



erwin Data Transformation

User Guide

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Legend



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.

erwin Data Transformation – User Guide

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About this guide

This guide explains how to configure and use the tool erwin Data Transformation, describing the various features and functionality available to the user.

It is recommended that you print this guide so that you can follow the instructions more easily. The guide is designed to be printed double-sided in booklet form.

Document audience

The User Guide is intended to be read by end users who are concerned with getting the most benefit from the erwin Data Transformation implementation.

Document conventions

- DT** erwin Data Transformation
- CM** CW Suite Desktop Modeling Suite (aka Corporate Modeler Suite)
- CE** erwin CW Exchange (aka Corporate Exchange)
- Evolve** erwin EA Web Platform
- WF** Workflow

Getting Started

Tool Overview

DT is aimed at configuring multiple, dynamic data flows, and managing those flows without relying on programming resources, with an easy to use interface to organize them in logically consistent job sequences, to be run on schedule/on demand:

- Extract and transform raw data *from third party tools* in order to create and update data into erwin CW Exchange repository or into erwin EA Agile workspaces
- Extract data *from erwin CW Exchange repository or from erwin EA Agile workspaces* in order to update third party tools.
- Configure operation to *run on a schedule*: after the initial configuration and test, the data flows can run automatically with no need for the user to intervene.

From now on, “*model*” refers to data logically organized either into CW Exchange repository or into erwin EA Agile workspaces.

DT can therefore be classified as a tool that enables users to:

- *Maintain model data aligned with external sources*
 - Get raw data from external data source via adapters
 - Transform data using XLST Transformation library
 - Map data to the model objects and load into the model
- *Export and publish model data*
 - Unload data from the model, using custom filters
 - Transform data using XLST Transformation library
 - Upload external databases, post data to cloud systems or send files to external folder data to destination

-
- *Manage operations*
 - Back up data
 - Schedule the data flows to be executed
 - Review audit logs
 - Configure email notification alerts

DT offers a number of ready-to-use standard adapters that cover a wide number of integration needs. This enables the application of a standard approach to integration requirements.

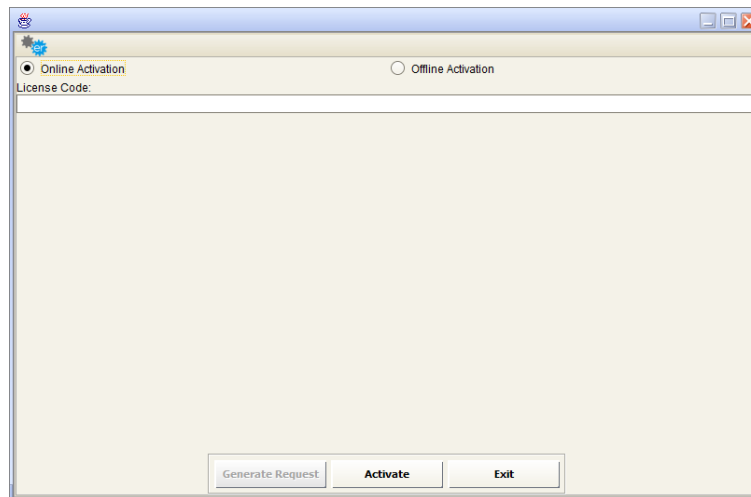
To ensure safe data operations, all updating activities are performed using standard APIs, and are preceded by data mapping and consistency checks. A user operation log, e-mail notification, scheduled operation log and system log are also provided (sever errors are notified via e-mail to system administrator).

DT stores all the necessary settings (environment parameters, access control and profiling, job scheduling, workflows, adapter parameters and rules for file handling) in an embedded database (users do not need to interact with this database directly, a tool administrator may do).

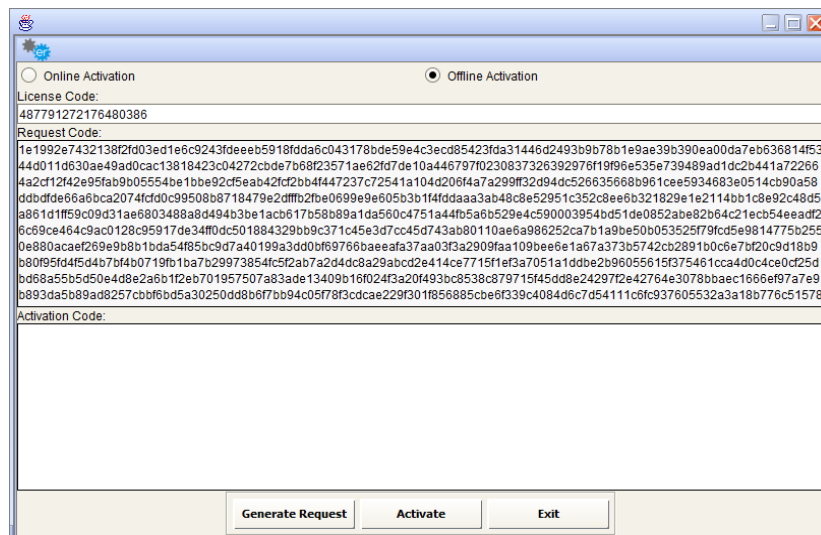
User may interact with the tool during workflow testing activities, checking data previews and if necessary, discarding the updates.

Licensing


If no valid license is found on the system, the user is required to provide a license key when DT starts.



For offline licensing, a request code must be generated. This window should not be closed until the product activation is complete, as a new request would otherwise need to be generated.



This code should be sent to erwin support, who will in turn provide an activation code specific to the request. This code should be used to activate the product. The activation code used must be specific to the request code provided to support; generating a new request code would necessitate a new activation code.



☐ Online Activation
 ☒ Offline Activation

License Code:
 487791272176480386

Request Code:
 dc879521141be08c7acc4b074aef9a9b579ce21aeda5ecd0a4256707178357c3040cda8681f615786665fce809b78e0b21ac748abbea7bcd2fdff6b95d0b843e1b7a07619f2805c5bd3b9c0d1fb1433eaa4a4f0e642dc0acc8df183a583c20b493aa7ba39f929bcb3df478e56bd449180e707b1a6bdcc5638067c0e564901ec5b0e2f5719e9d48902f839ee103fca67c3afdad02503c79f17c3bf439322f62e6a0217e568af9dbd15e0b3a10b561f88f8973655b54d0132ed90772358544766aab9a9166025a60adda451368a254dd4689df250d2a7c72ea7afb095f6ef0489d90a66ec1be36549b4043dcf79fdf2fd2ffe906121c4f37177c88e1e47592a9e0379dbce9a1dde4328827936999ebe4ee67db3dfa96fee8ed802f63354e36f0d241a80e332cedde976641b087795420353366501dec6ca8cd8a3823674ec02e13d9d764ce334c9acbd20e491a43ed875ef0d58bbd5a65d2887bd9c34c674191e1cba36d3679f119f6d9b7b0de20e0c45d9064bb054a1316d0aa0db02344c7e4a604b2c4b389dfccbb36e254dbcb0a02628ff20c57dd44f91a0fb5a156e20a5482faa0f6166fd36e2e173321baa61d6a743be393ae7b24ca1e539ba354f62f1f1ac7d6fec9ecd45aabcaa2a723384a09144cd5521918a15b44802fa25b23fd41839c65daea8c76a47e3cdd4d2394f767705fffd85ff9956bbc31a336b457969e18878083878214e621effc08390b800ac3abd2e6e2b0f4cf9de6c503f9d4397819bd4f02886731ed9a8df13c16b0805a07b8294151ad9d2c49b6f14409510bf2574bc5b374bc6a77c71f797a

Activation Code:
 226ddbcb6debeaad9cf6ffad7ff042aa71d9d05cf23fb40266ad04779a79dadfd634856299a1d168139ab6e972dce76dd0439ef5d6130cd9c72a9afed7ba5b6a454ba04fe779af92da1d28092f358580a952936f015ec25bcfb140c64afb8e82b6bc7036652eee84c9e07794127dd30c34413d03cdf1016c7a11573ba5f3d9392fdee9a0bf33a2baef5667c05155090acfb7897fc54b502033026f71aec294a994bb642bb9ba099bf628390f57a343b280d27118ea0898c97ff49f2288dcb377d8e9c468c0fc41f8383089113dc7c16c4a5e216b22d70176c654ebb6d9713919eca7f2d16d6f0f8fc1d07710d8527c98aace2f12b376377bb34802a91ceea8aac4ed725da10ece51c1c1c56569fcc87179bb747cd278270388e3036b7d1a939ece360c26e073289886c9d3b6223824c1a1c4ccca284f89e40dd2273c6598857d1f6ed0f068b1a1d85be0757dc5c6e577963ad10dbfdcaab9149517f1870fe14f584855e1af2f3c7f342be67b637e00ec8d4f39d6d5bf1e177aa5732d053f953afa83f564fd1a1c1b66860ccdb14b32b7bd6653b7c7553d56001079b4af582b271c1d982a53bab0034f0ae3a575810a99fbde55f1758314972e3d5183a3bdeea6c7b49960766c7e8b3d5dc34f01a83317faeedaf5b12bc1f3ea306274854ffb166cdea84428c58223dc6aeb13cbb3e88c6c99fd227955ad5b5f86741bc7f3027ad66da483c1594954c95dab4522260acdf4909cad1d64045b5789c53458905aeedd48f00873287915852c1a3537837c5ba3716f90bbeae4fc39b4293b383186e11208f3fe4306f6fe2ef9d12

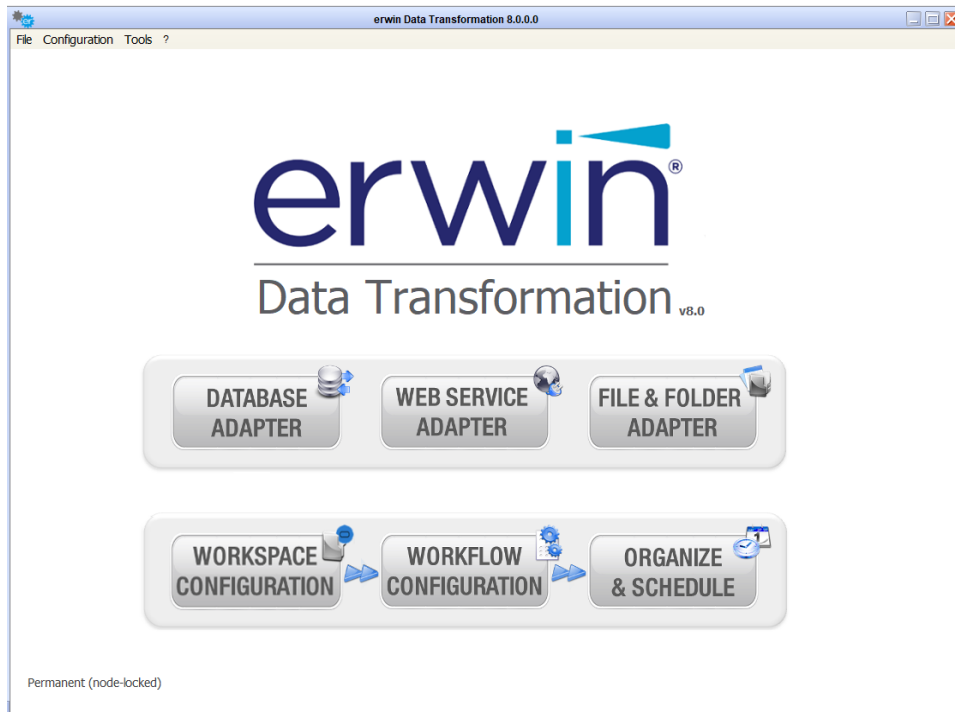
Generate Request

Activate

Exit

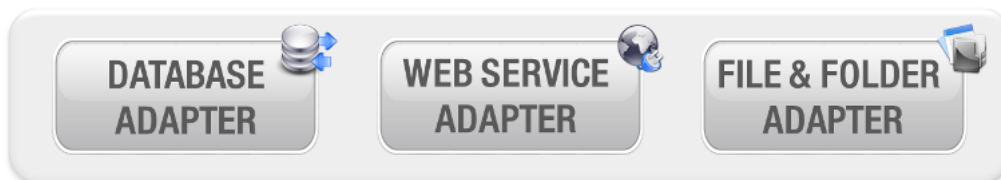
Home page

The home page allows the user to select the operation by clicking on the buttons or selecting from the menu at the top of the window.



Operations are logically divided into 2 groups:

- *Setting adapters:*



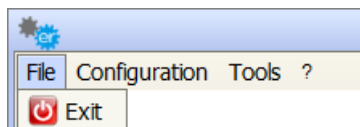
- *Define model (or workspace) configuration, workflow (data flows) configuration and schedule of the jobs/job sequences.*



The same operations are available from the menu bar, as explained in following paragraphs.

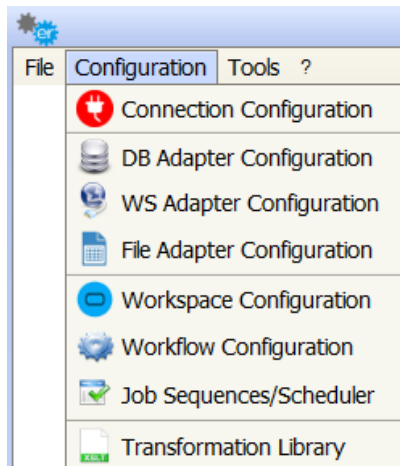
File Menu

This menu is used to close the application.



Configuration Menu

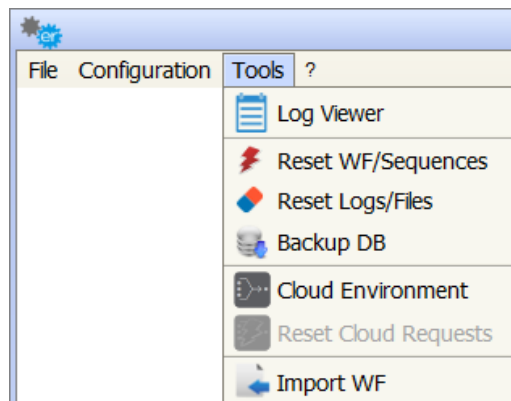
This menu provides access to add/delete/modify the settings for the following operations:



- Connection Configuration
- Adapter Configuration (DB, WebService or File Adapter)
- Model/Workspace Configuration
- Workflow Configuration
- Job Sequences/Scheduler
- Transformation Library

Tools Menu

This menu provides access to the application log viewer. Additionally the user can reset sequences that are running, reset logs, delete workflow files, backup CC database and import workflow from the CC workflow export file – see [Utilities](#)

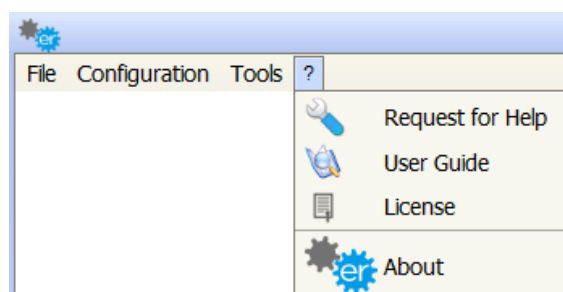


“Cloud Environment” and “Reset Cloud Requests” items refer to external environment configuration and operations – See [Running DT from Cloud Platform](#)

Help Menu

This menu provides information and tools:

- Request for Help on a given workflow – see [Utilities](#)
- DT User Guide (PDF)
- License
- About, DT version, build and type of license



Adapters Configuration

Adapters are tools used by DT to “GET” data from the external world (databases, web services, folders and files) or to “PUT”, or send data to the destination. “GET” adapters can be used as a data source when configuring a workflow; “PUT” adapters can be used as a workflow operation target (see later). Any time a “GET” adapter is created, a job is also created, in order to be scheduled and produce its dataset (triggering all the workflows which use that dataset as source). A “PUT” adapter cannot be scheduled, as its execution is triggered by the execution of workflows using it as target.

DB Adapter Configuration

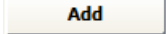
Going through this configuration window, the user can set up an adapter to be used as data source or operation target in a workflow. It's possible to:

- Execute a **query** on a specified relational database to use the result set as data source in a workflow
- Execute a **stored procedure** with the proper parameters to use the output file as a data source in a workflow
- Configure a **DB loader** to be used as the operation target in a workflow
- Execute a **query** on a MongoDB database to use the result set as data source in a workflow

The first group of fields in the window is the DB Adapter List, which lists all the DB Adapters available. The second group is the General Parameters, which include the Name, Description, Type and DB Adapter folder; all these fields are mandatory.

The third group is the Connection Parameters, which includes all the parameters needed to connect to the Data Base and finally the last group is the DB Adapter Parameters, which describes the query or the Stored Procedure and its parameters.

Add or Modify DB Adapter

To create a new DB Adapter just press the  button and start editing the new adapter parameters.

Alternatively modify an existing adapter, simply selecting from the list – the parameters are always in edit mode.

The name, description, type and folder (used to save intermediate and result files for adapter execution) of the DB adapter are the first fields to enter in the form; then for any type of DB Adapter the user must provide connection parameters and adapter details as described below.

DB Adapter Configuration

Name	Type	DB Type	Id

General

Name: MySQL CMDB Description: Type: DB Query Folder: C:\Users\Alessio\Documents\ADAPTERS

Connection Parameters

DB Type: MySQL
 Driver: MySQL Connector
 Server Name: 127.0.0.1
 Port Number: 3306
 Database name: test
 User: root
 Password: ****

DB Adapter Parameters

Query:

```
SELECT
    ID_APPLICATION,
    TXT_APPLICATION_NAME,
    COD_APPLICATION,
    DESCR_APPLICATION,
    ID_STATE,
    DE_STATE,
    MAIN_TECHNOLOGY,
    TXT_SERVICE_NAME
FROM
    APPLICATIONS,SERVICES,STATES
WHERE
    APPLICATIONS.FK_SERVICES = SERVICE.ID_SERVICE AND
    APPLICATIONS.FK_STATES = STATES.ID_STATE
```

Buttons: Add, Delete, Test Connection, Test, Save, Cancel, Exit

Connection Parameters

In the Connection Parameters pane the user has to provide all the parameters needed to set up the connection with the database. In order to check if a connection can run correctly, press the

Test Connection

button.

Then, depending on what has been selected in the drop-down list named Type (Stored Procedure, DB Query, DB Loader and NoSQL DB Query) the DB Adapter Parameters section shows the following.

Stored Procedure

When the field “Type” is set to “Stored Procedure”, then two other fields are highlighted:

- The field “Stored Procedure name” that has to be filled with the stored procedure name
- The field “Parameters” that has to be filled with the list of all the parameters separated by commas and optionally enclosed by quote (e.g. the same way the stored procedure could be called from outside DT, like a DB Client).

Name	Type	DB Type	Id
SOGEI_DELTADB_RELAZIONI	DB Query	SQL Server	914
STORED PROCEDURE for SERVICES	Stored Procedure	SQL Server	315
SVC_CATALOG_DB_LOADER	DB Loader	SQL Server	714

General
Name: STORED PROCEDURE for SERVICES
Description: xxx
Type: Stored Procedure
Folder: C:/Users/csalaris/Documents/ADAPTERS

Connection Parameters
DB Type: SQL Server
Driver: SQL Server 2005
Server Name: CLAUDIAMOBILE
Instance Name:
Port Number: 1433
Database name: EADB
User: eadbuser1
Password: *****

Stored Procedure
Name: servicesToFile
Parameters: C:/TEMP, 'sp_1.csv'

Add Delete Test Connection Test Save Cancel Exit

To be used as data source adapter in DT, stored procedures must produce a CSV file containing a data set; this means that at least two parameters are required (folder as the first parameter and file name as second), so that DT knows and accesses the resulting dataset.

For example, if an external database contains a stored procedure named “servicesToFile”, which accepts two parameters “folder” and “filename”, then the parameters text area must be filled with the folder path enclosed by quotes.

DB Query

When the field “Type” is set to “DB Query”, then the “Query” field is highlighted. In this field, the user has to write the query to be run by the Database.

DB Adapter Configuration

Name	Type	DB Type	Id
MY ADAPTER	DB Query	ORACLE	255
MY SQL APP CATALOG	DB Query	MySQL	298
MY SQL APP CATALOG_DISMISSED	DB Query	MySQL	10...

General
 Name: MY SQL APP CATALOG Description: ccc Type: DB Query Folder: C:/Users/csalars/Documents/_ADAPTERS

Connection Parameters
 DB Type: MySQL Driver: MySQL Connector Server Name: localhost Port Number: 3306 Database name: test User: root Password: *****

DB Adapter Parameters
 Query:

```
SELECT
  ID_APPLICATION,
  COD_APPLICATION,
  TXT_APPLICATION_NAME,
  DESCR_APPLICATION,
  ID_STATE,
  DE_STATE,
  TXT_SERVICE_NAME
FROM
  APPLICATIONS,
  SERVICES,
  STATES
WHERE
  APPLICATIONS.FK_SERVICE = SERVICES.ID_SERVICE
  AND APPLICATIONS.FK_STATE = STATES.ID_STATE
```

Add Delete Test Connection Test Save Cancel Exit

In order to check if the previous DB query is written correctly, press the **Test** button. This opens a new window that contains the result set obtained from running the adapter.

The result set is paginated in groups of 50 records. Use the side window arrows to go up and down the list.

Adapter Preview

Adapter Preview:
MY SQL APP CATALOG

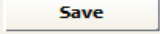
ID_APPLICATION	COD_APPLICATION	TXT_APPLICATION_N...	DESCR_APPLICATION	ID_STATE	DE_STATE	TXT_SERVICE_NAME
26	H65	Mailing List	index_definitions_depl...	6	Production	Mailing List (T66)
2	L99	IP Phone System	The primary objective...	6	Production	VOIP svc (H65)
3	F33	Fleet Management		9	Dismissed	Repository (B31)
4	B72	SAP Financials	It is based on the sta...	6	Production	SAP SVC (L13)
5	A23	Order to Cash	The new version's sig...	6	Production	Sales and Customer S...
6	W32	Stock Control System		6	Production	Workflow4logistic (C12)
27	A65	Project Management ...		3	Test	PPM service (P09)
28	C50	EA Repository		6	Production	Repository (B31)
13	K51	Order Processing Syst...		8	To be dismissed	ERP Service order pro...
20	T43	Customer Care System	The Customer Care a...	6	Production	Sales and Customer S...
29	C99	Who's Who	Assesses whether a gi...	6	Production	Sales and Customer S...

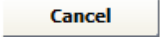
Page 1 of 1 (1-11)

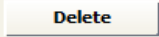
Exit

DB Loader

When the field “Type” is set to “DB Loader”, then the entire DB Adapter Parameters section is disabled. All the mapping parameters between source and target data structure, needed to upload a table in the externals database, will be provided in the workflow operation configuration (see later).

For every type, to save the new DB Adapter just created, press the  button. The adapter will be saved and added to the DB Adapter List at the top of the window. Only if the Test Connection (and query execution, for that type) have valid results, the DB Adapter will be saved.

To cancel the adapter data just entered and to reset the window, press the  button.

To delete an existing adapter, just select it and press the  button. It will be permanently removed from the DB Adapter List.



All the items linked to the deleted DB adapter (job and workflows that use it as source) are also removed.

The  button closes the window.

NoSQL DB Query

When the field “Type” is set to “NoSQL DB Query”, then the “Query” field is highlighted. In this field, the user has to write the query to be run by the MongoDB Database and MongoDB item is selected in the “DB Type” dropdown list. The query must be written using SQL syntax; examples of supported SQL functions are:

- `select object.key1, object2.key3, object1.key4 from my_collection where object.key2 = 34 AND object2.key4 > 5`
- `select * from my_table where date(column,'YYY-MM-DD') >= '2016-12-12'`
- `select * from my_table where date(column,'natural') >= '5000 days ago'`
- `select * from my_table where regexMatch(column,'^[ae]gaf]+$') = true`
- `select distinct column1 from my_table where value IS NULL`
- `select * from my_table where value LIKE 'start%'`

- *select column1 from my_table where value IN ("theValue1","theValue2","theValue3")*
- *select column1 from my_table where value NOT IN ("theValue1","theValue2","theValue3")*
- *select column1 from my_table where column = true*
- *select borough, cuisine, count(*) from my_collection WHERE borough LIKE 'Queens%' GROUP BY borough, cuisine ORDER BY count(*) DESC;*
- *delete from my_table where value IN ("theValue1","theValue2","theValue3")*

In the Connection Parameters, user is asked for: Connection String, Database name and Password. For local connection, Connection string is usually *mongodb://127.0.0.1:27017*, while for cloud connections, Connection String can be automatically retrieved from the Connect button inside MongoDB web console. Connection String samples are:

```
mongodb://myusername:<PASSWORD>@cluster0-shard-00-00-pncrc.mongodb.net:27017,cluster0-shard-00-01-pncrc.mongodb.net:27017,cluster0-shard-00-02-pncrc.mongodb.net:27017/admin?replicaSet=Cluster0-shard-0&ssl=true
```


and

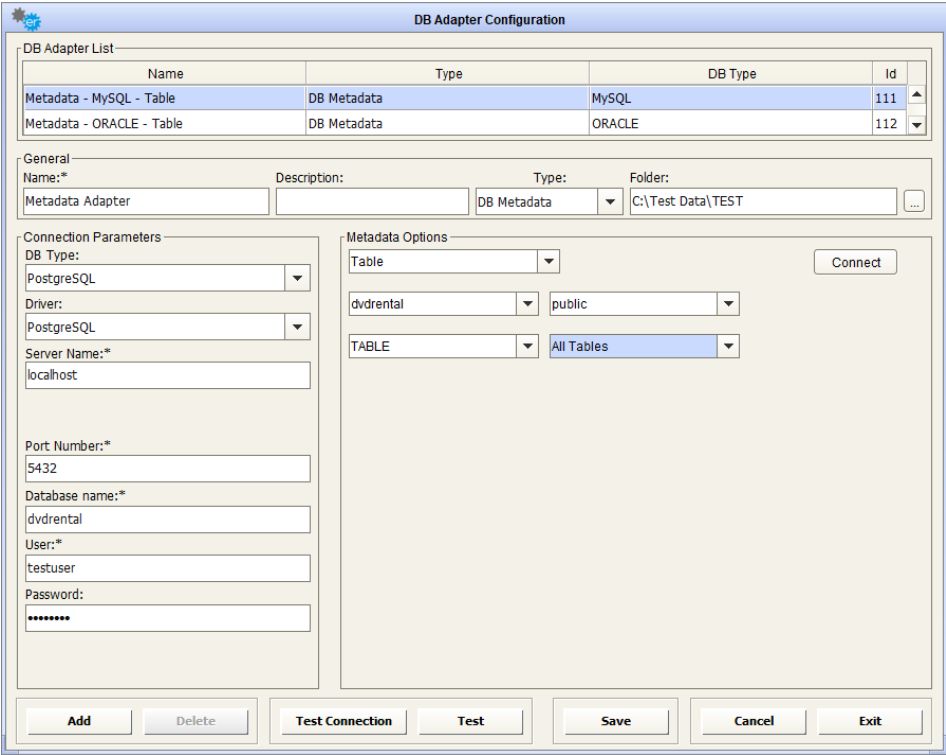
```
mongodb+srv://myusername:<PASSWORD>@cluster0-pncrc.mongodb.net/test
```

The user can replace <PASSWORD> wildcard with the real one or can keep <PASSWORD> wildcard in the Connection string and provide the encrypted password in the "Password" field.

DB Metadata

Setting the “Type” field to “DB Metadata” allows metadata to be retrieved from an SQL databases.

If the “Connection Parameters” are valid, clicking the  button will result in options being displayed for filtering the results by catalog name, schema, table name, and/or table type, as appropriate to the database type and requested metadata type.



The DB Adapter Configuration dialog box is shown. It contains a table with two rows of metadata adapters. Below the table are sections for General information, Connection Parameters, and Metadata Options. The General section includes fields for Name, Description, Type, and Folder. The Connection Parameters section includes fields for DB Type, Driver, Server Name, Port Number, Database name, User, and Password. The Metadata Options section includes dropdowns for Table, Catalog, Schema, and Table Type, along with a Connect button. At the bottom are buttons for Add, Delete, Test Connection, Test, Save, Cancel, and Exit.

Name	Type	DB Type	Id
Metadata - MySQL - Table	DB Metadata	MySQL	111
Metadata - ORACLE - Table	DB Metadata	ORACLE	112

General

Name: Metadata Adapter Description: Type: DB Metadata Folder: C:\Test Data\TEST

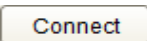
Connection Parameters

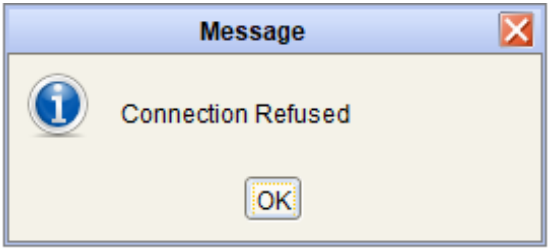
DB Type: PostgreSQL Driver: PostgreSQL Server Name: localhost Port Number: 5432 Database name: dvdrental User: testuser Password: *****

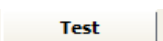
Metadata Options

Table: Table Catalog: dvdrental Schema: public Table Type: TABLE All Tables

Buttons: Add, Delete, Test Connection, Test, Save, Cancel, Exit

If the a connection cannot be established, clicking the  button will result in a “Connection Refused” message being displayed.



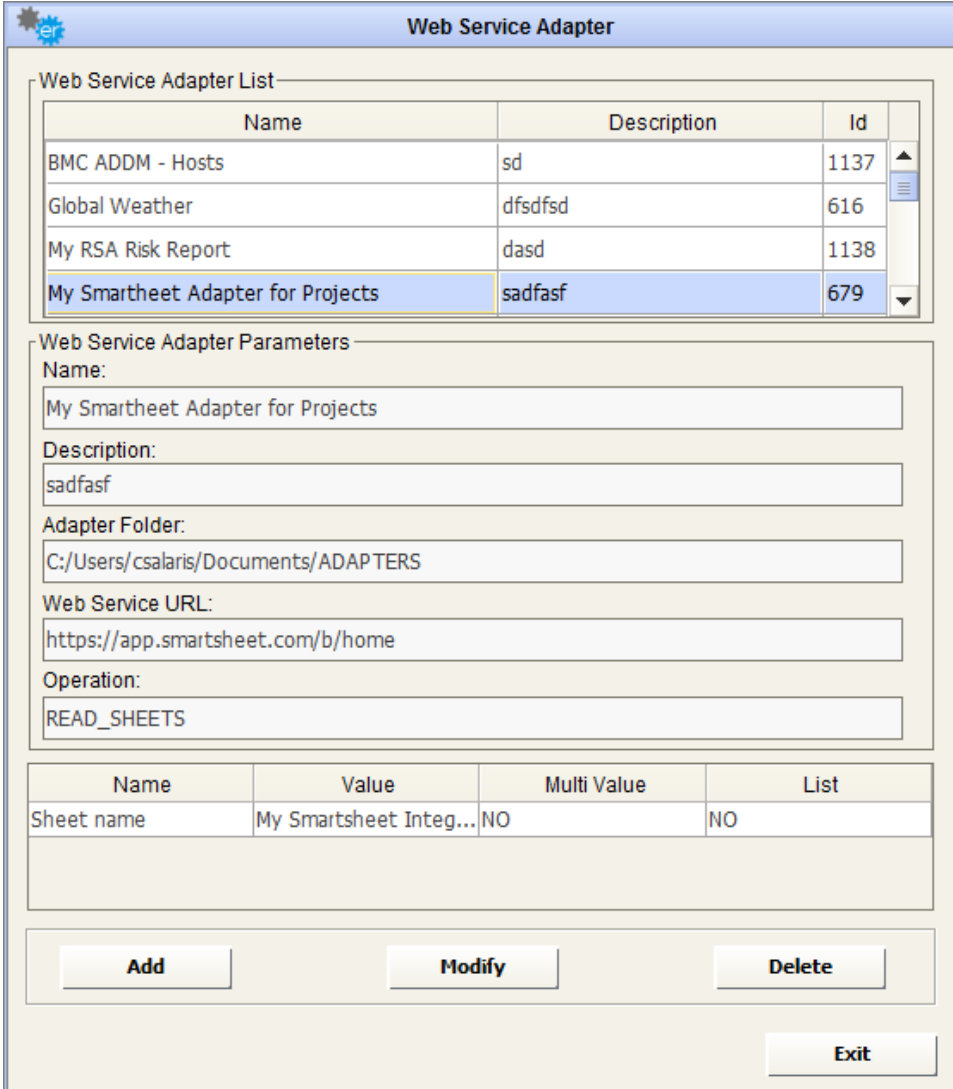
The first 50 results can be previewed by pressing the  button.

Adapter Preview					
Adapter Preview:					
PostgreSQL Example					
Database	Schema	Table Name	Table Type	Decription / Remarks	
dvdrental	public	actor	TABLE		
dvdrental	public	address	TABLE		
dvdrental	public	category	TABLE		
dvdrental	public	city	TABLE		
dvdrental	public	country	TABLE		
dvdrental	public	customer	TABLE		
dvdrental	public	film	TABLE		
dvdrental	public	film_actor	TABLE		
dvdrental	public	film_category	TABLE		
dvdrental	public	inventory	TABLE		
dvdrental	public	language	TABLE		
dvdrental	public	payment	TABLE		
dvdrental	public	rental	TABLE		
dvdrental	public	staff	TABLE		
dvdrental	public	store	TABLE		
dvdrental	public	actor_info	VIEW		
dvdrental	public	customer_list	VIEW		
dvdrental	public	film_list	VIEW		

Page 1 of 1 (1-22)
Exit

Web Service Adapter Configuration

Going through this configuration window, the user can set up an adapter to execute a connection with a known Web Service.



The image shows a software window titled "Web Service Adapter". It contains three main sections:

- Web Service Adapter List:** A table with columns "Name", "Description", and "Id". It lists four adapters, with "My Smartheet Adapter for Projects" selected.
- Web Service Adapter Parameters:** A form with fields for "Name", "Description", "Adapter Folder", "Web Service URL", and "Operation", all populated with data from the selected adapter.
- Input Parameters Table:** A table with columns "Name", "Value", "Multi Value", and "List", showing one row for "Sheet name".

At the bottom, there are buttons for "Add", "Modify", "Delete", and "Exit".

Name	Description	Id
BMC ADDM - Hosts	sd	1137
Global Weather	dfsdfs	616
My RSA Risk Report	dasd	1138
My Smartheet Adapter for Projects	sadfasf	679

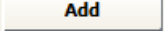
Name	Value	Multi Value	List
Sheet name	My Smartsheet Integ...	NO	NO

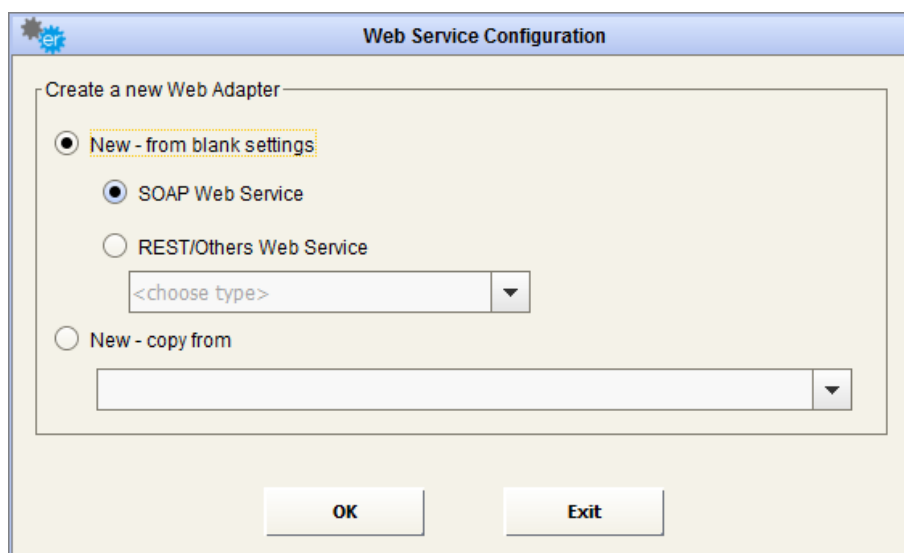
The first group of fields in the window relate to the Web Services Adapter List, which lists all the available adapters. For each adapter selected in the list, the Web Services Adapter Parameters fill the second group of fields, which describe the Web Service connection parameters and the third group of fields show the expected input parameters for the execution of the adapter.

When adding a new one, it's possible to choose between:


- **SOAP** Web Service
- **REST**/others specific adapters, from supported third party systems

Add or Modify SOAP Web Service Adapter

To create a new adapter just press the , and select "SOAP Web Service" in the following popup:





The dialog box is titled "Web Service Configuration". It contains a section "Create a new Web Adapter" with three radio buttons: "New - from blank settings" (selected), "SOAP Web Service", and "REST/Others Web Service". Below the "REST/Others Web Service" button is a dropdown menu with the text "<choose type>". Below the "New - copy from" radio button is a text field with a dropdown arrow. At the bottom are "OK" and "Exit" buttons.

To modify an existing adapter selected from the list, press the . An editing window pops up.

The same pop up window applies in both cases. The fields will be empty if the user is creating a new adapter. The same fields will contain data, if the user is going to modify an already existing adapter.

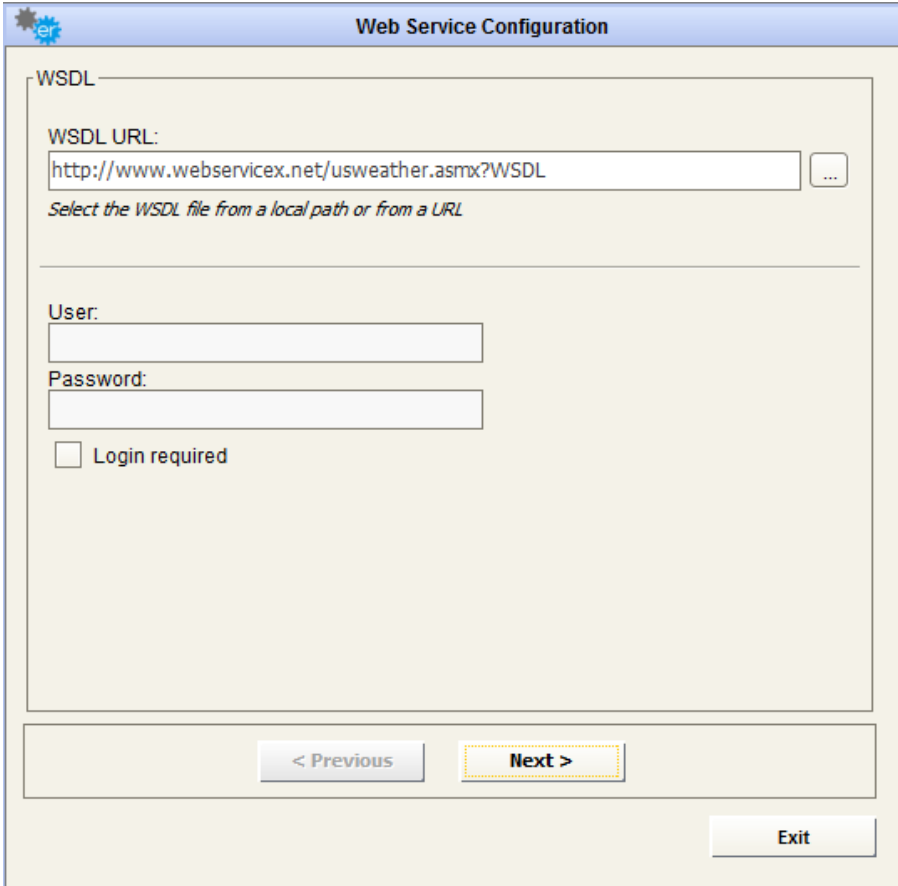
The first group of fields concern the WSDL Parameters while the second group allows the user to specify login parameters, if required.

The first field contains the URL of the WSDL file that should apply for the Web Service. The side button  of the first field allows navigating into the file system and selecting the WSDL file from a local path.

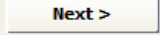
Should the Web Service require a login (username and password) to the WSDL server, a flag in the checkbox  **Login required** will enable the related fields allowing entry of the credentials.

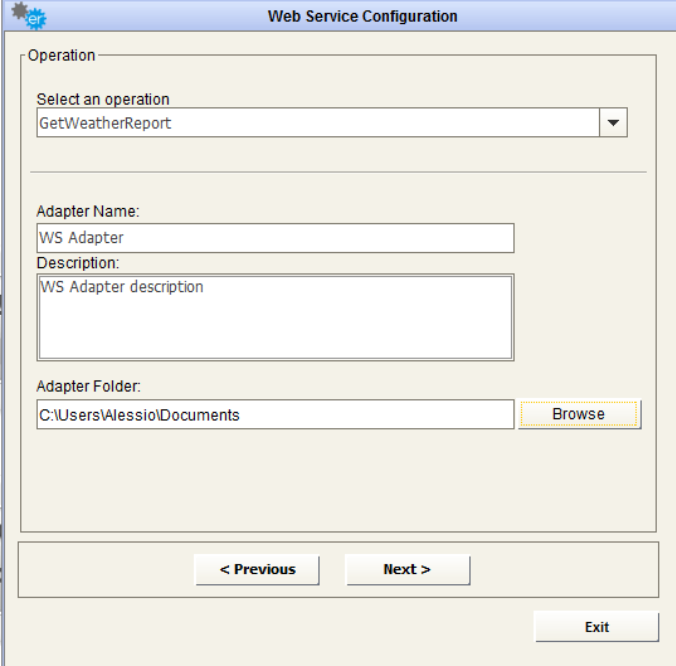


Note that this authentication only applies to the WSDL server and not to the web service operation – operation authentication is not supported at the moment.



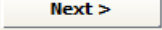
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into two sections. The top section is labeled 'WSDL' and contains a 'WSDL URL:' label, a text box with the URL 'http://www.webservice.net/usweather.asmx?WSDL', and a small button with three dots. Below the text box is the instruction 'Select the WSDL file from a local path or from a URL'. The bottom section contains a 'User:' label, a text box, a 'Password:' label, another text box, and a checkbox labeled 'Login required'. At the bottom of the dialog are three buttons: '< Previous', 'Next >', and 'Exit'. The 'Next >' button is highlighted with a dashed border.

The  button steps into the next window that shows all the available operations of that Web Service.

The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is labeled 'Operation' and contains a drop-down menu with 'GetWeatherReport' selected. Below this is a section for 'Adapter Name:' with a text box containing 'WS Adapter', and 'Description:' with a text box containing 'WS Adapter description'. The third section is 'Adapter Folder:' with a text box containing 'C:\Users\Alessio\Documents' and a 'Browse' button. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

The first field of the window is a drop-down list that contains a list of the operations available for the selected Web Service.

After selecting the desired operation it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to choose the values for the Web Service parameters.

If the Web Services has no parameters the user can leave the fields empty in the following wizard window.

The dialog box is titled "Web Service Configuration". It contains a table with the following data:

Type	Attribute Name	Attribute Value	isList
class java.lang.String	ZipCode		false

Below the table, there is a section for the selected parameter "ZipCode". It includes a checkbox labeled "Multi value with newline separator" which is currently unchecked. A text field labeled "Value(s):" contains the text "00144". To the right of this field is an "Enter" button. Below the text field is a "Modeler Objects" button. At the bottom of the dialog are four buttons: "< Previous", "Test", "Save", and "Exit".


The first field shows the list of the Web Service parameters, as read from the WSDL:

- Type of parameter (Type),
- Attribute Name (Class Name),
- Attribute Value (Value),
- Capability to accept list of values, as defined in WSDL (isList)

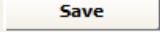
For each of the shown parameters, a value can be entered into the multiline text field, while the parameter is selected in the list above.

The  button sets the entered data.

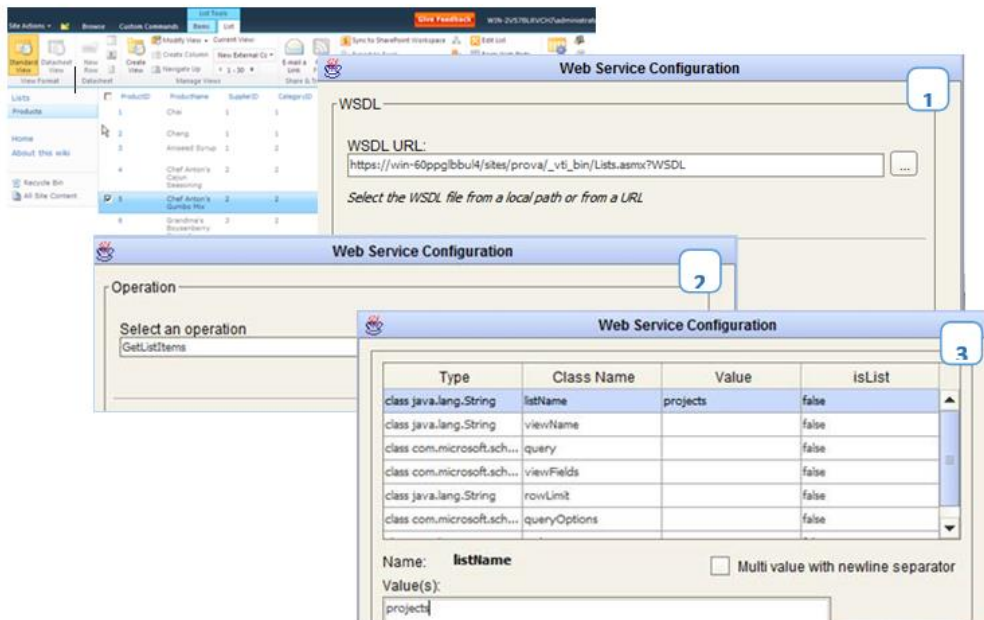
If a parameter is actually a list of values (column "isList" is true), then the user is required to optionally enter different values, separated by a new line (one per row). In this case, DT will call the Web Service only once, passing to it the multi-line string, containing the different values.

If a parameter natively does not allow a list of values (column "isList" is false), but the user needs to pass more than one value to the Web Service call, selecting the option  **Multi value with newline separator**, the user is allowed to enter a list of values for the selected parameter, even if "isList" is false, with the new line as a separator.

DT will then perform all the implied calls (as many times as the number of desired values in the list) to the Web Service at the scheduled time, by scheduling just one job.

Pressing the  button will save all the changes made in the window.

One common application may be extracting information from MS SharePoint Lists, for on premise deployments. In this case, the user could configure a web service adapter to read GetListItems operation from the Lists web service, specifying as a parameter the name of the list to get data from.



After configuring the adapter, users can use it in any workflow as a source, applying for source normalization the provided parser *GetListItemResponseParser* (which may be customized in terms of extracted properties, if needed), so that the list content can be used in an end to end operation.

ID	Title	Manager	Created	Criticality	Description	End Date	Resources
1	Incident Management Optimization	Mr. Scott	2016-01-08 17:49:51	High	This project covers the incident level 1 management only. Objectives : - Guarantee a better incident record by the Call Center - Ensure the tracking between the creation, the management and the closing of the incident	2016-04-22 00:00:00	10
2	Unloading Process Optimization & Compliance	Mrs. Ross	2016-01-08 17:53:13	Low	The Unloading Process Optimization & Compliance project aims at applying some changes on the Unloading Process in order to: - Reduce the truck queue on the unloading dock and then, manage all the delivery - Comply with a Security & Safety Audit	2016-04-23 00:00:00	5
3	Enterprise Service Catalog	Mr. Downey	2016-01-21 12:43:59	Medium	This large IT program consists in formalizing the whole Enterprise Service Catalogue. The way to articulate the Catalogues should follow the Industry Best Practices and must ensure pragmatic mapping with our actual Business	2016-08-27 00:00:00	7

Test Web Service Parameters

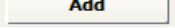
Before saving the Web Service adapter, the user can test it. Pressing the **Test** button will open a new pop-up window and the XML SOAP response resulting from the Web Service call is listed.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soap:Body>
    <GetWeatherReportResponse xmlns="http://www.webserviceX.NET">
      <GetWeatherReportResult><Weather><City><State><County><Country></County></City></Weather></GetWeatherReportResult>
    </GetWeatherReportResponse>
  </soap:Body>
</soap:Envelope>
```


The **Exit** button closes the data preview window and goes back to Web Service configuration form.

If you have not saved before testing the Web Service Configuration, remember to press the **Save** button, before leaving the parent window and all the entered parameters will be stored into the DT databases.

Add or Modify REST/others Web Service Adapter

To create a new adapter just press the , and select “REST/Others Web Service” in the following popup:



To modify an existing adapter selected from the list, press the . An editing window pops up.

BMC Discovery

To use the adapter for **BMC Discovery**, fill the field “Web Service Home URL” with the SmartSheet home page URL you want to connect to. Then provide the **username** and **password** for a valid BMC Account or an **access token** to connect. To generate an access token, please refer to BMC Discovery System Administrator

Web Service Configuration

Web Service Home URL:
 ...

☒ **Account** ☐ Access Token

User:

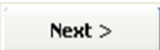
Password:

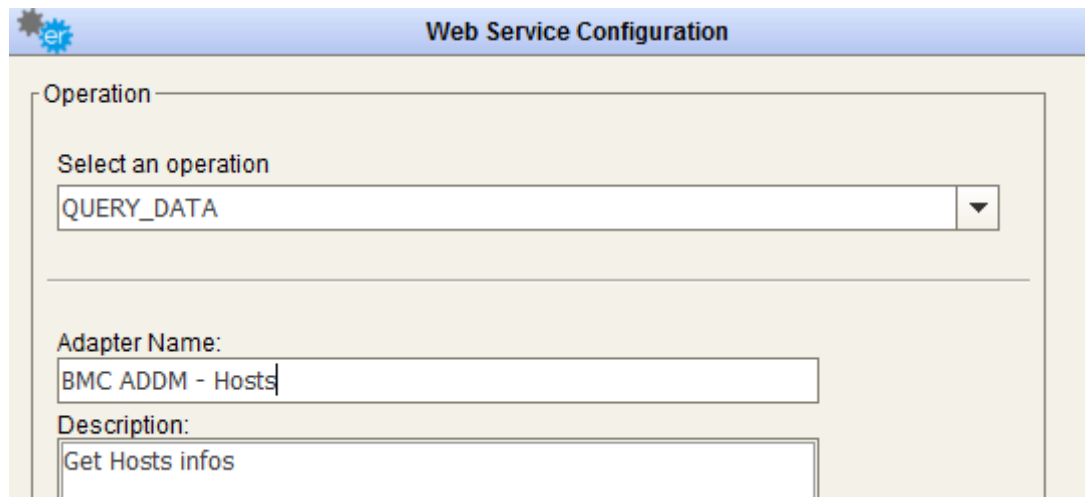
Web Service Configuration

Web Service Home URL:
 ...

☐ Account ☒ **Access Token**

Access Token:

The  button steps into the next window that shows the available operation of that Web Service, which is **"QUERY DATA"**, allowing users to query all data stored in the repository



Web Service Configuration

Operation

Select an operation

QUERY_DATA


Adapter Name:

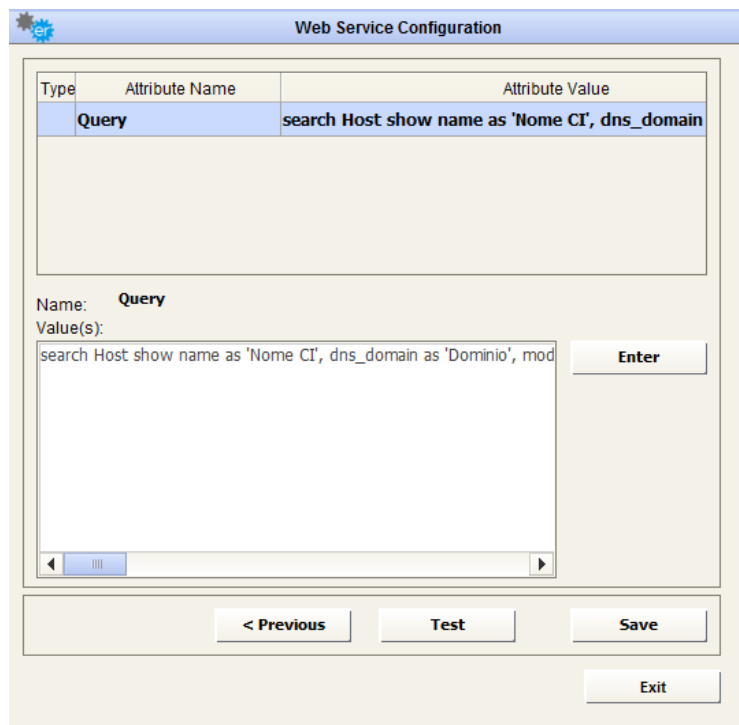
BMC ADDM - Hosts

Description:

Get Hosts infos

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.



Web Service Configuration

Type	Attribute Name	Attribute Value
Query		search Host show name as 'Nome CI', dns_domain

Name: **Query**

Value(s):

search Host show name as 'Nome CI', dns_domain as 'Dominio', mod

Enter

< Previous Test Save Exit

Test

Pressing the **Test** button will open a new pop-up window. The response resulting from the Web Service call is displayed.

Nome CI	Dominio	Modello	Tipo CPU	Numero C...	RAM Fisica	S.O.	Kernel	Versione ...	Hardware ...	Virtual	Partition	Indirizzi IP	Alias DNS
adscprvw	aceaspad...	VMware ...	Intel(R) X...	1	1024	Microsoft...	Uniproc...	Server 20...	VMware, ...	true		10.55.21...	
ahcmpr...	aceaspad...	VMware ...	Intel(R) X...	2	4096	Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.21...	portalem...
webato2...	aceaspad...	VMware ...	Intel(R) X...	4	4096	Microsoft...	Multiproc...	Server 20...	VMware, ...	true		10.55.21...	min...
ahqmspra...	aceaspa.it	VMware ...	Intel(R) X...	1	4096	Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		172.16.7...	ahqmspra...
ahs4ypa...	aceaspa.it	VMware ...	Intel(R) X...	1	2048	Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		172.16.7...	ahs4ypa...
raepdt512		VMware ...	Intel(R) X...	4		CentOS r...	2.6.18-3...	5.9	VMware, ...	true		10.65.50...	,
ahtpwpr...	aceaspa.it	VMware ...	Intel(R) X...	2		CentOS r...	2.6.32-3...	6.4	VMware, ...	true		172.16.7...	
ahwebpr...	aceaspad...	VMware ...	Intel(R) X...	2	4096	Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.34...	acea2...
adpdcpr...		VMware ...	Intel(R) X...	2		Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.33...	
server04	aceaspad...	VMware ...	Intel(R) X...	2	2048	Microsoft...	Multiproc...	Server 20...	VMware, ...	true		10.55.21...	
ahfp8prw...		VMware ...	Intel(R) X...	2		Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.34...	documen...
coco	aceaspad...	VMware ...	Intel(R) X...	4	4096	Microsoft...	Multiproc...	Server 20...	VMware, ...	true		10.55.21...	coco.ace...
ahwebpr...		VMware ...	Intel(R) X...	2		Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.34...	acea2...
adpdcpra...		VMware ...	Intel(R) X...	2		Microsoft ...	Multiproc...	Server 20...	VMware, ...	true		10.55.34...	

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SAVE

Pressing the **SAVE** button will store all the entered parameters for the web service adapter in the DT database.

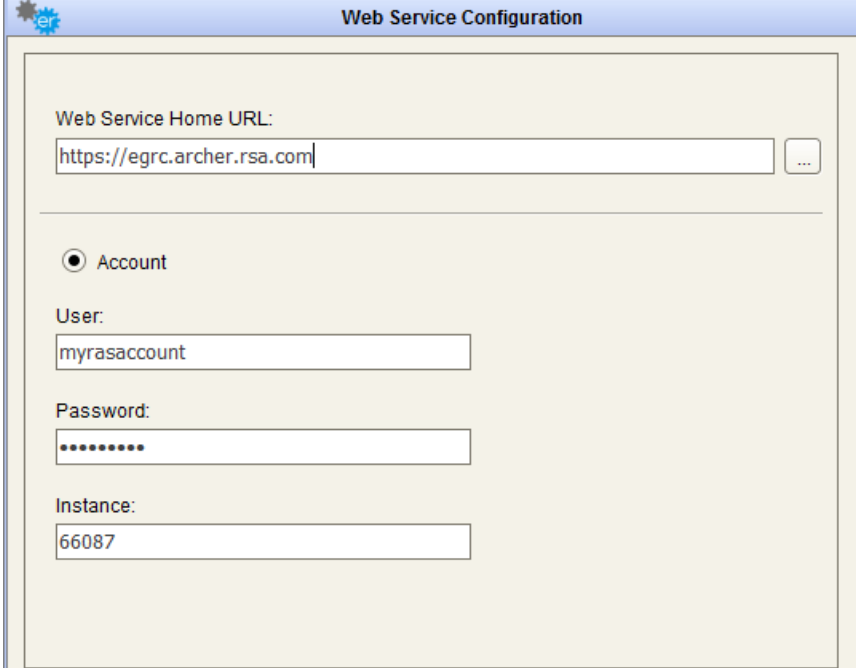
Exit

The **Exit** button closes the data preview window and goes back to Web Service configuration form.

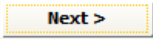
RSA Archer – VIEW REPORT

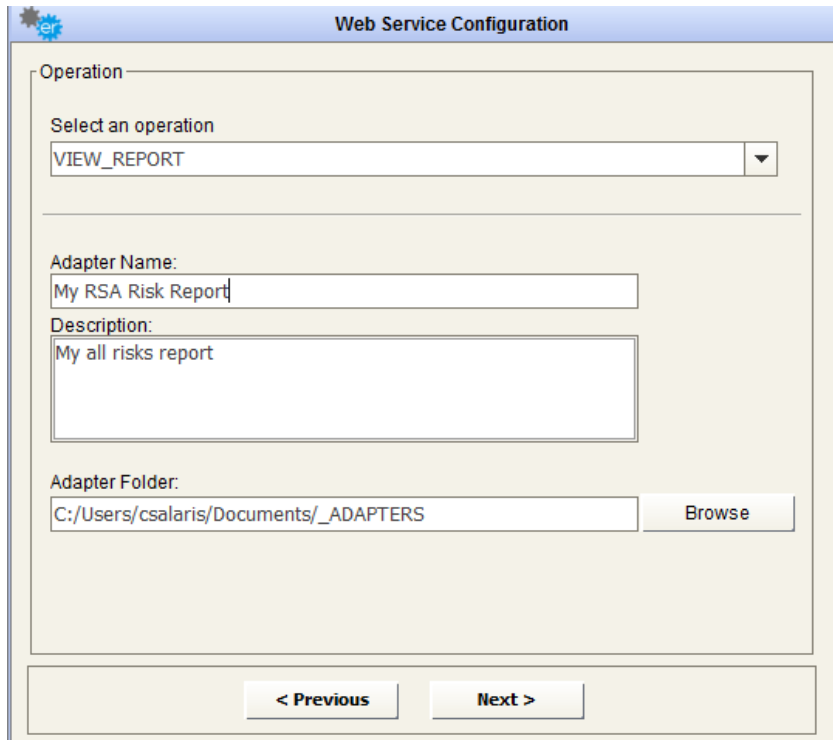
To use the adapter for **RSA Archer**, to read report contents, fill the field "Web Service Home URL" with the RSA URL you want to connect to.

Then, provide a valid instance URL and username/password to connect.




The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Web Service Home URL:' with a text field containing 'https://egrc.archer.rsa.com' and a browse button (...). Below this is a section with a radio button labeled 'Account' which is selected. Underneath are three text fields: 'User:' with 'myrasaccount', 'Password:' with masked characters (dots), and 'Instance:' with '66087'.

The  button steps into the next window that shows the available operations of this Web Service; choose “VIEW REPORT”, to query data as per RSA report definition.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu labeled 'Select an operation' showing 'VIEW_REPORT'. Below this are three input fields: 'Adapter Name:' with the text 'My RSA Risk Report', 'Description:' with the text 'My all risks report', and 'Adapter Folder:' with the text 'C:/Users/csalaris/Documents/_ADAPTERS'. A 'Browse' button is next to the 'Adapter Folder' field. At the bottom are two buttons: '< Previous' and 'Next >'.

After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.




When a lens icon shows beside the parameter name:


this means that user may set the parameter value from a list of available items.


In the case of the RSA Archer "View Report" operation, double-click on the lens icon besides "reportIdOrGuid" parameter, a popup appears, with the available reports to

query:



Web Service Configuration

Type	Attribute Name	Attribute Value
	reportIdOrGuid	



Field Values Preview

Adapter Preview:
My RSA Risk Report - reportIdOrGuid

ReportName	ReportDescription	ReportGUID	ApplicationName	ApplicationGUID
Risk With Metrics That Decreases...		d3444d55-ecfd-4335-b154-1b0...	Self-Assessment	31bc75bf-b2ec-4ea2-afbf-0711...
Risk With Metrics That Increases...		40152bb6-d070-425f-a121-460...	Self-Assessment	31bc75bf-b2ec-4ea2-afbf-0711...
Risk With Metrics That Increases...		9ef7e460-501f-46ea-a0e4-d36...	Self-Assessment	31bc75bf-b2ec-4ea2-afbf-0711...
Risk and Control Matrix	This report displays the Risk and...	2498b022-43b3-4603-abef-bbe...	Control Procedures	b8bcbfa4-37c5-4e4a-a1f6-539d...
Risk by Model Category		7b3f5d63-e242-4751-a553-43b...	Model Inventory	acf35c14-7c18-4a91-9e24-a52b...
RiskBusiness All Process Records	This report provides a list of all ...	13e05894-1185-484a-8e0c-fc1...	Business Processes	e8ee6401-b423-46c2-baec-abd...
RiskBusiness All Products and Se...	This report produces a list of vit...	f844c35c-963e-4860-8466-36b...	Products and Services	782e5dfc-3789-43e0-b8cf-bcdb...
RiskBusiness Dependent Metrics...		28fb09b1-e843-48c9-aed9-8e7...	Metrics	95049677-9da0-4687-b1e6-02...
RiskBusiness Dependent Metrics...		8dc9a319-2fa1-4639-ab56-5b2...	Performance Monitoring	2b28240c-fc6b-4c0e-8857-ef48...
RiskBusiness Product, Process, ...	This report depicts all of the Ris...	5903b928-cd85-4745-a31f-3d8...	Products and Services	782e5dfc-3789-43e0-b8cf-bcdb...
RiskBusiness Risk to Metric Map	This report provides a list of the...	01a533cb-376f-4a0f-9240-4a8a...	Risk Register	13bfb8c1-6fac-4e08-ba96-faab...
Risks - All	This report displays the Status ...	63e37893-32e3-4f85-82c3-bd8...	Risk Register	13bfb8c1-6fac-4e08-ba96-faab...
Risks Added, Changed Or Remo...		05286d31-2c26-41de-b5e3-8d...	Self-Assessment	31bc75bf-b2ec-4ea2-afbf-0711...
Risks Added, Changed Or Remo...		d69e401f-2f3f-4d71-935f-fab39...	Self-Assessment	31bc75bf-b2ec-4ea2-afbf-0711...

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Apply **Exit**

Select and apply the selection, and the desired report GUID fills the parameter value:

Web Service Configuration

Type	Attribute Name	Attribute Value
	reportIdOrGuid	63e37893-32e3-4f85-82c3-bd8f09b52355

Name: **reportIdOrGuid**

Value(s):

63e37893-32e3-4f85-82c3-bd8f09b52355

Enter

Should the provided account not be granted to read system tables (such as the one containing the list of user tables) the popup will be blank, but the parameters can always be manually filled.

Pressing the **Test** button and a new pop-up window is opened and the response resulting from the Web Service call is displayed.

Adapter Preview

Adapter Preview:

My RSA Risk Report

Business ...	Risk ID	Risk	Description	Inherent Ri...	Residual R...	Calculated ...	Status	Assesseme...	Inherent Ri...	Residual R...	Inherent Ri...	Residual R...
Legal	246904	2013 HIP...	<p> This ri...	High	High	High	Active	Qualitative...	High	High	Medium High	Low
IT Services	246905	Access Co...	<p> Opera...	High	High	High	Active	Qualitative...	High	High	High	Low
Retail Ope...	283286	Access Co...		Not Rated	Not Rated	Not Rated		Qualitative...	Not Rated	Not Rated	Not Rated	Not Rated
IT Services	246906	Access En...	<p> Applic...	Not Rated	Not Rated	Not Rated	Active	Quantitati...	Medium High	Medium Low	Not Rated	Not Rated
Finance	246907	Account F...	<p> Custo...	High	Medium Low	Medium Low	Active	Qualitative...	High	Medium Low	Not Rated	Not Rated
AlbertaEM...	246908	Account ...	The organ...	Medium High	Medium Low	Medium	Active	Qualitative...	Medium High	Medium Low	Not Rated	Not Rated
Finance	246909	Accounts ...	<p> Losse...	Medium	Medium Low	Medium Low	Active	Qualitative...	Medium	Medium Low	Not Rated	Not Rated
Alberta	246910	ACME Bro...	<p> Losse...	High	Low	Low	Active	Quantitati...	Medium High	Medium High	High	Low
Asia Pac C...	246911	Automatio...	The IT or...	Not Rated	Not Rated	Not Rated	Active	Qualitative...	Not Rated	Not Rated	Not Rated	Not Rated
Retail Ope...	281193	Bodily Inju...	<p> Loss ...	High	Medium High	Medium High	Active	Qualitative...	High	Medium High	Not Rated	Not Rated
IT Services	246912	Business C...	The organ...	Medium Low	Medium Low		Active	Qualitative...	Medium Low	Medium Low	Not Rated	Not Rated
Asia Pac C...	246920	Change M...	The IT or...	Medium High	Medium	Medium	Active	Qualitative...	Medium High	Medium	Not Rated	Not Rated
Asia Pac C...	246921	Communic...	Managem...	Medium High	Medium Low	Medium Low	Active	Qualitative...	Medium High	Medium Low	Not Rated	Not Rated
Asia Pac C...	246922	Configurati...	The IT or...	Medium	Medium Low	Medium Low	Active	Qualitative...	Medium	Medium Low	Not Rated	Not Rated

Page 1 of 1 (1-20)

Exit

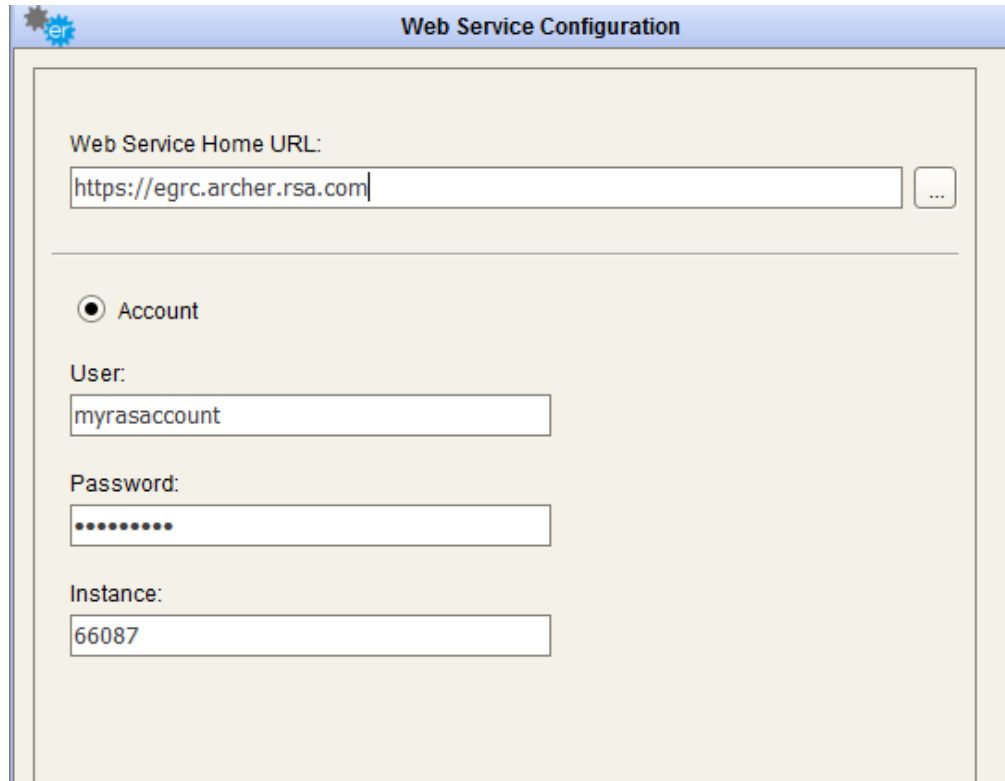
Pressing the **SAVE** button will store all the entered parameters for the web service adapter in the DT database.

The **Exit** button closes the data preview window and goes back to the Web Service configuration form.

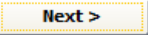
RSA Archer – EXECUTE DATA FEED

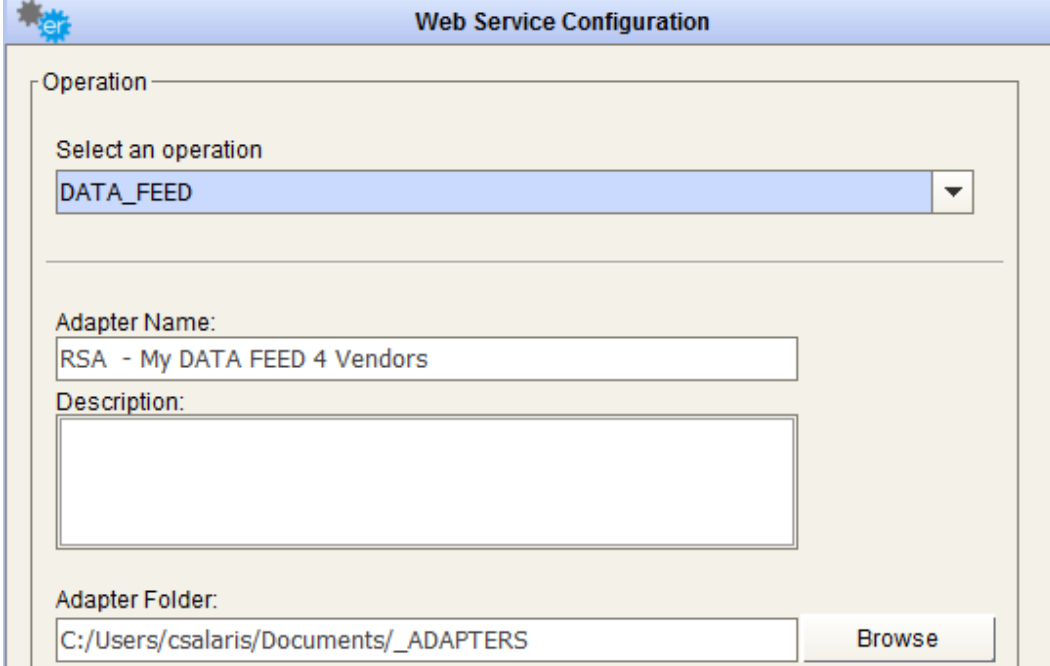
To use the adapter for **RSA Archer**, to **execute a data feed**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

Then, provide a valid instance URL and ID, username/password to connect.



The screenshot shows a 'Web Service Configuration' window. At the top, there's a title bar with a gear icon and the text 'Web Service Configuration'. Below the title bar, there's a section for 'Web Service Home URL:' with a text input field containing 'https://egrc.archer.rsa.com' and a small button with three dots. Below this, there's a section for 'Account' with a selected radio button. Under 'Account', there are three text input fields: 'User:' with 'myrasaccount', 'Password:' with masked characters (dots), and 'Instance:' with '66087'.

The  button steps into the next window that shows the available operations of this Web Service; choose “DATA FEED”, to manage data feed executions.



Web Service Configuration

Operation

Select an operation

DATA_FEED

Adapter Name:

RSA - My DATA FEED 4 Vendors


Description:

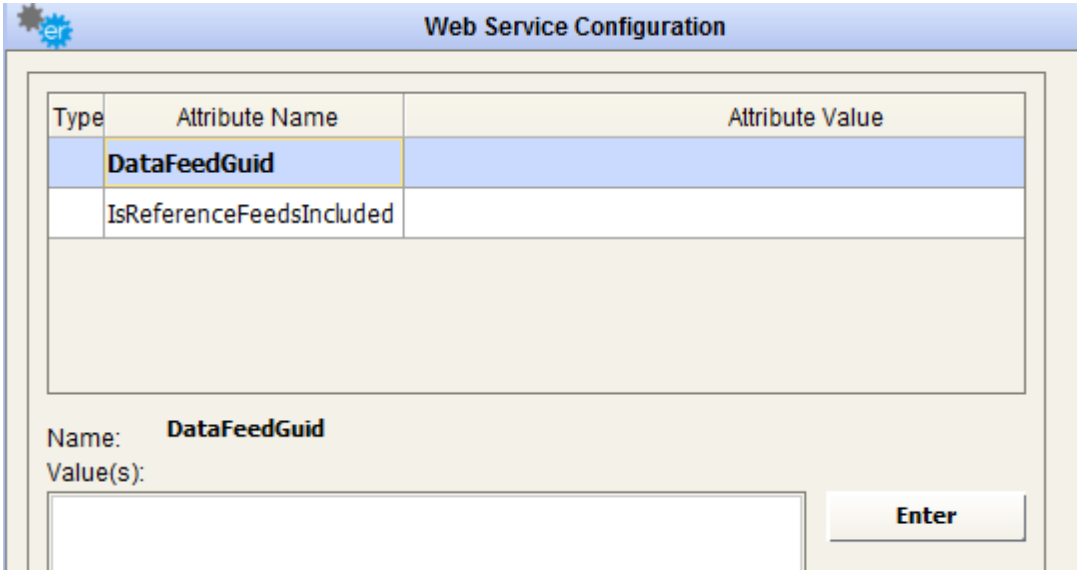
Adapter Folder:

C:/Users/csalaris/Documents/_ADAPTERS

Browse

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.




Web Service Configuration

Type	Attribute Name	Attribute Value
	DataFeedGuid	
	IsReferenceFeedsIncluded	


Name: **DataFeedGuid**


Value(s):

Enter

After that, user should complete configuration, filling the parameters (select the parameter, write value and press the  button):

- DataFeedGuid: Data Feed GUID, it can be retrieved from RSA Archer application
- IsReferenceFeedsIncluded: must be “true” before any referenced data feeds can run. If you want to run a single data feed without any referenced feeds, you must ensure that the flag is set to “false”.

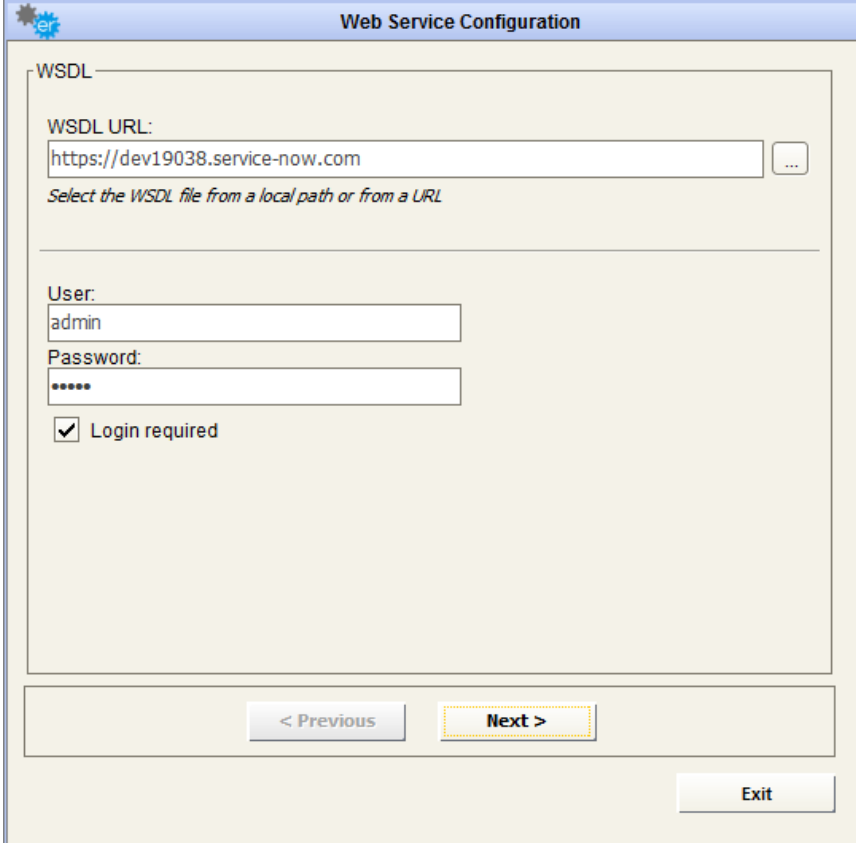
Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.

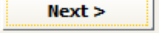
ServiceNow – READ TABLES

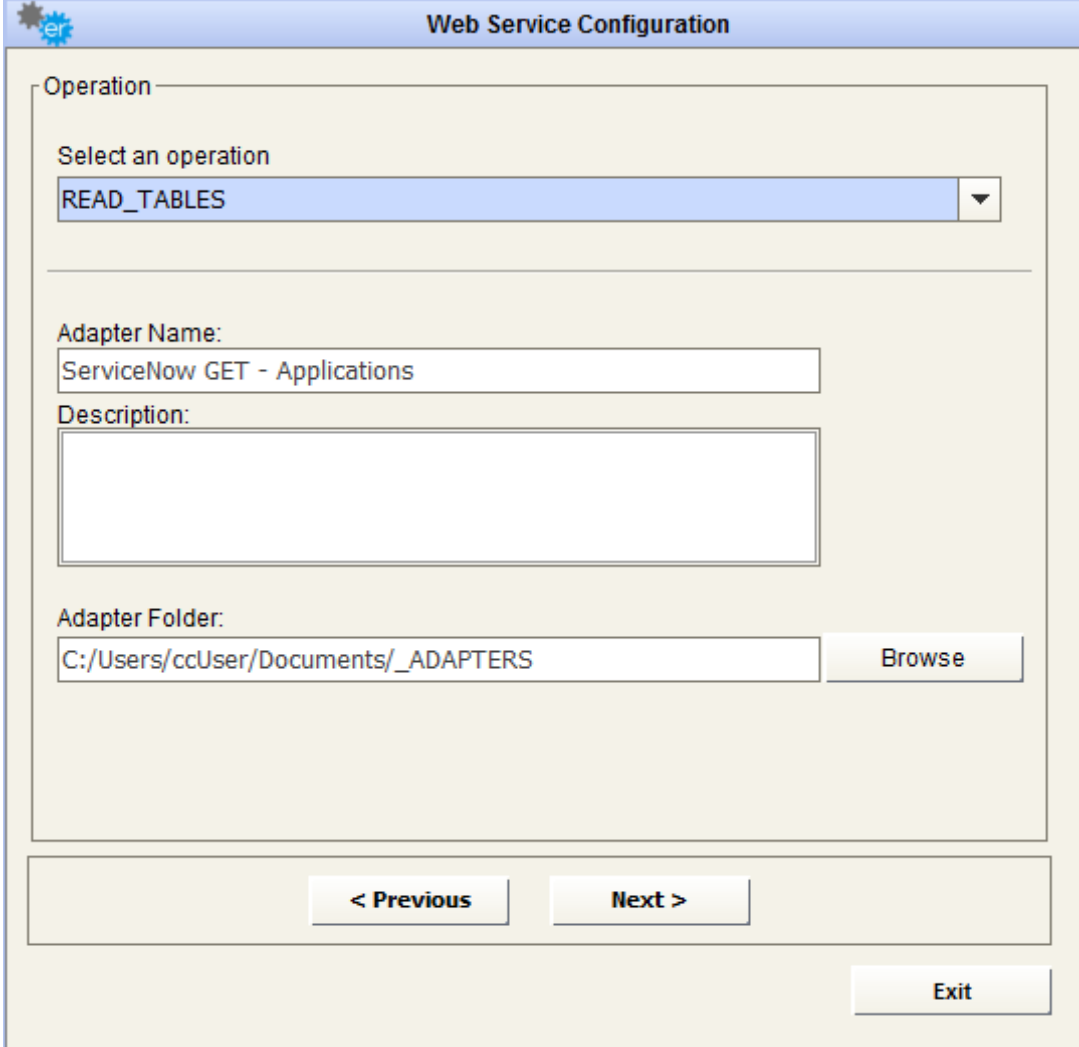
To use the adapter for **ServiceNow, to read table contents**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

Then, provide a valid instance URL, username/password to connect.




The image shows a "Web Service Configuration" dialog box. It has a title bar with a gear icon and the text "Web Service Configuration". The main area is divided into two sections. The top section is labeled "WSDL" and contains a "WSDL URL:" label followed by a text box containing "https://dev19038.service-now.com" and a browse button "...". Below this is a note: "Select the WSDL file from a local path or from a URL". The bottom section contains a "User:" label followed by a text box containing "admin", a "Password:" label followed by a text box containing "*****", and a checked checkbox labeled "Login required". At the bottom of the dialog are three buttons: "< Previous", "Next >" (highlighted with a dashed border), and "Exit".

The  button steps into the next window that shows the available operations of that Web Service; choose “READ TABLES”, to query data stored in ServiceNow tables.

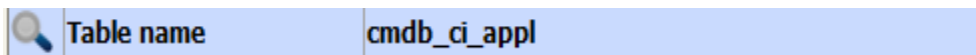


The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu showing 'READ_TABLES'. Below this are three input fields: 'Adapter Name' with the text 'ServiceNow GET - Applications', 'Description' (empty), and 'Adapter Folder' with the text 'C:/Users/ccUser/Documents/_ADAPTERS'. A 'Browse' button is next to the 'Adapter Folder' field. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name:



The image shows a single row in a table. The first column is 'Table name' and the second column is 'cmdb_ci_appl'. To the left of the 'Table name' text is a small magnifying glass icon (lens icon).

this means that user may set the parameter value from a list of available items.

In case of ServiceNow “read tables” operation, with the double-click on the lens icon besides “Table name” parameter, a popup appears, with the available tables to query:

Web Service Configuration

Type	Attribute Name	Attribute Value
	Table name	
	View name	
	Filters	

Adapter Preview:
My ServiceNow Adapter for applications - Table name

label	name	super_class	is_extendable	sys_updated_on
App Log Entry	syslog_app_scope0006	Log Entry	false	2016-09-19 04:25:42
App Log Entry	syslog_app_scope0004	Log Entry	false	2016-09-19 04:25:39
App Log Entry	syslog_app_scope	Log Entry	false	2016-09-19 04:09:30
App Log Entry	syslog_app_scope0003	Log Entry	false	2016-09-19 04:25:37
App Log Entry	syslog_app_scope0005	Log Entry	false	2016-09-19 04:25:41
App Template	sn_appcreator_app_template	Application File	false	2016-09-19 04:31:48
Application	sys_scope	Package	true	2016-09-19 04:09:14
Application	cmdb_ci_appl	Configuration Item	true	2016-09-19 04:14:44
Application Cluster	cmdb_ci_application_cluster	Configuration Item	false	2016-09-19 04:15:56
Application File	sys_metadata		true	2016-09-19 04:09:10
Application File Types	sys_app_file_type		false	2016-09-19 04:11:41
Application Menu	sys_app_application	Application File	false	2012-10-30 13:59:18
Application Menu	sys_ui_application	Application File	false	2016-09-19 04:12:56
Application Metadata	ua_app_metadata		false	2016-09-19 04:30:27
Application Model	cmdb_application_product_model	Product Model	false	2016-09-19 04:14:34
Application PID	cmdb_pid		false	2016-09-19 04:15:59

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Apply Exit

Select and apply the selection, and the desired table name (as expected by ServiceNow export service) fills the “Table name” parameter value:

Web Service Configuration

Type	Attribute Name	Attribute Value
	Table name	cmdb_ci_appl
	View name	ess
	Filters	ORDERBYname

Should the provided account not be granted to read system tables, as the one containing the list of user tables, the popup will be blank, but **the parameters** can always be **manually filled**.

After that, the user may apply optional formatting/filter settings, filling the parameters (select the parameter, write value and press the  button):


- **View Name:** name of the desired view. For example, to export fields visible from the Self Service view, parameter value is “**ess**”
- **Filters:** some additional parameters may be added to control for instance:
 - the sorting of results: “**ORDERBYname**”
 - the data filtering: “**category=Resource**”


Concatenate different filters with ampersand; for instance:


category=Resource&ORDERBYname

Complete reference for filters can be found at the ServiceNow website:

https://wiki.servicenow.com/index.php?title=Excel_Export_Threshold#Using_URL_Queries_to_Filter_List_Results

Pressing the  button will open a new pop-up window and the response resulting from the Web Service call is displayed.

Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.


Adapter Preview				
Adapter Preview:				
My ServiceNow Adapter for applications				
name	sys_class_name	category	version	operational_status
apache linux den 200	Web Server		6.0	Operational
apache linux ny 100	Web Server		6.0	Operational
CMS App FLX	Application			Operational
EXCH-SD-05	Email Server			Operational
EXCH-SD-07	Email Server			Operational
EXCHANGE-NY-02	Email Server			Operational
IronMail-SD-01	Email Server			Operational
IronMail-SD-02	Email Server			Operational
Java Application Server FLX	JavaServer			Operational
My Corporate Collector app	Application	Resource	5.0.0	Operational
PS Apache01	Web Server		6.0	Operational
PS Apache02	Web Server		6.0	Operational
PS Apache03	Web Server		6.0	Operational
SAP WEB01	Web Server		6.0	Operational
SAP WEB02	Web Server		6.0	Operational
SAP WEB03	Web Server		6.0	Operational

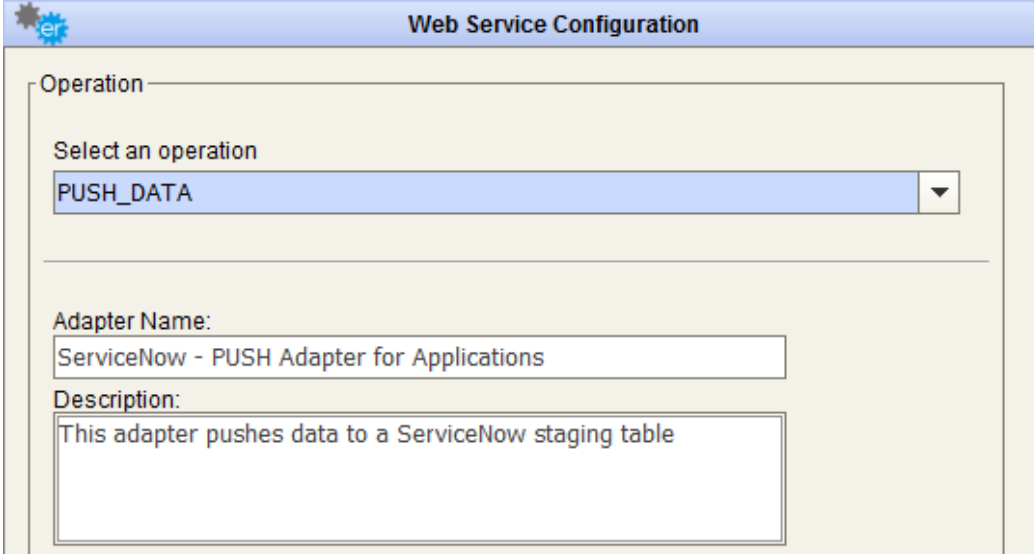
ServiceNow – PUSH DATA

To use the adapter for **ServiceNow**, to **push data to the system**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

Then provide a valid instance URL, username/password to connect.


Web Service Configuration	
WSDL	
WSDL URL:	<input type="text" value="https://dev19038.service-now.com"/>
<i>Select the WSDL file from a local path or from a URL</i>	
User:	<input type="text" value="admin"/>
Password:	<input type="password" value="*****"/>
<input checked="" type="checkbox"/> Login required	

The  button steps into the next window that shows the available operations of that Web Service; choose “PUSH DATA”, to query data stored in ServiceNow tables.



The screenshot shows a window titled "Web Service Configuration" with a blue header bar containing a gear icon and the text "er". The main area is titled "Operation" and contains a dropdown menu labeled "Select an operation" with "PUSH_DATA" selected. Below this are two text input fields: "Adapter Name:" with the value "ServiceNow - PUSH Adapter for Applications" and "Description:" with the value "This adapter pushes data to a ServiceNow staging table".

After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The  button steps into the next window that allows the user to set values for the Web Service parameters.

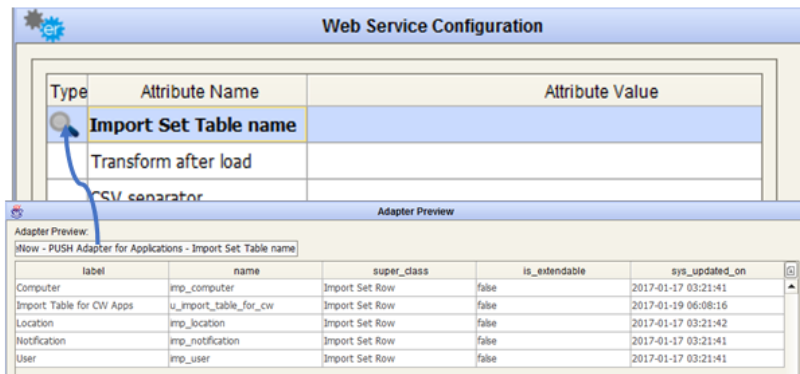
When a lens icon shows beside the parameter name, as for “**Import Set Table name**”:



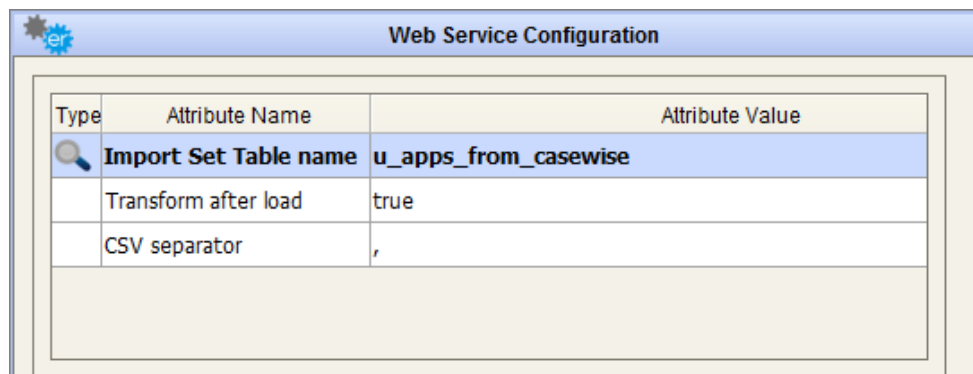
The screenshot shows a parameter field with a lens icon (magnifying glass) on the left and the text "Import Set Table name" in a blue box.

this means that user may set the parameter value from a list of available items.

In case of ServiceNow “push data” operation, with the double-click on the lens icon, a table appears, with the available import set tables:



Select the proper one and apply the selection, and the desired import set table name fills the “Import Set Table name” parameter value:



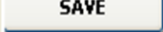
Should the provided account not be granted to read system tables, as the one containing the list of user tables, the popup will be blank, but **the parameters can always be manually filled.**


After that, user complete push operations configuration, filling the parameters (select the parameter, write value and press button):

- **Transform after load:** set to “true” if there is a Transformation Map set between the Import Set Table and ServiceNow target table to be applied after staging table load, “false” or blank otherwise
- **CSV separator:** comma as default

Documentation about import set tables and transformation map can be found at the ServiceNow website:

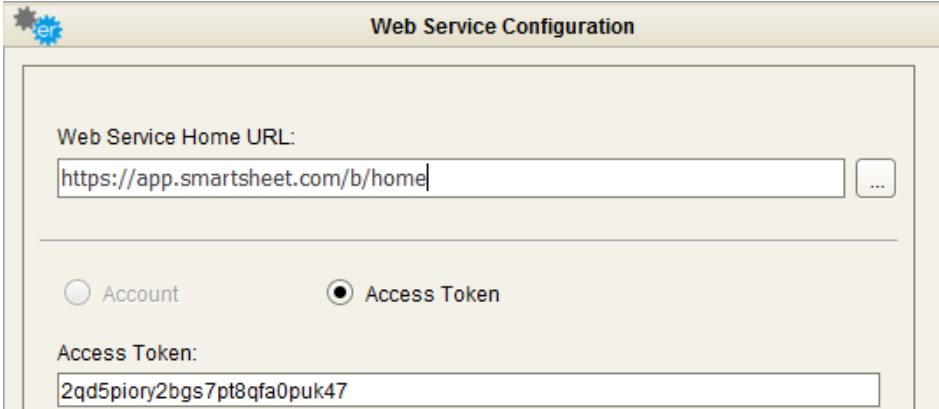
http://wiki.servicenow.com/index.php?title=Importing_Data_Using_Import_Sets#Posting_CSV_or_Excel_Files_Directly_to_an_Import_Set&gsc.tab=0

Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.


SmartSheet

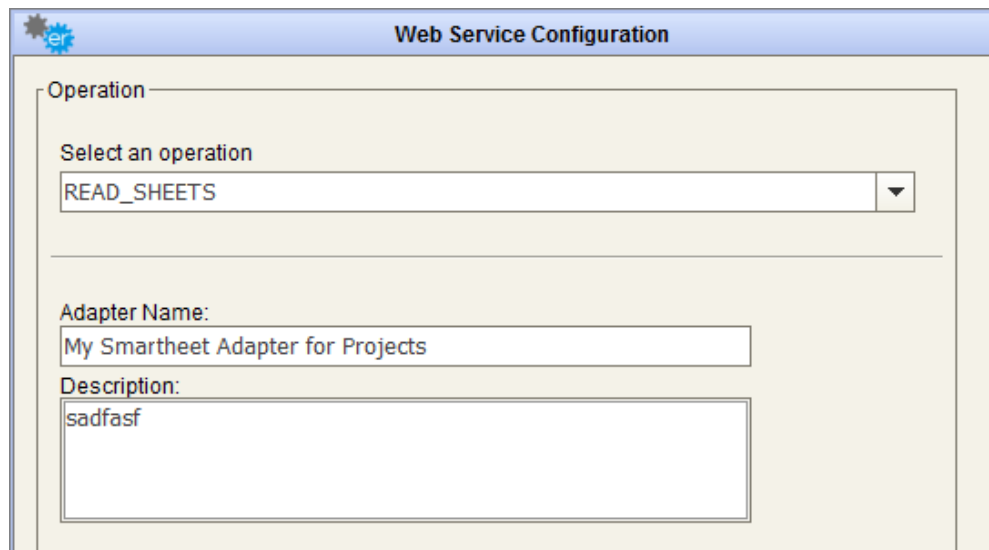
To use the adapter for **SmartSheet**, fill the field “Web Service Home URL” with the SmartSheet home page URL you want to connect to.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Web Service Home URL:' with a text input field containing 'https://app.smartsheet.com/b/home' and a browse button (...). Below this is a section for authentication with two radio buttons: 'Account' (unselected) and 'Access Token' (selected). Under 'Access Token', there is a text input field containing '2qd5piory2bgs7pt8qfa0puk47'.

Then, provide a valid **access token** to connect. To generate an access token, requested to authenticate the SmartSheet service, follow instructions from <https://smartsheet-platform.github.io/api-docs/?shell>

The  button steps into the next window that shows the available operation of that Web Service, which is “**READ SHEETS**”, allowing user to query all data stored in user worksheets.



Web Service Configuration

Operation

Select an operation

READ_SHEETS


Adapter Name:

My Smartheet Adapter for Projects


Description:

sadfasf

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).


The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name:

Type	Attribute Name	Attribute Value
	Sheet name	

this means that user may choose the parameter value from a list of available items.

In case of SmartSheet “read sheets” operation, with the double-click on the lens icon, a table appears, with the available sheets to query:

Type	Attribute Name	Attribute Value
	Sheet name	

Adapter Preview


Adapter Preview:

My Smartheet Adapter for Projects - Sheet name

ID	Sheet name	Owner	Version
6448230394292100	My second project		
2626708080748420	My Smartsheet Integration Project		
63763656271748	Sales forecast		

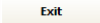
Select and apply the selection, and the desired sheet name (as expected by Smartsheet export service) fills the “Sheet name” parameter value:


Type	Attribute Name	Attribute Value
	Sheet name	My Smartsheet Integration Project


Pressing the  button opens a new pop-up window and the response resulting from the Web Service call is displayed.

Task Name	Duration	Start	Finish	Predecessors	Assigned To	% Complete	Status	Comments
Test REST API	16d	2016-06-19T08:...	2016-07-08T16:...		c.salari@aecon...	0.15	In Progress	
test with postman	2d	2016-06-19T08:...	2016-06-20T16:...		Omar	0.0	At Risk	
Collector develo...	6d	2016-06-26T08:...	2016-07-01T16:...		Claudia	0.25	On Track	Sembra fatta!!!!
Authentication ...	5d	2016-07-04T08:...	2016-07-08T16:...		Fabio	0.1	On Track	

Page 1 of 1 (1-4)

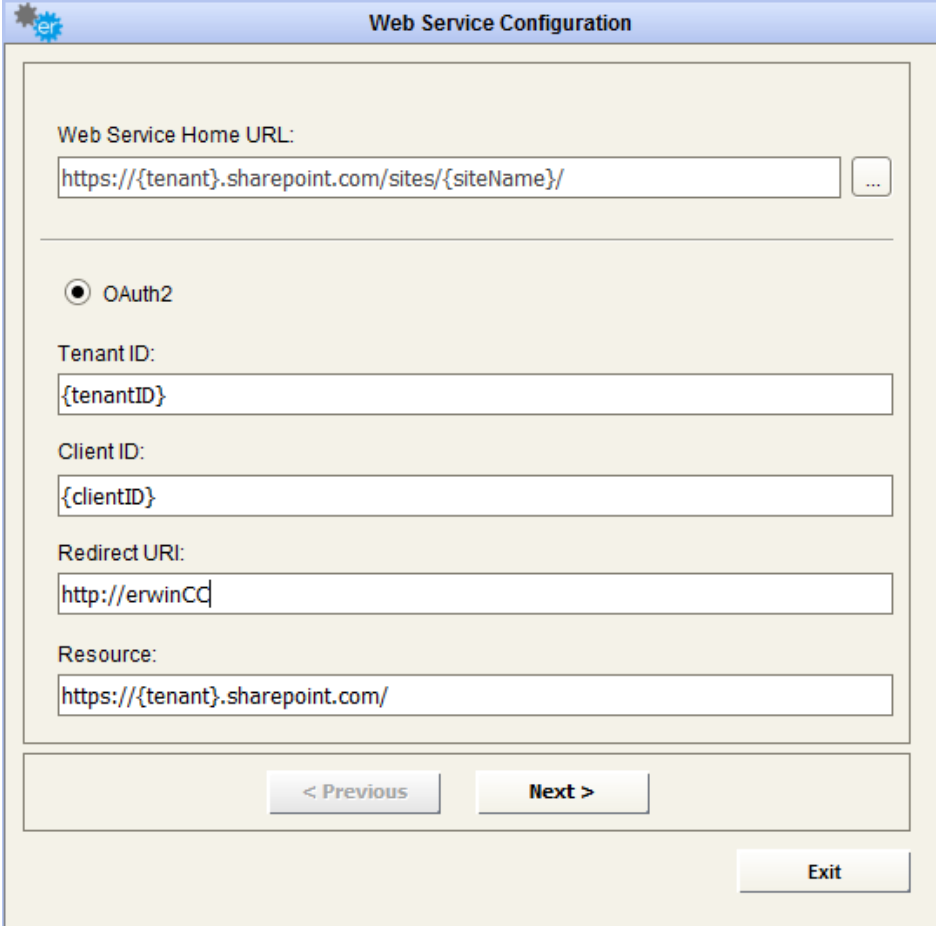


Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.

SharePoint Online

To use the adapter for **SharePoint Online**, fill the field “Web Service Home URL” with the SmartSheet home page URL you want to connect to.



The image shows a "Web Service Configuration" dialog box with a blue title bar and a gear icon. The main area is light beige and contains several input fields. The first field is labeled "Web Service Home URL:" and contains the text "https://{tenant}.sharepoint.com/sites/{siteName}/" with a small "..." button to its right. Below this is a horizontal separator line. Under the line, there is a radio button labeled "OAuth2" which is selected. Below the radio button are four more input fields: "Tenant ID:" with "{tenantID}", "Client ID:" with "{clientID}", "Redirect URI:" with "http://erwinCC", and "Resource:" with "https://{tenant}.sharepoint.com/". At the bottom of the dialog, there are three buttons: "< Previous" and "Next >" are side-by-side, and "Exit" is centered below them.

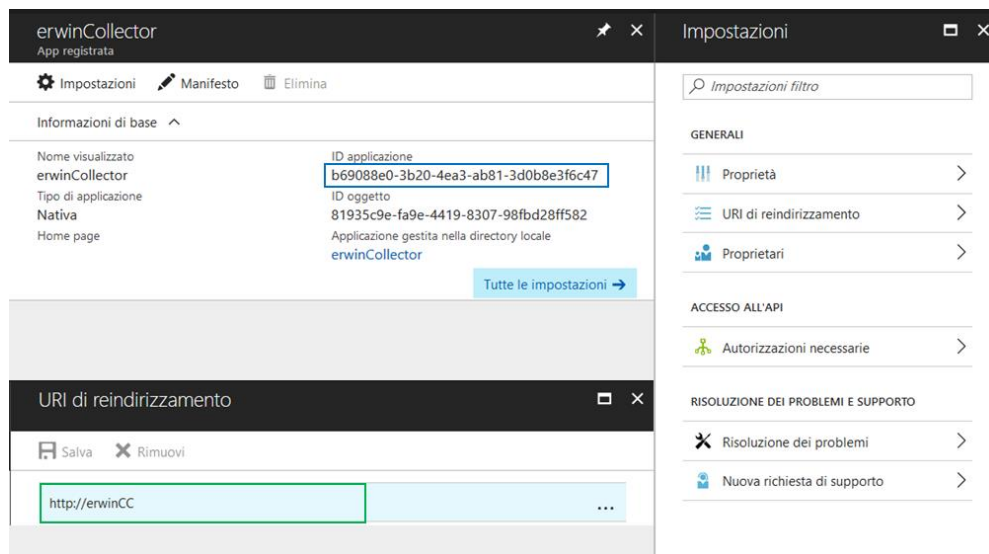
To provide required parameters, please ensure that erwin DT is registered on target tenant Azure Active Directory.

See: <https://docs.microsoft.com/en-us/azure/app-service/app-service-mobile-how-to-configure-active-directory-authentication#optional-configure-a-native-client-application> about registering a native application.

Register DT with:


- **Name:** erwinCollector

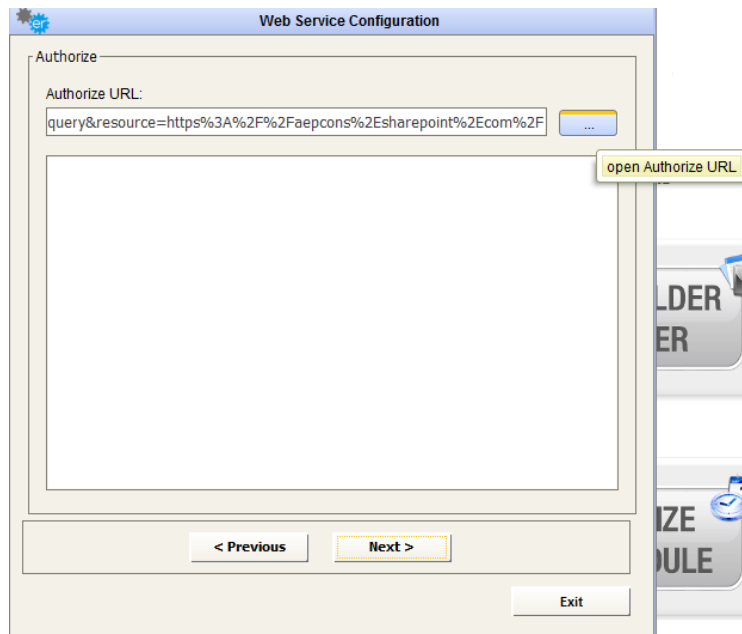
- **Application Type:** Native
- **Redirect URI:** http://erwinCC



and provide all grants to read site list, for specific Microsoft API:

- Microsoft Graph:
 - Read items in all site collection
 - Access directory as the signed in user
- Microsoft Azure Active Directory:
 - Read all users' basic profiles
 - Sign in and read user profile
- Office 365 SharePoint Online (Microsoft.SharePoint)
 - Read and write items and lists in all site collections
 - Read and write items in all site collections
 - Read items in all site collections
 - Read managed metadata

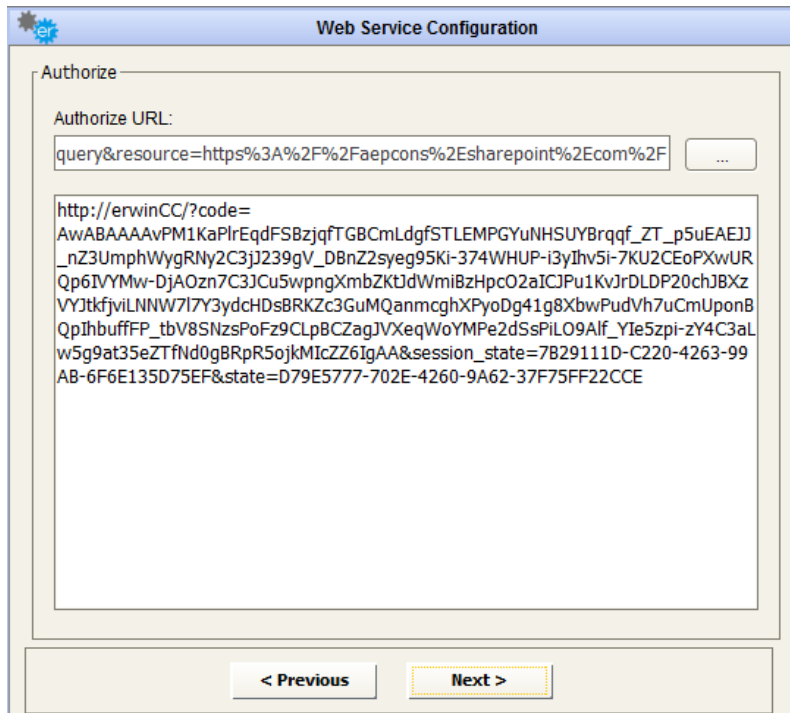
The  button steps into the next window, which requires user to browse to authorization URL and provide grant to the application:



Wait for the browser to complete the request; a new page will be presented, with a URL like:

```
http://erwinCC/?code=
AwABAAAavPM1KaPlrEqdFSBzjqfTGBCmLdgfSTLEMPGYuNHSUYBrqqf_ZT_p5uEAEJJ_nZ3Umph
WygRNY2C3jJ239gV_DBNZ2syeg95Ki-374WHUP-i3ylhv5i-7KU2CEoPXwURQp6IVYMw-
DjAOzn7C3JCu5wpngXmbZKtJdWmiBzHpcO2aICJPu1KvJrDLDP20chJBXzVYJtkfjviLNNW7I7Y3ydcH
DsBRKZc3GuMQanmcghXPyoDg41g8XbwPudVh7uCmUponBQplhbuffFP_tbV8SNzsPoFz9CLpBCZag
JVXeqWoYMPe2dSsPiLO9Alf_Yle5zpi-
zY4C3aLw5g9at35eZTfNd0gBRpR5ojkMlcZZ6lgAA&session_state=7B29111D-C220-4263-99AB-
6F6E135D75EF&state=D79E5777-702E-4260-9A62-37F75FF22CCE      &session_state=7B29111D-
C220-4263-99AB-6F6E135D75EF&state=D79E5777-702E-4260-9A62-37F75FF22CCE
```

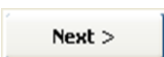
Copy the **entire URL** to DT text area:




The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section titled 'Authorize'. Below this title, there is a label 'Authorize URL:' followed by a text input field. The input field contains a long URL: 'query&resource=https%3A%2F%2Faepcons%2Esharepoint%2Ecom%2F'. To the right of the input field is a small button with three dots. Below the input field is a large text area containing a long URL: 'http://erwinCC/?code=AwABAAAAPM1KaPlrEqdFSBzjqfTGBCmLdgfSTLEMPGYuNHSUYBrqqf_ZT_p5uEAEJJ_nZ3UmphWygRNY2C3jJ239gV_DBN22syeg95Ki-374WHUP-i3yIhv5i-7KU2CEoPXwURQp6IVYMw-DjAOzn7C3JCu5wpngXmbZKtJdWmiBzHpcO2aICJPu1KvJrDLP20chJBXzVYJtkfjviLNNW7I7Y3ydcHDsBRKZc3GuMQanmcghXPYoDg41g8XbwPudVh7uCmUponBQpIhbuffFP_tbV8SNzsPoFz9CLpBCZagJVXeqWoYMPe2dSsPiLO9Alf_YIe5zpi-zY4C3aLw5g9at35eZTfNd0gBRpR5ojkMIcZZ6IgAA&session_state=7B29111D-C220-4263-99AB-6F6E135D75EF&state=D79E5777-702E-4260-9A62-37F75FF22CCE'. At the bottom of the dialog, there are two buttons: '< Previous' and 'Next >'. The 'Next >' button is highlighted with a dashed border.

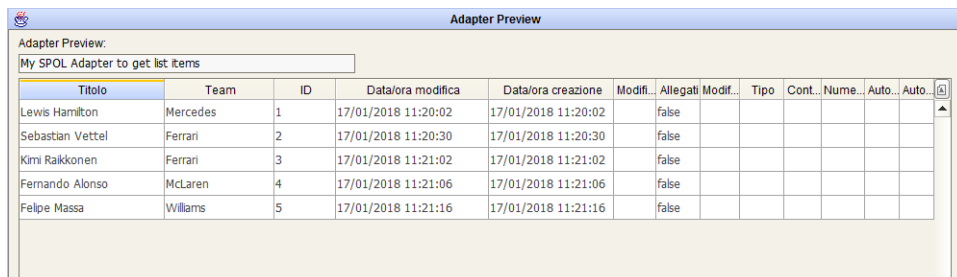
The  button steps into the next window that shows the available operation of that Web Service, which is "READ LISTS".

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.

Select the list – double click on lens icon beside "List GUID" open a list of available lists – and apply the selection, and the desired list GUID (as expected by Sharepoint export API) fills the parameter value


Pressing the  button opens a new pop-up window and the response resulting from the Web Service call is displayed.




Adapter Preview:

My SPOL Adapter to get list items

Titolo	Team	ID	Data/ora modifica	Data/ora creazione	Modifi...	Allegati	Modif...	Tipo	Cont...	Nume...	Auto...	Auto...
Lewis Hamilton	Mercedes	1	17/01/2018 11:20:02	17/01/2018 11:20:02		false						
Sebastian Vettel	Ferrari	2	17/01/2018 11:20:30	17/01/2018 11:20:30		false						
Kimi Raikkonen	Ferrari	3	17/01/2018 11:21:02	17/01/2018 11:21:02		false						
Fernando Alonso	McLaren	4	17/01/2018 11:21:06	17/01/2018 11:21:06		false						
Felipe Massa	Williams	5	17/01/2018 11:21:16	17/01/2018 11:21:16		false						

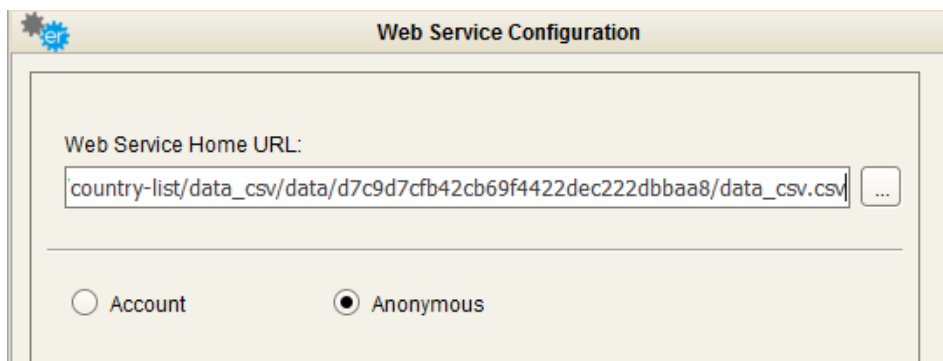
Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.

Generic data provider - CSV

To use the adapter for a **generic http data provider**, fill the field “Web Service Home URL” with the URL to the data provider service, ex:

https://pkgstore.datahub.io/core/country-list/data_csv/data/d7c9d7cfb42cb69f4422dec222dbbaa8/data_csv.csv




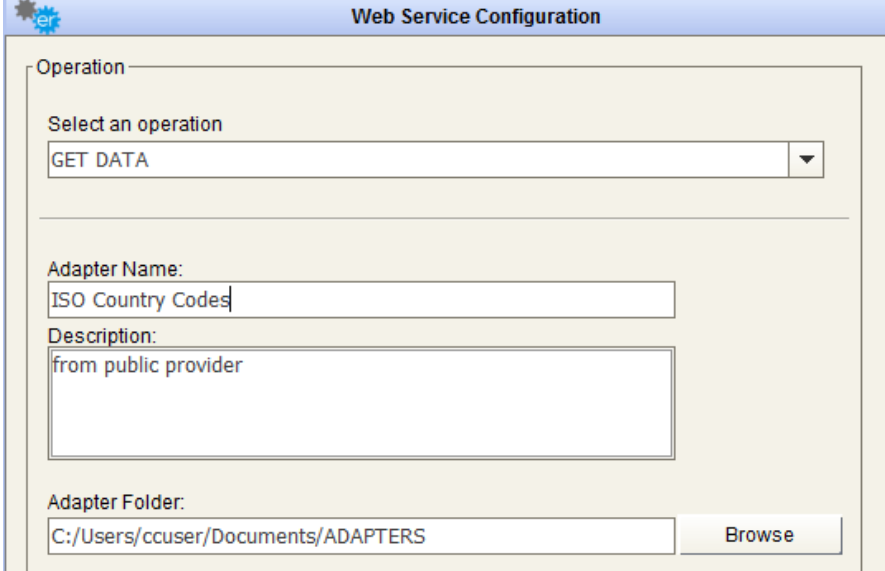
Web Service Configuration

Web Service Home URL:

☐ Account ☒ Anonymous

Then, provide a valid User/Password if service requires (basic) authentication, or select “Anonymous” access option

The  button steps into the next window that shows the available operation of that Web Service, which is “**GET DATA**”, allowing user to query web data.



Web Service Configuration

Operation

Select an operation

GET DATA

Adapter Name:

ISO Country Codes

Description:


from public provider

Adapter Folder:

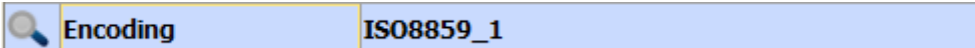
C:/Users/ccuser/Documents/ADAPTERS


Browse

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).


The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name:



 **Encoding** ISO8859_1

this means that user may choose the parameter value from a list of available items. In case of this example, with the double-click on the lens icon, a table appears, with the available encoding:

Type	Attribute Name	Attribute Value
	Parameters	
	CSV separator	,
	Encoding	ISO8859_1

Field Values Preview

Adapter Preview:
ISO Country Codes - Encoding

Name	Description
Cp858	Variant of Cp850 with Euro character
Cp437	MS-DOS United States, Australia, New Zealand, South Africa
Cp775	PC Baltic
Cp850	MS-DOS Latin-1
Cp852	MS-DOS Latin-2
Cp855	IBM Cyrillic
Cp857	IBM Turkish
Cp862	PC Hebrew
Cp866	MS-DOS Russian
ISO8859_1	ISO-8859-1, Latin Alphabet No. 1
ISO8859_2	Latin Alphabet No. 2
ISO8859_4	Latin Alphabet No. 4
ISO8859_5	Latin/Cyrillic Alphabet
ISO8859_7	Latin/Greek Alphabet (ISO-8859-7:2003)

Select and apply the selection, and the desired values for other fields, like the CSV column separator and parameters should the service require them.



Pressing the **Test** button opens a new pop-up window and the response resulting from the Web Service call is displayed.

Adapter Preview

Adapter Preview:
ISO Country Codes

Name	Code
Afghanistan	AF
Åland Islands	AX
Albania	AL
Algeria	DZ
American Samoa	AS
Andorra	AD
Angola	AO
Anguilla	AI
Antarctica	AQ
Antigua and Barbuda	AG
Argentina	AR
Armenia	AM
Aruba	AW
Australia	AU



Pressing the **SAVE** button stores all the entered parameters for the web service adapter in the DT database.



The **Exit** button closes the data preview window and goes back to Web Service configuration form.

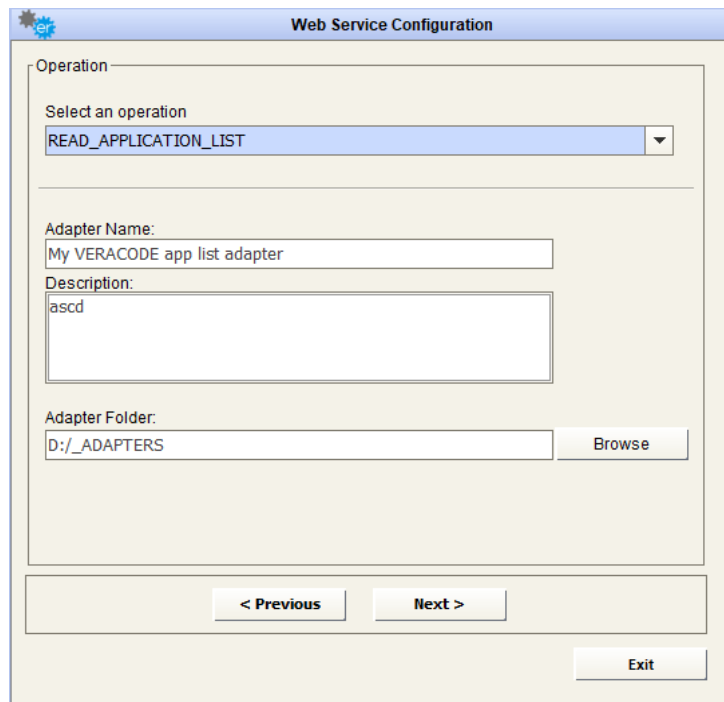
Veracode – READ APPLICATION LIST

To use the adapter for Veracode, **to read application list**, fill the field “Web Service Home URL” with the Veracode URL you want to connect to. Then, provide a valid username/password to connect, or the API credentials (ID/KEY), that can be generated by a valid account.

Please, make sure that the account has the correct permissions to use Veracode API:
https://help.veracode.com/reader/LMv_dtSHyb7ilxAQznC~9w/2nDnsqbBHfc2TPcl_Ps~KQ

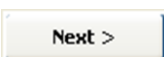
The image contains two screenshots. The top screenshot shows the 'API Credentials' page in the Veracode user interface. It includes a 'Generate API Credentials' button and a 'Generate API Credentials' link. Below this, there are fields for 'ID' and 'Secret Key'. The bottom screenshot shows the 'Web Service Configuration' dialog box. It has a 'Web Service Home URL' field with the value 'https://analysiscenter.veracode.com'. There are two radio buttons: 'Account' (selected) and 'API ID KEY'. The 'Account' section has fields for 'User' (jblack@erwin.com) and 'Password' (masked). The 'API ID KEY' section has two fields for API ID and API KEY, both containing long alphanumeric strings. At the bottom of the dialog, there are '< Previous' and 'Next >' buttons, and an 'Exit' button.

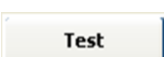
The **Next >** button steps into the next window that shows the available operations of this Web Service; choose “**READ APPLICATION LIST**”, to get the list of application names and their Veracode ID.

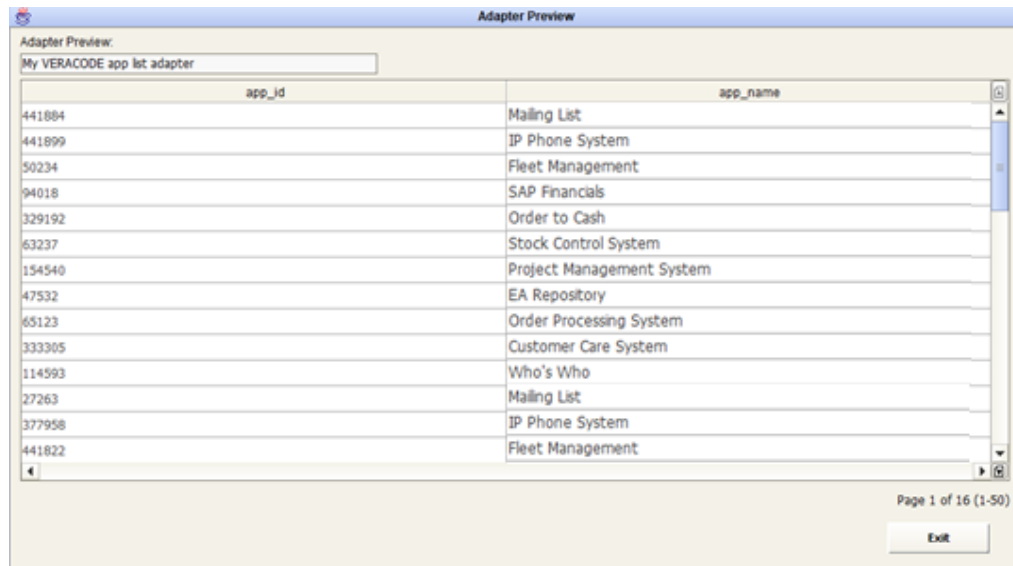


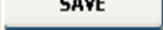
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu labeled 'Select an operation' showing 'READ_APPLICATION_LIST'. Below this are three input fields: 'Adapter Name:' with the text 'My VERACODE app list adapter', 'Description:' with the text 'ascd', and 'Adapter Folder:' with the text 'D:/_ADAPTERS' and a 'Browse' button next to it. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.


After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters, not required for this operation.

Pressing the  button and a pop-up window is opened and the response resulting from the Web Service call is displayed.



Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to the Web Service configuration form.


Veracode – IMPORT APPLICATION DATA

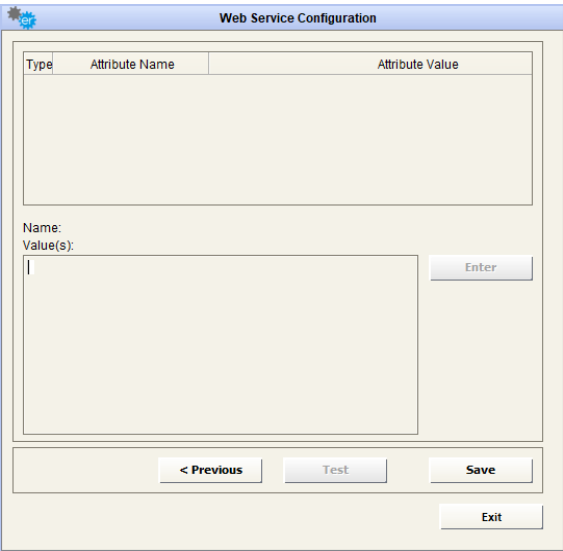
To use the adapter for Veracode, **to import application data**, fill the field "Web Service Home URL" with the Veracode URL you want to connect to. Then, provide a valid username/password to connect, or the API credentials (ID/KEY), that can be generated by a valid account.

Please, make sure that the account has the correct permissions to use Veracode API:
https://help.veracode.com/reader/LMv_dtSHyb7ilxAQznC~9w/2nDnsqbBHfc2TPcl_Ps~KQ


The **Next >** button steps into the next window that shows the available operations of this Web Service; choose **“IMPORT APPLICATION DATA”**, to configure an adapter that can be used in a workflow to push application metadata to Veracode (see later).


After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters, not required for this operation.

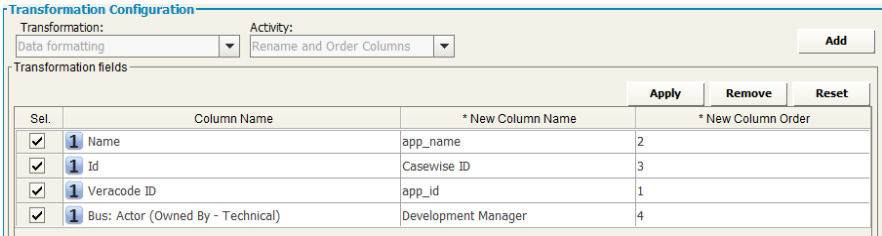


The 'Web Service Configuration' window features a table with columns 'Type', 'Attribute Name', and 'Attribute Value'. Below the table, there are input fields for 'Name:' and 'Value(s):', with an 'Enter' button. At the bottom, there are four buttons: '< Previous', 'Test', 'Save', and 'Exit'.

Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.

The Adapter, as mentioned, can be used to push data to Veracode and fill applications metadata. For example, if the application object type in Veracode has two custom fields named “Casewise ID” and “Development Manager”, the alignment can be done configuring a workflow, with a source providing values for the fields, and with the target operation “Web Service POST”, using the configured adapter. To provide mappings between source and target field, use a “Data Formatting: Rename and Order Columns” transformation, with the required “**app_id**” and “**app_name**” fields, and all others desired fields. Where “**app_id**” (numeric) value is **null** or **0**, the application with provided name will be created, or updated, if an existing Veracode application with the same name already exists.

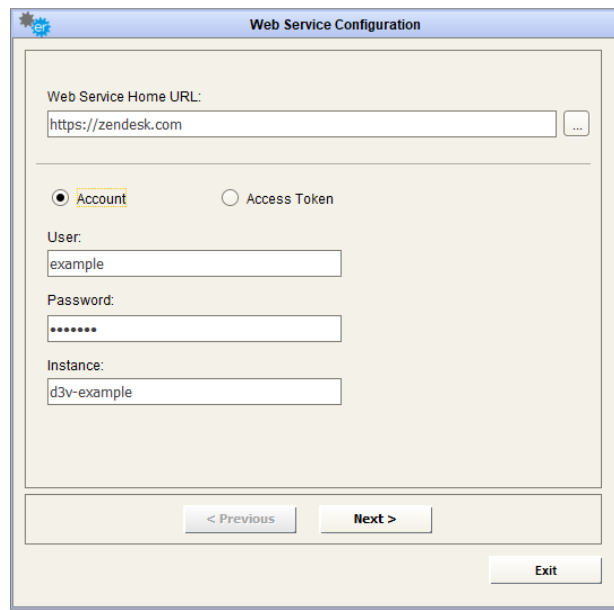


The 'Transformation Configuration' window shows a 'Transformation' dropdown set to 'Data formatting' and an 'Activity' dropdown set to 'Rename and Order Columns'. Below this is a table of transformation fields.

Sel.	Column Name	* New Column Name	* New Column Order
<input checked="" type="checkbox"/>	1 Name	app_name	2
<input checked="" type="checkbox"/>	1 Id	Casewise ID	3
<input checked="" type="checkbox"/>	1 Veracode ID	app_id	1
<input checked="" type="checkbox"/>	1 Bus: Actor (Owned By - Technical)	Development Manager	4

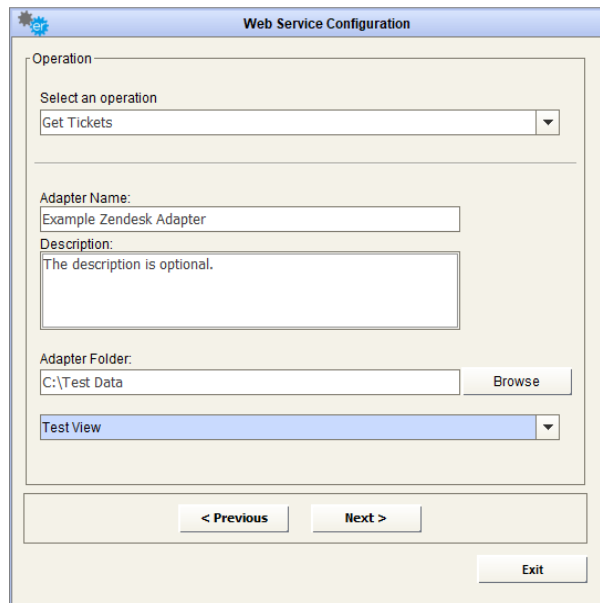
Zendesk – Get Tickets

To use the adapter for Zendesk **to get tickets**, select the authorization method (Account / Access Token) and enter the relevant credentials.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Web Service Home URL:' with a text box containing 'https://zendesk.com' and a browse button (...). Below this is a section for authorization with two radio buttons: 'Account' (selected) and 'Access Token'. Under 'Account', there are three text boxes: 'User:' with 'example', 'Password:' with '*****', and 'Instance:' with 'd3v-example'. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Click the **Next >** button to proceed to the next step, and select the operation “Get Tickets”. Enter a name and folder for the adapter, and select the view from which to retrieve tickets. A description can also optionally be entered for the adapter.



Web Service Configuration

Operation

Select an operation
Get Tickets

Adapter Name:
Example Zendesk Adapter

Description:
The description is optional.

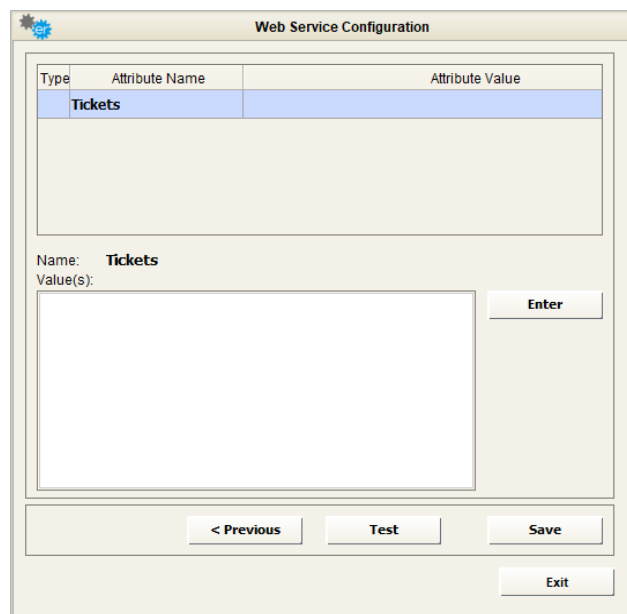
Adapter Folder:
C:\Test Data Browse

Test View

< Previous Next >

Exit

Click the **Next >** button to proceed to the next step, where the adapter can be previewed and/or saved.



Web Service Configuration

Type	Attribute Name	Attribute Value
Tickets		

Name: **Tickets**

Value(s):

Enter

< Previous Test Save

Exit

To preview a sample of the first 50 results, click the **Test** button.

Adapter Preview																			
Adapter Preview																			
Example Zendesk Adapter																			
assig...	created	custo...	fields	priority	reque...	subject	ticket...	ticket...	ticketId	ticketI...	ticketI...	ticketI...	ticketI...	ticket...	ticket...	ticket...	ticket...	ticket...	updated
3674...	2018-...			-	3674...	Papua...	3600...	PNG	511	3674...	PNG	2018-...	true	null	open	Papua...	null	https:...	2018-...
3674...	2018-...			-	3674...	Frenc...	3600...	ATF	510	3674...	ATF	2018-...	true	null	open	Frenc...	null	https:...	2018-...
3674...	2018-...			-	3674...	Panama	3600...	PAN	509	3674...	PAN	2018-...	true	null	open	Panama	null	https:...	2018-...
3674...	2018-...			-	3674...	Frenc...	3600...	PYF	508	3674...	PYF	2018-...	true	null	open	Frenc...	null	https:...	2018-...
3674...	2018-...			-	3674...	Palest...	3600...	PSE	507	3674...	PSE	2018-...	true	null	open	Palest...	null	https:...	2018-...
3674...	2018-...			-	3674...	Frenc...	3600...	GUF	506	3674...	GUF	2018-...	true	null	open	Frenc...	null	https:...	2018-...
3674...	2018-...			-	3674...	Palau	3600...	PLW	505	3674...	PLW	2018-...	true	null	open	Palau	null	https:...	2018-...
3674...	2018-...			-	3674...	France	3600...	FRA	504	3674...	FRA	2018-...	true	null	open	France	null	https:...	2018-...
3674...	2018-...			-	3674...	Finland	3600...	FIN	503	3674...	FIN	2018-...	true	null	open	Finland	null	https:...	2018-...
3674...	2018-...			-	3674...	Pakistan	3600...	PAK	502	3674...	PAK	2018-...	true	null	open	Pakistan	null	https:...	2018-...
3674...	2018-...			-	3674...	Fiji	3600...	FJI	501	3674...	FJI	2018-...	true	null	open	Fiji	null	https:...	2018-...
3674...	2018-...			-	3674...	Oman	3600...	OMN	500	3674...	OMN	2018-...	true	null	open	Oman	null	https:...	2018-...
3674...	2018-...			-	3674...	Faroe...	3600...	FRO	499	3674...	FRO	2018-...	true	null	open	Faroe...	null	https:...	2018-...
3674...	2018-...			-	3674...	Norway	3600...	NOR	498	3674...	NOR	2018-...	true	null	open	Norway	null	https:...	2018-...

To save the adapter to the DT database, click the



button.

Zendesk – Create Tickets

To use the adapter for Zendesk **to create new tickets**, select the authorization method (Account / Access Token) and enter the relevant credentials.

Web Service Configuration

Web Service Home URL:
https://zendesk.com

☒ Account ☐ Access Token

User:
example

Password:

Instance:
d3v-example

< Previous Next >

Exit

Click the **Next >** button to proceed to the next step, and select the operation “Create Tickets”. Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.

Web Service Configuration

Operation

Select an operation
Create Tickets

Adapter Name:
Example Zendesk Adapter

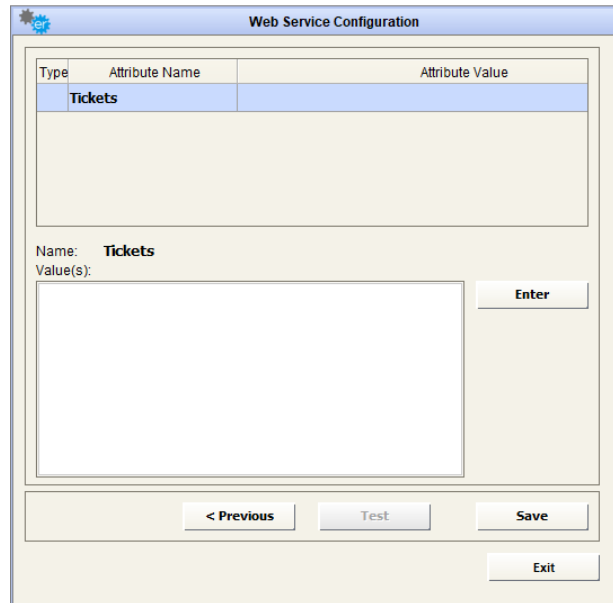
Description:
This description is optional.

Adapter Folder:
C:\Test Data Browse

< Previous Next >

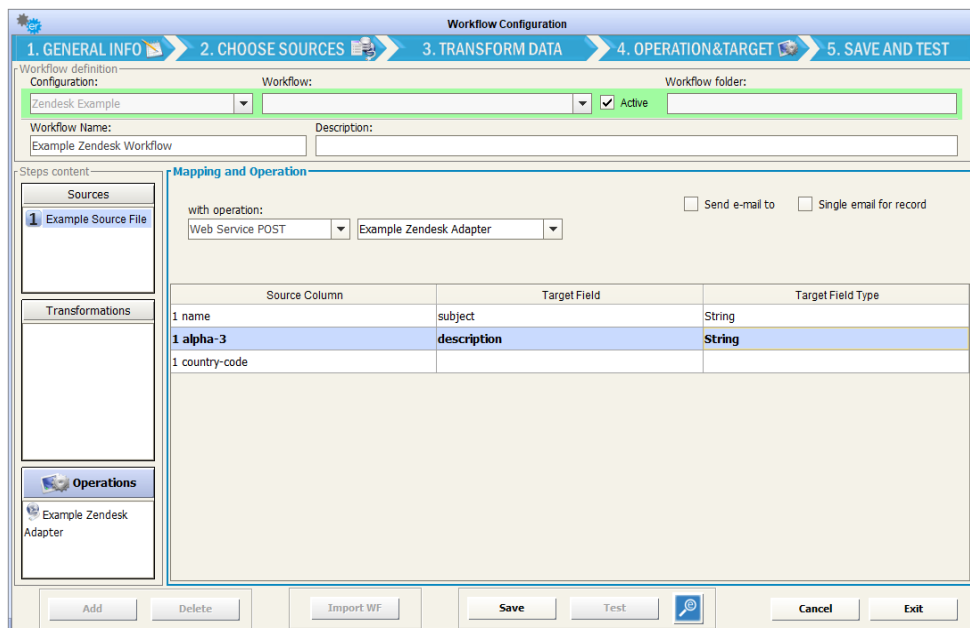
Exit

Click the **Next >** button to proceed to the next step. To save the adapter to the DT database, click the **SAVE** button.



The 'Web Service Configuration' dialog box is shown. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a table with columns 'Type', 'Attribute Name', and 'Attribute Value'. The first row is highlighted in blue and contains the text 'Tickets'. Below the table, there is a section with 'Name: Tickets' and 'Value(s):' followed by a large empty text area and an 'Enter' button. At the bottom, there are buttons for '< Previous', 'Test', 'Save', and 'Exit'.

The adapter can now be used as a target endpoint when mapping data in a workflow. To select the adapter as a target, select “Web Service POST” as the operation and select your Zendesk adapter. A mapping table will appear, allowing the source fields to be mapped to relevant target fields for creating Zendesk tickets.



The 'Workflow Configuration' dialog box is shown. It has a title bar with a gear icon and the text 'Workflow Configuration'. The top bar has five tabs: '1. GENERAL INFO', '2. CHOOSE SOURCES', '3. TRANSFORM DATA', '4. OPERATION & TARGET', and '5. SAVE AND TEST'. The '4. OPERATION & TARGET' tab is selected. Below the tabs, there is a 'Workflow definition' section with 'Configuration:' (a dropdown menu showing 'Zendesk Example'), 'Workflow:' (a dropdown menu), and 'Workflow folder:' (a text field). There is also a 'Workflow Name:' field with 'Example Zendesk Workflow' and a 'Description:' field. Below this is a 'Steps content' section with 'Sources' (a list containing '1 Example Source File'), 'Transformations' (empty), and 'Operations' (a list containing 'Example Zendesk Adapter'). To the right of the 'Steps content' is a 'Mapping and Operation' section. It has a 'with operation:' dropdown menu showing 'Web Service POST' and another dropdown menu showing 'Example Zendesk Adapter'. There are checkboxes for 'Send e-mail to' and 'Single email for record'. Below this is a table with columns 'Source Column', 'Target Field', and 'Target Field Type'. The table has three rows: '1 name' mapped to 'subject' (String), '1 alpha-3' mapped to 'description' (String), and '1 country-code' mapped to an empty field. At the bottom, there are buttons for 'Add', 'Delete', 'Import WF', 'Save', 'Test', 'Cancel', and 'Exit'.

Zendesk – Update Tickets

To use the adapter for Zendesk **to update existing tickets**, select the authorization method (Account / Access Token) and enter the relevant credentials.

Web Service Configuration

Web Service Home URL:

☒ Account ☐ Access Token

User:

Password:

Instance:

< Previous Next > Exit

Click the **Next >** button to proceed to the next step, and select the operation “Update Tickets”. Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.

Web Service Configuration

Operation

Select an operation

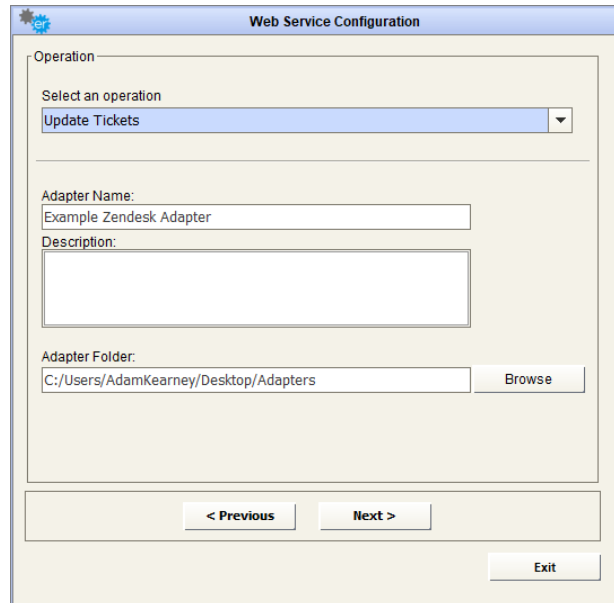
Adapter Name:

Description:

Adapter Folder:
 Browse

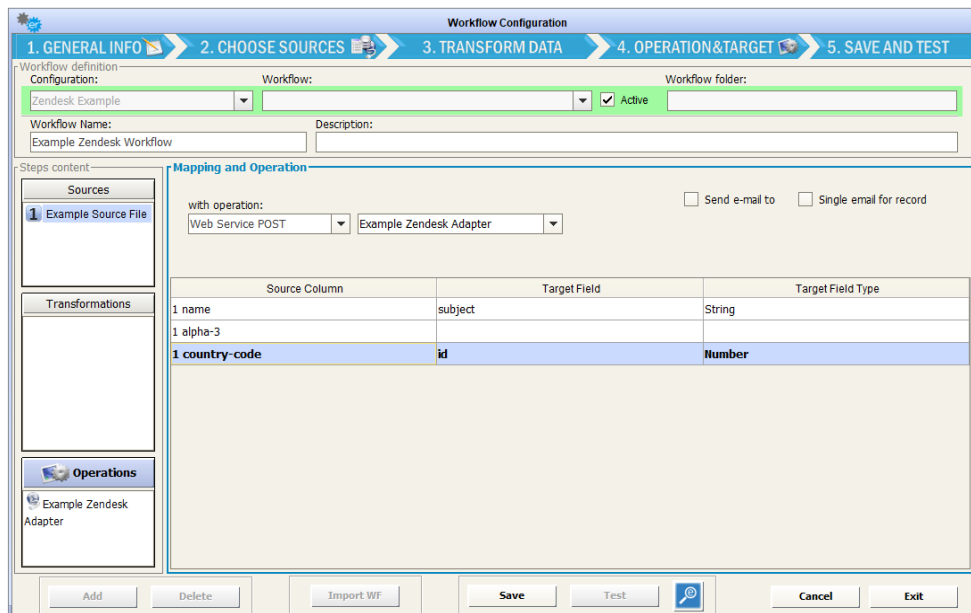
< Previous Next > Exit

Click the **Next >** button to proceed to the next step. To save the adapter to the DT database, click the **SAVE** button.



The 'Web Service Configuration' dialog box is shown. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu set to 'Update Tickets'. Below this are fields for 'Adapter Name' (containing 'Example Zendesk Adapter'), 'Description' (empty), and 'Adapter Folder' (containing 'C:/Users/AdamKearney/Desktop/Adapters' with a 'Browse' button). At the bottom are buttons for '< Previous', 'Next >', and 'Exit'.

The adapter can now be used as a target endpoint when mapping data in a workflow. To select the adapter as a target, select “Web Service POST” as the operation and select your Zendesk adapter. A mapping table will appear, allowing the source fields to be mapped to relevant target fields for updating Zendesk tickets (using the id as a key).



The 'Workflow Configuration' dialog box is shown, with tabs for '1. GENERAL INFO', '2. CHOOSE SOURCES', '3. TRANSFORM DATA', '4. OPERATION & TARGET', and '5. SAVE AND TEST'. The '4. OPERATION & TARGET' tab is active. It shows 'Workflow definition' with 'Configuration' set to 'Zendesk Example', 'Workflow' set to 'Example Zendesk Workflow', and 'Workflow folder' set to 'Example Zendesk Adapter'. The 'Steps content' section shows 'Sources' with '1. Example Source File', 'Transformations' (empty), and 'Operations' with 'Example Zendesk Adapter'. The 'Mapping and Operation' section shows 'with operation' set to 'Web Service POST' and 'Example Zendesk Adapter'. There are checkboxes for 'Send e-mail to' and 'Single email for record'. A table for mapping is shown below:

Source Column	Target Field	Target Field Type
1 name	subject	String
1 alpha-3		
1 country-code	id	Number

At the bottom are buttons for 'Add', 'Delete', 'Import WF', 'Save', 'Test', 'Cancel', and 'Exit'.

CloudHealth – READ PERSPECTIVE GROUPS

To use the adapter for CloudHealth, **to read perspective groups**, fill the field “Web Service Home URL” with the CloudHealth URL you want to connect to. Then, provide a valid username/password to connect, or the API credentials (API Key), that can be generated by a valid account.

Please, make sure that the account has the correct permissions to use CloudHealth API:
http://apidocs.cloudhealthtech.com/#documentation_getting-your-api-key

SETTINGS

API Access

Get API Key

er

Web Service Configuration

Web Service Home URL:

https://apps.cloudhealthtech.com

...

☒ API Key

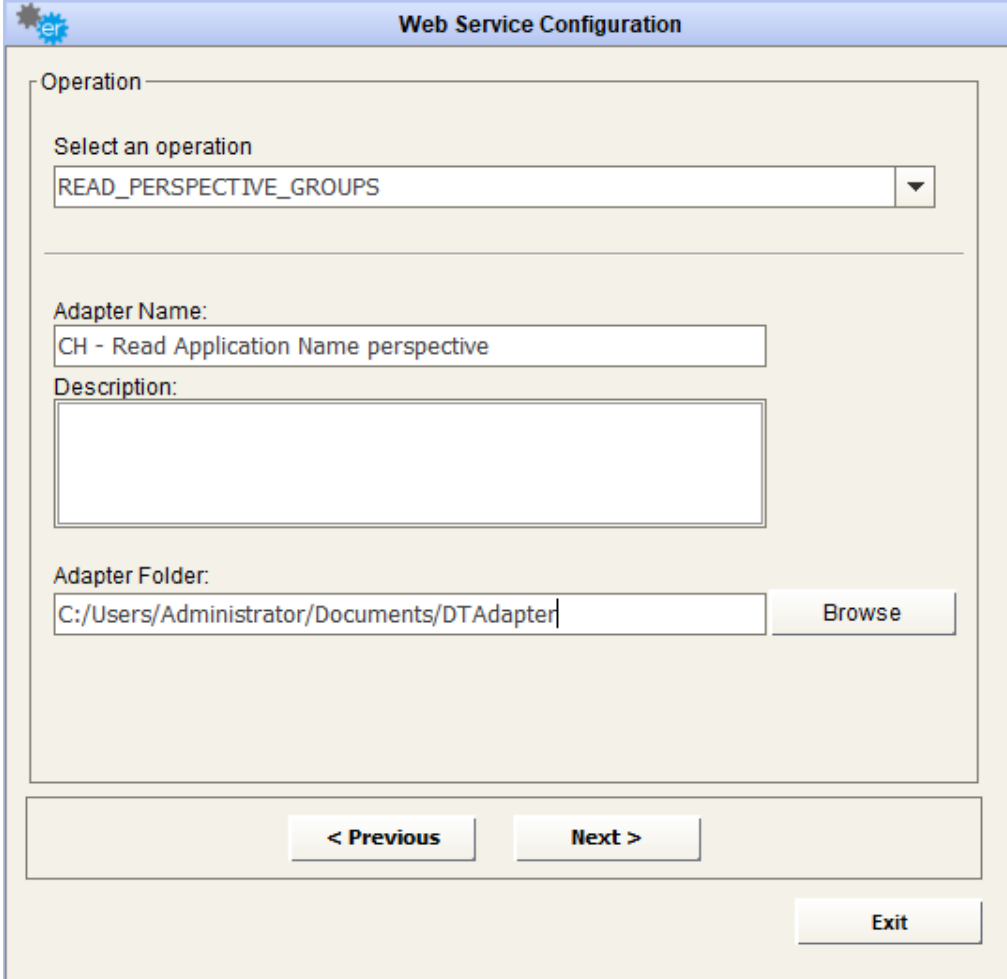
API Key:

a573862e-bcab-63ac-bcc7-2a04cbaca12b

The


Next >

 button steps into the next window that shows the available operations of this Web Service; choose “**READ PERSPECTIVE GROUPS**”, to get the list of groups in the desired perspective.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is 'Operation', which contains a dropdown menu labeled 'Select an operation' with 'READ_PERSPECTIVE_GROUPS' selected. Below this is a section for 'Adapter Name:' with a text box containing 'CH - Read Application Name perspective'. Underneath is a 'Description:' label followed by an empty text box. The next section is 'Adapter Folder:' with a text box containing 'C:/Users/Administrator/Documents/DTAdapter' and a 'Browse' button to its right. At the bottom of the dialog are three buttons: '< Previous', 'Next >', and 'Exit'.

After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name:

Type	Attribute Name	Attribute Value
	Perspective ID	

this means that user may choose the parameter value from a list of available items. In case of this example, with the double-click on the lens icon, a table appears, with the available perspectives:

Adapter Preview:
CH - Read Application Name perspective - Perspective ID

Perspective Name	Perspective Id	Active
Email	1099511682435	false
Matrix	1099512084097	false
RES Matrix MLS Application	1099512084099	false
Account	3710851744917	true
test	3710851744953	false
Environment	3710851744966	true
Platform	3710851744972	true
Application	3710851744973	true
Data Center Migration	3710851744977	true
BU	3710851744996	true
Account ID	3710851744999	true
blank for tagging	3710851745002	false
clnternational-team	3710851745007	true
CH - Tagging	3710851745008	false


Page 1 of 1 (1-36)

Apply Exit

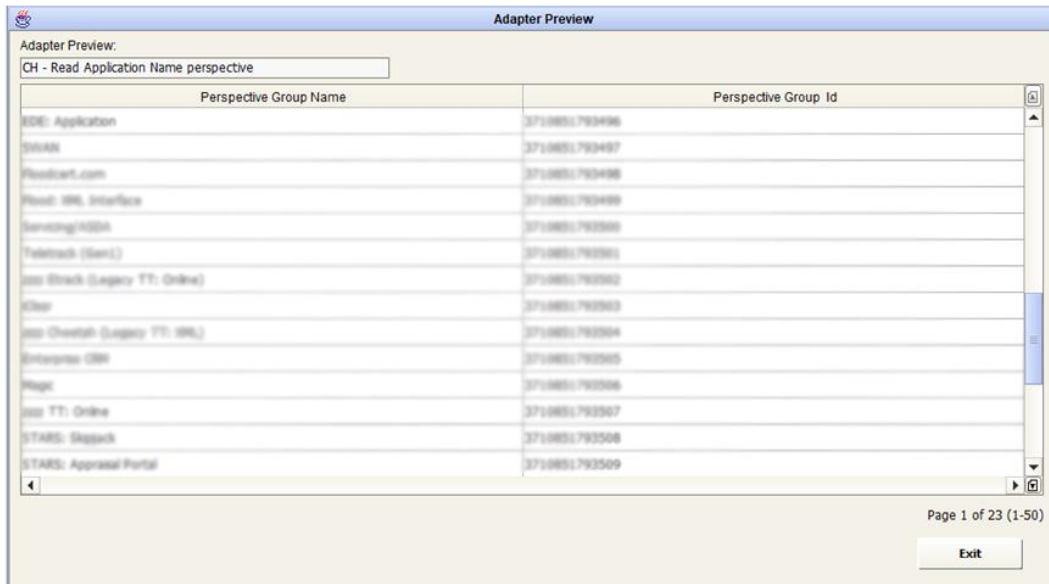
Select and apply the selection:

Type	Attribute Name	Attribute Value
	Perspective ID	3710871253012

Pressing the button opens a new pop-up window and the response resulting from the Web Service call is displayed, with the name and ref_id of existing groups. These values can be stored in EA model object to manage groups creation and update, based on CH identifier (see after).

Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

The button closes the data preview window and goes back to the Web Service configuration form.



The screenshot shows a window titled 'Adapter Preview'. Inside, there's a text field labeled 'Adapter Preview:' with the value 'GH - Read Application Name perspective'. Below this is a table with two columns: 'Perspective Group Name' and 'Perspective Group Id'. The table lists various perspective groups with their corresponding IDs. At the bottom right of the window, it says 'Page 1 of 23 (1-50)' and there is an 'Exit' button.

Perspective Group Name	Perspective Group Id
EDS: Application	3718851793496
SWAN	3718851793497
ReadCart.com	3718851793498
Read: SWL Interface	3718851793499
Service/MSB	3718851793500
Feedback (Gen1)	3718851793501
Geo Block (Legacy TT: Online)	3718851793502
Clear	3718851793503
Geo (Swedish (Legacy TT: SWL))	3718851793504
Enterprise CRM	3718851793505
Map	3718851793506
Geo TT: Online	3718851793507
STARIS: Skipack	3718851793508
STARIS: Appraisal Portal	3718851793509

CloudHealth – UPDATE PERSPECTIVE


To use the adapter for CloudHealth, **to update perspective**, fill the field "Web Service Home URL" with the CloudHealth URL you want to connect to. Then, provide a valid username/password to connect, or the API credentials (API Key), that can be generated by a valid account.

Please, make sure that the account has the correct permissions to use CloudHealth API:
http://apidocs.cloudhealthtech.com/#documentation_getting-your-api-key

SETTINGS

API Access

Get API Key

 Web Service Configuration

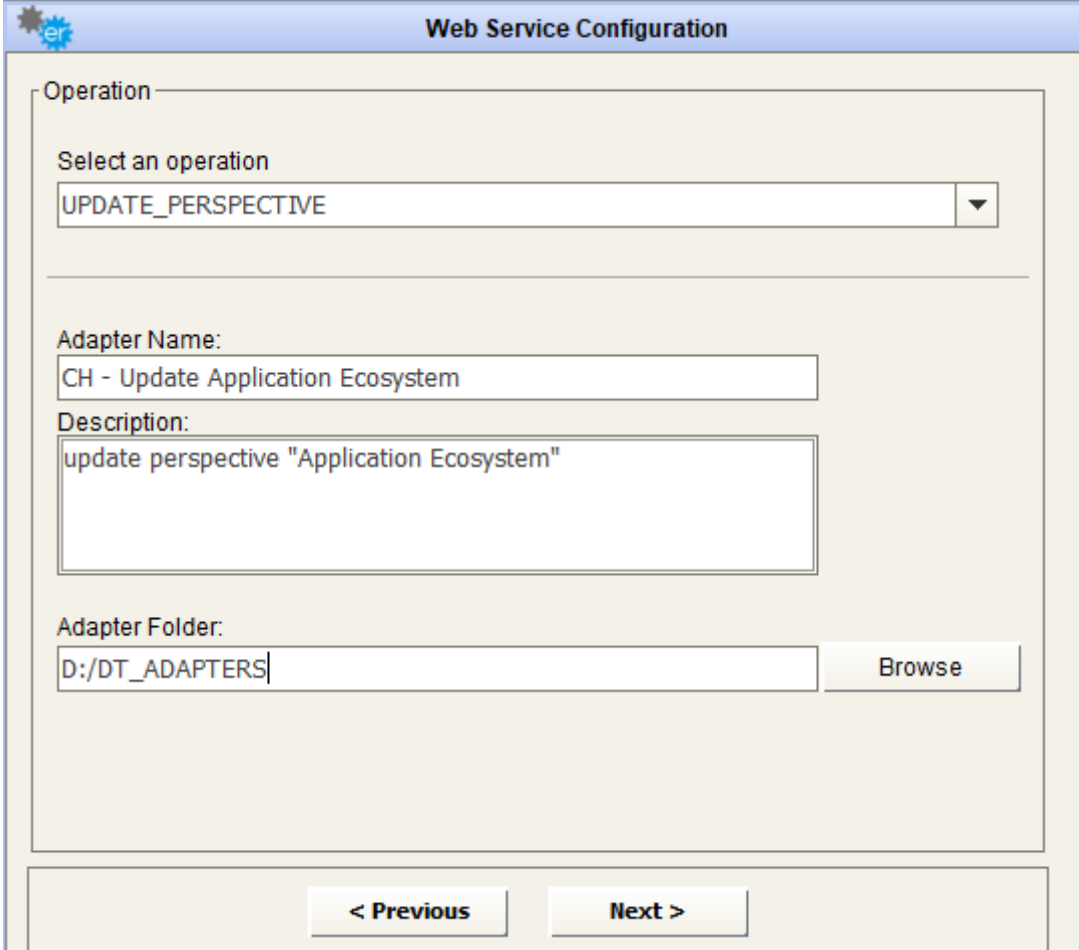
Web Service Home URL:

...

☒ API Key

API Key:

The “Next” button steps into the next window that shows the available operations of this Web Service; choose “UPDATE PERSPECTIVE”, to push groups to the desired perspective in CloudHealth.



Web Service Configuration

Operation

Select an operation

UPDATE_PERSPECTIVE

Adapter Name:

CH - Update Application Ecosystem

Description:

update perspective "Application Ecosystem"

Adapter Folder:

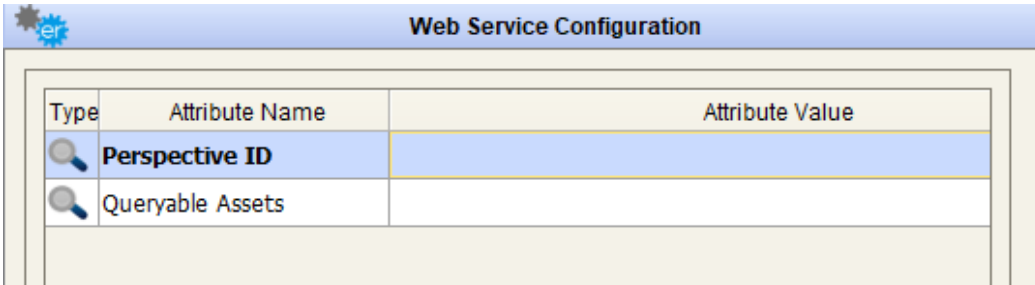
D:/DT_ADAPTERS

Browse



< Previous Next >

After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button steps into the next window that allows the user to set values for the Web Service parameters.

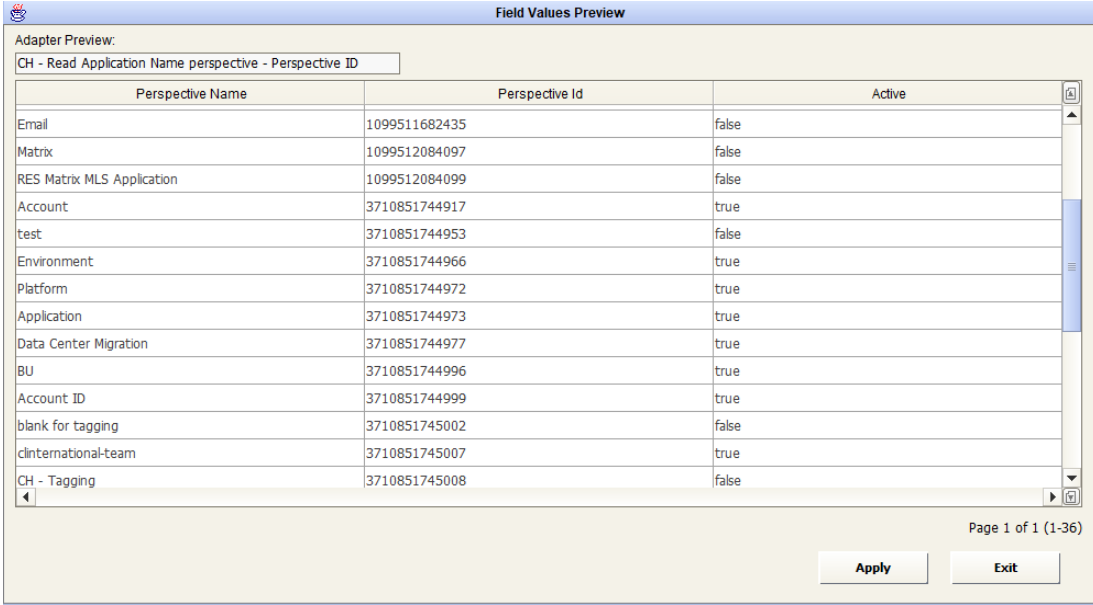


Web Service Configuration

Type	Attribute Name	Attribute Value
	Perspective ID	
	Queryable Assets	

When a lens icon shows beside the parameter name, this means that user may choose the parameter value from a list of available items.

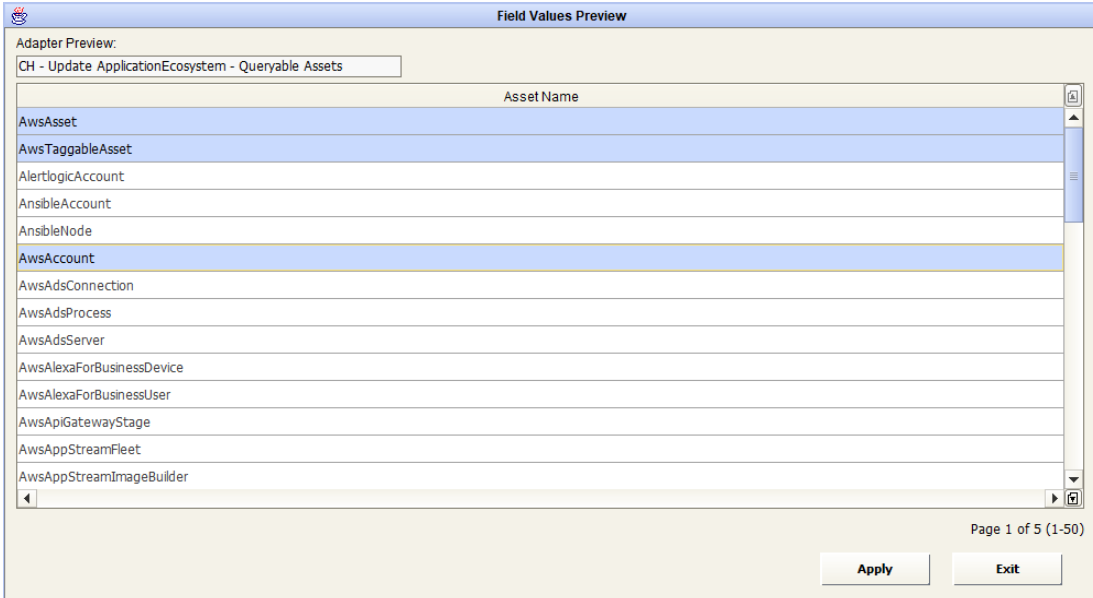
In case of this example, with the double-click on the lens icon, a table appears, with the available perspectives:



The screenshot shows a window titled "Field Values Preview". At the top, it says "Adapter Preview:" followed by a text box containing "CH - Read Application Name perspective - Perspective ID". Below this is a table with three columns: "Perspective Name", "Perspective Id", and "Active". The table contains 16 rows of data. At the bottom right, it says "Page 1 of 1 (1-36)" and there are "Apply" and "Exit" buttons.

Perspective Name	Perspective Id	Active
Email	1099511682435	false
Matrix	1099512084097	false
RES Matrix MLS Application	1099512084099	false
Account	3710851744917	true
test	3710851744953	false
Environment	3710851744966	true
Platform	3710851744972	true
Application	3710851744973	true
Data Center Migration	3710851744977	true
BU	3710851744996	true
Account ID	3710851744999	true
blank for tagging	3710851745002	false
clinternational-team	3710851745007	true
CH - Tagging	3710851745008	false

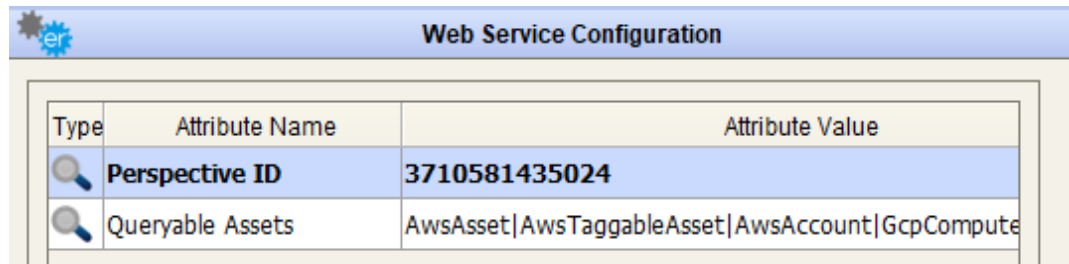
and Queryable assets:



The screenshot shows a window titled "Field Values Preview". At the top, it says "Adapter Preview:" followed by a text box containing "CH - Update ApplicationEcosystem - Queryable Assets". Below this is a list of assets under the heading "Asset Name". The list contains 17 items. At the bottom right, it says "Page 1 of 5 (1-50)" and there are "Apply" and "Exit" buttons.

Asset Name
AwsAsset
AwsTaggableAsset
AlertlogicAccount
AnsibleAccount
AnsibleNode
AwsAccount
AwsAdsConnection
AwsAdsProcess
AwsAdsServer
AwsAlexaForBusinessDevice
AwsAlexaForBusinessUser
AwsApiGatewayStage
AwsAppStreamFleet
AwsAppStreamImageBuilder

Select and apply the selection, even using multiselection in case of queryable assets:



The image shows a 'Web Service Configuration' dialog box. It contains a table with three columns: 'Type', 'Attribute Name', and 'Attribute Value'. The first row is highlighted in blue and shows a magnifying glass icon in the 'Type' column, 'Perspective ID' in the 'Attribute Name' column, and '3710581435024' in the 'Attribute Value' column. The second row shows a magnifying glass icon in the 'Type' column, 'Queryable Assets' in the 'Attribute Name' column, and 'AwsAsset|AwsTaggableAsset|AwsAccount|GcpCompute' in the 'Attribute Value' column.

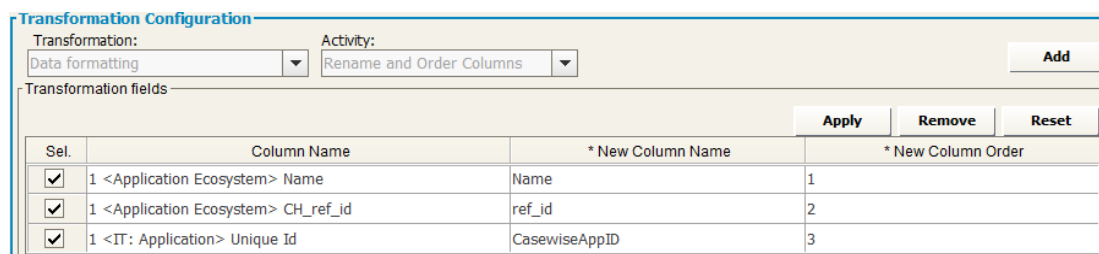
Type	Attribute Name	Attribute Value
	Perspective ID	3710581435024
	Queryable Assets	AwsAsset AwsTaggableAsset AwsAccount GcpCompute

Pressing the “Save” button will store all the entered parameters for the web service adapter in the DT database.

The “Exit” button closes the data preview window and goes back to the Web Service configuration form.

The Adapter, as mentioned, can be used to push data to CloudHealth and fill perspective groups. Based on an asset tag (for instance, application ID), corresponding metadata associated with the application ID will be pushed to CloudHealth in the form of perspectives and groups.

As an example, the perspective listing an Application Ecosystem and their associated applications can be aligned configuring a workflow, with a source providing values for application ecosystems name and associated application ID, and with the target operation “Web Service POST”, using the configured adapter. To provide mappings between source and target field, use a “Data Formatting: Rename and Order Columns” transformation, with the mandatory “**Name**” field for the perspective groups, the optional “**ref_id**” field to manage object renaming and additional fields name corresponding to tag fields to populate:



The image shows a 'Transformation Configuration' dialog box. It has two dropdown menus: 'Transformation:' set to 'Data formatting' and 'Activity:' set to 'Rename and Order Columns'. There is an 'Add' button. Below these is a section titled 'Transformation fields' which contains a table with columns: 'Sel.', 'Column Name', '* New Column Name', and '* New Column Order'. There are 'Apply', 'Remove', and 'Reset' buttons to the right of the table. The table has three rows, all with 'Sel.' checked.

Sel.	Column Name	* New Column Name	* New Column Order
<input checked="" type="checkbox"/>	1 <Application Ecosystem> Name	Name	1
<input checked="" type="checkbox"/>	1 <Application Ecosystem> CH_ref_id	ref_id	2
<input checked="" type="checkbox"/>	1 <IT: Application> Unique Id	CasewiseAppID	3

Mapping and Operation

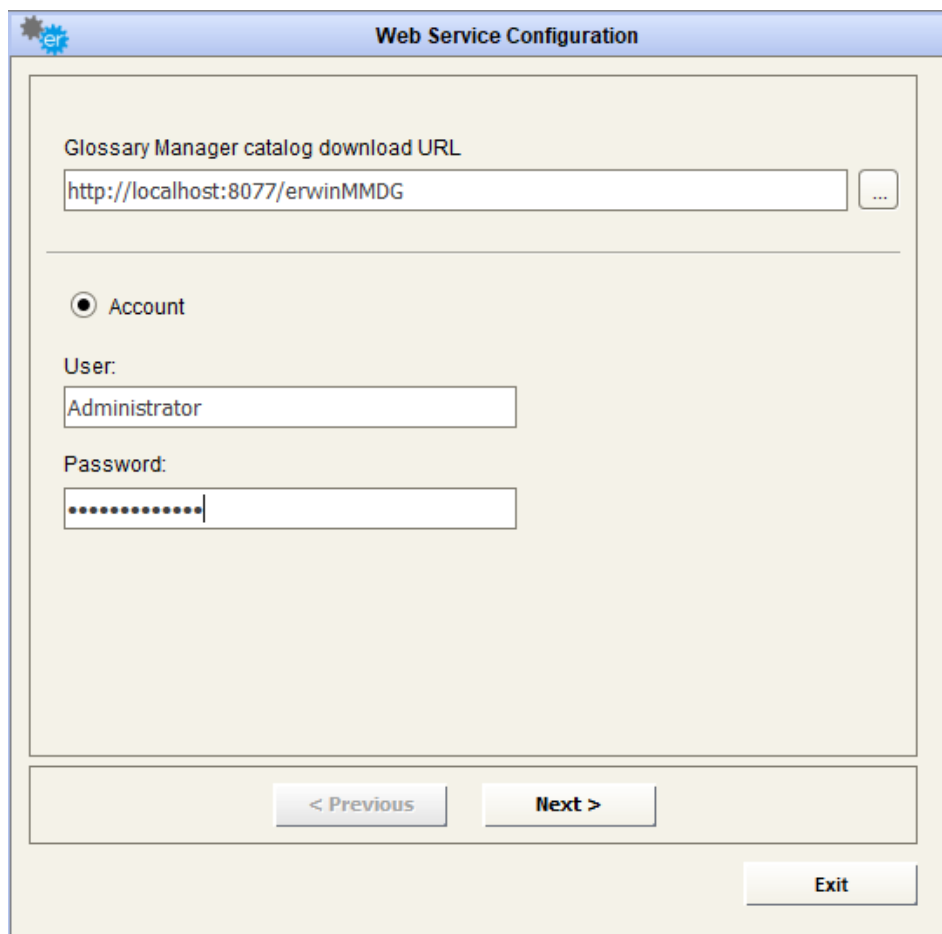
with operation:

Web Service POST

CH - Update ApplicationEcosystem

Business Terms from BGM – Download Business Terms

To use the adapter for BGM to get **Business Terms**, select the authorization method (Account / Access Token) and enter the relevant credentials.

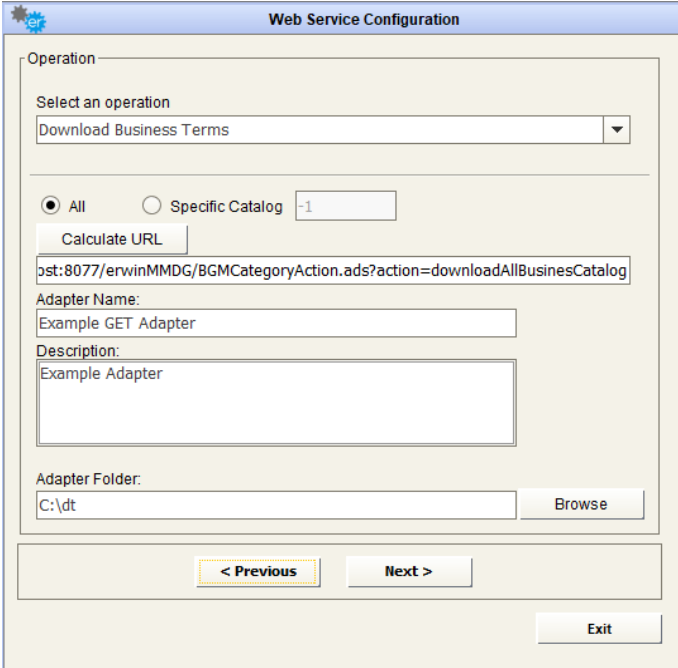


The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside the dialog, there is a section for 'Glossary Manager catalog download URL' with a text box containing 'http://localhost:8077/erwinMMDG' and a browse button (...). Below this is a section for authentication with a radio button selected for 'Account'. Under 'Account', there are fields for 'User:' (containing 'Administrator') and 'Password:' (containing masked characters). At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Click the **Next >** button to proceed to the next step, and select the operation “Download Business Terms”. Specify the specific Catalog ID or select “All” and click the **Calculate URL** button. Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.

Click the **Next >** button to proceed to the next step.

To save the adapter to the DT database, click the **SAVE** button.

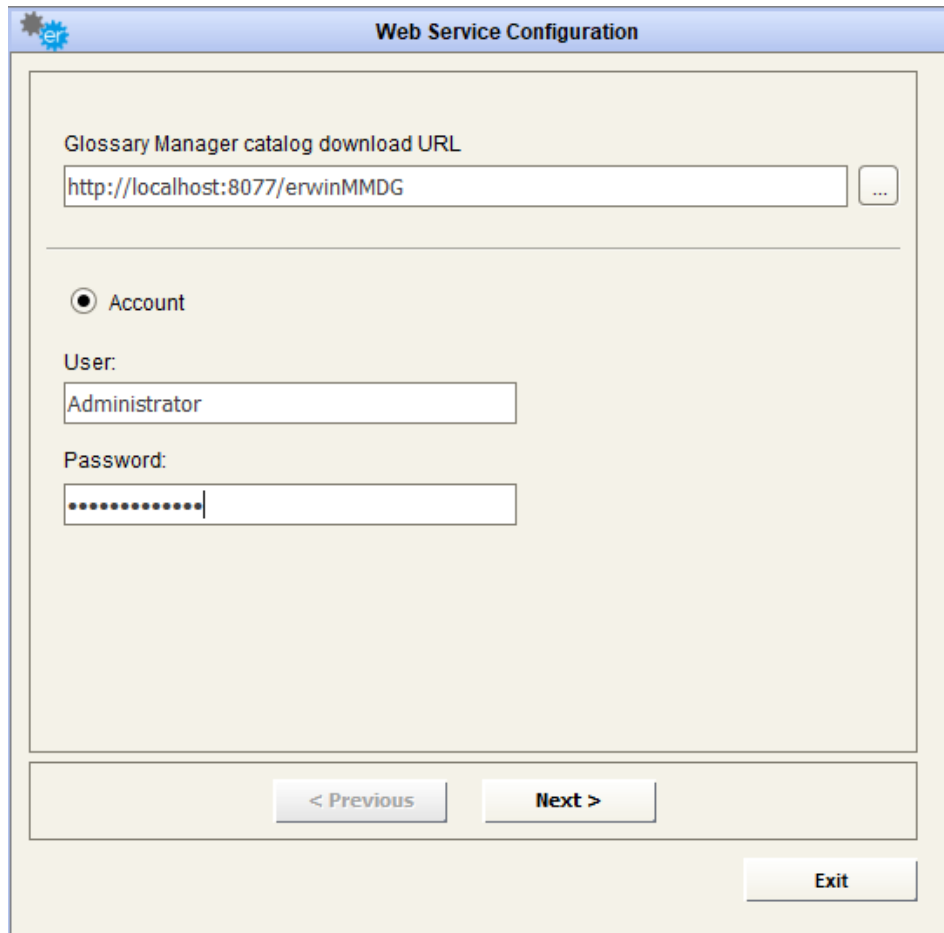


The image shows a "Web Service Configuration" dialog box. It has a title bar with a gear icon and the text "Web Service Configuration". The main area is titled "Operation" and contains a dropdown menu with "Download Business Terms" selected. Below this are two radio buttons: "All" (selected) and "Specific Catalog" (with a text box containing "-1"). A "Calculate URL" button is next to the "Specific Catalog" option. Below the buttons is a text box containing the URL "post:8077/erwinMMDG/BGMCcategoryAction.ads?action=downloadAllBusinesCatalog". Underneath the URL are three text boxes: "Adapter Name:" with "Example GET Adapter", "Description:" with "Example Adapter", and "Adapter Folder:" with "C:\dt". A "Browse" button is to the right of the "Adapter Folder" text box. At the bottom of the dialog are three buttons: "< Previous", "Next >", and "Exit".

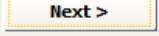
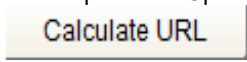
Click the **Next >** button to proceed to the next step, where the adapter can be previewed and/or saved.

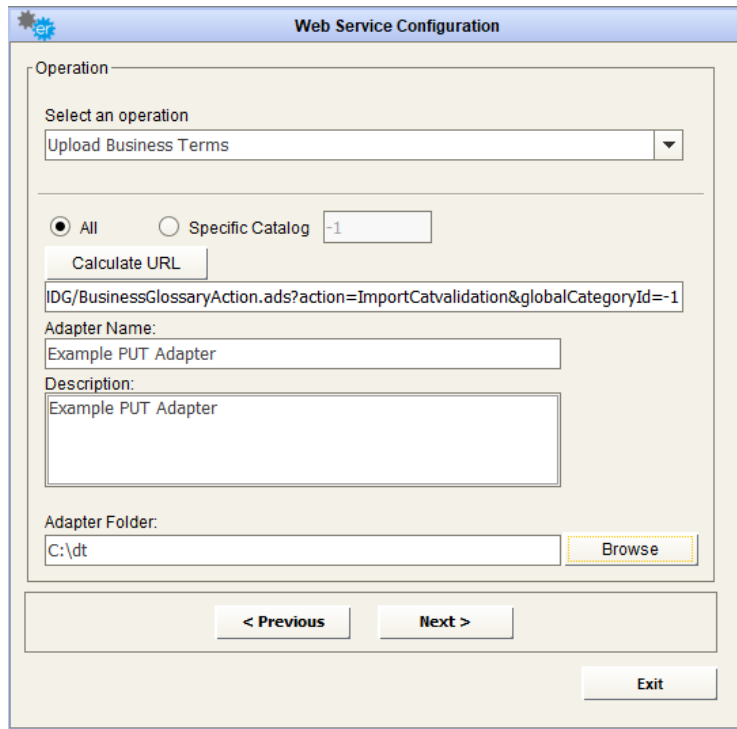
Business Terms from BGM – Upload Business Terms

To use the adapter for BGM to **get Business Terms**, select the authorization method (Account / Access Token) and enter the relevant credentials.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Glossary Manager catalog download URL' with a text field containing 'http://localhost:8077/erwinMMDG' and a browse button (...). Below this is a section for authentication with a radio button selected for 'Account'. Under 'Account', there are fields for 'User:' (containing 'Administrator') and 'Password:' (containing masked characters). At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Click the  button to proceed to the next step, and select the operation "Upload Business Terms". Specify the a specific Catalog ID or select "All" and click the  button. Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.



Web Service Configuration

Operation

Select an operation
 Upload Business Terms ▼

☒ All ☐ Specific Catalog -1

Calculate URL
 IDG/BusinessGlossaryAction.ads?action=ImportCatvalidation&globalCategoryId=-1

Adapter Name:
 Example PUT Adapter

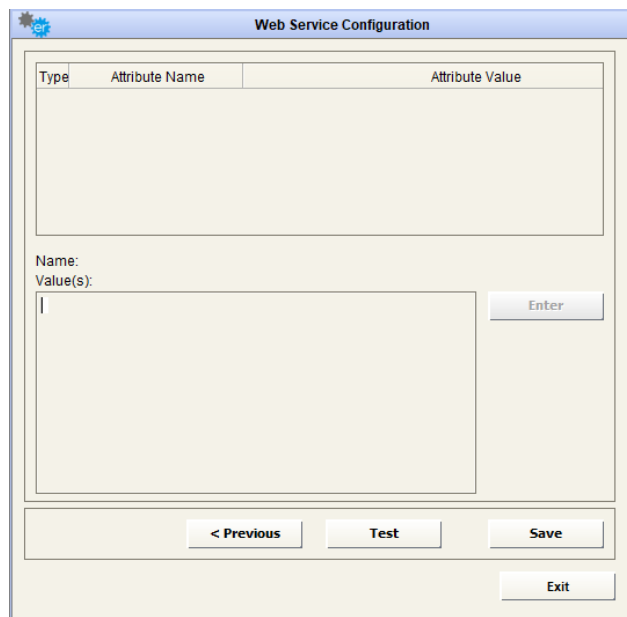
Description:
 Example PUT Adapter

Adapter Folder:
 C:\dt Browse

< Previous Next >

Exit

Click the **Next >** button to proceed to the next step. To save the adapter to the DT database, click the **SAVE** button.



Web Service Configuration

Type	Attribute Name	Attribute Value

Name:
 Value(s):

Enter

< Previous Test Save

Exit

The adapter can now be used as a target endpoint when mapping data in a workflow. To select the adapter as a target, select “Web Service POST” as the operation and select your BGM adapter. A mapping table will appear, allowing the source fields to be mapped to relevant target fields for creating BGM Business Terms.

Workflow Configuration

1. GENERAL INFO 2. CHOOSE SOURCES 3. TRANSFORM DATA 4. OPERATION & TARGET 5. SAVE AND TEST

Workflow definition

Configuration:

Workflow: Workflow folder: ☐ Active

Workflow Name: Description:

BGM PUT Example

Steps content

Sources

1 erwin EA Agile V3 (4003)

Transformations

Operations

Example PUT Adapter

Mapping and Operation

with operation: ☐ Send e-mail to ☐ Single email for record

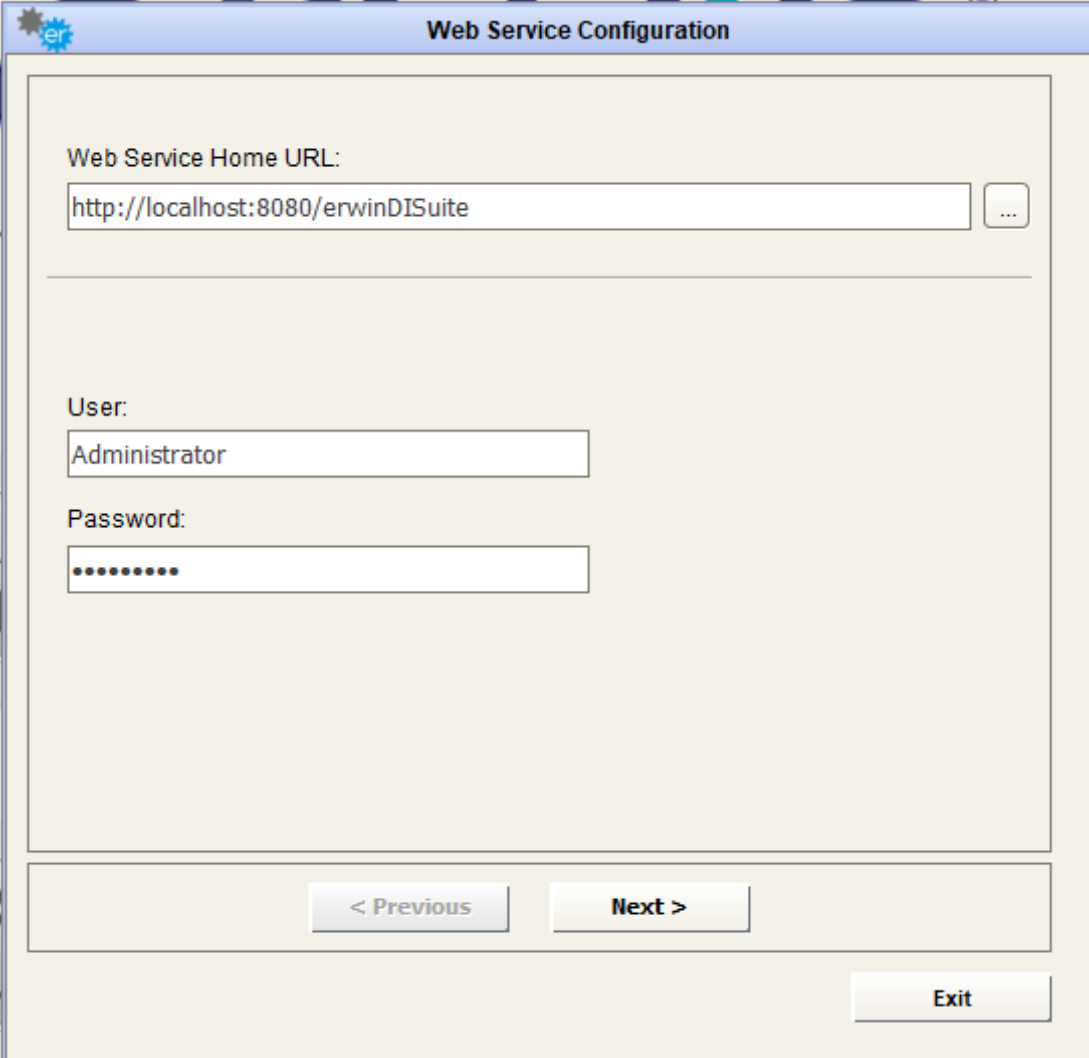
Web Service POST Example PUT Adapter

Source Column	Target Field	Target Field Type
1 Id		
1 Name	Business Term	String
1 Description	Description	String
1 MyVal	Path	String
1 BGM Catalog (is part of)	Catalog Name	String

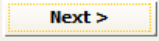
Add Delete Import WF Save Test Cancel Exit

erwin DISuite Metadata Manager

To use the adapter for erwin DISuite Metadata Manager **to download Data Dictionary**, provide the url of erwin DISuite and enter the relevant credentials

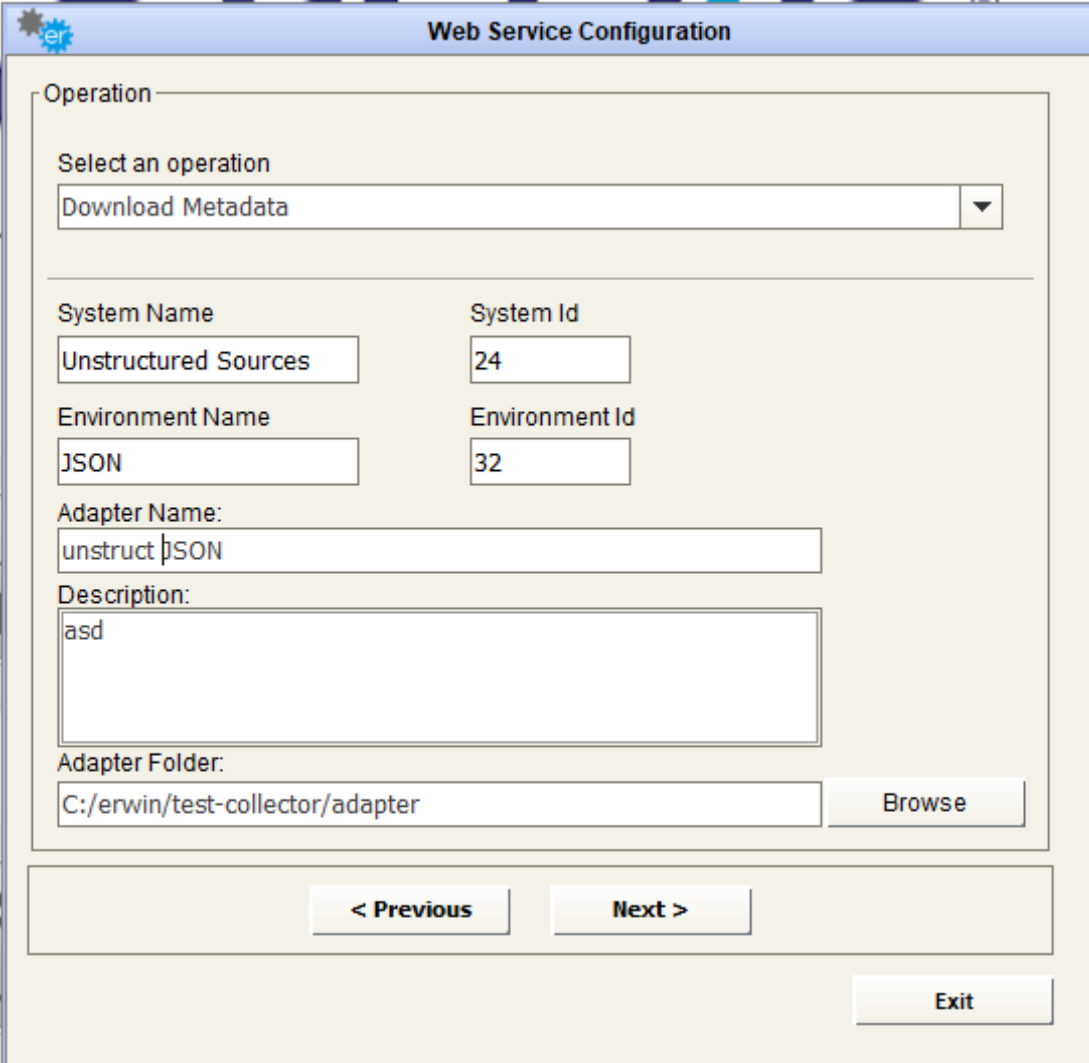


The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside the dialog, there are three input fields: 'Web Service Home URL:' with the value 'http://localhost:8080/erwinDISuite' and a browse button (...); 'User:' with the value 'Administrator'; and 'Password:' with a masked password (dots). At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Click the  button to proceed to the next step, and select the operation "Download Metadata".

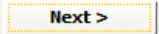
Provide the "System Name", "System Id", "Environment Name", "Environment Id" in their respective edit box.

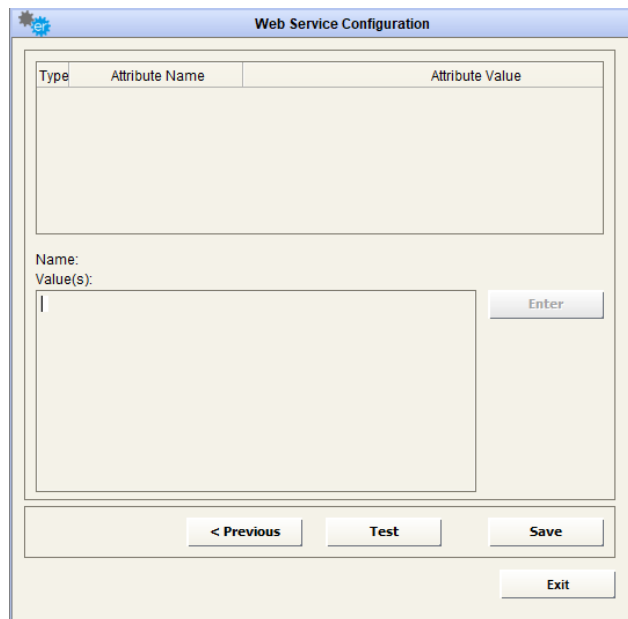
Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.



The image shows a 'Web Service Configuration' dialog box with a blue title bar and a gear icon. The main area is titled 'Operation' and contains a dropdown menu set to 'Download Metadata'. Below this are four input fields: 'System Name' (Unstructured Sources), 'System Id' (24), 'Environment Name' (JSON), and 'Environment Id' (32). Further down are 'Adapter Name:' (unstruct JSON) and 'Description:' (asd) fields. At the bottom is an 'Adapter Folder:' field with the path 'C:/erwin/test-collector/adapter' and a 'Browse' button. Navigation buttons at the bottom include '< Previous', 'Next >', and 'Exit'.

Field	Value
Operation	Download Metadata
System Name	Unstructured Sources
System Id	24
Environment Name	JSON
Environment Id	32
Adapter Name:	unstruct JSON
Description:	asd
Adapter Folder:	C:/erwin/test-collector/adapter

Click the  button to proceed to the next step, where the adapter can be previewed and/or saved.




The image shows a 'Web Service Configuration' dialog box. It features a table with three columns: 'Type', 'Attribute Name', and 'Attribute Value'. Below the table, there is a 'Name:' label and a 'Value(s):' text area. To the right of the text area is an 'Enter' button. At the bottom of the dialog, there are four buttons: '< Previous', 'Test', 'Save', and 'Exit'.


Type	Attribute Name	Attribute Value
------	----------------	-----------------

Name:
Value(s):

Enter

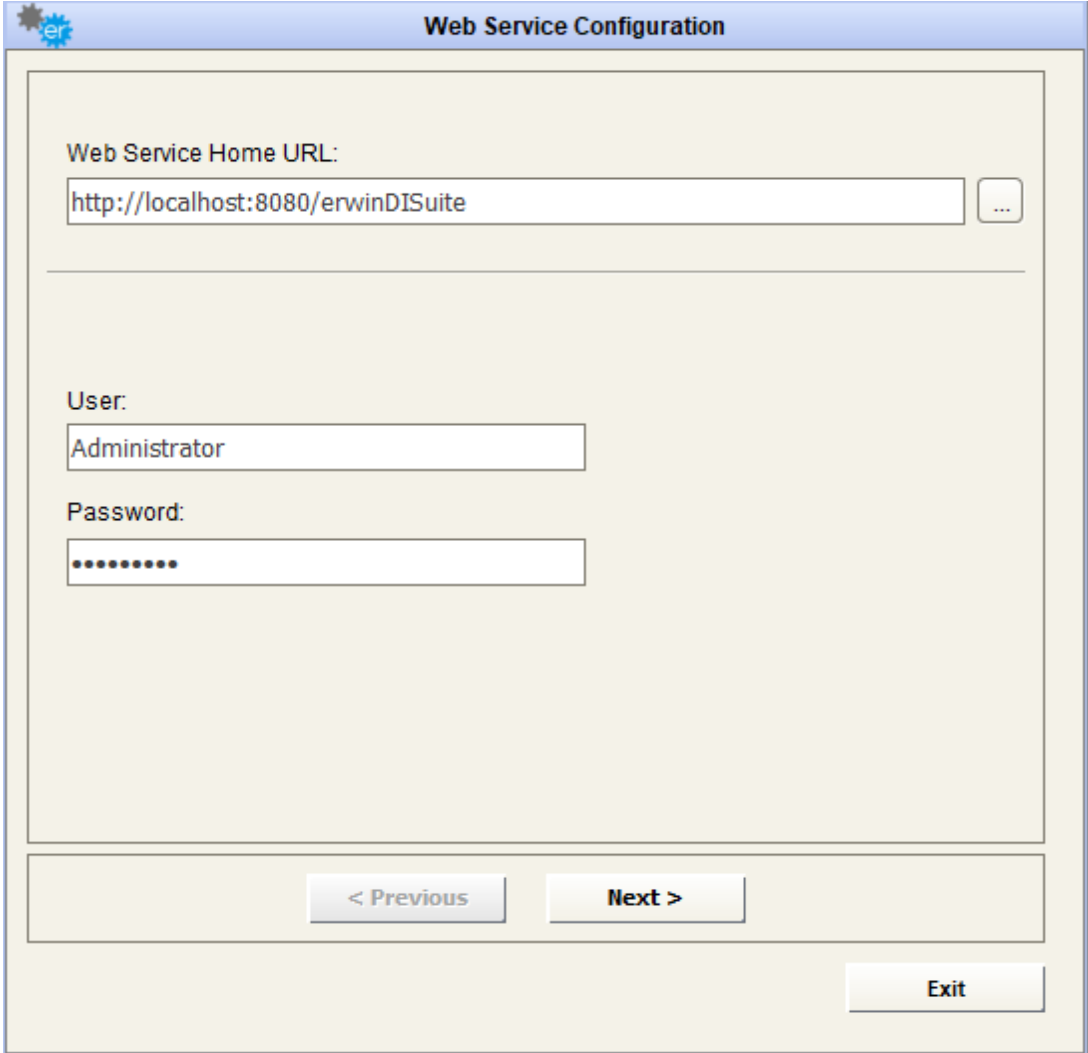
< Previous Test Save Exit

To preview a sample of the first 50 results, click the  button

To save the adapter to the DT database, click the  button.

erwin DISuite Mapping Manager

To use the adapter for erwin DISuite Mapping Manager to **download Mappings**, provide the url of erwin DISuite and enter the relevant credentials



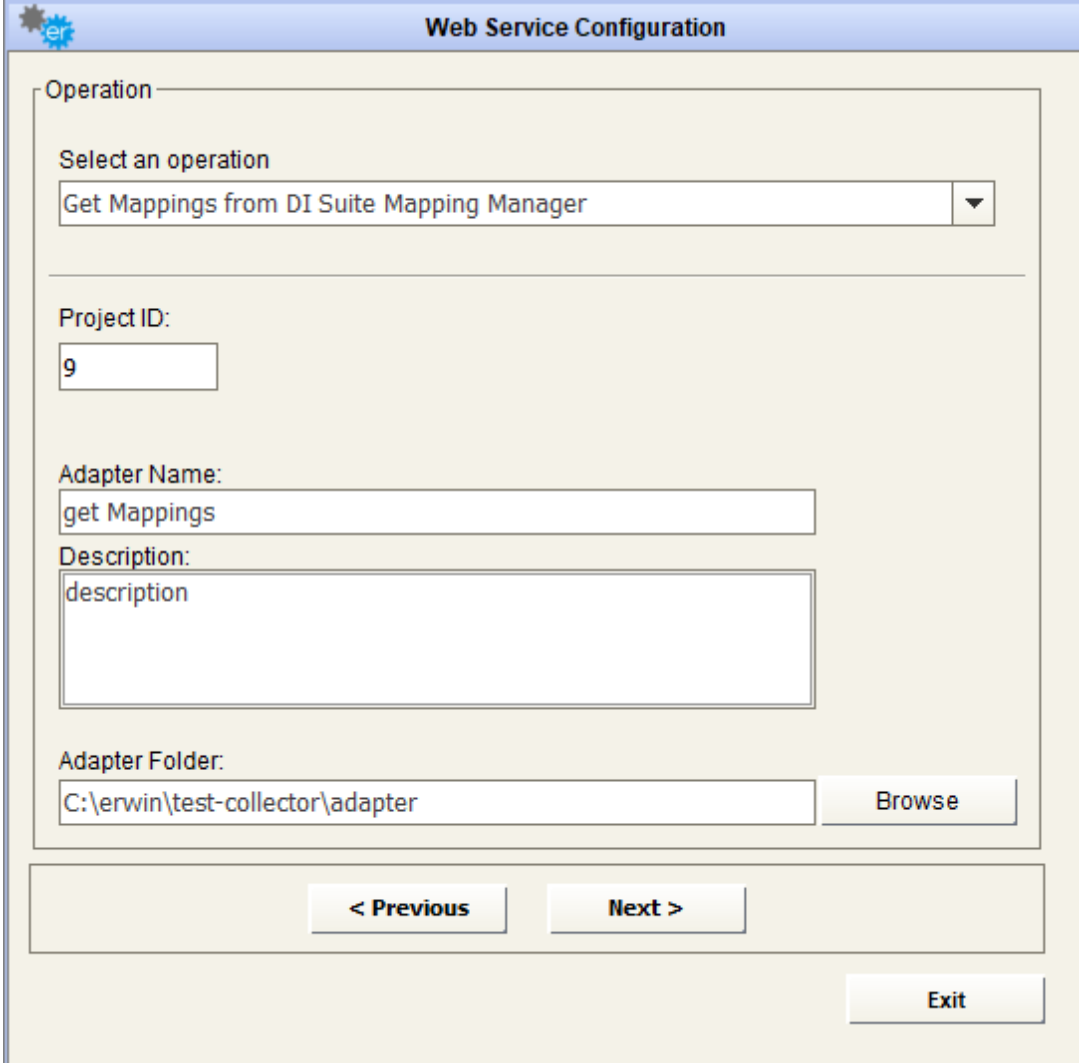
The image shows a 'Web Service Configuration' dialog box with the following fields and buttons:

- Web Service Home URL:** A text field containing 'http://localhost:8080/erwinDISuite' and a browse button ('...').
- User:** A text field containing 'Administrator'.
- Password:** A text field with masked characters ('.....').
- Navigation buttons:** '< Previous' and 'Next >' buttons.
- Exit button:** An 'Exit' button at the bottom right.

lick the **Next >** button to proceed to the next step, and select the operation "Get Mappings from DI Suite Mapping Manager".

Provide the "Project Id" of the project in Mapping Manager.

Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.



The image shows a 'Web Service Configuration' dialog box with a blue title bar and a gear icon. It contains several input fields and buttons. The 'Operation' section has a dropdown menu set to 'Get Mappings from DI Suite Mapping Manager'. The 'Project ID' field contains the number '9'. The 'Adapter Name' field contains 'get Mappings'. The 'Description' field contains 'description'. The 'Adapter Folder' field contains 'C:\erwin\test-collector\adapter' and has a 'Browse' button next to it. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Web Service Configuration

Operation

Select an operation

Get Mappings from DI Suite Mapping Manager ▼

Project ID:

9

Adapter Name:

get Mappings

Description:

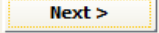
description

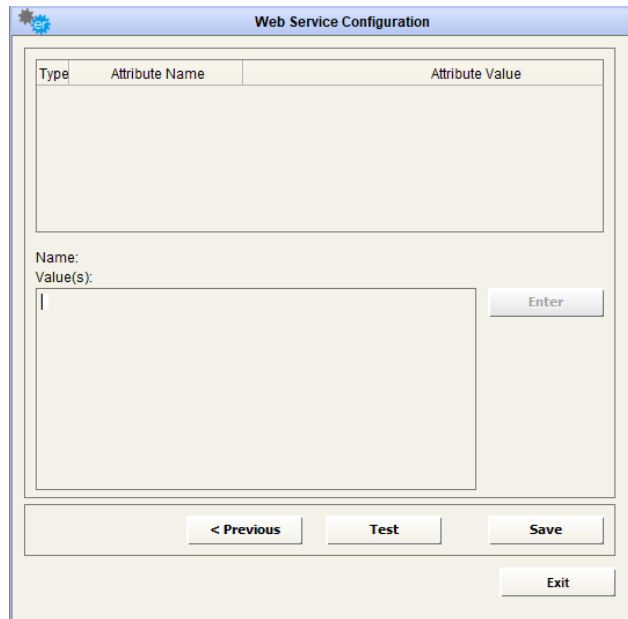
Adapter Folder:

C:\erwin\test-collector\adapter Browse

< Previous Next >

Exit

Click the  button to proceed to the next step, where the adapter can be previewed and/or saved.




The image shows a 'Web Service Configuration' dialog box. It features a table with three columns: 'Type', 'Attribute Name', and 'Attribute Value'. Below the table, there are input fields for 'Name:' and 'Value(s):', followed by an 'Enter' button. At the bottom, there are four buttons: '< Previous', 'Test', 'Save', and 'Exit'.


Type	Attribute Name	Attribute Value
------	----------------	-----------------

Name:
Value(s):

Enter

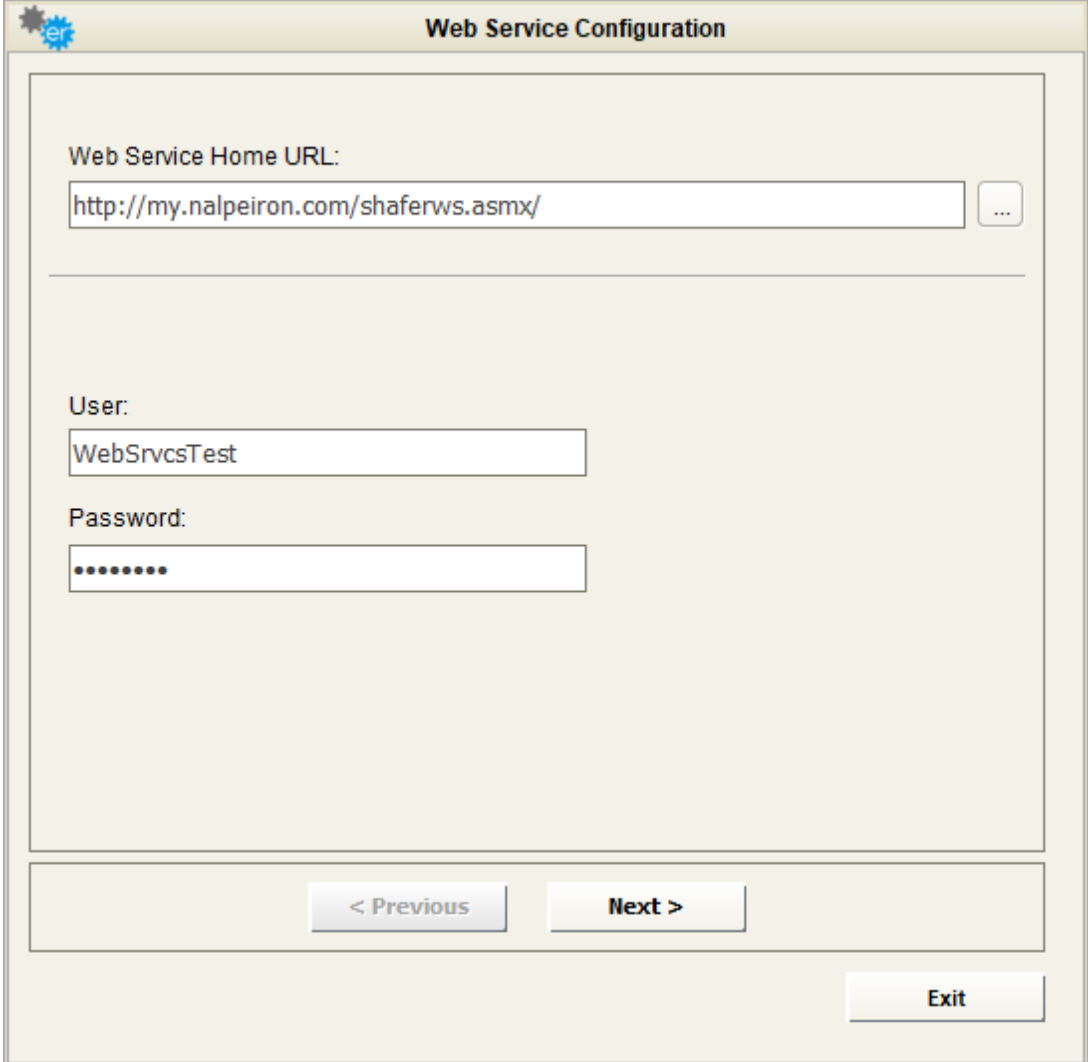
< Previous Test Save Exit

To preview a sample of the first 50 results, click the  button

To save the adapter to the DT database, click the  button.

Nalpeiron – get license details for company

To use the adapter for Nalpeiron **to download license details from Nalpeiron** , provide the url to access Nalpeiron webservice and enter the relevant credentials

A screenshot of a 'Web Service Configuration' dialog box. The dialog has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there are three input fields: 'Web Service Home URL:' with the value 'http://my.nalpeiron.com/shaferws.asmx/' and a browse button (...); 'User:' with the value 'WebSrvcsTest'; and 'Password:' with a masked password '.....'. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'. A small 'C' icon is visible at the bottom right of the dialog box.

Web Service Configuration

Web Service Home URL:

User:

Password:

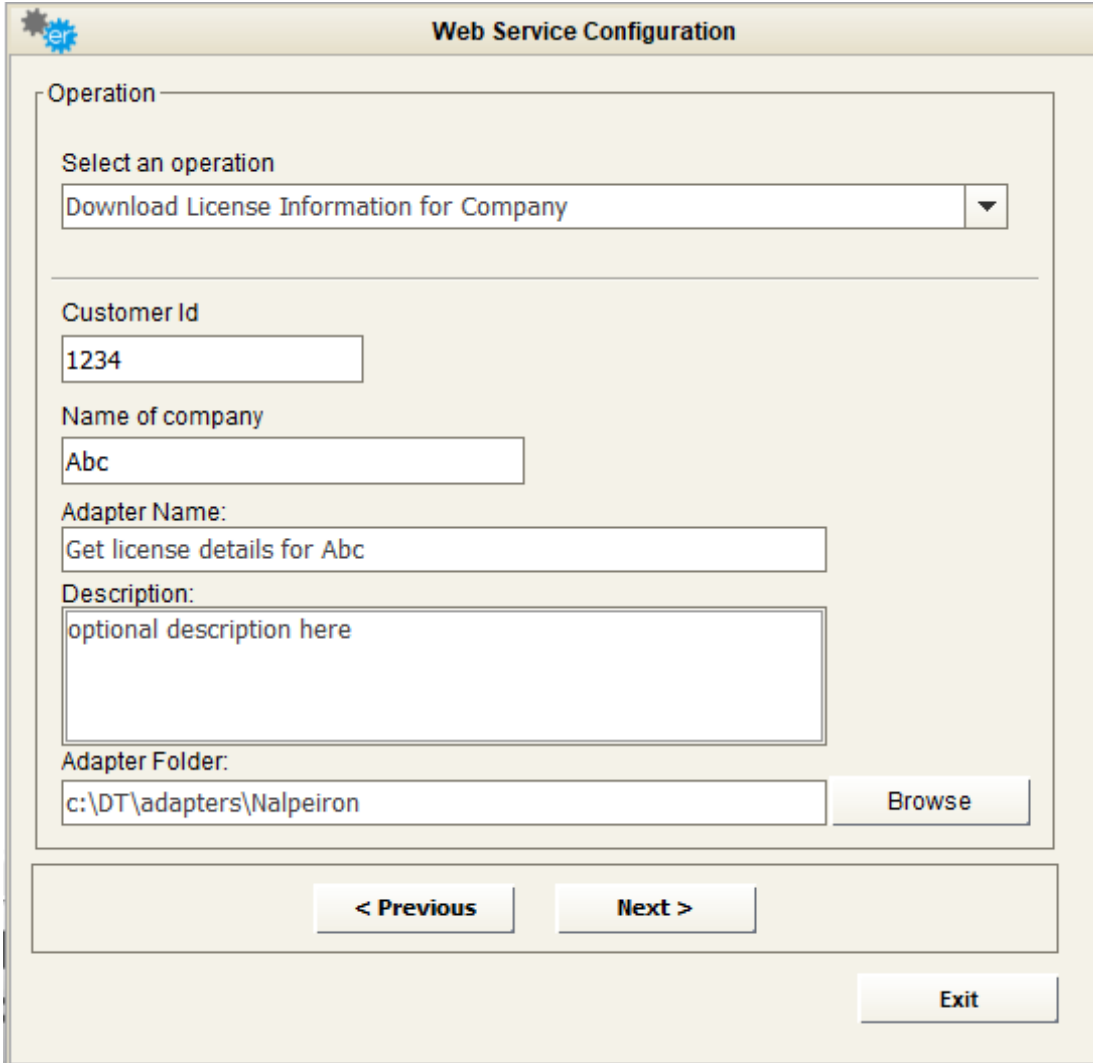
< Previous Next > Exit

lick the **Next >** button to proceed to the next step, and select the operation "Download License information for Company".

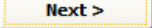
Provide the "Customer Id" that Nalpeiron has assigned to your company.

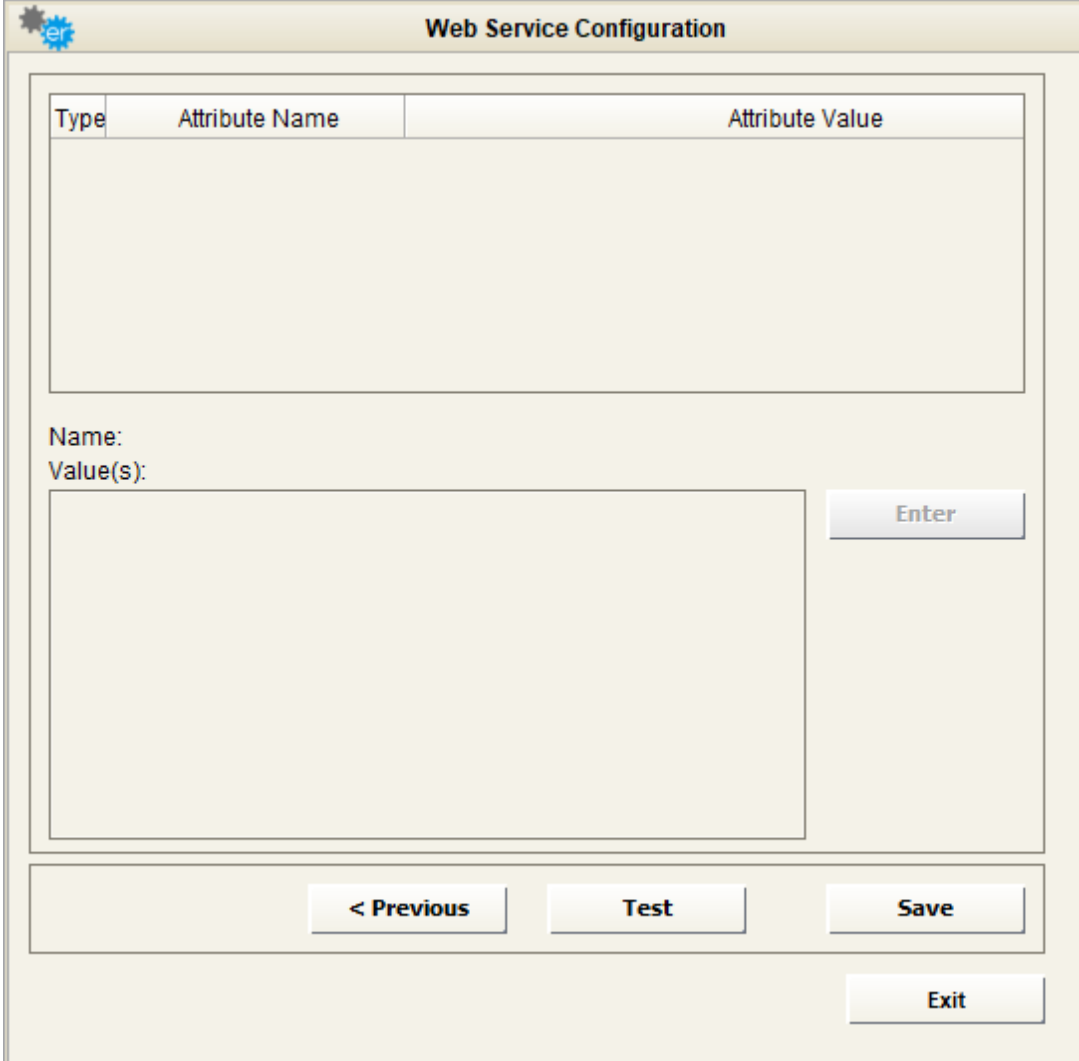
Provide the name of company (your customer) for whom you want to get license details from Nalpeiron

Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.



The image shows a 'Web Service Configuration' dialog box with a title bar containing a gear icon and the text 'Web Service Configuration'. The dialog is divided into several sections. The 'Operation' section at the top has a label 'Select an operation' and a dropdown menu currently showing 'Download License Information for Company'. Below this is a horizontal separator. The 'Customer Id' section has a text box with '1234'. The 'Name of company' section has a text box with 'Abc'. The 'Adapter Name:' section has a text box with 'Get license details for Abc'. The 'Description:' section has a larger text box containing 'optional description here'. The 'Adapter Folder:' section has a text box with 'c:\DT\adapters\Nalpeiron' and a 'Browse' button to its right. At the bottom of the dialog, there are three buttons: '< Previous', 'Next >', and 'Exit'. The 'Next >' button is highlighted with a yellow border.

Click the  button to proceed to the next step, where the adapter can be previewed and/or saved.



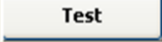
The image shows a 'Web Service Configuration' dialog box. It features a table with three columns: 'Type', 'Attribute Name', and 'Attribute Value'. Below the table, there are labels for 'Name:' and 'Value(s):' followed by a large text input area. To the right of this area is an 'Enter' button. At the bottom of the dialog, there are four buttons: '< Previous', 'Test', 'Save', and 'Exit'.

Type	Attribute Name	Attribute Value
------	----------------	-----------------

Name:
Value(s):

Enter

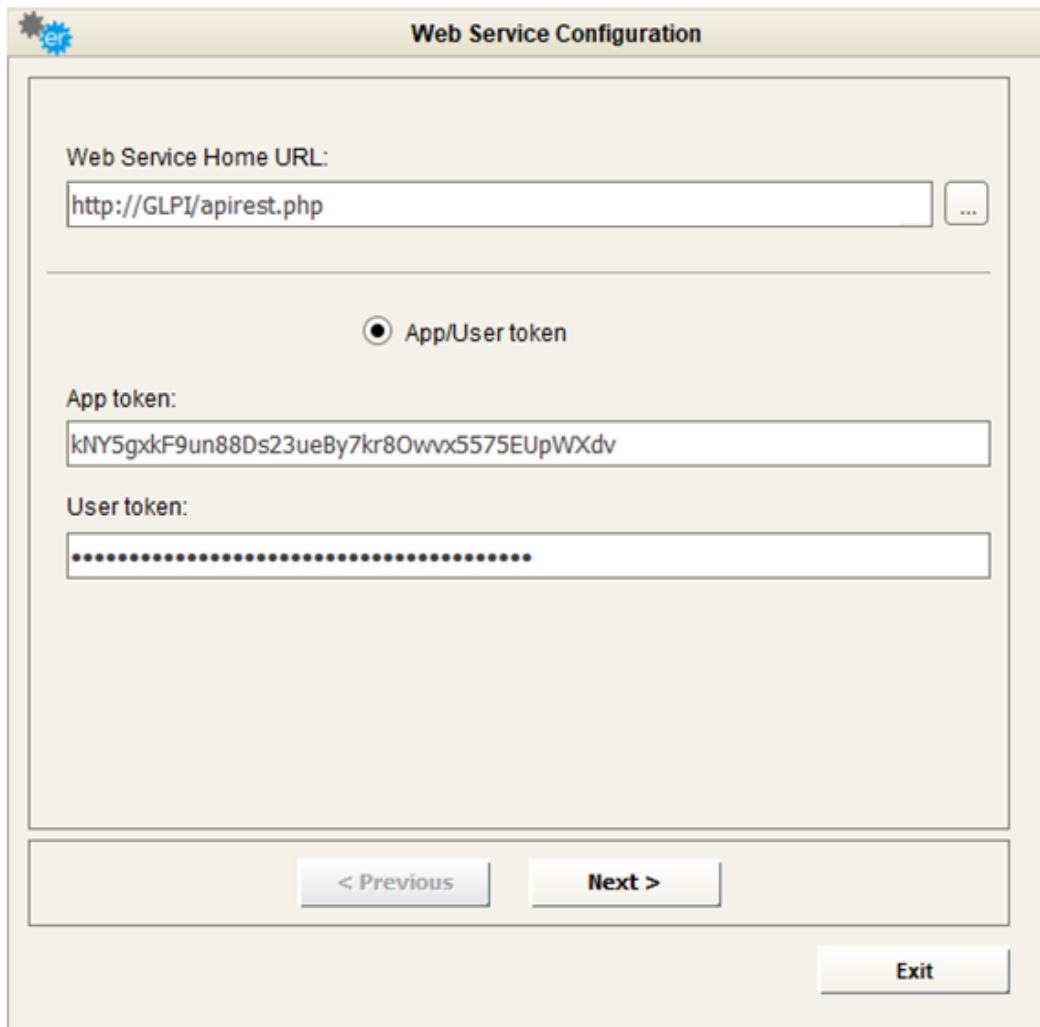
< Previous Test Save Exit

To preview a sample of the first 50 results, click the  button


To save the adapter to the DT database, click the  button.

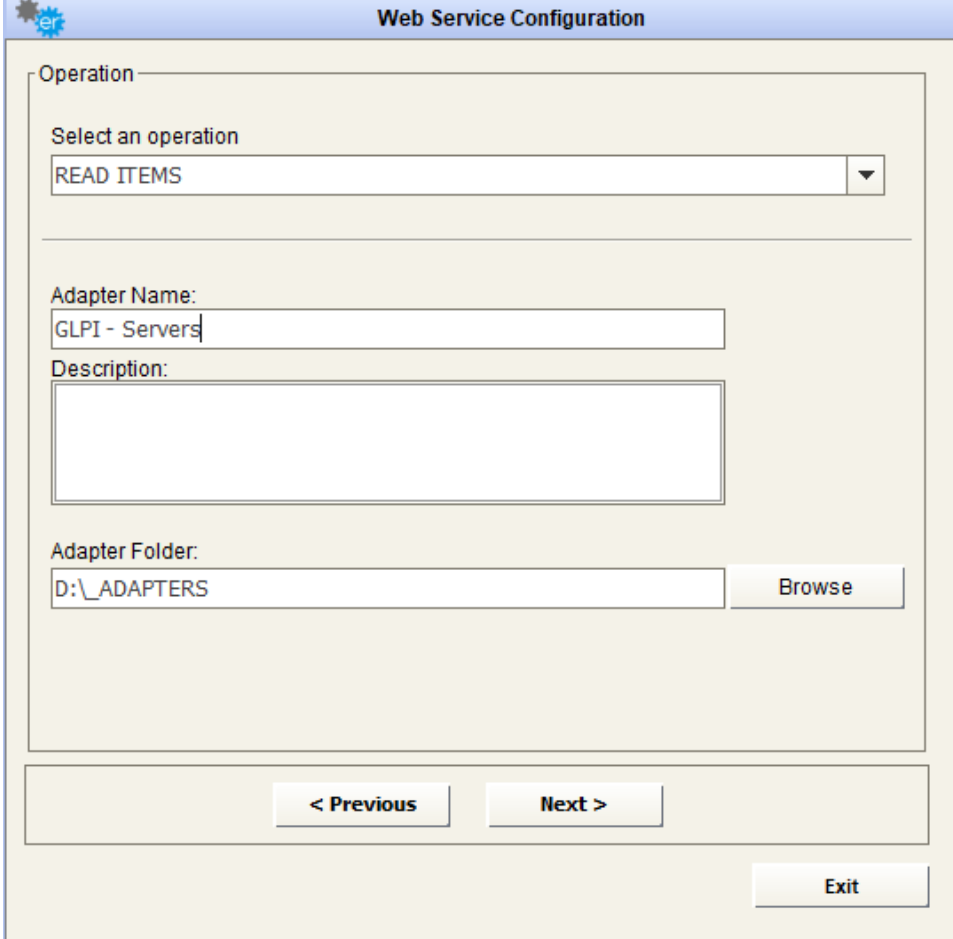
GLPI – Read configuration items

To use the adapter for **GLPI**, fill the field “Web Service Home URL” with the GLPI home page URL you want to connect to. Then provide the **APP token** and **user token** to connect.




The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Web Service Home URL:' with a text box containing 'http://GLPI/apirest.php' and a small '...' button to its right. Below this is a radio button labeled 'App/User token' which is selected. Underneath, there are two more text boxes: 'App token:' containing 'kNY5gxkF9un88Ds23ueBy7kr8Owvx5575EUpWXdv' and 'User token:' which is filled with dots. At the bottom of the dialog, there are three buttons: '< Previous', 'Next >', and 'Exit'.

The  button steps into the next window that shows the available operation of that Web Service, which is “**READ ITEMS**”, allowing users to query all items in GLPI repository, being them computer, software or other item types.



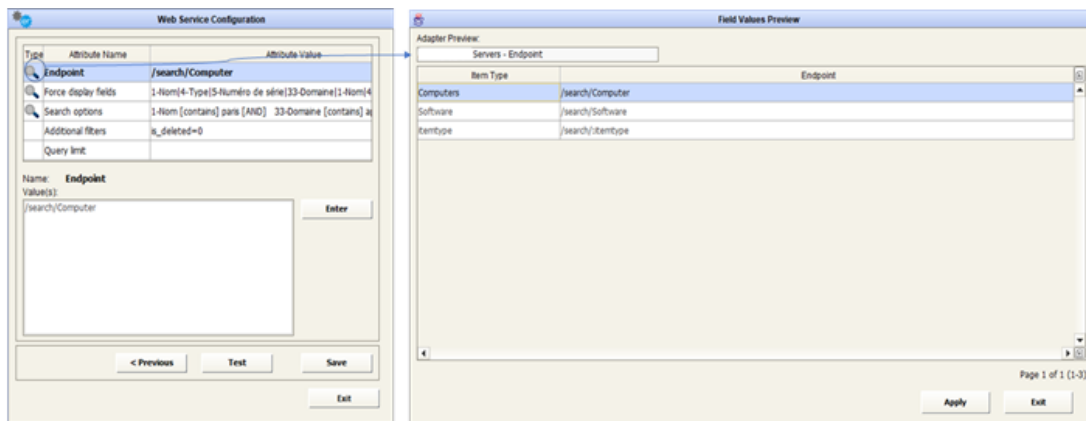
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is labeled 'Operation' and contains a dropdown menu with 'READ ITEMS' selected. The second section is labeled 'Adapter Name:' and contains a text box with 'GLPI - Servers'. Below that is a section labeled 'Description:' with a large empty text box. The third section is labeled 'Adapter Folder:' and contains a text box with 'D:_ADAPTERS' and a 'Browse' button. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

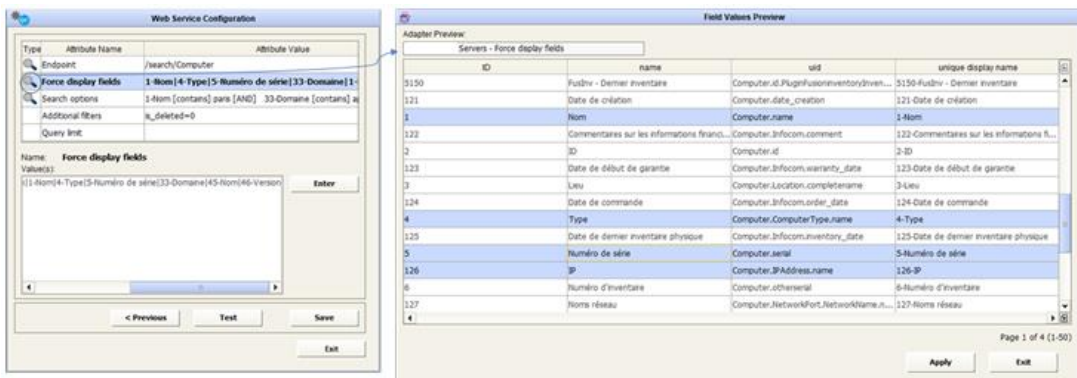
The next button  steps into the next window that allows the user to set values for the Web Service parameters.

After that, the user is provided with a set of options, to select endpoint, display fields, search options and additional filters:

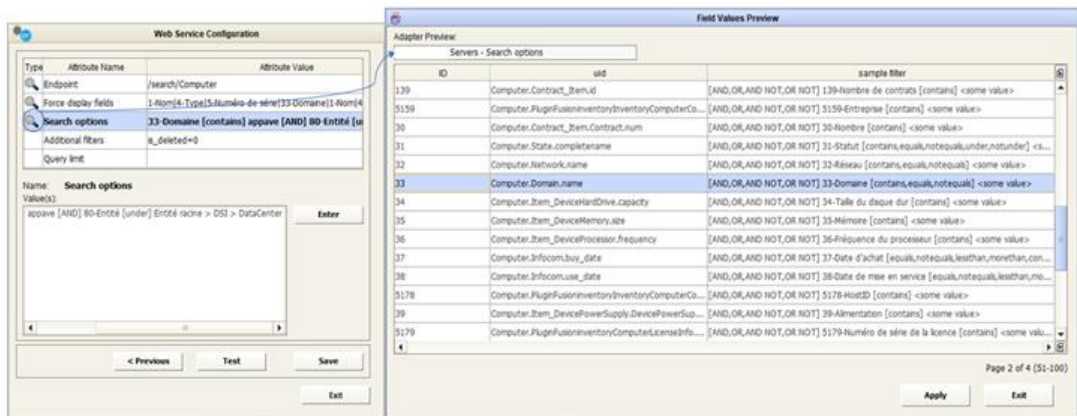
- 1) select between different endpoint, like Computer, Server, or any other item type:



2) select the fields of interest



3) Get available search options (search criteria):



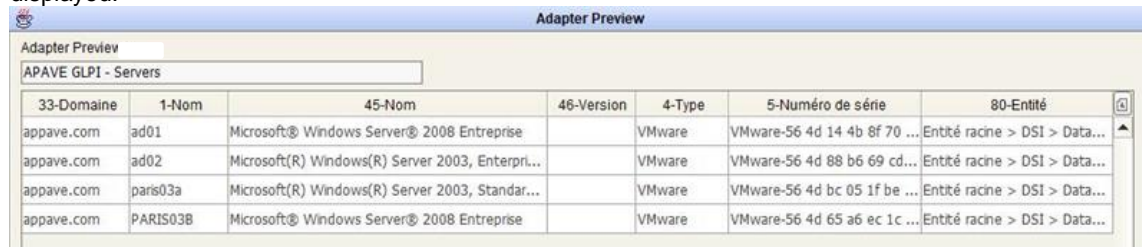
4) define additional filters, i.e.: "is_deleted=0" that will be appended to previous parameters. To add "metacriteria" to complete the search options, defined in point 3), append the metacriteria search options using the GLPI syntax here:

"is_deleted=0&metacriteria[0][itemtype]=Computer&metacriteria[0][field]=2&metacriteria[0][searchtype]=equal&metacriteria[0][value]=>0"

5) define a query limit (max returned range)

Test

Pressing the **Test** button will open a new pop-up window. The response resulting from the Web Service call is displayed.



The screenshot shows a window titled 'Adapter Preview' with a sub-header 'APAVE GLPI - Servers'. Below this is a table with the following columns: 33-Domaine, 1-Nom, 45-Nom, 46-Version, 4-Type, 5-Numéro de série, and 80-Entité. The table contains four rows of data, all with 'appave.com' in the 33-Domaine column.

33-Domaine	1-Nom	45-Nom	46-Version	4-Type	5-Numéro de série	80-Entité
appave.com	ad01	Microsoft® Windows Server® 2008 Entreprise		VMware	VMware-56 4d 14 4b 8f 70 ...	Entité racine > DSI > Data...
appave.com	ad02	Microsoft(R) Windows(R) Server 2003, Enterpri...		VMware	VMware-56 4d 88 b6 69 cd...	Entité racine > DSI > Data...
appave.com	paris03a	Microsoft(R) Windows(R) Server 2003, Standar...		VMware	VMware-56 4d bc 05 1f be ...	Entité racine > DSI > Data...
appave.com	PARIS03B	Microsoft® Windows Server® 2008 Entreprise		VMware	VMware-56 4d 65 a6 ec 1c ...	Entité racine > DSI > Data...

SAVE

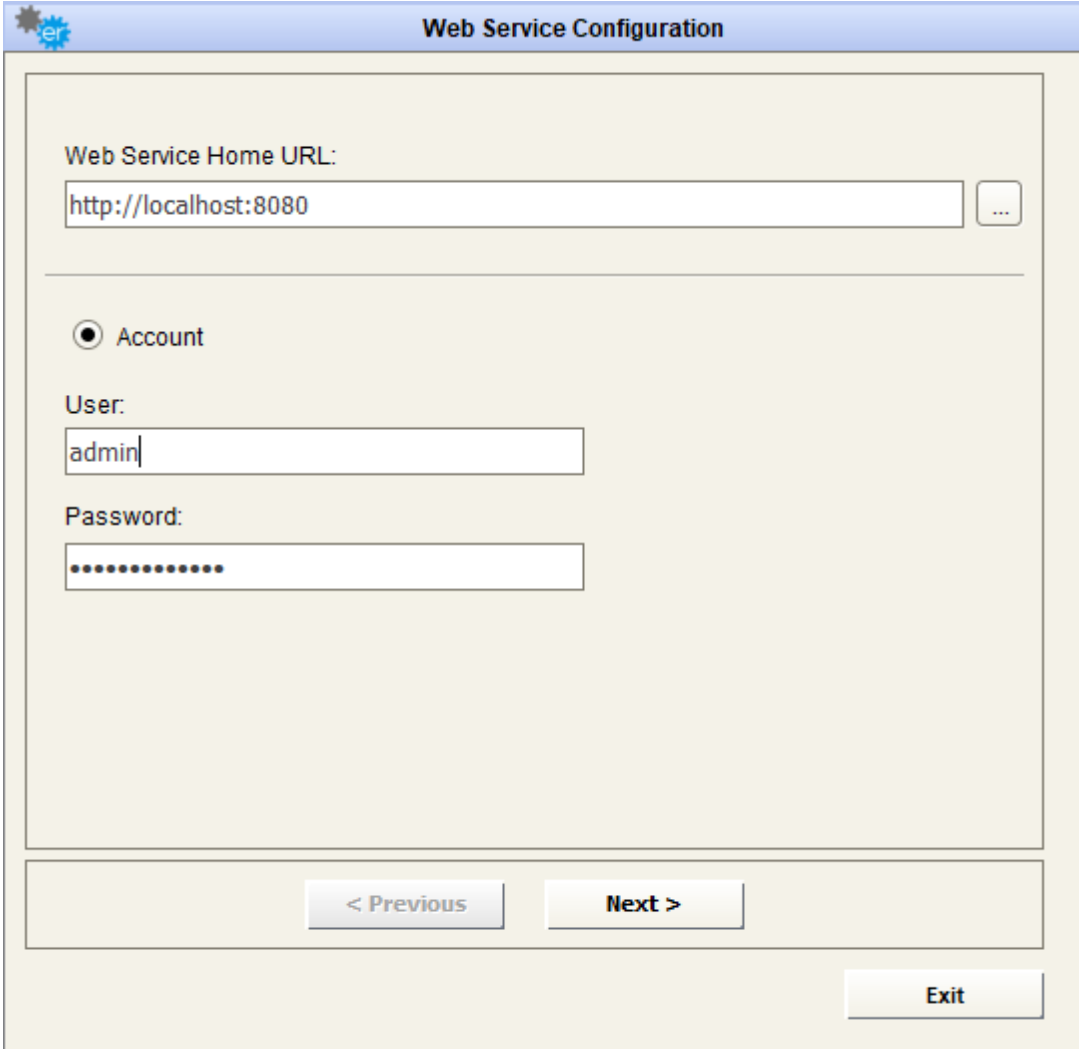
Pressing the **SAVE** button will store all the entered parameters for the web service adapter in the DT database.

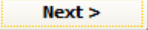
Exit

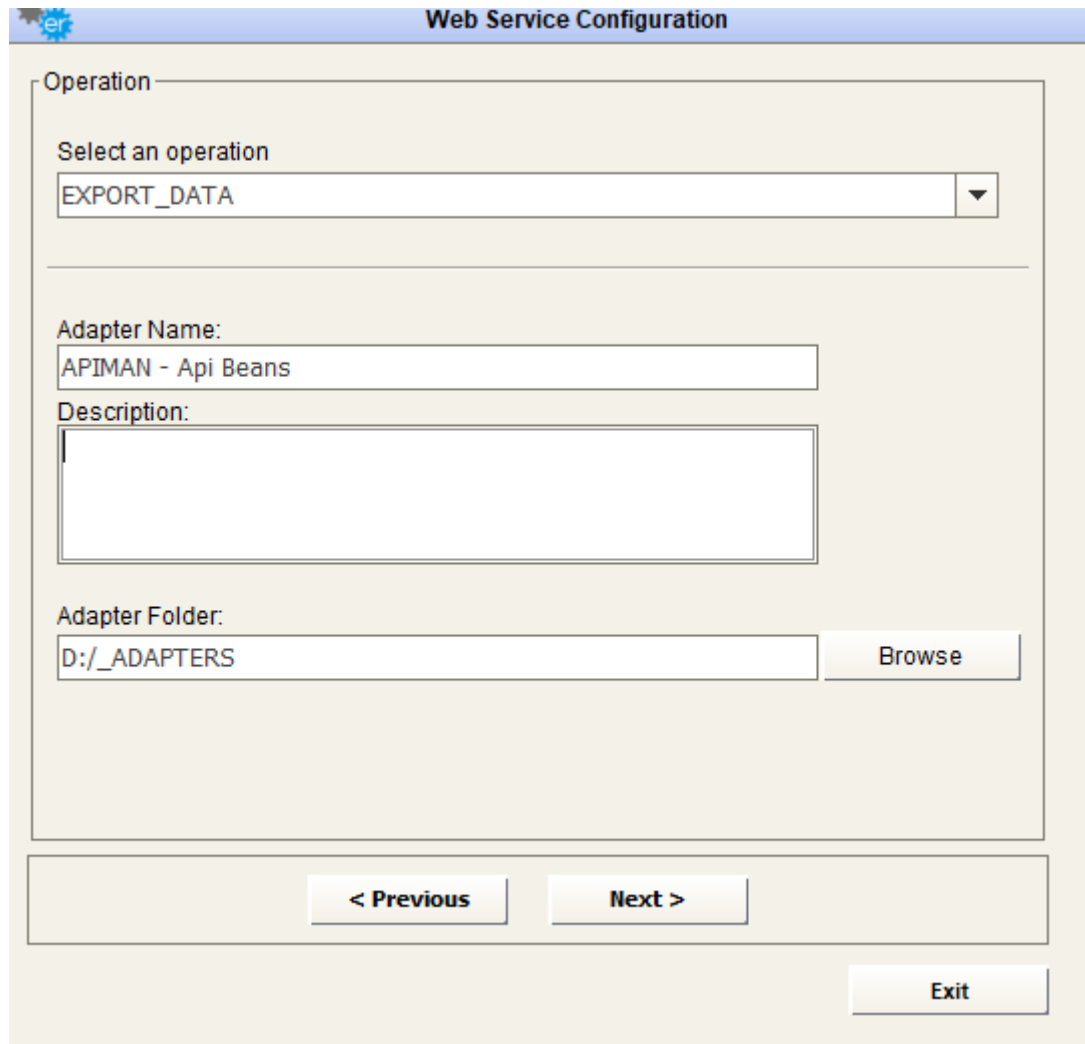
The **Exit** button closes the data preview window and goes back to Web Service configuration form.

APIMAN – Read APIs and contracts information

To use the adapter for APIMAN, fill the field “Web Service Home URL” with the APIMAN home page URL you want to connect to. Then provide valid user/password credentials to connect:


A screenshot of a 'Web Service Configuration' dialog box. The title bar is blue with a gear icon and the text 'Web Service Configuration'. The main area is light beige. It contains a label 'Web Service Home URL:' followed by a text input field containing 'http://localhost:8080' and a small button with three dots. Below this is a section with a radio button labeled 'Account'. Underneath are labels 'User:' and 'Password:' followed by text input fields. The 'User' field contains 'admin' and the 'Password' field contains a series of dots. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

The  button steps into the next window that shows the available operations of that Web Service; choose “**EXPORT DATA**”, to query data stored in APIMAN.



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is 'Operation', which contains a dropdown menu labeled 'Select an operation' with 'EXPORT_DATA' selected. Below this is a section for 'Adapter Name:' with a text field containing 'APIMAN - Api Beans', followed by a 'Description:' label and an empty text area. Then, there is an 'Adapter Folder:' label, a text field containing 'D:/_ADAPTERS', and a 'Browse' button. At the bottom of the main area are two buttons: '< Previous' and 'Next >'. At the very bottom right is an 'Exit' button.

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name, this means that user may choose the parameter value from a list of available items. In case of this example, with the double-click on the lens icon, a table appears, with the available endpoint for the Adapter:

Web Service Configuration

Type	Attribute Name	Attribute Value
Object type	ApiBean	

Name: **Object type**

Value(s):

ApiBean

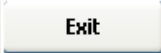
Enter

Field Values Preview	
Adapter Preview:	
APIMAN - Api Beans - Object type	
Object Type and references	Main node
Apis within Organizations	ApiBean
Api and Api Version	ApiVersionBean
Client APP, Contract, Api	Contracts

Pressing the button will open a new pop-up window and the response resulting from the Web Service call is displayed.

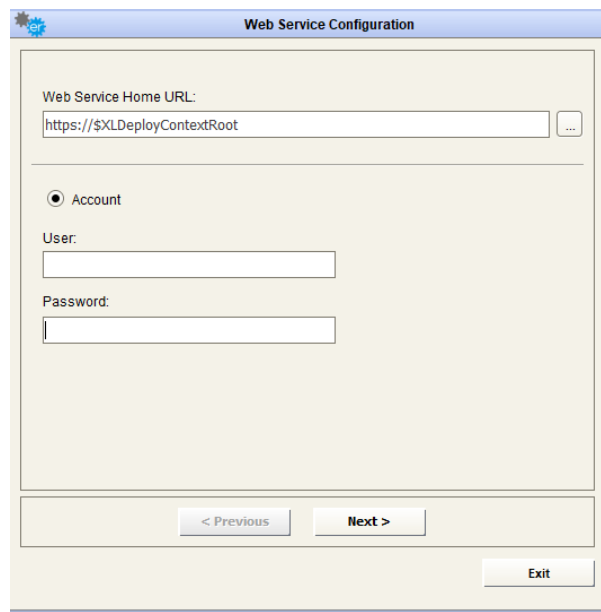
erwinCollector					
Organization id	Organization Name	Api Id	Api Name	Api description	Api created on
CORE	CORE	BEA-01	BEA-01	Application BEA	2019-07-01T14:04:00Z
CORE	CORE	FOR-01	FOR-01	Application Forum	2019-09-11T10:24:28Z
CORE	CORE	BOR-01	BOR-01	Application BOR	2019-09-11T14:05:00Z
CORE	CORE	ELA-001	ELA-001	Point d'entrée de recherche base Elasticsearch	2019-08-09T10:01:00Z
CORE	CORE	PEO-01	PEO-01	Application PEO	2019-07-01T14:05:00Z
CORE	CORE	OPH-01	OPH-01	Application Ophre (SRG)	2019-09-10T08:06:40Z
CORE	CORE	ELA-002	ELA-002	Point d'entrée base Elasticsearch	2019-09-09T10:01:00Z
CORE	CORE	CNE-01	CNE-01	Application Cnaga	2019-08-09T09:29:00Z
CORE	CORE	MOCK-01	MOCK-01	Point d'entrée mock (pour Tracc)	2019-07-10T08:17:00Z
CORE	CORE	GOP-01	GOP-01	Application GOP	2019-08-09T10:01:00Z
CORE	CORE	GOD-01	GOD-01	Application GC (OffreCommande)	2019-11-09T09:06:00Z
CORE	CORE	SHA-01	SHA-01	Application Rase Apave	2019-09-09T10:01:00Z
FRONT	FRONT	agencies-001	agencies-001	La Rue agencies-001 permet aux applications consommatrices de récupérer l'objet 'Agency' selon les critères de filtrage fournis lors de l'appel au Web Service. Le résultat du service retourne selon les paramètres d'entrée et fournis sous forme d'une structure JSON de l'objet Agency spécifique.	2019-07-09T10:01:00Z
FRONT	FRONT	factures-001	factures-001	La Rue factures-001 permet de publier un fichier sur E2 produits. Ce dernier est consommé par l'application 'Contraintes'. Un format peut générer à été défini pour permettre un interfaçage avec d'autres applications si besoin.	2019-09-09T10:01:00Z
FRONT	FRONT	directions-001	directions-001	La Rue directions-001 permet aux applications consommatrices de récupérer l'objet 'Direction' selon les critères de filtrage fournis lors de l'appel au Web Service. Le résultat du service retourne selon les paramètres d'entrée et fournis sous forme d'une structure JSON de l'objet Direction.	2019-07-09T10:01:00Z
FRONT	FRONT	groupes-011	groupes-011	La Rue groupes-011 permet aux applications consommatrices de récupérer l'objet 'Groupe' selon les critères de filtrage fournis lors de l'appel au Web Service. Le résultat du service retourne selon les paramètres d'entrée et fournis sous forme d'une structure JSON de l'objet Groupe.	2019-09-10T10:01:00Z
FRONT	FRONT	entites-002	entites-002	La Rue entites-002 permet aux applications consommatrices de récupérer l'objet 'Entite' selon les critères de filtrage fournis lors de l'appel au Web Service. Le résultat du service retourne selon les paramètres d'entrée et fournis sous forme d'une structure JSON de l'objet Entite.	2019-09-09T10:01:00Z

Pressing the button stores all the entered parameters for the web service adapter in the DT database.

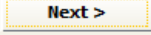
The  button closes the data preview window and goes back to Web Service configuration form.

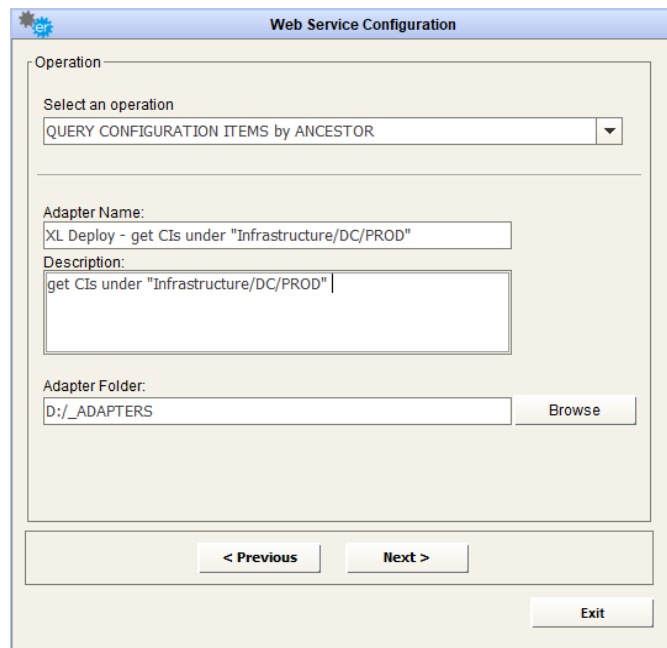
XLDeploy – Read deployment information

To use the adapter for XLDeploy, fill the field “Web Service Home URL” with the APIMAN home page URL you want to connect to. Then provide valid user/password credentials to connect:



The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section for 'Web Service Home URL:' with a text field containing 'https://\$XLDeployContextRoot' and a browse button (...). Below this is a section for 'Account' with a radio button selected. It contains 'User:' and 'Password:' labels, each followed by a text field. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

The  button steps into the next window that shows the available operations of that Web Service; choose “**QUERY CONFIGURATION ITEMS by ANCESTOR**”, to query data stored in XLDeploy:



Web Service Configuration

Operation

Select an operation
 QUERY CONFIGURATION ITEMS by ANCESTOR

Adapter Name:
 XL Deploy - get CIs under "Infrastructure/DC/PROD"

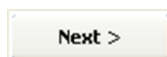
Description:
 get CIs under "Infrastructure/DC/PROD"

Adapter Folder:
 D:/_ADAPTERS Browse

< Previous Next >

Exit

After selecting the desired operation, it is required to enter a name and a description for the adapter in the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).



The next button steps into the next window that allows the user to set values for the Web Service parameters.




Web Service Configuration

Type	Attribute Name	Attribute Value
Ancestor		Infrastructure/DC/PROD

Name: **Ancestor**

Value(s):

Enter

Pressing the  button will open a new pop-up window and the response resulting from the Web Service call is displayed.


Adapter Preview


Adapter Preview:
XL Deploy - get CIs

CI Name	CI Type
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0000P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0000P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0011P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0011P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0012P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0012P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0013P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0013P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0022P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0022P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0023P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0023P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P/01_BT_PRO0032P0_data	file.DeployedFolder
Infrastructure/SBUV1/PROD/P1PRCA0/SRV0016P02/01_BT_PRO0032P0_data	file.DeployedFolder

Page 1 of 14 (1-50)

Exit

Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

The  button closes the data preview window and goes back to Web Service configuration form.

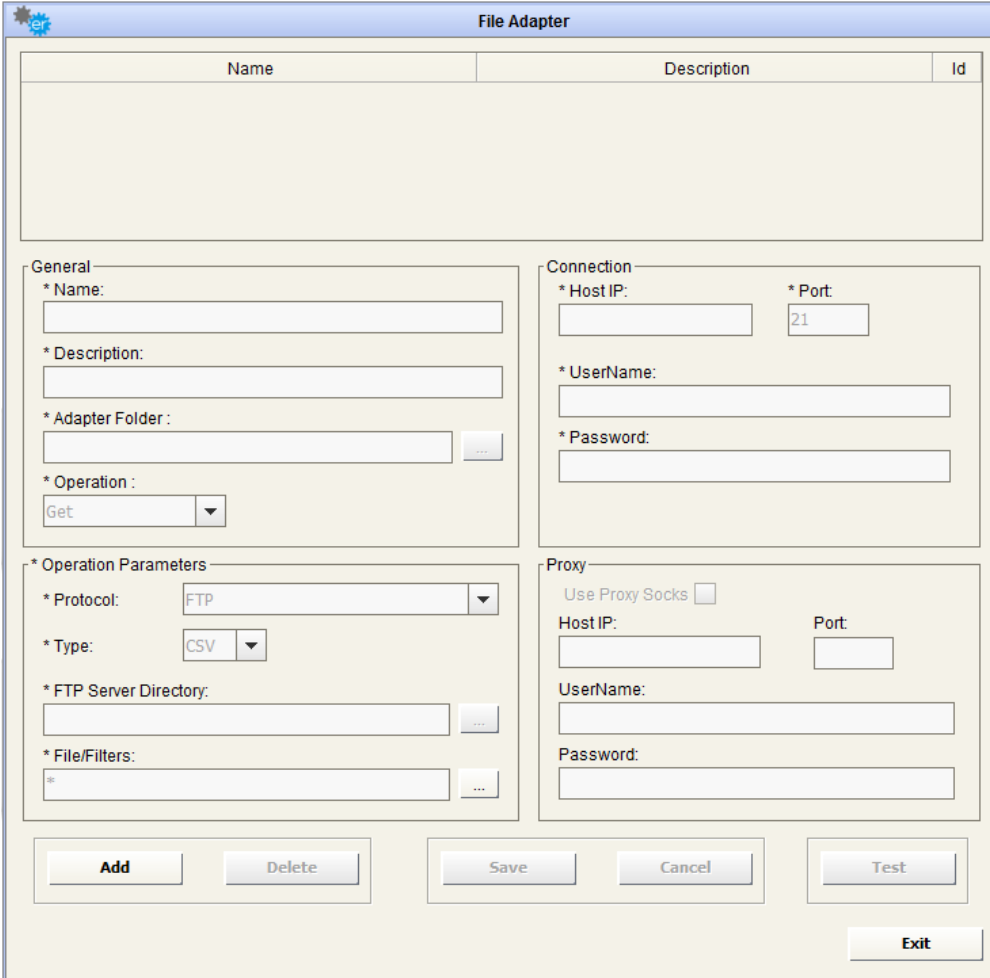
File Adapter Configuration

Going through this configuration window, the user can set up a file adapter to use as a data source or operation in a workflow.

It's possible to:

- Configure a File Adapter to use the file content as a data source in a workflow – **GET** type
- Configure a File Adapter to use as a workflow operation target – **PUT** type

See later for a detailed description of using a [File Adapter](#) the workflow configuration.



The image shows a software window titled "File Adapter" with a gear icon in the top-left corner. The window is divided into several sections. At the top, there is a table with three columns: "Name", "Description", and "Id". Below the table, the window is split into four main configuration panels. The "General" panel on the left contains fields for "* Name:", "* Description:", "* Adapter Folder:" (with a browse button "..."), and "* Operation:" (a dropdown menu currently showing "Get"). The "Connection" panel on the right contains fields for "* Host IP:", "* Port:" (with a value of "21"), "* UserName:", and "* Password:". Below these, the "Operation Parameters" panel contains fields for "* Protocol:" (a dropdown menu showing "FTP"), "* Type:" (a dropdown menu showing "CSV"), "* FTP Server Directory:" (with a browse button "..."), and "* File/Filters:" (with a text input field and a browse button "..."). The "Proxy" panel on the right contains a checkbox for "Use Proxy Socks", and fields for "Host IP:", "Port:", "UserName:", and "Password:". At the bottom of the window, there are five buttons: "Add", "Delete", "Save", "Cancel", and "Test". An "Exit" button is located at the bottom right of the window.

The first group of fields in the window relate to the File Adapter List, which lists all the File Adapters available.

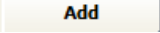
The second group is the General Parameters, which include the Name, Description, File Adapter folder and Operation type (GET - PUT); all these fields are mandatory.



Note that in this case the adapter folder is the one used as the destination folder for the GET adapter and the source folder for the PUT adapters, as explained later.

The third group is the Operation Parameters, including all the parameters needed to actually perform the requested operation, as a Protocol (NFS or FTP), file type, etc.

The fourth group is the Connection Parameters to be set up when configuring an FTP file adapter.

To create a new File Adapter just press the  button and start editing the new adapter parameters.

The name, description and adapter folder for the File Adapter are the first fields to enter in the form; then, depending on the selection in the drop-down list named Operation (GET or PUT) the Operation Parameters section shows the following:

Operation “GET”

When the field “Operation” is set to “GET”, then the Operation Parameter section shows options for the file adapter execution. The first option is related to the protocol (NFS or FTP)

NFS Protocol

If the protocol is set to NFS, then the Operation Parameter section shows the following parameters:

- Type (CSV, Sheet, XML, MS Project, DM) – file type the adapter will manage
- Target (remote) Directory that will be used at adapter execution time to get files from; this may be anywhere in the Windows network file system, provided that it is accessible and readable by the Windows user (“local system account”) performing batch operations.
- Filters – used to include more than one file in the adapter operation (using “*” as a wildcard for the beginning, in the middle, or at the end of file name). If filter is set as a single “*”, then the entire folder content will be used by the adapter during execution.

* Operation Parameters

* Protocol: NFS

* Type: CSV

* Target Directory:

* File/Filters:

FTP Protocol

If the protocol is set as FTP then the Operation Parameter section shows the following parameters:

- Type (CSV, Sheet, XML, MS Project, DM) – type of file the adapter will manage
- FTP Server Directory that will be used at adapter execution time; this may be anywhere in the network file system, provided that it is accessible and readable by the adapter specified in the FTP account (see below)
- Filters – used to include more than one file in the adapter operation (using “*” as a wildcard for the beginning, in the middle, or at the end of file name). If filter is set as a single “*”, then the entire folder content will be used by the adapter during execution.

* Operation Parameters

* Protocol: FTP

* Type: CSV

* FTP Server Directory:

* File/Filters:

Moreover, the user has to define the Connection and Proxy sections with the parameters needed to access the FTP server.

Connection

* Host IP:

* Port:

21

* UserName:

* Password:

Proxy

Use Proxy Socks

☐

Host IP:

Port:

UserName:

Password:

All the parameters in the Connection section are mandatory, including the FTP account to be used to access the specified directory; if a proxy is used then the user must complete the Proxy section parameters.

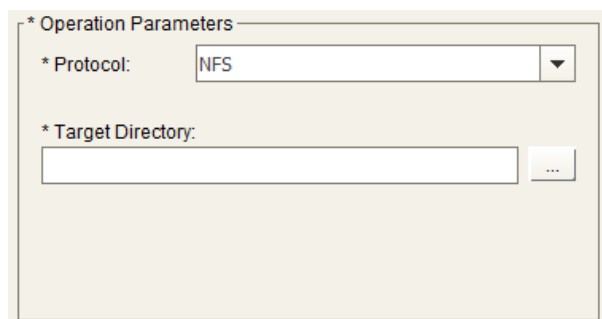
Operation “PUT”

When the field “Operation” is set to “PUT”, then the Operation Parameter section shows options for the file adapter execution. The first option is related to the protocol (NFS or FTP)

NFS Protocol

If the protocol is set to NFS, then the Operation Parameter section shows the following parameters:

- Target (remote) Directory that will be used at adapter execution time, to drop files coming out from workflows using it as operation target; this may be anywhere in the Windows network file system, provided that it is accessible and writable by the Windows user (“local system account”) performing batch operations.



* Operation Parameters

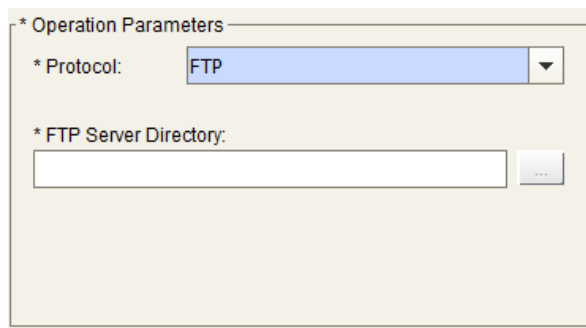
* Protocol:

* Target Directory:

FTP Protocol

If the protocol is set to FTP, then the Operation Parameter section shows the following parameters:

- FTP Server Directory that will be used at adapter execution time, to drop files coming out from workflows using it as operation target, provided that it is accessible and writable by the adapter specified FTP account (see below)



* Operation Parameters

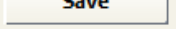
* Protocol:

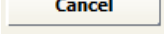
* FTP Server Directory:

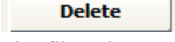
Moreover, the user has to define the Connection and Proxy sections with the parameters needed to access the FTP server.

The screenshot shows a configuration window with two main sections. The top section, titled 'Connection', contains four mandatory fields: '* Host IP:', '* Port:' (with the value '21' entered), '* UserName:', and '* Password:'. The bottom section, titled 'Proxy', contains a 'Use Proxy Socks' checkbox and four optional fields: 'Host IP:', 'Port:', 'UserName:', and 'Password:'.

All the parameters in the Connection section are mandatory, including the FTP account to be used to access the specified directory; only if you have a proxy you must complete the Proxy section parameters.

To save the new File Adapter just created, press the  button. The adapter will be saved and added to the File Adapter List at the top of the window.

To cancel the adapter data just entered and to reset the window, press the  button.

To delete an existing adapter, just select it and press the  button. It will be permanently removed from the File Adapter List (all the items linked to the file adapter are removed: job, workflow using it as source).

The  button closes the window.

Transformation Library Configuration

In the Transformation Library there are some pre-built parsers (based onto XSLT) to apply transformations to the data managed through the workflow (see after):

- Data cleanse (like Data Type Check, Not Allowed Text Check)
- Data format (like Format Date - Format Number - Capital/Small letter - Suffix/Prefix - Replace Text)
- Data structure change (like Combine Field - Split Field - Add Fixed value field)
- Data filter (like Fixed values, Interval Value)
- Data Derivation (like Sum values in rows/columns, counting values in rows/columns, Match keys and pick values)

These kinds of XSLT files can't be modified or deleted by the user.

Library Configuration

Library List

Operation	Activity	Description	File
Custom Transforma...	CC2CSV	Transform workflow...	CC2CSV.xsl
Custom Transforma...	SharePointListPar...	Extract List items in...	GetListItemsResp...
Custom Transforma...	CC2EXCEL	Transform workflow...	CC2EXCEL.xslt
Custom Transforma...	CC2HTML	Transform workflow...	MyXSLT2HTML.xslt
Custom Transforma...	CC2PDF	Transform workflow...	wkhtmltopdf.exe
Data filtering	Distinct Values	Distinct Values	distinctValues.xsl

Library Parameters * Mandatory field

Activity:* Type:*


Description:

File:*

The top field of the window shows the contents of the XSLT library, with a short description and the relative XSL file.

Selecting an activity from the list automatically completes the Library Parameters fields with the parameters of the library.

Optionally, it's also possible here to define custom XSLT library elements to be used in the workflow configuration for input or output data formatting (see later). The custom parsers must have been developed in advance, with a proper XML/XSLT editor.

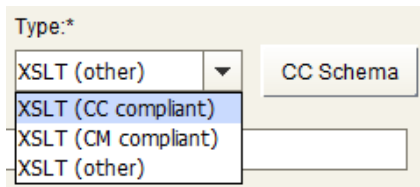
To add a new custom XSLT to the library, press the  button; once the name and description are provided, the browse button pops up a new window allowing the user to select an .XSLT file from the file system. The selected file will be copied into the subfolder "library\Custom Transformation" of your DT data installation folder.

A custom transformation could be alternatively defined as:

- CC compliant – output is XML, compliant with the CC internal XML schema
- CC uncompliant – output is XML, with a different schema, or HTML, or TXT, or MS Excel
- CM compliant – output is XML, compliant with CM operation schema (only to be used to load in CM models multiple intersection object type at once)

It's possible to have a preview of the CC internal Schema / CM operation Schema pressing the

 button, with the appropriate dropdown type selection:





The image shows a user interface element with a label "Type:*" above a dropdown menu. The dropdown menu is open, showing four options: "XSLT (other)", "XSLT (CC compliant)", "XSLT (CM compliant)", and "XSLT (other)". The "XSLT (CC compliant)" option is currently selected and highlighted in blue. To the right of the dropdown menu is a button labeled "CC Schema". Below the dropdown menu is an empty text input field.


```

<?xml version="1.0" encoding="UTF-8" ?>
<!-- W3C Schema generated by XMLSpy v2011 sp1 (http://www.altova.com) -->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
- <xs:simpleType name="ST_cell">
  <xs:restriction base="xs:string" />
</xs:simpleType>
- <xs:element name="root">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="dataset" maxOccurs="unbounded" />
    </xs:sequence>
    <xs:attribute name="status" type="xs:string" use="optional" />
    <xs:attribute name="notifyTo" type="xs:string" use="optional" />
    <xs:attribute name="creationDate" type="xs:string" use="optional" />
    <xs:attribute name="wfName" type="xs:string" use="optional" />
  </xs:complexType>
</xs:element>
- <xs:element name="cell">
  <xs:complexType>
    <xs:simpleContent>
      <xs:extension base="ST_cell">
        <xs:attribute name="status" type="xs:string" use="optional" />
        <xs:attribute name="name" type="xs:string" use="required" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>

```

The  button saves the XSL library once created or modified by the user.

The  button deletes the XSL library that user selected from the list.

The  button resets all the fields just edited by the user.

The  button closes the window.

Configurations

Model Configuration


If logged to a CE Repository, this window can add, delete or modify a *model configuration*. A *model configuration* is a group of parameters that:

- Allows DT to connect to models in CE repository
- Allows the user to configure preferences (publication sets, export folder, etc.)

In order to prevent inconsistency that may arise if two or more configurations address the same data, one model can be associated to only one configuration.

Name	State	Id
Somma TCO	Active	3

The first step is to select a configuration from the pick list, or add a new one by clicking the

 button.

Selecting an existing configuration fills all fields in the form automatically.

On pressing the “Add” button, the user is required to set the configuration name, to select a model name and an export folder, which will be also *the working folder for automatically created adapters to import/export data from workspace*.

In particular, the user should select model name and preferences in the section “Model parameters”. All fields are mandatory.

In detail, the following parameters have to be defined:

- Model name – select the name of the model you want to work with.
- Configuration Folder – browse to a path where you wish the model backups and exports to be saved

At the left side of model configuration window, is a list of the existing workflows created to manage information flows in and out of that model. In particular, you can see the name, the activation status and ID of each (useful for troubleshooting purposes, see later).

Name	State	Id
Somma TCO	Active	3

You can change “Active/Not Active” status of the single workflow by double-clicking on status cell, and then simultaneously saving the current set with the **Save WF status** button.

To save the Model Configuration use the **Save** button .

Pressing the **Cancel** button clears all fields on this form.

To delete an existing configuration just select it from the configurations list and press the



button. The configuration will be removed from the list.



If a configuration is deleted, all the adapters, jobs and workflows associated to the configuration will be deleted.

The



button closes the window.

Workspace Configuration

If logged in to EA Agile or EA Agile V3, this window is to add, delete or modify a *workspace configuration*. A *workspace configuration*, in a similar way to CM *model configuration*, from the tool perspective, is a group of parameters that:

- Allows DT to connect to an EA Agile workspace
- Allows the user to configure preferences for export folder

In order to prevent inconsistency that can arise if two or more configurations address the same data, one workspace can be associated to only one configuration.

Name	State	Id
_A SALSAL MULTI 3	Not Active	1303
BMC ADDM getting Hosts	Active	1288
EA AGILE - Load Apps from App catalogue	Active	1275
EA AGILE - Export app component to DB Lo...	Not Active	1272
EA AGILE - Export app component to PDF	Active	1279
EA AGILE - Export app components to Serv...	Active	1274
EA AGILE - Exporting View My Reqs	Not Active	1276
EA Agile - Getting Applications from Service...	Active	1284
Exporting requirements (OT)	Not Active	1287
My CRM Portfolio	Active	1283

The first step is to select a configuration from the pick list, or add a new one by clicking the **Add** button.

Selecting an existing configuration fills in all fields on the form automatically.

On pressing the “Add” button, the user is required to set the configuration name, to select a workspace name and the export folder, which will be also *the working folder for automatically created adapters to import/export data from workspace*.

In particular, the user should select model name and preferences in the section “Model parameters”. All fields are mandatory.

In detail, the following parameters have to be defined:

- **Workspace name** – select the name of the workspace you want to work with.
- **Configuration Folder** – browse to a path where you wish the exports to be saved

At the left side of model configuration window, is a list of the existing workflows created to manage information flows in and out of that model. In particular, you can see the name, the activation status and ID of each (useful for troubleshooting purposes, see later).

Name	State	Id
_A SALSAL MULTI 3	Not Active	1303
BMC ADDM getting Hosts	Active	1288
EA AGILE - Load Apps from App catalogue	Active	1275
EA AGILE - Export app compoent to DB Lo...	Not Active	1272
EA AGILE - Export app component to PDF	Active	1279
EA AGILE - Export app components to Serv...	Active	1274
EA AGILE - Exporting View My Reqs	Not Active	1276
EA Agile - Getting Applications from Service...	Active	1284
Exporting requirements (OT)	Not Active	1287
My CRM Portfolio	Active	1283

You can change “Active/Not Active” status of the single workflow by double-clicking on status cell, and then simultaneously saving the current set with the **Save WF status** button.

To save all the Model Configuration use the **Save** button.

Pressing the **Cancel** button clears all fields on this form.

To delete an existing configuration just select it from the configurations list and press the **Delete** button. The configuration will be removed from the list.



If a configuration is deleted, all the adapters, jobs and workflows associated to the configuration will be deleted.

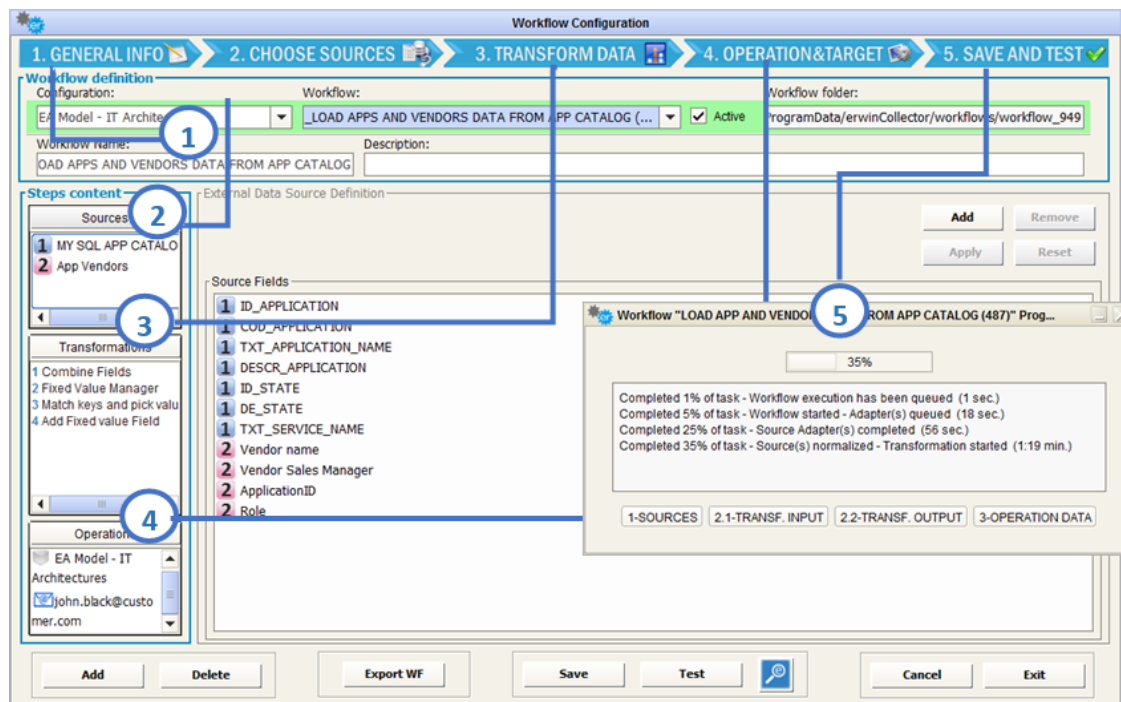
The  button closes the window.

Workflow Configuration

This window goes through the configuration and management of the Workflow. For each CW model, for which a configuration has been set up (See [Configurations](#)), the user can define more than one workflow.

Each workflow is described through three main sections:

- Data Source, containing information for getting the input data.
- Transformation, containing activities to be applied to transform the input data.
- Operation, which details the target of the workflow, i.e. where to send the output data



Configuring a workflow means:

1. Providing general information, like name, descriptions and “active” status
2. Choosing applicable data sources, and providing normalization parameters (like name of the sheet for Excel files, or the object type to extract for an EA/EA Agile Adapter)
3. Optional data transformation – filters on source data and other needed data manipulations settings
4. Operation and target – what system/human resource is the target for the desired operation

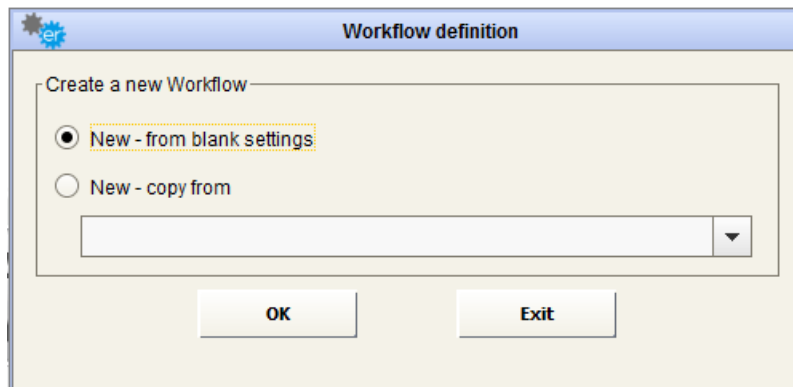
-
5. Test and save the workflow: workflow is ready to be tested (whatever the setting for “Active” checkbox is) and saved for further scheduled executions (if set in “Active” mode)

First of all the user is required to select a model/workspace configuration in the **Configuration** drop-down list.

In the “Workflow” drop down list are displayed all the existing workflows for that model configuration.

To create a new Workflow, press the  button. This pops up a new window with two options:

- Create the new Workflow from blank settings (option “New – from blank settings”), or
- Copy it from an existing Workflow, that the user can choose from the displayed drop-down list (option “New – copy from”).



When the user presses the “Add” button the workflow name and description are set and then the three sections of a workflow are defined.

Data Source

To define the source of a Workflow follow the steps in the section “External Data Source Definition”:

- Select ADD button
- Select the external data source type

According to the type of the data source, the External Data Source Definition section shows the requested data normalization parameters as described below.

User may also create File Adapter, DB Adapter and Web Service Adapter using the <Create New> item in the available adapters list, and pressing “Apply” button.

File Adapter

External Data Source Definition

FILE ADAPTER ▼ Name **File di test** ▼ Type SHEET folder  **Add** **Remove**

Header ☐ 1° col 0 1° row 0 Sheet

Apply **Reset**

Source Fields

- 1 <Application> Category [Equal "ERP"]
- 1 <Application> Number of Users [Greater than (numeric value) *100*]
- 1 <Application> TCO
- 1 <IT Portfolio> Name
- 1 <IT Portfolio> Total TCO

Select the name of the File Adapter from the drop-down list, Name (as mentioned in ["File Adapter Configuration"](#) only "GET" File Adapters will appear in the list).

- If the type of file is **"CSV"** it's necessary to complete the following information:
 - Header (yes/no)
 - Separator (between columns)
- If the type of file is **"Sheet"** it's necessary to complete the following information:
 - Header (yes/no)
 - 1° column
 - 1° row
 - Sheet name
- If the type of file is **"XML"** it's necessary to complete the following:
 - XSL ParserThis parser can be selected in a list containing all "non CC compliant" custom transformations, previously defined in "XSLT Library". Any XSLT parser developed to manage XML data has to provide a CSV structure, with a "semicolon" as a separator.
- If the type of file is **"Project"** it's necessary to complete the following:
 - Project Information (TASK, RESOURCE)This allows the user to extract information from the project file, related to the work breakdown structure, task start and end dates, task duration, task cost; or the resource assignments in task, with earned value information, budget and actual cost and work.
- If the type of file is **"DM"** it's necessary to complete the following:
 - DM Information (ENTITY_ATTRIBUTES, RELATIONSHIPS)This allows the user to extract information from DM export file, about Entities, their attributes and Primary Key/Foreign Key roles and Relationships:


ENTITY_NAME	ATTRIBUTE_NAME	ATTRIBUTE_WTABLE_NAME	ATTRIBUTE_TYPE	ATTRIBUTE_IS_PK_OF	ATTRIBUTE_IS_NONKEY_OF	ATTRIBUTE_IS_FK_OF_ENTITY	ATTRIBUTE_IS_FK_OF_ENTITYATTR
Person	firstName	Person.firstName	char(18)		Person		
Person	surName	Person.surName	char(20)		Person		
Person	ssn	Person.ssn	char(18)	Person			
Address	address_line_1	Address.address_line_1	char(18)		Address		
Address	address_line_2	Address.address_line_2	char(18)		Address		
Address	city	Address.city	char(18)		Address		
Address	zip_code	Address.zip_code	char(18)		Address		
Address	address_Identifier	Address.address_Identifier	char(18)	Address			
Address	ssn	Address.ssn	char(18)		Address	Person	Person.ssn
Task	taskId	Task.taskID	char(18)	Task			
Task	Name	Task.Name	char(18)		Task		
Task	Description	Task.Description	char(18)		Task		
Task	duration	Task.duration	int		Task		
Task	startDate	Task.startDate	datetime		Task		
Task	endDate	Task.endDate	datetime		Task		
Task	ssn	Task.ssn	char(18)		Task	Person	Person.ssn
Message_Log	time	Message_Log.time	Time	Message_Log			
Message_Log	log_Text	Message_Log.log_Text	char(64)		Message_Log		
Message_Log	ssn	Message_Log.ssn	char(18)		Message_Log	Person	Person.ssn

REL_NAME	TABLE2TABLE_NAME	PARENT_ENTITY	CHILD_ENTITY	CARDINALITY
may have	Person may have Address	Person	Address	-3
creates	Person creates Task	Person	Task	-3
logs in	Person logs in Message_Log	Person	Message_Log	-3

- Click the “Apply” button to save the data source
- A preview of the source fields will be shown

DB Adapter

External Data Source Definition

DB ADAPTER ▾ Name **Nuovo DB Adapter** ▾ Type DB Query 

Add **Remove**

Apply **Reset**

Source Fields

- 1 <Application> Category [Equal "ERP"]
- 1 <Application> Number of Users [Greater than (numeric value) "100"]
- 1 <Application> TCO
- 1 <IT Portfolio> Name
- 1 <IT Portfolio> Total TCO

- Select the name of the DB Adapter from the drop-down list, Name (only DB Query and Stored Procedure Adapters will appear in the list)
- Click the “Apply” button to save the data source
- A preview of the source fields will be shown

WS Adapter

External Data Source Definition

WS ADAPTER Name WS Adapter Type WS Consumer

XSL Parser for source normalization: CC2HTML

Source Fields

- 2 http://www.w3.org/2001/XMLSchema xmlns:fn="http://www.w3.org/2005/xpath-functions"

- Select the name of the Web Services Adapter from the drop-down list
- Select XSL Parser for source normalization from the list

This parser can be chosen in a list containing all “non CC compliant” custom transformations previously defined in “XSLT Library”; in particular, any XSLT parser developed to manage outside XML data has to provide a CSV structure, with “semicolon” as separator, to be effective in this step.

- Click on the “Apply” button to save the data source
- A preview of the source fields will be shown

EA Adapter (formerly CM Adapter)

External Data Source Definition

EA ADAPTER Name EA Model - Enterprise (EAENT) Export Type repository export

Select Object Type Application

Source Fields

- 1 Name
- 1 Category
- 1 Description
- 1 Update Date [Later than (days ago) "30"]

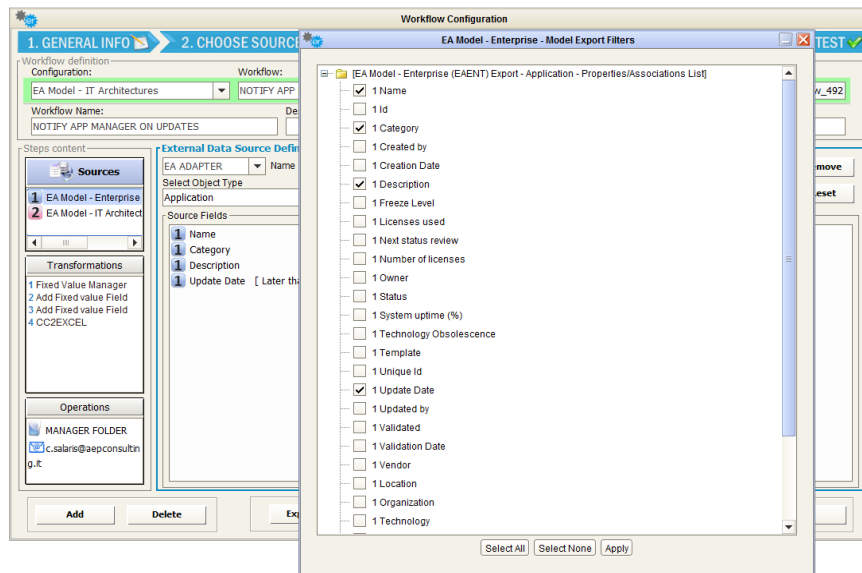
When creating a model configuration, adapters to import / export data from model are automatically created (the working folder is the one set as “Export folder”):

Select the name of the EA Adapter from the drop-down list Name (only the “EA Adapters for import” will be shown in the list)

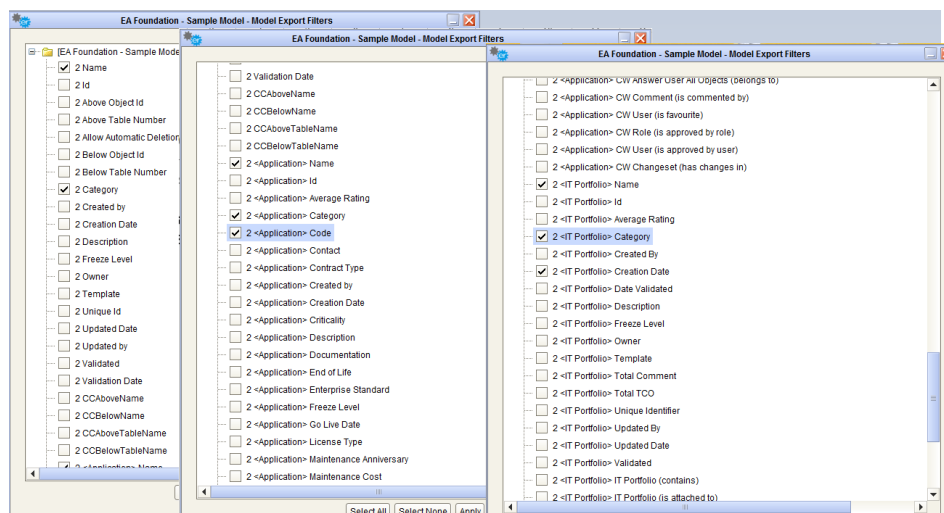
- Select the object type from the drop-down list “Select Object Type”

- Click on the “Apply” button to save the data source
- A preview of the source fields will be shown

It's also possible to choose which Properties/Associations extract through an EA Adapter for the selected object type. The “Source Filters” button allow user to pick only the desired information from a model, while default operation includes all of them.



When selecting an intersection object type, the list of exportable fields includes not only the ones defined for the intersection object itself, but the ones defined for associated objects. This way, it's easy to have with a single data source a combined set of source object and target object of the association:



External Data Source Definition

EA ADAPTER ▼ Name EA Foundation - Sample Model (EASAMP14) Export ▼ Type repository export Add Remove

Select Object Type Association IT Portfolio Application ▼ Source Filters Apply Reset

Source Fields

- 2 Name
- 2 Category
- 2 <Application> Name
- 2 <Application> Category
- 2 <Application> Code
- 2 <IT Portfolio> Name
- 2 <IT Portfolio> Category
- 2 <IT Portfolio> Creation Date

EA Agile Adapter

When creating a workspace configuration, adapters to import / export data from workspace are automatically created (the working folder is the one set as “Export folder”):

- Select the name of the EA Agile Adapter from the drop-down list Name (only the “EA Agile Adapters for export” will be shown in the list)
- Select the object type from the drop-down list “Select Object Type”
- Click the “Apply” button to save the data source
- A preview of the source fields will be shown

External Data Source Definition

EA Agile ADAPTER ▼ Name My AS IS Architecture (1705) Export ▼ Type EA Agile export Add Remove

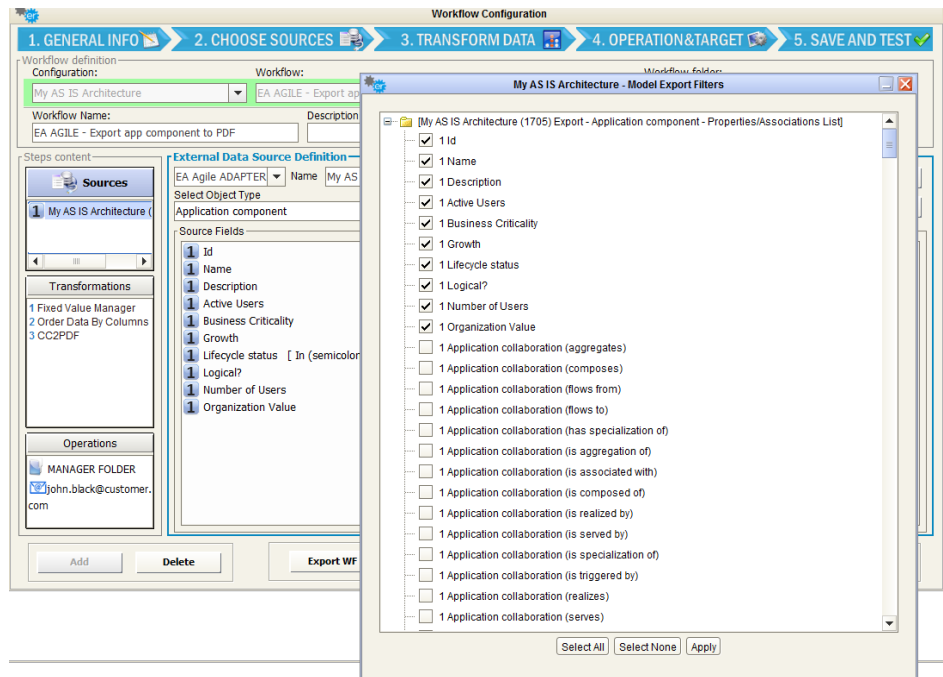
Select Object Type Application component ▼ Source Filters Apply Reset

Source Fields

- 1 Id
- 1 Name
- 1 Description
- 1 Active Users
- 1 Business Criticality
- 1 Growth
- 1 Lifecycle status [In (semicolon separated) "Live;Implementation"]
- 1 Logical?
- 1 Number of Users
- 1 Organization Value

It's also possible to choose which Properties/Associations

extract through an EA Agile Adapter for the selected object type. The “Source Filters” button allow user to pick only the desired information, while default operation includes all of them.



EA Agile V3 Adapter

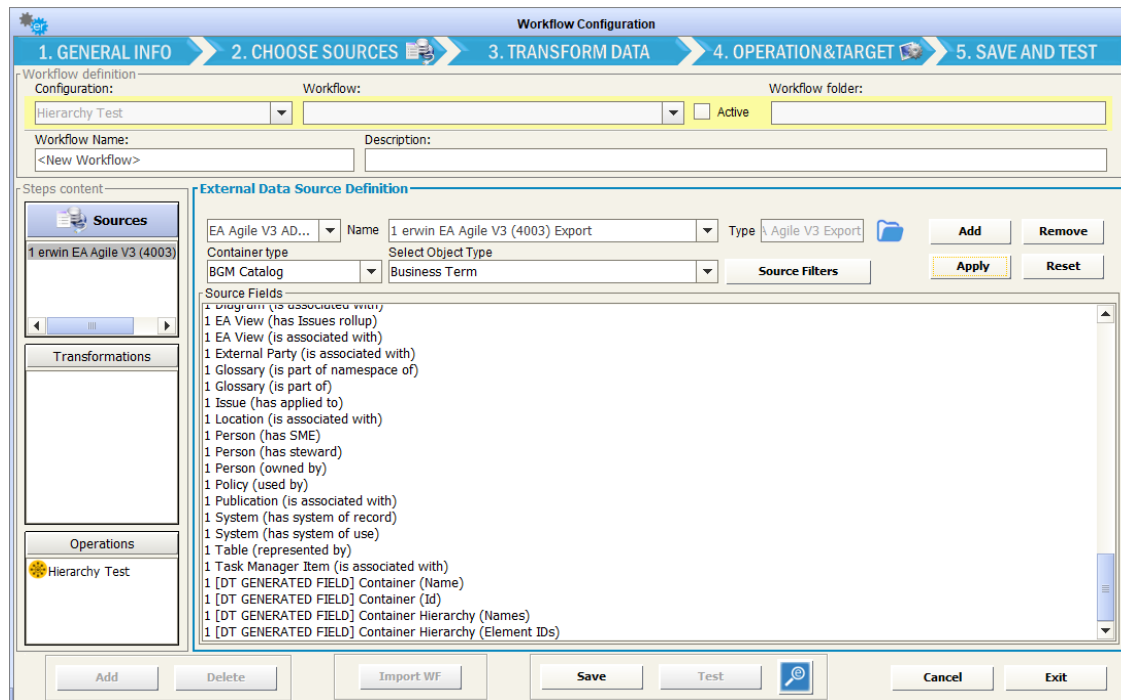
When creating a workspace configuration for EA Agile V3, adapters to import / export data from the platform are automatically created (the working folder is the one set as “Export folder”):

- Select the name of the EA Agile V3 Adapter from the drop-down list Name (only the “EA Agile V3 Adapters for export” will be shown in the list)
- Select the object type from the drop-down list “Select Object Type”
- Click the “Apply” button to save the data source
- A preview of the source fields will be shown

It's also possible to choose which Properties/Associations

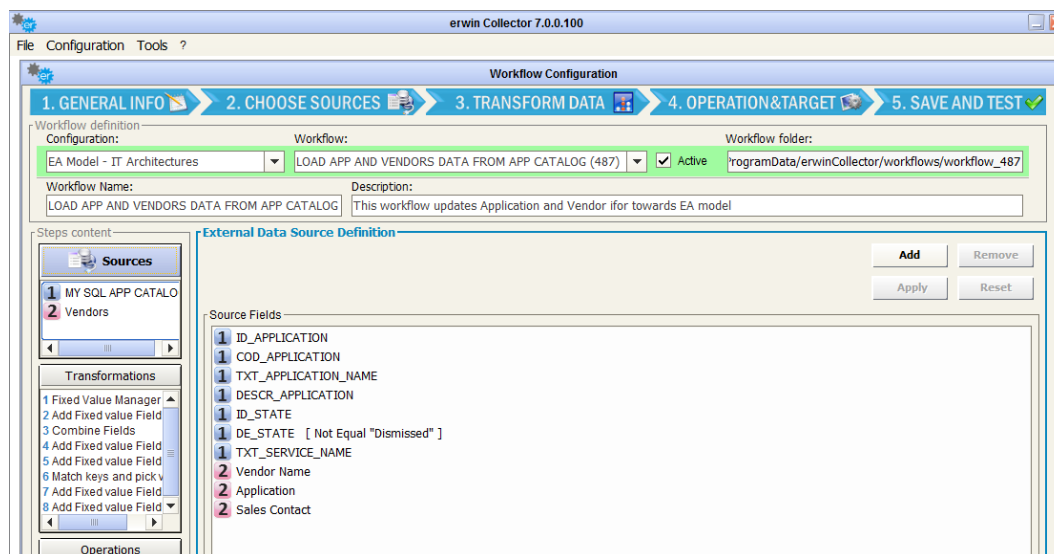
extract through a EA Agile V3 Adapter for the selected object type. The "Source Filters" button allow user to pick only the desired information, while default operation includes all of them.

It is also possible to optionally select a "Container type" for the selected; for an object type that contains either an object of the same type or the selected object type as a terminal node, the hierarchy of the source object type will be resolved in generated fields. This cannot be combined reliably with the source filters.



Regardless of the data source type, it is possible to insert more than one data source in the same workflow of the same type or of different types); each data source is then marked with a sequence number.

In this case you have a “multi source” workflow, and a specific “**multisource job**” is created to be scheduled and produce all the different data sets involved at the same time (thus ensuring the time consistency of the whole set of related information). The data sources defined in a workflow will be displayed in the section Source Definition in the left upper area of the Workflow window:



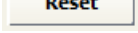
It's possible to select one of these data sources to modify it. Please be careful, as when a user modifies the source of a workflow, all fields will be deleted for the transformation and mapping rules, where they are not required by the new source definition.



Please be careful, as when a user modifies the source of a workflow, all fields will be deleted for the transformation and mapping rules, where they are not required by the new source definition.



Remove

The **Remove** button deletes the selected source from the workflow; the  **Reset** button clears all the settings for the selected source.

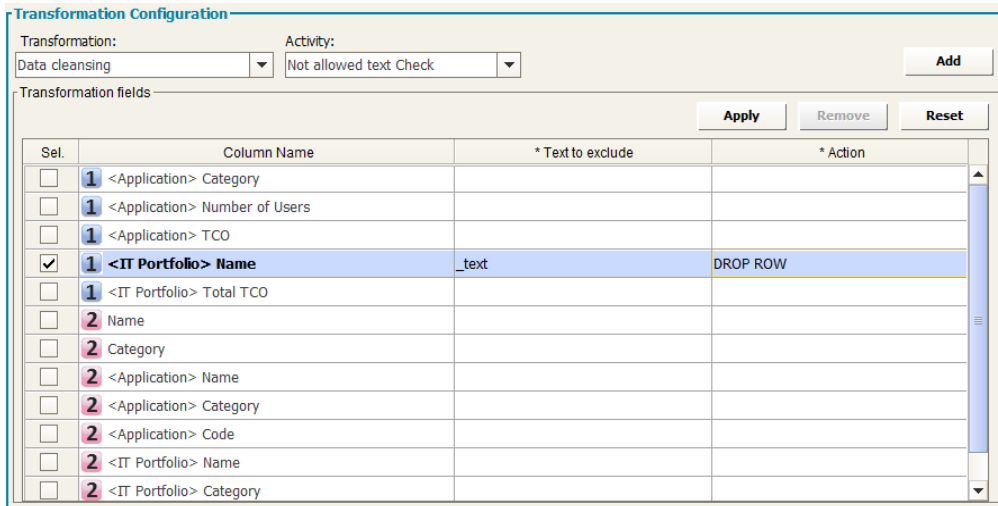


Note that changing the source will result in a transformation and mappings reset unless the new source provides exactly the same source columns as the previous.

Transformation

To define the transformations in the intermediate step of the new Workflow follow the following steps in the section Transformation Configuration:

- Click on the ADD button to insert a transformation. It's possible to add more than one transformation for each workflow and apply a specific transformation to the data source fields or to the new columns coming from a previous transformation of the same workflow. - Select the transformation from the "Transformation" and "Activity" drop-down lists
- Click the "Apply" button to apply the selected transformation rule



The image shows a 'Transformation Configuration' dialog box. At the top, there are two dropdown menus: 'Transformation:' set to 'Data cleansing' and 'Activity:' set to 'Not allowed text Check'. An 'Add' button is to the right. Below these is a section titled 'Transformation fields' containing a table with columns: 'Sel.', 'Column Name', '* Text to exclude', and '* Action'. The table lists various data fields, with the row for '<IT Portfolio> Name' selected (checked in the 'Sel.' column). This row has '_text' in the '* Text to exclude' column and 'DROP ROW' in the '* Action' column. To the right of the table are 'Apply', 'Remove', and 'Reset' buttons.

Sel.	Column Name	* Text to exclude	* Action
<input type="checkbox"/>	<Application> Category		
<input type="checkbox"/>	<Application> Number of Users		
<input type="checkbox"/>	<Application> TCO		
<input checked="" type="checkbox"/>	<IT Portfolio> Name	_text	DROP ROW
<input type="checkbox"/>	<IT Portfolio> Total TCO		
<input type="checkbox"/>	Name		
<input type="checkbox"/>	Category		
<input type="checkbox"/>	<Application> Name		
<input type="checkbox"/>	<Application> Category		
<input type="checkbox"/>	<Application> Code		
<input type="checkbox"/>	<IT Portfolio> Name		
<input type="checkbox"/>	<IT Portfolio> Category		

The available Transformations and Activities are:

Data Cleansing

Data Type Check

The "Data Type Check" Transformation applies in the case the user needs to check the *format* of the columns and perform an *action* in case the data format is not compliant with the specified format. The actions are *drop text* (exclude from the following workflow steps only the invalid format values in the specified column), *drop row* (exclude from the following workflow steps the whole record containing an invalid value for any specified column) or *drop file* (discard the entire file – no following operations will be performed). All these configurations may be done separately for each source field.

Not Allowed Text Check

The "Not Allowed Text Check" Transformation applies when it's required to check if in the selected column there is a specific *string value* and perform an *action* in the case of invalid data.

If a cell contains a value containing that text (i.e. is not valid) the user can choose the action to perform. The possible choices of action are *drop text* (remove specified text from the cells in the specified column), *drop row* (exclude from the following workflow steps the whole record containing an invalid value for any specified column) or *drop file* (discard the entire file – no following operations will be performed). All these configurations may be done separately for each source field.

Normalize Blank Spaces

The “*Normalize Blank Spaces*” Transformation applies when it’s required to delete some redundant blank spaces in the cell value. It’s possible to choose between “Left Trim”, “Right Trim”, “Trim (both sides)”, “Normalize Blank Spaces” (this will trim blank spaces from both sides and delete internal spaces between words if more than one. All these configurations may be done separately for each source field.

Data Formatting

Format Date

The “*Format Date*” Transformation applies if it is required to *transform* a column with internal data type DATE from a specific *source format* (for example EUR date format) into a different *target format* (for example USA date format). If the column value can't be transformed into the specific format, the user can choose the action to perform. The possible actions are; *drop text* (exclude from the following workflow steps only the values in the specified column where transformation can't be performed), *drop row* (exclude from the following workflow steps the whole record for a specified column where the transformation can't be performed in any specified column) or *drop file* (discard the entire file – no following operations will be performed). All these configurations may be done separately for each source field.

Format Number

The “*Format Number*” Transformation applies if it is required to transform a column with internal data type NUMBER (integer or decimal) from a specific source format (for example EUR number format) into a different target format (for example USA number format). If the column value can't be transformed into the specified format, the user can choose the action to perform. The possible actions are *drop text* (exclude only the values in the specified column where the transformation can't be performed), *drop row* (exclude the whole record for a specified column where the transformation can't be performed in any specified column) or *drop file* (discard the entire file and stop). All these configurations may be done separately for each source field.

Capital/Small letter

The “*Capital/Small Letter*” Transformation applies if it is required to change the string format of a specific column; the user can choose from Capitalized, To Upper and To Lower. The transformation will be applied to the specified column value. All these configurations may be done separately for each source field.

Suffix/Prefix

The “*Suffix/Prefix*” Transformation applies if it is required to add a specific string to a specific column value; the user can choose between Suffix and Prefix and insert the string to add as prefix/suffix to the column value. All these configurations may be done separately for each source field.

Replace Text

The “*Replace Text*” Transformation applies if it is required to replace a specific string value with another string value into a specific column values; the user can edit the text to be replaced and the text to replace it with. Some special replace can be obtained: in a cell containing multi-values separated by commas, for instance, using “\n” to replace “,” will result in a cell containing a list of those values separated by a newline. Also, wildcards can be used: for instance, when asked to replace “**PROC*_**” with “”, DT will delete this sub word from the cell value regardless of the dynamic part of it. All these configurations may be done separately for each source field.

Special parameter can be used for particular replace requirements:

- **<%BLANK%>** as text to be replaced: to replace empty text

- **<%SYSDATE%>** as text to replace with: to obtain datetime (at execution time) in *UTC format* or **<%SYSDATE_EUR%>** to obtain datetime in *European format* or **<%SYSDATE_USA%>** to obtain datetime in *United States format* (see [here](#) for date format descriptions).

Replace Value on Condition

The “*Replace Value on Condition*” Transformation applies if it is required to set a specific value if a condition is matched and another if it's not. The user can edit the condition on the source column, choosing between “Equal”, “Not Equal”, “Less than (numeric value)”, “Greater than (numeric value)”, “Like” or “Not Like” options, and then editing the value to be compared with the source column value. Then the user may pick between the available columns to set the column target to be used in case the condition is matched or not. Parameters can be applied as previous transformation.

Rename and Order Columns

The “*Rename and Order Columns*” Transformation applies if it is required to change the name of a specific column, and or its order, in the output; the user can choose to rename a column, to give it a different order from the natural one (as coming from the source), or both. The order is not mandatory, while the given orders must not be conflicting. The transformation will be applied to the specified column value. All these configurations may be done separately for each source field.

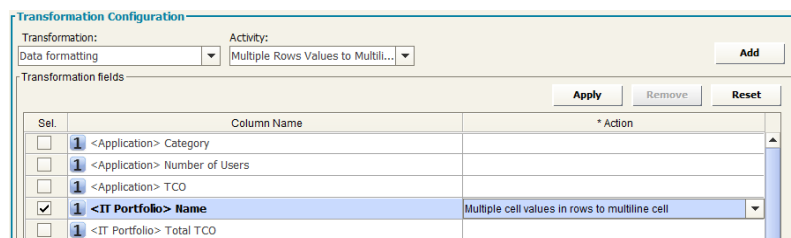
Selected Value in List

The “*Selected Value in List*” Transformation applies if there is a column containing a multiline text, as when exporting from a CM model an object and a list of associated objects, and it's needed to have a single item of that list, either the first or the last. The user can set the option on the source column, choosing between “First value in List”, “Last value in List”. All these configurations may be done separately for each source field.

Multiple Rows Values to Multiline Cell

The “*Multiple Rows Values to Multiline Cell*” Transformation applies to get a list of items from a column containing different values, fixed other columns, grouping them in a multiline cell.

Typical use case: when exporting an intersection object type, with couples of associated objects, from a model, for a given couple obj1-obj2, obtain one single row with obj1 and a list of all the obj2 for that obj1 value.



Multiline Cell to Multiple Rows

The “*Multiline Cell to Multiple Rows*” Transformation applies to get, from a single multi-value (multiline) cell, one different row for one single different value in multiline value

Typical use case: getting an object from CM, with properties and associations and obtain one row per associated object, for selected association type

The dialog shows the 'Transformation' set to 'Data formatting' and 'Activity' set to 'Multiline Cell to Multiple Rows'. Under 'Transformation fields', a table lists columns with checkboxes and actions.

Set	Column Name	* Action
<input type="checkbox"/>	1 <Application> Category	
<input type="checkbox"/>	1 <Application> Number of Users	
<input type="checkbox"/>	1 <Application> TCO	
<input checked="" type="checkbox"/>	1 <IT Portfolio> Name	Values in multiline cell to multiple rows
<input type="checkbox"/>	1 <IT Portfolio> Total TCO	

Group data from datasets

The “*Group data from datasets*” Transformation applies when data belonging to different dataset must be grouped into one.

Typical use case: different lists of the same object type are provided by different data sources, and must be loaded into model, in a single workflow operation. This can be obtained defining:

- one dataset to be the **master** (this will contain all merged data): set this option on whatever column in the dataset
- one or more dataset providing data to **append by column name** (data will be appended to the master one by its columns name): set this option on whatever column in the dataset
- one or more dataset providing data to **append by column position** (data will be appended to the master one by its columns position): set this option on whatever column in the dataset

The dialog shows the 'Transformation' set to 'Data formatting' and 'Activity' set to 'Group data from datasets'. Under 'Transformation fields', a table lists columns with checkboxes and actions.

Set	Column Name	* Field category
<input type="checkbox"/>	1 <Application> Category	
<input type="checkbox"/>	1 <Application> Number of Users	
<input type="checkbox"/>	1 <Application> TCO	
<input checked="" type="checkbox"/>	1 <IT Portfolio> Name	Append dataset by columns name
<input type="checkbox"/>	1 <IT Portfolio> Total TCO	
<input type="checkbox"/>	2 Name	
<input type="checkbox"/>	2 Category	
<input checked="" type="checkbox"/>	2 <Application> Name	Master dataset
<input type="checkbox"/>	2 <Application> Category	
<input type="checkbox"/>	2 <Application> Code	

After the transformation, the master dataset will contain all data as per configured merging options, and can be used to send data to model:

	Column Name	Type	Object types	Mapping (Properties/Ass...	Type	Action	KeySet	No new
1	<Application> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<Application> Number of U...	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<Application> TCO	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<IT Portfolio> Name	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<IT Portfolio> Total TCO	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	Name	Generic string	Application	<OBJ NAME> Name	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>
2	Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<Application> Name	Generic string	Application	<OBJ NAME> Name	Single-line ...		<input type="checkbox"/>	<input type="checkbox"/>
2	<Application> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<Application> Code	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Name	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Creation Date	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>

Sort Data by Columns

The “*Sort Data by Columns*” Transformation applies if it is required to sort data by column contents. Use columns “Order Index” (1..4) and “Order Type” (“A to Z”, “Z to A”, “Numerical Ascending”, “Numerical Descending”) to have data sorted by the corresponding content and settings.

Compare and Replace

The “*Compare and Replace*” Transformation applies if it is required to compare two column values, and replace a third or fourth column value, if the condition is matched or not. Check the source column to be compared, set the condition, and the value for the comparison; select the true value (column to be used to replace value of the source, when condition is matched) and false value (column to be used to replace value of the source, when condition is not matched). After the transformation, the source column value will be replaced with the “true” value or “false” value, depending from the result of the condition evaluation.

Value Substring

The “*Value Substring*” Transformation applies if it is required extract part of a text from the value of a given field. Check the source column, the *start from* index, and the *length* of the text to extract. After the transformation, the source column value will be replaced with the extracted text. For instance, applying this transformation to “Application” with a *start from* equal to 1 and a *length* of 3, the output will be “App”. Providing a negative number for the *start from* parameter, the start will be considered from the end of the original string. For instance, applying the transformation to “New York” with a start from equal to -4 and a length of 4, the output will be “York”.

Data Structure Changing

Combine Field

The “*Combine Field*” Transformation applies if it is required to create a new column as result of the combination of two other column values. The user can insert a name of the new column, the *first field* of the combine operation, a *separator* and the *second field*.

The user must indicate which is **the data source to assign to** the new column, using the “Adapter to assign column” drop-down list. This new column can be used by another transformation or by the mapping operation. Special chars like “\n” (combine with newline) can be used for specific requirements.

Split Field

The “*Split Field*” Transformation applies if it is required to create two new columns as result of the splitting an existing column value.

The user can insert the name of the *two new columns* and the *separator* that the system must use to perform the split operation. If you have more than one data source, you must indicate which is the data source to assign the new column to, using the “Adapter to assign column” drop-down list. This new column can be used by another transformation or by the mapping operation. Special chars like “\n” (split by newline) can be used for specific requirements.

Add Fixed value field

The “*Add Fixed Value Field*” Transformation applies if it is required to create a *new column* with the same *value* for all the entries. The user can insert a name for the *new column* and the *value* to assign to it. When you have more than one data source you must indicate which is the data source to assign the new column to, using the “Adapter to assign column” drop-down list. This *new column* can be used by another transformation or by the mapping operation. A parameter can be used to populate the new column with the system date and time: `<%SYSDATE%>` for *UTC format*, `<%SYSDATE_EUR%>` for *EUR format*, `<%SYSDATE_USA%>` for *USA format* (see paragraph 1.3.1 for date format descriptions).

Copy Column

The “*Copy Column*” Transformation applies if it is required to create a *new column* with the *same values of another*. The user can insert the name of the new column and the column value to assign to it, picking it from a list of available columns. The user must indicate which is the data source to assign the new column to, using the “Adapter to assign column” drop-down list.

This new column can be used by another transformation or by the mapping operation.

Drop Column

The “*Drop Column*” Transformation applies if it is required to delete one or more *columns* from the output. The user must check the column to be deleted and set the action to “DROP COLUMN”. The selected columns will not be included in the resulting output. A second option, “DROP DATASET”, will remove from the output the entire dataset that the column is in.

Data Filtering

Fixed value manager

The “*Fixed Value Manager*” Transformation applies if it is required to *filter* the workflow data by some *fixed value* specified for a given column. The user can insert the format of the column, the *filter operator* between “*Equal*”, “*Not Equal*”, “*Greater than*”, “*Less than*”, “*Like*” or “*Not Like*”, “*Equal sysdate*”, “*Later than (days ago)*”, “*Later than (hours ago)*”, “*Later than (minutes ago)*”, “*Earlier than (days ago)*”, “*Earlier than (hours ago)*”, “*Earlier than (minutes ago)*”, “*In (semicolon separated)*”, “*Not in (semicolon separated)*” and the value to use as filter. For example, the condition “Not Like” and the value “a” will remove from the resulting dataset all the rows in which that column value does not contain “a” (case sensitive). All the configurations may be done separately for each source field.

When using “Like” and “Not Like”, wildcard “%” can be used to filter content containing text (“%CRM%”: only cells containing “CRM” match filter), starting with text (“CRM%”: only cells starting with “CRM” match filter), ending with text (“%CRM”: only cells ending with “CRM” match filter).

When possible, **filters defined as first transformation in the list, for columns coming from a CM Object Type export**, are executed at export time, allowing for more compact and less consuming workflow execution.

Interval value manager

The “*Interval Value Manager*” Transformation applies if it is required to *filter* the workflow data by a *list of possible values* specified for a given column. Users have to define the *value list*, and the *separator* between the list items. All these configurations may be done separately for each source field.

Distinct values

The “*Distinct Value*” Transformation applies if it is required to *obtain distinct occurrences of data* by a *list of columns* specified as the keyset. Users have to define the columns to be the keyset setting the *action* “*DISTINCT*”. The result will contain only one occurrence for any combination of values of the selected “*DISTINCT*” columns list.

Not All Null values

The “*Not All Null values*” Transformation applies if it is required to *check that at least one value is not null* in a *list of columns* specified by user. Users have to define the columns to be verified setting the *action* “*Check value in Column*”. The result will contain only rows containing at least one non null value in the selected columns.

In/Not In Dataset

The “*In/Not In Dataset*” Transformation applies if it is required to filter one dataset by the condition that a key column value is (not) in the allowed values list, provided by a slave key column in a second dataset. Users have to define for the master dataset a column as the “*Key (master)*” and a column as the “*Key (Slave) – IN*” or “*Key (Slave) – NOT IN*”. The result will contain rows in the master dataset, only if its master key column value (does not) exist in the slave dataset, in the slave key column.

Data Derivation

Match Keys and Pick Values

The “*Match Keys and Pick Values*” Transformation (former “*Format Values On Conditions*”) applies if it is required to join values from different data sets, apply conditions to different column values, and then specify a result column value if the conditions (evaluated all together) are matched or not. For first, given two datasets, the user must choose a column for the first and a column for the second, setting one as “*Key (master)*” and the other as “*Key (slave)*” for the join operation. Then, for the remaining columns, the user may optionally define a “*condition*” as described for the “*Replace value on condition*” transformation: they have to all be matched to make the transformation condition be true. Lastly, the user can choose one or more columns as “*result*” column, thus choosing which column value to set for it if the condition is true and which if it’s false, picking them from the joined dataset columns. User may also define a single column as “*Key (master)/Result*”, to be used both as a key for the join, and to host the result when matching occurs.



Please be sure that column that is identified as “Key (slave)” contains only one occurrence per key value, while this is not mandatory for the master.

Count Items In Column

The “*Count Items In Column*” Transformation applies if it is required to evaluate the number of item in a list, with an item per line in a multiline *column*. The user must give a name for the new column that will contain the number of items (one per line of the multiline cell) and select from a dropdown list the column containing the multiline text. The output column will contain the number of items (lines) in the selected multiline column.

Count Items In Rows

The “*Count Items In Rows*” Transformation applies if it is required to count the *occurrence of a given keyset for several rows*. The user must choose one or more columns to be the “*Key (for data aggregation)*”, a column to be the “*Source column (to count items for keyset)*” and a third column to be the “*Result*”. The output will contain a single row for any combination of keys; the “*Result*” column will contain the count of selected “*Source*” column in different rows for the same keyset. It can be used for instance to count associated objects for a master object.

Sum Values In Rows

The “*Sum Values In Rows*” Transformation applies if it is required to sum the *numerical values* in a selected *column for several rows*. The user must choose one or more columns to be the “*Key (for data aggregation)*”, a column to be the “*Source column (to sum values from)*” and a third column to be the “*Result*”. The output will contain a single row for any combination of keys; the “*Result*” column will contain the sum of values in the selected “*Source*” column in different rows (non numerical values will be skipped).

Sum Values In Columns

The “*Sum Values In Column*” Transformation applies if it is required to sum the *numerical values* in selected *columns for one single rows*. The user must choose one or more columns to be the “*Source column (to sum values from)*” and another column to be the “*Result*”. The “*Result*” column will contain the sum of values in the selected “*Source*” columns in same row (non numerical values will be skipped).

Divide Values In Two Columns

The “*Divide Values In Columns*” Transformation applies if it is required to get the division between values in two columns of a dataset. The user must choose one column to be the “*Numerator*”, a column to be the “*Denominator*” and a third column to be the “*Result (number)*” or “*Result (percent)*”. The output will contain in the “*Result*” column the division between values in “*Numerator*” and “*Denominator*” columns in the selected format (non numerical values will produced a blank result).

Two Levels Aggregation

The “Two Levels Aggregation” Transformation applies if it is required to sum the numerical values in a selected column for several rows, with two different levels of aggregation.

The user must choose one column to be the “Key (for first level aggregation)”,

- a column to be the “Result (for first level aggregation)”,
- a column to be the “Key (for second level aggregation)”,
- a column to be the “Result (for second level aggregation)”, and
- a column to be the “Source column (to sum values from)”.

The output will contain a single row for any combination of keys; the “Result (for first level aggregation)” column will contain the sum of values in the selected “Source column (to sum values from)” column in different rows, given a single “Key (for first level aggregation)” value, and the “Result (for second level aggregation)” column will contain the sum of values in the selected “Source column (to sum values from)” column in different rows, given a single “Key (for second level aggregation)” value (non numerical values will be skipped).

Typical use case: A model contains a technical chain from server with number of CPU, associated to IT services, associated with application, aggregated in platforms: exporting the two intersection object types, and using the “Sum Values in Rows” for association between servers (with CPU) and IT Services, collecting the CPU for IT Service in the first dataset (association between platform and application), using the IT service as key in “Match keys and pick values” transformation, this output can be obtained:

Platform	CPU per Platform	Application	CPU per Application
Billing&Credit Management	6730	CELLOM 2.0	92
Billing&Credit Management	6730	ADM Credit Care	52
Billing&Credit Management	6730	SAP IS-U QW	1222
Billing&Credit Management	6730	SAP IS-U IB	1222
Billing&Credit Management	6730	SAP IS-U EC	1346
Billing&Credit Management	6730	SAP IS-U EB	1346
Billing&Credit Management	6730	SAP IS-U EG	1346
Billing&Credit Management	6730	CREDIT CARE IRW	52
Billing&Credit Management	6730	CELLOM 1.0	52
Business Intelligence	3527	BI 2.0	1819
Business Intelligence	3527	Operational Intelligence	720
Business Intelligence	3527	SAP Process Mining	15
Business Intelligence	3527	SAP LT Replication Server	973
CRM	222	CCU FYN 3.0	100
CRM	222	CCU FYN 1.0	100
CRM	222	HU	22

Custom Transformation

If it is required to apply a custom transformation the user must define a specific XSLT Library using the XSLT Library Configuration Tool (see before).

The user may define a “**CC Uncompliant**” or “**CC Compliant**” (compliant to CC schema) XSLT Library item.



*Please note that the “**CC uncompliant**” custom transformation can’t be followed by any other transformation and the workflow operation can only be set to “File Adapter”.*

“**CC compliant**” transformations are instead not subject to any constraint (besides adhering to CC internal XML schema) when used in workflow transformations.

A number of “CC uncompliant” transformations are included, producing a formatted workflow:

- CC2CSV: produces a csv output file
- CC2HTML
- CC2EXCEL: produces a MS Excel compatible file via XSLT, so that it can be slightly customized
- CC2MSEXCEL: produces an XLSX file through Excel API, not configurable
- CC2OGFF: Produces an Open Group File Format XML output file. Note that this additionally requires the application of a fixed value field (*OGFF_Type*) specifying the target object type.

A special third type is “**CM Compliant**” transformations, which means that the output file is an XML ready to be consumed by the import module CM4Collector (i.e. describing target model, operation, objects metamodel, identity constraints, maps and object instances to be uploaded). Using that one, all the user interface setting for operation will be skipped at workflow execution time.



Please note that saving the entire workflow using the “Save” button will also save the selected transformations.

It’s possible to insert more than one transformation in the same workflow of the same type or of different types. The transformation defined in a workflow will be displayed in the section “Transformation” in the left middle section of the Workflow window.

It’s possible to select one of these transformations to delete it; if the user deletes a transformation in a workflow, the mapping rules applying to the fields that are no longer required (i.e. created by that transformation) will also be deleted.

Operation

To define the operation of a Workflow follow the steps in the section “Mapping and Operation”:

- Select the operation in the “with operation” drop-down list.
- Optionally, provide the email configuration parameters

According to the rules of the operation type, the Mapping and Operation section shows the requested parameters as described below.


Load in CM Repository

In the “Model Name” field you can see the model linked to the selected configuration.

The user may proceed with the mapping operation in the mapping table, having the requested parameters described in the following list:

Column Name: shows the columns coming from the data source and from the transformation steps; a sequence number that the system assigns to each data source can be seen as prefix to the column name, so the user can easily recognize the source of the data, in the case of multiple data sources.

Column type and format: choose the type and format of the column of the source (String, numeric, boolean, date). This is important if user wants DT to perform a re-format operation on the target column data type.

Mapping and Operation							
with operation:		Model Name:		<input checked="" type="checkbox"/> Send e-mail to <input type="checkbox"/> Single email for record			
Load in CM Repository		EA Foundation - Sample Model		john.black@customer.com 			
Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 <Application> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> Numbe...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> TCO	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Name	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Total T...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 Name	Generi...	Application	<OBJ NAME> Name	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>
2 Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <Application> Name	Generi...	Application	<OBJ NAME> Name	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>
2 <Application> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <Application> Code	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <IT Portfolio> Name	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <IT Portfolio> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <IT Portfolio> Creatio...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>

In particular, to properly import *date fields* with DT, it's important to follow the following rules.

First, it's helpful to configure the query/file in order to have preformatted source data.

In particular, dates coming from data sources that are mapped onto *CM datetime* property types have to be one of the following:

- DD/MM/YYYY i.e. 31/08/2016 (EUR FORMAT)
- MM/DD/YYYY i.e. 08/31/2016 (USA FORMAT)

- YYYY-MM-DD i.e. 2016-08-31 (UTC FORMAT)

while time, when provided, has to be mandatory in the format:

- HH24:mm:ss

This input date format has to be set in workflow mapping step:

2	<IT Portfolio> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Creation Date	Date in EUR forma...	Application	<PROPERTY> Cr...	Date / Time		<input type="checkbox"/>	<input type="checkbox"/>

Model object type: choose the model object type to load the data; it's possible to select different object types in the same operation

Mapping (prop./assoc.): once you have selected the object type you can map the property or the association between the ones defined in CM for that object type.



Please be sure that the **"Name"** property of an object type is always mapped, to allow DT to identify the object instance to work with (except for Association Types imports, see later).

Take into consideration that you can map Unique ID to keep the values when moving objects from a model to another.

Type: shows the type of the mapped column of the target (String, numeric, boolean, date)

Action: user can now choose what to do for a single attribute/association mapping. This means that:

- For multiline property: the user can choose between APPEND, REPLACE or EMPTY model values
- For other data type properties: the user can choose EMPTY model values (not for Name or ID)
- For association type: user can choose between MERGE, REPLACE or EMPTY model values
- For property types:
 - o UUID
 - o Created By
 - o Creation Date
 - o Updated by
 - o Updated Date

user is requested to choose between two Actions: KEEP TARGET (default) and KEEP SOURCE.

KEEP TARGET: target object property is maintained regardless of what is mapped from the user (the property is skipped)

KEEP SOURCE: target object property is overridden with source property

UUID, Creation Date and Created By properties cannot be updated.

KEEP SOURCE action should be used in a federated models environment and is also supported by Synch in CM Repository

Unique Key: users must check, for all the mapped object types, which set of columns must be considered as the unique keyset when performing the upload of the data. Keep in mind that this setting will work according to the usual Corporate Modeler behaviour, where “Name” has to be unique in the object type instances list, while mapping ID or Unique ID allows object name to be updated. For example, the user may check “Name” as key, and all other properties/associations of an existing object with that name will be updated, or a new object with that name will be created by DT if it is not already in use, or will concatenate it with a sequence number.

Any other mapped column can be included in the keyset, without the “name” – in this case, if an object is identified by the configured keyset, DT will try to update the name with the uniqueness rules described above.

No New: when importing data from an external source, it’s possible that the master list of objects involved in the operation is the one contained in the model. In such a case, the user would want existing objects to be updated (only for the properties used in mapping), but no new objects to be created. If so, user may choose to check “No New” option, on the keyset of the master object type, and this will prevent new objects to be created, while existing will be updated within bounds of mapped properties. The same applies when the object list which has not to be extended is the one related to an object type associated with the master, involved in the operation. In such a case, the user may choose to check the “No New” option, on the record related to the association, and this will prevent new associated objects from being created.

As a result for this operation, data coming from the source adapter will be transformed as defined in “Transformation” step and uploaded into specified model according to the defined mapping rules.

Some additional requirements apply to specific kind of operations, as follows.

1. In case of “All Objects” type of associations, differently from other type of associations, the target object type has to be specified, allowing a proper execution of data import. To do this, after mapping a source column to an association to all object, it is then mandatory to map one more specific column:
 - **TARGET_OBJTYPE:** scriptname of the **object type** at the other side of the “all object” association with the same name, which user wants the objects to belong

Mapping and Operation

with operation: Model Name: ☐ Send e-mail to

Column Name	Type	Object ty...	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 <Application> Category	Generic string	<SKIP ...	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> Number of ...	Generic string	<SKIP ...	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> TCO	Generic string	<SKIP ...	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Name	Generic string	CW User	<ASSOCIATION> All Objects (has as...		Replace	<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Total TCO	Generic string	<SKIP ...	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>

To help this mapping, the tooltip of Model Object type, when selecting one, is equal to the SCRIPTNAME of the selected.

Type	Object types	Mapping
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	CW User	<SKIP CO
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	AnyObject_To	<OBJ NAM
Generic string	Application	<OBJ NAM
Generic string	Association Ar	<SKIP COL
Generic string	Association Ap	<SKIP COL
Generic string	Association De	<SKIP COL
Generic string	Association Fli	<SKIP COL

This can be added in the source with a fixed value field, with scriptname value, to be then used in mapping.

- In case of *multiple data source*, it is implied that the different dataset, alternatively:
 - Have to be joined, if each of them contains a subset of properties/associations information for the same Object Type. If so, the "Name" property of the object type must be mapped onto each dataset resulting in multiple "Name" mappings – this will be the field used to perform the join operation at runtime on the actual data.
 - Have to be used to map on different object types; if so, "Name" property must mapped only once for each Object Type.
- In case of *association type*, when the user wants, for instance, to import the association's properties, it is mandatory to map four specific columns:
 - CCAboveName**: name of the object **instance** at one side of the association (the one defined as "Source Object Type" at design time)
 - CCBelowName**: name of the object **instance** at one side of the association (the one defined as "Target Object Type" at design time)
 - CCAboveTableName**: scriptname of the **object type** at one side of the association (the one defined as "Source Object Type" at design time)
 - CCBelowTableName**: scriptname of the **object type** at one side of the association (the one defined as "Target Object Type" at design time)

To help the last two mappings, the tooltip of Model Object type, when selecting one, is equal to the SCRIPTNAME of the selected.

/format	Model object types	Mapping (Pr
c string	Referente AM	<ABOVE OE
ic string	SocietaVSOrg	<BELOW OE
ic string	Software di Infrastruttu	<PROPERTY
ic string	Software di Infrastruttura	<SKIP COLL
ic string	Standard	<PROPERTY
ic string	Subcontractor	<PROPERTY
ic string	SWInfrServizio	<PROPERTY
ic string	Technology	<PROPERTY
ic string	Utenti esterni	<PROPERTY

4. In case of *Users* or *User Group* import operation, which is allowed using the Admin Model configuration, the operation, will be executed within the following conditions:
 - New **users** can be created, if:
 - **User Name** and **Logon Name** are both **unique** - records which are uncompliant to this Corporate Modeler requirement are skipped at import time, and logged into the operation log file
 - **Password** cannot be provided
 - **Power Level** has to be **provided**, in a numeric form, and is documented by a tooltip:

Users - 1 (System Manager), 2 (Project Manager), 3 (Normal User), 4 (Read Only User)
 - No new **user groups** are going to be created; user can only associate **users** to existing user groups
 - The operation **key** has to be one and only one of the following fields:
 - User Name – in that case, for existing objects, fields can be updated, except for Logon Name, Power Level and Password
 - Logon Name – in that case, for existing objects, name and other fields can be updated, except for Power Level and Password
 - CW ID - in that case, for existing objects, name and other fields can be updated, except for Logon Name, Power Level and Password

Delete in CM Repository

When selecting this operation, the only mandatory mapping is the NAME of the object type that the user wants to manage: as a result of this operation, data coming from the source adapter will be *physically deleted* in the specified model accord to the defined mapping rules, for the ones that are not diagrammed (while diagrammed ones will be listed in the operation log file).

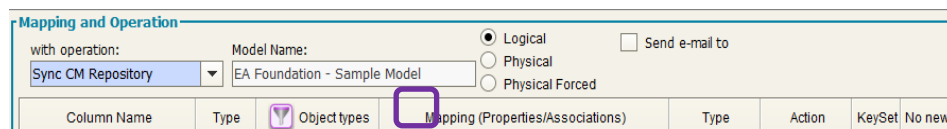
Synch in CM Repository

When selecting this operation, it is mandatory that user choose a *keyset* that's *unique in the source dataset* to avoid undesired results. In particular:

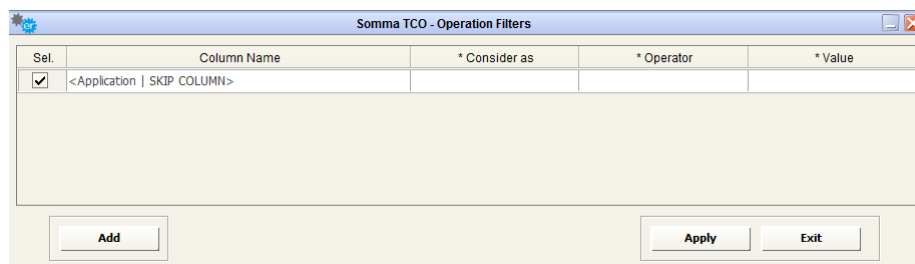
- *Objects coming from the source dataset* will be *inserted/updated* in the specified model accord to the defined mapping rules
- *Objects* already in the specified model object type, that are *not listed in the source dataset*, will be:
 - When “*logical*” option is set, *logically deleted*, and renamed with the prefix “_TO_BE_DELETED_”
 - When “*physical*” option is set, *physically deleted*, if not diagrammed, or renamed with the prefix “_TO_BE_DELETED_” if diagrammed
 - When “*physical forced*” option is set, *physically deleted*, even if diagrammed

If the synchronization operation must be done against a subset of objects, and not the whole set of instances (for example, when contributing external source are more than one for a given object type, each one managing a set of instances, like a CMDB providing data for “Applications in Production environment”), this can be managed using the **sync filters** interface.

Double clicking on the “filter” icon on object type column name



Opens a popup window allowing the creation of sync filters and showing previously defined filters:



User can add, delete (uncheck the filters to be deleted) and apply desired filters.

When the sync operation is defined to be executed according to filters, the involved object type name will be marked with a specific filter icon in the map table, the name will be plain otherwise:

Mapping and Operation

with operation: **Sync CM Repository** Model Name: **EA Foundation - Sample Model** ☒ Logical ☐ Physical ☐ Physical Forced ☐ Send e-mail to

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 <Application> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> Numbe...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> TCO	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Name	Generi...	CW User	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Total T...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 Name	Generi...	Application	<OBJ NAME> Name	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>
2 Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2 <Application> Name	Generi...	Application	<OBJ NAME> Name	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>

For filtered sync option, the load step will follow the usual behavior, while the deletion of redundant object instances will be done within the filtered subset on objects compliant with the filters.

POST to EA Agile

Mapping and Operation

with operation: **POST to EA Agile** Workspace Name: **My AS IS Architecture** ☒ Send e-mail to ☐ Single email for record **csalaris@erwin.com** **Config**

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 ID_APPLICATION	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 COD_APPLICATION	Generi...	Application comp...	<ASSOCIATION> Requirement (realizes)	Relationship		<input type="checkbox"/>	<input type="checkbox"/>
1 TXT_APPLICATION_N...	Generi...	Application comp...	<OBJ NAME> Name			<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 DESCR_APPLICATION	Generi...	Application comp...	<PROPERTY> Description		Replace	<input type="checkbox"/>	<input type="checkbox"/>
1 ID_STATE	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 DE_STATE	Generi...	Application comp...	<PROPERTY> Lifecycle status			<input type="checkbox"/>	<input type="checkbox"/>
1 TXT_SERVICE_NAME	Generi...	Application comp...	<ASSOCIATION> Goal (influences)	Relationship	Replace	<input type="checkbox"/>	<input type="checkbox"/>

In the

“Workspace Name” the name of target workspace will be shown.

User may proceed with the mapping operation in the mapping table, having the requested parameters described in the following list:

Column Name: shows the columns coming from the data source and from the transformation steps; a sequence number that the system assigns to each data source can be seen as prefix to the column name, so the user can easily recognize the source of the data, in the case of multiple data sources.

Column type and format: choose the type and format of the column of the source (String, numeric, boolean, date). This is important if user wants DT to perform a re-format operation on the target column data type.

Date in UTC format

Date / Datetime

The following ISO-8601 formats are supported:

-
- YYYY-MM-DD (e.g. 2019-01.28)
 - YYYY-MM-DDThh:mm (e.g. 2019-01-28T01:02)
 - YYYY-MM-DDThh:mm:ss (e.g. 2019-01-28T01:02:03)
 - YYYY-MM-DDThh:mm:ssTZD (e.g. 2019-01-28T01:02:03+04:05)

When positing to EA Agile, if a time and offset are not provided, these will default to 00:00Z (i.e. 00:00+00)

Date Ranges

For the supported UTC date formats outlined above, DT supports the following separators:

- \$UTCDATE/\$UTCDATE
- \$UTCDATE,\$UTCDATE
- \$UTCDATE;\$UTCDATE
- start:\$UTCDATE end:\$UTCDATE
- start: \$UTCDATE end: \$UTCDATE

Date in EUR format

Date / Datetime

The following formats are supported:

- dd/MM/yyyy (e.g. 28/01/2019)
- dd/MM/yyyy HH24:mm (e.g. 28/01/2019 13:01)
- dd/MM/yyyy HH24:mm:ss (e.g. 28/01/2019 13:01:02)
- dd/MM/yyyy HH:mm AM/PM (e.g. 28/01/2019 01:01 PM)
- dd/MM/yyyy HH:mm:ss AM/PM (e.g. 28/01/2019 01:01:02 PM)
- dd/MM/yyyy HH:mmAM/PM (e.g. 28/01/2019 01:01PM)
- dd/MM/yyyy HH:mm:ssAM/PM (e.g. 28/01/2019 01:01:02PM)

Date Ranges

For the supported EUR date formats outlined above, DT supports the following date range formats:

- start:\$EURDATE end:\$EURDATE

- start: \$EURDATE end: \$EURDATE
- \$EURDATE;\$EURDATE
- \$EURDATE,\$EURDATE

Date in USA format

Date / Datetime

The following formats are supported:

- MM/dd/yyyy (e.g. 01/28/2019)
- MM/dd/yyyy HH24:mm (e.g. 01/28/2019 13:01)
- MM/dd/yyyy HH24:mm:ss mm (e.g. 01/28/2019 13:01:02)

Date Ranges

Dates ranges may be formatted as:

- start:\$USADATE end:\$USADATE
- start: \$USADATE end: \$USADATE
- \$USADATE;\$USADATE
- \$USADATE,\$USADATE

This input date format has to be set in workflow mapping step:

2	<IT Portfolio> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Creation Date	Date in EUR	forma... Application	<PROPERTY> Cr...	Date / Time		<input type="checkbox"/>	<input type="checkbox"/>

Object type: choose the model object type to load the data; it's possible to select different object types in the same operation

Mapping (prop./assoc.): once you have selected the object type you can map the property or the association between the ones defined in EA Agile for that object type.



Please be sure that the **"Name"** property of an object type is always mapped, to allow DT to identify the object instance to work with (except for Association Types imports, see later).

About **associations** mappings, multiple values can be associated putting the different values in a single cell, **newline** separator. Other separators can be replaced with "Data Formatting: Replace Text":

Sel.	Column Name	* Text to be replaced	* Replace with
<input type="checkbox"/>	1 name		
<input type="checkbox"/>	1 busines_criticality		
<input type="checkbox"/>	1 service_classification		
<input checked="" type="checkbox"/>	1 managed_by	;	\n

If an association is of “composition” type, like “Entity is part of Data Model”, the action “set as parent” must be selected from drop down list in order to properly identify objects parent in the platform.

1	ENTITY_NAME	Generi...	Entity	<OBJ NAME> Name	String		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	SCHEMA4TABLES_NA...	Generi...	Entity	<ASSOCIATION> Data Model (is part of)	Composition	Set as parent	<input type="checkbox"/>	<input type="checkbox"/>

Type: shows the type of the mapped column of the target (String, numeric, boolean, date). To help the user in mapping, in case of list or key values allowed values are shown in the “type” cell tooltip:

1	DE_STATE	Generic...	Application compo...	<PROPERTY> Lifecycle status	List		<input type="checkbox"/>	
1	TXT_SERVICE_NAME	Generic ...	Application component	<ASSOCIATION> Goal (influences)	Relation		<input type="checkbox"/>	

Proposed, In Development, Live, Phasing Out, Retired, Proof of Concept, Pilot, Implementation

No New: when importing data from an external source, it’s possible that the master list of objects involved in the operation is the one contained in the workspace. In such a case, the user would want existing objects to be updated (only for the properties used in mapping), but no objects from being created. If so, the user may choose to check the “No New” option, on the keyset of the **master object type**, and this will prevent new objects from being created, while existing will be updated within bounds of mapped properties.

The same applies when the object list which has not to be extended is the one related to an object type **associated with the master**, involved in the operation. In such a case, user may choose to check “No New” option, on the record related to the association, and this will prevent new associated objects from being created.

Delete in EA Agile

When selecting this operation, user should map only the “**Name**” of the object type that he wants to manage: as a result of this operation, data coming from the source adapter will be deleted in the specified workspace according to the defined mapping rules.

POST to EA Agile V3

In the “Workspace Name” the name of target workspace will be shown (“Default”).

User may proceed with the mapping operation in the mapping table, having the requested parameters described in the following list:

Column Name: shows the columns coming from the data source and from the transformation steps; a sequence number that the system assigns to each data source can be seen as prefix to the column name, so the user can easily recognize the source of the data, in the case of multiple data sources.

Mapping and Operation

with operation: Workspace Name: ☒ Send e-mail to ☐ Single email for record

POST to DG Default csalaris@erwin.com Config

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 name	Generi...	System	<OBJ NAME> Name	String		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1 busines_criticality	Generi...	System	<PROPERTY> Notes	String		<input type="checkbox"/>	<input type="checkbox"/>
1 service_classification	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 managed_by	Generi...	System	<ASSOCIATION> Person (has SME)	Relationship	Replace	<input type="checkbox"/>	<input type="checkbox"/>
1 owned_by	Generi...	System	<ASSOCIATION> Person (owned by)	Relationship	Replace	<input type="checkbox"/>	<input type="checkbox"/>
1 change_control	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 location	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 operational_status	Generi...	System	<PROPERTY> Status	List (Single)		<input type="checkbox"/>	<input type="checkbox"/>
1 sys_id_display	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 SN URL	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 URL	Generi...	System	<PROPERTY> CMDB link	URL		<input type="checkbox"/>	<input type="checkbox"/>

Column type and format: choose the type and format of the column of the source (String, numeric, boolean, date). This is important if user wants DT to perform a re-format operation on the target column data type.

Date in UTC format

Date / Datetime

The following ISO-8601 formats are supported:

- YYYY-MM-DD (e.g. 2019-01.28)
- YYYY-MM-DDThh:mm (e.g. 2019-01-28T01:02)
- YYYY-MM-DDThh:mm:ss (e.g. 2019-01-28T01:02:03)
- YYYY-MM-DDThh:mm:ssTZD (e.g. 2019-01-28T01:02:03+04:05)

When positing to EA Agile, if a time and offset are not provided, these will default to 00:00Z (i.e. 00:00+00)

Date Ranges

For the supported UTC date formats outlined above, DT supports the following separators:

- \$UTCDATE/\$UTCDATE
- \$UTCDATE,\$UTCDATE
- \$UTCDATE;\$UTCDATE
- start:\$UTCDATE end:\$UTCDATE
- start: \$UTCDATE end: \$UTCDATE

Date in EUR format

Date / Datetime

The following formats are supported:

- dd/MM/yyyy (e.g. 28/01/2019)
- dd/MM/yyyy HH24:mm (e.g. 28/01/2019 13:01)
- dd/MM/yyyy HH24:mm:ss (e.g. 28/01/2019 13:01:02)
- dd/MM/yyyy HH:mm AM/PM (e.g. 28/01/2019 01:01 PM)
- dd/MM/yyyy HH:mm:ss AM/PM (e.g. 28/01/2019 01:01:02 PM)
- dd/MM/yyyy HH:mmAM/PM (e.g. 28/01/2019 01:01PM)
- dd/MM/yyyy HH:mm:ssAM/PM (e.g. 28/01/2019 01:01:02PM)

Date Ranges

For the supported EUR date formats outlined above, DT supports the following date range formats:

- start:\$EURDATE end:\$EURDATE
- start: \$EURDATE end: \$EURDATE
- \$EURDATE;\$EURDATE
- \$EURDATE,\$EURDATE

Date in USA format

Date / Datetime

The following formats are supported:

- MM/dd/yyyy (e.g. 01/28/2019)
- MM/dd/yyyy HH24:mm (e.g. 01/28/2019 13:01)
- MM/dd/yyyy HH24:mm:ss mm (e.g. 01/28/2019 13:01:02)

Date Ranges

Dates ranges may be formatted as:

- start:\$USADATE end:\$USADATE

- start: \$USADATE end: \$USADATE
- \$USADATE;\$USADATE
- \$USADATE,\$USADATE

2	<IT Portfolio> Category	Generic string	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
2	<IT Portfolio> Creation Date	Date in EUR forma...	Application	<PROPERTY> Cr...	Date / Time		<input type="checkbox"/>	<input type="checkbox"/>

Object type: choose the model object type to load the data; it's possible to select different object types in the same operation

Mapping (prop./assoc.): once you have selected the object type you can map the property or the association between the ones defined in EA Agile V3 for that object type.



Please be sure that the **"Name"** property of an object type is always mapped, to allow DT to identify the object instance to work with (except for Association Types imports, see later).

About **associations** mappings, multiple values can be associated putting the different values in a single cell, **newline** separator. Other separators can be replaced with "Data Formatting: Replace Text":

Sel.	Column Name	* Text to be replaced	* Replace with
<input type="checkbox"/>	1 name		
<input type="checkbox"/>	1 busines_criticality		
<input type="checkbox"/>	1 service_classification		
<input checked="" type="checkbox"/>	1 managed_by	;	\n

If an association is of "composition" type, like "Entity is part of Data Model", the action "set as parent" must be selected from drop down list in order to properly identify objects parent in the platform.

1	ENTITY_NAME	Generi...	Entity	<OBJ NAME> Name	String		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	SCHEMA4TABLES_NA...	Generi...	Entity	<ASSOCIATION> Data Model (is part of)	Composition	Set as parent	<input type="checkbox"/>	<input type="checkbox"/>

Type: shows the type of the mapped column of the target (String, numeric, boolean, date). To help the user in mapping, in case of list or key values allowed values are shown in the "type" cell tooltip:

1	DE_STATE	Generic...	Application compo...	<PROPERTY> Lifecycle status	List		<input type="checkbox"/>	
1	TXT_SERVICE_NAME	Generic ...	Application component	<ASSOCIATION> Goal (influences)	Relation...		<input type="checkbox"/>	

Proposed, In Development, Live, Phasing Out, Retired, Proof of Concept, Pilot, Implementation

No New: when importing data from an external source, it's possible that the master list of objects involved in the operation is the one contained in EA Agile V3 workspace. In such a case, the user would want existing object to be updated (for the only properties used in mapping), but no objects to be created. If so, user may choose to check "No New" option, on the keyset of the **master object type**, and this will prevent new objects to be created, while existing will be updated within bounds of mapped properties. The same applies when the object list which has not to be extended is the one related to an object type **associated with the master**, involved in the operation. In such a case, user may choose to check "No

New” option, on the record related to the association, and this will prevent new associated objects to be created.

Delete in EA Agile V3

When selecting this operation, user should map only the “**Name**” of the object type that he wants to manage: as a result of this operation, data coming from the source adapter will be deleted in the specified workspace according to the defined mapping rules.

Send to File Adapter

The screenshot shows the 'Mapping and Operation' dialog box. It has two main sections. The first section, 'with operation:', contains a dropdown menu set to 'Send to File Adapter'. The second section, 'Choose Adapter', contains a dropdown menu set to 'MANAGER FOLDER'. Below these, there is a text input field for 'Optional output file naming convention, without extension:' with the value 'APPandVendorsEXCEL'. To the right of this field is a checked checkbox labeled 'Overwrite file'.

- Choose the *File Adapter* in the “Choose Adapter” drop-down list (only the “PUT” File Adapter will be available in the list)
- Optionally, define a customized name for the output file, without the extension (it will be *.xml*, if no final custom transformation is applied; it will be *.csv*, if *Custom transformation (CC uncompliant):CC2CSV* transformation is applied, or *.xls*, for *Custom transformation (CC uncompliant):CC2EXCEL*, or *.html*, for *Custom transformation (CC uncompliant):CC2HTML*, etc). Moreover, the user can choose between overwriting file if existing, or have a different file for different executions (in this case, the name will be post fixed with a timestamp)

As a result of this choice, data coming from the source adapter will be transformed as defined in “Transformation” step and sent to the File Adapter folder. When completed it will be delivered to the destination.

Send to DB Loader

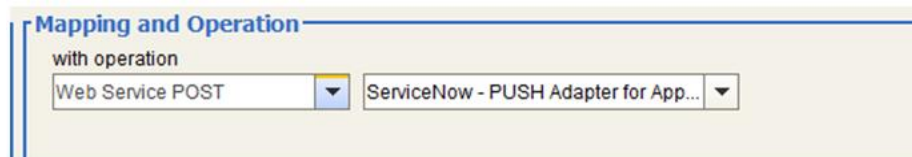
The screenshot shows the 'Mapping and Operation' dialog box. It has two main sections. The first section, 'with operation:', contains a dropdown menu set to 'Send to DB Loader'. The second section, 'Choose Adapter', contains a dropdown menu set to 'MYSQL LOADER'. To the right of these sections are two checkboxes: 'Send e-mail to' and 'Single email for record', both of which are unchecked. Below these, there is a text input field for 'Table to be updated:' with the value 'services'. To the right of this field is a dropdown menu for 'Key field for this operation:' set to 'ID_SERVICE'. To the right of this dropdown is a checked checkbox labeled 'No new (only updates)'. Below these fields is a table with 6 columns: 'Object field', 'Object type', 'Table column', 'FK table', 'FK match column', and 'FK key column'. The table contains 4 rows of data.

Object field	Object type	Table column	FK table	FK match column	FK key column
1 Name	Generic string	TXT_SERVICE_NAME			
1 Id	Generic string	ID_SERVICE			
1 Status	Generic string	FK_STATE	states	DE_STATE	ID_STATE
1 Updated Date	Generic string	<SKIP COLUMN>			

- Select the *Table* to be uploaded with data, coming from the source and transformations of the workflow, among the ones owned by the user specified at DB Loader Adapter configuration time.
- Select the *Key column* among the ones describing the Table, to be used to allow DT to properly perform an “INSERT” or “UPDATE” SQL command at runtime, for any given field value occurrence in input data.
- Then, for each input column name the user may alternatively:
 1. Map onto a specified column of the previously chosen table, when the input value is natively hosted by that
 2. Map onto a specified column of the previously chosen table, when this contains the foreign key of another table in the same database, actually containing the input values, providing:
 - The name (“FK table”)
 - The column hosting the input values (“FK match column”)
 - The column hosting the foreign keys for given table (“FK key column”)
- The option “No New (only updates)” allows user to set import operation to be limited to updates on selected table

As a result of this choice, data coming from the source adapter will be transformed as defined in “Transformation” step and sent to the DB Loader Adapter for the upload operation previously defined.

Web Service POST



Choose the *Web Service POST Adapter* in the “Choose Adapter” drop-down list (only the Web Service “POST” Adapters will be available in the list)

As a result of this choice, data coming from the source adapter will be transformed as defined in “Transformation” step and sent to the Web Service, as defined in its configuration.

Evolve Site Import

Mapping and Operation

with operation: Evolve Site Import Model Name: EA Foundation - Sample Model ☐ Send e-mail to ☐ Single email for record

	Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	N...
1	<Application> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<Application> Num...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<Application> TCO	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1	<IT Portfolio> Name	Generi...	IT Portfolio	<OBJ NAME> Name	Single-line t...		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	<IT Portfolio> Total T...	Generi...	IT Portfolio	<PROPERTY> Total TCO	Whole num...		<input type="checkbox"/>	<input type="checkbox"/>

In order to copy Evolve sites from model to model, you should consider that:

- A target site has to be created before executing the operation
- Only the following components are copied from source model to target model: Menu, Index Pages, Object Pages, Diagram Popouts, Diagram Designer Layouts
- If you want to manage Diagram Designer Layouts you should enable target model with Diagram Designer
- If any objects is already defined in the target site it will be overwritten
- It is recommended that all the pages linked to source Evolve site, should not be associated to other Evolve sites

The following instructions have to be followed in order to copy an Evolve Site. It is recommended to back up your target model before the operation, as a bad configuration may result in a loss of information.

1. Create a new workflow configuration on your target model configuration
2. Select as source EA Adapter and select the export adapter related to your source model
3. Select **CW Site** as object type and filter only Name and Description properties

External Data Source Definition

EA ADAPTER EA Foundation - Sample Model (EASAMP14) Export

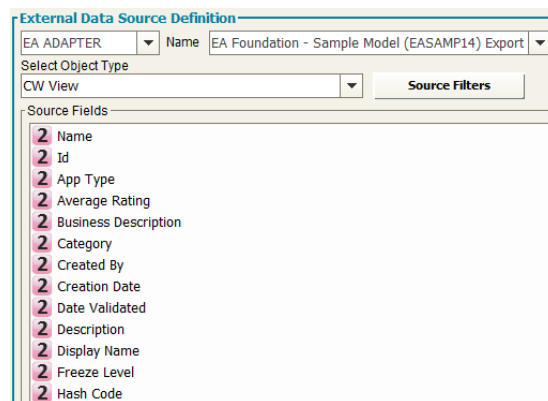
Select Object Type CW Site Source Filters

Source Fields

- 1 Name
- 1 Id
- 1 Average Rating
- 1 Category
- 1 Created By
- 1 Creation Date
- 1 Date Validated
- 1 Description

-
4. Add a second source EA Adapter and select the export adapter related to your source model: select **CW View** as object type and filter the following properties/associations:

- a. Name
- b. App Type
- c. Business Description
- d. Category
- e. Description
- f. Display Name
- g. Hash Code
- h. Root Object Type
- i. CW Site (belongs to (index))
- j. CW Site (belongs to (single))
- k. CW Site (belongs to (diagram pop out))



5. (Optionally, only if you want to copy **Diagram Designer Layouts**) Add a third source EA Adapter, select the export adapter related to your source model and filter the following properties:

- a. Name
- b. Automatic Diagram
- c. Category
- d. Description
- e. Enabled Version

f. Root Object Type

External Data Source Definition

EA ADAPTER Name EA Foundation - Sample Model (EASAMP14) Export

Select Object Type CW Diagram Designer Source Filters

Source Fields

- 3 Name
- 3 Id
- 3 Automatic Diagram
- 3 Average Rating
- 3 Category
- 3 Created By
- 3 Creation Date
- 3 Date Validated
- 3 Description

6. Add a Fixed Value Manager transformation on the following columns:

Src. Number	Column Name	Consider as	Operator	Value
1	Name	String	Equal	source_site_name
2	CW Site (belongs to (index))	String	In (semicolon separated)	;source_site_name*
2	CW Site (belongs to (single))	String	In (semicolon separated)	;source_site_name*
2	CW Site (belongs to (diagram popout))	String	In (semicolon separated)	;source_site_name*

*: use semicolon in value cell as specified

7. Add a Replace Text transformation on the following columns:

Src Number	Column Name	Text to be replaced	Replace with
1	Name	source_site_name	target_site_name
2	CW Site (belongs to (index))	source_site_name	target_site_name
2	CW Site (belongs to (single))	source_site_name	target_site_name
2	CW Site (belongs to (diagram popout))	source_site_name	target_site_name

8. Choose the operation **Evolve Site Import** that will automatically map all needed fields

Mapping and Operation

with operation: **Evolve Site Import** Model: **EA Model - PRODUCTION** ☐ Send e-mail to

	Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet
1	Name	Generic ...	CW Site	<OBJ NAME> Name	Single-line text		<input checked="" type="checkbox"/>
1	Description	Generic ...	CW Site	<PROPERTY> Description	Multi-line text		<input type="checkbox"/>
2	Name	Generic ...	CW View	<OBJ NAME> Name	Single-line text		<input checked="" type="checkbox"/>
2	App Type	Generic ...	CW View	<PROPERTY> App Type	Drop-down list		<input type="checkbox"/>
2	Business Description	Generic ...	CW View	<PROPERTY> Business Description	Multi-line text		<input type="checkbox"/>
2	Category	Generic ...	CW View	<PROPERTY> Category	Drop-down list		<input type="checkbox"/>
2	Description	Generic ...	CW View	<PROPERTY> Description	Multi-line text		<input type="checkbox"/>
2	Display Name	Generic ...	CW View	<PROPERTY> Display Name	Single-line text		<input type="checkbox"/>
2	Hash Code	Generic ...	CW View	<PROPERTY> Hash Code	Whole number		<input type="checkbox"/>
2	Root Object Type	Generic ...	CW View	<PROPERTY> Root Object Type	Single-line text		<input type="checkbox"/>
2	CW Site (belongs to (index))	Generic ...	CW View	<ASSOCIATION> CW Site (belongs to (index))		Replace	<input type="checkbox"/>
2	CW Site (belongs to (single))	Generic ...	CW View	<ASSOCIATION> CW Site (belongs to (single))		Replace	<input type="checkbox"/>
2	CW Site (belongs to (diagra...	Generic ...	CW View	<ASSOCIATION> CW Site (belongs to (diagr...		Replace	<input type="checkbox"/>

Email Configurations

The email notification allows the user to be easily aware of what's going on with DT operations, particularly for the owners of model information managed by the tool.

Notification email for the workflow operation results can be configured with a custom setting for recipients, CC recipients, email subject and message text.

The workflow output, in HTML format, will be attached to email. If it is not needed – for example, the workflow is configured to produce a file that will be also attached to email – the option “Attach workflow output file” should be deselected:

☒ **Attach workflow output file (HTML)**

another option is provided to send email always (per default), only with data, or only on errors:

☐ Email Always
 ☒ **Only with data**
 ☐ Only on errors

Some parameters can be used in subject or message text:

- `<%SYSDATE%>`, `<%SYSDATE_EUR%>`, `<%SYSDATE_USA%>`, `<%SYSDATE_UTC%>`: replaced at execution time with date time, using requested format.
- `<%OPERATION_FOLDER%>`: replaced at execution time workflow operation folder path.
- `<%WORKFLOW_FOLDER%>`: replaced at execution time workflow folder path.

The email can contain links to specified URL: just use “Add URL” button to have a sample link text and replace your own site address and name:

The resulting email looks like this:

Application Catalog updated - 06/10/2017 19:22:20

 **Messaggio**  **WFOUTPUT_1123_20171006_192156083.html (3 KB)**

Please, check HTML Report in
C:/Users/csalaris/Documents/_CC_EAGILE/CC4EAG_1123_20171006_192156052.

Refer to
[Go to Application Catalog](https://myapm.com)
for details.

Collector Team

It is possible to use the option “*Single email for record*” to send a notification for each input dataset record.

Users may put parameters in the email configuration using column name to give specific information regarding the recipient: to be recognized by DT as a parameter, a column name must be enclosed between a prefix "<%" and a suffix "%>".

For instance if the first dataset of a workflow has a column named "**1 AM email**", containing the application manager email related to the column "1 Application name", a proper email recipient could be configured in the email as **<%1 AM email %>** and the subject of the message could be:

"Application **<%1 Application name %>** has been updated in EA model"

The image shows two overlapping windows from a software application. The top window is titled "Workflow Configuration" and has five tabs: "1. GENERAL INFO", "2. CHOOSE SOURCES", "3. TRANSFORM DATA", "4. OPERATION&TARGET", and "5. SAVE AND TEST". The "GENERAL INFO" tab is active, showing fields for "Workflow Name" (TEST EMAIL NO DATA), "Description", "Workflow" (TEST EMAIL NO DATA (1348)), "Workflow folder" (ogramData/erwinCollector/workflows/workflow_1348), and "Active" (checked). The "Steps content" section shows "Sources" (MY SQL APP CATALOG) and "Mapping and Operation" (with operation: Load in CM Repository, Model Name: Casewise Framework Example). The "Send e-mail to" checkbox is checked, and the "Single email for record" checkbox is also checked. The "Email To" field contains "<%1 AM email %>". The "Email CC" field contains "servicedesk@customer.com". The "Email Subject" field contains "Application <%1 Application name %> updated in EA Model". The "Attach workflow output file (HTML)" checkbox is checked. The "Email Always" radio button is selected. The "Only with data" radio button is selected. The "Only on errors" radio button is unselected. The bottom window is titled "Configure message" and has fields for "Email To:" (<%1 AM email %>), "Email CC:" (servicedesk@customer.com), and "Email Subject:" (Application <%1 Application name %> updated in EA Model). It also has a checked "Attach workflow output file (HTML)" checkbox and three radio buttons: "Email Always" (selected), "Only with data" (selected), and "Only on errors" (unselected). There is an "Exit" button at the bottom right.

This setting, when the "Single email for record" option is selected, produces a single notification per source dataset record, replacing parameters with their value as read from the input.

A: b.becker@customer.com
 Cc: servicedesk@customer.com
 Oggetto: Application E-Learning has been updated in EA model

✉ Messaggio  WFOUTPUT_79_20130619_160109727.html (3 KB)

Application E-Learning has been updated from Application Catalogue, with status 1 - Feasibility
 Please, check attachment for detail

Best regards

 Corporate Collector

Workflow operation for folder
 C:/Users/ClaudiaAdmin/Documents/CONFREX/CC4CMXML_79_20130619_1601
 09719 has been executed with no errors

Corporate Collector			2013/06/19 16:01:09
1 Application name	1 Status	1 AM email	
Sales Force	1 - Feasibility	t.jones@customer.com	
Customer Care	2 - Preproduction	n.rhodes@customer.com	
E-Learning	1 - Feasibility	b.becker@customer.com	
Inventory Management	2 - Preproduction	c.salaris@customer.com	

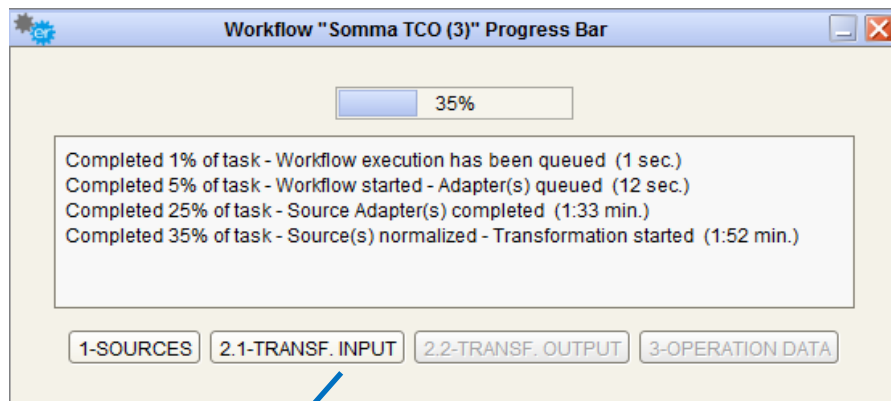
Workflow Test

Once configured, the workflow can be tested using the button “Test”, even if is not yet active.

When tested, a progress bar will make the user aware of the major workflow steps:

1. Adapter execution
2. Source data normalization – to provide transformation input data
3. Transformation execution
4. Workflow output normalization – to provide data for operation

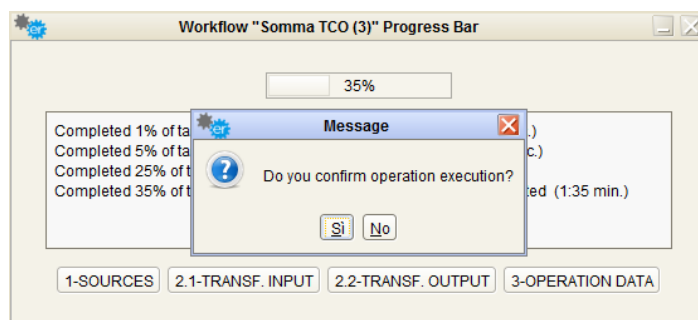
As soon as the step is performed and corresponding data is produced, a specific button makes it available to the user.



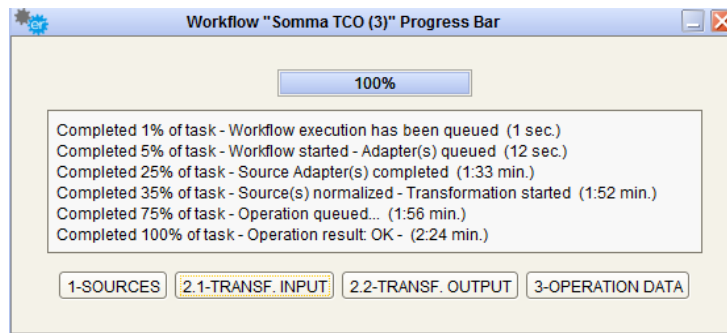
Corporate Collector

<Application> Category	<Application> Number of Users	<Application> TCO
Legacy	40	7500
ERP	402	100000
Legacy	200	78000
Middleware	150	220000
Software	150	30000
ERP	110	50000
ERP	150	7500
ERP	20	80000
Legacy	152	7500
ERP	370	200000
Software	300	65000

Once data for operation have been produced, user may choose to actually execute operation or not, after checking the operation data.



The user is then informed about the result of the operation execution, if requested.



Administrator Tools

Execute and Schedule Jobs

The administrator tools include the scheduler, which is the engine that runs the jobs mainly related to the adapters set up by the user. The scheduler allows the user to schedule a single job; the user may define and schedule job sequences that run the desired jobs with the assigned priority.

According to the type of jobs available and the timing facilities, the user may schedule each single job (or a job sequence) with a certain frequency.

In this window the user can choose to manage the jobs available for all the configurations or to select a specific model configuration to work on the model administration jobs. In particular, selecting from the upper dropdown list:

- “*All Configurations*”, the user can schedule the Custom Job (see related section) and the Adapters (CM, WS, File and DB Adapters) which may be used by different models within their specific workflows. In this case, when an adapter is executed by the scheduler engine, an embedded workflow manager will trigger all the workflows using that adapter as its data source to execute

For each of the available Adapters, the user can set up the definition of single job to be scheduled (section “Job Scheduler”)

- *A specific model configuration name*, the user manages the scheduling of the given model administration jobs, as
 - Model backup
 - Multisource jobs defined within that configuration workflow (thus needed only for those and not available for any other)

For each of the available model configuration, the user can set up:

- If it is active or not (checkbox “Active configuration”) – a configuration could exist even if it is not active
- The definition of single job to be scheduled (section “Job Scheduler”)
- The definition of each job sequencer (“Job Sequencer”)

Job Scheduler

For any kind of job, the user can set the scheduling time for each job after selecting it from the list.

The screenshot shows the 'Scheduler' window with the following sections:

- Configuration:** A dropdown menu set to 'All the configurations' and a checked checkbox for 'ACTIVE CONFIGURATION'.
- Job Sequence:** A table with columns 'Sequence Name', 'Description', and 'Next Execution Time'. Below the table are 'Add', 'Edit', and 'Delete' buttons.
- Scheduler Job:** A table with columns 'Job Name', 'Description', and 'Next Execution Time'. It lists four jobs: 'Adapter Job - EA Foundation - Sample Model (EASAMP14) ...', 'Adapter Job - File di test', 'Adapter Job - Nuovo DB Adapter', and 'Adapter Job - WS Adapter'. Below the table are 'Add', 'Edit', and 'Delete' buttons.
- Timing Parameters:** A section with 'Repetition' (set to 'Daily'), 'Parameters' (set to 'Every 3 days'), 'Start Time' (set to '16:00:21'), and 'Time window' (with 'From' and 'To' fields). At the bottom are 'Apply', 'Unschedule', 'Run Now', and 'Exit' buttons.

Here are the timing parameters available:

- *Time Window* - gives the opportunity to set a date interval for job execution. The jobs are executed according to the following repetition options and set-up time field.

The 'Time window' section shows 'From' and 'To' date fields. The 'From' field is set to '21/09/2018' and the 'To' field is set to '23/11/2018'. Each field has a calendar icon to its right.

- *Repetition by "Minutes"* - set the repetition of a job every "xx" minutes (optionally within an hour interval).

The 'Repetition' section has a dropdown menu set to 'Minutes'. The 'Parameters' section shows 'Every 15 minutes' with a checked 'Set Hours Interval' checkbox. It also includes 'From' and 'To' time fields, with 'From' set to '8' and 'To' set to '24'.

- *Repetition "Hourly"* - set the repetition of a job every "xx" hours (12 hours in the example).

Repetition	Parameters
Hourly	Every 12 hours

- *Repetition "Daily"* - set the repetition of a job every "xx" days (2 days in the example).

Repetition	Parameters
Daily	Every 2 days

- *Repetition "Weekly"* - set the repetition of a job each "day" of the week (Sunday and Monday in the example).

Repetition	Parameters
Weekly	<input checked="" type="checkbox"/> Sun <input checked="" type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat

- *Repetition "Monthly"* - the repetition of the job every "xx" (ordinal number) of the month (first day in the example).

Repetition	Parameters
Monthly	The 1 of the month

- *Repetition "Once"* - schedule the job to run just once, in the specified date and accordingly to the "Start Time" field.

Repetition		
Once		
Start Time	Date	
(hh:mm:ss)		
16:42:42	20/09/2017	

When the user has completed the scheduling configuration, the user can store the scheduling parameters in the DT database by pressing the **Apply** button.

When the user presses the "Apply" button, either if they selected a job sequence or a single job, the field "Next Execution Time" (in the Job Sequencer or Job Scheduler respectively) is filled with the next expected time the job will run.

If it is required to unschedule a job, the user has to select it in the list and then press the **Unschedule** button.

If it is required to execute a job or a job sequencer immediately, the user has to select it in the list and then press the **Run Now** button.

The **Exit** button closes the window.

Active Configurations

If you want the scheduler to execute the jobs at the scheduled time, activate the configuration by checking the ☒ ACTIVE CONFIGURATION check box. Once activated the check-box changes colour from yellow to green.



Please note that a configuration does not necessarily need to be activated to schedule its jobs.

The user is allowed to schedule any of the jobs, but the jobs will not be executed if at the execution time the configuration is not checked as “active”.

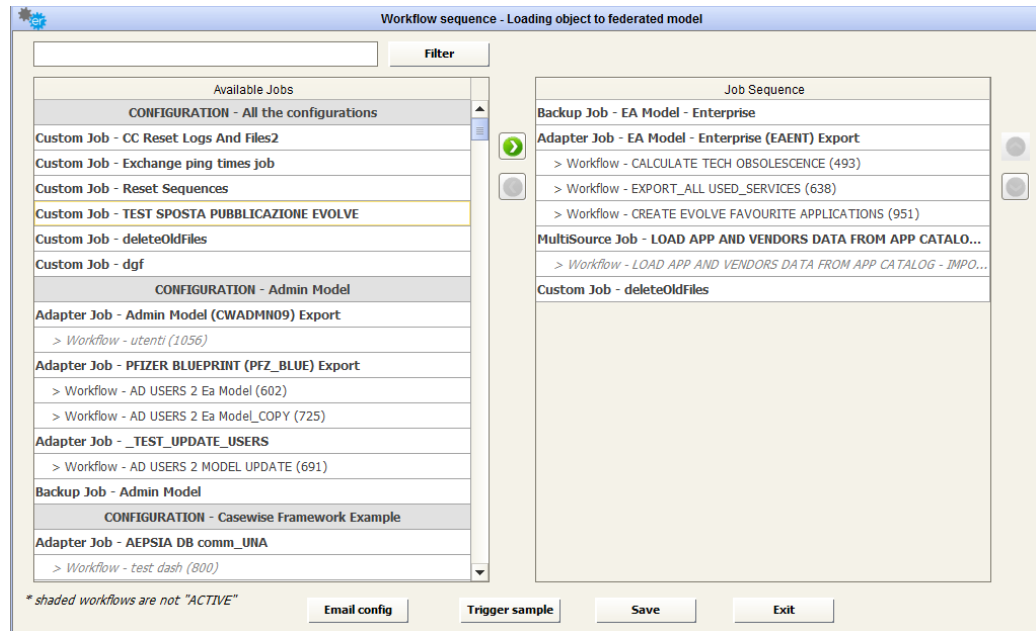
The screenshot shows a 'Configuration' panel with a 'Select Configuration' dropdown menu set to 'All the configurations'. To the right of the dropdown is a checkbox labeled 'ACTIVE CONFIGURATION' which is currently unchecked. The background of the checkbox area is yellow.

The “All the configurations” configuration is always active:

This screenshot is identical to the one above, but the 'ACTIVE CONFIGURATION' checkbox is now checked. The background of the checkbox area has changed from yellow to green.

Define Jobs Sequences

The user may define job sequences, configuring *adapters and workflow* in a real *logical flow*; the user may choose between available adapters and related workflows which ones, and which order they belong in the Job Sequence:



Using right/left arrows to include/ exclude an item, and up/down arrow to change their order.

User may include more than one occurrence of adapter, with different workflows, backup and custom jobs.

You can schedule a job using the standard timing parameters: the job will result in the execution of all the adapters belonging to the job sequencer definition and all of the selected workflow, in the configured order.



Please take into consideration that if a workflow included in a sequence is set inactive in the workflow configuration, then it will still belong to the sequence, but it will appear “grayed out” in the sequence definition window, and its execution will be skipped when running the sequence itself.

Take into account the following internal behavior: when different workflows use source objects exported from the same model:

Job Sequencer
Adapter Job - EA Model - Enterprise (EAENT) Export
> Workflow - CALCULATE TECH OBSOLESCENCE (493)
> Workflow - EXPORT_ALL USED_SERVICES (638)
> Workflow - EXPORT_ALL_UNUSED_SERVICES (535)
> Workflow - CREATE EVOLVE FAVOURITE APPLICATIONS (951)

All the different requests will be aggregated, in terms of **different object types**, and in terms of **filters** (which attributes/associations are to be exported; the definition of filters on data).

So, if the objects to be exported, all at once, are typically more than a few thousand, or the filters are conflicting, it's recommended to replicate the adapter execution, moving workflows in order to make the adapter request more efficient and avoid conflicts:

Job Sequencer
Adapter Job - EA Model - Enterprise (EAENT) Export
> Workflow - CALCULATE TECH OBSOLESCENCE (493)
Adapter Job - EA Model - Enterprise (EAENT) Export
> Workflow - EXPORT_ALL USED_SERVICES (638)
Adapter Job - EA Model - Enterprise (EAENT) Export
> Workflow - EXPORT_ALL_UNUSED_SERVICES (535)
Adapter Job - EA Model - Enterprise (EAENT) Export
> Workflow - CREATE EVOLVE FAVOURITE APPLICATIONS (951)

This is not mandatory and a single rule of workflow aggregation cannot be provided, as it hugely depends on the size/type of required export.

Sometimes, if DT Windows Services are forced to stop, or in case of severe internal error, sequences may enter an inconsistent state, that could stop other jobs from being executed. In that case the administrator may use the **"Reset sequences"** item in the "Tools" menu (See [Utilities](#)).

Multi Source Jobs

When the user in a workflow configuration defines more than one source (workflow with multi source) the system creates a “special” job named “MultiSource Job” that will be shown in the Job Sequencer and Job Scheduler sections of the specific workflow configuration:

Job Sequence		
Sequence Name	Description	Next Execution Time
Sequencer multisource	CONDITIONAL	

Scheduler Job		
Job Name	Description	Next Execution Time
Backup Job - EA Foundation - Sample Model	Backup	
MultiSource Job - Somma TCO	MultiSourceJob	

You can schedule it using the standard timing parameters: the job will result in the execution of all the adapters belonging to the source definition of the workflow that will trigger the workflow execution itself.

Workflows that have any of those adapters as single source or in a different multisource definition will not be triggered.

Custom jobs

If needed, users can configure a custom job, aimed to run any external executable that can be launched through a command line, using the “Add” button at the bottom of the job list, available with the “All the configurations”.

The screenshot shows the 'Scheduler' application window. It has a title bar with a gear icon and the text 'Scheduler'. The window is divided into several sections:

- Configuration:** A dropdown menu labeled 'Select Configuration' with 'All the configurations' selected. To its right is a checkbox labeled 'ACTIVE CONFIGURATION' which is checked.
- Job Sequence:** A table with three columns: 'Sequence Name', 'Description', and 'Next Execution Time'. It contains one row: 'Sequencer multisource', 'CONDITIONAL', and an empty cell. Below the table are three buttons: 'Add', 'Edit', and 'Delete'.
- Scheduler Job:** A table with three columns: 'Job Name', 'Description', and 'Next Execution Time'. It contains four rows:
 - 'Adapter Job - EA Foundation - Sample Model (EASAMP14) ...', 'CM repository export', and an empty cell.
 - 'Adapter Job - File di test', 'SHEET folder', and an empty cell.
 - 'Adapter Job - Nuovo DB Adapter', 'DB Query', and an empty cell.
 - 'Adapter Job - WS Adapter', 'WS Consumer', and an empty cell.Below the table are three buttons: 'Add' (highlighted with a blue border), 'Edit', and 'Delete'.
- Timing Parameters:** A section with two main areas:
 - Repetition:** A dropdown menu.
 - Parameters:** A text input field.
 - Start Time:** A text input field.
 - Time window:** Two text input fields with small square icons to their right.At the bottom of this section are three buttons: 'Apply', 'Unschedule', and 'Run Now'.

An 'Exit' button is located at the bottom right of the window.

To configure a Custom Job, beside the Job Name and Description, the user must provide the environment information, such as the IP of the server in which the execution has to be launched, the username and password of a Windows account (as specified in the Windows domain) which has the grant to login to the server and run the execution.

Custom Job Configuration

Job Name:*

Job Description:

Server IP:* Username:* Password:*

Executable path (server):*

Parameters:

☐ Wait For Return Timeout after minutes *(Kill the custom job if not completed after x minutes)*

The user must provide the physical path, including the file name, of the given execution in the server, and the optional parameters required by the execution itself, enclosed by quotes if needed, as they would be written in a command line.

Custom Job Configuration

Job Name:*
My custom job

Job Description:
post processing jobs to complete links

Server IP:* Username:* Password:*

192.168.29.18 Administrator *****

Executable path (server):*

F:\temp\pbiPostProcessing.bat

Parameters:

F:\temp\output.txt

☒ Wait For Return Timeout after minutes *(Kill the custom job if not completed after x minutes)*

The option “Wait For Return” forces the process that launches the execution to be listening for the external process to end and wait for the exit code. In this case it’s mandatory to define the timeout in minutes, to avoid DT hanging, if the executable does not exit in the given elapsed.

DTWhen “Wait For Return” is not checked, user may define a number of minutes that DT will wait before scheduling the next job, if the custom job is included in a job sequence.

☒ **Wait For Return** Timeout after minutes *(Kill the custom job if not completed after x minutes)*

After saving the configuration, user can test the execution of the job:

Custom Job Configuration

Job Name:*
My custom job

Job Description:
post processing jobs to complete links

Server IP:*
192.168.29.18

Username:*
Administrator

Password:*

Executable path (server):*
F:\templ\pblPostProcessing.bat

Parameters:
F:\templ\output.txt

☒ Wait For Return Timeout after 1 minutes (Kill the custom job if not completed after x minutes)

Buttons: Save, Test, Exit

Message
JOB SUCCESSFULLY LAUNCHED
OK

In case of error, DT will provide the return code of the process execution.

Custom Job Configuration

Job Name:*
My custom job

Job Description:
post processing job to complete links

Server IP:*
192.168.20.18

Username:*
AEPDATABASE

Password:*

Executable path (server):*
F:\public\appoggio_Salaris\pblPostProcessing.bat

Parameters:
C:\TEMP\output.txt

☒ Wait For Return Timeout after 1 minutes (Kill the custom job if not completed after x minutes)

Buttons: Save, Test, Exit

Message
EXECUTION END WITH RETURN CODE:6
OK

You can schedule it using the standard timing parameters: the job will result in the launch of the external execution.

Custom Job - My custom job CustomJob

Buttons: Add, Edit, Delete

Timing Parameters

Repetition: Weekly

Parameters: ☐ Sun ☒ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat

Start Time (hh:mm:ss): 23:08:27

Time window: From 22/09/2017 To 30/09/2017

Buttons: Apply, Unschedule, Run Now

Running DT on Event

Running an Adapter on Event

In a real life environment, it could be important to acquire external data on a scheduled basis, or in an “*on event*” mode; in particular, when a DB Adapter is used for reading the information from a database. It’s quite easy to implement, for example, a stored procedure that drops a text file, containing the trigger information for DT to start a given adapter.

The trigger file can be detected by DT if dropped in a given folder:

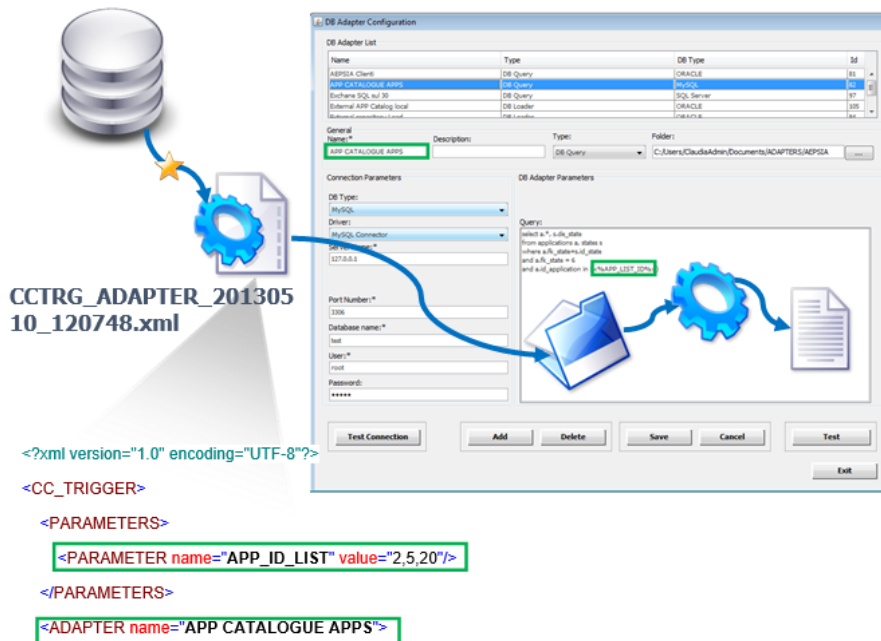
- any of the DT *adapter folders* (including the specific adapter, but not mandatory)
- the folder “C:\ProgramData\erwin\Data Transformation\workflows”

The described *triggering feature* applies to any other adapter type.

The trigger files must be compliant with the naming convention:

`CCTRG_ADAPTER_YYYYMMDD_HHMMSS.xml`

and the sample content describing the schema is detailed below (see next paragraph for <PARAMETERS> tag):



Please note that you could even choose whether to execute all the (active) workflows defined against that adapter as source, or a sub list of your choice:

```

<?xml version="1.0" encoding="UTF-8"?>
<CC_TRIGGER>
  <PARAMETERS>
    <PARAMETER name="APP_ID_LIST" value="2,5,20"/>
  </PARAMETERS>
  <ADAPTER name="APP CATALOGUE APPS">
    <DELAY HH="0" MIN="0" SEC="30" />
    <WORKFLOWS all="false">
      <WORKFLOW name="CCWORKFLOW_1">
        <DELAY SEC="0" MIN="0" HH="0"/>
      </WORKFLOW>
    </WORKFLOWS>
  </ADAPTER>
</CC_TRIGGER>

```

Running a DB Adapter on Event with Parameters

When configuring and using a trigger file for executing a DB adapter on event, it is possible to add parameters to drive the query resultset through them.

Let's suppose that you want to configure a DB Query Adapter, which is named "MY ADAPTER" and extract detail of just the Applications that have been updated / inserted in a table named "MY_TABLE". The Applications are selected, based on their ID.

The SQL query to do this would look like:

```
SELECT * from MY_TABLE where APPLICATION_ID in (131, 156, 653)
```

When triggering DT on event, you may want this adapter to just process applications that were updated or inserted in the DB table. The IDs of the updated / inserted Applications can be obtained and passed to the adapter using parameters in the SQL query. e.g.

```
SELECT * from MY_TABLE where APPLICATION_ID in (<%APP_ID_LIST%>)
```

<%APP_ID_LIST%> in the SQL query is the parameter name to obtain the name of the parameter in the XML trigger file.



Please note the required syntax for DT: parameter names must be provided enclosed by the prefix "<%" and suffix "%>", like: <%PARAM_NAME%>.

The values of the parameter must be written in the XML trigger file each time that the SQL Trigger executes on the Table where the Application detail will be updated / inserted.

The XML trigger file must contain the following:

```
<PARAMETERS>
  <PARAMETER name="APP_ID_LIST" value="345, 436"/>
</PARAMETERS>
```

The parameter name is hard coded into the SQL Trigger, and the values are the IDs of the changed Applications which is written directly into the xml trigger file by the SQL Trigger. These values can be different, each time that the database trigger is executed.

When the DT Database query is executed, the values will be put in place of the parameter name, as follows:

```
SELECT * from MY_TABLE where APPLICATION_ID in (345, 436)
```

Parameters included in the trigger file can be used even in workflow transformations, when they accept fixed values, like:

Transformation Configuration

Transformation: Activity:

Transformation fields

Sel.	Column Name	* Consider as	* Operator	* Value
<input type="checkbox"/>	1 <Application> Category			
<input type="checkbox"/>	1 <Application> Number of Users			
<input type="checkbox"/>	1 <Application> TCO			
<input checked="" type="checkbox"/>	1 <IT Portfolio> Name	String	Equal	<%CUSTOMER%>

Special parameters include:

<%SYSDATE%>: a parameter can be used to populate a fixed value column, or a filter value, with the system date and time (*UTC format*); if the value **<%SYSDATE%>** is entered, DT will replace the parameter with the datetime value, at execution time.

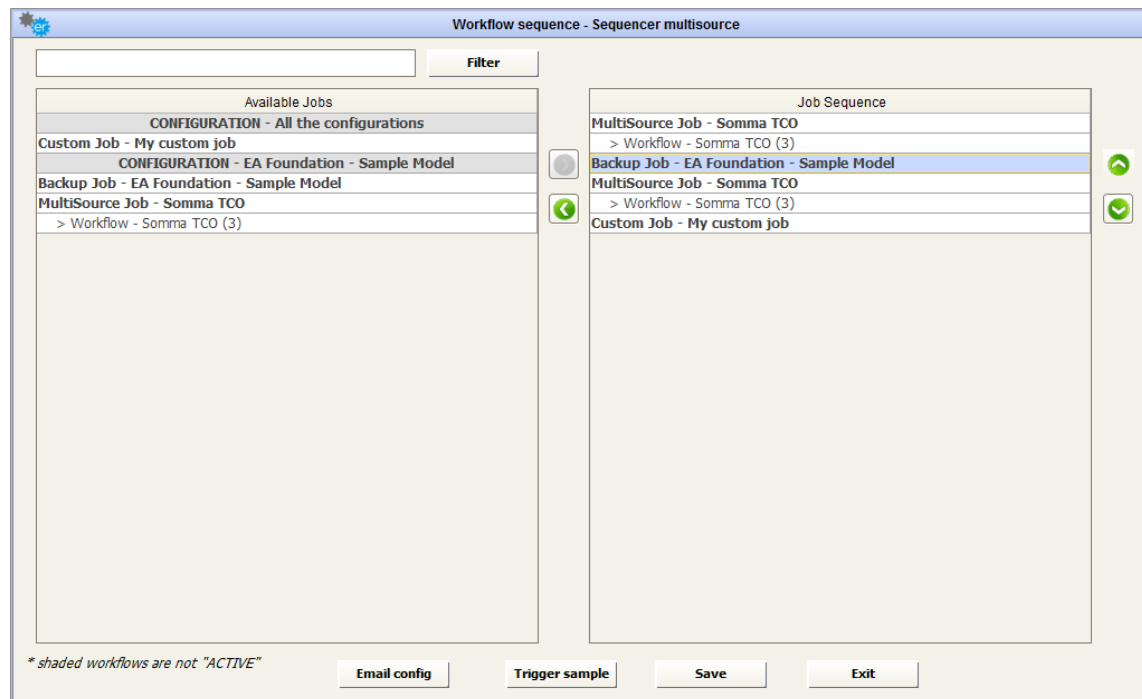
<input checked="" type="checkbox"/>	1 DATA_OP	<%SYSDATE%>
-------------------------------------	-----------	-------------

<%BLANK%>: in Replace Text transformation, when you want it to be applied to an empty value.

Sel.	Column Name	* Text to be replaced	* Replace with
<input checked="" type="checkbox"/>	1 <Application> Category	<%BLANK%>	Critical

Running a Sequence on event

In this version, you can define job sequences, not only on schedule time basis, but in a real logical flow; that is, the user may choose between available adapters and related workflows; which ones, and in which order they belong in the Job Sequence:



The job sequences can be launched on demand, on schedule, or on event in a similar way to adapters.

A sample of the needed trigger file could be obtained pushing the "Trigger sample" button:

```
<?xml version="1.0" encoding="UTF-8"?>
<CC_TRIGGER sequence="MySequenceJob">
  <PARAMETERS>
    <PARAMETER name="MY_CATEGORY_PARAM" value="sample_value" />
  </PARAMETERS>
</CC_TRIGGER>
```

```
</PARAMETERS>  
</CC_TRIGGER>
```

And it will contain all the parameters included in the included adapter/workflow definitions (where “*sample_value*” must be replaced by the actual “*MY_CATEGORY_PARAM*” value when producing the real trigger file).

The trigger files must be compliant to the naming convention:

CCTRG_SEQUENCE_YYYYMMDD_HHMMSS.xml

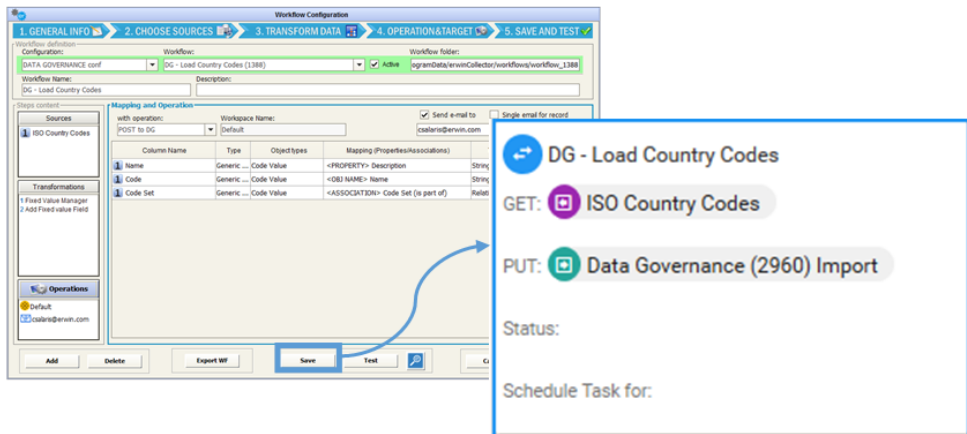
Running DT from Cloud Platform

Collector4Cloud provides EA Agile/EA Agile V3 users the capability to interact with onPrem DT:

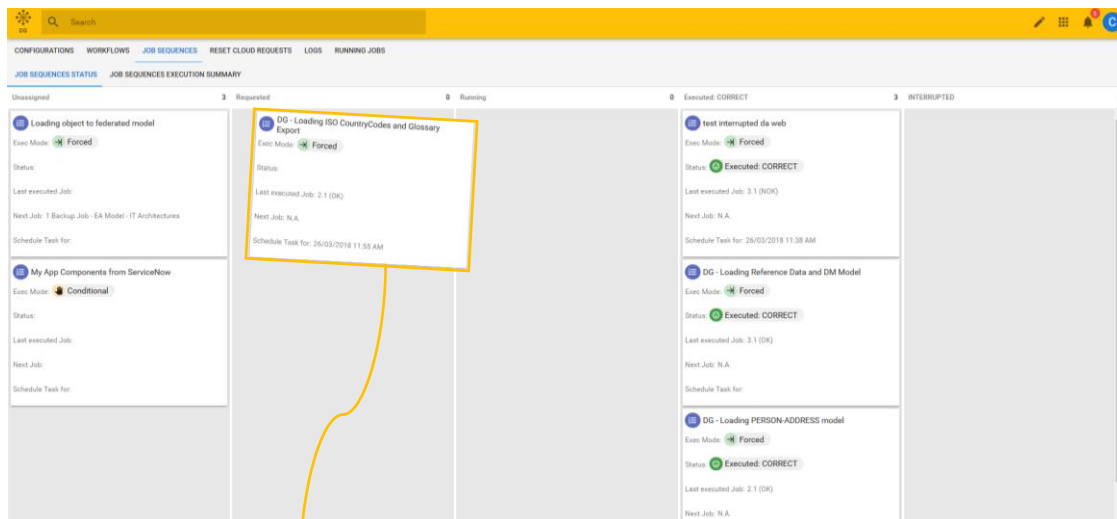
- View available DT flows / job scheduler
- View the workflow definition, in terms of sources/target Adapters and configuration
- View the Job Sequence definition, in terms of included workflows and custom jobs
- Run a specific flow or job sequence on demand or by schedule, following the execution status
- view the data managed by the flow to the target system / people
- check if the flow exited with no data
- check if there were errors, and view the logs in case
- Have a complete updated view of the daily operations log

Both **erwin EA Agile** and **erwin EA Agile V3** are supported, depending on the specific configuration (see [Cloud Environment](#)). This enables Listener Windows service to support on premise application to work with cloud:

- Job (workflows and sequences) definitions are pushed to cloud



- *Job requests* are pulled from cloud
 - *one time requests*– drag and drop to “Requested” status Kanban



Name
DG - Loading ISO CountryCodes and Glossary Export

Description
Upload ISO Country Codes, then export Business Glossary for Data Owner

Exec Mode
→ Forced

Schedule Task for
26/03/2018 11:55 AM

Notify Result to
c.salaris@yahoo.it

Status
⌚ Requested

Execution Progress
http://localhost/CollectorWorkflows/CCJobSequence_1522065263365_20180326_135423.html

Last Execution DateTime
26/03/2018 01:57 PM

Last executed Job
2.1 (OK)

Next Job
N.A.

Workflows included
⚙ DG - Load Country Codes ⚙ DG Glossary - Report

Custom Jobs included

Last Execution ID
1522065263365

Job Sequence ID
-17089281

- on schedule – setting the datetime field “Schedule Job for”

Schedule Task for
26/03/2018 01:28 PM



Please note that **repetitive schedules** are only configurable by **on premise application**.

User can **monitor** the **execution of jobs** by different views and fields and linked reports:

DG - Load Country Codes
 GET: ISO Country Codes
 PUT: Data Governance (2960) Import
 Status: Running
 Schedule Task for:

DG - Loading ISO CountryCodes + ServiceNow Systems and Glossary Export
 Exec Mode: Forced
 Status: Running
 Last executed Job: 2 (OK)
 Next: 2.1 > Workflow - DG - Loading Business Services from ServiceNow
 Job: CMDB
 Schedule Task for:

- “Last execution Dataset” for workflows:

Last Execution ID
1522071325173

Last Execution DateTime
26/03/2018 03:37 PM

Last Execution Dataset

<http://localhost/CollectorWorkflows/My Application Catalog.pdf>

erwinCollector

Workflow: TABLE - Export appcomponent to PDF 2018/03/26 15:36:46

Name	Action	Availability character set	Business Criticality	Date of last release	Date of next release	Lifecycle status	Next Logically	Next Standard release date	Requirement (Inherited)
Bank Application	Replace and consolidate		High 100	31/03/2015 11:00:00 AM	31/03/2016 11:00:00 AM	PhaseOut	False		
Bank System	Replace and consolidate	26/7	High 100	01/12/2015 00:00:00 AM	01/12/2017 00:00:00 AM	Retired	False		
Call Center Manager	Consolidate	26/7	Low 10	01/12/2015 00:00:00 AM	01/12/2017 00:00:00 AM	Use	False		
Car Insurance Application	Replace and consolidate		Low 10	31/03/2015 11:00:00 AM	31/03/2016 11:00:00 AM	PhaseOut	False		
Claim Handling	Consolidate	Medium 50	High 100	31/03/2015 11:00:00 AM	01/12/2017 00:00:00 AM	In Development	False		
Claim Handling Management	Survive/Retire		High 100	01/12/2015 00:00:00 AM	31/03/2016 11:00:00 AM	Use	False		

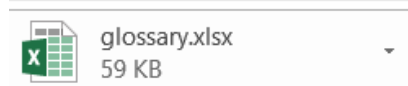
- “Execution Progress” for Job Sequences (with links to workflows dataset), continuously updated:

- *Notification emails* – can be requested by cloud setting the “Notify Result to” field on workflow/job sequences

Notify Result to

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A



[Go to Erwin](#)

Other **summary views** show more detailed information about last run, including last execution datetime and link to output file (if any) or error file (in case of errors):

The screenshot shows the 'Collector Operations' interface with the 'Workflows Details' tab selected. It displays a table of workflow execution details.

Name	Status	GET	PUT	Last Execution DateTime	Last Execution dataset	Workflow ID
BMC ADDM getting Hosts	Executed: ERROR	BMC ADDM - Hosts	MANAGER FOLDER	14/11/2017	http://localhost/CollectorWorkflows/server.txt	1288
EA ADILE - Load Apps from App catalogue	Executed: CORRECT	MY SQL APP CATALOG	My AS IS Architecture (1705) Import	13/11/2017	http://localhost/CollectorWorkflows/WFOUTPUT_11...	1275
EA ADILE - Export app component to DB Loader	Executed: CORRECT	My AS IS Architecture (1705) Export	MYSQL LOADER	13/11/2017	http://localhost/CollectorWorkflows/WFOUTPUT_41...	1272
EA ADILE - Export app component to PDF	Executed: CORRECT	My AS IS Architecture (1705) Export	MANAGER FOLDER	13/11/2017	http://localhost/CollectorWorkflows/My overwrite.pdf	1279
EA ADILE - Export app components to Service Now	Running	My AS IS Architecture (1705) Export	ServiceNow PUSH Application comp...	14/11/2017	http://localhost/CollectorWorkflows/WFOUTPUT_11...	1274
EA ADILE - Exporting View My Reqs	Executed: CORRECT	My AS IS Architecture (1705) Export	MANAGER FOLDER	14/11/2017	http://localhost/CollectorWorkflows/My Requiremen...	1276
EA Agile - Getting Applications from ServiceNow	Executed: NO DATA	ServiceNow GET - Applications	My AS IS Architecture (1705) Import	13/11/2017		1284
Exporting requirements (OT)	Executed: NO DATA	My AS IS Architecture (1705) Export	MANAGER FOLDER	13/11/2017		1287
My AS IS - Business Processes	Executed: CORRECT	My AS IS Architecture (1705) Export	MANAGER FOLDER			1317
My CRM Portfolio	Executed: CORRECT	My AS IS Architecture (1705) Export	MANAGER FOLDER	13/11/2017	http://localhost/CollectorWorkflows/My CRM Portfol...	1283

A dedicated **logs view** enables cloud users to be aware of DT operations, from the request through intermediate steps to execution, with a XLSX report, updated in near real time:

The screenshot shows the 'Collector Operations' interface with the 'LOGS' tab selected. It displays a table of log entries with a 'Log File' column containing links to XLSX reports.

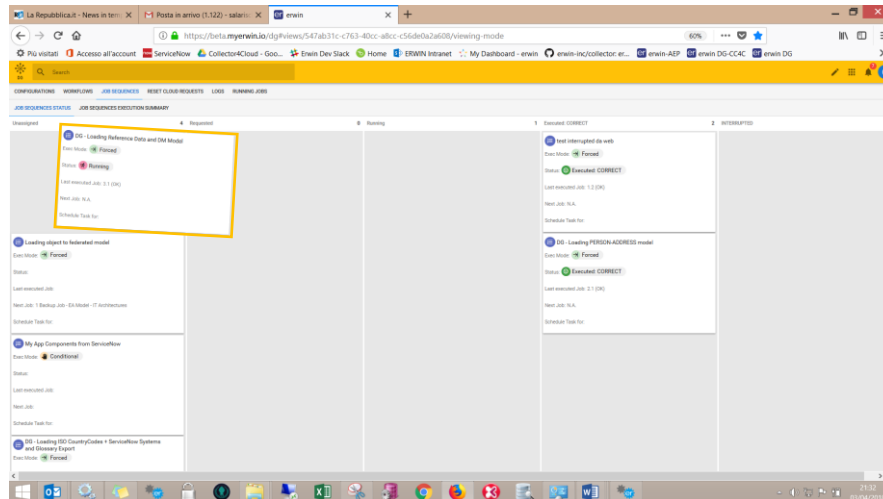
name	Log File
Collector Operations Log - 2018.03.23	http://localhost/CollectorWorkflows/CollectorOperations_20180323.xlsx
Collector Operations Log - 2018.03.24	http://localhost/CollectorWorkflows/CollectorOperations_20180324.xlsx
Collector Operations Log - 2018.03.25	http://localhost/CollectorWorkflows/CollectorOperations_20180325.xlsx
Collector Operations Log - 2018.03.26	http://localhost/CollectorWorkflows/CollectorOperations_20180326.xlsx

The screenshot shows an XLSX report with columns: CONFIGURATION, Operation Date, USER, OPERATION, and NOTE. It details the execution of various workflows and data governance tasks.

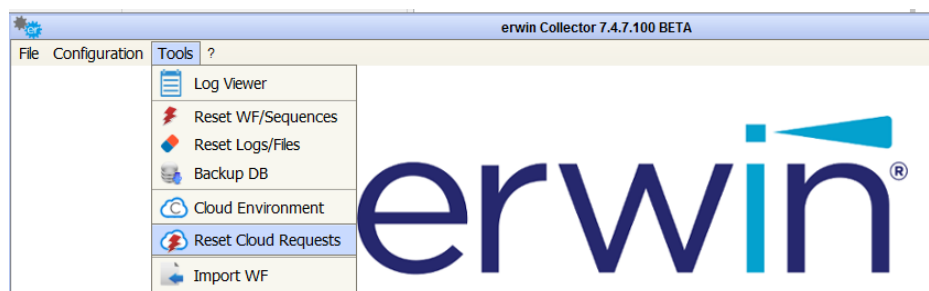
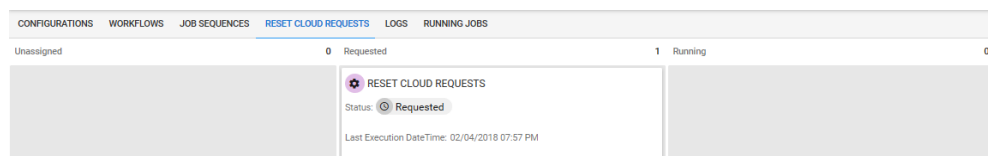
CONFIGURATION	Operation Date	USER	OPERATION	NOTE
All the configurations	2018-03-26 16:17:31.862	SequenceManager	Sequence completed	Sequence "DG - Loading PERSON-ADDRESS model" has been completed (ExecID:1522073660871-FORCED)
DATA GOVERNANCE conf	2018-03-26 16:17:20.665	File Adapter	workflow completed	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ExecID:1522073660871-ID:1440) - File has been sent to Adapter
DATA GOVERNANCE conf	2018-03-26 16:17:08.924	Workflow manager	waiting for operation...	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ID:1440)
DATA GOVERNANCE conf	2018-03-26 16:17:04.656	Workflow manager	workflow starting...	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ID:1440)
All the configurations	2018-03-26 16:16:18.616	SequenceManager	Sequence completed	Sequence "DG - Loading ISO CountryCodes and Glossary Export" has been completed (ExecID:1522073588324-FORCED)
All the configurations	2018-03-26 16:16:10.728	Data Governance	DG_endExport	Adapter file: C:/ProgramData/erwinCollector/workflows/workflow_1440/MULTISOURCE_1440_20180326_1522073660871/AD/
DATA GOVERNANCE conf	2018-03-26 16:16:04.559	File Adapter	workflow completed	Workflow: DG Glossary - Report (ExecID:1522073588324-ID:1369) - File has been sent to Adapter target folder: F:/ServiceNk
DATA GOVERNANCE conf	2018-03-26 16:15:51.55	DG Adapter	workflow completed	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ExecID:1522073660871-ID:1394) - Processed folder: C:/Users/cs
DATA GOVERNANCE conf	2018-03-26 16:15:33.331	Workflow manager	waiting for operation...	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ID:1394)
DATA GOVERNANCE conf	2018-03-26 16:15:28.033	Workflow manager	waiting for operation...	Workflow: DG Glossary - Report (ID:1369)
DATA GOVERNANCE conf	2018-03-26 16:15:27.533	Workflow manager	workflow starting...	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ID:1394)
DATA GOVERNANCE conf	2018-03-26 16:15:15.308	Workflow manager	workflow starting...	Workflow: DG Glossary - Report (ID:1369)
All the configurations	2018-03-26 16:14:39.607	File Adapter	file(s) transferred	Adapter file: C:/Users/csalaris/Documents/_ADAPTERS/ADAPT_1201_7_20180326_161439366.xml
All the configurations	2018-03-26 16:14:37.751	Data Governance	DG_endExport	Adapter file: C:/Users/csalaris/Documents/_CC_DG/ADAPT_1198_6_20180326_161430847.json
All the configurations	2018-03-26 16:14:28.047	SequenceManager	Sequence starting...	Sequence "DG - Loading PERSON-ADDRESS model" has been started (ExecID:1522073660871-FORCED)
All the configurations	2018-03-26 16:14:20.871	csalaris	sequence requested	"DG - Loading PERSON-ADDRESS model" sequence requested (ExecID:1522073660871)
DATA GOVERNANCE conf	2018-03-26 16:14:08.404	DG Adapter	workflow completed	Workflow: DG - Load Country Codes (ExecID:1522073588324-ID:1388) - Processed folder: C:/Users/csalaris/Documents/_C
DATA GOVERNANCE conf	2018-03-26 16:14:00.583	Workflow manager	waiting for operation...	Workflow: DG - Load Country Codes (ID:1388)
DATA GOVERNANCE conf	2018-03-26 16:13:56.974	Workflow manager	workflow starting...	Workflow: DG - Load Country Codes (ID:1388)
All the configurations	2018-03-26 16:13:33.616	WS Adapter	...end WS Export	Adapter completed
All the configurations	2018-03-26 16:13:14.379	SequenceManager	Sequence starting...	Sequence "DG - Loading ISO CountryCodes and Glossary Export" has been started (ExecID:1522073588324-FORCED)
All the configurations	2018-03-26 16:13:08.324	csalaris	sequence requested	"DG - Loading ISO CountryCodes and Glossary Export" sequence requested (ExecID:1522073588324)

User can also **reset** requests:

- *one time requests* – drag and drop on “unassigned” status kanban
- *on schedule* – clearing the datetime field “Schedule Job for”, if not started; with drag and drop on “unassigned” status kanban, if running



- *all requests* can be deleted through “**RESET CLOUD REQUESTS**” job from cloud, or “**Tools** **Reset Cloud Requests**” command from onprem UI.




Log Viewer

The log window lists all the most important actions performed by DT.

For each row, you can see the name of the configuration (column name *CONFIGURATION* – available only if linked to the action), the date (column name *DATE* – timestamp of the action), the user (column name *USER* – the user who owns the action), the operation (column name *OPERATION* – what has been done) and a short description of the action (column name *DESCRIPTION*).

Filters (one for each column) can be used to see a subset of the whole Log.

By pressing the  button the selected filters are applied.

Clicking on the head of each column, the rows will be ordered alphabetically.

If “Note” refers to a file or folder, double click on the note text will open it.

Log Viewer				
<div>Filters</div> <div> <div>Configuration:</div> <div>Date:</div> <div>User:</div> <div>Operation:</div> <div>Description:</div> </div>				
CONFIGURATION	DATE	USER	OPERATION	NOTE
All the configurations	2017-09-20 16:57...	ADMIN	Job Sequence Configurati...	User "ADMIN" updated the job sequence "Sequencer multisource".
All the configurations	2017-09-20 16:57...	ADMIN	Job Sequence Configurati...	User "ADMIN" created the job sequence "Sequencer multisource".
EA Foundation - Sample Model	2017-09-20 16:56...	ADMIN	Scheduler	User "ADMIN" unscheduled the Job "MultiSource Job - Somma TCO"
EA Foundation - Sample Model	2017-09-20 16:56...	ADMIN	Scheduler	User "ADMIN" scheduled the Job "MultiSource Job - Somma TCO"
EA Foundation - Sample Model	2017-09-20 16:52...	ADMIN	Workflow configuration	User "ADMIN" updated the workflow "Somma TCO".
All the configurations	2017-09-20 15:59...	Workflow manager	workflow completed	Workflow: Somma TCO (ID:3) - operation not requested
EA Foundation - Sample Model	2017-09-20 15:57...	Workflow manager	waiting for operation...	Workflow: Somma TCO (ID:3)
EA Foundation - Sample Model	2017-09-20 15:57...	Workflow manager	workflow starting...	Workflow: Somma TCO (ID:3)
All the configurations	2017-09-20 15:56...	CM Adapter	...end CM Export	Adapter file: C:/Users/Alessio/Documents/Model Export/ADAPT_82_2_20170920_155639787.xml
EA Foundation - Sample Model	2017-09-20 15:53...	CM Adapter	workflow completed	Workflow: Somma TCO (ID:3) - Processed folder: C:/Users/Alessio/Documents/Model Export/CC4CMXML_81_20170920_155239054
				Workflow: Somma TCO (ID:3)

Client Log

Scheduler Log

Workflow Log

Exit

Client, Scheduler and Workflow log

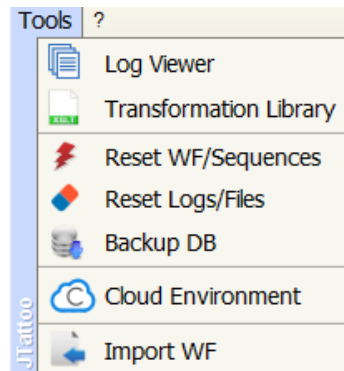
The buttons open different kinds of logs showing a detailed view of the system events. Very detailed information can be found there, such as query messages, exceptions, errors etc.

The log will be shown in your predefined text editor:

- *Client Log* refers to the operations executed through the user interface
- *Scheduler Log* refers to the batch operations related to Adapter execution
- *Workflow Log* refers to the operations required by workflow transformation and operation

Utilities

Additional administration features are available from the “Tools” Menu.



Reset Workflows/Sequences

If DT Windows Services are forced to stop, or in the case of a severe internal error, sequences may enter an inconsistent state which could stop other jobs from being executed. In such a case, the administrator may use the “Reset WF/Sequences” item in the “Tools” menu.

This operation can be done manually, as described, or by scheduling it in a custom job, using the sample execution: *resetSequencesUtil.bat* that can be found in the DT installation folder:

The screenshot shows a 'Custom Job Configuration' dialog box with the following fields and options:

- Job Name:*** Reset Sequences Util
- Job Description:** the job will reset running and pending sequences
- Server IP:*** ALESSIOMOBILE
- Username:*** AlessioAdmin
- Password:*** (masked with dots)
- Executable path (server):*** C:\ProgramFiles(x86)\CorporateCollector\resetSequencesUtil.bat
- Parameters:** (empty text box with up/down arrows)
- ☒ **Wait For Return**
- Timeout after** 1 **minutes** (Kill the custom job if not completed after x minutes)
- Buttons:** Save, Test, Exit

Reset Logs/Files

When needed, it is possible to reset the logs table just by pressing the “Tools” menu item “Reset Logs/Files”.

This action will clean the database of all the application logs, thus preventing the DB from being overloaded by historical tracking data.

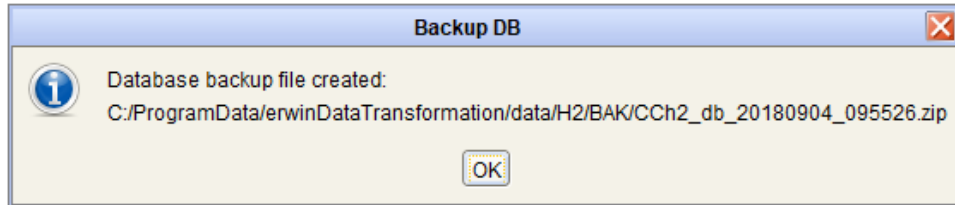


All the physical files mentioned in the deleted logs will also be deleted in the internal workflow folders; please be sure that no active workflows are running when using this feature.

This operation can be done manually, as described, or by scheduling it as a custom job, using the sample execution: *resetLogsUtil.bat* that can be found into the DT installation folder. The executable optionally accepts a numerical integer parameter, which is “days to be maintained”. For example, if called with “3”, past logs until 3 days before the job execution will be deleted.

Backup DB

Regular DT database backups are recommended as a best practice. This can be obtained with “Tools→Backup DB”: it produces a zip file with a dump of CC DB into “C:\ProgramData\erwinDataTransformation\data\H2\BAK” folder, with backup datetime:

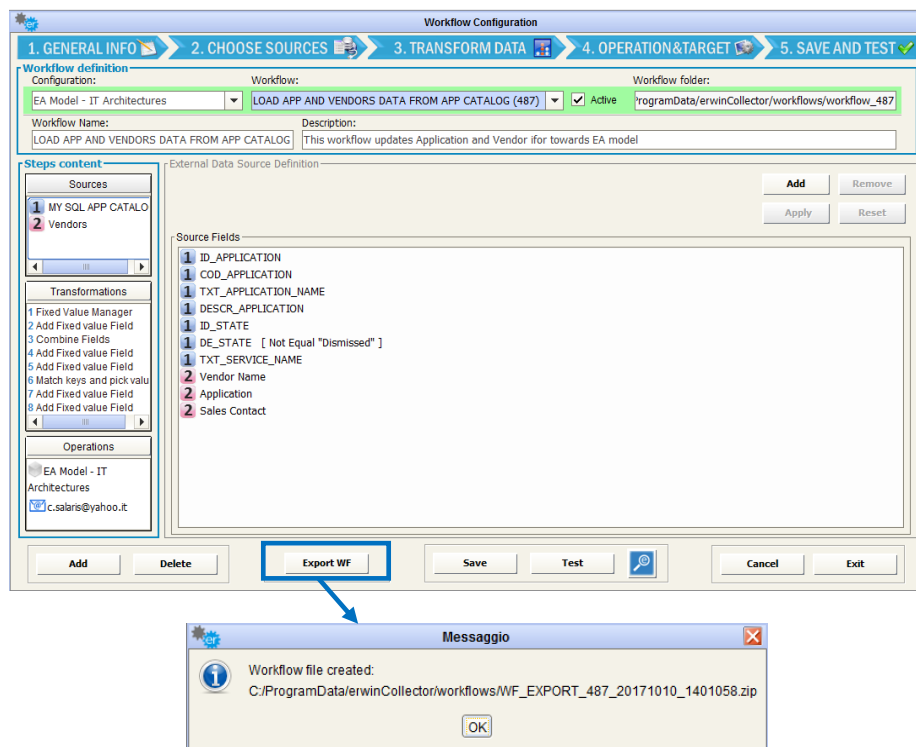


Export/Import Workflow

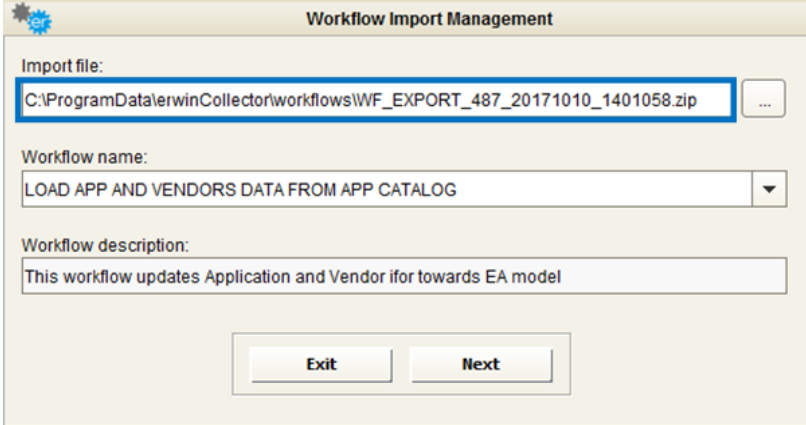
It can sometimes be necessary to configure and test workflows in a working DT instance before deploying them in a production site.

Workflows can be exported and imported in a different DT instance.

- To **Export workflows**, just open the workflow of interest, and create an archive (zip file) containing the workflow and its adapters/activity information:



- To **Import workflows**, use the “Tools”→”Import WF” - or the button “Import” in the workflow configuration interface, after selecting a model configuration - and browse to the exported zip file previously created (or drag the file to the text field):



Workflow Import Management

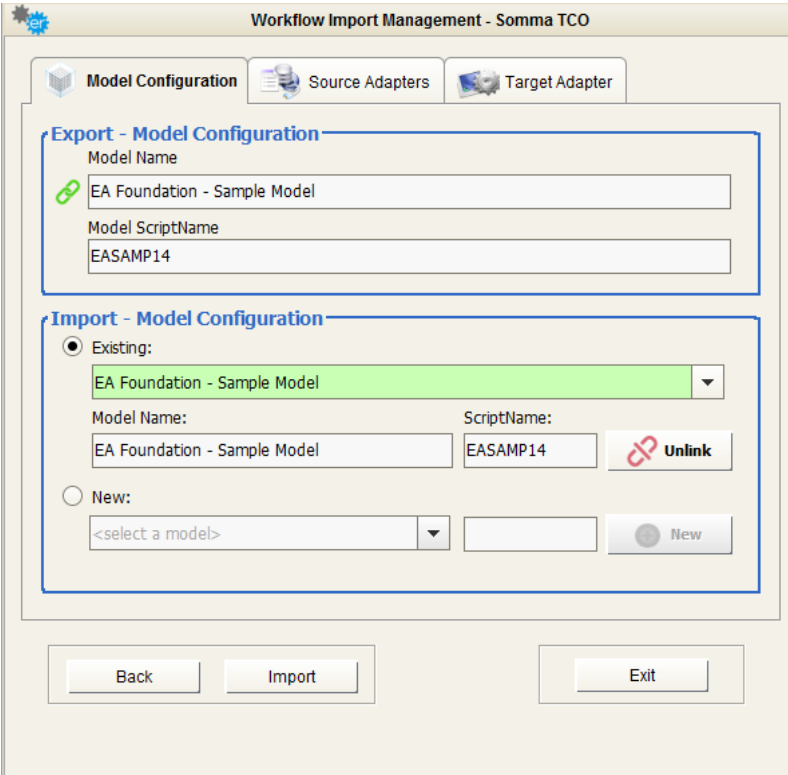
Import file:
 C:\ProgramData\erwinCollector\workflows\WF_EXPORT_487_20171010_1401058.zip

Workflow name:
 LOAD APP AND VENDORS DATA FROM APP CATALOG

Workflow description:
 This workflow updates Application and Vendor ifor towards EA model

Exit Next

Then map the **model configuration**, **source(s) adapter(s)**, and **target adapter**. In every step, should the needed configuration or adapter not exist in the target DT instance, it **can be contextually created**, allowing for smart import operations:



Workflow Import Management - Somma TCO

Model Configuration Source Adapters Target Adapter

Export - Model Configuration

Model Name
 EA Foundation - Sample Model

Model ScriptName
 EASAMP14

Import - Model Configuration

☒ Existing:
 EA Foundation - Sample Model

Model Name: EA Foundation - Sample Model ScriptName: EASAMP14 Unlink

☐ New:
 <select a model> New

Back Import Exit

Workflow Import Management - Somma TCO

Model Configuration Source Adapters Target Adapter

Export - Source Adapters

Id	Name	Type
	EA Foundation - Sample Model (EASAMP14) Export	CM repository export

Import - Source Adapters

☐ Existing:

EA Foundation - Sample Model (EASAMP14) Export

Adapter Description: EA Foundation - Sample Model (EASAMP14) E Adapter Type: CM repository export Link

☒ New:

EA Foundation - Sample Model Adapter Type: EASAMP14 New

Back Import Exit

Workflow Import Management - Somma TCO

Model Configuration Source Adapters Target Adapter

Export - Target Adapter

Adapter Name

EA Foundation - Sample Model (EASAMP14) Import

Adapter Description: EA Foundation - Sample Model (EASAMP14) Import - localhost Adapter Type: CM repository import

Import - Target Adapter

☒ Existing:

EA Foundation - Sample Model (EASAMP14) Import

Adapter Description: EA Foundation - Sample Model (EASAMP14) Adapter Type: CM repository import Unlink

☐ New:

New

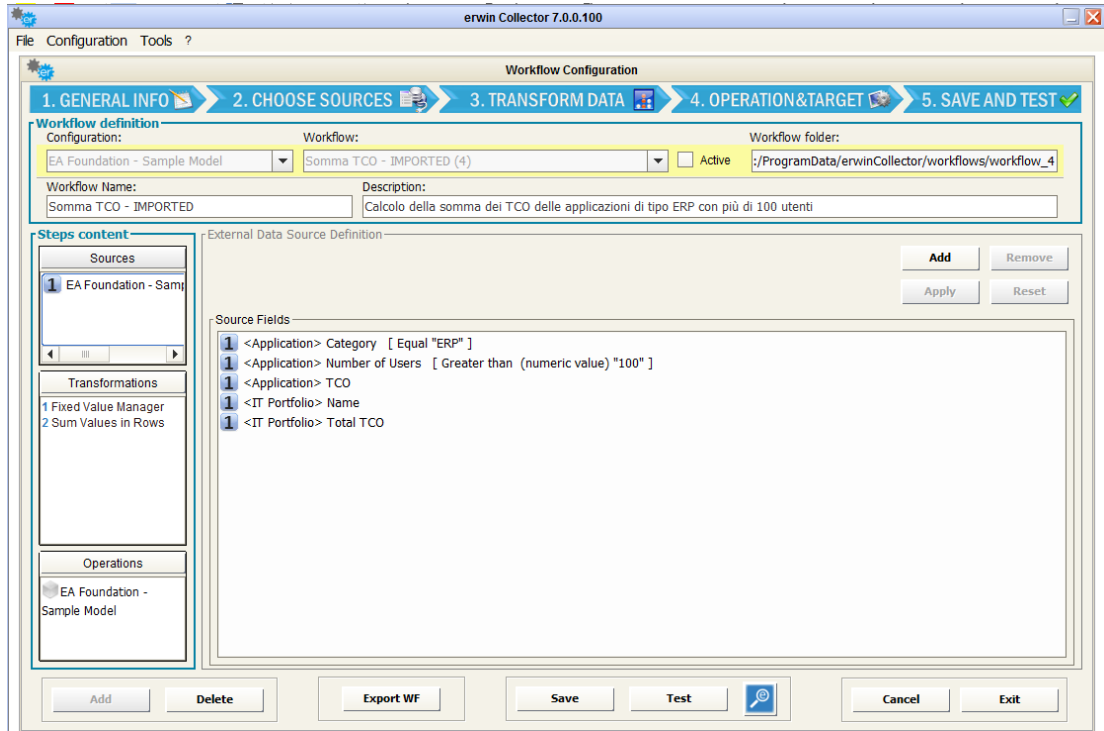
Back Import Exit

Info

Workflow import completed (ID:4)

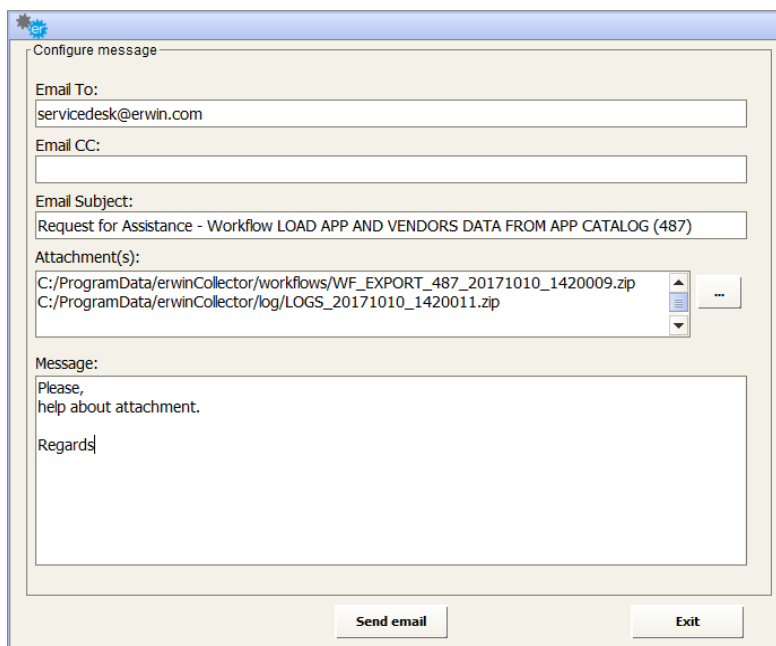
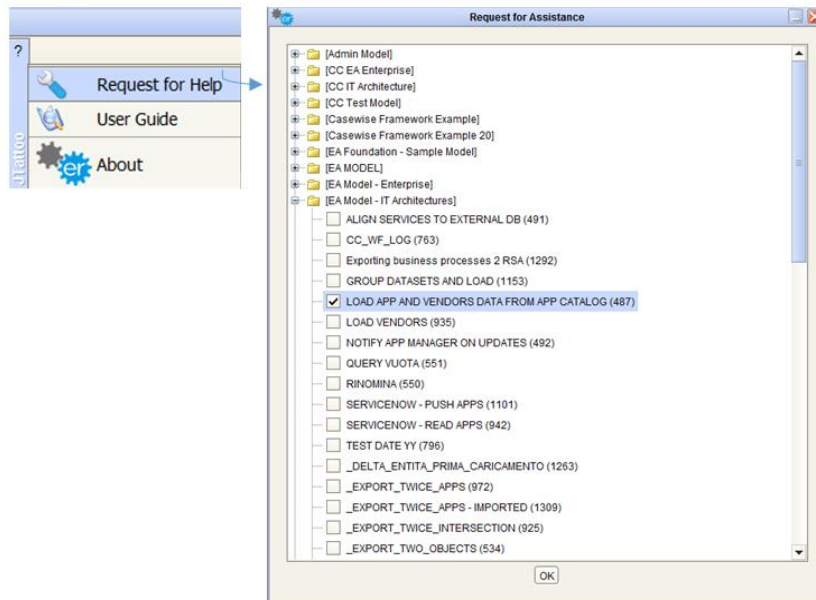
OK

The result of the import operation is then shown to the user, which can edit/test/schedule workflow as usual:



Request for Help

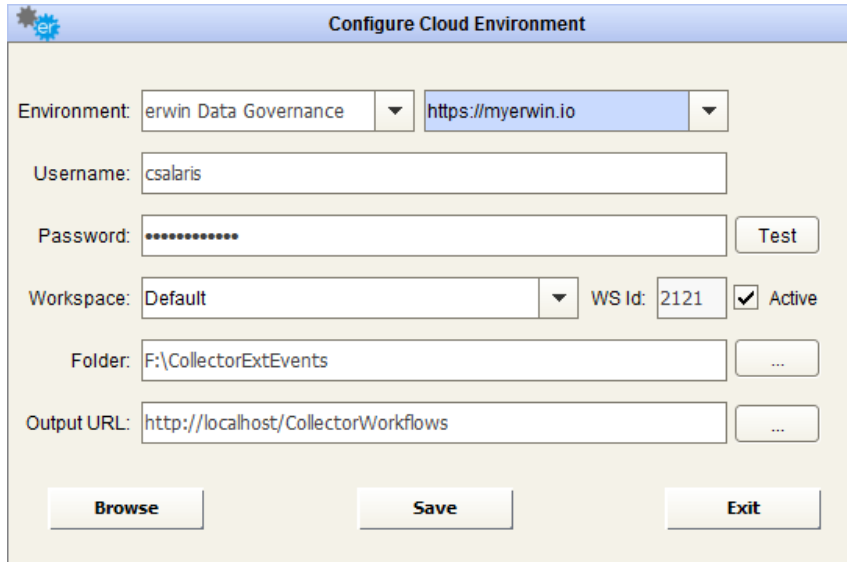
Users can ask for assistance for workflows through a dedicated features in main toolbar:



A message with a workflow definition and log file attached (more files can be added) will be prepared to be sent to ServiceDesk if DT email parameters have been provided during tool configuration.

Cloud Environment

Use this menu item to configure Cloud Environment parameters, to connect DT to erwin Cloud platform ([see Running DT from Cloud Platform](#))

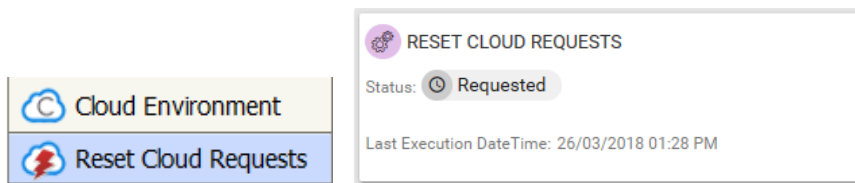


1. Select environment parameters – erwin EA Agile or erwin EA Agile V3 – and instance
2. Provide credentials for the selected instance
3. Test the connection
4. Select workspace containing the DT package (see before)
5. Set the communications to be active or not. In last case, DT will not take charge of requests from cloud. This may be applied as a temporary setting for upgrade/maintenance purposes etc.
6. Select a physical folder. This will be used as a publishing folder for web reports (HTML, pdf, csv, Excel), like web logs, workflows operation data, sequence progress reports. It has to be:
 - a. Readable/writable by Windows user running Windows services and the DT UI on premise
 - b. Published in LAN or public web, making DT reports visible and accessible by web.
7. Save
8. Restart Windows service “erwinDataTransformationEventManager”
9. Reset WF/Sequences from Tools menu item.

Reset Cloud Requests

Use this menu item to reset requests sent by erwin Cloud platform ([see Running DT from Cloud Platform](#)).

If DT Windows Services are forced to stop, or in the case of a severe internal error, sequences may enter an inconsistent state which could stop other jobs from being executed. In such a case, the administrator may use the “Reset Cloud Requests” item in the “Tools” menu, or request for “RESET CLOUD REQUESTS” job by cloud.



Users, Roles and Security

DT interacts with CM contents – models, objects and so on – through the same logic and application components that Corporate Modeler and Evolve rely on.

Normal authentication is the only **fully supported** option.

Windows Authentication is **not supported** in DT, as it is not suitable for batch job execution.

General rules about security, authentication and authorization are:

- *Users' logon* is performed using their CM userid/password, provided that a valid DT license has been installed.
- Once logged on, users can define *model configurations*, and associated *workflows*, only for *models* which have been granted through Corporate Modeler Administration.
- When a user defines a model configuration, *users' credentials of related CM Adapters* (created automatically for data export/import on that model) are encrypted and stored in the CC internal database. This is needed in order to be available when workflows using those adapters are executed in a batch mode (which "Test workflow" simulates).

This means that CM Users actually executing the operation are the person that configured and saved the associated model configuration. *If the user has to be changed*, the new user must log on to DT, and save the configuration, in order to bind their CM credentials to it; the workflows will be automatically updated.

- *Read/write/delete operations* on object type instances will be executed within the same user's rights scope existing in model. This means that they are impacted by general and specific grants on model and object type, by the status of the object (for instance, Frozen level) and property type configuration (Read Only properties will be not updated).

When requested, these operations will be executed, if possible, or a log will be produced, containing details about what prevented the operation to be finalized.

Troubleshooting Information

DT creates and uses some specific paths/folder during the execution of client configurations or scheduled operations. Main folders and files are explained in the following paragraphs.

Installation Path

The **installation path** is by default:

C:\Program Files (x86)\erwin\Data Transformation

Contents:

- *Configuration files:*
 - *<inst_path>\config\erwinDataTransformation.properties*
 - *<inst_path>\config\quartz.properties*
 - *<inst_path>\config\workflows\config\jdbc\CollectorDS.properties*
containing the DT database connection string
- *Binaries*
- *External libraries*
- *CM4Collector.exe*
performs import/export CM models operations

Data Path

The **data path** is by default:

C:\ProgramData\erwin\Data Transformation

Subfolders:

- *data*
DT database files
- *libraries*
XSLT parsers used for library/custom transformations
- *log*
Client.log, event.log, server.log, listener.log
- *workflows*
Workflows operation data, workflow testing triggers

The data path can be different from the default; configure the tool providing the desired path:

erwinCollector Configuration Parameters

erwin
COLLECTOR

General Database Email

Select Language: English

Select JDK version: 1.7.0_79 (64bit)

Credential for Windows services creation:

User: CLAUDIAMOBILE\ClaudiaAdmin

Password:

Attention: for service creation user with password is mandatory.

Select Data Folder

C:/ProgramData/erwinCollector Browse...

Setup / Windows Services

DT installs four Windows Services, which have to be launched by a Windows user belonging to the Administrator group:

- *erwinDataTransformationH2DB:*
Runs the application database
- *erwinDataTransformationListenerManager*
Detects newly created files into DT folders (see later)
- *erwinDataTransformationEventManager*
Manage the event queue, as workflows to be run for adapter files detected by Listener manager
- *erwinDataTransformationServerManager*
Performs scheduled jobs (adapters or sequences execution)

Adapter Folders

When configuring an adapter, DT requires to assign a folder.

This will contain:

- A file, created when saving the adapter, which is used to inherit the information about the structure of datasets coming from the adapter, named:

ADAPT_<adapt_id>_struct.<adapt_ext>

For instance, ADAPT_79_struct.csv will be produced when saving a DB adapter with internal id equal 79, containing the resultset columns and a sample of data.

- The following adapter files coming from its execution, that will be named as:

ADAPT_<adapt_id>_<operation_timestamp>.<adapt_ext>

Model Configuration Folder

When setting up a model configuration, DT requires assignment of a folder for the backup. This will be used also as *adapter folder* for the automatically created CM import-export adapter.

This will contain:

- The backup of the model, when required by scheduling:
<model_scriptname>_<operation_timestamp>.mdb
- The structure file for export adapter, containing the metamodel: *ADAPT_<adapt_id>.xml*
- The CM export adapter files, when requested:
ADAPT_<adapt_id>_<operation_timestamp>.xml
- Operation folders for the given model (see later)

Workflow Folder

When configuring a workflow, DT will automatically create a subfolder in the <datafolder>/workflows, assigned for the specific workflow, named:

workflow_<wf_id>

This will contain:

- the source adapter normalized file
- the multisource folder when using more than a source
- Support file containing trigger and parameter information
- the xslt dynamically created to perform requested transformation
- the intermediate and final result of the transformation chain

Operation Folder

When configuring a workflow operation, this will be in charge of an adapter (*CM Import*, *DB Loader*, *Folder*).

The workflow manager, at the end of the transformation chain, prepares the files which allow it to perform the requested operation, and puts them into a subfolder of the adapter folder.

In particular, for:

- *Load/Synch/Delete CM Repository*
The subfolder will be created into target model folder
- *Send to DB Loader*
The subfolder will be created into adapter folder
- *Send to File Adapter*
The subfolder will be created in the target folder

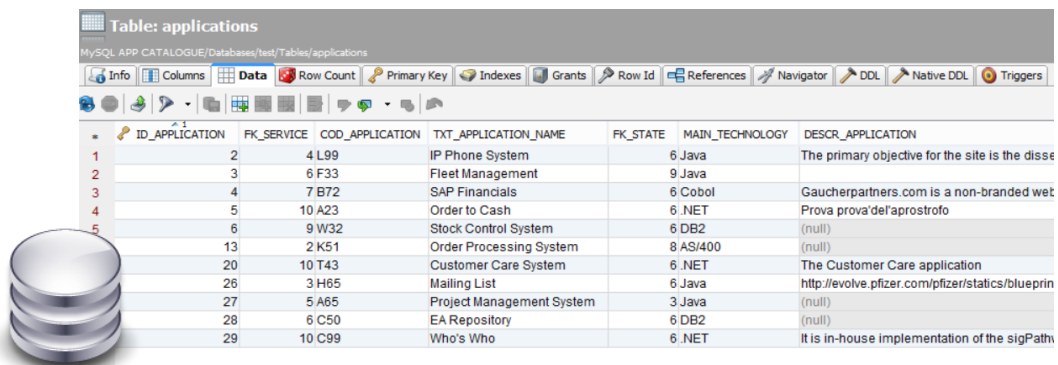
Examples of Workflow Configurations

Loading data from external sources into a model

This example describes the following use case: application and vendor data stored in different external tools must be loaded consistently in a CE repository.

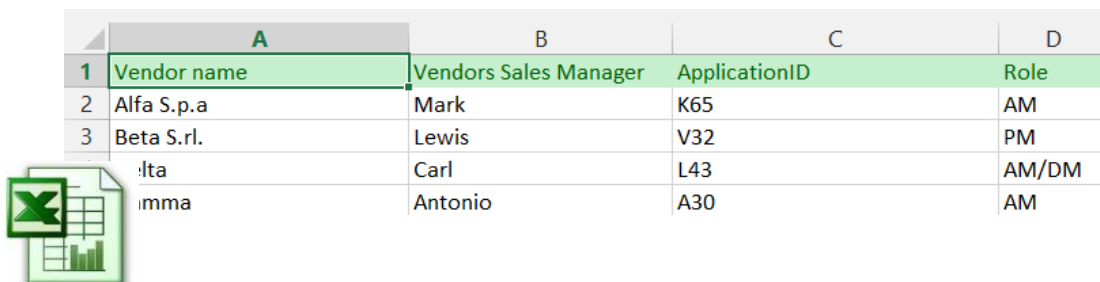
Let us suppose that:

- a **CMDB** manages the **application data**, stored in a MySQL **database table**. The application table identifies the item with a “COD_APPLICATION” field, which has a different erwin ID for the model for the same item:

A screenshot of a MySQL database table named 'applications'. The table has columns: ID_APPLICATION, FK_SERVICE, COD_APPLICATION, TXT_APPLICATION_NAME, FK_STATE, MAIN_TECHNOLOGY, and DESCR_APPLICATION. The data is as follows:

ID_APPLICATION	FK_SERVICE	COD_APPLICATION	TXT_APPLICATION_NAME	FK_STATE	MAIN_TECHNOLOGY	DESCR_APPLICATION
1	2	4 L99	IP Phone System	6	Java	The primary objective for the site is the disse
2	3	6 F33	Fleet Management	9	Java	
3	4	7 B72	SAP Financials	6	Cobol	Gaucherpartners.com is a non-branded wet
4	5	10 A23	Order to Cash	6	NET	Prova prova del'apostrofo
5	6	9 W32	Stock Control System	6	DB2	(null)
	13	2 K51	Order Processing System	8	AS/400	(null)
	20	10 T43	Customer Care System	6	NET	The Customer Care application
	26	3 H65	Mailing List	6	Java	http://evolve.pfizer.com/pfizer/statics/blueprin
	27	5 A65	Project Management System	3	Java	(null)
	28	6 C50	EA Repository	6	DB2	(null)
	29	10 C99	Who's Who	6	NET	It is in-house implementation of the sigPath

- Vendor data** for any application are provided by another APM tool, via an **Excel** report. The file relates the Vendor and the Sales Contact with an Application through its CMDB code:

A screenshot of an Excel spreadsheet with columns A, B, C, and D. The data is as follows:

	A	B	C	D
1	Vendor name	Vendors Sales Manager	ApplicationID	Role
2	Alfa S.p.a	Mark	K65	AM
3	Beta S.r.l.	Lewis	V32	PM
	Ita	Carl	L43	AM/DM
	Imma	Antonio	A30	AM

A DT workflow importing and refreshing application and vendor data can be configured with the following steps:



- **CREATE MODEL CONFIGURATION**

Log in to DT and create a model configuration, for instance on model “Framework Example”. To load data into a model choose the specific model configuration.

- **CREATE DATABASE ADAPTER FOR SAMPLE APPLICATION CATALOG DB**

Press the “DB Adapter” button on the Home Page and configure the following adapter:

DB Adapter Configuration

DB Adapter List

Name	Type	DB Type	Id
MY ADAPTER	DB Query	ORACLE	255
MY SQL APP CATALOG	DB Query	MySQL	298
MY SQL APP CATALOG_DISMISSED	DB Query	MySQL	10...

General

Name: MY SQL APP CATALOG Description: ccc Type: DB Query Folder: C:/Users/csalaris/Documents/_ADAPTERS

Connection Parameters

DB Type: MySQL Driver: MySQL Connector Server Name: localhost Port Number: 3306 Database name: test User: root Password: *****

DB Adapter Parameters

Query:

```
SELECT
  ID_APPLICATION,
  COD_APPLICATION,
  TXT_APPLICATION_NAME,
  DESCR_APPLICATION,
  ID_STATE,
  DE_STATE,
  TXT_SERVICE_NAME
FROM
  APPLICATIONS,
  SERVICES,
  STATES
WHERE
  APPLICATIONS.FK_SERVICE = SERVICES.ID_SERVICE
  AND APPLICATIONS.FK_STATE = STATES.ID_STATE
```


having the database type equal to “MySQL”, server, port, database name, user, password and query producing the desired data (preview with the “Test” button):

Adapter Preview:
MY SQL APP CATALOG

ID_APPLICATION	COD_APPLICATION	TXT_APPLICATION_N...	DESCR_APPLICATION	ID_STATE	DE_STATE	TXT_SERVICE_NAME
26	H65	Mailing List	index_definitions_deployment	6	Production	Mailing List (T66)
2	L99	IP Phone System	The primary objective for t...	6	Production	VOIP svc (H65)
3	F33	Fleet Management		9	Dismissed	Repository (B31)
4	B72	SAP Financials	It is based on the standard ...	6	Production	SAP SVC (L13)
5	A23	Order to Cash	The new version's significa...	6	Production	Sales and Customer Servic...
6	W32	Stock Control System		6	Production	Workflow4logistic (C12)
27	A65	Project Management System		3	Test	PPM service (P09)
28	C50	EA Repository		6	Production	Repository (B31)
13	K51	Order Processing System		8	To be dismissed	ERP Service order processi...
20	T43	Customer Care System	The Customer Care applicat...	6	Production	Sales and Customer Servic...
29	C99	Who's Who	Assesses whether a given g...	6	Production	Sales and Customer Servic...

- CREATE FILE ADAPTER FOR VENDORS INFORMATIONS FILE

Press the “File Adapter” button on the Home Page and configure the following adapter:



File Adapter

Name	Description	Id
ADAPTER CSV FROM ARCHER	---	333
AFD	---	293
App Vendors	---	373
CAP ONE - 1002-Requirement_Coverage_Detail	sf	682
CAP1 - Requirement Details	---	78

General

* Name:

App Vendors

* Description:

* Adapter Folder :

C:/Users/csalaris/Documents/ADAPTERS

...

* Operation :

Get

▼

* Operation Parameters

* Protocol:

NFS

▼

* Type:

Sheet

▼

* Target Directory:

isktop/CW Collector Training 2016.02.04/Support files

...

* File/Filters:

Vendors.xlsx

...

Connection

* Host IP:

* Port:

21

* UserName:

* Password:

Proxy

Use Proxy Socks

☐

Host IP:

Port:

UserName:

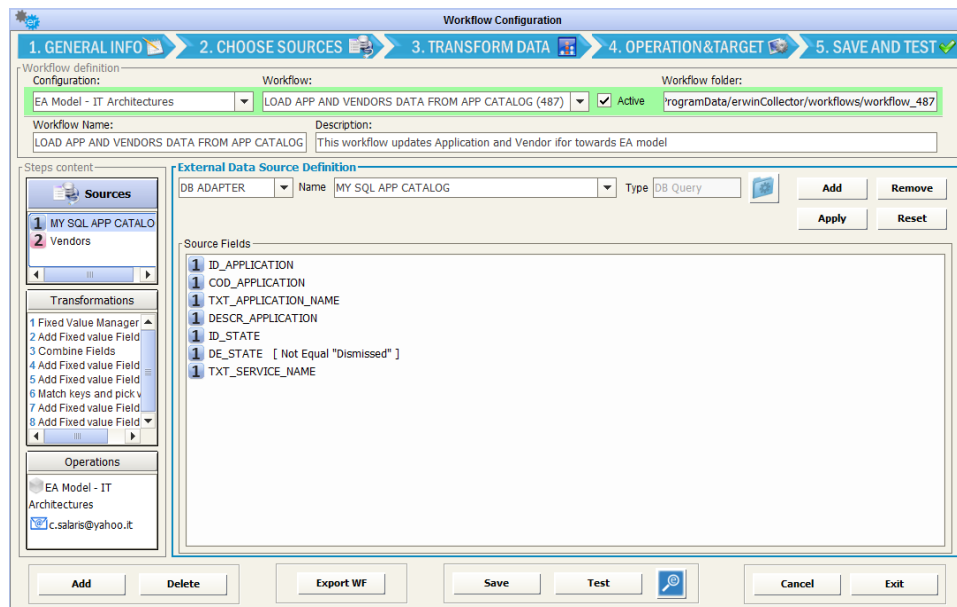
Password:

- CREATE WORKFLOW TO LOAD APPLICATIONS AND VENDOR DATA

Press the “Workflow configuration” button on the Home Page and configure the following workflow choosing the model configuration set in the previous steps:

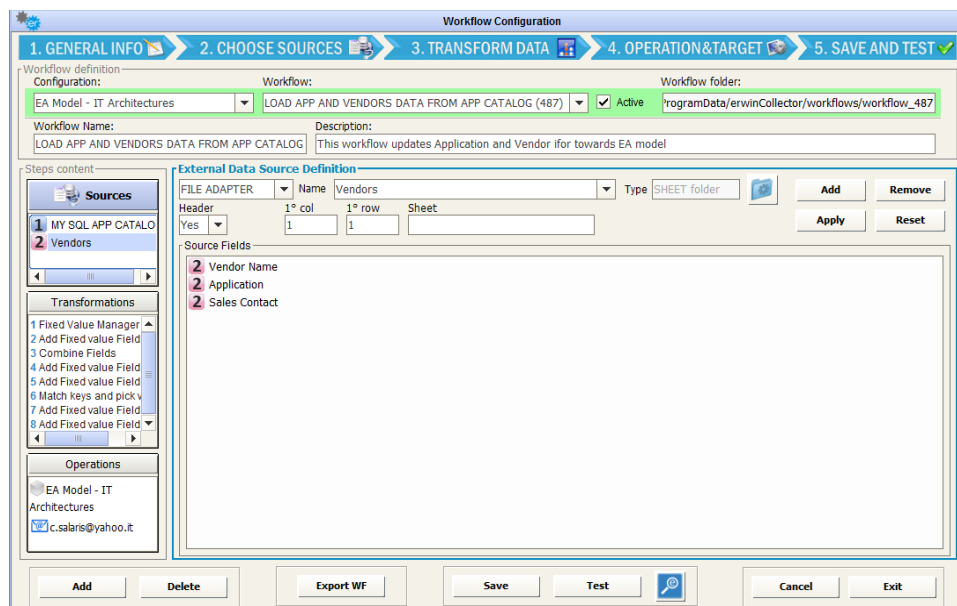
SOURCE DEFINITION – Source 1

Choose previously configured DB adapter on MYSQL:



SOURCE DEFINITION – Source 2

Choose previously configured file adapter for vendor info:



TRANSFORMATION 1 – Combine field

Let us suppose that “Status” field in CM model is coded, combining the status id with the status description (for example “6 - Production”). Combine the application status code and application status description (columns “1 ID_STATE” and “1 DE_STATE”) in a new column named “1 Coded state” with a given separator according to target model conventions:

Steps content

Sources

- 1 MY SQL APP CATALOG
- 2 App Vendors

Transformations

- 1 Combine Fields
- 2 Fixed Value Manager
- 3 Match keys and pick value
- 4 Add Fixed value Field

Operations

Load in CM Repository
- EA Model - IT Architecture
res
email@john.black@customer.com

Transformation Configuration

Transformation: Data structure changing Activity: Combine Fields Adapter to assign column: 1 MY SQL APP CATALOG

Transformation fields

Sel.	Column Name	* First field	Separator	* Second field
<input type="checkbox"/>	1 ID_APPLICATION			
<input type="checkbox"/>	1 COD_APPLICATION			
<input type="checkbox"/>	1 TXT_APPLICATION_NAME			
<input type="checkbox"/>	1 DESCR_APPLICATION			
<input type="checkbox"/>	1 ID_STATE			
<input type="checkbox"/>	1 DE_STATE			
<input type="checkbox"/>	1 TXT_SERVICE_NAME			
<input type="checkbox"/>	2 Vendor name			
<input type="checkbox"/>	2 Vendor Sales Manager			
<input type="checkbox"/>	2 ApplicationID			
<input type="checkbox"/>	2 Role			
<input checked="" type="checkbox"/>	1 Coded State	1 ID_STATE	-	1 DE_STATE

TRANSFORMATION 2 – Filter Status Values

CM model manages only active applications: choose “DATA FILTER”, “Expected fixed Value Manager” to manage only application with a status different from “Dismissed”:

Steps content

Sources

- 1 MY SQL APP CATALOG
- 2 App Vendors

Transformations

- 1 Combine Fields
- 2 Fixed Value Manager
- 3 Match keys and pick value
- 4 Add Fixed value Field

Operations

Load in CM Repository
- EA Model - IT Architecture
res
email@john.black@customer.com

Transformation Configuration

Transformation: Data filtering Activity: Fixed Value Manager

Transformation fields

Sel.	Column Name	* Consider as	* Operator	* Value
<input type="checkbox"/>	1 ID_APPLICATION			
<input type="checkbox"/>	1 COD_APPLICATION			
<input type="checkbox"/>	1 TXT_APPLICATION_NAME			
<input type="checkbox"/>	1 DESCR_APPLICATION			
<input type="checkbox"/>	1 ID_STATE			
<input checked="" type="checkbox"/>	1 DE_STATE	String	Not Equal	Dismissed
<input type="checkbox"/>	1 TXT_SERVICE_NAME			
<input type="checkbox"/>	2 Vendor name			
<input type="checkbox"/>	2 Vendor Sales Manager			
<input type="checkbox"/>	2 ApplicationID			
<input type="checkbox"/>	2 Role			
<input type="checkbox"/>	1 Coded State			

TRANSFORMATION 3 – Pick the application name from the App catalogue dataset, given its id

The “Data derivation” activity “Match keys and pick values” applies if it is required to join values from different data sets and have a different result column value if the keys are matched or not. For the purposes of this exercise:

- Set the ‘Category’ field to “Key (slave)” for “COD_APPLICATION” and “Key (master/result)” for “ApplicationID” in the Vendor dataset: pick “TXT_APPLICATION_NAME” column from app catalogue dataset to get the application name, when the keys match (“Value If True”) and the column itself, otherwise (“Value If False”).

Steps content

Sources

- 1 MY SQL APP CATALOG
- 2 App Vendors

Transformations

- 1 Combine Fields
- 2 Fixed Value Manager
- 3 Add Fixed value Field
- 4 Add Fixed value Field
- 5 Match keys and pick values
- 6 Add Fixed value Field
- 7 Add Fixed value Field

Operations

Load in CM Repository
- EA Model - IT Architecture
email@john.black@customer.com

Transformation Configuration

Transformation: Data derivation Activity: Match keys and pick values Add

Transformation fields

Sel.	Column Name	Category	Consider as	Operator	Value	Value if True	Value if False
<input type="checkbox"/>	1 ID_APPLICATION						
<input checked="" type="checkbox"/>	1 COD_APPLICATION	Key (slave)					
<input type="checkbox"/>	1 TXT_APPLICATION_NAME						
<input type="checkbox"/>	1 DESCR_APPLICATION						
<input type="checkbox"/>	1 ID_STATE						
<input type="checkbox"/>	1 DE_STATE						
<input type="checkbox"/>	1 TXT_SERVICE_NAME						
<input type="checkbox"/>	2 Vendor name						
<input type="checkbox"/>	2 Vendor Sales Manager						
<input checked="" type="checkbox"/>	2 ApplicationID	Key (master)/Result			1 TXT_APPLICATION_...	2 ApplicationID	
<input type="checkbox"/>	2 Role						
<input type="checkbox"/>	1 Coded State						
<input type="checkbox"/>	1 App Vendor						

TRANSFORMATION 4 – Set Vendor Category.

Choose “DATA STRUCTURE CHANGING” and “Add fixed value Field”, with name “Vendor Category” and value “VENDOR” and assign to Adapter “2 App Vendors”:

Steps content

Sources

- 1 MY SQL APP CATALOG
- 2 App Vendors

Transformations

- 1 Combine Fields
- 2 Fixed Value Manager
- 3 Match keys and pick values
- 4 Add Fixed value Field

Operations

Load in CM Repository
- EA Model - IT Architecture
email@john.black@customer.com

Transformation Configuration

Transformation: Data structure changing Activity: Add Fixed value Field Adapter to assign column: 2 App Vendors Add

Transformation fields

Sel.	Column Name	* Fixed value
<input type="checkbox"/>	1 ID_APPLICATION	
<input type="checkbox"/>	1 COD_APPLICATION	
<input type="checkbox"/>	1 TXT_APPLICATION_NAME	
<input type="checkbox"/>	1 DESCR_APPLICATION	
<input type="checkbox"/>	1 ID_STATE	
<input type="checkbox"/>	1 DE_STATE	
<input type="checkbox"/>	1 TXT_SERVICE_NAME	
<input type="checkbox"/>	2 Vendor name	
<input type="checkbox"/>	2 Vendor Sales Manager	
<input type="checkbox"/>	2 ApplicationID	
<input type="checkbox"/>	2 Role	
<input type="checkbox"/>	1 Coded State	
<input checked="" type="checkbox"/>	2 Org Category	VENDOR

OPERATION – Load in CM Repository

Load application and vendor data in to model, as in the next picture.

Steps content

Sources

- 1 MY SQL APP CATALOG
- 2 App Vendors

Transformations

- 1 Combine Fields
- 2 Fixed Value Manager
- 3 Match keys and pick value
- 4 Add Fixed value Field

Operations

Load in CM Repository
EA Model - IT Architectures
email@john.black@cust...
rmar.com

Mapping and Operation

with operation: Load in CM Repository
Model: EA Model - IT Architectures
Send e-mail to: ☒ john.black@customer.com
Single email for record: ☐
Config

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 ID_APPLICATION	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 COD_APPLICATION	Generic...	Application	<PROPERTY> CIID	Single-line text		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 TXT_APPLICATION_N...	Generic...	Application	<OBJ NAME> Name	Single-line text		<input type="checkbox"/>	<input type="checkbox"/>
1 DESCR_APPLICATION	Generic...	Application	<PROPERTY> Description	Multi-line text		<input type="checkbox"/>	<input type="checkbox"/>
1 ID_STATE	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 DE_STATE	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 TXT_SERVICE_NAME	Generic...	Application	<ASSOCIATION> IT Service		Forced replace	<input type="checkbox"/>	<input type="checkbox"/>
2 Vendor name	Generic...	Organization	<OBJ NAME> Name	Single-line text		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Vendor Sales Manager	Generic...	Organization	<PROPERTY> Contact Person	Single-line text		<input type="checkbox"/>	<input type="checkbox"/>
2 ApplicationID	Generic...	Organization	<ASSOCIATION> Application		Replace	<input type="checkbox"/>	<input type="checkbox"/>
2 Role	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Coded State	Generic...	Application	<PROPERTY> Status	Drop-down list		<input type="checkbox"/>	<input type="checkbox"/>
2 Org Category	Generic...	Organization	<PROPERTY> Category	Drop-down list		<input type="checkbox"/>	<input type="checkbox"/>

Note that the keyset for operation is set to "<Property> CIID" to manage the renaming of applications. The "Forced replace" option under 'Action' for "TXT_SERVICE_NAME" will make the association between "applications" and "IT services" be replaced even when associations are diagrammed.

- TEST THE WORKFLOW

Test the configured workflow with the "Test" button, and follow its execution through the progress bar or Logs and email notifications.

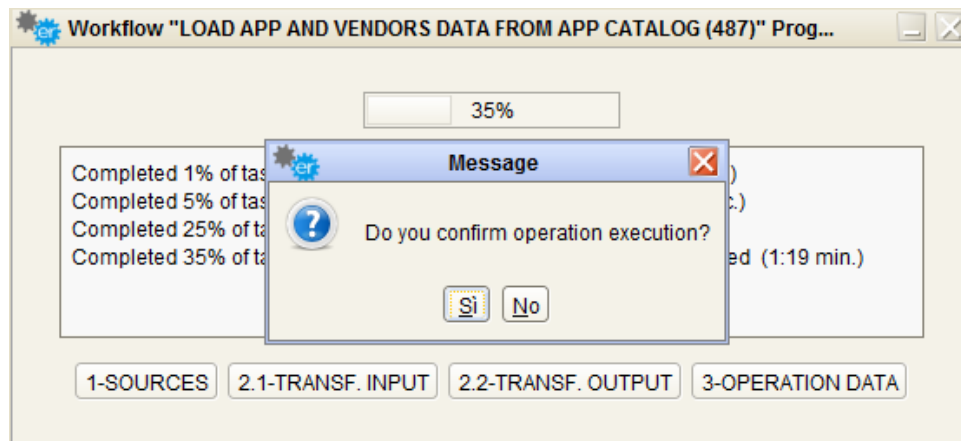
Workflow "LOAD APP AND VENDORS DATA FROM APP CATALOG (487)" Prog...

35%

Completed 1% of task - Workflow execution has been queued (1 sec.)
 Completed 5% of task - Workflow started - Adapter(s) queued (18 sec.)
 Completed 25% of task - Source Adapter(s) completed (56 sec.)
 Completed 35% of task - Source(s) normalized - Transformation started (1:19 min.)

1-SOURCES 2.1-TRANSF. INPUT 2.2-TRANSF. OUTPUT 3-OPERATION DATA

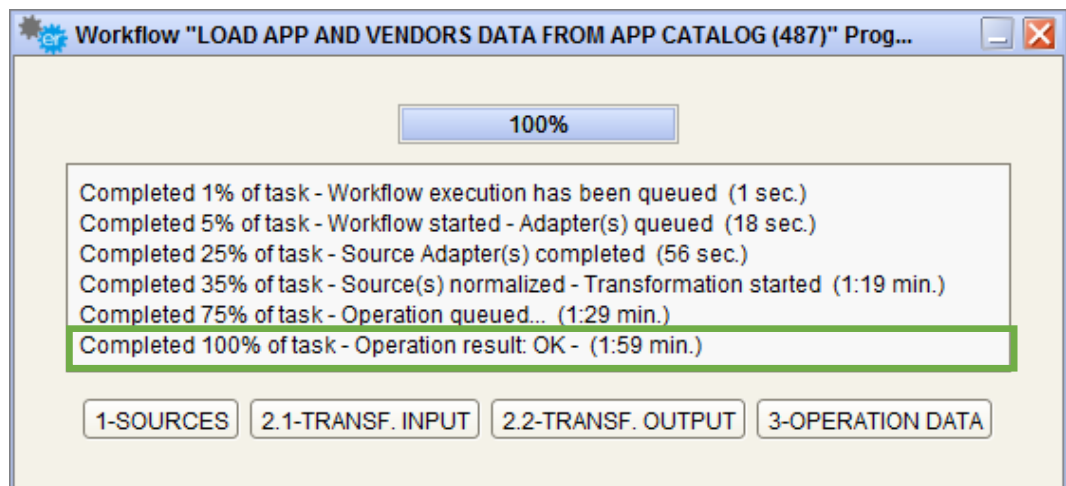
At the end of workflow transformation if operation data is available and ready, the user may choose whether to execute the operation or not:



- CHECK RESULT

Moreover, you can check the result:

- from the test workflow progress bar:



- in CM, accessing the tool through the CM icon provided in the button bar.

Type/format	Model object types	Mapping (Prop/As)	Type	Action	Keyfel	No new
Generic string	Application	<OBJ ID> Id	Whole num...			
Generic string	Application	<OBJ NAME> Name	Single-line ...			
Generic string	Application	<PROPERTY> Description	Multi-line text Repla...			
Generic string	<SKIP COLUMN>	<SKIP COLUMN>				
Generic string	<SKIP COLUMN>	<SKIP COLUMN>				
Generic string	<SKIP COLUMN>	<SKIP COLUMN>				
Generic string	Organization	<OBJ NAME> Name				
Generic string	Organization	<PROPERTY> Contact Person				
Generic string	<SKIP COLUMN>	<SKIP COLUMN>				
Generic string	<SKIP COLUMN>	<SKIP COLUMN>				
Generic string	Application	<PROPERTY> Status				
Generic string	Organization	<ASSOCIATION> Application				
Generic string	Organization	<PROPERTY> Category				

Name	Licenses used	Next status re...	Number of lic...	Status
Stock Control System	0	00:00:00	0	6 - Production
SAP Financials	0	00:00:00	0	6 - Production
Order to Cash	0	00:00:00	0	6 - Production
Mailing List	0	00:00:00	0	6 - Production
Repository	0	00:00:00	0	6 - Production
Project Management System	0	00:00:00	0	3 - Test
Order Processing System	0	00:00:00	0	8 - To be dis...
IP Phone System	0	00:00:00	0	6 - Production
Customer Care System	84	16/06/2009	100	6 - Production

- with the email notification, if configured for the single workflow:



martedì 02/02/2016 14:39

collector@aepconsulting.it

Update App information workflow - executed

A c.salaris@aepconsulting.it

Messaggio

WFOUTPUT_375_20160202_143802581.html (7 KB)

Application data are updated.

Regards

Corporate Collector

ID_APPLICATION	TXT_APPLICATION_NAME	DESCR_APPLICATION	ID_STATE	DE_STATE	TXT_SERVICE_NAME	Coded State
26	Mailing List		6	Production	Mailing List (T66)	6 - Production
2	IP Phone System		6	Production	VOIP svc (H65)	6 - Production
4	SAP Financials		6	Production	SAP SVC (L13)	6 - Production
5	Order to Cash		6	Production	Sales and Customer Services (Q61)	6 - Production
6	Stock Control System		6	Production	Workflow-logistic (C12)	6 - Production
27	Project Management System		3	Test	PPM service (P09)	3 - Test
28	Repository		6	Production	Repository (B31)	6 - Production
13	Order Processing System		8	To be dismissed	ERP Service order processing (F43)	8 - To be dismissed
20	Customer Care System	The Customer Care application	6	Production	Sales and Customer Services (Q61)	6 - Production

Vendor name	Vendor Sales Manager	ApplicationID	Role	Application Name	Vendor Category
Alfa S.p.a	John Black	13	AM	Order Processing System	VENDOR
Beta S.r.l.	Mark Brown	5	Vendor	Order to Cash	VENDOR
Delta	Lisa White	4	AM	SAP Financials	VENDOR
Gamma	Rick Jones	2	AM	IP Phone System	VENDOR
Gamma	Rick Jones	13	VENDOR	Order Processing System	VENDOR

- from the **DT Log Viewer**:

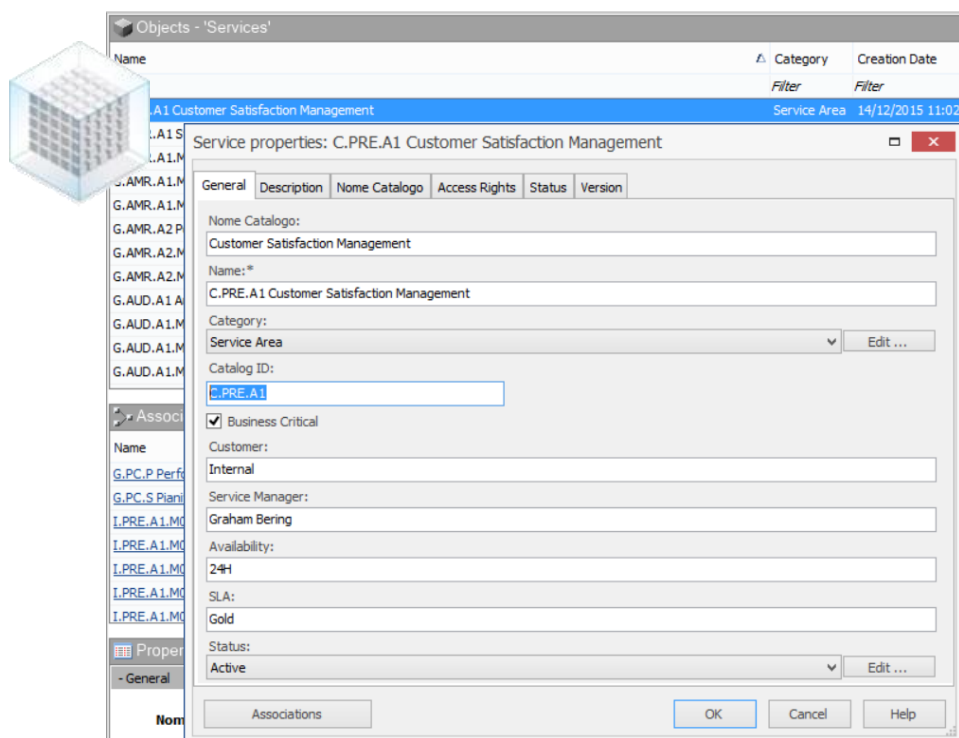
Log Viewer				
Filters				
Configuration:	Date:	User:	Operation:	Description:
CONFIGURATION	DATE	USER	OPERATION	NOTE
EA Model - IT Architectures	2017-09-30 13:35...	CM Adapter	workflow completed	Workflow: LOAD APP AND VENDORS DATA FROM APP CATALOG (ID:487) - Processed folder: C:/Users/csalaris/Documents/_CC_ITARCH/CC4CMXML_375_20170930_133136283
EA Model - IT Architectures	2017-09-30 13:31...	Workflow manager	waiting for operation...	Workflow: LOAD APP AND VENDORS DATA FROM APP CATALOG (ID:487)
EA Model - IT Architectures	2017-09-30 13:31...	Workflow manager	workflow starting...	Workflow: LOAD APP AND VENDORS DATA FROM APP CATALOG (ID:487)
All the configurations	2017-09-30 13:30...	File Adapter	file(s) transferred	Adapter file: C:/ProgramData/erwinCollector/workflows/workflow_487/MULTISOURCE_487_20170930_1330030/ADAPT_299_2_20170930_133030645.xlsx
All the configurations	2017-09-30 13:30...	DB Query	...end DB Export	Adapter file: C:/ProgramData/erwinCollector/workflows/workflow_487/MULTISOURCE_487_20170930_1330030/ADAPT_298_1_20170930_133030515.csv

Align External DB with Model Contents

The example describes the following use case: business service data, managed natively into a CE repository, must be loaded consistently in a MS SQL database, hosting a third party Service Catalogue.

Let us suppose that:

- Business service data are into the CM model, in a dedicated object type

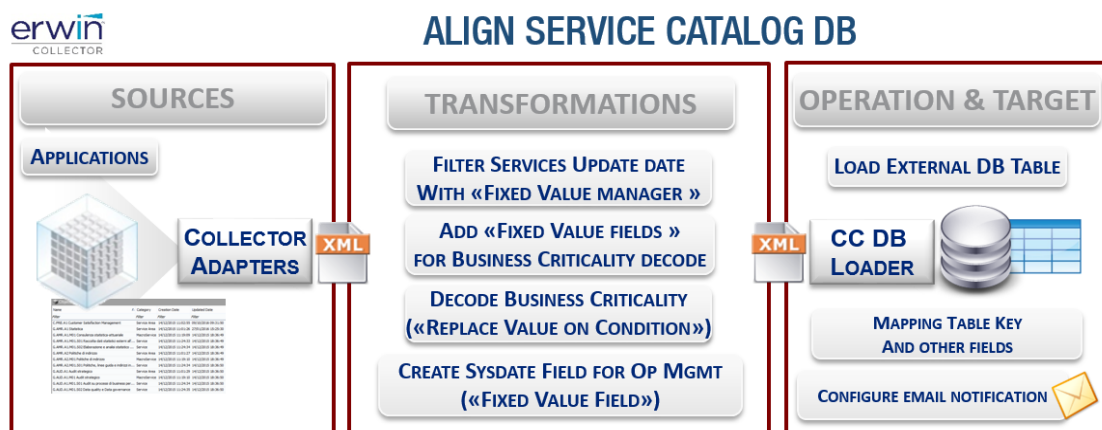


- a **Service Catalogue** manages **enterprise services data**, stored in a MS SQL **database table**. The service table identifies the item with a "COD_APPLICATION" field, which is differentiated by the Erwin ID of the model for the same item:



SVC_ID	NAME	DESCRIPTION	CATEGORY	SLA	BSN_CRITICAL	STATUS	OP_DATE	CC_OP_DATE
C.PRE.A1	Prestazioni sanitarie		Service Area	Gold	1	Active	2016-10-09 09:31:50...	2016-10-06 10:19:14...
G.AMR.A1	Statistica		Service Area	Platinum	1	Active	2016-01-27 15:25:30...	2016-10-06 10:19:14...
G.AMR.A1.M01	Consulenza statistica-attuale		MacroService	Silver	0	Active	2015-12-14 18:36:49...	2016-10-06 10:19:14...
G.AMR.A1.M01.S01	Raccolta dati statistici esterni all'Istituto	Acquisizione dei dati e dell...	Service	Gold	1	Active	2015-12-14 18:36:49...	2016-10-06 10:19:14...
G.AMR.A1.M01.S02	Elaborazione e analisi statistico attuale	Studio, analisi ed elaborazi...	Service	Gold	1	Active	2015-12-14 18:36:49...	2016-10-06 10:19:14...
G.AMR.A2	Politiche di indirizzo		Service Area	Silver	1	Active	2015-12-14 18:36:49...	2016-10-06 10:19:14...
G.AMR.A2.M01	Politiche di indirizzo		MacroService	Gold	1	Active	2015-12-14 18:36:49...	2016-10-06 10:19:14...
G.AMR.A2.M01.S01	Politiche, linee guida e indirizzi in materia di risc...	Predisposizione di politiche...	Service	Gold	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A1	Audit strategico		Service Area	Platinum	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A1.M01	Audit strategico		MacroService	Platinum	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A1.M01.S01	Audit su processi di business per miglioramento...	Controllo metodologico sui...	Service	Gold	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A1.M01.S02	Data quality e Data governance	Controllo dei processi di Da...	Service	Gold	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A2	Governance Rischi		Service Area	Gold	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A2.M01	Governance Rischi		MacroService	Silver	0	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A2.M01.S01	Gestione Rischi	Verifica della regolarità dell...	Service	Gold	1	Active	2015-12-14 18:36:50...	2016-10-06 10:19:14...
G.AUD.A2.M01.S02	Antifrode	Valutazione dei rischi e dei...	Service	Gold	1	Active	2016-01-29 16:57:38...	2016-10-06 10:19:14...

A DT workflow aligning Business Services data from Erwin to the Service Catalogue database can be configured with the following steps:



- CREATE MODEL CONFIGURATION

Log in to DT and create a model configuration for the model involved in the use case

- CREATE DATABASE ADAPTER TO LOAD SERVICE CATALOG DB

Press “DB Adapter” button in Home Page and configure the DB Loader Adapter:

Name	Type	DB Type	Id
SOGEL_DELTADB_RELAZIONI	DB Query	SQL Server	914
STORED PROCEDURE for SERVICES	Stored Procedure	SQL Server	315
SVC_CATALOG_DB_LOADER	DB Loader	SQL Server	714

General
Name: SVC_CATALOG_DB_LOADER Description: zz Type: DB Loader Folder: c:\alari\Documents\ADAPTERS\DB LOADER

Connection Parameters
DB Type: SQL Server Driver: SQL Server 2008 Server Name: CLAUDIAMOBILE Instance Name: Port Number: 1433 Database name: EADB User: casevise Password: *****

DB Adapter Parameters

Add Delete Test Connection Test Save Cancel Exit

with the proper DB type, server, port, database name, user, password for the target

- CREATE WORKFLOW TO ALIGN SERVICE CATALOG DATABASE

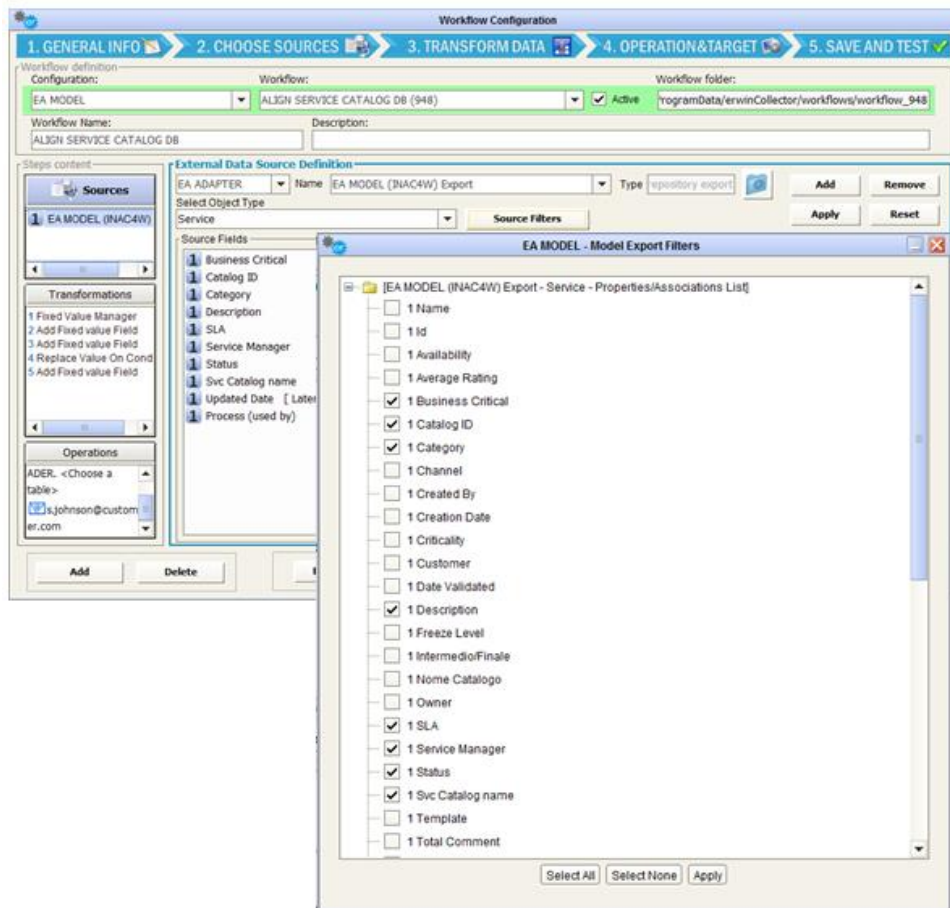
Press the “Workflow configuration” button on the Home Page and configure the following workflow choosing the model configuration according to requirements (please note that the model configuration is mandatory for a given model, only for “Load, Sync or Delete” operation against that model)



Please note that the model configuration is mandatory for a given model, only for “Load, Sync or Delete” operation against that model.

SOURCE DEFINITION – Source 1

Choose CM Adapter and the specific CM Model Export adapter from the dropdown list; then pick the “Service” object type from the list and check the desired properties / associations from the “CM Filters” interface:



TRANSFORMATION 1 – Filter services at export time

To optimize the data flow, filter source data in order to export only the more recently updated. Use then a “Data filtering”, “Fixed Value Manager” to manage only services with “Updated Date” up to 3 days before the operation (i.e. running the workflow every 3 days, they will be only needed services, if updated in the last 3 days).



Please note that filters defined as the first transformation will be shown in the source field list (see picture above) and executed at export time (if a CM Adapter is the source for filter fields)

Transformation Configuration

Transformation: Data filtering Activity: Fixed Value Manager Add

Transformation fields Apply Remove Reset

Sel.	Column Name	* Consider as	* Operator	* Value
<input type="checkbox"/>	1 Business Critical			
<input type="checkbox"/>	1 Catalog ID			
<input type="checkbox"/>	1 Category			
<input type="checkbox"/>	1 Description			
<input type="checkbox"/>	1 SLA			
<input type="checkbox"/>	1 Service Manager			
<input type="checkbox"/>	1 Status			
<input type="checkbox"/>	1 Svc Catalog name			
<input checked="" type="checkbox"/>	1 Updated Date	Date in EUR format (DD-MM-...	Later than (days ago)	3
<input type="checkbox"/>	1 Process (used by)			

TRANSFORMATION 2/3 – Add Fixed Value fields for target Business Critical fields

The target database stores the Business Criticality information in a bit field, with “0” or “1” values. In CM there is a checkbox field, exported by CM Adapter as “True” / “False” values.

A text conditional replace is then needed so that two different fixed value fields, with values 0 and 1 respectively, replace “False” and “True” in the following replace transformation (see later):

Steps content

Sources: 1 EA MODEL (INAC4W)

Transformations

- 1 Fixed Value Manager
- 2 Add Fixed value Field
- 3 Add Fixed value Field
- 4 Replace Value On Condi
- 5 Add Fixed value Field

Operations: Send to DB Loader - SVC_CATALOG_DB_LOA

Transformation Configuration

Transformation: Data structure changing Activity: Add Fixed value Field Adapter to assign column: 1 EA MODEL (INAC4W) Export Add

Transformation fields Apply Remove Reset

Sel.	Column Name	* Fixed value
<input type="checkbox"/>	1 Business Critical	
<input type="checkbox"/>	1 Catalog ID	
<input type="checkbox"/>	1 Category	
<input type="checkbox"/>	1 Description	
<input type="checkbox"/>	1 SLA	
<input type="checkbox"/>	1 Service Manager	
<input type="checkbox"/>	1 Status	
<input type="checkbox"/>	1 Svc Catalog name	
<input type="checkbox"/>	1 Updated Date	
<input type="checkbox"/>	1 Process (used by)	
<input checked="" type="checkbox"/>	1 NON BSN CRITICAL	0

Steps content

Sources: 1 EA MODEL (INAC4W)

Transformations

- 1 Fixed Value Manager
- 2 Add Fixed value Field
- 3 Add Fixed value Field
- 4 Replace Value On Condi
- 5 Add Fixed value Field

Operations: Send to DB Loader - SVC_CATALOG_DB_LOA DER-- BSN_SERVICE

Transformation Configuration

Transformation: Data structure changing Activity: Add Fixed value Field Adapter to assign column: 1 EA MODEL (INAC4W) Export Add

Transformation fields Apply Remove Reset

Sel.	Column Name	* Fixed value
<input type="checkbox"/>	1 Business Critical	
<input type="checkbox"/>	1 Catalog ID	
<input type="checkbox"/>	1 Category	
<input type="checkbox"/>	1 Description	
<input type="checkbox"/>	1 SLA	
<input type="checkbox"/>	1 Service Manager	
<input type="checkbox"/>	1 Status	
<input type="checkbox"/>	1 Svc Catalog name	
<input type="checkbox"/>	1 Updated Date	
<input type="checkbox"/>	1 Process (used by)	
<input type="checkbox"/>	1 NON BSN CRITICAL	
<input checked="" type="checkbox"/>	1 IS BSN CRITICAL	1

TRANSFORMATION 4 – Prepare Application name column into Vendor dataset

Vendors are to be imported as Application associated objects, but the Vendor file does not contain the application name, which is needed to execute the operation.

A “Replace Value on Condition” is needed to decode the “True”/“False” value for the source field hosting Business Criticality information in Modeler to the target 1/0 format:

Transformation Configuration

Transformation: Data formatting Activity: Replace Value On Condition Add

Transformation fields

Sel.	Column Name	* Consider as	* Operator	* Value	* Value if True	* Value if False
<input checked="" type="checkbox"/>	1 Business Critical	String	Equal	True	1 IS BSN CRITICAL	1 NON BSN CRITICAL
<input type="checkbox"/>	1 Catalog ID					
<input type="checkbox"/>	1 Category					
<input type="checkbox"/>	1 Description					
<input type="checkbox"/>	1 SLA					
<input type="checkbox"/>	1 Service Manager					
<input type="checkbox"/>	1 Status					
<input type="checkbox"/>	1 Svc Catalog name					
<input type="checkbox"/>	1 Updated Date					
<input type="checkbox"/>	1 Process (used by)					
<input type="checkbox"/>	1 NON BSN CRITICAL					
<input type="checkbox"/>	1 IS BSN CRITICAL					

Apply Remove Reset

TRANSFORMATION 5 – Add Fixed Value to fill a datetime target field

Let’s suppose that a datetime field in the target table is uploaded with the DT execution datetime, for any created/updated record.

In such a case, a fixed value field, with value equal to parameter “<%SYSDATE_EUR%>” (to get a European “DD/MM/YYYY” format, or “<%SYSDATE_USA%>” for a “MM/DD/YYYY” format or “<%SYSDATE%>” for a standard “DDDD/MM/YY” UTC format):

Steps content

Sources

- 1 EA MODEL (INAC4W)

Transformations

- 1 Fixed Value Manager
- 2 Add Fixed value Field
- 3 Add Fixed value Field
- 4 Replace Value On Condition
- 5 Add Fixed value Field

Operations

- Send to DB Loader - SVC_CATALOG_DB_LOADER - BSN_SERVICE

Transformation Configuration

Transformation: Data structure changing Activity: Add Fixed value Field Adapter to assign column: 1 EA MODEL (INAC4W) Export Add

Transformation fields

Sel.	Column Name	* Fixed value
<input type="checkbox"/>	1 Business Critical	
<input type="checkbox"/>	1 Catalog ID	
<input type="checkbox"/>	1 Category	
<input type="checkbox"/>	1 Description	
<input type="checkbox"/>	1 SLA	
<input type="checkbox"/>	1 Service Manager	
<input type="checkbox"/>	1 Status	
<input type="checkbox"/>	1 Svc Catalog name	
<input type="checkbox"/>	1 Updated Date	
<input type="checkbox"/>	1 Process (used by)	
<input type="checkbox"/>	1 NON BSN CRITICAL	
<input type="checkbox"/>	1 IS BSN CRITICAL	
<input checked="" type="checkbox"/>	1 CC_OPERATION_DATE	<%SYSDATE_EUR%>

Apply Remove Reset

Add Delete Save Test Cancel Exit

OPERATION – Send to DB Loader

In the “Mapping and Operation” step, choose the previously configured DB Loader, the target table, and the target field to be used as a key for the operation. Then map all the relevant

source fields to target fields. In case of datetime, boolean or numeric target fields, the source datatype must be specified to ensure a correct data transfer:

Mapping and Operation

with operation: Send to DB Loader Choose Adapter: SVC_CATALOG_DB_LOADER ☒ Send e-mail to ☐ Single email for record s.johnson@customer.com **Config**

Table to be updated: BSN_SERVICE Key field for this operation: SVC_ID

	Object field	Object type	Table column	FK table	FK match column	FK key column
1	Business Critical	Boolean (true/false or 0/1)	BSN_CRITICAL			
1	Catalog ID	Generic string	SVC_ID			
1	Category	Generic string	CATEGORY			
1	Description	Generic string	DESCRIPTION			
1	SLA	Generic string	SLA			
1	Service Manager	Generic string	SERVICE_MANAGER			
1	Status	Generic string	STATUS			
1	Svc Catalog name	Generic string	NAME			
1	Updated Date	Date in EUR format (DD/...	OP_DATE			
1	Process (used by)	Generic string	PROCESS_SUPPORT			
1	NON BSN CRITICAL	Generic string	<SKIP COLUMN>			
1	IS BSN CRITICAL	Generic string	<SKIP COLUMN>			
1	CC_OPERATION_D...	Date in EUR format (DD/...	CC_OP_DATE			

Email can be configured with default text (simply filling the “email to” field) or with custom properties (“Conf”). Please refer to the [“Email configurations”](#) for a detailed description on the email configuration options.

Configure message

Configure message

Email To: s.johnson@customer.com

Email CC: i.collins@provider.com

Email Subject: Service Catalog Updated

☒ Attach workflow output file (HTML) ☐ Send on errors only

Message:

Hi,
Business Services have been updated.

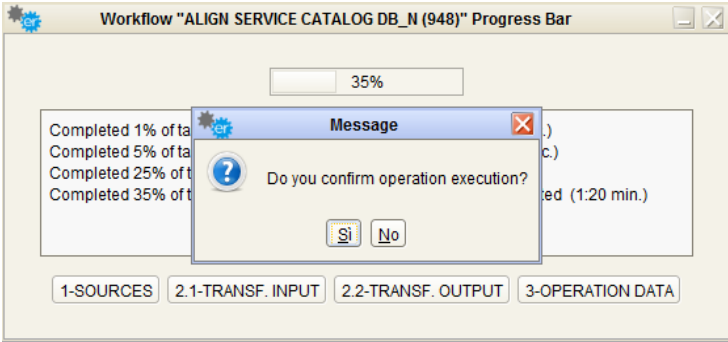
Regards

CC Integration Team

Add URL **OK** **Exit**

- TEST THE WORKFLOW AND CHECK RESULT

Test the configured workflow with the “Test” button, and follow its execution through the progress bar or Logs and email notifications. At the end of the workflow execution, check the result in the target database:



Results		Messages											
SVC_ID	NAME	DESCRIPTION	CATEGORY	SERVICE_MANAGER	AVAILABILITY	SLA	BSN_CRITICAL	STATUS	OP_DATE	CC_OP_DATE			
1	C PRE A1	Prestazioni sanitarie	Service Area	Graham Being	24H	Gold	1	Active	2016-10-09 09:31:50.000	2016-10-09 21:43:18.000			
2	S ICT A4	Information Services	Service Area	Alex Williams	N.A.	Platinum	1	Active	2016-10-09 09:47:52.000	2016-10-09 21:43:18.000			
3	S ICT A4.M01	Analytics Services	MacroService		NULL		0	Active	2015-12-14 18:37:25.000	2016-10-06 18:00:18.000			
4	S ICT A4.M01.S01	Servizi Analitici e di Reportistica	Service		NULL		0	Active	2015-12-14 18:37:25.000	2016-10-06 18:00:18.000			
5	S ICT A4.M02	Data Services	MacroService		NULL		0	Active	2015-12-14 18:37:25.000	2016-10-06 18:00:18.000			
6	S ICT A4.M02.S01	Document Management e Co...	Service		NULL		0	Active	2015-12-22 18:00:11.000	2016-10-06 18:00:18.000			
7	S ICT A4.M03	Open data	MacroService		NULL		0	Active	2015-12-14 18:37:25.000	2016-10-06 18:00:18.000			
8	S ICT A4.M03.S01	Gestione Open Data	Service		NULL		0	Active	2015-12-14 18:37:25.000	2016-10-06 18:00:18.000			
9	S ICT A5	Infrastructures, Operation & Se...	Service Area		NULL		0	Active	2015-12-14 18:37:26.000	2016-10-06 18:00:18.000			
10	S ICT A5.M01	Progettazione e realizzazione i...	MacroService		NULL		0	Active	2015-12-14 18:37:26.000	2016-10-06 18:00:18.000			
11	S ICT A5.M01.S01	Progettazione e realizzazione i...	Service		NULL		0	Active	2015-12-14 18:37:26.000	2016-10-06 18:00:18.000			
12	S ICT A5.M02	Operation Management	MacroService		NULL		0	Active	2015-12-14 18:37:26.000	2016-10-06 18:00:18.000			

Align Federated Models

This example describes the following use case: an enterprise organized its EA information in two federated models, one specifically aimed to support IT and the second for more general business analysis purposes. The two models partially share the same metamodel, given to different IT and business teams requirements.

The first model is used to synchronize the second about application data, but only for a specific subset of applications, i.e. applications with a given lifecycle status ("production") and only for those coming from the enterprise application catalogue (the source of application information for IT models, while the second hosts applications from other sources, relevant for the business).

Let us suppose that:

- Application data are in the source CM model in a dedicated object type:

Application properties: Customer Care System

System information | Access Rights | Status | Version

Customer Care System

Status: 6 - Production Edit ...

Category: System Edit ...

CIID: T43

SOURCE SYSTEM: Application Catalog

Sales Manager: Carrie Bloom

- a **second CM Model** hosts **application data**, which is needed to execute Business Analysis in a dedicated object type, and a slightly different metamodel from the IT Model:

Application properties: Customer Care System

Description | Business information | Access Rights | Status | Version

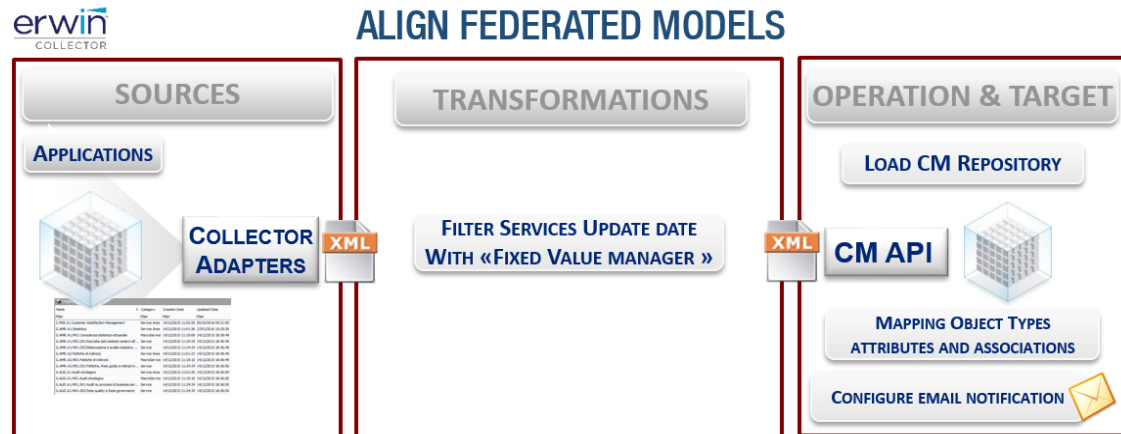
Customer Care System

Common Name: Customer Care System

Category: System Edit ...

Application Manager: William Kelley

A DT workflow aligning the database of two CM models can be configured with the following steps:



- CREATE WORKFLOW TO ALIGN FEDERATED MODELS

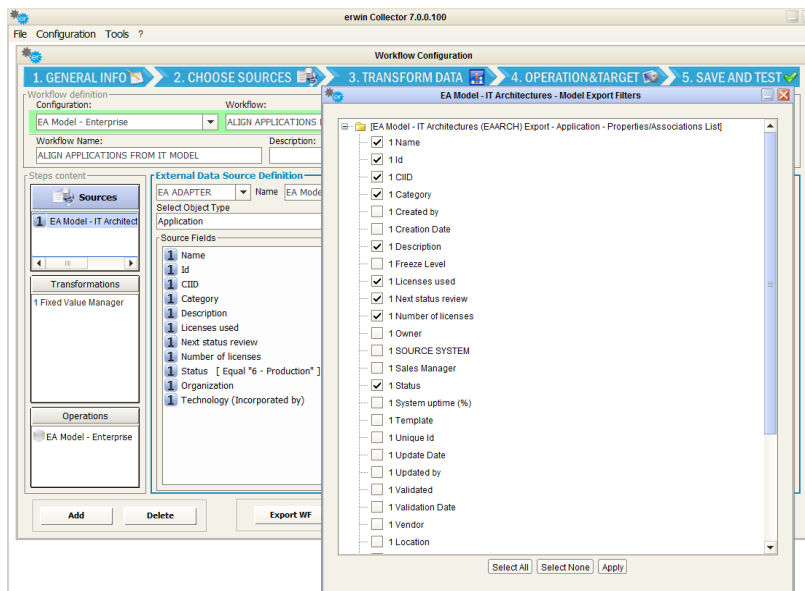
Press the “Workflow configuration” button on the Home Page and configure the following workflow choosing the model configuration according to requirements (please note that the model configuration is mandatory for a given model, when the “Load, Sync or Delete” operation must be executed on that model)



Please note that the model configuration is mandatory for a given model, when the “Load, Sync or Delete” operation must be executed on that model)

SOURCE DEFINITION – Source 1

Choose the CM Adapter and specific CM Model Export adapter (i.e. the IT Model one) from the dropdown list; then pick the “Application” object type from the list and check the desired properties/associations from the “Source Filters” interface:



TRANSFORMATION 1 – Filter Application in “Production”

To optimize the data flow, filter source data in order to export only the more recently updated. Use then a “Data filtering”, “Fixed Value Manager” to manage only services with “Status” equal “6 – Production”.



Please note that filters defined as the first transformation will be shown in source fields list (see picture above) and executed at export time (if an EA Adapter is the source for filter fields)

Transformation Configuration

Transformation: Data filtering Activity: Fixed Value Manager Add

Transformation fields

Sel.	Column Name	* Consider as	* Operator	* Value
<input type="checkbox"/>	1 Name			
<input type="checkbox"/>	1 Id			
<input type="checkbox"/>	1 CIID			
<input type="checkbox"/>	1 Category			
<input type="checkbox"/>	1 Description			
<input type="checkbox"/>	1 Licenses used			
<input type="checkbox"/>	1 Next status review			
<input type="checkbox"/>	1 Number of licenses			
<input checked="" type="checkbox"/>	1 Status	String	Equal	6 - Production
<input type="checkbox"/>	1 Organization			
<input type="checkbox"/>	1 Technology (Incorporated by)			

Apply Remove Reset

OPERATION – Sync CM Repository

In the “Mapping and Operation” step, choose “Sync CM Repository”. The target model is the one related to the Model Configuration the workflow has been assigned to. Then map all the relevant source fields to the target fields for “Application” object type. Define the desired synchronization action (“Logical”, “Physical” or “Physical Forced” deletion, which will affect redundant objects in the target model in comparison with the exported list from the source model):

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 Name	Generic...	Application	<OBJ NAME> Common Name	Single-line text		<input type="checkbox"/>	<input type="checkbox"/>
1 Id	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 CIID	Generic...	Application	<PROPERTY> CI ID	Single-line text		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 Category	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Description	Generic...	Application	<PROPERTY> Description	Multi-line text	Replace	<input type="checkbox"/>	<input type="checkbox"/>
1 Licenses used	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Next status review	Date in...	Application	<PROPERTY> Next status review	Date / Time		<input type="checkbox"/>	<input type="checkbox"/>
1 Number of licenses	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Status	Generic...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Organization	Generic...	Application	<PROPERTY> Vendor	Drop-down list		<input type="checkbox"/>	<input type="checkbox"/>
1 Technology (Incorpora...	Generic...	Application	<ASSOCIATION> Technology (Incorporated ...		Forced replace	<input type="checkbox"/>	<input type="checkbox"/>



Please note the keyset on the operation defined to be the CI ID of the applications is a reasonable setting because the second model receives application data from various sources. For object types with instances coming only from the source model, it can be also used the Erwin Id.

To apply the synchronization within requirements (it must occur only for applications with a specific source system - the Application Catalogue) configure a filter for the synch operation, by double clicking on the filter icon on the “Object Type” column:

Mapping and Operation

with operation: Model: ☒ Logical ☐ Send e-mail to ☐ Single email for record
☐ Physical ☐ Physical Forced

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new

ALIGN APPLICATIONS FROM IT MODEL - Operation Filters

Sel.	Column Name	* Consider as	* Operator	* Value
<input checked="" type="checkbox"/>	<Application PROPERTY> Source System	String	Equal	Application Catalog

- TEST THE WORKFLOW AND CHECK RESULT

Test the configured workflow with the “Test” button and follow its execution through the progress bar, Logs and email notifications. At the end of workflow execution, check the result in the target CM Model:

Workflow "ALIGN APPLICATIONS FROM IT MODEL (490)" Progress Bar

75%

Completed 1% of task - Workflow execution has been queued (1 sec.)
 Completed 5% of task - Workflow started - Adapter(s) queued (9 sec.)
 Completed 25% of task - Workflow started - Adapter(s) queued (9 sec.)
 Completed 35% of task - Workflow started - Adapter(s) queued (9 sec.)
 Completed 75% of task - Workflow started - Adapter(s) queued (9 sec.)

1-SOURCES 2.1

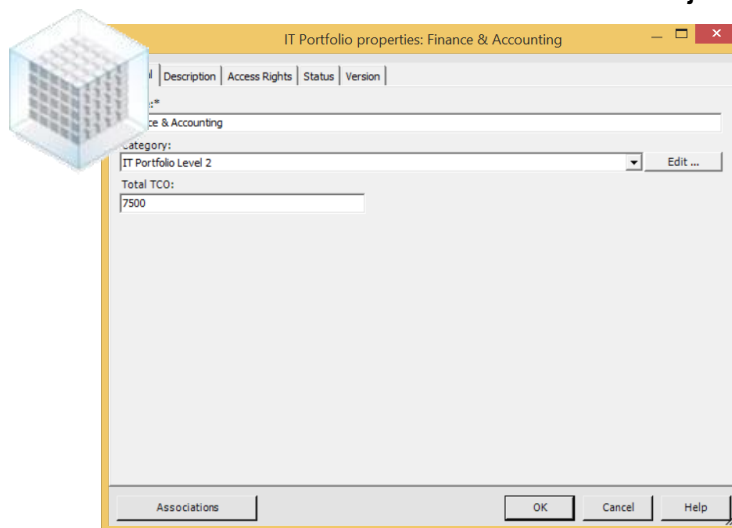
Common Name	CI ID	Source System	Update Date
_TO_BE_DELETED_Customer Care	SC7	Application Catalog	09/10/2016 19:17:10
_TO_BE_DELETED_Parts Ordering System	SC9	Application Catalog	09/10/2016 19:17:10
Customer Care System	SC20	Application Catalog	09/10/2016 19:31:13
EA Repository	SC13	Application Catalog	09/10/2016 22:35:38
Fleet management	SC14	Application Catalog	09/10/2016 22:35:49
IP Phone System	sc16	Application Catalog	09/10/2016 22:35:55
Mailing List	SC26	Application Catalog	09/10/2016 19:31:53
Order to Cash	SC5	Application Catalog	09/10/2016 19:32:07
QuickBooks	SC8	Others	09/10/2016 19:32:11
Repository	SC27	Others	09/10/2016 19:32:17

Deriving values and update consistency data

The example describes the following use case: an enterprise organized its EA information in a model which supports general business analysis purposes with reports and dashboards. One of them is about IT Portfolios, and shows summary information to managers.

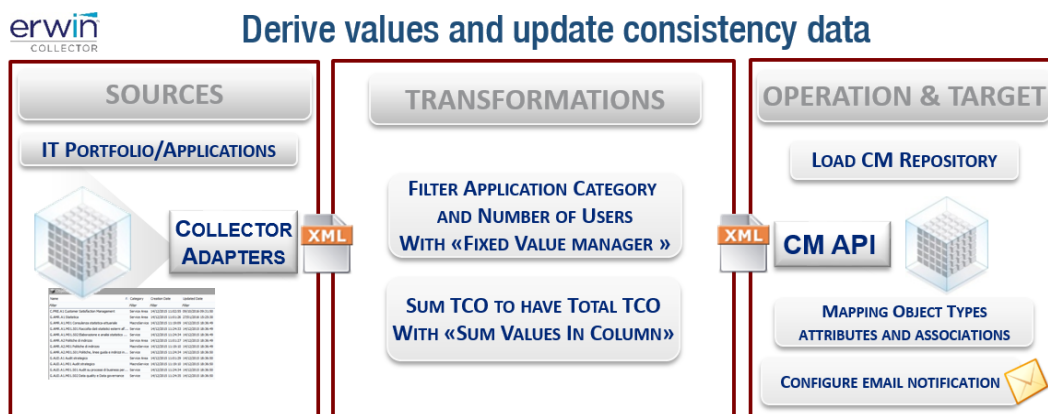
Let us suppose that:

- **IT Portfolio data** are in the source **CM model** in a dedicated **object type**:



and the **"Total TCO"** value must be calculated as the sum of associated **application TCO**, for the ones of **"ERP"** category and a **number of users greater than 100**.

A DT workflow calculating Total TCO for IT Portfolios can be configured with the following steps:



- CREATE WORKFLOW TO DERIVE VALUES AND UPDATE CONSISTENCY DATA

Press the “Workflow configuration” button on the Home Page and configure the following workflow choosing the model configuration according to requirements

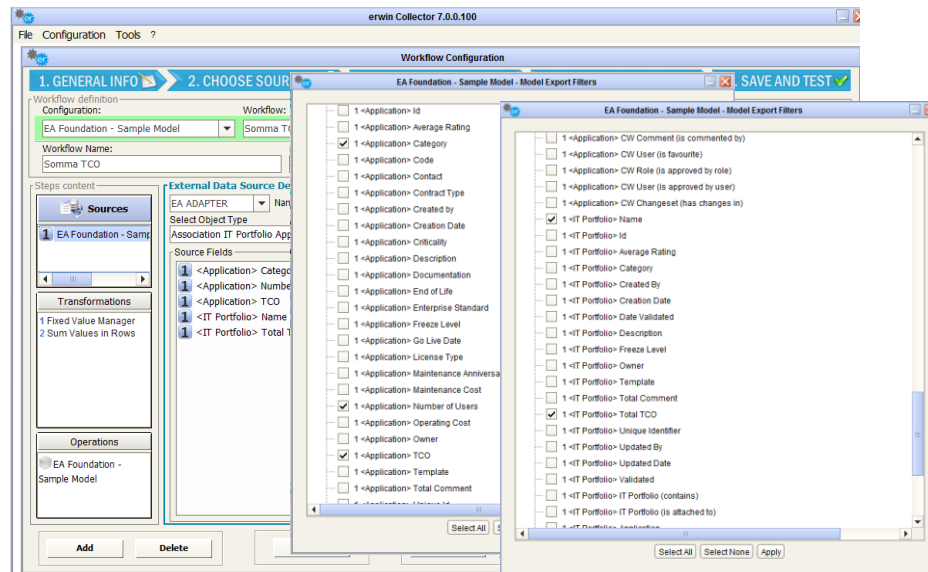


Please note that the model configuration is mandatory for a given model, when the “Load, Sync or Delete” operation must be executed towards that model)

SOURCE DEFINITION – Source 1

Choose CM Adapter, and specific CM Model Export adapter (i.e. the IT Model one) from the dropdown list; the select “Association IT Portfolio-Application” from the Object Type list, and

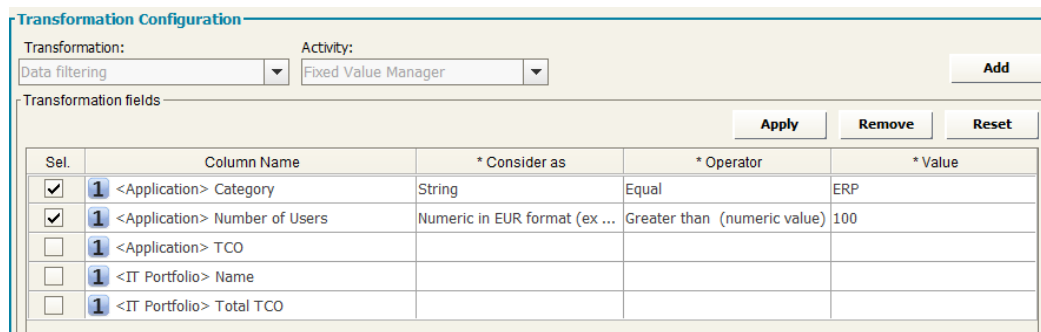
select <Application> Category, <Application> TCO, <Application> Number of Users, <IT Portfolio> Name, <IT Portfolio> Total TCO fields:



TRANSFORMATION 1 – Filter application by “category” and “number of users”

To export the relevant application, set a filter on “category” and “number of users” with “DATA FILTERING”-“Fixed Value Manager” to manage applications having:

- “Category” equal to “ERP”
- “Number of users” greater than “100”.



TRANSFORMATION 2 – Derive IT Portfolio “Total TCO” from associated applications

Choose a “DATA DERIVATION”, “Sum Values in Column” transformation and set:

- The “<Application> TCO” column as “Source Column (to sum values from)”
- The “<IT Portfolio> Name” column as “Key (for data aggregation)”
- The “<IT Portfolio> Total TCO” as “Result” for the transformation

Transformation Configuration

Transformation: Activity:

Transformation fields

Sel.	Column Name	* Field category
<input type="checkbox"/>	1 <Application> Category	
<input type="checkbox"/>	1 <Application> Number of Users	
<input checked="" type="checkbox"/>	1 <Application> TCO	Source column (to sum values from)
<input checked="" type="checkbox"/>	1 <IT Portfolio> Name	Key (for data aggregation)
<input checked="" type="checkbox"/>	1 <IT Portfolio> Total TCO	Result

OPERATION – Sync CM Repository

In the “Mapping and Operation” step, choose the “Load CM Repository”. The target model is the one related to the Model Configuration which the workflow has been assigned. Then map all the relevant source fields to target fields:

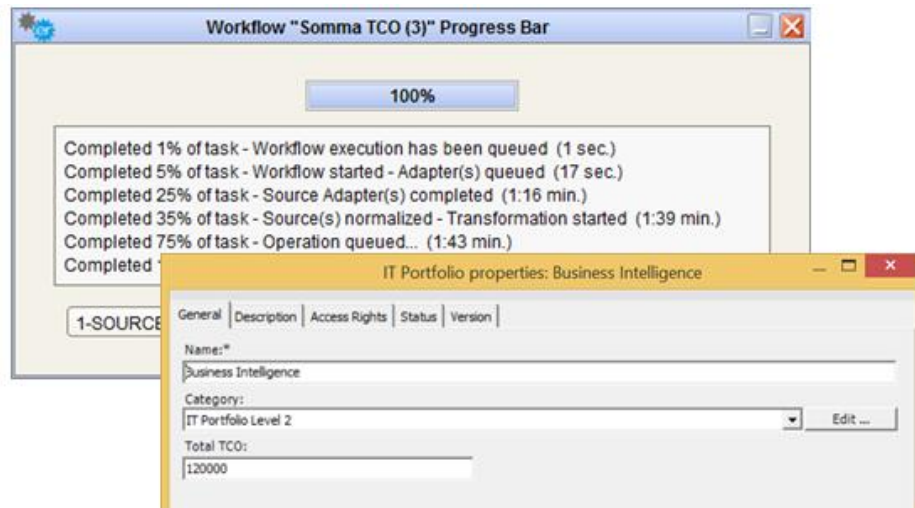
Mapping and Operation

with operation: Model Name: ☐ Send e-mail to ☐ Single email for record

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 <Application> Category	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> Numbe...	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <Application> TCO	Generi...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Name	Generi...	IT Portfolio	<OBJ NAME> Name	Single-line t...		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 <IT Portfolio> Total T...	Generi...	IT Portfolio	<PROPERTY> Total TCO	Whole num...		<input type="checkbox"/>	<input type="checkbox"/>

- **TEST THE WORKFLOW AND CHECK RESULT**

Test the configured workflow with the “Test” button and follow its execution through the progress bar, Logs and email notifications. At the end of the workflow execution check the result in CM Model IT Portfolios:



About Us

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management to Active Directory and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Around the globe, more than 130,000 companies and 95% of the Fortune 500 count on Quest to deliver proactive management and monitoring for the next enterprise initiative, find the next solution for complex Microsoft challenges and stay ahead of the next threat. Quest Software. Where next meets now. For more information, visit www.quest.com.

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- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.