Creating a Hierarchical to Relational Transformation with the Data Processor Transformation Wizard
Abstract

Use the Data Processor transformation wizard to auto-generate a Data Processor transformation with input and output formats such as COBOL, ASN.1, relational, or JSON. This article describes how to use the wizard to generate a transformation with hierarchical input and relational output.

Supported Versions

- Data Transformation 9.6.0

Table of Contents

Hierarchical to Relational Transformation Overview ...................................... 2
Scenario ............................................................................................................ 2
Creating a Hierarchical to Relational Transformation .................................... 3
  Step 1: Create a Transformation with the Wizard ........................................ 3
  Step 2: Edit the Transformation .................................................................. 4

Hierarchical to Relational Transformation Overview

A Data Processor transformation reads data from input ports and transforms it into other formats. The formats can be of any type such as Excel, PDF, COBOL, EDI, XML, JSON, relational, or user-designed. In this example, you create a transformation that receives hierarchical data, transforms the data, and sends rows of relational data to output ports.

You can use the Data Processor transformation wizard to automatically map relational data. Then you can edit the mapping for Data Processor transformation ports on the transformation Overview view.

You can create a transformation based on a hierarchical schema and relational output mapping. To transform input hierarchal elements into output groups or elements, the wizard maps nodes from hierarchical nodes to relational ports.

In the relational model, each table schema identifies a column, called the primary key, to uniquely identify each row. You identify the relationship between each row in the table and a row in another table with a foreign key. The wizard generates keys when it creates the transformation. You can change an auto-generated transformation, and add, edit, or delete ports.

Edit Data Processor transformation ports on the transformation Overview view. In the Ports panel of the Overview view, you can link schema nodes to relational ports. To the left side of the Ports panel is the Transformation input area, with input ports, and to the right side of the panel is the Transformation output area, with output ports. In this example, the input ports are hierarchical nodes, and the output ports are relational elements.

Scenario

The Logistics department of the Harrinder Shipping company must process shipment data. They need to transform inventory and customer data from hierarchical format into relational data that they can store in database tables.

They need to create a mapping that transforms hierarchical data into relational data. The company inventory system generates shipment inventory data in hierarchical format. The mapping needs to use a Data Processor transformation that inputs shipment data including details such as sender name, sender ID, sender address, customer name, customer ID, shipment ID, inventory item, and customer address, and outputs the details in a usable relational format.
In the Shipments input in hierarchical format, the Shipment element contains sub-elements with sender, customer, and inventory data for each shipment:

```
Shipments
  Shipment
    Sender
      Sender_ID
      Sender_Name
      Contact_Name
      Sender_Address
    Items
      Item_Name
      Inventory_ID
    Customer
      Customer_Name
      Customer_ID
      Customer_Address
```

In the relational output, the Customer_ID element is a primary key in the Customer table, and a Foreign key in the Shipment table. Similarly, the Sender_ID is a primary key in the Sender table, and a Foreign key in the Shipment table.

<table>
<thead>
<tr>
<th>Customer_ID</th>
<th>Customer_Name</th>
<th>Customer_Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>3543766</td>
<td>Tony Birch</td>
<td>6 Moby Drive</td>
</tr>
<tr>
<td>6342362</td>
<td>Sujita Man</td>
<td>22 Dan Street</td>
</tr>
<tr>
<td>6471862</td>
<td>Dwayne Horace</td>
<td>7 Jafendar Boulevard</td>
</tr>
<tr>
<td>7265204</td>
<td>Carmela Perez</td>
<td>23 Dan Street</td>
</tr>
<tr>
<td>4559672</td>
<td>Delilah Soraya</td>
<td>28 Jafendar Boulevard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sender_ID</th>
<th>Sender_Name</th>
<th>Contact_Name</th>
<th>Sender_Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>3355437</td>
<td>Birch Gifts</td>
<td>Race Sela</td>
<td>74 Mobile Avenue</td>
</tr>
<tr>
<td>6562342</td>
<td>Sandy Car Parts</td>
<td>Corrine Jacques</td>
<td>815 LaValle Boulevard</td>
</tr>
<tr>
<td>8626471</td>
<td>Horace Candies</td>
<td>Lilly Sitara</td>
<td>7 Terrence Boulevard</td>
</tr>
<tr>
<td>2047265</td>
<td>Smith Confectioners</td>
<td>Tim Rodriguez</td>
<td>23 Terrence Boulevard</td>
</tr>
<tr>
<td>4596725</td>
<td>Knit and Purl</td>
<td>Lalitha Lakshmi</td>
<td>28 Short Drive</td>
</tr>
</tbody>
</table>

Creating a Hierarchical to Relational Transformation

You can generate a hierarchical to relational transformation using the Data Processor transformation wizard. After the wizard creates the transformation, you can edit the relational output mapping as needed.

1. Create a relational to hierarchical transformation using the Data Processor transformation wizard.
2. Edit the mapping for Data Processor transformation ports on the transformation Overview view.

**Step 1: Create a Transformation with the Wizard**

Create a Data Processor transformation with JSON input and relational output.

1. In the Developer tool, click **File > New > Transformation**.
2. Select the Data Processor transformation and click **Next**.
3. Enter a name for the transformation and browse for a Model Repository location to put the transformation.
4. Select **Create a data processor using a wizard** and click **Next**.
5. Select the JSON input format and click **Next**.
6. Browse to select a JSON schema or sample JSON file. Click **Next**.
7. Select the relational output format and click **Next**.
8. Click **Finish**.

The Developer tool creates the transformation in the repository. The **Overview** view appears in the Developer tool.

**Step 2: Edit the Transformation**

After you create the Data Processor transformation, you can edit the hierarchical to relational mapping as needed.

1. To view the mapping, in the **Overview** view **Ports** area, select **Input Mapping**.
2. Expand the trees in the **Ports** grid. To the left, the **Transformation input** panel shows the expected hierarchical input, and to the right, the Transformation **Transformation output** panel shows the relational output.
3. To add an input group or port to the **Transformation output** area, use one of the following methods:
   - Drag a simple or complex element in the **Transformation input** area to an empty column in the **Transformation output** area. If the node is a group node, the Developer tool adds a relational group without ports.
   - To add a relational group, select a row and right-click to select **New > Group**.
   - To add a relational port, right-click to select **New > Field**.
4. To clear the hierarchical node settings for locations of ports, use one of the following methods:
   - Select one or more nodes in the **Transformation input** area, right-click and select **Clear**.
   - Select one or more lines that connect the relational ports to the hierarchical nodes, right-click and select **Delete**.
5. The relational output might not match the hierarchical input. To address any gaps, use one of the following methods:
   - Modify the relational output mapping.
   - Modify the PowerCenter mapping that maps from the Data Processor transformation to the relational output.

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