

Solution to the Challenges in Pivoting



Applies to:

SAP NetWeaver 2004s/ MDM 5.5 SP 06.

For more information, visit the [Master Data Management homepage](#).

Summary

This article strives to describe the different approaches to obtain a Pivot table. It explains in details the prerequisites of the required source file. Then it describes the step by step approach to create a Pivot, depending on different source files. Finally it shows the changes in the source file after Pivoting.

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Introduction

Pivot: Pivoting is a process of restructuring or rotating the source data, thereby creating a different source table. Pivoting is required when the source data is piled vertically and we need the same table horizontally to import it into the fields and attributes of a regular table.

Note:

1. The data source should be updateable (eg: MS Access). As pivoting creates a new data source and further operations are performed on the new data source created.
2. It is still possible to create a Pivot table and view its preview on a data source that is not updateable (MS Excel); Pivoting done as a transformation option in this case.
3. As it creates an entirely new source table, actions like splitting and partitioning should be carried out after Pivoting.
4. The distinct data values of the fields are converted to field names thereby increasing the number of fields and decreasing the number of data values per field.

Prerequisites

The fields in a source file that is to be pivoted needs to be identified as:

- **Key** :Used to identify duplicate records
- **Metadata** :The data values which are converted to field names
- **Data Value** :The values that remain as data values

Before performing a Pivot action we need to identify:

- The source field that is participating in pivot
- The fields containing metadata, key and the data values.
- Whether there are multiple fields participating in metadata and data values as a combination.

Example:

Let us take a simple example to understand what Pivots are.

The source field is as below, where the Key, Metadata and the Data values are identified.

Serial No. (KEY)	Name(METADATA)	Marks(DATA)
001	AAA	10
001	BBB	20
002	AAA	30
003	AAA	40
002	BBB	60
003	BBB	70
002	CCC	80
003	CCC	90
001	CCC	20

After the Pivot action, distinct values of the metadata field have been transformed to field names.

The Data Values are accordingly re-arranged. The records are collapsed basing on the Key field (ignoring duplicates).

Serial No. (KEY)	AAA	BBB	CCC
001	10	20	20
002	30	60	80
003	40	70	90

Types of Pivoting

Pivoting can be done in several ways, depending on the source field. The basic types of Pivoting are as follows:

- One Metadata field and one data values field
- Multiple Metadata and multiple data values
- Multiple pairs of corresponding fields of metadata and data values

This article explains Pivoting on one metadata and one data values field on an updateable source.

Synopsis of the Process

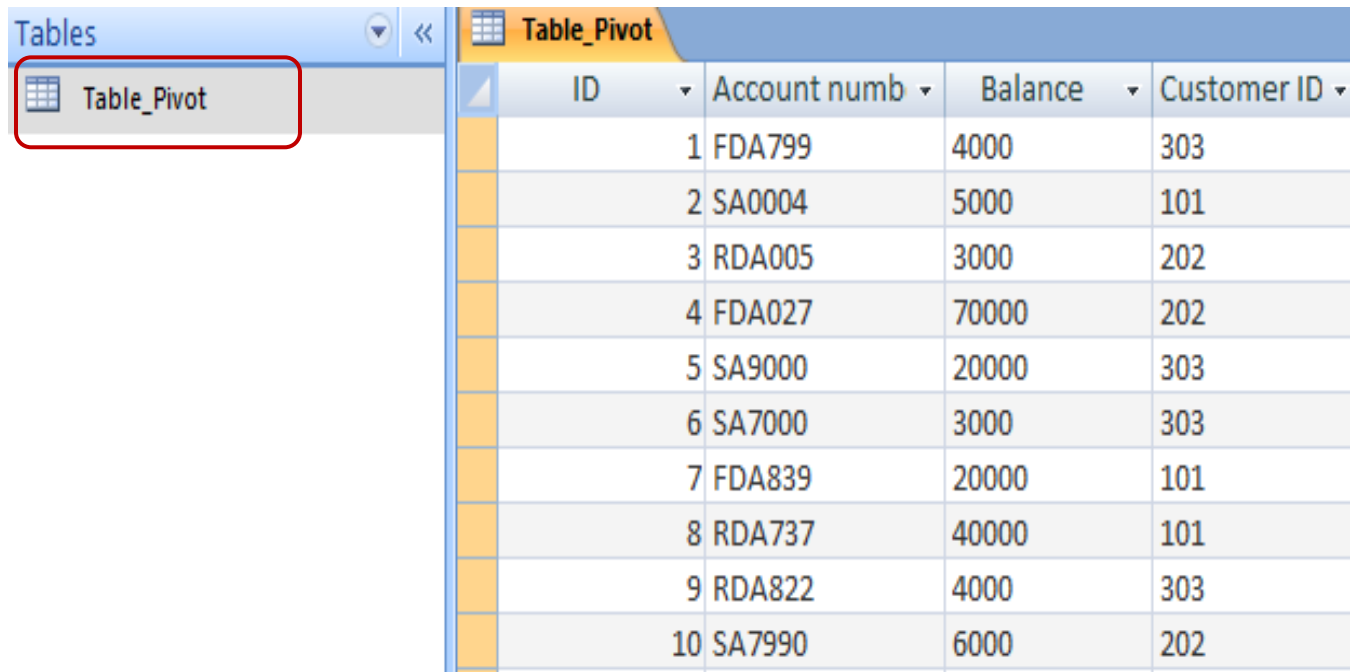
At the Source

The source file is created in MS Access as it is an updateable source.

The table name is **Table_Pivot**. The fields used are **Account number, Balance and Customer ID**.

Here, Key field is the Customer ID, Metadata field is Account Number and Data Values field is Balance.

The below screen shot shows the table created as source file.



The screenshot displays the SAP Data Browser interface. On the left, the 'Tables' pane shows 'Table_Pivot' selected and highlighted with a red rectangle. The main pane shows the table structure with columns: ID, Account numb, Balance, and Customer ID. The data is as follows:

ID	Account numb	Balance	Customer ID
1	FDA799	4000	303
2	SA0004	5000	101
3	RDA005	3000	202
4	FDA027	70000	202
5	SA9000	20000	303
6	SA7000	3000	303
7	FDA839	20000	101
8	RDA737	40000	101
9	RDA822	4000	303
10	SA7990	6000	202

Note: The repository should be loaded.

At the Import Manager

1. **Connecting** to the repository.

The screenshot shows the 'Connect to MDM Repository' dialog box in the SAP MDM Import Manager. The dialog has a title bar with a close button. Below the title bar is a logo with the word 'IMPORT' and the text 'SAP MDM Import Manager'. The main area contains several input fields: 'Repository:' with a dropdown menu showing 'training [psimdm]' and a browse button (...); 'Language:' with a dropdown menu showing 'English [US]'; 'User:' with a text box containing 'Admin'; and 'Password:' with an empty text box. There is also a checkbox for 'Save password' and an 'About...' button. At the bottom of the dialog, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangle.

2. **Connecting to the source file.** Here the source file is created in MS Access. So select the type as **Access**.

The screenshot shows the 'Connect to Source' dialog box in SAP MDM. The title bar reads 'Connect to Source' with a close button. The main title is 'SAP MDM Import Manager'. The 'Type' dropdown menu is set to 'Access'. The 'Remote system' dropdown is set to 'MDM'. The 'File name' field contains the path 'C:\Users\jk54139\Desktop\DB_Pivot.mdb'. The 'Finish' button is highlighted with a red box. Other fields include 'Port', 'XML schema', 'DSN', 'DBMS server', 'Database', 'User', 'Password', 'Columns', and 'Delimiter'. A 'Read-only' checkbox is also present.

3. At the Import Manager, the current source table is selected as the **Table_Pivot**, which is the source file to be pivoted.

The screenshot displays the SAP MDM Import Manager interface. The 'Source Preview' tab is active, showing a list of tables on the left and a preview of records on the right. The 'Table_Pivot' table is selected in the 'Tables' list. The 'Records' preview shows 10 rows of data with columns for ID, Customer ID, Account number, and Balance.

ID	Customer ID	Account number	Balance
1	303	FDA799	4000
2	101	SA0004	5000
3	202	RDA005	3000
4	202	FDA027	70000
5	303	SA9000	20000
6	303	SA7000	3000
7	101	FDA839	20000
8	101	RDA737	40000
9	303	RDA822	4000
10	202	SA7990	6000

4. The source preview tab at the Import Manager is shown in the below screenshot. We can see the Source table (**Table_Pivot**) in the below:

Source Preview		Partition Field/Value	Map Fields/Values	Match Records	Import Status
Tables		Records			
Table_Pivot		ID	Customer ID	Account number	Balance
		1	303	FDA799	4000
		2	101	SA0004	5000
		3	202	RDA005	3000
		4	202	FDA027	70000
		5	303	SA9000	20000
		6	303	SA7000	3000
		7	101	FDA839	20000
		8	101	RDA737	40000
		9	303	RDA822	4000
		10	202	SA7990	6000

5. **Creating the Pivot:**

Selecting the fields we want to pivot. Right click on it and 'Create Pivot Table'.

The screenshot shows the SAP Business Explorer interface. The 'Source Hierarchy' pane on the left displays a tree structure for 'DB_Pivot.mdb' with 'Table_Pivot' selected. Under 'Table_Pivot', the fields 'Account number' and 'Balance' are visible. A red box highlights 'Account number'. A context menu is open over the 'Table_Pivot' node, with 'Create Pivot Table...' highlighted by another red box. The 'Destination Hierarchy' pane on the right shows a 'training [psimdm]' folder containing 'Products' and 'Business Partners'. The main data table at the bottom right has columns for 'Customer ID', 'Account number', and 'Balance', with data rows for various customer and account combinations.

Customer ID	Account number	Balance
303	FDA799	4000
101	SA0004	5000
202	RDA005	3000
202	FDA027	70000
303	SA9000	20000
303	SA7000	3000
101	FDA839	20000
101	RDA737	40000
303	RDA822	4000
202	SA7990	6000

Note: The key field is not selected here.

6. The following window appears:

The screenshot shows the 'Create Pivot Table' dialog box. It has a title bar 'Create Pivot Table'. Below the title bar, there is a 'Key fields:' dropdown menu. To the right of the dropdown are buttons for 'OK', 'Cancel', 'Combine', 'Split', and 'Preview'. Below the dropdown, there are two columns: 'Field values become field names:' and 'Field values become field values:'. The first column contains 'Account number' and 'Balance'. The second column is empty. At the bottom, there is a 'Preview:' section with a small table.

7. Here the **selection of Key field, Metadata field and the Data Value field** is done.

In this case; **Key field:** Customer ID (Key Fields),

Metadata: Account Number (Field Values become Field Names),

Data Values: Balance (Field values become Field Values).

Then we click on preview.

The screenshot shows the 'Create Pivot Table' dialog box with several elements highlighted by red boxes. The 'Key fields:' dropdown now contains 'Customer ID'. The 'Field values become field names:' list contains 'Account number'. The 'Field values become field values:' list contains 'Balance'. The 'Preview' button is also highlighted. The 'Preview:' table at the bottom is empty.

8. The preview is shown below.

Create Pivot Table

Key fields: Customer ID

Field values become field names: Account number

Field values become field values: Balance

OK

Cancel

Combine

Split

Preview

Preview [3 of 3]:

	Customer ID	FDA027	FDA799	FE
▶	101	<NULL>	<NULL>	20000
	202	70000	<NULL>	<NULL>
	303	<NULL>	4000	<NULL>

Note: The Pivot cannot be created until we click on 'preview'. Only after this the "OK" button is enabled.

9. Then we click on 'Ok' and the below changes happen at the Import Manager.

Source Preview	Partition Field/Value	Map Fields/Values	Match Records	Import Status							
Tables	Records										
Table_Pivot	Customer ID	FDA027	FDA799	FDA839	RDA005	RDA737	RDA822	SA0004	SA7000	SA7990	SA9000
Table_Pivot <Pivot>	101			20000		40000		5000			
	202	70000			3000					6000	
	303		4000				4000		3000		20000

Here, we find two tables under the source preview tab (**Table_Pivot** and **Table_Pivot<Pivot>**). Prior to the pivoting action, there was only one table (**Table_Pivot**) available under the source preview tab of Import Manager. Thus, a new source is created which is the pivot of the original table we pivoted. It is differentiated from the original table by a suffix **<Pivot>** at the end of the table name.

10. The screenshot of the source file after pivoting is shown below.

Tables	Table_Pivot	Table_Pivot <Pivot>	Customer ID	FDA027	FDA799	FDA839	RDA005	RDA737	RDA822	SA0004	SA7000	SA7990	SA9000
Table_Pivot	101				20000		40000		5000				
Table_Pivot <Pivot>	202	70000				3000					6000		
	303		4000					4000		3000			20000
	*												

Here also we can find a new source created (**Table_Pivot<Pivot>**).

Summary

Here, we have seen the prerequisites of creating a pivot, step by step approach of creating a Pivot table depending on the source type. The change in the structure of the table after pivoting is reflected in the source. It is a very simple and flexible way of restructuring the source according to the requirement.

Related Content

http://help.sap.com/saphelp_mdm550/helpdata/en/43/12036df94c3e92e10000000a1553f6/frameset.htm

www.sdn.sap.com/irj/sdn/mdm-elearning.

<https://www.sdn.sap.com/irj/scn/forums>

For more information, visit the Master Data Management homepage.

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