How to using Expert Routine in Transformation

Applies to:
SAP BI, SAP BW, ECC, ABAP, Business Intelligence. For more information, visit the EDW homepage.

Summary
This article demonstrates how to create expert routine and load the data. This gives you a very basic idea of creating an expert routine.

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Created on: 18 August 2010

Author Bio
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Introduction

You use routines to define complex transformation rules. Routines are local ABAP classes that consist of a predefined definition area and an implementation area. The TYPES for the inbound and outbound parameters and the signature of the routine (ABAP method) are stored in the definition area. The actual routine is created in the implementation area. ABAP object statements are available in the coding of the routine. Upon generation, the coding is embedded in the local class of the transformation program as the method.

The following graphic shows the position of these routines in the data flow:

```
Start Routine
Transformation
End Routine
Transformation Rule 1
Transformation Rule n
Start Routine
Target
Transformation
End Routine
Transformation Rule 1
Transformation Rule n
Start Routine
Source
```

Start Routine

The start routine is run for each data package at the start of the transformation. The start routine has a table in the format of the source structure as input and output parameters. It is used to perform preliminary calculations and store these in a global data structure or in a table. This structure or table can be accessed from other routines. You can modify or delete data in the data package.

Routine for Key Figures or Characteristics

This routine is available as a rule type; you can define the routine as a transformation rule for a key figure or a characteristic. The input and output values depend on the selected field in the transformation rule.

End Routine

An end routine is a routine with a table in the target structure format as input and output parameters. You can use an end routine to postprocess data after transformation on a package-by-package basis. For example, you can delete records that are not to be updated, or perform data checks.
Expert Routine

This type of routine is only intended for use in special cases. You can use the expert routine if there are not sufficient functions to perform a transformation. The expert routine should be used as an interim solution until the necessary functions are available in the standard routine.

You can use this to program the transformation yourself without using the available rule types. You must implement the message transfer to the monitor yourself.

If you have already created transformation rules, the system deletes them once you have created an expert routine.

Definition

An Expert routine is a routine with contains both the source and target structure. We can use Expert routine if there are not sufficient functions to perform transformation.

Approach to Scenario

For Expert Routine every things needs to be written using coding. In simple an expert routine performs all the actions of Start Routine, Mappings, Field and End Routines.

In Expert Routine we will read from source_package which contains all the data and update into result_package which should be the output.

Source data

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emp No</td>
<td>Name</td>
<td>Sex</td>
<td>Age</td>
</tr>
<tr>
<td>2</td>
<td>E0001</td>
<td>Ragav</td>
<td>M</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>E0002</td>
<td>Ravi</td>
<td>M</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>E0003</td>
<td>Shyam</td>
<td>M</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>E0004</td>
<td>Ram</td>
<td>M</td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>E0005</td>
<td>Shiva</td>
<td>M</td>
<td>22</td>
</tr>
</tbody>
</table>

Infoobjects

ER_ENUM - Employee Number
ERENAME - Employee Name
ER_ESEX - Employee Sex
ER_EAGE - Employee Age
Cube Design

Create DataSource

DataSource: ER_DS
Source system: FLAT_FILE
Data Type DataSource: Transaction Data
Monitor - Administrator Workbench

PSA Maintenance

Transformation
Creating Transformation by Expert Routine
How to using Expert Routine in Transformation

Do you want to delete transformation RSDS ER_DS
FLAT_FILE -> CUBE ER_CUBE
(0KKCP1MLZUTX8S0X9CQYY3E209B0JZ)? and replace it with an expert routine?

Yes  No  Cancel
CLASS %c1_transform IMPLEMENTATION.

METHOD expert_routine.

  Calculation of result package via expert routine

  -> package of source segments
  < result package

  METHOD inverse_expert_routine.

  %**** Segments ***

  FIELD-SYMBOLS:
    <SOURCE_FIELDS> TYPE ty_s_SC_1.
    DATA:
      RESULT_FIELDS TYPE ty_s_TG_1.

  *$* begin of routine - insert your code only below this line  *$*
  """insert your code here"

  *$* end of routine - insert your code only before this line

ENDMETHOD.  "expert_routine"

  Method inverse_expert_routine


Expert Routine Code

Transformation Create

METHOD expert_routine.
*** Segments ***

FIELD-SYMBOLS:
  <SOURCE_FIELDS> TYPE _ty_s_SC_1.

DATA:
  RESULT_FIELDS TYPE _ty_s_TG_1.

').' insert your code here

Data : wa_SOURCE_PACKAGE type _ty_s_SC_1.
data : wa_RESULT_PACKAGE type _ty_s_TG_1.

loop at SOURCE_PACKAGE into wa_SOURCE_PACKAGE .

  move wa_SOURCE_PACKAGE-/BIC/ER_ENUM to wa_RESULT_PACKAGE-/BIC/ER_ENUM.
  move wa_SOURCE_PACKAGE-/BIC/ER_NAME to wa_RESULT_PACKAGE-/BIC/ER_NAME.
  move wa_SOURCE_PACKAGE-/BIC/ER_ESEX to wa_RESULT_PACKAGE-/BIC/ER_ESEX.
  move wa_SOURCE_PACKAGE-/BIC/ER_EAGE to wa_RESULT_PACKAGE-/BIC/ER_EAGE.
  append wa_RESULT_PACKAGE to RESULT_PACKAGE.

endloop.
DTP data load

**Creation of Data Transfer Process**

<table>
<thead>
<tr>
<th>Data Transfer Proc.</th>
<th>ER_DS / FLAT_FILE -&gt; ER_CUBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTP Type</td>
<td>Standard (Can Be Scheduled)</td>
</tr>
</tbody>
</table>

**Target of DTP**

- **Object Type**: InfoCube
- **Name**: ER_CUBE
- **Test for expert routine**

**Source of DTP**

- **Object Type**: DataSource
- **DataSource**: ER_DS
- **Source System**: FLAT_FILE

**Data Transfer Process**

- **ID**: DTP_1K2N0Y0H9UF3WJE1E2BG
- **Version**: Active, Saved
- **Delta Status**: Active, No Request Yet

**Technical Request Status**

- **Request status is set to 'green' if warnings occur**

**Overall Status of Request**

- **Set Overall Status Automatically**
Check the DTP monitor

DTP Request 778.015

Request ID: 778.015
Start Time: 2018.12.16 12:34:50
Finish Time: 2018.12.16 12:35:11

Overall Status: Ready
Technical Status: Ready
Runtime: 23s
Source: RDS, FLAT_FILE (Expert Routine)
Transformation: RDS, FLAT_FILE -> CUBE, ER_CUBE
Target: ER_CUBE (Test for expert routine)
Selections: REQUID = 778011
Data Transfer Proc: DTP_4K66NOY8HYP0CUFW3WJEBF2B6 (RDS, FLAT_FILE -> ER_CUBE)
User: I644912
Extraction Mode: Delta
Package Size: Depend on Source Package Size
Error Handling: Valid Records Update, No Reporting (Request Red)
Processing Mode: Parallel Extraction and Processing
Inserted Data Records: 5
Request ID: DTPR_4K66NVCMASS9VMNCYYHMP0ZSI

"ER_CUBE", List output

<table>
<thead>
<tr>
<th>ER_NAME</th>
<th>ER_ENUM</th>
<th>Gender</th>
<th>Request ID</th>
<th>ER_EAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ragav</td>
<td>E0001</td>
<td>M</td>
<td>DTPR_4K66NVCMASS9VMNCYYHMP0ZSI</td>
<td>27,000</td>
</tr>
<tr>
<td>Ravi</td>
<td>E0002</td>
<td>M</td>
<td>DTPR_4K66NVCMASS9VMNCYYHMP0ZSI</td>
<td>32,000</td>
</tr>
<tr>
<td>Shyam</td>
<td>E0003</td>
<td>M</td>
<td>DTPR_4K66NVCMASS9VMNCYYHMP0ZSI</td>
<td>26,000</td>
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<td>Ram</td>
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<td>DTPR_4K66NVCMASS9VMNCYYHMP0ZSI</td>
<td>24,000</td>
</tr>
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<td>Shiva</td>
<td>E0005</td>
<td>M</td>
<td>DTPR_4K66NVCMASS9VMNCYYHMP0ZSI</td>
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Related Content

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