

## White Paper

product brief

### IDM Toolbox



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## About this document

This document summarizes the functions of the product "IDM Toolbox".

## Audience

This guide is intended for consultants and administrators designing and maintaining existing NetIQ Identity Manager environment. You should have an understanding of drivers, workflows, eDirectory and the IDM Designer tool.

## Feedback

We appreciate your comments and suggestions about the PowerRole drivers and this manual. If you have any suggestions, comments, feature requests please contact us via [info@skypro.ch](mailto:info@skypro.ch).

## 1 Introduction

The IDM Toolbox is a powerful tool for consultants, project manager and system administrators. The IDM toolbox consists of a rich set of functions covering the following tasks:

1. Design (drivers, forms, mails)
2. Analyzing
3. Data Migration & Modification
4. Documentation (driver, workflow, DAL, schema)
5. Translation (workflow)
6. Acceptance (project, driver, workflow)
7. Collaboration (versioning, data exchange)
8. Testing (under development)

With the help of the IDM Toolbox a consultant is able to define together with the customer detailed driver specifications, workflow forms and mail templates. These specifications can be deployed directly in to your IDM system and imported into designer. The developer can start building the driver based on these specifications. He doesn't need to start with building event filters, attribute mappings etc. because these definitions are already there, but continues the consultants work with adding the logical functions like content conversions or placement rules. The developer directly benefits from the consultants work.

With the trace file analyzer function, project managers and system administrator obtain a very powerful tool to analyze driver trace files. The analyzer visualizes in comprehensible tables and graphics all events that have been processed by the different drivers. You see how many successes, warnings or errors occurred on a specific period of time or within different days of the week.

The directory cloner enables you to copy complete subtrees with all objects and attributes from one directory as a source to another directory as the target. Within minutes you're able to copy thousands of objects from your productive environment in to your staging, test or development area. This way test environments can be loaded with live data to build real test scenarios.

The IDM Toolbox is a Java based application and runs on any Java supported platform. The client is completely browser based so you can use Internet Explorer, Firefox, Safari or Chrome.

## 2 Installation

The installation process is easy and straight forward.

1. Copy the provided zip file into your program folder
2. Unzip the file
3. Start the java application depending on your operating system:

Windows:     run.cmd  
Linux:         start.sh  
Mac:           start.command

Note the port the application is running on (default 3190)

4. The application unpacks itself and stops.

```
epts/Accepts.class
Create Default Files: Accepts_Helsana_V1.xlsx
Create Default Files: Driver_Default.xlsx
Create Default Files: Project_Default.xlsx
Create Default Files: Projekt_Helsana_V1.1.xlsx
Create Default Files: Workflow_Default.xlsx
TRIAL LICENSES CREATED.. RESTART PLEASE!!!

Press Enter to exit
logout

[Prozess beendet]
```

5. Close the terminal window and restart the program.
6. Start your preferred browser
7. Enter <http://localhost:3190>
8. Accept the info boxes
9. Be aware of the trial license expiration date

Modules	Licensed till
Accepts	TRIAL 2014-10-01
CloneDir	TRIAL 2014-10-01
Driver	TRIAL 2014-10-01
Driver Design	Free
Driver Docu	TRIAL 2014-10-01
Form Design	Free
Log Analyzer	TRIAL 2014-10-01
Mail Design	Free
Schema Documentation	TRIAL 2014-10-01
Workflow Translator	TRIAL 2014-10-01

10. You now may go to settings and change the port number, name your Toolbox and set a username and password to enter the toolbox.


Have fun.

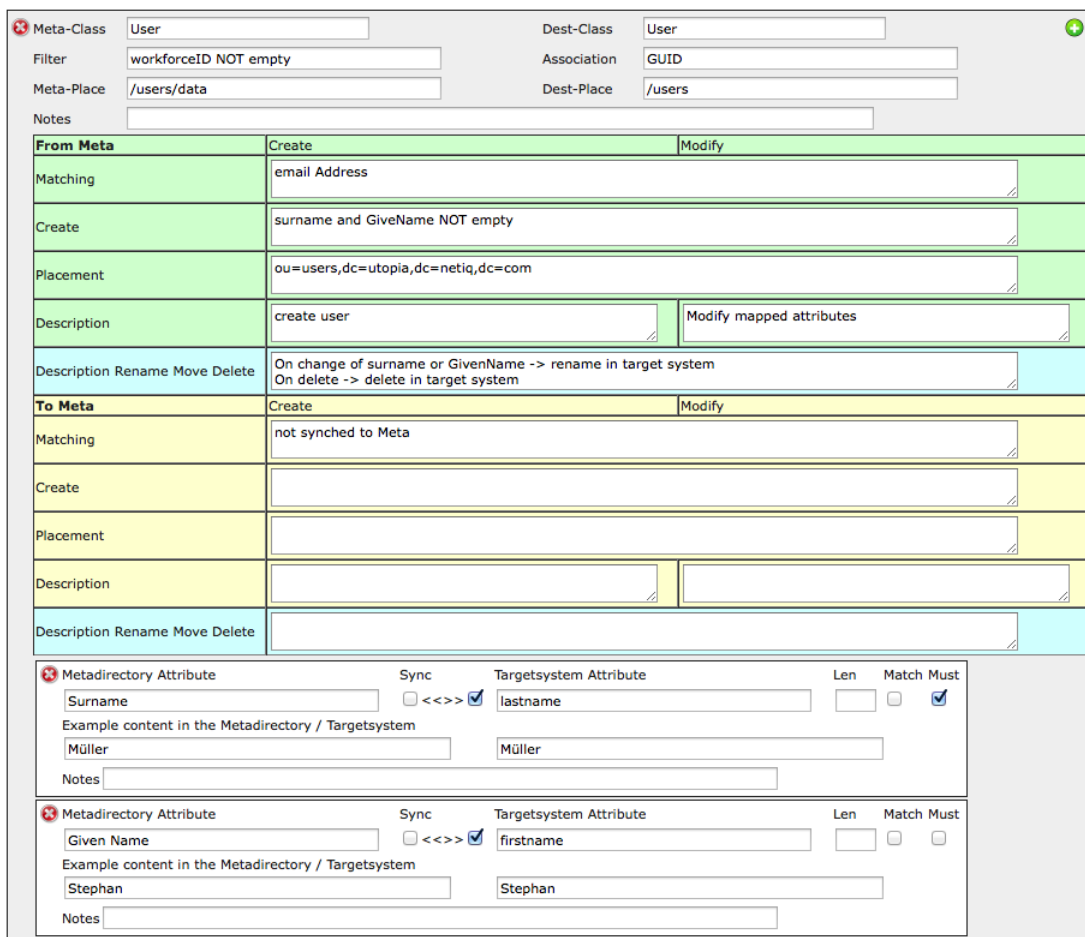
## 3 Design Tools

### 3.1 Driver Design

The driver designer enables the consultant to specify drivers offline together with the customer in a way the customer understands the main synchronization concepts (publisher/subscriber) and attribute mappings of a driver.

#### Schema / Attribute Mapping:

- ☐ Simple Mode
- ☒ Event Sheets
-  Add new Class



picture 1: interactive driver design

The elaborated driver definition can be used to create a real driver skeleton. The generated driver already holds all basic driver policies like filter, attribute mapping, notes. You can directly deploy the driver in a real IDM environment. The developer can import this driver into its Designer environment and start adding missing policies like value conversion, placement policies etc.

The developer may reuse the driver documentation objects like „driver-infos“, „driver-classes“ or „driver-attrs“, that have been created by the toolbox to keep the driver documentation up to date all the time.

To finalize the documentation you can reimport the driver into the IDM Toolbox and generate the driver documentation.

## 3.2 Form Design

The form designer allows the interactive design of workflow forms together with the customer. It offers all the visualization tools (textfield, radio picklist, checkbox, multi value selectlist etc.) that are also available in the Designer to create workflows. You can export the form and import it into Designer. The developer doesn't have start with recreating the form but starts directly with adding the needed logical functions to the workflow.

**Workflow Formname:** Request AD Share

☐ Addons  
☐ Preview

**Request AD Share**

Select Share and Drive you want to request

Share

Drive

Checkboxen: ☐ Option1 ☐ Option2

**Properties**

Label

Values

**Title / Label**

**Subtitle / Sublabel**

DN Display: DN zum Anzeigen

Text Feld:

Objekt Feld:

Password:

Textarea:

Radio Picklist: ☐ Radio1 ☐ Radio2

Checkboxen: ☐ Option1 ☐ Option2

Picklist:

Multi Value Picklist

Multi Value Selectlist

HTML HTML Quelltext

picture 2: Interactive form design

## 3.3 Mail Design

The mail designer component gives the consultant the ability to create mail templates together with the customer. These templates can be imported into Designer. The developer does not have to create any mail templates but can just integrate these mail templates into the workflows.

**Template Name:** Request Confirmation

☒ Send Mail as HTML

Subject: Your request has been approved

Tokens:

```

$$firstname$$
$$lastname$$
$$request$$
$$approver$$

```

**HTML Editor:**

Dear \$\$firstname\$\$

Your request for \$\$request\$\$ has been approved by \$\$approver\$\$.

Wish you a great day.

Your IAG Team

picture 3: Interaktive mail template design



## 4 Driver Testing (under development)

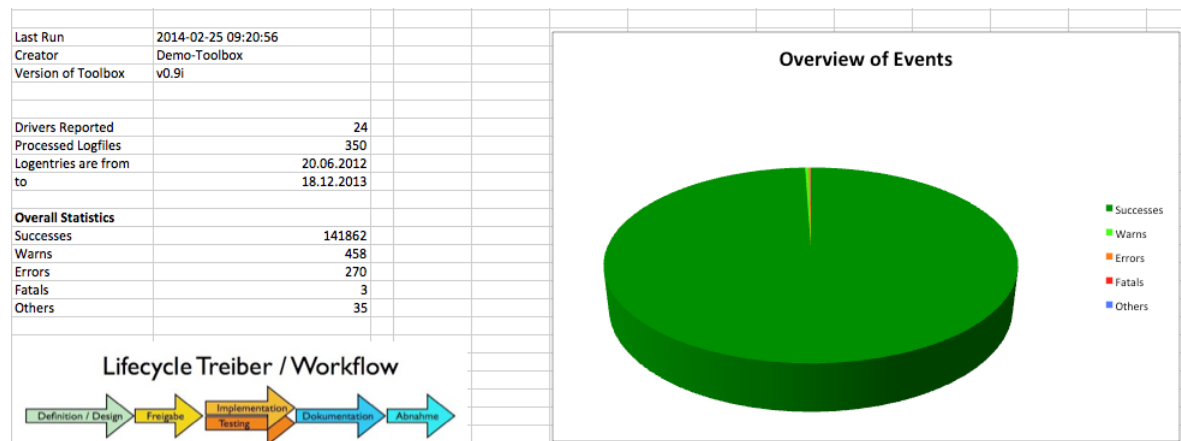
This module allows the interactive testing of all objects, attributes and events, that have been defined in a driver.

[Under Development!](#)

## 5 Analyze

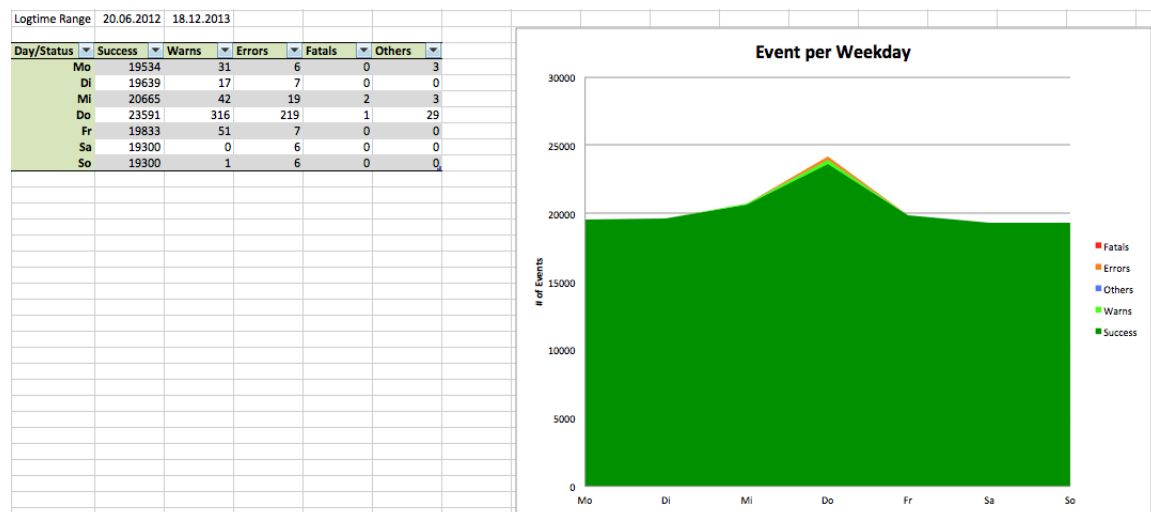
### 5.1 Trace File Analyzer

The trace file analyzer analyzes a set of driver trace files for successes, warnings and errors. It creates a summary of the processed trace files. The summary shows the total amount of processed trace files, the date range of the trace entries and the total amount of successes, warnings and errors that have been found in the provided trace files.



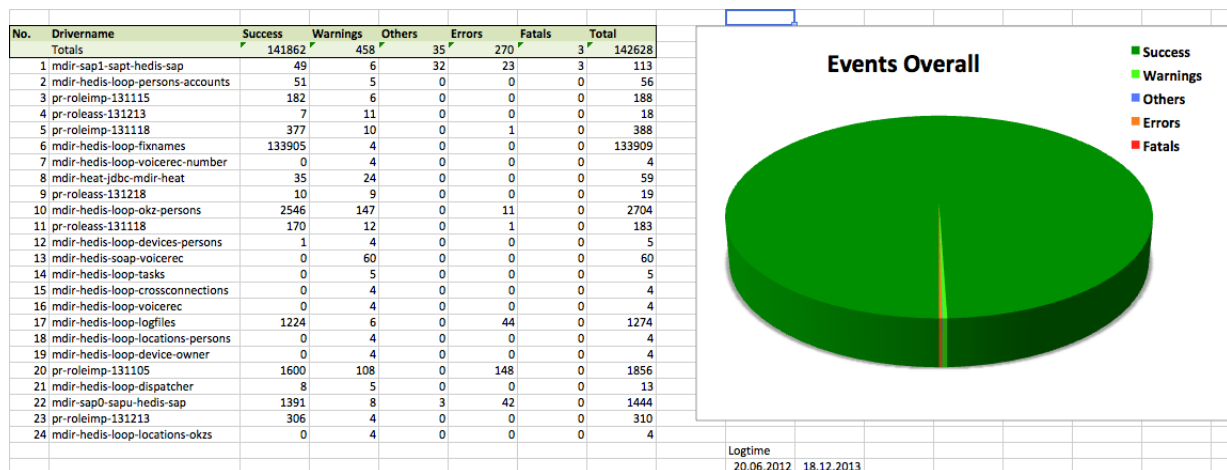
picture 4: Trace file analyzer summary

A week statistic is provided to see if errors may happen on specific days of the week.



picture 5: Trace file analyzer weekday summary

A summary of all events per driver visualizes the workload and reliability of each driver.



picture 6: driver summary

Errors within drivers will be summarized by error code. This view reduces the amount of errors to the real causes of the errors.

No	Drivername	Count	Errortype	Date/Time	Message
1	mdir-sap1-sapt-hedis-sap	2	FATAL	10/16/13 14:20:58.874	com.novell.nds.dirxml.remote.ConnectionClosedException: Connection was closed
2	mdir-sap1-sapt-hedis-sap	1	FATAL	10/17/13 13:40:12.830	java.net.ConnectException: Connection refused: connect
3	mdir-sap1-sapt-hedis-sap	16	ERROR	10/16/13 14:29:42.987	<description>BAPI_USER_CREATE1 : com.novell.nds.dirxml.driver.sapumshim.BapiExc
4	mdir-sap1-sapt-hedis-sap	2	ERROR	10/16/13 14:28:11.290	<description>BAPI_USER_CREATE1 : com.novell.nds.dirxml.driver.sapumshim.BapiExc
5	mdir-sap1-sapt-hedis-sap	1	ERROR	10/17/13 15:37:53.000	<description>BAPI_USER_LOCK : com.novell.nds.dirxml.driver.sapumshim.BapiExcepti
6	mdir-sap1-sapt-hedis-sap	1	ERROR	10/17/13 14:11:58.635	<description>BAPI_USER_CHANGE : com.novell.nds.dirxml.driver.sapumshim.BapiExcc
7	mdir-sap1-sapt-hedis-sap	2	ERROR	10/17/13 16:12:53.852	<description>BAPI_USER_CHANGE : com.novell.nds.dirxml.driver.sapumshim.BapiExcc
8	mdir-sap1-sapt-hedis-sap	1	ERROR	10/16/13 14:24:28.350	<description>BAPI_USER_GET_DETAIL : com.novell.nds.dirxml.driver.sapumshim.Bapi
9	mdir-sap1-sapt-hedis-sap	1	RETRY	10/17/13 16:15:29.587	Code(-9006) The driver returned a "retry" status indicating that the operation should l
10	mdir-sap1-sapt-hedis-sap	31	RETRY	10/16/13 14:21:00.090	Code(-9006) The driver returned a "retry" status indicating that the operation should l
11	pr-roleimp-131118	1	ERROR	12/12/13 18:00:19.719	Code(-9000) Element <value> specified bad attribute value. 'string' was specified, 'stri
12	mdir-hedis-loop-okz-persons	2	ERROR	06/21/12 09:05:33.820	Code(-9061) Error processing XSLT policy: vnd.nds.stream://HMDT/system/dirxml/dsP
13	mdir-hedis-loop-okz-persons	4	ERROR	07/04/12 13:01:16.561	Code(-9039) Element <modify> does not have a valid association.
14	mdir-hedis-loop-okz-persons	2	ERROR	06/20/12 13:34:13.871	Code(-9208) Error: attribute 'hdsOKZManager' not in schema.
15	mdir-hedis-loop-okz-persons	2	ERROR	06/21/12 09:10:59.765	Code(-9010) An exception occurred: java.lang.NullPointerException   at com.novell.xi
16	mdir-hedis-loop-okz-persons	1	ERROR	06/20/12 13:30:06.441	Code(-9010) An exception occurred: novell.jclient.JCException: nameToId -601 ERR_N
17	pr-roleass-131118	1	ERROR	12/13/13 08:29:48.321	Code(-9205) Error in vnd.nds.stream://UTOPIA-TREE/system/driverset1/pr-roleAss-13
18	mdir-hedis-loop-logfiles	44	ERROR	10/16/13 00:01:00.614	Code(-9010) An exception occurred: novell.jclient.JCException: modifyEntry -608 ERR
19	pr-roleimp-131105	1	ERROR	11/19/13 14:56:14.022	Code(-9066) Unable to open trace file /var/log/dirxml/history/hist-20131119-001.log:
20	pr-roleimp-131105	147	ERROR	11/14/13 16:32:45.629	Code(-9010) An exception occurred: novell.jclient.JCException: nameToId -601 ERR_N
21	mdir-sap0-sapu-hedis-sap	36	ERROR	10/17/13 14:06:49.802	<description>ChangePassword : com.novell.nds.dirxml.driver.sapumshim.BapiExcepti
22	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 12:45:05.186	<description>BAPI_USER_CHANGE : com.novell.nds.dirxml.driver.sapumshim.BapiExcc
23	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 10:54:06.424	<description>BAPI_USER_CHANGE : com.novell.nds.dirxml.driver.sapumshim.BapiExcc
24	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 10:40:23.804	Code(-9031) Global Configuration Value 'SAP-group' not found: vnd.nds.stream://HMI
25	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 13:05:51.392	java.lang.NullPointerException
26	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 14:10:09.724	Code(-9188) Error in vnd.nds.stream://HMDT/system/dirxml/dsPROV/mdir-sap0-sapu
27	mdir-sap0-sapu-hedis-sap	1	ERROR	10/10/13 12:22:59.623	<description>BAPI_USER_CHANGE : com.novell.nds.dirxml.driver.sapumshim.BapiExcc
28	mdir-sap0-sapu-hedis-sap	3	RETRY	10/14/13 09:11:24.542	Code(-9006) The driver returned a "retry" status indicating that the operation should l

picture 7: Trace file analyzer error summary

## 6 Data Migration & Modification

### 6.1 Directory Cloner

The directory cloner copies objects (container, user, group etc. free choice of objects types) from one source directory to a chosen target directory. This function is very useful to copy data from a productive environment into a test environment. Because the directory cloner uses a special multi stage copy process, it can also copy group memberships, dynamic membership queries, role associations etc.

The directory cloner allows the definition of mandatory attributes per class that have to be valued. Otherwise objects won't be copied. In addition you can specify attributes per class, that mustn't be copied. Specific attributes can be defined to be copied on a binary base so their content won't be touched.

A regex expression editor allows the free definition of regex rules how objects and their attribute values may have to be transformed.

#### Settings to Clone Data from a Directory to another

Portal Source Directory Dummy Destination Directory

☒ PASS 1 / 2 - Clone Base Objects ☒ Trim the DN's

☒ PASS 2 / 2 - Clone Operational Data ☒ Sort the DN's

Mandatory Attributes:  
objectClass,cn,surname,ou

Suppress Attributes:  
user|mobile

Copy Attributes:  
ldapPhoto

DN's to Clone:

```
"cn=YuriyO,ou=Users,o=CHAM"
"cn=Yuriy,ou=Service,ou=Users,o=CHAM"
"cn=Yulia,ou=Users,o=CHAM"
"cn=wwwrun,ou=OES,ou=Resourcen,o=CHAM"
"cn=www,ou=OES,ou=Resourcen,o=CHAM"
"cn=wc7132,ou=Service,ou=Users,o=CHAM"
"cn=Vlado,ou=Users,o=CHAM"
"cn=VitaliyO,ou=Users,o=CHAM"
"cn=Vitaliy,ou=Users,o=CHAM"
"cn=Vibe,ou=Groups,o=CHAM"
"cn=Users,cn=Help Desk Management,cn=RBS,o=CHAM"
"cn=usdemo,ou=Users,o=CHAM"
"cn=UR-Pilot,ou=Users,o=CHAM"
"cn=uatest09,ou=Users,o=CHAM"
"cn=uatest08,ou=Users,o=CHAM"
"cn=uatest07,ou=Users,o=CHAM"
"cn=uatest06,ou=Users,o=CHAM"
"cn=uatest05,ou=Users,o=CHAM"
"cn=uatest04,ou=Users,o=CHAM"
"cn=uatest03,ou=Users,o=CHAM"
"cn=uatest02,ou=Users,o=CHAM"
"cn=uatest01,ou=Users,o=CHAM"
"cn=Thomas,ou=Users,o=CHAM"
"cn=Tetyana,ou=Users,o=CHAM"
"cn=TestUser001,ou=Service,ou=Users,o=CHAM"
```

Regex for Datamod:

```
/ou=Users,o=CHAM/ou=User
s,o=ZUG/
```

Clone Data

picture 8: Directory Cloner

## 6.2 Object Modifier

The object modifier is a very powerful function to do mass modifications on any directory object. You can save your mass modification parameters to reuse them at any time. Define a base DN to start with and a filter to select the object you want to modify. You can retrieve the objects from your directory to test your filter.

Define the object class, attribute and a value filter for the content of the object you want to modify. For the value filter you can use any regex expression, which are very powerful. You can add new content, replace existing content or delete content. The content can be defined by any java script expression. Just enter "result=" with a value or call your java script function you have entered in the java script field.

Object Modifier Modify Log

Settings Add Description - 2014-09-01 15:41:12 Load Delete

Save as

Directory SKyPRO live

BaseDN ou=users,o=cham

Filter cn=\*

Check DN

Check Filter

Retrieve DNs from BaseDN / Filter

DNs

- cn=Alexander,ou=Users,o=CHAM
- cn=Alexandr,ou=Users,o=CHAM
- cn=AlexandrL,ou=Users,o=CHAM
- cn=AlexandrM,ou=Users,o=CHAM
- cn=AlexandrR,ou=Users,o=CHAM
- cn=AlexandrZ,ou=Users,o=CHAM
- cn=Alexey,ou=Users,o=CHAM
- cn=Andreas,ou=Users,o=CHAM
- cn=Andrey,ou=Users,o=CHAM
- cn=AndreyV,ou=Users,o=CHAM
- cn=Andy,ou=Users,o=CHAM
- cn=Anna,ou=Users,o=CHAM
- cn=AnnaS,ou=Users,o=CHAM
- cn=Antoinette,ou=Users,o=CHAM
- cn=Anton,ou=Users,o=CHAM
- cn=Antonina,ou=Users,o=CHAM
- cn=AntonY,ou=Users,o=CHAM
- cn=Anzhela,ou=Users,o=CHAM
- cn=apptest,ou=Service,ou=Users,o=CHAM
- cn=Arkadii,ou=Users,o=CHAM

Add Action

Objectclass organizationalPerson Attribute description Value Filter

Operation ☒ Add ☐ Replace ☐ Replace All ☐ Delete

JavaScript result="new description";

Dry Run Run

picture 9: object modifier

With a "dry run" you can test your object modification definition against the directory before you start the real "run".

## 7 Documentation

### 7.1 Driver Documentation

The IDM Toolbox generates complete driver documentations in form of an Excel sheet. The documentation contains general driver information, that have already been defined by the consultant during the conceptual phase as well as detailed information about the driver channels with synchronized attributes, example values, event handling and specific notes.

Red Hat			Events				SuSE	
Klasse	NDS-Attribut	System-Attr	<<	Pub	Sub	>>	Beispiel	Notizen
User	uniqueID	LOGIN		X	IUS	>>	EX0KY   ex0ky	Alle Lowercase machen?
User	givenName	FIRST		X	IUS	>>	Thomas   Thomas	
User	Surname	LAST		X	IUS	>>	Müller   Müller	Need Conversion?
User	nspmDistributionPassword	PASSWORD		X	IUS	>>	*****   *****	
User	OU	ORGUNIT		X	IUS	>>	IIZ   IIZ	
User	Internet EMail Address	EMAIL		X	IUS	>>	thomas.mueller@helsana.ch   thomas.mueller@helsana.ch	
User	nrfAssignedRoles	ROLES		X	IUS	>>	BER_360-UNIX-Account	Minimum zum erstellen des Accounts
nrfRole	hdsRoleOrigName	ROLE	<<	IUS	X		FIXME   FIXME	Muss noch genau angeschaut werden
nrfRole	CN	ROLE	<<	IUS	X		BER_360-UNIX-<ROLE>   <ROLE>	Wie wo was.. FIXME

Legende: Attribute

Events:

(I)nsert/Add | (U)pdate/Modify | (D)elete | (S)ync  
(M)ove | (R)ename | (T)rigger | (X)No Event

picture 10: driver documentation

### 7.2 DAL Documentation

Identity Managers UserApplication driver can directly be imported into the IDM Toolbox. The Toolbox generates a complete documentation of all DAL definitions, parameters, workflows even java scripts used in workflows.

Entity Properties:  
system: false  
editable: true  
viewable: true  
creatable: true  
protected: true  
removable: true

Object Classes:

LDAP	NDS	Add	Aux	Protect	Search
inetOrgPerson	User				true
srvprvUserAux	srvprvUserAux	true	true	true	false

Attributes:

KEY	LDAP	NDS	Display	Class	Type	Options
FirstName	givenName	Given Name	Vorname		String	1 2 4 5 6 7 8 9
LastName	sn	Surname	Nachname		String	1 2 4 5 6 7 8 9
Title	title	Title	Titel		String	1 2 4 6 8 9
Department	ou	OU	Abteilung		String	2 4 6 8 9
Location	l	L	Region		String	2 4 6 8 9
Email	mail	Internet EMail Address	Email		String	1 2 4 5 6 8 9
manager	manager	manager	Manager		DN	1 2 4 5 6 8 9
group	groupMembership	Group Membership	Gruppe		DN	1 2 4 5 6 8 9
TelephoneNumber	telephoneNumber	Telephone Number	Telefonnummer		String	1 2 4 6 8 9
UserPhoto	photo		Benutzerfoto		Binary	1 2 3 4 6 9
directReports	directReports	directReports	Direkt unterstellt		DN	1 2 4 5 6 8 9
srvprvQueryList	srvprvQueryList	srvprvQueryList	Abfrageliste	srvprvUserAux	String	1 2 5 6
srvprvHideAttributes	srvprvHideAttributes	srvprvHideAttributes	Liste der verborgenen Attribute	srvprvUserAux	String	1 2 4 5 6
NotificationPrefs	srvprvNotificationPrefs	srvprvNotificationPrefs	Bevorzugte Benachrichtigung	srvprvUserAux	String	1 2 4 5 6 9
srvprvUserPrefs	srvprvUserPrefs	srvprvUserPrefs	Benutzereinstellungen	srvprvUserAux	String	1 2 5 6

Options:  
1 editable  
6 readable  
2 enabled  
7 required  
3 hideable  
8 searchable  
4 multivalue  
9 viewable  
5 protected

picture 11: Directory Abstraction Layer (DAL) documentation

### 7.3 Workflow Documentation

After importing the UserApplication driver into the IDM Toolbox you can generate a complete documentation of each workflow within the driver. For each workflow a separate Excel sheet is generated to document the workflow. The Excel sheet documents all forms (request and approval forms), every field, field properties and localizations, all activities and their properties as well as all data items used in the workflow.



Informationen:		Description:	Rollengenehmigung				
		Kategorie:	nrf				
		Flowstrategie:	SingleFlow				
		Grant:	TRUE				
		Revoke:	FALSE				
		Status:	Active				

Form	Name	Datatype	Controltype	Displayname Default	Displayname De	Displayname Fr	Displayname It
request_form	title		Title	Role Approval	Rollengenehmigung	Approbation du rôle	Approvazione ruolo
request_form	subheading		Title	Press 'Submit' to request the entitlement.	Wählen Sie 'Senden' zum Anfordern der Berechtigung.	Cliquez sur 'Soumettre' pour demander le droit.	Fare clic su 'Invia' per richiedere l'autorizzazione.
request_form	nrfRequestDN	dn	Text	Request DN	Anforderungs-DN	DN de requête	DN richiesta

Name	Datatype	Source	Target	Targettype
nrfRequestDN	dn		flowdata.nrfRequest/DN	single-value

Form	Name	Datatype	Controltype	Displayname Default	Displayname De	Displayname Fr	Displayname It
approval_form	title		Title	Role Approval	Rollengenehmigung	Approbation du rôle	Approvazione ruolo
approval_form	subheading		Title	Please select the appropriate button to approve or reject the request.	Bitte wählen Sie die entsprechende Schaltfläche zum Genehmigen oder Ablehnen der Anforderung.	Sélectionner le bouton approprié pour approuver ou refuser la requête.	Selezionare il pulsante appropriato per approvare o rifiutare la richiesta.
approval_form	RequestNumber	dn	DNDisplay	Request Number:	Anforderungsnummer:	Numéro de requête :	Numero richiesta:
approval_form	RequesterName	dn	DNDisplay	Requested by:	Angefordert von:	Demandée par :	Richiesta da:
approval_form	Operation	string	Html	Operation:	Vorgang:	Opération :	Operazione:
approval_form	SourceDN	string	Html	Role:	Rolle:	Rôle :	Ruolo:
approval_form	TargetDN	string	Html	Recipient:	Empfänger:	Destinataire :	Destinatario:
approval_form	RequestDate	date	DatePicker	Request Date:	Anforderungsdatum:	Date de la requête :	Data della richiesta:
approval_form	StartDate	date	DatePicker	Start Date:	Startdatum:	Date de début :	Data di inizio:
approval_form	EndDate	date	DatePicker	End Date:	Enddatum:	Date de fin :	Data di fine:
approval_form	Description	string	Html	Description:	Beschreibung:	Description :	Descrizione:
approval_form	CurrentStatus	string	Html	Status:	Status:	Etat :	Stator:
approval_form	apwComment	string	TextArea	Comment:	Kommentar:	Commentaire :	Commento:

Parent	Name	Datatype	Source	Target	Targettype
Activity	RequestNumber	dn	NrfRequest.getCh()		single-value
Activity	RequesterName	dn	NrfRequest.getRequester()		single-value
Activity	Operation	string	NrfRequest.getCategoryLocalString(locale)		single-value
Activity	SourceDN	string	NrfRequest.getSourceDNDisplayName(locale)		single-value
Activity	TargetDN	string	NrfRequest.getTargetDNDisplayName(locale)		single-value

picture 12: workflow documentation

## 7.4 Schema Documentation

With the schema documenter you generate a very comprehensive Excel sheet that visualizes the detailed configuration of specific object classes you want to document. Each class will be documented in separate tabs including class flags, subclasses, mandatory and optional attributes. Each attribute is documented with its type, flags and length.

Schema - Documentation			
Every Class has its own Classbox.			
Only the Classes and Attributes are			
<ul style="list-style-type: none"> <li>listed and documented here, that are exported from the Designer as a Schema-File.</li> </ul>			
To Export a Schema-File *.sch*			
<ul style="list-style-type: none"> <li>Open the Designer right-click on the Vault Object and there choose: Schema -&gt; Export</li> </ul>			

Legende Attributes Flags			
SY	Immediately Synced		
SI	Sized		
FI	Fixed		
ST	String		
PU	Public Readable		
SV	Single Valued		
HI	Hidden		
RF	Read Filtered		
NR	Non Removable		
MA	Write Managed		

Legende Attributes Types			
CI	Case Ignored		
NU	Numbered		
CE	Case Exact		

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User			
Flags			
Effective Class			
Non Removeable			
Subclass			
Organizational Person			
MayContain			
Password Unique Required	Boolean	SY,SV,NR	
manager	DN	SY	
SAS:SecretStore	Boolean	SY,SV	
Network Address Restriction	Net-Address	SY,NR	
Server Holds	Hold	SY,NR	
SAS:Service DN	DN	SY,SV,SR	
Account Balance	Counter	SY,SV,NR	
Login Intruder Address	Net-Address	SY,SV,NR	
RADIUS:Concurrent Limit	Integer	SV	
Private Key	Octet String	HI,SY,RF,SV,NR	
homePhone	TelNr	ST,SY	
SAS:SecretStore:Key	Octet String	HI,SY,SV	
preferredLanguage	CI String	ST,SY,SV	
sssServerPolicyOverrideDN	DN	SY,SV	
SAS:PKIStore:Keys	Octet String	HI,SY	
Given Name	CI String	ST,SY,SI,NR,PU	1<32
userCertificate	Octet String	SY,PU	
Timezone	Octet String	SV,NR,PU	
carLicense	CI String	ST,SY	
sssProxyStoreKey	Octet String	HI,SY,SV	
Last Login Time	Time	SV,NR	
Login Grace Limit	Integer	SY,SV,NR	
employeeType	CI String	ST,SY	
RADIUS:Service List	Tag-Name-String		
homePostalAddress	Postal Address	SY	
uniqueID	CI String	ST,SY,SI,NR,PU	1<64
Profile	DN	SY,SV,NR	
Home Directory	Tag-Name-String	SY,SV,SI,NR	1<255
Public Key	Octet String	SY,RF,SV,NR,PU	
Profile Membership	DN	SY,MA,NR	
RADIUS:Password	Octet String	SV	

picture 13: schema documentation

## 8 Translation

### 8.1 Workflow Translator

The workflow translator generates an Excel sheet with all localized strings that exists within a workflow for the selected languages. This Excel sheet can be processed internally to complete all missing localized strings. The final sheet is reimported into the IDM Toolbox and the localized strings will be deployed into the workflow.

Workflow DN	Formularname	Formt	Feldname	en	de	fr	it
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	Instructions1	Choose a department				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	summary1	summary1				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	department	Department				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	emailSearch	email search				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	instructions2	Choose a user				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	user	User				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	runSearch					
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	instructions3	User Information				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	fname	First Name				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	lname	Last Name				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	title	Title				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	region	Region				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	birthday	birthday		Geburtstag		
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	RegisterNr	RegisterNr.		RegisterNr.		
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	email	E-Mail Address				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	userdepartment	Department				
cn=SendOTP,cn=RequestDefs,cn=AppConfig,cn=User Application request_form	Request	SubmitAction	Send OTP		OTP senden		

picture 14: workflow translator



## 9 Acceptance

### 9.1 Project

IDM Toolbox can create different acceptance documents in form of an Excel sheet for the customer to sign. The Excel sheet contains tabs for a project cover sheet, acceptance protocol, decisions and issues.

You can create your own Excel templates to customize the acceptance sheet to your corporate identity look & feel.



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### Project Acceptance

**Project:** Enterprise Directory

**Creator:** John Harris

**Version:** 1.0

**Date:** 2014-03-31 14:57:54

**Created by:** Andy Toolbox  
v0.9k

picture 15: Project Acceptance Sheet

### 9.2 Driver

For each driver in the IDM Toolbox you can create a driver acceptance sheet. You can define your own Excel templates to customize the driver acceptance sheet to your corporate identity look & feel.



## Driver Acceptance

### Driver

Driver Infos	Values
Source	SuSE
System	sadfds
Target	Red Hat
DNS Name or IP	192.168.0.135
Table	
User	root
Password	*****
Contact	Reto Gantenbein IIZ
Title	LinuxIPA
Drivername	cn=LinuxIPA
Version of the Driver	0.1
Last Changes on Driver	Thomas Bucher
Change of the Driver	Thomas Bucher
Driver Status	DEVELOPMENT
Integrated System ID	

### Project

Project name	Enterprise Directory
Project leader	John Harris
Client	Global Insurance
Date	2014-03-31 15:22:39
Employees	Mike, Harry, Peter
Goals	
Last Run	2014-03-31 15:22:39
Version of the TB	v0.9k
Name if the TB	Andy Toolbox
Year	2014
Month	3
Day	31
Time	15:22
Fields are feeded from the Form	
The Form is created out of the Tab "template"	
Go for Enterprise RBAC	

picture 16: Driver Acceptance Sheet

## 9.3 Workflow

For each workflow in the IDM Toolbox you can create a workflow acceptance sheet. You can define your own Excel templates to customize the workflow acceptance sheet to your corporate identity look & feel.



## Workflow Acceptance

### Workflow

### Project

Project name	Enterprise Directory
Project leader	John Harris
Client	Global Insurances
Date	2014-03-31 15:27:13
Employees	Mike, Peter, Harry
Goals	
Last Run	2014-03-31 15:27:13
Version of the TB	v0.9k
Name if the TB	Andy Toolbox
Year	2014
Month	3
Day	31
Time	15:27
Fields are feeded from the Form	
The Form is created out of the Tab "template"	
Go for Enterprise RBAC	

picture 17: Workflow Acceptance Sheet

## 10 Collaboration

### 10.1 Versioning

The IDM Toolbox always keeps track of every version of drivers, workflow or mail templates object that has been created or modified.

#### Objects stored in the Toolbox:

Refresh

Show 10 entries Search:

Name	Type	Timestamp	Version	Commands
Bestellung neue Rolle	Formular Design	2013-10-31 15:46:34.0	4	
cn=LinuxIPA,cn=idmDriverSet,ou=idm,o=system	Driver	2013-10-31 15:23:07.0	3	
cn=LinuxIPA,cn=DS,ou=dummy,o=dummy	Driver	2013-10-31 15:16:33.0	1	

picture 18: Versioning

At all time you can step back to any version of a driver or template that has ever existed.

#### Versions of the Inspected Object:

Show 10 entries Search:

Name	Type	Timestamp	Version	Commands
Bestellung neue Rolle	Formular Design	2013-10-31 15:46:34.0	4	
Bestellung neue Rolle	Formular Design	2013-10-31 15:45:01.0	3	
Bestellung neue Rolle	Formular Design	2013-10-31 15:44:25.0	2	
Bestellung neue Rolle	Formular Design	2013-10-31 15:44:00.0	1	

Showing 1 to 4 of 4 entries First Previous 1 Next Last

picture 19: Restore specific object version

### 10.2 Data Exchange

The IDM Toolbox can exchange its data with any other IDM Toolbox that is reachable via IP. This enables developer to work together very efficiently since they do not have to export, send via email and reimport objects like drivers or forms. Any IDM Toolbox can initiate a mutual trust to each other and is able to exchange all objects directly between their data stores.

## 11 Modules

The IDM Toolbox contains different modules:

- Accepts: Create different acceptance documents
- CloneDir: Copy objects between different directories
- Connections: Define directory connections
- DriverDesign: Interactive driver designer
- Drivers: Upload, export, import and document drivers
- Exchange: Data exchange between several IDM Toolbox instances
- FormDesign: Design workflow forms
- LogAnalyzer: Analyze driver trace files
- MailDesign: Interactive mail template designer
- SchemaDoc: Document eDirectory schemas
- Settings: general settings
- Tests: Driver testing (under development)
- Versions: Versioning
- WFTTranslator: Workflow translator

The following modules are free:

- Connection
- DriverDesign
- FormDesign
- MailDesign
- Settings
- Versions

You receive the module „Exchange“ for free upon a purchase of more than one module.