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IBM WebSphere® Data Interchange V3.3

Qualification Example



@business on demand.

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This presentation will review how to qualify loops in Data Transformation maps.

Agenda

- Review CloseOccurrence Command
- Describe Qualification behavior



The presentation will review the CloseOccurrence Command and describe the behavior using different qualification mapping.

Looping Structures and Qualification

- CloseOccurrence Command
 - ▶ Prevents overlaying of data in the Target document.
 - ▶ Close the current occurrence of a repeating target element and force the creation of another instance of the element.
 - ▶ Available in both Source and Target based maps.
 - ▶ CloseOccurrence (targetpath)



The CloseOccurrence command prevents overlaying of data in the Target document. Its function is to close the current occurrence of a repeating target element and force the creation of another instance of the element. This command is available in both Source and Target based maps.

Looping Structures and Qualification

- CloseOccurrence Command Why?
 - ▶ Feature: Forward and Reverse References
 - References to elements not at the current position.
 - ▶ Feature: Mapping between Elements
 - Mapping not attached to a particular element.
 - ▶ Feature: Qualification on non-repeating or non-compound elements.
 - Implied CloseOccurrence at the loop level.



The CloseOccurrence command is a feature that can be used with references to elements not at the current mapping position or if the mapping is not attached to a particular element. Qualification on non-repeating or non-compound elements will have an implied CloseOccurrence at the loop level.

Looping Structures and Qualification

The screenshot shows the IBM Business Process Manager (BPM) mapping tool interface. It displays a source-based map configuration with the following details:

- Source:** EDI Standard Transaction (X12V3R1) (856)
- Target:** Data Format (856RECU_DICTIONARY) (856RECU)
- Target Elements:** TRANSACTION_HEADER [TRANSACTION_HEADER], 856SHIPMENTLOOP, SHIPMENT_DETAIL [SHIPMENT_DETAIL], 856ORDERLOOP, ORDER_DETAIL [ORDER_DETAIL], 856CONTAINERLOOP, CARTON_DETAIL [CARTON_DETAIL]
- Map Structure:**
 - 10 M HL Loop [Hierarchical Level]
 - Qualify (StrComp ((Table 2) 10 M HL Loop) 10 M HL) (3 M 735) ('S') EQ ()
 - 10 M HL [Hierarchical Level]
 - CloseOccurrence (856SHIPMENTLOOP)
 - MapTo (856SHIPMENTLOOP)
 - 1 M 628 [Hierarchical ID Number]
 - 2 O 734 [Hierarchical Parent ID Number]
 - 3 M 735 [Hierarchical Level Code]
 - 4 O 736 [Hierarchical Child Code]
 - 20 O LTN [Item Identification]
 - 30 O SH1 [Item Detail (Shipment)]
 - 40 O SLN [Subline Item Detail]
 - 50 O PRF [Purchase Order Reference]
 - 60 O POD4 [Item Physical Details]
 - 70 O PID [Product/Item Description]
 - 80 O MEA [Measurements]
 - 90 O PVK [Paperwork]

Annotations in the screenshot:

- Loop Level: Implied Close Occurrence:** Points to the 'CloseOccurrence' element.
- Qualified Segment Level:** Points to the 'MapTo' element.

Global Variables table:

Global Variable	Local Variable Name	Special Variable Name	Scope	Data Type
testx		DIOutType	Do...	Character
SUB_PER_QU		DIOutFile	Do...	Character
sub_entsttydo		DIOutData	Do...	Character
sub_desc				
ST006S1				
SB_REF_ID				
SB_MIDDLE				
RPN_1				
resp_count				
REF_Identifier				
PTP_REF_QU				
PTP_ADD1				
prv_refidqanl				
pro_add2				
patinfo_unmb				
PA_COLY				
NM1_SUB_In				
NM1_REC_In				
MagSoftCnt				
MapNameWith				

This example is a Source based map with Electronic Data Interchange (EDI) source data. The map is using the Hierarchical Level (HL) Loop for the Qualification but Special HL Loop qualification is not used therefore the example applies to normal qualification for repeating elements. Should a 'CloseOccurrence' be necessary when a 'MapTo' command is present?

Looping Structures and Qualification

▪ EDI Source Message Target has 2 records for each HL Level

▶ ST*856*45920001~	▪ 0030	
▶ BSN*30*01*050524*0049~	▪ 01000001S	
▶ HL*1**S~	▪ 01	SHIP1
▶ N1*SF**92*SHIP1~	▪ 02000002O	
▶ HL*2**O~	▪ 02 0000ORD1	
▶ PRF*ORD1*11113711**050523~	▪ 05 P	
▶ HL*3**P~	▪ 05	PAC1111
▶ MAN*GM*PAC1111~	▪ 02000004O	
▶ HL*4**O~	▪ 02 0000ORD2	
▶ PRF*ORD2*11113712**050523~	▪ 05 P	
▶ HL*5**P~	▪ 05	PAC2222
▶ MAN*GM*PAC2222~	▪ 01000006S	
▶ HL*6**S~	▪ 01	SHIP2
▶ N1*SF**92*SHIP2~	▪ 02000007O	
▶ HL*7**O~	▪ 02 0000ORD3	
▶ PRF*ORD3*11113711**050523~	▪ 05 P	
▶ HL*8**P~	▪ 05	PAC3333
▶ MAN*GM*PAC3333~	▪ 02000009O	
▶ HL*9**O~	▪ 02 0000ORD4	
▶ PRF*ORD4*11113712**050523~	▪ 05 P	
▶ HL*10**P~	▪ 05	PAC4444
▶ MAN*GM*PAC4444~		
▶ CTT*10~		
▶ SE*24*45920001~		



This is the results of the Qualification used in the mapping example. The EDI source message is on the left and the application target output is on the right. The application record ids are position 1 for length 2. The output shows 2 records created for each HL Level. For example, the Shipment level 'S' should create 1 01 record with the shipment information and there are 2 01 records in the output.

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Looping Structures and Qualification

WebSphere Data Interchange for Multiplatforms V3.2.1 - [WDI Server 3.2 - Data Transformation Map - 856EXAMPLE_TEST2]

Source: EDI Standard Transaction\X12V3R1856
 Table 1
 Table 2
 Table 3

Target: Data Format\856RECU_DICTIONARY\856RECU
 TRANSACTION_HEADER [TRANSACTION_HEADER]
 856SHIPMENTLOOP
 SHIPMENT_DETAIL [SHIPMENT_DETAIL]
 856ORDERLOOP
 ORDER_DETAIL [ORDER_DETAIL]
 856CONTAINERLOOP
 CARTON_DETAIL [CARTON_DETAIL]

Loop Level: Implied Close Occurrence

Qualified Segment Level

```

HL*1**S~
N1*SF**92*SHIP1~
HL*2**O~
PRF*ORD1*11113711**050
523~
HL*3**P~
MAN*GM*PAC1111~
  
```

Ready

start

Address Go

1:17 PM
 Wednesday
 3/7/2007

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Qualification Example © 2007 IBM Corporation

Taking a closer look at the Qualification. The mapping execution creates the target looping levels in order of the source message with an implied 'CloseOccurrence' with each HL Loop found in the Source. At the same time the TRANSFORM re-positions in the target message moving up 1 level during processing to check to see if the target was created. If the target was created a Close Occurrence is executed on that target and a new target is created.

The source message has Shipment, Order, and Pack HL Loops. The Shipment HL produces the 856SHIPMENTLOOP, Order produces the 856ORDERLOOP, and Pack produces the CARTON_DETAIL. The Shipment HL produced the first 856SHIPMENTLOOP in the target.

First the Qualify by Value identified the execution of the Shipment Qualification. The next command is CloseOccurrence for the 856SHIPMENTLOOP in the target. Since no element mapping has been executed, the target has not been created. The MapTo Command will create a new occurrence of the 856SHIPMENTLOOP in the target. When translation moves to the mapping for the N1 segment, the MapTo command is complete and the 856SHIPMENTLOOP is closed because the MapTo command is within the HL segment.

Looping Structures and Qualification

Loop Level: Implied Close Occurrence

Qualified Segment Level

```

HL*1**S~
N1*SF**92*SHIP1~
HL*2**O~
PRF*ORD1*11113711**050
523~
HL*3**P~
MAN*GM*PAC1111~
    
```

When the Order HL was found in the source message, an implied 'CloseOccurrence' for 856SHIPMENTLOOP was executed.

First the Qualify by Value identified the execution of the Order Qualification. The next command is CloseOccurrence for the 856ORDERLOOP in the target. Since no element mapping commands have been executed, the target has not been created. The MapTo Command will create a new occurrence of the 856ORDERLOOP in the target. Since 856SHIPMENTLOOP is the parent of the 856ORDERLOOP another occurrence of this target is also created. When translation moves to the mapping for the PRF segment, the MapTo is complete and the 856ORDERLOOP is closed because the MapTo command is within the HL segment.

Looping Structures and Qualification

Source: EDI Standard Transaction X12V3R11856

Target: Data Format 856RECU_DICTIONARY/856RECU

Loop Level: Implied Close Occurrence

Qualified Segment Level

```

HL*1**S~
N1*SF**92*SHIP1~
HL*2**O~
PRF*ORD1*11113711**050
523~
HL*3**P~
MAN*GM*PAC1111~
  
```

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Qualification Example © 2007 IBM Corporation

When the Pack HL was found in the source message, an implied 'CloseOccurrence' for 856ORDERLOOP was executed.

First the Qualify by Value identifies the execution of Pack Qualification. The next command is CloseOccurrence for the CARTON_DETAIL record in the target. Since no element mapping commands have been executed, the target has not been created. The MapTo Command will create a new occurrence of the 856ORDERLOOP in the target. Since 856ORDERLOOP is the parent of the CARTON_DETAIL record another occurrence of this target is also created. When translation moves to the mapping for the MAN segment, the MapTo command is complete and the CARTON_DETAIL record is closed because the MapTo command is within the HL segment.

The Pack HL closed the first occurrence of 856ORDERLOOP in the target and created a second 856ORDERLOOP using the 'MapTo' command.

Looping Structures and Qualification

▪ EDI Source Message Target has 2 records for each HL Level

▶ ST*856*45920001~	▪ 0030	
▶ BSN*30*01*050524*0049~	▪ 01000001S	
▶ HL*1**S~	▪ 01	SHIP1
▶ N1*SF*92*SHIP1~	▪ 02000002O	
▶ HL*2**O~	▪ 02	0000ORD1
▶ PRF*ORD1*11113711**050523~	▪ 05	P
▶ HL*3**P~	▪ 05	PAC1111
▶ MAN*GM*PAC1111~	▪ 02000004O	
▶ HL*4**O~	▪ 02	0000ORD2
▶ PRF*ORD2*11113712**050523~	▪ 05	P
▶ HL*5**P~	▪ 05	PAC2222
▶ MAN*GM*PAC2222~	▪ 01000006S	
▶ HL*6**S~	▪ 01	SHIP2
▶ N1*SF*92*SHIP2~	▪ 02000007O	
▶ HL*7**O~	▪ 02	0000ORD3
▶ PRF*ORD3*11113711**050523~	▪ 05	P
▶ HL*8**P~	▪ 05	PAC3333
▶ MAN*GM*PAC3333~	▪ 02000009O	
▶ HL*9**O~	▪ 02	0000ORD4
▶ PRF*ORD4*11113712**050523~	▪ 05	P
▶ HL*10**P~	▪ 05	PAC4444
▶ MAN*GM*PAC4444~		
▶ CTT*10~		
▶ SE*24*45920001~		



The values from the HL segment in the source are in the first 01 record and the values from the N1 segment are in the second 01 record.

Looping Structures and Qualification

The screenshot shows the IBM Data Transformation Map interface. The source is 'EDI Standard Transaction\12V3R1\856' containing 'Table 1', 'Table 2', and 'Table 3'. The target is 'Data Format\856RECU_DICTIONARY\856RECU' containing 'TRANSACTION_HEADER [TRANSACTION_HEADER]', '856SHIPMENTLOOP', 'SHIPMENT_DETAIL [SHIPMENT_DETAIL]', '856ORDERLOOP', 'ORDER_DETAIL [ORDER_DETAIL]', '856CONTAINERLOOP', and 'CARTON_DETAIL [CARTON_DETAIL]'. A red arrow points to a '10 M HL Loop [Hierarchical Level]' in the 'Table 2' section, with the text 'Loop Level: Implied Close Occurrence' next to it. Another red arrow points to a '10 M HL Loop' in the 'Table 1' section, with the text 'Remove CloseOccurrence' next to it. The bottom of the window shows a Windows taskbar with the date 'Wednesday 3/7/2007' and time '2:05 PM'. The footer contains 'Qualification Example' and '© 2007 IBM Corporation'.

What happens when you remove the CloseOccurrence Command?

Looping Structures and Qualification

▪ EDI Source Message

Target has each HL Level grouped together

ST*856*45920001~	▪ 0030	
BSN*30*01*050524*0049~	▪ 01000001S	SHIP1
HL*1**S~	▪ 01000006S	SHIP2
N1*SF*92*SHIP1~	▪ 02000002O0000ORD1	
HL*2**O~	▪ 02000004O0000ORD2	
PRF*ORD1*11113711**050523~		
HL*3**P~		
MAN*GM*PAC1111~	▪ 05 P	PAC1111
HL*4**O~		
PRF*ORD2*11113712**050523~		
HL*5**P~		
MAN*GM*PAC2222~	▪ 05 P	PAC2222
HL*6**S~		
N1*SF*92*SHIP2~		
HL*7**O~		
PRF*ORD3*11113711**050523~		
HL*8**P~		
MAN*GM*PAC3333~	▪ 02000007O0000ORD3	
HL*9**O~	▪ 02000009O0000ORD4	
PRF*ORD4*11113712**050523~		
HL*10**P~		
MAN*GM*PAC4444~	▪ 05 P	PAC3333
CTT*10~		
SE*24*45920001~	▪ 05 P	PAC4444



The results are 1 record for each HL Loop, but the records are grouped together. Shipment 1 and Shipment 2 are together, Order 1 and Order 2 are together.

Looping Structures and Qualification

Remove MapTo

What happens when you remove the MapTo Command?

Looping Structures and Qualification

- EDI Source Message
 - ▶ ST*856*45920001~
 - ▶ BSN*30*01*050524*0049~
 - ▶ HL*1**S~
 - ▶ N1*SF*92*SHIP1~
 - ▶ HL*2**O~
 - ▶ PRF*ORD1*11113711**050523~
 - ▶ HL*3**P~
 - ▶ MAN*GM*PAC1111~
 - ▶ HL*4**O~
 - ▶ PRF*ORD2*11113712**050523~
 - ▶ HL*5**P~
 - ▶ MAN*GM*PAC2222~
 - ▶ HL*6**S~
 - ▶ N1*SF*92*SHIP2~
 - ▶ HL*7**O~
 - ▶ PRF*ORD3*11113711**050523~
 - ▶ HL*8**P~
 - ▶ MAN*GM*PAC3333~
 - ▶ HL*9**O~
 - ▶ PRF*ORD4*11113712**050523~
 - ▶ HL*10**P~
 - ▶ MAN*GM*PAC4444~
 - ▶ CTT*10~
 - ▶ SE*24*45920001~
- OVERLAY !!!!!
 - 0030
 - 01000006S SHIP2
 - 02000009O0000ORD4
 - 05 P PAC1111
 - 05 P PAC2222
 - 05 P PAC3333



Now you have target data that has been overlaid. The first shipment level created the 01 record, but the second shipment overlaid this record. The same is true with the order level and the 02 record.

Looping Structures and Qualification

The screenshot displays the WebSphere Data Interchange for Multiplatforms V3.2.1 interface. The main window shows a mapping configuration for a looping structure. The source is EDI Standard Transaction V12V3R1\856, and the target is Data Format\856RECU_DICTIONARY\856RECU. The mapping is structured as follows:

- Source: EDI Standard Transaction V12V3R1\856
 - Table 1
 - Table 2
 - 10 M HL Loop [Hierarchical Level]
 - Qualify (StrComp (Table 2\10 M HL Loop\10 M HL\3 M 735\, "S") EQ 0)
 - CloseOccurrence [856SHIPMENTLOOP\]
 - 10 M HL [Hierarchical Level]
 - 1 M 628 [Hierarchical ID Number]
 - 2 O 734 [Hierarchical Parent ID Number]
 - 3 M 735 [Hierarchical Level Code]
 - 4 O 736 [Hierarchical Child Code]
 - 20 O LIN [Item Identification]
 - 30 O SN1 [Item Detail (Shipment)]
 - 40 O SLN [Subline Item Detail]
 - 50 O PRF [Purchase Order Reference]
 - 60 O PO4 [Item Physical Details]
 - 70 O PID [Product/Item Description]
 - 80 O MEA [Measurements]
 - 90 O PWK [Paperwork]
 - 100 O PKG [Marking, Packaging, Loading]

The 'CloseOccurrence' node is highlighted in red, and the text 'Add CloseOccurrence' is written in red next to it. The interface also shows a taskbar at the bottom with the date Wednesday 3/7/2007 and time 2:27 PM.

This time add the CloseOccurrence back to the mapping under the Loop qualification instead of under the Segment.

Looping Structures and Qualification

EDI Source Message

| | | |
|----------------------------|-------------------|---------|
| ST*856*45920001~ | 0030 | |
| BSN*30*01*050524*0049~ | | |
| HL*1**S~ | | |
| N1*SF*92*SHIP1~ | 01000001S | SHIP1 |
| HL*2**O~ | | |
| PRF*ORD1*11113711**050523~ | 02000002O0000ORD1 | |
| HL*3**P~ | | |
| MAN*GM*PAC1111~ | 05 P | PAC1111 |
| HL*4**O~ | | |
| PRF*ORD2*11113712**050523~ | 02000004O0000ORD2 | |
| HL*5**P~ | | |
| MAN*GM*PAC2222~ | 05 P | PAC2222 |
| HL*6**S~ | | |
| N1*SF*92*SHIP2~ | 01000006S | SHIP2 |
| HL*7**O~ | | |
| PRF*ORD3*11113711**050523~ | 02000007O0000ORD3 | |
| HL*8**P~ | | |
| MAN*GM*PAC3333~ | 05 P | PAC3333 |
| HL*9**O~ | | |
| PRF*ORD4*11113712**050523~ | 02000009O0000ORD4 | |
| HL*10**P~ | | |
| MAN*GM*PAC4444~ | 05 P | PAC4444 |
| CTT*10~ | | |
| SE*24*45920001~ | | |



Now you have the correct Results. Shipment 1 and shipment 2 both with the orders that are associated with those shipments.

Section

Multiple Occurrence Qualification

Looping Structures and Qualification

- What happens when there are no qualifications in place for a repeating element?



What happens when there are no qualifications in place for a repeating element?

Looping Structures and Qualification

The screenshot shows the IBM Data Transformation Studio interface. The main workspace displays a source-based map with the following structure:

- Source: Data Format\ADF-TO-EDI_DICT\ADF-TO-EDI_ADF
 - DEMO50CLREC [Demo purchase order message as SUW]
 - SUPPLIER [Description of the supplier]
 - PONBR [Customer data]
 - LINEITEMDATA [Line item details]
 - CUSTRECTYPE [Demo for Purchase Order (850)]
 - CUSTSUPPLIERNBR [Demo for Purchase Order (850)]
 - CUSTPONBR [Demo for Purchase Order (850)]
 - CUSTRELNBR [Demo for Purchase Order (850)]
 - CUSTOMDATE [Demo for Purchase Order (850)]
 - CUSTROLINE [Demo for Purchase Order (850)]
 - CUSTPROID [Demo for Purchase Order (850)]
 - CUSTQTY [Demo for Purchase Order (850)]
 - CUSTLITHEAS [Demo for Purchase Order (850)]
 - CUSTITEMDESC [Demo for Purchase Order (850)]
 - FILLER3 [Demo for Purchase Order (850)]
 - CUSTPRODQUAL [Demo for Purchase Order (850)]
 - CUSTPORPRICE [Demo for Purchase Order (850)]

Target: EDI Standard Transaction\12V2R1\850
Table 1

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Default |
|----------------------|-------|---------------------|-----------------------|-------|---------|
| StopSeq | Ses | T0 | DIOutType | Do... | CI |
| MapNameWithProje... | Int | T1 | DIOutFile | Do... | CI |
| Headerfinal | Ses | | DIUserData | Do... | CI |
| GroupControlNumber | Int | | | | |
| G_ASPE_S | Ses | | | | |
| G | Ses | | | | |
| WICHMAP308Interch... | Int | | | | |
| varxx | Ses | | | | |
| mmbbooleantrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| BUNDLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WICHMAP308Session... | Ses | | | | |
| SponsorId | Int | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_S | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |

This is a Source based map. The LINEITEMDATA is a repeating structure and has no qualification.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

NOT QUALIFIED

- ST\850\0001
- BEG\00\00\PONBR00001\RELEASE001\
 \920701
- N1\BT\KIRKWOX\01\05441205
- DTM\002\920708
- PO1\001\2500\EA\\\BP\19836
- J2X\\\WIDGET CLAMP
- ITA\ZZ\\\BB
- CTT\22\348300
- SE\9\0001

Only Last one in the Target



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Qualification Example

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The example on the left is the results of qualification on the LINEITEMDATA record and the results on the right are the results with no qualification. Only the last PO1 Loop is in the target output with the Not Qualified case.

Looping Structures and Qualification

The screenshot shows the 'WebSphere Data Interchange for Multipatforms V3.2.1' interface. The main window displays a mapping configuration for a source 'Data Format(ADF-TO-EDI_DICT)DTADF-TO-EDI_ADF'. The tree view on the left shows a 'CloseOccurrence' structure being added to a loop. The right pane shows a table of variables:

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Default |
|----------------------|-------|---------------------|-----------------------|-------|---------|
| StopSeq | Ses | TO | DIOutType | Do... | O |
| MapNameWithProje... | Int. | T1 | DIOutFile | Do... | O |
| HeaderFinal | Ses | | DIUserData | Do... | O |
| GroupControlNumber | Int. | | | | |
| G_ASPE_S | Ses | | | | |
| g | Ses | | | | |
| WCMAP308Interch... | Int. | | | | |
| varxx | Ses | | | | |
| mmloopgrouptrue | Grp | | | | |
| HeaderSTO2 | Ses | | | | |
| BLINCLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WCMAP308Session... | Ses | | | | |
| SponsorId | Int. | | | | |
| INVOICE_LINE | Grp | | | | |
| G_VATP_S | Ses | | | | |
| G_VATP_CAT_Z_FLAG | Ses | | | | |

You can add CloseOccurrence and see what happens.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

NOT QUALIFIED: CloseOccurrence

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ CTT\1\300
- ▶ SE\8\0001

Only First one in the Target



The example on the left is the results of qualification on the LINEITEMDATA record and the results on the right are the results with no qualification with the CloseOccurrence Command. This seems to give the same output as a qualified loop but only the first PO1 loop is created.

Looping Structures and Qualification

WebSphere Data Interchange for Multiplatforms V3.2.1 - [WDI Server 3.2 - Data Transformation Map - S-CNF-ADF2(ED1)]

Source: Data Format(ADF-TO-EDI_DICT)DTADF-TO-EDI_ADF
 DEMO850CLREC (Demo purchase order message as SUW)

MapTo (Table 1)320 M PO1 Loop\

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | DI |
|----------------------|-------|---------------------|-----------------------|-------|----|
| StopSeq | Ses | T0 | DIOutType | Do... | O |
| MapNameWithProje... | Int. | T1 | DIOutFile | Do... | O |
| Headerfinal | Ses | | DICUserData | Do... | O |
| GroupControlNumber | Int. | | | | |
| G_ASPE_S | Ses | | | | |
| d | Ses | | | | |
| WICMAP308Interch... | Int. | | | | |
| varxxx | Ses | | | | |
| mmbboolgrouptrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| SUNORDERFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WICMAP308Session... | Ses | | | | |
| SponsorId | Int. | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_S | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |

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You can add a Multiple Occurrence Qualification using the MapTo Command.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

Multi-Occurrence Qualification

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\\\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001



The example on the left is the results of qualification on the LINEITEMDATA record and the results on the right are the results with a Multiple Occurrence Qualification using the MapTo Command. This seems to give the correct output.

Looping Structures and Qualification

The screenshot shows the IBM Data Transformation Studio interface. The source is 'Data Format(ADF-TO-EDI_DICT)TADP-TO-EDI_ADF' and the target is 'EDI Standard Transaction(W12V2R1)950'. The map structure includes a loop '320 M PO1 Loop [Purchase Order Baseline Item Data]'. A table of variables is visible at the bottom right:

| Global Variable Name | Scope | Local Variable Na | Special Variable Name | Scope | Di |
|----------------------|-------|-------------------|-----------------------|-------|----|
| StopSeq | Ses | TO | DICOutType | Do... | CI |
| MapName(WithProje... | Int. | T1 | DICOUFile | Do... | CI |
| Headerfinal | Ses | | DICUserData | Do... | CI |
| GroupControlNumber | Int. | | | | |
| G_ASPE_5 | Ses | | | | |
| d | Ses | | | | |
| WICMAP308Interch... | Int. | | | | |
| varx | Ses | | | | |
| mmboolgrouptrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| BUNDLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WICMAP308Session... | Ses | | | | |
| SponsorId | Int. | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_5 | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |

This is a Target based map. The PO1 Loop is a repeating structure and has no qualification.

Looping Structures and Qualification

▪ Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

▪ NOT QUALIFIED

- ST\850\0001
- BEG\00\00\PONBR00001\RELEASE001\920701
- N1\BT\KIRKWOX\01\05441205
- DTM\002\920708
- PO1\001\300\EA\\\BP\15776
- J2X\\\WIDGET BASE
- CTT\1\300
- SE\8\0001

Only First one in the Target



The example on the left is the results of qualification on the PO1 Loop and the results on the right are the results with no qualification. Only the first PO1 Loop is in the target output with the Not Qualified case. This is different as compared with the source based map. With the source based map in the previous example only the last PO1 Loop is in the target output with the Not Qualified case.

Looping Structures and Qualification

WebSphere Data Interchange for Multiplatforms V3.2.1 - [WDI Server 3.2 - Data Transformation Map - T-CONF-ADF2ED12]

File Actions Edit Navigate View Window Help

System [WDI Server 3.2]

General Details Comments

Sources: Data Format(ADF-TO-EDI_DICT)DTADF-TO-EDI_ADF
 DEMOSOURCE [Demo purchase order message as SUW]

- 240 O MEA [Measurements]
- 250 O PWK [Paperwork]
- 260 O PKG [Marking, Packaging, Loading]
- 270 O TD1 [Carrier Details (Quantity and Weight)]
- 280 O TD5 [Carrier Details (Routing Seq/Transit Time)]
- 290 O TD3 [Carrier Details (Equipment)]
- 300 O TD4 [Carrier Details (Spec Handling/Hz Mats)]
- 310 O MAN [Marks and Numbers]
- 320 M PO1 Loop [Purchase Order Baseline Item Data]
- 680 M CTT [Transaction Totals]
- 690 F NTE [Note/Special Instruction]
- 700 F NTE [Note/Special Instruction]
- 710 F NTE [Note/Special Instruction]

320 M PO1 Loop [Purchase Order Baseline Item Data]

- CloseOccurrence [Type: 320 M PO1 Loop]
- 330 O CUR [Currency]
- 340 O JZX [Item Description]
- 350 O S/N Loop [Subline Item Detail]
- 370 O POS [Additional Item Detail]
- 380 O CTP [Pricing Information]
- 390 O PID [Product/Item Description]
- 400 O MEA [Measurements]
- 410 O PWK [Paperwork]
- 420 O PKG [Marking, Packaging, Loading]
- 430 O PO4 [Item Physical Details]
- 440 O REF [Reference Numbers]
- 450 O PER [Administrative Communications Contact]
- 460 O SSS [Special Services]
- 470 O ITA [Allowance, charge or Service]
- 480 O ITS [Conditions of Sale]

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Di |
|----------------------|-------|---------------------|-----------------------|-------|----|
| StopSeq | Ses | T0 | DICOutType | Do... | CI |
| MapNameWithProje... | Int | T1 | DICOutFile | Do... | CI |
| Headerfnal | Ses | | DICUserData | Do... | CI |
| GroupControlNumber | Int | | | | |
| G_ASPE_5 | Ses | | | | |
| d | Ses | | | | |
| WCMPAP308Interch... | Int | | | | |
| varnc | Ses | | | | |
| mmbboolgrouptrue | Gro | | | | |
| HeaderSTUZ | Ses | | | | |
| BUNDLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WCMPAP308Session... | Ses | | | | |
| SponsorId | Int | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_5 | Ses | | | | |
| G_VAT_CAT_2_FLAG | Ses | | | | |

Ready

Address [Go] 97% 10:47 AM Monday

Qualification Example © 2007 IBM Corporation

You can add CloseOccurrence and see what happens.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

NOT QUALIFIED: CloseOccurrence

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\\\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ CTT\1\300
- ▶ SE\8\0001

Only First one in the Target



The example on the left is the results of qualification on the PO1 Loop and the results on the right are the results with no qualification. Only the first PO1 Loop is in the target output with the Not Qualified case. The CloseOccurrence command has no affect in this example.

Looping Structures and Qualification

The screenshot shows the IBM Data Transformation Map interface. The main workspace displays a data flow diagram with a tree view on the left and a variable declaration table on the right. A red arrow points to a 'ForEach' command within a '320 M PO1 Loop [Purchase Order Baseline Item Data]'. The 'ForEach' command is configured with the expression '(DEMO50CLN1C)LINEITEMDATA\'. Below the tree view, a table lists various global and local variables.

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Default |
|----------------------|-------|---------------------|-----------------------|-------|---------|
| StopSeq | Ses | TO | DIOutType | Do... | O |
| MapNameWithProge... | Int | TI | DIOutFile | Do... | O |
| Headerfinal | Ses | | DIUserData | Do... | O |
| GroupControlNumber | Int | | | | |
| G_ASPE_5 | Ses | | | | |
| d | Ses | | | | |
| WCMAP308Interch... | Int | | | | |
| varox | Ses | | | | |
| mmboolgrouptrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| BUNDLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WCMAP308Session... | Ses | | | | |
| SponsorId | Int | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_5 | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |

You can add a Multiple Occurrence Qualification using the ForEach Command.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

QUALIFIED: Multi-Occurrence (Seg)

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\\\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET BASE
- ▶ CTT\22\348300
- ▶ SE\8\0001

Only Last one in the Target



The example on the left is the results of qualification on the PO1 Loop and the results on the right are the results with Multiple Occurrence Qualification using the ForEach Command. Only the last PO1 Loop is in the target output. This is different than the source based example. With source based map the expected results were achieved with a multiple occurrence qualification.

Looping Structures and Qualification

The screenshot shows the WebSphere Data Interchange for Multiplatforms V3.2.1 interface. The main window displays a data transformation map for 'T-COMF-ADF2ED12'. The source is 'Data Format\ADF-TO-EDI_DICT\DTADF-TO-EDI_ADF'. The map includes several data elements: DEMOS03CLREC, SUPPLIER, PONBR, LINEITEMDATA, and a list of carrier details (240 O MEA to 710 F NTE). A '320 M PO1 Loop' is expanded to show a 'CloseOccurrence' structure within a 'ForEach' loop. A red arrow points to the 'CloseOccurrence' structure. The 'Global Variable Name' table is visible on the right.

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Default Value |
|----------------------|-------|---------------------|-----------------------|-------|---------------|
| StopSeq | Ses | TO | DIOutType | Do... | CI |
| MapNameWithProje... | Int | T1 | DIOutFile | Do... | CI |
| HeaderFinal | Ses | | DIUserData | Do... | CI |
| GroupControlNumber | Int | | | | |
| G_ASPE_S | Ses | | | | |
| G | Ses | | | | |
| WCMAP308Interch... | Int | | | | |
| varox | Ses | | | | |
| mmboolgroutrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| BUNLXFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WCMAP308Session... | Ses | | | | |
| SponsorId | Int | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_S | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |
| G | Ses | | | | |

You can add a CloseOccurrence within the Multiple Occurrence Qualification.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

QUALIFIED: Multi-Occurrence (Seg)

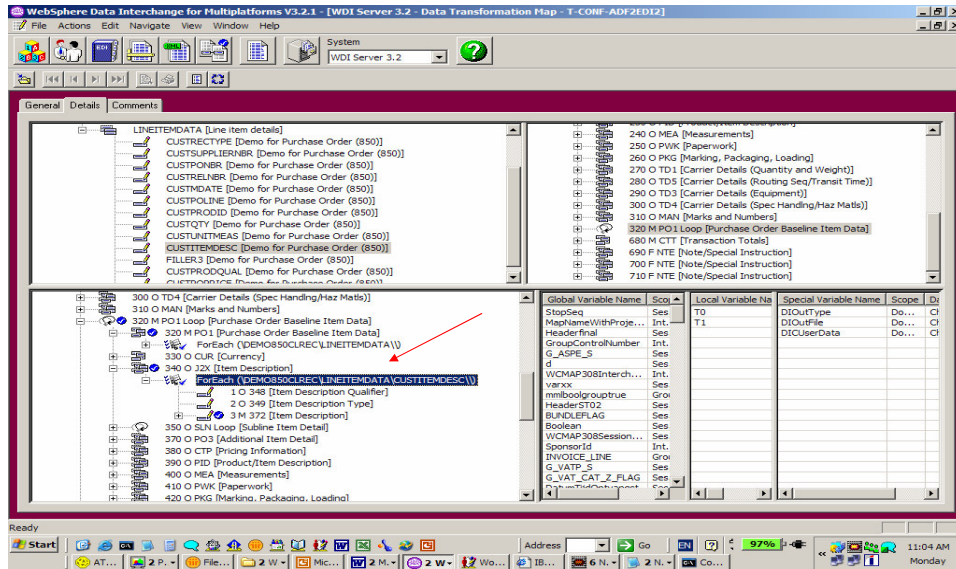
- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ PO1\003\100\EA\\\BP\31812
- ▶ PO1\004\1000\EA\\\BP\34418
- ▶
- ▶
- ▶ PO1\012\30000\EA\\\BP\16709
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET BASE
- ▶ CTT\22\348300
- ▶ SE\29\0001

Only First Description in the Target



Now you have multiples of the PO1 loop in the target but only the first J2X segment is in the output.

Looping Structures and Qualification



You can add Multiple Occurrence Qualification for the J2X Segment mapping using the ForEach Command. Notice the same Source Path was used with the ForEach Command. With Target based maps, you can execute the Source looping structures multiple times to produce the target. This can be handy if you want to save some values from the source looping structure and then execute the source looping structure again and use the saved values.

Looping Structures and Qualification

The screenshot shows the IBM Data Transformation Map interface. The main workspace displays a hierarchical tree of data objects. A red arrow points to a 'ForEach' loop within a 'PO1' segment. The loop is defined as 'ForEach (DEMO50CLN1C) (LINEITEMDATA)'. Below the loop, several data objects are listed, including '1 O 350 [Purchase Order Line Number]', '2 M 330 [Quantity Ordered]', '3 M 355 [Unit of Measurement Code]', '4 C 212 [Unit Price]', '5 O 639 [Basis of Unit Price Code]', '6 O 235 [Product/Service ID Qualifier]', '7 C 234 [Product/Service ID]', '8 O 235 [Product/Service ID Qualifier]', '9 C 234 [Product/Service ID]', '10 O 235 [Product/Service ID Qualifier]', and '11 C 234 [Product/Service ID]'. The right-hand pane shows a list of global and local variables, including 'StopSeq', 'MapNameWithProje...', 'Headerfinal', 'GroupControlNumber', 'G_ASPE_5', 'd', 'WCMAP308Interch...', 'varox', 'mmboolgrouptrue', 'HeaderST02', 'BUNDLEFLAG', 'Boolean', 'WCMAP308Session...', 'SponsorId', 'INVOICE_LINE', 'G_VATP_5', and 'G_VAT_CAT_Z_FLAG'. The bottom status bar indicates 'Ready' and 'Address'.

Notice the Multiple occurrence Qualification the ForEach command and its location. The Qualification is within the PO1 Segment and should be within the PO1 Loop.

Looping Structures and Qualification

Source: Data Format1\ADF-TO-EDI_DICT\DTADF-TO-EDI_ADF
Target: EDI Standard Transaction\X12\3R1\850

Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Di

| Global Variable Name | Scope | Local Variable Name | Special Variable Name | Scope | Di |
|----------------------|-------|---------------------|-----------------------|-------|----|
| StopSeq | Ses | T0 | DIOutType | Do... | CI |
| MapNameWithProje... | Int. | T1 | DIOutFile | Do... | CI |
| HeaderFinal | Ses | | DIUserData | Do... | CI |
| GroupControlNumber | Int. | | | | |
| G_ASPE_S | Ses | | | | |
| d | Ses | | | | |
| WICHMAP308Interch... | Int. | | | | |
| varox | Ses | | | | |
| mmbbookgrouptrue | Gro | | | | |
| HeaderST02 | Ses | | | | |
| BUNDLEFLAG | Ses | | | | |
| Boolean | Ses | | | | |
| WICHMAP308Session... | Ses | | | | |
| SponsorId | Int. | | | | |
| INVOICE_LINE | Gro | | | | |
| G_VATP_S | Ses | | | | |
| G_VAT_CAT_Z_FLAG | Ses | | | | |

If you move the Qualification within the PO1 Loop, you should get the correct results.

Looping Structures and Qualification

Qualified

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001
 \920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001

QUALIFIED: Multi-Occurrence Loop

- ▶ ST\850\0001
- ▶ BEG\00\00\PONBR00001\RELEASE001\\\920701
- ▶ N1\BT\KIRKWOX\01\05441205
- ▶ DTM\002\920708
- ▶ PO1\001\300\EA\\\BP\15776
- ▶ J2X\\\WIDGET BASE
- ▶ ITA\ZZ\\\BB
- ▶ PO1\002\300\EA\\\BP\29599
- ▶ J2X\\\WIDGET STAND
- ▶ ITA\ZZ\\\BB
- ▶
- ▶
- ▶ PO1\013\200\EA\\\BP\23001
- ▶ J2X\\\GADGET STAND
- ▶ ITA\ZZ\\\BB
- ▶ PO1\001\2500\EA\\\BP\19836
- ▶ J2X\\\WIDGET CLAMP
- ▶ ITA\ZZ\\\BB
- ▶ CTT\22\348300
- ▶ SE\72\0001



Now you have the correct results.

Summary

- If there are no qualifications in place for a repeating element, then it is handled as a multi-occurrence qualification by default.
 - ✓ True, but Overlays can occur in the Target data.
 - ✓ Placement is extremely important.
 - ✓ Feature with Target based maps is that you can execute Source looping structures multiple times. This can be handy if you want to save some values from the source looping structure and then execute the source looping structure again and use the saved values.
- Mapping TIP: For New maps with complex looping, Map a few fields in the loop and test the Qualification before mapping the entire document. Get the Looping correct first.



If there are no qualifications in place for a repeating element, then it is handled as a multi-occurrence qualification by default but data overlays can occur in the target data. Placement of Qualification and use of the CloseOccurrence Command is extremely important. For New maps with complex looping, map a few fields in the loop and test the Qualification before mapping the entire document. Get the Looping correct first.

Reference

- More information can be found in the WDI V3.3 Mapping Guide.



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

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Qualification Example

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