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IBM WebSphere® Data Interchange V3.3

Using a Field User Exit



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This presentation will describe how to use a field user exit using Data Transformation maps.

Agenda

- Describe the User exits available
- Review the Field User exit parameters
- Demonstrate how to setup the Field User exit using WDI Client.



The presentation will describe the User exits available, review the field user exit parameters and demonstrate how to setup the field user exit using WebSphere Data Interchange (WDI) Client.

Using a field user exit

- User written program
- User extension exit routine
 - ▶ Can interact directly in the current translation session
- Independent
 - ▶ Has no knowledge of the current translation session.



An exit routine is a program that you provide to perform some service for your application or data. WebSphere Data Interchange calls the exit routine at an appropriate time, and passes it the information needed to accomplish the task.

There are two types of exit routines. One type of exit routine is a user extension to WebSphere Data Interchange and can interact directly in the current WebSphere Data Interchange session. The other type is an independent program and has no knowledge of the current session.

Using a field user exit

- ✓ **Data transformation exit routines will allow users to specify in their data transformation maps that a user-written program should be called**
- Field exit routines provide additional processing for application data (translate-to-standard) and EDI standard data (translate-to-application) during translation.
- Transaction exit routines (pre-translation and post-translation) provide additional processing for an entire transaction after translate-to-standard or before translate-to-application.
- Security exit routines protect transaction data through encryption and authentication. Filtering and compression exits are also defined as part of this process.
- Point-to-point network program exit routines get invoked on communication requests for a point-to-point network.
- Message handling exit routines are invoked to process responses from the networks that are not directly supported by WebSphere Data Interchange.



There are six user exits that your application programs can use to extend or enhance the capabilities of WebSphere Data Interchange. This presentation will review the Data Transformation (DT) exit.

Using a field user exit

```
int func (
    char* pOutPut, /* Pointer to output buffer */
    long lOutLeng, /* Maximum number of output characters */
    void** ppUEContext, /* Pointer to user exit context pointer */
    char* pOption1, /* Pointer to first optional string */
    char* pOption2, /* Pointer to second optional string */
    char* pOption3, /* Pointer to third optional string */
    char* pOption4); /* Pointer to forth optional string */
)
```

If the **User Exits** profile indicates that Unicode strings are involved, then the char* parameters above would be wchar_t* parameters.

Sample exit in WDI Client Help.



This is the prototype for the data transformation user exit.

pOutPut – is a pointer to a buffer that will hold the null terminated string to be returned by the field exit routine. An empty string can be returned. Upon successful completion, the field exit routine returns a character string in this field that can be used in an expression or to update a variable or a simple element in the target document

lOutLeng – identifies the largest string that can be returned in *pOutPut* buffer.

ppUEContext – is a pointer to a user exit context pointer.

pOption1 – is a pointer to the first optional input parameter. If present, this will point to a null terminated character string.

pOption2 – is a pointer to the second optional input parameter. If present, this will point to a null terminated character string.

pOption3 – is a pointer to the third optional input parameter. If present, this will point to a null terminated character string.

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pOption4 – is a pointer to the fourth optional input parameter. If present, this

Using a field user exit

WebSphere Data Interchange for Multiplatforms V3.3 - WDI33Server (Processing) - Query: All

System: WDI33Server

WDI33Server (Processing) - Query: All

Exit Name	Description	Exit Type	Lock	Updated Date and Time
EDIRFH2	Network program for WDI RFH2	Send or Receive Exit	No	2/20/2007 8:37:51 AM
IBMIIN		Send or Receive Exit	No	2/20/2007 8:37:51 AM
LOGEDI		Send or Receive Exit	No	2/20/2007 8:37:51 AM

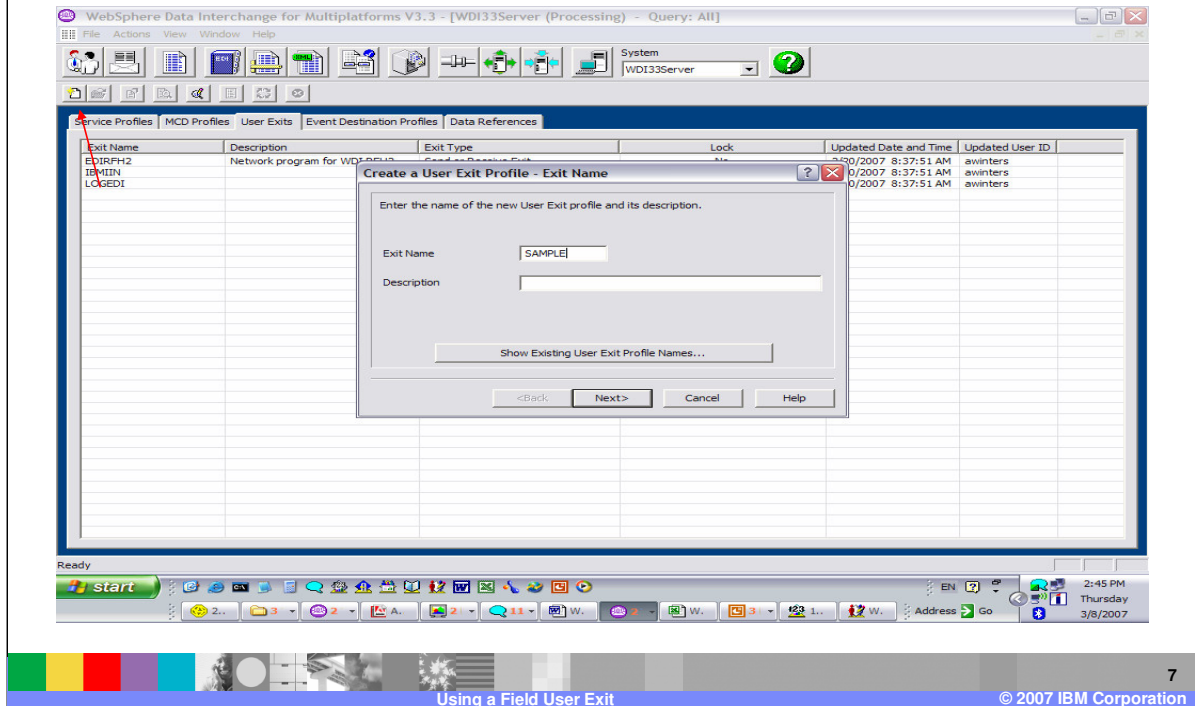
3 rows

Using a Field User Exit

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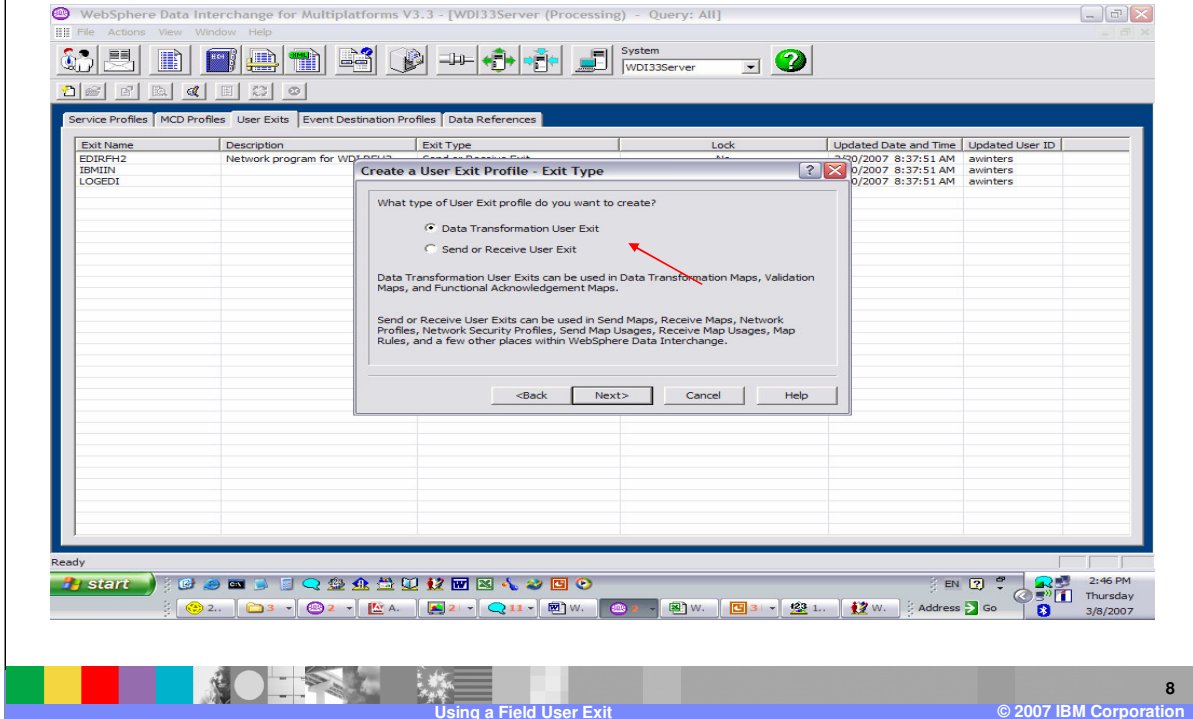
The user exit profile is located in the Processing functional area.

Using a field user exit



To add a User exit, click on the new button. Enter the Exit name and optional description and click Next.

Using a field user exit



Indicate if the exit is for data transformation or Send and Receive. Data Transformation exits can be used in data transformation, validation, and functional acknowledgment maps.

Using a field user exit

The screenshot shows the WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window displays a table of user exit profiles. A dialog box titled "Create a User Exit Profile - Program Name and Language" is open, prompting the user to select the programming language for the user exit program. The dialog box contains the following fields:

Exit Name	Description	Exit Type	Lock	Updated Date and Time	Updated User ID
EDIRFH2	Network program for WDI...			3/20/2007 8:37:51 AM	awinters
IBM4IN				3/20/2007 8:37:51 AM	awinters
LOGEDI				3/20/2007 8:37:51 AM	awinters

The dialog box fields are:

- Program Language: C/C++ (indicated by a red arrow)
- DLL Name: SAMPLE
- Function Name: sampfunc

Buttons at the bottom of the dialog box include <Back, Next>, Cancel, and Help.

The programming language for data transformation exits is C or C++. In the **DLL Name** field, type the name of the DLL where the exit is located. In the **Function** field, type name of the user exit routine in the DLL.

Using a field user exit

WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server (Processing) - Query: All]

Service Profiles | MCD Profiles | User Exits | Event Destination Profiles | Data References

Exit Name	Description	Exit Type	Lock	Updated Date and Time	Updated User ID
EDIRFH2	Network program for WDI33Server			8/20/2007 8:37:51 AM	awinters
IBMIN				8/20/2007 8:37:51 AM	awinters
LOGED1				8/20/2007 8:37:51 AM	awinters

Create a User Exit Profile - Input and Output Information

Indicate whether character input and output data will use the local code page or UCS2 - UNICODE characters.

String Type

Local Code Page UCS2 - UNICODE

Specify the maximum length of the output that the user exit program may produce.

Output Length 0

<Back Next> Cancel Help

Ready

start

EN 2:55 PM Thursday 3/8/2007

Using a Field User Exit

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Indicate whether character input and output will use local code page or UNICODE characters.

Using a field user exit

The screenshot displays the 'WebSphere Data Interchange for Multiplatforms V3.3' application window. The 'User Exits' tab is active, showing a table with columns: Exit Name, Description, Exit Type, Lock, Updated Date and Time, and Updated User ID. A 'Create a User Exit Profile - Confirmation' dialog box is overlaid on the table. The dialog contains the following information:

- Name: SAMPLE
- Description: Network program for WDI33S...
- Exit Type: Data Transformation Exit
- Program Language: C/C++
- DLL Name: SAMPLE
- Function Name: sampFunc
- Input and Output Character Format: Local Code Page

The 'Finish' button in the dialog is highlighted with a red arrow.

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Press the Finish button to complete the definition.

Using a field user exit

The screenshot displays the 'WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server (Processing) - Query: All]' application window. The 'User Exits' tab is selected, showing a table with the following data:

Exit Name	Description	Exit Type	Lock	Updated Date and Time	Updated User ID
EDIRFH2	Network program for WDI RFH2	Send or Receive Exit	No	2/20/2007 8:37:51 AM	awinters
IBMIIN		Send or Receive Exit	No	2/20/2007 8:37:51 AM	awinters
LOGEDI		Send or Receive Exit	No	2/20/2007 8:37:51 AM	awinters
SAMPLE		Data Transformation Exit	No	3/8/2007 2:58:00 PM	awinters

A red arrow points to the 'SAMPLE' row in the table. The interface includes a menu bar (File, Actions, View, Window, Help), a toolbar, and a Windows taskbar at the bottom showing the system clock as 2:58 PM on Thursday, 3/8/2007. The footer of the slide contains the text 'Using a Field User Exit' and '© 2007 IBM Corporation'.

The user exit profile definition is listed in the User Exit list.

Using a field user exit

WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server - User Exit Profile - SAMPLE]

File Actions Edit Navigate View Window Help

System
WDI33Server

General Comments

Exit Name: SAMPLE

Description:

Program Language: C/C++

DLL Name: SAMPLE

Function Name: sampfunc

Output Length: 0

String Type:
 Local Code Page UCS2 - UNICODE

Ready

start

2:59 PM Thursday 3/8/2007

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You can update all fields for the definition except the exit name.

Section

Mapping



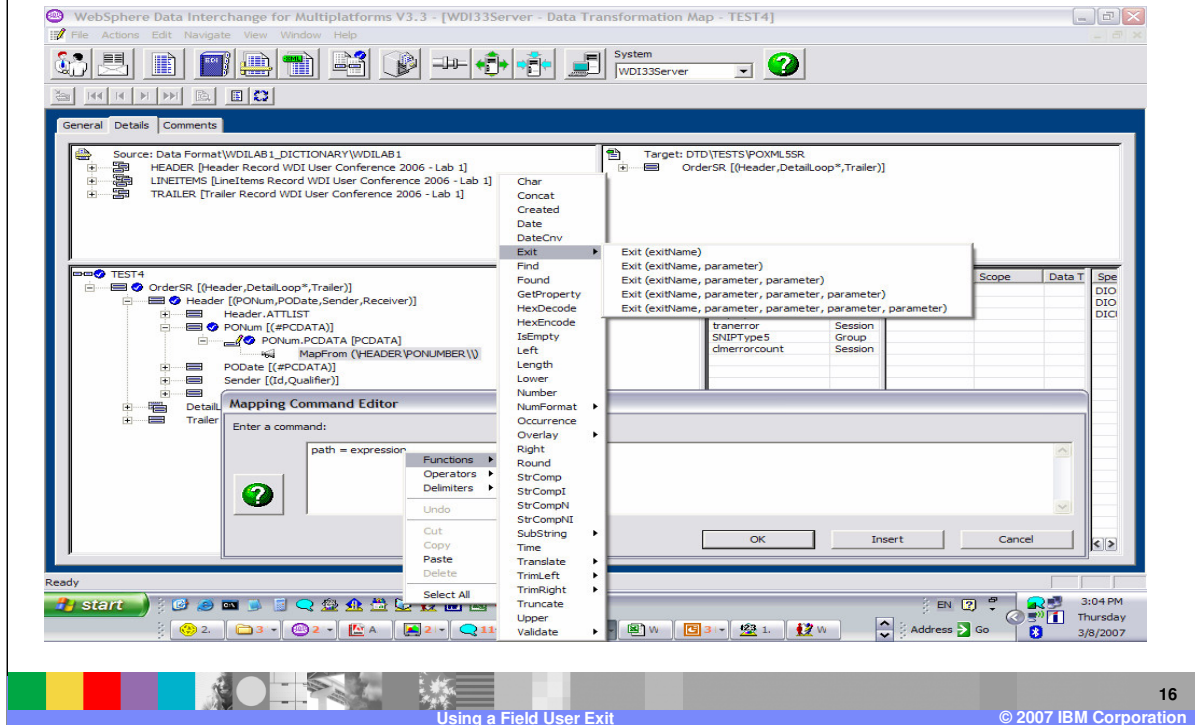
Using a field user exit

The screenshot shows the WebSphere Data Interchange (WDI) Data Transformation Map (DTM) editor. The source is a Data Format (DF) with three main sections: HEADER, LINEITEMS, and TRAILER. The target is a DTD (XML Schema) for OrderSR. The map is named 'TEST4' and includes a 'Field User Exit' (FUE) for the 'PONum.PCDATA' field. The FUE is implemented as a 'MapFrom' function that maps the header's 'PONUMBER' field to the 'PONum.PCDATA' field. The map also includes a 'DetailLoop' and a 'Trailer' section.

Global Variable Name	Scope	Local Variab...	Scope	Data T	Spe
TotalNumEmployees	Session				DIO
svccerrorcount	Session				DIO
EmployeeCnt	Session				DICI
tranerror	Session				
SNIPTType5	Group				
clnerrorcount	Session				

Now you can add the user exit to a map.

Using a field user exit



The user exit is defined to the map using the Exit function. You can add the user exit to any command or function that can take a function as an argument. There are 5 Exit functions to select. The exit name is required and there are 4 optional parameters.

Using a field user exit

Source: Data Format\WDILAB1_DICTIONARY\WDILAB1
 HEADER [Header Record WDI User Conference 2006 - Lab 1]
 LINEITEMS [LineItems Record WDI User Conference 2006 - Lab 1]
 TRAILER [Trailer Record WDI User Conference 2006 - Lab 1]

Target: DTD\TESTS\POXML5SR
 OrderSR [(Header,DetailLoop*,Trailer)]

Global Variable Name	Scope	Local Variab...	Scope	Data T	Spe
TotalNumEmployees	Session				DIO
sverrorcount	Session				DIO
EmployeeCnt	Session				DIO
tranerror	Session				DIO
SNIPType5	Group				
clmerrorcount	Session				

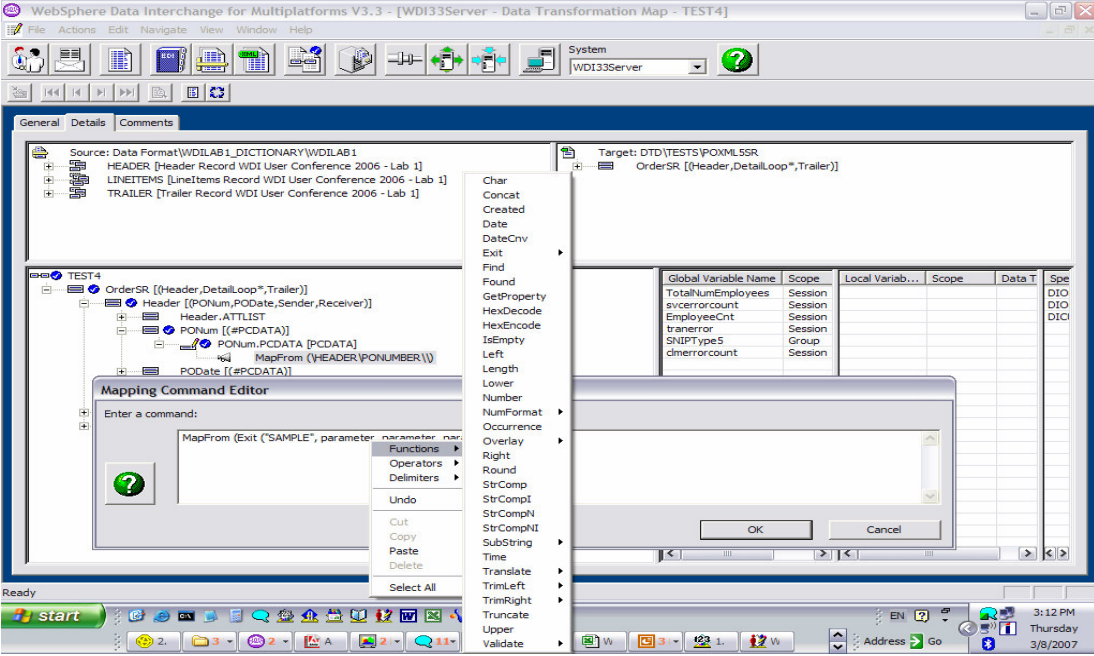
Mapping Command Editor
 Enter a command:
 MapFrom (exitName, parameter, parameter, parameter, parameter)

Context menu options: Values, Functions, Operators, Delimiters, Undo, Cut, Copy, Paste, Delete, Select All.

Selected option: Values
 Dropdown menu: User Exit Profile Name...

The exit name can be selected from the User Exit Profiles by using right click on the exitName parameter and selection Values.

Using a field user exit



WebSphere Data Interchange for Multiplatforms V3.3.3 - [WDI33Server - Data Transformation Map - TEST4]

Source: Data Format(WDILAB1_DICTIONARY(WDILAB1))

- HEADER [Header Record WDI User Conference 2006 - Lab 1]
- LINEITEMS [LineItems Record WDI User Conference 2006 - Lab 1]
- TRAILER [Trailer Record WDI User Conference 2006 - Lab 1]

Target: DTD(TESTS\POXMLSSR)

- OrderSR [(Header,DetailLoop*,Trailer)]

Mapping Command Editor

Enter a command:

MapFrom (Exit ("SAMPLE", parameter, parameter, parameter))

Global Variable Name	Scope	Local Variab...	Scope	Data T	Spe
TotalNumEmployees	Session				DIO
svcerrorcount	Session				DIO
EmployeeCnt	Session				DIO
tranerror	Session				DIO
SNIPTypeS	Group				DIO
dmerrorcount	Session				DIO

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The optional parameters can be values from the source message, variables, literals, or functions that would result in the data type for the corresponding parameter.

Reference

- More information can be found in the WDI V3.3 User's Guide and Programmer's Reference Guide.



More information can be found in the WebSphere Data Interchange Version 3.3 User's Guide and Programmer's Reference Guide.

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