PlanetPress® Connect

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Creating an XML Data Mapping Configuration

Connect DataMapper Walkthrough

OBJECTIF LUNE

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Connect DataMapper Walkthrough
Software version 1.5

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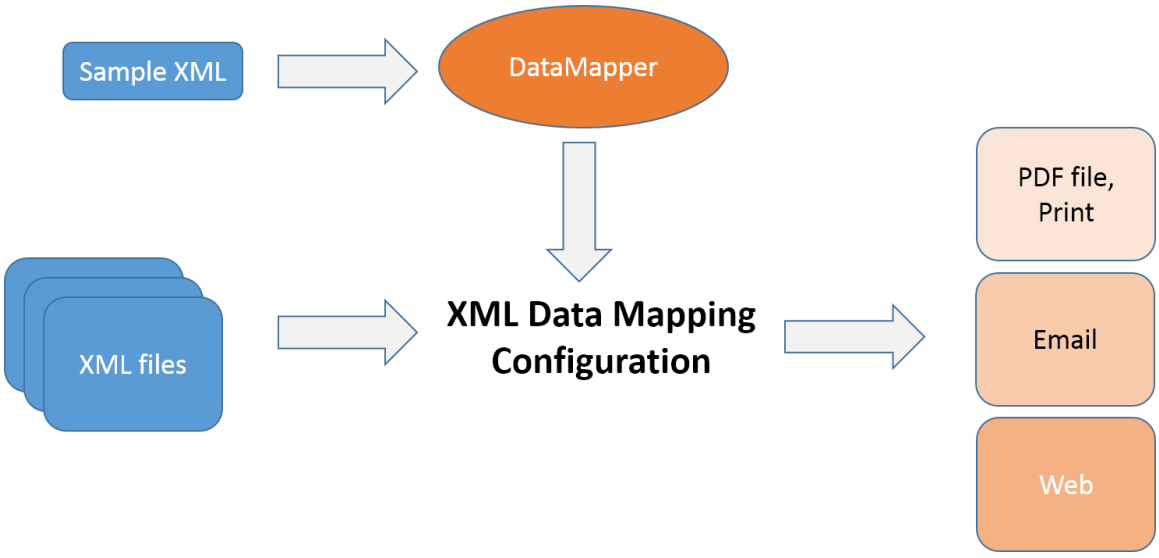
Introduction

Connect's DataMapper lets you extract data from a variety of files. This walkthrough guides you through the process of creating a Data Mapping Configuration for an XML file. This Data Mapping Configuration enables the DataMapper to extract data from all XML files with the same structure. The Data Mapping Configuration can then be used to add variable data to Connect Designer templates.

This tutorial introduces you to a big part of the basic functionality of the DataMapper. You will learn to create a Data Mapping Configuration by opening a file and defining records in it. Then you will extract the data by adding extraction steps and detail tables to the configuration. You will also learn how to rename fields and detail tables, and how to fine-tune the data for use in the Designer.

After completing this walkthrough, you'll have a basic knowledge of how to create a Data Mapping Configuration for XML files. However, this walkthrough describes only one way to do things. It shows how to extract data using toolbar buttons, for example, whereas it would also be possible to do that via drag-and-drop, the menu, or the shortcut menu.
So, go on and explore! To discover new ways and enhance your skills, please visit learn.objectiflune.com and help.objectiflune.com.



Creating a configuration

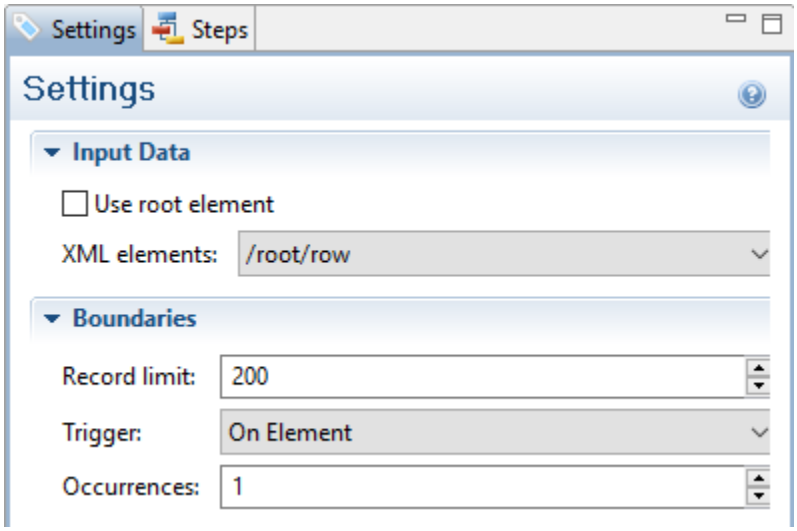
The first step towards a Data Mapping Configuration is to open a source file and help the DataMapper to identify records. In this exercise you will open an XML file and set the record boundaries.

1. Open the XML file

1. Go to the *Welcome* screen: start Connect Designer, or, if it is already running, use the Home icon at the top right to go to the Welcome screen.
2. On the left, under *Use the DataMapper to…* choose *Create a New Configuration.*
3. Under *From a file* choose *XML.*
   There is also a Wizard for XML files. Save trying that for later; it automates a number of the steps that this walkthrough demonstrates.
4. Select the sample file: **olsg-data.XML**.

2. Identify records

Take a look at the *Settings* pane on the left.



The *Input Data* and *Boundaries* settings determine what identifies a record in the source file. For this file, the correct settings are:

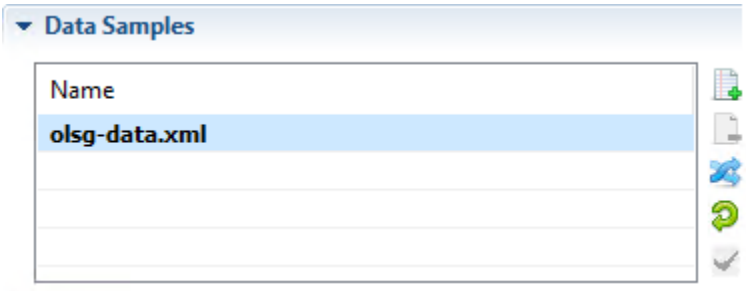
- *XML elements:* /root/row.
- *Trigger*: On element
- *Occurrences*: 1

This means that every time a new <row> element occurs, the DataMapper is triggered to start a new record. Setting *Occurrences* to 2 would make two <row> elements go in one record.

The *Record Limit* limits the number of records that can be browsed in the Data model pane and that will be saved as a sample within the Data Mapping Configuration.

Note

The Record Limit does *not* limit the amount of records that can be extracted from an XML file using this Data Mapping Configuration in Connect Workflow.

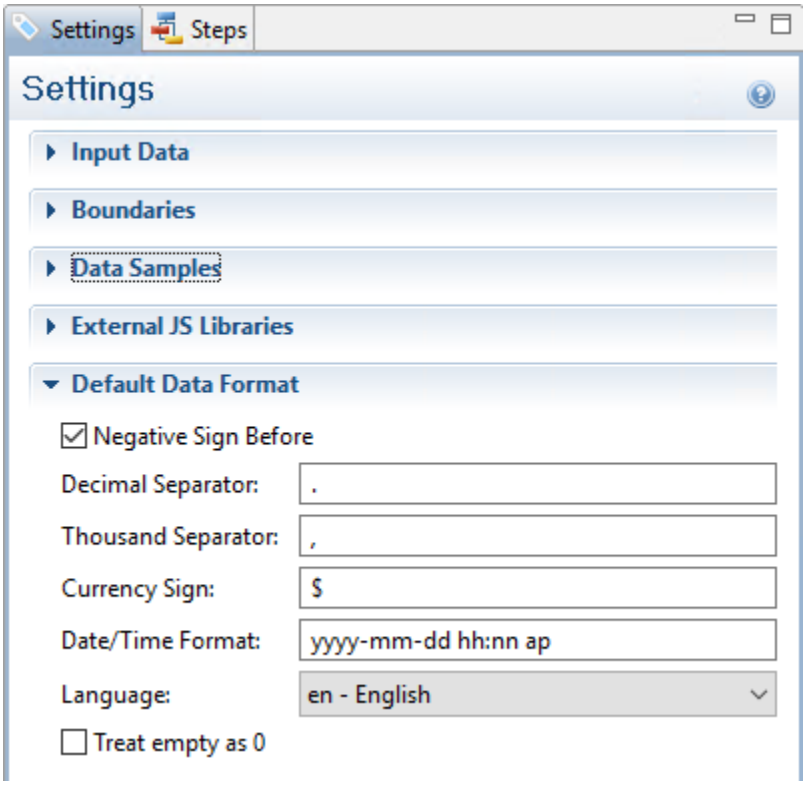


The XML file has been added to the *Data Samples*. Via the menu **File > Add data** you could add more samples if you'd need to. For this tutorial one sample is sufficient.

3. Set the default data format

By setting the default data format you're telling the DataMapper what format it can expect when it has to read a field as a date or a number from the source file.

1. Below *Data Samples* on the *Settings* pane, there is a heading *Default Data Format*. Click this heading.



Note

The initial default settings for the Default Data Format can be set via the menu: **Window > Preferences > Datamapper > Datamapper default format**.

2. Both separators look fine. Leave them as they are.
3. In **olsg-data.XML,** amounts of money do not have a currency sign. Remove the currency sign.
4. The dates in the source data don't look the same, but let's say that the default format for dates is like that of the first date in the record. Change the Date/Time format to: dd/mm/yyyy.

4. Save the file

The DataMapper does not automatically save the configuration, so now that the initial settings are done, it's a good idea to save the file.

1. Select **File > Save as**, and give the Data Mapping Configuration a name.
2. Press Ctrl+S every now and then to save the file while working on the Data Mapping Configuration.

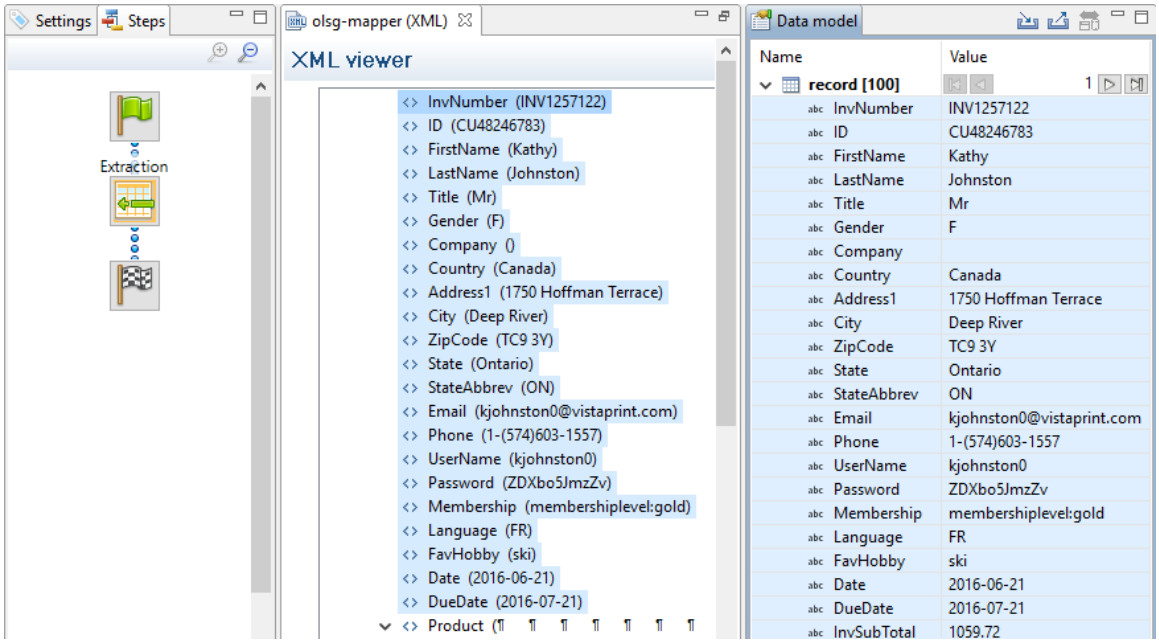
Extracting data

The next step is to extract data. Open the *Steps* pane, next to the *Settings* tab. Here you can see two flags, representing the preprocessor step and the postprocessor step. With these you could, among other things, define variables and modify the source file before extracting data (preprocessor step) or modify the output file after extracting data (postprocessor step). But in this case, as in most cases, you can immediately start extracting data.

5. Create an Extract step

At the heart of this Data Mapping Configuration are an Extract step and a Repeat step. First you'll add the Extract step.

1. In the first *row* element, select the elements from *Number* up to and including *DueDate*. (E.g. Hold the Shift key, click *Number* and then click *DueDate*.)
2. Click the *Add Extract Step* button . This adds an Extraction step to the *Steps* pane, between the Preprocessor step and the Postprocessor step.
3. Take a look at the Data model pane at the right. You can now browse the resulting records.



6. Add extra fields to an Extraction step

At the bottom of each row element, below the products, there's some more information that needs to be extracted. You could create a new Extraction step for that, but it's better to add it to the existing Extraction step: the fewer Extraction steps, the faster the Data Mapping Configuration will be.

1. Click the Extraction step on the *Steps* pane to select it.

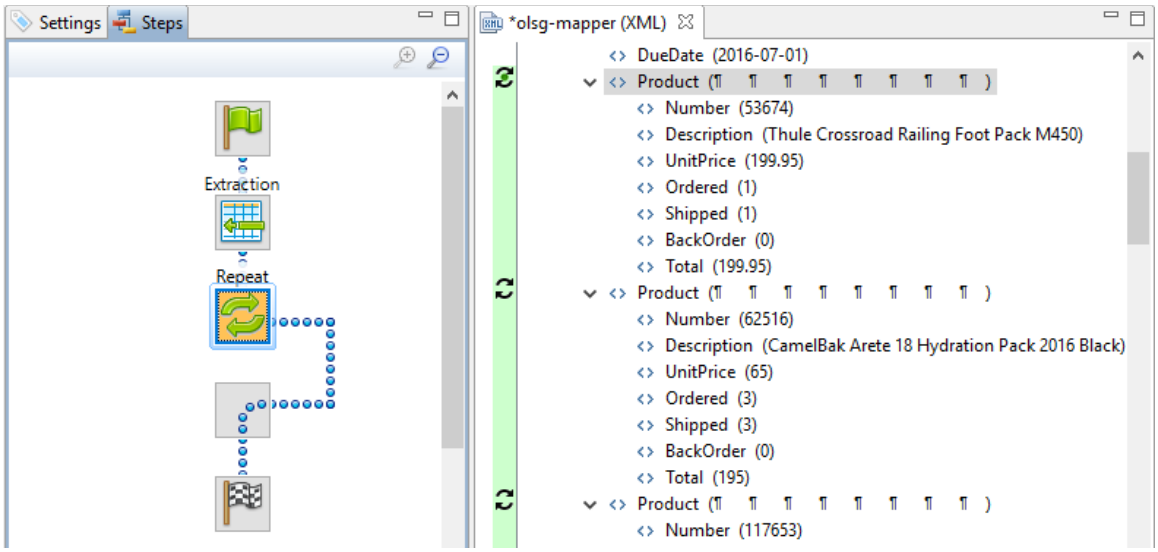
2. In the XML viewer (in the middle) scroll down past all <product> elements. Select the elements *SubTotal*, *TaxTotal* and *Total*. (Hold the Ctrl key while clicking the fields.)
3. Click the *Add Extract Field* button to add the fields to the existing Extraction step, instead of creating a new Extraction step.

Tip: To create the fastest possible Data Mapping Configuration, add as few Extraction steps as possible.

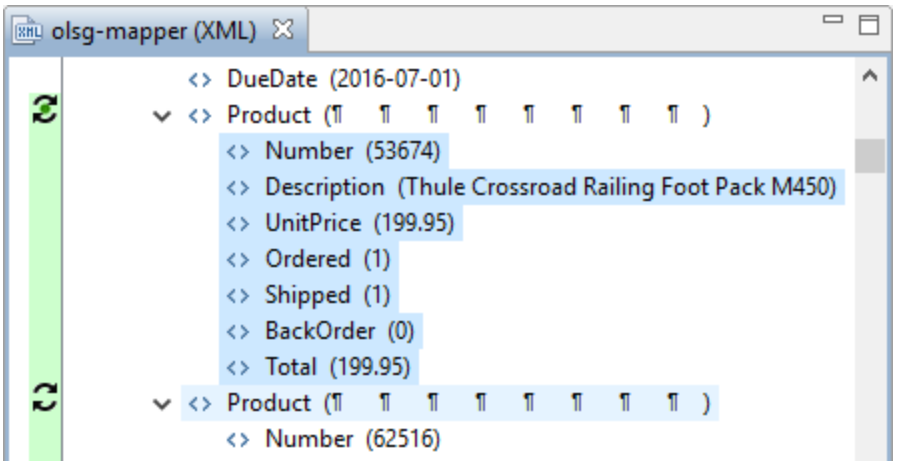
7. Extract line items using a Repeat step

When the number of a certain type of element in a record can vary, like the number of products in a row in this XML file, they have to go in a detail table.

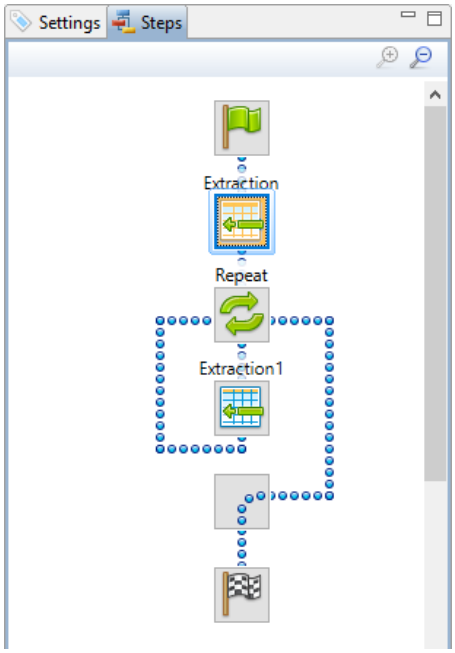
1. Click the first *Product* element.
2. Click the *Add Repeat Step* button. In the left margin of the XML viewer you will see a green line. (If you don't, there is probably only one product in the current record. Browse some more records via the Data model pane.) The Add Repeat Step icon appears before each product.



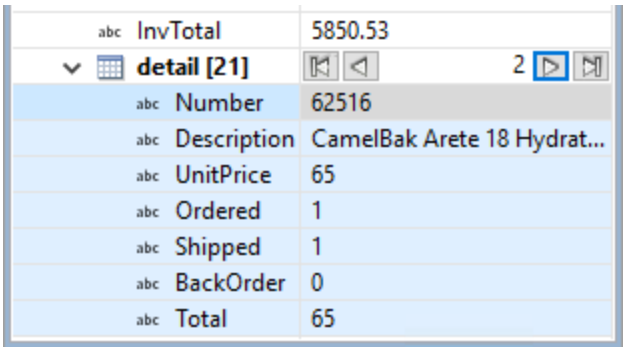
3. Select all elements inside the first *Product* element: while pressing the Shift key, click *Number*, and then click *Total*.



4. Click the *Add Extract Step* button .
   On the *Steps* pane, a new Extraction step has appeared within the Repeat step.



5. A detail table has been added on the *Data model* pane. Try browsing the products that belong to one record.

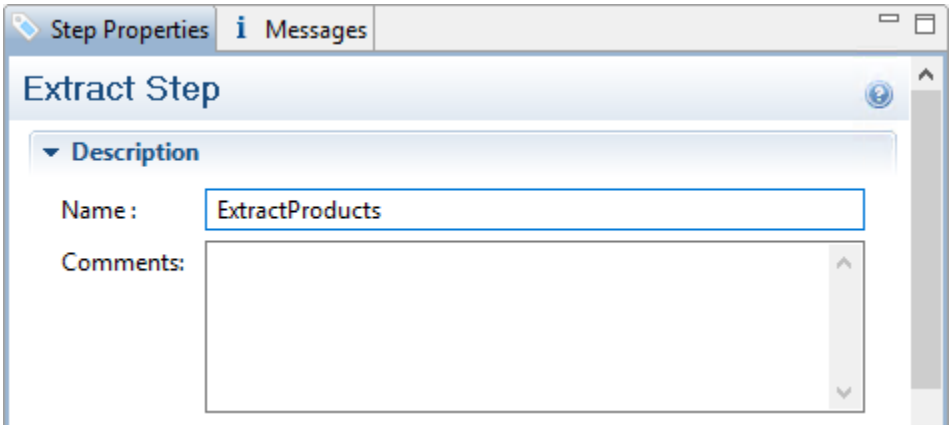

InvTotal
5850.53
detail [21]
2
Number
62516
Description
CamelBak Arete 18 Hydrat...
UnitPrice
65
Ordered
1
Shipped
1
BackOrder
0
Total
65

Renaming steps, fields and detail tables

8. Rename Extractions steps

With only two Extraction steps, this Data Mapping Configuration is fairly simple. Extraction steps in bigger and more complex Data Mapping Configuration need clear names to help you keep track of what each step in the Data Mapping Configuration does. This exercise shows how to rename Extraction steps.

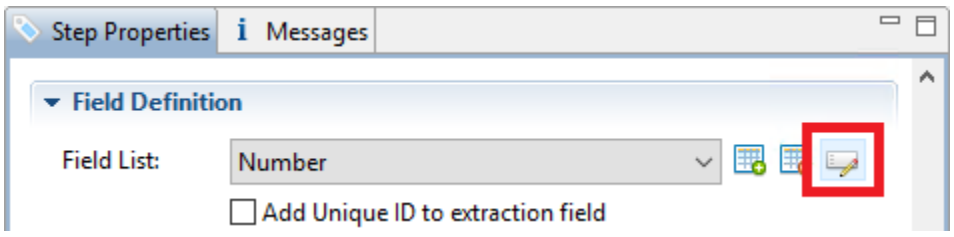
1. On the *Steps* pane, click the *Extraction1* step inside the Repeat step.
2. On the *Step Properties* pane (below the XML viewer), click *Description* and rename the repeat step, for example to *ExtractProducts*.



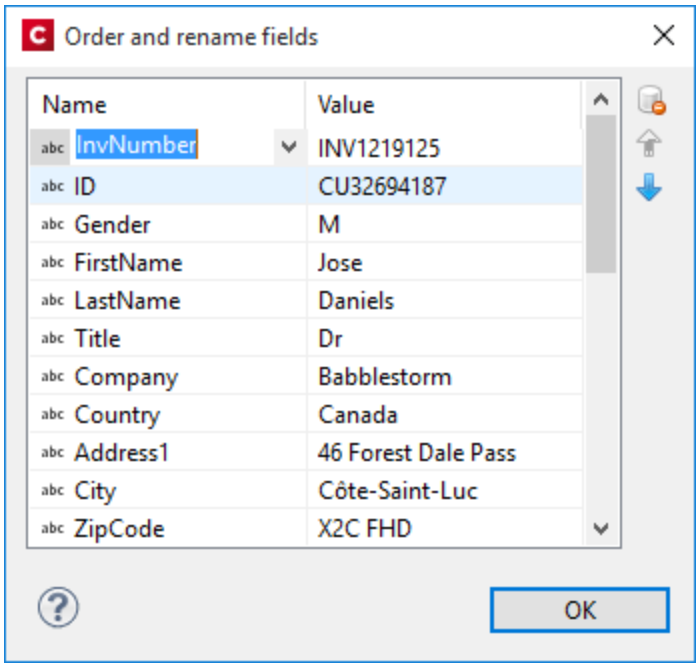
9. Rename fields

The field names in the *Data Model* pane (at the right) will also be visible in the Designer. Field names like *Number* and *Number2* can be confusing when you are creating a template with variable data. In this exercise you will rename those fields and one of the fields in the detail table.
The first *Number* field actually contains an invoice number. Rename the field so that the field name makes this clear:

1. On the Data Model pane, click the *Number* field (or any other field in the same Extraction step).
2. On the *Step Properties* pane, click the *Order and Rename Fields* button  .



3. In the dialog that appears, click the field *Number* and rename it to *InvNumber*.



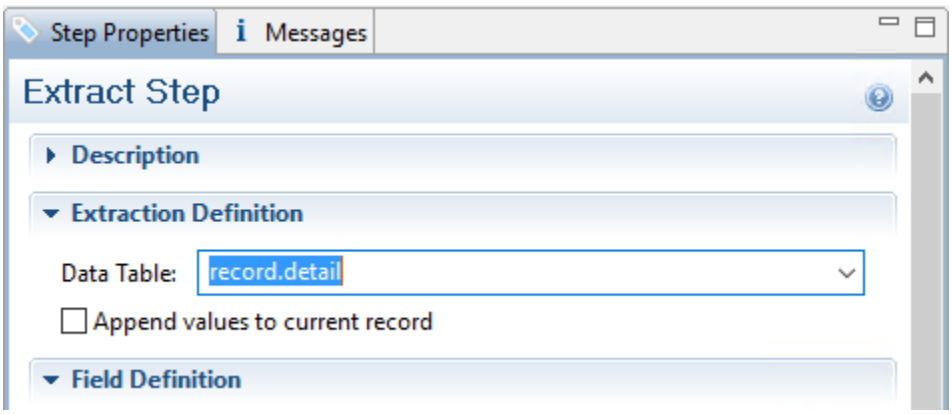
Next, rename the *Number2* field in the detail table to make clear that that field contains a product number:

1. On the *Data model* pane, click a field in *detail* (the detail table).
2. On the *Step Properties* pane, click *Order and Rename Fields*.
3. Rename the field *Number2* to *ProdNumber*.

10. Rename a detail table

Renaming detail tables is especially useful when there are more detail tables in one record, or when a detail table contains another detail table. For this detail table, 'products' would be a better name.

1. On the *Data model* pane, click one of the fields in *detail* (the detail table).
2. On the *Step Properties* pane, click *Extraction Definition*.



3. Rename the detail table from *record.detail* to *record.products*.

Note

A detail table's name should always begin with *'record.'*.

4. Click somewhere else on the *Step Properties* pane to update the data model. You will see the new name appear.

Changing the data type of fields

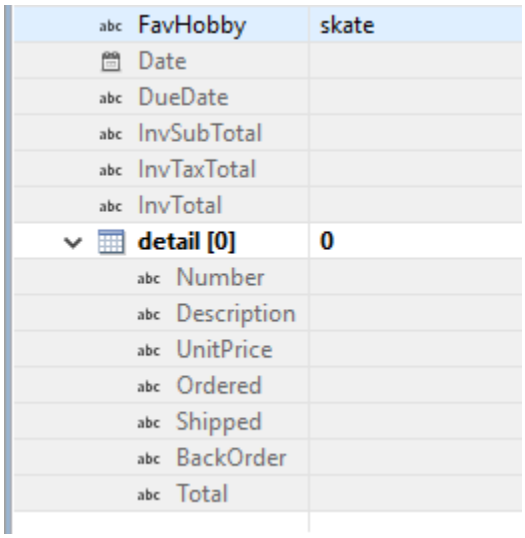
In addition to renaming them, fields need to be prepared for use in Connect Designer templates by setting their data type.
You have already set a default data format. This has had no effect on the extracted data, because by default, all fields are extracted as Strings (text). But for dates, numbers and currencies, other data types are available. Select a data type for these fields to make it easier to use them in a template.

11. Set a field's data type to Date

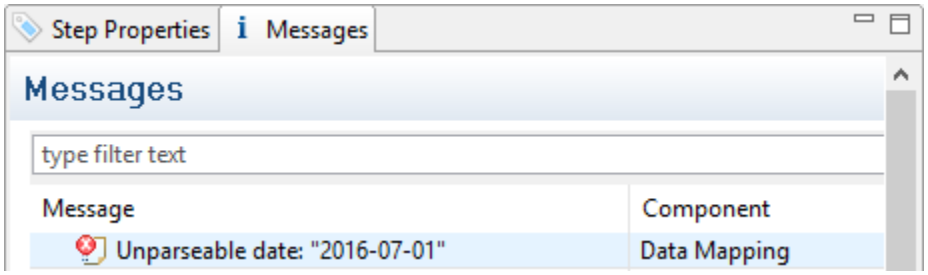
Two fields in the Data Model actually contain a date. Set their data type accordingly, so they can be interpreted and processed as such in the DataMapper and in templates.

1. On the *Data model* pane, click *Date*.
2. On the *Step Properties* pane, under *Field Definition*, set the *Type* to *Date*.
3. Repeat this procedure for the *DueDate* field.

You will have noticed that something has gone wrong: the fields following the *Date* field in the *Data model* pane are grayed out.

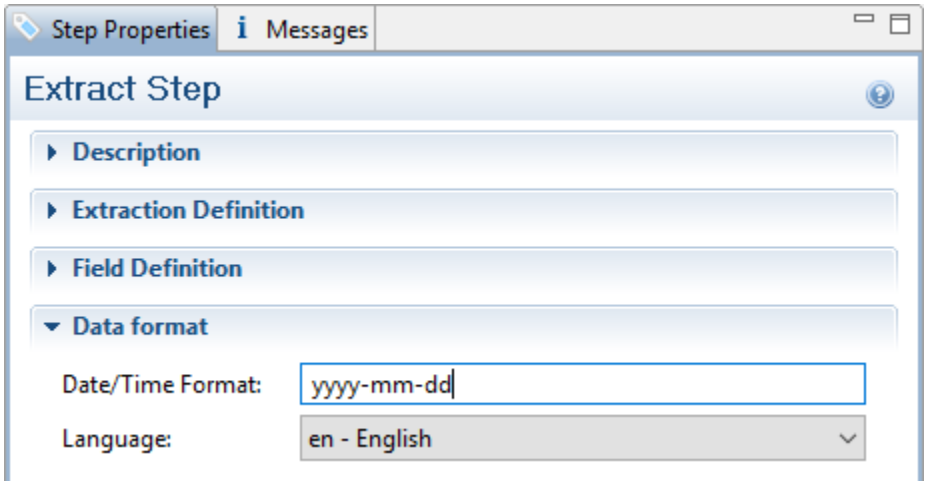


The Messages pane also indicates that there was an error: the DataMapper could not interpret the input data correctly:



The DataMapper could not parse the date, because it expected the date to be formatted different. The problem can be solved by setting a date format for this field.

4. On the *Step Properties* pane, click *Data format*. Here you can change the format of the input data for the selected field.
5. In the input data for this date the year comes first, then the month, and then the day, and they are all separated by '- '. Change the format to yyyy-mm-dd.



12. Set a field's type to Integer

Integers are whole numbers. In **olsg-data.XML,** there are a few elements that actually contain an integer. Set the data type of the respective fields in the data model accordingly.

1. On the *Data model* pane, select *Ordered*.
2. On the *Step Properties* pane, under *Field Definition*, set the *Type* to *Integer*.
3. Repeat this procedure for *Shipped* and *Backorder*.

13. Select a field and set its data type to Currency

In **olsg-data.XML,** there is also a number of elements that contain an amount of money. Set the data type of the respective fields in the data model to *Currency*.

1. On the *Data model* pane, click *SubTotal*.
2. On the *Step Properties* pane, under *Field Definition*, set the *Type* to *Currency*.
3. Repeat this procedure for *TaxTotal* and *Total* and for the currency fields in the detail table.

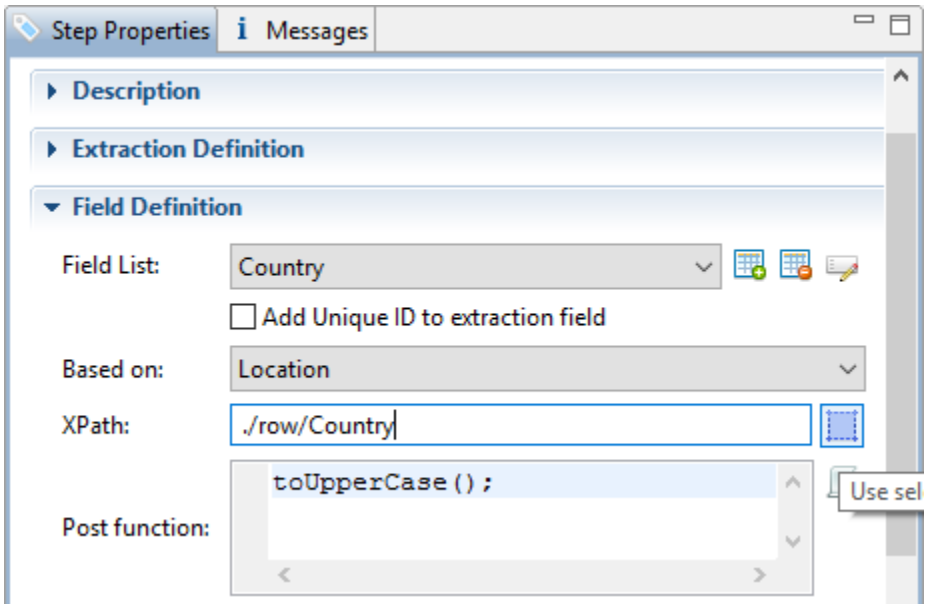
Fine-tuning using JavaScript

This lesson explains how to fine-tune a record set according to your needs.
For this, understanding JavaScript is an advantage, but don't be scared: you won't need to write any code yourself.

14. Post function: capitalize country

What if the extracted data is correct, but you'd like the data to be a little different: in capitals for example? Then you could use the Post function. Code typed in the *Post function* field on the *Step Properties* pane will be executed after (hence: 'post') the extraction of the selected field, on the extracted data. In this exercise you will capitalize the letters of the *Country* field.

1. On the *Data model* pane, click *Country*.
2. On the *Step Properties* pane, in the *Post function* field, type `toUpperCase();`
   This is a standard JavaScript function to capitalize the letters of a String (a text).



3. Click somewhere else on the *Step Properties* pane and check the result on the *Data model* pane.

15. Split a field and keep one part of it

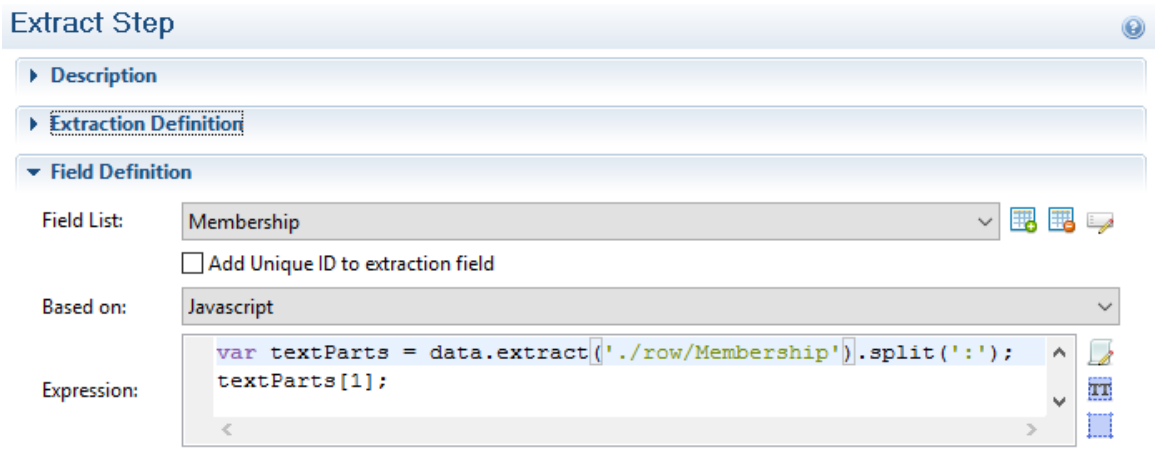
Sometimes you will want to keep only one part of the information that has been extracted to a field, and remove the rest. In **olsg-data.XML,** the Membership level is 'membershiplevel:bronze', 'membershiplevel:silver', or 'membershiplevel:gold'. The word 'membershiplevel' is superfluous. In this exercise you will remove it from the data field.

1. On the *Data model* pane, click *Membership*.
2. On the *Step Properties* pane, change *Based on* from *Location* to *Javascript*.
3. The *Expression* field now shows this line of code:

```
data.extract('./row/Membership');
```

This is the code that normally extracts data from a specific location, in this case, the data found in the *Membership* element in a *row* element.
Replace this line by the following code:

```
var textParts = data.extract('./row/Membership')
      .split(':');
textParts[1];
```



This code extracts the data and then splits the resulting text in two parts, using a colon (':') as the separator.

The parts of the text are stored in a list variable called *textParts*. The first item in this list is *membershiplevel*, the second item is the level itself. To get the second item from the list, you need to use `textParts[1];` because the list is a JavaScript array and JavaScript arrays always start counting at 0.

Note

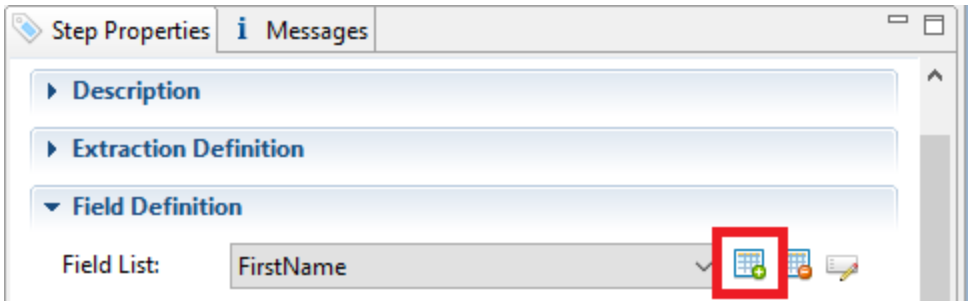
The last line of code is essential: the value of the variable at the end of the code becomes the value of the data field.

4. Take a look at the result on the *Data model* pane: the *Membership* field now only contains the membership level itself. The word 'membershiplevel' and the colon have been removed from the data field.

16. Add a concatenated field

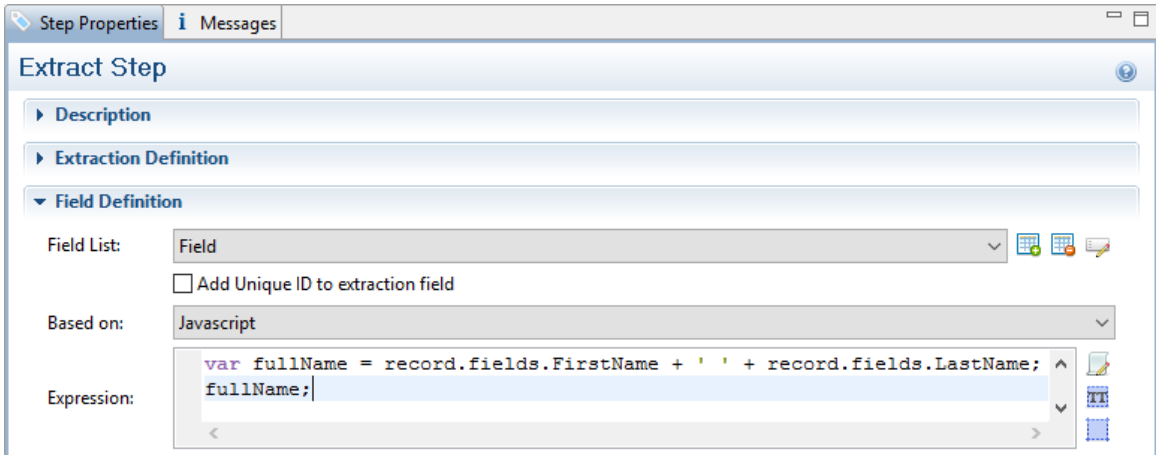
It can be very useful to add a field that isn't filled directly via an extraction. In this exercise you will add a field that combines information from two data fields.

1. On the *Steps* pane, click the first Extraction step.
2. On the *Step Properties* pane, under *Field Definition*, click the *Add field* button.



3. In *Expression* type this code:

```
var fullName = record.fields.FirstName + ' ' +
      record.fields.LastName;
fullName;
```



4. Click another field in the *Step Properties* pane. Now you will see the result on the *Data model* pane.
5. Rename the new field to *FullName*.

What's next?

The Data Mapping Configuration is now ready. It can be used to extract data from any XML file that has the same structure as **olsg-data.xml**.
Its data model can be used in the Connect Designer, to create templates with variable data. To do this, you have to have the Data Mapping Configuration and a Connect Designer template open at the same time. The sample data will be visible in the *Data model* pane in the Connect Designer.
Alternatively you could export the Data Model from the DataMapper and import it in the DataMapper again when extracting data from other types of files, or in the Connect Designer when creating a template. The exported Data Model doesn't contain the data sample so in these cases the sample data will not be visible.

To get an introduction to the Connect Designer, please proceed with the **OLSG Invoice Walkthrough** or the **OLSG Mobile Letter Walkthrough**, depending on your needs.