



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

Updated – December 2023

Version – 9.2.4

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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 Modelling 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.

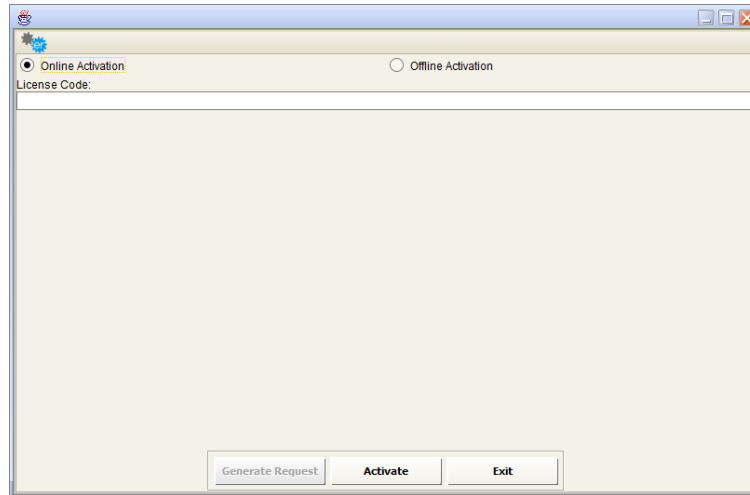
To ensure safe data operations, all updating activities are performed using standard APIs, and are preceded by data mapping and consistency checks. A user operation log, e-mail notification, scheduled operation log and system log are also provided (sever errors are notified via e-mail to system administrator).

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).

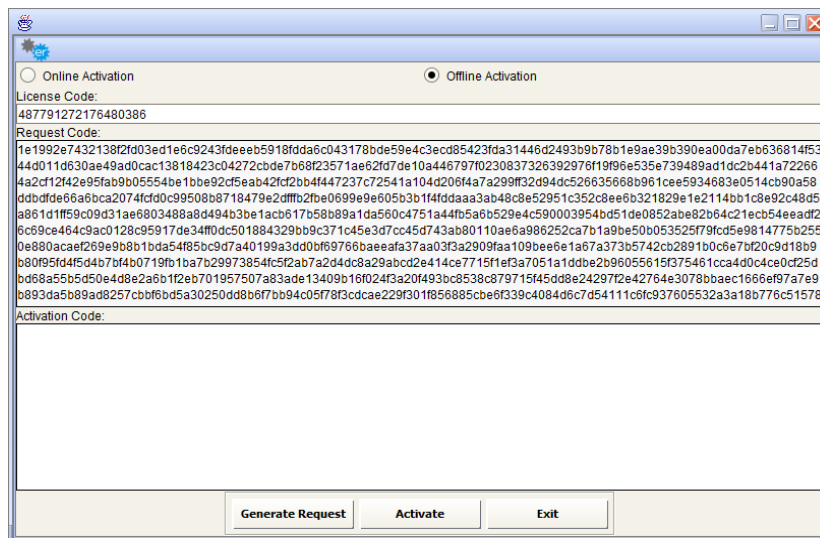
User may interact with the tool during workflow testing activities, checking data previews and if necessary, discarding the updates.

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:
 dc879521141be08c7acc4b074aef9a9b579ce21aeda5ecd0a4256707178357c3040cda8681f615786665fce809b78e0b21ac748abbea7bcd2fd6b95d0b843e1b7a07619f2805c5bd3b9c0d1fb1433eaa4a4f0e642dc0acc8df183a583c20b493aa7ba39f929bcb3df478e56bd449180e707b1a6bdcc5638067c0e564901ec5b0e2f5719e9d48902f839ee103fca67c3afdad02503c79f17c3bf439322f62e6a0217e568af9dbd15e0b3a10b561f98f8973655b54d0132ed90772358544766aab9a9166025a60adda451368a254dd4689df250d2a7c72ea7afb095f6ef0489d90a66ec1be36549b4043dcf79fdf2d2ffe906121c4f37177c89e1e47592a9e0379dbce9a1dde4328827936999ebe4ee67db3dfa96fee8ed802f63354e36f0d241a80e332cedde976641b087795420353366501dec6ca8cd8a3823674ec02e13d9d764ce334c9acbd20e491a43ed875ef0d58bbd5a65d2887bd9c34c674191e1cba36d3679f119f6d9b7b0de20ec45d9064bb054a1316d0aa0db02344c7e4a604b2c4b389dccb36e254dbcb0a02628ff20c57dd44f91a0fb5a156e20a5482faa0f6166fd36e2e173321baa61d6a743be393ae7b24ca1e539ba354f62f11ac7d6fec9ecd45aabcaa2a723384a09144cd5521918a15b44802fa25b23fd41839c65daea8c76a47e3cdd4d2394f767705fffd85ff9956bbcc31a336b457969e18878083878214e621effc08390b800ac3abd2e6e2b0f4cf9de6c503f9d4397819bd4f02886731ed9a8df13c16b0805a07b8294151ad9d2c49b6f14409510bf2574bc5b374bc6a77c71f797a

Activation Code:
 226ddbc6debeaad9cf6ffad7ff042aa71d9d05cf23fb40266ad04779a79dadfd634856299a1d168139ab6e972dce76dd0439ef5d6130cd9c72a9afed7ba5b6a454ba04fe779af92da1d28092f358580a952936f015ec25bcbfbc140c64afb8e82b6bc7036652ee84c9e07794127dd30c34413d03cf81016c7a11573ba5f3d9392fdee9a0bf33a2baeff5667c05155090acb7897fc54b502033028f71aec294a994bb642bb9ba099bf6628390f57a343b280d27118ea0898c97ff49f2288dc377d8e9c468c0fc41f8383089113dc7c16c4a5e216b22cf0176c654ebbd9713919eca7f2d16d0f0fc51d07710d8527c98aace2f12b376377bb34802a91ceea8aac4ed725da10ece51c1c1c56569fcc87179bb747df278270388e3036b7d1a939ece360c26e073289886c9d3b6223824c1a1c4ccca284f89e40dd2273c6598857d1f6ed0f068b1a1d85be0757dc5c6e577963ad10dbfdcaab9149517f1870fe14f584855e1af2f3c7f342be67b637e00ec8d4f39d6d5bf1e177aa5732d0539f53afa83f564fd1a1c1b66860ccdb14b32b7bd6653b7c7553d56001079b4af582b271c4d982a53bab0034f0ae3a575810a99fbde55f1758314972e3d5183a3bdeea6c7b49960766c7e8b3d5dc34f01a83317faeedaf5b12bcf13ea306274854ffb166cdea84428c58223dc6aeb13cbb3e88c6c99fd227955ad5b5f86741bc7f3027ad66da483c1594954c95dab4522260acdf4909cad164045b5789c53458905aedd48f00873287915852c1a3537837c5ba3716f90bbeae4fc39b4293b383186e11208f3fe4306f6fe2ef9d12

Generate Request

Activate

Exit

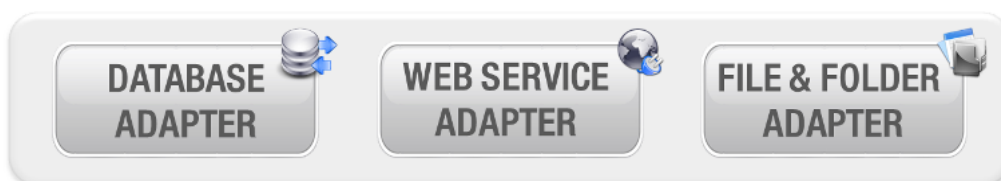
Home page

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.

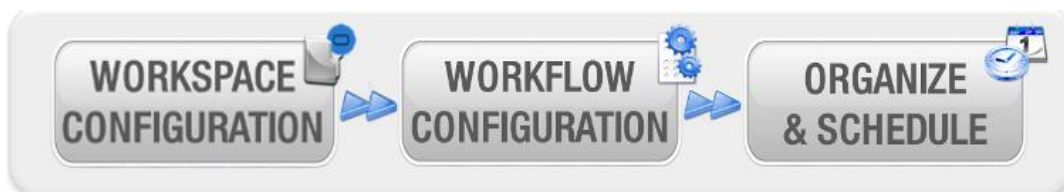


Operations are logically divided into 2 groups:

- *Setting adapters:*



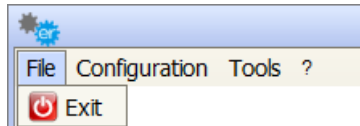
- *Define model (or workspace) configuration, workflow (data flows) configuration and schedule of the jobs/job sequences.*



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

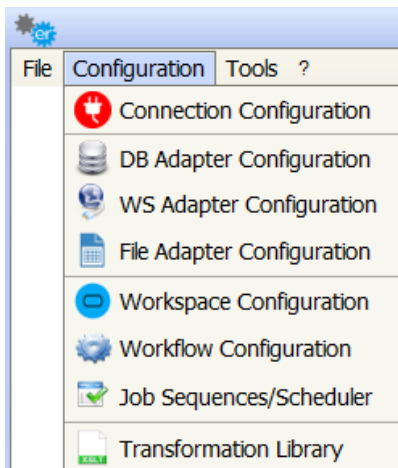
File Menu

This menu is used to close the application.



Configuration Menu

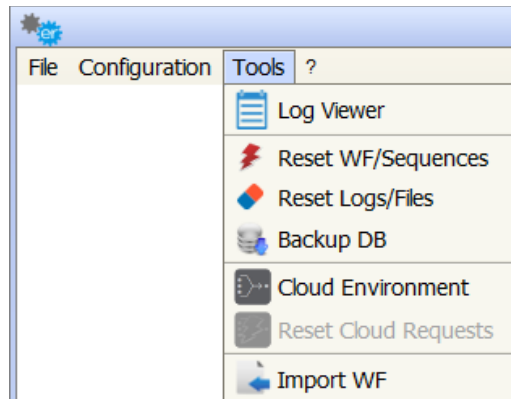
This menu provides access to add/delete/modify the settings for the following operations:



- 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](#)

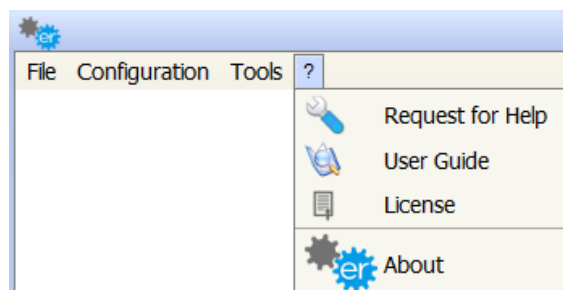


“Cloud Environment” and “Reset Cloud Requests” items refer to external environment configuration and operations – See [Running DT from Cloud Platform](#)

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

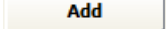
Going through this configuration window, the user can set up an adapter to be used as data source or operation target in a workflow. It's possible to:

- 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

DB Adapter List

Name	Type	DB Type	Id

General

Name: * Description: Type: Folder: ...

Connection Parameters

DB Type: Driver: Server Name: * Port Number: * Database name: * User: * 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
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: 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'

Buttons: 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/csalaro/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

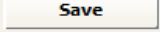
ID_APPLICATION	COD_APPLICATION	TXT_APPLICATION_N...	DESCR_APPLICATION	ID_STATE	DE_STATE	TXT_SERVICE_NAME
26	H65	Mailing List	index_definitions_depl...	6	Production	Mailing List (T66)
2	L99	IP Phone System	The primary objective...	6	Production	VOIP svc (H65)
3	F33	Fleet Management		9	Dismissed	Repository (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...

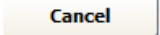
Page 1 of 1 (1-11)


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"ga]+') = 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")*

Name	Type	DB Type	Id
local mongodb	NoSQL DB Query	MongoDB	78
local mongodb_test	NoSQL DB Query	MongoDB	83
test db	DB Query	Microsoft SQL Server	79

General

Name: local mongodb

Description:

Type: NoSQL DB Query

Folder: s:/Administrator/Documents/Adapter Folder

Connection Parameters

DB Type: MongoDB

Driver: MongoDB Driver

Connection String: mongodb://127.0.0.1:27017

Database name: test

You can hide your password using <PASSWORD> wildcard inside Connection String specifying the real one below

Password:

DB Adapter Parameters

Use SQL to query your MongoDB collection

Query:

```
select
*
from
restaurants
where
name like "%Kosher%"
```

Add Delete Test Connection Test Save Cancel Exit

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

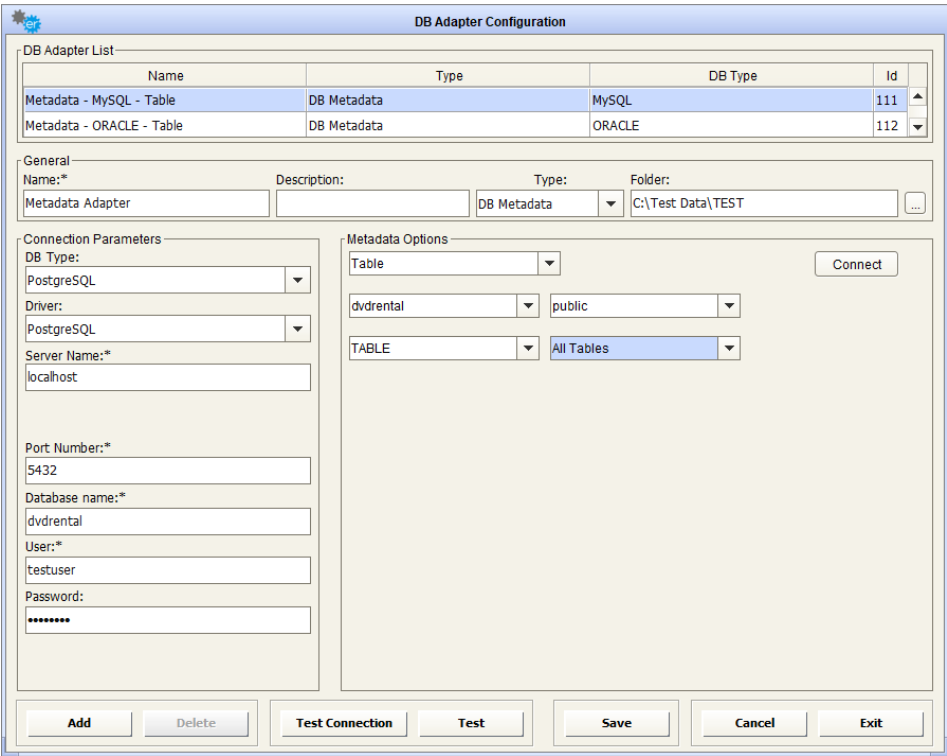
```
mongodb+srv://myusername:<PASSWORD>@cluster0-pncrc.mongodb.net/test
```


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.

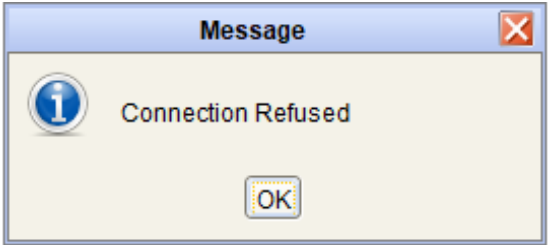
DB Metadata

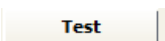
Setting the “Type” field to “DB Metadata” allows metadata to be retrieved from an SQL databases.


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.



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

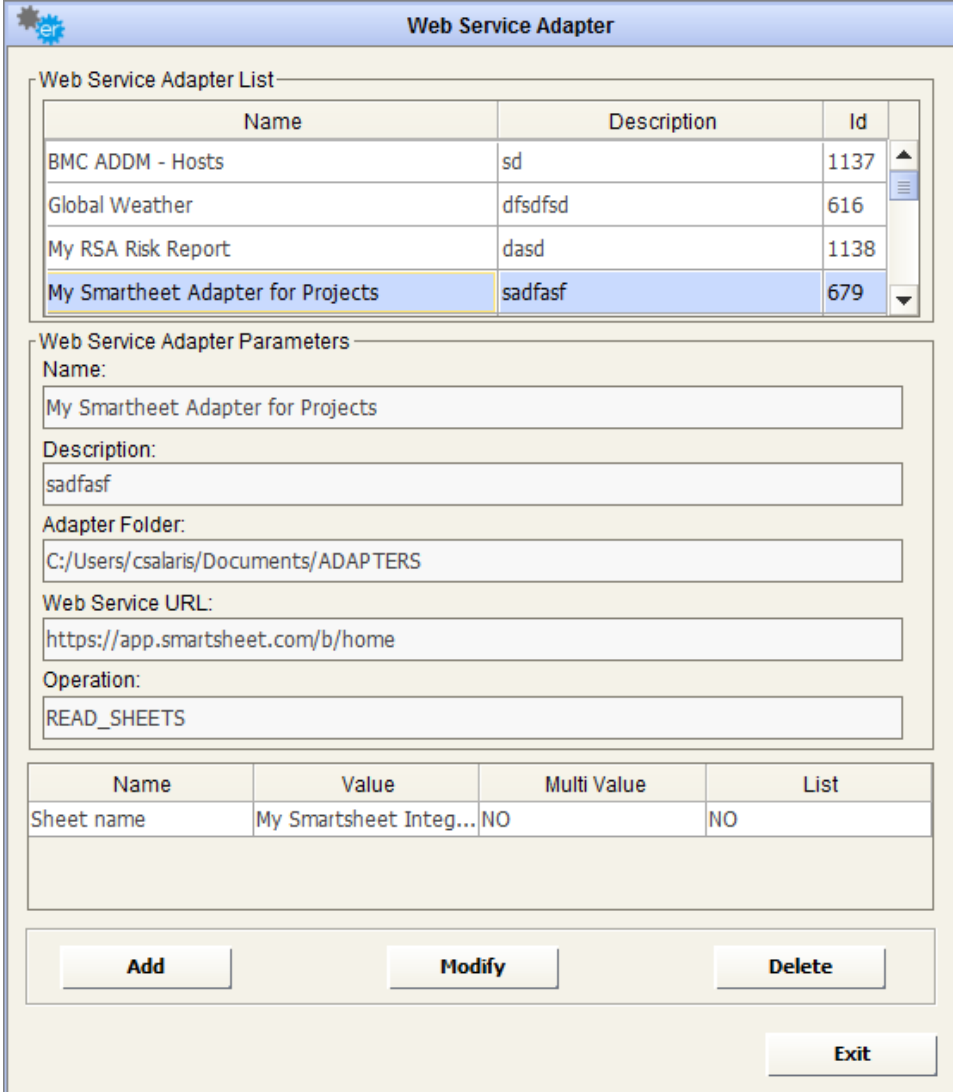
Database	Schema	Table Name	Table Type	Decription / Remarks
dvdrental	public	actor	TABLE	
dvdrental	public	address	TABLE	
dvdrental	public	category	TABLE	
dvdrental	public	city	TABLE	
dvdrental	public	country	TABLE	
dvdrental	public	customer	TABLE	
dvdrental	public	film	TABLE	
dvdrental	public	film_actor	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" with a gear icon in the top-left corner. The window is divided into three main sections. The first section, "Web Service Adapter List", contains a table with four columns: "Name", "Description", "Id", and an empty column. It lists four adapters, with "My Smartheet Adapter for Projects" selected. The second section, "Web Service Adapter Parameters", contains several text input fields for "Name", "Description", "Adapter Folder", "Web Service URL", and "Operation", each with a value corresponding to the selected adapter. The third section contains a table with four columns: "Name", "Value", "Multi Value", and "List", showing input parameters for the selected adapter. At the bottom, there are four buttons: "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	

Web Service Adapter Parameters

Name: My Smartheet Adapter for Projects

Description: sadfasf

Adapter Folder: C:/Users/csalaris/Documents/ADAPTERS

Web Service URL: https://app.smartsheet.com/b/home

Operation: READ_SHEETS

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

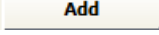
Add Modify Delete Exit

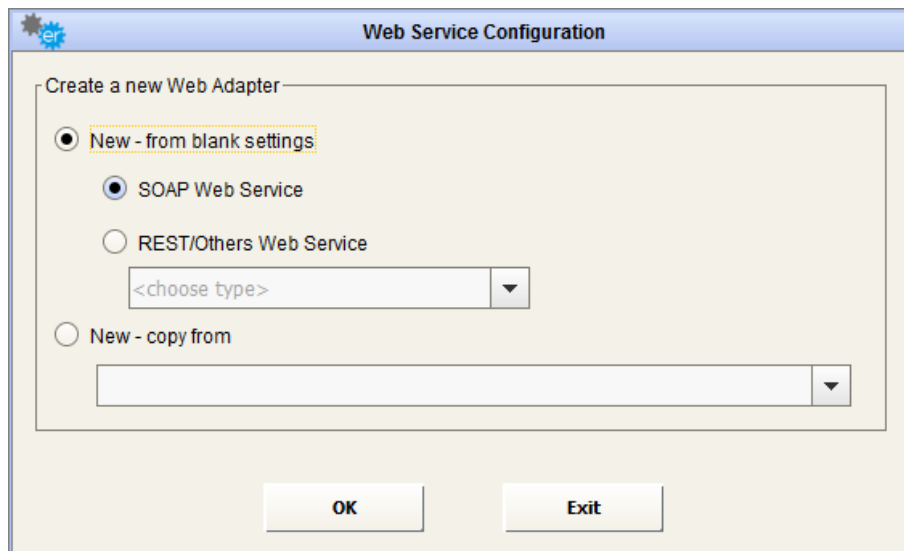
The first group of fields in the window relate to the Web Services Adapter List, which lists all the available adapters. For each adapter selected in the list, the Web Services Adapter Parameters fill the second group of fields, which describe the Web Service connection parameters and the third group 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" option is a dropdown menu with the text "<choose type>". Below the "New - copy from" option is another dropdown menu. At the bottom of the dialog 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.

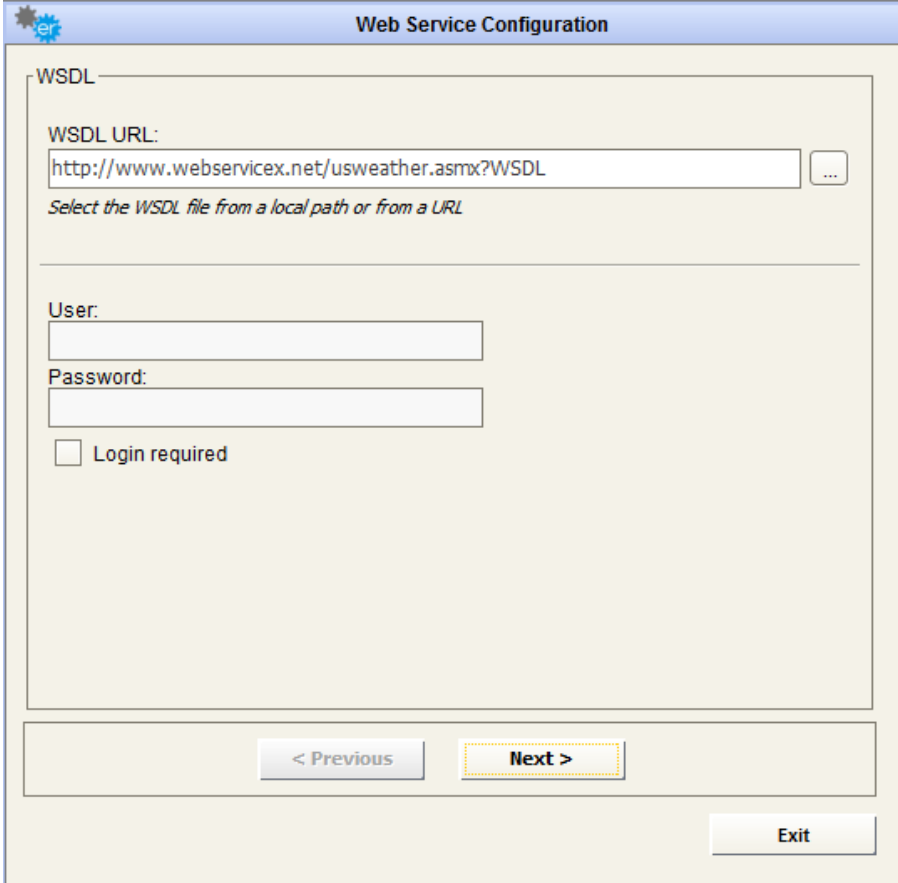
The first group of fields concern the WSDL Parameters while the second group allows the user to specify login parameters, if required.

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.

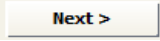
Should the Web Service require a login (username and password) to the WSDL server, a flag in the checkbox  **Login required** will enable the related fields allowing entry of the credentials.

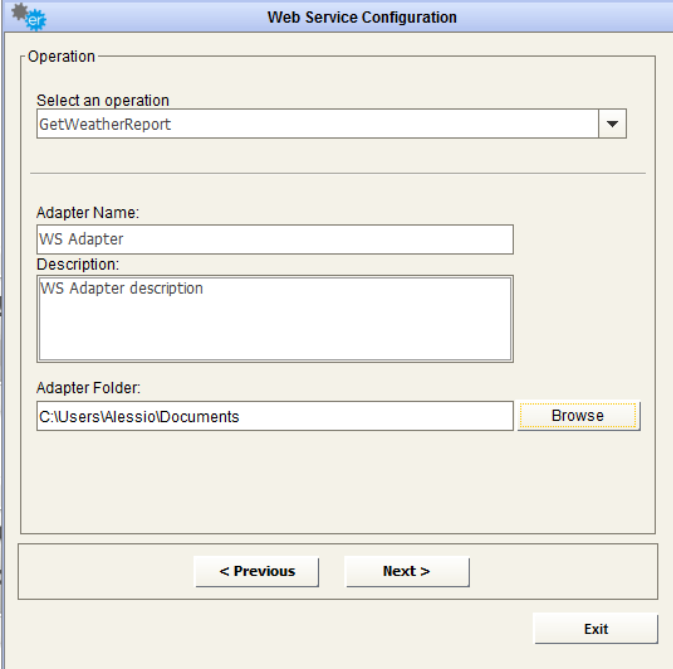


Note that this authentication only applies to the WSDL server and not to the web service operation – operation authentication is not supported at the moment.



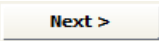
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is labeled 'WSDL' and contains a 'WSDL URL:' label, a text box with the URL 'http://www.webservice.net/usweather.asmx?WSDL',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

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 the text 'Select an operation' and 'GetWeatherReport' selected. Below this is a section for 'Adapter Name:' with a text box containing 'WS Adapter'. Underneath is 'Description:' with a larger text box containing 'WS Adapter description'. The next section is 'Adapter Folder:' with a text box containing 'C:\Users\Alessio\Documents' and a 'Browse' button to its right. At the bottom of the dialog 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:

Name: **ZipCode** ☐ Multi value with newline separator

Value(s):

00144

Buttons: Enter, Modeler Objects, < Previous, Test, Save, 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)

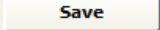
For each of the shown parameters, a value can be entered into the multiline text field, while the parameter is selected in the list above.

The **Enter** button sets the entered data.

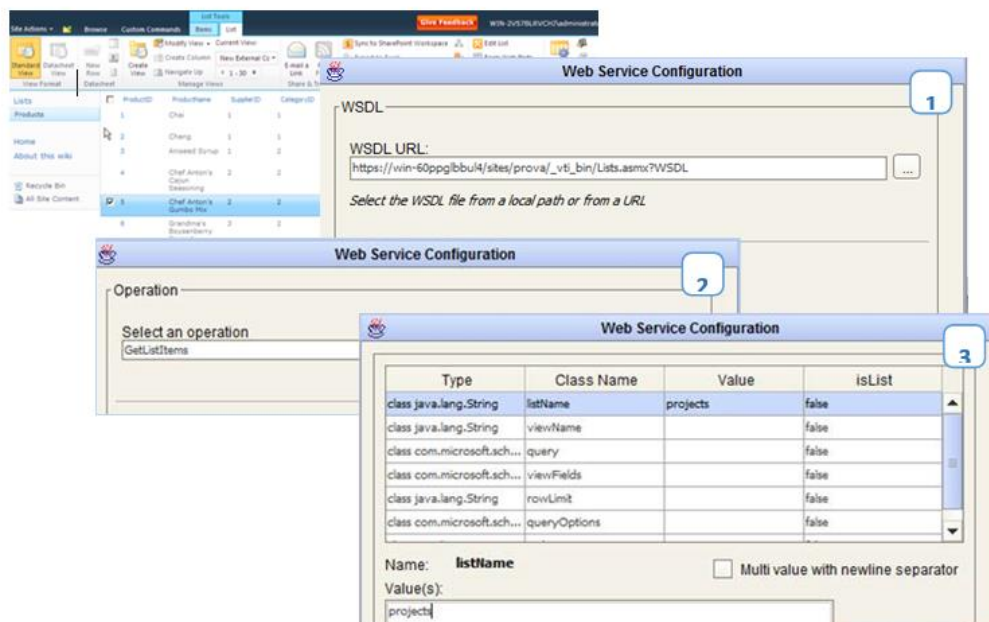
If a parameter is actually a list of values (column "isList" is true), then the user is required to optionally enter different values, separated by a new line (one per row). In this case, DT will call the Web Service only once, passing to it the multi-line string, containing the different values.

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.

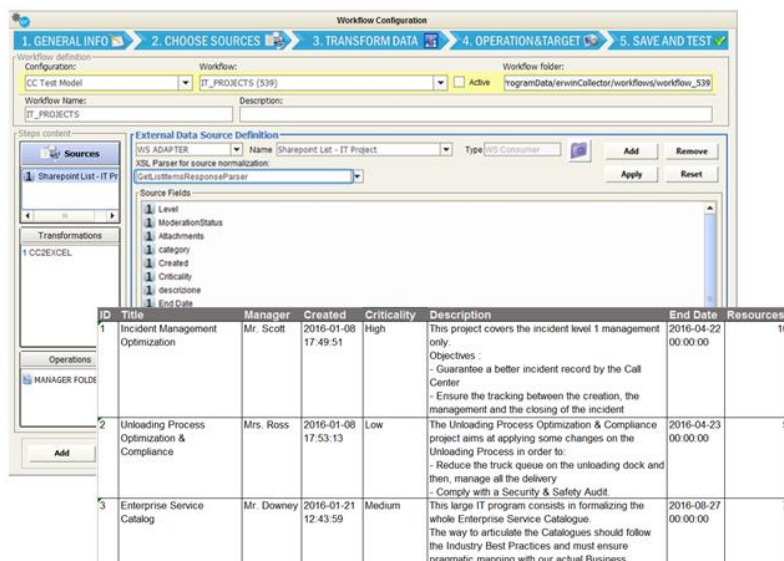
DT will then perform all the implied calls (as many times as the number of desired values in the list) to the Web Service at the scheduled time, by scheduling just one job.

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.



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.



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 **Add** , and select “REST/Others Web Service” in the following popup:



To modify an existing adapter selected from the list, press the **Modify** . 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



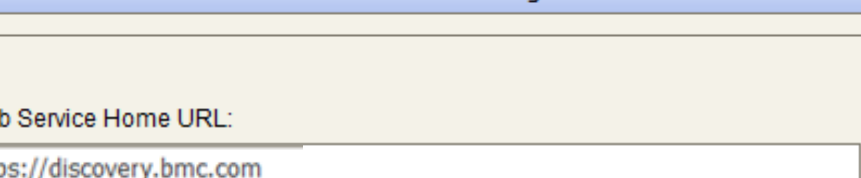
Web Service Configuration

Web Service Home URL:

☒ Account ☐ Access Token

User:

Password:




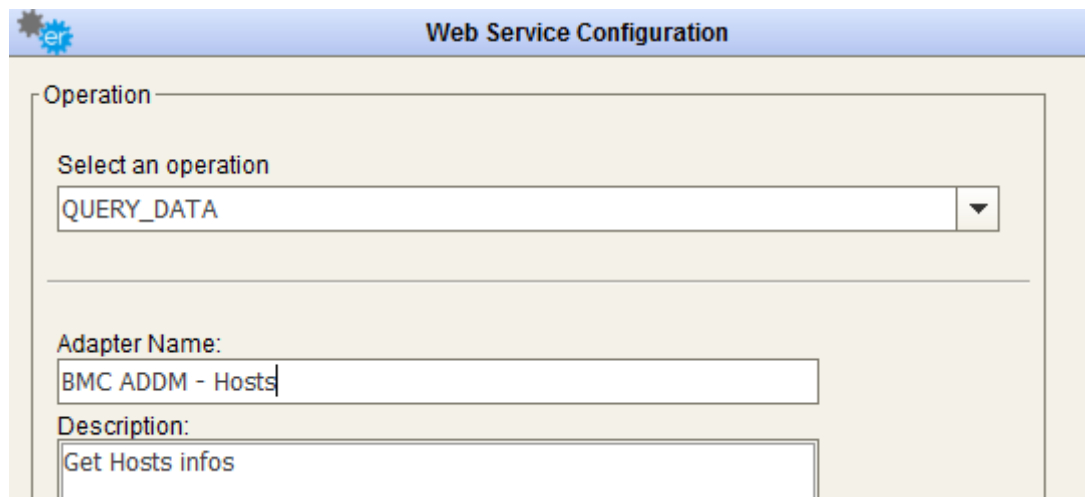
Web Service Configuration

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:

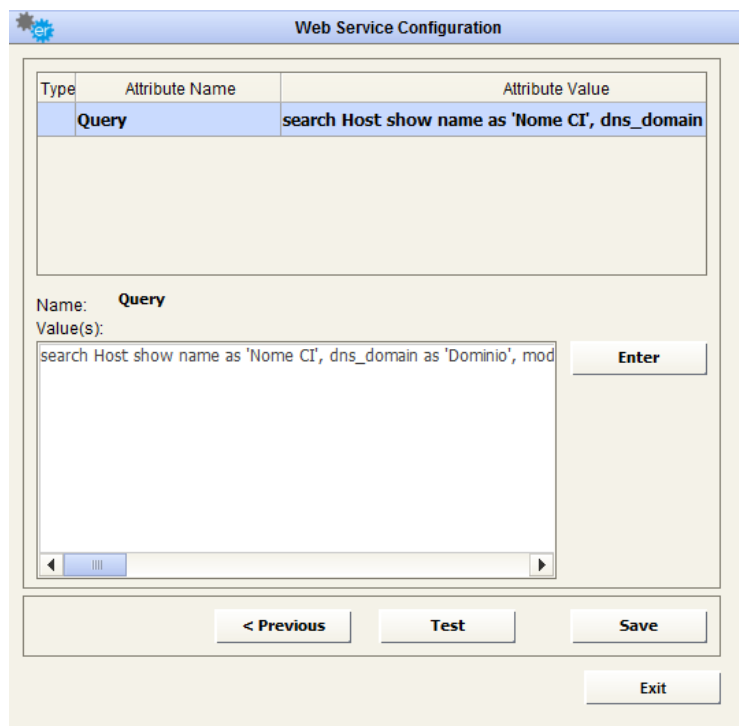
BMC ADDM - Hosts

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

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	Indirizzo 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...mn...
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...
adpdcprd...		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...	
ahfp8prv...		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...	

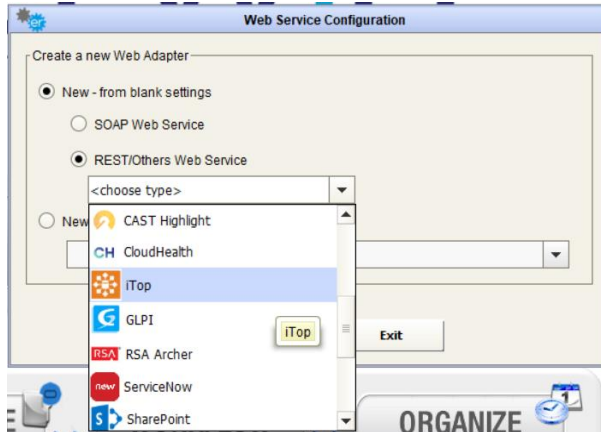
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Pressing the **SAVE** button will store all the entered parameters for the web service adapter in the DT database.

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

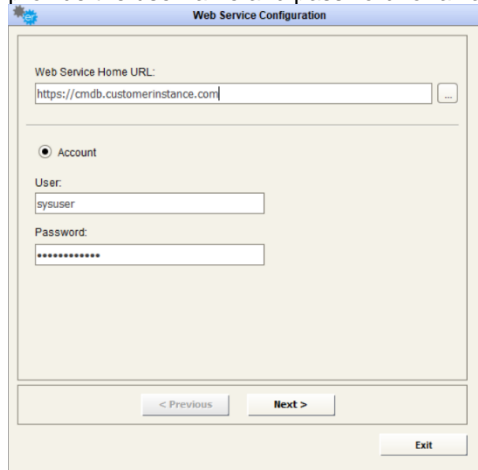
ITOP – READ iTop CI

To use the adapter for **iTOP**, double click on “Web Service Adapters” in Home Page, a UI will be presented for this purpose. To create a new adapter just press the “Add” button, and select “REST/Others Web Service” in the following popup:



This action will open a wizard where user can input:

1. The field “Web Service Home URL” with the iTop instance URL you want to connect to. Then provide the username and password for a valid iTop Account, with grants to all the CI of interest.



2. Pressing the **Next >** button the user steps into the next window that shows the available operation of that Web Service, which is in this case “**GET iTop CI**”, allowing users to query all items of a given class (selected in the next window) into the CMDB.

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).

3. Pressing the button the user steps into the next window, aimed to allow the settings / parameters for the Web Service call execution:

Type	Attribute Name	Attribute Value
Object type		VirtualMachine
Additional filters		

In particular, selecting the **“Object Type”** the user can type and enter the “FinalClass” name of the desired item in the text area, the press the “Enter button” to assign the value to this parameter.

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

Web Service Configuration

Web Service Home URL:

☒ Account

User:

Password:

< Previous Next > Exit

- Pressing the **Next >** button the user steps into the next window that shows the available operation of that Web Service, which is in this case “**POST data to iTop**”, allowing users push data to a given class (selected in the next window) in the CMDB.

Web Service Configuration

Operation:
 Select an operation

Adapter Name:

Description:

Adapter Folder:

< 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).

- Pressing the **Next >** button the user steps into the next window, aimed to allow the settings / parameters for the Web Service call execution:

Web Service Configuration

Type	Attribute Name	Attribute Value
Object type		ApplicationSolution
iTop Key		name

Name: **Object type**

Value(s):

< Previous Test Save Exit

In particular, selecting the “**Object Type**” the user can type and enter the “FinalClass” name of the desired item in the text area, the press the “Enter button” to assign the value to this parameter.

Selecting the “**iTop Key**” parameter the user can type and enter key field to determine where an insert or an update is required: in this case, the “**name**” of the instance is the key, when the iTop or erwin ID are not exchanged between the tools.

iTop Key	name
----------	------


Nom: **iTop Key**

Valeur (...)

name

Entrer

However, *it may be recommended to use a given object type master system ID to manage renaming, if it is possible for its instances.*

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

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.

Web Service Configuration

Web Service Home URL:

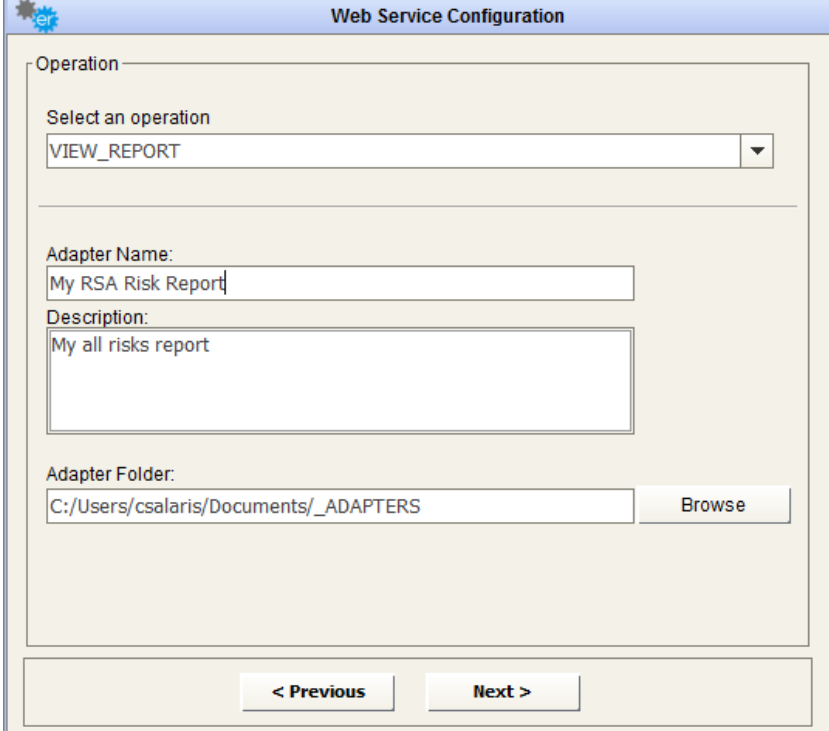
☒ Account

User:

Password:

Instance:

The **Next >** 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' and a 'Browse' button. 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 **Next >** steps into the next window that allows the user to set values for the Web Service parameters.



The image shows a parameter field with a blue background. On the left, there's a magnifying glass icon (lens icon) next to the text 'reportIdOrGuid'.

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:

Type	Attribute Name	Attribute Value
	reportIdOrGuid	

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-afb0f-0711...
Risk With Metrics That Increases...		40152bb6-d070-425f-a121-460...	Self-Assessment	31bc75bf-b2ec-4ea2-afb0f-0711...
Risk With Metrics That Increases...		9ef7e460-501f-46ea-a0e4-d36...	Self-Assessment	31bc75bf-b2ec-4ea2-afb0f-0711...
Risk and Control Matrix	This report displays the Risk and...	2498b022-43b3-4603-abef-bbe...	Control Procedures	b8bcba4-37c5-4e4a-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-afb0f-0711...
Risks Added, Changed Or Remo...		d69e401f-2f3f-4d71-935f-fab39...	Self-Assessment	31bc75bf-b2ec-4ea2-afb0f-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

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  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	Assesse...	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

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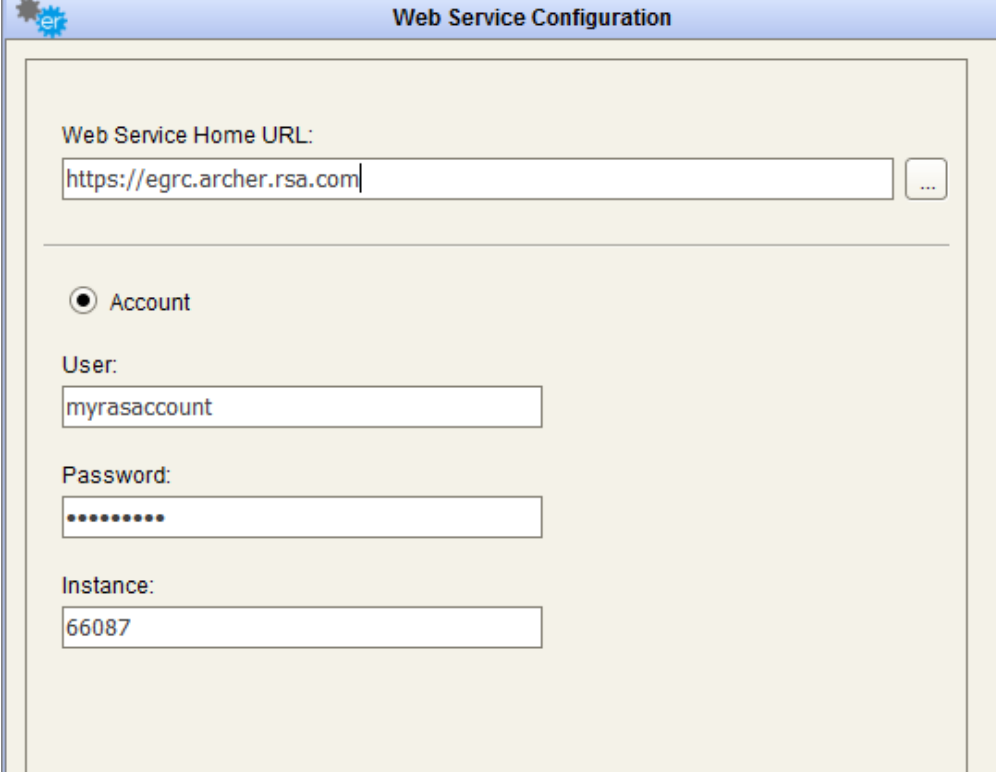
Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

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

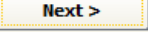
RSA Archer – EXECUTE DATA FEED

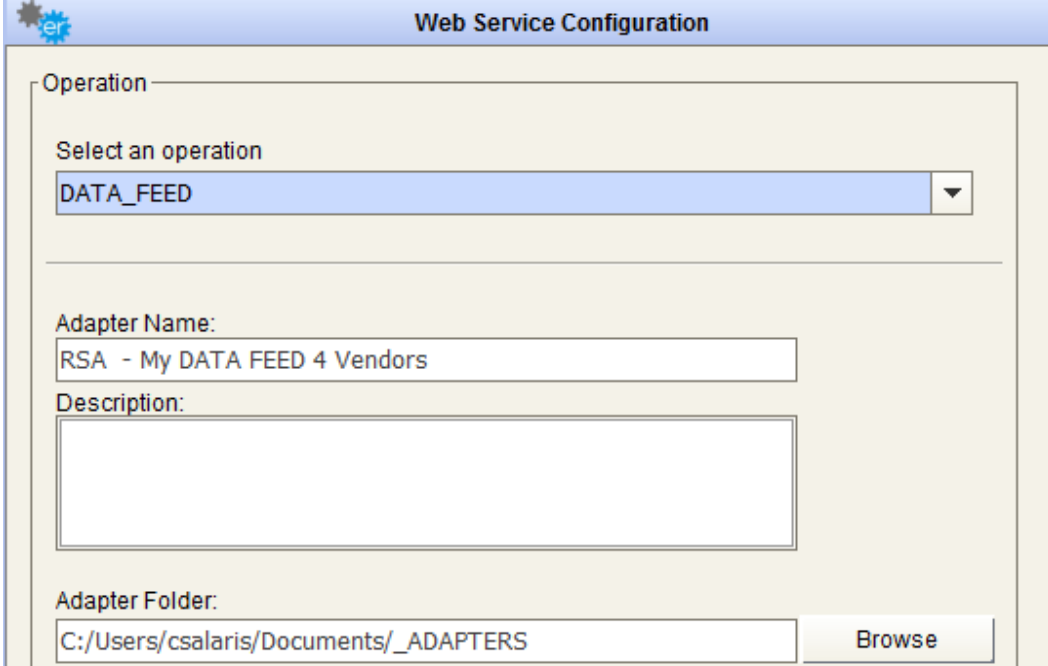
To use the adapter for **RSA Archer**, to **execute a data feed**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

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



The 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 "Web Service Home URL:" with a text input field containing "https://egrc.archer.rsa.com" and a browse button "...". Below this is a section for "Account" with a radio button and the label "Account". Under "Account", there are three text input fields: "User:" with "myrasaccount", "Password:" with masked characters "*****", 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

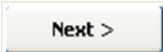
Description:

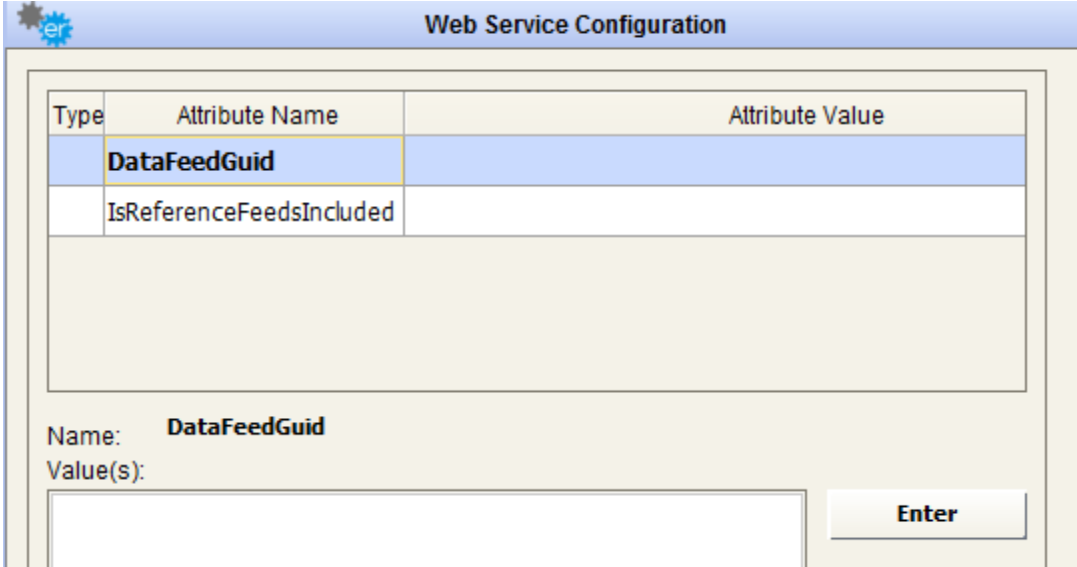
Adapter Folder:

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”.

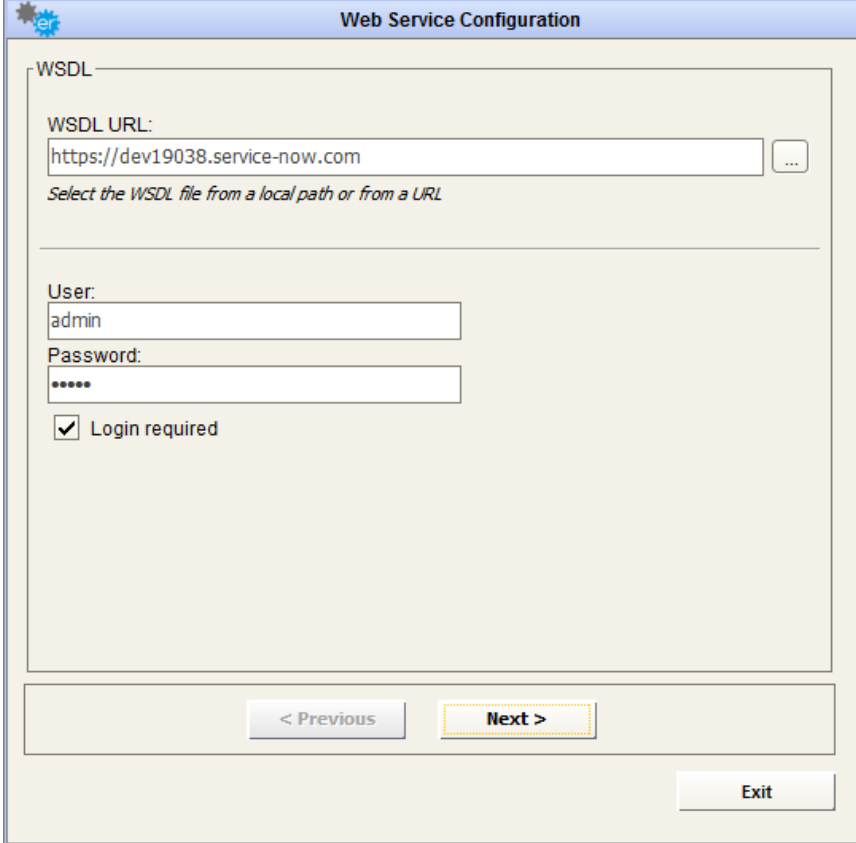
Pressing the  button will store all the entered parameters for the web service adapter in the DT database.

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

ServiceNow – READ TABLES

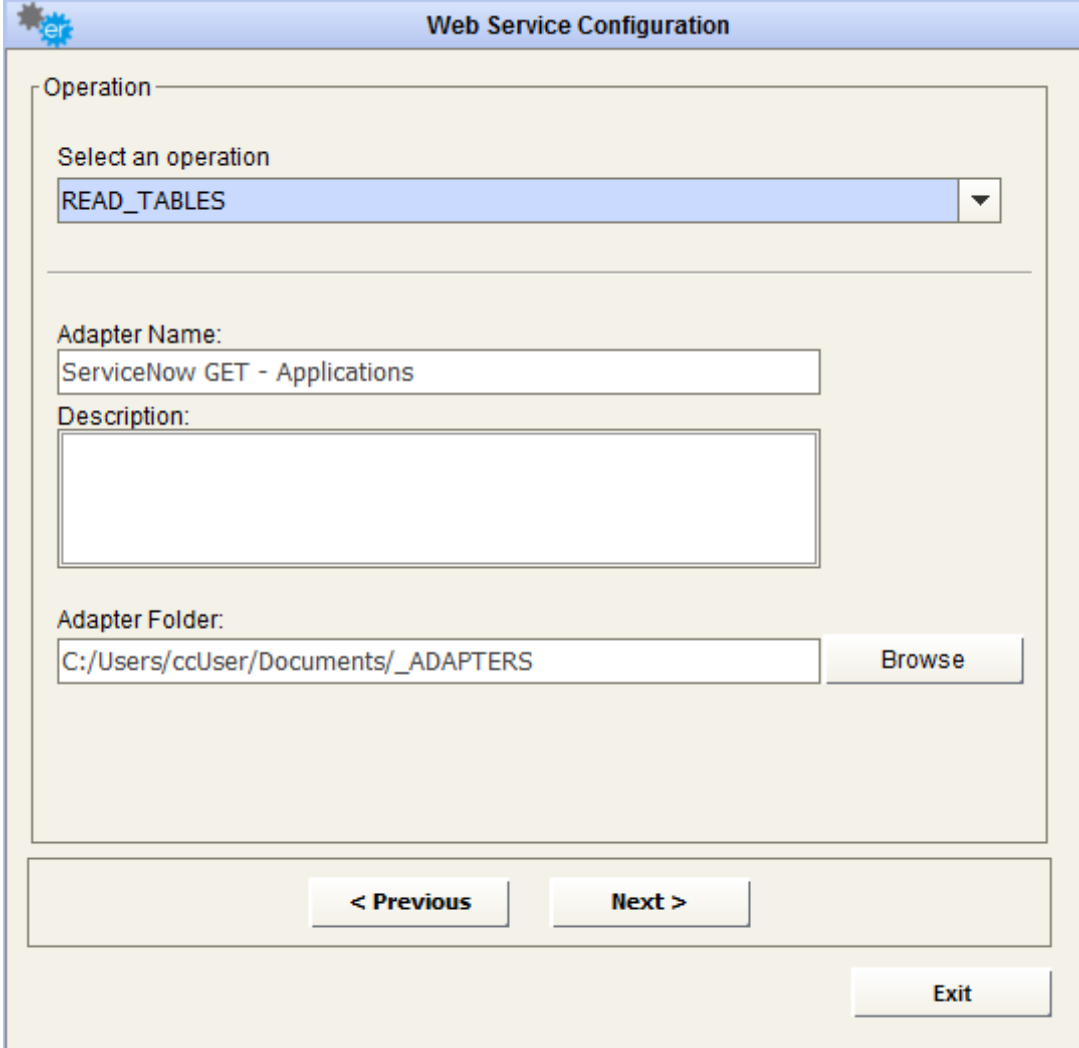
To use the adapter for **ServiceNow, to read table contents**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

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



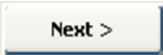
The image shows a "Web Service Configuration" dialog box. It has a title bar with a gear icon and the text "Web Service Configuration". The main area is titled "WSDL" and contains a "WSDL URL:" label followed by a text box containing "https://dev19038.service-now.com" and a browse button "...". Below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

The **Next >** 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'. To the right of the 'Adapter Folder' field is a 'Browse' button. 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 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).

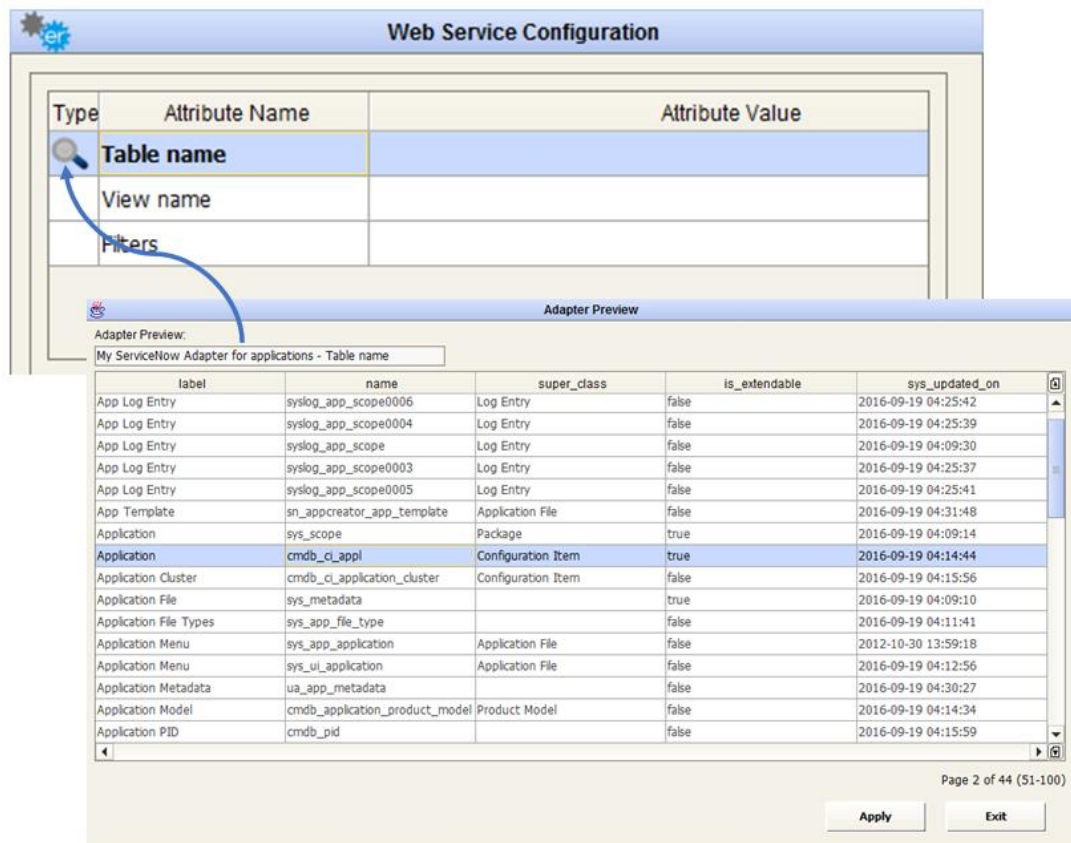
The next button  steps into the next window that allows the user to set values for the Web Service parameters.

When a lens icon shows beside the parameter name:

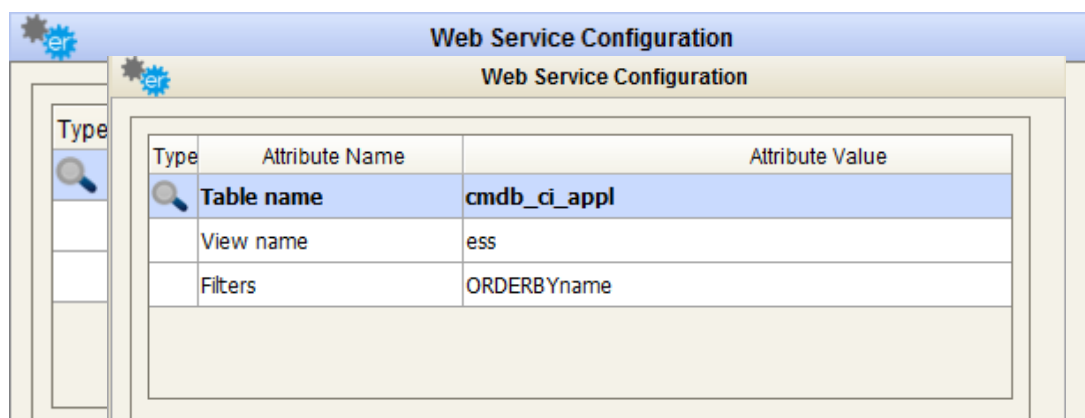
	Table name	cmdb_ci_appl
---	-------------------	--------------

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:



Select and apply the selection, and the desired table name (as expected by ServiceNow export service) fills the "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, 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	

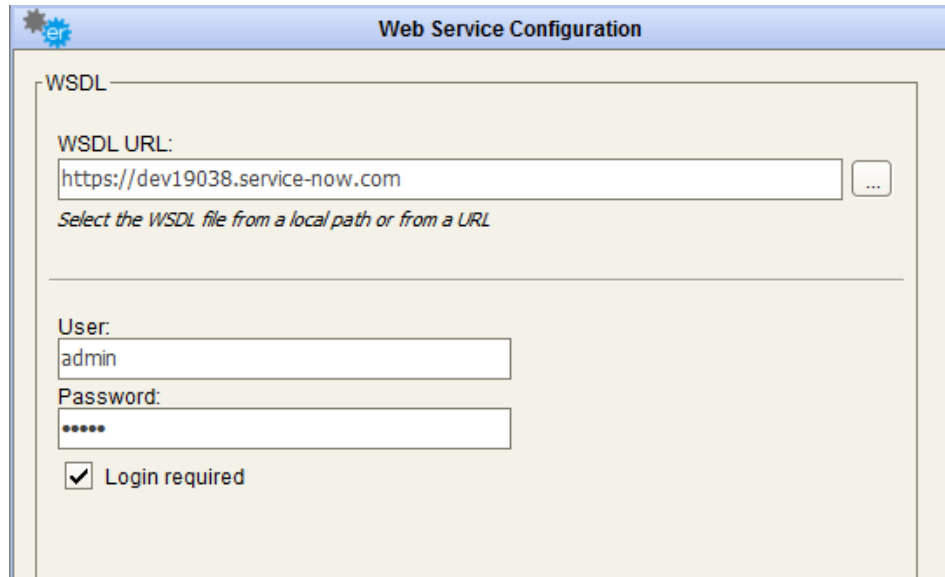
Page 1 of 1 (1-17)

Exit


ServiceNow – PUSH DATA

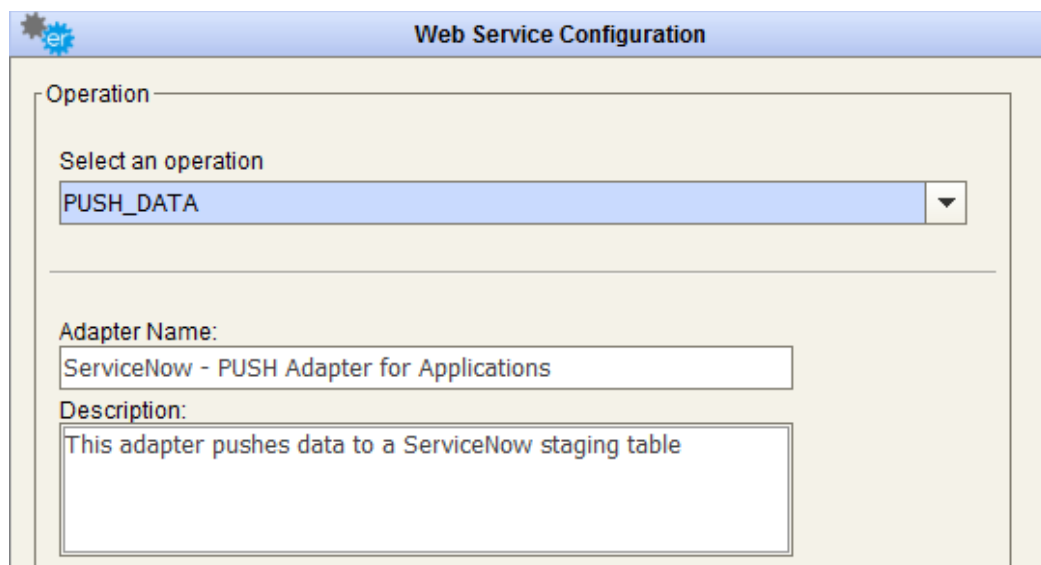
To use the adapter for **ServiceNow**, to **push data to the system**, fill the field “Web Service Home URL” with the ServiceNow instance URL you want to connect to.

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



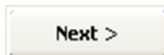
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area is divided into sections. The first section is labeled 'WSDL' and contains a 'WSDL URL:' label followed by a text input field containing 'https://dev19038.service-now.com' and a browse button (...). Below this is a hint: 'Select the WSDL file from a local path or from a URL'. The second section contains a 'User:' label followed by a text input field containing 'admin'. Below that is a 'Password:' label followed by a password input field with six dots. At the bottom of this section is a checked checkbox labeled '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 image shows the same 'Web Service Configuration' dialog box, but now the 'Operation' section is visible. It contains a 'Select an operation' label followed by a dropdown menu with 'PUSH_DATA' selected. Below this is an 'Adapter Name:' label followed by a text input field containing 'ServiceNow - PUSH Adapter for Applications'. At the bottom is a 'Description:' label followed by a text input field containing '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).



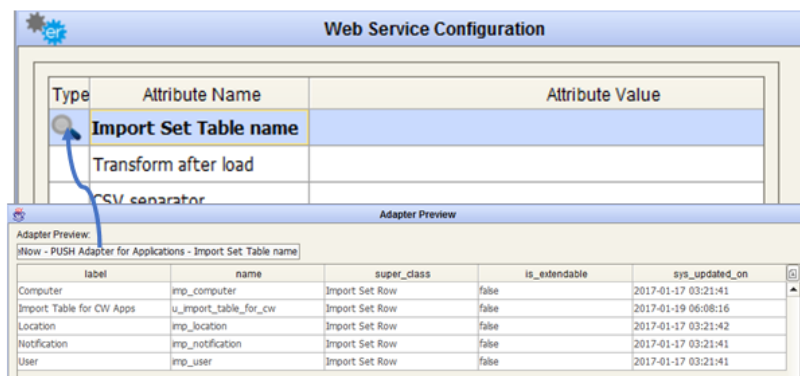
The **Next >** button steps into the next window that allows the user to set values for the Web Service parameters.

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

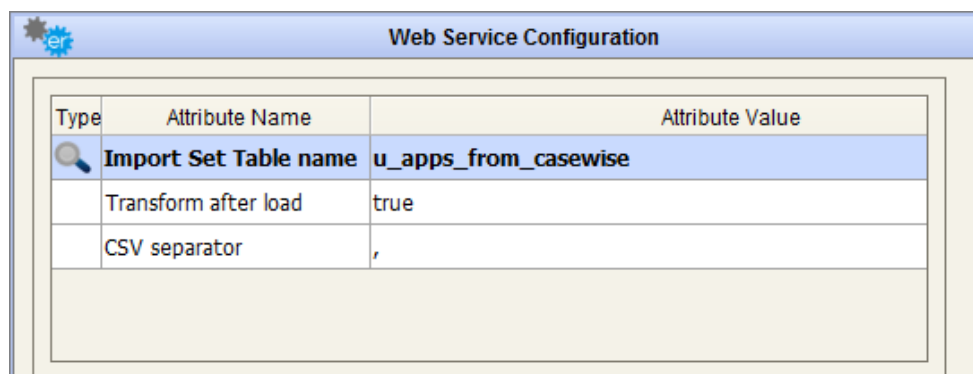


this means that user may set the parameter value from a list of available items.


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:

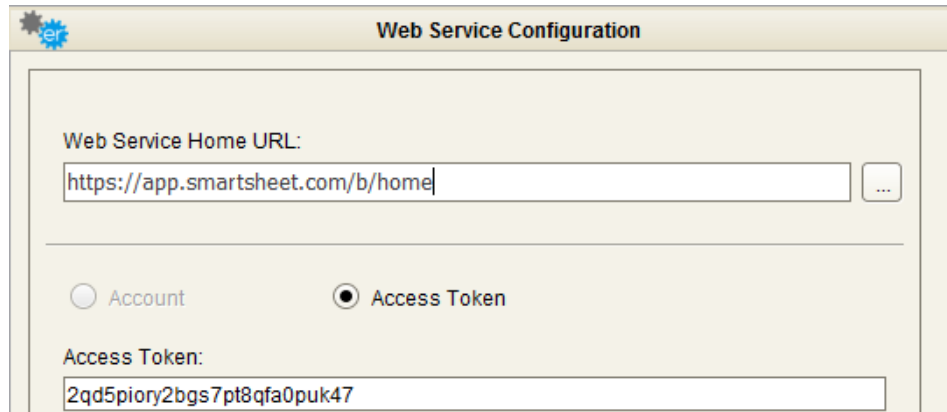
http://wiki.servicenow.com/index.php?title=Importing_Data_Using_Import_Sets#Posting_CSV_or_Excel_Files_Directly_to_an_Import_Set&gsc.tab=0

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.

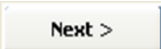
SmartSheet

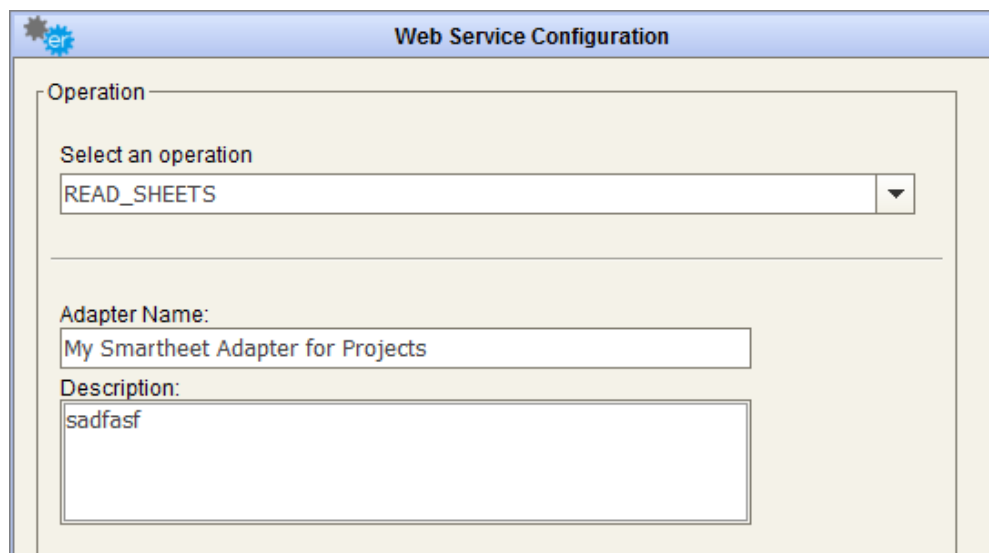
To use the adapter for **SmartSheet**, fill the field “Web Service Home URL” with the SmartSheet home page URL you want to connect to.



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, there are two radio buttons: 'Account' (unselected) and 'Access Token' (selected). Under the 'Access Token' radio button, there is a text input field for the 'Access Token:' 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.




The image shows the next '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 'Operation'. Below the title, there is a dropdown menu labeled 'Select an operation' with 'READ_SHEETS' selected. Below the dropdown, there are two text input fields: 'Adapter Name:' with the value 'My Smartheet Adapter for Projects' and 'Description:' with the value '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 w:

My Smartsheet Adapter for Projects - Sheet name

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

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.

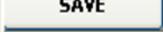
Adapter Preview:

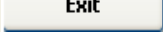
My Smartheet Adapter for Projects

Task Name	Duration	Start	Finish	Predecessors	Assigned To	% Complete	Status	Comments
Test REST API	16d	2016-06-19T08:...	2016-07-08T16:...		c.salaris@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 fattal!!!
Authentication ...	5d	2016-07-04T08:...	2016-07-08T16:...		Fabio	0.1	On Track	

Page 1 of 1 (1-4)

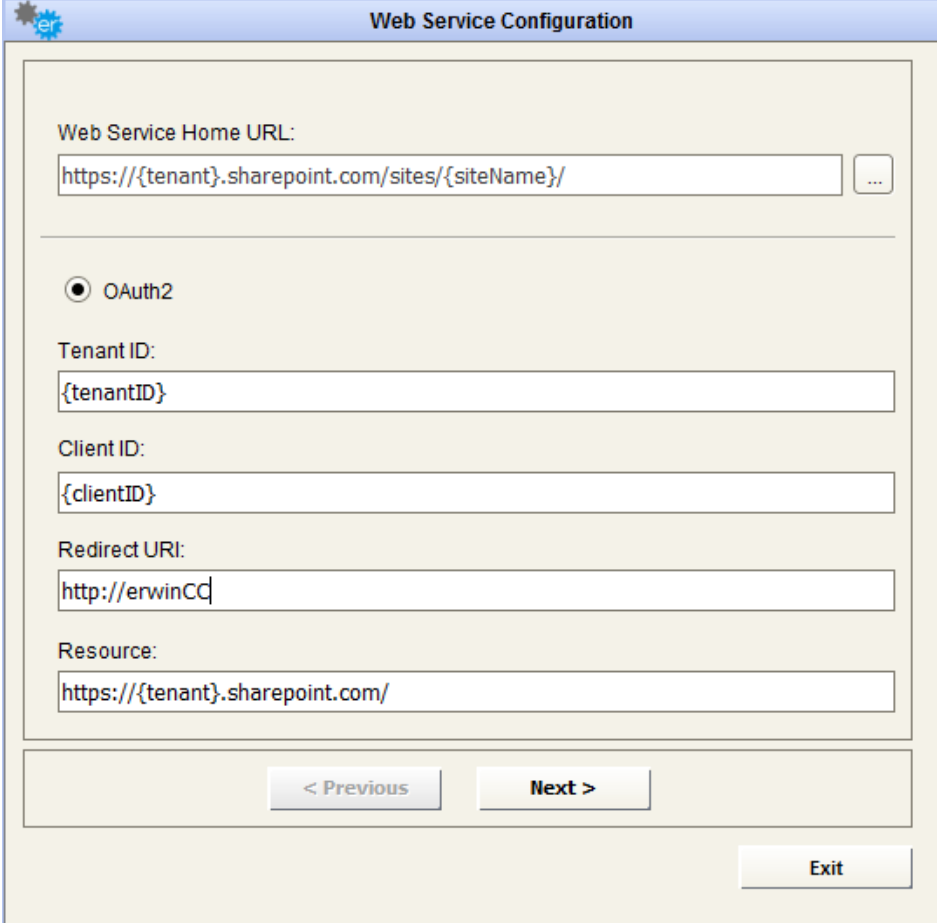
Exit

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.

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. It contains several text input fields and a radio button. The 'Web Service Home URL' field is at the top, followed by a horizontal separator. Below the separator is a radio button labeled 'OAuth2'. This is followed by four more text input fields: 'Tenant ID', 'Client ID', 'Redirect URI', and 'Resource'. At the bottom of the main configuration area are two buttons: '< Previous' and 'Next >'. A separate 'Exit' button is located at the bottom right of the dialog box.

Web Service Configuration

Web Service Home URL:

☒ OAuth2

Tenant ID:

Client ID:

Redirect URI:

Resource:

< Previous Next >

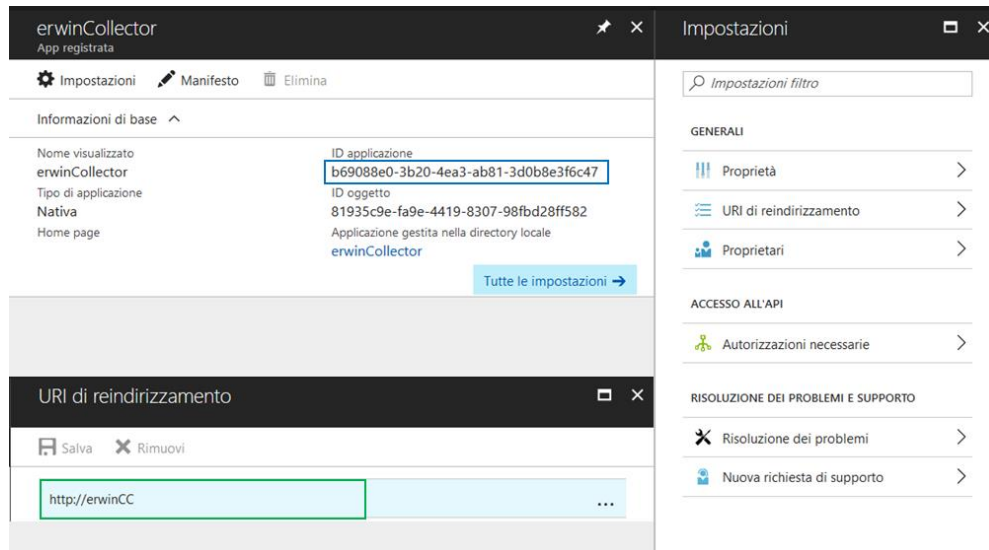
Exit

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:

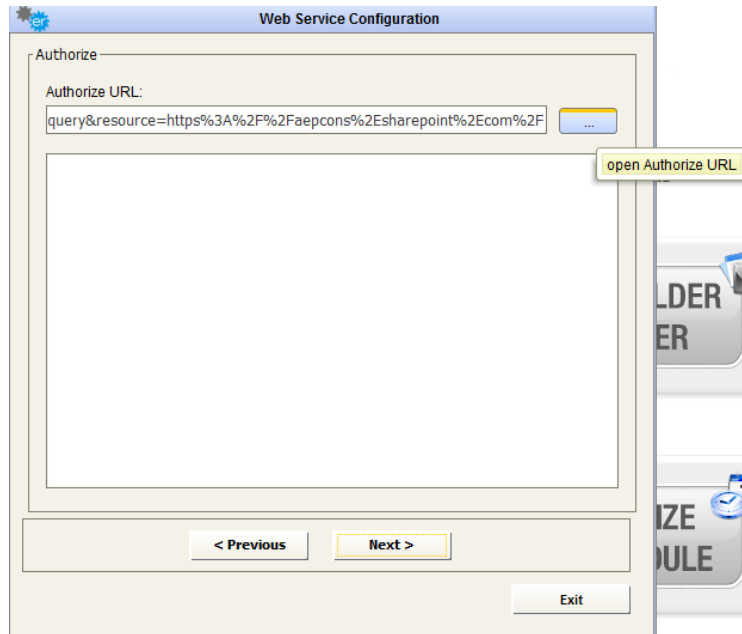
- **Name:** erwinCollector
- **Application Type:** Native
- **Redirect URI:** http://erwinCC



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

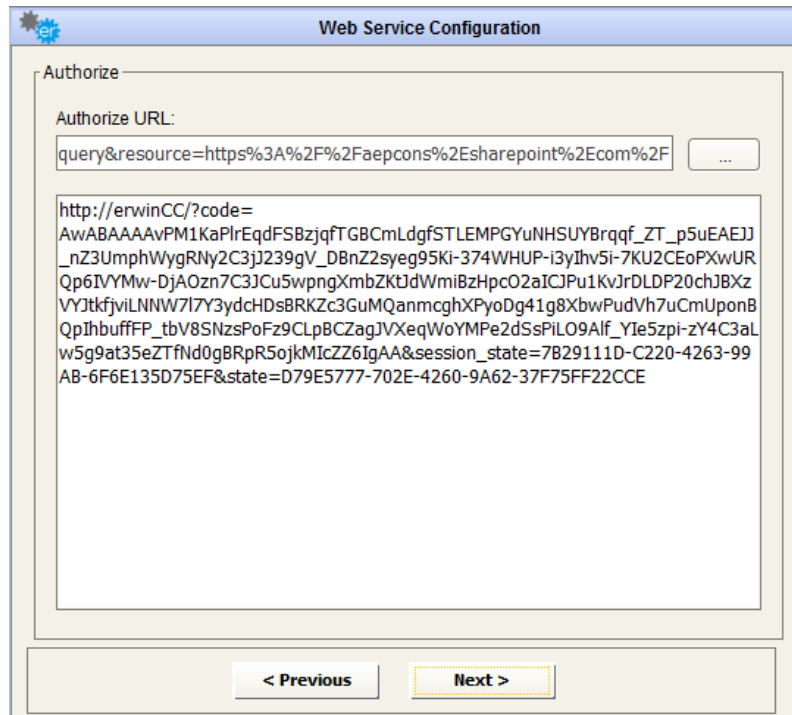
The  button steps into the next window, which requires user to browse to authorization URL and provide grant to the application:



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:



Web Service Configuration

Authorize


Authorize URL:

query&resource=https%3A%2F%2Faepcons%2Esharepoint%2Ecom%2F


...

http://erwinCC/?code=AwABAAAAPM1KaPlrEqdFSBzjqfTGBCmLdgfSTLEMPGYuNHSUYBrqqf_ZT_p5uEAEJJ_nZ3UmpHwygRNY2C3jJ239gV_DBNZ2syeg95Ki-374WHUP-i3yIhv5i-7KU2CEoPXwURQp6IVYMw-DjAOzn7C3JCu5wpngXmbZKtJdWmiBzHpcO2aICJPu1KvJrDLDP20chJBXzVYJtkfjviLNNW7l7Y3ydcHdsBRKZc3GuMQanmcghXPYoDg41g8XbwPudVh7uCmUponBQpIhbuffFP_tbV8SNzsPoFz9CLpBCZagJVXeqVVoYMPe2dSsPiLO9Alf_YIe5zpi-zY4C3aLw5g9at35eZTfNd0gBRpR5ojkMicZZ6IgAA&session_state=7B29111D-C220-4263-99AB-6F6E135D75EF&state=D79E5777-702E-4260-9A62-37F75FF22CCE


< Previous Next >

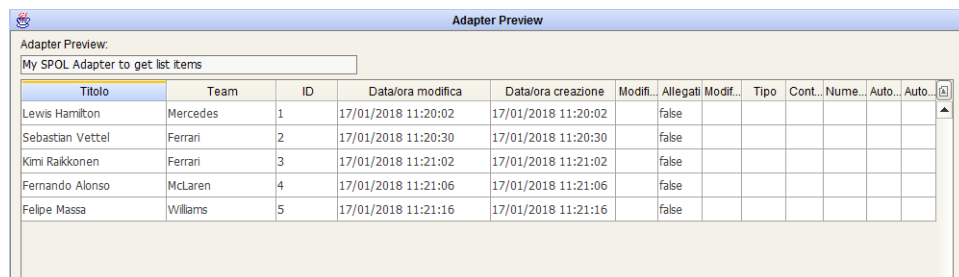
The  button steps into the next window that shows the available operation of that Web Service, which is "READ LISTS".

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

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...	Al
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							

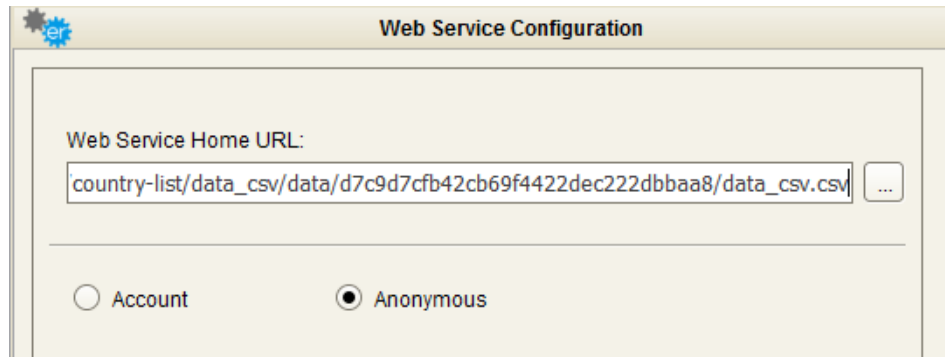
Pressing the  button stores all the entered parameters for the web service adapter in the DT database.

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

Generic data provider - CSV

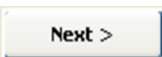
To use the adapter for a **generic http data provider**, fill the field “Web Service Home URL” with the URL to the data provider service, ex:

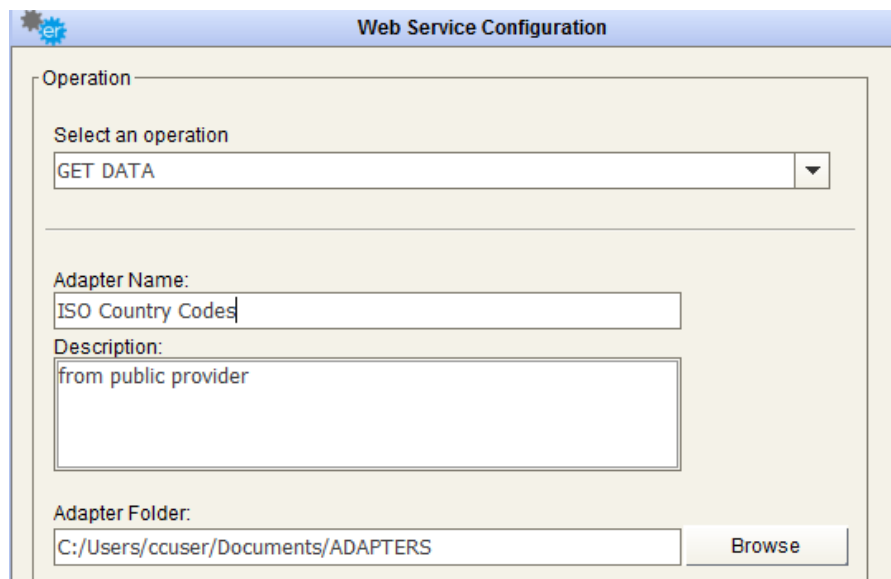
https://pkgstore.datahub.io/core/country-list/data_csv/data/d7c9d7cfb42cb69f4422dec222dbbaa8/data_csv.csv



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 label 'Web Service Home URL:' followed by a text input field containing the URL 'country-list/data_csv/data/d7c9d7cfb42cb69f4422dec222dbbaa8/data_csv.csv'. To the right of the input field is a small button with three dots. Below the input field, there are two radio buttons: 'Account' (unselected) and 'Anonymous' (selected).


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.

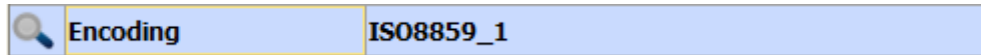


The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is a section titled 'Operation' with a label 'Select an operation' and a dropdown menu showing 'GET DATA'. Below this, there are two text input fields: 'Adapter Name:' with the text 'ISO Country Codes' and 'Description:' with the text 'from public provider'. At the bottom, there is a label 'Adapter Folder:' followed by a text input field containing 'C:/Users/ccuser/Documents/ADAPTERS' and a 'Browse' 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:




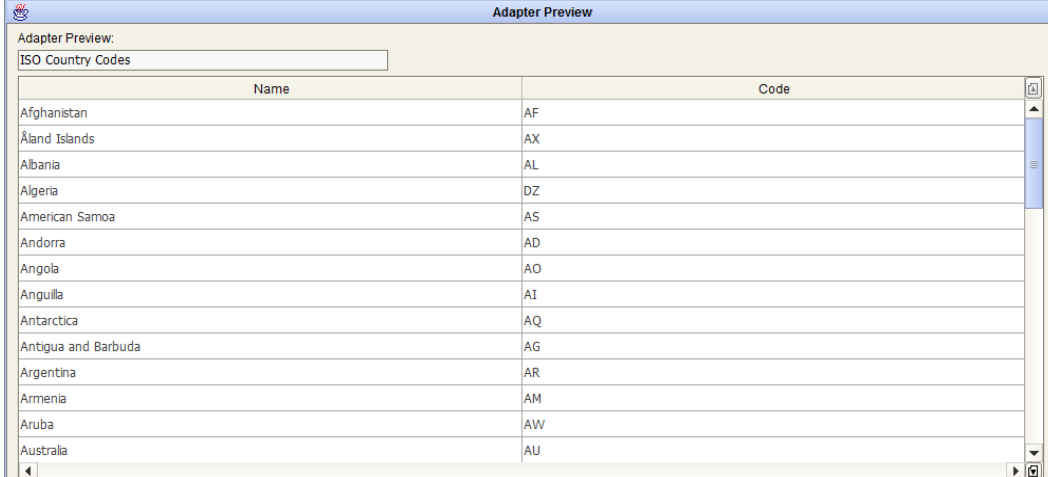
this means that user may choose the parameter value from a list of available items. In case of this example, with the double-click on the lens icon, a table appears, with the available encoding:

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




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  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.

Veracode – READ APPLICATION LIST

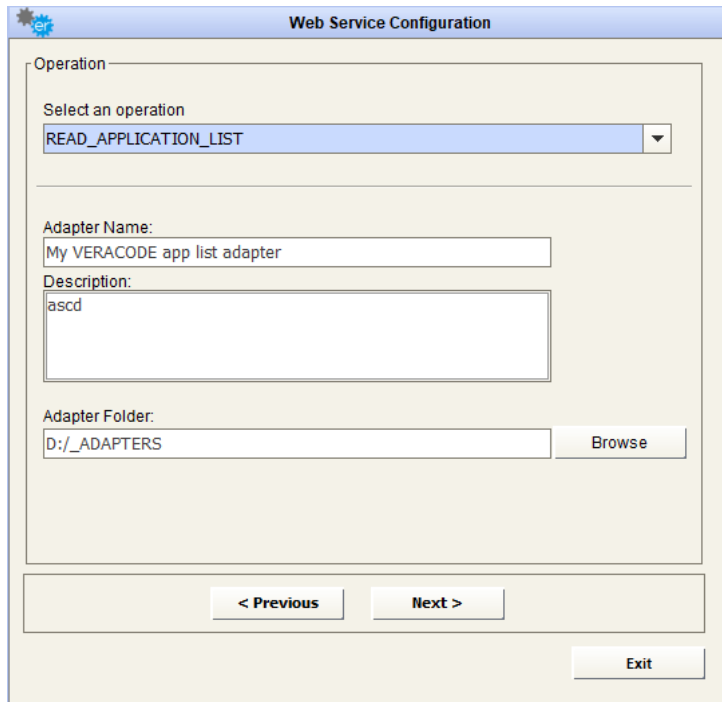
To use the adapter for Veracode, **to read application list**, fill the field “Web Service Home URL” with the Veracode URL you want to connect to. Then, provide a valid username/password to connect, or the API credentials (ID/KEY), that can be generated by a valid account.

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

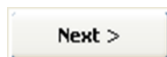
The image displays two screenshots from a software interface. The top screenshot shows the 'API Credentials' page, which includes a 'Generate API Credentials' button and a 'Secret Key' field. The bottom screenshot shows the 'Web Service Configuration' window, which has two tabs: 'Account' and 'API ID KEY'. The 'Account' tab is selected, showing fields for 'Web Service Home URL' (https://analysiscenter.veracode.com), 'User' (jblack@erwin.com), and 'Password'. The 'API ID KEY' tab is also visible, showing fields for 'Web Service Home URL' (https://analysiscenter.veracode.com), 'API ID' (61eb665c5247238e57b61d3c37d571e), and 'API KEY' (e4d2960417a7d5be19946a429712ad59b521b4dc85e91592b9780681102b04109a0d). A 'Next >' button is highlighted in the bottom right corner of the 'Web Service Configuration' window.

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.

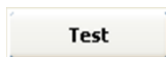


The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu showing 'READ_APPLICATION_LIST'. Below this, there are three input fields: 'Adapter Name:' with the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

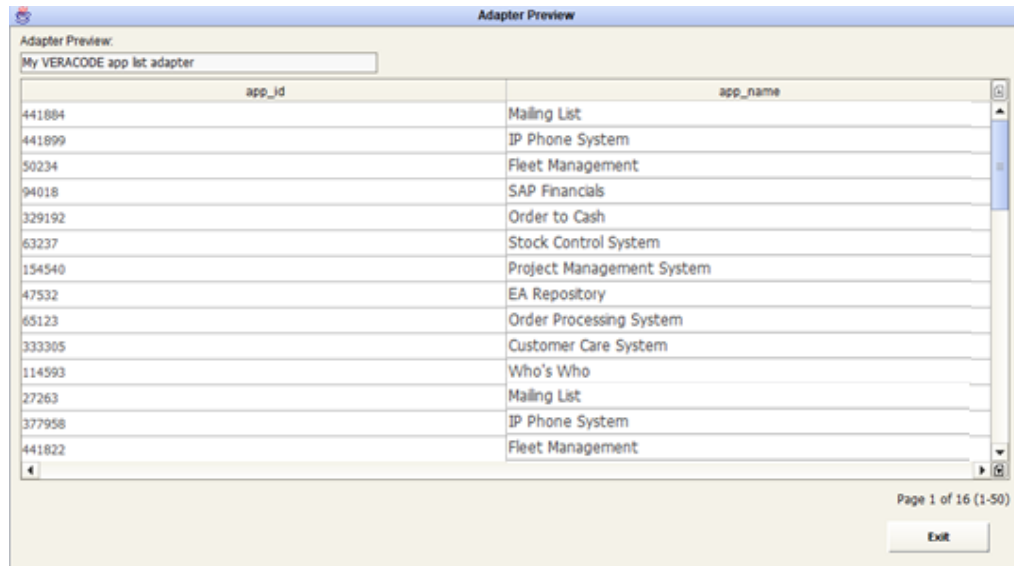
After selecting the desired operation, it is required to enter a name and a description for the adapter into the appropriate fields; the user must browse the file system for the adapter folder (used to save intermediate and result file for adapter execution).

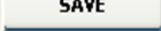



The next button steps into the next window that allows the user to set values for the Web Service parameters, not required for this operation.



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 image displays two side-by-side screenshots of the 'Web Service Configuration' dialog box. Both windows have a title bar with a gear icon and the text 'Web Service Configuration'. The left window shows the 'Account' tab selected, with radio buttons for 'Account' and 'API ID KEY'. It contains a 'Web Service Home URL' field with the value 'https://analysiscenter.veracode.com', a 'User' field with 'jblack@erwin.com', and a 'Password' field with masked characters. The right window shows the 'API ID KEY' tab selected, with radio buttons for 'Account' and 'API ID KEY'. It contains a 'Web Service Home URL' field with the same value, an 'API ID' field with '61eb6685c6247238e57b81d3c37dd71e', and an 'API KEY' field with 'e4d2960417a7d5be19946a429712ad59b521b4dc85e91592b9780681102b04109a09'. Both windows have '< Previous', 'Next >', and 'Exit' buttons at the bottom.

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).

Web Service Configuration

Operation

Select an operation
IMPORT_APPLICATION_DATA

Adapter Name:
My VERACODE push app id list

Description:
as

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


Web Service Configuration

Type	Attribute Name	Attribute Value

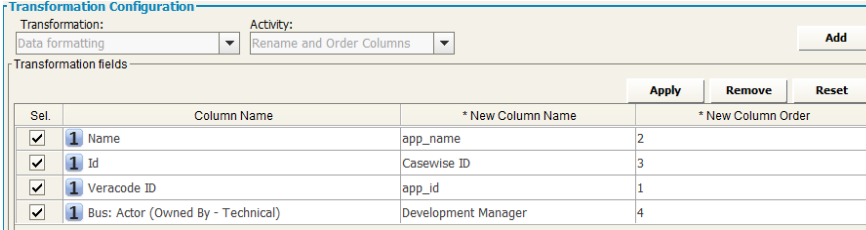
Name:
Value(s): Enter

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

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.

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 “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

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

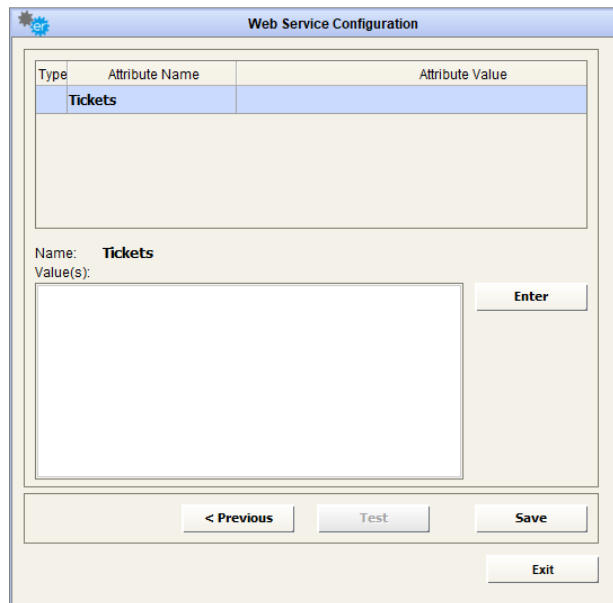
Description:
This description is optional.

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.

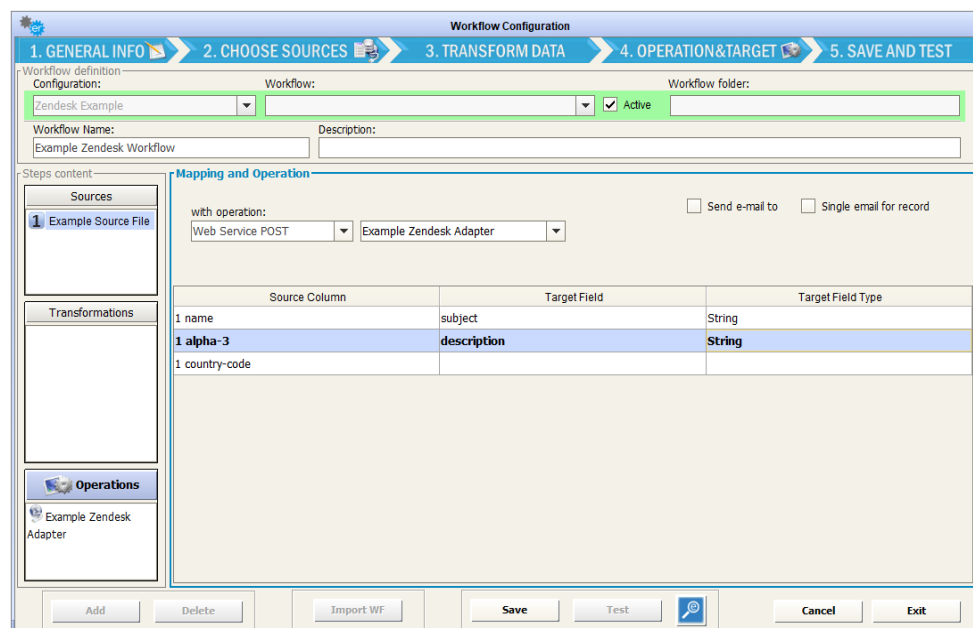


The 'Web Service Configuration' dialog box contains a table with the following structure:

Type	Attribute Name	Attribute Value
Tickets		

Below the table, the 'Name' is set to 'Tickets' and the 'Value(s)' field is empty. An 'Enter' button is located to the right of the 'Value(s)' field. At the bottom of the dialog, there are four buttons: '< 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 shows the '4. OPERATION & TARGET' step. The 'Configuration' section includes 'Zendesk Example' for the workflow, 'Active' status, and 'Example Zendesk Workflow' for the name and description. The 'Steps content' pane on the left shows 'Example Source File' under Sources, 'Example Zendesk Adapter' under Operations, and an empty 'Transformations' section. The 'Mapping and Operation' section shows the operation set to 'Web Service POST' with the 'Example Zendesk Adapter'. A mapping table is displayed below:

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

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:
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 “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
Create Tickets

Adapter Name:
Example Zendesk Adapter

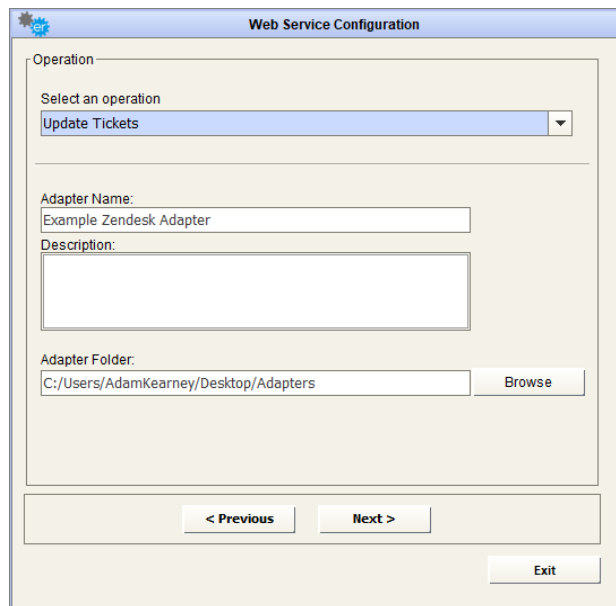
Description:
This description is optional.

Adapter Folder:
C:\Test Data Browse

< Previous Next >

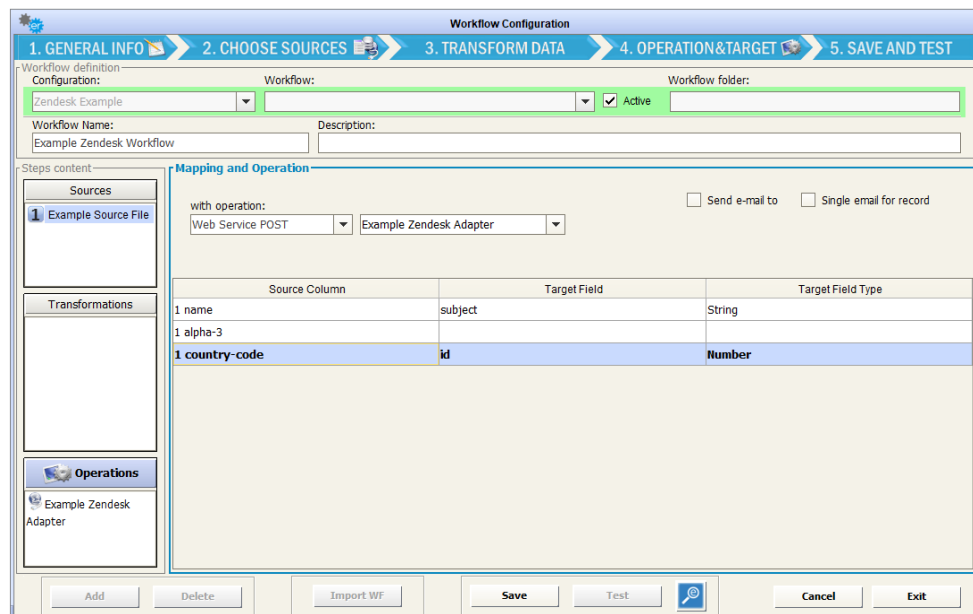
Exit

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'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' (an empty text area), and 'Adapter Folder' (containing 'C:/Users/AdamKearney/Desktop/Adapters' with a 'Browse' button next to it). At the bottom, there are three buttons: '< 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 the '4. OPERATION & TARGET' tab selected. The 'Workflow definition' section at the top shows 'Configuration' set to 'Zendesk Example', 'Workflow' set to 'Example Zendesk Workflow', and 'Workflow folder' set to 'Example Zendesk Workflow'. The 'Steps content' section on the left has three tabs: 'Sources', 'Transformations', and 'Operations'. The 'Operations' tab is active, showing 'Example Zendesk Adapter'. The main area is titled 'Mapping and Operation' and contains a 'with operation:' dropdown set to 'Web Service POST' and another dropdown set to 'Example Zendesk Adapter'. There are checkboxes for 'Send e-mail to' and 'Single email for record'. Below this is a table for mapping source columns to target fields.

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

At the bottom of the dialog 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

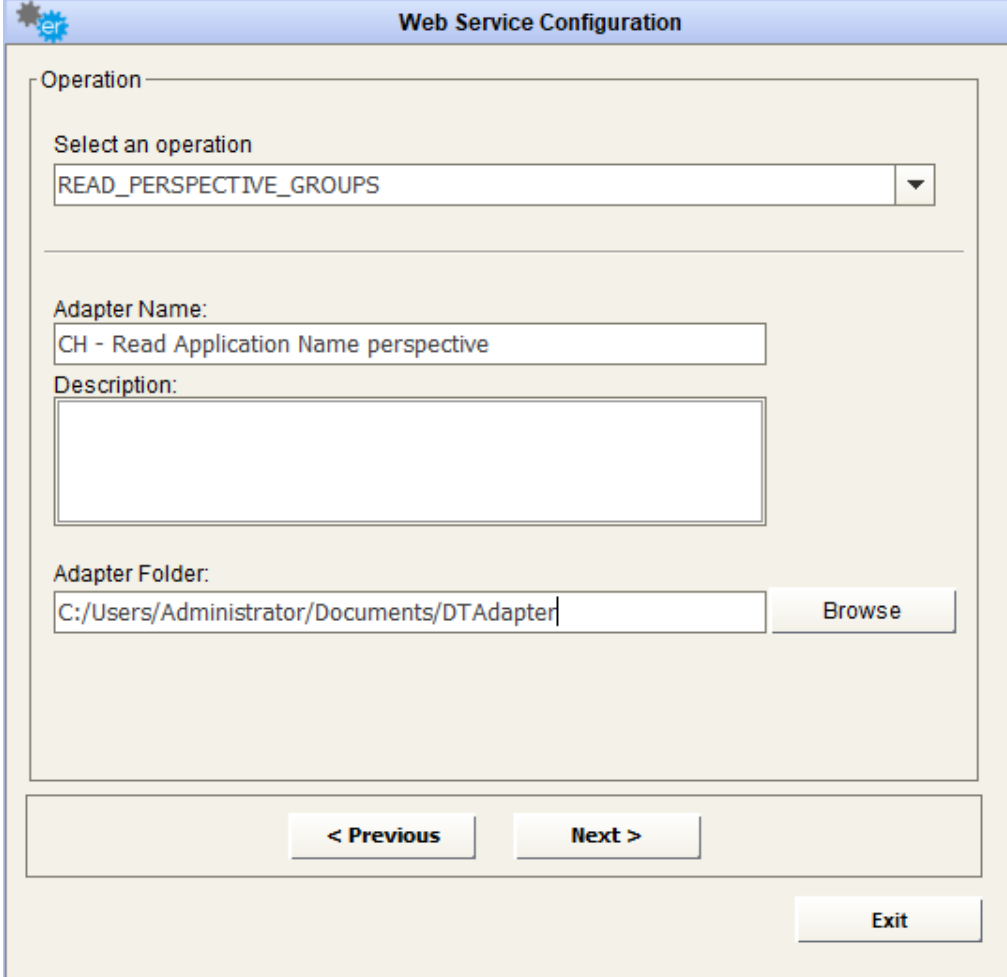
 **Web Service Configuration**

Web Service Home URL:

☒ API Key

API Key:

The 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.



Web Service Configuration

Operation

Select an operation

READ_PERSPECTIVE_GROUPS

Adapter Name:

CH - Read Application Name perspective

Description:

Adapter Folder:

C:/Users/Administrator/Documents/DTAdapter


Browse

< Previous

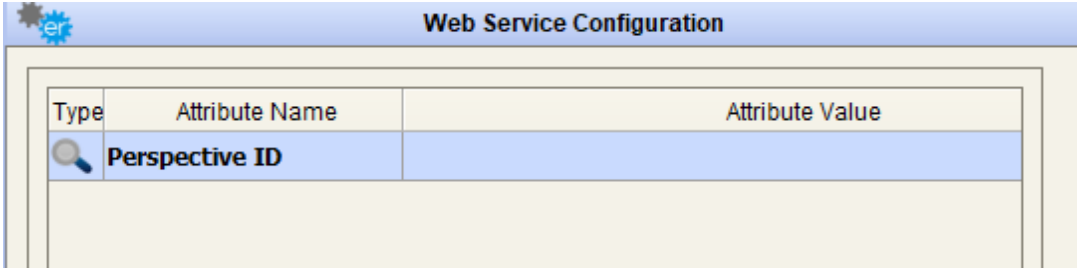
Next >


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:

 **Field Values Preview**


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:

 **Web Service Configuration**

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.

Adapter Preview		
Adapter Preview:		
CH - Read Application Name perspective		
Perspective Group Name	Perspective Group Id	
EDC: Application	3710851793496	
STAR	3710851793497	
Flowchart.com	3710851793498	
Flow: SWL Interface	3710851793499	
Servicing/ASDA	3710851793500	
Teletrack (Star)	3710851793501	
Star Black (Legacy TT: Online)	3710851793502	
Star	3710851793503	
Star Chevrolet (Legacy TT: SWL)	3710851793504	
Enterprise CRM	3710851793505	
Map	3710851793506	
Star TT: Online	3710851793507	
STAR: Skipack	3710851793508	
STAR: Approval Portal	3710851793509	

Page 1 of 23 (1-50)

Exit

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

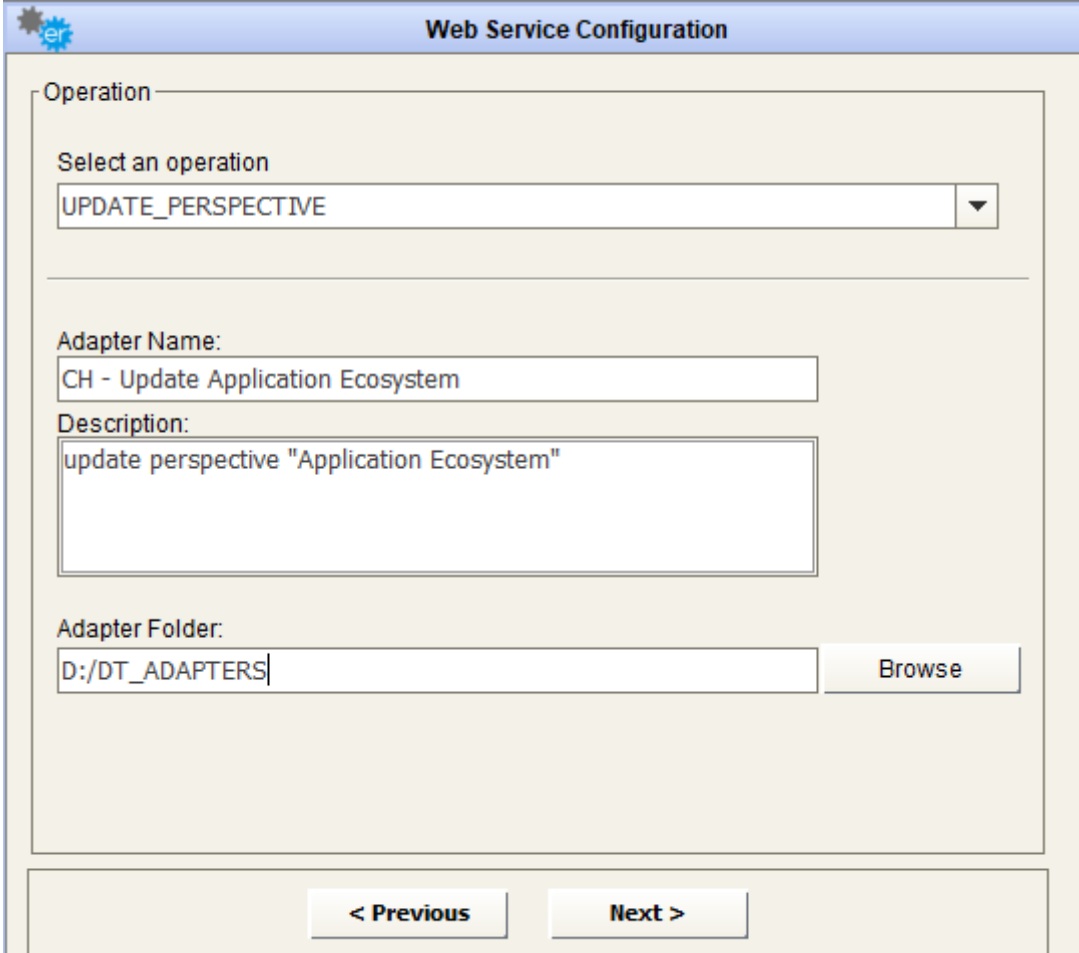
Web Service Configuration

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:

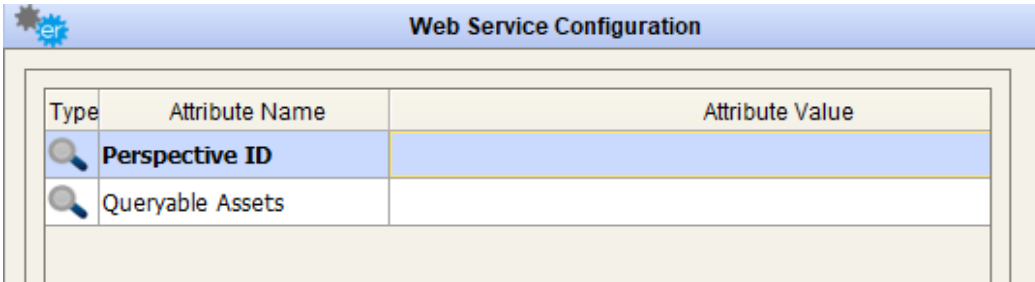
D:/DT_ADAPTERS

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.

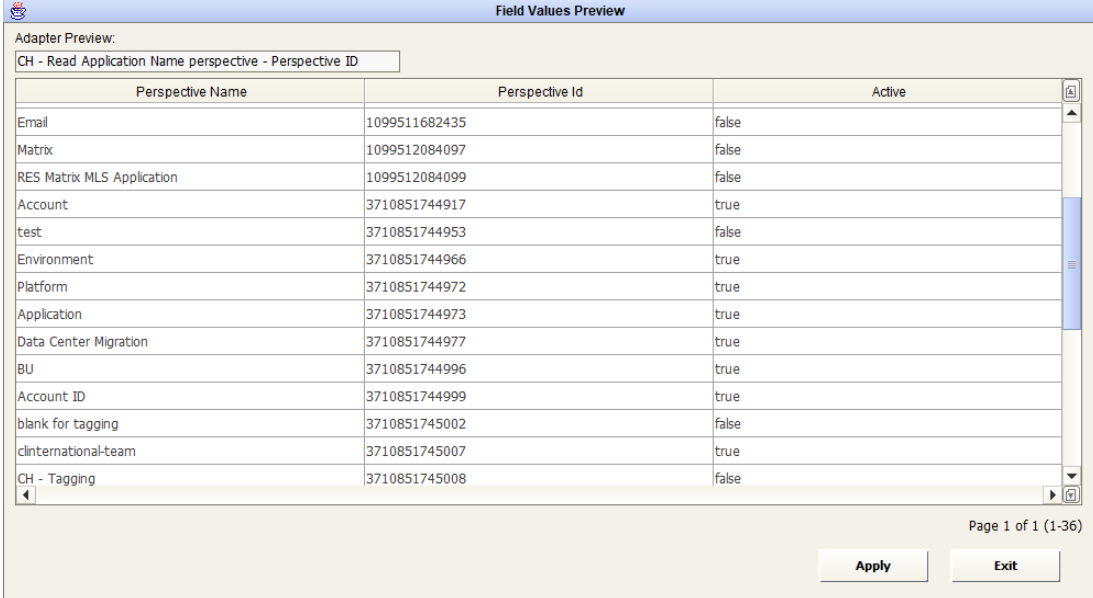


Web Service Configuration

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.

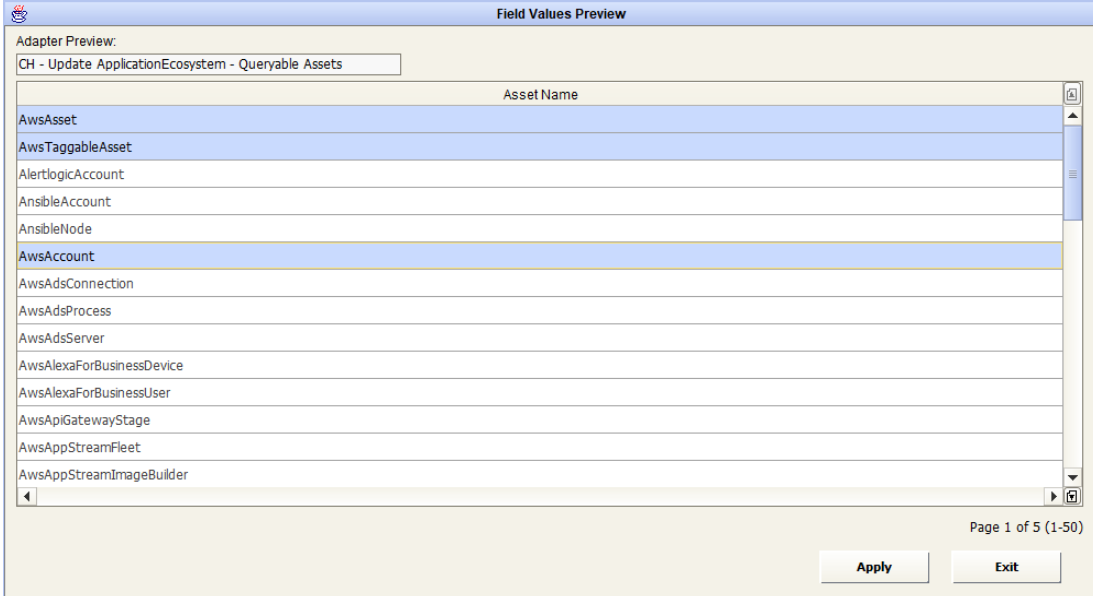
In case of this example, with the double-click on the lens icon, a table appears, with the available perspectives:



The dialog box titled "Field Values Preview" shows the "Adapter Preview" section with the text "CH - Read Application Name perspective - Perspective ID". Below this is a table with three columns: "Perspective Name", "Perspective Id", and "Active". The table lists various perspectives such as Email, Matrix, RES Matrix MLS Application, Account, test, Environment, Platform, Application, Data Center Migration, BU, Account ID, blank for tagging, clinternational-team, and CH - Tagging. At the bottom right, it says "Page 1 of 1 (1-36)" and has "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 dialog box titled "Field Values Preview" shows the "Adapter Preview" section with the text "CH - Update ApplicationEcosystem - Queryable Assets". Below this is a list of assets under the heading "Asset Name". The assets include AwsAsset, AwsTaggableAsset, AlertlogicAccount, AnsibleAccount, AnsibleNode, AwsAccount, AwsAdsConnection, AwsAdsProcess, AwsAdsServer, AwsAlexaForBusinessDevice, AwsAlexaForBusinessUser, AwsApiGatewayStage, AwsAppStreamFleet, and AwsAppStreamImageBuilder. At the bottom right, it says "Page 1 of 5 (1-50)" and has "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:

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.

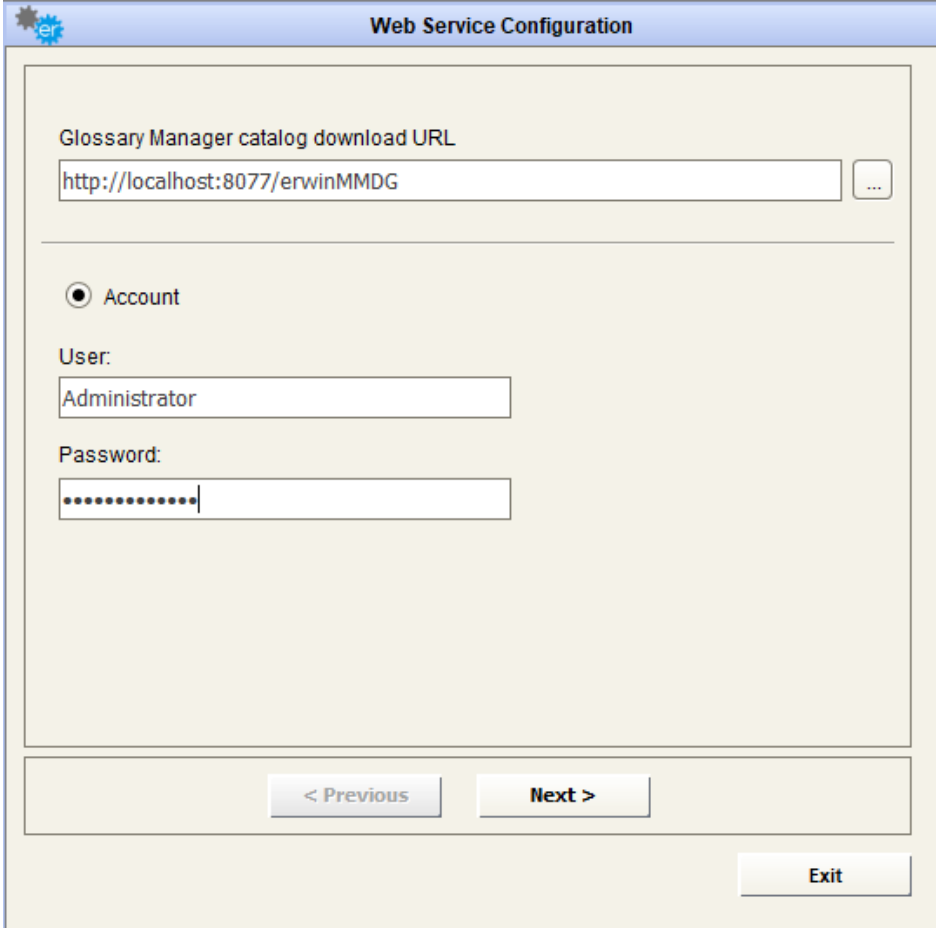
As an example, the perspective listing an Application Ecosystem and their associated applications can be aligned configuring a workflow, with a source providing values for application ecosystems name and associated application ID, and with the target operation “Web Service POST”, using the configured 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:

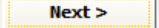
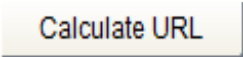
Transformation Configuration			
Transformation:		Activity:	
Data formatting		Rename and Order Columns	
Add			
Transformation fields			
Sel.	Column Name	* New Column Name	* New Column Order
<input checked="" type="checkbox"/>	1 <Application Ecosystem> Name	Name	1
<input checked="" type="checkbox"/>	1 <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

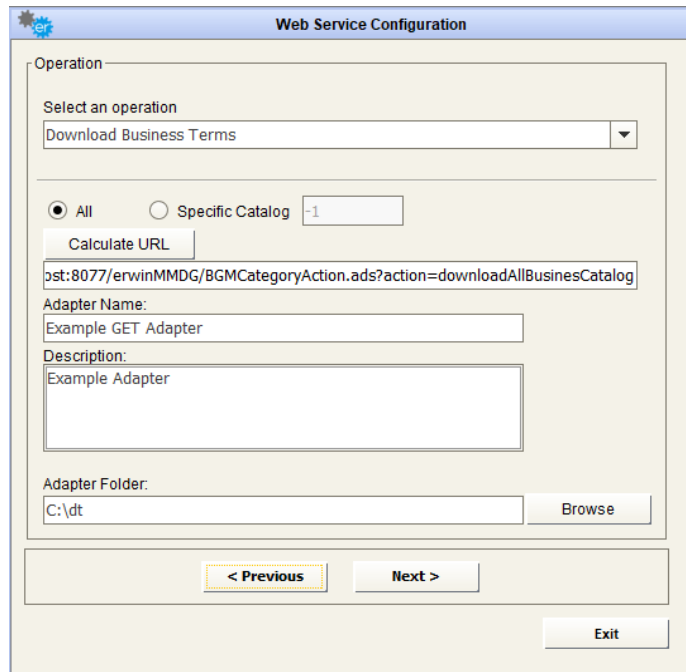
To use the adapter for BGM to get **Business Terms**, select the authorization method (Account / Access Token) and enter the relevant credentials.

The image shows a 'Web Service Configuration' dialog box. At the top, there is a title bar with a gear icon and the text 'Web Service Configuration'. Below the title bar, the main area contains a label 'Glossary Manager catalog download URL' followed by a text input field containing 'http://localhost:8077/erwinMMDG' and a small '...' button to its right. Below this, there is a radio button labeled 'Account' which is selected. Underneath, there are two labels: 'User:' followed by a text input field containing 'Administrator', and 'Password:' followed by a text input field with masked characters (dots). At the bottom of the dialog, there are three buttons: '< Previous' on the left, 'Next >' in the center, and 'Exit' on the right.

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

Click the  button to proceed to the next step.

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



Web Service Configuration

Operation

Select an operation
 Download Business Terms

☒ All ☐ Specific Catalog -1

Calculate URL
 bst:8077/erwinMMDG/BGMCatalogAction.ads?action=downloadAllBusinessCatalog

Adapter Name:
 Example GET Adapter

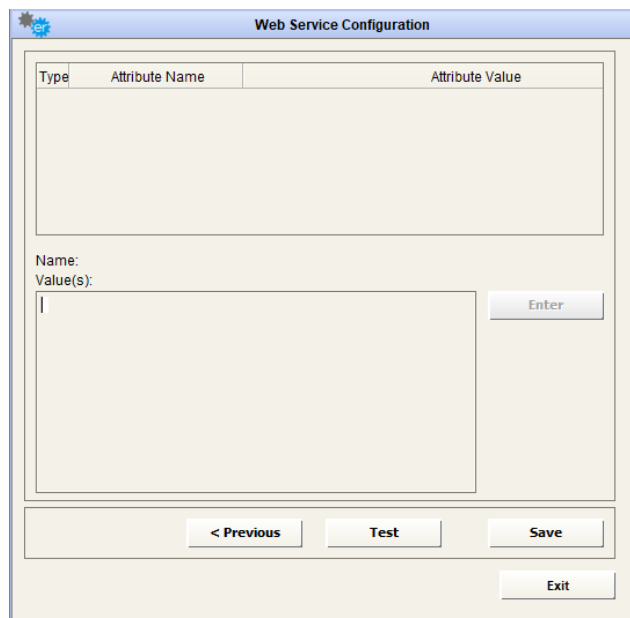
Description:
 Example Adapter

Adapter Folder:
 C:\dt Browse

< 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

Name:
 Value(s):

Enter

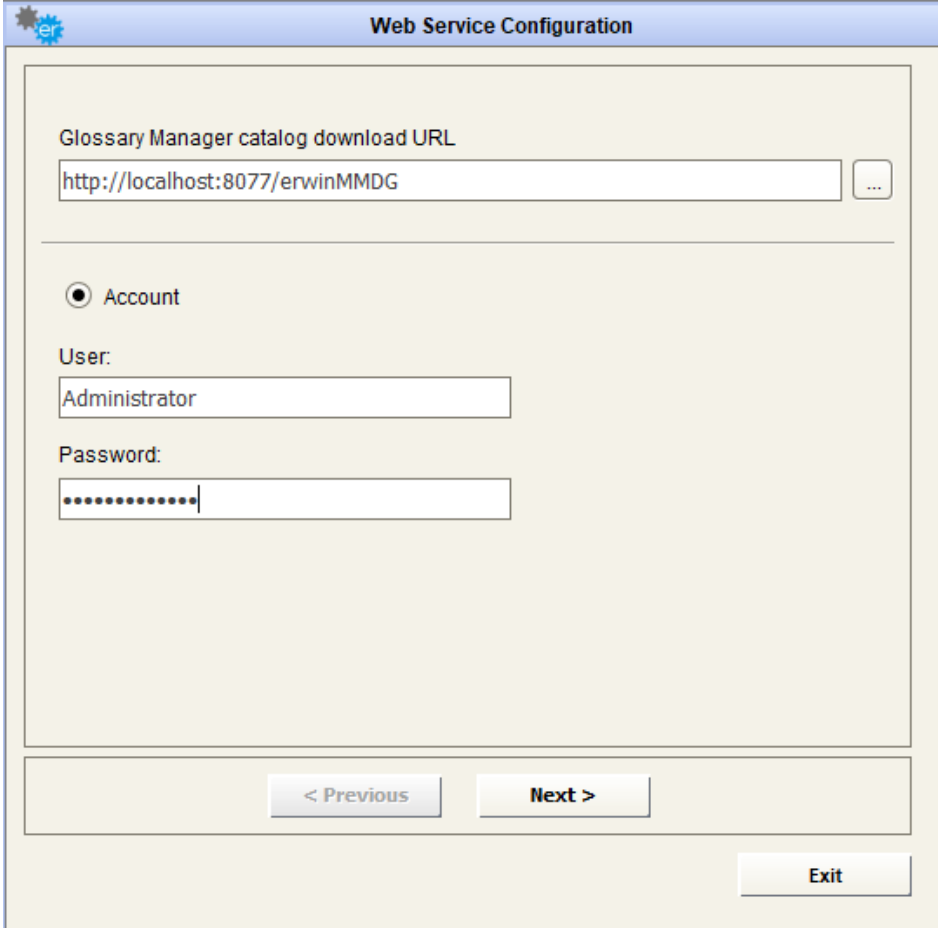
< Previous Test Save

Exit

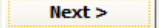
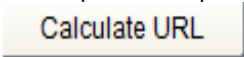
To preview a sample of the first 50 results, click the **Test** button.

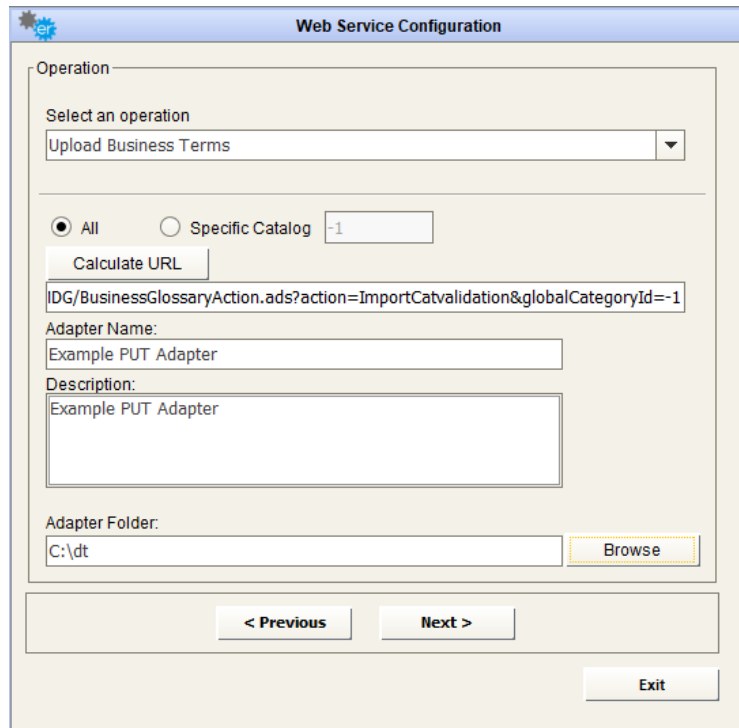
Business Terms from BGM – Upload Business Terms

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 radio button labeled 'Account' which is selected. Underneath are fields for 'User:' containing 'Administrator' and 'Password:' containing a masked password. 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

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

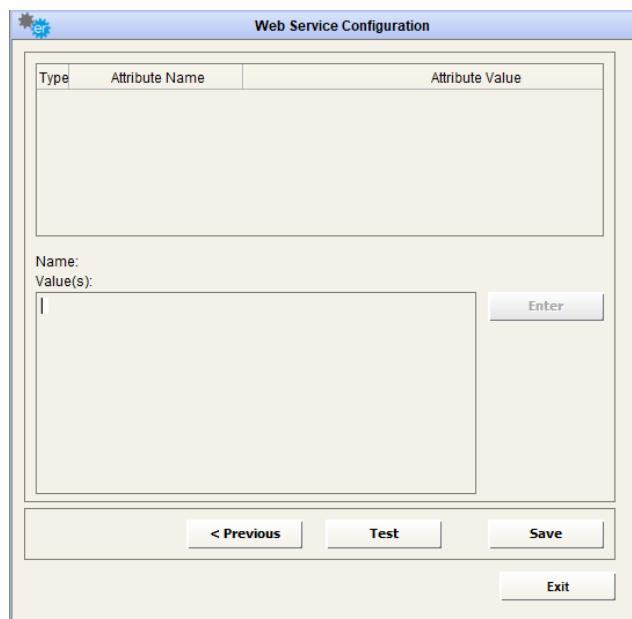
Adapter Name:
Example PUT Adapter

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:

Workflow Name: Description:

Steps content:

Sources

1 erwin EA Agile V3 (4003)

Transformations

Operations

Example PUT Adapter

Mapping and Operation

with operation:

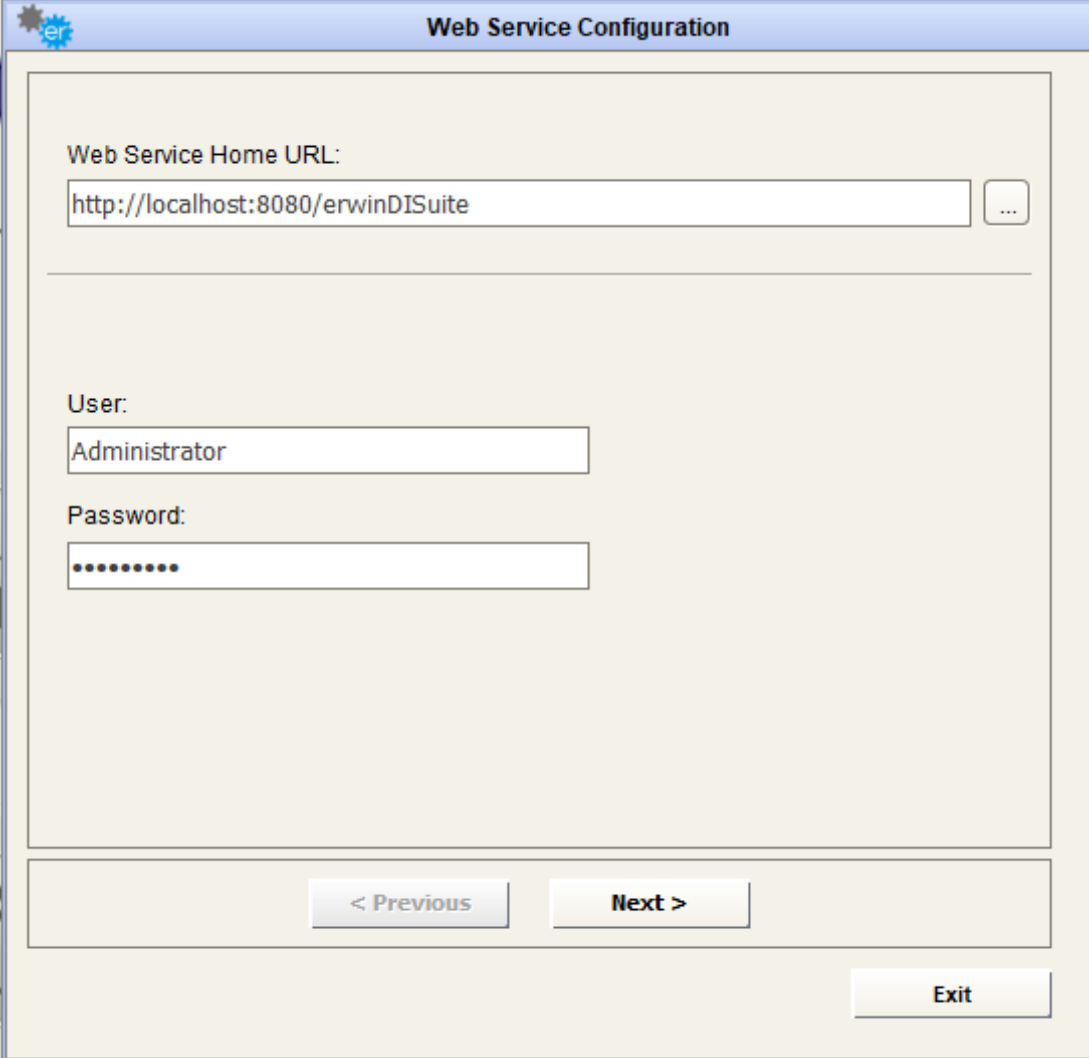
☐ Send e-mail to ☐ Single email for record

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 DI Suite 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 with a blue title bar and an 'erwin' logo. It contains three input fields: 'Web Service Home URL:' with the value 'http://localhost:8080/erwinDISuite', 'User:' with the value 'Administrator', and 'Password:' with masked characters. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Web Service Home URL:

http://localhost:8080/erwinDISuite

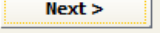
User:

Administrator

Password:

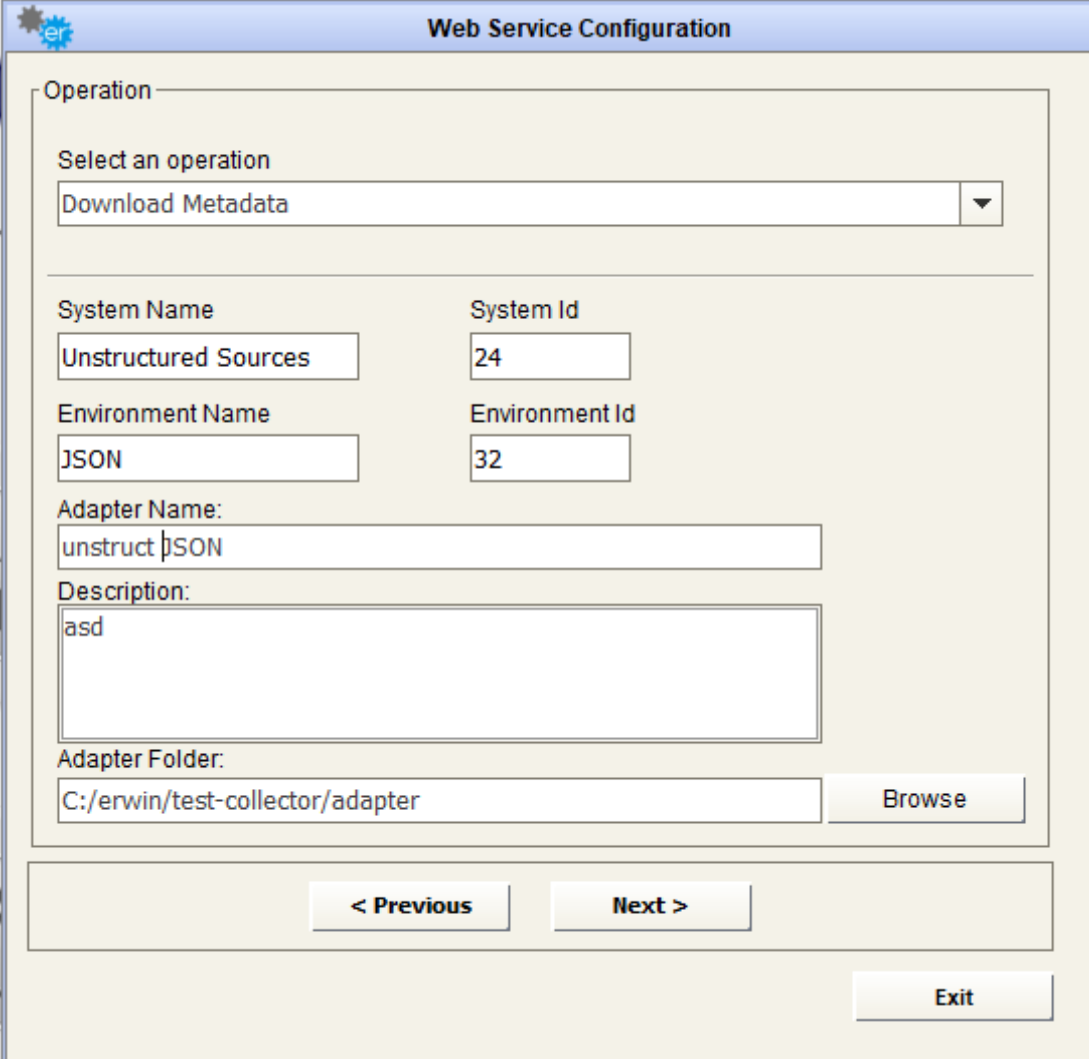
.....

< Previous Next > Exit

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

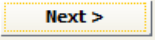
Provide the "System Name", "System Id", "Environment Name", "Environment Id" in their respective edit box.

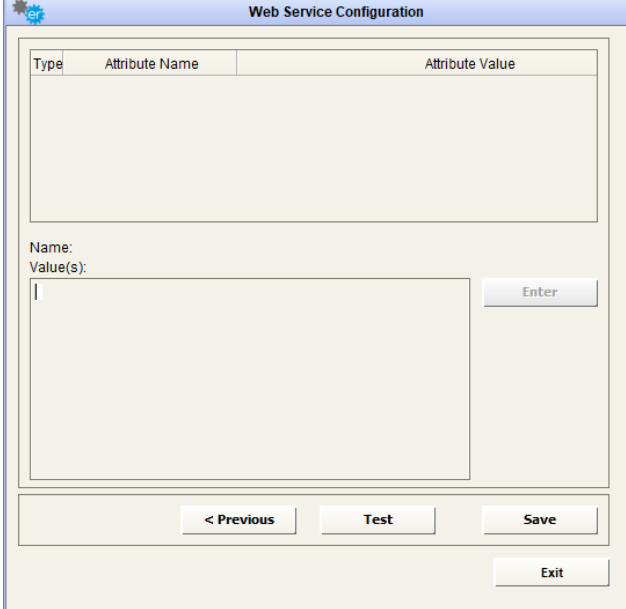
Enter a name and folder for the adapter. A description can also optionally be entered for the adapter.



The image shows a 'Web Service Configuration' dialog box with a blue title bar and a gear icon. The 'Operation' section has a dropdown menu set to 'Download Metadata'. Below this, there are two columns of input fields: 'System Name' (Unstructured Sources) and 'System Id' (24), followed by 'Environment Name' (JSON) and 'Environment Id' (32). The 'Adapter Name' field contains 'unstruct JSON' and the 'Description' field contains 'asd'. The 'Adapter Folder' field shows the path 'C:/erwin/test-collector/adapter' with a 'Browse' button next to it. At the bottom, there are three buttons: '< Previous', 'Next >', and 'Exit'.

Web Service Configuration	
Operation	
Select an operation Download Metadata	
System Name	System Id
Unstructured Sources	24
Environment Name	Environment Id
JSON	32
Adapter Name: unstruct JSON	
Description: asd	
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 has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is 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'.

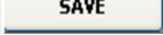
Type	Attribute Name	Attribute Value
------	----------------	-----------------

Name:
Value(s):

Enter

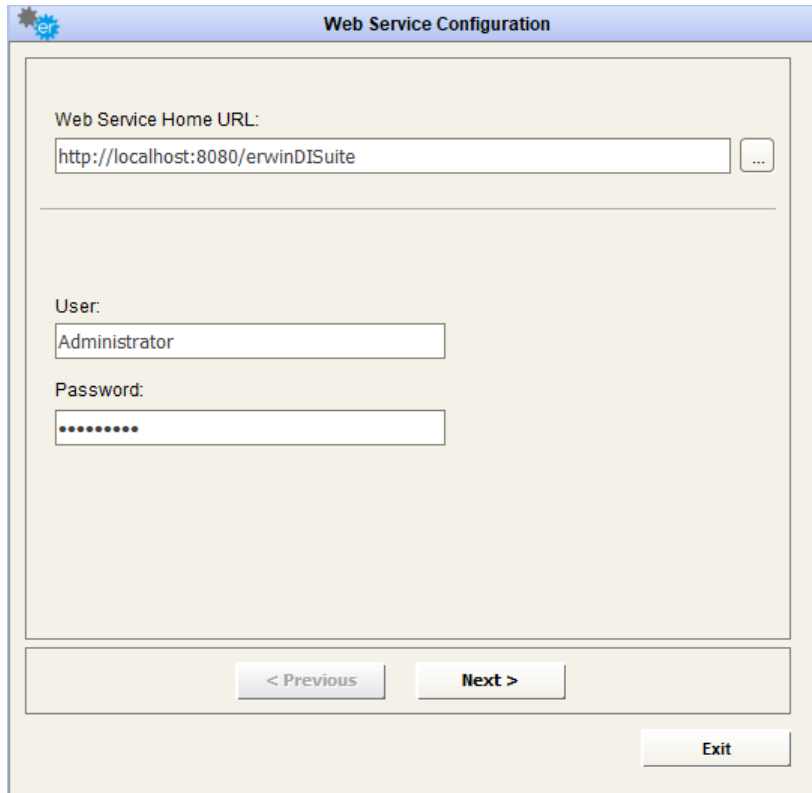
< Previous Test Save Exit

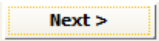
To preview a sample of the first 50 results, click the  button

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

erwin DI Suite Mapping Manager

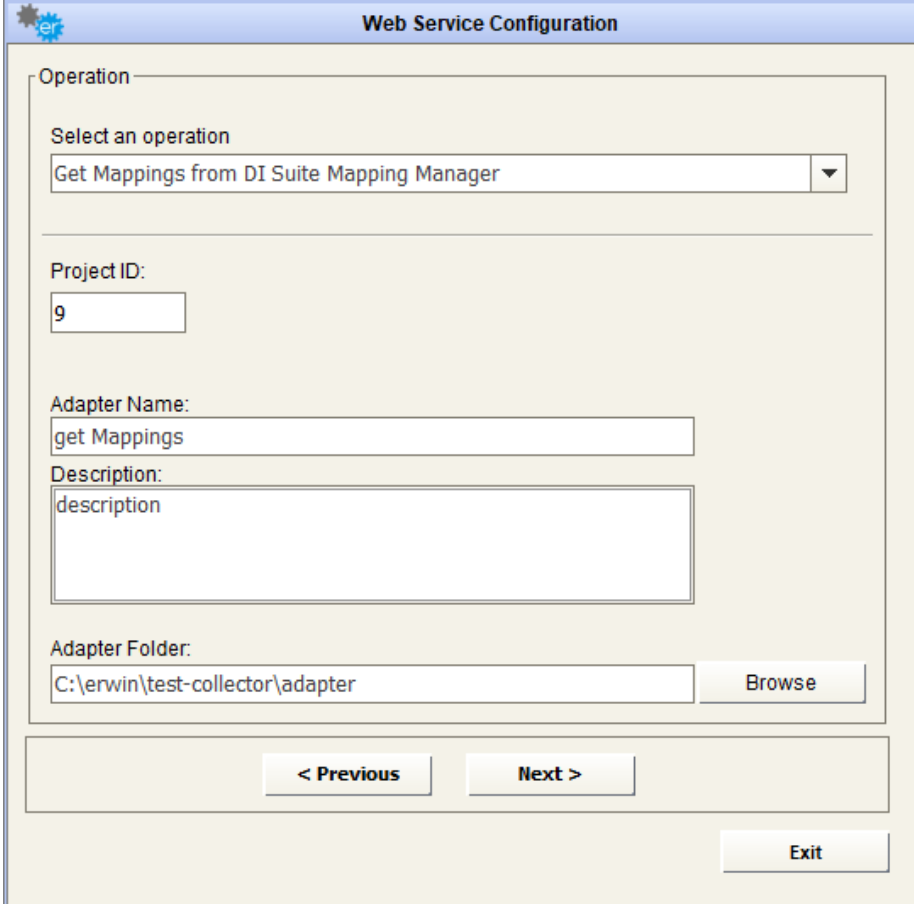
To use the adapter for erwin DI Suite Mapping Manager to **download Mappings**, provide the url of erwin DI Suite and enter the relevant credentials

A screenshot of a 'Web Service Configuration' dialog box. The title bar is blue with the erwin logo and the text 'Web Service Configuration'. The main area is light beige. It contains 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 masked characters (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 “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. 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' with a dropdown menu showing 'Get Mappings from DI Suite Mapping Manager'. The second section is 'Project ID:' with a text box containing '9'. The third section is 'Adapter Name:' with a text box containing 'get Mappings'. The fourth section is 'Description:' with a text box containing 'description'. The fifth section is 'Adapter Folder:' with a text box containing 'C:\erwin\test-collector\adapter' and a 'Browse' button. 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:

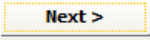
C:\erwin\test-collector\adapter

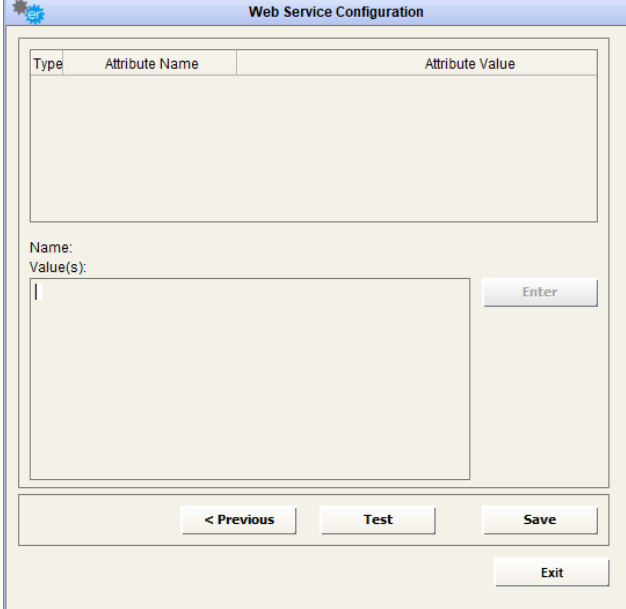
Browse

< 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 has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there is 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'.

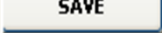
Type	Attribute Name	Attribute Value
------	----------------	-----------------

Name:
Value(s):

Enter

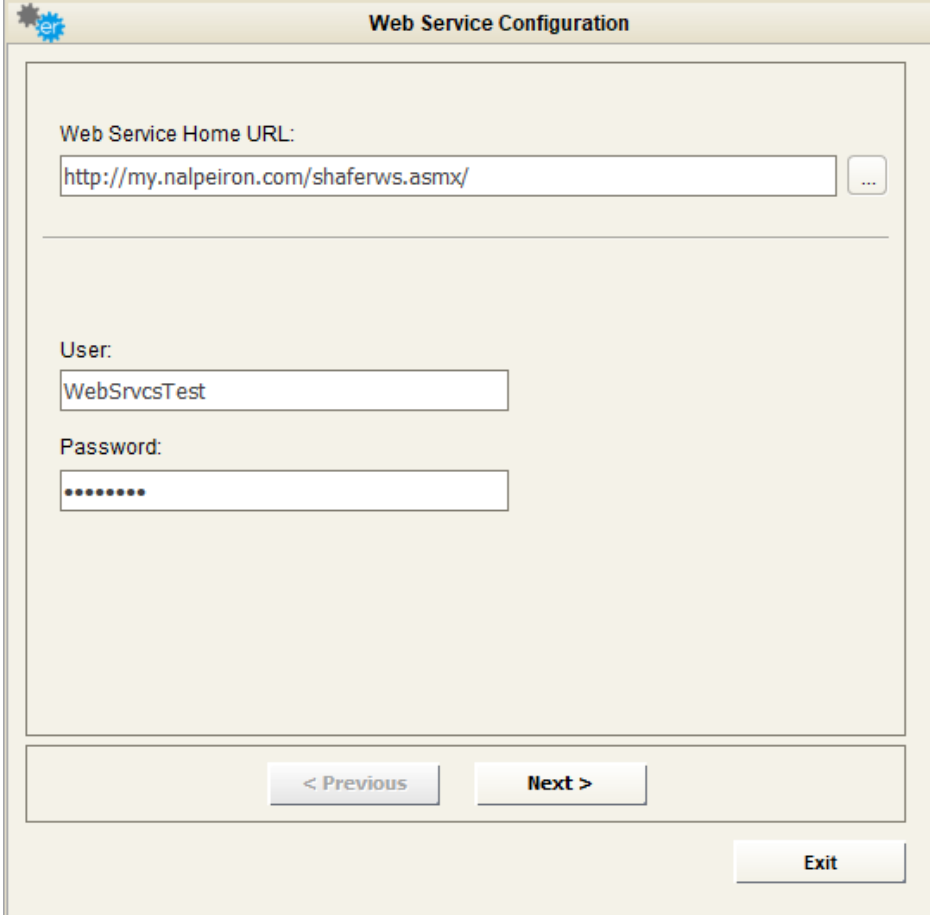
< Previous Test Save Exit

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

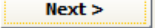
To save the adapter to the DT database, click the  button.

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



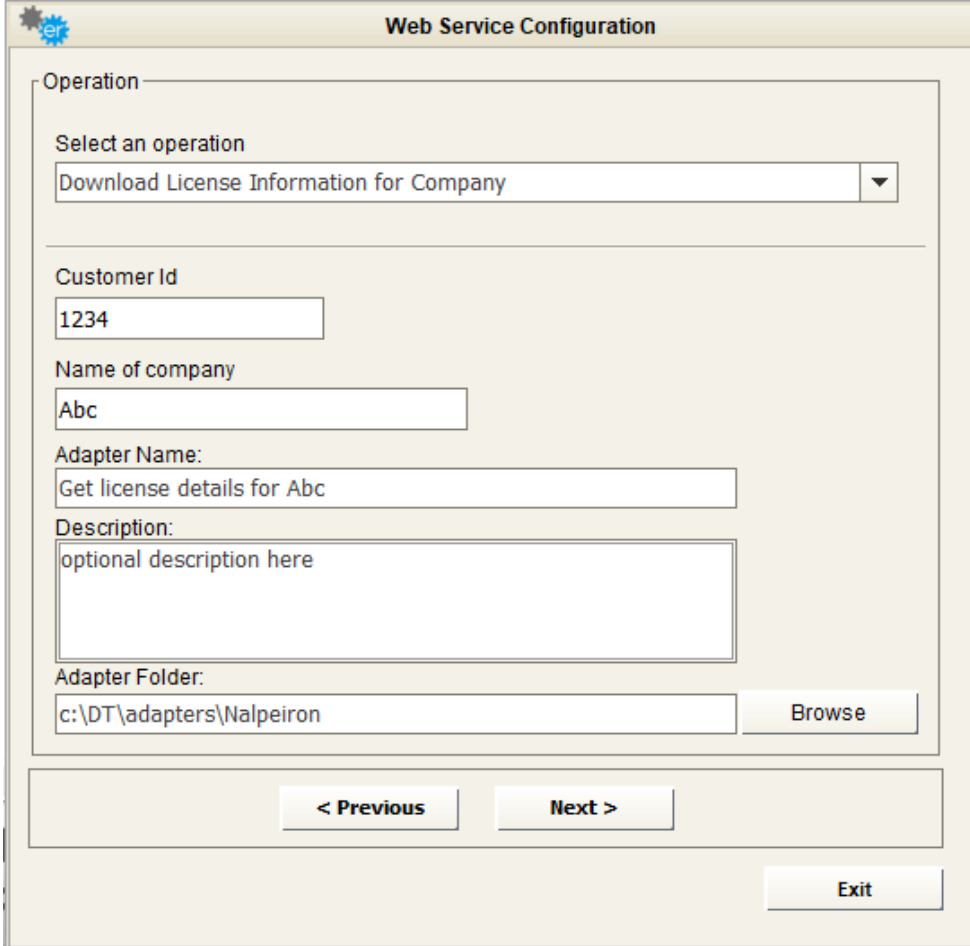
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside the dialog, there are three input fields: 'Web Service Home URL:' with the value 'http://my.nalpeiron.com/shaferws.asmx/' and a browse button (...); 'User:' with the value 'WebSrvcsTest'; and 'Password:' with 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 “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 an 'er' logo. 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 'Customer Id' section with a text box containing '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'.

Web Service Configuration

Operation

Select an operation

Download License Information for Company

Customer Id

1234

Name of company

Abc

Adapter Name:

Get license details for Abc

Description:

optional description here

Adapter Folder:

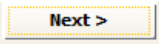
c:\DT\adapters\Nalpeiron

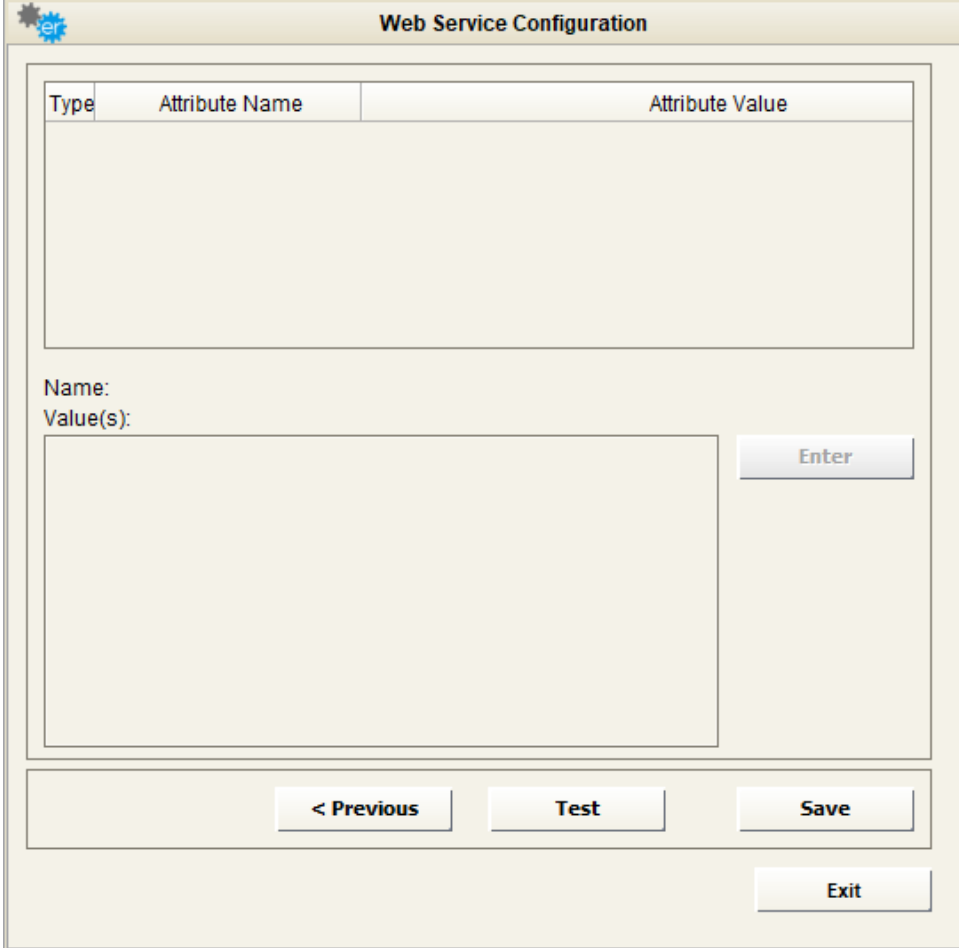
Browse

< Previous

Next >

Exit

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




The dialog box is titled "Web Service Configuration" and features the erwin logo in the top-left corner. It contains 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

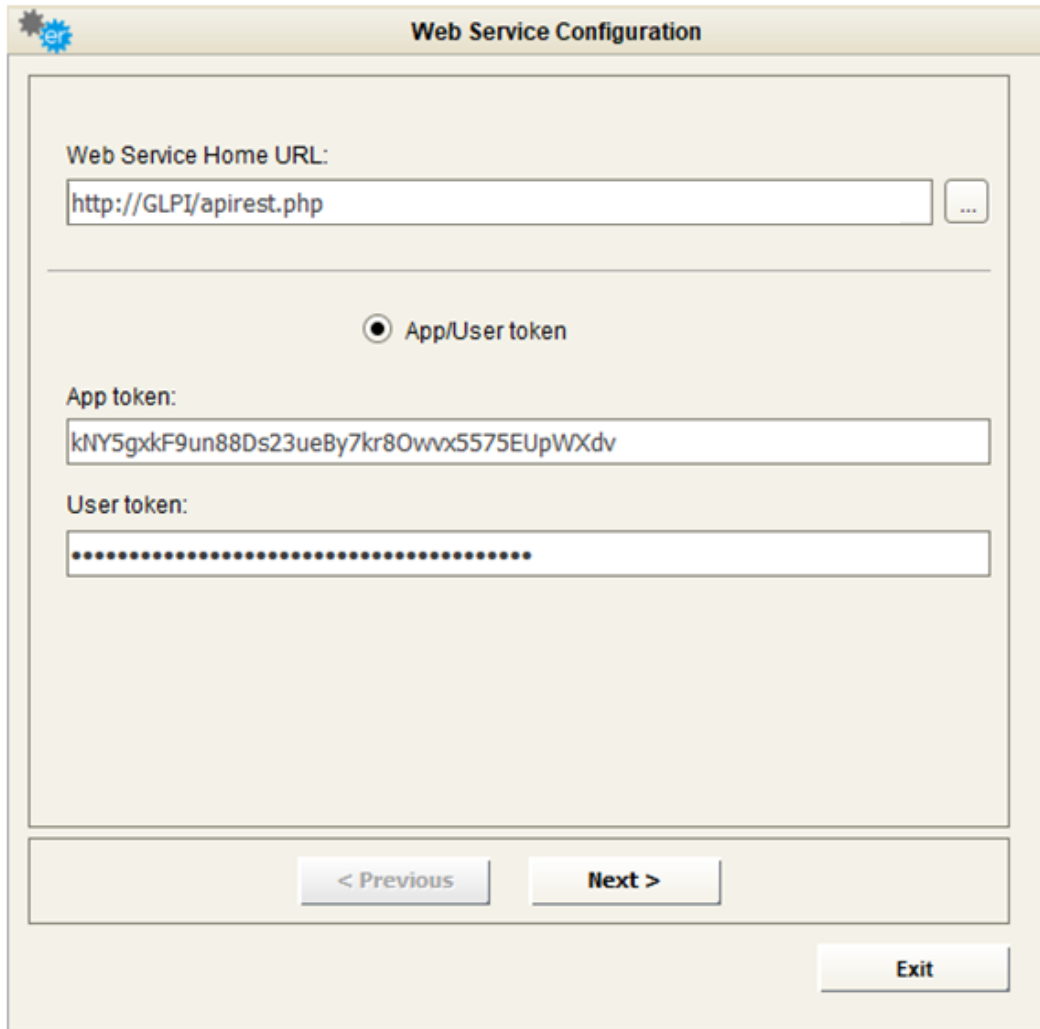
< Previous Test Save Exit

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

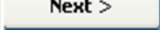
To save the adapter to the DT database, click the  button.

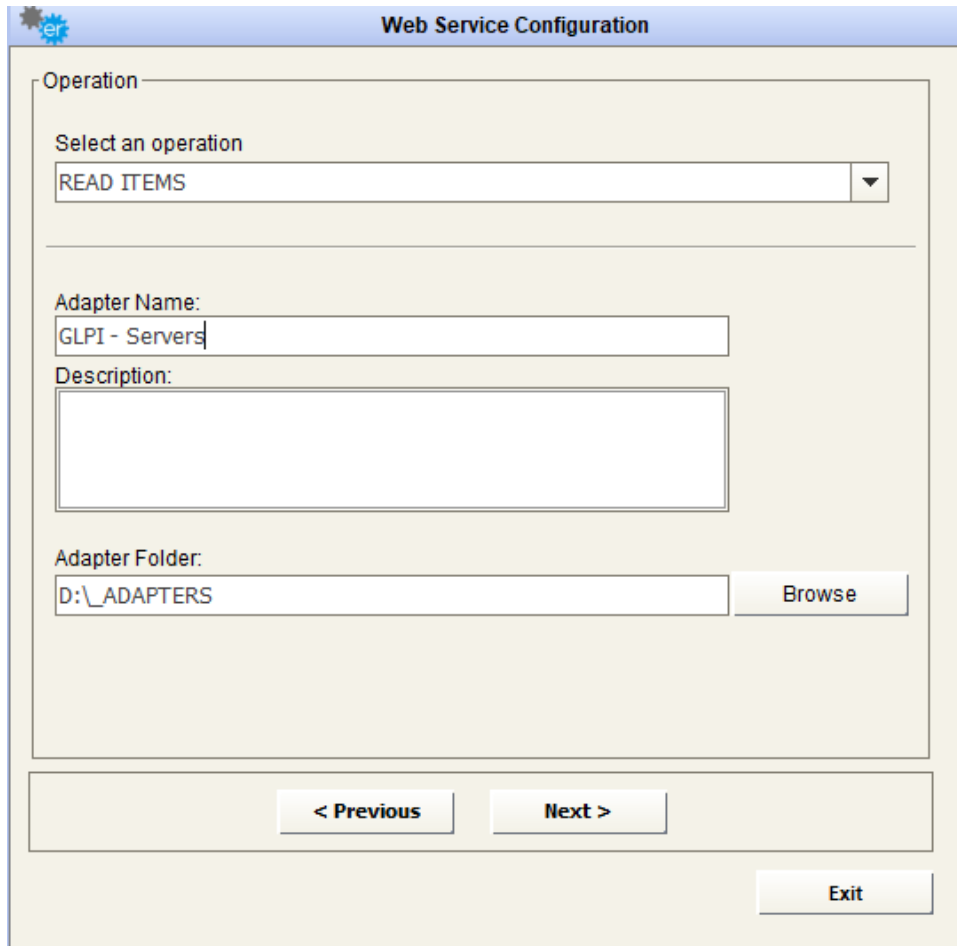
GLPI – Read configuration items

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 input field 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 are two more text input fields: 'App token:' containing 'kNY5gxkF9un88Ds23ueBy7kr8Owwx5575EUpWXdv' and 'User token:' containing 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 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.

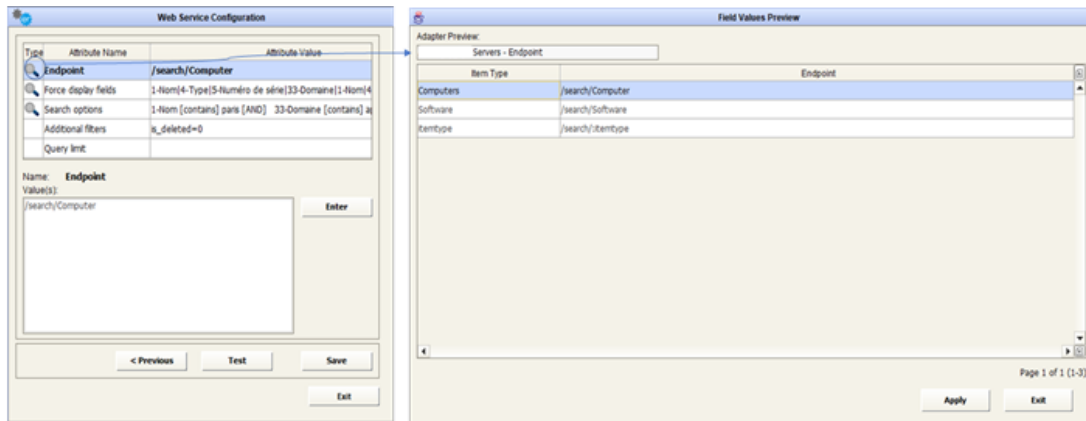
The image shows a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. Inside, there's a section titled 'Operation' with a dropdown menu showing 'READ ITEMS'. Below this, there's a text field for 'Adapter Name' containing 'GLPI - Servers', a larger text area for 'Description', and another text field for 'Adapter Folder' containing 'D:_ADAPTERS' with 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 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).

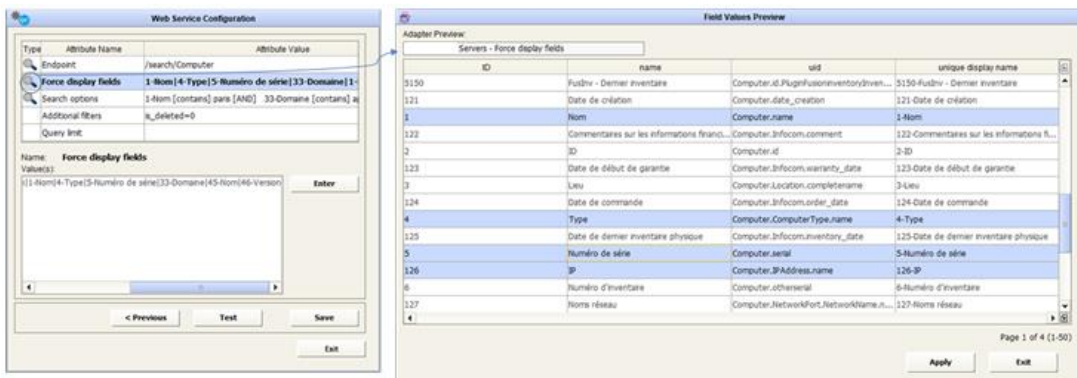
The next button  steps into the next window that allows the user to set values for the Web Service parameters.

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

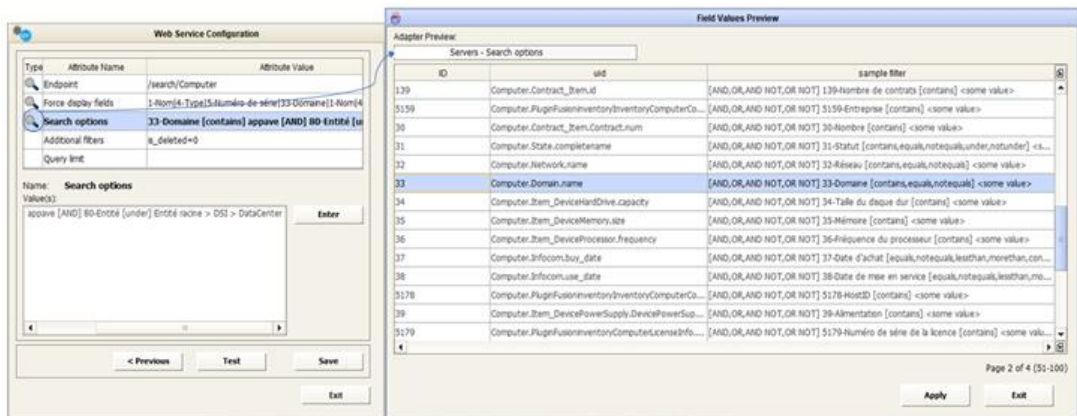
- 1) select between different endpoint, like Computer, Server, or any other item type:



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)

Pressing the **Test** button will open a new pop-up window. The response resulting from the

Adapter Preview

Adapter Preview:
APAVE GLPI - Servers

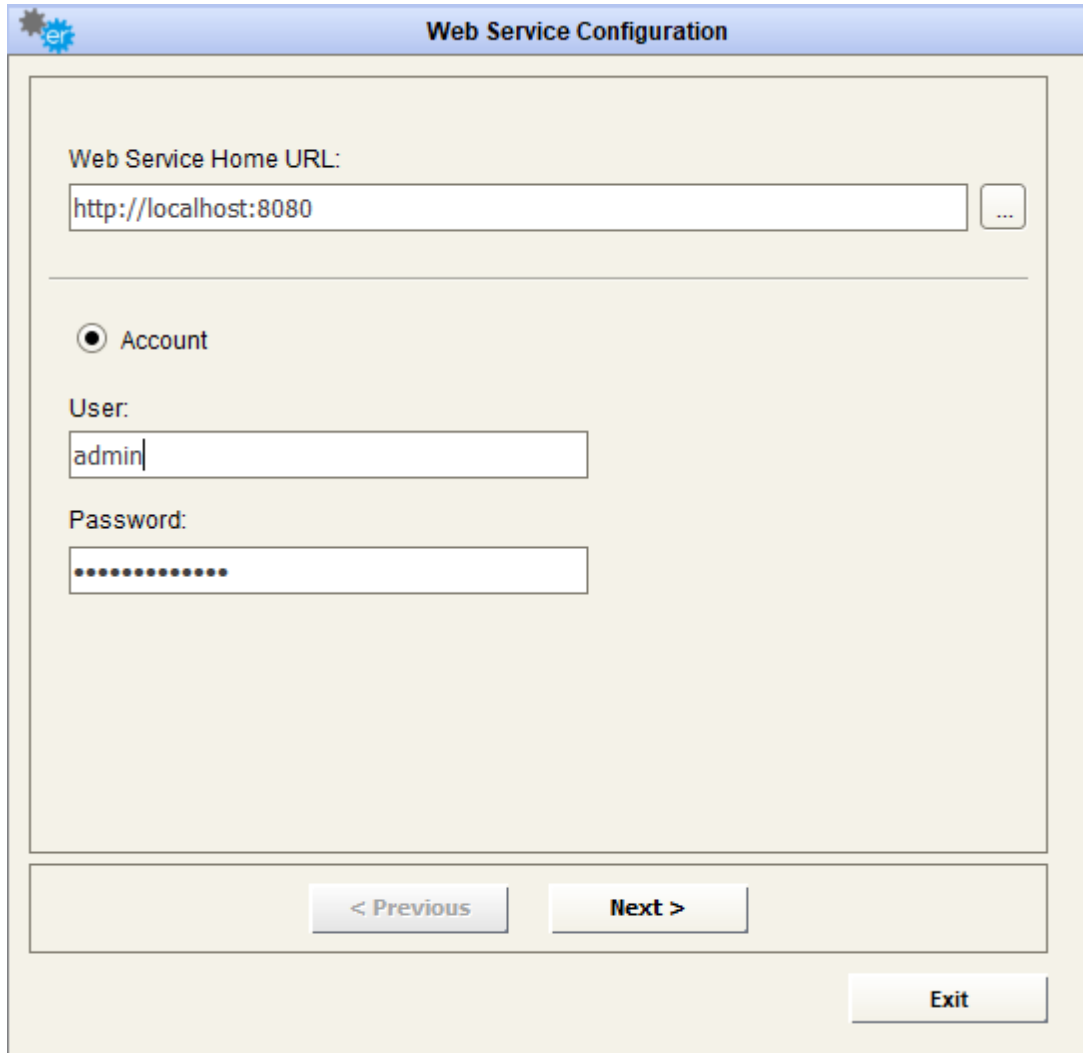
33-Domaine	1-Nom	45-Nom	46-Version	4-Type	5-Numéro de série	80-Entité
appave.com	ad01	Microsoft® Windows Server® 2008 Entreprise		VMware	VMware-56 4d 14 4b 8f 70 ...	Entité racine > DSI > Data...
appave.com	ad02	Microsoft(R) Windows(R) Server 2003, Enterpri...		VMware	VMware-56 4d 88 b6 69 cd...	Entité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

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

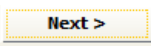
The **Exit** button closes the data preview window and goes back to Web Service configuration form.

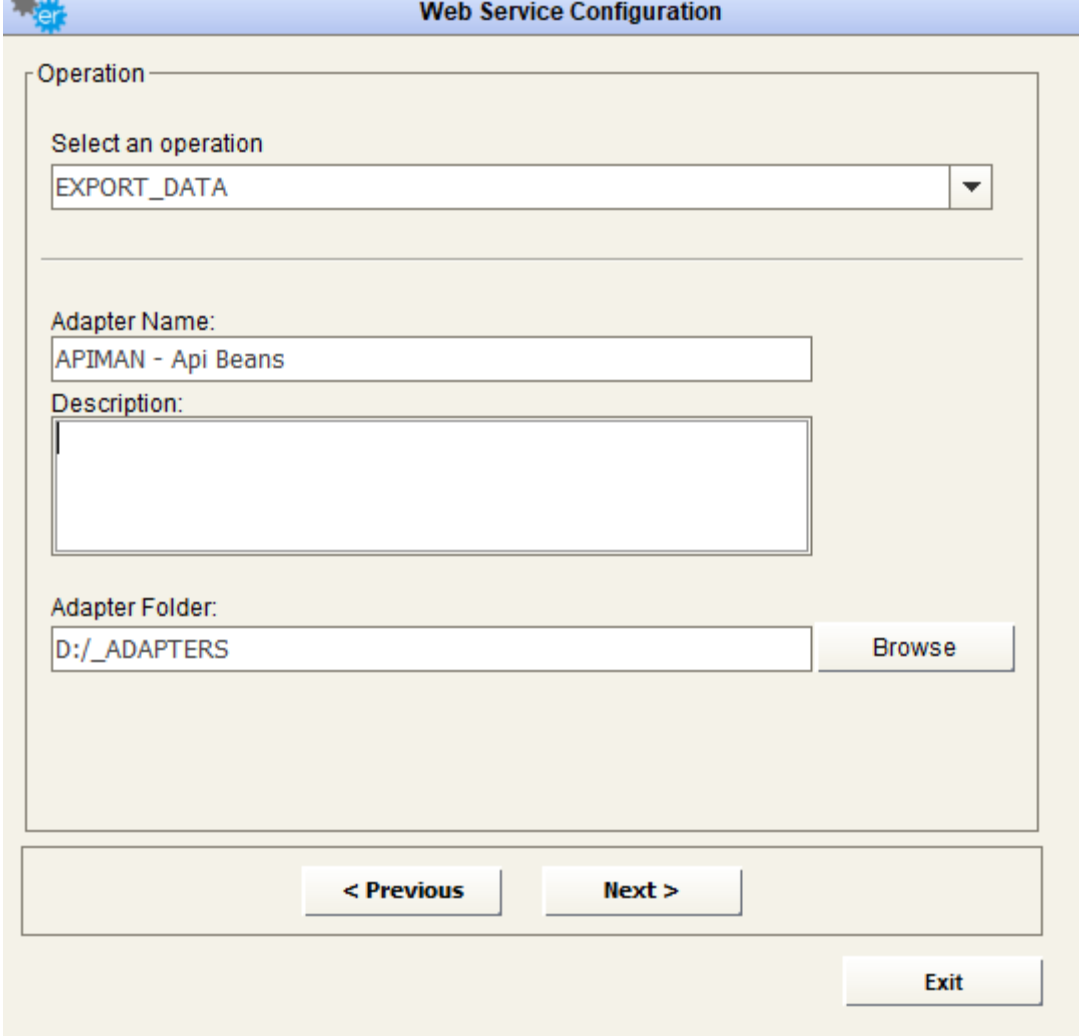
APIMAN – Read APIs and contracts information

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:




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 "Web Service Home URL:" with a text input field containing "http://localhost:8080" 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 input field. The "User:" field contains "admin" and the "Password:" field contains a series of 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 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 titled 'Operation' and contains a dropdown menu labeled 'Select an operation' with 'EXPORT_DATA' selected. Below this are three input fields: 'Adapter Name:' with the text 'APIMAN - Api Beans', 'Description:' which is empty, and 'Adapter Folder:' with the text 'D:/_ADAPTERS'. To the right of the 'Adapter Folder' field is a 'Browse' button. 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 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 **Test** button will open a new pop-up window and the response resulting from the Web Service call is displayed.

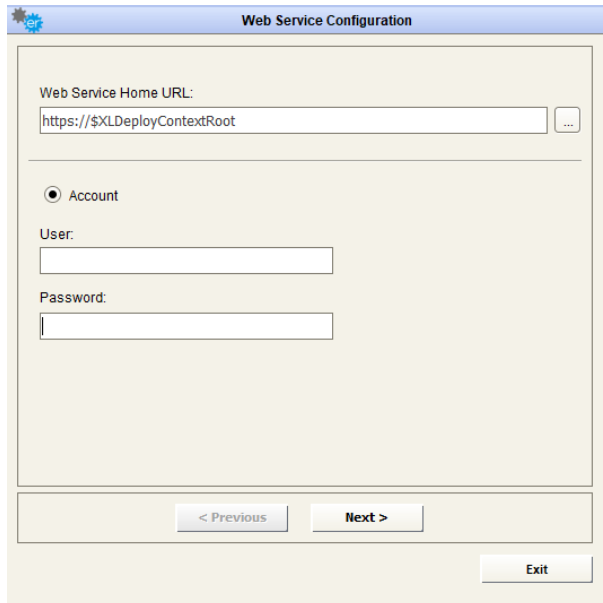
erwinCollector					Menu/Help - 2020/01/18 11:40:08
Organisation	Organisation Name	Api ID	Api Name	Api description	Api created on
CORE	CORE	BEA-01	BEA-01	Application BEA	2019-01-01T12:14:16Z
CORE	CORE	FOR-01	FOR-01	Application Forum	2019-09-11T10:24:28Z
CORE	CORE	BOR-01	BOR-01	Application BOR	2019-09-11T14:16:12Z
CORE	CORE	ELA-001	ELA-001	Point d'entrée de recherche base Elasticsearch	2019-09-08T10:01:16Z
CORE	CORE	PEO-01	PEO-01	Application Pegasus	2019-01-01T14:16:12Z
CORE	CORE	OPH-01	OPH-01	Application Ophelia (SAR)	2019-09-10T16:06:42Z
CORE	CORE	ELA-002	ELA-002	Point d'entrée base Elasticsearch	2019-09-08T10:01:16Z
CORE	CORE	CME-01	CME-01	Application Cmeiga	2019-09-08T10:25:32Z
CORE	CORE	MOCK-01	MOCK-01	Point d'entrée mock (pour Trello)	2019-01-10T10:17:16Z
CORE	CORE	GOO-01	GOO-01	Application GooP	2019-09-08T10:16:12Z
CORE	CORE	GOO-01	GOO-01	Application GO (OfficeCommander)	2019-01-01T10:06:16Z
CORE	CORE	BEA-01	BEA-01	Application Base Apave	2019-01-01T12:14:16Z
FRONT	FRONT	agencies-001	agencies-001	La rue agencies-001 permet aux applications consommatrices de récupérer l'agent 'Agencies' 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'agent Agencies.	2019-01-01T12:14:16Z
FRONT	FRONT	filieres-001	filieres-001	La rue filieres-001 permet de publier un fichier sur E2 products. Ce dernier est consommé par l'application CamScanner. Un format pour générer le fichier est défini pour permettre un interfaçage avec d'autres applications si besoin.	2019-09-10T11:40:25Z
FRONT	FRONT	directions-001	directions-001	La rue directions-001 permet aux applications consommatrices de récupérer l'agent 'Directions' 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'agent Directions.	2019-01-01T12:14:16Z
FRONT	FRONT	grategies-011	grategies-011	La rue grategies-011 permet aux applications consommatrices de récupérer l'agent 'Grategies' 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'agent Grategies.	2019-09-10T10:13:02Z
FRONT	FRONT	entites-002	entites-002	La rue entites-002 permet aux applications consommatrices de récupérer l'agent 'Entites' 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'agent Entites.	2019-09-10T10:08:54Z

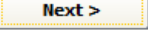
Pressing the **SAVE** button stores all the entered parameters for the web service adapter in the DT database.

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:

A screenshot of a 'Web Service Configuration' dialog box. It has a title bar with a gear icon and the text 'Web Service Configuration'. The main area contains a label 'Web Service Home URL:' followed by a text input field containing 'https://\$XLDeployContextRoot' and a browse button '...'. Below this is a section with a radio button labeled 'Account' which is selected. Underneath are labels 'User:' and 'Password:' followed by empty text input fields. 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 Next > steps into the next window that allows the user to set values for the Web Service parameters.

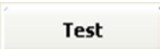
Web Service Configuration

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.

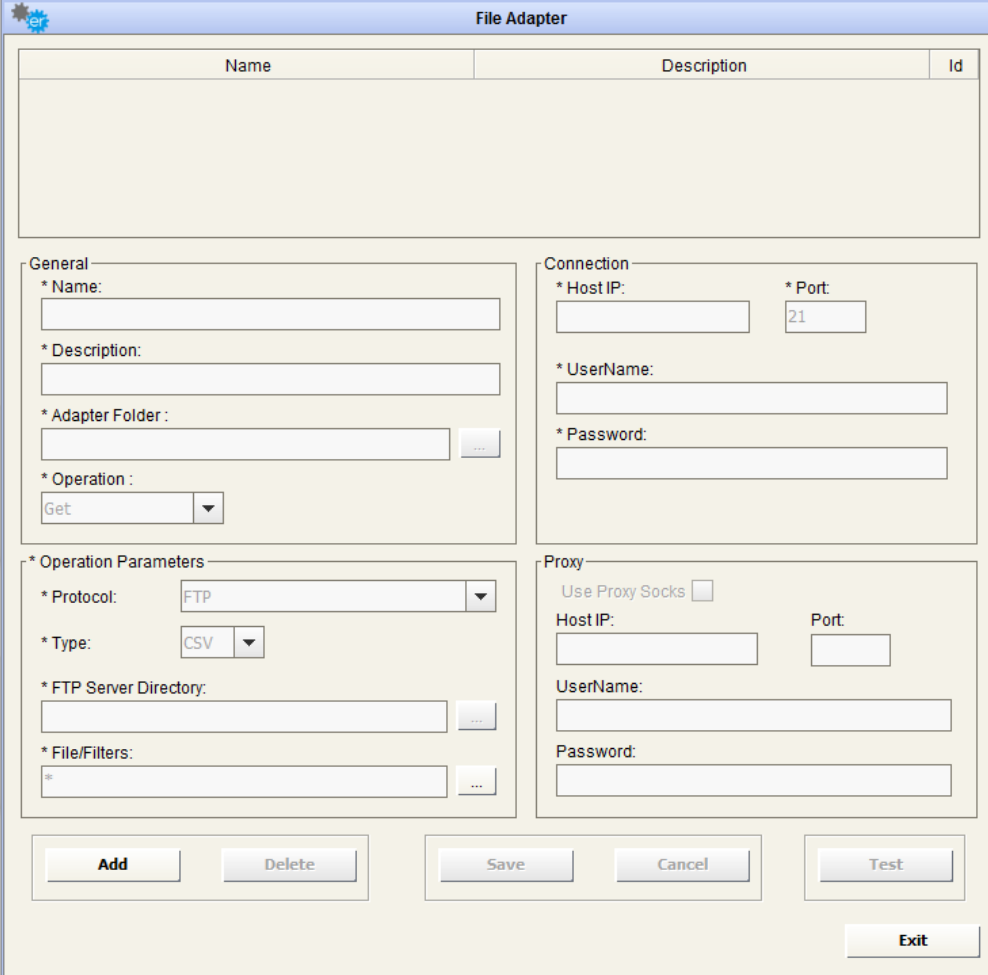
File Adapter Configuration

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 set to "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 set to "FTP"), "* Type:" (a dropdown menu set to "CSV"), "* FTP Server Directory:" (with a browse button), and "* File/Filters:" (with a text input 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". A small "Exit" button is located at the bottom right corner of the window.

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

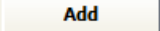
The second group is the General Parameters, which include the Name, Description, File Adapter folder and Operation type (GET - PUT); all these fields are mandatory.



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:

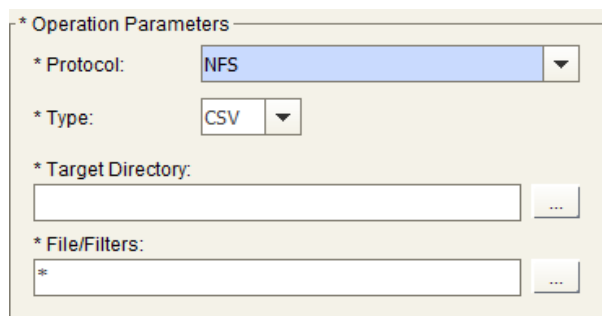
Operation “GET”

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.



The screenshot shows a dialog box titled “* Operation Parameters”. It contains the following fields:

- * Protocol: A dropdown menu with “NFS” selected.
- * Type: A dropdown menu with “CSV” selected.
- * Target Directory: A text input field with a browse button (three dots) to its right.
- * File/Filters: A text input field containing an asterisk (*) with a browse button (three dots) to its right.

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.

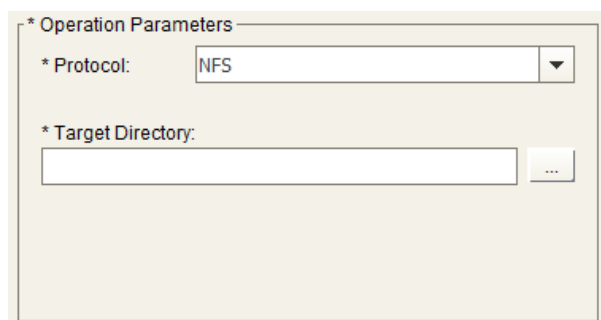
Operation “PUT”

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.

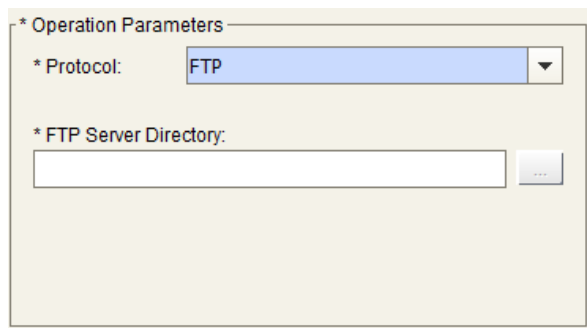


The screenshot shows a dialog box titled “* Operation Parameters”. It contains two fields: “* Protocol:” with a dropdown menu set to “NFS”, and “* Target Directory:” with a text input field and a browse button (three dots).

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)

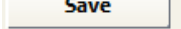


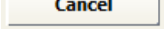
The screenshot shows a dialog box titled “* Operation Parameters”. It contains two fields: “* Protocol:” with a dropdown menu set to “FTP”, and “* FTP Server Directory:” with a text input field and a browse button (three dots).

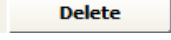
Moreover, the user has to define the Connection and Proxy sections with the parameters needed to access the FTP server.

The image shows a configuration window for a File Adapter. It is divided into two main sections: 'Connection' and 'Proxy'. The 'Connection' section contains four mandatory fields: '* Host IP' (text box), '* Port' (text box with '21' entered), '* UserName' (text box), and '* Password' (text box). The 'Proxy' section contains a 'Use Proxy Socks' checkbox, and four optional fields: 'Host IP' (text box), 'Port' (text box), 'UserName' (text box), and 'Password' (text box).

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:*

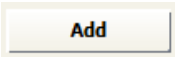
Description:

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.

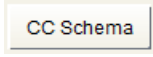
Optionally, it's also possible here to define custom XSLT library elements to be used in the workflow configuration for input or output data formatting (see later). The custom parsers must have been developed in advance, with a proper XML/XSLT editor.

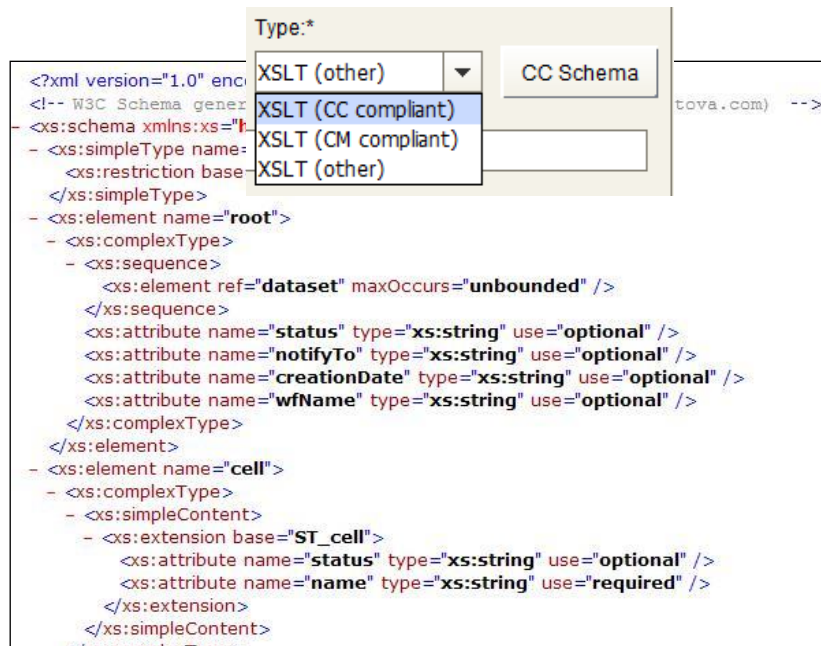
To add a new custom XSLT to the library, press the  button; once the name and description are provided, the browse button pops up a new window allowing the user to select an .XSLT file from the file system. The selected file will be copied into the subfolder "library\Custom Transformation" of your DT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

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 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

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 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.

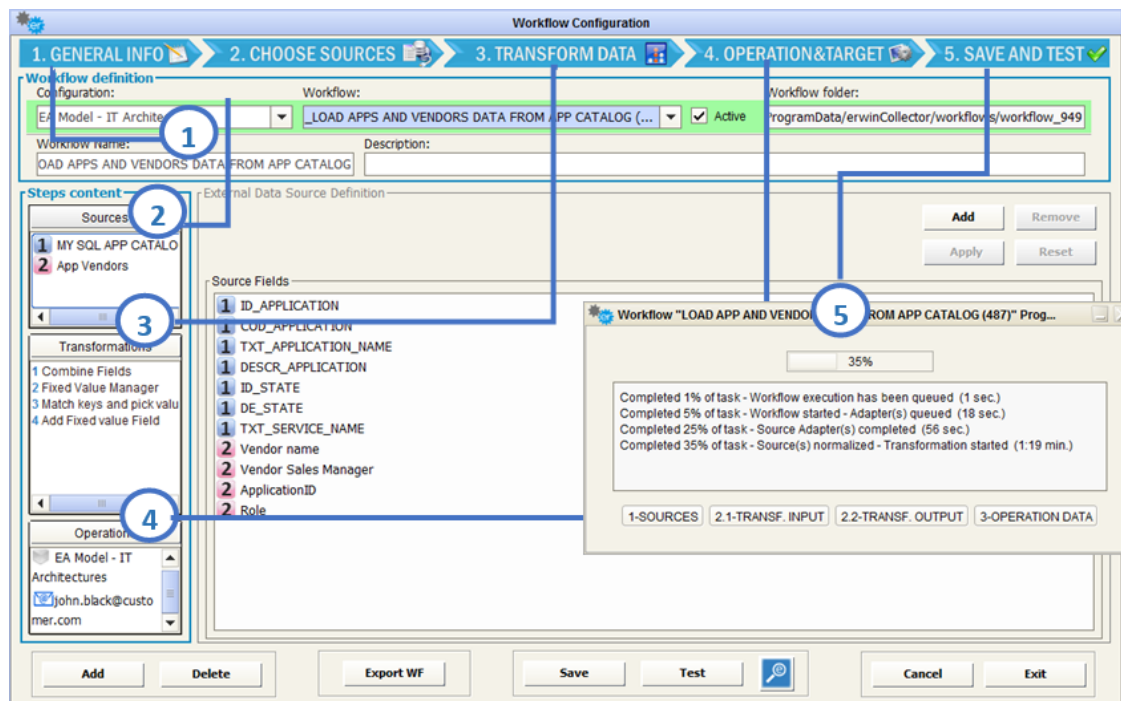
The  button closes the window.

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

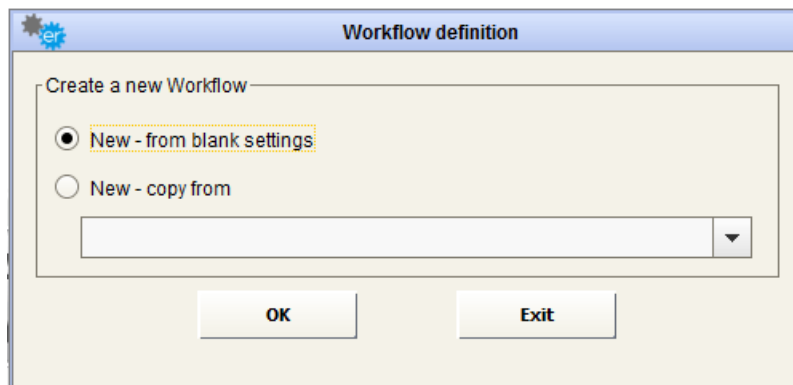
-
5. Test and save the workflow: workflow is ready to be tested (whatever the setting for “Active” checkbox is) and saved for further scheduled executions (if set in “Active” mode)

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: [v] Name: File di test Type: SHEET folder [v] [Add] [Remove]

Header: [x] 1° col: 0 1° row: 0 Sheet: [v]

[Apply] [Reset]

Source Fields

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

This 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 Add Remove

XSL Parser for source normalization: CC2HTML Apply Reset

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 Add Remove

Select Object Type Application Source Filters Apply Reset

Source Fields

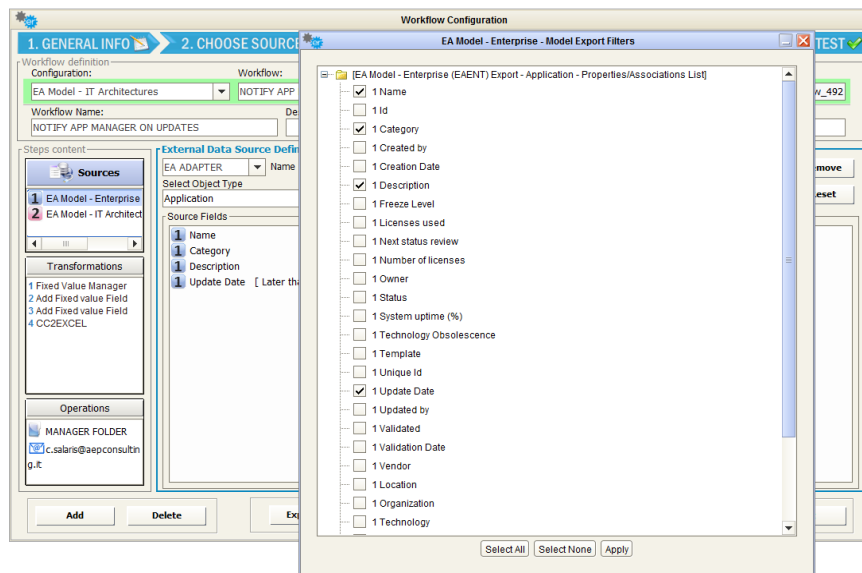
1 Name
1 Category
1 Description
1 Update Date [Later than (days ago) "30"]

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”):

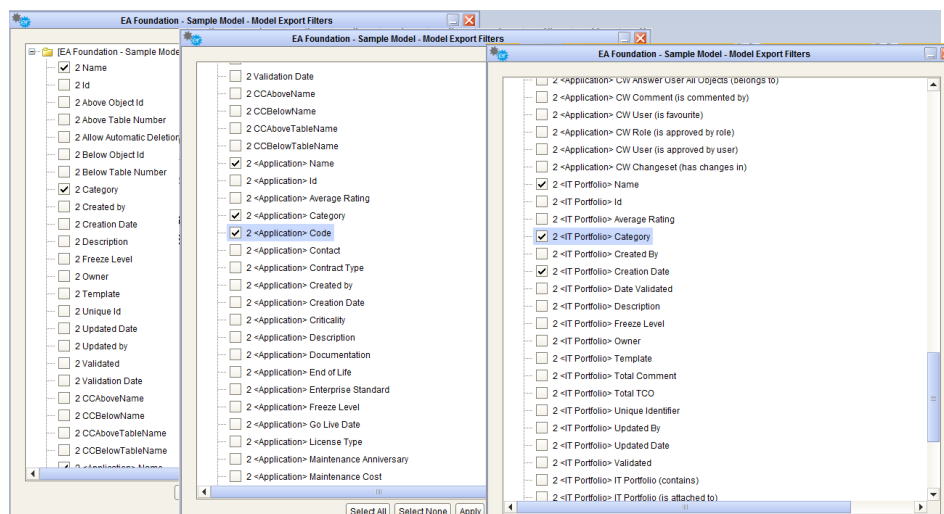
Select the name of the EA Adapter from the drop-down list Name (only the “EA Adapters for import” will be shown in the list)

- 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 [Icon] [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 [Icon] [Add] [Remove]

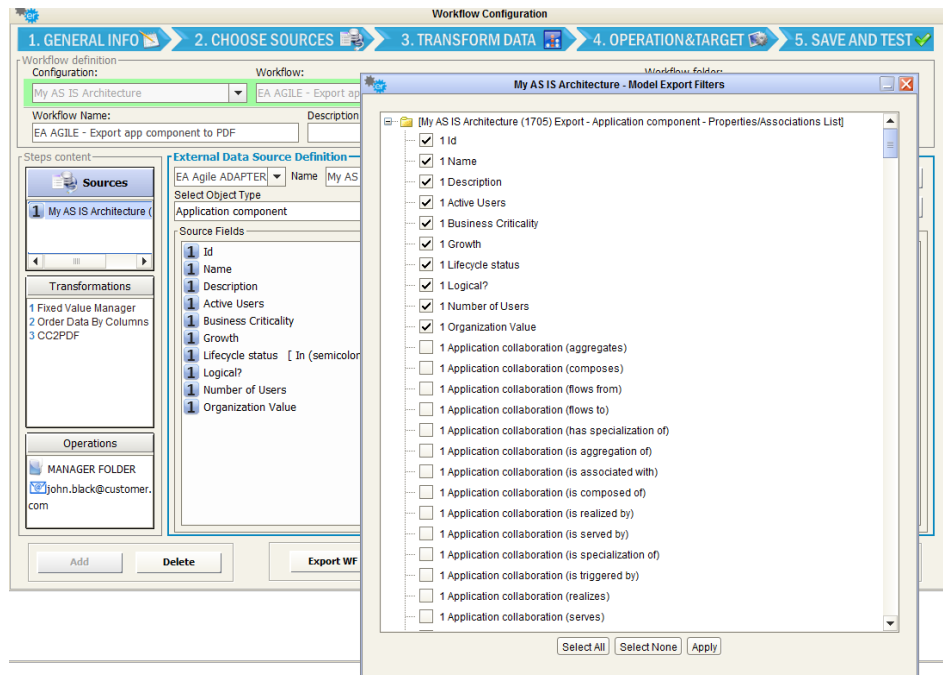
Select Object Type
Application component ▼ [Source Filters] [Apply] [Reset]

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

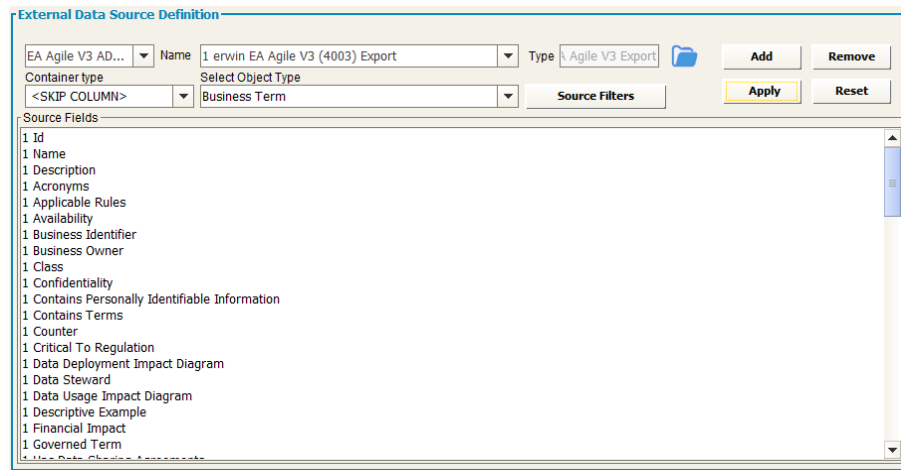
extract through an EA Agile Adapter for the selected object type. The “Source Filters” button allow user to pick only the desired information, while default operation includes all of them.



EA Agile V3 Adapter

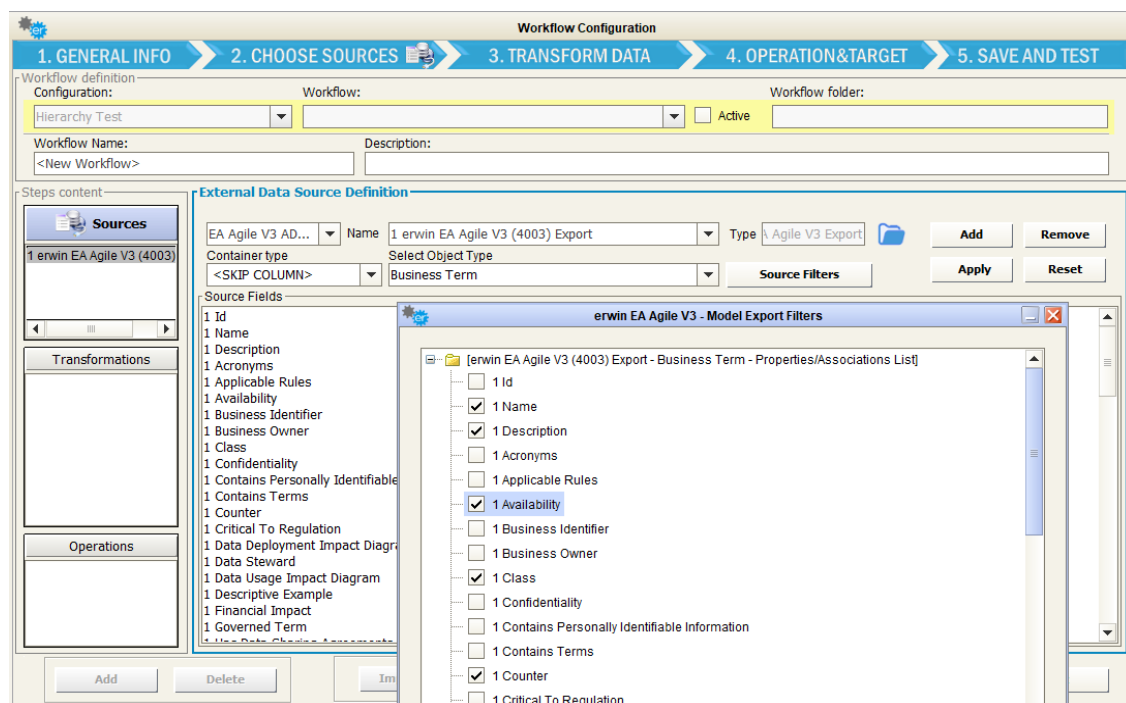
When creating a workspace configuration for EA Agile V3, adapters to import / export data from the platform are automatically created (the working folder is the one set as “Export folder”):

- 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

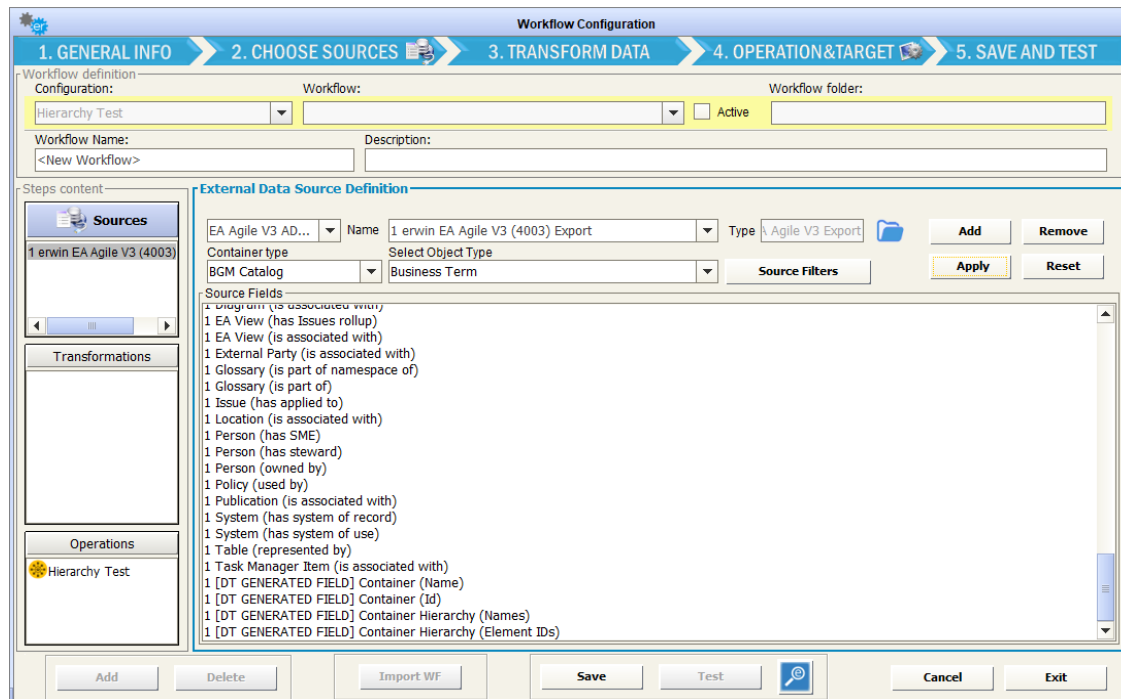


It's also possible to choose which Properties/Associations

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.

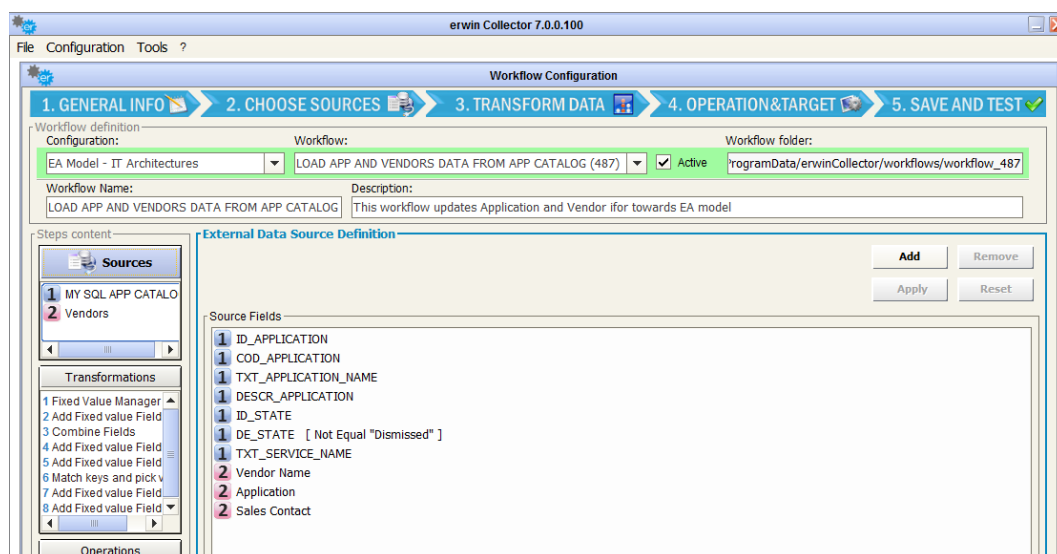


It is also possible to optionally select a “Container type” for the selected; for an object type that contains either an object of the same type or the selected object type as a terminal node, the hierarchy of the source object type will be resolved in generated fields. This cannot be combined reliably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

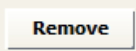
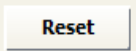
In this case you have a “multi source” workflow, and a specific “**multisource job**” is created to be scheduled and produce all the different data sets involved at the same time (thus ensuring the time consistency of the whole set of related information). The data sources defined in a workflow will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

The  button deletes the selected source from the workflow; the  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:' with 'Data cleansing' selected, and 'Activity:' with 'Not allowed text Check' selected. To the right of these is an 'Add' button. Below the dropdowns is a section titled 'Transformation fields' containing a table. Above the table are three buttons: 'Apply', 'Remove', and 'Reset'. The table has four columns: 'Sel.', 'Column Name', '* Text to exclude', and '* Action'. The first four rows are grouped under a '1' icon, and the last six rows are grouped under a '2' icon. The row for '<IT Portfolio> Name' is selected, showing '_text' in the 'Text to exclude' column and 'DROP ROW' in the 'Action' column.

Sel.	Column Name	* Text to exclude	* 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	_text	DROP ROW
<input type="checkbox"/>	1 <IT Portfolio> Total TCO		
<input type="checkbox"/>	2 Name		
<input type="checkbox"/>	2 Category		
<input type="checkbox"/>	2 <Application> Name		
<input type="checkbox"/>	2 <Application> Category		
<input type="checkbox"/>	2 <Application> Code		
<input type="checkbox"/>	2 <IT Portfolio> Name		
<input type="checkbox"/>	2 <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.

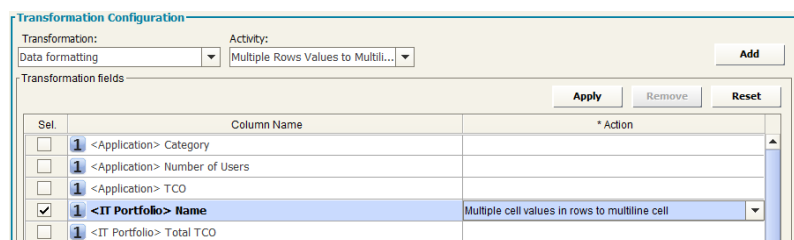
Selected Value in List

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 screenshot shows the 'Transformation Configuration' dialog. The 'Transformation' dropdown is set to 'Data formatting' and the 'Activity' dropdown is set to 'Multiline Cell to Multiple Rows'. The 'Transformation fields' table is as follows:

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 screenshot shows the 'Transformation Configuration' dialog. The 'Transformation' dropdown is set to 'Data formatting' and the 'Activity' dropdown is set to 'Group data from datasets'. The 'Transformation fields' table is as follows:

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 on form 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 Config			
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:
 - UUID
 - Created By
 - Creation Date
 - Updated by
 - 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	CW User	<SKIP CO
Generic string	<SKIP COLUMN...	<SKIP COL
Generic string	AnyObject_To	<SKIP COL
Generic string	Application	<OBJ NAM
Generic string	Association Ar...	<SKIP COL
Generic string	Association	APPLICATION
Generic string	Association re	<SKIP COL
Generic string	Association De	<SKIP COL
Generic string	Association Fl...	<SKIP COL

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

2. 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.

3. 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
ic string	Referente AM	<ABOVE OE
ic string	SocietaVSOrg	<BELOW OE
ic string	Software di Infrastruttur	<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:

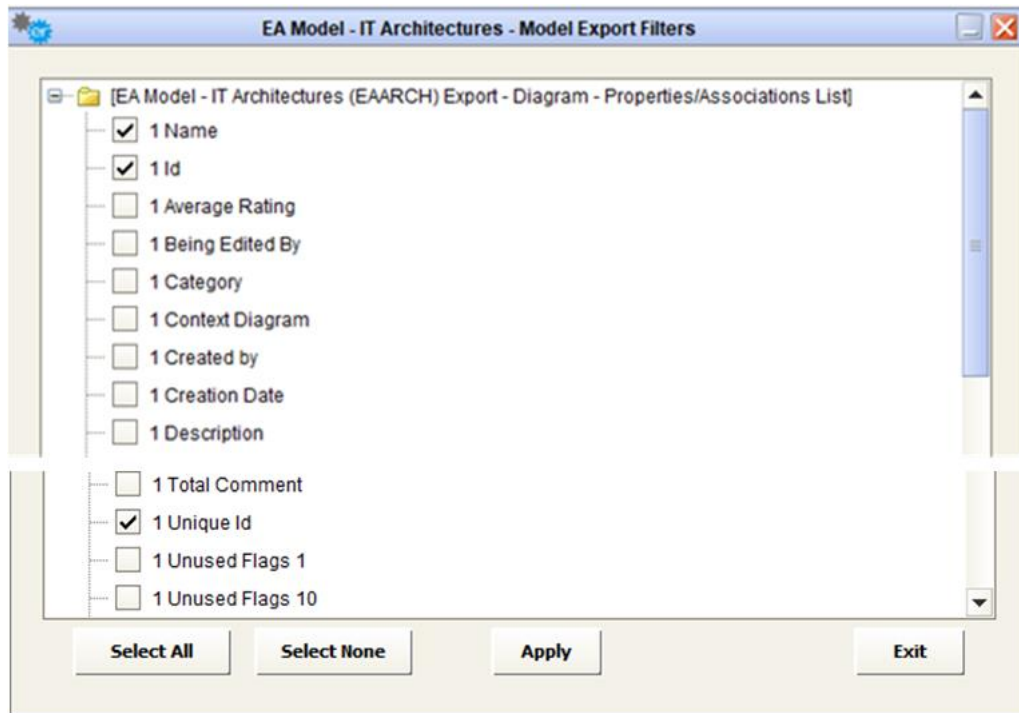
Users - 1 (System Manager), 2 (Project Manager), 3 (Normal User), 4 (Read Only User)
- No new **user groups** are going to be created; user can only associate **users** to existing user groups
- The operation **key** has to be one and only one of the following fields:
 - User Name – in that case, for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

Load in CM Repository - Migrate diagrams between CM Models

The “Load in CM Repository” operation can be used to migrate Diagrams between CM Models. To enable this migration, both source and target model configuration must be created, and diagram migration utilities must be located into erwin EA (Corporate Modeler) bin folder, see Installation guide for instructions.

Then, create a workflow selecting the target model configuration, and select as the source model EA Adapter, Diagram object type as data source, selecting at least Name, Id, Unique Id fields:

The screenshot shows the 'Workflow Configuration' dialog box, which is divided into five tabs: 1. GENERAL INFO, 2. CHOOSE SOURCES, 3. TRANSFORM DATA, 4. OPERATION & TARGET, and 5. SAVE AND TEST. The 'CHOOSE SOURCES' tab is currently selected. The 'Workflow definition' section at the top shows the 'Configuration' as 'EA Model - Enterprise', the 'Workflow' as 'Migrate diagrams between IT and Enterprise EA (1114)', and the 'Workflow folder' as 'a/erwin/Data Transformation/workflows/workflow_1114'. The 'Workflow Name' is 'Migrate diagrams between IT and Enterprise EA' and the 'Description' is empty. The 'Steps content' section on the left has three tabs: 'Sources', 'Transformations', and 'Operations'. The 'Sources' tab is active, showing a list with '1 EA Model - IT Architecture'. The 'External Data Source Definition' section on the right shows the 'EA ADAPTER' selected, with the 'Name' as '1 EA Model - IT Architectures (EAARCH) Export', the 'Type' as 'export (CMXML)', and the 'Object Type' as 'Diagram'. The 'Source Fields' section lists '1 Name [Equal "Claim Handling - Accept Claim Process - TO BE"]', '1 Id', and '1 Unique Id'. At the bottom, there are buttons for 'Add', 'Delete', 'Export WF', 'Save', 'Test', 'Cancel', and 'Exit'.



Other fields, like Category, Parent Object/Parent object name etc can also be selected to be used to filter diagrams of interest, if desired.

Finally, select the "Load in CM Repository" mapping name, Id, Unique Id as mandatory fields, using Unique Id as key for the operation, with Action "Keep SOURCE" or "Keep TARGET" as desired:

Workflow Configuration

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

Workflow definition Configuration:

Workflow: EA Model - Enterprise Migrate diagrams between IT and Enterprise EA (1114) ☒ Active Workflow folder: a/erwin/Data Transformation/workflows/workflow_1114

Workflow Name: Migrate diagrams between IT and Enterprise EA Description:

Steps content:

Sources: 1 EA Model - IT Architecture

Transformations: 1 Fixed Value Manager

Operations: EA Model - Enterprise

Mapping and Operation

with operation: Load in CM Repository Model Name: EA Model - Enterprise ☐ Send e-mail to ☐ Single email for record

Column Name	Type	Object types	Mapping (Properties/Associations)	Type	Action	KeySet	No new
1 Name	Generic...	Diagram	<OBJ NAME> Name	Single-line ...		<input type="checkbox"/>	<input type="checkbox"/>
1 Id	Generic ...	Diagram	<OBJ ID> Id	Single-line t...		<input type="checkbox"/>	<input type="checkbox"/>
1 Category	Generic ...	<SKIP COLUMN>	<SKIP COLUMN>			<input type="checkbox"/>	<input type="checkbox"/>
1 Unique Id	Generic ...	Diagram	<OBJ UUID> Unique Id	Single-line t...	Keep SOURCE	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Buttons: Add, Delete, Export WF, Save, Test, Cancel, Exit

All other mappings are unnecessary, since the diagram migration component will take care of moving diagram properties and associations, diagrammed objects and actual diagram image content (shapes, connectors etc)

The migration will actually work under the following conditions:

1. Workflow operation involves the object type DIAGRAM
2. CwImport.exe, CwSingleExport.exe, CwSingleExportAndImport.exe are found into Corporate Modeler bin folder (see Installation Guide)
3. Source and target models share the same design, at least for diagrammed objects

Please note that the diagrams already existing into target model, based on their UUID, are exported in XML ("Diagrams_DT_TARGET_BAK_YYYYMMDD_hh24mmssmillis.xml" into operation folder) for backup and rollback support, before being updated.

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).

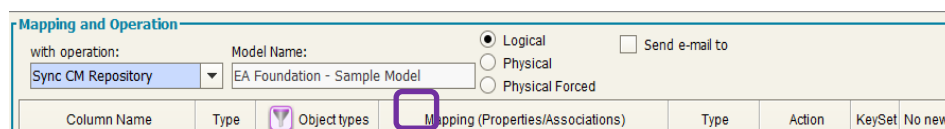
Synch in CM Repository

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:

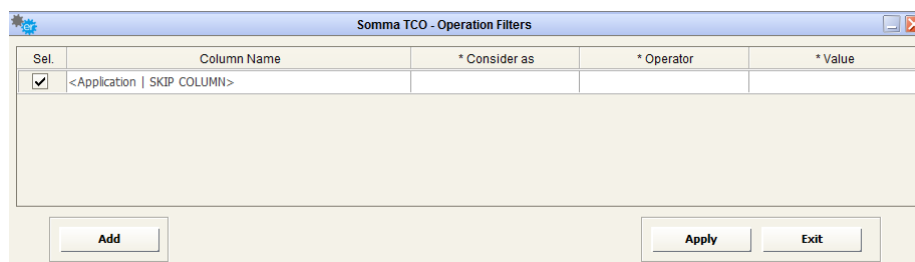
- *Objects coming from the source dataset* will be *inserted/updated* in the specified model accord to the defined mapping rules
- *Objects* already in the specified model object type, that are *not listed in the source dataset*, will be:
 - When “*logical*” option is set, *logically deleted*, and renamed 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 format...	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			
1	TXT_SERVICE_NAME	Generic ...	Application component	<ASSOCIATION> Goal (influences)	Relation...			

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: POST to DG Workspace Name: Default ☒ Send e-mail to csalaris@erwin.com ☐ Single email for record **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	Generi...	Application compo...	<PROPERTY> Lifecycle status	List		<input type="checkbox"/>	
1	TXT_SERVICE_NAME	Generi...	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. The 'with operation:' dropdown is set to 'Send to File Adapter'. The 'Choose Adapter' dropdown is set to 'MANAGER FOLDER'. Below, there is a text field for 'Optional output file naming convention, without extension:' containing '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

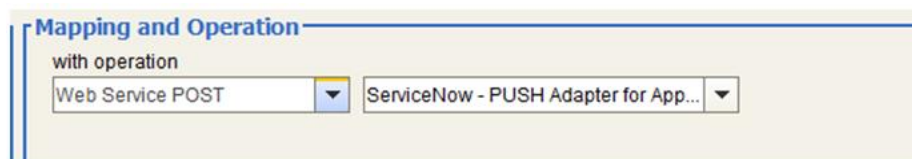
The screenshot shows the 'Mapping and Operation' dialog box for 'Send to DB Loader'. The 'with operation:' dropdown is set to 'Send to DB Loader'. The 'Choose Adapter' dropdown is set to 'MYSQL LOADER'. There are checkboxes for 'Send e-mail to' and 'Single email for record', both of which are unchecked. Below, there is a text field for 'Table to be updated:' containing 'services'. To the right of this field is a dropdown 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)'. At the bottom, there is a table with 6 columns: Object field, Object type, Table column, FK table, FK match column, and FK key column.

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:
 - o The name (“FK table”)
 - o The column hosting the input values (“FK match column”)
 - o 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 Name EA Foundation - Sample Model (EASAMP14) Export Source Filters

Select Object Type

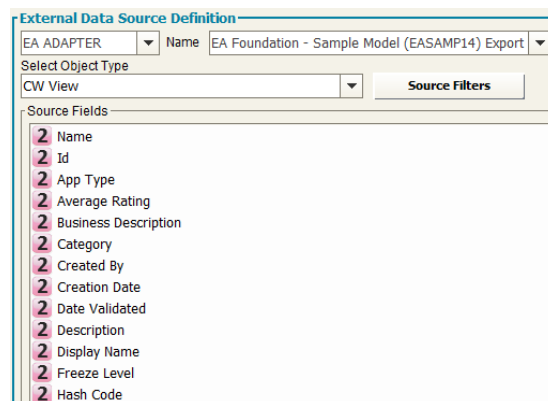
CW Site

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:

Configure message

Configure message

Email To:
john.black@customer.com

Email CC:

Email Subject:
Application Catalog updated - <%SYSDATE_EUR%>

☒ Attach workflow output file (HTML)

☐ Email Always ☒ Only with data ☐ Only on errors

Message:
Please, check HTML report in <%OPERATION_FOLDER%>.
Refer to:
Enterprise Application Catalog
for details.
Collector Team

Add URL OK Exit

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 the erwin Data Transformation software. The top window is the 'Workflow Configuration' dialog, with the '4. OPERATION&TARGET' tab selected. It shows workflow details like 'Workflow Name: TEST EMAIL NO DATA' and 'Workflow folder: ogramData/erwinCollector/workflows/workflow_1348'. The 'Mapping and Operation' section shows 'with operation: Load in CM Repository' and 'Model Name: Casewise Framework Example'. Checkboxes for 'Send e-mail to' and 'Single email for record' are both checked. The 'Email To' field contains '<%1 AM email%>'. The bottom window is the 'Configure message' dialog. It has fields for 'Email To:' (containing '<%1 AM email%>'), 'Email CC:' (containing 'servicedesk@customer.com'), and 'Email Subject:' (containing 'Application <%1 Application name%> updated in EA Model'). There is a checked checkbox for 'Attach workflow output file (HTML)'. At the bottom, three radio buttons are present: 'Email Always' (unselected), 'Only with data' (selected), and 'Only on errors' (unselected).

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.

The image shows an email notification from 'b.becker@customer.com' to 'servicedesk@customer.com' with the subject 'Application E-Learning has been updated in EA model'. The email body says 'Application E-Learning has been updated from Application Catalogue, with status 1 - Feasibil Please, check attachment for detail'. An attachment named 'WFOUTPUT_79_20130619_160109727.html' (3 KB) is shown. Below the email, there is a table titled 'Corporate Collector' with a timestamp of '2013/06/19 16:01:09'. The table has three columns: '1 Application name', '1 Status', and '1 AM email'. It contains four rows of data. At the bottom, there is a note: 'Workflow operation for folder C:/Users/ClaudiaAdmin/Documents/CONFREX/CC4CMXML_79_20130619_160109719 has been executed with no errors'.

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

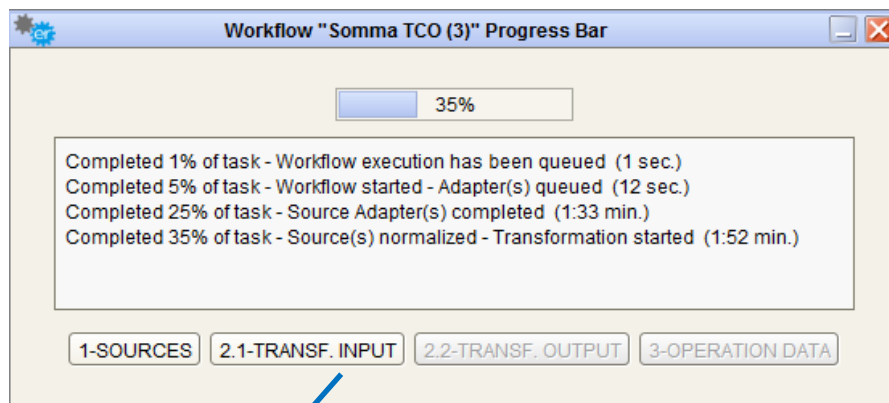
Workflow Test

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

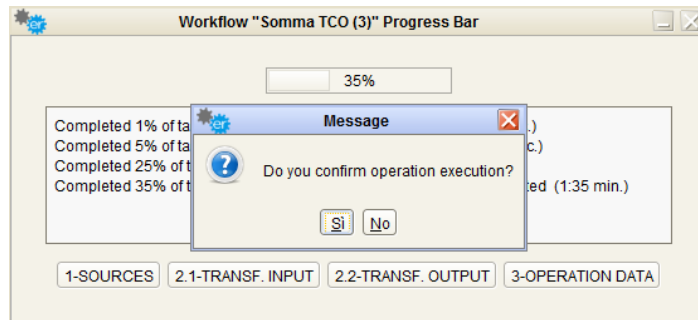
As soon as the step is performed and corresponding data is produced, a specific button makes it available to the user.



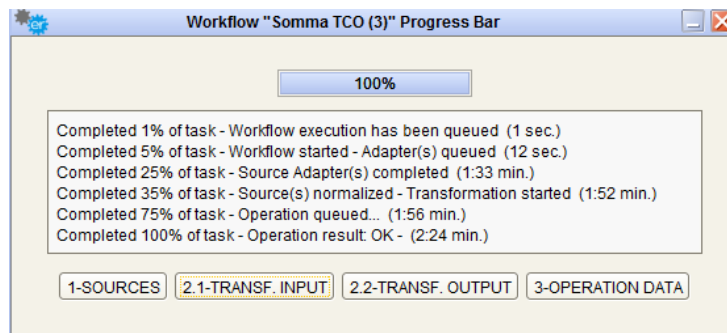
Corporate Collector

<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 Scheduler application window is divided into several sections:

- Configuration:** Includes a 'Select Configuration' dropdown set to 'All the configurations' and a checked 'ACTIVE CONFIGURATION' checkbox.
- Job Sequence:** A table with columns 'Sequence Name', 'Description', and 'Next Execution Time'. It is currently empty, with 'Add', 'Edit', and 'Delete' buttons below it.
- Scheduler Job:** A table with columns 'Job Name', 'Description', and 'Next Execution Time'. It contains four entries:

Job Name	Description	Next Execution Time
Adapter Job - EA Foundation - Sample Model (EASAMP14) ...	CM repository export	
Adapter Job - File di test	SHEET folder	
Adapter Job - Nuovo DB Adapter	DB Query	
Adapter Job - WS Adapter	WS Consumer	

 Below the table are 'Add', 'Edit', and 'Delete' buttons.
- Timing Parameters:** Includes a 'Repetition' dropdown set to 'Daily', a 'Parameters' section with 'Every 3 days', a 'Start Time' field set to '16:00:21', and a 'Time window' section with 'From' and 'To' date pickers. 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 two date pickers: 'From' set to '21/09/2018' and 'To' set to '23/11/2018'.

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

The 'Repetition' section shows 'Minutes' selected in the dropdown. The 'Parameters' section shows 'Every 15 minutes' and a checked 'Set Hours Interval' checkbox. The 'From' time is '8' and the 'To' time is '24'.

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


The 'Repetition' section shows 'Hourly' selected in the dropdown. The 'Parameters' section shows 'Every 12 hours'.

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


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


- *Repetition “Monthly”* - the repetition of the job every “xx” (ordinal number) of the month (first day in the example).

- *Repetition “Once”* - schedule the job to run just once, in the specified date and accordingly to the “Start Time” field.

When the user has completed the scheduling configuration, the user can store the scheduling parameters in the DT database by pressing the  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  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  button.

The  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”.

Configuration

Select Configuration

All the configurations ☐ ACTIVE CONFIGURATION

The “All the configurations” configuration is always active:

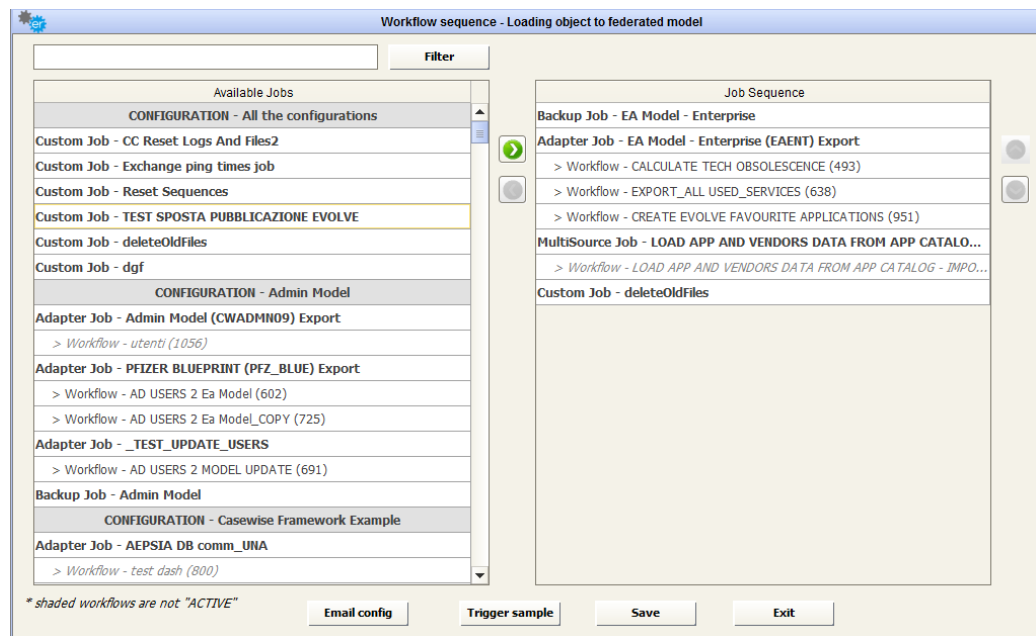
Configuration

Select Configuration

All the configurations ☒ ACTIVE CONFIGURATION

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' with description 'CONDITIONAL'. 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) ...' with description 'CM repository export'
 - 'Adapter Job - File di test' with description 'SHEET folder'
 - 'Adapter Job - Nuovo DB Adapter' with description 'DB Query'
 - 'Adapter Job - WS Adapter' with description 'WS Consumer'Below the table are three buttons: 'Add', 'Edit', and 'Delete'. The 'Add' button is highlighted with a blue border.
- Timing Parameters:** This section contains:
 - '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'.

At the very bottom right of the window is an 'Exit' button.

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 0 minutes *(Kill the custom job if not completed after x minutes)*

Save Test Exit

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\pblPostProcessing.bat

Parameters:

"F:\temp\output.txt"

☒ Wait For Return Timeout after 1 minutes *(Kill the custom job if not completed after x minutes)*

Save Test Exit

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 1 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:\temp\pblPostProcessing.bat

Parameters:
F:\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
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:* AEPDASE 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

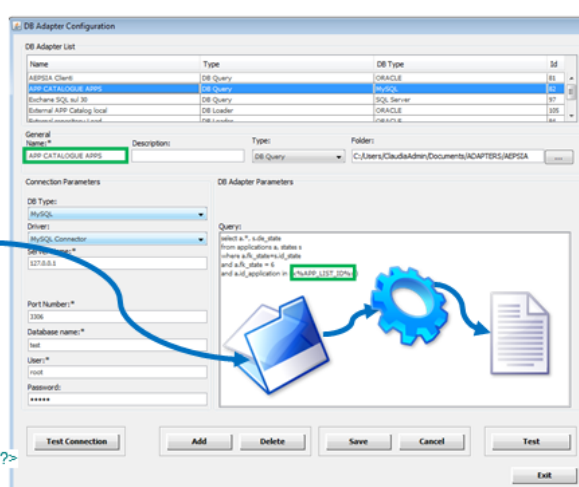
and the sample content describing the schema is detailed below (see next paragraph for <PARAMETERS> tag):



CCTRG_ADAPTER_20130510_120748.xml

```
<?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">

```





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: Data filtering Activity: Fixed Value Manager Add

Transformation fields Apply Remove Reset

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.

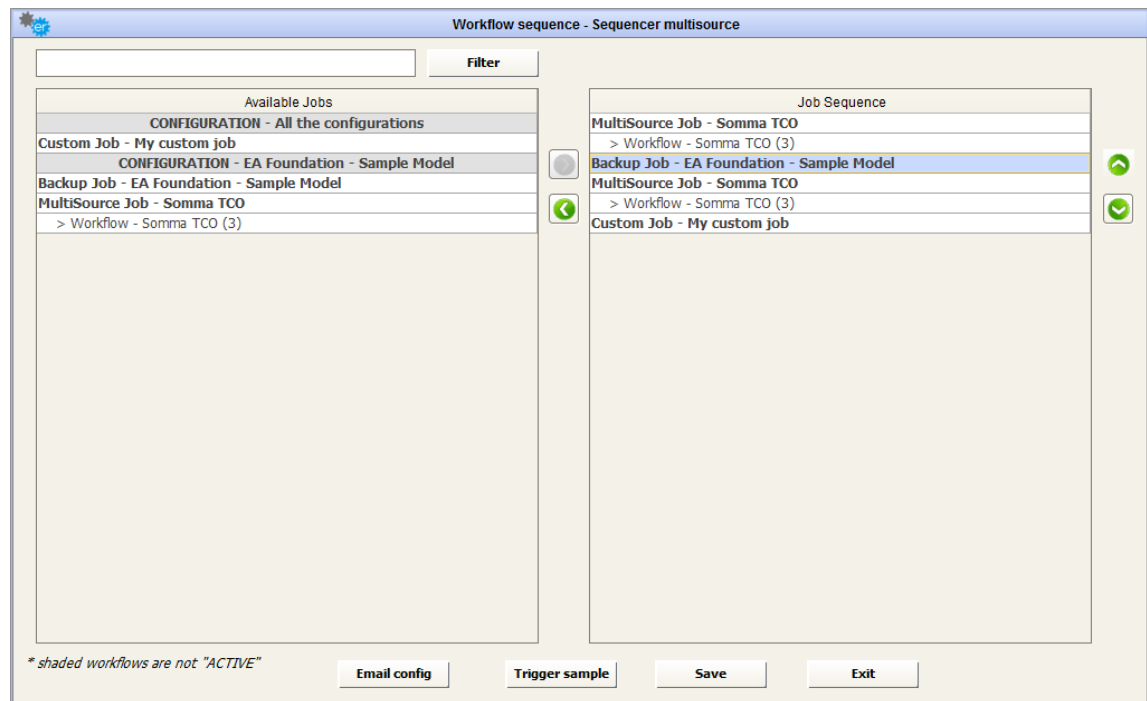
<input checked="" type="checkbox"/>	1 DATA_OP	<%SYSDATE%>
-------------------------------------	-----------	-------------

<%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>
```

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

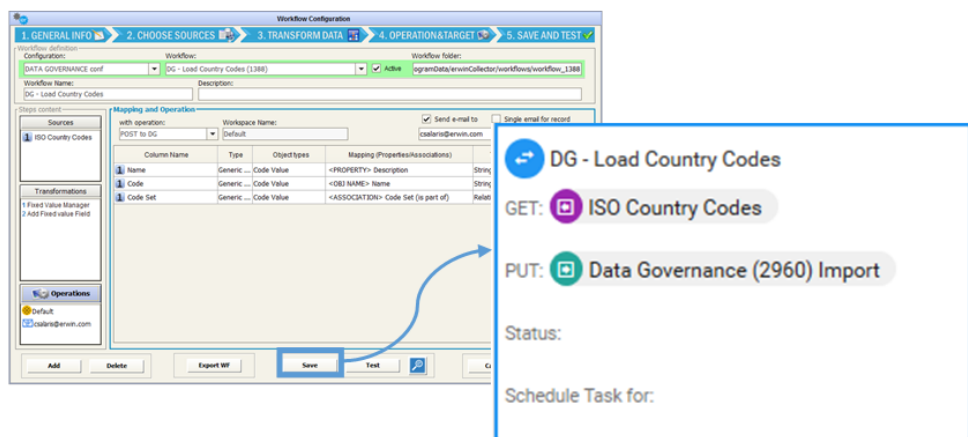
Running DT from Cloud Platform

Collector4Cloud provides EA Agile/EA Agile V3 users the capability to interact with onPrem DT:

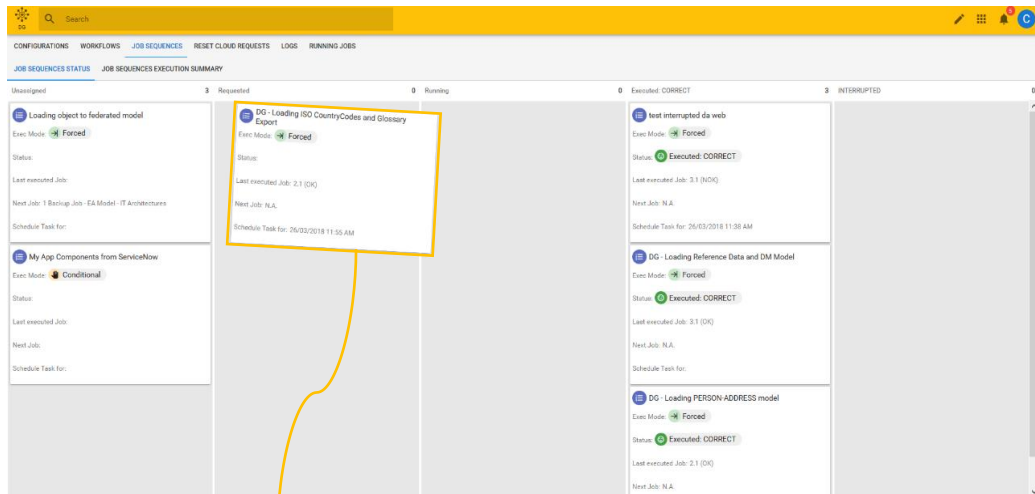
- View available DT flows / job scheduler
- View the workflow definition, in terms of sources/target Adapters and configuration
- View the Job Sequence definition, in terms of included workflows and custom jobs
- Run a specific flow or job sequence on demand or by schedule, following the execution status
- 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

< Mar 2018 >

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

01 : 28 PM

Set to Now



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: EAGLE - Export app component to PDF 2018/03/26 15:36:46

Name	Action	Availability characteristics	Business Criticality	Date of last release	Date of next release	Lifecycle status	Logcat	Next standard review date	Requirement (realises)
Bank Application	Replica and consolidate	High	100	2018/03/15 11:00:00 AM	2018/03/16 11:00:00 AM	Running Out	false		
Bank System	Replica and consolidate	High	100	2018/03/15 03:00:00 AM	2018/03/17 03:00:00 AM	Retired	false		
Call Center Manager	Consolidate	Low	10	2018/03/15 03:00:00 AM	2018/03/17 03:00:00 AM	Use	false		
Car Insurance Application	Replica and consolidate	Low	10	2018/03/15 11:00:00 AM	2018/03/16 11:00:00 AM	Running Out	false		
Claim Handling	Consolidate	Medium	50	2018/03/15 11:00:00 AM	2018/03/17 11:00:00 AM	In Development	false		
Claim Handling Management	Supersede/replace	High	100	2018/03/15 03:00:00 AM	2018/03/16 11:00:00 AM	Use	false		

- “Execution Progress” for Job Sequences (with links to workflows dataset), continuously updated:

The screenshot shows the Erwin Cloud interface. On the left, a job configuration panel for 'DG - Loading ISO CountryCodes + ServiceNow Systems and Glossary Export' is visible. It includes fields for 'Name', 'Description', 'Exec Mode' (set to 'Forced'), 'Notify Result to' (set to 'mailto:stefan.kaub@ppl.com'), and 'Status' (set to 'Running'). A link to the 'erwinCollector' is provided. An arrow points from this link to the 'erwinCollector' table below.

erwinCollector					
Job Type	Index	Job Name	Status	Execution DateTime	Notes
SINGLE_ADAPTER	1	ISO Country Codes	Executed CORRECT	2018-04-02 17:49:02.455	
WORKFLOW	1.1	> DG - Load Country Codes	Executed CORRECT	2018-04-02 17:49:54.575	OPERATION DATA
SINGLE_ADAPTER	2	SN - get Business Services	Executed CORRECT	2018-04-02 17:50:25.448	
WORKFLOW	2.1	> DG - Loading Business Services from ServiceNow CMDB	Executed CORRECT	2018-04-02 17:51:21.29	OPERATION DATA
SINGLE_ADAPTER	3	Data Governance (2960) Export	Executed CORRECT	2018-04-02 17:51:50.978	
WORKFLOW	3.1	> DG Glossary - Report			

erwinCollector					
Job Type	Index	Job Name	Status	Execution DateTime	Notes
SINGLE_ADAPTER	1	Data Governance (2960) Export	Executed CORRECT	2018-04-02 10:27:20.423	
WORKFLOW	1.1	> BI REPORTS	Skipped	2018-04-02 10:27:22.049	JOB IS NOT ACTIVE
CUSTOM_JOB	2	EVOLVE Publication	Executed ERROR	2018-04-02 10:27:50.514	Sequence stopped
MULTI_ADAPTER	3	GETTING DATA FROM DM - REPORT			
WORKFLOW	3.1	> GETTING DATA FROM DM - REPORT			

- *Notification emails* – can be requested by cloud setting the “Notify Result to” field on workflow/job sequences

Schedule Task for

Notify Result to

Business Glossary from erwin DG - 03/04/2018 08:28:27

A

glossary.xlsx
59 KB

PFA the Business Glossary.

See more information on:

[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):

Collector Operations > Views > My Collector Workflows

Smart Queries: **AW**

Workflows 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 AGILE - 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 AGILE - 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 AGILE - 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 AGILE - 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 AGILE - 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 CORRECT	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:

Search

CONFIGURATIONS WORKFLOWS JOB SEQUENCES RESET CLOUD REQUESTS **LOGS** RUNNING JOBS

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

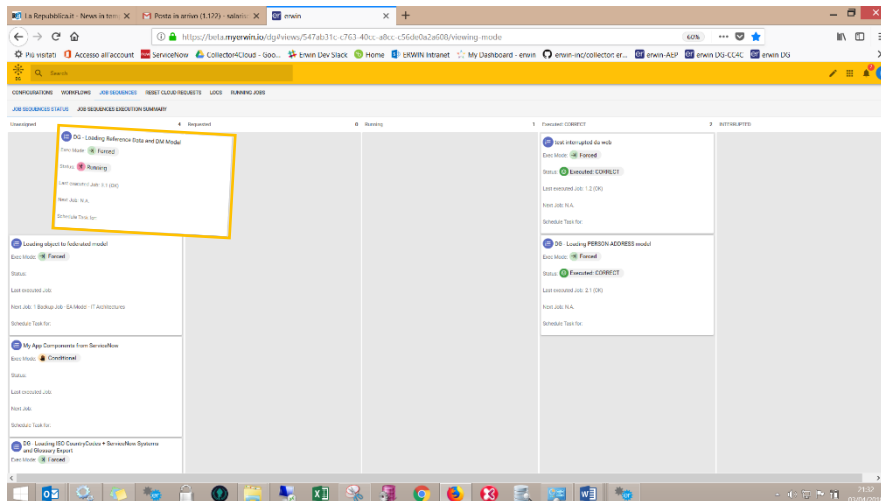
Collector Operations Log - 2018.03.25 http://localhost/CollectorWorkflows/CollectorOperations_20180325.xlsx

Collector Operations Log - 2018.03.26 http://localhost/CollectorWorkflows/CollectorOperations_20180326.xlsx

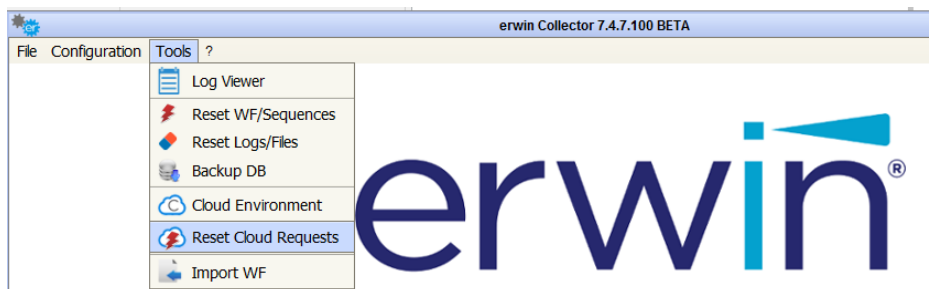
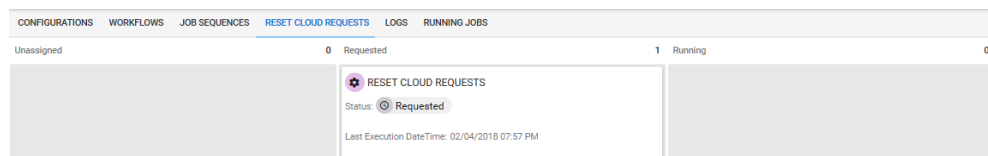
1	A	B	C	D	NOTE
CONFIGURATION	Operation Date	USER	OPERATION		
2	All the configurations	2018-03-26 16:17:31.062	SequenceManager	Sequence completed	Sequence "DG - Loading PERSON-ADDRESS model" has been completed (ExecID:1522073660871-FORCED)
3	DATA GOVERNANCE conf	2018-03-26 16:17:20.665	File Adapter	workflow completed	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ExecID:1522073660871-ID:1440) - File has been sent to Adapter
4	DATA GOVERNANCE conf	2018-03-26 16:17:08.924	Workflow manager	waiting for operation...	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ID:1440)
5	DATA GOVERNANCE conf	2018-03-26 16:17:04.656	Workflow manager	workflow starting...	Workflow: DG - Exporting PERSON_ADDRESS Data Model (ID:1440)
6	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)
7	All the configurations	2018-03-26 16:16:10.728	Data Governance	DG_endExport	Adapter file: C:\ProgramData\erwin\Collector\workflows\workflow_1440\MULTISOURCE_1440_20180326_1522073660871\AD\
8	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:\Service\k
9	DATA GOVERNANCE conf	2018-03-26 16:15:51.555	DG Adapter	workflow completed	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ExecID:1522073660871-ID:1394) - Processed folder: C:\Users\cs
10	DATA GOVERNANCE conf	2018-03-26 16:15:33.331	Workflow manager	waiting for operation...	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ID:1394)
11	DATA GOVERNANCE conf	2018-03-26 16:15:28.033	Workflow manager	waiting for operation...	Workflow: DG Glossary - Report (ID:1369)
12	DATA GOVERNANCE conf	2018-03-26 16:15:27.533	Workflow manager	workflow starting...	Workflow: IMPORT DM MODEL TO DATA GOVERNANCE (ID:1394)
13	DATA GOVERNANCE conf	2018-03-26 16:15:15.308	Workflow manager	workflow starting...	Workflow: DG Glossary - Report (ID:1369)
14	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
15	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
16	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)
17	All the configurations	2018-03-26 16:14:20.871	csalaris	sequence requested	"DG - Loading PERSON-ADDRESS model" sequence requested (ExecID:1522073660871)
18	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
19	DATA GOVERNANCE conf	2018-03-26 16:14:00.583	Workflow manager	waiting for operation...	Workflow: DG - Load Country Codes (ID:1388)
20	DATA GOVERNANCE conf	2018-03-26 16:13:56.974	Workflow manager	workflow starting...	Workflow: DG - Load Country Codes (ID:1388)
21	All the configurations	2018-03-26 16:13:33.616	WS Adapter	...and WS Export	Adapter completed
22	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)
23	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.

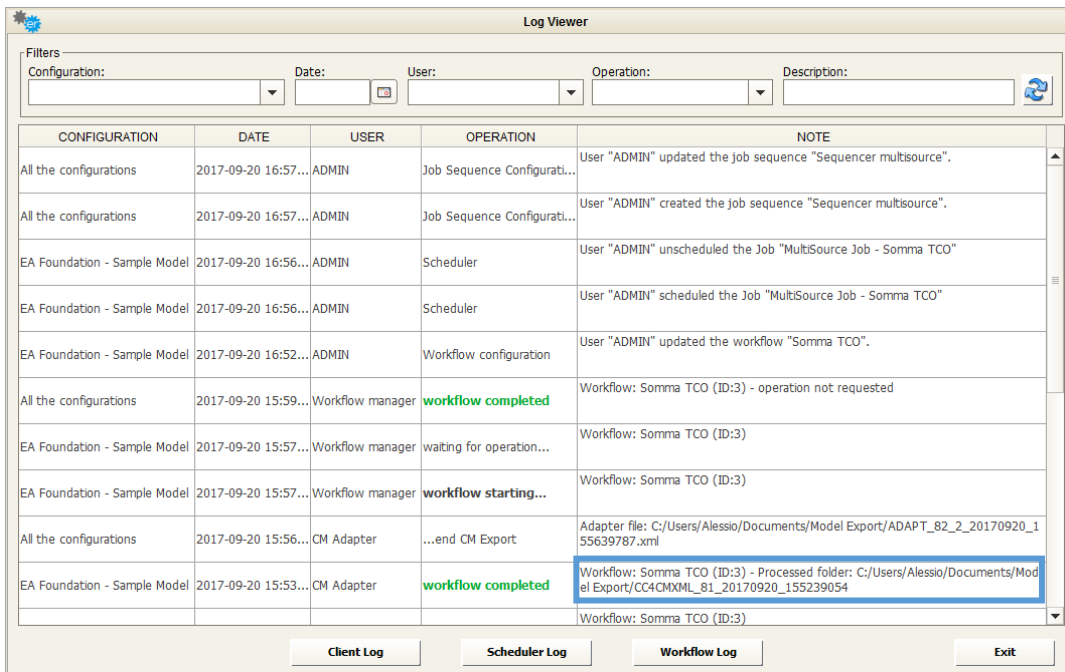
For each row, you can see the name of the configuration (column name *CONFIGURATION* – available only if linked to the action), the date (column name *DATE* – timestamp of the action), the user (column name *USER* – the user who owns the action), the operation (column name *OPERATION* – what has been 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.



The screenshot shows the 'Log Viewer' application window. At the top, there are filter fields for Configuration, Date, User, Operation, and Description, along with an 'Apply' button. Below the filters is a table with the following columns: CONFIGURATION, DATE, USER, OPERATION, and NOTE. The table contains several log entries, including actions performed by 'ADMIN' and 'Workflow manager'. The 'NOTE' column contains detailed descriptions of the actions, some of which are highlighted in blue. At the bottom of the window, there are buttons for 'Client Log', 'Scheduler Log', 'Workflow Log', and 'Exit'.

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, Scheduler and Workflow log

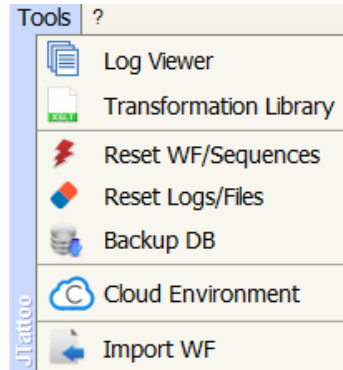
The buttons open different kinds of logs showing a detailed view of the system events. Very detailed information can be found there, such as query messages, exceptions, errors etc.

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:

A screenshot of the 'Custom Job Configuration' dialog box. The dialog has a title bar with a gear icon and the text 'Custom Job Configuration'. It contains several input fields: 'Job Name:*' with the value 'Reset Sequences Util', 'Job Description:' with the value 'the job will reset running and pending sequences', 'Server IP:*' with the value 'ALESSIO MOBILE', 'Username:*' with the value 'AlessioAdmin', 'Password:*' with masked characters, and 'Executable path (server):*' with the value 'C:\ProgramFiles(x86)\CorporateCollector\resetSequencesUtil.bat'. There is also a 'Parameters:' field. At the bottom, there is a 'Wait For Return' checkbox (checked), a 'Timeout after' field with the value '1', and the text 'minutes (Kill the custom job if not completed after x minutes)'. There are three buttons: 'Save', 'Test', and '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.

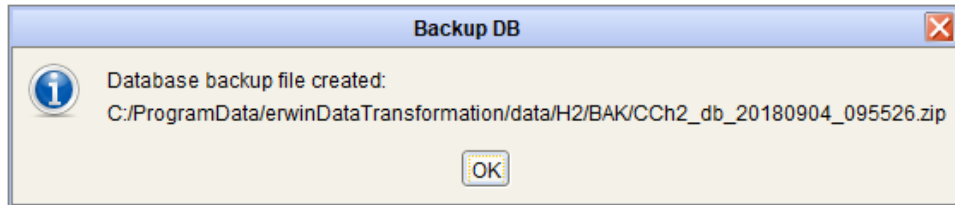


All the physical files mentioned in the deleted logs will also be deleted in the internal workflow folders; please be sure that no active workflows are running when using this feature.

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:

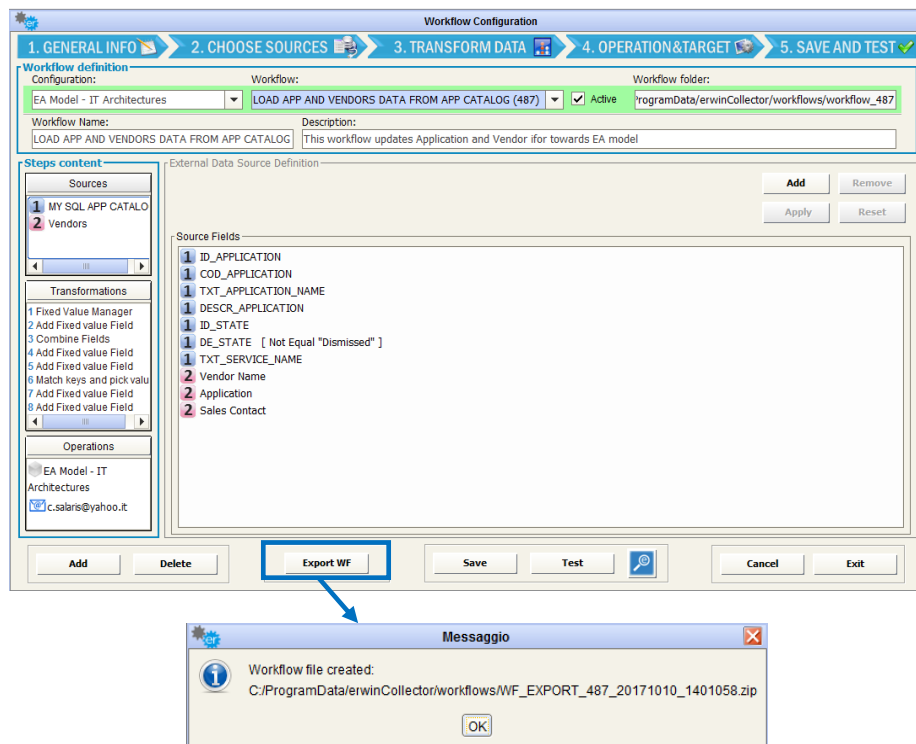


Export/Import Workflow

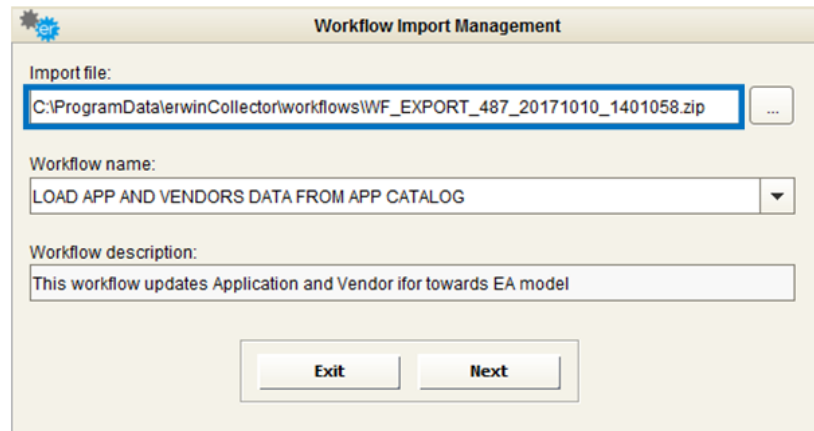
It can sometimes be necessary to configure and test workflows in a working DT instance before deploying them in a production site.

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):



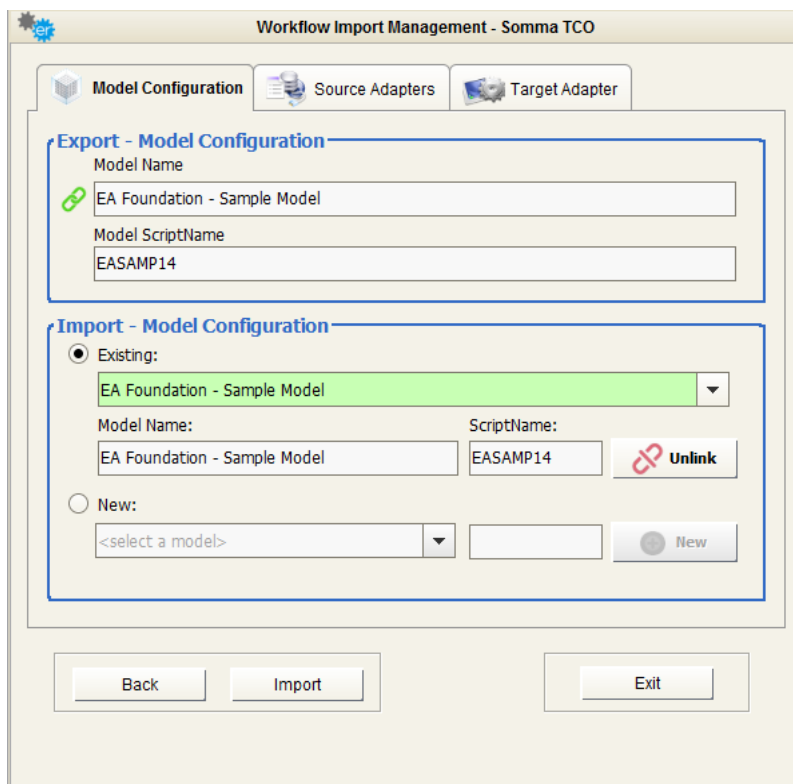
Workflow Import Management

Import file:
 ...

Workflow name:
 ▼

Workflow description:

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

Model ScriptName

Import - Model Configuration

☒ Existing:
 ▼

Model Name: ScriptName:

☐ New:
 ▼

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 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

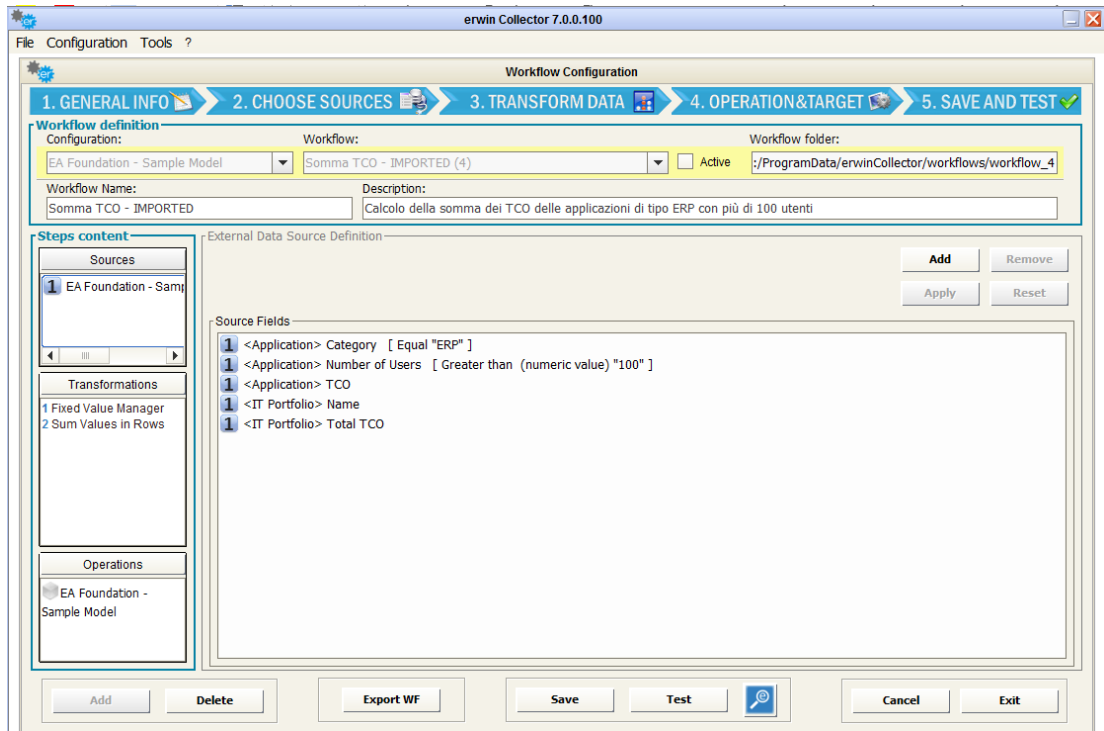
Back Import Exit

Info

Workflow import completed (ID:4)

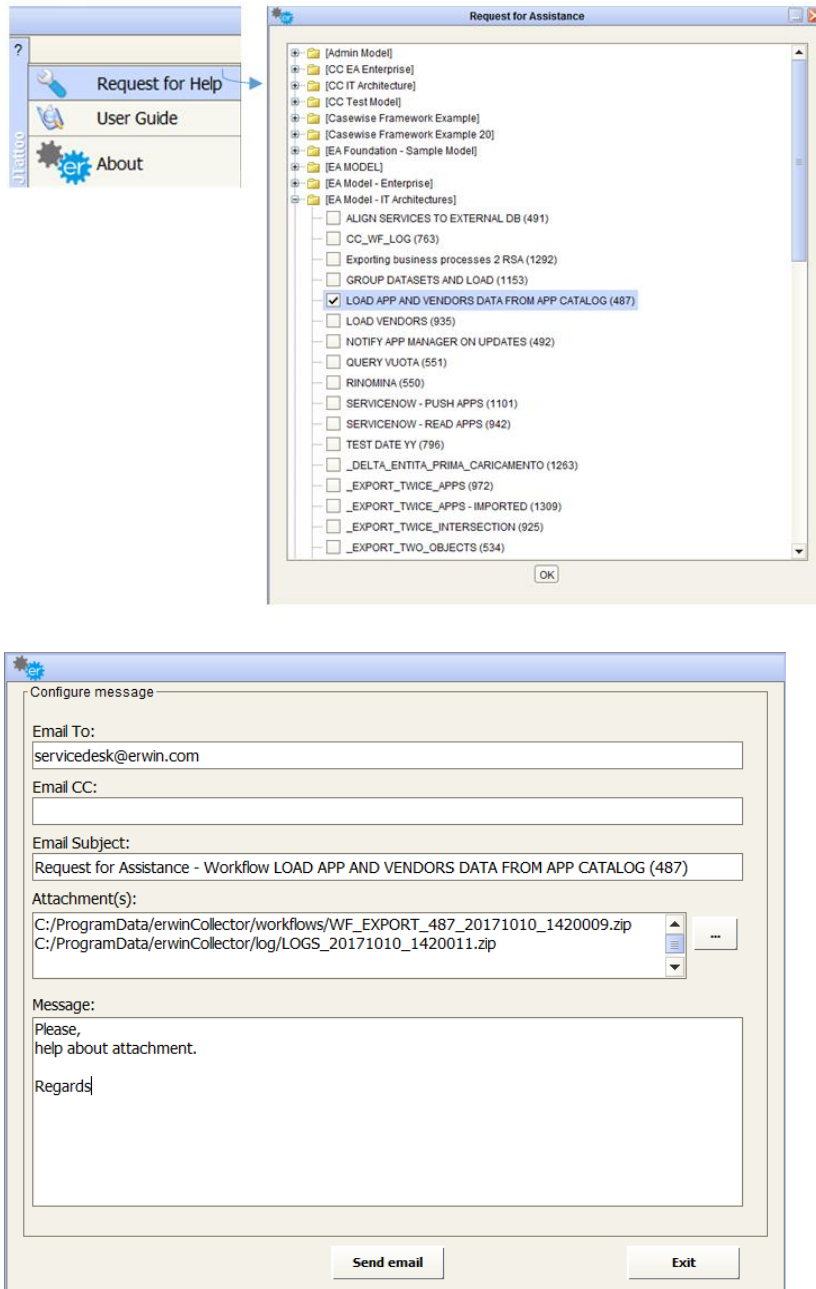
OK

The result of the import operation is then shown to the user, which can edit/test/schedule workflow as usual:



Request for Help

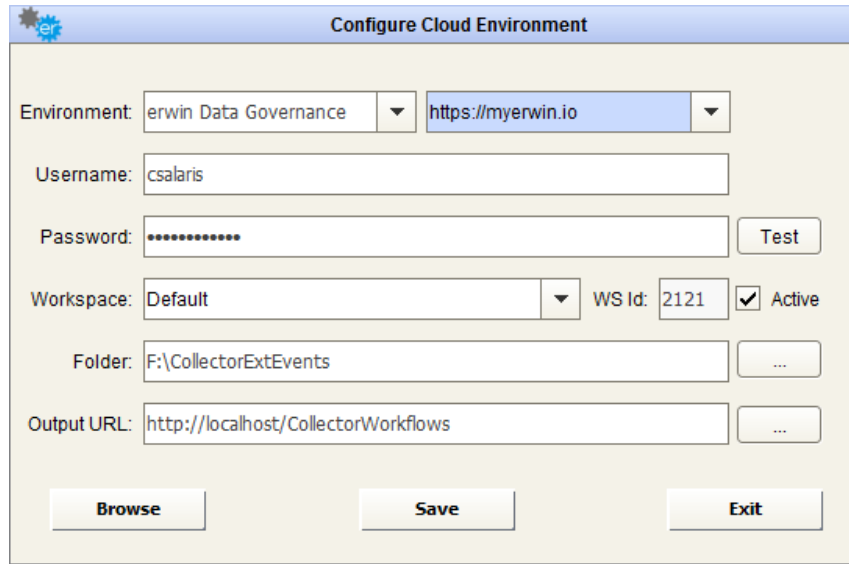
Users can ask for assistance for workflows through a dedicated features in main toolbar:



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](#))

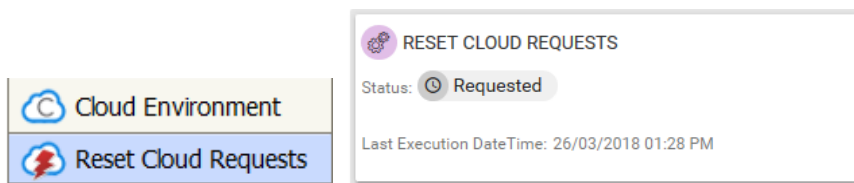


1. Select environment parameters – erwin EA Agile or erwin EA Agile V3 – and instance
2. Provide credentials for the selected instance
3. Test the connection
4. Select workspace containing the DT package (see before)
5. Set the communications to be active or not. In last case, DT will not take charge 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:



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

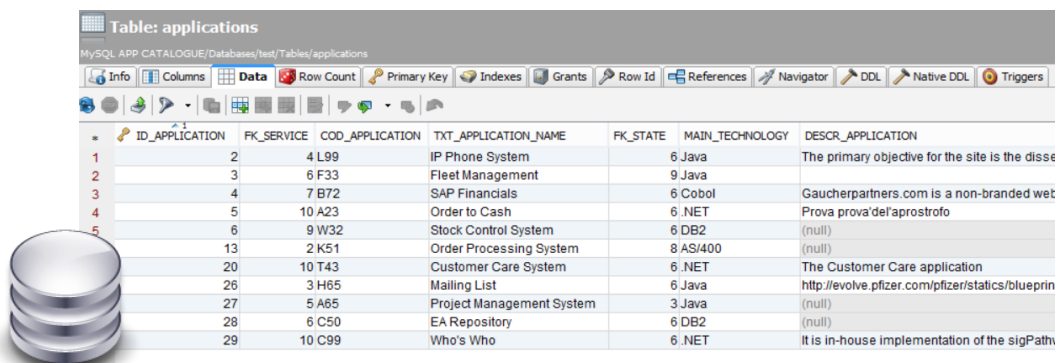
Examples of Workflow Configurations

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:



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 web
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	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
	lta	Carl	L43	AM/DM
	mma	Antonio	A30	AM

AD Importing and refreshing application and vendor data can be configured with the following steps:

LOAD APPS AND VENDORS DATA FROM APP CATALOG



- 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:

The screenshot shows the 'DB Adapter Configuration' window. It contains a table of existing adapters and configuration fields for a new adapter.

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:

* Description:

* Adapter Folder : ...

* Operation :

Connection

* Host IP: * Port:

* UserName:

* Password:

*** Operation Parameters**

* Protocol:

* Type:

* Target Directory: ...

* File/Filters: ...

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:

Workflow Configuration

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

Workflow definition Configuration: Workflow: Workflow folder:

EA Model - IT Architectures LOAD APP AND VENDORS DATA FROM APP CATALOG (487) Active programData/erwinCollector/workflows/workflow_487

Workflow Name: LOAD APP AND VENDORS DATA FROM APP CATALOG Description: This workflow updates Application and Vendor ifor towards EA model

Steps content

Sources

1 MY SQL APP CATALOG 2 Vendors

Transformations

1 Fixed Value Manager 2 Add Fixed value Field 3 Combine Fields 4 Add Fixed value Field 5 Add Fixed value Field 6 Match keys and pick v 7 Add Fixed value Field 8 Add Fixed value Field

Operations

EA Model - IT Architectures c.salariis@yahoo.it

External Data Source Definition

DB ADAPTER Name MY SQL APP CATALOG Type DB Query

Source Fields

1 ID_APPLICATION 1 COD_APPLICATION 1 TXT_APPLICATION_NAME 1 DESCR_APPLICATION 1 ID_STATE 1 DE_STATE [Not Equal "Dismissed"] 1 TXT_SERVICE_NAME

Add Delete Export WF Save Test Cancel Exit

SOURCE DEFINITION – Source 2

Choose previously configured file adapter for vendor info:

Workflow Configuration

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

Workflow definition Configuration: Workflow: Workflow folder:

EA Model - IT Architectures LOAD APP AND VENDORS DATA FROM APP CATALOG (487) Active programData/erwinCollector/workflows/workflow_487

Workflow Name: LOAD APP AND VENDORS DATA FROM APP CATALOG Description: This workflow updates Application and Vendor ifor towards EA model

Steps content

Sources

1 MY SQL APP CATALOG 2 Vendors

Transformations

1 Fixed Value Manager 2 Add Fixed value Field 3 Combine Fields 4 Add Fixed value Field 5 Add Fixed value Field 6 Match keys and pick v 7 Add Fixed value Field 8 Add Fixed value Field

Operations

EA Model - IT Architectures c.salariis@yahoo.it

External Data Source Definition

FILE ADAPTER Name Vendors Type SHEET folder

Header 1° col 1° row Sheet

Yes 1 1

Source Fields

2 Vendor Name 2 Application 2 Sales Contact

Add Delete Export WF Save Test Cancel Exit

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:

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”:

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
res
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
res
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@customer.com

Mapping and Operation

with operation

Model:

☒ Send e-mail to
☐ Single email for record
john.black@customer.com

Load in CM Repository

EA Model - IT Architectures

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.

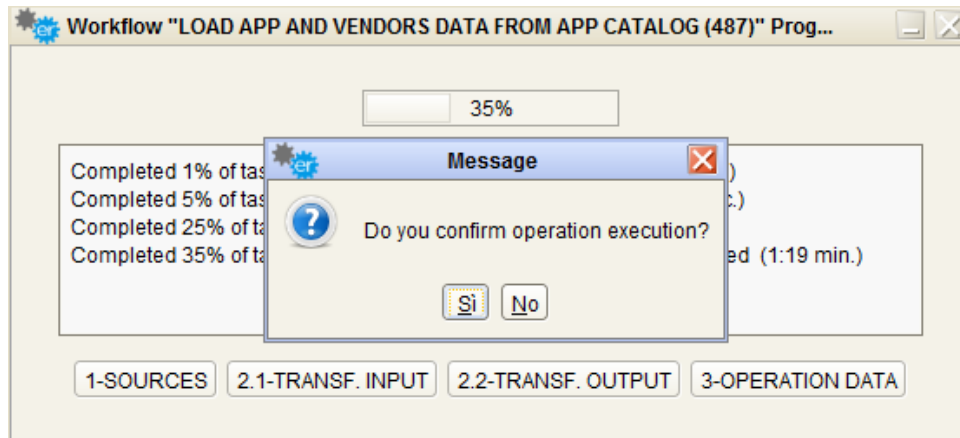
Workflow "LOAD APP AND VENDORS DATA FROM APP CATALOG (487)" Prog...

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

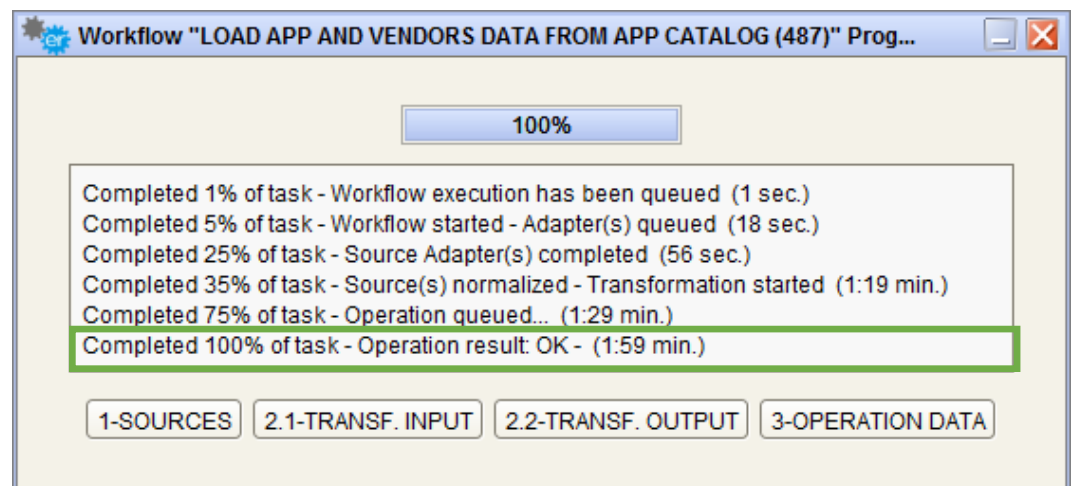
At the end of workflow transformation if operation data is available and ready, the user may choose whether to execute the operation or not:



- CHECK RESULT

Moreover, you can check the result:

- from the test workflow progress bar:

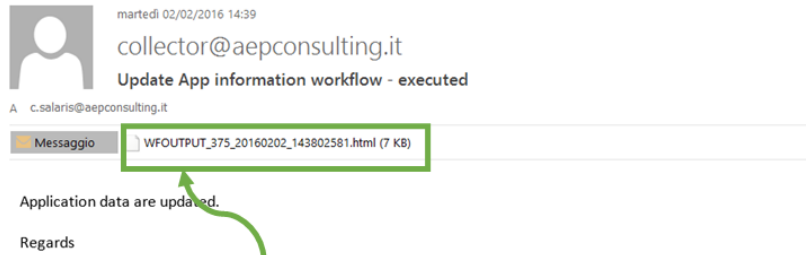


- in **CM**, accessing the tool through the CM icon provided in the button bar.

Type/format	Model object types	Mapping (Properties)	Type	Action	Key/Ref	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	16/06/2003	100	6 - Production

- with the email notification, if configured for the single workflow:



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:

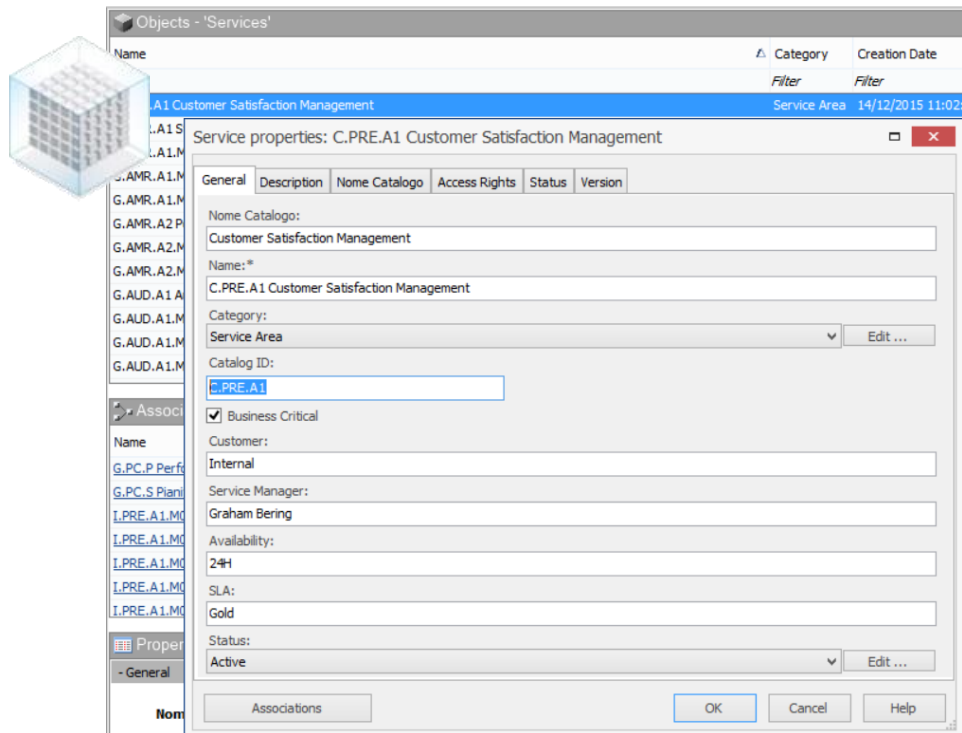
Log Viewer				
Filters				
Configuration:	Date:	User:	Operation:	Description:
CONFIGURATION	DATE	USER	OPERATION	NOTE
EA Model - IT Architectures	2017-09-30 13:35...	CM Adapter	workflow completed	Workflow: LOAD APP AND VENDORS DATA FROM APP CATALOG (ID:487) - Processed folder: C:/Users/csalaris/Documents/_CC_ITARCH/CC4CMXML_375_20170930_133136283
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:

ALIGN SERVICE CATALOG DB



- 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:

The screenshot shows the 'DB Adapter Configuration' dialog box. It contains a table of existing adapters and a form for configuring a new one.

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:\salris\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: casewise | Password: *****

Buttons: 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

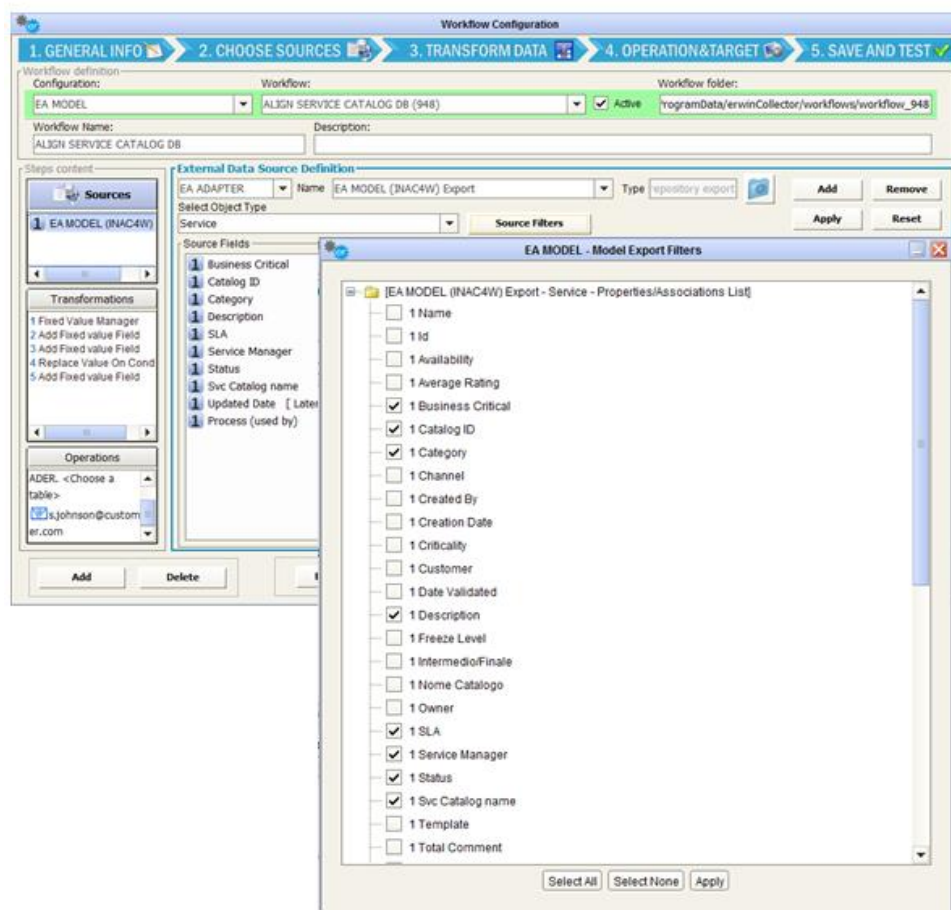
note that the model configuration is mandatory for a given model, only for “Load, Sync or Delete” operation against that model)



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

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)			

Apply Remove Reset

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 Condition
- 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

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

Apply Remove Reset

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_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

Apply **Remove** **Reset**

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					

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 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 type="checkbox"/>	1 IS BSN CRITICAL	
<input checked="" type="checkbox"/>	1 CC_OPERATION_DATE	<%SYSDATE_EUR%>

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

Email To:
s.johnson@customer.com

Email CC:
l.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:

Workflow "ALIGN SERVICE CATALOG DB_N (948)" Progress Bar

35%

Completed 1% of task
Completed 5% of task
Completed 25% of task
Completed 35% of task

Message
Do you confirm operation execution?
Yes No

1-SOURCES 2.1-TRANSF. INPUT 2.2-TRANSF. OUTPUT 3-OPERATION DATA

	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 Bering	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	Messa a disposi...	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...	Messa a disposi...	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	Sviluppo e gestio...	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...	Attività di analisi, p...	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:

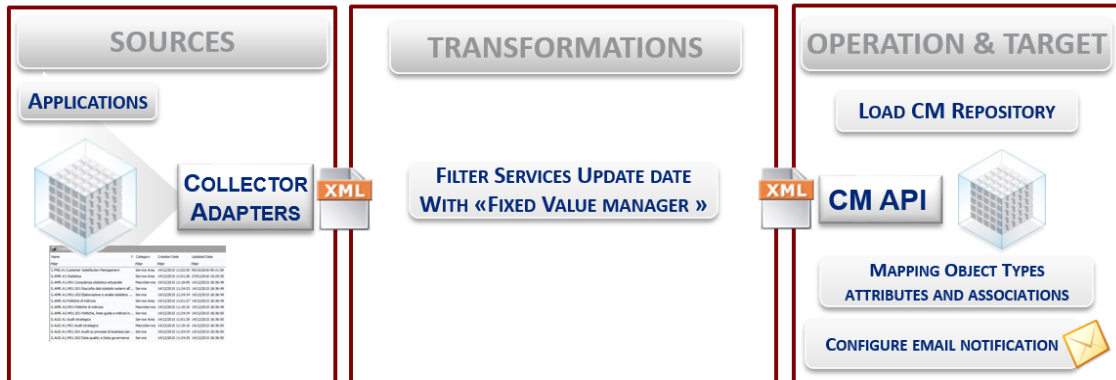
The screenshot shows a dialog box titled "Application properties: Customer Care System". It has a tabbed interface with "System information", "Access Rights", "Status", and "Version". The "System information" tab is active. It contains the following fields: "Status:" with a dropdown menu showing "6 - Production" and an "Edit ..." button; "Category:" with a dropdown menu showing "System" and an "Edit ..." button; "CIID:" with a text field containing "T43"; "SOURCE SYSTEM:" with a dropdown menu showing "Application Catalog"; and "Sales Manager:" with a text field containing "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:

The screenshot shows the same dialog box, but with the "Description" tab selected. It contains the following fields: "Common Name:*" with a text field containing "Customer Care System"; "Category:" with a dropdown menu showing "System" and an "Edit ..." button; and "Application Manager:" with a text field containing "William Kelley".

A DT workflow aligning the database of two CM models can be configured with the following steps:

ALIGN FEDERATED MODELS



- CREATE WORKFLOW TO ALIGN FEDERATED MODELS

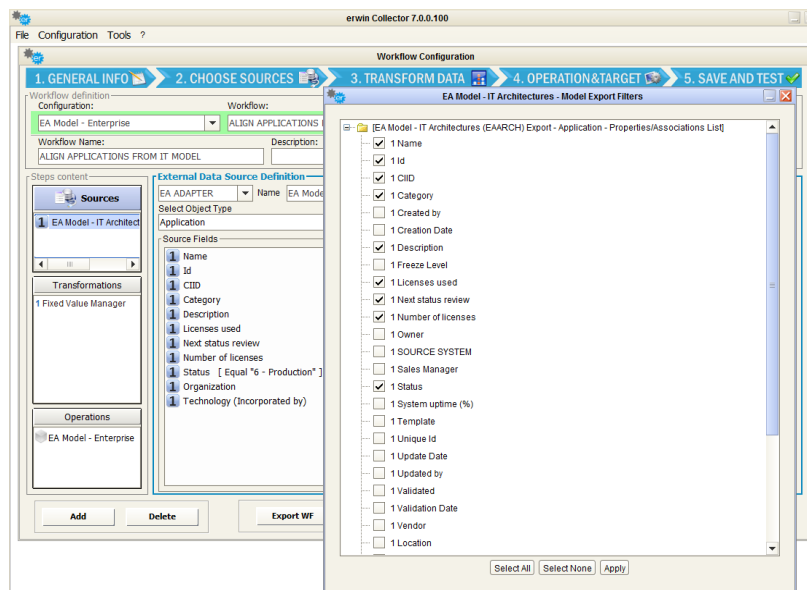
Press the “Workflow configuration” button on the Home Page and configure the following workflow choosing the model configuration according to requirements (please note that the model configuration is mandatory for a given model, when the “Load, Sync or Delete” operation must be executed on that model)



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 Apply Remove Reset

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)			

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):

Mapping and Operation

with operation: Sync CM Repository Model: EA Model - Enterprise ☒ 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
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: Sync CM Repository Model: EA Model - Enterprise ☒ 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

Buttons: Add, Apply, Exit

- 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 - Objects - 'Applications'
 Completed 35% of task -
 Completed 75% of task -

Common Name	CI ID	Source System	Update Date
Filter	Filter	Filter	Filter
_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

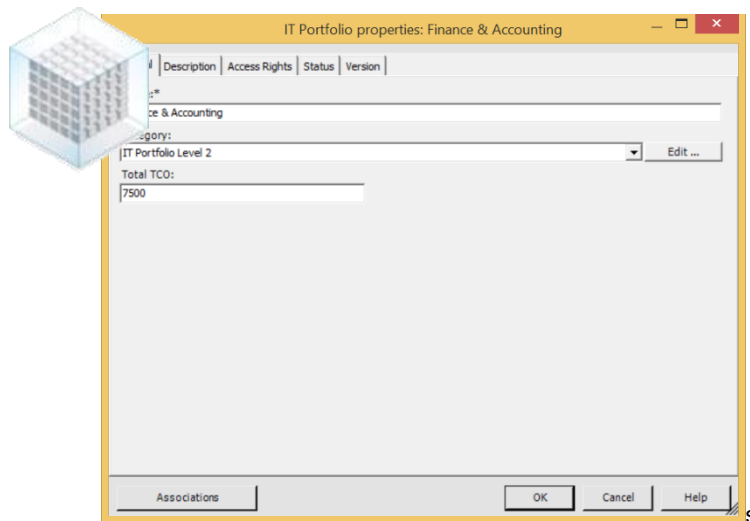
1-SOURCES 2.1

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**.

Application properties: HR Access

General | Description | Details | Access Rights | Status | Version

Name:*

HR Access

Enterprise Standard:

3 - Approver

Category:

ERP

Application properties: HR Access

General | Description | Details | Access Rights | Status | Version

Go Live Date:

giovedì 1 gennaio 2009 00:00:00 Now

End of Life:

sabato 31 dicembre 2016 00:00:00 Now

Number of Users:

370

Contract Type:

1 - Premium Contract Edit ...

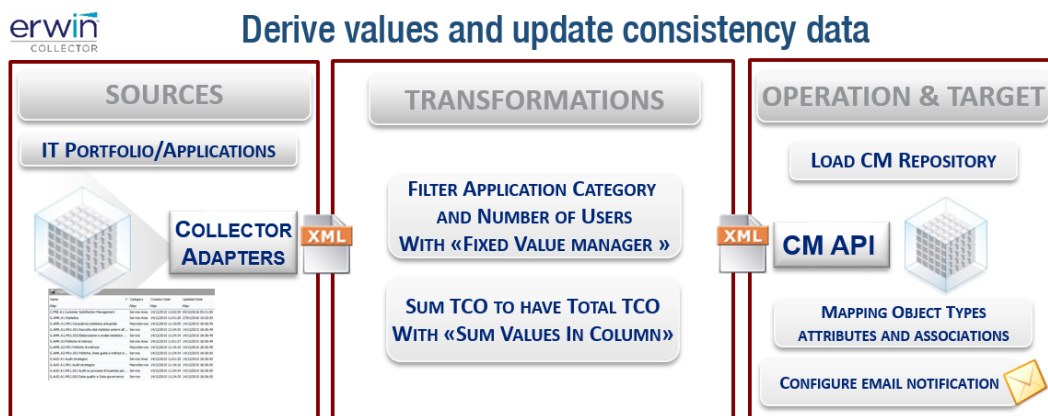
License Type:

Rental per User Edit ...

TCO:

200000

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

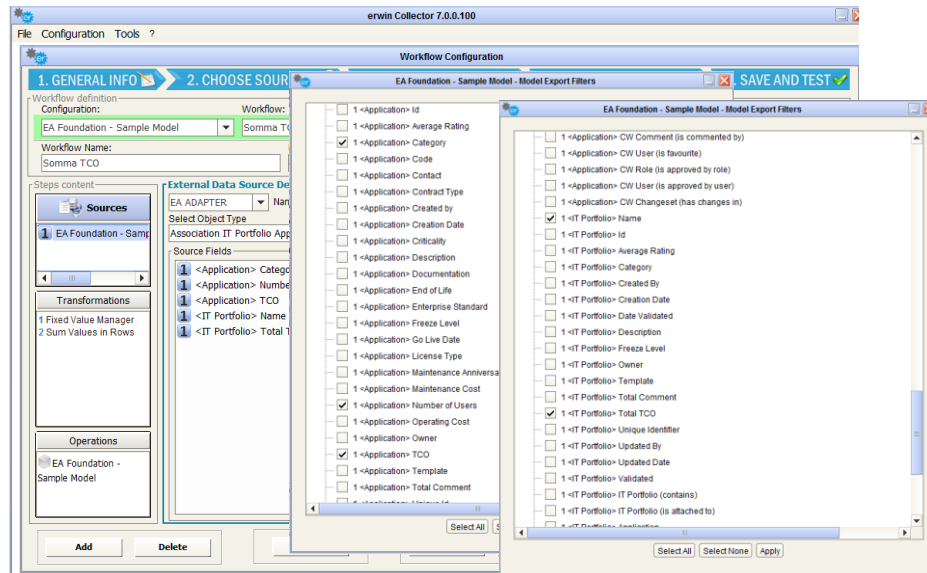
Press the "Workflow configuration" button on the Home Page and configure the following workflow choosing the model configuration according to requirements



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

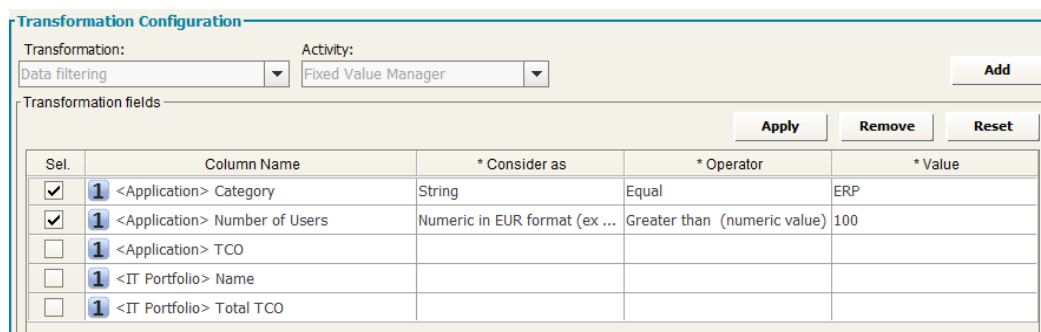
Choose CM Adapter, and specific CM Model Export adapter (i.e. the IT Model one) from the dropdown list; the select "Association IT Portfolio-Application" from the Object Type list, and select <Application> Category, <Application> TCO, <Application> Number of Users, <IT Portfolio> Name, <IT Portfolio> 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: Data derivation Activity: Sum Values in Rows Add

Transformation fields Apply Remove Reset

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: Load in CM Repository 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	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:

Workflow "Somma TCO (3)" Progress Bar

100%

Completed 1% of task - Workflow execution has been queued (1 sec.)
 Completed 5% of task - Workflow started - Adapter(s) queued (17 sec.)
 Completed 25% of task - Source Adapter(s) completed (1:16 min.)
 Completed 35% of task - Source(s) normalized - Transformation started (1:39 min.)
 Completed 75% of task - Operation queued... (1:43 min.)
 Completed

1-SOURCE

IT Portfolio properties: Business Intelligence

General	Description	Access Rights	Status	Version
Name:*				
Business Intelligence				
Category:				
IT Portfolio Level 2 Edit ...				
Total TCO:				
120000				

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.

Technical support resources

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

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

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.