

**How-to Guide  
SAP NetWeaver '04**



# **How To... Handle Attributes during Data Transformation**

**Version 1.00 – March 2005**

**Applicable Releases:  
SAP NetWeaver '04  
Master Data Management 5.5 (MDM 5.5)**

© Copyright 2004 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, and Informix are trademarks or registered trademarks of IBM Corporation in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C<sup>®</sup>, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data

contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

SAP NetWeaver "How-to" Guides are intended to simplify the product implementation. While specific product features and procedures typically are explained in a practical business context, it is not implied that those features and procedures are the only approach in solving a specific business problem using SAP NetWeaver. Should you wish to receive additional information, clarification or support, please refer to SAP Consulting.

Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.

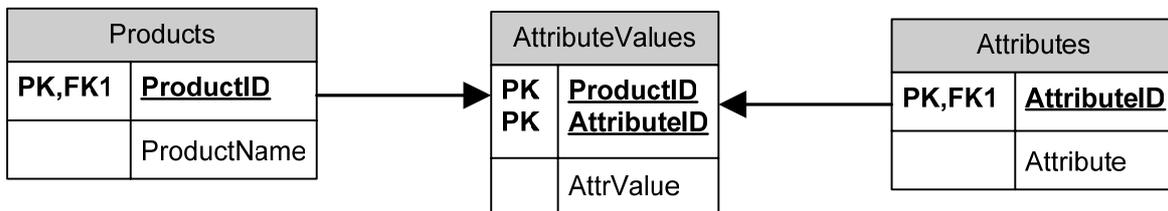
# 1 Scenario

The following source database needs to be imported into an MDM 5.5 repository. It includes three tables:

The **Products** table contains the catalog products. The key field is the *ProductID* (or can be a combination of other fields – in the example below, the table keys are the prefix (*PFX\_NUM*) and the stock number (*STK\_NUM*)).

The **Attributes** table contains the unique list of attributes that can be assigned to products. The key field is the *AttributeID*.

The **AttributeValues** table contains the attribute assignments to the product and the associated values. The keys for this table are the *ProductID* (foreign key from **Products** table) and the *AttributeID* (foreign key from the **Attributes** table).



## Table Structure Example

The **Products** table:

PFX_NUM	STK_NUM	ITM_DSC	SKU_
AVT	MF302	MAPFLAG,PENNANT,25/BX,RD	
AVT	MF303	MAPFLAG,PENNANT,25/BX,WE	
AVT	MF304	MAPFLAG,PENNANT,25/BX,BE	
AVT	MTA	MAPTACK,STNDRD AST100/BX	
AVT	PC0300	CLIP,PLASTIC,MED,500/BOX	
AVT	PC0600	CLIP,PLASTIC,LARGE,200/BX	
AVT	PPC40AS	PUSHPIN,3/8", 40/BX,AST	
AVT	PPC40CL	PUSHPIN,3/8", 40/BX,CR	
AVT	TLF2B	ORGANIZER,CAR TRNK,LGL,BK	
BAL	8565	STATION,LENS CLEAN,DSPOSE	
BAL	8574GM	DISPENSER,LENS CLNR,100BX	
BAL	8595	CLEANER,WIPES,ANTIBCTRL	
BAT	9800231	PUNCH,PAPER,HUMMER,24SHT	
BAT	9800251	PUNCH HEAD,HUMMER,F/231	
BAT	9800276	PUNCH,3 HOLE,32SHT CAP,GY	
BAT	9800277	PUNCH,3 HOLE,32SHT CAP,GY	

The table key is the combination of the *PFX\_NUM* and the *STK\_NUM* fields.

The **Attributes** table:

ATTR_ID	ATTR_NAME
7	Number Of Lines
11	+/- Switch Key
14	10-Bit Video D/A Converter
16	12 Hour/Military Time
23	4MM/8MM/Quarter Inch/Travan/Standard
37	Accessories Included
41	Activation/Review Functions
42	ADA Compliant
43	Adapter Required/Included
44	Adapter(s) Included
48	Additional Features
53	Adhesive
57	Adjustability Features
78	Aerosol
79	Aerosol/Size
80	Alarm Features
81	Alarm(s)
82	Allen Wrenches

The table key is the *ATTR\_ID* field. The *ATTR\_NAME* field is the description or name of the attribute.

The **AttributeValues** table:

ITEM_NUM	ATTR_ID	ATTR_VAL
AVTTLF2B	1793	Each
AVTTLF2B	2075	17w x 14d x 11h
AVTTLF2B	2600	--
AVTTLF2B	2686	Hanging files
AVTTLF2B	2851	--
BAL8565	802	N/A
BAL8565	1859	--
BAL8565	2046	--
BAL8565	2075	--
BAL8565	2378	Lens Cleaning Station
BAL8565	2464	Yes
BAL8565	2662	1,520 large 4-3/4 x 6-1/2 tissues and 16 oz. spray bottle
BAL8565	2851	Dispenser box; for glass/plastic lenses
BAL8574GM	802	N/A
BAL8574GM	1859	--
BAL8574GM	2046	--
BAL8574GM	2075	--
BAL8574GM	2378	Premoistened lens cleaning tissues
BAL8574GM	2464	Yes

The table key is the combination of the *ITEM\_NUM* and *ATTR\_ID*. The *ITEM\_NUM* is the combination of the foreign key *PFX\_NUM* and the *STK\_NUM* in the **Products** table. The *ATTR\_ID* is the foreign key to the **Attributes** table.

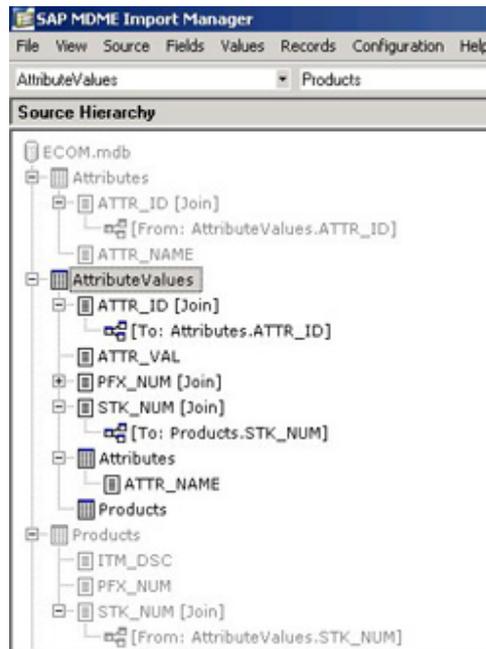
## 2 Introduction

Before you begin, the MDM 5.5 repository should hold the relevant fields including Taxonomy. The following import process will add the attributes to the repository, assign the attributes to the taxonomy structure, and assign the product items to the attribute with its associated value assignment.

## 3 A Step By Step Solution

### 3.1 Table preparations prior to the Import Action

1. Use MDM 5.5 Import Manager to join the **Attributes** and **AttributeValues** tables.



Note: If not applicable, merge (or join) the Attributes and AttributeValues in the source database in order to move the attribute names into the same table prior to the use of MDM 5.5 Import Manager.

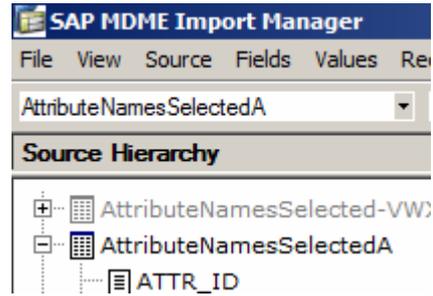
2. Resultant table:

ITEM_NUM	ATTR_ID	ATTR_NAME	ATTR_VAL
AVTPPC40CL	2208	Suggested Uses	--
AVTPPC40CL	2483	Weight	--
AVTPPC40CL	2662	Includes	Pins, packaged in handy pin caddy
AVTPPC40CL	2851	Special Features/Suggested Use	--
AVTTLF2B	411	Closure	Transparent Lid
AVTTLF2B	422	Color(s)	Black
AVTTLF2B	836	For File Size (Letter/Legal)	Legal or letter
AVTTLF2B	948	Handle	Two, easy-lift
AVTTLF2B	1278	Material(s)	Industrial grade plastic
AVTTLF2B	1355	Mobile	Optional Shuttle, sold separately
AVTTLF2B	1793	Quantity Per Box/Pack	Each
AVTTLF2B	2075	Size	17w x 14d x 11h
AVTTLF2B	2600	Recycled Content	--
AVTTLF2B	2686	For Use With	Hanging files
AVTTLF2B	2851	Special Features/Suggested Use	--
BAL8565	802	Flushing Time	N/A
BAL8565	1859	Refill(s)	--
BAL8565	2046	Shipping Weight	--
BAL8565	2075	Size	--
BAL8565	2378	Type	Lens Cleaning Station

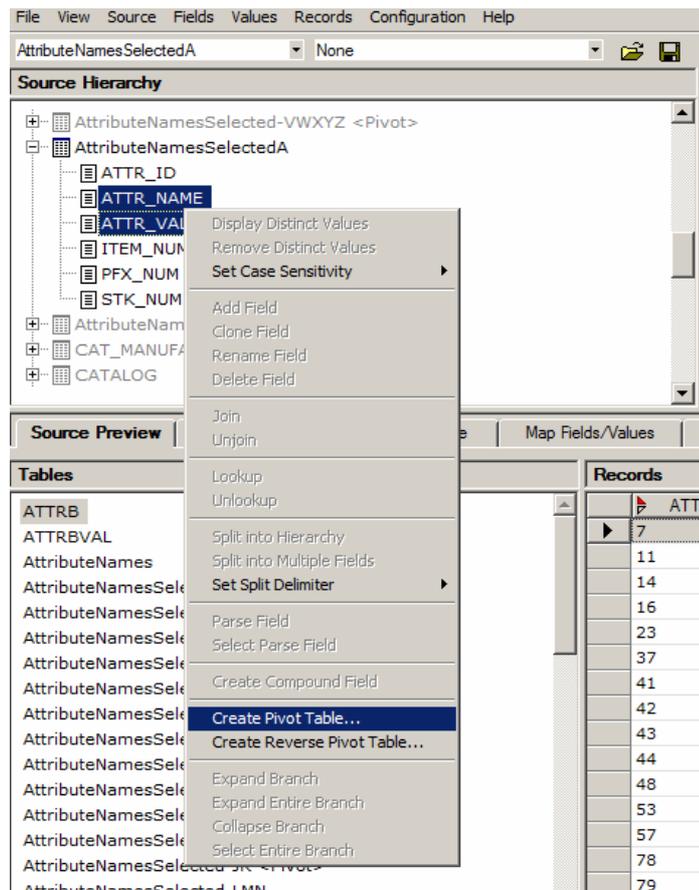
3. The resultant table must be pivoted by the *ATTR\_NAME* column in order to import. In the table structure above, the attribute names are values in a row; however, the Import Manager requires that the Attribute Names will be mapped the same way as field names. Thus Attribute names must appear in the source as column headers. There might be a database limit as to the number of columns a table can have. Therefore, the number of unique attributes should be limited in a table in order to enable the table pivot. One solution is to separate the table into multiple tables based on attribute names. For example a table that contains all the attribute names that begin with the letter "A", numeric or other non-alphabetic characters; then with letter "B", then letter "C", etc. Each resulting table must be loaded into the Import Manager and pivoted.

### 3.2 Create Pivot Tables using MDM 5.5 Import Manager

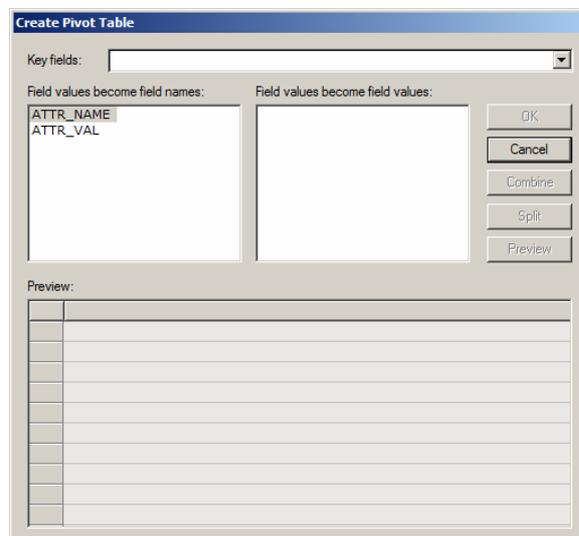
4. Create Pivot Tables from the resulting tables in Section 3.1. The first action is to select the table to work with in the source drop-down control of the Import Manager as shown.



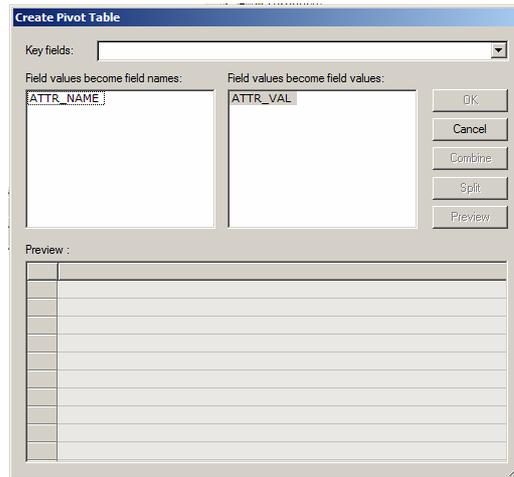
5. Select the attribute name and value fields (hold the control-key when selecting the second field) in the Source Hierarchy section of the Import Manager as shown below. Then right-click and select the menu option "Create Pivot Table".



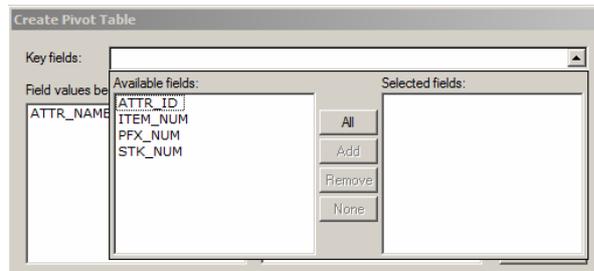
6. This will load the Pivot Table dialog as shown:



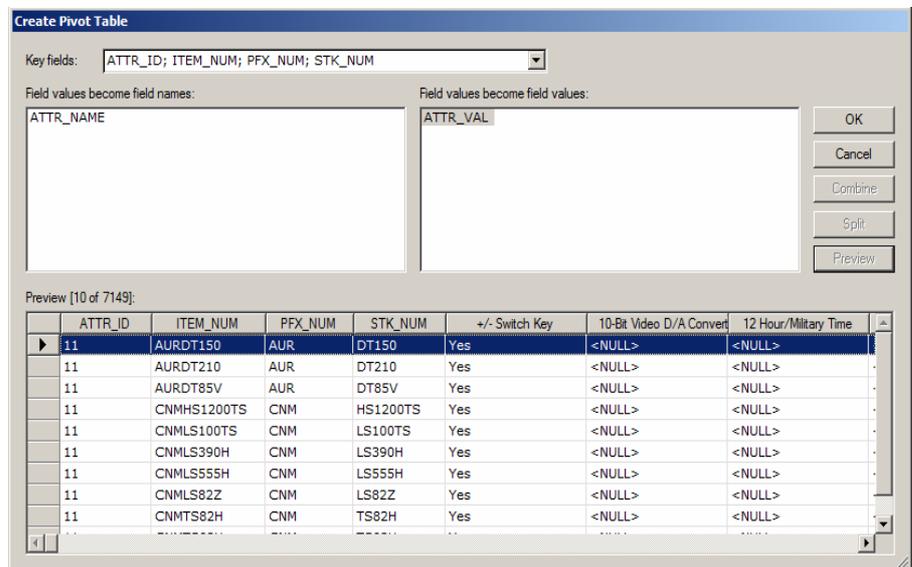
7. The next action is to select which field is to become the value and which field is to become the name. The *ATTR\_NAME* field contains the “Field values to become field names” and the *ATTR\_VAL* field contains the “Field values to become field values”. The selection is accomplished by selecting the field *ATTR\_VAL* and double-clicking to move to the adjacent input as shown below



8. The next action is to select the Key fields by selecting the drop-down as shown:

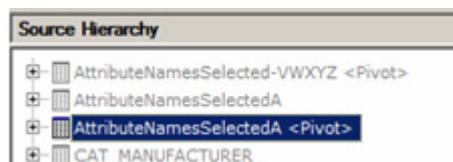


9. All the available fields (even though they will not be used) should be moved to the selected fields by pressing the “All” button; press the up-arrow button to close the input selection. Now select the “Preview” button to see the first 10 records of the pivot table in preview mode.



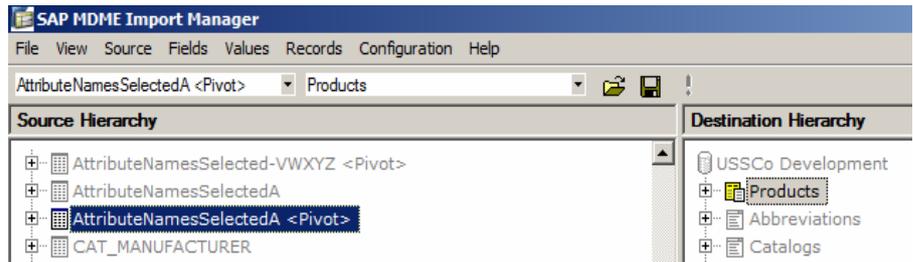
Notice that the attribute names are now columns in the table; records that did not have an attribute assignment for a specific product are given the <NULL> value.

10. Press the “OK” button to now create the pivot table which will be added to the source hierarchy

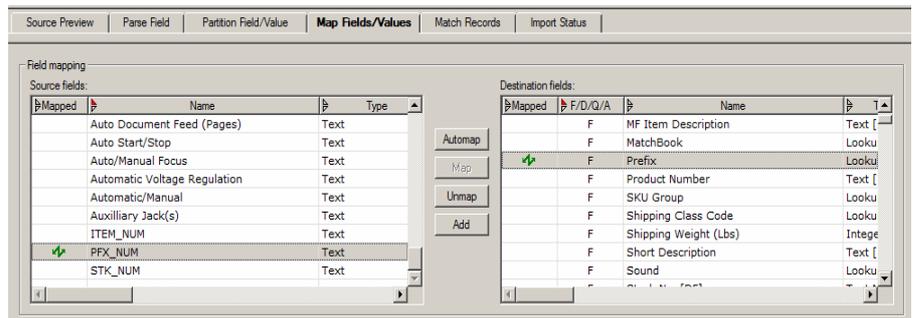


### 3.3 Map and load the created attribute pivot tables using the Import Manager

11. Select the created **AttributeNamesSelectedA <Pivot>** table in the source table drop-down control of the Import Manager. Select the **Products** table in the destination table drop-down control of the Import Manager as shown:

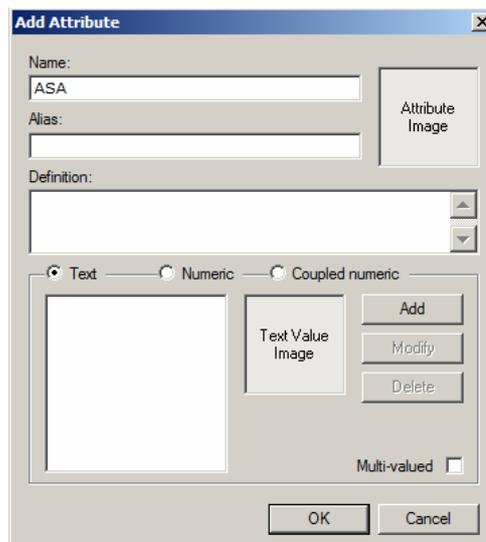


12. Select the “Map Fields/Values” tab in the lower section of the Import Manager. Map the **PFX\_NUM** field in the Source table to the **Prefix** field in the Destination table by selecting each field and pressing the “Map” button as shown:



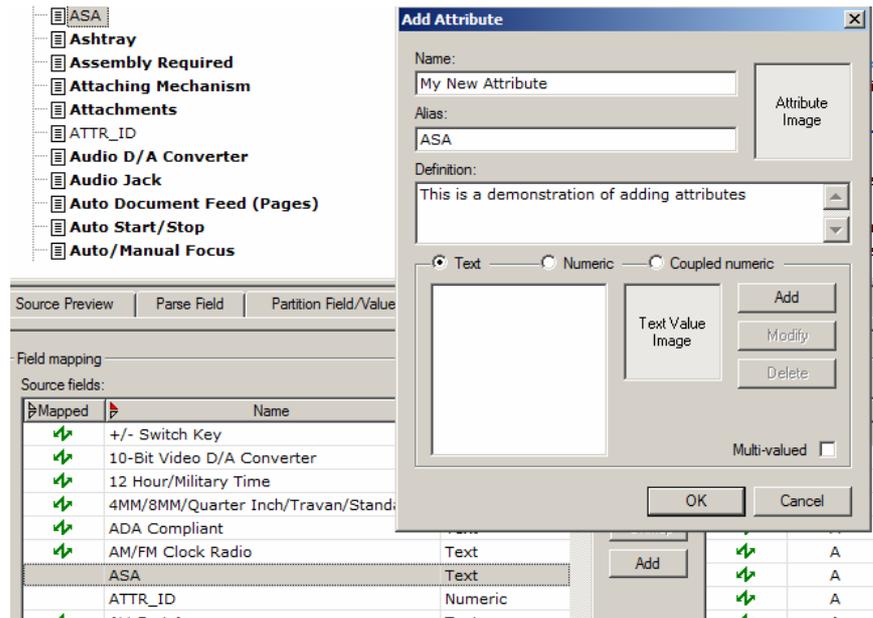
13. Repeat the mapping process for the **STK\_NUM** field in the Source table to the **Stock No [DF]** field in the Destination table.

14. Select all the fields and press the “Automap” button. Review the results of the Automap process by sorting on the “Mapped” column of the source fields. Manually add any attribute that was not mapped automatically by selecting the attribute name and pressing the “Add” button. This will bring up the Attribute definition dialog as shown:

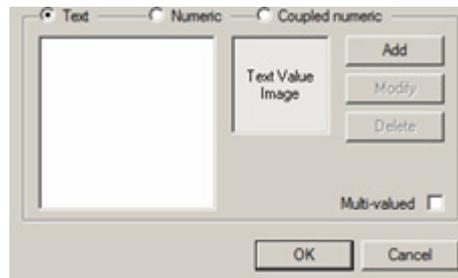


Note: Normally, no data information is added to the catalog database until the “Execute Import” button is pressed at the last step. The only exception is, when adding attributes to the catalog, the attribute names are added Real-Time to the database. Therefore, it is best to select the attribute field names, and press the “Automap” button to map any attribute names that may already be in the database. Otherwise, duplicate attribute names (with a numeric number appended to the end) will be added to the database inadvertently. Those can only be removed in the MDM 5.5 Content Manager.

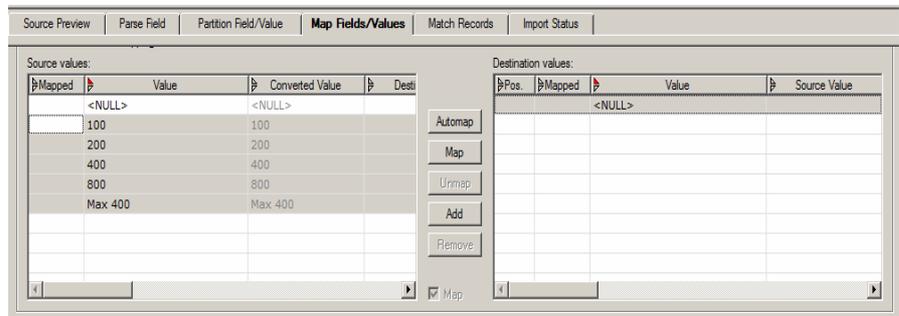
15. The *Name* can be changed if desired and the *Alias* and *Definition* can be added at this time. Also, select the type of attribute value (*Text*, *Numeric*, or *Coupled-numeric*). It is not necessary to define attribute values at this time (these will be added during the value mapping). This is shown in the following dialog for the attribute “ASA”:



16. Now press the “OK” button to accept the input and add the attribute to the catalog. Repeat this process to add and map all the attributes.



17. Now you must map all the values for the mapped lookup fields and text attributes. Select the first attribute field; now scroll down the “Map Field/Values” tab to display the values.



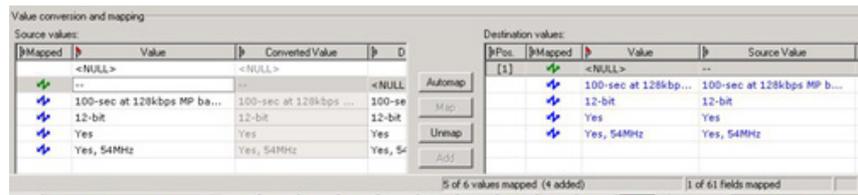
Select all the field values and press the “Add” button. At this point it is typical that cleanup will occur.

Note: when mapping the field values, it is always good to select all values and then click on the Add button. These will Automap the existing values with a green arrow notation; any new values will be added with a blue arrow notation. It is important to do so when you are mapping to a multi-value destination field, since there could be in one distinct row in the source that some of the values already exist and some do not.

For example: a row contains A; B; C, where A and C exist and B does not.

If you use the Automap button, then you will have green arrows because of A and C being mapped, but B will not be mapped and not be added. If instead you choose Add (to add the missing B value), then you will have a multi-arrow notation, which part of it is blue (for B) and part of it is green (for A and C), and the new value will be added and mapped.

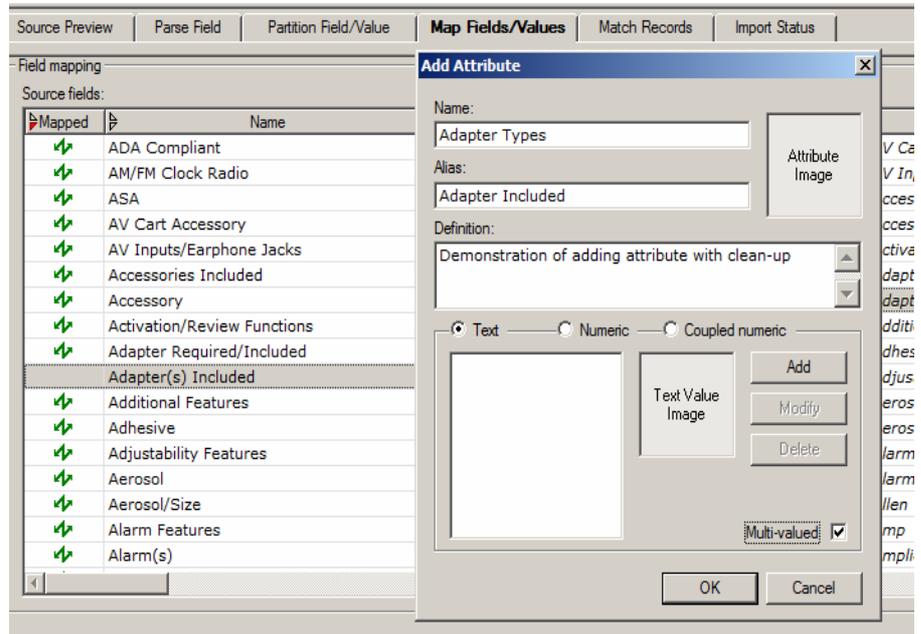
**18. Map undesired attribute values (e.g. "--") to NULL**



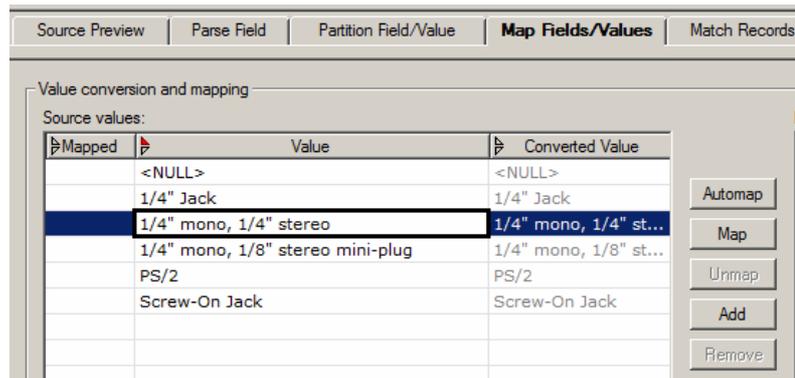
Note: Alternatively, replace the "--" values from the source table with NULL in the source database as a preparation step, before using the import Manager. This alternative way could cause the loss of these attributes from being assigned into the taxonomy and has to be determined by the business owner. This will happen if all the values for a specific attribute are null for all the products related to a specific category. The decision to prepare the source table ahead should be made according to performance issues. For example, if 1/3 of the attribute values are Nulls and there are more than 100K rows to be imported.

### 3.4 An example of attribute cleanup:

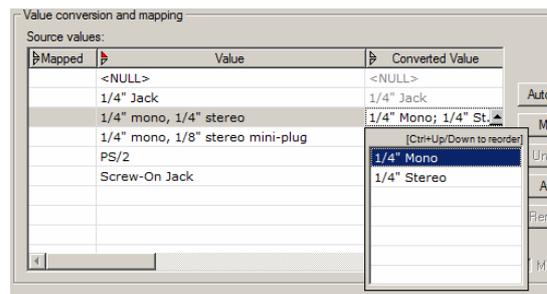
19. This example adds the attribute “Adapter Types”. The “multi-valued” check-box is selected. Text for the *Alias* and *Definition* is also added.



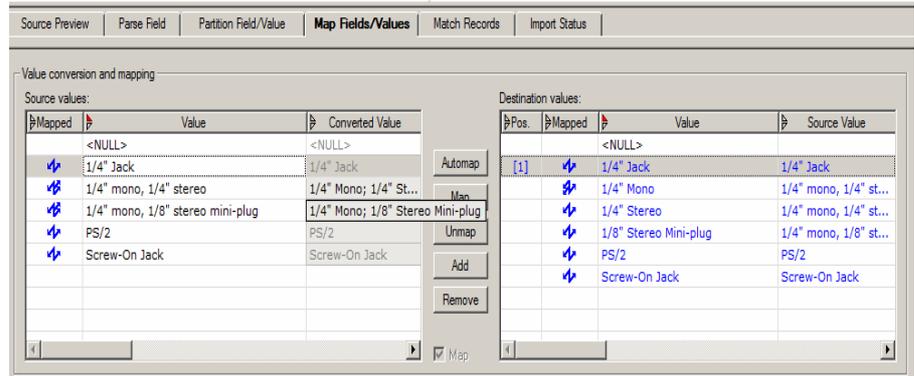
20. The original attribute values are as follows.



21. It is desired to split the multi-valued rows, since the source column is mapped to a multi-value attribute. This is accomplished by declaring the comma (,) as the multi-value split delimiter. Then by double-clicking on the attribute converted value, you may edit the values:



**22.** To capitalize the first character use the Change Case option for all values or edit the text manually for each row. Now select the attribute values and press the “Add” button. The result mapping is



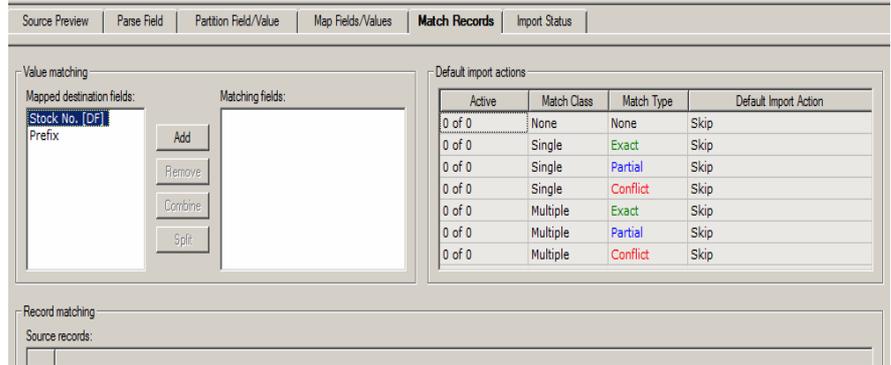
**23.** The multi-value rows are split in the mapping process. Three new attribute values are added from the converted two source attribute values (1/4” Mono, 1/8” Stereo Mini-plug, and 1/4” Stereo) and mapped to the destination.

Note: It is a good practice to save the mapping process to a MAP file. This allows for reuse and allows for breaks during the mapping process since this can be a lengthy process that requires input from business data owners to determine how to map the attributes and values. It is suggested to establish a naming convention for the MAP files; one convention is to use the following:

<Source Table> – <Repository Name> /<Target Table>.MAP

### 3.5 Perform the Match Records step in the Import Manager

**24.** Select the “Match Records” tab and match the source records to the destination records.

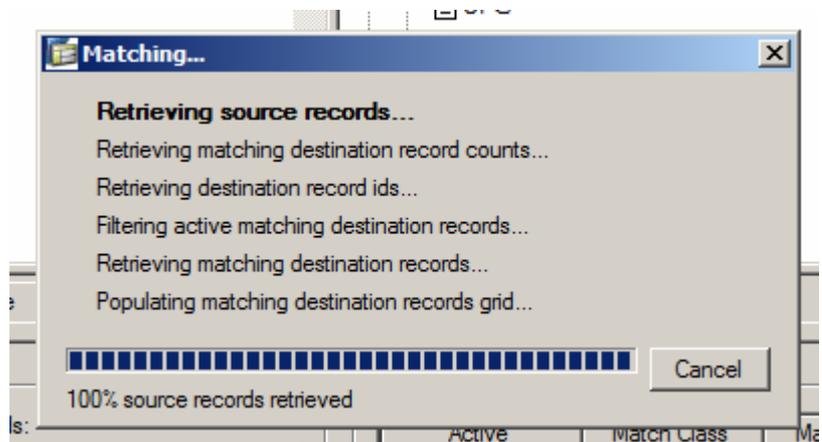


**25.** You must set the “Value matching”. In this catalog, the Product Items are uniquely determined by the combination of the *Stock No* and *Prefix* fields. Select both of these fields by holding down the control key; then press the “Add” button.



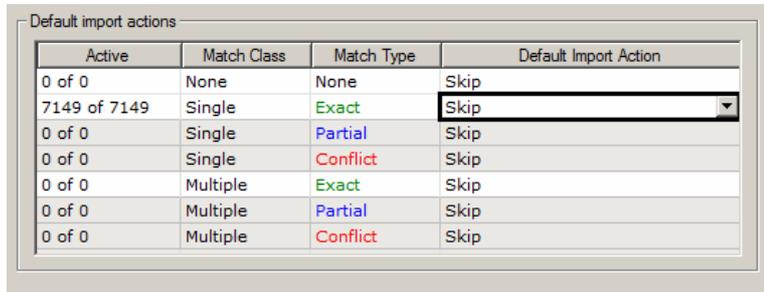
Select the option “Add as Combination”.

**26.** This will give the following pop-up status dialog:



**Set the “Default Import Actions” on the right side of the Import Manager**

**27.** If there are records in the Match Class “None” (first row above), then you must set the “Default Import Action” to either “Skip” or “Create”. This Match Class covers those records that did not match any existing records and should be created as new records; thus set the “Default Import Action” to “Create”.



**28.** Select the second line and under the column “Default Import Action” press the down arrow:

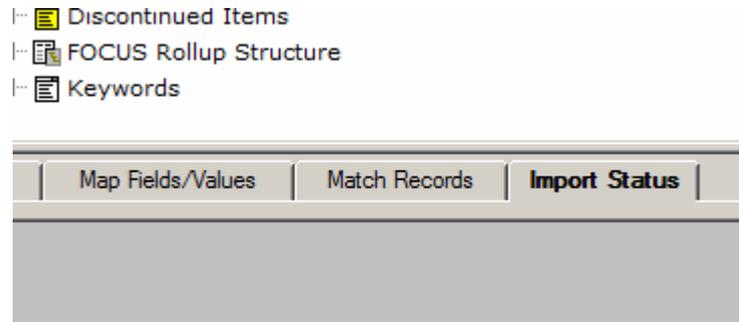


**29.** Select the choice “Update (all mapped fields)”. The action for each choice is as follows.

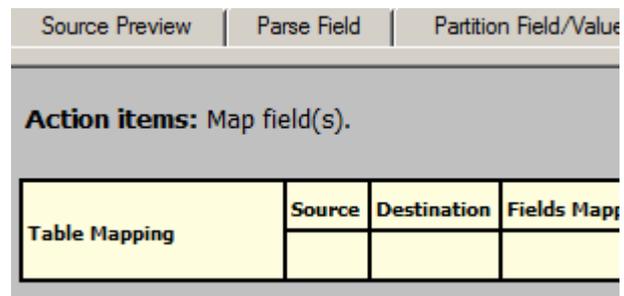
Selection	Meaning
Skip	All records are skipped; no update to matched records is performed for any field value
Update (NULL fields only)	Only records in the destination table having a mapped field with a NULL value assigned are updated with the value from the Import
Update (all mapped fields)	All record field values for the mapped fields are updated with the value from the Import. Whether a NULL field in the source will overwrite a populated field in the destination, this is determined by the Default Null Interpretation (Ignore/Overwrite) option of the Configuration settings.
Replace	The matching records are deleted; new records are added with only the map field values from the Import. Any previous field assignments are lost. This option is rarely used and must always be used with caution.

### 3.6 Complete the Import Process by loading mapped records

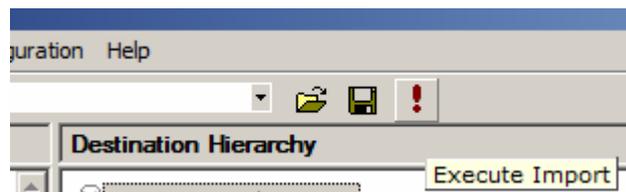
**30.** You are now ready to import the mapped records, fields, and values. Go to the “Import Status” tab.



**31.** If all fields and values are mapped, then the status will be “Ready to Import”. If not, a message will provide information on missing steps which must be completed prior to import.



**32.** Once all steps are completed and you have a status “Ready to Import”, you can press the “Execute Import” button on the toolbar.



[www.sap.com/netweaver](http://www.sap.com/netweaver)