Security Guide | PUBLIC
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Security Optimization Guide

THE BEST RUN SAP

Content

1 Document History

> ⚠ Caution
>
> Before you start using this guide, make sure you have the latest version of this document. You can find the latest version at https://help.sap.com/viewer/p/SAP_Solution_Manager *select your version* *Implement* *Security*.

The following table provides an overview of the most important document changes.

Support Package Stacks (Version)	Date	Description
SP13	2021-08-02	**Data Protection and Privacy Measures** In section *Simplification of Deletion*, added information on authorization protection mechanism for application *ASU Toolbox*. **SAP Notes** • 2250709 Solution Manager 7.2: End-User Roles and Authorizations Corrections as of SP01 and higher • 2257213 Berechtigungen für RFC-Benutzer für SAP Solution Manager 7.2 SP02 und höher • 3058852 User Management Recommendation SAP Solution Manager 7.2: SMD_AGT In section *Simplification of Deletion*, added information for *UX Monitoring* on how to delete any personal data within a recorded script before uploading it. In all sections, added information for *SUT Management* application.

Support Package Stacks (Version)	Date	Description
SP12	2021-02-01	**S-User Expiration Date** Updated section on the deletion of personal data within chapter *Data Protection and Privacy Measures*. SAP's backbone is the leading system in regards to S-user assignments and usage. S-users, which are created, edited, and deleted or expired in the backbone are replicated into the SAP Solution Manager system accordingly. → Remember Update your S-User regularly in the SAP backbone system. **Data Protection and Privacy Measures** - added new ILM archiving object for Test Management `SM_TPLN` **New Sections** - Protecting Functions and Tables **Managing Authentication** Added information on removal of obsolete technical users such as `SMD_AGT`, due to security criticality.
SP11	2020-05-11	**Securing Data, Data Flow, and Processes** Updated section *Securing Attachments, Uploads, and Download* with paragraph on parameter setting for size limitations when uploading files. **Updated sections** - Updating Authorizations and Roles - Using Authorizations to Restrict System (LDMB) Data - How to Handle Default Standard Users **New section Modifying Values in Authorizations**
`SP09`	2019-06-17	**Data Protection and Privacy Measures** - new section on *Interface Documentation* - additional information for *GSS* in section *Simplification of Deletion of Personal Data* - new section on *SAP's Support Backbone Channels*, see in chapter *Securing Channels and Destinations* - additional information on upload functionalities, see section *Securing Attachments, Uploads, and Downloads*
`SP08`	2019-03-11	Minor changes

Support Package Stacks (Version)	Date	Description
SP08	2018-12-03	**Data Protection and Privacy Measures** Added new information to all sections: • Reporting: Improvement of report options • Deletion: Added deletion relevant authorization objects to specific administration roles • Table Access: Added new authorization groups to administration roles • Change Log: Added change log information to relevant administration roles
SP07	2018-05-25	**New section on Data Protection and Privacy Measures** New chapter on specifics for personal data protection measures. Check the **main collective SAP Note** 2610137 **Personal Data related information within SAP Solution Manager**. **i Note** In the majority of cases, compliance with data privacy laws is not a product feature. SAP software supports data privacy by providing security features and specific data-protection-relevant functions such as functions for the simplified blocking and deletion of personal data. SAP does not provide legal advice in any form. The definitions and other terms used in this guide are not taken from any given legal source. **Composite Roles** As of SP07, composite roles in SAP Solution Manager are no longer supported. All business user definitions with accordingly assigned roles are available with their documentation in application Solution Manager User Administration (SMUA) and in transaction SOLMAN_SETUP. For more information on business users (Use Case IDs), see the according section in the *Authorization Concept Guide*. For more information on the application SMUA, see the *Secure Configuration Guide*. **New section on Managing Authorizations** New section on critical SAP BASIS authorization objects and Solution Manager authorization objects

Support Package Stacks (Version)	Date	Description
SP06	2017-10-16	**General Information** First publication • As of Release 7.2, the security information on topics related to SAP Solution Manager is published within five separate guides: ○ *SAP Solution Manager Authorization Concept* This guide contains all information referring to the general concept of security and authorizations for the complete stack for SAP Solution Manager. ○ *Secure Configuration Guide* This guide contains all information referring to security aspects, users and authorizations used in transactions SOLMAN_SETUP and SMUA. In addition, users and authorization for the migration procedure for the process documentation are included. ○ *Application Security Guide* This guide contains all information referring to security aspects and authorizations for individual scenarios/applications. **i Note** All relevant changes for the individual applications/scenarios are documented in the document history of the individual sections. ○ *SAP Fiori Application Guide* This guide contains all information referring to security aspects for all delivered SAP Fiori Apps (ST-UI). ○ *Secure Optimization Guide* This guide contains information referring to security aspects for SAP Solution Manager users and roles in regards to Optimization and Operation.

2 List of Roles Updated per SP

Starting as of SP13, you can find here a list of all updated roles per SP. For each role, we recommend to check in the menu tab of the role in transaction `PFCG` for detailed change information.

Updated Roles per SP

SP	Roles
SP14	• `SAP_CM_MANAGED_CTS_DEV` (with Software Component ST-PI 740 SP16) • `SAP_CM_MANAGED_CTS_OPERATOR` (new with Software Component ST-PI 740 SP16) • `SAP_CM_MANAGED_CTS_CHANGEM` (new with Software Component ST-PI 740 SP16) • `SAP_CM_MANAGED_CTS_TESTER` (new with Software Component ST-PI 740 SP16) • `SAP_CM_MANAGED_CTS_ADMIN` (new with Software Component ST-PI 740 SP16) • `SAP_SM_COMM` • `SAP_STWB_WORK_ALL` • `SAP_CM_MANAGED_CTS_DEV` • `SAP_CM_SMAN_OPERATOR` • `SAP_SDCCN_ALL` • `SAP_SOLMAN_TMW_702` • `SAP_SOLMAN_READ_702` • `SAP_SM_SL_ADMIN` • `SAP_SM_TSTR_THIRD_PARTY_INT`

SP	Roles
SP13	SAP_CCLM_ALL
	SAP_CCLM_DIS
	SAP_DVM_SERVICE
	SAP_CM_SMAN_ADMINISTRATOR
	SAP_OP_DSWP_BPM
	SAP_OP_DSWP_BPM_DIS
	SAP_SETUP_BASIC_ARCHIVE
	SAP_SETUP_NOTEDOWNLOAD
	SAP_SETUP_SYSTEM_PREP
	SAP_SM_BASIC_SETTINGS
	SAP_SM_ITSM
	SAP_SM_TSTR_THIRD_PARTY_INT
	SAP_SOLMAN_READ_702
	SAP_SOLMAN_TMW_702
	SAP_STWB_WORK_ALL
	SAP_STWB_WORK_DIS
	SAP_SM_ECET
	SAP_TM_CONFIG
	SAP_SMWORK_TECH_MON

3 Introduction

Motivation and Use of This Guide

This guide refers to **Security Optimization and Operation** topics for SAP Solution Manager to ensure a standard security concept.

> ℹ Note
>
> If you require a higher level of security, we recommend specific security consulting.

For general information on the authorization concept of SAP Solution Manager, application-specific authorizations, SAP Fiori Apps, or setup security, refer to the complimentary guides on SAP Support Portal at: https://help.sap.com/viewer/p/SAP_Solution_Manager ▶ *SAP Components* ▶ *SAP Solution Manager* ▶ *<current release>* ▶ (updated with every change per Support Package).

For any issues with security, authorizations, roles, or user management for SAP Solution Manager, use message component `SV-SMG-AUT`.

This security guide does not give any advice on whether these features and functions are the best method to support company, industry, regional, or country-specific requirements. Further, this guide does not give recommendations with regard to additional features that would be required in a particular environment; decisions related to data protection must be made on a case-by-case basis and under consideration of the given system landscape and the applicable legal requirements.

OWASP Top 10

> → Remember
>
> **It is highly recommended to treat an SAP Solution Manager system as integration platform and one access to all your attached managed systems, in terms of security with the same care as all your other business systems.**

Securing your system environment and all applications running on them is critical to your business, specifically business data. According to the *Open Web Application Security Project* (OWASP Top 10 in 2017), the main points of attack to your systems are as follows:

1. SQL Injections
2. Authentication and Session Management
3. Cross Site Scripting
4. Function Level Access Control
5. Security Misconfiguration

   > → Tip
   >
   > To avoid misconfiguration, check the *Secure Configuration Guide* for SAP Solution Manager.
6. Sensitive Data Exposure

7. Attack Protection
8. Cross - Site Request Forgery
9. Components with Known Vulnerabilities
10. Underprotected APIs

This guide deals specifically with authentication, data protection, and access control. It is intended to help you secure your SAP Solution Manager applications, and optimize security controls.

Integration

Security topics are relevant for the following phases:

- Upgrade
- Operations
- Optimization

> → Recommendation
>
> Use this guide during the mentioned phases. For a detailed overview of which documentation is relevant for each phase, see guide references on SAP Support Portal at: https://help.sap.com/viewer/p/SAP_Solution_Manager *SAP Components* *SAP Solution Manager 7.2* .
>
> This document is focused on a selection of important security-related settings in the SAP Solution Manager system to ensure a greater security during operation of the system. Due to its compact nature, it is not complete. In-depth resources on SAP security can be found on SAP Support Portal, SAP Help Portal, and SAP Developer Network sites.

What is Your Opinion?

We are always interested in how we can improve our documentation to your needs. At SAP Support Portal, you can leave your feedback online, which is regularly checked by us.

More Information

For a complete list of the available SAP security guides, see SAP Support Portal: https://help.sap.com/viewer/p/SAP_Solution_Manager

4 Managing Authentication

4.1 Vulnerability

Authentication management is one of the major concerns in regards to the security of your system landscape. Authorizations and authentication issues allow any external attacker to infiltrate your system. Also, any authorized user may attempt to steal and hamper the data in your system. Therefore, any leaks or flaws in your authentication or authorization concept, such as exposed user accounts or plain passwords, default users with unlimited authorizations, can lead to attacks. Any such attack may lead to an exposure of your user accounts. This applies specifically to accounts with high privileges. An attacker may start with a user with low privileges and try to obtain higher ones.

The following sections describe in detail recommendations for dealing with default users in SAP Solution Manager, such as `SOLMAN_ADMIN`, or technical users with high privileges, such as `SOLMAN_BTC`. Recommendations include specific authorizations to restrict access to these users, secure password policy, and others.

> → Recommendation
>
> A quick list of recommendations:
>
> - Protect passwords and encryption keys
> - Change default user names and passwords
> - Restrict access to storage for credentials
> - Have different credentials in development and productive systems
> - Use finely-tuned credentials on user levels (segregation of duty)
> - Store credentials in protected storages

4.2 Overview: All Standard Users Created in Basic Configuration in Transaction SOLMAN_SETUP

Underneath, you find an overview of all users used and created within transaction `SOLMAN_SETUP` (Configuration of SAP Solution Manager).

- SM=Solution Manager System
- MS=Managed Systems
- BW=Business Warehouse
  SAP Solution Manager
- SLD - Users SAP Solution Manager

Technical Users

SAP Solution Manager System

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SMD_AGT	System	ABAP	SM	System Preparation	To connect Diagnostics Agent to SAP Solution Manager Java stack
SOLMAN_BTC	System	ABAP	SM	System Preparation	To run all required batch jobs for the basic configuration of SAP Solution Manager
SM_EXTERN_WS	System	ABAP	SM	System Preparation	For external web service communication between Diagnostics Agent and SAP Solution Manager
SM_INTERN_WS	System	ABAP	SM	System Preparation	For internal web service communication between ABAP and Java stack of SAP Solution Manager
BI_CALLBACK	System	ABAP	SM	Infrastructure Preparation	For reorganization of BW data in SAP Solution Manager; for configuration validation
SM_AMSC	System	ABAP	SM	System Preparation	For Automated Managed System Configuration to run update job
SMD_RFC	System	ABAP	SM	System Preparation	To connect ABAP and Java stack
SM_EFWK	System	ABAP	SM	System Preparation	To run Extractor Resource Manager Step, and in case of local BW system, used to load data in the BW system
SM_TECH_ADM	System	ABAP	SM	System Preparation	For setting up SAP Solution Manager as managed system
SMB_*	System	ABAP	SM	Managed System Configuration	For back communication from managed system to SAP Solution Manager
Guest (Wily)		Java	SM	Managed System Configuration	Built-in user of the Introscope Enterprise Manager

Managed System

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SMDAGENT_xxx	System	ABAP	MS	Managed System Configuration	To connect Wily host to managed systems
READ	System	ABAP	MS	Managed System Configuration	To read table information from the managed systems
TMW	System	ABAP	MS	Managed System Configuration	To read table information from the managed systems and schedule batch jobs in the managed systems
SM_COLL_xxx		ABAP/ Java	MS	Managed System Configuration	For data collection in the managed system

BW System

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SMD_BI_RFC	System	ABAP	BW	Infrastructure Preparation	In case of a remote BW system used to load data into the BW system
SM_BW_ADMIN	System	ABAP	BW	Infrastructure Preparation	To initially configure the BW system
SM_BW_ACT	System	ABAP	BW	Infrastructure Preparation	For scenario-specific content activation on the BW system
SM_BW_XXX	System	ABAP	BW	Infrastructure Preparation	In case of a standalone BW system used to extract data
SM_BOC	System	ABAP	BW	Infrastructure Preparation	Business Objects Cloud

SLD Users

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SLD_CS_USER	System	ABAP	SLD	Infrastructure Preparation	For collecting system landscape information
SLDAPIUSER	System	ABAP	Central SLD		

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SLDDSUSER	System	ABAP	SLD		For SLD data suppliers to write technical system information into SLD

Dialog Users

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
DDIC	Dialog	ABAP	SM		This is a user required for any SAP System. For any additional information on this user, read the SAP NetWeaver documentation for the relevant SAP Basis release. **⚠ Caution** This user usually receives profiles SAP_ALL and SAP_NEW. **Therefore, we highly recommend to deactivate the user after configuration and/or change password.**
SOLMAN_ADMIN	Dialog	ABAP	SM	Procedure Call (Pop-Up)	**Configuration User** relevant for SAP Solution Manager to be used for Guided Procedures: System Preparation, Infrastructure Preparation, Basic Configuration, Managed System Configuration, EWA Management
SAPSUPPORT	Dialog	ABAP	SM, BW, Managed System	Basic Settings Configuration, Managed Systems Configuration	Diagnostics **display** user for SAP Support
SAPSERVICE	Dialog	ABAP	SM, BW	Basic Settings Configuration	Service Delivery user for SAP Support
SM_ADMIN_xxx	Dialog	ABAP	MS	Managed System Configuration	Configuration User for managed systems in ABAP stack and/or Java stack
J2EE_ADMIN	Dialog	ABAP/Java	MS	Managed System Configuration	For Java stack administration

User	User Type	Stack	In System	Created in Guided Procedure View SOLMAN_SETUP	Additional Remarks
SA_ADM_XXX	Dialog	ABAP	SM	Basic Settings Configuration	SAP Solution Manager administration

4.3 Overview: All End-Users and Business Partners per SOLMAN_SETUP Scenario

For all scenarios, you need to create users in your systems. For some scenarios, you may as well need to create Business Partners related to your users. The following lists give an overview of scenarios that require users in the Solution Manager system, the managed systems, the BW-system, and functions that require business partner users in the Solution Manager system:

Scenario	User in Solution Manager	User in Managed System	User in BW System	Business Partner Required
Implementation	X	X (Customizing Distribution)		X
Test Management	X	X (Test Execution)		
Incident Management	X			X
Technical Administration	X	X		
Application Monitoring	X		X	X
Business Process Operation	X		X	
Change Request Management	X	X		X
Quality Gate Management	X			X
Root Cause Analysis	X	X	X	
SAP Engagement and Service Delivery	X		X (Issue Management)	
Job Scheduling Management	X		X	

Scenario	User in Solution Manager	User in Managed System	User in BW System	Business Partner Required
LMDB	X			X

4.4 Using Solution Manager User Administration

SAP Solution Manager Administration Views: Security, Users

SAP Solution Manager Administration contains views relevant for the administration of the SAP Solution Manager system. Here, the views *Security* and *Users* are mentioned in detail as they refer to security of your system.

You can access the tiles using transaction `SM_WORKCENTER` and the Fiori Launchpad.

View: Security Critical Activities

As of SAP Solution Manager Release 7.2 SP05, steps and activities with the basic configuration of `SOLMAN_SETUP` that are relevant for overall security of your system, are flagged as security-relevant. You can display all of them in one view within the SAP Solution Manager Administration work center under the heading of *Security*. More information on specific topics of these steps can be found in the following sections in this guide.

View: Users

The view *Users* gives you access to the *Solution Manager User Administration (SMUA)*. This tool is described in detail in one of the following sections in this guide.

How to Access The Overview

You can access the overview on all security-relevant activities in the corresponding tile from section *Solution Manager Administration* on the SAP Fiori Launchpad.

The tile is not displayed by default.

> **i** Note
>
> If you require the tile, you need to personalize the SAP Fiori Launchpad accordingly.

Required Authorization

To be able to use the tile, you require at least the following roles:

- SAP_SM_SECREL
- SAP_SOLMAN_SETUP_ADMIN_ALL
- SAP_SMWORK_SM_ADMIN - access
  Also, you can create a user from SAP Solution Manager Administration use case ID *SA_DIS_<System ID>*, in the basic configuration procedure in transaction SOLMAN_SETUP.

→ Recommendation

We recommend using a dialog user created from the template user SOLMAN_ADMIN to use the application in edit mode.

4.5 How to Handle Default Standard Users - SOLMAN_ADMIN, SMC* Users, and Template Use Case IDs

General Considerations

Any default standard user in a system can pose a serious risk to your system landscape. In the scope of SAP Solution Manager, a number of **default users** are shipped for convenience purposes, such as dialog user SOLMAN_ADMIN, used for the basic configuration of SAP Solution Manager, or users starting with naming convention SMC*, to which are assigned all the necessary roles and authorizations to run a guided procedure configuration. Below, see a detailed explanation as to how to handle these users.

→ Recommendation

In general, we recommend using any dialog standard default user delivered with SAP Solution Manager as a template only, and creating a specifically-named dialog user. You can do this with all relevant standard default use case IDs shipped with SAP Solution Manager. This allows you to directly follow any actions of this user in the system, which would not be the case if you leave them to remain default users. **In production, either remove any created default users from the system, lock them, or remove their role assignment, and so on.**

Avoiding Profile SAP_ALL with Dialog User SOLMAN_ADMIN

ℹ Note

Avoid users with profiles SAP_ALL and SAP_NEW for configuration.

Handling User Roles for SOLMAN_ADMIN

The only task of the dialog template user SOLMAN_ADMIN is to be able to configure the *Basic Settings* for SAP Solution Manager system landscape to run Infrastructure, Prerequisites, Managed Systems, and Cross Scenario settings, as well as the mandatory scenario EarlyWatch Alert Management. It is not tailored to be able

to run any application or any other configuration procedure. The user is assigned a number of roles, which allow the above-mentioned guided procedures to be configured. The authorizations are a minimal set. Still, the number of authorization objects and the combination of these objects make this user a security issue in its own right. Therefore, we recommend the following as to how to handle the user:

→ Recommendation

- To be able to follow historical documents for forensics purposes, employ this user as a template to create a named dialog user.
- To be able to control the activities of such a powerful user, create separate users with Segregation of Duty, such as a user to configure, a user to be able to run *User Management*, and a user to execute *role assignment*.
- When you **update** your SAP Solution Manager system configuration, check the user authorizations for this user again, and update its authorizations.
- Use the default user `SOLMAN_ADMIN` to create any of the scenario-specific configuration users `SMC*` and technical users. Afterwards, immediately remove role `SAP_SM_USER_ADMIN` from the user.
- Only allow the configuration users actively in the system for the time of configuration. Lock them afterwards or set a limited *Time Validity*.
- If you require a user to display and check specific configuration settings, substitute all roles with full authorizations with their analogues roles for display usage.

Using Predefined Authorization Roles and Adapt Them

All roles assigned to users created in transaction `SOLMAN_SETUP` are fully maintained. For authorization fields that cannot be prefilled by SAP with default values, an asterisk (*) is maintained, which allows **full authorization for this field**. For instance, the field for system ID in authorization object `AI_LMDB_OB` cannot be prefilled by SAP due to its generic nature.

→ Recommendation

We strongly recommend maintaining any fields in authorization objects in delivered roles to maintain according to your security guidelines.

Update Users When Roles Need to be Updated

Update your users, when roles/authorizations need to be updated. In addition, you can choose to update/enhance an existing users with additional role assignments using the update functionality. For instance, you can update/enhance user `SOLMAN_ADMIN` with configuration roles for scenario-specific guided procedures in `SOLMAN_SETUP`.

You can upload the authorization roles for the `READ` user and the `TMW` user from SAP Solution Manager into the managed systems.

Handling Password Changes

⚠ Caution

When changing or resetting the password for user `SOLMAN_ADMIN`, you need to also change the password within the Solution Manager User Administration (SMUA) application, which is accessible via transaction `USR_MNGT`. The system then pushes the information to the genstore.

> → Tip
>
> If you have changed the password for the user SOLMAN_ADMIN and you encounter frequent locks, it is likely that the user is used in multiple configuration scenarios. We highly recommend employing this user only for configuration purposes, and deactivating it after configuration. For more information, see the section on this user in the *[[unresolved text-ref: Secure Configuration Guide for SAP Solution Manager]]*.

Use the following trace possibilities:

- The audit log trace using transactions SM19 and SM20 to determine the source address from which the user is trying to access the system.
- The change documents using transaction SUIM to determine the reason why a user is locked.
- Check SAP Note 1493272 - A user gets locked automatically for information on how to check on Java stacks.

Use Case ID: SMC_*** Configuration Users

All SMC_**Configuration Users* receive the following roles and according authorizations:

- SAP_*_CONF* role: contains all relevant application specific authorizations for mandatory as well as for optional activities. See as well the following link on the difference between mandatory and optional settings configuration in ITSM "Quick Setup": https://blogs.sap.com/2017/08/14/sap-solution-manager-7.2-it-service-management-quick-setup/

  > → Recommendation
  >
  > In case you want to configure only the minimal settings for your scenarios, and would need to have this reflected in your roles as minimal authorizations, you require to run a specific trace for only mandatory activities and then either build your own roles or remove unnecessary authorization objects from SAP delivered roles. We recommend running the configuration with the delivered SAP standard roles, and either set the user after configuration inactive or remove (or substitute or set inactive) the assigned roles. Do not keep the configuration user in an active state in your system.

- SAP_SM_SMUA_ALL role: contains full authorization for *Mass User* creation in the Solution Manager User Administration
- SAP_SM_ROLECMP_ALL role: contains full authorization for the *Role Adjustment* tool within transaction SOLMAN_SETUP.
- SAP_SM_USER_ADMIN role: contains full authorization for *User Management* (transaction SU01) and *Role Management* (transaction PFCG).

> → Recommendation
>
> We recommend to use the predefined configuration user template to create a named configuration user for the configuration, as the authorizations assigned to these users are specifically tailored to the individual procedure. In this way, you can ensure, that the user cannot be misused to any other task.

SOLMAN_SETUP User Generation Dialog POP-UP

General Information

Any of the scenarios in SAP Solution Manager is to be configured using the Guided Procedure (GP) for configuration of it in transaction `SOLMAN_SETUP`. To avoid a configuration user to need profile `SAP_ALL`, specific configuration user templates are shipped with minimal authorizations assigned (template user name convention: `SMC*`). Whenever a new dialog user is starting to configure a new GP in transaction `SOLMAN_SETUP`, this user is checked automatically by the system for correct authorizations. In case the user in question does not have the required roles, a pop-up is displayed by the system and the user can be created with the required authorizations.

> → Tip
>
> If you do not assign transaction `SU01` (or respective role `SAP_SM_USER_ADMIN`) to your user, but authorization object `SM_SETUP` with `ACTVT 02`, the system automatically displays a pop-up which contains the possibility to *Request Authorizations* for a guided procedure. In this case, the system generates an HTML report with the required authorization roles for the specific Guided Procedure.

How to Deactivate the Authorization Request Dialog

The pop-up itself can be deactivated by the user in different ways:

- Call transaction `SOLMAN_SETUP` by *ignoring* the Pop-Up *Always*
- Set a personal setting for it.

  > i Note
  >
  > Any user can deactivate this pop-up using the *Personalization* link, whenever roles are updated with authorization objects by SAP. *This does not work for newly shipped roles.*
  >
  > 1. In the User Interface of the transaction, choose the link *Personalization*.
  > 2. Mark the box for **Logged on User**.

- Add the user parameter `SETUP_HIDE_PERMCHECK` to the user profile of the configuration user.

  > → Recommendation
  >
  > We recommend this version to be used and set by your *System Administrator in advance to configuration*.

Restricting Access Transaction SOLMAN_SETUP by Using Critical Authorization Object SM_SETUP

The authorization object `SM_SETUP` controls whether a user can access transaction `SOLMAN_SETUP`. In addition, it controls which functions can be used by user `SOLMAN_ADMIN` within this transaction.

Overview on Specific Role Restrictions During Administration and Operation

After the configuration or update of the configuration of SAP Solution Manager, you can restrict authorizations for the dialog user SOLMAN_ADMIN, if needed. For instance, role SAP_J2EE_ADMIN allows administration authorization for all areas of J2EE. To separate and/or restrict this authorization, you can de-assign this role to user SOLMAN_ADMIN and assign the relevant restrictive roles. In addition, the following roles should be **de-assigned after configuration**:

- SAP_SM_USER_ADMIN: Remove it or restrict. The role contains authorization object S_USER_GRP with ACTVT 05 (unlock). This authorization is used to unlock locked users during the configuration of users (create, update). ACTVT 03 (display) is added for the user to check the status of the BACK RFC-user.
- SAP_SM_GATEWAY_ACTIVATION
- SAP_SM_ROLECMP_ALL
- SAP_SM_SMUA_ALL
- SAP_SM_RFC_***: The object S_RFC_ADM allows the user to have access to transaction SM59 (coupled with authorization object S_TCODE: SM59). If you do not want to allow the configuration user to maintain RFCs after the configuration of the managed system has been executed, you can remove the role and the authorizations.

  > **i Note**
  >
  > If authorization object S_RFC_ADM is not assigned to the user who is allowed to display any User Interface with users, roles, and RFC - connection on the same screen such as in transaction SOLMAN_SETUP or in transaction SMUA, the system does not display the RFC - connection information. This can be the case for instance for the User Interface for creating managed system users READ or TMW.

- **Restricting Role SAP_J2EE_ADMIN for User SOLMAN_ADMIN**

Assigned Roles	Restricting roles	Help Text - ID
SAP_J2EE_ADMIN	SAP_RCA_AGT_ADM	AUTH_SAP_RCA_AGT_ADM
	SAP_JAVA_NWADMIN_CENTRAL_READONLY	no Help Text ID, see the according security guide for NW Java
	SAP_RCA_AGT_ADM_VIA_SLD	This role allows to use the Expert User Interface in Java for the Agent Candidate Management. It should only be assigned to specified users.
	sap.com/tc~monitoring~systeminfo*sap_monitoring/SystemInfo_Support_Role	no Help Text ID, see the according security guide for NW Java
	sap.com/SQLTrace*OpenSQLMonitors / OpenSQLMonitorLogonRole	no Help Text ID, see the according security guide for NW Java

Assigned Roles	Restricting roles	Help Text - ID
	SAP_SLD_GUEST	Read access to SLD ⚠ Caution If you restrict access to technical systems in the ABAP stack, using authorization object AI_LMDB_OB, a user with access to SLD and role SAP_SLD_GUEST can read all system information in SLD.

Dedicated Role Adjustment after Support Package Update with Role Adjustment Tool

Part 1: Customer Authorization Value Table Adjustment

When roles need to be updated, you must first at least run transaction SU25 points 2a) and 2b). This is reflected in an activity in the Basic Settings Configuration in transaction SOLMAN_SETUP. Alternatively, follow SAP Note 368496.

Part 2: Update Your Own Roles

Whenever a new SAP role is shipped, the existing SAP role is overwritten in the system. Therefore, we strongly recommend to copy any SAP role which you adjust, in your own name space. This is not relevant for the following roles:

- Roles for technical users in ABAP. These roles are shipped with the authorization objects and their values intended for this purpose only. They should not be maintained and can be used as shipped by SAP.
- As Java relevant roles are assigned to user in the ABAP stack, they do not contain any authorizations, and should not be copied into any name space.

> ℹ Note
>
> All ABAP roles referring to J2EE security (UME) are shipped in the SAP name space. These roles should not be copied into any other name space, as they connect through their technical name the user management of the ABAP stack with the user management of the Java stack.

- For updating individual authorizations and authorization values, choose the *Role Adjustment Tool*.

> ⚠ Caution
>
> The use of this tool can be critical, as it allows manipulation of any customer roles if authorization is given. **Authorization should only be assigned to a specified user responsible for role adjustment**. You can use SOLMAN_ADMIN user to use the *Role Adjustment Tool* for comparing your own customer

roles with updated SAP Standard roles in transaction SOLMAN_SETUP per user. You can also create a specific user for this task, manually. You need to assign this user the following authorizations/roles:

- SAP_SM_ROLECMP_ALL
  The role contains authorization for role adjustment, authorization object SM_ROLECMP.

  > **i Note**
  >
  > Role SAP_SM_ROLECMP_ALL is assigned to all configuration users, created in *Basic Configuration* in transaction SOLMAN_SETUP, technical names: SMC_***.

- SAP_SM_USER_ADMIN
- In addition, you need to assign authorization objects S_TCODE (for SOLMAN_SETUP) and SM_SETUP with ACTVT 03 (Display) to access transaction SOLMAN_SETUP, as well as ACTVT 02 specifically assigned for the *User Creation* step.

4.6 How to Handle Technical Users

Specific Roles for Technical Users

Technical users in SAP Solution Manager are assigned specific roles. A role contains the minimal authorizations required for the task for the corresponding **software component**. Due to the deployment of software components in ABAP, ST, and ST-BCO, as well as the addition of the Java stack, three possible role assignments to technical users are possible.

> **→ Recommendation**
>
> See the *[[unresolved text-ref: Secure Configuration Guide]]* for further details on technical users' roles. The guide describes which critical authorizations are contained in the roles and what needs to be considered by you for secure configuration.

One or Two Roles Assigned (ST: ABAP / Java)

If the ST and ST-BCO components are in separate system due to a remote BW, any technical user with tasks in the ABAP stack receive one single role with the minimal authorizations in SAP Solution Manager. If the user has additional tasks within the Java stack, an additional role might apply.

Two or Three Roles Assigned (ST: ABAP / Java and ST-BCO)

If you are using standard BW, some technical users are assigned more than one role due to the combined use of Software Components ST and ST-BCO. For instance, the technical user SOLMAN_BTC is assigned a role for software component ST SAP_SM_BATCH and a role for software component ST-BCO SAP_BI_E2E.

Several Roles According to Critical Authorization Separation

An exception to the two use cases above is technical user SM_TECH_ADM. This technical user SM_TECH_ADM is used to execute a number of activities for the managed system setup. The code is shipped with software component ST. Therefore, this technical user is assigned one single role with specifically-maintained

authorization objects that form the miminum authorization required in the ABAP stack SAP_SM_TECH_ADM. Role SAP_J2EE_ADMIN is assigned due to the activities of the user in the Java stack. Additionally, single role SAP_SM_USER_ADMIN is assigned, as the user must be authorized to create users in the managed system, separately.

> → Recommendation
>
> We recommend removing the role SAP_SM_USER_ADMIN if you create any managed system user manually in the managed system. In addition, if you do not set up Java systems, you can remove the user role SAP_J2EE_ADMIN as it is the administrator role for the Java stack and security-critical. After configuration, deactivate this user and reactivate only when you run an update of the managed system setup.

Single Role	Help Text
SAP_J2EE_ADMIN	AUTH_SAP_J2EE_ADMIN
SAP_SM_TECH_ADM	AUTH_SAP_SM_TECH_ADM
SAP_SM_USER_ADMIN	SAP_SM_USER_ADMIN ⚠ Caution This role is required for creating the BACK RFC User. You can remove this role if you create the user either manually or via SOLMAN_SETUP with user SOLMAN_ADMIN.

> → Recommendation
>
> The user should be locked after the finished configuration tasks. In case of upgrade configuration, you need to unlock it again.

Operations/Upgrade Mode

When upgrading the system, you need to check in the SOLMAN_SETUP transaction any upgrade relevant activities. Therefore, check all the technical users required for the system for any role updates that are required. Update the users with the roles shipped by SAP. If you want to control which authorizations are updated by SAP, you can use the tool *Role Adjustment Tool* for analysis.

4.7 Removing Obsolete Users

> → Recommendation
>
> We recommend to regularly check all users for obsolete ones, and remove them accordingly. On how to find out about regularly reporting and tools, see section on *Useful Tools*.

Removing Obsolete Technical Users

Obsolete Technical Users

Technical User Name	Obsolete since 7.2 SP	Additional Remarks
SMDS***	6	Changed user name from SMDS_*** to LMDB_DS_***
SMD_AGT	5	

4.8 Check and Secure Dialog Users

Default Users and Passwords

SAP-wide default users such as DDIC, SAP* are security-critical. For default users, the general SAP policy for passwords is relevant. After configuration, change the password for these users, or deactivate them. For more information, check the *[[unresolved text-ref: SAP NetWeaver Security Guide]]*.

→ Recommendation

We recommend checking report RSRFCCHK. With this report you can:

- Check the complete logon info with connection test for a specific user
- Check the type of the user
- Check and monitor users
- Conduct a security measure

Consider regularly using *Configuration Validation*. See the corresponding section *[[unresolved text-ref: Useful Tools]]* in this guide.

Logging Off Inactive Users

For more information, see User Administration Functions

Update Passwords

If you manage users and their passwords solely using transaction SOLMAN_SETUP, the passwords are automatically adapted in transaction SU01 and the RFC destination. In case of CUA, SOLMAN_SETUP can not adapt passwords accordingly. For more information on CUA, see the *[[unresolved text-ref: Secure Configuration Guide for SAP Solution Manager]]*.

4.9 Using Secure Policy for Passwords and Login

Security Policy Parameters to be Used

> **i** Note
>
> With SAP Solution Manager 7.2 and SAP Basis 7.40, you can define group-specific security policies regarding **logon** and **passwords** for your users. For users who should not use the default attributes, you can define individual security policies in transaction `SECPOL` and assign it to users in transaction `SU01` (transaction `SU10` for mass maintenance). For more information, see http://help.sap.com/saphelp_nw70ehp1/helpdata/EN/7f/c52442ad9f5133e10000000a155106/content.htm

Parameter	Description	Default Value
`CHECK_PASSWORD_BLACKLIST`	Check the Password Blacklist	1
`DISABLE_PASSWORD_LOGON`	Disable Password Logon	0
`DISABLE_TICKET_LOGON`	Disable Ticket Logon	0
`MAX_FAILED_PASSWORD_LOGON_ATTEMPTS`	Maximum Number of Failed Attempts	5
`MAX_PASSWORD_IDLE_INITIAL`	Validity of Unused Initial Passwords	0
`MAX_PASSWORD_IDLE_PRODUCTIVE`	Validity of Unused Productive Passwords	0
`MIN_PASSWORD_CHANGE_WAITTIME`	Minimum Wait Time for Password Change	1
`MIN_PASSWORD_DIFFERENCE`	No. of Different Chars When Changing	1
`MIN_PASSWORD_DIGITS`	Minimum Number of Digits	0
`MIN_PASSWORD_LENGTH`	Minimum Password Length	6
`MIN_PASSWORD_LETTERS`	Minimum Number of Letters	0
`MIN_PASSWORD_LOWERCASE`	Minimum Number of Lowercase Letters	0
`MIN_PASSWORD_SPECIALS`	Minimum Number of Special Characters	0

Parameter	Description	Default Value
MIN_PASSWORD_UPPERCASE	Minimum Number of Uppercase Letters	0
PASSWORD_CHANGE_FOR_SSO	Password Change Req. for SSO Logons	1
PASSWORD_CHANGE_INTERVAL	Interval for Regular Password Changes	0
PASSWORD_COMPLIANCE_TO_CURRENT_POLICY	Password Change After Rule Tightening	0
PASSWORD_HISTORY_SIZE	Size of the Password History	5
PASSWORD_LOCK_EXPIRATION	Automatic Expiration of Password Lock	0

Authorization objects S_SECPOL and S_SECPOL_A

If you are using security policies for your users, maintain authorization object S_SECPOL. If required, also maintain authorization object S_SECPOL_A to control which actions a user can execute in transaction SICF_SESSIONS. This authorization object is security-critical when assigned to a user and needs careful consideration. Authorization object S_SECPOL is delivered in its *Inactive* state in role SAP_SM_USER_ADMIN.

Password and Certificate Policy Recommendations

- Use a strong password policy
- Do not send any passwords over e-mail to your users
- Change passwords regularly
- Regularly check certificates and update

Authorization Object SM_GENSTOR (Generic Protection on Genstore)

Authoriaztion object SM_GENSTOR is used as a generic protection of passwords. It is used to protect the relevant function modules which are called during configuration. If you want to filter the access to genstore data, you need to restrict authorization object SM_SETUP in transaction (S_TOCDE) SOLMAN_SETUP_ADMIN.

5 Managing Authorizations

5.1 Vulnerabilities

→ Recommendation

We strongly recommend strictly dividing responsibilities for **roles management** and **user management**, or implement a four-eye-principle workflow. In addition, carefully consider your authorization concept and monitor it regularly. For more information on monitoring and reporting possibilities, see *Configuration Validation* in this guide's *Useful Tools* section. In addition, get familiar with SAP NetWeaver Identity Management, which is used in SAP Solution Manager: https://help.sap.com/saphelp_nw70ehp2/helpdata/en/e1/120024e74011d2962b0000e82de14a/frameset.htm

Quick recommendations

- Implement segregation of duty as part of your authorization concept
- Implement strict acess control with minimal authorizations for the task at hand
- Protect authorization and authentication access
- Align differing authorization concepts as tight as possible
- Update user authorizations regularly
- Allow for limited log access

5.2 Configuration Transaction SOLMAN_SETUP - Segregation of Duty

SOLMAN_SETUP - Segregation of Duty (SoD)

In transaction `SOLMAN_SETUP`, transaction `SU01`(*User Management*) and transaction `PFCG` (*Role Management*) are displayed within one user interface. User management and role management should be handled separately by different users.

You can distribute the tasks to a number of different users. This is possible by using authorizations and roles restrictions:

- *Access* mode restriction: You can allow a user to only be able to access the procedure in *Display* mode by restricting to `ACTVT 03` in authorization object `SM_SETUP`.
- *View* restriction: You can allow for the display and access to specific procedures by restricting authorization object `SM_WC_VIEW`.

- *Step* restriction: You can allow for access to only specific steps within the procedures using authorization object SM_SETUP. For instance, you can allow for a specific administrator (such as for users and authorizations) to be able to edit only user-specific steps and display others. Similarly, you can allow an administrator to be responsible for only BW-related setup to access only those steps in *Edit* mode, and so on.
- *Topic* restriction: You can allow for administrator users for specific topics, such as users and roles, BW configuration, or managed system configuration. Restrict users' role assignments. For more information on which roles are assigned to the dialog user SOLMAN_ADMIN and what authorizations they contain, check the Secure Configuration Guide for this user.

User and Roles Administration Role SAP_SM_USER_ADMIN

Role Assignment

The role SAP_SM_USER_ADMIN contains administrative authorizations for both transactions:

- SU01
- PFCG

This role is assigned to all SMC_*** users and SOLMAN_ADMIN by default, but marked as being **optional**. The role allows for full authorization, which can pose a security risk. For SMC_*** users, it is required to create template users. Therefore, if you refrain from using template users, this role is not required for configuration. **Before generating any SMC_*** user consider carefully the assignment of this role.** It contains authorization for *User Management* (transaction SU01) and *Role Management* (transaction PFCG).

→ Recommendation

- If you work with an SoD between role assignment and user generation, we recommend copying the role manually in transaction PFCG. Differentiate via menu entry between a role for user assignment and role assignment. You can do this by removing, for instance, access transaction PFCG in one role and access transaction SU01 in the other. If this poses too much overhead, we strongly recommend removing the role from your user after configuration or setting a specified time frame validity date for this role. In any case, assignment of the role poses a security risk and should be considered carefully.
- We strongly recommend regulating the use and assignment of this role to your configuration users. In case of dialog user SOLMAN_ADMIN, it is required for all technical users and basic dialog users. After you have created all technical users, remove this role from your SOLMAN_ADMIN user permanently until you need to update roles within the procedure of an SP update for your system.
- In case of SMC_*** users, it is required to create template users. If you do not require your users to create any template users during SOLMAN_SETUP configuration, this role can be dismissed and must not be assigned.

Authorization Objects S_USER_***

→ Recommendation

Whenever you assign any of these objects to a user outside the use of the roles SAP_SM_USER_ADMIN and SAP_SM_USER_DISPLAY, consider carefully how to maintain the values for these objects. We recommend having miminal authorizations such as ACTVT 03 and 08 for display purposes together with transaction SU01D (strict display).

Using Role Namespace and User Group to Separate Users

The *Expert Mode* allows you to use the following features in regard to user creation, role creation as well as assignment:

- Define name space for roles
- Define and assign the user to a specified user group

You can set a specified **name space for the roles**, which the system assigns to one user. The default name space is *Z*.

> **i** Note
>
> All roles assigned to the predefined users:
>
> - SAPSERVICE receive name space ZSD.
> - SMC_MIG_* receive name space ZM.
>
> This name space is set, because the authorizations for these users are predefined and should not be changed.

You can define a **user group for the users** you create. The user is assigned to this user group.

> → Recommendation
>
> - We recommend group users. You can then easily search for them and restrict access to them using authorization object S_USER_GRP.
> - Any predefined users such as SAP*, DDIC, EARLYWATCH, or TMSADM should be assigned to a separate user group such as SUPER. For more infromation on these users and how to protect them, see https://help.sap.com/saphelp_nw70ehp1/helpdata/en/3e/cdaccbedc411d3a6510000e835363f/frameset.htm. In addition, check section *[[unresolved text-ref: Configuration Validation]]* for ConfigStore STANDARD_USERS in this guide.

5.3 Roles and Authorization Management

User Creation Interface in SOLMAN_SETUP and SMUA

Within transaction SOLMAN_SETUP and in application SMUA, you can **create users** and **update user roles**. The *Role Adjustment* tool helps you to compare authorization objects and authorization values of your customized roles with newly-delivered SAP roles. This tool is delivered with software component ST.

How does the system role copy work?

When you update a user with user roles in SOLMAN_SETUP, the following steps are executed by the system:

1. The system deletes the present copied target role.

2. The system copies the SAP source role.

> **i** Note
>
> When you modify any authorization field in your copied role, this modification would be lost with a system copy role. **If you want to keep the modification, you can compare your copied role with the newly-delivered SAP role update, and then decide on how your modified role is updated.**

How to access the role adjustment?

The *Role Adjustment* tool compares the delivered SAP role with the existing copied role. The comparison status of the target role (the copied role) shows you for which authorization objects and authorization fields differences exist in the target role to the SAP role. Checking these differences, you can decide whether to replace or adjust authorization objects and authorization fields in the copied role.

1. Access transaction `SOLMAN_SETUP` in *Edit* mode.
2. Select the action *Create User* or *Update User Roles*.
3. Mark the line of the role in which the *Update* flag is set.
4. Choose *Manual Role Adjustment* in the upper left corner above the list of roles that are assigned to a user.

Constraint: Adaptation of Authorization Objects

The following authorization objects can be adapted using transaction `PFCG`:

- Authorization objects `S_TCODE`, `S_SERVICE` and `S_START`: Any start transaction authorization object can be maintained by using the *Menu* tab in a role using transaction `PFCG`.
- Authorization object `S_RFC`: `S_RFC` is not maintainable by maintaining the standard values. You need to either adapt the authorization object for the application in transaction `SU24` or add a manually-created authorization object maintenance in transaction `PFCG`.
- Authorization object `PLOG`: Organization units (such as maintained in authorization object `PLOG` for `HR`) must be maintained in transaction `PFCG`.

Edit Authorizations for SOLMAN_SETUP, SMUA, and Role Adjustment Tool

Transaction SOLMAN_SETUP

General User Management and *Role Assignment* authorization is granted by authorization object `SM_SETUP`. This authorization is contained in any of the configuration roles and roles `SAP_SETUP_BASIC_***`.

Application SMUA

Authorization object `SM_SMUA` must be assigned. This authorization object is contained in the single role `SAP_SM_SMUA_*`.

Role Adjustment Tool

Authorization object `SM_ROLECMP` must be assigned. This authorization object is contained in the single role `SAP_SM_ROLECMP_*`.

> **→** Recommendation
>
> We recommend to assign these authorizations in a controlled manner.

Inactive Authorization Objects

Nevertheless, in some navigation role menus, you find additional transactions. These transactions must be present in the *Menu* tab since they define the transaction navigation in the work center. Having transactions in the *Menu* tab allows the system to automatically trace all relevant authorization objects, which are connected to this transaction. Authorization objects for these transactions are set inactive.

> ⚠ Caution
>
> Do not activate inactive authorization objects in the shipped navigation roles. Doing so may override your existing authorization concept.

Documentation Possibilities

Within transaction `SOLMAN_SETUP` as well as application Solution Manager User Administration (`SMUA`) users and assigned roles are documented by SAP via a link in column *Documentation* within the user interface screen of the application. When you choose this link, a dialog window appears with the relevant documentation text. The help text is integrated into the system by transaction `SE61`.

For more information on any specific role, or if you want to adapt the original to your own purpose, follow these steps:

1. Call transaction `SE61`.
2. Choose *Document Class* **`General text`**(`TX`).
3. Choose your language.
4. Enter the technical ID of the help text as given in the tables in this guide.
5. Choose *Display*. The system displays the text, which is also linked in the setup screen.

> ℹ Note
>
> - All documents for authorization roles description shipped by SAP have the naming convention `AUTH_*`. Consider using your own naming convention.
> - All documents for user descriptions shipped by SAP have naming conventions either `TP*` or `USER_*`. Consider using your own naming convention.

5.4 Restricting Roles to Allow Minimal Authorization

> → Recommendation
>
> We strongly advise maintaining copied SAP-delivered roles according to your needs. Consider which scenarios you use and which requirements you need to fulfill.

Restrict Authorizations for System Administrators

We strongly advise restricting authorizations for **system administrators** to the required minimum. System adminsitrators in general have more authorizations and more critical authorizations than any other end-user in your company. We advise distinguishing between tasks of system administrators, such as *User Administration* as opposed to *Role Administration*, and so on. You can use roles (such as `SAP_SM_USER_ADMIN`) and authorizations objects (such as `SM_SETUP` or `AI_LMDB_OB`) to limit authorizations per system administrator.

Restrict Extractor Authorization

Role `SAP_SM_INC_EXTRACTOR` contains as well the authorization object to allow for PPM extractor runs `ACO_SUPER` with values `DPO` and `PPO`. In case, you do not use PPM and the integration of cProject, you can set the authorization object inactive.

Restrict Access to Dashboards

In case you want to minimize authorizations of role `SAP_SM_DSH_DISP` for specific applications, such as `ITPPM`, you need to maintain authorization objects `SM_DSHO` and `SM_DSH_CAT` explicitly.

5.5 Transporting Roles from Development to Production

> → Recommendation
>
> We strongly recommend that for your development system, create roles for dialog users with specific maintenance of authorization fields. Transport these roles to your production system. If your security protocol requires any authorization level for technical users, we recommend transporting these roles as well. Note though, that some authorization objects such as `AI_LMDB_OB` or `SM_SDOC` might need adapting in the procutive system due to required IDs, which are dynamically-generated. For more information, see section *[[unresolved text-ref: Protecting Systems and Processes]]*.

Activating the Transport Request Tool

For documentation purposes, it is possible to activate automatic transport request.

Prerequisites for usage:

- Configured *Automatic Recording of Changes* in transaction `SCC4`
- Configured *Transport Management*

- Maintain table PRGN_CUST, adding value CLIENT_SET_FOR_ROLES

> **i Note**
>
> This function is only available in the SAP Solution Manager system. In your managed systems and a remote BW system, you need to add your roles to a manually-created transport request. If you transport roles to your productive system, you should remove any access to transaction PFCG.

Required Transport Authorizations

To successfully transport, you require at least the following security critical authorizations:

- S_SYS_RWBO with ACTVT 01, 02, 03 and request types CUST, TASK
- S_TRANSPRT with ACTVT 01, 02, 03 and request types CUST, TASK

5.6 Function Calls

General Issues

In the context of security of RFC calls, consider the following three areas:

- *Authentification*
  Incoming RFC connections must authenticate in the system. For instance, the READ RFC call is an incoming RFC call in the managed system. Therefore, a user must be present in the managed system to authenticate the RFC call. Here, user of type *system* is used. From the SAP Solution Manager system's point of view, the READ RFC connection is an outgoing RFC. Outgoing RFC connections are maintained in transaction SM59 in the present system. In the RFC itself, the user is maintained. During the Solution Manager setup of managed systems, most RFCs are automatically created, as well as the user in the managed system, and the assignment of according authorizations for this user. The RFCs are added automatically to transaction SM59. For their evaluation and monitoring, RFC traces (transaction ST05) can be used as well as the Security Audit Log.
- *System Profile Parameter*
  The RFC authorization check can be activated / deactivated with the system profile parameter auth/rfc_authority_check. This parameter must not be set to the value '0'. If you set the value to = 9, the system only accepts the values of FUNC (function module) in the authorization object. Make sure, that all roles do only contain FUNC (except for function group SRFC). For more information, see SAP Note 931252 .
- *Transaction Code SE37*
  We strongly advise not to assign transaction code SE37 to any dialog user. The authorization for this transaction should be handled very cautiously, and only assigned to specific users. The combination of this transaction code with authorization object S_RFC is security - critical.

Authorization Object S_RFC

A remote function call (RFC) calls a function module in another system. Due to the nature of SAP Solution Manager, the number of RFC calls to and from other systems is high. Therefore, a high number of function modules are affected.

> ✤ Example
>
> The SYST function group is needed to call SM59. If it is missing, the *remote logon* in transaction SM59 causes the RFC_NO_AUTHORITY ABAP runtime error in the target system.

For S_RFC value changes for the technical RFC - users for READ and TMW RFC connection, see SAP Note 1572183.

Since SAP_BASIS 7.02, you can maintain the authorization object for certain function groups but also function modules. Within SAP Solution Manager, you may find the authorization object maintained according to this differentiation.

Authorization object S_RFC can be traced with audit log trace in transaction **SM19** and **SM20**. To protect the deletion of traces, maintain field *ACTVT* with value **36** of authorization object S_RFC_ADM.

> ⚠ Caution
>
> Currently, RFC - function modules in function group /SSF/INTRFC have no own authorization checks.

> i Note
>
> For more information on RFCs and how to secure them, see http://scn.sap.com/docs/DOC-60425 and SAP Note 14113011.

Authorization Object S_DEV_REMO

In managed systems as of SAP_BASIS 8.03 and higher, function group RFC1 is additionally protected by authorization object S_DEV_REMO. Therefore, all relevant roles for the setup of managed systems using transaction SOLMAN_SETUP include authorization object S_DEV_REMO.

5.7 Start Authorizations

Transactions, Web Dynpro Applications, and OData - Services posses so-called start authorization objects. These authorization objects are called when the user calls a transaction, a WebDynpro Application, or an OData - Service.

Authorization Object S_TCODE for Transaction

To be able to run any transaction in any SAP System, authorization object `S_TCODE` is called by the system and must be assigned to the user running the transaction.

> ⚠ Caution
>
> `S_TCODE` should only contain the transaction codes that the user is allowed to run.

Authorization Object S_START for Web Dynpro Application

S_START substituting S_SERVICE

Web Dynpro Applications have start authorization object `S_START`. `S_START` is delivered with SAP BASIS Release 7.40. This authorization object substitutes authorization object `S_SERVICE` as the start authorization object.

> ℹ Note
>
> In addition to authorization object `S_START` with SAP Basis 7.40, authorization object `S_USER_STA` is required by a user, if he/she want to add a new Web Dynpro Application in the menu of an authorization role.

Authorization Object S_SERVICE for OData - Services

OData Services have start authorization object `S_SERVICE`.

> ℹ Note
>
> External Services are also protected by authorization object `S_SERVICE`.

5.8 User Security

With SAP Solution Manager 7.2 and SAP Basis 7.40, you can define group-specific security policies in regards to *Logon* and *Passwords* for your users. For users who should not use the default attributes, you can define individual security policies in transaction `SECPOL` and assign it to users in transaction `SU01` (transaction `SU10` for mass maintenance). For more information, see http://help.sap.com/saphelp_nw70ehp1/helpdata/EN/7f/c52442ad9f5133e10000000a155106/content.htm

Security Policy Parameters to be Used

Parameter	Description	Default Value
CHECK_PASSWORD_BLACKLIST	Check the Password Blocklist	1
DISABLE_PASSWORD_LOGON	Disable Password Logon	0
DISABLE_TICKET_LOGON	Disable Ticket Logon	0
MAX_FAILED_PASSWORD_LOGON_ATTEMPTS	Maximum Number of Failed Attempts	5
MAX_PASSWORD_IDLE_INITIAL	Validity of Unused Initial Passwords	0
MAX_PASSWORD_IDLE_PRODUCTIVE	Validity of Unused Productive Passwords	0
MIN_PASSWORD_CHANGE_WAITTIME	Minimum Wait Time for Password Change	1
MIN_PASSWORD_DIFFERENCE	No. of Different Chars When Changing	1
MIN_PASSWORD_DIGITS	Minimum Number of Digits	0
MIN_PASSWORD_LENGTH	Minimum Password Length	6
MIN_PASSWORD_LETTERS	Minimum Number of Letters	0
MIN_PASSWORD_LOWERCASE	Minimum Number of Lowercase Letters	0
MIN_PASSWORD_SPECIALS	Minimum Number of Special Characters	0
MIN_PASSWORD_UPPERCASE	Minimum Number of Uppercase Letters	0
PASSWORD_CHANGE_FOR_SSO	Password Change Req. for SSO Logons	1
PASSWORD_CHANGE_INTERVAL	Interval for Regular Password Changes	0
PASSWORD_COMPLIANCE_TO_CURRENT_POLICY	Password Change After Rule Tightening	0
PASSWORD_HISTORY_SIZE	Size of the Password History	5

Parameter	Description	Default Value
PASSWORD_LOCK_EXPIRATION	Automatic Expiration of Password Lock	0

Authorization objects S_SECPOL and S_SECPOL_A

If you are using security policies for your users, maintain authorization object S_SECPOL, and if required, authorization object S_SECPOL_A. Authorization object S_SECPOL is delivered as *Inactive* in role SAP_SM_USER_ADMIN.

5.9 SAP Basis Critical Authorizations and Combinations

System Authorization S_ADMI_FCD

This authorization object checks access to several SAP Basis functions such as spool administration and monitoring. It is a security-critical object. It needs to be checked carefully in combination with the following transactions:

- SM13
- SCC4 with S_ADMI_FCD value T000, which allows creation of client authorization.
- SARA for archiving
- SP01
- SM30, SM31, SE16N, STRUST
- SM01
- STAT, STAD, STAUTHTRACE
- SP11, SP12
- SICF
- SM50, SM51, SM04, SMICM
- SM59
- SLICENSE
- SM54
- SM55
- SM18 and SM19

> **i Note**
>
> The transactions give access to the security audit lock with values AUDA or AUDD. We strongly recommend not to assign these values to any end user role.

File Access Authorization S_DATASET

You use this object to assign authorizations for accessing operating system files. This object can also be used to assign the authorization for using operating system commands as a file filter.

> ### i Note
>
> Always make sure that a specific program name and physical file name are specified. All SAP Solution Manager standard roles are shipped with program specifics, but not with values for the physical file name. In addition, `ACTVT 06` for deletion is security-critical. **In general, the according section in the application - specific guide gives a hint on why this activity might be needed in the respective application.**

ABAP Workbench Authorization S_DEVELOP

`S_DEVELOP` is the general authorization object for `ABAP` Workbench objects. You use it to grant access authorizations for all `ABAP` Workbench components, which include the following:

- `ABAP` development tools
- `ABAP` Dictionary and Data Modeler
- Screen Painter and Menu Painter
- Function Builder
- Repository Browser and Info System
- `SAP` SmartForm

> ### → Recommendation
>
> From a production perspective, it is considered critical if authorization object `S_DEVELOP` is assigned to users. In general, authorization object `S_DEVELOP` with more than display access (`ACTVT 03`) is not required by any user in production.

> ### i Note
>
> The authorization object is assigned for maintaining transaction `SNOTE` during the SAP Solution Manager basic setup to the `SOLMAN_ADMIN` user in role `SAP_SETUP_BASIC_S_DEVELOP`. After implementing all required SAP Notes into the system, you can set the according authorization object inactive. Documentation is given in the Guided Procedure for the automated setup.

The authorization `S_DEVELOP` defines the access for objects in the ABAP Workbench. The object is shipped in standard SAP Solution Manager roles. In case, `ACTVT 16` (execute) is added to the object, it is described in the role description tab and the security guide for the specific application.

> ### → Recommendation
>
> The following apply to critical authorization combinations:
>
> - Do not assign debug authorization in productive system. `S_DEVELOP` with value `DEBUG` appears often in authoriaztion traces, even though it is not required for the user as authorization. You can ignore it.
> - Do not assign transaction `SE38`, instead use `SA38`. Transaction `SA38` automatically calls authorization object `S_PROGRAM`. In combination with `S_DEVELOP` value `PROG` and `ACTVT 16`, this is security-critical.

- Do not assign transaction SU24 to any user to disable authorization checks for transactions. A combination of this transaction with S_DEVELOP ACTVT 02 and value SUSK plus authorization object S_USER_GRP change authorization is highly security critical.
- Carefully check the assignment of transactions SE11 or SE13, as it may allow Data Dictionary maintenance (ACTVT 02 and values STRU or TABL), or modification of tables if assigned with S_DEVELOP ACTVT 02 and value TABL
- Carefully check the assignment of transaction SE37, as it may allow RFCs via function calls if assigned with S_DEVELOP ACTVT 16 and value FUGR.
- Transaction SE93 and S_DEVELOP ACTVT 01/02 with value TRAN allows the maintenance of transaction codes.
- Transactions SE16/SE16N and in S_DEVELOP ACTVT 02 with TABL together with object S_TABU_DIS ACTVT 02 (change): This allows replace and debugging of tables in SAP Solution Manager. Transaction SE16 automatically calls S_TABU_DIS. Therefore, table maintenance and develop authorization other than ACTVT 03 is critical.

S_DEVELOP in a BW Environment

When you activate content in BW, authorization object S_DEVELOP is asked for with a temporary package assignment $tmp. This is a specific feature for BW. The concept is, that the activation is done in a specific system. If you want to transport, then you can change the package in the transport request.

Documentation Maintenance Authorization S_DOKU_AUT

The authorization object S_DOKU_AUT is required for the maintenance of online documentation in transaction SE61

Authorization for GUI Activities

Authorizations for activities with reference to GUI objects. With this object, you can, for example, assign authorization to save lists in local files (download lists).

Administration for Internet Communication Framework S_ICF_ADM

Authorization check for activities in the Internet Communication Framework (ICF). It allows administration in the ICF, which is considered as security critical.

Number Range Maintenance S_NUMBER

Authorization to maintain number ranges or to change the number of a number range that was used last. You do not require authorization for displaying number range objects. This authorization is contained in SAP Solution Manager roles for *Requirement Management* and other CRM related roles.

File System Access via ABAP/4 Authorization S_PATH

Authorization groups for the file system are defined in the table `SPTHB`. Table `SPTH` assigns authorization groups to paths in the file system.

ABAP: Program Flow Checks Authorization S_PROGRAM

Authorization to execute ABAP programs by program group.

> **i** Note
>
> You can define authorization groups for a group of programs.

CCMS: System Administration Authorization S_RZL_ADM

Authorization object for R/3 System administration using the Computing Center Management System. The object is rarely used in SAP Solution Manager standard roles, still check the object if used for appropriate assignment to users.

TREX Administration Authorization S_TREX_ADM

This objects allows the use of the TREX administration tool. It is contained in the SAP Solution Manager standard role for TREX Admin `SAP_SM_TREX_ADMIN` which is assigned to user `SOLMAN_ADMIN` in transaction `SOLMAN_SETUP`. The `SOLMAN_ADMIN` user is allowed to set up the TREX tool. If you do not require this authorization, remove the role form the `SOLMAN_ADMIN` user.

Transport Management Authorization S_SYS_RWBO and S_TRANSPRT

Both authorization objects are relevant for Transport Management. For more information on these authorization objects and combinations, see section *Change Control Related Issues*.

> **i Roles**
>
> Role SAP_SM_GP_ADMIN contains this critical authorization combination.

ABAP Function Call Authorization S_RFC

The authorization object S_RFC can be found in many roles for SAP Solution Manager. It allows for running Function Modules. The combination of this authorization object with transaction SE37 is security critical. We recommend to assign transaction SE37 only to specified users.

5.10 Configuration Authorization

Authorization object SM_SETUP allows you to protect the Solution Manager configuration transaction SOLMAN_SETUP. When you run transaction SOLMAN_SETUP, you can restrict access on the following levels:

- Activities
- Scenarios/Procedures
- Steps within a procedure

Please be aware of the following conditions:

- If you allow display authorization (ACTVT 03) for any scenario, the user is not allowed to edit any step within the procedure in question.
- If your security policy only allows certain users to maintain a specific set of steps within the procedures, you can restrict on procedure and step level.
- If a user does not have this authorization object assigned, but still has access to the transaction via authorization object S_TCODE by using the work center for SAP Solution Manager configuration (also using WDA: AGS_WORKCENTER), data are not displayed by the system in the user interface.

5.11 Updating Authorizations and Roles

Authorization Adjustment

Everytime an authorization object is changed and adapted, you can use report REGENERATE_SAP_NEW to generate the profile SAP_NEW. You can then assign this profile to your users, so that your business is not interrupted.

Role Comparison after Updated Roles

Roles are shipped in software components `ST`, `ST-BCO`, `ST-PI`, `ST-UI`, and `ST-ICC`. In the SAP Solution Manager system, all required users and template roles are present in transaction `SOLMAN_SETUP`. Here, the system displays all roles and users which need to be updated by assigning an *Update Flag*. This is not possible for users and roles transported to managed systems or separate BW systems in your landscape. To find out about any changes to these roles that are shipped with new SPs, you can proceed as follows:

Role Description Tab

1. As soon as you have adapted your system to a new SP level, check the documentation history in the security guide *[[unresolved text-ref: Secure Configuration Guide for SAP Solution Manager]]* for this SP. Here, you will find the latest changes for roles for this SP. If you do find the ST-PI roles for the managed system users as changed, proceed with the next step. If not, nothing needs to be done.
2. Check in your managed system the SAP role that had been mentioned in the guide. In the description tab of the role, you can see all the changes to authorization objects and authorization fields which have been shipped. You can adapt your role in the development system according to this information and transport the changes.

Tool Support Transaction SUIM

1. Go to transaction `SUIM`.
2. Go to `COMPARISONS -> OF ROLES`.
3. In field *role A* enter the role in the SAP namespace. In the other field, enter your current copy of this role.
4. According to the results, adapt your copied role and transport the new version.
   The system displays all differences between both roles. Here, you can drill down also to relevant field values.

5.12 Modifying Values in Authorizations (CRM)

The following section gives you an overview of all relevant authorization objects and roles relating to applications that are built on CRM software components, such as Change Request Management or Incident Management. Here, modifications in the customizing of transaction types result in modifications necessary in authorization objects. Underneath, you find a list of relevant authorization objects you need to modify.

- `CRM_ORD_PR`
- `SM_TIMEREP`
- `SM_FIELD`
- `SM_APP_AP`
- `SM_BPCA`
- `B_USERSTAT`
- `B_USER_ST`

6 Securing Your Systems

6.1 Vulnerability

> **i** Note
>
> For a guidance on secure configuration for SAP Solution Manager, see the *[[unresolved text-ref: Secure Configuration Guide]]*. As configuration of SAP Solution Manager is executed using transaction `SOLMAN_SETUP`, check the relevant documentation for the individual activities carefully. See also section *[[unresolved text-ref: Security Flags for Relevant Activities in SOLMAN_SETUP]]* in this guide. Repeated control and monitoring can easily detect infiltration during operation. It is also strongly advised to build up a multi-tier environment of systems in which same purpose users receive different passwords per landscape and environment.

A secure configuration of your system and system landscape is prerequisite for a secure operation of all relevant applications running on this system. If not secured, it opens all your applications running on your system as well as the system itself to vulnerabilities. Therefore, the entire stack must be configured in a secure manner. If your system configuration is not secured, it is vulnerable for any attacker to misuse user accounts (such as default user accounts; see section *[[unresolved text-ref: Managing Authentication]]*), unused applications which are active nonetheless, flaws which are known, but not patched, files and documents which are not protected, and so on. Using a misconfigured system, an attacker can easily remain in a system undetected, modify your data, and gain knowledge of your business data without detection from your side. Similarly, authorized users may misuse an insecure configuration. In worst cases, this can lead to a complete compromise of your system and your system landscape. Considering the approach of the SAP Solution Manager system as **one single entry point** to your system landscape, this is especially applicable for this system.

Often, a number of vulnerabilities resulting from misconfiguration can lead to a security breech in your system, such as an unprotected administration page coupled with a default user account, which has not been deactivated after configuration procedure. Or, missing restriction on error logs after configuration can lead to data vulnerabilities, such as stack information of your system landscape leading to information leakage.

Secure Configuration applies to your OS system, server landscape, databases, applications, APIs, and any other component you use. For relevant information on the security of your server and databases, check the *SAP Netweaver Guide* for security guidelines. The following section will only deal with applications of Software Component *ST* for SAP Solution Manager and its managed systems (`ST-PI, ST-BCO`).

Secure Configuration also includes, that after your configuration/update of configuration is executed, all relevant default accounts are checked for restriction during operation. For this information, see the section *[[unresolved text-ref: Managing Authentication]]* and *[[unresolved text-ref: Useful Tools]]* in this guide.

> → Recommendation
>
> Quick recommendations checklist of the most common issues. In addition, read SAP's Security Recommendations: A Practical Guide:
>
> - Secure your network

- Close ports
- Issue: Unencrypted communication between SAP solutions. We highly recommend using TLS protocol
- separate productive systems from development and test systems
- Configure and update securely
- Issue: Lack of an established patch process. We highly recommend regularly deploying available security patches
- Ensure that SAP components are not exposed to the internet.

6.2 Checking SAP Basis Infrastructure Security - Settings

Additional Documents

→ Recommendation

- Get familiar with the **White Paper on SAP Security Recommendations** for SAP NetWeaver systems: http://scn.sap.com/docs/DOC-17149
- Read the **SAP Netweaver Security Guide**: https://help.sap.com/saphelp_nw70ehp1/helpdata/en/3e/cdaccbedc411d3a6510000e835363f/frameset.htmto protect for instance functions like:
  - Gateway
  - Security Audit Log
  - RFCs between your Business Systems
  - and others

Read the System Security Advice from SAP NetWeaver: https://help.sap.com/saphelp_nw70ehp2/helpdata/en/cd/14c93ec2f7df6ae10000000a114084/frameset.htm

Secure Settings for SAP BASIS 7.40

Many mandatory security settings are basically SAP NetWeaver specific, and even though they are mentioned in transaction `SOLMAN_SETUP` in the SAP Solution Manager configuration, they are basic settings which need to be executed when you setup the NetWeaver system itself, such as secure HTTP(s) https://help.sap.com/viewer/e73bba71770e4c0ca5fb2a3c17e8e229/7.4.17/en-US/5dcb88b33cad4f5da9dd77a3802e172f.htmlor specific system parameters.

6.3 Security Checks of SOLMAN_SETUP

SAP Solution Manager can be targeted for attacks because of its importance as an administration platform. In transaction SOLMAN_SETUP_ADMIN, you find specific guided procedures for specific purposes that must be protected.

> **i Note**
>
> All authorization objects and respective roles in this section are security-relevant.

SOLMAN_SETUP Administration

You can use transaction SOLMAN_SETUP_ADMIN to administer the configuration done in transaction SOLMAN_SETUP. It contains various views which are explained in detail in the help texts within the user interface of the transaction. The transaction is not integrated in any work center. You have to assign the following roles (which allow access to all views, except Log Archiving) to a dedicated user, manually:

- SAP_SOLMAN_SETUP_ADMIN_ALL
- SAP_SOLMAN_SETUP_ADMIN_DIS

6.4 Using Authorizations to Restrict System (LMDB) Data

To protect your systems and all data connected to those systems (such as users, processes, or sensible data), we recommend restricting the access to your systems accordingly. All systems used by SAP Soltuion Manager are documented in the LMDB. Therefore, this store is protected by authorization objects for LMDB. They are contained in roles SAP_SYSTEM_REPOSITORY_*** only, which are assigned to most of the template users that you can create in SOLMAN_SETUP and application SMUA.

> **i Note**
>
> For technical users, the objects are contained in the assigned user role for software component ST. If you follow a strict security protocol, we advise restricting the relevant authorization objects AI_LMDB_***. In this case, consider updating such a modified technical user role with the *Role Adjustment Tool*.

Roles SAP_SYSTEM_REPOSITORY_***

The roles SAP_SYSTEM_REPOSITORY_*** are the only roles assigned to dialog users containing the main system restricting authorization objects for LMDB. Underneath, find a short overview on these roles and additional authorization objects, which are included in the roles.

Role	Included Authorization Objects
SAP_SYSTEM_REPOSITORY_DIS	The role contains all relevant authorizations for systems AI_LMDB_* in display mode, as well as: • SM_CMDB_OB • SM_SETUP manually entered
SAP_SYSTEM_REPOSITORY_ALL → Recommendation This role is assigned to all SMC* users. After configuration of the required scenarios, either remove this role from your user and replace it with role SAP_SYSTEM_REPOSITORY_DIS, or deactivate the SMC* user.	Additional to all authorization objects for SAP_SYSTEM_REPOSITORY_DIS the role includes as well: • AI_LMDB_AD • AI_LMDB_RE • AI_LMDB_TM → Recommendation As this object is only required in the context for Transport Management, set it inactive if not needed. • S_TCODE; TCD value LMDB
SAP_SYSTEM_REPOSITORY_EDIT	This role allows for editing LMDB specific data in any application. It contains authorization object AI_LMDB_OB in edit mode.

Authorization Object AI_LMDB_OB

The object allows you to restrict systems and client information.

Using remote WBEM client

When using a remote WBEM client in LMDB, authorization checks are also performed. WBEM standard defines a communication protocol that is implemented by both SLD and LMDB. Any standard-compliant WBEM client implementation can be used to communicate with SLD or LMDB via intrinsic methods defined in the WBEM specification. As it is a generic access to LMDB objects, the user must have assigned the fields LMDB_MTYPE, LMDB_STYPE and LMDB_OBJID with an asterisks * in the user data. In this use case, for activities only using display functionality you can use activity display ACTVT 03 for further activities you have to use activity change ACTVT 02.

This implementation leads to an authorization trace information with a Return Code = 4 for the LMDB object. The trace information itself refers to ACTVT 02 as seemingly required for the application, even though you may only require ACTVT 03 display for your user. The information appears in the trace, but has no influence on the system's function.

LMDB and SLD Compatibility

> ⚠ Caution
>
> This authorization object allows you to restrict your users for systems to display, edit, and so on. If you restrict `AI_LMDB_OB`, do not allow System Landscape Directory `(SLD)` authorizations at the same time. Minimal `SLD` authorizations have complete read access. For more information, see *SLD security guide*.

Authorization Object AI_LMDB_PS

This authorization object is relevant for the restriction of Product Systems in Release 7.1. It is only relevant in Release 7.2 for migration purposes. When you have finished migration, you can remove the object from the role.

Authorization Object AI_LMDB_TM

The authorization object `AI_LMDB_TM` protects the transport domain entry in transaction `LMDB`. The *Transport Management* provides a disjoint possibility to store information about systems. In many cases, the systems stored in the *Transport Management* `LMDB` Web User Interface allows users to access the information about the relationship between Transport Management System (`TMS`) information and technical system information. You can list all systems (system data) provided by `TMS` via the domain controller data supplier, and you can maintain (assign/de-assign) a link between `TMS` system information and technical system information. `TMS` information is not created or modified – only the links to `LMDB` information are displayed/created/deleted.

Authorization Object AI_LMDB_AD

This authorization object is relevant for the administration of the `LMDB`. It should only be assigned to the administrator of the `LMDB`.

Authorization Object AI_LMDB_RE

This authorization object is relevant for the remote access to the `LMDB`. It is contained only in role `SAP_SYSTEM_REPOSITORY_ALL`.

> → Recommendation

If you do not require this object, we recommend removing it or setting it inactive in the role.

6.5 Updating Managed Systems in SOLMAN_SETUP

In case of an update to your managed systems, the Managed System Setup in transaction `SOLMAN_SETUP` can be run automatically. This requires the automatic update of users in your managed system.

Technical User SM_AMSC

The update job of the managed system configuration is run by the technical user `SM_AMSC` in the Solution Manager system. This user is created during System Preparation in the Solution Manager system. For more details, see section on *Technical User SM_AMSC* in this guide.

In Case of SLD Changes

Use Case

In case of system updates in the System Landscape Directory (SLD), a configuration update job runs in the Solution Manager with a dedicated technical user `SM_AMSC`.

6.6 Checking Security Flags for Relevant Activities in SOLMAN_SETUP

Activities that are security-critical are flagged as **security-relevant** and displayed in transaction `SOLMAN_SETUP_ADMIN` or in application *Security*, which is part of the *SAP Solution Manager Administation Work Center*.

> **i** Note
>
> SAP role `SAP_SETUP_SECURITY_REC` contains the object `CRM_ORD_PR` with full authorization.

6.7 Using System Recommendation Application

Use the application *System Recommendation* in the SAP Solution Manager to show relevant Security Notes (Hot News, Legal Change Notes, or Performance Notes) for an SAP System. This application works especially for ABAP, Java and HANA - and other SAP system types which you can connect to SAP Solution Manager. You can use this application for your business systems like ERP, CRM, BW, Portal, as well as for infrastructure systems like XI, or the SAP Solution Manager itself.

Prerequisite

You have to register the systems at the System Landscape Directory (SLD; For more information, see Secure Configuration Guide), and define them as Technical Systems in the SAP Solution Manager. Then, you can configure the application *System Recommentation* to calculate relevant SAP Notes.

> **i** Note
>
> The application cannot judge on manual configurations like profile parameters, settings in *.ini files, White Lists, or other access control entries. Security Notes describing such manual activities need to be checked manually. There exist some additional limitations for the kernel since the kernel contains various individual executables and libraries. These may get individually patched resulting in a mixture of version numbers.

Template End Users

New template users with Default ID: `SYR_<user description>_<system ID>` added in the system. These template users are assigned a number of roles relevant for the application.

The users are available in application *Solution Manager User Administration* (SMUA) in work center *SAP Solution Manager Administration* view *Users*. For more information on SMUA, see in the *Secure Configuration Guide* the according section.

Administrator User SYR_ADM_XXX (Help Text ID: TP_SYR_ADM)

Single role	Help Text ID
SAP_SYSREC_ALL	AUTH_SAP_SYSREC_ALL
SAP_SM_SL_EDIT	AUTH_SAP_SM_SL_EDIT
SAP_SYSTEM_REPOSITORY_ALL	AUTH_SAP_SYSTEM_REP_ALL
SAP_SMWORK_CHANGE_MAN	AUTH_SAP_SMWORK_CHANGE_MAN
SAP_SM_FIORI_LP_EMBEDDED	AUTH_SAP_SM_FIORI_LP_EMBED

Display User SYR_DIS_XXX (Help Text ID: TP_SYR_DIS)

Single role	Help Text ID
SAP_SYSREC_DIS	AUTH_SAP_SYSREC_DIS

Single role	Help Text ID
SAP_SM_SL_DISPLAY	AUTH_SAP_SM_SL_DISPLAY
SAP_SYSTEM_REPOSITORY_DIS	AUTH_SAP_SYSTEM_REP_DIS
SAP_SMWORK_CHANGE_MAN	AUTH_SAP_SMWORK_CHANGE_MAN
SAP_SM_FIORI_LP_EMBEDDED	AUTH_SAP_SM_FIORI_LP_EMBED

Main Authorization Objects

S_TABU_DIS: Authorization Group for Tables

All tables relevant for System Recommendation are secured by authorization group SMSR.

SM_FUNC: Restricting Tabs

The single tabs for SAP Notes can be restricted by authorization object SM_FUNCS

> **i** Note

By default, the tab *SECURITY* is not added to the core roles SAP_SYSREC*, due to security - criticality of the object. You need to allow this authorization explicitely for your end-user. We recommend to only allow it for specific Security Administrators.

7 Securing Channels and Destinations

7.1 Vulnerability

One of the most prominent features of the SAP Solution Manager system as an administration platform is its tight integration with almost any system in your system landscape. This sets the SAP Solution Manager within your system landscape at high risk. It becomes a profitale target for any attack if successful, as it contains administrative data about your complete infrastructure and system landscape. The system connection is managed by RFC connections and HTTP connections. If intercepted, they can allow attackers to penetrate your system landscape easily. Therefore, a close protection of these connections is strongly recommended. The following section explains such measures in detail.

7.2 Overview: Where Used - Solution Manager Technical RFC - Users per Scenario (READ, TMW, TRUSTED)

For **trusted RFCs**, see the section *[[unresolved text-ref: Communication Channels and Tehcnical Users]]* per scenario.

7.3 Secure RFCs with Authorizations

Overview

To protect RFCs with authorization restrcitions, check the following topics:

- Securing Trusted RFCs by correctly assigning and maintaining authorization objects `S_RFC_TT`, `S_RFCACL`, and `S_ICF`.
- Restricting access to transaction `SM59`, which is contained in role `SAP_SM_RFC_ADMIN`.
- Securing RFCs by restricting authorization objects `S_RFC, S_RFC_ADM` as well as profile parameters.

For additional information, also see https://help.sap.com/saphelp_nw70ehp1/helpdata/en/57/e100438a189c45b6290c2a1d0614bc/frameset.htm

The Trusted - Trusting Relationship (RFC)

The Trusted - Trusting RFC destination has the *Current User* settings, and *Trust Relationship Yes* in transaction SM59.

> → Recommendation
>
> A trusted relationship in SAP Solution Manager should only be one-sided. We recommend, you only create a trusted relationship between the managed system to SAP Solution Manager, but not SAP Solution Manager to the managed systems. This means that you should only allow trusted calls from Solution Manager to a managed system but not vice versa.

Authorization errors in the use of an RFC destination flagged as a *Trusted System* cause the following message to be sent: `No Authorization to logon as Trusted System (Trusted RC = #).`

Every authorization error when using an RFC destination flagged as a *Trusted System*, is a RABAX (ABAP exception). The RABAX contains detailed error information. To analyze the error:

1. Choose transaction ST22 and the selection period.
2. Choose the entry under the user SAPSYS and the program name CALL_FUNCTION_SYSCALL_ONLY. The paragraph *Troubleshooting*, contains the information necessary to correct the error.

Return Code

Return Code	Explanation	To Do
0	Invalid logon data (user and client) for the trusting system	Create a corresponding user in the client system for the user in the server system (trusting system)
1	The calling system is not a trusted system, or the system security ID is invalid.	Create the trusted RFC connection again.
2	The user has no authorization containing the authorization object S_RFCACL, or is logged on as the protected user DDIC or SAP*.	Give the user the authorization, or do not use the protected users DDIC or SAP* (see: profile parameter and value: login/no_automatic_user_sapstar = 0)
3	The timestamp of the logon data is invalid. Check the system time in the client and in the server, and the validity date of the logon data.	Synchronize the system times

Creating a Trusted Relationship - Authorization Object S_RFC_TT

Authorization object S_RFC_TT is only required for creating trusted relationships for managed systems in transaction SMT1, as of SAP_BASIS_7.02 SP03 and higher, see SAP Note 1734607.

Securing a Permanent Trusted Relationship - Authorization Object S_RFCACL

If you use an already existing trusted RFC connection, you need to have the authorization object S_RFCACL in the Solution Manager system and in the managed system assigned to your user. This authorization object **is not contained in profile** SAP_ALL due to its highly critical nature.

Usage in Transaction SOLMAN_SETUP

Within transaction SOLMAN_SETUP, you can create end-users (template users) for all required scenarios. If the scenario, you want to create users for, requires a mandatory trusted RFC - connection, the system assigns either role SAP_SM_S_RFCACL or SAP_SM_BW_S_RFCACL (BW-System) are assigned. These roles contain the authorization object.

> → Recommendation
>
> We recommend to check carefully, whether you require trusted RFC. If you require the authorization object, please maintain it specifically for your purposes, such as correct System ID, Client, and User in question.

How to Maintain S_RFCACL

> → Recommendation
>
> How to maintain the object:
>
> - RFC_SYSID : <System Id of the Solution Manager>
> - RFC_CLIENT: <Client of the Solution Manager>
> - RFC_USER : ' '
> - RFC_EQUSER: Y (for Yes)
> - RFC_TCODE : ' ' (if transaction flag is not active in transaction SMT1)
>   The SAP Solution Manager managed system setup generates a Trust relationship with an inactive transaction flag. This is the recommended setting for the remote scenario used by the SAP Solution Manager. You can view the transaction flag for a single trust relationship in transaction SMT1 respective for all trust relationships in transaction SE16 for table RFCSYSACL (field RFCTCDCHK = X).
>
>   > i Note
>   >
>   > If you use another remote scenarios which are based on Trust relationship, then it might be the case that you activate the transaction flag in transaction SMT1, for instance in case of the GRC FireFighter application which requires to activate this flag. In this case you should change the value for field RFC_TCODE from ' ' to *. Despite the fact, that we do not recommend to install the central GRC on the SAP Solution Manager system, you should be aware that this requirement is relevant if you install the central GRC elsewhere, but use GRC FireFighter in local mode.
>
> - RFC_INFO : <Installation Number of the Solution Manager>
> - ACTVT : 16

How to Maintain the Authorization Object for SAP Fiori APPs

> ⚠ Caution
>
> Specifically for **all SAP Fiori Applications**, make sure you maintain the authorization object with only the required values for the user and the system IDs in question. Do not use any generic values (such as '*') for `RFC_SYSID, RFC_CLIENT`, and `RFC_USER`, see also SAP Note 128447.

Securing a Temporary Trusted Relationship - Authorization Object S_ICF

Use authorization object `S_ICF` see for tempory Trusted RFC.

Authorization Roles SAP_SM_RFC_*** for Dialog Users

RFC - Connections are created and maintained within transaction `SM59`. Creating RFCs using transaction `SOLMAN_SETUP`, it references transaction `SM59`. Roles `SAP_SM_RFC_***` contain all relevant authorization objects for transaction `SM59`, such as `S_RFC***`. For technical users, some roles also contain `S_RFC***` authorizations, but maintained according to the task of the respective technical user.

RFC Maintenance Role SAP_SM_RFC_ADMIN

This role contains authorizations for creating RFC connections using transaction `SM59`. It is therefore considered highly security - relevant. The role is assigned by default to user `SOLMAN_ADMIN`.

> → Recommendation
>
> We recommend to remove this role from the user after finishing the basic configuration from the Solution Manager system landscape, managed systems, and remote BW system.

Role	Included Authorization Objects
`SAP_SM_RFC_*`	• `S_RFC_ADM` • `S_ADMI_FCD` • `S_RFC_TT` manually added due to its criticality Additional authorization objects `S_TCODE` for transaction `SM59` and `S_SERVICE`

Securing General RFC - Connections

A remote function call (`RFC`) calls a function module in another system. Due to the nature of SAP Solution Manager, the number of `RFC` calls to and from other systems is high. Therefore, a high number of function modules are affected.

In the context of security of RFC calls, consider the following three areas:

- *Authentification*
  Incoming RFC connections must authenticate in the system. For instance, the READ RFC call is an incoming RFC call in the managed system. Therefore, a user must be present in the managed system to authenticate the RFC call. Here, user of type *system* is used. From the SAP Solution Manager system's point of view, the READ RFC connection is an outgoing RFC. Outgoing RFC connections are maintained in transaction SM59 in the present system. In the RFC itself, the user is maintained. During the Solution Manager setup of managed systems, most RFCs are automatically created, as well as the user in the managed system, and the assignment of according authorizations for this user. The RFCs are added automatically to transaction SM59. For their evaluation and monitoring, RFC traces (transaction ST05) can be used as well as the Security Audit Log.
- *System Profile Parameter*
  The RFC authorization check can be activated / deactivated with the system profile parameter auth/rfc_authority_check. This parameter must not be set to the value '0'. If you set the value to = 9, the system only accepts the values of FUNC (function module) in the authorization object. Make sure, that all roles do only contain FUNC (except for function group SRFC). For more information, see SAP Note 931252.
- *Authorization Objects S_RFC and S_RFC_ADM*
  The authorization object S_RFC is used to check, whether the called RFC user is authorized to execute RFC function modules. The authorization object is delivered with dedicated values for function modules.

  > **Example**
  >
  > The SYST function group is needed to call SM59. If it is missing, the *remote logon* in transaction SM59 causes the RFC_NO_AUTHORITY ABAP runtime error in the target system.

  For S_RFC value changes for the technical RFC - users for READ and TMW RFC connection, see SAP Note 1572183.
  Since SAP_BASIS 7.02, you can maintain the authorization object for certain function groups but also function modules. Within SAP Solution Manager, you may find the authorization object maintained according to this differentiation.
  Authorization object S_RFC can be traced with audit log trace in transactions **SM19** and **SM20**. To protect the deletion of traces, maintain field *ACTVT* with value **36** of authorization object S_RFC_ADM.

  > **Caution**
  >
  > Currently, RFC - function modules in function group /SSF/INTRFC have no own authorization checks.

> **Note**
>
> For more information on RFCs, how to analyse them https://wiki.scn.sap.com/wiki/display/Snippets/Show+RFC+Workload+Statistic+to+build+authorizations+for+authorization+object+S_RFC and secure them, see http://scn.sap.com/docs/DOC-60425 and SAP Note 14113011 and SAP Note 2008727.

S_RFC and Additional S_TABU_NAM

In case a generic function module is called, this function module is protected by the additional authorization object S_TABU_NAM. For more information on specific table protection, see section *Tighten Table Read and Write Access/Table Protection*.

Authorization Object S_DEV_REMO

In managed systems as of SAP_BASIS 8.03 and higher, function group RFC1 is additionally protected by authorization object S_DEV_REMO. Therefore, all relevant roles for the setup of managed systems using transaction SOLMAN_SETUP include authorization object S_DEV_REMO.

7.4 SAP's Support Backbone Destinations

To securely run SAP's support backbone communication, ensure that you have:

- activated a new technical communication user for the destinations.
- established a HTTPS communication channels.
- enabled server certificates to use SSL.
- checked the correct kernel version. You require kernel release <742, which allows for remote HTTPS connection.
- configured STC01 and STC02.

Background Jobs and Technical User SOLMAN_BTC

Technical user SOLMAN_BTC runs all relevant background jobs for the connection to SAP.

> **i Note**
>
> To run the background jobs successfully, you need to update role SAP_SM_BATCH to the latest version, at least SP09. The latest version can be found in SAP Note 2250709.

Technical Communication User

The Technical Communication User is needed to access SAP-internal systems via RFC destinations. You need to provide the user for RFC usage in transaction STC01. To learn more about the Technical Communication User, see SAP Note 2174416.

> **⚠ Caution**
>
> Only your Super Administrator is allowed to create and activate *Technical Communication Users*. You can have a number of these users according to the number of RFCs you are using. The user is created with a basic authentication password, and is available within 4 hours of request.

Specific Relevant Authorization Objects

Authorization Object S_LOG_COM

S_LOG_COM is required to run the TLS version check for 1.1 in the task list SAP_SUPPORT_HUB_CONFIG. With this authorization check, the system checks whether or not the user can execute the external command in a background job. Role SAP_SETUP_SYSTEM_PREP contain the correct maintenance for the object, which should not be changed:

- COMMAND: SAPGENPSE
- OPSYSTEM: ANYOS
- HOST: *

Connected authorization objects:

- S_RZL_ADM with the possibility to create
- S_ADMI_FCD with value PADM

Transaction S_TCODE: SBGRFCCONF

S_TCODE for transaction SBGRFCCONF is required to create the supervisor RFC - destination for the SOAP runtime framework. Attached authorization object is S_BGRFC

RFC Relevant Authorizations

- S_RFC_ADM for RFCs SAPOSS, SAPSNOTE with ACTVT 01 (generate), 02 (change), 03 (display) for destinations ABAP (03) as well as L (Reference Entry) and T (Start External Program) as RFCTYPE
- S_RFC with FUGR SYST

Authorization Object S_DATASET

S_DATASET with program SAPLSSFM is required.

Authoriaztion Object S_TC

S_TC with ACTVT 03, 16 is required to execute the task list specifically for RFC SAP_SUPPORT_HUB_.

7.5 SNC Check

Use report RSRFCCHK to analyze whether RFC destinations are with or without SNC. Check existing entries in table USRACL.

> ⚠ Caution
>
> For SNC for Java check SAP Note 2895836.

SAP Solution Manager

SAP solution Manager uses SNC protection.

Webadmin JCo Destination

Since `SP09` Webadmin JCo destination on JCo 3.0 runs via SNC.

Wily Introscope

For Wily Introscope see SAP Notes:

- 1690662 - Option: Blocking unencrypted SAPGUI/RFC connections
- 1701870 - RFC client communication supporting SNC without SSO

8 Securing Access to Applications

8.1 Vulnerability

If applications or APIs do not verify the user authorized for a target source, or if the user authorized has far too many priviledges, a security vulnerability exists in your system landscape. This can result in the possibility of the unintended user to manipulate your system and its parameters in a way which is not registered by you. A careful consideration of access control is necessary from your side to protect your business efficiently.

Access Control to SAP Applications is given by the assignment of so-called start authorization objects. For SAP Solution Manager, they are assigned for all OData - Services (authorization object `S_SERVICE`), WebDynpro Applications (authorization object `S_START`), and transactions (`S_TCODE`). The automatic assignment of these object is managed within the menu tab of an SAP role, due to assignment of these applications there. These menu entries reference attached authorization objects, which belong to the application as a minimum protection. This principle allows you to remove application access and referenced objects or add new applications with an automatic access control authorization. For more information on this concept, see the *Authorization Concept Guide for SAP Solution Manager*.

> → Recommendation
>
> We strongly recommend to add newly build applications only in the menu tab of a role to automatically have access protection in place. Avoid adding field values to authorization objects `S_TCODE, S_START, S_SERVICE` directly.

Specifically Administration users are assigned security - critical authorization which can lead to escalation of priviledge if a vulnerability occurs. Any administrative application that is accessible by a non - administration users is exploitable. Considering that SAP Solution Manager is also a platform for adminnistrators, this is especially applicable.

> → Recommendation
>
> We strongly recommend to implement a four eye principle for administrative access to your system, as well as a careful implementation of security - critical authorization objects and their assignment to users. This applies especially to critical authorization combinations. Some of these objects and their critical combinations are outlined in this section. In section *Useful Tools*, you can find more information on how to optimize and monitor these access restrictions.

8.2 Restrict Access to Transaction SOLMAN_SETUP and its GPs

→ Recommendation

For secure configuration, check the *Secure Configuration Guide* for details.

Access Protection with Authorization Object SM_SETUP

Authorization object `SM_SETUP` allows you to protect the Solution Manager configuration transaction `SOLMAN_SETUP`. It controls, if a user can access transaction `SOLMAN_SETUP`. You can restrict access on the following levels:

- Activities

  i Note

  `ACTVT 02` (edit) is required for both, accessing the transaction in change mode and being able to set the lock for the Guided Procedure. If edit authorization is not assigned, the *LOCK* button is not displayed. Once a guided procedure has been locked, a configuration user can unlock it by using the Locked Guided Procedures function in the `SOLMAN_SETUP_ADMIN` transaction.

- Scenarios/Procedures: Every configuration user role `SAP_<scenario>_CONF***` contains the object with authorization for the relevant guided procedure.

  i Note

  Some roles contain access authorization for other Guided Procedure for specific configuration purposes. Consider these extra access authorizations carefully. If it is not required for your business case, deactivate the respective authorization or remove it from the role completely. In general, the `Scenario ID` for the *Overview* of transaction `SOLMAN_SETUP` is assigned in every configuration role by default.

  Example

  `SAP_CHARM_CONFIG` role contains access authorization for Change Request Management procdures as well as access for specific steps in Job Scheduling Management with read access or ITPPM.

- Steps within a procedure

In case:

- you allow display authorization (`ACTVT 03`) for any scenario, the user is not allowed to edit any step within the procedure in question.
- your security policy only allows certain users to maintain a specific set of steps within the procedures, you can restrict on procedure and step level.

- a user does not have this authorization object assigned, but still has access to the transaction via authorization object S_TCODE using the work center for SAP Solution Manager configuration (also using WDA: AGS_WORKCENTER), data are not displayed by the system in the User Interface.

Restricting Work Center Navigation View Panel - Authorization Object: SM_WC_VIEW

> **i Note**
>
> See SAP Note 2211213 - How to maintain the authorization for SM_WC_VIEW in a PFCG role.

All work center home page applications are ABAP WebDynpro based. *Work Center Views*, any Sub-Views, and the *Common Task* level can be restricted by the authorization object SM_WC_VIEW. This authorization object is contained in the specific core role for the application. In case the authorization object is not granted, the according View, Sub-View or Common Task is hidden by the system in the User Interfaces

You may need to adapt this authorization object for instance in scenarios in which the user can select copied transaction types in sub-views or views, such as *Incident Management* or *Change Request Management*. To be able to adapt, proceed as follows:

1. Choose transaction SM30.
2. Choose table AGS_WORK_VIEW.
3. Copy the according entry for the transaction type.
4. Adapt the copied entry.

Table AGS_WORK_VIEW is used as the value help for the authorization object. You can add views and tasks to your work centers and control them using this authorization object. Activate the BAdI Implementation in the IMG for SAP Solution Manager in transaction SPRO.

The BAdI implementation fills the value help table for the authorization object. To use the trace, you must activate the BAdI and go to the work center. The system enters the work center IDs in the value help table AGS_WORK_VIEW. You can then adjust the authorization object in the role. In a nutshell:

1. Activate BAdI: AGS_WORK_AUTH_SM_WC_VIEW in Enhancement EHN_AGS_WORK_AUTH_UI (activate via transaction SOLMAN_SETUP)
2. Activate BAdI: AGS_WORK_AUTH_F4_TRACE in Enhancement EHN_AGS_WORK_AUTH_TRACE (activate via transaction SPRO).
3. Go to transaction PFCG, and call role the according core role.
4. Change the values in the authorization object, for instance only add those views which you want to see, leave out those you do not want to see.
5. Generate the profile, and assign the role to the user.

> **i Note**
>
> Authorization object SM_WC_VIEW is always checked. If the SM_WC_VIEW check succeeds, then the system checks the authorizations for the specific business function required to use the Web Dynpro Application, Web Dynpro Component or transaction. The additional User Interface authorization object makes sure, that the User Interface is controlled even when an application does not require specific application relevant authorization restrictions. In addition, this approach has the advantage that you can use the authorization

object to remove for instance Common Tasks from a work center, even if the user is technically authorized to use such tasks.

Example

In Work Center Incident Management, the Common Task *Manage Substitutes* is not displayed by the system if:

- authorization object `SM_WC_VIEW` with the according entry is **not granted to the user**, but the application specific authorizations are granted. This may be the case, if you only want users to maintain substitutes in transaction `BP`, and not in the work center
- authorization object `SM_WC_VIEW` **is granted**, but the application specific authorization object `B_BUPR_BZT` with value `BUR013` is not granted to specific users only.

The Common Task is only displayed by the system, if both authorization objects with the according values are granted to the user.

Adaptation of Related Links in the Navigation Panel

We recommend to use the delivered navigation roles. You can also define them for your own purposes. This means, you can add new folders with applications in the *Related Links* area in the work center navigation panel. You can also delete defined folders. You cannot change entries in the work center areas *Common Tasks* or *Navigation Panel Views* in the role. You can adapt these areas using authorization object `SM_WC_VIEW`.

8.3 Secure Single Applications in Intra/Internet

ABAP WebDynpro Applications and Components

`ABAP` WebDynpro is used for most applications in SAP Solution Manager.

ABAP WebDynpro Application versus ABAP WebDynpro Component

Any ABAP WebDynpro Application is at least restricted by its start authorization object (`S_START`), and the application itself must be activated as a service in transaction `SICF`. In contrast, ABAP WebDynpro Components have no start authorization and must not be active in transaction `SICF`. There is no specific concept as to whether an ABAP WebDynpro Application or an ABAP WebDynpro Component is embedded into the Work Centers.

Note

Transaction `SICF` allows for Maintenance of ICF setting. We recommend to restrict authorization object `S_ICF_ADM` carefully and only assign it to specified users in the system. In addition, avoid assigning

authorization object S_SEC_SESS with ACTVT 63 or HI in combination with transaction SICF_SESSION as it allows activation or deactivation of HTTP Security Session Management.

⚠ Caution

If you require to call any application, which is embedded in any Work Center, to be called stand-alone, you need to check whether it is an ABAP WebDynpro Application or an ABAP WebDynpro Component. In case of an ABAP WebDynpro Component, find out its application or create your own application for it, and use this application as stand-alone application.

i Note

If an imbedded Web Page is a *Web Dynpro Component*, they are not to be activated using transaction SICF. **If you want to display such an application separately outside the Work Center framework, this can lead to security-leaks** as some *Web Dynpro Components* might not have separate authorization object checks.

Web Dynpro Application - Start Authorization Object: S_START

Before SAP Basis Release 7.4, the maintenance of authorization objects for ABAP WebDynpro in transaction PFCG was mainly done *manually*, due to former restrictions for this type of technology in transaction PFCG. The start transaction used had been authorization object S_SERVICE. With SAP Basis Release 7.4, a specific start transaction authorization object is introduced: S_START. This authorization object is similar to S_TCODE. S_TCODE is the start authorization for transactions. Therefore, in SAP Solution Manager Release 7.4, authorization object S_SERVICE is substituted by authorization object S_START as *ABAP WebDynpro* start authorization. For additional information, see section *Application Start Authorization Objects*.

Example

For instance, for End-User Experience monitoring (EEM), the core single role is SAP_SM_EEM_*.

The role contains all relevant application IDs for the relevant EEM user role. It does not contain the application ID for the dashboard application for EEM though. This ID is included in the core authorization role dashboards for EEM: SAP_SM_DASHBOARDS_DISP_EEM.

i Note

All delivered roles are updated in this regard from Release 7.1 to Release 7.2.

Restricting Link and Button Access - URL Framework Authorization Objects SM_WD_COMP and SM_APP_ID

From within a Web Dynpro Application, other applications can be called via a User Link. This user link is protected by authorization object SM_WD_COMP. Any new application can be either called within the Web Page itself or in a separate window. This is protected by authorization object SM_APP_ID. Both authorization objects are used in the following work centers in SAP Solution Manager:

- Technical Administration
- Technical Monitoring
- SAP Solution Manager Configuration
- Solution Manager Administration
- Root Cause Analysis

- Data Volume Management

Both authorization objects restrict views, subviews, `URL` links, transactions, or buttons leading to separate screens. For all roles delivered as default template roles by SAP, these objects are already maintained according to the user definition by SAP. The authorization objects are included in the applicable core authorization role for the application.

> ⚠ Caution
>
> The use of these two user interface authorizations can lead to misleading `ST01` or `STAUTHTRACE` authorization traces. If you trace one application due to authorization error messages, the analysis of the trace displays all authority checks executed by the system. This also includes user interface authorizations. In case of restrictions to user interfaces by the above-mentioned objects any missing authorizations for them are marked with return - code (`RC`) = `4`. If you are not tracing for the user interface element, you can ignore this entry. We recommend not to change the delivered SAP roles.

URL - Framework

You can adapt the authorization objects, and therefore the user interface for all scenarios of these work centers. To do so, you need to apply the so called `URL` - framework. Here, you can find the according values for the application you want to restrict. Proceed as follows:

1. Call the URL for service: sap/bc/webdynpro/sap/urlapi_app_manager.
2. Open the links for the work center you want to adapt.
3. Check the application view. The authorization object is displayed on the same page.

Restricting Visibility of Tabs or Logon Screen in the Work Center User Interface

You can restrict individual tabs in any of the User Interfaces in the Work Centers by using general WebDynpro functionality. For an individual user, proceed as follows:

1. To indicate which tab should be hidden or restricted, bring the cursor in the fields of the tab.
2. Use the left mouse click to display the menu of options.
3. On the menu, choose *More*, and *Hide Elements*. The system hides the according tab in the User Interface. For more information to restrict a tab system wide for all users, choose documentation link: http://help.sap.com/saphelp_nw70/helpdata/en/46/98ce61f37d19ace10000000a11466f/frameset.htm

> ℹ Note
>
> If you want to customize your Work Centers for branding or adapting the Web Dynpro Logon Screen, see SAP Note 1160651.

CRM Web Client User Interface Authorization

Authorization Object UIU_COMP

`BSP` based technology is used within the `CRM WebClient User Interface`, which is called from within the work centers `ABAP` WebDynpro applications for Incident Management and Change Management applications. Similar to the work center navigation role concept, a `CRM` navigation role is delivered with the according authorization roles for the authorizations for the User Interface. For more information, see section *Using SAP Solution Manager with CRM*.

The authorization object for the User Interface for CRM is UIU_COMP. It restricts authorizations for CRM components and its used applications. The authorization object controls which components can be called by the user.

We deliver specific roles for this authorization object, which are again contained in the respective roles. All roles for the UIU_COMP authorization object have the naming convention SAP_SM_CRM_UIU_*. They are layered according to the user definition they are defined for. They are additive. For instance, if you use the administrator role for Incident Management, you find two UIU_COMP roles included, as UIU_COMP authorizations in both roles add up. The *Incident Management* role for the processor includes only one UIU_COMP role. An ST01 or STAUTHTRACE trace always displays all possible values for this authorization object. Only the objects included in the above-mentioned roles are relevant for SAP Solution Manager applications. For instance, a trace may result in about 500 checks for the authorization object UIU_COMP of which only about 20 checks are relevant for SAP Solution Manager use. We recommend not to change the delivered SAP roles.

> → Recommendation
>
> We recommend not to change the delivered SAP roles.

Authorization Object C_LL_TGT

Authorization object C_LL_TGT is required within the CRM Web Client User Interface for Links to ITSM Reporting and HTML mail formats.

Authorization Object S_TCODE for Transaction

To be able to run any transaction in any SAP System, authorization object S_TCODE is called by the system and must be assigned to the user running the transaction.

> ⚠ Caution
>
> S_TCODE should only contain the transaction codes that the user is allowed to run.

Authorization Object S_START for Web Dynpro Application

Web Dynpro Applications have start authorization object S_START. S_START is delivered with SAP BASIS Release 7.40. This authorization object substitutes authorization object S_SERVICE as the start authorization object.

> i Note
>
> In addition to authorization object S_START with SAP Basis 7.40, authorization object S_USER_STA is required by a user, if he/she want to add a new Web Dynpro Application in the menu of an authorization role.

Authorization Object S_SERVICE for OData - Services

OData Services have start authorization object S_SERVICE.

> **i** Note
>
> Note, that external services are also protected by authorization object S_SERVICE. The Service - ID is added manually in the respective roles.

8.4 Guided Procedure Framework

If you want to customize your own Guided Procedure, assign SAP_SM_GP_ADMIN. This role contains the critical authorization object S_SYS_RWBO with ACTVT 01, 02, 03, and critical authorization object S_TRANSPRT with ACTVT 01, 02, 03, 07 for Workbench Requests and Customizing Requests. If you do not want to allow the user to create, change, delete or display transports, then you need to **deactivate** these objects. Additionally, critical authorization object S_CTS_ADMI with value TABL is included in the role. It should not be assigned in combination with transaction codes SE80 or STMS, as it allows super user authorizations in ABAP development environment and transport environment.

In case you need to maintain SAPscript documentation using transaction SE61, you need to assign the following authorization objects to the role:

- S_TCODE with value SE61
- S_DEVELOP with ACTVT 03 (display) for all object types

8.5 Protecting ABAP Development Environment

Authorization Object S_DEVELOP

S_DEVELOP is the general authorization object for ABAP Workbench objects. You use it to grant access authorizations for all ABAP Workbench components, which include the following:

- ABAP development tools
- ABAP Dictionary and Data Modeler
- Screen Painter and Menu Painter
- Function Builder
- Repository Browser and Info System
- SAP SmartForm

→ Recommendation

From a production perspective, it is considered critical if authorization object S_DEVELOP is assigned to users. In general, authorization object S_DEVELOP with more than display access (ACTVT 03) is not required by any user in production.

Critical Authorization Combinations with S_DEVELOP

The combination of field values for S_DEVELOP is critical:

- object types STRU (structure), TABL (table) , and ACTVT values 07, 40, 41, 42 for S_TCODE SE11 allows maintenance of data dictionary objects.
- object type FUGR (function group) with ACTVT 16 for S_TCODE SE37 allows RFC via function calls.
- object types DEBUG (debugging), PROG (program) with ACTVT value 02, and S_PROGRAM with ACTVT value SUBMIT for S_TCODE SE38 allows replacing and debugging of reports. Note here as well, that S_TCODE SE38 should never be granted to general end-users. In combination with S_TCODE SE80 it allows programming (active in role SAP_DVM_SERVICE (needs access programming tools), see *Application - Specific Guide for DVM*)
- object type TABLE (table) with ACTVT value 02, and S_TABU_DIS with ACTVT value 02 for S_TCODE SE16, SE16N allows replacing and debugging of tables.
- object type TRAN (table) with ACTVT value 01, 02 for S_TCODE SE93 allows maintenance of transaction codes.

S_DEVELOP in transaction SOLMAN_SETUP

The authorization object is assigned for maintaining transaction SNOTE during the SAP Solution Manager basic setup to the SOLMAN_ADMIN user in role SAP_SETUP_BASIC_S_DEVELOP.

→ Recommendation

After implementing all required SAP Notes into the system, you can set the according authorization object inactive. Documentation is given in the Guided Procedure for the automated setup.

8.6 Protecting Functions and Tables

Protecting Functions

Protecting function groups and subsequently function modules is part of protecting your application. In general, for SAP Solution Manager roles, in most cases SAP limits authorizations to only the nesessary function

modules for the according function.This is done via authorization object S_RFC. In case your security guidelines do not allow for specific function modules, such as RFC_ABAP_INSTALL_AND_RUN (ABAP-source code via RFC install and execute) which belongs to function group SUTL, you can remove the relevant function module from the roles. Still, keep in mind, that the relevant function module might be mandatory to run the specific function.

> **i** Note
>
> When you run an authorization trace for S_RFC, the trace shows you both, function groups and the relevant function module of this group. We recommend to limit authorizations always to function modules instead of function groups.

Protecting Tables

Protecting groups of tables and individual tables is part of protecting your application. For more information on this, see information in the section *Tighten Table Read and Write Access* in this guide. As with functions, we recommend to rather protect individual tables, such as DBTABLOG using authorization object S_TABU_NAM than table groups, such as SA using authorization object S_TABU_DIS.

9 Securing Data, Data Flow, and Processes

9.1 Vulnerability

Authorization checks are shipped by SAP for all applications and APIs, but they must be assigned to the authorized user in a controlled way by you. Here, we regard any authorized dialog user in your system as a potential security issue.

Any dialog user in your system must be restricted to be *authorized only to the functions and applications he/she is intended to have*, in other words, the user should be assigned minimal authorization that is required for his/her task. Even read access to applications that are not part of the user's task, can pose a risk, as an attacker can potentially use any information available to gain knowledge and consequently access to your system. Avoid adding authorizations to a dialog user without knowing which consequences may arise.

Authorizations delivered in roles by SAP are customized to fulfil the requirement of the SAP designed Standard Process. Very seldom this process matches your own process in your business. Therefore, any authorization role delivered by SAP should be customized to match your own processes. If you use authorizations in your systems which are not restricting access to your system and processes in a controlled and specific manner, this can be easily exploited and may lead to escalation of priviledge and damage to your data.

> → Recommendation
>
> We strongly recommend that you adjust any authorization objects which are delivered with generic field values. Generic field values are all fields in authorization objects which can not be predetermined by SAP.

Additionally, it is possible in various applications to upload files, to your system. Uploaded files can pose a security risk to your system, as they may contain malicious content, such as code which can influence your system if undetected. If malicious code finds its way into your system and is executed, it can damage your whole system. It could result in system shutdown or take over, or any other attack depending on the code and the aim of the attacker. Therefore, uploaded files can be considered as a first step to a security attack.

> → Recommendation
>
> In general, we strongly recommend to implement reliable virus scans and make use of authorization restriction.

9.2 Background Jobs

Background Job Authorizations S_BTCH_***

Batch Job scheduling and execution is protected by Background Job authorizations starting with `S_BTCH_***`.

> → Recommendation
>
> Authorization object `S_BTCH_NAM` determines the authorized users for running batch jobs. In SAP Solution Manager standard roles, this object is delivered with no specific user maintained. We recommend to maintain this object for any technical user required, for instance `SOLMAN_BTC`. A combination of transaction `SM36`, `S_BTCH_NAM` with full authorization and `S_BTCH_JOB` with `RELE` (release) authorization is critical.

Restricting Authorizations of SOLMAN_BTC

According to Background Jobs

The technical user `SOLMAN_BTC` runs all relevant jobs for the basic configuration, which are listed in transaction `SOLMAN_SETUP` in view *Basic Configuration* in step 2 *Schedule Jobs*. All background jobs that run with this user can also be found in SAP Note 894279. If you would like to run a job which is not in the list, you require a different user or you need to add additional authorizations. Then, you need to trace the authorization for this job and add it to `SOLMAN_BTC` at your own risk. We advice to have a separate role and check for critical authorization combinations.

> → Recommendation
>
> In case you run a highly secure environment, we strongly advice to create for any job, or group of similar jobs, a single role built from scratch by using an authorization trace for it.

Troubleshooting Technical User SOLMAN_BTC in Rapid Content Delivery

The report is protected by authorization object `S_PROGRAM` with program group `RCSU_PREREQ_CHECK`. The execution of the report program `RCSU_PREREQ_CHECK` can be checked in the log in transaction `SLG1` using Object **`RCD`** and Subobject **`TROUBLESHOOT`**.

SDCCN - EWA Background User in Managed Systems

All jobs referring to transaction `SDCCN` are managed by a user, which is generally the first user to activate the transaction `SDCCN`. In most cases, this would be the administrator user for the managed system with far too

many authorizations than necessary. Activate SDCCN with a separate technical user for background jobs. This allows you to lock the configuration user SOLMAN_ADMIN after configuration.

In case you have used user SOLMAN_ADMIN to activate transaction SDCCN and consequently run all required background jobs for SDCCN (/BDL/*) with his user, you need to have role SAP_SDCCN_ALL assigned. This role contains authorization for authorization object S_DEVELOP.

> → Recommendation
>
> We strongly recommend to change the user, which runs the jobs to a technical user type, with only specified roles. The specific role that should be assigned is SAP_SDCCN_ALL which contains authorizations S_SDCC***. In case, you choose to run this job with a general batch user for your managed system, either add the role SAP_SDCCN_ALL to your user or the respective authorization objects.

9.3 Securing Attachments, Uploads, and Download

Upload and Download of Files in Various Applications

Upload and Download possibilities in various applications can pose a security risk to your system, as unintended data may be downloaded and distributed or uploaded documents may contain malicious content which can disturb your business. Both can damage your system and business reputation.

> → Recommendation
>
> We strongly recommend to install a virus scanner for any uploaded data. For more information, see underneath. In addition, make sure, that any download possibility is controlled by security measures, such as dedicated users and dedicated authorizations assigned.

Set Size Limits to File Uploads

You can limit the size of uploaded files to protect the application server from a Denial of Service (DOS) attack from large requests. This restriction is set in the Internet Communication Manager (ICM) and applies to *_all_* file uploads via the HTTP protocol. Use parameter *icm/HTTP/max_request_size_KB* with an integer value for the maximum file size in kilobytes. If the content-length of the request exceeds the specified value of the parameter, the system does not pass the request to the application server. An error message is sent to the application frontend.

Download Completion Report of Configuration Process in SOLMAN_SETUP

Within SAP Solution Manager, a number of applications provide the possibility to download data and also to upload attachments. These possibilities are protected by authorization activities such as UPLOAD or DOWNLOAD within the respective authorization object.

> **i Note**
>
> These `ACTVT` (upload and download) are shipped in an inactive status due to their criticality. If you require any user to be allowed to download or upload within an application, you must activate these authorizations first.

> **Example**
>
> Authorization Object `SM_SETUP`: This authorization allows access to the transaction `SOLMAN_SETUP` and various activities within the transaction. If you want to allow download of completed configuration procedure activities, you must add `ACTVT 61` (export) and assign it to the respective user.

Upload of Images in Comments to SOLMAN_SETUP

In the `SOLMAN_SETUP` comments area for each activity, it is possible to upload images. The possibility of uploading is protect by a specified authorization object `SM_UPLOAD` with activity `ACTVT UL` for upload. It is contained in the role `SAP_SETUP_BASIC` as well as in the roles for GP framework `SAP_SM_GP_ADMIN` and `SAP_SM_GP_EXE` in an inactive state.

Virus Scan for Applications and SAP Fiori Apps

In general, any upload functionality in applications of SAP Solution Manager is integrated in the relevant application and therefore indirectly protected by the application specific authorization object. In addition, upload files should always be scanned by a virus scanner.

> **→ Recommendation**
>
> We recommend to use ABAP Virus Scanning Interface (VSI) for virus scans of attachments. Configure `VSI` to exclude both executable (.exe) and HTML files from being uploaded. Note, that in case the VSI is active, but you have no Third Party Virus Scan in place, the system will not upload any attachments by default. If you do not set the VSI active, the system will allow you to upload attachments. As this is highly insecure, we strongly recommend to use a Virus Scan Product for uploading attachments. Check: https://help.sap.com/saphelp_nw70ehp2/helpdata/en/cd/14c93ec2f7df6ae10000000a114084/frameset.htm

Attackers can abuse a file upload to modify displayed application content or to obtain authentication information from a legitimate user. Usually, virus scanners are not able to detect files designed for this kind of attack. For this reason, the standard SAP virus scan interface includes options to protect the user and the SAP system from potential attacks. For more information about the behavior of the virus scanner when default virus scan profiles are activated. See SAP Note 1693981 (Unauthorized modification of displayed content)

In all CRM applications the following default VSI profiles are used:

- `/SCET/GUI_UPLOAD`
- `/SIHTTP/HTTP_UPLOAD`

`/SCMS/KPRO_CREATE`, specifically for Incidents which are created via an external interface.In addition, attachments are scanned using standard Knowledge Warehouse profile.

> **i Note**
>
> Check the basic configuration of virus scanner settings, either in transaction SOLMAN_SETUP or in application *Security* which is part of the *SAP Solution Manager Administration*.

The thread dump analyzer is implemented via Java webdynpro component FileUpload. The webdynpro component uses virus scan profile webdynpro_FileUpload.

-

Application Log Access for SOLMAN_SETUP

Any application within SAP Solution Manager comes with a log possibility. For most applications, the log information can be retrieved by using transaction SLG1 together with the respective object and subobject for the application. This information are given in the *Application - Specific Security Guide* as per scenario and in the *Application Operations Guide*. In terms of security, log file information is security - critical, as it contains valid information as to your system, your users, performance and the like.

SAP Panks (SAP Note Search within SOLMAN_SETUP Log)

Within the log for every SOLMAN_SETUP step, you have the possibility to search for SAP Notes connected with any errors occuring for the configuration step. The PANKS search connects to SAP's support backbone using RFC SAPOSS.

Log Upload and Download in SOLMAN_SETUP

The logs of any guided procedure in transaction SOLMAN_SETUP can be attached to an Incident Message and downloaded for the purpose of error reference. Any user data or other data in this respect are visible in these HTML reports. Reports are only available for download, if the current user has access to SOLMAN_SETUP or the SAP Solution Manager Configuration work center. Access is granted by authorization object SM_SETUP – 61 export.

The activity to *Export* any logs in the User Interface of transaction SOLMAN_SETUP (buttons *Export To HTML* and *Send By Email*) is protected by authorization object SM_SETUP with ACTVT 61 (Export).

Audit Log

See the *Auditing and Logging* on SAP Support Portal at: http://help.sap.com *Search Documentation* , search for *Auditing and Logging*.. Check:

- https://help.sap.com/saphelp_nw70ehp2/helpdata/en/c7/69bcb7f36611d3a6510000e835363f/frameset.htm
- SAP Note 2080378
- SAP Note 536404

9.4 Processes and Document Management

Process Documentation

Role	Included Authorization Objects
SAP_SM_SL_DISPLAY	The role contains all relevant authorizations for process documentation in display mode.
SAP_SM_SL_EDIT	The role contains all relevant authorizations for process documentation for editing processes.
SAP_SM_SL_EDIT_BPMN	The role contains all relevant authorizations for process documentation for editing, and maintenance authorization for Business Process Graphics processes.
SAP_SM_SL_ADMIN	The role contains all relevant authorizations for process documentation administration.

Authorization Objects that were relevant in Release 7.1

Due to the major change in *Process Documentation* architecture, most formerly relevant authorization objects are obsolete. They are set into authorization class AAAA as obsolete. In case you need to check solutions of Release 7.1, roles SAP_SOLPRO_OLD and SAP_SOLPRO_DISP_OLD contain these authorization objects.

Authorization Object SM_SDOC

This object is relevant for being able to restrict processes/solutions.

Authorization Object SM_SDOC_ADM

This object restricts solutions on the administrative level.

Authorization Object SM_GAL_GO

This object is specific for role SAP_SM_SL_EDIT_BPMN. It allows for restricting the use of graphical objects for Business Process Operations in Process Documentation.

Document Management and Digital Signature

Role	Included Authorization Objects
SAP_SM_KW_DIS	The role contains all relevant authorizations for Documentation Management in display mode.
SAP_SM_KW_EXE	The role contains all relevant authorizations for Documentation Management for editing documents.
SAP_SM_KW_ALL	The role contains all relevant authorizations for Document Management administration.

Obsolete Authorization Objects

Two new authorization objects are shipped with Release 7.2. They substitute completely authorization objects S_IWB, S_IWB_ADM, and S_IWB_ATTR. Both objects are shipped with software component SAP_BASIS, and are contained in authorization class SMD.

New Authorization Object: S_SMDATT

This object restricts the use of a document depending on the allowed document attributes.

New Authorization Object: S_SMDDOC

This object restricts the activities that can be done on a document.

> **i Note**
>
> - Activity 60 (import) is shipped per default in role SAP_SM_KW_ALL. It is used for the migration procedure of documents to import KW documents into the new folders. You can remove the value after having run the migration procedure for documents.
> - Test Management uses document folders which are specific for Test Management, as users create Test Notes from Test Documents. The relevant authorization object S_SMDDOC is contained in roles SAP_SM_KW_* allowing values that are contained in table SMDFLDGRP. Per default all folder groups are allowed. Test Notes and Test Results are stored in a KW folder which has the name of the solution added by naming convention TWB. If you want to restrict folders specifically for Test Management documents, then you should make sure that you need to add this naming convention <.TMW> as addition to the solution, <technical solution name>.TWB.

Digital Signature for Test Management

As Test Management contains a separate framework for Digital Signature which allows to use a signature process for Test Plans. All relevant authorizations for object C_SIGN for this use case are contained in roles SAP_STWB_2_***, see scenario - specific guide for *Test Management*.

Authorization Objects with Fields for Solution and Branch

- SM_CM_DGPN
- SM_CRM_RFIT

These two objects are used in the area of change control. They are to be used in combination with authorization object SM_SDOC which should only be maintained for display usage.

Embedded Search (TREX and HANA based)

Embedded Search supported by TREX or HANA is used in SAP Solution Manager by various scenarios, such as *Process Documentation*, *Change Request Management, Incident Management* or *Q-Gate Management*.

Authorizations

All authorization objects required by this basic functionality is included in the core role `SAP_SM_ESH*`. You can use role `SAP_SM_ESH_ADM` to configure the view: Embedded Search. For more information, see section on *View Embedded Search* in the *Secure Configuration Security Guide*. All authorization objects related to Embedded Search have the following naming convention: `S_ESH_*`.

9.5 Change Control Related Issues

Batch Job Authorizations (S_BTCH_***)

The authorization object `S_BTCH_JOB` in roles for *Change Request Management* contain the `ACTVT` to delete. During cycle switches, either in continual cycle or phase cycle or release cycle, you can either switch the existing import jobs or at least remove the old jobs, and schedule new ones on the same recurrence basis. While you can close a Change Cycle and create a successor Change Cycle all existing jobs in the closed Change Cycle need to be finished. As these jobs are not Change Manager's or Release Manager's own jobs, he or she needs to have the authorization to finish any developer's jobs in order to close the Change Cycle.

> → Recommendation
>
> We recommend to remove the authorization for any user who should not be able to remove background jobs for this case.

Restricting Change Control Landscapes and Branches/Processes (SM_CM_FUNC)

To be able to differentiate within Change Request Managent on Processes and branches, you need to maintain authorization object SM_CM_FUNC which is contained in all roles concerning Change Control. Here, you can refine Solution and Branch together with Cycle Type in combination with specific functions for all Change Control related scenarios, such as Change Request Management, QGM, or Requirements Management.

> → Recommendation
>
> In case you restrict this authorization object for your scneario, we recommend:

- to check that authorization object SM_SDOC is maintained with ACTVT display for the same solution/s and branch/es. This object is contained in roles SAP_SM_SL_***, see also section *Processes and Process Documents*.
- to check all roles which contain the object, such as roles for the dialog user, but also for technical users such as SM_EFWK or SOLMAN_BTC. If you want to know more on how to find out all roles which contain the object, or any other authorization object in question, check the *Configuration Validation* possibilities in section *Useful Tools*.

Restricting Number Ranges Authorization S_NUMBER

Most of the CRM related scenarios, such as Requirements Management or Change Request Management, require the maintenance of number ranges with transaction SNUM. The object is delivered in roles SAP_***_CONFIG, but must be maintained accordingly.

Organisational Org Unit Maintenance Authorization PLOG

The authorization object PLOG defines an organizational level in HR Management. When you use organisational units with CRM - related scenarios, this authorization object is required. It is shipped inactive in all SAP Soltuion MAnager standard roles and must be set active.

⚠ Caution

The object requires specific maintenance in transaction PFCG. Please see the general documentation for transaction PFCG and Authorization Object Maintenance.

Transaction Type Relevant Authorization Objects

Adapting Transaction Type Relevant Authorization Objects

As per SAP Standard delivery of roles, users in the ChaRM application are able to display every transaction with read authorizations. As a user in your system should only be granted minimal authorizations that are necessary to perform its intended function, all relevant authorization objects that relate to transaction types must be maintained. Authorization Key and Status Profile are dependent on the Transaction Type. For the various scenarios different Transaction Types are delivered by SAP, which need to be adapted later due to customizing. If you customize your own *Transaction Types*, you need to add them and related entities to the according authorization objects. You can find out which SAP Standard Transaction Type is used for the individual scenarios, check the Application-Specific Guides.

→ Recommendation

We strongly recommend to define a granular authorization concept for users to access transaction types and perform activities in transaction types and diligently document the customizing of any CRM - objects and modification of authorization objects in CRM.

All authorization field values delivered are SAP owned customizing entries. If customizing is executed in a customer system, these values must also be adapted in the required authorization objects. The field values are:

- Transaction Type
- Authorization Key
- Status Profile

The fields are contained in the following authorization objects which relate to each other:

- `CRM_ORD_PR`: checks which transaction type is allowed with access rights
- `B_USERSTAT`: defines the change of status *executed by the end-user*.
- `B_USERST_T`: defines the change of status *executed by the system*.
- `SM_TIMEREP`: manages the time recording for messages
- `SM_FIELD`: checks which UI element can be accessed in an assignment block in the CRM WebClient UI

Inactive Authorization Object CRM_ORD_LP

For SAP Solution Manager, authorization object `CRM_ORD_PR` is the main object. You may encounter authorization object `CRM_ORD_LP` in SAP Soltuion Manager delivered roles, but here it is set inactive. Both objects are related due to the CRM authorization check method `CRM_ORDER_CHECK_AUTHORITY_ACE`, whereas `CRM_ORD_LP` has a higher ranking than `CRM_ORD_PR`. Due to the fact, that it is less complicated to maintain authorization object `CRM_ORD_PR` with two authorization fields, all instances of `CRM_ORD_LP` are set inactive.

- The following objects are generally assigned:
- `CRM_ORD_OE`
- `CRM_ORD_OP`
- `CRM_ORD_PR`
- `CRM_SEO`
- `CRM_TXT_ID`
- `B_USERSTAT`
- `B_USERST_T`

Updating Roles With Modified Authorization Field Values

To keep these modified values for roles over a number of SP updates, either add additional values in the roles themselves or create a separate role with the relevant authorization objects and modified values. You can also use the Role Adjustment Tool from within transaction `SOLMAN_SETUP` or application `SMUA`, for more information on the *Role Adjustment Tool*, check section *Useful Tools*.

9.6 Manage Import Authorization in ChaRM

Use

Import authorizations are necessary in the Change Management process. It allows Business users to being able to automatically create transport requests and import transports from a source system into a target

systems. The authorization object required is S_CTS_ADMI. If you use cluster or non-ABAP systems in TMS communication systems, we recommend to use the equivalent authorization object S_CTS_SADM instead. Authorization object S_CTS_SADM allows you to additionally restrict on systems and domains.

Prerequisites

You are using delivered Standard Roles SAP_CM_MANAGED_* for users in your managed systems. These roles contain specific security-critical authorizations for the individual Business users, which should be handled separately.

Procedure

We recommend two alternatives for handling these security-critical authorizations, depending on your level of security protection for your systems:

- a) Use Existing Standard Roles for Managed Systems (assigned import authorization)
- b) Use Delivered Import Role SAP_CM_MANAGED_IMPORT

Use Existing Standard Roles

Use the existing roles for users with additional import authorizations.

Use Delivered Import Role SAP_CM_MANAGED_IMPORT

This practice allows you to use role SAP_CM_MANAGED_IMPORT for any Business User required. This role contains all required import authorizations needed.

> ⚠ Caution
>
> The above roles should only be assigned to the following users in the respectively mentioned systems, but never in production systems or security relevant systems:
>
> - Developers in consolidation systems
> - Testers in all test systems
> - Change Managers in consolidation systems
>
> A combination of authorization object S_DATASET and S_CTS_ADMI with value IMPA and EPS1 can jeopardize security in your system. You should only use this practice if you require a smooth Change Request Management process.

Security Criticality

The following authorizations are relevant for the imports into test and production systems.

S_CTS_ADMI and S_CTS_ADMS

Both objects protect administration functions in the Change and Transport System in transaction STMS: In contrast to object S_CTS_ADMI, authorization object S_CTS_ADMS restricts directly on systems.

> **i** Note
>
> The value for TMS Whitelist can not be used for ChaRM/QGM. Therefore, the value is not activated by default for any shipped roles.

The following combinations are examples of critical authorization combinations, which should be avoided in your system or only assigned for a specified time frame to any user.

- Transaction SE06 with values INIT and SYSC for S_CTS_ADMI and S_TRANSPRT with display authorization.
- Transaction SPAM with a combination of S_CTS_ADMI value TABL and S_TRANSPRT value PATC for ACTVT 01 (create).

S_TRANSPRT and S_SYS_RWBO

With authorization object S_SYS_RWBO, you have the option to specify system destination and domain, which are not available in S_TRANSPRT.

9.7 Early Watch Alert Data

For any session, but specifically for EWA Sessions, ACTVT 06 (delete) for authorization object D_SVAS_SES is security-critical. This object is contained in role SAP_SETUP_BASIC without delete authorization, which is assigned to user SOLMAN_ADMIN. If you require to remove sessions from your system, you must add the value manually.

9.8 Restricting BI Master Role: SAP_BI_E2E

Display Authorization for Role SAP_BI_E2E

Role SAP_BI_E2E contains activation authorizations for all BI - reporting scenarios as well as batch authorizations. It is not delivered as a display role, as such a use case would be very specific. For instance, if you want to display performance data in the Alerting Framework in work center SAP Solution Manager Administration, you need to add role SAP_BI_E2E as well.

If you want to restrict the role for display purposes, proceed as follows:

1. Copy role SAP_BI_E2E.
2. Restrict the activity field ACTVT for all authorizations to *display* (usually 03).
3. The authorization objects S_BTCH_* should be set inactive.

9.8.1 Business Partner Data

Business Partners are used by many applications running in Solution Manager. These roles contain all necessary authorizations for their usage.

> **i Note**
>
> If this role (or the corresponding authorization objects) is not assigned to a user, this user will not be able to display the *Business Partner* tab in transaction LMDB, or be able to filter in the POWL queries SMWORK_TSYS_DIAG_REL and SMWORK_DIAG_ALL.
>
> Within transaction LMDB, you are able to go to the *Business Partner detail* screen of the CRM WebClient application. To be able to do so, you need to additionally assign the following two roles to your user:
>
> - SAP_SM_CRM_UIU_SOLMANPRO (do **not** copy into your name space) for navigation access
> - SAP_SM_CRM_UIU_SOLMANPRO_PROC (do copy into your name space) for authorization access

Business Partner

Role	Included Authorization Objects
SAP_SM_BP_*	The role contains all relevant authorizations for business partner and product assignment for POWL queries SMWORK_TSYS_DIAG_REL and SMWORK_DIAG_ALL • B_BUPA_RLT • COM_IL All additional authorization objects for business partners can, but must not necessarily be used.

10 Data Protection and Privacy Measures

10.1 Vulnerabilities

> **i** Note
>
> In the majority of cases, compliance with data privacy laws is not a product feature. SAP software supports data privacy by providing security features and specific data-protection-relevant functions such as functions for the simplified blocking and deletion of personal data. SAP does not provide legal advice in any form. The definitions and other terms used in this guide are not taken from any given legal source.

The following section deals with:

- **Overview**: Gives an overview of relevant applications in SAP Solution Manager and possible safeguard applications
- Reporting on Existing Data to an Identified Data Subject
- Simplification of Deletion of Personal Data
- Change Log Information per Function
- Archiving of Objects
- SAP ILM Tool Support

Each chapter contains relevant information per scenario/function.

10.2 Glossary

The following information define the terms relevant for this section in more detail.

> **i** Note
>
> For simplicity reasons, the following abbreviations are used throughout the chapter:
>
> - Abbreviations for functions are referenced in section *Overview of Relevant Applications in SAP Solutin Manager*, and are then used throughout the chapter. For instance: Service Availability Management: SAM
> - Business Partner: BP
> - End of Purpose: EoP
> - Information Lifecycle Management: ILM

Glossary

Term	Definition
Personal data	Any information relating to an identified or identifiable natural person (*data subject*). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural, or social identity of that natural person.
Purpose	A legal, contractual, or in other form justified reason for the processing of personal data. The assumption is that any purpose has an end that is usually already defined when the purpose starts.
Blocking	A method of restricting access to data for which the primary business purpose has ended.
Deletion	The irreversible destruction of personal data.
Retention period	The period of time between the end of purpose (EoP) for a data set and when this data set is deleted subject to applicable laws. It is a combination of the residence period and the blocking period.
End of purpose (EoP)	A method of identifying the point in time for a data set when the processing of personal data is no longer required for the primary business purpose. After the EoP has been reached, the data is blocked and can only be accessed by users with special authorization.
Residence period	The period of time after the end of purpose (EoP) for a data set during which the data remains in the database and can be used in case of subsequent processes related to the original purpose. At the end of the longest configured residence period, the data is blocked or deleted. The residence period is part of the overall retention period.
Where-used check (WUC)	A process designed to ensure data integrity in the case of potential blocking of business partner data. An application's where-used check (WUC) determines if there is any dependent data for a certain business partner in the database. If dependent data exists, this means the data is still required for business activities. Therefore, the blocking of business partners referenced in the data is prevented.
Consent	The action of the data subject confirming that the usage of his or her personal data shall be allowed for a given purpose. A consent functionality allows the storage of a consent record in relation to a specific purpose and shows if a data subject has granted, withdrawn, or denied consent.

10.3 Overview of Relevant Applications in SAP Solution Manager

General Information

The following section gives you an *overview* of all relevant applications and possible safeguarding measures.

Before You Start: Check the Main Collective SAP Note

> → Remember
>
> Check the main collective SAP Note 2610137 **Personal Data related information within SAP Solution Manager**, which is also linked in transaction `SOLMAN_SETUP_ADMIN` view *Security*, step *General Data Protection Regulation*. For personal data stored by addon ST-A/PI, see SAP Note 2638080.

Business Partner Protection

For general information on Business Partner protection, see Application Help for Business Partners.

BW - related Information

If not otherwise stated, use standard BW functionalities as described in the BW documentation Data Protection and Privacy.

CRM - related Information

CRM Access Control Engine is used. This includes a hierarchy of authorization objects and possible customer created BAdI implementations to enforce access, see chapter Using CRM in SAP Solution Manager in the security guide *Authorization Concept in SAP Solution Manager* and *CRM ACE/authorization documentation* for further information. In addition, check SAP Note 2354273 Data protection for CRM transaction data.

Overview of Relevant Applications

The table underneath gives you an overview over:

- *Applications*: Functions on scenario level
- *Object*: Personal data used per function
- *Purpose*: Information about which object/document is related to the personal data mentioned in column *Object*
- *Comments*: Specific information relevant for the function
- *Safeguards*: Specific information on protection measures for the function

All information in the following chapters is based on the overview table.

Functions

Application	Object	Purpose, Comments, Safeguards
Business Process Change Analysis		

Application	Object	Purpose, Comments, Safeguards
Business Process Change Analyzer (BPCA)	User IDs, Business Partner	User IDs are mandatory for **traceability and auditing** on who performed what actions in the system. 1. **Third Party Test Management Tool Registry (Customizing Activity)** Used to register Third Party Test Management Tools for Data Exchange with BPCA 2. **BPCA Analysis** Stores the result of a Change Impact Analysis 3. **Optimization Approach** Reusable Settings for BPCA Test Scope Optimization 4. **TBOM** Technical Bill of Materials of an Executable object. Stores all objects used while executing an executable unit. 5. **TBOM History** Action Log for Canges to TBOM per executable. 6. **TBOM Classification** Stores classifications of objects types appearing TBOMs 7. **TBOM Criticality** Stores criticalities of objects appearing in TBOMs 8. **TBOM Filter** Stores rules for excluding objects in TBOMs from BPCA analysis 9. **TBOM Options** Settings for TBOM recording 10. **TBOM Work Items** Used to delegate TBOM creation to Business Process Experts 11. **TBOM work item configuration** Stores the CRM transaction type for TBOM work items The following objects exist in the managed systems where BPCA functions are used: 1. **TBOM Options in managed system** Stores options for TBOM recording in managed systems. 2. **BPCA Object and Key mapping** Stores mapping between transport and runtime objects. The application is protected by authorization object `SM_BPCA`.
Business Process Operations (BPO)		
Business Process Completeness Check (BPCC)	User Name	The user name displays who started the **process instance**. The process instance shows the user name in context *Step Context*. Authorization Object `SM_APP_ID` with `ACTVT 03` and `URL_APP_ID BPCC` protects the access.

Application	Object	Purpose, Comments, Safeguards
Business Process Improvement (BP Improvement), including: 1. Business Process Analytics 2. Business Process Operations Dashboards (including Setup Application) 3. Progress Management Boards 4. Dependency Diagrams (including Setup Application) 5. BPO Reporting Infrastructure Maintenance (especially Usage Analysis) 6. Maintenance Tool Persistence Browser 7. Automation Rate Cockpit	Responsible person data, User IDs	Maintenance of responsible persons, such as name, phone number(s), email, academic title, department): relevant for application 3. User ID in change log for objects stored on database: relevant for applications 1-5. Change log can be viewed by application 6. User ID in usage log: relevant for application 1 and 2. Usage log can be displayed by application 5. User ID in Business Process Improvement KPIs (if provided as characteristic), can be viewed in application 1 and 2. *Responsible persons* are used to define who should take care of **issues and action items**: User ID can be available in KPIs as characteristic for **analysis** reasons. User ID is used to track changes within **Business Process Improvement configuration objects**. User ID is used in usage analysis to **measure which people are using which Business Process Improvement applications**. *Responsible persons*: authorization object `SM_BPA_OBJ` with field name `BPA_OBJTYP` = `RESPONSIBLE` and field `ACTVT` with values `01,02,03,06`. Display change log (including User ID) via application 6. Relevant authorization object `SM_BPM_ACF` with field name `ACTVT` = `01`. Display usage analysis (including User ID) via application 5: Relevant authorization object `SM_BPM_ACF` with field name `ACTVT` = `01`. Display User ID as characteristic in applications 1 and 2: Relevant authorization object `SM_BPM_ANA` with field name `ANALYTICFUNC` = `BENCHMARKING_ADV_USR`. **⚠ Caution** In Business Process Operations you can write your own monitors that persist data on the managed system. Which kind of data you collect is in your own responsibility.

Application	Object	Purpose, Comments, Safeguards
Business Process Monitoring (BP Mon)	Business Partners, User ID, Email	For complex notification scenarios, email addresses and Business Partners can be configured as **recipients of the alert notification** via the so-called **notification grouping**. During the data collection, a so-called detail list of the relevant business objects is persisted on the managed system. This **detail list** can include Business Partners or user names (depending on the functional scope of a key figure). In the usage of BPMon, when accessing the BPMon application or BPO alert inbox, the user has to choose a **solution context**. The last used solution context per application is persisted per user. BPMon configuration can only be displayed if sufficient authorization is assigned. The same authorization governs the access to the notification grouping. For this, Solution Doumentation authorizations as well as BPMon authorizations are checked. The access to the detail list is managed by authorization object `SM_BPM_DET`. **i Note** For some monitoring objects, the detail list is on the managed systems, while for others it is on the SAP Solution Manager. Additionally, not all monitoring objects have detail lists. **⚠ Caution** In Business Process Operations you can write your own monitors that persist data on the managed system. Which kind of data you collect is in your own responsibility.
Cross-Database Comparison (CDC)	User Name	To track, who changed a Data Model (versioning) and to track by whom and when a certain comparison was executed (history). Relevant authorization object `SM_CDC_OBJ`: to display the Data Model and its versions. Use the relevant authorization object `SM_CDC_INS` to see the comparison history. Activity *execute* allows to run a new comparison, and activity *output* allows to review the result.
Job Health Check	User Name	To be able to understand which user scheduled a batch job.
Interface Documentation	User ID	User ID for Batch Input (BI) and File Creator in technology File (FILE). Authorization object for transaction `AGS_DCM_IF_DOCU` exists with specific authorization for the custom attributes application `AGS_DCM_CUST_IFDOCU`. For access via the application *Solution Documentation*, you need the relevant authorizations for it.
OCC Alert Reporting	User IDs	When accessing the OCC Alert Reporting, the user has to choose a solution context. The last used solution context per application is persisted per user.
Change Control Management		

Application	Object	Purpose, Comments, Safeguards
BW Reporting: • ITSM BW Report • ChaRM BW Report	Text of the Business Partner names and Business Partner IDs	The text and ID of Business Partners is essential **information in the reports**, like the processor of a ticket or the tester of a test case. End users can filter, drill down and aggregate on business partners. For **ITSM BW Report** and **ChaRM BW Report**, BW infoobject `0SPRBPNO` contains the text of the Business Partner. Th following applications are relevant: 1. **ITSM BW Report** ○ SOLMAN_WORKCENTER -> IT Service Management -> Incident and Problem Dashboard ○ SOLMAN_WORKCENTER -> IT Service Management -> Incident and Change Dashboard ○ SOLMAN_WORKCENTER -> IT Service Management -> Service Order Dashboard ○ SOLMAN_WORKCENTER -> IT Service Management -> Service Request Dashboard ○ SOLMAN_WORKCENTER -> IT Service Management -> Incident Dashboard 2. **Change Request Management BW Report** SOLMAN_WORKCENTER -> Change Management -> IT Service and Change Management Dashboard All reports in the Dashboard Builder (see also information on *Dashboard Builder* in scenario *Infrastructure*) are protected by authorization objects `SM_DSHCAT` and `SM_DSHO`. SAP Solution Manager related data in BW is protected by authorization objects in the `RS` object class.
Change Request Management (ChaRM)	Business Partner and User ID	Compliance of software Change Management processes; all participants in the **change process** have to be tracked. The standard CRM authorization concept for all **CRM documents** applies.

Application	Object	Purpose, Comments, Safeguards
Configuration Validation and CCDB	User ID	**Configuration Stores** may contain confidential and personal data to allow for an analysis of any configuration data in any of your systems in the system landscape. The purpose is to get an overview on configuration data of the managed systems, to detect changes and to validate configuration against a customer defined policy (target system). **ConfigStores** The ConfigStores are protected by authorization objects SM_CV*. Data of ConfigStores that do have User IDs are secured by authorization object AI_CCDB_SC using field CONT_AUTH with value SECURITY. **Example** The ConfigStore AUTH_PROFILE_USER is an example that has the User ID stored. It contains all User IDs that contain the profile SAP_ALL assigned in the managed systems client. The tables that hold the configuration data are secured by table authorization group DIAGST. **CCDB** The CCDB tasks and data are monitored in CCDB administration. CCDB uses the Extractor Framework (for more information, see function *Extractor Framework* in scenario *Infrastructure*) to transfer technical data of the connected managed systems into the Configuration and Change Database (CCDB). CCDB is a set of tables stored in the database of Solution Manager. Some of the configuration data contain User IDs. **Note** The application configuration validation has a feature called *Trend Analysis*. Trend Analysis offers to store the result of the validation by using a periodic job. By default no job is scheduled. This means that no data for Trend Analysis is stored. You can schedule a job for a report for Trend Analysis. Then, the data is stored in BW InfoCubes. CCDB Administration can be started via: *Fiori Launchpad → SAP Solution Manager Administration → Configuration Change Database Store Administration*.
Incident Management (ITSM)	User ID and Business Partners	Used in **CRM related Incidents, Service Requests, Problems** for customer/user reported incidents, service requests, problems.
License Management	User ID	Personal data are stored as part of log entries where they indicate the person who changed the state of automatic distribution of licenses or triggered the license distribution process.
Quality Gate Management (QGM)	Business Partner and User ID	Compliance of software change QGM processes; all participants in the change process have to be tracked The standard CRM authorization concept for all **CRM documents** applies.

Application	Object	Purpose, Comments, Safeguards
Requirement Management	Business Partner and User ID	Compliance of software requirements management processes; all participants in the change process have to be tracked.
System Recommendation	SAP User names	SAP User names are used to log the decisions by a user, for instance: assignments, comments, creation of ChaRM requests, and so on. This log and the comments are relevant for auditing. For each user, a personalization such as filter settings, is stored. According authorization object is `SM_FUNCS`.
Custom Code Management (CCM)		
CCM and Custom Code Library	Owner Data	*Owner Data*, in case the owner is a person, describes who is responsible for the Custom Code Data. The purpose is to **assign an owner to one or more custom code objects**. The owner data are protected by authorization object `SM_CC_LIB`.
Data Volume Management (DVM)		
DVM	User ID	You can create **impact and reference projects** based on an existing solutions.
Job Management		
Job Management	User ID, E-mail, Business Partner	Send the **notification** by e-mail, if a job has failed or has not run due to any reason. Additionally, it is used to check the created by or last changed by user. According authorization objects are in place.
Process Management		
Custom Development Management Cockpit (CDMC)	User ID	User IDs are stored in customizing tables for information purposes, like who created a project, who executed the activity, and so on. Authorization object used is `S_CDMC`.
Customizing Distribution and Customizing Scout	User ID	To keep track of who has created the synchronization group and the setup.
JSON file (Process Document Viewer)	User Name	The application needs to display the name of the user in the customer organisation responsible for the different processes extracted from SAP Solution Manager, and display the creator of the processes in SAP Solution Manager.
SLO Analysis Services Tool		

Application	Object	Purpose, Comments, Safeguards
Solution Documentation	Business Partner and User ID	The Business Partner and User IDs are needed to store responsible persons and/or owners of **elements**, or persons who created the last change of **an element or an attribute** in the application. The User ID is used for digital signature of **KW documents**. The application dynamically reads basic information associated to the Business Partner ID or User ID, and displays this information. This basic information is the name of the user, which can consist of a combination of first name, last name, academic title, and so on. **i Note** The application stores the IDs of Business Partners and Users, but not the person related data associated to these IDs. The person related data associated to these IDs is read on demand. Relevant authorization objects `SM_SDOC` and `SM_SDOCADM` are used to protect the application.
Solution Documentation Graphical Editor Diagram Entities	User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system, to display the users responsible for creation and last changes of diagram objects and diagram entities. This allows to keep track on changes in diagrams and different diagram entities. The *Graphical Editor* is managed by application *Solution Documentation*. The relevant authorization object used is `SM_GAL_GO`.
Quick Upgrade Analyser (QUA)	User ID	Range of HR personal numbers, vendor and customer numbers
Project Management		
Project Management (ITPPM)	User ID	User ID is stored in log data for the copied customizing table `SMCP_CUST_TABLOG`.
Root Cause Analysis		
Agent Administration	User ID	User IDs in the *Maintenance Mode History* are mandatory for **traceability and auditing** on who performed this action on the system. This information is only visible to users assigned to role `SAP_RCA_AGT_ADM`.
E2E TA Housekeeping: Trace Analysis	User ID	User IDs are integral parts of **logs and traces** which are collected from the managed systems, and are displayed in the application. Authorized users are allowed to display traces.
Exception Management	Reference to a User ID	Exception Management may include a reference to a User ID as part of the **data payload that is retrieved**.
SAP Engagement and Service Delivery		

Application	Object	Purpose, Comments, Safeguards
Customer Service Administration (CSA)	E-mail address	When a CSA session task is changed to being *overdue* or having received a *warning*, a **notification E-mail** is sent to the related person, whose email address is maintained as a recipient.
DSA / Web DSA	User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system.The **session data** can be accessed, if the user has authorization object `D_SVAS_SES` assigned.
EarlyWatch Alert Settings (EWA Settings)	Business Partner ID and User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. Business Partners IDs are stored as **contacts for EWA Sessions**.
Issue Management	Business Partner ID and User ID	**Issues, Top Issues, Task Issues** are objects based on CRM. The assigned business partner reflects the role (processor, reporter), and is used to inform any relevant persons via email in case of status changes. The User ID which is stored, displays who created and/or changed an object. According authorization objects are in place.
Service Delivery	Business Partner ID and User ID	**Service sessions** are executed by SAP employees or the user itself. The User ID which is stored, displays who created and/or changed the service session. A business partner can be assigned optionally. **Engagement Cycles and Support Requests** are based on CRM. The User ID which is stored, displays who created and/or changed an Engagement Cycle or Support Request. According authorization objects are in place.
Service Content Update	User ID	The **Service Content** is used when executing services such as SAP EarlyWatch Alert, SAP CQC for Implementation or others within the Service Session Workbench (DSA). **i Note** Software component version ST-SER 720 contains the Service Content. Transaction `AGS_UPDATE` offers an option to **receive updates from SAP Support Backbone**. The User ID which is stored displays who executed updates from SAP Backbone. According authorization object is: `SM_CNT_UPD`.
Service Data Collection (SDCCN)	User ID	Service Data Download (SDCC) is storing User IDs for auditing and traceability in regards the tasks created. See SAP Note 2643956 ST-PI : Personal Data in Service Data Function Modules
Value Based Delivery Dashboard	User ID	Used for *Engagement Cycles*.
SAP Solution Manager Administration		

Application	Object	Purpose, Comments, Safeguards
UOCShell Personalization	User ID	**Ownership** ("what is my personalization configuration") and Traceability ("who LastChanged a Personalization configuration")
Scope and Effort Analyser (SEA)		
Scope and Effort Analyzer (SEA)	User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. The application is protected by authorization object `SM_SEA`.
Technical Administration		
Central Notification Management (`CNM`)	External Recipients and User ID	Responsible persons are maintained with name, phone number(s), or email. E-mail ID or phone number are used to send **e-mails or SMS to the recipients**. User IDs are used to keep track of who created or changed the **CNM resources**.
IT Calendar and Work Mode Management/ IT Events	User ID	User IDs are stored to keep track of who created and changed the calendar events like Work Modes and IT Events. Authorization objects: • `SM_WMM_AUT` Authorization object for Workmode Management • `SM_ITE_ACT` Authorization object for IT Event
IT Task Management	User Names and Business Partner ID	Tasks are assigned to Business Partners and Users. Authorization object: `SM_TP_AUTH` Authorization object for IT Task Planning
Service Availability Management (SAM)	User IDs	Used in **Service Definition, Service Outage** Service Availability Data is audit relevant. This data is protected by authorization: • `SM_SAM_DEF` Service Availability Management - Service Definition • `SM_SAM_OUT` Service Availability Management - Service Outage
Technical Monitoring		
BI Monitoring	User ID	Administration purpose (for instance to check the created by or last changed by user)
BW Reporting: System Monitoring (also: System Reporting)	User ID	The User ID is part of the statistical record created by SAP Basis. The ABAP statistical records are collected from the managed systems and stored for use in the SAP Solution Manager related BW for RCA (see also the according scenario information) and System Reporting. It is not explicitly used by system reporting, but could be used by individual analysis.
Central Job Overview	User ID	Customizing (mails customizing and saving variants).

Application	Object	Purpose, Comments, Safeguards
Data Readiness Monitoring (DRM)	User ID, E-mail ID	Customizing (mails customizing and saving variants) and administration purpose (for instance to check the created by or last changed by user).
Interface - and Connection Monitoring	User ID	The User ID is stored in a table, but not displayed in the UI.
Job Monitoring	User ID	Administrative purpose, to check created by or last changed by information.
Monitoring and Alerting Infrastructure including Alert Inbox (MAI and Alert Inbox)	User ID	Alert Inbox keeps an action log for each alert which was processed. Some of these actions are sending notifications (e-mails, SMS), postponing an alert, creating an incident out of an alert, confirming an alert, adding a comment to an alert, and so on. Authorization object `SM_MOAL_TC`
Message Flow Monitoring (MFM)	User ID	**Configuration**: The application maintains the person responsible for each **message flow type** by manually entering the name of the user. This can be replaced manually by the administrator at any time. **Monitoring**: The application maintains the **filter variants** for a User ID. **Application Part**: The **payload information** collected from the managed systems, including the SAP PI system, can contain personal information. The application is protected by the `SM_MOAL_TC` authorization object, with the corresponding values for message flow monitoring. Additionally, the message flow group/instance is protected by the `SM_MFM_FG` authorization object, and the payload is protected by the `SM_MFM_PYL` authorization object.
PI Monitoring	User ID	In the message search application, users can save **filter variants** for their User ID. The application is protected by authorization object `SM_MOAL_TC`, with the according values for PI Monitoring.
Self Diagnosis	User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. In Self-Diagnosis application, the User ID is saved when **Self-Diagnosis settings** are changed and saved. The application is protected by authorization object `D_SM_S_DIA`.
System Monitoring (Mobile Optimized SAP Fiori App)	User ID	User IDs are used to store **favourite systems** a user would like to display when the application loads.
User Experience Monitoring	User ID	**Personalization** for the monitoring application such as organization of views, preferences, filters, and so on. User IDs are mandatory for traceability and auditing on who performed what actions on the system. User ID stored in configuration logs by the Guided Procedure framework. Any personal data within a recorded script.

Application	Object	Purpose, Comments, Safeguards
Test Suite		
Test Suite BW Report	Text of the Business Partner and Business Partner IDs	The Text and the ID of business partners is essential information in the reports, like the processor of a ticket or the tester of a test case. End users can do filter, drill down and aggregation on business partners. All reports in the *Dashboard Builder* (see also function *Dashboard Builder* in scenario *Additional Functions*) are protected by authorization objects `SM_DSHCAT` and `SM_DSHO`. Data in the SAP Solution Manager related BW is protected by authorization objects in the `RS` object class. For **Test Suite BW Report**, BW info object `0SMTBP` contains the text of a Business Partner.
Partner Test Management	User ID	Used for: • adminstration of data of connectivity to third party system and association information • retaining the status of different asynchronous activity triggered by SAP Solution Manager system to sync with HP ALM • retaining the test results synchronised from HP ALM and logs for association Authorization object `SM_TS_PTM` is used to protect the application.
Test Suite including Test Automation and Management, SUT Management (CBTA and TAO)	Business Partners and User ID	Business Partners are used to store **test plan, test packages and test sequences** responsibles. They are also used to stored the tester assigned to a given test package and/or test cases. They are also used in filter definition for test cases hierarchy and analytics reports. A User ID is used to store the created by and changed by data for major objects. It is also used to store executed by data for batch job execution as well as user preferences in **personalization**. As test plans reflect the information from the *solution documentation* (see also scenario *Process Management*) hierarchy, all nodes attributes from solution documentation which refer to a personal data are also stored in the model for both for business partners and User IDs. User IDs are stored in case of **digital signature**, both for **test plan** and **test documents** (for instance test plan attachments and test package attachments, test note and test results).
Infrastructure		
Extractor Framework (EFWK)		
Guided Procedure Authoring (GPA)	Users ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. They are also mandatory for the business to identify who created guided procedures / steps / activities .

Application	Object	Purpose, Comments, Safeguards
Guided Self Services (GSS)	User ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. The log can only be accessed if the user has authorization object `SM_SETUP` value display to be able to navigate in the setup scenarios.
Landscape Management Database (LMDB)	User ID	Change log entries because they contain the information about which user executed changes in low level format. It is used to broadcast landscape changes to applications via the *LMDB Notification Framework*, and to analyse changes during SAP delivered support. The `AI_LMDB_AD` authorization object protects generic access to the CIM objects stored in the LMDB.
	User ID	**Landscape Data Entities** User IDs are mandatory for traceability and auditing on who performed which actions on the entity. The `AI_LMDB_OB` authorization object protects access to technical systems and hosts in transaction LMDB. The `AI_LMDB_AD` authorization object protects generic access to the CIM objects stored in the LMDB. If accessed by means of transaction `LMDB_ADM`, only the generic CIM-based access is possible. If you access the CIM objects generically by using the *Details* button, the authorization object `AI_LMDB_AD` is needed as well.
	User ID	**Customizing of additional attributes** contain the information which user created and executed changes. Additional LMDB attributes are used for customizing. Users can create their own custom attributes and assign them to a technical system type and host.
	Business Partner ID	Business partners contain information about a person, a group of persons, or organizations. Business partners can be assigned to a technical system. LMDB only displays the information of business partners assigned to a technical system. The relationship between business partners and technical systems are persisted in the CRM IBase.
	User ID	User IDs are used for **support** reasons; they allow the **identification of entries needed for special analysis**.

Application	Object	Purpose, Comments, Safeguards
SOLMAN_SETUP (Configuration Transaction)	Picture upload	To allow for upload possibility of additional information. **i Note** It is in your responsibility what information the picture contains. The function is protected by authorization object SM_UPLOAD.
SOLMAN_SETUP (Configuration Transaction)and managed system configuration	Users ID	User IDs are mandatory for traceability and auditing on who performed what actions on the system. Users IDs are stored in log table AGSSISE_LOG and are stored in the Generic Storage for configuration purposes.
Background job REFRESH_ADMIN_DATA_FROM_SUPPORT	Contact person	Details of contact persons, for instance name, gender, telephone number, e-mail, country, language, and so on, are synchronized from SAP Support Portal. The data in the relevant table AICONTACTS is used in the following scenarios: • *Incident Management*: Report AI_SDK_SP_GENERATE_BP_V2 generates Business Partners and users based on this table. This report can be run when SAP Solution Manager is run by *Value Added Resellers (VAR)*, so that the customer of the VAR is able to create incidents in the SAP Solution Manager system of the VAR. • *Service Connection Application*: The S-User is selected as a contact person when setting up or opening a service connection. • *SAP Communication*: This table is used as a value help of S-User selection in transaction AISUSER. Table Information: • Table AISUSER stores the mapping between Solution Manager users and contact persons. The data in table AISUSER is used to determine the requester for SAP communication. • Table AICONTACTS stores the details of contact persons, e.g. name, gender, telephone number, e-mail, country, language, and so on, which is synchronized from SAP Support Portal. • The data in table AIINSTACCESS is used to perform pre-checks, before the data is sent for SAP communication. Table AIINSTACCESS stores the authorization of each contact person, including the following authorizations: ○ Create customer messages ANLEG ○ Open service connections SVER ○ Maintain system data INSTPROD • Table AICONNSTATUS stores the contact person for opening a remote connection at SAP. Before SP07, this table stored telephone number, e-mail address, fax of this contact person. As of SP07, the contact person ID is stored instead of these fields.

Application	Object	Purpose, Comments, Safeguards
Service Connection Application		**→ Recommendation** Run the background job for report `AI_SC_MIGRATION` to refresh this table. The Order Software function in the SWCATALOG software catalog is no longer used in SAP Solution Manager 7.2. The job deletes all entries in this table for SWCATALOG after you have implemented SAP Note 2641326.
Additional Applications		
Dashboard Builder	User ID	The User ID in the Dashboard Builder is stored in order to know which user created or modified a **dashboard**.
Dashboard Framework	User ID	The User ID is used to identify the user's **personal configuration**, or, in case of **custom developed objects**, identify the creator of such objects. Relevant authorization objects are `SM_APPTYPE`, `SM_DSBFWK`, and `SM_DSBINST`.
KPI Catalog API	User ID	The User IDs are used for **support reasons**; they allow the identification of entries that are needed for special analysis.
Rapid Content Delivery	User ID	User IDs are used to update the content delivered via software component `ST-CONT`. Authorization object: • `CSU_UNPACK` to unpack content
Social Application Integration `(SAI)`	User ID	The User ID is used to link the SAP Solution Manager user with the Social Application Platform user. The functionality is protected by the authorization object `SM_SAI`.
URL Framework	User ID	The User ID is stored to keep track of who has customized or created an application URL in the URL framework: access permissions for the URL framework UI are required.
Functions relating to SAP Solution Manager Release 7.1		
Application Specific Upgrade Toolbox (ASU Toolbox)	User ID, Technical User ID (RFC scenario)	User IDs are used to store, who has created/changed **ASU Content/ASU task list**, and who has executed and confirmed an ASU task list step. In the RFC scenario (ASU step is executed on a separate system), the Technical User ID stored is used for the RFC connection. Authorization object is `B_ASU_ADMI`.
ESR/PSLE Self Service Reporting (ESR/PSLE)	Business Partner ID and User ID	Business Partner IDs are essential information in engagement self-service reports. They are stored in SAP Solution Manager related BW for **reporting** purposes. User IDs are used for **configuration** purposes. Data in the SAP Solution Manager related BW is protected by the authorization objects in the `RS` object class.

Application	Object	Purpose, Comments, Safeguards
Roadmap	User ID	User IDs are stored to display who created the Roadmap and who changed it last.
Solar Project, Learning Map, Solutions (SOLAR)	Business Partner and User ID	User IDs are stored to keep track of who has created or changed Project, Learning Map, Solution Elements. Business Partners can be assigned as customer attributes to project and solution elements.
Solution Documentation Assistant (SDA)	User ID	To keep track of who has created and changed **Analysis projects, Analyses and Check steps**.
Switch Framework (Business Function Scoping)	User ID	
System Monitoring based on CCMS	User ID	These tables are used to store user personalization in the system monitoring scenario if the CCMS infrastructure is being used. As of SAP Solution Manager 7.1, the system monitoring scenario is part of a new infrastructure base. If a SAP Solution Manager system is upgraded from release 7.0 to release 7.2, tables referencing data for System Monitoring based on CCMS, may still contain old data, which could contain personal information such as user names.
Testworkbench BW Reporting	User ID	The following types of user ID are part of the Testworkbench data: • Tester • User responsible for creating test plans or test cases • Message processor The structures were used in SAP Solution Manager 7.1 and are obsolete in SAP Solution Manager 7.2; they may, however, still contain data if an upgrade took place. There is a standard BW access mechanism in place for accessing data.
Test Management	User ID, Business Partner ID,	see scenario *Test Suite* and section for *Test Automation* The data refers to tests that have been planned and performed before the upgrade to the current release. The data is available for reference purposes only.
Transaction `SMSY`	User ID	

Additional Information Sources

- Specific **application security**, see the according sections in the *Application Specific Security Guide*.
- Specific **configuration security**, see *Secure Configuration Security Guide*.
- Authentication and Authorization features are described in more detail in sections **Managing Authentication** and **Managing Authorization** in this guide. See also Security Guide *Authorization Concept in SAP Solution Manager*.

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10.4 Reporting on Existing Data to An Identified Data Subject

Solution Manager and Managed Systems: Automated Option - Transaction SM_PD_INFO

Using Transaction SM_PD_INFO

You can report on existing data subjects in SAP Solution Manager using transaction `SM_PD_INFO`. Here, you find:

- the option to run the report over all scenarios: *All Scenarios*. This information retrieval is run using a background job. The Job Log for the background job lists all relevant scenarios and functions and their specific user information.
- a number of reports separated per scenario and function to report on individual data subjects. If a function has the option for automatic information retrieval, it is listed underneath in column *Report* with symbol `X`.

> **i** Note
>
> To run information retrieval reports which connect to the managed systems, the Read RFC - Connection is used.

> **→** Tip
>
> To ease using the information retrieval for your currently used functions, you can maintain table `AIDPP_REPORTS(_T)` accordingly. In the table, set the flag for your own functions. In addition, you can also maintain your own authorizations in fields `AUTH_OBJECT` und `AUTH_VALUE`, which allows you to restrict access to specified functions in the transaction for individual users only.

Authorization Protection

The transaction as well as each report is protected by authorization object `S_TCODE` value `SM_PD_INFO`, which you have to assign to the user running the reports.

> **i** Note
>
> We strongly recommend to only assign this authorization to individual users and remove it after usage.

Read Access Log

The transaction is protected by a Read Access Log. The *Read Access Log* for the reports in transaction `SM_PD_INFO` can be called in transaction `SLG1` using object `SM_PD_INFO`.

Solution Manager and Managed Systems: Manual Procedure Option

For some functions both options exist, automatic and manual. And, for specific functions explicite manual procedures are available. Manual procedures are described in column *Manual Procedures*. Authorization protection is mentioned if required.

BW System - related Retrieval Function

For information retrieval in Software Component ST-BCO, you can use transaction `SMBCO_PD_INFO` for the following functions:

- BW Reporting for System Monitoring (System Reporting)
- SAP Solution Manager 7.1 TWB Reporting

The transaction is protected by authorization object `S_TCODE` value `SMBCO_PD_INFO`.

> **i Note**
>
> We strongly recommend to only assign this authorization to individual users and remove it after usage.

Read Access Log

The transaction is protected by a Read Access Log. The *Read Access Log* for the reports in transaction `SM_PD_INFO` can be called in transaction `SLG1` using object `SMBCO_PD_INFO`.

Check SAP Note 2640144 - Identifying and deletion of personal data stored by ST-BCO.

Overview Information Retrieval Options for Individual Functions

The table underneath gives an overview over Information Retrieval Options.

Functions

Application	Report	Manual Procedure
BPCA		
BPCA	X	When you run the report in SAP Solution Manager, the managed system report can be started from here. **i Note** See SAP Note 2640865 - BPCA:Identify personal data stored by ST and add-on ST-PI
BPO		

Application	Report	Manual Procedure
BPO	X	
Interface Documentation	X	
Change Control Management		
BW Reporting for ITSM and Change Request Management	X	In SAP Solution Manager, run the report in transaction `SM_PD_INFO`. In SAP BW, to view all usages of a Business Partner ID for BW objects, proceed as follows: 1. In the BW System, call transaction `RSA1`. 2. Choose *Modeling -> InfoObjects*, and search for the relevant InfoObjects (`0SPRBPNO`, `0SPRCUBP1`, `0SPRCUBP2`, `0SPRCUBP3`, `0SPRCUBP4`, `0SPRCUBP5`, `0SPRCUBP6`, `0SPRCUBP7`, `0SPRCUBP8`, `0SPRCUBP9`, `0SPRCUBP10`). 3. In the context menu for each relevant InfoObject, choose *Maintain Master Data*. If the system displays the *No master data maintenance possible* message, this Business Partner ID is not used in this InfoObject. If the system displays the *<System ID>: Change Master Data of Info Object Name 0SMTBP* screen, search for the relevant Business Partner ID. If the Business Partner ID is not displayed on the master data screen, this Business Partner ID is not used in this InfoObject. 4. If you find the Business Partner ID and want to delete it, proceed as follows: ○ Select the Business Partner ID, and then choose *Delete Keys -> Save*. ○ Select *Delete SIDs, Delete Texts and Simulation Mode*. ○ For the search mode, select one usage per value per Object. ○ Choose *Start*. ○ In the *Confirm Deletion of SID*s dialog box, choose *Yes*. ○ On the *Master Data used* screen, choose *Details*. The system displays the where-used list for this Business Partner ID. ○ If the simulation finished successfully, the Business Partner ID in the master data of this InfoObject is not used in any other BW objects, and can be deleted from the master data of this InfoObject. See section *Simplification of Deletion* for more details. If your SAP Solution Manager 7.2 system has been upgraded from SAP Solution Manager 7.1, look for user information in the obsolete `SPR_MDIDX` database table in SAP Solution Manager BW.
Change Request Management	X	

Application	Report	Manual Procedure
Configuration Validation / CCDB Administration	X	**i Note** You can display personal data for CCDB using transaction `SM_PD_INFO`. CCDB offers a selection of data using a variety of filters. As the User ID is stored in element keys or values, user dependent data is displayed, when a selection is done using the User ID as element pattern. Within the application, on tab *Status*, select *Cross Selection*, enter the User ID in field *Element Pattern*, and press either *Display* or *Display Elements*. *Display Elements* displays the element keys and values having the User ID and the context like config store. *Display* offers a list of config stores that have the requested User ID stored. This information is needed, if the config stores that contain the User ID should be deleted. **→ Recommendation** Because of performance reasons it is recommended to do the selection per config store type. In the *Store Filters* area, select the *Type* to restrict on a config store type. For the selection related to the type *XML Store* or *Text Store* use the element pattern of the User ID starting and ending with an asterisks *. **Example** For instance `*DDIC*` to find elements which have the User ID `DDIC` stored. Text and xml type stores might have the User ID as part of a string, for instance in the comments of the config store `ABAP_INSTANCE_PROFILE`. **→ Recommendation** As the selection using **User ID** is time consuming and not needed for all other store types, just the User ID should be entered as element pattern. For these store types the User ID is stored in a field, if at all.
ITSM	X	
License Management		This scenario stores User IDs as part of the configuration data and logs that are handled by the scenario SAP Solution Manager Configuration and Guided Procedure Authoring. Refer to the instructions for reporting on existing data to an identified data subject for the scenario *SAP Solution Manager Configuration (SOLMAN_SETUP)* and *Guided Procedure Authoring (GPA)* in scenario *Infrastructure*.
Quality Gate Management	X	
Requirements Management	X	

Application	Report	Manual Procedure
System Recommendation	X	
CCM		
CCM	X	
DVM		
DVM		Run report `DVM_GDPR_INFO`.
Job Management		
Job Management	X	
Process Management		
CDMC	X	When you run the report in SAP Solution Manager, the managed system report can be started from here. **i Note** To run the report in the managed system from the SAP Solution Manager, you need to add the following Function Module authorization to the READ User in your respective managed system for authorization object `S_RFC`: `CNV_CDMC_GDPR_UNAME_INFO`, `CNVCDMC_GDPR_INFO`. See also SAP Note 2257213.
Customizing Distribution and Scout	X	

JSON file (Process Document Viewer)		1. Export the offline application content.
		2. Navigate to the *Data* folder under the application folder.
		3. Open the *FastFact JSON* file.
		4. Check the value of the relevant fields, such as *Changed by* or *Responsible*.
		5. Open the *MasterPage JSON* file.
		6. Check the relevant field.
		7. Open the *UserRole JSON* file.
		8. Check the value of the following fields:
		  ○ Description
		  ○ Name

SLO Analysis Services Tool	X	
Solution Documentation	X	For further analysis, you can use the advanced search functionality. All attributes are indexed in the Embedded Search. You can use this search function to search for specific information in the attribute values as well as in the document content.

Application	Report	Manual Procedure
Solution Documentation - Diagram Entities	X	
QUA		Run report `/SLOAS/GDPR_INFO` in your managed system.
Project Management		
Project Management Customizing	X	
RCA		
Agent Administration - Maintenance Mode		Open the *Agent Administration* UI, select the *Agents* tab, and then choose *History* (next to *Maintenance Mode*). Search the history table for the relevant User ID. The data persisted in the *Maintenance Mode History* view of the *Agent Administration* is only visible to users having the `SAP_RCA_AGT_ADM` or the `SAP_J2EE_ADMIN` role.
E2E TA Housekeeping: Trace Analysis		In the E2E Trace Analysis application, use the filter function and press the filter icon in the business transaction table. Specify the data in the *Text* field.
Exception Management	X	
SAP Engagement and Service Delivery		
CSA		Report `RDSVASACSA_PERS_DATA` is provided to retrieve all personal data stored in the CSA database tables. An authority check is taken into account when the report is executed, and `SLG1` logs are provided after execution.
DSA / Web DSA	X	
EWA Settings	X	
Issue Management	X	
Service Delivery	X	
Service Content Update	X	

Application	Report	Manual Procedure
SDCCN	X	When you run the report in SAP Solution Manager, the managed system report can be started from here. **i Note** To run the report in the managed system from the SAP Solution Manager, you need to add the following Function Module authorization to the Read User in your respective managed system for authorization object `S_RFC`: `/BDL/CHECK_GDPR_INFO`. See also SAP Note 2257213.
Value Based Delivery Dashboard	X	
SAP Solution Manager Administration		
UOCShell	X	
SEA		
SEA	X	
Technical Administration		
Technical Administration	X	
Technical Monitoring		
BI Monitoring	X	
BW Reporting for System Monitoring (System Reporting)	X	To check for existing data in the BW System, use transaction `SMBCO_PD_INFO` In addition, you can display existing data by using transaction `RSA1` to report on existing data. The info providers used for System Reporting on ABAP Statistical Data are contained in info area `0CCMS_STAT`.
Central Job Monitoring	X	
DRM	X	
Interface and Connection Monitoring	X	
Job Monitoring	X	
MAI and Alert INbox	X	
MFM	X	

Application	Report	Manual Procedure
PI Monitoring	X	
Self Diagnosis	X	
System Monitoring	X	
User Experience Monitoring	X	
Test Suite		
BW Reporting for Test Suite	X	In SAP BW, to view all usages of a Business Partner ID for BW objects, proceed as follows: 1. In the BW System, call transaction `RSA1`. 2. Choose *Modeling -> InfoObjects*, and search for the relevant InfoObject (`0SMTB`). 3. In the context menu for each relevant InfoObject, choose *Maintain Master Data*. If the system displays the *No master data maintenance possible* message, this Business Partner ID is not used in this InfoObject. If the system displays the *<system ID>: Change Master Data of InfoObject 0SMTBP* screen, search for the relevant Business Partner ID. If the Business Partner ID is not displayed on the master data screen, this Business Partner ID is not used in this InfoObject. 4. If you find the Business Partner ID and want to delete it, proceed as follows: ○ Select the Business Partner ID, and then choose *Delete Keys -> Save*. ○ Select *Delete SIDs, Delete Texts and Simulation Mode*. ○ For the search mode, select one usage per value per Object. ○ Choose *Start*. ○ In the *Confirm Deletion of SID*s dialog box, choose *Yes*. ○ On the *Master Data used* screen, choose *Details*. The system displays the where-used list for this Business Partner ID. ○ If the simulation finished successfully, the Business Partner ID in the master data of this InfoObject is not used in any other BW objects, and can be deleted from the master data of this InfoObject. See section *Simplification of Deletion* for more details.
Partner Test Management	X	
Test Management (Automation)	X	
Test Suite	X	
Infrastructure		
Extractor Framework	X	

Application	Report	Manual Procedure
GPA	X	Data for all scenarios that are part of SAP Solution Manager Configuration are checked, as well as logs and statuses for *Guided Self-Services (GSS)* and *Guided Procedure Authoring (GPA)*.
GSS	X	Data for all scenarios that are part of SAP Solution Manager Configuration are checked, as well as logs and statuses for *Guided Self-Services (GSS)* and *Guided Procedure Authoring (GPA)*.
LMDB	X	
Service Application Connection / S-User Master Data	X	
`SOLMAN_SETUP`	X	Data for all scenarios that are part of SAP Solution Manager Configuration are checked, as well as logs and statuses for *Guided Self-Services (GSS)* and *Guided Procedure Authoring (GPA)*.
Managed System Configuration as part of `SOLMAN_SETUP` transaction		This scenario stores User IDs as part of the configuration data and logs that are handled by the scenario SAP Solution Manager Configuration and Guided Procedure Authoring. Refer to the instructions for reporting on existing data to an identified data subject for the scenario SAP Solution Manager Configuration and Guided Procedure Authoring.
Additional Functions		
Dashboard Builder	X	
Dashboard Framework	X	In addition, use program `DSH_DASHBOARD_ANALYSER` to check content of personal dashboard instances.
KPI Catalog API	X	
Rapid Content Delivery	X	
SAI	X	The `SAI_ADMIN_TOOL` application displays all users who use SAI services. This application can also be used to remove users from SAI services. For more information on deletion, see section *Simplification of Deletion* in this chapter.
URL Generation Framework	X	
Functions relating to Release 7.1		
ASU Toolbox	X	Run report `/ASU/SMT_GDPR_INFO_ASU_TOOLBOX` in your managed systems.

Application	Report	Manual Procedure
ESR / PSLE Self-Service Reporting	X	
Roadmap	X	
SAP Engagement and Service Delivery	X	
SOLAR	X	
Switch Framework	X	
System Monitoring	X	
System Monitoring based on CCMS	X	
Test Management	X	
Transaction SMSY	X	

10.5 Simplification of Deletion of Personal Data

Personal Data Deletion Options

The deletion of personal data might be required and may include a certain retention period of these data in the system before deletion. If retention periods are required and how to specify them is described per function.

In addition, personal data required for customizing/configuration purposes may also be subject to remaining in the system until the end of the business purpose is reached. Specific information is given in the individual chapters per function.

Authorization Mechanims

Deletion is protected by either table protection or application protection. The protection mechanisms in place are mentioned in column *Authorization Mechanism* in the table underneath.

- *Table Protection using authorization groups:* authorization object `S_TABU_DIS` with the according authorization group is used to protect a groupo of tables. For authorization groups used in SAP Solution Manager, see section *Tighten Table Read and Write Access* in this guide or check transaction `SE54`.
- *Table Protection for individual tables:* authorization object `S_TABU_NAM` is used to protect individual tables.
- *Application Authorizations:* Application authorizations are used to protect the specific function.

Interdependency SAP's Backbone and SAP Solution Manager

SAP's backbone is the leading system in regards to S-user assignments and usage. S-users, which are created, edited, and deleted or expired in the backbone are replicated into the SAP Solution Manager system accordingly.

> → Remember
>
> Update your S-User regularly in the SAP backbone system.

Business Partner Blocking/Deletion

Business Partners can be centrally blocked and deleted. The functionality is used in SAP Solution Manager scenarios. Any specific deviations are described separately per function. For more information, see SAP Note: 1825608 Simplified Blocking and Deletion of Central Business Partner.

Deletion with SAP ILM Tool Support

Some SAP Solution Manager scenarios use SAP ILM Tool Support. For more information, see SAP Notes:

- 2354273 Data protection for CRM transaction data
- 2039738 Simplified Data Deletion based on SAP ILM in CRM.

Overview of Functions with Deletion Possibilies with SAP Solution Manager

Underneath, you find an overview of deletion possibilities for the various functions.

Functions

Application	Provided Deletion Functionality	Authorization Mechansim
BPCA		

Application	Provided Deletion Functionality	Authorization Mechansim
BPCA	Manual deletion is in place for all objects storing personal data. Data can be deleted in the following ways for the individual objects: 1. 3PTM Registry: View Cluster: `AGS_BPCA_3PTM_TOOL_REGISTRY` 2. BPCA Analysis As of Support Package 08, ILM Support is available, see also section *SAP ILM Tool Support* ILM Object: `SM_BPCA_ANALYSIS` Destruction object: `SM_BPCA_ANALYSIS_DESTRUCTION` Manual Deletion: *Solution Manager Launchpad -> Test Suite -> Business Process Change Analyzer* 3. Optimization Approach *Solution Manager Launchpad -> Test Suite -> Business Process Change Analyzer -> Details Optimization Approach -> Edit* As of Support Package 08, ILM Support is available, see also section *SAP ILM Tool Support* ILM Object: `SM_BPCA_OA` Destruction object: `SM_BPCA_OA_DESTRUCTION` 4. TBOM *Solution Manager Launchpad -> Project and Process Management -> Solution Documentation -> List View -> Restrict to object type TBOM* 5. TBOM History As of Support Package 08, ILM Support is available, see also section *SAP ILM Tool Support* ILM Object: `SM_BPCA_TBOM_HISTORY` Destruction object: `SM_BPCA_TBOM_HIST_DESTRUCTION` Manual Deletion: TBOM history logs are deleted when the corresponding executables are deleted in *Solution Documentation*. 6. TBOM Classification View maintenance for table `AGS_TBOM_CLASS_C`. 7. TBOM Criticality *Solution Manager Launchpad -> Test Suite -> Administration Change Impact Analysis -> Administration Change Impact Analysis -> Maintain TBOM Criticality Table* 8. TBOM Filter *Solution Manager Launchpad -> Test Suite -> Administration Change Impact Analysis -> Administration Change Impact Analysis -> Maintain TBOM Filter Table* 9. TBOM Options View Maintenance for View `AGS_BPCA_ACTVFCT`	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SM_BPCA_*_ALL`.

Application	Provided Deletion Functionality	Authorization Mechansim
	10. TBOM Work Item As of Support Package 08, ILM Support is available, see also section *SAP ILM Tool Support* ILM Object: `SM_BPCA_WORK_ITEM` Destruction object: `SM_BPCA_WI_DESTRUCTION` Manual deletion: *Solution Manager Launchpad -> Test Suite -> My Tasks TBOM Work List -> All Work Items* 11. TBOM Work Item Configuration View Maintenance for View `V_AGS_TBWI_CRM_C` The following objects exist in the managed systems where BPCA functions are used: 1. TBOM Options in managed system View maintenance for the `VTBOM_FCT_SWITCH` 2. BPCA object and Key mapping in managed systems View Cluster `BPCA_TR_RT_MAPP` 3. Exceptions for Table Key Recording View Maintenance for View `VBPCA_TABK_EXC`	
BPO		
BPCC	Run report `E2EEM_HOUSEKEEPING_REPORT`. You can use the BPCC configuration tab *Housekeeping*. Here, you can see the status of the housekeeping job and define for each category and subcategory when the data stored should be deleted. Separately, the IPA Store can be configured to be deleted after a specified number of days. Here are the detailed steps to delete process instances: 1. Open the Solution Manager Launchpad. 2. Open tile *Configuration – Business Process Completeness Check* in area *Data Consistency Management*. 3. Change to tab *Housekeeping*. 4. For the Category and Sub-Category you would like to delete, set the *No of Days* to keep data to 1. 5. Check that Processing Status is not enabled. 6. Save your changes.	The deletion is protected by authorization object `S_TABU_NAM` in role `SAP_OP_DSWP_BPM`.

Application	Provided Deletion Functionality	Authorization Mechansim
BP Improvement	Run report `GDPR_BPIMP_CLEAR_ALL`. Historical key figure data containing personal data in BPA TwinCubes (BW) is handled by an automatic housekeeping process. The data retention period for this Info Provider can be maintained as follows for the Business Process Improvement: Administration scenario: 1. Open the SAP Solution Manager launchpad. 2. Navigate to the *Business Process Improvement* launchpad group. 3. Choose *Business Process Improvement: Administration*. 4. Select the *BW Setup* tab. 5. Maintain the data retention period. You can delete data from individual BPA TwinCubes at any time by executing the `AGS_BPA_RI_DATA_DELETE`. In addition, you can delete personal data for the following functions: **Business Process Analytics** To delete key figures, proceed as follows: 1. Open the SAP Solution Manager launchpad. 2. Navigate to the *Business Process Improvement* launchpad group. 3. Choose *Solution Documentation: Monitoring Configuration*. 4. Select the appropriate solution. 5. Select *Analytics Library* and look for the key figure. 6. Select the key figure and delete it. To delete key figure variants/categories, proceed as follows: 1. Open the SAP Solution Manager launchpad. 2. Navigate to the *Business Process Improvement* launchpad group. 3. Choose *Business Process Analytics: Classic*. 4. Select the *Key Figure Variants* tab. 5. Choose *Manage Variant Categories and Variants*. 6. Choose *Category Maintenance or Variant Maintenance*. 7. Select the relevant variant category or variant, and delete it. **Business Process Operations Dashboards** If you want to delete objects that are no longer needed due to business reasons, proceed as follows: 1. Open the SAP Solution Manager launchpad. 2. Navigate to the *Business Process Improvement* launchpad group.	The deletion is protected by authorization object `SM_BPM_ACF` for activity `ACTVT 06` delete in role `SAP_SM_BPOIMP_ALL`.

Application	Provided Deletion Functionality	Authorization Mechansim
	3. Choose *Configuration: Dashboards Business Process Operations*. 4. Select the relevant tab *Analytical Key Figure Instance, Panel, Dashboard*. 5. Delete the objects that are no longer needed. **Progress Management Boards and Maintenance Tool Persistence Browser** To delete user information, logs, and objects, execute the `AGS_BPA_PERSISTENCE_REORG` report. **Dependency Diagrams (including Setup Application)** To delete user information, logs, and objects, execute the `AGS_BPM_RI_PERSISTENCE_REORG` report. **BPO Reporting Infrastructure Maintenance (especially Usage Analysis)** The Usage Analysis function has a data retention period, after which all logged personal data is reorganized. To set the data retention period, proceed as follows: 1. Open the SAP Solution Manager launchpad. 2. Navigate to the *Business Process Improvement* launchpad group. 3. Choose *Business Process Improvement: Administration*. 4. Select the *Usage Analysis* tab. 5. Choose *Display Settings*. 6. Set the data retention period as required.	

Application	Provided Deletion Functionality	Authorization Mechansim
Business Process Monitoring (BP Mon) and Alert Inbox	**Business Process Monitoring application** Up to and including SAP Solution Manager 7.2 SP04, the Business Process Monitoring application and Business Process Operations Alert Inbox logged the last solution context used by a user accessing these applications. As of SAP Solution Manager 7.2 SP05, a different logging mechanism is used. You can delete the context that was persisted up to SAP Solution Manager 7.2 SP04 by upgrading to SAP Solution Manager 7.2 SP05 or higher, and by executing the `AGS_BPM_ALREP_RESET_DEFAULTS` report. For the user name, enter asterisk `*` and select all three deletion options. As of SAP Solution Manager 7.2 SP05, Business Process Monitoring logs the last *solution context* that an end user used to access the Business Process Monitoring application, the Business Process Operations Alert Inbox, the Job Monitoring application, and OCC Alert Reporting. To delete the *persisted solution context* for a user for each application, execute the `E2E_BPM_VARIANT_CLEANUP` report. Mass deletion is possible. To delete *notification groups*, access the *Business Process Operations Object Administration*. Access the configuration of any Business Process Monitoring object. Select the *Notifications* tab. On the righthand side of the screen, open the *Notification Groups* maintenance. Choose *Delete all*. **Business Process Monitoring configuration** In the Business Process Monitoring configuration, the creation user and change user of Business Process Monitoring objects is persisted. This user information is deleted when you delete the relevant Business Process Monitoring object. You can do this in the *Business Process Operations Object Administration*. Select the *Overview* tab, and filter for Business Process Monitoring objects where the monitoring ID is not empty. Select the Business Process Monitoring objects that you want to delete, and then choose *Deletion*.	• The deletion is protected by authorization object `SM_MOAL_OC` activity `ACTVT 06` delete for *Monitoring Object Type* `BP_MON` in role `SAP_OP_DSWP_BPM`. **i Note** Since deleting a BPMon object also means deleting the object in the solution documentation, the respective authorization for deleting objects in the solution documentation also needs to be assigned to the user executing the deletion. • The deletion of the persistence of personalization data in Business Process Monitoring via report `E2E_BPM_VARIANT_CLEANUP` is governed via authorization object `SM_MOAL_TC` with activity `ACTVT 02` change for Monitoring Object Types in role `SAP_OP_DSWP_BPM`: ○ `BP_MON` to delete personalization for the BPMon application ○ `INBOX` to delete personalization for the BPO Alert Inbox ○ `JOB_MON` to delete personalization for the Job Monitoring application

Application	Provided Deletion Functionality	Authorization Mechansim
CDC	Run report `DSWP_CDC_DELETE_PERS_DATA. It deletes data which is not anymore needed for the group type definitions.` **! Restriction** Relevant as of SP08. You also have manual deletion options: • Comparison Results Delete comparison results by executing the `DSWP_CDC_COMPARE_REORG` program. **i Note** We recommend that you execute this program on a regular basis to delete outdated results. • Comparison Groups 1. Start CDC. 2. In the Comparison Group dropdown list, select Comparison Groups Only. 3. ○ To delete individual comparison groups: Select the relevant rows, choose *Delete*, and then confirm your selection. ○ To delete all comparison groups: Select all rows, choose *Delete*, and then confirm your selection. • Comparison Group Types Comparison group types can only be deleted individually. 1. To delete a comparison group type, start *CDC*. 2. Select the *Comparison Group* tab. 3. Select the group type that you want to delete, and then choose *Delete Group Type*. • Comparisons 1. To delete comparisons, start *CDC*. 2. In the *Comparison Group* dropdown list, select *Comparisons Only*. 3. ○ To delete individual comparisons: Select the relevant rows, choose Delete, and then confirm your selection. ○ To delete all comparisons: Select all rows, choose Delete, and then confirm your selection. • Data Models A deletion of a comparison does not automatically result in the deletion of the underlying data model, as the data model might be relevant for other or future comparisons. 1. To delete data models, start *CDC*.	• In role `SAP_CDC_INSTANCE_CREATOR` • `SM_CDC_OBJ` with `ACTVT 06` (delete) protects *Data Model* and *Data Model Change Documents*. • `SM_CDC_INS` with `ACTVT 06` (delete) protects *Comparison* and *Comparison Change Documents.* • `SM_CDC_INS` with `ACTVT 65` (reorganize) protects *Comparison Results*. • `SM_CDC_GRP` with `ACTVT 06` (delete) to protect *Comparsion Groups*.

Application	Provided Deletion Functionality	Authorization Mechansim
	2. Choose *Mass processing*. 3. On the next screen, choose *Delete Data Models*, and then choose *Continue*. 4. In the first step of the guided procedure, select the data models that you want to delete, and then choose *Next*. 5. If the correct data models are shown on the next screen, choose *Delete Data Models*. 6. A popup will then inform you if deletion was successful. • Change Documents To delete change documents, execute the `DSWP_CDC_SHOW_CHANGEDOCS` program.	
Interface Documentation	A manual deletion of interfaces and interface details is possible. You can search all interfaces for person responsible in the application *Solution Documentation* and delete them. Follow the steps to delete process instances: 1. Open the *Solution Documentation* using transaction `SOLDOC`. 2. Navigate to the *Interface Details* element. 3. Right click the element and select *Delete*.	
Job Health Check	To delete data for a specific user from the `0SM_JSM*` info cubes, proceed as follows: 1. In the BW System, call transaction `RSA1`. 2. Select the cube. 3. In the context menu, choose *Planning-Specific Properties -> Change Real-Time Load Behaviour ...* . 4. Switch to Real-Time Data Target Can Be Loaded with Data; Planning not allowed. 5. Do not select a transport. 6. Choose *Manage -> Contents -> Delete Selection -> Deletion Selection*s. 7. Select the ID of the JSM Job Scheduling user whose data you want to remove from the system. 8. Choose *Execute*. 9. Switch the cube back to *Planning Mode*.	The deletion is protected by authorization object `S_TABU_DIS` with table authorization group `SMJM` in role `SAP_OP_DSWP_BPM`.

Application	Provided Deletion Functionality	Authorization Mechansim
OCC Alert Reporting	Up to and including SAP Solution Manager 7.2 SP04, the OCC Alert Reporting function logged the last solution context used by a user accessing OCC Alert Reporting. As of SAP Solution Manager 7.2 SP05, a different logging mechanism is used. You can delete the context persisted up to SAP Solution Manager 7.2 SP04 by upgrading to SAP Solution Manager 7.2 SP05 or higher, and by executing the `AGS_BPM_ALREP_RESET_DEFAULTS` report. For the user name, enter asterisk `*` and select all three deletion options. As of SAP Solution Manager 7.2 SP05 Business Process Monitoring logs the last *solution context* that an end user used to access the Business Process Monitoring application, the Business Process Operations Alert Inbox, the Job Monitoring application, and OCC Alert Reporting. To delete the persisted solution context for a user for each application, execute the `E2E_BPM_VARIANT_CLEANUP` report. Mass deletion is possible.	The deletion of the persistence of personalization data in OCC Alert Reporting via report `AGS_BPM_ALREP_RESET_DEFAULTS` and via report `E2E_BPM_VARIANT_CLEANUP` (both reports are necessary) is governed via authorization object `SM_MOAL_TC` with activity `ACTVT 02` change for Monitoring Object Type `REPORTING` (role: `SAP_OP_DSWP_BPM`).
Change Control Management		

Application	Provided Deletion Functionality	Authorization Mechansim
BW Reporting: ITSM and Change Request Management	To delete information concerning business partners that are not only blocked, but are also no longer relevant for reporting, proceed as follows: Provided Deletion Functionality: 1. Run program report `ITSM_REP_GDPR_STOP_WLI` in Solution Manager. 2. Wait for 10 minutes. 3. Run program report `ESR_GDPR_DELETE_USER_INFO` in Solution Manager. 4. Run program report `ITSM_REP_DELETE_BW_DATA_710` in Solution Manager BW. 5. Run program report `SMT_REP_DELETE_BW_DATA` in Solution Manager BW. 6. Run program report `ITSM_REP_DELETE_BW_DATA` in Solution Manager BW. 7. Perform re-initialization for ITSM BW Report via transaction `SOLMAN_SETUP` *-> IT Service Management -> 4.1 Define Extraction Settings*. Make sure, the check box *Initialize* is selected. 8. Perform re-initialization for ChaRM BW Report via transaction `SOLMAN_SETUP` *-> Change Control Management -> Change Request Management -> 6.1 BW Reporting: Define Extraction Settings*. Make sure, the check box *Initialize* is selected. 9. Perform re-initialization for Test Suite BW Report via transaction `SOLMAN_SETUP` *-> Test Suite -> Test Suite Preparation -> Step 2.5 Analytics*. Make sure, the check box *Initialize* is selected.	
ChaRM	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction objects: - `AI_CRM_CM_DESTRUCT_OLD_DATA`: For deletion of obsolete table data; needs to be performed only once. - `AI_CRM_CM_DESTRUCT_REP_TRACK`: For deletion of reporting and transport tracking data. In addition, ILM processes for blocking and deletion of Business Partners are used: - Business Partners: `CA_BUPA`	*SAP ILM Tool Support*

Application	Provided Deletion Functionality	Authorization Mechansim
Configuration Validation	The CCDB deletes by default configuration data including those data that hold User IDs after 36 months. This setting is changeable and can be adjusted in CCDB itself. The cross selection using the *Display* button generates a list of config stores. It is possible to mark one config store, several, or all config stores of the list and choose *Delete Selected Stores*. This function can run Online or in Background mode, which is preferred if many config stores are marked. The deletion of the data is done by a daily job. The information whether this job is running successfully is displayed on tab *Status*, subtab *General*. In *CCDB Infrastructure*, the status of Administration tasks should have a green *Successful* rating. Detail logs for the housekeeping task are displayed in tab *Exception* using the Log Type filter *Admin*. Task: Housekeeping. The deletion removes the config store and its data. **i Note** The next extractor run loads the configuration data and re-creates the config store. This means that, as long as the User ID in question is stored in the managed system, the User ID is stored again. To avoid this, delete the User ID in question in the managed system, before the deletion in the CCDB is performed. Another approach is to remove the managed system from CCDB completely, with the effect, that no data is available in the CCDB. If you want to delete all data which is available in CCDB related to a technical system and avoid that it is loaded again, the first step is to delete the extractors. To delete a Technical System in CCDB select tab *Status* and then *Technical Systems*. Mark the system and click the button *Delete all Stores*. This operation is performed online or in background depending on the selected option. In most cases, the background deletion is the recommended option because it may take several minutes. Subsequently, delete the technical system and its stores in the CCDB Administration. The CCDB Administration can be started via *Solution Manager Launchpad → Solution Manager Administration → Configuration Change Database Store Administration* tile. **i Note** If you want to start a new history, do not delete the extractors. As a result, the technical system appears again in the CCDB Administration after the next extractor run. On tab *Configuration*, the button *Information* opens a dialog that gives you some background information about the CCDB data retention. The config stores of type *Event* are handled separately,	The deletion is protected by authorization objects SM_CCDB* in role SAP_CV_ALL.

Application	Provided Deletion Functionality	Authorization Mechansim
	as these can have a high number of records, because new items (events) are extracted and stored. **Example** A prominent example of an event store is the store for the transport requests `ABAP_TRANSPORTS`. For any other stores, the first snapshot is stored and afterwards only information about changes are stored. Thus, these stores are not supposed to hold lots of records. For more information on deletion, see section *Simplified Deletion*.	
ITSM	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction objects • Incident: `CRM_INCDNT` • Problem: `CRM_PROBLM` • Service Request: `CRM_INCDNT` In addition, ILM processes for blocking and deletion of Business Partners are typically used in conjunction with ITSM scenarios: • Business Partners: `CA_BUPA`	*SAP ILM Tool Support*
License Management	Run report `AGSSISE_DEL_LOGS_GP_SETUP` to delete log entries which are older than a given date.	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SM_LICMAN_ALL`.
QGM	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction objects: • `AI_CRM_CM_DESTRUCT_OLD_DATA`: For deletion of obsolete table data; needs to be performed only once. • `AI_CRM_CM_DESTRUCT_REP_TRACK`: For deletion of reporting and transport tracking data. In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: `CA_BUPA`	*SAP ILM Tool Support*
Requirements Management	See section *Archiving of Objects*	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_ITPPM_ALL`.

Application	Provided Deletion Functionality	Authorization Mechansim
System Recommendation	As soon as a technical system is not managed by the SAP Solution Manager anymore and does not send data to SAP Solution Manager via LMDB we recommend to decommission the system in transaction `SOLMAN_SETUP` *Managed System Configuration*. In addition to the activities proposed by this procedure you can delete any remaining data about such a system using report `AGSNO_RPT_CLEANUP_SYSTEMS`. **i Note** After a defined number of years depending on your specific retention period, the data of the tables which contain personal data is anonymized / deleted, or the data sets are archived.	The deletion is protected by authorization object `SM_FUNCS` with `ACTVT 06` (delete) in role `SAP_SYSREC_ALL`. **i Note** Any data in configuration of transaction `SOLMAN_SETUP` is protected by authorization object `SM_SETUP` accordingly.
CCM		
CCM	In the application, you can use button *Delete Owner* to allow a user to delete selected owner(s) together with all assignments to a custom code object.	The deletion is protected by authorization object `SM_TABU_DIS` in role `SAP_CCLM_ALL`.
DVM		
DVM	Once a solution is deleted, DVM related data get deleted as well. For more information, see SAP Note 264781.	The deletion is protected by authorization objects `SM_DVM` with `ACTVT 06` and `SM_DVM_APP` with `ACTVT 06`.
Job Management		
Job Management	Run report `AI_JOB_MANAGEMENT`. Tables are protected by authorization group `SMAL` and the application specific authorization objects. For more information on the authorizations, see the according section for *Job Management* in the *Application - Specific Security Guide*.	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SM_SCHEDULER_ADMIN`.
Process Management		
CDMC	Run report `CNVCDMC_GDPR_DELETE`. Deletion is protected by authorization object `S_CDMC`.	The deletion is protected by authorization object `S_CDMC`.
Customizing Distribution and Scout	Customizing group or setup can be deleted from within the applications.	The deletion is protected by `S_TABU_DIS`.
JSON file (Process Document Viewer)	Personal data exists in the *Process Portal* application. To delete the user IDs, delete the extracted ZIP file.	

Application	Provided Deletion Functionality	Authorization Mechansim
Solution Documentation	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction objects: • Destruction of Solution Documentation Documents: Delete unused documents depending on a retention period `SMD_DOC_HISTORY_DESTRUCTION` • Destruction of Content Activation Data: `SMMIG_CONT_ACT_DESTRUCTION` • Destruction of solution history data for deleted nodes: `SMUD_HISTORY_DESTRUCTION` • Destruction of Solution Documentation Layouts: `SMUD_LAYOUT_DESTRUCTION` • Destruction of Solution Documentation Reports: `SMUD_REPORT_DESTRUCTION` In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: `CA_BUPA` Business partners are used in various parts of Solution Documentation. For blocked business partners, only the ID is displayed, but no other personal data. The deletion of all data including personal data related to Solution Documentation is supported by manual deletion functionality. **KW Documents** Personal data that is stored in KW documents, which can be found using the embedded search. Such documents can then be deleted manually. See also SAP Note 2625551 Delete Unused Documents. **Personalization** If a user is deleted, all corresponding personalization data related to Solution Documentation is deleted. This includes private entities such as scopes, reports, and layouts. **Transaction SM_CLEANUP** The following programs are provided in this transaction: • Delete documents for deleted solutions and documents without solution assignment • Solution Documentation: Clean up library generation data • Solution Documentation: Delete personalization data for all deleted users Check the application log in transaction `SLG1` for object `SM_CLEANUP`.	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SM_SL_ADMIN` and authorization object `SM_SDOCADM` with `ACTVT 06`.

Application	Provided Deletion Functionality	Authorization Mechansim
	Solutions In the *Solution Administration* application, an entire solution can be deleted. If a solution is deleted, all personal data in all versions of the solution is deleted, too. The deletion of a solution includes also the deletion of all Knowledge Warehouse (KW) documents (see above) with all versions in the solution-specific folder. In addition, instead of deleting an entire solution, all unused documents that are no longer assigned to the solution can be deleted by executing the `SOLMAN_UNUSED_DOCUMENTS` report. This report is available with SAP Note 2625551. **Cross - Solution Entities** Most data in Solution Documentation is organized by solutions. In addition, there are some cross-solution entities: reports, layouts, and document types. For all these entities there is a manual deletion function available. **Data Related to Content Activation** All data related to Solution Documentation content activation can be deleted by executing the `RSMMIG_GP1_GP2_DATA_DELETE` report.	
Solution Documentation Graphical Editor Diagram Entities	Since Graphical Editor objects are solution-specific, deletion of these objects is related to the deletion of *Solution Documentation* as explained in the Solution Documentation section.	
Project Management		
ITPPM	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. The customizing log can be deleted at the end of purpose using the ILM Object Destruction object • Customizing Log: `SMCP_CUSTLOG_DESTRUCT` In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: `CA_BUPA`	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_ITPPM_ALL` and *SAP ILM Tool Support*.
RCA		

Application	Provided Deletion Functionality	Authorization Mechansim
Agent Administration	Run transaction SM_CLEANUP to delete user data. Check the application log in transaction SLG1 for object SM_CLEANUP. Manually, data can be deleted by using the function *Clear History* in the *Agent Administration – Maintenance Mode History - Clear History*.	not applicable
E2E TA Housekeeping: Trace Analysis	Once a trace has been recorded and uploaded it can be either deleted manually, or it will be deleted automatically by a housekeeping job after a configurable retention time.	not applicable
Exception Management	Housekeeping settings are available in the regular *Exception Management* configuration area, which is available in *Solution Manager Configuration* using transaction SOLMAN_SETUP under section *Application Operations*.	The deletion is protected by authorization object SM_SETUP with ACTVT 02 (change) in role SAP_EM_COCKPIT.
SAP Engagement and Service Delivery		
CSA	Report RDSVASACSA_PERS_DATA is provided to delete all personal data stored.	The deletion is protected by authorization object S_TABU_DIS in role SAP_OP_DSWP_CSA.
DSA / Web DSA	To delete data from service sessions, execute the RDSMOPREDUCEDATA report. This report has various selection criteria such as system IDs, dates, and session packages, and can be used for mass deletion.	
EWA Settings	To delete **configuration data** for SAP EarlyWatch Alert Management, you can use the following reports: • AGSSISE_DEL_LOGS_GP_SETUP for log and status • PD_EWA_OLD_DATA_CLEANUP for old EWA settings data Additionally, you have to manually delete the **settings and recipents**. To **manage favorites** in the report viewer, run report PD_EWA_VIEWER_FAV_CLEANUP.	The deletion is protected by authorization object SM_SETUP with ACTVT 02 (change) in role SAP_SETUP_BASIC.
Issue Management	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction objects • Issue/Top Issue: CRM_SERORD • Task: CRM_ACT_ON In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: CA_BUPA	*SAP ILM Tool Support*

Application	Provided Deletion Functionality	Authorization Mechansim
Service Delivery	Use report RDSMOPREDUCEDATA to delete data with complex selection criterias. **Personalization** Use report RESD_PERSONAL_DATA_DELETION to delete personalization data for a user ID. **Service Request** The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction object • Support Request: CRM_SERORD In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: CA_BUPA	*SAP ILM Tool Support* The deletion of user IDs is protected by authorization object S_TABU_DIS.
Service Content Update	Use report RAGS_SCU_DELETE_DELTA_LOGS to delete all entries in the delta log.	The deletion is protected by authorization object SM_CNT_UPD, with activity ACTVT 30 for content update CONT_UPD in role SAP_SETUP_BASIC.
SDCCN	In each managed system where you want to remove the data related to the service data download, execute the /BDL/HANDLE_OLD_RECORDS report. The deletion is protected by authorization objects S_SDCC and S_SDCCN with ADMIN and WRITE permissions. See SAP Note 2643825 - Deletion of personal data stored by Service Data Download (transaction SDCCN)	The deletion is protected by authorization objects S_SDCC and S_SDCCN with ADMIN and WRITE permissions in role SAP_SDCCN_ALL.
Value Based Delivery Dashboard	The SAP ILM Support Tool is used. See section on *Archiving of Objects* for more information.	*SAP ILM Tool Support*
SAP Solution Manager Administration		
UOCShell Personalization	A background Job SM:TECHMON_UI5_CONFIG_CLEANUP with report TECHMON_UI5_CONFIG_CLEANUP is scheduled in transaction SOLMAN_SETUP *Configuration > Basic Configuration > Step 2 : Scheduled Jobs*. Periodicity: weekly. The job removes all System and Application Monitoring Configuration entries of non-existing users.	The deletion is protected by authorization object S_TABU_NAM in role SAP_SM_BATCH.
SEA		

Application	Provided Deletion Functionality	Authorization Mechansim
SEA	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. ILM Object: `SM_SEA_DESTRUCTION` Destruction Object: `SM_SEA_DESTRUCTION` Manual deletion is in place for all objects storing personal data. To access the application, choose *Solution Manager Launchpad → Test Suite → Scope and Effort Analyzer*. See SAP Note 2421158 - SEA - Deletion of personal data stored by ST.	Manual deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SEA_ALL`.
Technical Administration		
CNM	To delete user IDs, execute the `CNM_USER_INFO_DEL` report. To delete all recipients created before a specific date and time, execute the `CNM_USER_INFO_DEL_F_DATE` report. The LDAP user (used for connection to LDAP server to fetch DL details) is maintained in the Central Notification Management application. This can be accessed via the tile *Configuration* (SMS and LDAP Servers) under the *TechnicalAdministration* catalog. If needed, you can remove the user from the LDAP Server configuration.	The deletion is protected by authorization object `SM_NOTI_TA` with `ACTVT 06` (delete) in role `SAP_NOTIF_ADMIN`.
IT Calendar and Work Mode Management /IT Events	To delete personal data, execute the `ITC_USER_INFO_HANDLING` report.	The deletion is protected by authorization object `SM_WMM_AUT` with `ACTVT 06` (delete) in role `SAP_SM_WMM_ALL`.
IT Task Management and Planning	IT Task Management uses standard CRM functionality. A CRM task is created and assigned to business partners. Apart from the detection and deletion functionality supported by CRM, the user information in the IT Task Plan can be taken care of by using report `TPA_USER_INFO_HANDLING`.	The deletion is protected by authorization object `SM_TP_AUTH` with `ACTVT 06` (delete) in role `SAP_TASK_PLANNING_ALL`.
SAM	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. Destruction object is: `SAM_DESTRUCTION` with the following selection fields: • Entity ID • Service ID **Note** The retention period uses the valid to timestamp of service definitions. All service availability management data that is equal to the valid to timestamp + 1 day will be deleted. In addition, ILM processes for blocking and deletion of Business Partners are used: • Business Partners: `CA_BUPA`	*SAP ILM Tool Support*

Application	Provided Deletion Functionality	Authorization Mechansim
Technical Monitoring		
BI Monitoring	Run report `AC_BIMON_DELETE_PERSONAL_DATA`.	The deletion is protected by authorization object `SM_MOAL_TC` with `ACTVT 02` (change) in role `SAP_SM_BIM_LEVEL02`.
BW Reporting for System Monitoring (System Reporting)	Run report `CCMSBI_DELETE`. For more information, see SAP Note 2640144 - Identifying and deletion of personal data stored by ST-BCO Data in info cubes is subject to automatic reorganization after lifetime is reached. Lifetime is configured in the SAP Solution Manager Configuration. All other data can be deleted when reporting for system monitoring is no longer used.	The deletion is protected by authorization object `S_TABU_NAM` in role `SAP_SETUP_BASIC`.
Central Job Overview	Run report `AC_CJO_DELETE_PERSONAL_DATA`.	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SM_CENTRAL_JOB_OVERVIEW`.
Data Readiness Monitoring	Execute the `AC_DRM_DELETE_PERSONAL_DATA` report.	The deletion is protected by authorization object `SM_MOAL_TC` with `ACTVT 02` (change) in role `SAP_SM_BIM_LEVEL02`.
Interface and Connection Monitoring	The user ID associated to an interface channel can be deleted together with the interface channel itself. The delete function is available in *SAP Solution Manager Configuration* work center (transaction `SOLMAN_SETUP`) under *Application Operations → Integration Monitoring → Interfaces and Connections → Step 5.2 Configuration* of the guided procedure.	
Job Monitoring	`Run report AC_JOBMON_DELETE_PERSONAL_DATA`.	The deletion is protected by authorization object `SM_MOAL_TC` with `ACTVT 02` (change) in role `SAP_SM_JMON_LEVEL02`.

Application	Provided Deletion Functionality	Authorization Mechansim
MAI and Alert Inbox	**Configuration** MAI stores configuration which is used by the business. Configurations can be retained until they serve the business purpose. After the configuration is no longer used, the possibility to delete the configuration is provided in the MAI application. The template created can be deleted from the template maintenance tool from where it is created. Run reports: • `ACR_DELETE_UNUSED_CUSTOM_TMPL` - Delete Unassigned Custom Templates • `ACR_DELETE_UNUSED_ALERT_CONSUM` - Delete Unassigned Alert Consumer Variants • `ACC_DELETE_OBSOLETE_USERS` - Delete Obsolete User data from Alert Personalization Settings **Monitoring** Monitoring for a system can be deactivated by decommission monitoring. **Alerts** Housekeeping program `E2EA_HOUSEKEEPING` scheduled as job `SAP_ALERT_HOUSEKEEPING` deletes as per configured intervals. It can be used to delete alerts that are no longer relevant for business. With the alert deletion, the information of user(s) who was / were assigned as processor(s) or took any action on those alerts are also deleted.	The deletion is protected by authorization object `S_TABU_DIS` in role `SAP_SETUP_BASIC`.
MFM	**Payload and EDI attributes** are deleted by the following housekeeping jobs: • `E2EEM_HOUSE_KEEPING` • `E2EEM_HOUSE_KEEPING_PP` The **payload information** collected from the managed systems can contain personal information. The data is deleted as part of the housekeeping process within the application. **Contact persons** maintained in the message flow configuration, and filter variants for user IDs can be deleted by executing the `E2EE_MFMON_DELETE_PD` report.	The deletion is protected by authorization object `SM_MOAL_TC` with `ACTVT 02` (change) and `S_TABU_NAM` in role `SAP_SM_MFM_LEVEL02` .
PI Monitoring	Filter criteria can be deleted manually in the application by the user who created the filter. Additionally, you can delete the filters related to personal data (user ID) by executing the `AC_PIMON_DELETE_PD` report.	The deletion is protected by authorization object `SM_MOAL_TC` with `ACTVT 02` (change) in role `SAP_SM_PIM_LEVEL02`.

Application	Provided Deletion Functionality	Authorization Mechansim
Self Diagnosis	Run report `SD_DELETE_PD`.	The deletion is protected by authorization object `D_SM_S_DIA` with `ACTVT 06` (delete) in role `SAP_SETUP_BASIC`.
System Monitoring (Mobile Optimized SAP Fiori App)	While a user is still active, they can remove systems from their favorites, so that their personal data is deleted from the application. In addition, to delete data for a specific user, execute the `TECH_SYSMON_APP_USER_DATA_DEL` report. **i Note** Application System Monitoring (Mobile App based on Android, discontinued): To delete data for a specific user, execute the `TECH_SYSMON_OLD_USER_DATA_DEL` report.	The deletion is protected by authorization object `S_TABU_NAM` in role `SAP_SM_SYM_LEVEL02`.

Application	Provided Deletion Functionality	Authorization Mechansim
User Experience Monitoring	**Scenario Definition (Scripts)** You can delete scripts in transaction `SOLMAN_SETUP`. If a script is no more required, it can be manually deleted. Proceed as follows: *Solution Manager Launchpad → Configuration All Scenarios tile → Application Operations → User Experience Monitoring → Step 3.3 Assign Script*. Choose the script to delete and press the *Delete* button. **Any Personal Data within a Recorded Script** Since the content of a recorded script depends on what has been recorded by a user, any personal data can be recorded. To make sure that personal data in such scripts is correctly removed, we recommend to do this when you parameter the scripts, and before you upload them to the *User Experience Monitoring* repository. 1. In the *Script Editor*, go to *EEM Navigator* panel, and select the script you like to verify. 2. In the context menu, choose *Explore in File System*. The system opens the script folder in the editor workspace. 3. In the content of the files and sub-folders, you can search for data which you do not want to keep in clear text. 4. Replace the content as follows: ○ If you find such data in the recordings.meta folders or in the replaying.meta folders, replace the text with a dummy value directly in the file. ○ If you find such data in the root folder of the script. such as in script.http.xml, ConfigScript.xml, and so on, edit the script in the *Editor* and replace the text with an UXMon variable of type *secure*. See the SCN Wiki on how to declare UXMon variable in the Editor ○ If there is a text which you do not want to keep in clear text in your script data, you can store this text in a UXMon secure variable, or you can replace it with a dummy value. **Configuration Settings** Execute the `UXMON_GDPR_DELETE` report to delete user configuration settings (extra customization configuration).	The deletion is protected by authorization object `S_TABU_NAM` in role `SAP_SM_EEM_CONF`.
Test Suite		

Application	Provided Deletion Functionality	Authorization Mechansim
BW Reporting Test Suite	Proceed as follows: Provided Deletion Functionality: 1. Run program report `ITSM_REP_GDPR_STOP_WLI` in Solution Manager. 2. Wait for 10 minutes. 3. Run program report `ESR_GDPR_DELETE_USER_INFO` in Solution Manager. 4. Run program report `ITSM_REP_DELETE_BW_DATA_710` in Solution Manager BW. 5. Run program report `SMT_REP_DELETE_BW_DATA` in Solution Manager BW. 6. Run program report `ITSM_REP_DELETE_BW_DATA` in Solution Manager BW. 7. Perform re-initialization for ITSM BW Report via transaction `SOLMAN_SETUP` *-> IT Service Management -> 4.1 Define Extraction Settings*. Make sure, the check box *Initialize* is selected. 8. Perform re-initialization for ChaRM BW Report via transaction `SOLMAN_SETUP` *-> Change Control Management -> Change Request Management -> 6.1 BW Reporting: Define Extraction Settings*. Make sure, the check box *Initialize* is selected. 9. Perform re-initialization for Test Suite BW Report via transaction `SOLMAN_SETUP` *-> Test Suite -> Test Suite Preparation -> Step 2.5 Analytics*. Make sure, the check box *Initialize* is selected.	
Partner Test Management	Execute the `AGS_ADAPTER_PD_DELETE` report.	The deletion is protected by auhorization object `SM_TS_PTM` with `ACTVT 01` (create/generate) in role `SAP_TMT_ADMIN`.
Test Automation	The SAP ILM tool is used, see also section *SAP ILM Tool Support*. The objects for the ILM destruction report are: • Object: `SM_CBTA` • The destruction object is `SM_CBTA_DESTRUCTION`. • The Data Destination Program is `SM_CBTA_DESTRUCTION` Minimum retention time of one year is lowest limit and can be individually extended.	*SAP ILM Tool Support* In addition, the deletion of user IDs is protected by auhorization object `SM_SUTMNGT` with `ACTVT 23` (maintain) in role `SAP_SM_CBTA_ADMIN`.

Application	Provided Deletion Functionality	Authorization Mechansim
Test Suite	The SAP ILM tool is used, see in section *Archiving of Objects.*. The destrcution of objects is optional. Run transaction `SM_CLEANUP` to delete: • personalization data for all deleted users • control table for deleted test scripts Check the application log in transaction `SLG1` for object `SM_CLEANUP`. Manual deletion is in place for all objects that store personal data. In the Test Management application, data can be deleted in the following ways for individual objects via *SAP Solution Manager Launchpad → Test Suite → Test Plan Management*: • Test plan: In the Test Plan Management view, select the test plans that you want to delete, and then choose *Test Plan → Delete*. This also deletes all related data (test packages, test sequences, test status, test notes, and test results). • Test sequence: In the Test Plan Management view, select the test plan with test sequences that you want to delete, and then choose *Test Plan → Edit*. In the Test Plan Maintenance application, select the *Test Sequences* tab. Select the test sequences that you want to delete, and then choose *Test Sequence → Delete*. Save your changes. This also deletes all data related to the deleted test sequences (test packages which reference to the test sequence, test status, test notes, and test results). • Test package: In the Test Plan Management view, select the test plan with test packages that you want to delete, and choose *Test Plan → Edit*. In the Test Plan Maintenance application, select the *Test Packages* tab. Select the test packages that you want to delete, and then choose *Test Package → Delete*. Save your changes. This also deletes all data related to the deleted test packages (test status, test notes, and test results). In addition, run transaction `SM_CLEANUP` to delete old `SSIMG` for test plan hierarchy. Check the application log in transaction `SLG1` for object `SM_CLEANUP`.	*SAP ILM Tool Support* The deletion of user ID is protected by authorization objects `SM_TPLN` and `SM_TPCK` with activity `ACTVT 06` (delete) in role `SAP_STWB_2_ALL`. Authorization for the deletion of user preferences is managed by `S_USR*` authorizations for user deletion.

Application	Provided Deletion Functionality	Authorization Mechansim
SUT Management	User IDs are used. You can remove them manually within the application. Proceed as follows: 1. In the Solution Manager system, go to tile *Test Suite Administration*. 2. Choose tab *Test Automation Framework* and choose *Maintain SUT Systems*. The system opens the SUT Management application. 3. Go to tab *System Data Container Hierarchy*, and open the filter criteria to enter the the relevant User ID in the field *Business User*. 4. Click on *Filter*. The system removes all entries in the *Business Destination Enhancement Details*, which do not match the specified business user. 5. Expand the hierarchy and navigate to each entry where the user may have been registered. 6. Select the corresponding *Test Profile* from the *Business Destination Enhancement Details*, and click *Remove*. 7. Save your changes. 8. Repeat step 6 within tab *SAP ABAP Backend*, for tab *CBTA* and tab *URI Based SUT*.	
Infrastructure		

Application	Provided Deletion Functionality	Authorization Mechansim
EFWK	Extractors in EFWK for each scenario run periodically to delete the text of Business Partners, which are set to be blocked in the Business Partner application. Remaining potential risks are: • If these extractors are stopped manually, the extractor does not update the text of the Business Partner. • Because the extractors are scheduled periodically, there is a time frame between the time when a Business Partner is blocked in a Business Partner function and the time when the text of this Business Partner is updated in the BW infoobject. Within this time frame, a user can see the text of the Business Partner which has been blocked in the Business Partner function. The delivered value of this time frame is 1440 minutes (24 hours). The text of a blocked Business Partner can be deleted manually via the *Master Data Maintenance* tool in BW. There are various ways provided in SAP BW to delete the text of a particular record in one InfoObject. You can use report `RSDMDD_DELETE_BATCH`. In the BW system, choose transaction `RSA1`, go to `Modeling` → `InfoObjects`. Select the infoObject and right click on it to open the context manual for *Maintain Master Data*.	not applicable

Application	Provided Deletion Functionality	Authorization Mechansim
GPA	Using GPA you can delete *Guided Procedures* and their execution logs, including user data. Guided Procedures can be filtered per Users, Creation Date, Change Date, and so on. **⚠ Caution** Delete GPA data only for custom guided procedures/ plugins. No personal data is stored in SAP-delivered guided procedures/plugins. Guided Procedure Authoring data can be deleted manually by using the user interface. Only the customer namespace data should be deleted. The following data can be deleted directly by using the guided procedure catalog via *SAP Solution Manager launchpad → Guided Procedures launchpad group → Guided Procedure Catalog*: • Delete logs by selecting a guided procedure and choosing *Execution Logs → Delete Execution Logs* (With Job). • Delete statuses by selecting a guided procedure and choosing *Execution Logs → Delete Execution Instances* (With Job). • Delete guided procedure plans by choosing *Display All Plans* for each guided procedure and then choosing *Delete* for each plan. • Delete a complete guided procedure by choosing *Delete*. **i Note** ○ Guided procedures used as references will only be deleted if the guided procedures that reference them are deleted first. ○ Only delete a guided procedure once you have removed its logs and statuses as mentioned above. • Delete plug-ins by editing an existing guided procedure, adding a plug-in step, and then choosing *New* to open the plug-in maintenance screen. On this screen, choose *Delete*. You can also directly call the Web Dynpro for plug-in maintenance by calling transaction `SICF` starting the Web Dynpro `AGS_GPA_PLUGIN_MNGT`. Once the data mentioned above has been manually deleted, execute the `PR_UNUSED_DATA_CLEANUP` report to clean up unused/obsolete data. This will clean up orphaned steps, activities, and documentation help texts. To delete old data, execute the `PR_OLD_DATA_CLEANUP` report.	The deletion is protected by authorization object `S_TABU_DIS` with table authorization group `SMGP` in role `SAP_SM_GP_ADMIN`.

Application	Provided Deletion Functionality	Authorization Mechansim
	To delete all logs and statuses for guided procedures, execute the `AGSSISE_DEL_LOGS_GP_SETUP` report. The following steps are relevant for a full clean-up: 1. Go to transaction `SOLMAN_SETUP_ADMIN`. 2. Open the *Generic Storage Admin* menu. 3. Filter on configuration ID: `GP_*`. 4. Remove all entries This removes the remaining data from Guided Procedures executions.	
GSS	**Log and Status** Logs and statuses that are stored for Guided Self-Services can be deleted together with all SAP Solution Manager Configuration logs and statuses. To do so, execute the `AGSSISE_DEL_LOGS_GP_SETUP` report by entering the number of days for which you need to keep the logs, and then selecting SAP Solution Manager and Guided Self Services. **i Note** To delete **old data**, execute the `PR_OLD_DATA_CLEANUP` report, and select *SAP Solution Manager*. **i Note** If technical users or configuration users are deleted in transaction `SU01`, the `SM:AGSSISE_USER_CLEANUP` batch job will automatically clean up the data stored in the generic storage. **! Restriction** Using this report will impact the auditing and traceability of all SAP Solution Manager Configuration scenarios. **GSS Session Data** To delete Guided Self-Services session data, execute the `RDSMOPREDUCEDATA` report. Use this report to filter according to session package (`GSS*`), and remove the relevant session data for Guided Self-Services.	The deletion is protected by auhorization object `SM_SETUP` with `ACTVT 02` (change).
LMDB	Report `RLMDB_CLEAR_CHANGELOG` can be used to delete LMDB Change Log Entries which are older than a given date. A detailed report documentation exists, which explains how to execute the report and schedule a periodical job.	The deletion is protected by authorization objects `AI_LMDB_OB` and `AI_LMDB_AD` in role `SAP_SYSTEM_REPOSITORY_ALL`.

Application	Provided Deletion Functionality	Authorization Mechansim
	To delete `LMDB change log entries` that are older than a given date, execute the `RLMDB_CLEAR_CHANGELOG` report. A detailed report documentation exists, which explains how to execute the report and schedule a periodic job. This cleans up the `LMDB_P_CHANGELOG` table. A job log is written.	
	To delete LMDB landscape entries whose end-of-purpose has been reached, follow the *Decommissioning* guided procedure of the *Technical Administration* application. Alternatively, there are dedicated delete functions on the LMDB UI. This cleans up the `LMDB_P_INSTANCE` and `DIAGLS_STAT_MAIN` tables. An LMDB change log is written.	
	To delete custom *LMDB additional attributes* in the `VC_LMDB_ADD_ATTR` view cluster whose end-of-purpose have been reached, use transaction `SM34`. This cleans up the `SMSY_ATTRIB` table.	
	To delete *LMDB log configuration* of the `V_LMDB_LOG_CONF` view and the `DIAG_UNIF_CONFIG` table for a specific user, execute the `RLMDB_USER_DATA_CLEANUP` report. This cleans up the tables mentioned here. These tables are cleaned up during user deletion, too. An application log is written.	
	To remove *business partner assignments* from technical systems, use the LMDB user interface. Standard functions, such as blocking a business partner for data protection reasons, can be performed by using the standard business partner functionality.	
	For tables `DIAG_LOG_MAIN` and `DIAG_LOG_MESS`, housekeeping is done by means of the `PR_DIAGLS_CLEANUP` report.	
	Run transaction `SM_CLEANUP` to: - delete entries from the obsolete file path repository - delete entries from the obsolete data stores Check the application log in transaction `SLG1` for object `SM_CLEANUP`.	

Application	Provided Deletion Functionality	Authorization Mechansim
Managed System Configuration	Run report AGSSISE_DEL_LOGS_GP_SETUP to delete log and status entries which are older than a given date. Then, run report PR_UNUSED_DATA_CLEANUP. Persisted user data can be deleted by using transaction SOLMAN_SETUP_ADMIN: 1. Start transaction SOLMAN_SETUP_ADMIN 2. Select Generic Storage Admin 3. Switch to edit mode 4. Delete appropriate Generic Storage Entries of following Configuration IDs: ○ AGS_INSE_USER ○ AGS_USER_MNGD_ADMIN ○ AGS_USER_MS_SM_COLLJ ○ AGS_USER_MS_SUPPORT ○ AGS_USER_MS_SUPPORTJ ○ AGS_USER_MS_WILYAGT ○ AGS_USER_RFC_BACK ○ AGS_USER_RFC_READ ○ AGS_USER_RFC_TMW ○ DIR_SCOPE_MIGRATION ○ RCA_SETUP	The deletion is protected by auhorization object SM_SETUP with ACTVT 02 (change) in role SAP_SETUP_BASIC.

Application	Provided Deletion Functionality	Authorization Mechansim
Transaction `SOLMAN_SETUP`	**⚠ Caution** If you delete logs and statuses, the traceability of the current SAP Solution Manager configuration will be deleted, too. If you delete generic storage data from the SAP Solution Manager Configuration, the current configuration of the system will be deleted, too, and will have a high impact on functionality. To delete **SAP Solution Manager Configuration statuses and logs for all scenarios**, execute the `AGSSISE_DEL_LOGS_GP_SETUP` report, and select *SAP Solution Manager* and *Guided Self Services*. To delete **data stored for configuration in the SAP Solution Manager Configuration Generic Storage**, call transaction `SOLMAN_SETUP_ADMIN`, select *Generic Storage Admin*, and remove the relevant configuration ID. To delete **mass configuration data**, run report `PR_OLD_DATA_MASS_CONF_CLEANUP`. To delete **old data**, execute the `PR_OLD_DATA_CLEANUP` report, and select *SAP Solution Manager*. **i Note** If technical users or configuration users are deleted in transaction `SU01`, the `SM:AGSSISE_USER_CLEANUP` batch job will automatically clean up the data stored in the generic storage. To delete obsolete data, execute the `PR_UNUSED_DATA_CLEANUP` report and select both SAP Solution Manager and Guided Procedure Authoring. See also SAP Note 2647547.	The deletion is protected by auhorization object `SM_SETUP` with `ACTVT 02` (change) in role `SAP_SETUP_BASIC`.

Application	Provided Deletion Functionality	Authorization Mechansim
Service Connection Application	**Router Permission Table** If you maintain your router permission table by means of the SOLMAN_SAPROUTER transaction, you have to manually delete the related FTP user and FTP passwords in this transaction. In addition, make sure your router permission table does not contain personal data. **Clean Up Report AI_SC_CLEANUP_DATA** The AI_SC_CLEANUP_DATA report provides a way to delete obsolete personal data if you are planning to shut down functions. This report provides the following functions: • Service Connection Application buffer Select this if you are planning to shut down the service connection application using transaction SOLMAN_CONNECT. This function deletes all service connection data including contact persons. If you decide at a later stage to re-open the service connection application, execute the AI_SC_MIGRATION report to download the buffer data from SAP. • Line Opener log This deletes the log for the AI_SC_LINE_OPENER report, and records the user who runs this report. • SAP Router data This deletes data for the SOLMAN_SAPROUTER transaction. • System Upload Data buffer This deletes the buffered hash data, which contain the data that is sent to SAP via job SM:UPLOAD SYSTEM DATA for system upload purposes. **i Note** The upload in job SM:UPLOAD SYSTEM DATA has been deactivated. For more information, see SAP Note 2863831. • S-user Master Data (see tables AICONTACTS, AIINSTACCESS) This deletes personal data and authorizations for S-users, including the AICONTACTS and AIINSTACCESS tables. After the report is finished, you then have to execute the report SOLMAN_DELETE_CUSTOMER_DATA Cleanup S-users, or AI_SDK_SP_GENERATE_BP_V2 to check and lock the relevant Business Partners that are generated by the AI_SDK_SP_GENERATE_BP_V2 report.	**Router Permission Table** The clean up of all sap router data is protected by authorization object SM_RTR_PRM with ACTVT 06 (delete). **Clean Up Report AI_SC_CLEANUP_DATA** Deletion is protected by authorization object S_TABU_DIS: • Clean up all data for setting up / opening service connection and LOP Check is based on authorization group SMSC. • Clean up all S-Users is based on authorization group AISU.

Application	Provided Deletion Functionality	Authorization Mechansim
	i Note You are not allowed to delete S-users in this report if you manage customer numbers in the `V_AISAPCUSTNOS` view • Transaction `AISUSER` This deletes all data in the `AISUSER` transaction. Only select this option if you are sure that you do not want the SAP Solution Manager system to communicate with SAP. **i Note** You are not allowed to delete the entries in this report if you manage customer numbers in the `V_AISAPCUSTNOS` view. • **Data in obsolete tables** This deletes all obsolete tables that are no longer used in SAP Solution Manager 7.2.	
Additional Functions		
Dashboard Builder	You can delete the dashboard or category in the dashboard builder in the configuration mode. If you delete a dashboard via the configuration UI, then the related information will be removed from the according tables. To delete a **dashboard**, open the dashboard in the configuration mode and choose the *delete* button in the bottom of the page. To delete a **dashboard category**, choose *Edit Dashboard Category* and then select the category and choose the *Delete* button.	Authorization object `S_TABU_DIS` is used with table authorization group `CSA0` is used to safeguard the content of the tables in role `SAP_SM_DSH_CONF`.
Dashboard Framework	**Individual dashboard configurations** can be deleted from within the dashboard or by using the `DSH_DELETE` program. **General dashboard configurations** can be deleted only by deleting the corresponding dashboard alias by means of the specific tool: Web Dynpro application `DASHBOARD_MANAGEMENT`. **Dashboard framework objects** (apps and data suppliers) can be deleted only in the specific tool: Web Dynpro application `DASHBOARD_APPLOADER`. **Namespaces** can be deleted by using `DSH_DELETE` program if no apps are assigned to them.	The deletion is protected by authorization object `S_TABU_NAM` for tables `DSH_APP_INSTANCE`, `DSH_CONTEXT`, `DSH_NAMESPACES`.

Application	Provided Deletion Functionality	Authorization Mechansim
KPI Catalogue API	Logs and traces are automatically deleted after 30 or 90 days. Downloaded definitions can be deleted by using the `SMKPI_DELETE` program.	Authorization object `S_TABU_DIS` is used with table authorization group `SMTA` is used to safeguard the content of the tables.
Rapid Content Delivery	User IDs of the users who have downloaded and imported `ST-CONT 200` content into an SAP Solution Manager 7.2 system are stored. Run the `RCD_DELETE_PERSONAL_DATA` report.	The application is protected by authorization object `CSU_UNPACK` with `ACTVT 02` (change) in role `SAP_SETU_BASIC`.
SAI	The `SAI_ADMIN_TOOL` BSP application displays all users who use SAI services. This application can also be used to remove users from SAI services.	The deletion is protected by `S_TABU_NAM` in role `SAP_SM_SAI_ADMIN`.
URL Framework	1. Open the SAP Solution Manager launchpad. 2. Navigate to the *SAP Solution Manager Administration* launchpad group. 3. Open the URL framework application → Templates → Root Cause Analysis tile. 4. In the Applications table, search for the user ID whose URL customization you would like to delete. 5. For each search result, either choose *Delete* (for application IDs/URLs that were created), or, if the selected application was simply customized, choose *Restore*.	not applicable
Functions related to Release 7.1		
ASU Toolbox	Run report `/ASU/ASUDEL` to delete ASU Content for a given ASU scenario/version. See SAP Note 2646822 - Deletion of personal data stored by ST-PI (ASU Toolbox)	The deletion is protected by authorization object `S_ADMI_FCD` with value `RSET`.
ESR/PSLE	Run report `ESR_GDPR_DELETE_USER_INFO`.	
BW Reporting Testworkbench	All data can be deleted by using the `CCMSBI_TWB_REORGANIZATION` program. See SAP Note 2640144 - Identifying and deletion of personal data stored by ST-BCO	To delete TWB data, the `S_RZL_ADM` authorization object with the `ACTVT ID` and the `01` (create) field is required. See also SAP Note 2645383.
Roadmap	Run report `RSOLAR_DELETE_ROADMAP`. This report deletes roadmaps which were created in the SAP Solution Manager Release 7.1.	The deletion is protected by authorization object `S_AIRMAUTH` with `ACTVT 06` (delete)

Application	Provided Deletion Functionality	Authorization Mechansim
Solar Project, Learning Map, Solutions	**Scenario: Solution Directory** Run report `RSOLAR_DELETE_SOLUTIONS_71` This report deletes old solutions which were created and edited in the SAP Solution Manager ST7.1. Their sessions, documents, download data, and reporting documents which contained on the solutions are also deleted. You can select solutions from the F4 help, or a creation date range, for deletion. **Scenario: Solar Learning Map** Run report `RSOLAR_DELETE_LEARNING_MAP` This report deletes learning maps which were created in the SAP Solution Manager ST7.1. You can select learning map(s) from the F4 help.	The deletion is protected by authorization objects `S_PROJECT` with `ACTVT 06` (delete) for SOLAR projects, and `D_MD_DATA` with `ACTVT 10, 00`.
Solution Directory	Run report `RSOLAR_DELETE_SOLUTIONS_71`. This report deletes old solutions which were created and edited in the SAP Solution Manager Release 7.1, their sessions, documents, download data and reporting documents.	The deletion is protected by authorization object `S_TABU_DIS` with table authorization group `SMAN` in role `SAP_SOL_***`.
SDA	SDA can be activated by implementing the SAP Note 2283635 on Solution Manager Release 7.2, then you can choose which analysis projects and analysis should be deleted.	The deletion is protected by authorization object `D_SOL_RBE` with `ACTVT 70` for `AGS_RBE`.
SAP Engagement and Service Delivery	Use report `RAGS_SERVPLAN_MIGRATION` to delete obsolete data. The data remained in the system after the migration from SAP Solution Manager 7.1 to SAP Solution Manager 7.2. It deletes service sessions, issues, top issue and data from service session access keys.	
Switch Framework	Run report `RSOLAR_DELETE_PROJECT`. This report deletes personal data stored in application Switch Framework.	
System Monitoring based on CCMS	Run report `RS_WBA_SYSMON_DELETE`.	The deletion is protected by authorization object `DSWP_ACTIO` with `ACTVT 02` (change), and authorization object `S_MI_CCMS` with `ACTVT 06` (delete).
Test Management	Run report `SMT_PRVD_DELE_TWB71` During the update, test plans and test packages from Solution Manager Release 7.1 were not removed in order to keep them for reference purpose. These are available in Solution Manager Release 7.2 in display mode only, and can be removed as soon as the data is no longer needed.	The deletion is protected by authorization object `S_TWB` with `ACTVT 06` (delete), and `TREE_TYPE TWB2` for test plans respectively `TWB3` for test packages.

Application	Provided Deletion Functionality	Authorization Mechansim
SMSY	Run report SMSY_CLEANUP.	The deletion is protected by authorization object AI_LMDB_AD with activity ACTVT 06 (delete) in role SAP_SYSTEM_REPOSITORY_ALL.

10.6 Tighten Table Read and Write Access / Table Protection

In many scenarios for SAP Solution Manager, the system needs to read table entries. The direct access to tables is limited wherever possible, because a huge number of changes might be executed this way. In some cases, users need to look at data directly. To look at data in a table, users use these transaction codes most frequently: SE16, SE16N, or SE17, SM30, SM34, SM31 or "proxy"-transactions.

Authorization Object S_TABU_DIS

Authorization object S_TABU_DIS is used to control table access. It determines what group of tables using authorization groups someone can look at, when they use any of the transaction codes above. The authorization object S_TABU_DIS controls complete access during standard table maintenance (transaction SM31), advanced table maintenance (transaction SM30) or the Data Browser (transaction SE16). If you need to control access to individual tables instead to groups of tables, you can use authorization object S_TABU_NAM (see section underneath).

You can assign a table to a specified group. Group assignments are defined in table TDDAT (transaction SE54). For Solution Manager, we deliver dedicated authorization groups for specific functions.

The following authorization groups are used in SAP Solution Manager:

Authorization Group	Remarks
AISU	all *S-USER* - related tables
/ASU	ASU Tool
BCSV	CRM: Status Profile Maintenance
BI* (Remodeling, Repartitioning, Warehouse)	all BI - related tables
BPCA	Business Process Change Analyzer - related tables
CHRM	other than CRM - related tables for Change Request Management

Authorization Group	Remarks
CRMC	all CRM - related customizing views as CRM - based scenarios can refer to the same tables; and ICC
DFWK	Dashboard Framework - related tables
DIAGST	all RCA - related tables
DNO	CRM: Basis Message
DSA	Solution Manager DSA
IVIS	Integration Visibility
LMDB	all LMDB and SMSY - related tables
SARC, BCTA	Data Volume Management
SBPO	Solution Manager: Business Process Operations (Monitoring)
SDCO	all other than CRM - related tables for Incident Management
SEA	Solution Manager: Scope and Effort Analyzer
SGEN	ES-Reporting and SUGEN - related tables
SISE	Solution Manager Basic Configuration (transaction SOLMAN_SETUP) - related tables
SMAL	Monitoring and Alerting (Technical Monitoring) – related tables
SMAN	Implementation and Upgrade - related tables
SMCB	Solution Manager: CBTA
SMCM	Solution Manager: Customer Life-Cycle Management
SMCP	Project Management
SMDC	Solution Manager: Data Consistency Management (general)
SMDS	Solution Manager: Data Consistency Management (sensitive)
SMGP	Solution Manager: GPA
SMJM	Solution Manager: Job Management
SMLIC	Solution Manager: License Management
SMRC	Solution Manager: Root Cause Analysis
SMRS	Solution Manager: System Recommendation

Authorization Group	Remarks
SMSD	Solution Manager: Service Delivery
SMTA	Technical Administration
SMUA	Process Documentation: Administration Data
SMUD	Process Documentation: Instance Data
SMUG	Process Documentation: Authorization Groups
SMUL	Process Documentation: Library
SMUM	Process Documentation: Model Data
SRCD	Rapid Content Delivery
SS	RS: SAP Control
STAO	Solution Manager: TAO
TSTM	Test Management - related tables
USAG	Process Documentation: SMUD Usage

Managed Systems

Authorization Group	Remarks
ST-PI	ST-PI related table authorization group **! Restriction** This authorization group is relevant for all tables for ST-PI in managed systems.

⚠ Caution

Authorization object S_TABU_DIS is delivered with value asterisk (*) for roles assigned to prominent users in SOLMAN_SETUP such as SOLMAN_ADMIN and SOLMAN_BTC.

The majority of users in a production environment do not need direct access to tables. They view data through transaction codes. However, a few users might need access. When providing direct access to tables, you should use transaction SM30. Extra precautions should be taken for the selected users who require access to transaction SE16, because powerful access to a variety of data might be incorporated. You can make SE16 safer by creating a custom transaction code. With a custom transaction code, the user executes SE16 with a view of the table they require. This means they do not enter the table name, instead the custom transaction code takes them into transaction SE16 and directly into the table.

The combination of the object S_TABU_DIS with other objects can be critical:

- with ACTVT value 02 and S_TABU_CLI (see underneath) for S_TCODE SM30, SM31 allows maintenance of cross-client tables
- with ACTVT value 02 for S_TCODE SM30, SE16 allows unrestricted table maintenance (e.g. SAP_SUPPDESK_CONFIG, see *Application - Specific Guide* section on *Incident Management*)

Authorization Object S_TABU_NAM

The existing SAP table authorization concept is mainly based on the group assignment of tables and the authorization object S_TABU_DIS. But, authorization object S_TABU_DIS might not always be sufficient.

This authorization object contains the fields:

- ACTVT: display and change access similar to S_TABU_DIS
- TABLE: table name

With this object, the system checks the view names or table names directly, so that an exact authorization check is possible. In the function module VIEW_AUTHORITY_CHECK, the system checks S_TABU_NAM only if the authorization check on S_TABU_DIS was unsuccessful.

> **i** Note
>
> Run report SUSR_TABLES_WITH_AUTH (see SAP Note 1500054) for analyzing table authorizations for a user or a single role. You can use this program to selectively determine the authorizations for the object S_TABU_DIS or S_TABU_NAM with regard to the tables that can be accessed using it. Transaction SU24_S_TABU_NAM reduces the effort required for maintaining authorization default values during the introduction of an authorization concept with S_TABU_NAM.
>
> See also the following SAP Notes:
>
> - 1481950 Information on the new authorization check for generic table access
> - 1541577 Impact of S_TABU_NAM in Risk Analysis and Remediation

S_TABU_NAM in Function Retrofit (ChaRM)

For the function Retrofit in Change Request Management, role SAP_CM_MANAGED_DEVELOPER_RETRO is delivered. This role contains authorization object S_TABU_NAM in an inactive state. To be able to use this function and role, you need to set the object active and add either full authorization for tables or add only those table names which are relevant for you.

Authorization Object S_TABU_CLI

Authorization object S_TABU_CLI grants authorization to maintain cross-client tables with the standard table maintenance transaction SM31, extended table maintenance transaction SM30, the *Data Browser*. It acts as an additional security measure for cross-client tables and enhances the general table maintenance authorization S_TABU_DIS.

⚠ Caution

A combination of S_TABU_DIS value X, S_TABU_DIS value 02 for field ACTVT, and S_TCODE values SM30, SM31, SCC5 is critical.

10.7 Change Log Information per Function

→ Recommendation

We strongly advice to get familiar with the Auditing and Logging possibilities of SAP NetWeaver: https://help.sap.com/saphelp_nw70ehp2/helpdata/en/c7/69bcb7f36611d3a6510000e835363f/frameset.htm. In addition, to find out how to use transactions SM19 and SM20, check https://blogs.sap.com/2014/12/11/analysis-and-recommended-settings-of-the-security-audit-log-sm19-sm20/

Application Logs

Deletion of personal data is logged. Logs can be accessed either in transaction SLG1 or transaction SOLMAN_SETUP, which is based on transaction SLG1.

In Transaction SLG1

Most log files for SAP Solution Manager can be accessed by using transaction SLG1 which requires authorization object S_APPL_LOG, therefore object and available subobject are listed per function underneath. You need to assign the authorization object with the according values to your user.

In Transaction SOLMAN_SETUP

Authorization object SM_SETUP with ACTVT 61 is checked by the frame of the transaction SOLMAN_SETUP. It allows to display the SOLMAN_SETUP log files for any of the steps. Due to its **security criticality**, it is not included in any of the configuration roles. You can either assign it separately to your users or assign role SAP_SETUP_BASIC_APPLOG.

Logging of Customizing Tables

Changes to customizing tables can be logged via the *Table Change Logging* functionality provided by SAP NetWeaver.

See the SAP Help Portal for details on Table Change Logging.

Application Log Overview

The table underneath provides you with information on the transaction for the logging files access. In the *Comments* column you can find additional information, for instance if separate logging applications are used, customizing table logging applies, and so on.

Application Log Overview

Application	Transaction	Object	Subobject	Comment
BPCA				
BPCA	SLG1	BPCA_DELETE		For customizing table logging, check the information above. For deletion logs see transaction SLG1. The logging for the objects is realized as follows: 1. 3PTM Registry: Table logging for Customizing tables. 2. BPCA Analysis: Access via *Solution Manager Launchpad → Test Suite → Business Process Change Analyzer*. Log via SLG1. 3. Optimization Approach: Access via *Solution Manager Launchpad -> Test Suite -> Business Process Change Analyzer -> Details Optimization Approach -> Edit*. Creator and last change user are logged. Protected via authorization object SM_BPCA. 4. TBOM: Access via *Solution Manager Launchpad -> Project and Process Management -> Solution Documentation -> List View -> Restrict to object type TBOM -> Open TBOM -> Action Log*. Protected via authorization object SM_BPCA. 5. TBOM History: displays change history. 6. TBOM Classification: Table logging for Customizing tables. 7. TBOM Criticality: Table logging for Customizing tables. 8. TBOM Filter: Table logging for Customizing tables. 9. TBOM Options: Table logging for Customizing tables. 10. TBOM Work Item: Access via *Solution Manager Launchpad → Test Suite → My Tasks TBOM Work List → All Work Items → Open Work Item → Action Log*. Protected via authorization object SM_BPCA. Deletion is logged via transaction SLG1. 11. TBOM Work Item Configuration: Table logging for Customizing tables. 12. TBOM Options in managed system: Table logging for Customizing tables 13. BPCA Object and Key mapping: Table logging for Customizing tables

Application	Transaction	Object	Subobject	Comment
BPO				
BPCC		E2E_EXCMGT	HOUSEKEEP	For the housekeeping job, you can use the job log in transaction SM37.
BPI	SLG1	AGS_BPA		See section *Overview of Relevant Applications in SAP Solution Manager* for additional information on log information access. For handling configurable business objects in dependency diagrams and progress management boards, you can access a change log in the persistency browser by executing the AGS_BPA_PERSISTENCE_BROWSER report in SAP Solution Manager. Change log information can be deleted with the report AGS_BPA_PERSISTENCE_REORG. Deletion operations on business objects are logged in the application log (transaction SLG1). The relevant object is AGS_BPA and the subobject is PSM (Persistence Manager) or DIR (Business Process Operations Dashboards).
BP Monitoring	SLG1	E2E_ALERT and SOLAR	BPMO	External ID starting with DELE is used to log deletion activities.
		in the managed system /SDF/E2E	/SOMO/BPMON	Report name E2E_BPM_VARIANT_CLEANUP used as external ID to log deletion activities for persisted solution context.

Application	Transaction	Object	Subobject	Comment
CDC	SLG1	SM_DCM	In the same order: • CDC_DELETE_CHDOC_COM • CDC_DELETE_CHDOC_MOD • CDC_DELETE_COMP_DEF • CDC_DELETE_DATAMODEL • CDC_DELETE_GROUP • CDC_DELETE_RESULTS	In the same order: • Deletion of Change Docs for Comparisons • Deletion of change documents for data models • Deletion of Comparisons • Deletion of Data Models • Deletion of Groups and Comparison Group Types • Deletion of Comparison Results
Job Health Check				The job health check does not change personal data, but collects the User ID of the job execution user. Therefore, there is no change log. If you have deleted selective data from the JSM cubes in the job log you find, who deleted whom, when. Note, that the job logs are reorganized. Thus, download them if you need to persist this information.
Interface Documentation	SLG1	AGS_DCM	IFDOCU	
OCC Alert Reporting	SLG1	SOLAR	BPMON	Report names AGS_BPM_ALREP_RESET_DEFAULTS and E2E_BPM_VARIANT_CLEANUP used as External IDs to log deletion activities.
Change Control Management				
BW Reporting for ITSM and ChaRM	SLG1	ITSM	ITSM_SETUP	Logs the re-initialization in transaction SOLMAN_SETUP
		RSD	CUBE_DEL, ODSO_DEL	Logs the deletion of cube data and DSO in transaction RSA1.
		RSDMD	MD_DEL	

Application	Transaction	Object	Subobject	Comment
Requirements Management ChaRM QGM	SLG1	ARCHIVING, CRM_DATAARCHIVING		
Configuration Validation (CCDB)	SLG1	CCDB	STORE-DELETION	
ITSM	SLG1	AISDK	• AISDK_HIER • AISDK_SP (Service Provider) • AISDK_SP_BG (Master Data Comparison Background)	Numerous SLG1 objects are used, in particular by the CRM framework.
		PPF	PROCESSING	Processing log
License Management	SLG1	SOLAR		Additional AGS_SISE logs are available.
System Recommendation	SLG1	AGS_SR	CHECK	The change log functionality within the application itself is protected by authorization object S_APPL_LOG with the same object and subobject information.
CCM				
CCM	SLG1	CCLM	CCLM	
			LIB	Logs concerning changes in the library, including the creation and deletion of CCLM Owners and Contracts.
			DECOM	Logs concerning analyses in the Decommissioning Cockpit.
			QUAL	Logs concerning analysis in the Quality Cockpit.
DVM				
DVM	SLG1	DVM	DVMICI	Improvement project
			DECISONMAKER	Prioritized object list

Application	Transaction	Object	Subobject	Comment
Job Management				
Job Management	SLG1	SOLAR, AI_JOB_MANAGEMENT	AGS_EXTJOB, JOBMANAGEMENT	
Project Management				
IT PPM				Copy of customizing is similar to the customizing copy of ChaRM transaction types, which use logging in separate specific tables. ITPPM logs the original source and the copied target data of every copy process including data and user (see table SMCP_CUST_TABLOG).
Process Management				
CDMC				Own logs, it stores basic information of the repository objects
Customizing Distribution and Scout	SLG1	SOLAR	DEFAULT	Logs deleted setup/configuration information. Check also in transactions SCDT_LOG and SCDR_LOG_DELETE
		CUST_SYNC	DISTRIB	
Solution Documentation and Solution Documentation Graphical Entities	SLG1	SMUD	BPD	Changes on attributes and elements are stored in own history tables of the application. Changes on KW documents trigger separate physical IDs (PHIOs) for every version. The corresponding history information can be viewed using functionality that is provided in the application. In addition to this, specific important actions are written into the SLG1 log.
Solution Documentation - Content Activation	SLG1	SMMIG_GP, SOLAR	MIGRATION	
RCA				
Agent Administration				This scenario is storing User IDs as part of the logging data in the *Maintenance History* view of the Agent Administration. Open the *Agent Administration UI*, navigate to the *Agents* tab, and click on the *History* link next to the *Maintenance Mode* button. Scroll through the history table for the User ID in question.
E2E TA Housekeeping				See Java Logging.

Application	Transaction	Object	Subobject	Comment
Exception Management	SLG1	EXM	• COLLECTOR • COMMON • EXM LOADER • SETUP	Configuration steps are logged in the *Guided Procedure Framework*.
SAP Enagement and Service Delivery				
CSA	SLG1	SOLAR	CSA	
DSA/Web DSA	SLG1	SOLAR	JOB	Job RDSMOPREDUCEDATA is logged. The following tables are relevant: DSVASSESSADMIN (change / creation user) DSMOPSERSESSN (change / creation user) DSWPDOWNLOADADM (change / creation user) DSVASSESSIONHEAD (change / creation user) DSVASDOCHEAD (change / creation user) DSVASRESULTSERR (creation user)
EWA Settings	SLG1	SOLAR	SAP_BACKEND	Log for old data cleaned up by report PD_EWA_OLD_DATA_CLEANUP
		SM_SETUP	SM_DEL_LOG_GP	Log and statuses of the EarlyWatch Alert Management scenario
Issue Management				Top Issue, Issue, and Task use CRM framework.
Service Delivery	SLG1	SOLAR	SAP_BACKEND	Service Session exchange with SAP uses SLG1 to log changes including changes to personal data. (External ID: GET_SERV_PLAN*).
SDCCN	SLG1	/BDL/LOG	DELETE	Deletion of SDCCN data is logged in SLG1 in every managed system.
SAP Solution Manager Administration				
UOCShell Personalization				Logs for name of deleted users and number of deleted entries are written in the Job Spool.
SEA				

Application	Transaction	Object	Subobject	Comment
SEA Analysis	SLG1	AGSSEA		Protected via authorization object SM_SEA. Deletions of SEA analysis are logged in SLG1 (External key *ADMIN_DELETE_ANALYSES).
Technical Administration				
CNM	SLG1	CNM	USER_INFO	
IT Calendar and Work Mode Management	SLG1	IT_CALENDAR	USER_INFO, USER_INFO_OBSOLETE, HOUSE_KEEPING	
IT Task Management	SLG1	TASK_PLANNING	USER_INFO	
Technical Monitoring				
BI Monitoring	SLG1	AI_JOB_MANAGEMENT	BIMON	
BW Reporting for System Monitoring (System Reporting)	SLG1	ASR_EXTRACT	• EXTRACTOR Data extractor • SETUP Setup of ASR extractors • TEST Test Mode Extractor	
		GENDL_TASK	GENDL_TASK_SUB Step in post processing of BW data	
Central Job Overview	SLG1	AI_JOB_MANAGEMENT	CJO	
DRM	SLG1	AI_JOB_MANAGEMENT	DRM	
Interface and Connection Monitoring	SOLMAN_SETUP			Change logs are generated and displayed in the context of transaction SOLMAN_SETUP for the scenario.

Application	Transaction	Object	Subobject	Comment
Job Monitoring	SLG1	AI_JOB_MANAGEMENT	JOBMON	
MAI	SLG1	E2E_ALERTING	AUTOCONFIG, DIRECTORY, DPC_RUNTIME, DPC_SETUP, ENGINE, REPOSITORY, SELF_MON, MEA_DIRECTORY_API	
Message Flow Monitoring	SLG1	E2E_EXCMGT	SETUP, ME_ASSEMBLER, MSG_ACTION	
MFM	SLG1	COMPMON_DEL	MFMON	
PI Monitoring	SLG1	COMPMON_DELETE	PIMON	
Self Diagnosis	SLG1	COMPMON_DELETE	SELFDIAG	
System Monitoring	SLG1	SYSMON	USER_INFO	
User Experience Monitoring	SLG1	EEM	RUN	Configuration steps are also logged in transaction SOLMAN_SETUP.
Test Suite				
BW Reporting for Test Suite	SLG1	SMT_ST	SMT_SETUP	Logs the re-initialization in transaction SOLMAN_SETUP.
		RSD	CUBE_DEL	Logs the deletion of transactional data in cubes.
			ODSO_DEL	Logs the deletion of transactional data in DSOs.
		RSDMD	MD_DEL	Logs the deletion of master data in infoobjects.
Partner Test Management	SLG1	E2E_PI_DOMAIN	EXTRACTOR, DOMAIN	Configuration: using logs, which are exposed through the APIs by Solution Manager setup.

Application	Transaction	Object	Subobject	Comment
		E2E_PI_MESSAGE	EXTRACTION	
		E2E_PI_MONITORING	CHANNELMON, CHANNEL_EXTRACTOR, INITIALIZATION, RESET	
Test Suite	SLG1	SMT_TWB	DEFAULT	Objects (test plans, test packages, and test sequences) that are deleted in the application itself via *Delete* button are also logged there. The log is mainly used to log what is happening in the back-end (method access and error messages). **Note** No deletion information is logged, as the main object (test configuration, for example) is an eCATT object; therefore logging should be handled by the eCATT application. Logging for users is done by the main application.
Test Automation (CBTA and TAO)	SLG1	SOLAR	TST	
Infrastructure				
GPA	SLG1	SM_GPA	SM_GPA_PLAN_MAN	The log can only be accessed if the user has authorization object SM_GPACUST value display to be able to navigate in the configuration scenarios. Guided Procedures Plans
		SM_SETUP	SM_DEL_LOG_GP	Cleanup logs and statuses for Guided Procedures
		SM_GPA	SM_DEL_GPA	Other Guided Procedures objects
GSS	SLG1	SM_SETUP	SM_DEL_LOG_GP	
Job RDSMOPREDUCEDATA	SLG1	SOLAR	JOB	
LMDB	SLG1	AI_LMDB		Customizing tables: LMDB_LOG_CONF (via V_LMDB_LOG_CONF) SMSY_ATTRIB (via VC_LMDB_ADD_ATTR)

Application	Transaction	Object	Subobject	Comment
SOLMAN_SETUP	SLG1	SM_SETUP	SM_DEL_LOG_GP	The deletion of logs is logged. The log can only be accessed if the user has authorization object SM_SETUP value display to be able to navigate in the setup scenarios Logs and statuses
			SM_DEL_GP	Log for mass configuration data as well as the log and statuses reports
			SM_GENST_DEL_USER	Log for user data cleaned up by SM:AGSSISE_USER_CLEANUP job
			SM_GENSTORE	Log for generic storage
Managed System Configuration				AGS_SISE_LOG
Service Connection Application	SLG1	SOLAR	SC	The change log indicators are active in tables AICONTACTS, AIINSTACCESS, AISUSER. When the REFRESH_ADMIN_DATA_FROM_SUPPORT job runs, application log is written.
Additional Functions				
Dashboard Builder	SLG1	DSH_BUILDER	BADI, BPA, BPM, DATA_FEEDER, FM_CON, GATEWAY	
Dashboard Framework	SLG1	ASR_EXTRACT	SETUP	The deletion of objects via standard tools DASHBOARD_MANAGEMENT and DASHBOARD_APPLOADER is not logged. The deletion of individual configurations is logged via SLG1.
KPI Catalog API	SLG1	SMKPI_LOG		
Rapid Content Delivery	SLG1	SOLAR	CSU_DWLD_IMPORT and CSU_PACK	
SAI	SLG1	SAI_LOG		External ID: SAI_EXT_NO
URL Framework	SLG1	DIAGURL	MANAGER; API	URL Maintenance and URL Runtime
Functions relating to SAP Solution Manager release 7.1				

Application	Transaction	Object	Subobject	Comment
ASU Toolbox				ASU Toolbox creates a new content and task list versions if something is changed by end user.
ESR / PSLE Self - Service Report	SLG1	AGSESR	EXTRACTOR	
Roadmap	SLG1	ROADMAP		
SDA	SLG1	RBE40	DEFAULT	
Service Content Update	SLG1	SOLAR	DEFAULT	In addition, check in transaction AGS_UPDATE the change log protocol.
Service Delivery	SLG1	AGS_ESD	WKC	External ID: DATA_MIGRATION_710TO720
SOLAR, Switch Framework	SLG1	SOLAR	DEFAULT	Learning Map
			DOCU	Solar Project
System Monitoring based on CCMS	SLG1	APPL_LOG	OTHERS	External ID SYSMON
TWB Reporting	SLG1	TWB	TWB_DATA_LOADER_CUBE	Data Loader Call
			TWB_DATA_LOADER_V1	Data Loader Version 1
		TWB_ST	TWB_ATT_EXTR	TWB Attribute Extractor
			TWB_BI_SETUP	TWB BI Reporting Setup
			TWB_EXTRACTOR	TWB Main Extractor
			TWB_MDA_EXTR	TWB Master Data Extractor
Test Management	SLG1	SMT_TWB	DEFAULT	Solution Manager Testing: Test Workbench
SMSY	SLG1	SMSY_LOG_OBJ	SECURITY	

Additional information

For more information on Logging / Tracing, see the *Application Operations Guide*.ILM https://wiki.wdf.sap.corp/wiki/pages/viewpage.action?pageId=1577448349

10.8 Archiving of Objects

Methods of Archiving

Within SAP Solution Manager, the following methods are used:

- SAP ILM Tool Support and transaction `SARA`: For more information, see section *SAP ILM Tool Support*.
- Transaction `SARA` (respectively transaction `SARI` for display purposes)
- Guided Procedures Framework: For more information, see section *Guided Procedure Framework* in the guide.

SAP ILM Tool Support

Once a document has reached the end of its purpose, you can use the ILM object for archiving and thus blocking the document in the system.

Authorization object `S_ARCHIVE` is used. For SAP Solution Manager related ILM archiving objects, assign application area: `CR` (Customer Relationship Management) and your archiving ILM object.

Archiving Business Partners

ILM object `CA_BUPA` with archiving object `CA_BUPA` enables:

- Residence rules in relation to consuming applications to control blocking of the central business partner can be maintained
- Deletion of a central business partner considering retention rules in relation to consuming application is possible.

Transaction SARA

In general, a system adminsitrator would be executing destruction or archiving of objects. Authorization object `S_ARCHIVE` is used in SAP archiving programs called by transaction `SARA` to protect the access to archive files. It is also contained in role `SAP_SETUP_BASIC_ARCHIVE`.

→ Recommendation

- We strongly recommend to remove all instances of `ACTVT 01` or `06` in combination with authorization object `S_PROGRAM: ACTVT SUBMIT`, as this allows deletion of archive files.
- For additional detailed information on ILM related authorizations and roles, please see the documentation for ILM.

SOLMAN_SETUP

To allow any user to use the archiving in `SOLMAN_SETUP`, you must assign authorization object `SM_SETUP` with activity `ACTVT 24` (archive). You can archive logs using the Solution Manager Administration in transaction `SOLMAN_SETUP_ADMIN`. Then, logs are no longer visible in the `SOLMAN_SETUP` User Interface. If you assign the delete permissions, you can delete archived logs.

Overview

The table underneath gives an overview of functions using archiving methods. In the column *Comment*, specific details are mentioned.

Application	Method of Archiving	Comment
Change Control Management		
ChaRM	SAP ILM Tool Support	The SAP ILM tool is used. The archiving object for Change Request Management is `CRM_SERORD`. Archiving needs to be performed for the Change Request Management transaction types. For more information on the relevant **transaction types**, see the section for *ChaRM* in the *Application - Specific Security Guide*. i Note The task list data and reporting data is not archived, but it is deleted. After archiving, the data can no longer be displayed in the CRM WebClient UI, but only in a technical view.
ITSM	SAP ILM Tool Support	Full instructions are provided in SAP Note 1758090 Archiving Solution Manager Incidents. SAP ILM tool is used. ILM objects are: • Incident: `CRM_INCDNT` • Problem: `CRM_PROBLM` • Service Request: `CRM_INCDNT`

Application	Method of Archiving	Comment
QGM	SAP ILM Tool Support	The SAP ILM tool is used. The archiving object for QGM is `CRM_SERORD`. Archiving needs to be performed for the QGM transaction types. For more information on the relevant **transaction types**, see section for *QGM* in the *Application - Specific Security Guide*. **i Note** The task list data and reporting data is not archived, but it is deleted. After archiving, the data can no longer be displayed in the CRM WebClient UI, but only in a technical view.
Requirements Management	SAP ILM Tool Support	The SAP ILM tool is used. The archiving object for Requirements Management is `CRM_SERORD`. Archiving needs to be performed for the Requirements Management **transaction types**. For more information on the relevant transaction types, see section for *Requirements Management* in the *Application - Specific Security Guide*. **i Note** The task list data and reporting data is not archived, but it is deleted. After archiving, the data can no longer be displayed in the CRM WebClient UI, but only in a technical view.
Test Suite	SAP ILM Tool Support	The SAP ILM tool is used. The archiving objects for Test Suite are `SM_TPLN`, `SMT_TPCK`, `SMT_TFLW`. For more information on how to archive, see Application Help for Test Suite.
Infrastructure		
License Management	Transaction `SARA`	For `AGS_SISE_LOG` message archiving.
Transaction `SOLMAN_SETUP`: Managed System Configuration	Transaction `SARA`	For `AGS_SISE_LOG` message archiving.
Transaction `SOLMAN_SETUP`: Solution Manager Configuration	Transaction `SARA`	For more information, choose text `AGS_SISE_ARCH_DISPLAY` in transaction `SE61`. SARA Object ID is `SISELOG`.

Application	Method of Archiving	Comment
Service Connection Application		When an individual S-User is expired, inactive or deleted at SAP, the job `REFRESH_ADMIN_DATA_FROM_SUPPORT` removes the according entry in `AICONTACTS` as well as its authority data in table `AIINSTACCESS`. Then, it adds the record for its S-User ID and customer number in table `AICONTACTS_DEL` for further processing. After that, you have two ways to archive the corresponding Business Partner and lock the user (Any added entries in table `AICONTACTS_DEL` are deleted as well): 1. Run the report `AI_SDK_SP_GENERATE_BP_V2`. 2. Run the report `SOLMAN_DELETE_CUSTOMER_DATA`, selecting the option *Cleanup S-Users*. The Business Partner for contact persons is archived, when the contact person becomes obsolete. See section on *Simplification of Deletion*.
SAP Engagement and Service Delivery		
Issue Management	SAP ILM Tool Support	The archiving objects are `CRM_SERORD` and `CRM_ACT_ON`.
Service Delivery	SAP ILM Tool Support	Use archiving object `CRM_SERORD`.
Value Based Delivery Dashboard	SAP ILM Tool Support	The archiving object is `CRM_SERORD`.
Technical Monitoring		
Exception Management	Guided Procedure Framework	The archiving and deletion of log entries are handled by the Guided Procedure Framework. The content entries are deleted based on the housekeeping settings (retention time). The job is running every day.
User Experience Monitoring	Guided Procedure Framework	The archiving and deletion of log entries are handled by the Guided Procedure Framework. The content entries are deleted based on the housekeeping settings (retention time). The job is running every day.
Additional Applications		
Rapid Content Delivery	Transaction `SARA`	Archiving object is `CSU`. Archived data belongs to content deliveries downloaded or imported.Per default, the job is scheduled to run once in every 3 months within transaction `SOLMAN_SETUP` → *Basic Configuration Procedure*. This time interval can be adapted.

10.9 SAP ILM Tool Support

Transactional data (documents) is blocked using SAP Information Lifecycle Management, master data is blocked using a central blocking indicator. An authorization concept controls both types of blocking. This means that only authorized users, for example an auditor, can access blocked data.

SAP ILM Tool Support

The SAP Information Lifecycle Management (ILM) component supports the entire software lifecycle including the storage, retention, blocking, and deletion of data.

For more information on ILM, see SAP Note 1825544 Simplified Deletion and Blocking of Personal Data in SAP Business Suite and SAP Information Lifecycle Management.

Business Partner Blocking

Transactional data related to a central business partner (business partner data that is managed centrally) exist in several applications. Some data relates to closed business, other data to open or new business. As long as business activities are in progress, most data will neither be blocked nor be deleted. As soon as business activities related to the central business partner are completed, you need to block the data. After the data reaches the longest retention period, you need to delete the data.

The central business partner needs to be blocked in the leading system and the connected systems after considering the application`s consumption of the central business partner. The relevant applications, including the central business partner application itself, needs to provide permission for blocking the central business partner based on the residence rule calculation defined in the ILM framework. After the central business partner is blocked, business users must no longer be able to display or process this data. Only authorized users such as an auditor should view the central business partner.

PFCG role `SAP_CA_BP_DP_ADMIN` and authorization object `B_BUP_PCPT` are available to maintain the authorization for the following activity types:

- `ACTVT 03` Display (blocked data for a central Business Partner)
- `ACTVT 05` Lock (execute the blocking/end of purpose check for a central Business Partner)
- `ACTVT 95` Unlock (execute the unblocking check for a central Business Partner)

> → Tip
>
> If you do not assign the authorization object, and your Business Partner is blocked, you are not able to see any Business Partner data anymore. If you need to display blocked Business Partners for audit reasons, assign the object with `ACTVT 03` display. The object is not contained in any of the SAP Solution Manager standard roles.

For more information, read: 1825608 Simplified Blocking and Deletion of Central Business Partner.

CRM related - Additional Information

- 2044428 FAQ End of Purpose Check of central business partner data in CRM
- 2354273 Data protection for CRM transaction data
- 2039738 Simplified Data Deletion based on SAP ILM in CRM.

11 Useful Tools to Help Your Running Operation Stay Secure

11.1 Run a Security Optimization Service

1. Start Work Center *SAP Engagement and Service Delivery* using transaction `SM_WORKCENTER`.
2. Go to *Service* and choose the sub-view *Service View*.
3. *Create* a new *Security Optimization Service*.
4. A Guided Procedure lets you create the new service for the requested system/s.

For Security Optimization service, you need to assign additional authorizations. For more information, see SAP Note 69647.

11.2 Early Watch Alert Management

The Early Watch Alert service monitors the most important areas of a SAP component with focus on performance and stability. EWA data is based on weekly statistics of performance and system as well as data of system configuration and error analysis. The data is collected by unmodifiable data collectors using transaction `SDCCN` in the target system and is stored in cluster tables `BDLDTOC` and `BDLDATCOL` in SAP Solution Manager to be persisted. The report displays aggregates of these data as analysis results, trend graphics, and so on.

Configuration

You can configure Early Watch Alert (EWA) Reporting in transaction `SOLMAN_SETUP`. Since the setup for `EWA` is mandatory for all systems in your system landscape, the procedure for the setup of Early Watch Alert Management can be run by user `SOLMAN_ADMIN`.

Data Protection

The report does not contain data for specific users. Even though the statistical data can contain user names, they are without any relation to application data, but only to technical data, such as response times or information for technical error analysis. In case, the user who collects the data in the source system has authorization to run transaction `ST03` (Workload Monitor) and display application-relevant data, the EWA report also displays technical transaction codes with user names. This can be avoided by de-assigning value `S_TOOLS_EX_A` in authorization object `S_TOOLS_EX` for the user in question.

Data Archiving

For more information, see SAP Note 546685.

11.3 Using Configuration Validation for Regular Checks of Compliance

11.3.1 Introduction

> → Tip
>
> For an introduction, see also https://wiki.scn.sap.com/wiki/display/TechOps/ConfVal_Reporting

The following document is designed to give you a minimal recommendation on how to use and implement the function Configuration Validation (CV) for your SAP Solution Manager, specifically for the topic on Authorizations and Users. This includes the Customizing of ConfigStores, and subsequent definition of the compliance reporting. All recommendations are based only on SAP Solution Manager best practice (You can find more information in the Online Documentation for this topic as well as WIKI information which is linked to in the RCA WIKI (see in the SAP Solution Manager system work center Root Cause Analysis).

CV can be used for many more topics regarding security compliance and optimization as well as other configuration relevant setting in your system. In addition, due to the nature of the Solution Manager system as single source of truth and subsequent connection to all required managed systems, this function can be applied from within Solution Manager to all your managed systems as well.

The following overall description is not based on a specific Support Package of SAP Solution Manager.

In this document, we deal exemplarily with the following topics which can be evaluated on a regular basis as soon as they are implemented:

Topic	According ConfigStore and According Section in the Guide	Remarks
Which of your predefined critical Standard Users have still their default passwords assigned and are not compliant?	`STANDARD_USERS`	This CS is by default shipped by SAP. It can not be adapted or changed. If you are not compliant with this ConfigStore, it is highly recommended to check the specific users.
Which users have profile `SAP_ALL` assigned and are not compliant?	`AUTH_PROFILE_USER`	The profile definition `SAP_ALL` is predefined by default from SAP. This ConfigStore can be extended by additional definition of ConfigStore values. For instance, you can also check for profile `SAP_NEW`, or any other profile you have defined yourself.

Topic	According ConfigStore and According Section in the Guide	Remarks
Which users have which roles?	AUTH_ROLE_USER	
Which roles exist with a specific pattern in a role name?	AUTH_PATTERN_ROLE	
For instance: in which display roles exist change/edit authorizations?	AUTH_DISPLAY_ROLE	
In which roles exist specific authorizations or authorization combinations?	AUTH_COMB_CHECK_ROLE	
Which users have specific authorizations or authorization combinations?	AUTH_COMB_CHECK_USER	
Which users are allowed to run which transactions?	AUTH_TRANSACTION_USER	
Are there any users in the system with the wrong user type?	AUTH_USER_TYPES	

11.3.2 Prerequisites

Use

To be able to use this function in SAP Solution Manager, some preconditions must be fulfilled.

Prerequisites

System Configuration

The following prerequisites have to be met, before you can run Configuration Validation successfully. You have:

- Configured Solution Manager-system/client
- Configured BW-system/client
- Extractor Framework is running and extractors are collecting data
- RFC - connections READ and BW-related are working
- A dialog user with according authorizations in your Solution Manager-system and BW-system.

More Information

For more information on the configuration of SAP Solution Manager, see the corresponding *Secure Configuration (SOLMAN_SETUP) Guide* for SAP Solution Manager 7.2.

11.3.3 Users and Roles in the SAP Solution Manager

This paragraph gives an overview over users as recommended by SAP and their according user roles.

Template End User

New template users with Default ID: `CV_<user description>_<system ID>` added in the system.

The users are available in application *Solution Manager User Administration* (SMUA) in work center *SAP Solution Manager Administration* view *Users*. For more information on SMUA, see in the *Secure Configuration Guide* the according section.

Administrator User CV_ADM_XXX (Help Text ID: TP_CV_ADM)

Single Roles	Help Text ID
SAP_CV_ALL	AUTH_SAP_CV_ALL Full authorization for Configuration Validation, especially Report Directory **i Note** Authorization object AI_CCDB_SC is set inactive in the role. The authorization restricts access to the User ConfigStores, and therefore security-relevant data. If you allow your administration user to read these data, set the authorization object active in this role.
SAP_SYSTEM_REPOSITORY_DIS	AUTH_SAP_SYSTEM_REP_DIS
SAP_SMWORK_DIAG	AUTH_SAP_SMWORK_CHANGE_MAN
SAP_SM_FIORI_LP_EMBEDDED	AUTH_SAP_SM_FIORI_LP_EMBED
BW- Related Single Roles	Help Text ID
SAP_BI_E2E	• AUTH_SAP_BI_E2E • AUTH_SAP_SM_BI_ADMIN

Single Roles	Help Text ID
SAP_SM_BI_ADMIN	⚠ Caution If the BI - scenario is remote, these roles have to be assigned to the BI - user in the remote system in addition with authorization object S_RFCACL.

Display User CV_DIS_XXX (Help Text ID: TP_CV_DIS)

Single Roles	Help Text ID
SAP_CV_DIS	AUTH_SAP_CV_DIS
SAP_SYSTEM_REPOSITORY_DIS	AUTH_SAP_SYSTEM_REP_DIS
SAP_SMWORK_DIAG	AUTH_SAP_SMWORK_CHANGE_MAN
SAP_SM_FIORI_LP_EMBEDDED	AUTH_SAP_SM_FIORI_LP_EMBED
SAP_BI_E2E SAP_SM_BI_DISP	• AUTH_SAP_SM_BI_E2E • AUTH_SAP_SM_BI_DISP ⚠ Caution If the BI - scenario is remote, these roles have to be assigned to the BI - user in the remote system in addition with authorization object S_RFCACL.

Main Authorization Objects

AI_CCDB_SC

With the help of this authorization object, you can protect individual configuration stores in customizing. Only those users, who have authoriaztion on specific stores are able to access them. This is especially useful in regards to Data Protection, as many configuration stores can contain personal or even sensitive personal data.

→ Recommendation

We recommend to only assign this authorization to specific administration or configuration users, and only for a specified time period.

11.3.4 Defining Configuration Stores

Get an Overview over Configuration Stores

> **i Note**
>
> For a very good overview of defining Configuration Stores, see SDN https://wiki.scn.sap.com/wiki/display/TechOps/ConfVal_Reporting.

Which data does each ConfigStore contain?

The content of a CS (or in other words, what data the extractors collect) is always defined by the specific definition of it. The data you see here, is all the information collected by the extractors according to the definition for the specific CS. Initially, some CS already have a definition delivered by SAP, for instance CS `AUTH_PROFILE_USER`. But not all CS contain initial content and are empty.

What happens if the definition of the ConfigStore changes?

When you start changing the definition of the CS to your individual needs, the extractors collect content according to this new definition, and it is displayed by the system.

Define the Concept

Before you implement anything in your system, it is vital that you are sure of what your concepts for security compliance are which you want to implement. To do this, we recommend some preparatory steps and explanations, which help you later to easily deploy your requirements. We therefore recommend to prepare your concept and how to translate it into the system, by preparing a table which includes questions and answers as well as some technical information:

- What is the requirement?
- When is the system compliant?
- How should the reports be called? Do you have any naming conventions which are required and ease your work?

Know the Procedure of Implementing ConfVal

Each CS is unique in that according to the focus of the compliance task, a specific statement needs to be added. In addition, each CS allows you to maintain it specifically to your needs. Therefore, the recommendations we give in the individual sections of this document can only be taken as an example or template with which you can start. For each implementation for a CS, we recommend to proceed as follows, after your concept is finished, and you know what you want to implement. All these steps are followed in the recommendations for the CS, we describe in this document.

Define the CS in transaction CCDB

Most CS are delivered by SAP as defaults without any content, except for `STANDARD_USERS` or `AUTH_PROFILE_USER`. Therefore, you need to define the content of the CS according to your concept of what

you want to check later on. You can define almost any CS, except for `STANDARD_USERS`. Depending on what you want to check, the extractors collect data. These collected data provide the background against which you can later run compliance definitions.

Generally, all CS are defined using a specific transaction: `CCDB`. In this transaction, you can also check for errors if extractors are not working, and so on. To define CS content, proceed as follows (How to define each specific CS is explained in the individual sections per CS):

1. Choose transaction `CCDB`.
2. Choose tab *Technical System*, and filter for your system ID (in this case the Solution Manager system ID). The system should not display any error messages for extractors.
3. Mark the line for the `ABAP` stack, as in this example we want to define a CS for ABAP. The system displays a number of filter buttons for the Stores underneath.
4. Choose the button *Correct*. The system display all correctly running CS for your system and clients.
5. Mark the line for the CS you want to define, and choose button *Store Details*.
6. Open the tray to display the detail list underneath.
7. Choose the tab *Customizing*.
8. Define your own *Store Customizing* for this particular CS (see following sections per CS).

   > → Recommendation
   >
   > Make sure, you are not overwriting the default customizing *000 SAP (Default)*, but create your own.

9. After you defined it, you need to set it relevant for the system, otherwise the extractors will not collect the data you defined.

11.3.5 STANDARD_USERS: Which Standard Users Retain Their Default Password?

Use

With this CS you can answer questions, such as Which of the passwords of standard users have not been changed? Changing passwords that are generally known is one of the first tasks you should be doing to secure your system. In addition, we strongly recommend to regularly check the compliance to this requirement. This CS is a standard CS delivered by SAP, so you do not need to configure the CS specifically. Users checked are:

SAP Users Checked

- `DDIC`
- `EARLYWATCH`
- `SAP*`
- `SAPCPC`
- `TMSADM`

11.3.6 AUTH_PROFILE_USER: Which Users Have Profile SAP_ALL / SAP_NEW Assigned?

Use

With this CS you can answer questions, such as **Which users have profiles SAP_ALL and SAP_NEW assigned?** Assigning these two profiles is generally a secuirty risk, and shoul dbe handled carefully. If possible, try to minimize authorizations for users instead of extending them.

11.3.7 AUTH_ROLE_USER: Which User Is Assigned Critical Roles

Use

With this CS you can answer questions, such as Which Users have roles assigned that are critical in your system landscape? The pattern of roles can be variable. You can use this function for instance to find out, which roles can be deleted from the system, or something similar.

In our case, we want to find out and check, which users have critical roles `SAP_J2EE_ADMIN` or `SAP_SM_USER_ADMIN` assigned.

Customzing CS

1. Define the CS and assign the pattern `SAP_J2EE_ADMIN` in column *Role Pattern*, and an asterisks * in column *User Pattern* to see all users. You could also specify users here.

   > **i** Note
   >
   > The column *Check ID* defines simply an ID for the value in question.

2. Wait for the next extractor run.

Result

To have a quick check of users, you can check directly in transaction `CCDB` for this CS. Simply choose button *Content* for the latest extractor results.

11.3.8 AUTH_PATTERN_ROLE: Which Roles Exist for a Specific Pattern in the Role Name?

Use

With this CS you can answer questions, such as **Which roles with a specific pattern do exist in the system**? The pattern can be variable, such as the name space of a roles. You can use this function for instance to find out, which roles can be deleted from the system, or similar.

In our case, we want to find out and check, which navigation roles from SAP have been copied as navigation roles should not be copied.

Procedure

1. Define the CS and assign the pattern.
   The conditions are therefore:
   - Copied role do not start with name space *SAP*.
   - Navigation role all contain the pattern *SMWORK*.

   The pattern/value is therefore: `*SMWORK*`.
   Wildcards indicate, that we check for all possible characters before and after the pattern *SMWORK*.

   > **i** Note
   >
   > The column *Parameter* defines simply an ID for the value in question.

2. Wait for the next extractor run.
   The selection of roles is read from table `AGR_1251`.

Result

The system displays all navigation roles, which have been copied and can therefore be removed from the system.

11.3.9 AUTH_DISPLAY_ROLE: In which display roles exist change/edit authorizations?

Use

With this CS you can answer questions, such as Which display only roles contain change authorizations? You can use this function for instance to check whether your defined display roles contain only display

authorizations. The system checks if other activities than 03 (display) are present in an authorization object in the roles defined.

In our case, we want to find out and check, which SAP display roles contain authorizations which do not follow the default activity for display `ACTVT 03`.

11.3.10 AUTH_COMB_CHECK_ROLE: In Which Roles Exist Specific Authorizations or Authorization Combinations?

Use

With this CS, you can answer questions, such as:

- Which roles have specific authorization objects with specified values?
- Which roles have specific authorization object combinations with specified values?

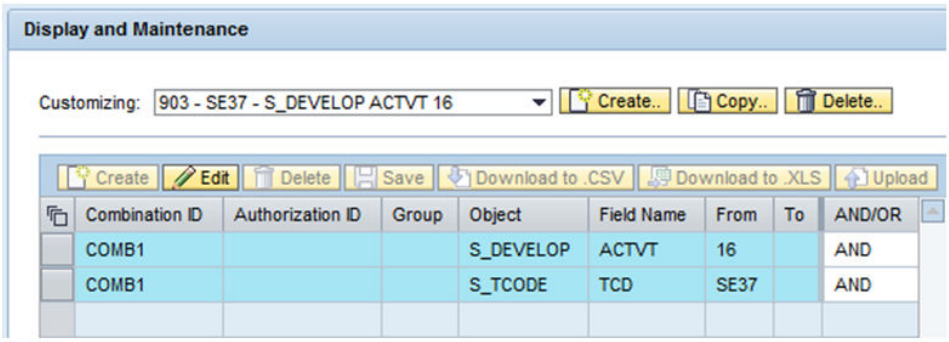
You can use this function to check whether specific critical authorization objects and authorization values are contained in roles in your system.

Procedure

> **Example**
>
> We want to display all roles in the system which contain transaction code `SE37` to run function modules and authorization object `S_DEVELOP` with activity `16` for execution.

The definition table requires at least a self-defined *Combination ID*, *Object*, *Field Name*, *Values* and `AND/OR` clause.

1. Define the CS.
   The conditions are therefore:
   - Define a *Combination ID* for the combination you define. For example: `COMB1`.
   - Object names are `S_TCODE` and `S_DEVELOP`.
   - Field name for `S_TCODE` is `TCD SE37`.
   - Field name for `S_DEVELOP` is `ACTVT` with value 16.
   - Clause value for both objects is `AND`.
2. Enter the values for the combination per line.



Tab: Customizing

3. Set the new definition active by selecting it as *Store Customizing*.
4. Wait for the next extractor run or manually start an extractor run by checking the store (button *Expert Functions*) and using executing extractors (button *Execute Extractors*).
   The selection of roles is read from table `AGR_1251`.
5. You can check for any Upload information in tab *Log*.

Result

The system displays all roles, which contain the above combination of authorizations.

11.3.11 AUTH_COMB_CHECK_USER: Which Users Have Specific Authorizations or Combinations Assigned?

Use

With this CS, you can answer questions, such as *Which users have specific authorization objects with specified values assigned?* It is very similar to CS `AUTH_COMB_CHECK_ROLES`. We recommend to reuse your customizing from the `AUTH_COMB_CHECK_ROLES` store.

You can use this function to check whether specific critical transactions such as `SE80` and so on are assigned to users in your system.

Procedure

> **Example**
>
> We want to display all users in the system which are assigned transaction code `SE37` or `SOLMAN_SETUP`.

The definition table requires at least a self-defined *Combination ID*, *Object*, *Field Name*, *Values* and `AND/OR` clause.

1. Define the CS.
   The conditions are therefore:
   - Define a *Combination ID* for the combination you define. For example: `COMB1`.
   - Object names are `S_TCODE` and `S_DEVELOP`.
   - Field name for `S_TCODE` is `TCD SE37`.
   - Field name for `S_DEVELOP` is `ACTVT` with value 16.
   - Clause value for both objects is `AND`.
2. Enter the values for the combination per line.
3. Set the new definition active by selecting it as *Store Customizing*.
4. Wait for the next extractor run or manually start an extractor run by checking the store (button *Expert Functions*) and using executing extractors (button *Execute Extractors*).
   The selection of roles is read from table `AGR_1251`.
5. You can check for any Upload information in tab *Log*.

Result

The system displays all users, which contain the above combination of authorizations.

11.3.12 AUTH_TRANSACTION_USER: Which Users Are Allowed to Run Critical Transactions?

Use

With this CS, you can answer questions, such as *Which users are allowed to run predefined critical transactions?*

Procedure

> Example
>
> We want to display all users in the system which are assigned transaction code `SU01` and `PFCG`.

1. Enter the values for the transaction in the field `Transaction Code`.
2. Set the new definition active by selecting it as *Store Customizing*.
3. Wait for the next extractor run or manually start an extractor run by checking the store (button *Expert Functions*) and using executing extractors (button *Execute Extractors*).
4. You can check for any Upload information in tab *Log*.

Result

The system displays all users, which contain the above combination of authorizations.

11.3.13 AUTH_USER_TYPES: Are There Any Users in the System with Wrong User Type?

Use

With this CS you can answer questions, such as **Are all users in the correct User Type group**?

Procedure

> **Example**
>
> We want to display all users in the system which are assigned to user type *Service*. For SAP Solution Manager no users with type *Service* are supposed to be created.

1. Define the CS.
   The conditions are therefore:
   - Define a *Check ID* for the combination you define. For example: `COMB1`.
   - User Names are all users, enter `*`.
   - User Type we want to see is `Service`.
2. Enter the values for the combination per line.
3. Set the new definition active by selecting it as *Store Customizing*.
4. Wait for the next extractor run or manually start an extractor run by checking the store (button *Expert Functions*) and using executing extractors (button *Execute Extractors*).
5. You can check for any Upload information in tab *Log*.

Result

The system displays all users, which contain the above combination of authorizations.

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