



How to automate the synchronization of AD and metadata

Manage users in AD, loading of users and groups into metadata and regular, automatic checking of rights

Agenda

- 1** Initial situation
- 2** The tool of choice
- 3** Preparation in AD
- 4** The implementation in SMC
- 5** Let's automate it
- 6** Regular checks

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Initial situation

- ▶ Manual user administration
- ▶ Maintenance of users through separate user administration
- ▶ No comparison when user information changes
- ▶ No regular checks of user rights
- ▶ Lots of old entries in metadata
- ▶ Frequent coordination with user administration required
- ▶ Special cases or problems still had to be solved by SAS-admins
- ▶ Applications for rights are mainly made by email

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The tool of choice - METACODA

- ▶ Already in use as a test version
- ▶ Brings all those functions we where looking for, right the moment we needed them

What's New in Metacoda Plug-ins 5.0?

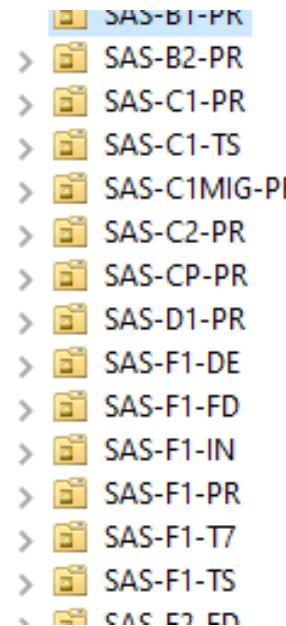
- **Easily Sync Active Directory Users & Groups into SAS Metadata:** the new Metacoda Identity Sync plug-in allows you to easily synchronise identities from Microsoft Active Directory (AD) and other SAS environments into SAS metadata, without needing to write SAS code.
- **Documentation from Interactive Security Testing:** where the Metadata Security Testing Framework previously generated test failure reports in batch mode, you can export an HTML or CSV file of test failures directly from the interactive Test Runner plug-in now too.
- **New Recommended Practice Tests:** the Metadata Security Testing Framework can now help you to enforce the 'Golden Rules' for SAS metadata security. A new series of tests help you to enforce the use of Access Control Templates (ACTs) and limit the use of Access Control Entries (ACEs), and enforce the use of groups and limit the use of users in access controls (whilst allowing for some exclusions). You can find out more about the new recommended practice tests on platformadmin.com.
- **Enhanced Exports:** as some of the most requested enhancements, the Identity Permissions Explorer and Object Permissions Explorer now allow effective permission reports to be exported in HTML and CSV format. You can also export effective permission tests to run in the testing framework too.
- **Inspect SAS Workspace Servers:** the new [Metacoda Workspace Inspector Plug-in](#) allows you to quickly inspect workspace server execution environments. You can run small code fragments, review the SAS log, check pre-assigned libraries and test the availability of table contents without leaving SAS Management Console.
- **Support for Multiple SAS Software Versions:** Metacoda Plug-ins 5.0 is supported for use with SAS software versions 9.4, 9.3 and 9.2 (including SAS Visual Analytics) at all maintenance levels. If you still have any legacy SAS 9.1.3 SP4 installations we still have Metacoda Plug-ins 1.0 available too.
- **New Licensing Bundles:** **Starter** if you just want to do identity synchronization; **Basic** if you want all the time-saving metadata security perspectives provided by the reviewers and explorers; and **Enterprise** if you want everything including the confidence-boosting automated Metadata Security Testing Framework.
- **Automatic Upgrades for Metacoda Customers:** if you're already a customer, we'll be sending you your new new V5 licenses. The Metacoda Plug-ins 5.0 R1 installation packages are now available for download from support.metacoda.com.

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Preparation in AD – Orga-based permissions

- ▶ One OU for all SAS-OUs
- ▶ One OU per SAS-environment
- ▶ One AD-group per organisation unit (AE12, AE15, ...) and one per parent organisation unit (AE, AK, ...)



 GgpAcc-SASB1-AE-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE12-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE15-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE31-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE32-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE34-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE35-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE43-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE45-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE51-PR	Sicherheitsgru...
 GgpAcc-SASB1-AE72-PR	Sicherheitsgru...
 GgpAcc-SASB1-AK-PR	Sicherheitsgru...
 GgpAcc-SASB1-AK01-PR	Sicherheitsgru...
 GgpAcc-SASB1-AK02-PR	Sicherheitsgru...

Preparation in AD – Rolebased permissions

- ▶ One AD-group per SAS-role
- ▶ Also an AD-group for some software components

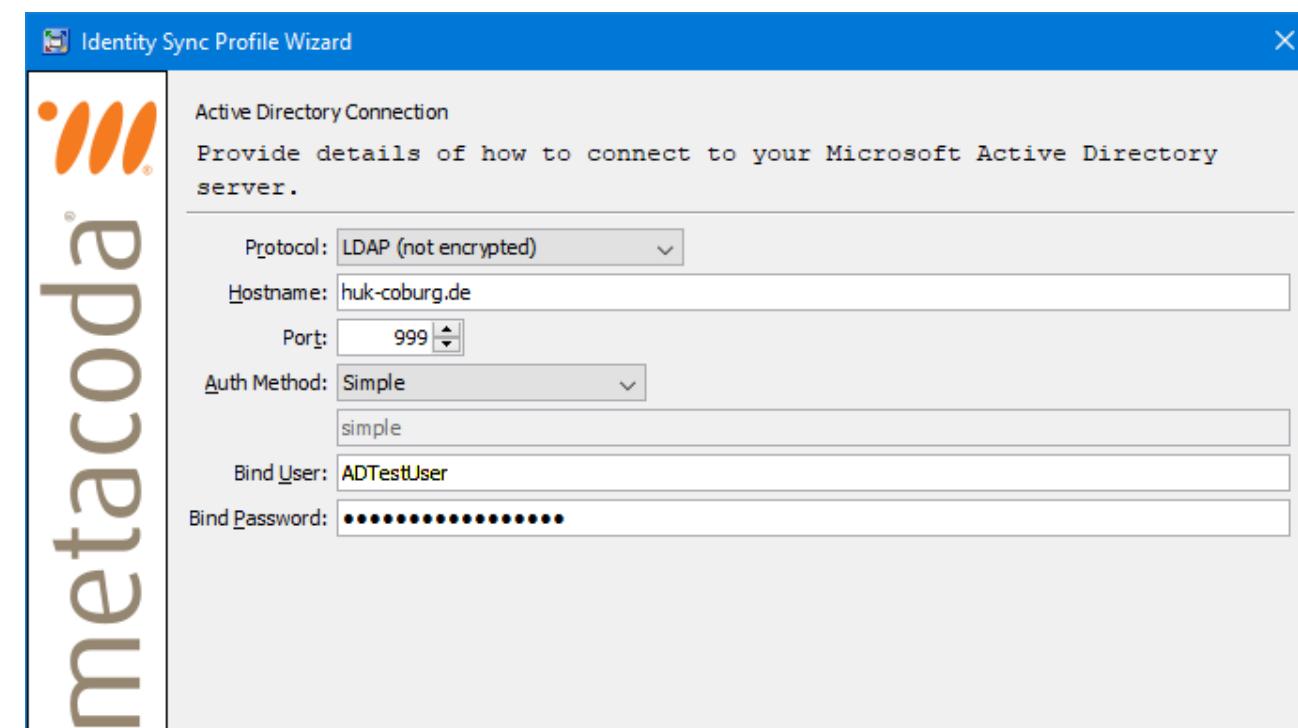
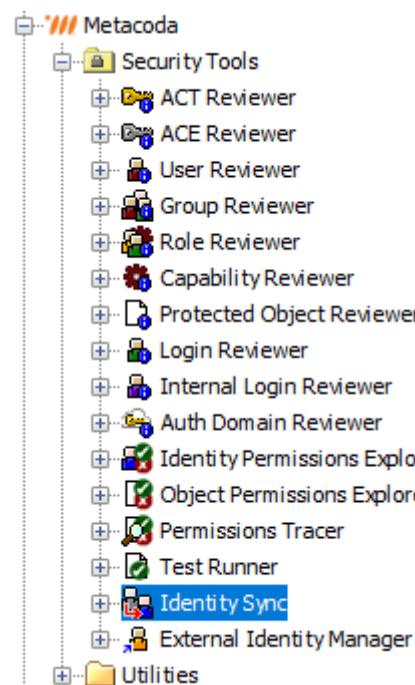
 GgpAcc-SASC2-HU00-ClStudio-PR	Sicherheitsgru...	Berechtigt für das SAS CI Studio
 GgpAcc-SASC2-HU00-DA-PR	Sicherheitsgru...	HU00 - SAS Data Analyst
 GgpAcc-SASC2-HU00-DC-PR	Sicherheitsgru...	HU00 - SAS Data Versender
 GgpAcc-SASC2-HU00-DE-PR	Sicherheitsgru...	HU00 – SAS Data Entwickler
 GgpAcc-SASC2-HU00-DIN-PR	Sicherheitsgru...	HU00 – SAS Data Abteilung IN
 GgpAcc-SASC2-HU00-DS-PR	Sicherheitsgru...	HU00 – SAS Data Spezialist
 GgpAcc-SASC2-HU00-PR	Sicherheitsgru...	HU - HUK24
 GgpAcc-SASC2-HU00-VV-PR	Sicherheitsgru...	HU00 - VA-Report Viewer

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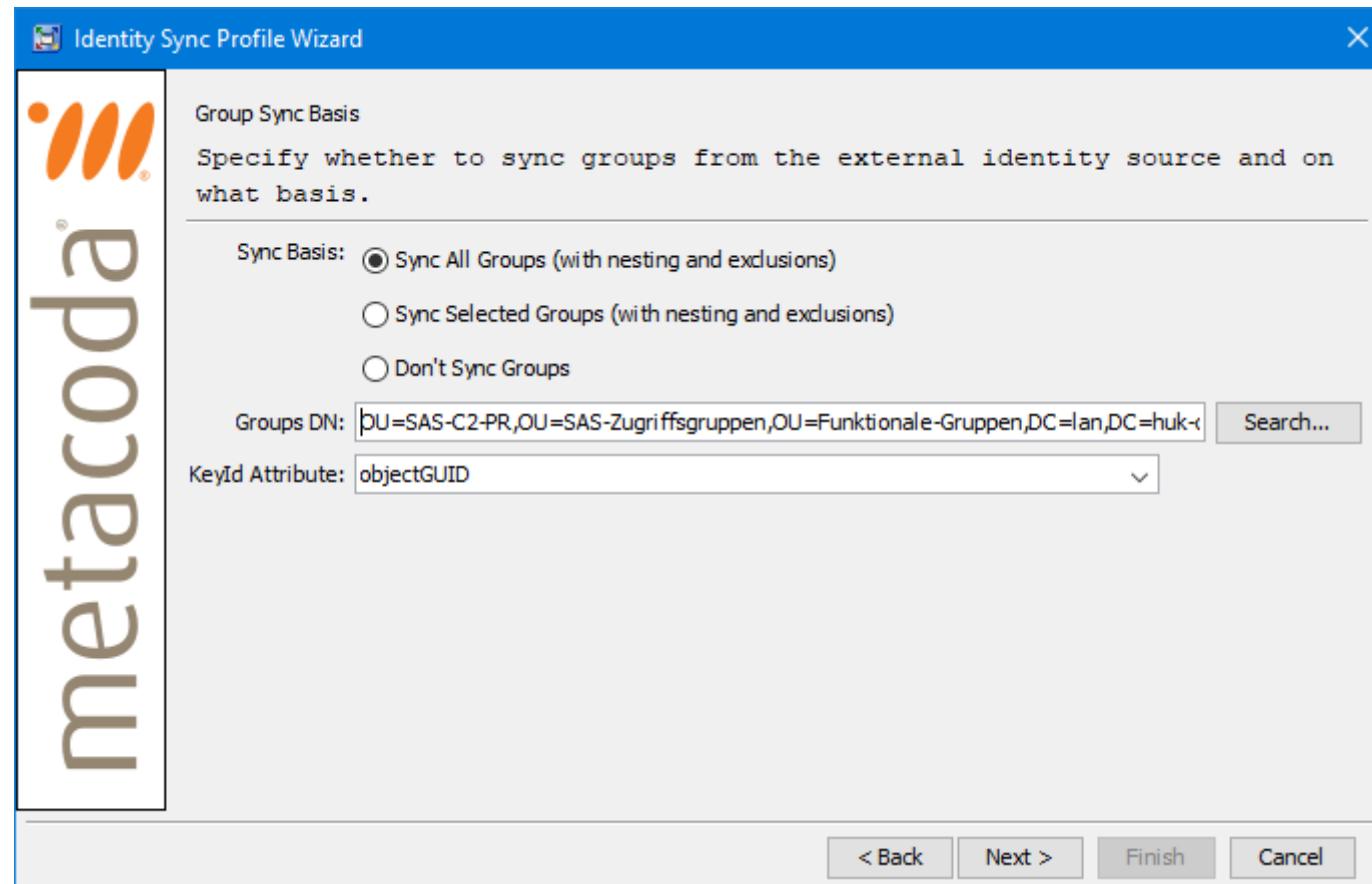
The implementation in SMC

- ▶ Install the plugin into SMC
- ▶ Create a new idsp – identity sync profile with the wizard
- ▶ An AD-user with read rights is needed



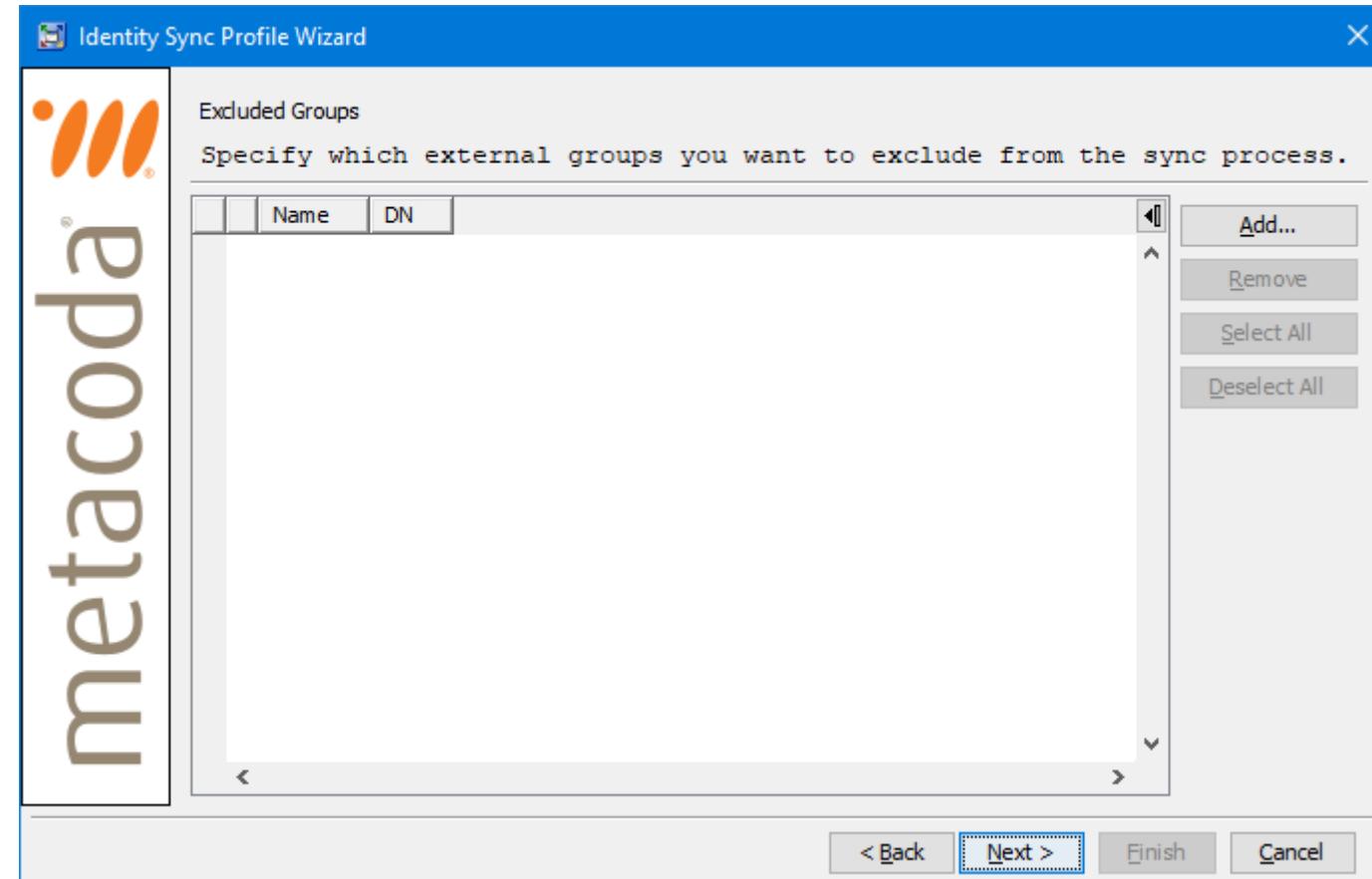
Setup the idsp using the wizard

- ▶ All groups of the selected OU should be synced



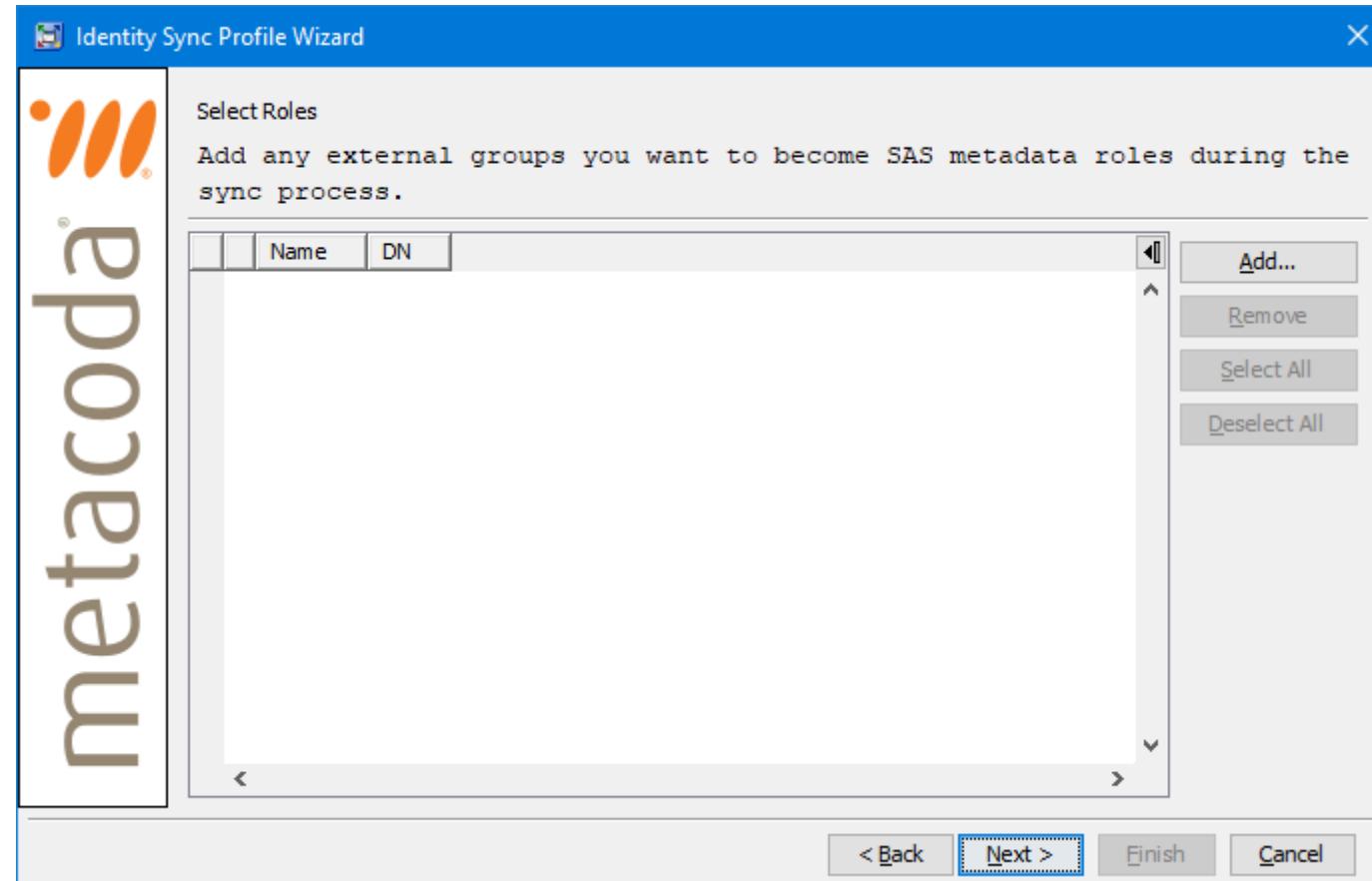
Setup the idsp using the wizard

- ▶ No exclude needed, since the structure in AD already is fine



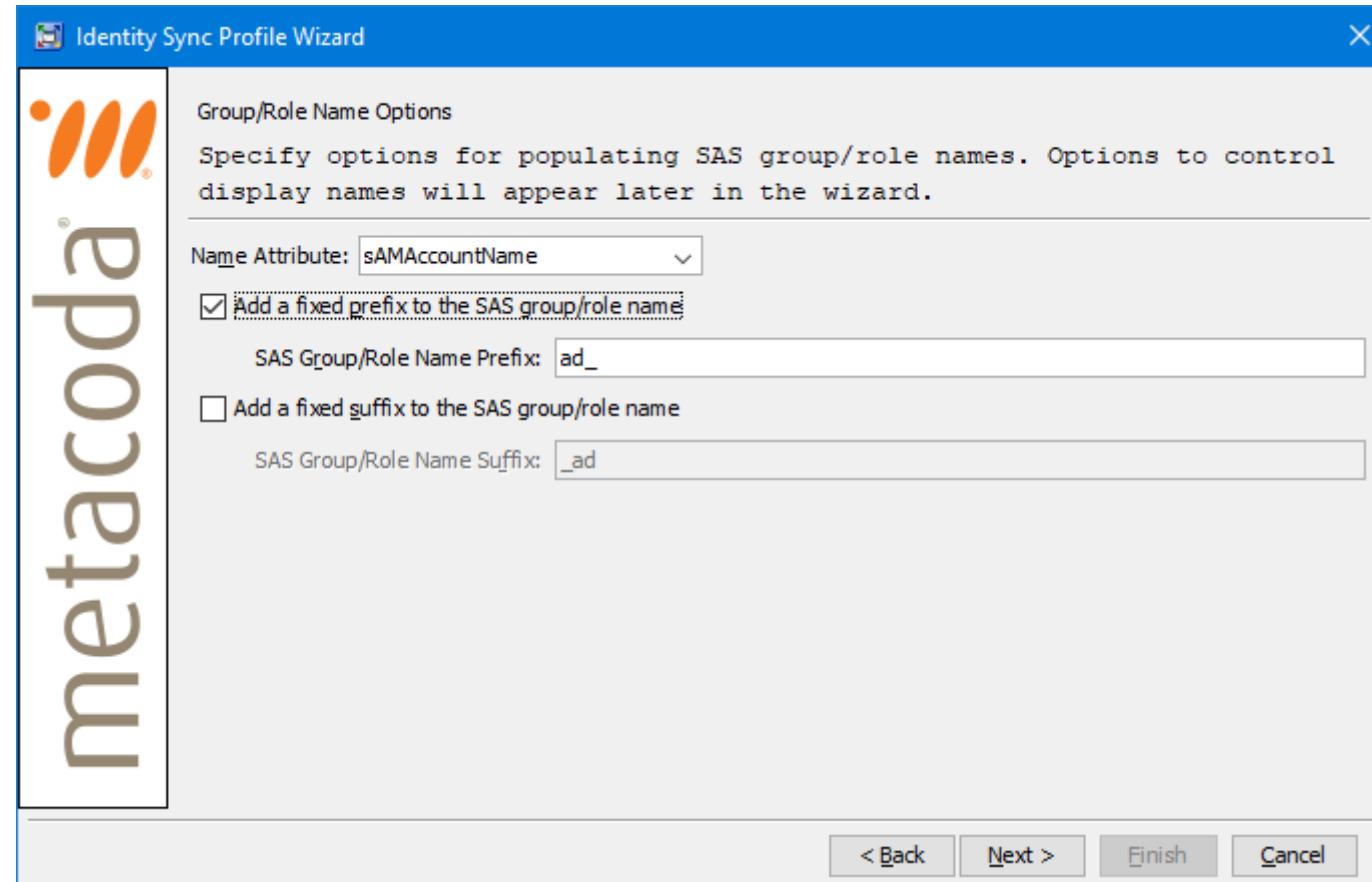
Setup the idsp using the wizard

- Ability to create SAS roles from AD groups



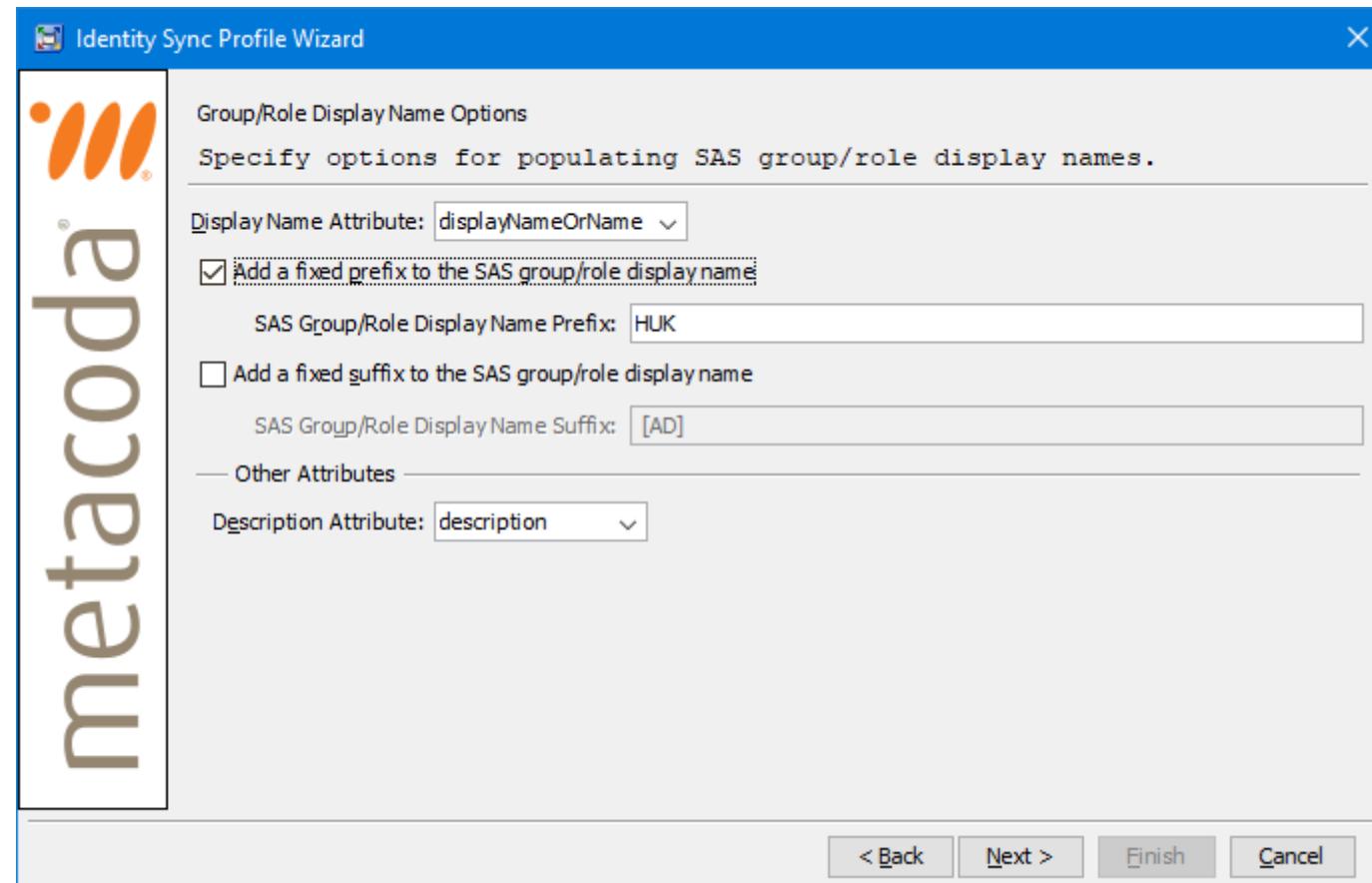
Setup the idsp using the wizard

- ▶ Which AD-attribute should be used for the Name Attribute
- ▶ Do you need a Pre- or Suffix?



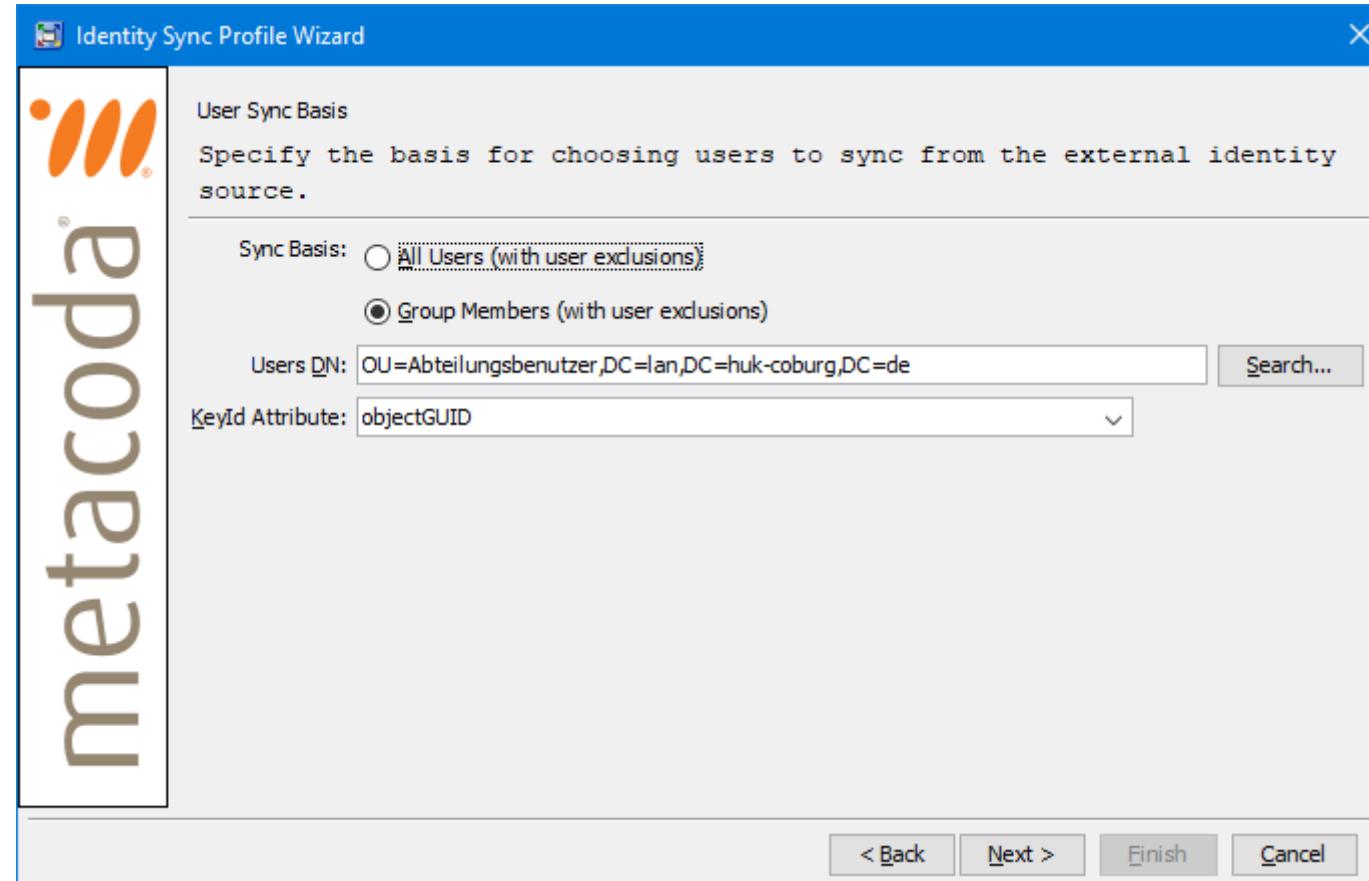
Setup the idsp using the wizard

- ▶ Setting the Display Name and Description attribute



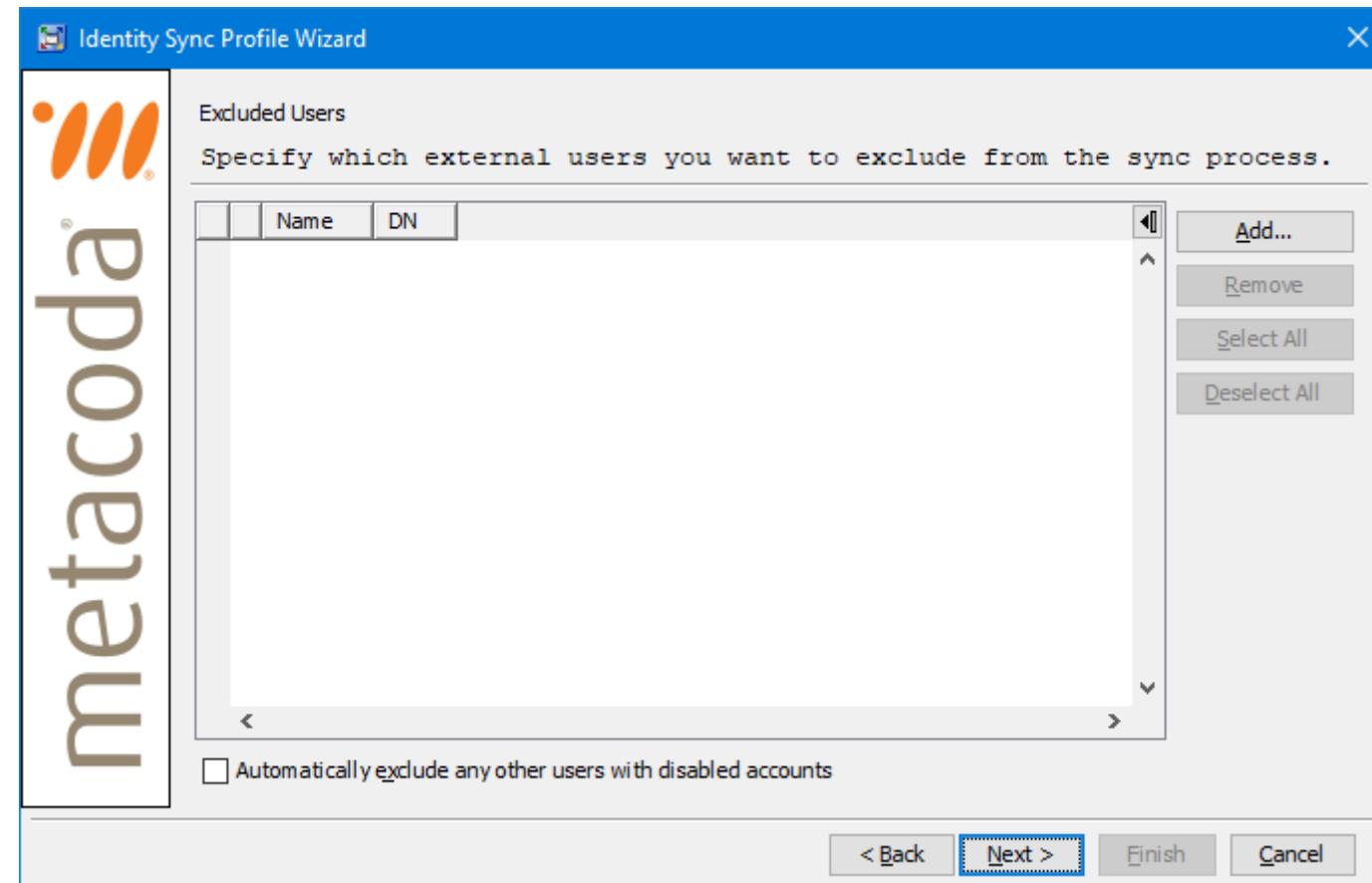
Setup the idsp using the wizard

- ▶ Choose which users should be synced
- ▶ At HUK, all users are in one OU, so we only want to sync the group members



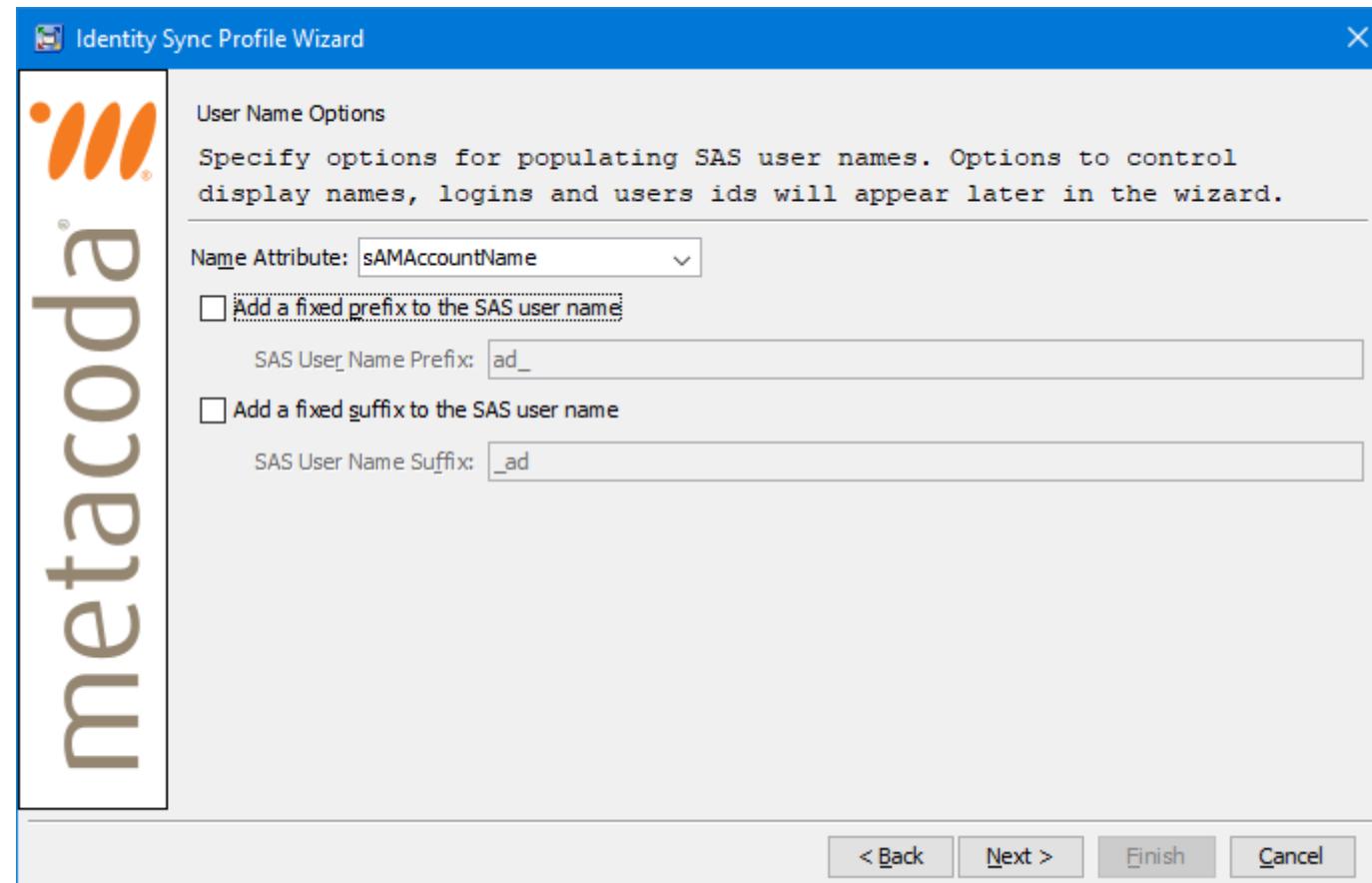
Setup the idsp using the wizard

- You can exclude users as well



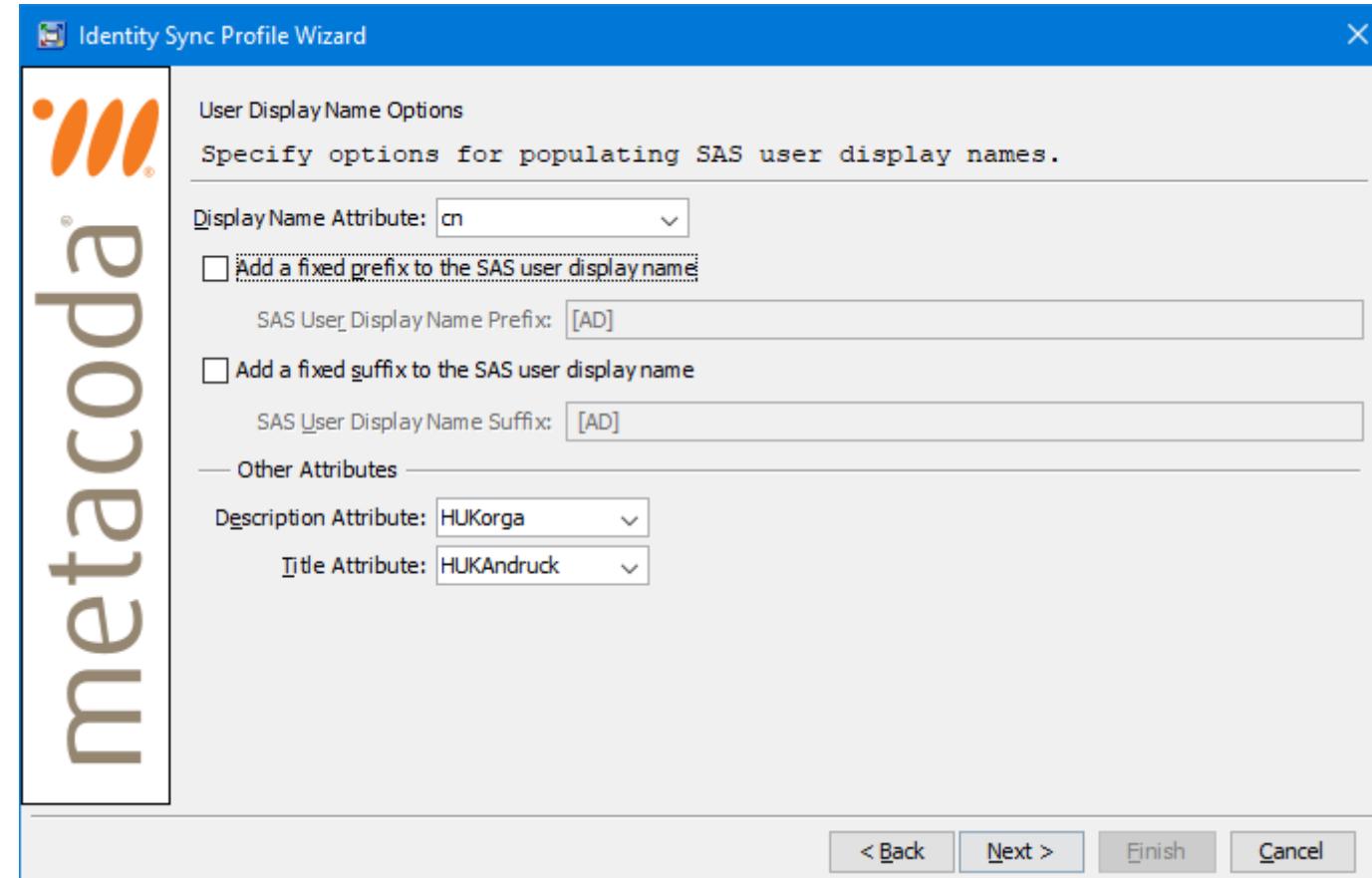
Setup the idsp using the wizard

- Same as for groups - User-Name, Pre- und Postfix



Setup the idsp using the wizard

- ▶ Select AD-attribut for Display Name, Description and Titel
- ▶ All AD-attribut-fields are preset with the standard AD attributes but at the same time free text field, so your own attributes are also possible



Setup the idsp using the wizard

- ▶ Choose of Auth Domain, Pre- and Suffix for user id and if needed a second auth domain

Identity Sync Profile Wizard

Primary User Login Options
Specify options for handling primary user logins (user ids).

SAS Auth Domain:

Login Attribute:

Add a fixed prefix to the user id (e.g. DOMAIN\)

Login Prefix:

Add a fixed suffix to the user id (e.g. @domain.com)

Login Suffix:

< Back

Identity Sync Profile Wizard

Secondary User Login Options
Specify options for handling any secondary user logins (user ids).

Add a Secondary login (e.g. for web authentication domain)

Auth Domain (#2):

Login Attribute (#2):

Prefix 2nd login (e.g. DOMAIN2\)

Login Prefix (#2):

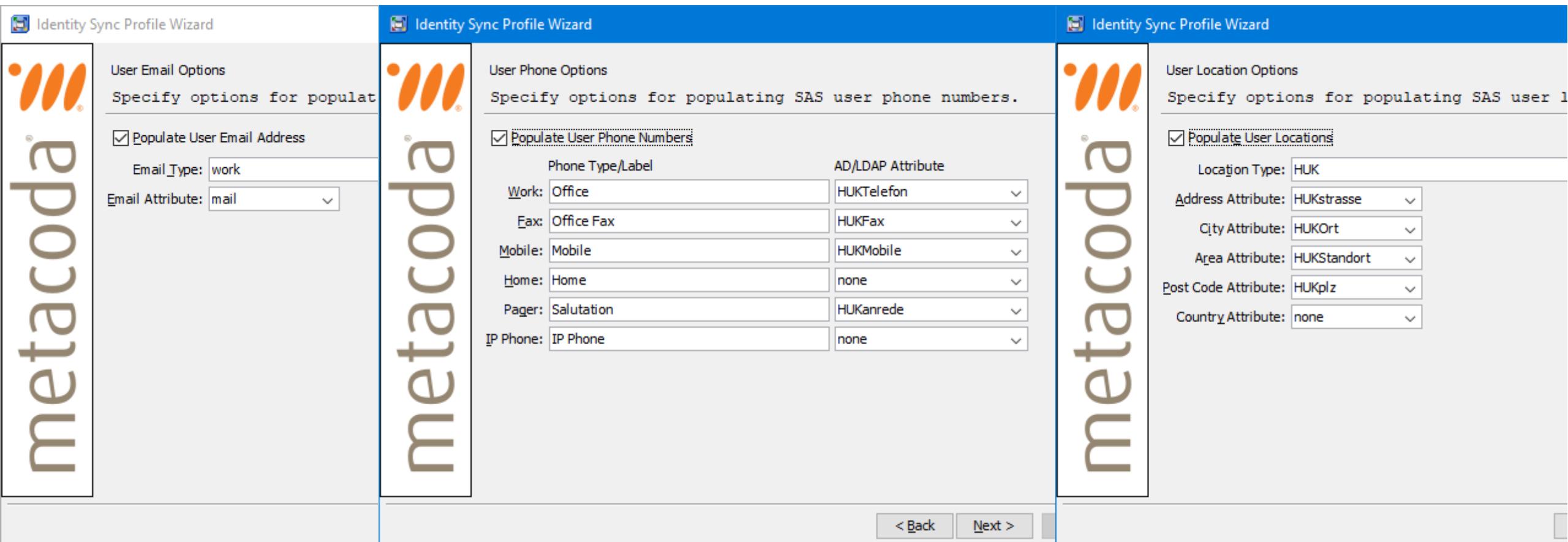
Suffix 2nd login (e.g. @domain2.com)

Login Suffix (#2):

< Back

Setup the idsp using the wizard

- An all the other attributes, that should be filled



The image displays three sequential screens of the 'Identity Sync Profile Wizard' for configuring synchronization options between SAS and AD/LDAP.

User Email Options: This screen allows specifying options for populating SAS user email addresses. It includes a checkbox for "Populate User Email Address" and dropdowns for "Email Type" (set to "work") and "Email Attribute" (set to "mail").

User Phone Options: This screen allows specifying options for populating SAS user phone numbers. It includes a checkbox for "Populate User Phone Numbers". A table maps phone types to AD/LDAP attributes:

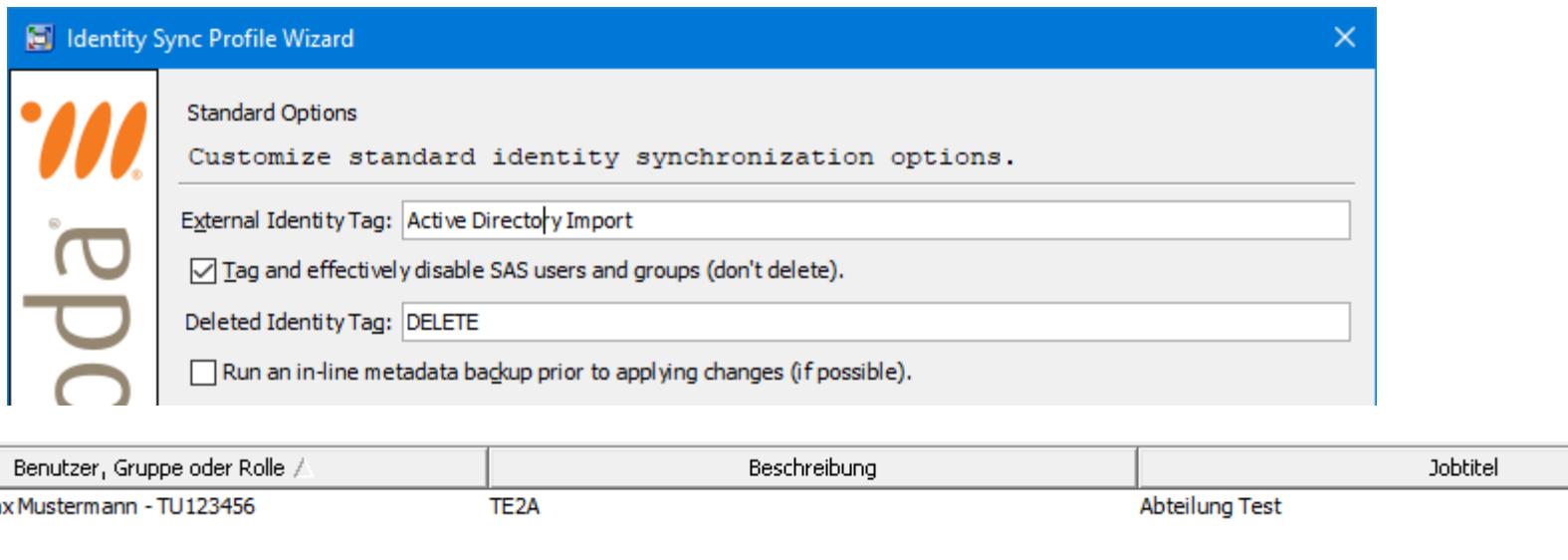
Phone Type/Label	AD/LDAP Attribute
Work: Office	HUKTelefon
Fax: Office Fax	HUKFax
Mobile: Mobile	HUKMobile
Home: Home	none
Pager: Salutation	HUKAnrede
IP Phone: IP Phone	none

User Location Options: This screen allows specifying options for populating SAS user locations. It includes a checkbox for "Populate User Locations" and dropdowns for various location attributes:

Location Type	Address Attribute	City Attribute	Area Attribute	Post Code Attribute	Country Attribute
HUK	HUKstrasse	HUKOrt	HUKStandort	HUKplz	none

Setup the idsp using the wizard

- ▶ External Identity Tag is being filled aswell
- ▶ Login and group membership of users, that are no longer member of a synchronised AD-group, will be deleted and the Display Name gets a TAG like “DELETE”
- ▶ An optional metadata backup can be activated



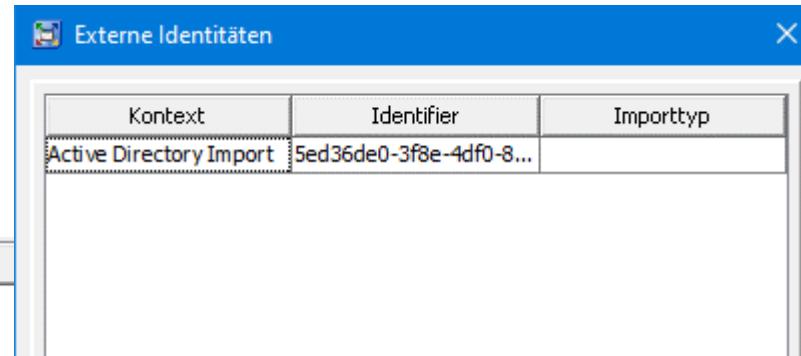
The screenshot shows the "Identity Sync Profile Wizard" window. On the left, there's a logo for "idsp". The main area is titled "Standard Options" with the sub-instruction "Customize standard identity synchronization options.". It contains two sections:

- External Identity Tag:** A text input field containing "Active Directory Import".
- Deleted Identity Tag:** A text input field containing "DELETE".

Below these fields are two checkboxes:

- Tag and effectively disable SAS users and groups (don't delete).
- Run an in-line metadata backup prior to applying changes (if possible).

At the bottom of the wizard window, there are three tabs: "Benutzer, Gruppe oder Rolle", "Beschreibung", and "Jobtitel". The "Benutzer, Gruppe oder Rolle" tab is active and shows a single entry: "[DELETE] Max Mustermann - TU123456". The other tabs are empty.

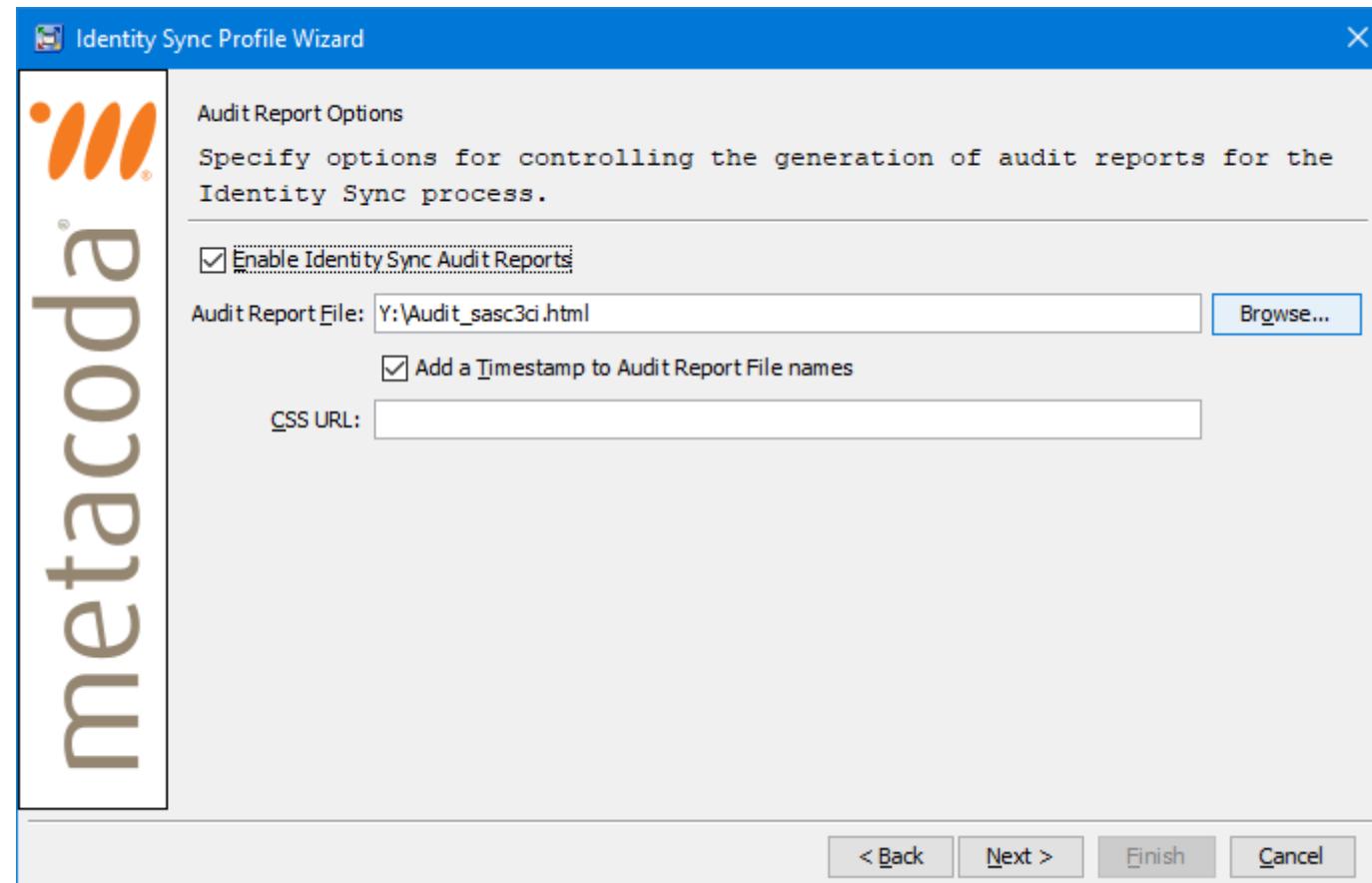


The screenshot shows a table titled "Externe Identitäten" (External Identities). The table has three columns: "Kontext", "Identifier", and "Importtyp". There is one row in the table:

Kontext	Identifier	Importtyp
Active Directory Import	5ed36de0-3f8e-4df0-8...	

Setup the idsp using the wizard

- A report with all the changes can be created



Identity Sync Profile: W:\Prz-SAS-IB\IB62\sy053\SASC3CI-PR.idsp

Server: SASCIMAS - Logical Workspace Server

Groups (35) Users (288) Memberships (1,112) Logins (275) Emails (264) Phones (908) Locations (250) Domains (0) Exceptions (82) Validation (0) Failures (0)

	Action	Name	Display Name	Description	Group Type
1	+ Add Group	ad_GgpAcc-SASC2-IB34-PR	HUK GgpAcc-SASC2-IB34-PR	IB - Anforderungs- u. Rechteservice	
2	+ Add Group	ad_GgpAcc-SASC2-HU00-VV-PR	HUK GgpAcc-SASC2-HU00-VV-PR	HU00 - VA-Report Viewer	
3	+ Add Group	ad_GgpAcc-SASC2-AE41-PR	HUK GgpAcc-SASC2-AE41-PR	AE - Planung und Konzeption	
4	+ Add Group	ad_GgpAcc-SASC2-HU00-DIN-PR	HUK GgpAcc-SASC2-HU00-DIN-PR	HU00 – SAS Data Abteilung IN	
5	+ Add Group	ad_GgpAcc-SASC2-AE44-PR	HUK GgpAcc-SASC2-AE44-PR	AE - Provisions- und Kampagnenmanagement	
6	+ Add Group	ad_GgpAcc-SASC2-HU00-DC-PR	HUK GgpAcc-SASC2-HU00-DC-PR	HU00 - SAS Data Versender	
7	+ Add Group	ad_GgpAcc-SASC2-PZ01-PR	HUK GgpAcc-SASC2-PZ01-PR	PZ - Innendienst Betriebliche Versorungslösungen	
8	+ Add Group	ad_GgpAcc-SASC2-HU00-DE-PR	HUK GgpAcc-SASC2-HU00-DE-PR	HU00 – SAS Data Entwickler	
9	+ Add Group	ad_GgpAcc-SASC2-IN16-PR	HUK GgpAcc-SASC2-IN16-PR	IN16 - Internetbearbeitung	
10	+ Add Group	ad_GgpAcc-SASC2-IN17-PR	HUK GgpAcc-SASC2-IN17-PR	IN17 - Internetbearbeitung	
11	+ Add Group	ad_GgpAcc-SASC2-IN14-PR	HUK GgpAcc-SASC2-IN14-PR	IN14 - Internetbearbeitung	
12	+ Add Group	ad_GgpAcc-SASC2-IB62-PR	HUK GgpAcc-SASC2-IB62-PR	IB - DB-/DC-Systeme Service Produkte	
13	+ Add Group	ad_GgpAcc-SASC2-IB11-PR	HUK GgpAcc-SASC2-IB11-PR	IB - Storage- und Backup-Management	
14	+ Add Group	ad_GgpAcc-SASC2-HU00-CIStudio-PR	HUK GgpAcc-SASC2-HU00-CIStudio-PR	Berechtigt für das SAS CI Studio	
15	+ Add Group	ad_GgpAcc-SASC2-HU00-DA-PR	HUK GgpAcc-SASC2-HU00-DA-PR	HU00 - SAS Data Analyst	
16	+ Add Group	ad_GgpAcc-SASC2-AE82-PR	HUK GgpAcc-SASC2-AE82-PR	AE - Dokumentenmanagement & Basiskomponenten	
17	+ Add Group	ad_GgpAcc-SASC2-HU00-DS-PR	HUK GgpAcc-SASC2-HU00-DS-PR	HU00 – SAS Data Spezialist	
18	+ Add Group	ad_GgpAcc-SASC2-HU00-PR	HUK GgpAcc-SASC2-HU00-PR	HU - HUK24	
19	+ Add Group	ad_GgpAcc-SASC2-PR	HUK GgpAcc-SASC2-PR	SASC2-User	
20	- Update Group	ad_GgpAcc-SASC1-AE63-PR	[DELETE] HUK GgpAcc-SASC1-AE63-PR	AE - Business Intelligence I	
21	- Update Group	ad_GgpAcc-SASC1-MA-MO-PR	[DELETE] HUK GgpAcc-SASC1-MA-MO-PR	Berechtigt Marketing für SAS MO	
22	- Update Group	ad_GgpAcc-SASC1-WMRD-PR	[DELETE] HUK GgpAcc-SASC1-WMRD-PR	WMRD - Distributed Marketing User	
23	- Update Group	ad_GgpAcc-SASC1-PR	[DELETE] HUK GgpAcc-SASC1-PR	SASC1-User	
24	- Update Group	ad_GgpAcc-SASC1-MA21-PR	[DELETE] HUK GgpAcc-SASC1-MA21-PR	MA - Marketing Grundsatzfragen	
25	- Update Group	ad_GgpAcc-SASC1-MA21-CI-PR	[DELETE] HUK GgpAcc-SASC1-MA21-CI-PR	Berechtigt MA21 für SAS CI	
26	- Update Group	ad_GgpAcc-SASC1-MA41-CI-PR	[DELETE] HUK GgpAcc-SASC1-MA41-CI-PR	Berechtigt Marketing für SAS CI	
27	- Update Group	ad_GgpAcc-SASC1-AE65-PR	[DELETE] HUK GgpAcc-SASC1-AE65-PR	AE - Business Intelligence II	
28	- Update Group	ad_GgpAcc-SASC1-AE44-PR	[DELETE] HUK GgpAcc-SASC1-AE44-PR	AE - Provisions- und Kampagnenmanagement	
29	- Update Group	ad_GgpAcc-SASC1-MA2A-PR	[DELETE] HUK GgpAcc-SASC1-MA2A-PR	MA21 – Marketing Grundsatzfragen	
30	- Update Group	ad_GgpAcc-SASC1-AE41-PR	[DELETE] HUK GgpAcc-SASC1-AE41-PR	AE - Planung und Konzeption	
31	- Update Group	ad_GgpAcc-SASC1-AK-PR	[DELETE] HUK GgpAcc-SASC1-AK-PR	AK - Aktivität Kompat.	

Add Exception Compare/Validate... Select All Deselect All

What do we have now?

- ▶ Manual user administration → Still manually, but now by SAS-admins with just one click
- ▶ Maintenance of users through separate user administration → Automated
- ▶ No comparison when user information changes → Automatic
- ▶ No regular checks of user rights → Process still manual
- ▶ Lots of old entries in metadata → Done
- ▶ Frequent coordination with user administration required → Not needed anymore
- ▶ Special cases or problems still had to be solved by SAS-admins → Special cases and problems reduced to a minimum
- ▶ Applications for rights are mainly made by email → Applications are made via HUK's own ordering process

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Let's automate it – With the SAS Metacoda Batch Interface

- ▶ Allows automation of AD synchronization
- ▶ In addition, it offers various checks to control metadata security
- ▶ Must have access to an SMC (no problem thanks to GPFS)
- ▶ Initial configuration somewhat complex, afterwards "no" adjustments are necessary
- ▶ The previously created idsp is used - an easy-to-edit XML
- ▶ Technical users who are registered in the metadata must be excluded from the sync
- ▶ Automate via crontab:
Metacoda AD-Sync and Security-Check

- ▶ 15 0 * * * /gpfs/sasconf/config/grid/misc/3rdparty/metacoda/sasc3ci/SASC3CI_AD_SYNC.sh >>/dev/null 2>&1

What do we have now?

- ▶ Manual user administration → Automated
- ▶ Maintenance of users through separate user administration → Automated
- ▶ No comparison when user information changes → Automatic
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Regular checks

- ▶ Metacoda AD-sync writes all changes to the report
- ▶ Metacoda Security Test enables current metadata to be checked against a template
- ▶ Both run automatically via the Metacoda Batch Interface
- ▶ Sends Mail when an “Error”/Mismatch occurs
- ▶ Security Test runs weekly

Regular Checks – Metacoda AD-Sync

Metacoda Identity Sync Audit Report

Summary Report

Overview

Date/Time	15Sep2020:00:15:25
Client Operating System User Id	svcsasc3
Source Identity Environment	Microsoft Active Directory Server: lan.huk-coburg.de
Target Identity Environment	SAS Metadata Server: sasc3cm.lan.huk-coburg.de:16061
SAS Metadata Identity	SAS Administrator
SAS Workspace Identity	[same as SAS metadata identity]
Identity Sync State	Source/target identity changes have been applied.
Configured Sync Exceptions/Exclusions?	Yes (82)
Source Groups Extracted?	Yes (19)
Source Users Extracted?	Yes (41)
Target (SAS Metadata) Identity Changes Required?	Yes
... Validation Errors?	No (0)
... Target Group Changes?	Yes (2) : 0 group(s) added, 2 group(s) updated, 0 group(s) removed
... Target User Changes?	Yes (10) : 0 user(s) added, 10 user(s) updated, 0 user(s) removed
... Target Group/Role Membership Changes?	No (0) : 0 membership(s) added, 0 membership(s) removed
... Target Login Changes?	No (0) : 0 login(s) added, 0 login(s) removed
... Target Email Changes?	No (0) : 0 email(s) added, 0 email(s) updated, 0 email(s) removed
... Target Phone Changes?	No (0) : 0 phone(s) added, 0 phone(s) updated, 0 phone(s) removed
... Target Location Changes?	No (0) : 0 location(s) added, 0 location(s) updated, 0 location(s) removed
... Target Auth Domain Changes?	No (0) : 0 domain(s) added, 0 domain(s) updated, 0 domain(s) removed
Failures when Applying Changes?	No (0)

Identity Changes

Group/Role Changes

#	Action	Name	Display Name	Description	Group Type	Old Name	Old Display Name	Old Description
1	Update Group	 ad_GgpDel-AZ01179-HU00	[DELETE] HUK GgpDel-AZ01179-HU00	Abordnungsgruppe gültig vom 13.05.2019 bis zum 29.02.2020		ad_GgpDel-AZ01179-HU00	[DELETE] HUK GgpDel-AZ01179-HU00	Abordnungsgruppe gültig vom 13.05.2019 bis zum 29.02.2020
2	Update Group	 ad_GgpDel-AZ01185-HU00	[DELETE] HUK GgpDel-AZ01185-HU00	Abordnungsgruppe gültig vom 01.08.2019 bis zum 14.03.2020		ad_GgpDel-AZ01185-HU00	[DELETE] HUK GgpDel-AZ01185-HU00	Abordnungsgruppe gültig vom 01.08.2019 bis zum 14.03.2020

User Changes

Regular Checks – Metacoda Security Test



Metacoda Plug-ins: Security Testing Framework Report

Metadata Security Test Failures

Some metadata security tests have failed.
Details of the individual failures are provided below.

Summary

Started:	13Sep2020 00:30:08
Finished:	13Sep2020 00:30:19
Elapsed:	10 seconds
Tests Run:	173,990
Tests Failed:	12

Details

#	Test	Reason
1	ACTs/ACT('Customer Intelligence Template')/Objects/complete	The test specifies a COMPLETE set of protected objects for the Access Control Template (ACT) 'Customer Intelligence Template'. The test has failed because the ACT was actually found to be applied to an additional 2 unspecified objects. Additional test failures will occur for each unspecified object.
2	ACTs/ACT('Customer Intelligence Template')/Objects/complete/+Selection campaign '/HUK24/HUK24CI/HUK24_Context/2020/H24_Servicemailing_KFZ_Rueckerstattung'	The test specifies a COMPLETE set of protected objects for the Access Control Template (ACT) 'Customer Intelligence Template'. The test has failed because the ACT was also found to be applied to the unspecified Selection campaign '/HUK24/HUK24CI/HUK24_Context/2020/H24_Servicemailing_KFZ_Rueckerstattung'.
3	ACTs/ACT('Customer Intelligence Template')/Objects/complete/+Selection campaign '/HUK24/HUK24CI/HUK24_Context/2020/H24_KWK_HR_JW_2020'	The test specifies a COMPLETE set of protected objects for the Access Control Template (ACT) 'Customer Intelligence Template'. The test has failed because the ACT was also found to be applied to the unspecified Selection campaign '/HUK24/HUK24CI/HUK24_Context/2020/H24_KWK_HR_JW_2020'.
4	Users/User('AZ01179')/displayName	Mismatched displayName found. Expected <"[DELETE]"> but got <"Max Mustermann - TU123456">,
5	Users/User('AZ01179')/desc	Mismatched desc found. Expected <"TE2A"> but got <"Max Mustermann - TU123456">,
6	Users/User('AZ01179')/title	Mismatched title found. Expected <"Abteilung Test"> but got <"Abteilung">,
7	Users/User('')/DirectGroupMemberships/complete	The test specifies a COMPLETE set of DIRECT group memberships for the user ' '. The test has failed because they were actually found to be a direct member of an additional 1 unspecified group.
8	Users/User('HU00-VV-PR')/DirectGroupMemberships/complete/+ad_GgpAcc-SASC2-HU00-VV-PR'	The test specifies a COMPLETE set of DIRECT group memberships for the user 'HU00-VV-PR'. The test has failed because that user was also found to be a direct member of the unspecified group 'ad_GgpAcc-SASC2-HU00-VV-PR'.
9	Users/User('')/Capabilities/Capabilities('Visual Analytics 7.5;/Add and View Comments')/granted	The test has failed because the capability was found to be granted when the test specified it should have been NOT granted.
10	Users/User('')/Capabilities/Capabilities('Visual Analytics 7.5;/Personalization')/granted	The test has failed because the capability was found to be granted when the test specified it should have been NOT granted.
11	Groups/Group('ad_GgpAcc-SASC2-HU00-VV-PR')/DirectMembers/complete	The test specifies a COMPLETE set of DIRECT members for the group 'ad_GgpAcc-SASC2-HU00-VV-PR'. The test has failed because there were actually found to be an additional 1 unspecified member. Additional test failures will occur for each unspecified member.
12	Groups/Group('ad_GgpAcc-SASC2-HU00-VV-PR')/DirectMembers/complete/+user ' '	The test specifies a COMPLETE set of DIRECT members for the group 'ad_GgpAcc-SASC2-HU00-VV-PR'. The test has failed because the user ' ' was unspecified but was found to be a direct member of that group.

SAS Software distribution

- ▶ SAS-Software packed using NetInstall/DSM
- ▶ Authorization is based on AD
- ▶ Application uses the same process, we use for the rights (AD-Sync)
- ▶ Users order the software and the rights in one process and get both till the next day

Further Information

- ▶ 30-day free test of metacoda available <https://www.metacoda.com/en/products/security-plug-ins/>
- ▶ Using SAS-Macro to write your sync by yourself
<https://documentation.sas.com/?docsetId=bisecag&docsetTarget=n0l2hp5m00a1z2n1b598q4pknfih.htm&docsetVersion=9.4&locale=en>