

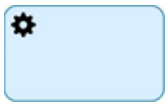
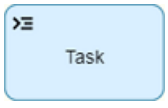
Icon	Label	Note (Optional)
	Annotation	Generates a text box that can be customized with text and resized.
	Flow	Connects one item on the canvas to another. Flow arrow appears black on the canvas.
	System	Option appears on left-click menu of process steps only.

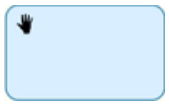
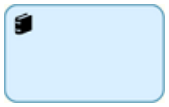
4.4.3.1.4 Process and Collaboration Diagrams - Right-Click Menu

Available items when selecting an icon on the canvas with a right click. Organized according to the icons' per-column top-to-bottom appearance in the palette.

Icon: Lane	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Replace	Not applicable	Not applicable	Can exchange current lane on canvas for another one.

Icon: Pool	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
	Not applicable	Not applicable	Not applicable	Not applicable	

Icon: Process Step	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Abstract Task	Displays the default view when adding the icon to the canvas.
		Types		Service Task	Marks the responsibility for the task as associated with a service.
		Types		Script Task	Marks the responsibility for the task as associated with a script.

Icon: Process Step	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		User Task	Marks the responsibility for the task as associated with the user.
		Types		Manual Task	Marks the task as associated with a manual action.
		Types		Business Rule Task	Marks the responsibility for the task as associated with a business rule.
		Types		Send Task	Marks the task as associated with sending a message.
		Types		Receive Task	Marks the task as associated with receiving a message.
		Loop Types		No Loop	Displays the default task view without a loop selection.
		Loop Types		Loop	Marks the task as a repeating action.
		Loop Types		Sequence Loop	Marks the task as a repeating action of a sequence.
		Loop Types		Parallel Loop	Marks the task as associated with repeating parallel actions.
		Compensation		For Compensation	Marks the task as an action associated with compensation.
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.

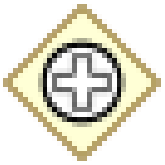
Icon: Data Object	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Data Object	Displays the default view when adding the icon to the canvas.
		Types		Input Data Object	Highlights the input associated with a data object.
		Types		Output Data Object	Highlights the output associated with a data object.
		Collection		Is a Collection	Marks the data object as part of a collection.
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.

Icon: Data Store	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.

Icon: System	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
	Not applicable	Not applicable	Not applicable	Not applicable	

Icon: Free System	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
	Not applicable	Not applicable	Not applicable	Not applicable	

Icon: Gateway	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		(No selection)	Presents two branches of activity Presents the default view when adding the icon to the canvas.
		Types		Normal Gateway	Presents two branches of activity

Icon: Gateway	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Complex Gateway	Presents more than two branches of activity
		Types		Parallel Gateway	Presents two branches of activity happening at the same time to advance a task
		Types		Inclusive Gateway	Presents inclusive activities to advance a task
		Types		Event-Based Gateway	Presents two branches of activity, due to an event
		Types		Exclusive Event-Based Gateway	Presents two branches of activity, due to an exclusive event
		Types		Parallel Event-Based Gateway	Presents two branches of activity, due to two events happening at the same time.

Icon: Start Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Parallel Multiple Start Event	Shows that more than one occurance happens at the same time to initiate task.
		Types		Multiple Start Event	Shows that more than one occurance happens to initiate task.
		Types		Message Start Event	Shows that a form of communication initiates a task.
		Types		Timer Start Event	Shows that calculated timing initiates a task.
		Types		Conditional Start Event	Shows that the occurance of a condition initiates a task.
		Types		Signal Start Event	Shows that a defined signal initiates a task.
		Types		Error Start Event	Shows that a defined error initiates a task.

Icon: Start Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Escalation Start Event	Shows that escalation of an occurance initiates a task.
		Types		Compensation Start Event	Shows that a compensation need initiates a task.
		Types		Normal Start Event	Presents the default view when adding the icon to the canvas.
		Maintain Reference	Not applicable	Not applicable	Assigns the start event to more than one process

Icon: Intermediate Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		None Message	Shows that a form of communication marks an intermediate event.
		Catch		Catch Timer Event	Indicates a relation between calculated timing and an intermediate event.
		Catch		Catch Conditional Event	Shows that the occurance of a condition marks an intermediate event.Shows that a form of communication interrupts action to complete a process.
		Catch		Catch Link Event	Shows thatIndicates a relation between a defined link received and an intermediate event.
		Catch		Catch Message Event	Marks the intermediate event as associated with receiving a message.
		Catch		Catch Signal Event	Marks the intermediate event as associated with receiving a signal.
		Catch		Catch Multiple Event	Shows multiple occurances processed in association with an intermediate event.
		Catch		Catch Parallel Multiple Event	Shows the processing of multiple occurances happening in parallel, as they relate to an intermediate event.

Icon: Intermediate Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Throw		Throw Escalation Event	Marks the intermediate event as associated with facilitating escalation in a process.
		Throw		Throw Compensation Event	Marks the intermediate event as associated with providing compensation.
		Throw		Throw Link Event	Indicates a relation between a defined link provided and an intermediate event.
		Throw		Throw Message Event	Marks the intermediate event as associated with sending a message.
		Throw		Throw Signal Event	Marks the intermediate event as associated with providing a signal.
		Throw		Throw Multiple Event	Shows multiple occurances triggered in association with an intermediate event.
		Maintain Reference	Not applicable	Not applicable	Assigns the intermediate event to more than one process

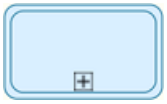
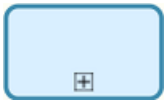
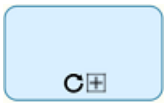
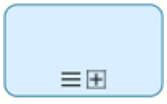
Icon: Boundary Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Boundary		Message Interrupting Event	
		Boundary		Timer Interrupting Event	Shows that calculated timing interrupts action to complete a process.
		Boundary		Escalation Interrupting Event	Shows that escalation of an occurance interrupts action to complete a process.
		Boundary		Conditional Interrupting Event	Shows that satisfied conditions interrupt action to complete a process.
		Boundary		Signal Interrupting Event	Shows that a signal received interrupts action to complete a process.

Icon: Boundary Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Boundary		Multiple Interrupting Event	Shows that multiple occurances interrupt action to complete a process.
		Boundary		Parallel Multiple Interrupting Event	Shows that more than one occurance happening at the same time interrupts action to complete a process.
		Boundary		Error Event	Shows that an error interrupts action to complete a process.
		Boundary		Cancel Event	Shows that a canceled event interrupts action to complete a process.
		Boundary		Compensation Event	Shows that an action relates to compensation as an event in the course of a process. You can also mark a process step directly as an action for compensation.
		Boundary		Throw Signal Event	Shows that a signal received interrupts action to complete a process.
		Boundary Non-Interrupting		Message Event	Shows that a form of communication serves as an event, though the event does not interrupt a process.
		Boundary Non-Interrupting		Timer Event	Shows that calculated timing of an occurance serves as an event, though the event does not interrupt a process.
		Boundary Non-Interrupting		Escalation Event	Shows that escalation of an occurance serves as an event, though the event does not interrupt a process.
		Boundary Non-Interrupting		Conditional Event	Shows that satisfied conditions serve as an event, though the event does not interrupt a process.
		Boundary Non-Interrupting		Signal Event	Shows that a received signal serves as an event, though the event does not interrupt a process.
		Boundary Non-Interrupting		Multiple Event	Shows that multiple occurances serve as a notable event, though the event does not interrupt a process.

Icon: Boundary Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Boundary Non-Interrupting		Parallel Multiple Event	Shows that more than one occurance happening at the same time serves as a notable event, though the event does not interrupt a process.

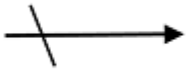
Icon: End Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Normal End Event	Presents the default view when adding the icon to the canvas.
		Types		Message End Event	Marks the end event as associated with sending a message.
		Types		Signal End Event	Marks the end event as associated with sending a signal.
		Types		Error End Event	Marks the end event as associated with communicating a error.
		Types		Escalation End Event	Marks the end of a process as it relates to facilitating escalation.
		Types		Cancel End Event	Shows an occurance where a cancelation relates to the end of a process.
		Types		Compensation End Event	Marks the end of a process as it relates to providing escalation.
		Types		Terminate End Event	Marks the end of a process as it relates to an event of terminating an occurance.
		Types		Multiple End Event	Marks the end of a process as it relates to triggering multiple occurances.
		Maintain Reference	Not applicable	Not applicable	Assigns the end event to more than one process

Icon: Sub-Process	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Normal Sub-Process	Presents the default view when adding the icon to the canvas.

Icon: Sub-Process	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Ad-Hoc Sub-Process	Marks the icon as containing ad-hoc sub-steps.
		Types		Transaction Sub-Process	Marks the icon as containing sub-steps of a transaction. Distinguishable by a double outline.
		Types		Call Activity	Marks the icon as containing call activity within its sub-steps. Distinguishable by a bold outline.
		Loop Types		No Loop	Displays the default sub-process view without a loop selection.
		Loop Types		Loop	Marks the sub-process as a repeating action.
		Loop Types		Sequence Loop	Marks the sub-process as a repeating action of a sequence.
		Loop Types		Parallel Loop	Marks the sub-process as associated with repeating parallel actions.
		Compensation		For Compensation	Marks the sub-process as an action associated with compensation.
		Maintain Reference	Not applicable	Not applicable	Assigns the end event to more than one process

Process and Collaboration Diagrams - Additional Right-Click Menu for Flow Arrow Icons

The flow arrow is not a palette icon, but when it appears on the canvas to connect two palette icons, the flow arrow offers right-click menu options.

Icon: Flow Arrow	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note (Optional)
		Types		Default Path	Used to expressly display a default path in a process, which is not to be confused with a normal path that does not make an express claim on the relationship between icons.
		Types		Conditional Path	Used to expressly display a conditional or uncertain path in a process.
		Types		Normal Path	Appears on the canvas as a default. This option is available on the menu only when your arrow currently displays a default or conditional path.

4.4.3.1.5 Process and Collaboration Diagrams - Text Options

Text Label Icon	Label	Note
	Left	Positions the text label to the left of the icon. Option applies to icons with external labels.
	Top	Positions the text label to the top of the icon. Option applies to icons with external labels.
	Right	Positions the text label to the right of the icon. Option applies to icons with external labels.
	Bottom	Positions the text label to the bottom of the icon. Option applies to icons with external labels.

Flow Text Label Icon	Label	Note
	Next to Source	Positions the text label to the beginning of the flow arrow.

Flow Text Label Icon	Label	Note
	Next to Target	Positions the text label to the end of the flow arrow.
	Middle	Positions the text label in the middle of the flow arrow.
	Flip Side	Positions the text label on the other side of the flow arrow.

4.4.3.2 Palette Reference - Universal Diagram

Graphical process editor users for SAP Solution Manager 7.2 can reference the following tables for the palette icons available to universal diagrams.

> **i** Note
>
> The universal diagram palette differs from the palette available for process and collaboration diagrams. Universal diagrams are commonly used to illustrate an overview of processes. From a universal diagram, you can navigate to other linked diagrams. For reference tables regarding process and collaboration diagram palettes, see Palette Reference - Process and Collaboration Diagrams [page 102].

Universal Diagram - Basic Palette

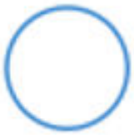
Items arranged as they appear in the first column top-to-bottom in the palette, then in additional columns top-to-bottom in the palette.

Icon	Label	Note (Optional)
	Square	
	Triangle	

Icon	Label	Note (Optional)
	Line	A saved diagram in the system cannot be attached to this object.
	Pentagon	This object fits seemlessly with the back of the chevron.
	Arrow	
	Callout	A saved diagram in the system cannot be attached to this object.
	Chevron	
	Oval	This shape's size can be adjusted to resemble a circle or an oval.
	Textbox	A saved diagram in the system cannot be attached to this object. This object's default size can display eight lines of text.

Universal Diagram - Left-Click Menu

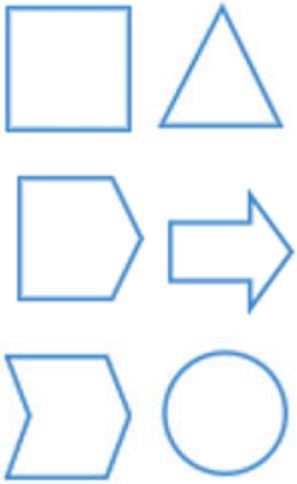
Available items when selecting an icon on the canvas with a left click. Exception: (Line icon).

Icon	Label	Note (Optional)
	Square	
	Pentagon	
	Chevron	
	Triangle	
	Arrow	
	Oval	
	Callout	

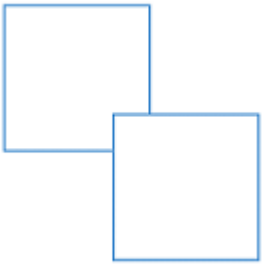
Icon	Label	Note (Optional)
	Textbox	Differs from the annotation object because it appears as an enclosed box, can be dragged from the palette, and contains the full left-click menu.
	Annotation	Generates a text field that can be customized with text and resized.
	Flow	Connects one item on the canvas to another. Exception: (Line icon).

Universal Diagram - Right-Click Menu

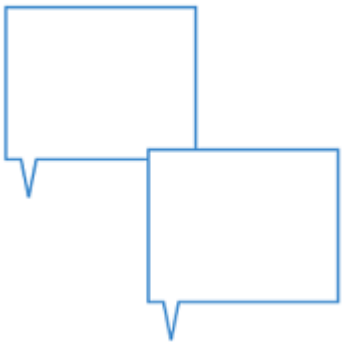
Available items when selecting an icon on the canvas with a right click. Grouped according to range of shared functions.

Icons	Right-Click Option	Option Label	Canvas Output	Note
		Rotate	Example: 	Rotates object 90 degrees

Icons	Right-Click Option	Option Label	Canvas Output	Note
		Color	Example: 	Presents a window with coloring options to fill the selected object.
		Replace	Not applicable	Can exchange current lane on canvas for another one.

Icons	Right-Click Option	Option Label	Canvas Output	Note
		Change Size	Not applicable	Presents a window for adjusting the percent of the selected object's height and width. Useful for standardizing objects.
		Duplicate	Example: 	Used to split the process flow into more than one branch.

Icons	Right-Click Option	Option Label	Canvas Output	Note
		Rotate	Example: 	Rotates object 90 degrees

Icons	Right-Click Option	Option Label	Canvas Output	Note
		Color	Example: 	Presents a window with coloring options to fill the selected object.
		Change Size	Not applicable	Presents a window for adjusting the percent of the selected object's height and width. Useful for standardizing objects.
		Duplicate	Example: 	Used to split the process flow into more than one branch.

Icon	Right-Click Option	Option Label	Canvas Output	Note
		Rotate	Example: 	Rotates object 90 degrees
		Color	Example: 	Presents a window with coloring options to fill the selected object.
		Duplicate	Example: 	Used to split the process flow into more than one branch.

Universal Diagram - Additional Right-Click Menu for Flow Arrow Icons

The flow arrow is not a palette icon, but when it appears on the canvas to connect two palette icons, the flow arrow offers right-click menu options.

Icon: Flow Arrow	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Association	Used to expressly display an association, rather than a link to a sequential step.

Icon: Flow Arrow	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Sequence Flow	Restores the default arrow view.
		Color		Not applicable	Presents a window with coloring options to fill the selected object.

Universal Diagram - Text Label Options

Flow Text Label Icon	Label	Note
	Right up Corner	Positions the text label to the upper right of the object.
	Right down Corner	Positions the text label to the lower right of the object.
	Left up Corner	Positions the text label to the upper left of the object.
	Left down Corner	Positions the text label to the lower left of the object.
	Middle	Positions the text label central to the object.

Flow Text Label Icon	Label	Note
	Next to Source	Positions the text label to the beginning of the flow arrow.
	Next to Target	Positions the text label to the end of the flow arrow.
	Middle	Positions the text label in the middle of the flow arrow.
	Flip Side	Positions the text label on the other side of the flow arrow.

4.4.3.3 Palette Reference - Interface Diagram

Graphical process editor users for SAP Solution Manager 7.2 can reference the following tables for the palette icons available to interface diagrams.

> **i Note**
>
> While similar to the palette available for process and collaboration diagrams, the interface diagram palette offers fewer objects. In addition, a notable difference is the orange interface step icon, compared to the blue process step.
>
> - To learn more about interface diagrams, see Interface Diagram [page 96]
> - For reference tables regarding process and collaboration diagram palettes, see Palette Reference - Process and Collaboration Diagrams [page 102].

Interface Diagram - Basic Palette

Items arranged as they appear in the first column top-to-bottom in the palette, then in the second column top-to-bottom in the palette.

Icon	Label	Note
	Lane	Represents a participant or system of a business process, one having a defined role to help carry out that process.
	Interface Step	Represents an action of processing logic that takes place within the involved systems.
	Data Object	Represents a piece of digital information relevant to an interface diagram.
	Data Store	Represents a database, or a holding of multiple pieces of information relevant to an interface diagram.
	Gateway	Used to split the interface diagram into more than one branch.
	Start Event	Serves as the catalyst, the point of setting the interface model in motion.
	Intermediate Event	For interface diagrams, often also called IME. Marks an occurance that happens in the course of an interface model, and attaches interfaces to the composite interface.
	End Event	Serves as the defining point in which the interface model is considered complete.

Interface Diagram - Palette Variations

Options when selecting the arrow to the right of palette icons. Only palette icons in the first column have arrow options available.

Icon: Lane	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Interface Step	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Data Object	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Icon: Data Store	Right-Arrow Palette Option	Option Icon Label	Note
	**Element menu**. You must first assign the palette icon to an element before adding it to the canvas.	Not applicable	From the element menu, you can choose an element saved in the solution documentation database, create a new element, search for existing elements, or edit existing elements.

Interface Diagram - Left-Click Menu

Available items when selecting an icon on the canvas with a left click.

Icon	Label	Note (Optional)
	Interface Step	
	Gateway	
	Intermediate Event	
	End Event	
	Annotation	Generates a text box that can be customized with text and resized.
	Flow	Connects one item on the canvas to another. Flow arrow appears black on the canvas.

Interface Diagram - Right-Click Menu

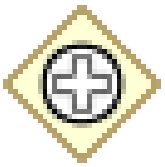
Available items when selecting an icon on the canvas with a right click. Organized according to the icons' per-column top-to-bottom appearance in the palette.

Icon: Lane	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
	Not applicable	Not applicable	Not applicable	Not applicable	No right click options available.
Icon: Interface Step	**Right-Click Option**	**Option Label**	**Canvas Output**	**Sub-Option Label**	**Note**
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.
Icon: Data Object	**Right-Click Option**	**Option Label**	**Canvas Output**	**Sub-Option Label**	**Note**
		Types		Data Object	Displays the default view when adding the icon to the canvas.

Icon: Data Object	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Input Data Object	Highlights the input associated with a data object.
		Types		Output Data Object	Highlights the output associated with a data object.
		Collection		Is a Collection	Marks the data object as part of a collection.
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.

Icon: Data Store	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Replace	Not applicable	Not applicable	Exchanges current icon on canvas for another one.

Icon: Gateway	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		(No selection)	Presents two branches of activity Presents the default view when adding the icon to the canvas.
		Types		Normal Gateway	Presents two branches of activity
		Types		Complex Gateway	Presents more than two branches of activity
		Types		Parallel Gateway	Presents two branches of activity happening at the same time to advance a task
		Types		Inclusive Gateway	Presents inclusive activities to advance a task
		Types		Event-Based Gateway	Presents two branches of activity, due to an event

Icon: Gateway	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Exclusive Event-Based Gateway	Presents two branches of activity, due to an exclusive event
		Types		Parallel Event-Based Gateway	Presents two branches of activity, due to two events happening at the same time.

Icon: Start Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Parallel Multiple Start Event	Shows that more than one occurance happens at the same time to initiate task.
		Types		Multiple Start Event	Shows that more than one occurance happens to initiate task.
		Types		Message Start Event	Shows that a form of communication initiates a task.
		Types		Timer Start Event	Shows that calculated timing initiates a task.
		Types		Conditional Start Event	Shows that the occurance of a condition initiates a task.
		Types		Signal Start Event	Shows that a defined signal initiates a task.
		Types		Error Start Event	Shows that a defined error initiates a task.
		Types		Escalation Start Event	Shows that escalation of an occurance initiates a task.
		Types		Compensation Start Event	Shows that a compensation need initiates a task.
		Types		Normal Start Event	Presents the default view when adding the icon to the canvas.
		Maintain Reference	Not applicable	Not applicable	Assigns the start event to more than one process

Icon: Intermediate Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		None Message	Shows that a form of communication marks an intermediate event.
		Catch		Catch Timer Event	Indicates a relation between calculated timing and an intermediate event.
		Catch		Catch Conditional Event	Shows that the occurance of a condition marks an intermediate event.
		Catch		Catch Link Event	Indicates a relation between a defined link received and an intermediate event.
		Catch		Catch Message Event	Marks the intermediate event as associated with receiving a message.
		Catch		Catch Signal Event	Marks the intermediate event as associated with receiving a signal.
		Catch		Catch Multiple Event	Shows multiple occurances processed in association with an intermediate event.
		Catch		Catch Parallel Multiple Event	Shows the processing of multiple occurances happening in parallel, as they relate to an intermediate event.
		Throw		Throw Escalation Event	Marks the intermediate event as associated with facilitating escalation in a process.
		Throw		Throw Compensation Event	Marks the intermediate event as associated with providing compensation.
		Throw		Throw Link Event	Indicates a relation between a defined link provided and an intermediate event.
		Throw		Throw Message Event	Marks the intermediate event as associated with sending a message.
		Throw		Throw Signal Event	Marks the intermediate event as associated with providing a signal.

Icon: Intermediate Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Throw		Throw Multiple Event	Shows multiple occurances triggered in association with an intermediate event.
		Maintain Reference	Not applicable	Not applicable	Assigns the intermediate event to more than one process

Icon: End Event	Right-Click Option	Option Label	Canvas Output	Sub-Option Label	Note
		Types		Normal End Event	Presents the default view when adding the icon to the canvas.
		Types		Message End Event	Marks the end event as associated with sending a message.
		Types		Signal End Event	Marks the end event as associated with sending a signal.
		Types		Error End Event	Marks the end event as associated with communicating a error.
		Types		Escalation End Event	Marks the end of a process as it relates to facilitating escalation.
		Types		Cancel End Event	Shows an occurance where a cancelation relates to the end of a process.
		Types		Compensation End Event	Marks the end of a process as it relates to providing escalation.
		Types		Terminate End Event	Marks the end of a process as it relates to an event of terminating an occurance.
		Types		Multiple End Event	Marks the end of a process as it relates to triggering multiple occurances.
		Maintain Reference	Not applicable	Not applicable	Assigns the end event to more than one process

Interface Diagram - Text Options

Text Label Icon	Label	Note
	Left	Positions the text label to the left of the icon. Option applies to icons with external labels.
	Top	Positions the text label to the top of the icon. Option applies to icons with external labels.
	Right	Positions the text label to the right of the icon. Option applies to icons with external labels.
	Bottom	Positions the text label to the bottom of the icon. Option applies to icons with external labels.

Flow Text Label Icon	Label	Note
	Next to Source	Positions the text label to the beginning of the flow arrow.
	Next to Target	Positions the text label to the end of the flow arrow.
	Middle	Positions the text label in the middle of the flow arrow.
	Flip Side	Positions the text label on the other side of the flow arrow.

4.4.3.4 Toolbar Reference - All Modifiable Diagrams

Graphical process editor users for SAP Solution Manager 7.2 can reference the following table to learn more about the toolbar options for all modifiable diagrams.

> **i** Note
>
> The phrase **all modifiable diagrams** means process and collaboration diagrams, interface diagrams, and universal diagrams. While value chain diagrams are comparable to universal diagrams, you automatically generate value chain diagrams from a graphical process modeling editor menu option. They are not modifiable.

Toolbar Options for the Diagram Canvas

Items arranged as they appear left to right in the toolbar. Options apply to all modifiable diagrams unless otherwise noted.

Label	Function	Note (Optional)
Hide Palette • *Show Palette*	The palette to the left of the canvas disappears.	Upon selection, *Show Palette* appears in place of *Hide Palette* so that you can toggle the view.
Display • *Edit*	The palette disappears and the items on the canvas cannot be modified.	By default, the selected diagram opens in edit mode. This means the toolbar option *Display* is initially visible. (Exception: Diagram opens in display mode if the diagram is already locked by another user.) Upon selection, *Edit* appears in place of *Display* so that you can toggle the view.
Save	A dialog box appears, confirming that all objects on the canvas have been saved to the diagram.	If applicable, a dialog box appears, stating that there have been no additional changes to the canvas.
Undo	This reverses the last action to a canvas item.	Option becomes available after you make an unsaved change to the canvas
Redo	This restores the last action before an *Undo* selection.	Option becomes available after you make an *Undo* selection.
Reference (Process and collaboration diagrams, interface diagrams)	Assigns a selected icon to one or more processes saved in the system.	This option performs the same function as the maintain reference icon (found in some icons' right-click menus). 
Export	Dropdown menu provides options to export the entire diagram in one of the following formats: PDF, BPMN, or SVG	**Note:** Export *As PDF* works differently for Internet Explorer than for other browsers. For Internet Explorer, the *Print* option on the application toolbar initiates this save function. From Internet Explorer's print menu, you can then save as PDF.
Auto-Map (Process and collaboration diagrams)	Through a window box that appears, you can convert draft objects on the canvas (such as draft process steps) to corresponding elements in the system (process steps).	From this selection window, you can also call up proposed names for the prospective elements, based on names already saved in the system. Items in a draft pool remain draft elements. The draft pool must first be converted to the system element of pool.

Label	Function	Note (Optional)
Import (Process and collaboration diagrams)	A dialog box appears asking for a BPMN file selection. A selected BPMN file populates the canvas.	The import erases the current diagram and replaces it with the imported one.
Fit to Space	This displays the entire diagram on the canvas.	This action is noticeable when zooming out to capture the entire diagram. This option has the same function as the center point of the 4-point directional icon, located in the canvas's upper left corner.
Align	Dropdown menu provides options to shift the objects in a horizontal or vertical alignment. The selected objects align as according to this selection.	You must first select one or more items on the canvas before this option becomes available.
Format (Universal diagram)	Dropdown menu provides options to adjust the label's text color, the label's text size, the shape's fill color, and the shape's size.	
Remove	This removes a selected object from the canvas.	You must first select one or more items on the canvas before this option becomes available.
Duplicate (Universal diagram)	This produces a copy of the selected canvas object, and places it near the selected object.	You must first select one or more items on the canvas before this option becomes available. You can duplicate multiple items at once.

Icon	Function	Note (Optional)
 • 	The canvas view expands.	Upon selection, the minimize icon appears in place of the maximize icon so that you can toggle the view.
	The canvas view closes.	This action does not delete any saved diagram displayed on the canvas.

4.4.3.5 Diagram Type Reference - All Diagrams

Here is a quick reference to describe the diagram types. The various diagrams offer varying icons and toolbar items.

Diagram Types for Process Modeling

Diagram	Description
Collaboration	You can use this diagram to depict one or more step-by-step business processes. Often described together with process diagrams due to their correlation. Both diagram types support business-driven modeling by showing logically-related activities performed within or across an organization to fulfill a defined business objective, such as order processing. For collaboration diagrams, your graphical process modeling editor's canvas can display more than one process. This means you can build more than one pool on the canvas. For more information, see Process and Collaboration Diagrams [page 86]
Interface	You can use this diagram to visualize the flow of a complex integration scenario, meaning multiple systems' involvement and association via point-to-point connections/interfaces. This type of diagram belongs to the category of process and collaboration diagrams, but with features tailored for IT-driven modeling. For more information, see Interface Diagram [page 96]
Process	You can use this diagram to depict one step-by-step business processes. Often described together with collaboration diagrams due to their correlation. Both diagram types support business-driven modeling by showing logically-related activities performed within or across an organization to fulfill a defined business objective, such as order processing. A process diagram contains one pool (and therefore one business process) only. The process diagram's palette does not contain additional pool options to add to the blank canvas. For more information, see Process and Collaboration Diagrams [page 86]

Diagram	Description
Universal	You can use this diagram to show a graphical overview of process and collaboration diagrams. From a universal diagram, you can navigate to other linked diagrams. This type of diagram features icons with [+] symbols within them. Selecting a plus sign allows you to drill down to see process diagrams within (and organizationally belonging to) the selected icon. You custom build and modify the universal diagram in the graphical process modeling editor. It is modifiable. For more information, see Universal Diagram [page 83]
Value Chain	You can use this diagram to show a high-level overview of processes just like the universal diagram. This type of diagram features icons with [+] symbols within them. Selecting a plus sign allows you to drill down to see process diagrams within (and organizationally belonging to) the selected icon. You automatically generate the value chain diagram from a graphical process modeling editor menu option. It is not modifiable. For more information on this type of an overview diagram, see Universal Diagram [page 83]

4.5 Authorization Concept

In this section, you learn more about the authorization concept in Solution Documentation. Two main elements in this concept are the Authorization Area [page 136] and the Authorization Group [page 137].

4.5.1 Authorization Area

Use

Authorization areas can protect sub trees of your solution structure. An administrator can assign an authorization area to a folder. Then only users that have an authorization for authorization object *Solution Documentation* (`SM_SDOC`) with this authorization area name in the field *Authorization Area* (`SMUDAREA`) for this authorization area are allowed to perform activities for this folder and its subelements.

Authorization areas are defined solution-specific. An authorization area has a 30 character long technical name and a description. The default authorization area does not need to be defined. The Solution

Documentation root element and all elements without assignment have the implicit authorization area assignment *Default* by definition.

When no authorization areas have been assigned to the elements of a solution yet, every element has authorization area *Default*. The assignment of a structure element to an authorization area is valid for all branches of a solution in which the assigned elements exists. The authorization area explicitly assigned to a structure element is valid for the whole subtree rooted by the element excluding all subtrees rooted by elements with own authorization area assignments. Non-structure elements always inherit the authorization area from their structure parents. The authorization area determination is branch-specific as the inheritance hierarchy is branch specific: if an element is moved between two folders that have different areas assigned, it may inherit a new authorization area from the new parent folder, so in this case the authorization area of an element may differ in different branches.

Activities

Maintenance of Authorization Areas

You maintain authorization areas with view cluster maintenance (transaction `SM34`) for view cluster `SMUD_AUTHG`. Select the solution for which you want to create authorization areas first.

Define Authorization Areas

Select in the view cluster the view *Define Authorization Areas* to create a new authorization area by giving it a considerate technical name and description.

Authorization Area Assignment

Select in the view cluster the view *Authorization Area Assignment* to assign an element of a solution to an authorization area. Choose the *New* button to add a new entry in the detail screen of the view. Enter an authorization area ID or select it in the value help provided. Select the button *Select Structure Element*. In the value help you can preselect by element type and by description.

More Information

For more information about the authorization objects `SM_SDOC` (*Solution Documentation*) and `SM_SDOCADM` (*Solution Documentation Solution Administration*), check the corresponding authorization documentation in the system.

4.5.2 Authorization Group

Use

The concept of Authorization Groups in DDIC Tables and Views as Basis

The concept of authorization groups in Solution Documentation is known from data dictionary tables and views. In transaction `SE54`, you can create and assign authorization groups to tables and views to provide the

option to protect these objects in generic table and view maintenance tools. The grouping of multiple objects makes it easier for an administrator to maintain authorization profiles. With a single entry, he can allow or forbid the maintenance for example of all service desk configuration tables and views using the authorization group `SDCO`.

The concept of the Authorization Groups in Solution Documentation

In Solution Documentation, a similar concept is used to allow authorization checks on object or attribute type level without the need of listing hundreds of object or attribute types in a special authorization role. Authorization groups are defined solution-dependent. They have a technical name that is checked in authorization object `SM_SDOC` in field `SMUDAUTHGR`.

The **Default** authorization group is always there. It contains all Solution Documentation object and attribute types that are not assigned to any named authorization group. As soon as you assign an object or attribute type to user-created authorization group (not **Default**) it is not assigned to the **Default** authorization group because an object or attribute type can only be assigned to one authorization group. This allows defining authorizations on "all other objects" or on "all other attributes" that you do not want to name explicitly. They are virtually assigned to **Default**.

Example: You want to create a role for users that are allowed to see all objects but only may maintain test cases. Then you create an authorization group for test cases. You maintain the authorizations so, that you give them *Display Authorization for the Authorization Group* **'*'** and *Maintenance Authorization for the Authorization Group* **Test Cases** only.

For another role you want to allow users to see and maintain everything but technical objects. Therefore you give them *Display and Maintenance Authorization for Authorization Group* **Default** and **Test Cases** and define a new authorization group **Technical Objects** which you do not include in the role. So for these users technical objects are invisible. It is not possible to add the same object or attribute to different authorization groups. Authorization groups must always be disjoint. But the technical name of an authorization groups is 30 characters long. So it is possible to give them hierarchical names, for example:

- `OBJ_LIB_TECH_DEV_CLAS` for a group containing the *classes* in the library
- `OBJ_LIB_TECH_DEV_PROG` for a group containing the *programs* in the library
- `OBJ_E2E_TECH_DEV_CLAS` for a group containing *classes* in the E2E area

This would allow you to use `OBJ_LIB_TECH_*` in authorizations for all technical objects in the library without listing all single groups explicitly. It is possible to make elements invisible by authorizations, but not individual attributes. A user always sees all attributes. But he may see some of them in read-only mode because of missing authorization.

Activities

Maintenance of Authorization Groups

You maintain authorization groups with view cluster maintenance `SM34` for view cluster `SMUD_AUTHG`. Select the solution for which you want to create authorization groups.

Define Authorization Groups

Select *Define Authorization Groups* to create a new authorization group by giving it a considerate technical name and description.

Authorization Groups for Attributes

Select *Authorization Groups for Objects* to assign attribute types to an authorization group. Use the value help or program `SMUD_MODEL_BROWSER` to find the attribute type IDs.

- To assign a single attribute type at a certain object type only, fill both key fields
- To assign an attribute type at any object type just fill field *Attribute Type*
- To assign any attribute type of an object type just fill field *Object Type*

Value `SPACE` in a key field stands for all types. In case an attribute-object-combination matches to more than one entry the above sequence is relevant.

Authorization Groups for Objects

Select *Authorization Groups for Objects* to assign object types to an authorization group. Use the value help or program `SMUD_MODEL_BROWSER` to find the object type IDs.

- To assign a single object type at a certain group type only, fill both key fields
- To assign an object type at any group type just fill field *Object Type*
- To assign any object type at a group type just fill field *Group Type*

Value `SPACE` in a key field stands for all types. In case an object-group-combination matches to more than one entry the above sequence is relevant.

More Information

For more information about the authorization objects `SM_SDOC` (*Solution Documentation*) and `SM_SDOCADM` (*Solution Documentation Solution Administration*), check the corresponding authorization documentation in the system.

4.6 Knowledge Warehouse Documents

While Solution Documentation is used for structuring business processes, documents are the key entities that carry the information about a specific part or aspect of a solution.

A document can be assigned to almost all elements of a solution. It is a bracket of document versions that were created by user interaction at different points of time.

Within a solution a document can be assigned more than once. Changing one usage will affect the other usages as well.

Documents are solution specific. If you export content from one solution and import it into another solution, the documents will be copied. Maintaining a document in one solution is thus decoupled from maintaining it in a second solution.

From a technical point of view, a document is a combination of content (the *document* itself) and attributes. Attributes can be searched for with simple and advanced search in the same way as modelled attributes. Full text search is supported for document content out of the box.

In Solution Documentation, there are three types that encapsulate a Knowledge Warehouse document. They are called *Document*, *Document URL* and *Test Document*.

4.6.1 Working with Documents

In this section, you learn how to work with documents, like creating, editing, copying, importing, and deleting documents.

4.6.1.1 Documents and Document Versions

Creating the document means creating both the document entity and the first document version.

Each document version brings a context with it and stores it internally. This context consists of the language, which must be one of the content languages of the solution, and the branch context. Documents take part in the lifecycle as described in section *Lifecycle based on Branches*.

Each version stores the user who created it and a timestamp. By this means a change history may be deducted from the subsequent document versions and their contexts.

Each time an existing document is modified, a new document version is created. A modification may be triggered by an explicit user interaction such as editing, or by executing one of the lifecycle operations, or by using import or third party API functionality.

If a version is created under change control, the document history will offer a link to navigate to the corresponding change.

4.6.1.2 Creating a Document

You can upload a document from the file system or specify a URL, or copy another document of the solution. A document can also reach the solution via import or third party API.

In Solution Documentation, document creation is triggered by the context menu.

You can either create an element of type *Document*, *Test Document* or *Document URL*. Proceed as follows:

For creating a *Document*, go to *Browser view* and open the context menu in the assignment list. Select *New* > *Documentation* and one of the entries *Document (From Template)*, *Document (Upload)* or *Document (Assign)*.

For creating a *Test Document*, go to *Browser view* and open the context menu in the assignment list. Select *New* > *Test Cases* and one of the entries *Test Document (From Template)*, *Test Document (Upload)* or *Test Document (Assign)*

From Template, *Upload* and *Assign* means the following:

- *From Template*
  A template is a document that is associated with a document type. When you choose a document type in the attribute dialog, the template content is taken over as content for the new document. If you want to change it before saving, press the choose *Edit Document*.
- *Upload*

A file dialog offers a selection of documents from the file system. The upload is for single documents only.

- *Assign*
  The recommendation is to use a document at a single place, but if there are business needs for multiple use, you can create new elements and reuse the documents.
  Used documents are documents that are still assigned in the solution. Orphan documents are documents that were once part of the solution, but are currently not assigned any more. They can be reassigned here. If you have searched for used documents and marked one or more hits in the result list, you can choose if you want to assign the original document or a copy. In the first case, the attribute *Document Reference* is filled to indicate that the new element is not the original usage. Orphan documents will always be assigned as copy.

For creating a *Document URL* (weblink), go to *Browser view* and open the context menu in the assignment list. Select *New* > *Documentation* > *Document URL*. Weblinks cannot be assigned as elements of type *Test Document*. The type *Document (Best Practice)* represents a weblink that does not support versioning. It is not part of Knowledge Warehouse documents.

Once the document is created, it will be displayed by clicking the document name in the assignment list.

4.6.1.3 Editing a Document

Either change the document attributes in the attribute pane or, if you want to modify the content or sign the document, choose one of the functions *Check Out/Check In*, *Upload New Version*, or *Edit Online*.

Checkout downloads the current version to the file system where you can edit the document in its native environment. A permanent lock is set until the document is checked in again. Before saving the content changes by file upload, attributes can be modified and stored together with the modified content in one version. The permanent lock is removed after check-in.

Uploading a new version means to overwrite the current content by uploading a new file. As with check-in, attributes can be modified before saving.

Editing a document online means to work on the document content and the attributes without downloading a file. Two windows are opened simultaneously, one for the attributes and one for the content. To save the changes, press the close button of the document content window. The option *Edit Online* uses *Office Integration*

Regarding the change history and the document versions, there is no difference between the functions *Check Out/Check In* and *Edit Online*.

Mass Maintenance

By marking several documents in the assignment list, a condensed attribute display is provided in the attribute panel. All maintainable attributes except the document status are mass maintainable.

The status is taken out as it is closely related to *Digital Signature*.

4.6.1.3.1 Digital Signature

Signing a document means to approve its content and the correctness of the document attributes with the help of a process of subsequent individual digital signatures. The central entity is the document status.

Depending on the document type and its status schema, certain status values may only be set if the user confirms the change with his signature.

Choose *Edit Online*, *Check out/Check In*, or *Upload New Version* and set the status in the upcoming window. When saving, you will be prompted for your credentials. Enter your system password to confirm the change.

> ⚠ Caution
>
> Editing a document online can take a long time due to large file sizes. If you only want to sign a document, we recommend using the *Attribute panel*, the *Check out/Check In* or *Upload New Version* functions.

In addition to editing online, a signature process can also be triggered by changing the status in the attribute panel or by uploading a new version.

> ⚠ Caution
>
> If you want to change any other attribute in the attribute panel, do this first before changing the status. When you change the status, this triggers the signature process and you cannot change other attributes afterwards.

> i Note
>
> For legal reasons, you are prompted to download the document so that you can have a look at it before signing.

The document display for a signed document is preceeded by a list of inidivdual signatures as long as the signature is valid. A valid signature requires a document status which is locked. If you have explicitely unlocked the document after the signature process was finished, or if your status schema sets an explicit signature end state which is not locked, this signature overview will not be displayed.

4.6.1.3.2 Office Integration

This topic describes the integration of Microsoft Office in Solution Documentation.

Office Integration is a setting that enables the *Edit Online* option for certain document formats when working with MS Internet Explorer (IE). The following formats are supported:

- MS Word: DOC, DOT, DOCX, DOCM, DOTX, DOTM
- MS Excel: XLS, XLT, XLSX, XLSM, XLTX, XLTM
- MS Powerpoint: PPT, PPTX

In Solution Documentation, you can choose the *Global Functions* menu and open the *Settings* dialog to switch it on or off.

The office integration functionality is based on Microsoft ActiveX technology and can only be used in the Microsoft Internet Explorer (IE) (Microsoft Edge browser and other browsers are not supported). The installation is done automatically when the application is called for the first time and if you accept the installation of the corresponding `SAP ACF` ActiveX which is signed by SAP.

If the office integration functionality cannot be used in your system, e.g. because you use another browser, the corresponding link and context menu entry are hidden and you can only edit your documents offline. However,

it might seem the functionality is available, but nevertheless it does not work. This can be the case if you have installed the ActiveX and disabled it afterwards or if the ActiveX is not installed correctly.

Prerequisites if your users should be allowed to install ActiveX

1150277 explains which settings are needed in the Microsoft Internet Explorer (IE) so that your users are allowed to install and run an ActiveX:

Go to *Tools* > *Internet options* > *Security* > *Internet or Local intranet* depending on your setup.

Make the following settings:

- 'Run ActiveX controls and plug-ins': *Enable*
- 'Script ActiveX controls marked safe for scripting': *Enable*
- 'Download signed ActiveX controls': *Prompt*

Prerequisites if your users are not allowed to install ActiveX (e.g. because you use Citrix client or want to give only limited authorization) but want to run the `SAP ACF` ActiveX

Make sure your users have the browser settings as described in 1150277:

- 'Run ActiveX controls and plug-ins': *Enable*
- 'Script ActiveX controls marked safe for scripting': *Enable*

For the installation, 1402024 contains a link to download the latest version of the executable that can be installed locally on all end user PCs. This is the option you can choose if you do not allow your users to download the ActiveX control. In this case, you have to take care that you install the latest version on your users' PCs. After an update of your SAP Solution Manager (e.g. after an upgrade of the system or after import of a new support package), you have to update your ActiveX on these PCs, otherwise you might have problems working with the office integration (for details concerning this case of outdated local installation, see 1488874).

General information about the local installation of the `SAP ACF` ActiveX is also contained in 766191.

Check whether the installation was successful

When the `SAP ACF` ActiveX is installed correctly, you should be able to see it in the Microsoft Internet Explorer (IE) add-ons. To see the list of all add-ons of your browser, go to the "Internet-Options" dialog, choose "Programs" and then "Manage add-ons". Make sure you choose the option to show "All add-ons" in the corresponding drop down box. In the list of your add-ons, the `SAP ACF` ActiveX needs to have the status "*Enabled*".

Related Information

Office Integration
OfficeControl

4.6.1.3.3 Edit Online with SAP GUI

Use

In solution documentation, ACF control has been used to edit documents online (see Office Integration [page 142]). This ActiveX control depends on the IE browser, which is coming to an end of maintenance. As a future alternative, you can use the online edit function with SAP GUI.

> **i** Note
>
> See also SAP note 3009338 on SAP GUI office integration.

Prerequisites

In the *Settings* menu in the *General* section, you need to activate *Enable GUI Office Integration*.

Activities

For editing a document online, proceed as follows:

1. Select a solution document in transaction `SOLDOC`
2. In the context menu, choose *Edit Online (SAP GUI)*.
3. Choose *Open* in the GUI shortcut that pops up. (The new report `RSMUD_DOC_GUI_OPEN` opens the solution document in GUI for editing).

The document opens in the edit mode.

When you are finished editing, proceed as follows:

1. Close the editing window by choosing *Close* ✕
2. You can *Save*, *Don't Save* or *Cancel* your changes.
   When you choose *Save*, a popup information confirms that the document is saved.

> **i Note**
>
> If you edit a document that has been released to the production branch before, a popup asks you whether you want to keep the changes or revert to the original content from the production branch.

> **i Note**
>
> Signing a document is not possible for Edit Online SAP GUI. You cannot change the attribute. Use Online SAP GUI only for editing. If you want to sign or change attributes, use the attribute panel. See also Digital Signature [page 141].

4.6.1.4 Lifecycle Operations on Documents

As all other entities in Solution Documentation, documents are subject to the lifecycle handling with branches. A document is created in a child branch and released to the parent branch. Changes may be discarded and conflicts must be resolved before release.

With regard to change tracking mode, there is a difference regarding the granularity of changes.

The decision to keep conflicts, discard changes or mark conflicts as resolved is not made on attribute level, but for the document version as a whole. This includes all attributes and the content as well.

4.6.1.5 Copying a Document

Documents can be copied by explicit selection and as part of a subtree.

If a subtree contains multiple assignments of the same document, only one document copy is made.

To reflect the reuse of documents, a maintainable attribute *Document Reference* is used. The idea is to have one *original* element and, if necessary, one or more references.

The attribute *Document Reference* is empty if a document is created or copied. For multiple assignments of a document in the subtree selection, document originals are copied once and all references are relinked to the document copy.

4.6.1.6 Importing a Document

Importing a document includes two steps. One is the import of the exported file, the other is the import of a transport request if source and target system differ.

As documents are solution specific, each import copies the documents contained in the exported file.

Multiple imports into the same solution reuse the document copies.

For different systems, the content of the imported documents comes in with the transport request.

The recommendation is to first import the request and then the file.

4.6.1.7 Deleting a Document

Deleting an element does not delete the document itself. If the last usage of a document is removed, the document becomes an orphan document. Orphans can be reassigned using the *Document (Assign)* or *Test Document (Assign)* function. Orphans keep their type, so that a document cannot be reassigned as a test document and vice versa.

Orphan documents occupy memory space. You can call up orphan documents with the *Clean Unused Document* function in the *Service Activities* menu (see Service Activities [page 32]) and delete those documents.

> **i Note**
>
> A document that is orphan to a deleted parent element may still be used by other solutions. In that case, you cannot delete the orphan document.
>
> All unused documents are deleted permanently and cannot be retrieved.

4.6.1.8 Sharing Element content outside SAP Solution Manager

To get a logical link to an element and use it outside of the SAP Solution Manager system, choose *Display Link* in the context menu. The second link in the popup shows the link to the element. It consists of the plain URL and the element name with the URL linked to it.

Some of the elements require access to the managed system. If the managed system is not accessible, the second link to the element is not shown in the popup for these elements.

- Copy and paste the link name into any tool that supports hyperlinks (for example, your email client or Microsoft Office applications). Note that text editors like notepad don't support hyperlinks.
- Copy the link URL and paste it into a browser to provide access to the document content.
- Use the *Send by E-Mail* button and MS Outlook opens with a new email containing the link.

4.6.2 Document Attributes

Document Type and Status

The most important document attributes are *Document Type* and *Status*.

The *Document Type* determines the following:

- Which usage restrictions apply to a document in Solution Documentation.

- Which completeness rules apply to a document in Solution Documentation.
- The status values that a document can take according to the status schema assigned to the document type.
- Whether a document had to be signed to take a defined status according to the assigned status schema.
- Whether a document can be released to the parent branch depending on its status and the parent branch type.
- Whether a document is included in a generated process document.

Document type and status are, along with document name, the only mandatory attributes of a document. Document types can be created, copied, modified, and deleted in solution administration.

Document Types can have a template assigned. A newly created document is then based on the template document content assigned to the corresponding document type. A document type can be used in a solution only if a template is assigned.

The indicator *Process Document relevant* determines if a document will be included into a generated process document (if setting *Process documentation relevant document types* is selected when process document is generated).

Document types must have a *status schema* assigned. A status schema defines the order of status values a document can pass through, if the document is locked in specific status values, and if the document must be digitally signed to take on a following status value. You can define status values in SAP Solution Manager Configuration in *Process Management* > *Define Values for Document Attributes*.

Status values carry an indicator *Released*. The Business Add-In BADI_SMD_DOCUMENT_LIFECYCLE allows to configure the check of document status that is done before releasing a document to parent branch depending on its document type and parent branch type. By default, for all document types, releasing a document to production branch is only possible if the document is in a status with indicator *Released* set.

Using status values, you can define status schemas in SAP Solution Manager Configuration in *Process Management* > *Define Values for Document Attributes* that can be assigned to document types.

Sensitivity

The attribute *Sensitivity* is intended to classify documents by their confidentiality. The sensitivity is, beside document type and status, taken into account in document authorization checks.

Process Document Relevance

The document attribute *Process Document Relevant* determines if a document will be included into a generated process document (if setting *Process documentation relevant documents* is selected when process document is generated).

Other attributes like *Priority*, *Keywords*, and *Technical Name* can be used to classify documents. Attribute *Description* allows to a hold a text of arbitrary length.

Customer Defined Attributes

You can define customer specific attributes in SAP Solution Manager Configuration in *Process Management* > *Define Document Attributes*. Customer specific attributes can be modelled as single- or multi-valued, changeable or read-only for users, and visible or hidden at the user interface.

4.6.3 Authorization Checks

Authorization checks protect Documents from unauthorized usage. Authorization checks for documents are based on authorization objects `S_SMDDOC` and `S_SMDATT`.

Authorization object `S_SMDDOC` allows to provide authorization for the activities create, change, display, delete, model, administer, and unlock documents. Authorizations can be provided solution specific and restricted to document types, status values, and sensitivity values.

Authorization object `S_SMDATT` allows to provide authorization to set attributes to specific values. For example, a user may not have authorization to change the sensitivity of a document. The authorization is checked for all attributes, except *Name* and *Description*, including customer defined attributes that are changeable.

SAP provides the predefined roles `SAP_SM_KW_ALL` for full authorization, `SAP_SM_KW_DIS` for display only authorization, and `SAP_SM_KW_EXE` for edit authorization. You can use these roles as templates to create your own roles tailored to your needs.

4.6.4 Document History

Like for all element types, you can display the history of a document via context menu *Display History*. The displayed changes affect the element attributes, the document content and document attributes. You can also display attributes and content of former (historical) versions.

In the *Standard View* (button *Show Details* is visible), each line represents an element version or a document version. These lines are displayed in different colors in column *Changed At*. By selecting a line, the attributes of element and document are displayed. If a document version has been signed, an icon is displayed in column *Sign* as an indicator. The document content can be displayed by pressing the link in column *Name*.

The *Detailed View* (button *Hide Details* is visible) offers detailed information about attribute changes. Old and new attribute values are listed, steps in digital signature processes or lifecycle operations are displayed.

Structure changes are changes in the set of child elements of the current element. You can exclude structure changes from the history list. This is the case if button *Show Structure Changes* is visible. If the button *Hide Structure Changes* is visible, structure changes are displayed. You can navigate to the history of a child element by pressing the corresponding child element link in column *Old Value* or *New Value*. The navigation path to the currently displayed element is displayed and allows back navigation.

The option *Display: Visible Versions Only* restricts the display to those versions that are visible from within the current branch. Option *All Versions* shows versions of all branches, that means the complete history.

The button *Print document version* generates a printable MS Word document containing attributes and digital signature information together with the content of the document version (for versions in format `.DOCX`) or a link to the document version in SAP Solution Manager (for versions in different format).

If a document already existed in SAP Solution Manager 7.1, the button *Show History in SAP Solution Manager 7.1* allows to navigate to the document history in SAP Solution Manager 7.1.

5 Executable Analysis Dashboard

Use

The executable analysis dashboard can provide development manager and process responsible with an overview about their developments and processes for which they are responsible. The dashboard shows for a selected system and client the usage of SAP and non-SAP (custom code and third party code) programs and transactions. In addition, the software component, development class and information what is documented in the Solution Documentation is indicated.

The entry point for the executable analysis dashboard is the *SAP Solution Manager Launchpad* area *Project and Process Management*. When you click on the tile *Executable Analysis*, the dashboard starts in another browser window.

The dashboard is per default empty, because you have to select a system with client first. With a click on the filter icon you can open a popup on which you can select one system and client. All tiles of the dashboard are filled depending on your selection. The combination system and client (e.g. PRD:100) works as a global filter for all tiles in this dashboard.

The dashboard is separated into two groups:

- The first group is Data Collection (Transactions and Reports) [page 150] with four tiles. Here you get basic information about executed objects.
- The second group is Executed Object Statistics [page 151] with two tiles. Here you get more information and statistics in detail about used and executed objects.

Prerequisites

The necessary authorization is defined in role `SAP_SM_DSH_DISP_EXECANA` which is part of the Solution Documentation template users. You can create these users in the *SAP Solution Manager Configuration* (transaction `SOLMAN_SETUP`) in the scenario *Process Management*, step *Define Authorization Concept*, substep *Create Template User*.

There is no special configuration necessary. However, the executable analysis considers SAP and non-SAP reports and transactions. The standard namespace is covered, but if you develop in your own namespace, you have to customize this with transaction `SM30`. There is a maintenance view for table `AGSEAN_CUSTOM`, in which you can configure the name space for your systems. The *Action* should be maintained as `DEVC`. The *Identifier/Value* is the development class (package) and the indicator *Flag* in the last column should be set to `X`.

More Information

Dashboard Builder

5.1 Data Collection (Transactions and Reports)

The group *Data Collection (Transactions and Reports)* consists of the following tiles.

Data Sets

The tile Data Sets shows the number of available month which are the basis for all tiles and there calculated summaries as well as the details. The value is calculated from available data which are generated in the library generation cockpit which is part of Solution Documentation. There is an additional drill down available. The drill down provides a list of the available month where data are collected and extracted for the KPI calculation of all tiles in this section. In addition the data provider is illustrated (transaction `ST03N` or BW InfoCube) where the data comes from.

For all tiles only the monthly data which are listed are taken into account. That means that there is no drill down to weekly or daily data. For some tiles are all month are considered (e.g. used SAP objects or used non-SAP objects) and for others (e.g. the Executed Object Statistics) only the last month is considered. That means that the dashboard values will change at the beginning of a month, if the last month is completed and all data are collected and added. Hence it is stable until the end of the month.

The maximum number of month is twelve. That means that one year back is considered for the calculation. If a new month is added, the data for the oldest month will be deleted for the calculation.

Used SAP Objects

The tile illustrates the number of used SAP objects in the mentioned time frame of tile *Data Sets*. The value is calculated from available data which are generated in the library generation cockpit which is part of Solution Documentation. The number contains the usage reports and transactions for all available month. You can click on the tile for more details and there is a drill down to the list of reports and transactions which are relevant for the calculation.

The list contains the object type, object name, software component, package, documentation as well as the counter (number of dialog steps, execution) of the transaction or report. Furthermore, the drill down to the top 100 and bottom 100 reports and transactions is available as well as a drill down to the executables by application. For the list you have no option to illustrate this as a graphic. The executables by application are illustrated as a column chart. There it is also possible to switch to other chart types. All data of the drill down can be downloaded to an EXCEL file and saved locally.

Used Non-SAP Objects

The tile illustrates the number of used non-SAP objects (custom code and third party code) in the mentioned time frame of tile *Data Sets*. The value is calculated very similar to the number of SAP objects for all available months. You can also click on this tile for more details. The lists are similar to the list with SAP objects, but the

software component is missing here, because there are no values. The last drill down shows the number of non-SAP objects summarized by development class in a column chart.

Standardization

The tile illustrates the standardization regarding the selected system and client. It is the ratio of used SAP and non-SAP reports and transactions. The value is an indicator how close you work to SAP standard software. Non-SAP code can extend test, maintenance and upgrade costs.

The tile has no further details and therefore the information *No Details* is added to the tile on the bottom left corner. The magnifier on the top right corner of the tile can be clicked in order to enlarge the graphic.

5.2 Executed Object Statistics

The group *Executed Object Statistics* consists of the following tiles.

Statistics for SAP Objects

The tile shows the top ten SAP executables which can be a mixture of reports and transactions. It is sorted by default and on top is the report or transaction with the highest number counter (e.g. number of dialog steps, calls). The value is calculated for the last month, which is available in the details of the first tile. If you click on the tile, there are more details available. The magnifier on the top right corner of the tile can be clicked in order to enlarge the graphic.

The drill down contains details for top ten reports as well as top ten transactions. Both are illustrated as bar chart by default. It is also possible to switch to other chart types. The time frame is again last month. Furthermore all transactions and reports are provided in list views for all available month. The list contains beside executable type and name of the package and software component information as well as the Solution Documentation information. This means, that the executable is documented in at least one solution/branch. The list of the executables can be very long and it takes time to load within the browser UI. The rendering needs the most time. Therefore, a download function is available to save all in Excel for further investigations.

Statistics for Non-SAP Objects

The tile is very similar to the statistics for SAP objects, but restricted to non-SAP objects (custom code and third party code). The drill downs and the function is exactly the same like tile *Statistics for SAP Objects*. If there are no data available (e.g. you use only SAP programs and transactions), you get the text “not available”.

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