



IBM Software Group

# ***IBM WebSphere® Data Interchange V3.3***

## ***Data Manipulation***



@.business on demand.

© 2007 IBM Corporation

This presentation will review WebSphere Data Interchange (WDI) Commands and Functions to manipulate data in a Send or Receive map .

## Agenda

- Where do you start?
- Review Send/Receive mapping commands.
- Review Send/Receive mapping functions.
- Illustrate commands and functions.
- Summary and references



The presentation will discuss where you should start for help, review commands and functions, and illustrate the use of mapping commands and function..

## Data Manipulation

- Where do you start?
  - ▶ WDI V3.3 Mapping Guide. Chapter 14
  - ▶ WDI Client Help contains the most up to date list of commands and functions.
    - Help->Contents->Mapping->Send Map->Mapping commands



The WDI Version 3.3 Mapping Guide, chapter 14, contains a list of commands and functions. The Client Help also contains this information.

# Data Manipulation

Adobe Reader - [Mapping\_Guide\_Final.pdf]

File Edit View Document Tools Window Help

Open Save a Copy Print Email Search Select Text

Options x

Bookmarks

- Part 2. Data Transformation Maps
  - Chapter 9. Data Transformation map
  - Chapter 10. Validation mapping
  - Chapter 11. Functional Acknowledge
  - Chapter 12. Data Transformation map
  - Part 3. Send and Receive Maps
  - Chapter 13. Send and Receive mapping
  - Chapter 14. Advanced send and Receive mapping**
- Layers
- Pages

Using accumulators

Using literals

Named variables

Expressions

Special variables

Mapping techniques for literal key

Examples of using literal keyword

Control data literals

Using service segment fields

Validation during mapping

Appendix A. Mapping Binary Data

Appendix B. Hierarchical loops

Appendix C. Handling international characters

Appendix D. DTD Conversion Utility

Notices

6.98 x 8.98 in

259 of 386

11:12 AM Thursday 3/1/2007

WDI Mapping Guide

## Chapter 14. Advanced send and Receive mapping

This appendix describes how to map your application data to an EDI standard transaction set. This appendix assumes that you are familiar with your application data layout and have already defined your application data to WebSphere Data Interchange. It also assumes you are familiar with the EDI standard transaction set you are using.

### Using accumulators

Accumulators are special fields that keep running totals or accumulate numeric data. Accordingly, WebSphere Data Interchange's accumulators can add data to an EDI transaction that does not occur in an application database and vice versa. WebSphere Data Interchange Client supports global and transaction accumulators. The scope of a global accumulator is an entire translation session. The scope of a transaction accumulator is a single transaction.

You can use accumulators to count occurrences of an event, such as counting the detail line items in a purchase order to provide a hash total. You can also use accumulators to total fields for control purposes, such as totaling the quantity field to cross check the number of items sent or received.

Accumulators can apply to individual transactions or to all transactions in a translation session. To map both an accumulator and a received value for the same element, use the Repeat action to create another occurrence of the element mapping. Then map one occurrence from the data element to a field and the other occurrence from the accumulator to a field. Each element mapping can support up to four accumulators.

For send transactions, accumulator actions will not be processed unless one of the following occurs:

- Data is accepted for the EDI standard data element.

Data Manipulation © 2007 IBM Corporation 4

The WDI Version 3.3 Mapping Guide.

# Data Manipulation

WebSphere Data Interchange for Multiplatforms V3.3

because they are entered in the "Literal" field on the...  
Literals sometimes refer to constants instead.

The following is a list of the mapping commands that can be used in both Send Maps or Receive Maps. These commands can be used in both Send Maps or Receive Maps unless otherwise noted. These commands are not used in [Data Transformation Maps](#), [Validation Maps](#), and [Functional Acknowledgement Maps](#).

<a href="#">&amp;ACFIELD</a>	<a href="#">&amp;ASSERT</a>	<a href="#">&amp;DATE</a>
<a href="#">&amp;DEFERRED</a>	<a href="#">&amp;E</a>	<a href="#">&amp;ERR</a>
<a href="#">&amp;FORCE</a>	<a href="#">&amp;FORMAT</a>	<a href="#">&amp;IF</a>
<a href="#">&amp;IFDATA</a>	<a href="#">&amp;IFNODATA</a>	<a href="#">&amp;IFNOVAR</a>
<a href="#">&amp;LOOPBREAK</a>	<a href="#">&amp;LOOPCHECK</a>	<a href="#">&amp;LSAVE</a>
<a href="#">&amp;LSET</a>	<a href="#">&amp;LSID</a>	<a href="#">&amp;SAMEAS</a>
<a href="#">&amp;SAVE</a>	<a href="#">&amp;SET</a>	<a href="#">&amp;THANDLE</a>
<a href="#">&amp;TIME</a>	<a href="#">&amp;TPID</a>	<a href="#">&amp;TPNICKN</a>
<a href="#">&amp;USE</a>	<a href="#">&amp;ZEROSIG</a>	

See also [literal keywords for the HL Segment](#).

Refer to [working with literals and mapping commands](#) for additional information.

WDI Client Help

5

Data Manipulation © 2007 IBM Corporation

WDI Client Help for Commands.

## Section

# ***WDI Mapping Commands***

## Data Manipulation

- Send/Receive Mapping Commands
  - ▶ Perform a specific action on the data.
  - ▶ Commands contain Expressions
  - ▶ The Syntax for an expression is token operator token
  - ▶ Special literal keywords supplied
  - ▶ Some literal keywords are specific to the Send or Receive map.



Mapping commands perform a specific action on the data. Commands contain Expressions. The Syntax for an expression is token operator token. Keywords are supplied to identify the mapping command or function. There are special keywords that do a specific mapping. Some keywords are available in a Send map and some are available in a Receive map.

## Data Manipulation

- Expressions are literals, elements and variables that are combined using operators
- Expression yield a single value
- Expressions can use
  - ▶ Arithmetic operators: +, -, \*, /
  - ▶ Logical operators: AND OR NOT
  - ▶ Relational operators: EQ, NE, LT, GT, LE, GE
- Expressions can be arbitrarily complex
- Example: &IF(Var1 NE 0 AND Var1 + Total < 500000)



Expression yield a single value. Expressions can use Arithmetic operators, Logical operators, and Relational operators. Expressions can be arbitrarily complex.



# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. A 'Mapping Data Element Editor - 324' dialog box is open, showing the 'Data Format Path' set to 'HEADER' and the 'Field' set to 'PONUMBER'. The 'Literal or Mapping Command' field is empty. The 'Accumulators / Actions' section contains several dropdown menus. The 'Comments' field is also empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The system tray at the bottom shows the date and time as 'Thursday 3/1/2007 11:19 AM'.

Commands are entered on the Literal or Mapping Command line. The Client mapping has field sensitive help which allows you to move to the literal line and press the F1 key on the keyboard to obtain help and navigate to the list of commands.

# Data Manipulation

**Mapping Data Element Editor**

The **Mapping Data Element Editor** is used to create and maintain most mappings in [Send Maps](#) and [Receive Maps](#). It is opened from the Details tab page of the [Send Map Editor](#) and [Receive Map Editor](#). Use the Mapping Data Element Editor to:

- Use an accumulator to store, count, and add values to a [Data Format Field](#) or [Data Element](#). [Accumulators](#) allow you to perform such actions as counting [Segments](#) in a [Transaction](#) for later placement in a Transaction's trailer Segment.
- Associate a WebSphere Data Interchange [literal or mapping commands](#) with a Field or Data Element. [Literals](#) allow you to perform such actions as providing data to trading partners that your application does not contain.
- Use any of WebSphere Data Interchange's special handling options on a Field or Data Element. [Special handling options](#) allow you to perform such actions as editing dates, verifying data in a field against pre-defined lists, and converting data from one value to another.

The Data Format Path and Field fields identify a Data Format Field that is mapped to the Data Element. A value can not be entered into these fields. Instead, these fields are populated by dragging a field to the existing mapping and dropping it there, or when the mapping is created by dragging the Field to the Data Element and dropping it there. The Data Format Path field is always disabled. You can clear the two fields by selecting the Field field and then pressing the Delete key. Selecting the Field name from the drop-down in the Field field can restore the values.

[Literals and mapping commands](#), as well as [constants](#), are placed into the field

10

Data Manipulation

© 2007 IBM Corporation

The Client mapping has field sensitive help which allows you to move to the literal line and press the F1 key on the keyboard to obtain help and navigate to the list of commands.

# Data Manipulation

perform conditional processing, etc... Most commands require parameters, [named variables](#), [special variables](#), [constants](#), and [expressions](#). Mapping commands in Send Maps and Receive Maps are most commonly called **literals** or **special literals** because they are entered in the "Literal" field on the [Mapping Data Element Editor](#). Literals sometimes refer to constants instead.

The following is a list of the mapping commands that are used in Send Maps and/or Receive Maps. These commands can be used in both map types unless otherwise noted. These commands are not used in [Data Transformation Maps](#), [Validation Maps](#), and [Functional Acknowledgement Maps](#).

<a href="#">&amp;ACFIELD</a>	<a href="#">&amp;ASSERT</a>	<a href="#">&amp;DATE</a>
<a href="#">&amp;DEFERRED</a>	<a href="#">&amp;E</a>	<a href="#">&amp;ERR</a>
<a href="#">&amp;FORCE</a>	<a href="#">&amp;FORMAT</a>	<a href="#">&amp;IF</a>
<a href="#">&amp;IFDATA</a>	<a href="#">&amp;IFNODATA</a>	<a href="#">&amp;IFNOVAR</a>
<a href="#">&amp;LOOPBREAK</a>	<a href="#">&amp;LOOPCHECK</a>	<a href="#">&amp;LSAVE</a>
<a href="#">&amp;LSET</a>	<a href="#">&amp;LSID</a>	<a href="#">&amp;SAMEAS</a>
<a href="#">&amp;SAVE</a>	<a href="#">&amp;SET</a>	<a href="#">&amp;THANDLE</a>
<a href="#">&amp;TIME</a>	<a href="#">&amp;TPID</a>	<a href="#">&amp;TPNICKN</a>
<a href="#">&amp;USE</a>	<a href="#">&amp;ZEROSIG</a>	

11  
Data Manipulation © 2007 IBM Corporation

You can select the command to view the format of the command or function.

# Data Manipulation

The screenshot shows a help window titled "WebSphere Data Interchange for Multiplatforms V3.3". The window has a menu bar with "Hide", "Back", "Print", and "Options". On the left is a "Contents" pane with a tree view containing folders like "WebSphere Data Interchange Client", "Trading Partners", "Operational profiles", "Document definitions", "Rules and Usages", "Mapping", "Document Store", and "Server Commands". The main content area displays the following information:

**&DATE**

**Keyword**                      **Keyword Description and Syntax**

**&DATE**                      **Syntax: &DATE**

Substitutes the system date. The length of the date field in the [EDI Standard Data Element](#) (Send Maps) or the [Data Format Field](#) (Receive Maps) determines whether the date is formatted as *yyyymmdd* or *yyymmdd*. The date is then edited as requested by the date edit specified in mapping.

You can use the &DATE keyword as source data for any of the EDI Standard data types.

You can also combine the &DATE keyword with the [&IFDATA](#), [&IFNODATA](#), or [&FORCE](#) keywords.

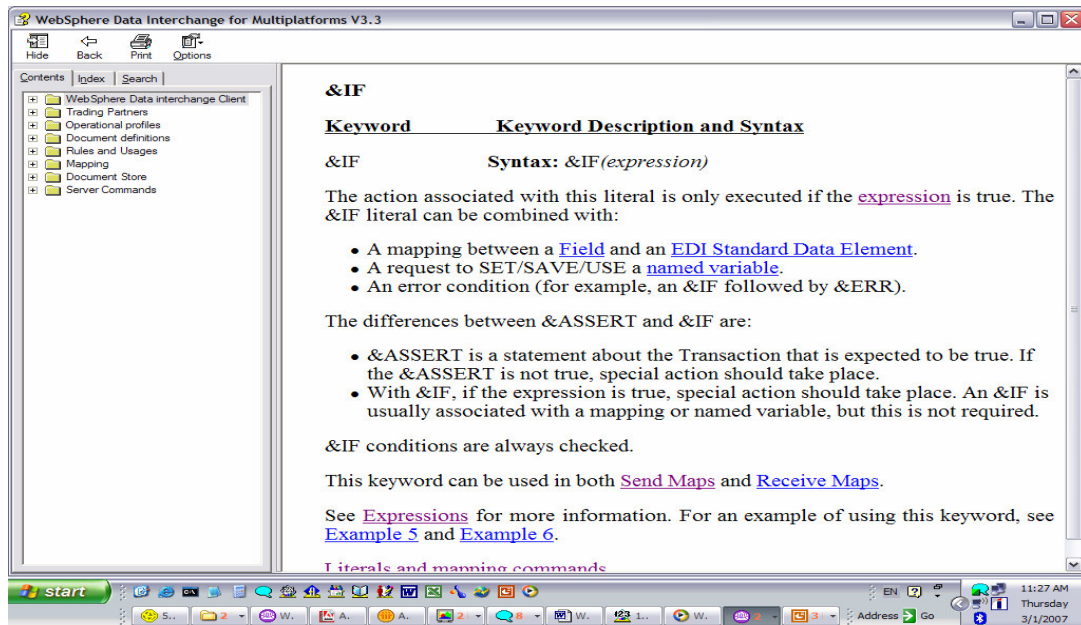
This keyword can be used in both [Send Maps](#) and [Receive Maps](#).

[Literals and mapping commands](#)

The taskbar at the bottom shows the Windows Start button, several application icons, and the system tray with the date and time: 11:24 AM Thursday 3/1/2007. A blue footer bar at the bottom of the slide contains the text "Data Manipulation" and "© 2007 IBM Corporation" on the right side.

This is the syntax for the &DATE function.

# Data Manipulation



The If command format contains an expression.

# Data Manipulation

The screenshot shows a help window titled "WebSphere Data Interchange for Multiplatforms V3.3". The window has a menu bar with "Hide", "Back", "Print", and "Options". Below the menu bar is a navigation pane with "Contents", "Index", and "Search" tabs. The "Contents" pane shows a tree view with the following items: WebSphere Data interchange Client, Trading Partners, Operational profiles, Document definitions, Rules and Usages, Mapping, Document Store, and Server Commands. The main content area displays the following text:

**&TPNICKN**

**Keyword**      **Keyword Description and Syntax**

**&TPNICKN**      **Syntax:** &TPNICKN

Substitutes the name of the [Trading Partner profile](#).

You can also use &TPID keyword with the [&IFDATA](#), [&IFNODATA](#), or [&FORCE](#) keywords.

This keyword can be used in [Send Maps](#) and [Receive Maps](#).

[Literals and mapping commands](#)

The window also shows a Windows taskbar at the bottom with the Start button, several application icons, and a system tray showing the time as 11:33 AM on Thursday, 3/1/2007. The bottom of the slide features a blue bar with the text "Data Manipulation" and "© 2007 IBM Corporation" on the right, and the number "14" on the left.

Some literal keywords do a specific mapping.

# Data Manipulation

WebSphere Data Interchange for Multiplatforms V3.3

Contents | Index | Search

- WebSphere Data interchange Client
  - Trading Partners
  - Operational profiles
  - Document definitions
  - Rules and Usages
  - Mapping
  - Document Store
  - Server Commands

## &FORCE

Keyword	Keyword Description and Syntax
&FORCE	<b>Syntax:</b> &FORCE <i>value</i>

Forces a value into a [Data Format Field](#) regardless of the [EDI Standard Data Element's](#) contents. A literal value specified for [Receive Maps](#) is normally used only if the Data Element does not contain any data, or if an error occurs while processing the data. See [literals and mapping commands](#) for special considerations.

For the &FORCE keyword to be effective, you must use it in a Data Element of a Segment that is present in the input Transaction.

This keyword can be used in [Receive Maps](#) only.

[Literals and mapping commands](#)

11:37 AM  
Thursday  
3/1/2007

Data Manipulation © 2007 IBM Corporation 15

Some commands for example &FORCE are only available in Receive maps.

## Section

# ***WDI Mapping Functions***



## Data Manipulation

- Send Receive Mapping Functions
  - ▶ Used to manipulate the data or assign values.
  - ▶ All functions take zero or more arguments as input and return a value.
  - ▶ Some functions have optional parameters.



Mapping functions are used to manipulate data or assign values. Some functions have no arguments. All functions return a value.

# Data Manipulation

The screenshot shows a help window titled "WebSphere Data Interchange for Multiplatforms V3.3". The window has a menu bar with "Hide", "Back", "Print", and "Options". Below the menu bar is a "Contents" pane with a tree view containing folders like "WebSphere Data Interchange Client", "Trading Partners", "Operational profiles", "Document definitions", "Rules and Usages", "Mapping", "Document Store", and "Server Commands". The main content area is titled "&USE" and contains the following text:

**&USE**

Keyword	Keyword Description and Syntax
&USE <i>value</i> >	<b>Syntax:</b> &USE <i>variable</i> <, <i>position</i> > <, <i>length</i> > < <i>default</i> >

*position* is optional, but if provided, it indicates the position within the variable from which the data should be retrieved.

*length* is optional, but if provided, it indicates the length of data that should be retrieved. You can use an asterisk to move all data beginning at the location specified by the position parameter through the end of the variable, for example, **&USE var 3,\***.

*default value* is optional, and if provided, the default value is used when the variable contains no value.

For numeric elements, a variable value of zero causes WebSphere Data Interchange to use the default value. In the case where no default is specified, as in literal = **&USE X**, there will be no output if variable X contains zero. At times, however, zero needs to be considered significant. In these cases, the user should specify the default, as in literal = **&USE X 0**.

For [Receive Maps](#), the value of the [named variable](#) is the source of data for the

A blue speech bubble labeled "WDI Client Help" points to the "&USE" section header.

The &USE function has some optional parameters or arguments for example position, length, and default value.

## Data Manipulation

- Send Receive Mapping Functions: Field Manipulation
  - ▶ Scenario Outbound:
    - New purchasing system (outbound order) using legacy system for inbound invoice processing. Invoice is matched to order using PO number.
    - Legacy system PO number always begins with '4' and cannot exceed 7 positions. The new purchasing system PO number is 10 positions and does not begin with '4'.
    - Orders are mirrored to legacy system using the legacy notation for PO number.



In this example, we have a new purchasing system which must match the purchase order number with the invoice system. The new purchasing system has purchase order number with length 10. The invoice system is expecting purchase order numbers with length 7 and beginning with the number 4.

## Data Manipulation

- Send Receive Mapping Functions: Field Manipulation

- ▶ Solution:

- Change the PO Number on the outbound order.
    - PO Number = 4 + last 6 digits of PO number.

- Data Example:

- PO number before = 5200000799
      - PO number after = 4000799



One solution is to change the purchase order number on the outbound order so the purchase order number in the returning invoice will match what is in the order.

## Data Manipulation

- Send/Receive Mapping Functions: Field Manipulation

- ▶ Steps Send/Receive Map:

- ✓ Save the PO number.
      - ✓ &SAVE PONUMBER
    - ✓ Use scaling to get the last 6 characters of the PO number.
      - ✓ &SET PONUMBER &E(CHAR(PONUMBER) SC 5.6)
    - ✓ Concatenate '4' with the last 6 characters of the PO number.
      - ✓ &SET PONUMBER &E('4' + CHAR(PONUMBER))
    - ✓ Map the result
      - ✓ &USE PONUMBER



The steps to manipulate the purchase order number are:

1. Save the purchase order number in a variable.
2. Save the last six characters of the purchase order number using the Scaling operator
3. Concatenate the number four with the last six characters of the purchase order number
4. Map the result

# Data Manipulation

The screenshot shows the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window displays a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]' and '850 [Purchase Order]'. A 'Mapping Data Element Editor' dialog box is open, showing the mapping of the 'PONUMBER' field from the source to the target. The 'Literal or Mapping Command' is set to '&SAVE SPONUMBER'. The dialog also includes options for 'Accumulators / Actions', 'Special Handling...', 'Element Attributes...', and 'Field Attributes...'. The 'Open Automatically When an Element Mapping is Created' checkbox is checked.

First you need to save the purchase order number to the variable SPONUMBER. Variable names may not begin with the letter P. To save the value, use the drag and drop on the purchase order number and enter the Literal Command &SAVE.

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window shows a tree view of data elements on the left and a detailed view of a selected element on the right. A 'Mapping Data Element Editor' dialog box is open, showing the configuration for a mapping command. The dialog includes fields for 'Data Format Path', 'Field', and 'Literal or Mapping Command'. The 'Literal or Mapping Command' field contains the expression: `&SET SPONUMBER &E(CHAR(SPONUMBER) SC 5,6)`. Below this, there are sections for 'Accumulators / Actions' and 'Comments'. The 'Accumulators / Actions' section has several dropdown menus. The 'Comments' section is empty. The dialog also has buttons for 'Special Handling...', 'Element Attributes...', and 'Field Attributes...', along with 'OK', 'Insert', and 'Cancel' buttons. A checkbox at the bottom is labeled 'Open Automatically When an Element Mapping is Created'.

23

Data Manipulation © 2007 IBM Corporation

Next you get the last 6 digits from the purchase order number. To add another mapping command double click on the element in the right window.

## Data Manipulation

Save the Result ← Evaluate (expression)

▪ `&SET SPONUMBER &E(CHAR(SPONUMBER) SC 5.6)`

↑ Variable Name      ↑ Force Character type

↑ Substring position 5 for length 6



This is the command that was entered on the literal or command line. The `&E` is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. A value with all digits is normalized to numeric data type automatically. The `CHAR` is an operator that forces the variable `SPONUMBER` which contains the purchase order number we saved in the previous mapping command, to be treated as a character value. The `SC` operator is a special operator used for scaling real numbers but can be used when dealing with character data to provide a substring capability. The `5.6` is the position and length for the substring. The `&SET` keyword indicates to save the result in the variable `SPONUMBER`.



# Data Manipulation

WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server - Send Map - WDI33CONFLAB1\_S850]

Mapping Data Element Editor - 324

Data Format Path: \_\_\_\_\_

Field: \_\_\_\_\_

Literal or Mapping Command: `&SET SPONUMBER &E('4' + CHAR(SPONUMBER))`

Accumulators / Actions: \_\_\_\_\_

Comments: \_\_\_\_\_

Special Handling...  
Element Attributes...  
Field Attributes...  
OK  
Insert  
Cancel

Open Automatically When an Element Mapping is Created

140 O DIS [Discount Detail]  
145 O INC [Installation Information]  
150 O DTM [Date/Time Reference]  
160 O LDT [Lead Time]

Ready

start

Address Go

12:33 PM  
Thursday  
3/1/2007

25

Data Manipulation © 2007 IBM Corporation

Next you concatenate the value '4' to the purchase order number.

## Data Manipulation

Save the Result ← Evaluate (expression)

▪ `&SET SPONUMBER &E('4' + CHAR(SPONUMBER))`

↑  
Variable Name

↑  
Force Character type

↑  
Concatenate operator



This is the command entered on the literal or command line. The &E is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. A value with all digits is normalized to numeric data type automatically. The CHAR is an operator that forces the variable SPONUMBER which contains the purchase order number we saved in the previous mapping command, to be treated as a character value. The plus operator is a numeric operator but can be used when dealing with character data to provide a concatenation capability. The &SET keyword indicates to save the result in the variable SPONUMBER.

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements. On the right, the 'Mapping Data Element Editor' dialog is open for element 324. The 'Literal or Mapping Command' field contains the text '&USE SPONUMBER'. The dialog also includes sections for 'Accumulators / Actions', 'Comments', and buttons for 'Special Handling...', 'Element Attributes...', 'Field Attributes...', 'OK', 'Insert', and 'Cancel'. The status bar at the bottom indicates 'Ready' and the system time is 1:31 PM on Thursday, 3/1/2007.

The &USE keyword will use the value in the variable SPONUMBER.

# Data Manipulation

WebSphere Data Interchange for Multiplatforms V3.3.3 - [WDI33Server - Send Map - WDI33CONFLAB1\_S850]

System: WDI33Server

General Details Comments

WDI33CONFLAB1 [WDI User Conference 2006 - Lab 1]

HEAD [Header Record WDI User Conference 2006 - Lab 1]

RECORDID [WDI User Conference 2006 - Lab 1]

TYPECODE [WDI User Conference 2006 - Lab 1]

PONUMBER [WDI User Conference 2006 - Lab 1]

PODATE [WDI User Conference 2006 - Lab 1]

NAME [WDI User Conference 2006 - Lab 1]

VENDORNUMBER [WDI User Conference 2006 - Lab 1]

ADDRESS [WDI User Conference 2006 - Lab 1]

CITY [WDI User Conference 2006 - Lab 1]

AD1FILLER2 [WDI User Conference 2006 - Lab 1]

STATE [WDI User Conference 2006 - Lab 1]

ZIP [WDI User Conference 2006 - Lab 1]

NAMEADDR [WDI User Conference 2006 - Lab 1]

LINEITEMS [LineItems Record WDI User Conference 2006 - Lab 1]

TRAILER [Trailer Record WDI User Conference 2006 - Lab 1]

Application Control Fields

850 [Purchase Order]

20 M BEG [Beginning Segment for Purchase Order]

1 M 353 [Transaction Set Purpose Code]

2 M 92 [Purchase Order Type Code]

3 M 324 [Purchase Order Number]

PONUMBER in HEADER

Literal of: &SET SPONUMBER &E(CHAR(SPONUMBER) SC 5.6)

Literal of: &SET SPONUMBER &E('4' + CHAR(SPONUMBER))

Literal of: &USE SPONUMBER

4 O 328 [Release Number]

M 373 [Date]

6 O 367 [Contract Number]

7 O 587 [Acknowledgment Type]

019 [Invoice Type Code]

[Contract Type Code]

11 O 1232 [Purchase Category]

11 O 786 [Security Level Code]

12 O 600 [Security Level Code]

1 Literal of: &SAVE SPONUMBER

2 Literal of: &SET SPONUMBER &E(CHAR(SPONUMBER) SC 5.6)

3 Literal of: &SET SPONUMBER &E('4' + CHAR(SPONUMBER))

4 Literal of: &USE SPONUMBER

Ready

start

EN 1:33 PM Thursday 3/1/2007

The completed mapping.

## Data Manipulation

- Send Receive Mapping Functions: Field Manipulation
  - ▶ Scenario Outbound:
    - My trading partner needs machine number and model number in the PO line item segment for all 7 digit buyer's part numbers. Buyer's part numbers can be up to 35 characters.
    - If the buyer's part number is 7 digits the first 4 digits of the part number is machine number and the last 3 digits of the part number is model number



In this example, my trading partner needs the machine number and model number in the purchase order line item segment for all 7 digit buyer's part numbers. The Buyer's part numbers can be up to 35 characters. If the part number is 7 digits, the first 4 digits is machine number and the last 3 digits are the model number.

## Data Manipulation

- Send Receive Mapping Functions: Field Manipulation

- ▶ Solution:

- If the buyer's part number is 7 digits
    - Machine Number = first 4 digits
    - Model Number = last 3 digits

- Data Example:

- Buyer's part number = 6400XYZ
      - STD before = PO1\*00010\*1\*EA\*0.01\*1 \*BP\*6400XYZ!
      - STD after = PO1\*00010\*1\*EA\*0.01\*1  
\*BP\*6400XYZ\*\*\*\*\*MA\*6400\*MN\*XYZ!



The solution is to check the length of the part number. If the length is 7, you need to split the part number to create the machine number and model number.

## Data Manipulation

- Send/Receive Mapping Functions: Field Manipulation
  - ▶ Steps Send/Receive:
    - Save the buyer's part number.
      - &SAVE partnum
    - Check to see if length 7
      - &SET mapit &E(CHAR(partnum) SC 8.1)
    - Use scaling to get machine number
      - &IF (mapit = ") &SET machinetype &E(CHAR(partnum) SC 1.4)
    - Use scaling to get model number
      - &IF (mapit = ") &SET modeltype &E(CHAR(partnum) SC 5.3)
    - Map machine number
      - &USE machinetype
    - Map model number
      - &USE modeltype

The steps to manipulate the part number are:

1. Save the part number in a variable
2. Check to see if the length is 7.
3. Use the scaling operator to get the machine number
4. Use the scaling operator to get the model number
5. Map the results

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements under 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. The 'ITEMNUMBER-BP' element is selected. A 'Mapping Data Element Editor - 235' dialog box is open, showing the configuration for this element. The 'Data Format Path' is 'LINEITEMS', the 'Field' is 'ITEMNUMBER-BP', and the 'Literal or Mapping Command' is '&SAVE partnum'. The 'Accumulators / Actions' section has a dropdown menu with an arrow pointing to it. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The status bar at the bottom shows 'Data Manipulation' and '© 2007 IBM Corporation'.

First save the buyer's part number to the variable bpartnum. Variable names may not begin with the letter P. To save a value, use the drag and drop on the buyer's part number and enter the Literal Command &SAVE.



# Data Manipulation

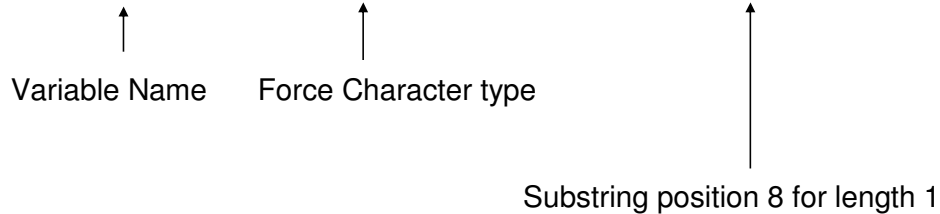
The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window shows a tree view of data elements on the left and a detailed view of a selected element on the right. A 'Mapping Data Element Editor - 235' dialog box is open, showing the configuration for a mapping command. The 'Literal or Mapping Command' field contains the command: `&SET mapit &E(CHAR(partnum) SC 7,1)`. The 'Accumulators / Actions' section has several dropdown menus, with an arrow pointing to the second one. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The status bar at the bottom indicates 'Ready' and the system clock shows '1:47 PM Thursday 3/1/2007'.

Next you need to try and determine the length of the part number. To add another mapping command double click on the element in the right window.

## Data Manipulation

Save the Result ← Evaluate (expression)

• `&SET mapit &E(CHAR(bpartnum) SC 8.1)`



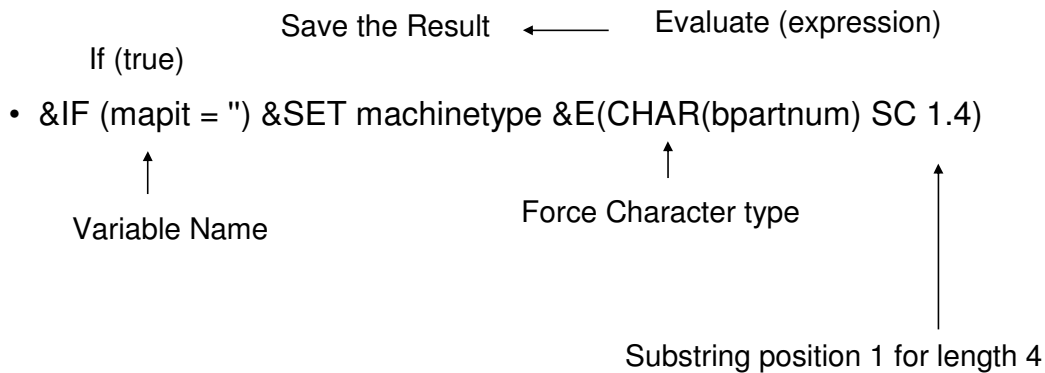
This is the command entered on the literal or command line. The `&E` is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. A value with all digits is normalized to numeric data type automatically. The `CHAR` is an operator that forces the variable `bpartnum` which contains the purchase order number we saved in the previous mapping command, to be treated as a character value. The `SC` operator is a special operator used for scaling real numbers but can be used when dealing with character data to provide a substring capability. The `8.1` is the position and length for the substring. The `&SET` keyword indicates to save the result in the variable `mapit`. If there is a character is position 8 then the variable `mapit` will contain a value which will indicate the part number length is greater than 7.

# Data Manipulation

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements for a 'WDI User Conference 2006 - Lab 1'. A 'Mapping Data Element Editor' dialog box is open, allowing the user to define a mapping command. The command entered is: `&IF (mapit | - ) &SET machinetype &E(CHAR(bpartnum) SC 1.4)`. The dialog also includes options for 'Accumulators / Actions', 'Special Handling...', 'Element Attributes...', and 'Field Attributes...'. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The system tray at the bottom shows the date and time as Thursday, 3/1/2007, 2:40 PM.

Now you can add an If command to see if we should split the part number. This command will set the machine number in the variable machinetype

## Data Manipulation



This is the command entered on the literal or command line. The &IF is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. In our example the variable mapit is null if there is not a digit in position 8. The mapit variable was set in the previous mapping command.

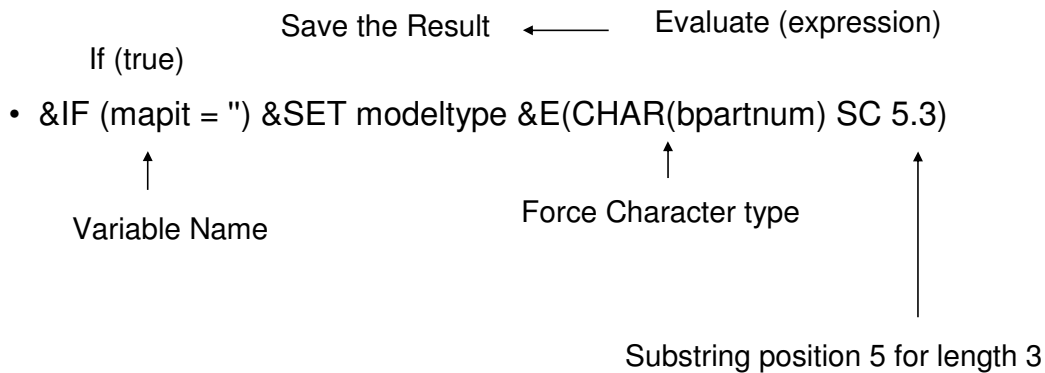
The &E is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. A value with all digits is normalized to numeric data type automatically. The CHAR is an operator that forces the variable bpartnum which contains the purchase order number we saved in the previous mapping command, to be treated as a character value. The SC operator is a special operator used for scaling real numbers but can be used when dealing with character data to provide a substring capability. The 1.4 is the position and length for the substring. The &SET keyword indicates to save the result in the variable machinetype.

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. A 'Mapping Data Element Editor' dialog box is open, showing the 'Literal or Mapping Command' field with the command: `&IF (mapit = ?) &SET modeltype &E(CHAR(bpartnum) SC 5.3)`. An arrow points to this command. The dialog also includes sections for 'Accumulators / Actions', 'Special Handling...', 'Element Attributes...', 'Field Attributes...', and 'Comments'. The background shows a tree view of data elements like 'WDILAB1 [WDI User Conference 2006 - Lab 1]' and 'LINEITEMS [LineItems Record WDI User Conference 2006 - Lab 1]'. The system tray at the bottom shows the date and time as Thursday, 3/1/2007, 2:48 PM.

Now you can add an If command to see if we should split the part number. This command will set the model number in the variable modeltype.

## Data Manipulation



38

Data Manipulation

© 2007 IBM Corporation

This is the command entered on the literal or command line. The &IF is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. In our example the variable mapit is null if there is not a digit in position 8. The mapit variable was set in the previous mapping command.

The &E is a mapping command and take an expression as an argument. It evaluates the expression and returns the result. The expression is within the first set of parentheses. A value with all digits is normalized to numeric data type automatically. The CHAR is an operator that forces the variable bpartnum which contains the purchase order number we saved in the previous mapping command, to be treated as a character value. The SC operator is a special operator used for scaling real numbers but can be used when dealing with character data to provide a substring capability. The 5.3 is the position and length for the substring. The &SET keyword indicates to save the result in the variable modeltype.

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements, including 'LINEITEMS' and various item codes. A 'Mapping Data Element Editor' dialog box is open, showing the configuration for a mapping. The 'Literal or Mapping Command' field contains '&USE machinetype'. The 'Accumulators / Actions' section has several dropdown menus, with an arrow pointing to the second one. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The system tray at the bottom shows the date and time as 3:05 PM Thursday 3/1/2007.

Next you map the results. The &USE keyword will use the value in the variable machinetype.

# Data Manipulation

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. A 'Mapping Data Element Editor - 234' dialog box is open, showing the 'Field' dropdown set to '&USE modeltype'. An arrow points to the 'Accumulators / Actions' section. The dialog also includes fields for 'Data Format Path', 'Literal or Mapping Command', and 'Comments'. The background shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'.

The &USE keyword will use the value in the variable modeltype.



# Data Manipulation

1 Literal of: &SAVE partnum  
 • Literal of: &SET mapit &E(CHAR(partnum) SC 7.1)  
 • Literal of: &IF (mapit = ") &SET machinetype &E(CHAR(partnum) SC 1.4)  
 • Literal of: &IF (mapit = ") &SET modeltype &E(CHAR(partnum) SC 5.3)  
 • Literal of: &USE machinetype  
 • Literal of: &USE modeltype

The screenshot shows the WebSphere Data Interchange mapping editor. The left pane displays a list of source fields including RECORDID, QTYORDERED, UNITOFMEAS, UNITPRICE, ITEMDESC, ITEMNUMBER-BN, ITEMCODE1, ITEMNUMBER-B1, ITEMCODE2, ITEMNUMBER-BC, ITEMCODE3, ITEMNUMBER-BP, ITEMCODE4, and TRAILER. The right pane shows the target fields and the mapping logic, including several 'Literal of:' entries and conditional logic using &IF and &SET. Blue callouts highlight the specific literals mentioned in the text above.

The completed mapping.

## Summary

- Where do you start?
  - ▶ WDI V3.3 Mapping Guide. Chapter 14
  - ▶ WDI Client Help contains the most up to date list of commands and functions.
    - Help->Contents->Mapping->Send Map->Mapping commands



More information can be found in the WebSphere Data Interchange Version 3.3 Mapping Guide chapter 14.

# Trademarks, copyrights, and disclaimers

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM	CICS	IMS	WMO	Tivoli
IBM (logo)	Cloudscape	Informix	OS/390	WebSphere
ef (logo)/business	DB2	iSeries	OS/400	xSeries
AIX	DB2 Universal Database	Lotus	pSeries	zSeries

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel, ActionMedia, LANDesk, MMX, Pentium and ProShare are trademarks of Intel Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Linux is a registered trademark of Linus Torvalds.

Other company, product and service names may be trademarks or service marks of others.

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements and/or changes in the product(s) and/or program(s) described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

Information is provided "AS IS" without warranty of any kind. THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (e.g., IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785  
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

© Copyright International Business Machines Corporation 2006. All rights reserved.

Note to U.S. Government Users - Documentation related to restricted rights-Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract and IBM Corp.



Data Manipulation

43

© 2007 IBM Corporation