



## One Identity Manager 8.1

# Administration Guide for the SAP R/3 Compliance Add-on

**Copyright 2019 One Identity LLC.**

**ALL RIGHTS RESERVED.**

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of One Identity LLC .

The information in this document is provided in connection with One Identity products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of One Identity LLC products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, ONE IDENTITY ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ONE IDENTITY BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ONE IDENTITY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. One Identity makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. One Identity does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

One Identity LLC.  
Attn: LEGAL Dept  
4 Polaris Way  
Aliso Viejo, CA 92656

Refer to our Web site (<http://www.OneIdentity.com>) for regional and international office information.

**Patents**

One Identity is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <http://www.OneIdentity.com/legal/patents.aspx>.

**Trademarks**

One Identity and the One Identity logo are trademarks and registered trademarks of One Identity LLC. in the U.S.A. and other countries. For a complete list of One Identity trademarks, please visit our website at [www.OneIdentity.com/legal](http://www.OneIdentity.com/legal). All other trademarks are the property of their respective owners.

**Legend**

-  **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.
-  **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.
-  **IMPORTANT, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

# Contents

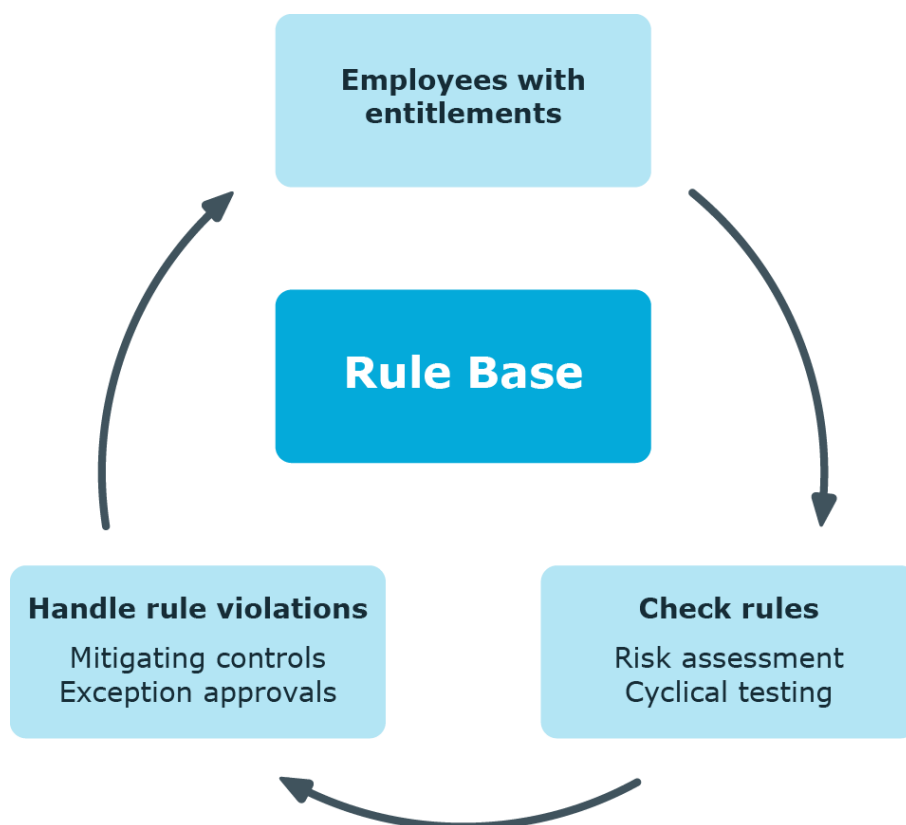
<b>SAP Functions and Identity Audit</b> .....	<b>5</b>
One Identity Manager users for managing SAP functions .....	6
Prerequisites for setting up SAP functions .....	8
<b>Setting up a synchronization project for synchronizing SAP authorization objects</b> .....	<b>9</b>
<b>Basic data for SAP functions</b> .....	<b>11</b>
SAP Function categories .....	11
Functional areas .....	12
Maintenance SAP functions .....	13
<b>Finding non-compliant authorizations</b> .....	<b>15</b>
Examples of SAP functions .....	17
Notes on authorization definitions .....	21
<b>Setting up SAP functions</b> .....	<b>22</b>
Using variables .....	22
Creating function definitions .....	23
General master data for a function definition .....	24
Additional tasks for working copies .....	26
Function definition overview .....	26
Authorization Editor .....	26
Checking authorization objects for completeness .....	30
Authorization overview .....	31
Enabling a working copy .....	31
Mitigating controls .....	31
Exporting a working copy .....	33
Additional tasks for function definitions .....	34
Function definition overview .....	34
Authorization overview .....	34
Creating a working copy .....	34
Exporting a function definition .....	35
Defining function instances .....	36

Master data for a function instance .....	36
Additional tasks for function instances .....	37
Function instance overview .....	37
Checking field variable definitions .....	37
Creating variable sets .....	38
Master data for a variable set .....	38
Additional tasks for variable sets .....	39
Variable set overview .....	39
Copying a variable set .....	40
Applying used variables .....	40
Plug-ins for SAP functions .....	40
Exporting function definitions .....	41
Importing function definitions .....	42
<b>Compliance rules for SAP functions .....</b>	<b>44</b>
Rule conditions for SAP functions .....	44
More rule violation reports .....	45
Mitigating controls for compliance rules .....	46
<b>Mitigating controls .....</b>	<b>47</b>
Entering master data .....	48
Additional tasks for mitigating controls .....	48
Mitigating controls overview .....	48
Assigning function definitions .....	49
Calculating mitigation .....	49
<b>Appendix: Configuration parameters for SAP functions .....</b>	<b>51</b>
<b>Appendix: Default project template for the SAP R/3 Compliance Add-on Module .....</b>	<b>52</b>
<b>Appendix: Referenced SAP R/3 tables and BAPI calls .....</b>	<b>54</b>
<b>About us .....</b>	<b>55</b>
Contacting us .....	55
Technical support resources .....	55
<b>Index .....</b>	<b>56</b>

## SAP Functions and Identity Audit

One Identity Manager can be used to define rules that maintain and monitor regulatory requirements and automatically deal with rule violations. Define compliance rules to test entitlements or combinations of entitlements in the context of identity audit for employees in the company. On the one hand, existing rule violations can be found by checking rules. On the other hand, possible rule violations can be preemptively identified and this prevented.

**Figure 1: Identity Audit in One Identity Manager**



In addition to rule checking, One Identity Manager offers a very detailed examination of effective authorization for SAP R/3 target systems for SAP user accounts. By linking SAP user accounts to employees, combinations of SAP authorizations that an employee obtains through different SAP user accounts can be checked. Potentially dangerous authorizations

and combinations of them can easily be recognized this way and the necessary action taken.

SAP authorizations are verified on the basis of the transactions permitted for a user account and the associated authorization objects. To do this you have to define the transactions and authorization objects you want to verify to be such SAP functions in the One Identity Manager. The SAP finds all the One Identity Manager roles and profiles that have exactly these authorization objects and transactions assigned to them. User accounts match the SAP functions if they are a member in the SAP roles and profiles that have been found.

In order to check whether there are potentially dangerous SAP authorizations in the company, define SAP functions that are critical for these authorizations. Find out which employees match these SAP functions by using compliance rules.

If employees are granted SAP authorizations through IT Shop requests, the authorizations that are not permitted can be detected and handled respectively when the request is made with the appropriate approval procedures. For detailed information about approval procedures in the IT Shop, see the One Identity Manager IT Shop Administration Guide.

Based on this information, you can make corrections to data in the One Identity Manager and transfer them to the connected SAP R/3 systems. The integrated report function in the One Identity Manager can be used to provide information for the appropriate tests.

- ① **NOTE:** SAP R/3 Compliance Add-on Module and Compliance Rules Module must be installed in order to set up and analyze SAP functions.
- ① **NOTE:** You cannot use SAP functions to check the authorizations in the child systems of a central user administration.

## One Identity Manager users for managing SAP functions

The following users are used for managing SAP functions.

**Table 1: User**

User	Task
Compliance rules administrators	Administrators must be assigned to the application role <b>Identity &amp; Access Governance   Identity Audit   Administrators</b> . Users with this application role: <ul style="list-style-type: none"><li>• Enter base data for for setting up company policies.</li><li>• Create compliance rules and assign rule supervisors to them.</li><li>• Can start rule checking and view rule violations as required.</li><li>• Create reports about rule violations.</li></ul>

User	Task
	<ul style="list-style-type: none"> <li>• Define SAP functions and assign these to managers.</li> <li>• Define function instances and variables sets for SAP functions.</li> <li>• Enter mitigating controls.</li> <li>• Create and edit risk index functions.</li> <li>• Monitor Identity Audit functions.</li> <li>• Administer application roles for rule supervisors, exception approvers and attestors.</li> <li>• Set up other application roles as required.</li> </ul>
Responsible for maintaining SAP functions.	<p>Administrators must be assigned to <b>Identity &amp; Access Governance   Identity Audit   Maintain SAP functions</b> or to a child role.</p> <p>Users with this application role:</p> <ul style="list-style-type: none"> <li>• Are responsible for SAP function contents.</li> <li>• Edit working copies of function definitions for which they are responsible.</li> <li>• Define function instances and variables sets for SAP functions.</li> <li>• Assign mitigating controls.</li> </ul>
One Identity Manager administrators	<ul style="list-style-type: none"> <li>• Create customized permissions groups for application roles for role-based login to administration tools in Designer as required.</li> <li>• Create system users and permissions groups for non-role-based login to administration tools in Designer as required.</li> <li>• Enable or disable additional configuration parameters in Designer as required.</li> <li>• Create custom processes in Designer as required.</li> <li>• Create and configures schedules as required.</li> <li>• Create and configure password policies as required.</li> </ul>
Compliance & Security Officer	<p>Compliance and security officers must be assigned to <b>Identity &amp; Access Governance   Compliance &amp; Security Officer</b>.</p> <p>Users with this application role:</p> <ul style="list-style-type: none"> <li>• View all compliance relevant information and other analysis in the Web Portal. This includes attestation policies, company policies and policy violations, compliance rules, and rule violations, critical SAP functions and risk index functions.</li> <li>• Edit attestation polices.</li> </ul>

# Prerequisites for setting up SAP functions

**Table 2: Configuration parameters for handling SAP functions**

<b>Configuration parameter</b>	<b>Meaning</b>
QER\ComplianceCheck	Preprocessor relevant configuration parameter for controlling the database model components for checking the rule base. Changes to the parameter require recompiling the database. If the parameter is enabled, you can use the model components.
TargetSystem\SAPR3\SAPRights	Preprocessor relevant configuration parameter for controlling component parts for testing authorizations in SAP R/3 using SAP functions. If the parameter is set, the components are available. Changes to the parameter require recompiling the database.

All the information regarding SAP authorizations, SAP users, SAP roles, and SAP profiles must be transferred to the One Identity Manager database so that One Identity Manager can test the effective SAP authorizations based on SAP functions.

## **Setting Up SAP Functions**

1. Check in Designer that "QER\ComplianceCheck" and "TargetSystem\SAPR3\SAPRights" are set. Otherwise, set the configuration parameters and compile the database.
2. Set up a synchronization project for synchronizing the necessary SAP schema types and start synchronization.

## **Detailed information about this topic**

- [Setting up a synchronization project for synchronizing SAP authorization objects on page 9](#)



## Setting up a synchronization project for synchronizing SAP authorization objects

SAP authorizations are verified on the basis of the transactions permitted for an SAP user account and the associated authorization objects. Authorization objects and transaction must be loaded into the SAP database first before you can create One Identity Manager functions. For each client, create a synchronization project for synchronizing the necessary schema types. A separate project template is required for this.

Use Synchronization Editor to configure synchronization between the One Identity Manager database and SAP R/3 environment.

### **To set up a synchronization project for SAP authorization objects.**

1. Set up an initial synchronization project as described in the One Identity Manager Administration Guide for Connecting to SAP R/3. The following special features apply:
  1. **NOTE:** You cannot use SAP functions to check the authorizations in the child systems of a central user administration. Set up the synchronization project for one client only, which is not a CUA system.
    - a. In the project wizard on the **Select project template** page, select the "SAP R/3 authorization objects" project template.
    - b. The **Restrict target system access** page is not displayed. The target system is only loaded.
2. Configure and set a schedule to execute synchronization regularly.

### **Detailed information about this topic**

- One Identity Manager Administration Guide for Connecting to SAP R/3
- One Identity Manager Target System Synchronization Reference Guide

## Related Topics

- [Appendix: Default project template for the SAP R/3 Compliance Add-on Module on page 52](#)
- [Appendix: Referenced SAP R/3 tables and BAPI calls on page 54](#)

## Basic data for SAP functions

The following base data is relevant for SAP Functions:

- Configuration parameter

Use configuration parameters to configure the behavior of the system's basic settings. One Identity Manager provides default settings for different configuration parameters. Check the configuration parameters and modify them as necessary to suit your requirements.

Configuration parameters are defined in the One Identity Manager modules. Each One Identity Manager module can also install configuration parameters. You can find an overview of all configuration parameters in **Base data | General | Configuration parameters** in Designer.

For more information, see [Appendix: Configuration parameters for SAP functions](#) on page 51.

- SAP function categories

Use SAP function categories to group SAP functions by specific criteria. For more information, see [SAP Function categories](#) on page 11.

- Functional areas

Functional areas can be used as an additional group characteristic for SAP functions. Furthermore, you can use functional areas to analyze rule violations in context of Identity Audit for different SAP functions. For more information, see [Functional areas](#) on page 12.


- Maintaining SAP functions

An SAP function can be assigned to employees that manage the SAP functions and there for can edit the working copies. For more information, see [Maintenance SAP functions](#) on page 13.

## SAP Function categories

Use function categories to group SAP functions by specific criteria.

### To edit function categories

1. Select **Identity Audit | Basic configuration data | SAP Function categories**.
2. Select a function category in the result list. Select **Change master data**.  
- OR -  
Click  in the result list toolbar.
3. Edit the function category's master data.
4. Save the changes.

Enter the following master data for a function category.

**Table 3: SAP function category properties**

Property	Description
Category	The category item's name.
Parent category	Parent category for organizing function categories hierarchically.
Description	Spare text box for additional explanation.

## Functional areas

You can use functional areas to analyze rule violations in context of Identity Audit for different SAP functions. You can enter criteria that provide information about risks from rule violations for functional areas and SAP functions.


To analyze rule checks for different areas of your company in the context of Identity Audit, you can set up functional areas. Functional areas can be assigned to hierarchical roles and service items. You can enter criteria that provide information about risks from rule violations for functional areas and hierarchical roles. To do this, you specify how many rule violations are permitted in a functional area or a role. You can enter separate assessment criteria for each role, such as a risk index or transparency index.

### Example for using functional areas

The risk of rule violation should be analyzed for cost centers. Proceed as follows:

1. Set up functional areas.
2. Assign cost centers to the functional areas.
3. Define assessment criteria for the cost centers.
4. Define assessment criteria for the functional areas.
5. Assign compliance rules required for the analysis to the functional area.
6. Use the One Identity Manager report function to create a report that prepares the result of rule checking for the functional area by any criteria.

### To edit functional areas

1. Select the category **Identity Audit | Basic configuration data | Functional areas**.
2. Select the functional area in the result list. Select **Change master data**.  
- OR -  
Click  in the result list toolbar.
3. Edit the function area master data.
4. Save the changes.

Enter the following data for a functional area.

**Table 4: Functional area properties**

Property	Description
Functional area	Description of the functional area
Parent Functional area	Parent functional area in a hierarchy. Select a parent functional area from the list in order to organize your functional areas hierarchically.
Max. number of rule violations	List of rule violation valid for this functional area. This value can be evaluated during the rule check.
Description	Spare text box for additional explanation.

Mitigating controls assigned to the function definitions to be tested are automatically copied to rules about SAP functions. Conditions:

- Active rules are assigned to a functional area and a department.
- The function definitions to be tested are assigned to the same functional area and to the variable set associated with the same department.

### Related Topics

- [Mitigating controls](#) on page 47

## Maintenance SAP functions

You can assign SAP functions to employees that are responsible for the content of those SAP functions. A default application role exists for maintaining SAP functions in One Identity Manager. Assign the employees that are authorized to enable and edit working copies of this SAP function and to define function instances to this application role. Create more application roles if required. For detailed information about implementing and editing application roles, see the *One Identity Manager Authorization and Authentication Guide*.

**Table 5: Default application roles for maintaining SAP functions**

User	Task
Responsible for maintaining SAP functions.	<p>Administrators must be assigned to <b>Identity &amp; Access Governance   Identity Audit   Maintain SAP functions</b> or to a child role.</p> <p>Users with this application role:</p> <ul style="list-style-type: none"><li>• Are responsible for SAP function contents.</li><li>• Edit working copies of function definitions for which they are responsible.</li><li>• Define function instances and variables sets for SAP functions.</li><li>• Assign mitigating controls.</li></ul>

***To specify a supervisor for maintaining SAP functions.***

1. Select the category **Identity Audit | SAP functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Change master data**.
4. In the **Manager/supervisor** menu, select the application role.

- OR -

To create a new application role, click  next to the **Manager/supervisor** menu.

- Enter the application role name and assign the parent application role **Identity & Access Governance | Identity Audit | Maintain SAP functions**.
  - Click **OK** to add the new application role.
5. Save the changes.
  6. Assign employees to this application role who are permitted to edit the function definition.

***To add employees to an application role***

1. Select the application role in **Identity Audit | Basic configuration data | Maintain SAP functions**.
2. Select **Assign employees**.
3. Assign the employees you want and save the changes.

**Related Topics**

- [General master data for a function definition](#) on page 24

## Finding non-compliant authorizations

**Table 6: Configuration parameters for authorization checks**

Configuration parameter	Description
TargetSystem\SAPR3\SAPRights\TestWithoutTCD	Checks SAP authorizations without taking SAP transactions into account.

SAP authorizations are verified on the basis of the transactions permitted for an SAP user account and the associated authorization objects. Authorization objects and transactions are grouped into single profiles. In order to check whether there are potentially dangerous authorizations in the company, define authorization objects and transactions as SAP functions. The One Identity Manager compares all authorization objects and transactions assigned to single profiles with the authorization definition in the SAP function. This way, it determines all SAP roles and profiles that have exactly these authorization objects and transactions assigned through single roles.

"TargetSystem\SAPR3\SAPRights\TestWithoutTCD" is evaluated by authorization checks. If the configuration parameter is not set (default case), the following rules apply to the authorization checks:

An SAP role or SAP profile matches an SAP function, when

1. It contains at least one of the transaction defined in the SAP function
2. It has all the authorization objects for this transaction
3. It has all the different authorization object function elements
4. At least one of the instances is defined exactly same function element.

An SAP role matches an SAP function if the SAP profile of this SAP role contains one the transactions defined in the SAP function. The SAP profile must have all this transaction's authorization objects to do this. If a list of different instances is defined for the authorization object, the SAP profile matches the SAP function if it has at least one of these instances.

These transactions are not taken into accounts during authorizations check if "TargetSystem\SAPR3\SAPRights\TestWithoutTCD" is set. In this case, the following rules apply for authorization checking:

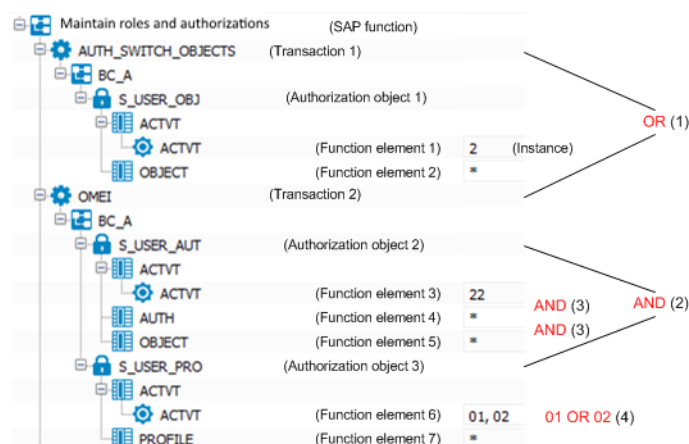
An SAP role or SAP profile matches an SAP function when

1. It has all the authorization objects for all transactions
2. It has all the different authorization object function elements
3. At least one of the instances is defined exactly same function element.

## Example of authorization checking

An SAP function is defined with the following transactions, authorization objects, and function elements.

**Figure 2: Authorization definition**



All SAP roles and SAP profiles with the authorizations listed below are found with the SAP function shown if the configuration parameter is not set.

- Transaction 1 with authorization object 1 and function element 1 with "02" OR "07" OR "21" AND Function elements 2
    - OR -
  - Transaction 2 with authorization object 2 and function element 3, 4, AND 5
    - AND -
- with authorization object 3 and function element 6 with the instance "01" OR "02" AND function element 7 with instance "SLH" OR "SLN"

All SAP roles and SAP profiles with the authorizations listed below are found through SAP functions when the configuration parameter is set.

- Authorization object 1 and function element 1 with the instance "02" OR "07" OR "21" AND Function elements 2
  - AND -
- Authorization object 2 and function element 3, 4, AND 5
  - AND -
- Authorization object 3 and function element 6 with the instance "01" OR "02" AND function element 7 with instance "SLH" OR "SLN"



# Examples of SAP functions

If you create an authorization definition, you need to think about which authorization combinations are not compliant. You can differentiate between two use cases:

1. Find all SAP roles and profiles with invalid combinations of authorizations.  
Create an SAP function for authorizations that cannot occur together with an SAP role or an SAP profile. The authorization test identifies all SAP roles and profiles that have this non-compliant combination of authorizations.
2. Find all employees that have obtain non-compliant combinations of authorizations through their SAP user accounts.  
Create SAP functions for compliant authorizations or combinations of authorizations. Create compliance rules for mutually exclusive SAP functions. The compliance check finds all employees that combine such non-compliant authorization combinations through their SAP user accounts.

## Example for use case 1

A company has changed its policies on compliant SAP authorizations. Now the new policies must be tested to see if existing authorizations (SAP roles and profiles) comply. SAP roles and profiles with non-compliant combinations of authorizations must be identified so that they can be modified to meet the new requirements.

An SAP function is created for each non-compliant authorization combination.

**Table 7: Example of an authorization definition**

SAP function	Transaction	Authorization objects	Field	Value
A	T1	B02	ACTVT	*
	T1	B02	Class	*
	T1	B03	ACTVT	01, 02
	T2	B05	ACTVT	*
	T2	B05	Class	RST*
B	T1	B03	ACTVT	*
	T1	B04	ACTVT	02, 03, 07
	T1	B04	Class	*

The following SAP roles are available:

**Table 8: Defined SAP roles**

SAP role	Transaction	Authorization objects	Field	Value
R1	T1	BO1	ACTVT	*
	T1	BO1	Class	*
	T1	BO3	ACTVT	*
	T1	BO4	ACTVT	01, 02
	T1	BO4	Class	DEF*
R2	T1	BO2	ACTVT	*
	T1	BO2	Class	*
	T1	BO3	ACTVT	*
R3	T1	BO4	ACTVT	03, 07
	T1	BO4	Class	*
R4	T2	BO5	ACTVT	03
	T2	BO5	Class	*

SAP roles are found that match the SAP function during authorization testing.

**Table 9: Authorization test results**

SAP function	SAP role	"TestWithoutTCD"	Reason
B	R1	disabled   enabled	<p>The role R1 has all the authorization objects and fields named in the SAP function and at least one field characteristic.</p> <p>Role R2 is missing authorization object BO4. Therefore it does not match the SAP function.</p> <p>Role R3 is missing authorization object BO3. Therefore it does not match the SAP function.</p> <p>The role R4 is missing authorization object BO3 and BO4. Therefore it does not match the SAP function.</p> <p>The configuration parameter does not affect the result of the authorization test because only one transaction is used in the SAP function.</p>
A	R2, R4	Disabled	<p>The role R2 has all the authorization objects, fields and characteristics named in transaction T1.</p> <p>The role R4 has all the authorization objects,</p>

SAP function	SAP role	"TestWithoutTCD"	Reason
--------------	----------	------------------	--------

			<p>fields and characteristics named in transaction T2.</p> <p>The role R1 is missing the authorization object BO2 or BO5. Therefore it does not match the SAP function.</p> <p>The role R3 does not have any of the named authorization objects. Therefore it does not match the SAP function.</p>
A	enabled		<p>The role R1 is missing authorization object BO2 and BO5. Therefore it does not match the SAP function.</p> <p>Role 2 is missing authorization object BO5. Therefore it does not match the SAP function.</p> <p>The role R3 does not have any of the named authorization objects. Therefore it does not match the SAP function.</p> <p>The role R4 is missing authorization object BO2 and BO3. Therefore it does not match the SAP function.</p>

The SAP role R3 complies with the new policies and can still be used. The roles R1, R2, and R4 must be modified to comply to the new policies. If an authorization is compliant without taking the authorization test into account, only role R1 must be modified.

### Example for use case 2

Now you need to run a test to ascertain which SAP user accounts do not conform to the new policies. To do this, you have to create compliance rules for the SAP functions.

**Table 10: SAP user accounts used**

Employees	SAP user accounts	SAP roles	Permissions
Clara Harris	K1	R1	BO1   ACTVT {*} BO1   CLASS {*} BO3   ACTVT {*} BO4   ACTVT {01, 02} BO4   CLASS {DEF*}
Ben King	K2	R2, R3	BO2   ACTVT {*} BO2   CLASS {*}

Employees	SAP user accounts	SAP roles	Permissions
			BO3   ACTVT {*}
			BO4   ACTVT {03, 07}
			BO4   CLASS {*}
Jenny Basset	K3	R2	BO2   ACTVT {*}
			BO2   CLASS {*}
			BO3   ACTVT {*}
Jenny Basset	K4	R3	BO4   ACTVT {03, 07}
			BO4   CLASS {*}
Jan Bloggs	K5	R3	BO4   ACTVT {03, 07}
			BO4   CLASS {*}

The SAP roles R2 and R3 are assigned to user account K2. The user account obtains all the authorizations from both these roles. However, according to the new policies, an employee cannot own the authorizations BO3 and BO4 (SAP function B) at the same time. A compliance rule is created for this, which finds all employees matching the SAP function B (rule C1). Since neither role R2 nor role R3 matches this SAP function, a rule violation is not found.

In order for One Identity Manager to acknowledge the rule violation, SAP functions must be created for the conflicting authorization objects. As a result, the SAP functions that cause a rule violation are combined into a compliance rule.

**Table 11: More SAP functions**

SAP function	Transaction	Authorization objects	Field	Value
B	T1	BO3	ACTVT	*
	T1	BO4	ACTVT	02, 03, 07
	T1	BO4	Class	*
C	T1	BO3	ACTVT	*
D	T1	BO4	ACTVT	02, 03, 07
	T1	BO4	Class	*

**Table 12: Compliance rules**

Rule	Rule condition	Employee who violate rules
CR1	Employee owns SAP function B.	Clara Harris
CR2	The employee owns the SAP function C AND the employee	Clara Harris

Rule	Rule condition	Employee who violate rules
	own the SAP function D.	Ben King Jenny Basset

Jan Bloggs does not violate the compliance rule. The SAP role R3 matches the SAP function D but this only leads to a rule violation in combination with the SAP function C.

## Related Topics

- [Finding non-compliant authorizations](#) on page 15
- [Rule conditions for SAP functions](#) on page 44

# Notes on authorization definitions

Take the following advice into account when you create an authorization definition in the authorization editor.

- Click **+** to add an additional value for the ACTVT element to an authorization object. You can also write several permitted values for ACTVT elements as a comma delimited list.
- To add an additional value for another function element (for example, CLASS) to an authorization object, click **C** next to this function element. The permitted values of this function element cannot be entered as a comma delimited list. They must always appear as separate entries in the authorization definition.
- Authorization objects cannot be added more than once to an authorization definition. if you want to run a function test on the same authorization object with different instances, create a separate SAP function for each instance. Combine these SAP function in a compliance rule.

## Detailed information about this topic

- [Authorization Editor](#) on page 26
- [Finding non-compliant authorizations](#) on page 15

## Related Topics

- [Examples of SAP functions](#) on page 17
- [Rule conditions for SAP functions](#) on page 44

## Setting up SAP functions

You can create function definitions, function instances and variable sets for SAP functions. A function definition contains the authorization definition as well as general master data. An authorization definition consists of at least one transaction. A least one authorization object belongs to a transaction. Each authorization object consists of at least one function element (activity or authorization field) with concrete instances. Instances are given as single values or as upper and lower scope boundaries. Function elements can be listed more than once per authorization object.

You can use an SAP function for different instances. Use variables in the authorization definition to do this. Fixed variable values are grouped in variable sets and used in the function instances.

### Using variables

You can set fixed values for function elements in authorization definitions. You can implement variables to use a function definition for different function instances. For this, the following is valid:

**Table 13: Variables specification**

Property	Specification
Variable name	<ul style="list-style-type: none"> <li>Begins with a letter</li> <li>Only contains letters, numbers and underscore</li> <li>Is enclosed in \$ signs</li> </ul> <p>Example: \$Var_01\$</p> <p><b>NOTE:</b> Variable names cannot begin with system variable names.</p>

Property	Specification		
Value	<b>Syntax (example)</b>	<b>SAP authorization is tested for</b>	<b>Example for value in the SAP system</b>
	*	Any value	abc   1234
	Any string (from)	Exact given value	abc
	[*]	The value *	*
	String[*] (abc [*])	Value	from*
	String* (abc [*])	Values beginning with the given string and ending with any string	abc*   abcd
	Comma delimited list (abc, 1234, d*)	A value contained in the list	ab   1234   c*   cde

You can also use system variables as well as self-defined variables in the authorization definition. System variables have the following syntax: `${character}+` (example: `$AUFART`).

Variables must be uniquely identifiable by the authorization check. Therefore, names of self-defined variables may not match system variables or begin with system variable name.

## Related Topics


- [Authorization Editor](#) on page 26
- [Master data for a variable set](#) on page 38

# Creating function definitions

A working copy is added to the database for every function definition. Edit the working copies to create function definitions and change them. The changes are not passed on to the production function definition until the working copy is enabled. SAP authorizations are only checked on the basis of active function definitions.

**NOTE:** One Identity Manager users with the application role **Identity & Access Governance | Identity Audit | Maintain SAP functions** can edit existing working copies for which they are listed as responsible in the master data.

### To create a new function definition

1. Select the category **Identity Audit | SAP functions | Function definitions**.
2. Click  in the result list toolbar.
3. Enter the function definition master data.
4. Save the changes.  
This adds a working copy.
5. Select the **Activate working copy** task. Confirm the security prompt with **OK**.  
This adds an enabled rule in the database. The working copy is retained and can be used to make changes later.

### To edit an existing function definition

1. Select the category **Identity Audit | SAP functions | Function definitions**.
    - a. Select the function definition in the result list.
    - b. Select **Create working copy** in the task view.  
The data from the existing working copy are overwritten with the data from the active function definition, after prompting. The working copy is opened and can be edited.
- OR -
- Select the category **Identity Audit | SAP functions | Function definition working copies**.
- a. Select a working copy in the result list.
  - b. Select **Change master data**.
2. Edit the working copy's master data.
  3. Save the changes.
  4. Select the **Activate working copy** task. Confirm the security prompt with **OK**.  
The changes to the working copy are transferred to the active function definition.

## General master data for a function definition



Table 14: Configuration parameters for risk assessment of SAP functions

Configuration parameter	Effect when set
QER\CalculateRiskIndex	Preprocessor relevant configuration parameter controlling system components for calculating an employee's risk index. Changes to the parameter require recompiling the database.  If the parameter is enabled, values for the risk index can be entered and calculated.



Enter the following master data for a function category.

**Table 15: Master data for a function definition**

Property	Description
Function definition	Name of the SAP function.
Functional area	The SAP function is valid for this functional area.
Function category	Grouping criteria for the SAP function. To create a new function categories, click  . Enter the name and a description of the function category.
Manager/supervisor	Application role whose members are responsible for the function definition in terms of content.  To create a new application role, click  . Enter the application role name and assign a parent application role.
Authorization objects	Spare text field for entering information about the authorization objects that are used in the function definitions.
Risk index	Defines the risk for the company if an SAP user account matches this SAP function. Use the slider to enter a value between 0 and 1.  0 ... no risk  1 ... Every SAP user account that matches the SAP function poses a problem.  The input field is only visible if the "QER\CalculateRiskIndex" configuration parameter is set.
Risk index (reduced)	Show the risk index taking mitigating controls into account. An SAP function's risk index is reduced by the significance reduction of all mitigating controls assigned to it. The risk index (reduced) is calculated for the original SAP function. To copy the value to a working copy, run the task <b>Create working copy</b> .  The input field is only visible if the "QER\CalculateRiskIndex" configuration parameter is set. The value is calculated by the One Identity Manager and cannot be edited.
Severity code	Specifies what it means to the company (or the assigned functional area) when an SAP user matches this SAP function. Enter a value between 0 and 1.  0 ... only information  1 ... Every SAP user account that matches the SAP function requires changes to the affected SAP authorizations.
Significance	Enter a verbal description of the effects on the company (or the functional area) when an SAP user matches this SAP function. In the default installation value list is displayed with the entries {NONE, 'low', 'average', 'high', 'critical'}.

Property	Description
Description	Spare text box for additional explanation.
Working copy	Specifies whether this is a working copy of the function definition.

### Detailed information about this topic

- [SAP Function categories](#) on page 11
- [Maintenance SAP functions](#) on page 13
- [Mitigating controls](#) on page 47
- One Identity Manager Risk Assessment Administration Guide

## Additional tasks for working copies

After you have entered the master data, you can apply different tasks to it. The task view contains different forms with which you can run the following tasks.

### Function definition overview

You can see the most important information about a working copy on the overview form.

#### *To obtain an overview of a working copy*

1. Select the category **Identity Audit | SAP functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Function definition**.

### Authorization Editor

Use the Authorization Editor to set up the SAP function authorization definition. To do this, group transactions and authorization objects together that should be covered by the SAP function.

#### *To compile an authorization definition*

1. Select **Identity Audit | SAP Functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Authorization Editor**.

4. Select one of the following tasks.

- **1. Add by menu template...**

**Table 16: Menu template properties**

<b>Property</b>	<b>Description</b>
SAP Menu display	Menu items from the SAP GUI's SAP menu display
All other menus	Menu items from all other SAP menus
System	SAP system to be used to display the menu tree
Menu	Menu tree for selecting menu items All the transaction and authorization objects are loaded that can be called from the selected menu items. Transaction codes that are linked to a menu item are shown in brackets in the menu tree as additional information.

- OR -

- **2. Add by transaction....**

**Table 17: Properties of a transaction**

<b>Property</b>	<b>Description</b>
Filter	Filter for list of available transactions
Transaction	Transactions whose authorization objects are to be loaded into the Authorization Editor All authorization object are added that are linked with the selected transaction.

- OR -

- **3. Add via authorization object....**

**Table 18: Authorization object properties**

<b>Property</b>	<b>Description</b>
Filter	Filter for list of available authorization objects
Authorization objects	Authorization objects to be loaded to the Authorization Editor All transactions that are linked to the authorization object are added.

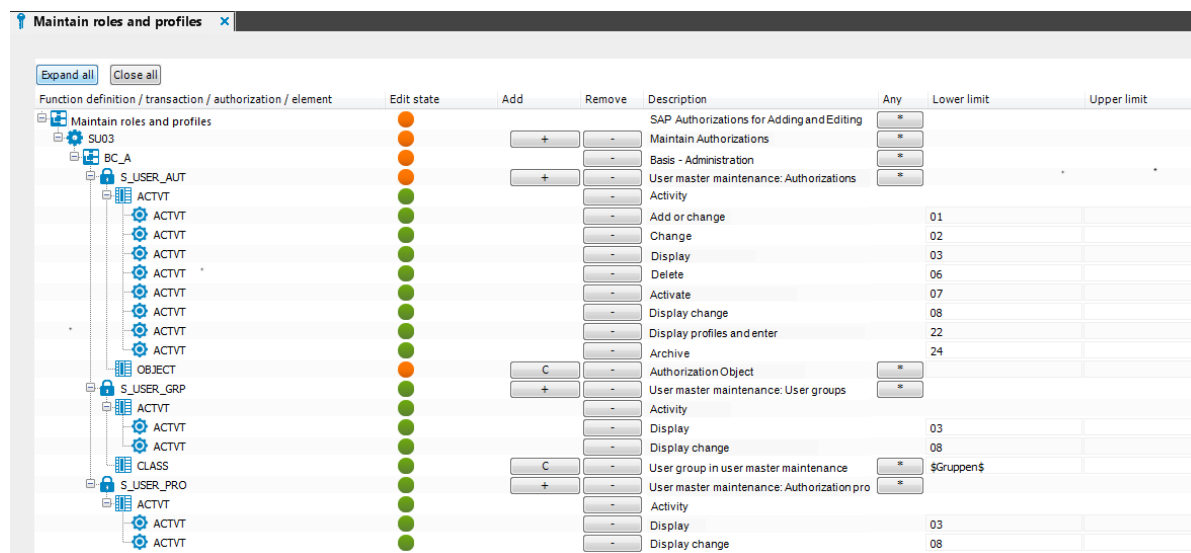
- OR -

- **4. Add via existing function definition....**

Select an existing function definition whose authorization definition you want to load into the Authorization Editor.

5. Specify details for each element in the Authorization Editor.
6. Save the changes.

**Figure 3: Authorization Editor for SAP functions**



The functionality of the Authorization Editor is based on the SAPGUI Authorization Editor. The columns in the Authorization Editor have the following meaning.

**Table 19: Properties of an authorization definition**

Property	Description
Function definition / transaction / authorization / function element	Function definition hierarchy. Transactions, their associated authorization objects and function elements are mapped in a tree structure.
Processing status	Processing status of tree structure objects: <ul style="list-style-type: none"> <li>● ... No value is specified for the function element.</li> <li>● ... A value is specified for the function element.</li> </ul>
Add	Click <b>+</b> , to add more objects to the authorization definition. This adds a sub object. Click <b>C</b> , to copy the function element.
Remove	Click <b>-</b> , to remove objects from the authorization definition.
Description	Object description.
Any	Click <b>*</b> , to define the value of a function element as "*" (any

Property	Description																											
	value).																											
Value / lower limit	<p>Values permitted for the function element. For example, you can limit SAP authorizations to specific SAP groups. When you specify a range, enter the lower limit here.</p> <p>Values can be added as variables. System variables can also be used. Wildcards can be used in the values.</p> <table border="1"> <thead> <tr> <th>Syntax (example)</th> <th>SAP authorization is tested for</th> <th>Example for value in the SAP system</th> </tr> </thead> <tbody> <tr> <td>*</td> <td>Any value</td> <td>abc   1234</td> </tr> <tr> <td>Any string (from)</td> <td>Exact given value</td> <td>abc</td> </tr> <tr> <td>[*]</td> <td>The value *</td> <td>*</td> </tr> <tr> <td>String[*] (abc[*])</td> <td>Value</td> <td>from*</td> </tr> <tr> <td>String* (abc[*])</td> <td>Values beginning with the given string and ending with any string</td> <td>abc*   abcd</td> </tr> <tr> <td>Comma delimited list (abc, 1234, d*)</td> <td>A value contained in the list Comma-delimited lists can only be used with ACTVT elements. This list is used like a string on other function elements.</td> <td>ab   1234   c*   cde</td> </tr> <tr> <td>Variable (\$Var\$)</td> <td>Value stored in the variable</td> <td></td> </tr> <tr> <td>System variable (\$var)</td> <td>Value stored in the system variable</td> <td></td> </tr> </tbody> </table>	Syntax (example)	SAP authorization is tested for	Example for value in the SAP system	*	Any value	abc   1234	Any string (from)	Exact given value	abc	[*]	The value *	*	String[*] (abc[*])	Value	from*	String* (abc[*])	Values beginning with the given string and ending with any string	abc*   abcd	Comma delimited list (abc, 1234, d*)	A value contained in the list Comma-delimited lists can only be used with ACTVT elements. This list is used like a string on other function elements.	ab   1234   c*   cde	Variable (\$Var\$)	Value stored in the variable		System variable (\$var)	Value stored in the system variable	
Syntax (example)	SAP authorization is tested for	Example for value in the SAP system																										
*	Any value	abc   1234																										
Any string (from)	Exact given value	abc																										
[*]	The value *	*																										
String[*] (abc[*])	Value	from*																										
String* (abc[*])	Values beginning with the given string and ending with any string	abc*   abcd																										
Comma delimited list (abc, 1234, d*)	A value contained in the list Comma-delimited lists can only be used with ACTVT elements. This list is used like a string on other function elements.	ab   1234   c*   cde																										
Variable (\$Var\$)	Value stored in the variable																											
System variable (\$var)	Value stored in the system variable																											
Upper scope boundary	Upper limit for the range of a function element Values can be added as variables.																											

All function elements in a transaction that are defined in a separate row must be fulfilled for the SAP function to match. If the SAP functions should only match when an SAP profile has one of several possible instances of one and the same function element, define this instance as a comma-delimited list of values for this function element.

### **To edit the properties of the selected object**

- Double-click on a function element in the Authorization Editor.  
You can edit the description of the function element and the upper and lower limits.

**Table 20: Function element properties**

<b>Property</b>	<b>Description</b>
Type	Specifies whether the selected function element is an activity or a authorization field.
Name	Name of the function element.
Lower limit, upper limit	Values permitted for the function element. When you specify a range, enter a lower and an upper limit. Values can be added as variables. Click ★ to select variables from the variable definitions available.
Description	Detailed description of the function elements.

### **Detailed information about this topic**

- [Using variables](#) on page 22
- [Creating variable sets](#) on page 38

### **Related Topics**

- [Notes on authorization definitions](#) on page 21

## **Checking authorization objects for completeness**

One Identity Manager uses this task to test whether all authorization objects that belong to a transaction occur in the authorization definition.

### **To test an authorization definition for completeness**

1. Select **Identity Audit | SAP Functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Authorization Editor**.
4. Select **Check authorization objects for completeness**.  
Missing authorization objects are displayed in a separate window.
5. Enable **Add** on the authorization object you want to add to the authorization definition.
6. Close the window using the **OK** button.

The authorization objects can now be edited in the authorizations editor.

## Authorization overview

Function elements are displayed in a flat structure in the authorization overview. You can edit all the object properties here.

### *To display an overview of all function elements*

1. Select **Identity Audit | SAP Functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Authorization overview**.

## Enabling a working copy

SAP authorizations are only checked on the basis of active SAP functions. When you enable the working copy, the changes are transferred to the function definition. An active function definition is added to a new working copy.

### *To transfer changes from a working copy to a function definition*

1. Select **Identity Audit | SAP Functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Enable working copy**.
4. Confirm the security prompt with **OK**.

## Mitigating controls

Mitigating controls can be stored with SAP functions. These reduce the effects on the company when SAP users match with SAP functions. At the same time, you specify how to deal with SAP users or SAP groups that match the SAP function. For example, changing a user assignment to an SAP role in the SAP system can be used as a mitigating control for an SAP function.

Mitigating controls can also be used as controlling measures for compliance rules. Mitigating controls assigned to the SAP functions for testing are automatically transferred into compliance rules about SAP functions.

### **Prerequisites:**

- Active rules are assigned to a functional area and a department.
- The SAP functions for testing are assigned to the same functional area and then associated variable set of the same department.

### **To edit mitigating controls**

- Set the configuration parameter "QER\CalculateRiskIndex" in the Designer.

## Detailed information about this topic

- [Assigning mitigating controls](#) on page 32
- [Creating mitigating controls](#) on page 32
- [Mitigating controls](#) on page 47

## Assigning mitigating controls

### *To assign mitigating controls to a function definition*

1. Select the category **Identity Audit | SAP functions | Function definition working copies**.
2. Select the working copy in the result list.
3. Select **Assign mitigating controls** from the task list.
4. Double-click on a mitigating control in **Add assignments** to assign it.
  - OR –
  - In the **Remove assignments** view, double-click on the mitigating control for which you want to delete the assignment.
5. Save the changes.

## Creating mitigating controls

### *To create a mitigating control for SAP functions*

1. Select **Identity Audit | SAP functions | Function definition working copies**.
2. Select a working copy in the result list.
3. Select **Assign mitigating controls** from the task list.
4. Select **Create mitigating controls**.
5. Enter the master data for the mitigating control.
6. Save the changes.
7. Select **Assign function definitions**.
8. In **Add assignments**, double-click the function definitions you want to assign.
9. Save the changes.

## Detailed information about this topic

- [Mitigating controls](#) on page 47



## Exporting a working copy

To transfer SAP functions from a development environment to a production environment, for example, you can export function definitions to CSV files. These CSV files can be imported into other databases.

### **To export the function definition of a working copy to a CSV file**

1. Select **Identity Audit | SAP Functions | Function definition working copies**.
2. Select the function definition in the result list.
3. Select **Change master data**.
4. Select **Export...**
5. Specify the file name and storage location for the CSV file.
6. Click **Save**.

The following properties are exported:

**Table 21: Exported master data for a function definition**

<b>Property</b>	<b>Data field in the CSV file.</b>
Name of the function definition	Function
Assigned function category	Process
Description	Function Description
Significance	Risk Level
Transactions	Transaction
Authorization objects	Object
Authorization fields	Field
Description of authorization field.	Field Description
Value/lower scope boundary	Value From
Upper scope boundary	Value To

The import status (State) is included with each data record in the CSV file as additional information. The import status is set to "1" by default on export. This data is evaluated when function definitions are imported.

### **Related Topics**

- [Importing function definitions](#) on page 42
- [Exporting function definitions](#) on page 41
- [Exporting a function definition](#) on page 35

# Additional tasks for function definitions

After you have entered the master data, you can apply different tasks to it. The task view contains different forms with which you can run the following tasks.

## Function definition overview

You can see the most important information about a function definition on the overview form.

### ***To obtain an overview of a function definition***

1. Select the category **Identity Audit | SAP functions | Function definitions**.
2. Select the function definition in the result list.
3. Select **Function definition**.

## Authorization overview

Function elements are displayed in a flat structure in the authorization overview.

### ***To display an overview of all function elements***

1. Select **Identity Audit | SAP functions | Function definitions**.
2. Select the function definition in the result list.
3. Select **Authorization overview**.

## Creating a working copy

To modify an existing function definition, you required a working copy of the function definition. The working copy can be created from the active function definition. The data of an existing working copy are overwritten with the data from the active function definition, after prompting.

### ***To create a working copy***

1. Select the category **Identity Audit | SAP functions | Function definitions**.
2. Select the function definition in the result list.
3. Select **Create working copy** in the task view.
4. Confirm the security prompt with **Yes**.

## Exporting a function definition

To transfer SAP functions from a development environment to a production environment, for example, you can export function definitions to CSV files. These CSV files can be imported into other databases.

### **To export the function definition to a CSV file**

1. Select **Identity Audit | SAP functions | Function definitions**.
2. Select the function definition in the result list.
3. Select **Change master data**.
4. Select **Export...**
5. Specify the file name and storage location for the CSV file.
6. Click **Save**.

The following properties are exported:

**Table 22: Exported master data for a function definition**

<b>Property</b>	<b>Data field in the CSV file.</b>
Name of the function definition	Function
Assigned function category	Process
Description	Function Description
Significance	Risk Level
Transactions	Transaction
Authorization objects	Object
Authorization fields	Field
Description of authorization field.	Field Description
Value/lower scope boundary	Value From
Upper scope boundary	Value To

The import status (State) is included with each data record in the CSV file as additional information. The import status is set to "1" by default on export. This data is evaluated when function definitions are imported.


### **Related Topics**

- [Importing function definitions](#) on page 42
- [Exporting a working copy](#) on page 33
- [Exporting function definitions](#) on page 41

# Defining function instances

One and the same function definition can be used for different concrete instances. A specific SAP client that the SAP function will be used in is given in the function instance. In addition, the variables that are assigned to the authorization fields are given specific values. Function instances can only be created for SAP functions that are enabled.

## To edit function instances


1. Select **Identity Audit | SAP Functions | Function instances**.
2. Select a function instance in the result list. Select **Change master data**.  
- OR -  
Click  in the result list toolbar.
3. Edit the function instance's master data.
4. Save the changes.

**NOTE:** One Identity Manager users with the application role **Identity & Access Governance | Identity Audit | Maintain SAP functions** can create and edit function instances for the SAP functions for which they are listed as responsible.

## Master data for a function instance

Enter the following master data for a function instance:

**Table 23: Function instance properties**

Property	Description
Function definition	The function instance is created for this function definition.
Client	SAP client to which the SAP function should be applied.
Variable set	Variable set with functions defined, which are used in the function definition. The variable set and the function instance must be assigned to the same SAP client.
Manager/supervisor	Application role whose members are responsible for the function instance and variable sets in terms of content. To create a new application role, click  . Enter the application role name and assign a parent application role.
Display name	Function instance display name. This is formatted from the function definition name, the assigned client and variable set.
Description	Spare text box for additional explanation. The function definition

Property	Description
	description is copied to a new function instance.
Function Instance Elements	Displays transactions, approval objects and function elements of the SAP function with specified values that are determined from the assigned variable set. Changes to the variables or variable set are displayed as soon as the DBQueue Processor has processed the corresponding authorization tasks.

## Related Topics

- [Creating variable sets](#) on page 38
- [Maintenance SAP functions](#) on page 13

## Additional tasks for function instances

After you have entered the master data, you can apply different tasks to it. The task view contains different forms with which you can run the following tasks.

### Function instance overview

You can see the most important information about a function instance on the overview form.

#### *To obtain an overview of a function instance*

1. Select **Identity Audit | SAP Functions | Function instances**.
2. Select the function instance in the result list.
3. Select **Function instance**.

### Checking field variable definitions

Before you use function instances in compliance rules, check whether all variable which are used in the function definition are defined in the variable set. If there is no function definition or variable set assigned to the function instance, the check-in fails with an error message. Variables that are not defined in the associated variable set are listed in the error message.

#### *To check variable definitions*


1. Select **Identity Audit | SAP Functions | Function instances**.
2. Select the function instance in the result list.

3. Select **Change master data**.
4. Select **Check variable definitions**.

## Creating variable sets

Use variable sets to group variables together that are used in an authorization definition and give them fixed values.

### To edit variable sets

1. Select the category **Identity Audit | SAP functions | Variable sets**.
2. Select a variable set in the result list. Select **Change master data**.  
- OR -  
Click  in the result list toolbar.
3. Edit the variable set's master data.
4. Save the changes.

## Master data for a variable set

Enter the following master data for variable sets.

**Table 24: Master Data for a Variable Set**

Property	Description
Variable set	Unique variable set identifier.
Client	Valid SAP client for the variable set.
Department	Relevant department for the variable set.
Functional area	Functional area relevant to the variable set.
Description	Spare text box for additional explanation.
SAP field variables	List of defined variables.

### To edit field variables

1. To add a line in the list, click **Add variable**.

**Table 25: Variable Properties**

Property	Description
Variable	Name of the variable in <code>\${alphanum}+\$</code> .  <b>i</b> <b>NOTE:</b> Variable names cannot begin with system variable names. Variable sets with variables like this cannot be saved.
Value	Concrete instances for the variable to be copied to the function instance.
Description	Spare text box for additional explanation.
Authorization objects	Reference to the authorization object in which the variable will be used

2. To delete marked variable from the list, click **Remove selected**.

There is help for your selected on the form. On the form, there is help available for selecting authorization fields for an authorization object to be used for defining variables.

- i** **TIP:** You can add variable sets without defining variables. Use these variables set for function definitions that do not have variables entered as values.

### Detailed information about this topic

- [Using variables](#) on page 22

## Additional tasks for variable sets

After you have entered the master data, you can apply different tasks to it. The task view contains different forms with which you can run the following tasks.

## Variable set overview

You can see the most important information about a variable set on the overview form.

### To obtain an overview of a variable set

1. Select the category **Identity Audit | SAP functions | Variable sets**.
2. Select the variable set in the result list.

3. Select **Variable set overview**.

## Copying a variable set

### *To copy a variable set*

1. Select the category **Identity Audit | SAP functions | Variable sets**.
2. Select the variable set in the result list.
3. Select **Change master data**.
4. Select **Copy variable set**.
5. Click **Yes** to immediately edit the copy's master data.
6. Edit the copy's master data.
7. Save the changes.

## Applying used variables

Variables used in SAP functions can be transferred to variable sets.

### *To transfer variables to a variable set*

1. Select **Identity Audit | SAP Functions | Variable sets**.
2. Select the variable set in the result list.
3. Select **Change master data**.
4. Select **Apply chosen variables...**
5. Mark all function definitions or working copies from which you want to copy the variables into the variable set.  
Multi-select is possible.
6. Click **OK** to transfer the variables.  
All variable from the selected function definitions are add to the list of field variables.
7. Edit the variables.
8. Save the changes.

## Plug-ins for SAP functions

There are two plugins available for SAP functions. Run **Plugins** from the menu bar. You can use the plugins to swap existing SAP functions in the One Identity Manager database between different One Identity Manager databases.



# Exporting function definitions

## To export all function definitions to a CSV file

1. Select **Identity Audit**.
2. Select **Plugins | Export all SAP-**
3. Click **Yes** to export only working copies.  
- OR -  
Click **No** to export only enabled SAP functions.
4. Specify the file name and storage location for the CSV file.
5. Click **Save**.  
All function definitions are written to file in sequence.

The following properties are exported:

**Table 26: Exported master data for a function definition**

Property	Data field in the CSV file.
Name of the function definition	Function
Assigned function category	Process
Description	Function Description
Significance	Risk Level
Transactions	Transaction
Authorization objects	Object
Authorization fields	Field
Description of authorization field.	Field Description
Value/lower scope boundary	Value From
Upper scope boundary	Value To

The import status (State) is included with each data record in the CSV file as additional information. The import status is set to "1" by default on export. This data is evaluated when function definitions are imported.

- NOTE:** SAP function supervisors can only export those function definitions for which they are responsible, as entered in the master data.

## Related Topics

- [Importing function definitions](#) on page 42
- [Exporting a working copy](#) on page 33
- [Exporting a function definition](#) on page 35

# Importing function definitions

A plugin is available to import SAP functions from an existing CSV file. The functions definitions contained in the CSV file are transferred to the database as working copies. The following data fields must be in the CSV file so that function definitions can be imported.

**Table 27: Data fields for importing function definitions**

<b>Data field in the CSV file. (header)</b>	<b>Object Properties in One Identity Manager</b>
Compulsory fields:	
Function	Function definition
Transaction	Transaction
Object	Authorization objects
Field	Authorization field
Value From	Value/lower scope boundary
Value To	Upper scope boundary
State	No equivalent The import status controls which data records are imported into One Identity Manager. 1 ... import
Optional fields:	
Process	Category
Function Description	Description of the function definition.
Risk Level	Significance Possible values are {Low Medium High Critical}.
Field Description	Describes the authorization fields, authorization objects and transactions.

- NOTE:** The order of the data fields is arbitrary. Ensure that all required data fields are defined in the header and exist in the data sets. Mark data fields without values with two sequential delimiters. Data sets with empty mandatory fields are not imported.

### **To import function definitions**

1. Select **Identity Audit**.
2. Select **Plugins | ImportSAP function definitions....**
3. Select the CSV file to import. Click **Open**.
4. Confirm the security prompt with **Yes**.

The functions definitions are transferred to the database as working copies. If there is already a working copy with the same name in the database, it is overwritten by the import.

## Compliance rules for SAP functions


Compliance rules can be checked through effective authorizations as well as through authorizations, which an employee has in an SAP R/3 system due to their user accounts and group and role memberships. Effective write permissions are tested through SAP functions. To do this, SAP functions are added to rule conditions.

The validity period of role assignments is taken into account in the rule check.

For more detailed information about compliance rules, see the One Identity Manager Compliance Rules Administration Guide.

### Rule conditions for SAP functions

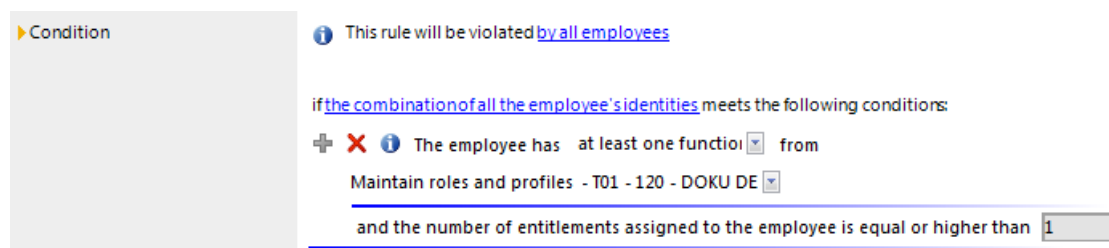
#### *To define new rules for SAP functions*

1. Select the category **Identity Audit | Rules**.
2. Click  in the result list toolbar.
3. Enter the master data for the rule.
4. Set the option **Rule for cyclical testing and risk analysis in IT Shop**.
5. Limit the affected permissions with the option **at least one function** and select the SAP function to test.
  - If SAP authorizations in combination result in a rule violation, enter a rule block for each SAP function.
6. Save the changes.

This adds a working copy.
7. Select **Enable working copy**. Confirm the security prompt with **OK**.

This adds an enabled rule in the database. The working copy remains and can be used for making changes to the rule later.

**Figure 4: Condition for SAP Functions**



When the One Identity Manager tests rules, it finds all the employees whose assigned SAP users match the SAP functions that are given in the rule. An SAP user matches an SAP function when:

- An SAP role assigned to the SAP user account matches the SAP function
  - OR -
- An SAP role that is assigned a reference user matching an SAP function
  - AND -
- The SAP user account is assigned this reference user.

### Detailed information about this topic

- One Identity Manager Compliance Rules Administration Guide

## More rule violation reports

**Table 28: Reports about Rule Violations**

Report	Description
Rule violations with SAP transactions	This report groups together all rule violations for the selected rule. It supplies results for rules that verify SAP functions. All function instances are listed with their transaction for each employee through which they violated the rule. SAP profiles and their authorization objects that match the SAP function are displayed for each transaction.
Rule violations with SAP roles	This report groups together all rule violations for the selected rule. It supplies results for rules that verify SAP functions. SAP groups, SAP roles and SAP profiles with their authorization objects are listed for each employee through which they violated the rule.

# Mitigating controls for compliance rules

Mitigating controls assigned to the function definitions to be tested are automatically copied to rules about SAP functions. Conditions:

- Active rules are assigned to a functional area and a department.
- The function definitions to be tested are assigned to the same functional area and to the variable set associated with the same department.

## Mitigating controls

**Table 29: Configuration parameter for risk assessment**

Configuration parameter	Effect when set
QER\CalculateRiskIndex	Preprocessor relevant configuration parameter controlling system components for calculating an employee's risk index. Changes to the parameter require recompiling the database.  If the parameter is enabled, values for the risk index can be entered and calculated.

Violation of regulatory requirements can harbor different risks for companies. To evaluate these risks, you can apply risk indexes to SAP functions. These risk indexes provide information about the risk involved for the company if this particular SAP function is violated. Once the risks have been identified and evaluated, mitigating controls can be implemented.

Mitigating controls are independent on One Identity Manager's functionality. They are not monitored through One Identity Manager.

Mitigating controls describe controls that are implemented if compliance SAP compliance was violated, function is met. The next calculation should not find any invalid authorizations for this SAP function once the controls have been applied.

### **To edit mitigating controls**


- In Designer, set the configuration parameter **QER | CalculateRiskIndex** and compile the database.

### **Detailed information about this topic**

- One Identity Manager Risk Assessment Administration Guide

# Entering master data

## **To edit mitigating controls**

1. In Manager, select **Risk index functions | Mitigating controls**.
2. Select a mitigating control in the result list and run **Change master data**.  
- OR -  
Click  in the result list toolbar.
3. Edit the mitigating control master data.
4. Save the changes.

Enter the following master data for mitigating controls.

**Table 30: General master data for a mitigating control**

<b>Property</b>	<b>Description</b>
Measure	Unique identifier for the mitigating control.
Significance reduction	When the mitigating control is implemented, this value is used to reduce the risk of denied attestation cases. Enter a number between 0 and 1.
Description	Detailed description of the mitigating control.
Functional area	Functional area in which the mitigating control may be applied.
Department	Department in which the mitigating control may be applied.

## Additional tasks for mitigating controls

After you have entered the master data, you can apply different tasks to it. The task view contains different forms with which you can run the following tasks.

## Mitigating controls overview

You can see the most important information about a mitigating control on the overview form.

### **To obtain an overview of a mitigating control**

1. Select **Risk index functions**.
2. Open **Mitigating controls**.



3. Select the mitigating control in the result list.
4. Select **Mitigating control overview**.

## Assigning function definitions

Use this task to specify the function definitions for which a mitigating control is valid. You can only assign function definitions that are enabled on the assignment form.

### *To assign SAP function definitions to mitigating controls*

1. Select **Risk index functions | Mitigating controls**.
2. Select the mitigating control in the result list.
3. Select **Assign function definitions**.
4. In **Add assignments**, double-click the function definitions you want to assign.  
- OR -  
In **Remove assignments**, double-click the function definitions whose assignment is to be deleted.
5. Save the changes.

## Calculating mitigation

The significance reduction of a mitigating control supplies the value by which the risk index of an SAP function is reduced when the control is implemented. One Identity Manager calculates a reduced risk index based on the risk index and the significance reduction. One Identity Manager supplies default functions for calculating reduced risk indexes. These functions cannot be edited with One Identity Manager tools.

The reduced risk index is calculated from the SAP function and the significance reduced sum of all assigned mitigating controls.

$\text{Risk index (reduced)} = \text{Risk index} - \text{sum significance reductions}$

If the significance reduction sum is greater than the risk index, the reduced risk index is set to **0**.

The significance reduction of a mitigating control supplies the value by which the risk index of an SAP function is reduced when the control is implemented. One Identity Manager calculates a reduced risk index based on the risk index and the significance reduction. One Identity Manager supplies default functions for calculating reduced risk indexes. These functions cannot be edited with One Identity Manager tools.

The reduced risk index is calculated from the SAP function and the significance reduced sum of all assigned mitigating controls.

$\text{Risk index (reduced)} = \text{Risk index} - \text{sum significance reductions}$

If the significance reduction sum is greater than the risk index, the reduced risk index is set to **0**.

## Appendix: Configuration parameters for SAP functions

The following configuration parameters are additionally available in One Identity Manager after the module has been installed.

**Table 31: Configuration parameters for the module**

Configuration parameter	Description
TargetSystem\SAPR3\SAPRights	Preprocessor relevant configuration parameter for controlling component parts for testing authorizations in SAP R/3 using SAP functions. If the parameter is set, the components are available. Changes to the parameter require recompiling the database.
TargetSystem\SAPR3\SAPRights\TestWithoutTCD	Checks SAP authorizations without taking SAP transactions into account.

## Appendix: Default project template for the SAP R/3 Compliance Add-on Module

A default project template ensures that all required information is added in One Identity Manager. This includes mappings, workflows and the synchronization base object. If you do not use a default project template you must declare the synchronization base object in One Identity Manager yourself.

Use a default project template for initially setting up the synchronization project. For custom implementations, you can extend the synchronization project with the Synchronization Editor.

Use the "SAP® R/3® authorization objects" project template to synchronize authorization packages and transactions. The template uses mappings for the following schema types.

**Table 32: Mapping SAP R/3 schema types to tables in the One Identity Manager schema.**

Schema Type in the Target System	Table in the One Identity Manager Schema
TOBJ	SAPAuthObject
ObjectClass	SAPAuthObjectClass
AUTHX	SAPField
Transaction	SAPTransaction
TACT	SAPActivity
objectHasField	SAPAuthObjectHasField
ObjectHasActivity	SAPAuthObjectHasSapActivity
FieldHasRcTable	SAPFieldHasSAPRCTable
tMenu01	SAPMenu

<b>Schema Type in the Target System</b>	<b>Table in the One Identity Manager Schema</b>
---	---

menuHasTransaction	SAPMenuHasSAPTransaction
ProfileHasAuthObjectField	SAPProfileHasAuthObjectElem
RcTable	SAPRCTable
RcVariable	SAPRCVariable
TRANSACTIONHASTOBJ	SAPTransactionHasSAPAuthObject

## Appendix: Referenced SAP R/3 tables and BAPI calls

The following overview provides information about all the tables referenced by SAP authorization objects in an SAP R/3 system and the BAPI calls that are executed. The tables and BAPIs accessed by the SAP R/3 connector when SAP R/3 basis administration is synchronized are listed in the One Identity Manager Administration Guide for Connecting to SAP R/3.

**Table 33: Referenced tables and BAPIs**

Tables	BAPI Calls
<ul style="list-style-type: none"> <li>• AUTHX</li> <li>• DD04L</li> <li>• DD07L</li> <li>• TACT</li> <li>• TACTZ</li> <li>• TMENU01</li> <li>• TMENU01R</li> <li>• TOBJ</li> <li>• TOBCT</li> <li>• TSTCT</li> <li>• USOBT_C</li> <li>• USR10</li> <li>• UST10S</li> <li>• UST12</li> <li>• USVART</li> </ul>	<ul style="list-style-type: none"> <li>• RFC_READ_TABLE</li> </ul>

One Identity solutions eliminate the complexities and time-consuming processes often required to govern identities, manage privileged accounts and control access. Our solutions enhance business agility while addressing your IAM challenges with on-premises, cloud and hybrid environments.

## Contacting us

For sales or other inquiries, visit <https://www.oneidentity.com/company/contact-us.aspx> or call +1-800-306-9329.

## Technical support resources

Technical support is available to One Identity customers with a valid maintenance contract and customers who have trial versions. You can access the Support Portal at <https://support.oneidentity.com/>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos at [www.YouTube.com/OneIdentity](http://www.YouTube.com/OneIdentity)
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product

## A

- application role
  - maintain SAP functions 13
- authorization
  - check 5
- authorization definition 26
  - authorization field 26
  - example 17
  - export 35
  - processing status 26
  - value 26
  - variable 26, 38
- authorization editor 26
- authorization object 26

## C

- compliance rule 5, 44

## F

- function category 11
- function definition 22
  - create 23
  - export
    - all 41
    - single 35
  - manager 24
  - severity level 24
  - significance 24
  - working copy 23
- function instance 22, 36
- test variables 37

- functional area 12

## I

- identity audit 5

## M

- mitigating control 47
  - assign 32
  - assign SAP function 32, 49
  - create 32
  - enter 48
  - overview 48
  - significance reduction 48

## O

- overview form 26
  - function definition 34
  - function instance 37

## P

- plug-in
  - SAP function 40
- project template 52

## R

- risk assessment
  - functional area 12
- risk index
  - calculate 49



- reduced
  - calculate 49
- rule condition
  - function 44
- rule violation
  - example 17

## S

- SAP function
  - compliance rule 44
- SAP function 5
  - apply 17
  - function definition 24
  - import 42
  - manager 36
- SAP function category 11
- significance reduction 48
- synchronization
  - configure 9
  - start 9
  - synchronization project
    - create 9
- synchronization project
  - create 9
  - project template 52
- system variable 22

## T

- transaction 26

## U

- user account
  - reference user 44

## V

- variable 22
  - check usage 37
  - system variable 22
- variable name 22
- variable set 38
  - apply variables 40
  - copy 40
  - overview form 39
  - SAP function 36

## W

- working copy
  - assign mitigating control 31
  - create 34
  - enable 31
  - export function definition 33
  - export permissions definition 33
  - overview form 26