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PeopleSoft Enterprise CRM 9.1 PeopleBook: Data Transformer

October 2009

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PeopleSoft Enterprise CRM 9.1 PeopleBook: Data Transformer
SKU crm91pbr0

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Appendix A

PeopleSoft Data Transformer Preface

This preface discusses PeopleSoft Data Transformer.

PeopleSoft Data Transformer

PeopleSoft Data Transformer enables you to extract, transform, and load data from remote or local data sources to a data source of your choice. PeopleSoft Data Transformer handles high volume data transfers and transformation processing and is configured to provide maximum performance between PeopleSoft applications.

Some of the page elements and colors that your product uses may differ slightly from the screen shots presented in this PeopleBook. This book uses a generic style sheet for the purposes of illustration only.

PeopleBooks and the Online PeopleSoft Library

A companion PeopleBook called PeopleBooks and the Online PeopleSoft Library contains general information, including:

- Understanding the PeopleSoft online library and related documentation.

- How to send PeopleSoft documentation comments and suggestions to Oracle.

- How to access hosted PeopleBooks, downloadable HTML PeopleBooks, and downloadable PDF PeopleBooks as well as documentation updates.

- Understanding PeopleBook structure.

- Typographical conventions and visual cues used in PeopleBooks.

- ISO country codes and currency codes.

- PeopleBooks that are common across multiple applications.

- Common elements used in PeopleBooks.

- Navigating the PeopleBooks interface and searching the PeopleSoft online library.

- Displaying and printing screen shots and graphics in PeopleBooks.

- How to manage the PeopleSoft online library including full-text searching and configuring a reverse proxy server.

- Understanding documentation integration and how to integrate customized documentation into the library.

- Glossary of useful PeopleSoft terms that are used in PeopleBooks.

You can find this companion PeopleBook in your PeopleSoft online library.

Chapter 1

Getting Started with PeopleSoft Data Transformer

This chapter provides an overview of PeopleSoft Data Transformer and discusses:

*   PeopleSoft Data Transformer business processes.

*   PeopleSoft Data Transformer implementation.

PeopleSoft Data Transformer Overview

PeopleSoft Data Transformer enables organizations to extract, transform, and load data from remote or local data sources to a target data source. Tasks that you perform in PeopleSoft Data Transformer, to prepare the data for transfer, include:

*   Setting up default target fields.

*   Defining transformation and filtering rules to convert data.

*   Creating map rules.

*   Creating map definitions.

PeopleSoft Data Transformer Business Processes

The following process flow illustrates the PeopleSoft Data Transformer business processes:
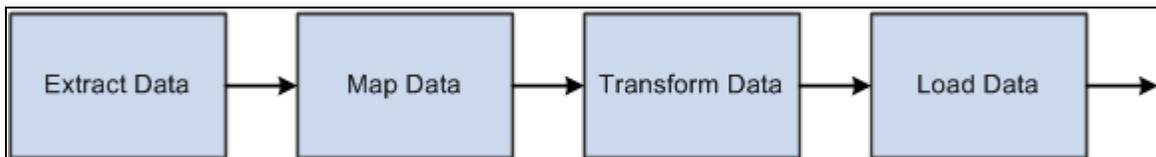
PeopleSoft Data Transformer business process flow

PeopleSoft Data Transformer Implementation

The PeopleSoft Data Transformer implementation can be divided into two phases:

• Setting up core PeopleSoft Data Transformer features.

• Creating source data objects.

Complete these phases to support PeopleSoft Data Transformer features.

In the planning phase of your implementation, take advantage of all PeopleSoft sources of implementation, including the installation guides and business process maps.

Setting Up Core PeopleSoft Data Transformer Features

To set up core PeopleSoft Data Transformer features, perform the following steps:

Step	Reference
Define remote database connections.	See Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Remote Database Connections, page 3.
Define installation options.	See Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Installation Options, page 6.
Define subject areas.	See Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Subject Areas, page 7.

Creating Source Data Objects

To set up source data objects, perform the following steps:

Step	Reference
Create basic source data objects.	See Chapter 3, "Creating Source Data Objects," Creating Basic Source Data Objects, page 11.
(Optional) Create expressions.	See Chapter 3, "Creating Source Data Objects," (Optional) Creating Expressions, page 16.
(Optional) Create filters.	See Chapter 3, "Creating Source Data Objects," (Optional) Creating Filters, page 23.
(Optional) Join records.	See Chapter 3, "Creating Source Data Objects," (Optional) Joining Records, page 25.

Chapter 2

Setting Up Core PeopleSoft Data Transformer Features

This chapter discusses how to:

• Define remote database connections.

• Define installation options.

• Define subject areas.

Note. These activities are typically one-time events and require minimal maintenance.

Defining Remote Database Connections

This section provides an overview of remote database connections and discusses how to define remote database connections.

Understanding Remote Database Connections

Data sources represent the location of the source data that is extracted, transformed, and loaded to the target. Remote data source data is extracted from a separate (remote) database and migrated into the local database. You must define remote database connections to source data from a database other than your local PeopleSoft database instance.

The Remote Database Access Management page enables you to define connectivity information for relational databases to be used for sourcing data for PeopleSoft Data Transformer. You can define connectivity information only for databases of the same type as the Target PeopleSoft database instance. For example, if the PeopleSoft database instance is Oracle, then you can define only Oracle remote connections. Remote database connections are established once for a local connect and once for each database that will be sourced. You must define one local connection for the current PeopleSoft instance. This connection is used during remote database access to retrieve information for the target database.

Note. If you are accessing data from a local database, then you do not need to set up remote database connections.

Page Used to Define Remote Database Connections

Page Name	Definition Name	Navigation	Usage
Remote Database Access Management	REMOTEDB	Enterprise Components, Data Transformation, Setup Remote Database Connection, Remote Database Access Management.	Define remote database connections.

Defining Remote Database Connections

Access the Remote Database Access Management (REMOTEDB) page (Enterprise Components, Data Transformation, Data Transformation Home, Setup Remote Database Connection, Remote Database Access Management).

Remote Database Access Management page

Important! Different fields may appear on the page based on the database DB type. The preceding page shows fields for *Microsoft, DB2 (OS/390), DB2/UNIX,* and *Sybase.*

This table illustrates the page variance by database type:

Database Type	Required Information
Microsoft, DB2 (OS/390), DB2/UNIX, and Sybase	Enter a description, server, database, userID, and password.

Database Type	Required Information
Informix	Enter a description, server, user ID, password, and Inf Svr (Informix Server) name.
Oracle	For Oracle and a Connection Type of *TNSNames,* enter a description, TNS Entry, user ID and password. **Note.** TNS Names is a preconfigured file (tnsnames.ora) with previously defined database connection information. Select a connection type of *Specific* if you want to set up a database that does not already have a TNS Entry defined, or when you don't want to use the TNS entry.

Name

Displays the remote DB name entered on the Search page for your database.

DB Type

Displays the database type of your PeopleSoft database.

Note. Since your remote database must be of the same type, this field is defaulted to your current local database type.

Local Connect

Select if you are defining the remote connection information for your local database. All others must be specified as remote databases. An error displays if you save a page with a connection checked as a Local Connect and there is already one identified as such (in the PSREMOTEDBDEFN table).

Important! One connection must be defined as the Local Connect, the connection information for the current PeopleSoft instance (the local database). This connection is used during remote database access to retrieve connection information for the source and as the target database for the sourced data.

Server

Enter the name of the server where the database resides.

Note. This field is platform specific.

DB Server Port

The DB Server Port number is automatically populated with a default value based on the database type. It may need to be changed depending upon your database server configuration.

User ID and **Password**

Enter the user ID and password that are required to access the database.

The password is not displayed.

Note. This field is platform specific.

Test Connect

Click to access the remote database by using the information that you have entered. This will verify that all of the connection information is correct.

See Also

PeopleSoft Hardware and Software Guide

Defining Installation Options

This section discusses how to define installation options.

Page Used to Define Installation Options

Page Name	Definition Name	Navigation	Usage
Data Transformation Installation Options	EOEW_OPTIONS	Enterprise Components, Data Transformation, Data Transformation Installation Options	Define installation options.

Defining Installation Options

Access the Data Transformation Installation Options (EOEW_OPTIONS) page (Enterprise Components, Data Transformation, Data Transformation Installation Options).

Data Transformation Installation Options

Data Transformation Defaults

*Maximum Rows To Preview:

*Tablespace Name:

☑ Create Temporary Table Select to dynamically create the temporary table associated with a map definition. Unselect to specify the table manually.

*Message Set Number: The Message Set default can be used for Transformations.

Data Transformation Installation Options page

System administrators may use PeopleSoft Data Transformers' installation options to set certain high-level Data Transformer defaults such as the maximum number of rows to return on a preview of sourced or transformed data, a table space name to be used to dynamically build temporary tables, and the default message set number assignment for transformation error correction.

Maximum Rows to Preview	Enter the maximum number of rows of sourced or transformed data to preview. Keep this value relatively low, for example 100 rows, as larger values significantly increase the amount of time it takes to retrieve data and render the preview pages.
Tablespace Name	Enter the tablespace name for the temporary table that is built dynamically at runtime. This tablespace name is applied to all of the temporary tables unless overridden at a lower level.
	Note. This name can be overridden at the subject area and map option levels.
Create Temporary Table	Select to create temporary tables dynamically. A temporary table is created at runtime—it's needed by the engine during processing only, then it's deleted at completion. It is not available in PeopleSoft metadata. If the check box is cleared, you must specify a temporary table record name on the map for use at runtime. This temporary table will be available in PeopleSoft metadata and remain after the engine processing.
	Note. Determining which of these options to use needs to be considered carefully. A dynamic temporary table will automatically change when the map changes, conversely, a non-dynamic temporary table will not change and may require more maintenance.
Message Set Number	Select a message set number that corresponds to a text error message set. When adding a new transformation and associating a specific error message with an error, this default message set number is used as a starting point.

See Also

Defining Subject Areas

This section provides an overview of subject areas and discusses how to define subject areas.

Understanding Subject Areas

Use subject areas as a grouping mechanism on translation sets, transformations, map rules and map definitions. These objects can only be shared within a subject area. An enterprise subject area can be used for objects that are to be shared by all subject areas.

You need to carefully plan subject areas when you implement PeopleSoft Data Transformer. For example, you need to consider how the Data Transformer objects (translation sets, transformations, map rules, map definitions, and so on) can be grouped most efficiently. Some objects need to be available to all users, while some only to a specific user or functional group.

Note. Subject areas affect only prompting and object selection and do not reflect object security.

You can set up default tablespaces, or you can dynamically create temporary tables by subject area. If an implementation requires that only groups of maps dynamically generate temporary tables, or are built within different tablespaces, you can specify this at the subject area level.

See Also

Chapter 4, "Preparing to Create Maps," page 27

Page Used to Define Subject Areas

Page Name	*Definition Name*	*Navigation*	*Usage*
Subject Areas	EOEW_OBJ_OWNER	Enterprise Components, Data Transformation, Setup Subject Areas	Define subject areas to group translation sets, transformations, map rules, and map definitions.

Defining Subject Areas

Access the Subject Areas (EOEW_OBJ_OWNER) page (Enterprise Components, Data Transformation, Setup Subject Areas).

Subject Areas page

Default Subject Area   Select to use this subject area as your default subject area.

Note. Only one subject area can be selected as the default, which becomes available to all users—it is your enterprise subject area.

Tablespace Name   Select the tablespace name to use if you want to override the Data Transformation installation options selection for this subject area.

Note. This is needed only when an implementation shares dynamically generated temporary tables over multiple tablespaces.

For example, the CEW EO temporary tables may be assigned to a special tablespace because the table size in this area is expected to be larger than other tables. For that subject area, an override tablespace name would be entered. The CEW CM subject area contains unique tables that also need special segmentation. For that subject area, an override tablespace name would be entered. All other subject areas would have a blank tablespace name therefore defaulting to the Data Transformation installation options tablespace name.

Create Temporary Table   Select if you want to override the Data Transformation installation options selection for this subject area.

This is needed only when an implementation allows or disallows the dynamic temporary table creation per subject area.

Chapter 3

Creating Source Data Objects

This chapter provides an overview of source data objects and discusses how to:

- Create basic source data objects.

- Create expressions.

- Create filters.

- Join records.

Understanding Source Data Objects

A source data object is the input to every map definition and defines the data to be extracted from the source. The business requirement of the map definition dictates the appropriate structure of the source data object, which can be as basic as requiring only an object definition and the fields to be used in the extract SQL specified, or quite complex containing expressions, multiple table joins, and filtering criteria.

Common Elements Used to Create Source Data Objects

Data Source	One or more record definitions joined by common fields.
Source Data Object	Enter a unique value of up to 30 characters, with no spaces or special characters. The system automatically converts the value to uppercase.
	This value, along with the description from the definition page, appears at the top of each page of the Source Data Object component.

Creating Basic Source Data Objects

This section discusses how to:

- Define source data objects.

- Specify source data object fields.

- Preview results.

• Preview SQL.

Note. All remote source databases must be of the same database type as the local PeopleSoft database instance. For example, if your PeopleSoft application is running on DB2/UNIX then you may only define DB2/UNIX source databases.

Pages Used to Create Basic Source Data Objects

Page Name	Definition Name	Navigation	Usage
Source Data Object	EOEW_SRCDO	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object	Create source data object definitions.
Fields	EOEW_SRCFIELD	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Fields	Specify the fields to include in the source data object.
Preview	EOEW_SRCPREVIEW	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Preview	Review the results and check the validity of the source data object.
View Query	EOEW_SRCQUERY	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, View Query	Generate and view the SQL based on the source data object definition.

Defining Source Data Objects

Access the Source Data Object (EOEW_SRCFIELD) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object).

Source Data Object page

Subject Area	Select a subject area.
	For new source data objects, the subject area will be set to the default as defined on the Subject Area page.
Data Source Type	*Local:* Select to use PeopleSoft-defined records from the current database.
	Remote: Select to access the remote database connection information and use records from a remote database. Select the desired data source for remote.
	Note. The Data Source Type can only be selected in Add mode. If you want to change this value, you will need to create a new Source Data Object.
Source Record	Select the source records from which to extract data. This record is placed in the From clause in the extract SQL.
	If multiple records are selected, join conditions are required.
	Note. To change a record that is associated with a source data object, you must delete the existing record and then add the new record.
Save As	Click to save an existing source data object under a new name.
	Use this function to create a new source data object that will only slightly differ from the original object. Once saved, you can make the necessary changes to the new object. The new object is maintained separately.

See Also

Specifying Source Data Object Fields

Access the Fields (EOEW_SRCFIELD) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Fields).
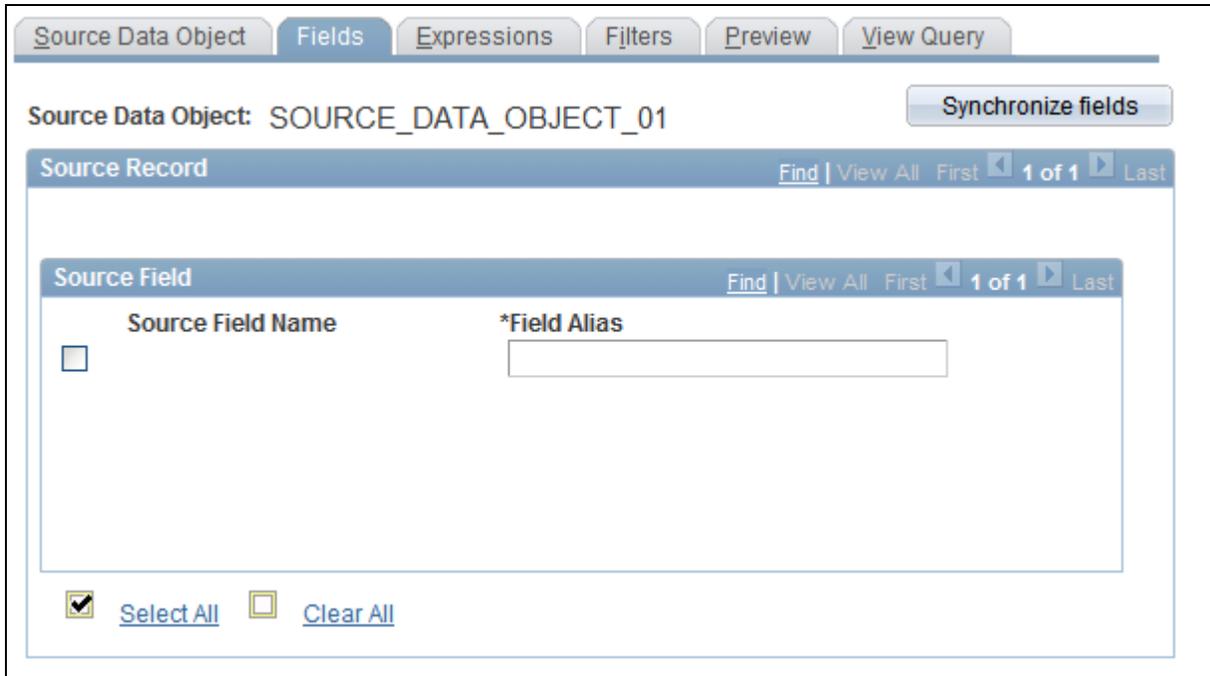
Fields page

The source field information is populated from the source records that you selected on the Source Data Object page. The selected fields become the select list in the extract SQL.

Source Field Name	Select the fields to include in the source data object.
	Note. At least one field must be selected. Use the Select All and Deselect all icons to make the field selection more efficient.
Field Alias	Change the field alias of any of the selected field names, if needed.
	The field alias is displayed when defining the map, so descriptive names are important.
	Note. All fields in the source data object must have an alias, and each alias must be unique within the source data object.

Synchronize Fields	Click to synchronize fields with the database record. It is possible over the life span of a source data object that customizations are made. If a field is added or removed from the physical table, the field list must be synchronized.
Select All	Click to select all of the fields that are listed.
Clear All	Click to clear all field selections.

See Also

Previewing Results

Access the Preview (EOEW_SRCPREVIEW) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Preview).

Click the Preview button to view a subset of the source data object based on the record and fields that are selected.

Use this feature to check the validity of the defined source data object. It is especially helpful in determining if your expressions are defined correctly.

Note. Attempting to preview complex data sources can quickly consume processing and memory resources on your application server.

The preview maximum row count is set using the Data Transformer Installation Options page. Large row counts take more time and resources to preview. Consider setting your preview row count relatively low.

If no data is returned, verify the SQL that it being used to extract the data is accurate.

See Also

Previewing SQL

Access the View Query (EOEW_SRCQUERY) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, View Query).

Click the Generate SQL button to generate SQL text in the Query text box.

Use this to preview the SQL generated by the defined source data object.

Note. The enterprise administrator can verify if the extract SQL is correct and adjust the source data object definition as necessary.

(Optional) Creating Expressions

This section provides an overview of expressions and discusses how to create expression statements.

Understanding Expressions

Expressions enable you to create virtual columns that are made up of mathematical calculations based on actual fields in a record. Expressions are resolved at runtime so that duplicate information is not stored in the database. Expressions can be numeric, string, date, time, or datetime. Numeric expressions can combine any number of fields, constant values, and math operators, and results are rounded based on the decimal position that is selected. String expressions can be concatenations of any number of character fields and constant values.

Built-in Functions

PeopleSoft delivers built-in functions that you can use to make expressions powerful and flexible. You can also nest built-in functions and expressions; for example:

* Concatenate two fields, separate them with a comma, drop trailing blanks, and limit this field to 40 characters:

  Substring(RTRIM(FirstName) | , | RTRIM(LastName),1,40)

* Sum the multiplication of two fields:

  SUM(PROD_COST * PROD_RATE)

This table lists all of the delivered built-in functions with supported meta-SQL and aggregate functions:

Function	Explanation	Use
ABS(Number)	Returns the absolute value of the specified number.	ABS(-5) returns 5.
AddMonth(Date, Number)	Adds a number of months to the specified date and returns the calculated date.	AddMonth("2002−01−10",2) returns 2002−03−10.
Average (Number)	Returns the average value of the specified number (typically a numeric column name).	Average(PRICE) returns the average price of your source data set.
Beginning of Month (Date)	Returns a date representing the first day of the month for the specified date.	Beginning of Month("2002−10−05") returns 2002−10−01.

Function	Explanation	Use
Beginning of Year (Date)	Returns a date representing the first day of the year for the specified date.	Beginning of Month("2002–10–05") returns 2002–01–01.
Count (col)	Returns the number of rows that are found.	Count(PRODUCT_ID) returns the number of rows on your source data set.
DateAdd(Date, Days)	Adds a number of days to the specified date and returns the calculated date.	DateAdd("2002–02–02",5) returns 2002–02–07.
DateDiff(Date, Date)	Returns the number of days that have elapsed between the first and second specified dates.	DateDiff("2002–02–02","2002–02–10") returns 8.
DtTmDiff(Datetime,Datetime)	Returns the number of minutes that have elapsed between the first and second specified datetimes.	DtTmDiff("'2002-01-01 00:00:00.000","2002-01-01 10:00:00.000") returns 600 (10 hours in minutes).
DIFF_H(Datetime, Datetime)	Returns the number of hours that have elapsed between the first and second specified datetimes.	DIFF_H("'2002-01-01 00:00:00.000","2002-01-01 10:00:00.000") returns 10.
DIFF_S(Datetime, Datetime)	Returns the number of seconds that have elapsed between the first and second specified datetimes.	DIFF_S("'2002-01-01 00:00:00.000","2002-01-01 10:00:00.000") returns 36000 (10 hours in seconds).
End of Month (Date)	Returns a date representing the last day of the month for the specified date.	End of Month("2002–10–05") returns 2002–10–31.
End of Year (Date)	Returns a date representing the last day of the year for the specified date.	End of Year("2002–10–05") returns 2002–12–31.
GetDay(Date)	Returns the day of the month for the specified date.	GetDay("2002–10–05") returns 5.
GetMonth(Date)	Returns the month of the specified date.	GetMonth("2002–10–05") returns 10.

Function	*Explanation*	*Use*
GetYear(Date)	Returns the year of the specified date.	GetYear("2002–10–05") returns 2002.
MOD(Number, Number)	Returns the modulus (or remainder) of the first number when it is divided by the second number.	MOD(14,3) returns 2 (14 divides into 3 four times with a remainder of 2).
Max (Number)	Returns the maximum value of the specified number (typically a numeric column name).	Max(PRICE) returns the largest price of your source data set.
Min (Number)	Returns the minimum value of the specified number (typically a numeric column name).	Min(PRICE) returns the smallest price of your source data set.
Sum (Number)	Returns the sum of the specified number (typically a numeric column name).	Sum(PRICE) returns the sum of all prices of your source data set.
RTRIM(String)	Returns the specified string, and trims trailing blank characters.	RTRIM("Hello ") returns Hello.
Round (Number, Factor)	Returns a number representing the specified number after being rounded to the given factor or precision.	Round(5.582, 1) returns 5.6 Round(5.512, 0) returns 6
Substring(String, StartPos, Length)	Returns a section of the specified string starting at the specified position and continuing for the specified length.	Substring("My String Expression", 4,6) returns String.
TO_CHAR(Number)	Returns a string representation of the specified numeric expression.	TO_CHAR(59) returns 59.
TO_NUM(String)	Returns a numeric representation of the specified string expression.	TO_NUM("59") returns 59. **Note.** Trying to apply a TO_NUM built-in function on a character that does not translate to a numeric value aborts the processing of your map.

Function	Explanation	Use
TrimSubStr (String, Start, Length)	Returns a section of the specified string starting at the specified position and continuing for the specified length, and trims trailing blank characters.	Substring("My String Expression", 4,7) returns String.
Truncate(Number, Factor)	Returns a number representing the specified number after being truncated to the given factor or precision.	Truncate(5.582, 1) returns 5.5. Truncate(5.512, 0) returns 5.
UPPER(String)	Returns the specified string in uppercase characters.	UPPER("My String Expression", 4,7) returns MY STRING EXPRESSION.
YYMMDD(Date)	Returns the string representation of a specified date in YYMMDD format.	YYMMDD("2002–10–01") returns 021001.

Page Used to Create Expressions

Page Name	Definition Name	Navigation	Usage
Expressions	EOEW_SRCFIELDEXPR	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Expressions	Create expression statements by selecting operators, fields, and constant values.

Creating Expression Statements

Access the Expressions (EOEW_SRCFIELDEXPR) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Expressions).
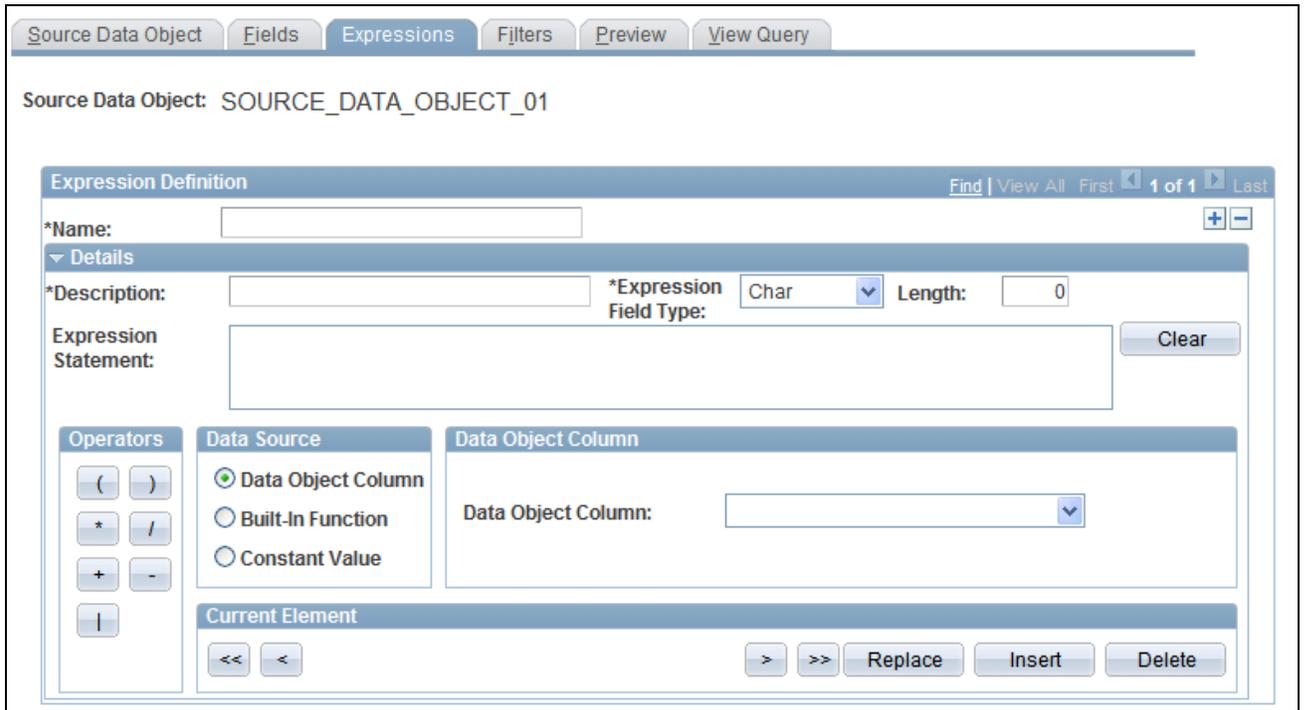
Expressions page

Name	Enter a unique name for this expression.
Expression Field Type	Select to control the set of operators, record fields, and value objects that can be selected when building the expression.
	Numeric: Select to combine any number of record fields, value objects, and math operators.
	String: Select to concatenate any number of character record fields and value objects.
	Date: Select to define a constant value or to create a date field from the source data object or built-in functions.
Expression Statement	Displays your expression as you build it. You cannot type directly into this edit box. Use operators, data source options, and the constant values to create your expressions.
	You can see what element is being specified by the arrows surrounding it; the selection is also displayed in the Current Element group box.
Clear	Click to delete all entries in the Expression Statement edit box.
Operators	Select from the operator buttons to add operators to the expression.

Data Source

Data Object Column Select this option to display a list of data object fields. Select a field and click Insert to have the selected data object appear in the expression statement.

Built-in Function Select this option to display a list of built-in functions. Select a function and click Insert to have the selected built-in function appear in the expression statement.

Built-in functions let you define numeric calculations like Sum, Average, or End of Month, and Minimum/Maximum values.

Note. All parameters of the selected built-in function must be defined.

Constant Value Select this option to enter your own character, numeric, or date value. Click Insert to have the value appear in the expression statement.

Note. Consider how an expression will be used when you want to specify date related value objects. If the expression will be in a WHERE clause, then use the %CurrentDateIn value object. If the expression will be in a SELECT clause, then use the %CurrentDateOut value object.

Current Element

<< , < , > , >> Click to move through the expression statement and identify the text you want to replace or delete or to move to the position in the statement where you want to insert text.

Click the Previous or Next button to move one element forward or backward. Click the First or Last button to move to the beginning or end of the expression statement.

Note. The element name will be shown in the Current Element group box as well as surrounded by arrows in the Expression Statement edit box.

Replace Click to replace the current element item in the expression statement with the selected data source.

Insert Click to insert the selected data source into the expression statement before the current element item.

Delete Click to delete the current element item in the expression statement.

Example: Creating Expressions by Using Data Object Column

This section provides an example of creating an expression by using a data object column.

The company wants to award its employees with a bonus of $1000 for each year that they have been employed by the company. To calculate the bonus:

1. Enter *BONUS* for the expression name, and then enter a description.

2. Select the *Number* expression type.

3. Select integer and decimal positions.

4. Select Data Object Column in the Data Source group box.

5. Select the *YEARS_OF_EMP* data object column, and click Insert.

    The field appears in the Expression Statement edit box.

6. Click the Multiplication (*) operator to insert it at the end of the expression statement.

7. Select Constant Value in the Data Source group box.

8. Enter a numeric value of *1000 ,* and click Insert.

    This creates the following expression statement:

    YEARS_OF_EMP * 1000

9. Click Save.

Example: Creating Expressions Using Built-in Functions

This section provides an example of creating an expression by using a built-in function.

You want to define a field called SHORT_DESCR that uses the first 10 characters of the DESCR field.

To define the SHORT_DESCR field:

1. Enter *SHORT_DESCR* for the expression name, and then enter a description.

2. Select the *Char* expression type.

3. Enter the length.

4. Select Built-in Function in the Data Source group box.

5. Select the *Substring (String,Start,Length)* built-in function, and click Insert.

    The function appears as *SUBSTRING (PARAM1 , PARAM2 , PARAM3)* in the Expression Statement edit box.

6. Use the arrow buttons to navigate through the expression statement and identify the PARAM1 element.

7. Select Data Object Column in the Data Source group box.

8. Select *DESCR,* and click Replace.

    The DESCR field appears in place of PARAM1 in the expression statement.

9. Navigate to PARAM2.

10. Select Constant Value in the Data Source group box, and enter a numeric value of *1*.

11. Click Replace.

12. Navigate to *PARAM3,* and replace it with a numeric value of *10.*

   This creates the following expression statement:

   SUBSTRING (DESCR , 1 , 10)

13. Click Save.

(Optional) Creating Filters

This section provides an overview of filters and discusses how to create filters.

Understanding Filters

Filters serves as criteria that the system applies to each row of data in the data source. If the row passes the criteria, the system uses the data as an input to the data transformer map; if the row doesn't pass, the system doesn't use the data. A filter compares the value in one of the row's fields to a reference value. For example, suppose that you need only products whose selling price is greater than $10.00. You would compare the value in the Price field to the constant value of $10.00. The filter criteria is placed in the WHERE clause in the extract SQL.

The following table describes the operators that you can use to compare values:

Operator	*Description*
Like	The value in the selected field matches a specified string pattern. The comparison value may be a string that contains wild card characters. The wild card characters that PeopleSoft Data Transformer recognizes are percent (%) and underscore (_).
	The % matches any string of zero or more characters. For example, *C%* matches any string starting with *C,* including *C* alone.
	The _ matches any single character. For example, *_ones* matches any 5-character string ending with *ones,* such as *Jones* or *bones.*
	Note. To use one of the wild card characters as a literal character, (that is, to include *%* in your string), precede the character with a backslash (\). For example, *percent\%*.
=	The value in the selected record field exactly matches the comparison value.
<>	The value in the selected record field is not equal to the comparison value.
>	The value in the record field is greater than the comparison value.
<=	The value in the record field is less than or equal to the comparison value.
<	The value in the record field is less than the comparison value.
>=	The value in the record field is greater than or equal to the comparison value.

When you include multiple filters, link them using AND or OR. When you link two filters with AND, a row must meet the first *and* second filter to pass the test. When you link with OR, a row must meet the first *or* second filter, but not necessarily both.

Page Used to Create Filters

Page Name	Definition Name	Navigation	Usage
Filters	EOEW_SRCFILTER	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Filters	Create filters.

Creating Filters

Access the Filters (EOEW_SRCFILTER) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Filters).

Filters page

To define a filter:

1. Select the record that you want to filter against from the list of records that are defined in the source data object.

2. Select the field on which to base your filter.

3. Select an operator.

4. Enter a comparison value.

5. Click Save.

6. Click Refresh Filter to save any changes that you made to existing filters and reflect those changes in the source data object. Refresh Filter also captures changes made for Save and updates drop-down lists to show your selections on the page.

Note. If the filter begins to get complicated, use the arrow keys to indent subconditions. Subconditions will be surrounded by parentheses and fully resolved before comparing results with other level results.

(Optional) Joining Records

This section provides an overview of joins and discusses how to define join conditions.

Understanding Joins

PeopleSoft Data Transformer enables you to create source data objects that include multiple-table joins. Joins retrieve data from more than one table, presenting the data as if it came from one table. PeopleSoft Data Transformer links the tables, based on common record fields, and links the rows on the two tables by common values in the shared record fields.

Page Used to Join Records

Page Name	Definition Name	Navigation	Usage
Join Conditions	EOEW_SRCJOIN	Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Join Conditions	Define join conditions.

Defining Join Conditions

Access the Join Conditions (EOEW_SRCJOIN) page (Enterprise Components, Data Transformation, Define Source Data Objects, Source Data Object, Join Conditions).

Join Conditions page

Note. This page appears only when two or more records are defined in the source data object.

Enter the record name and associated field name for the left and right sides of the join.

The content of the field name drop-down list box is filtered to exclude some fields with data types that cannot be qualified (for example, image columns). You need to fully qualify the join criteria of the selected records; otherwise, processing may return unexpected results. The join criteria will become part of the WHERE clause in the extract SQL.

Chapter 4

Preparing to Create Maps

This chapter provides an overview of the mapping process and discusses how to:

• Set up target field default values.

• Set up translation sets.

• Create transformations by using the Transformation Wizard.

• Use transformation PeopleCode.

• Create map rules.

Understanding the Mapping Process

Mapping translates values from the source data to the format of the target source by using default target values, transformations, translation sets, and map rules to facilitate the process.

This section discusses:

• Target field default value setup.

• Translation set setup.

• Transformation creation.

• Map rule setup.

Target Field Default Value Setup

Target field default values allow you to set up values, which can be reused across multiple maps, to map to the target field. This allows having a central location for updating a target field value. For example, the target field default value for EFF_STATUS is set to *A,* and is used in 100 maps. At runtime, A is inserted into the target field for all those maps. If the value for EFF_STATUS is changed to *Active,* the value is updated once and when the 100 maps are run again, the new value will be inserted into the target field. No changes are necessary at the map level.

A default with no value is initialized to a blank, a zero, or the appropriate PeopleSoft null value.

When setting default values, consider the target field data type format:

- Character fields are used for names, codes, and letter values.

  Uppercase converts the field value to uppercase and signifies that no other formatting options apply to the field. Mixed case stores uppercase and lowercase characters as entered.

- Number fields and signed number fields are fixed in field length and allow the entry of positive numbers.

  Only signed numbers allow the entry of negative numbers.

- Date fields contain calendar dates.

  A date field has a field length of 10 characters and is maintained by the system.

  The default format of a date field is defined by the database and can be overridden by your browser settings.

The following table discusses data type format considerations:

Source Field	Target Field	Required Considerations	User Warning
Date	Date	NA	NA
Date	DateTime	NA	NA
Char	Char	Truncation occurs as needed.	NA
Char	Number	Data must be numeric in the character source field.	Appears when the character field is greater than the number in bytes.
Number	Number	NA	Appears when the numeric field is smaller in integer positions, decimals, or if the source is signed and the target is not.
Number	Char	Character must be big enough.	NA
DateTime	Date	NA	NA
DateTime	DateTime	NA	NA
Time	Time	NA	NA

Source Field	Target Field	Required Considerations	User Warning
Long	Long	NA	NA

Note. The default value assigned must match the target field format or an error occurs at runtime. For example, you cannot assign a value of *7A* to a numeric field. Specific error messages display during the save if a datatype conversion error occurs.

Translation Set Setup

Use translation sets to define equivalent values or a code set for data conversion. For example: *EA* equals *Each,GAL* equals *Gallon,* and *IN* equals *Inch.* Translation sets make the data values consistent.

Transformation Creation

When data is copied from the source to the target, the data can be transformed by using edits, look ups, or PeopleCode. Transformations enable you to change a column's value. The Transformation Wizard guides you through the process of creating transformations.

Map Rule Setup

You can create rules to be used by the AutoMapper feature in the map field detail definition where it attempts to match source fields with target fields. Use rules to assign correct default values to target fields when creating maps. By using map rules, you can assign a literal default, transformation, source field, or a translation set to a target field. If the map rule is required, you cannot override the rule when you define map field details.

See Also

Setting Up Target Field Default Values

This section discusses how to set up target field default values.

Page Used to Set Up Target Field Default Values

Page Name	Definition Name	Navigation	Usage
Set Target Field Defaults	EOEW_SET_DFLT_RUL	• Enterprise Components, Data Transformation, Setup Target Field Defaults, Set Target Field Defaults • Enterprise Components, Data Transformation, Data Transformation Home, Define Maps, Map Field Detail Click the Default link on the Map Field Detail page.	Set target field default values that are used in the map field detail definition.

Setting Up Target Field Default Values

Access the Set Target Field Defaults (EOEW_SET_DFLT_RUL) page (Enterprise Components, Data Transformation, Setup Target Field Defaults, Set Target Field Defaults).

Set Target Field Default page

Target Field	Select the target field for which you want to define defaults.
Source Input Value	Enter the default value for the associated target field.
	Note. This field is free text, so you must consider the target field data type format.
Allow Map Override	Select to allow the field value to be overridden at the map level, otherwise the row will be protected.

Setting Up Translation Sets

This section discusses how to set up translation sets.

Page Used to Set Up Translation Sets

Page Name	Definition Name	Navigation	Usage

Translation Sets	EOEW_CODE_TBL	• Enterprise Components, Data Transformation, Setup Translation Set, Translation Sets
		
		• Enterprise Components, Data Transformation, Define Maps, Map Field Detail.
		
		  Click the Translation link on the Map Field Detail page.
		
		• Enterprise Components, Data Transformation, Define Maps, Map Field Detail.
		
		  Click the Add link on the Map Field Detail page.
			Enter translation set values for map definition details.

Setting Up Translation Sets

Access the Translation Sets (EOEW_CODE_TBL) page (Enterprise Components, Data Transformation, Setup Translation Set, Translation Sets).

Translation Set page

Subject Area

Select a subject area.

For new translation sets, the subject area will be set to the default as defined on the Subject Area page.

Undefined Value Options

Select how to handle undefined values:

- *Default for undefined values:* Rows that contain undefined source values have the defined default value inserted into the target field and then loaded in the target.

- *Do not load undefined values:* Rows that contain undefined source values will not be loaded into the target. Error handling options determine actions on these invalid rows.

- *Retain undefined data values:* Rows that contain undefined source values are retained and loaded in the target.

Translation Set Values

Enter the from and to values for each value that you want translated. If needed, enter the rationale for your selections in the More Information field.

See Also

Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Subject Areas, page 7

Creating Transformations by Using the Transformation Wizard

This section provides an overview of the Transformation Wizard, lists common elements, and discuss how to:

- Create transformation definitions.

- Define edit, look ups or PeopleCode transformations.

- Create message definitions.

- (Optional) Set up source conditions.

- (Optional) Define look up conditions.

Understanding the Transformation Wizard

Transformations are created differently based on the transformation type that you select on the definition page. The Transformation Wizard is a tool that guides you step-by-step through the process of creating transformations based on transformation type. The wizard enables you to navigate back and forth through only those pages that are necessary to create the transformation type that you select.

Note. Transformations occur after data has been extracted from your source.

The Transformation Wizard is comprised of up to six steps. The following table lists the steps that are necessary to complete look up, edit, and PeopleCode transformations:

	Look Up	*Edit*	*PeopleCode*
Create a transformation definition.	Yes	Yes	Yes
Define look ups.	Yes	No	No
Create a message definition.	Yes	Yes	No
Enter comments.	Yes	Yes	Yes
(Optional) Set up source conditions.	Yes	Yes	No
(Optional) Define look up conditions.	Yes	No	No

Common Element Used in This Section
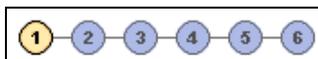
 The Transformation Wizard navigation tool displays the number of pages that are necessary to create the transformation, and it highlights the current page.

Click a page number to navigate to that page or click the Next and Previous buttons to navigate between pages.

Pages Used to Navigate Transformation Wizard

Page Name	*Definition Name*	*Navigation*	*Usage*
Transformation Wizard - Transformation Definition	EOEW_TRN_DFN_INFO	Enterprise Components, Data Transformation, Define Transformation Definition	Enter transformation definition information
Transformation Wizard - Look Up	EOEW_TRN_DFN_LU	• Click the Next button on the Transformation Wizard - Transformation Definition page. • Click the Transformation Wizard - Look Up page number on the Transformation Wizard navigation tool.	Enter a join condition to establish a relationship between this transformation and the look up definition.
Transformation Wizard - Edit	EOEW_TRN_DFN_EDIT	• Click the Next button on the Transformation Wizard - Look Up page. • Click the Transformation Wizard - Edit page number on the Transformation Wizard navigation tool.	Select the message definition to use for edit processing.
Transformation Wizard - Comments	EOEW_TRN_DFN_COM	• Click the Next button on the Transformation Wizard - Edit page. • Click the Transformation Wizard - Comments page number on the Transformation Wizard navigation tool.	Enter addition information about this transformation.
Transformation Wizard - Source Condition	EOEW_TRN_DFN_SRC	• Click the Next button on the Transformation Wizard - Comments page. • Click the Transformation Wizard - Source Condition page number on the Transformation Wizard navigation tool.	Define the source input values for this transformation condition.

Page Name	Definition Name	Navigation	Usage
Transformation Wizard - Lookup Condition	EOEW_TRN_DFN_LUC	• Click the Next button on the Transformation Wizard - Source Condition page. • Click the Transformation Wizard - Lookup Condition page number on the Transformation Wizard navigation tool.	Enter look up transformation definition properties.

Creating Transformation Definitions

Access the Transformation Wizard - Transformation Definition (EOEW_TRN_DFN_INFO) page (Enterprise Components, Data Transformation, Define Transformation Definition).

Transformation Wizard - Transformation Definition page

Transformation Object   Enter a unique object name for the transformation. The system automatically converts the input to uppercase.

For transformation type of PeopleCode, the name of the transformation object is used to reference the proper method in the PeopleCode transformation class. If the transformation object name does not contain a period (.) in its name, the corresponding method must be in the default class called EOEW_ETL_PUB:PeopleCodeTransformation.

To call a class in a proprietary package, use the name of the method in addition to the name of the package and class. For example, if you have created a package called MY_APP_PKG, with a class called MYPC and a method called SET_UNIT_PRICE, the transformation object name is specified as MY_APP_PKG:MYPC.SET_UNIT_PRICE.

Note. For PeopleCode transformations, the transformation object name must match the name of the Application Class method.

For any custom built PeopleCode transformations, use your own Application package and class name. By not putting the PeopleCode in EOEW_ETL_PUB:PeopleCodeTransformation, the code will not be affected during an upgrade.

Subject Area   Select a subject area.

For new transformations, the default subject is defined on the Subject Area page.

Transformation Type   *Look up.* Performs a look up against an intermediate table and returns a value. If the value does not exist, an error can be logged. An option is also available to default a value into the target field on error conditions.

Edit. Performs edits against the entire source dataset. An edit is applied at a map level, not at a target field level.

PeopleCode. Allows for a PeopleCode object reference. A PeopleCode Application Class method can be created to execute code for transformations that cannot be built with the available interfaces.

See Also

Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Subject Areas, page 7

Defining Look Ups

Access the Transformation Wizard - Look Up (EOEW_TRN_DFN_LU) page.

Transformation Wizard - Look Up page

Record (Table) Name	Select a record for the intermediary look up table.
	Note. This table must exist in the local PeopleSoft database.
Field Name	Select the value to be returned from the transformation and inserted into the target field. The available values are based on the record name that you selected.

Join Transformation to Look Up

Source Input Value	Select the source fields that are required for the join.
Look Up Field Name	Associate a look up field name value with a source input value to complete the join condition.

Creating Message Definitions

Access the Transformation Wizard - Edit (EOEW_TRN_DFN_EDIT) page.

Transformation Wizard - Edit page

Check If Edit Required	Select if you require an edit to be performed with transformation errors. If this check box is cleared, the edit will still execute at run-time but the results will not be available.
Message Set Number and **Message Number**	Select a message set number and a message number to be logged with any transformation errors.

Entering Comments

Access the Transformation Wizard - Comments (EOEW_TRN_DFN_COM) page.

Transformation Wizard - Comments page

Use the Comments field to enter commentary specific to this transformation. Try to thoroughly describe this edit to help others reuse it.

(Optional) Setting Up Source Conditions

Access the Transformation Wizard - Source Condition (EOEW_TRN_DFN_SRC) page.

Transformation Wizard - Source Condition page

Use source conditions to further qualify the source data that is used for this transformation. You can enter additional criteria to restrict the rows of the source data that are used in the join to the look up table.

(Optional) Defining Lookup Conditions

Access the Transformation Wizard - Look Up Condition (EOEW_TRN_DFN_LUC) page.

Transformation Wizard - Look Up Condition page

Record and **Field**	Displays the record and field to be used to return a value.
Default	Enter the value for the target field if the look up fails or returns a null value.

Return Look Up Record Field Conditions Grid

The look up condition further qualifies the look up table data that is used for this transformation. You can enter additional criteria to restrict the rows of the look up table that are used in the join to the look up table. The target field is populated based on the look up values that are provided.

Using Transformation PeopleCode

This section provides sample code delivered with your PeopleSoft product and discusses how to use transformation PeopleCode.

Note. If you need to create your own package and class, ensure that they adhere to the same format as shown here.

The FUNCLIB object must be imported and your methods must take this object as its only parameter. The HashTable class is a utility providing some of the internal information that you need to code your PeopleCode transformation. PeopleSoft Data Transformer creates a temporary table at runtime to store the fields from your source data object and from which you can access your PeopleCode transformation. In addition, the name of this temporary table is dynamically assigned and cannot be hard-coded into your program. For these reasons, PeopleSoft delivers helper methods for you to access and modify the content of your data:

- GetSourceFieldList() method returns a HashTable object containing a name-value pair for accessing your Source Data Object fields.

- GetTransformFieldList() method returns a HashTable object containing a name-value pair for accessing target fields that have transformations associated with them.

- GetTempTableName() returns the name of the temporary table that is used by PeopleSoft Data Transformer.

Sample PeopleCode Transformation

The following example updates the EOEC_CCI_UNITPRICE field on the target with a value of the source data object PROD_PRICE field plus a constant of 100, by issuing an UPDATE statement on the PeopleSoft Data Transformer temporary table.

Because the target field, EOEC_CCI_UNITPRICE, has an associated transformation, the actual name on the temporary table is resolved with a GetValue(EOEC_CCI_UNIT_PRICE) call on the transformation field's hash table. Similarly, the PROD_PRICE source data object field is resolved by making a GetValue(PROD_PRICE) call on the source field's hash table.

```
import EOEW_ETLAPI:COMMON:FUNCLIB;
import EOEW_ETLAPI:COMMON:HashTable;

class PeopleCodeTransformation
   method SET_UNIT_PRICE(&COMM As FUNCLIB);
   method MY_OTHER_PCODE_TRANS(&COMM As FUNCLIB);
end-class;

method SET_UNIT_PRICE
   /+ &COMM as EOEW_ETLAPI:COMMON:FUNCLIB +/
   Local HashTable &SDOFields, &TranFields;
   Local string &SQLStatement;

   /* Retrieve the hashtable containing ALIASNAME->TEMPFIELDNAME
    value pair */
   &SDOFields = &COMM.GetSourceFieldList();
   &TranFields = &COMM.GetTransformFieldList();

   /* Update the EOEW_CCI_UNITPRICE to: SDO.PROD_PRICE + SomeNumber
      This would resolve into something like:
 UPDATE ETL_TEMP_TBL SET ETL_TEMP_1 = EOEW_FP_N3_0 + 100
   */
   &SQLStatement = "UPDATE " | &COMM.GetTempTableName() | " SET " |
  &TranFields.GetValue("EOEC_CCI_UNITPRICE") | " = " |
  &SDOFields.GetValue("PROD_PRICE") | " + 100";

   SQLExec(&SQLStatement);
end-method;

method MY_OTHER_PCODE_TRANS
      .
 .
 .
end-method;
```

Creating Map Rules

This section provides an overview of map rules and discusses how to define map rules.

Understanding Map Rules

AutoMapper uses the rules that you create in the map field detail definition. Rules may be based on the subject area, the source, the target, or any combination, depending on the business rule being applied. AutoMapper considers only map rules that are defined with a subject area matching the map's subject area or those that are assigned the default enterprise subject area. The rules are made up of transformations, constant default values, translation sets, and field map hints. If the map rule is required, you will not have access to override the rule on the Map Field Detail page.

This order of precedence and conditions applies when you assign different rules to a single target field:

• Source

   The source field must exist on the source data object that is associated with the map. The source field type must be compatible with the target field type.

• Transformation

   The fields that are defined as joins or constraints from the source data object must exist on the source data object that is associated with the map.

• Translation Set

   The fields that are defined as the join to the from value of the translation set must exist on the source data object that is associated with the map.

If no rules were found to match a given target field, processing occurs in this order:

• Exact name match of target field.

• Default value for the target field.

• A zero or NULL is assigned to the field depending on its data type.

Page Used to Create Map Rules

Page Name	Definition Name	Navigation	Usage
Map Rule Definitions	EOEW_RULE_DFN	Enterprise Components, Data Transformation, Define Map Rules, Map Rule Definitions	Define map rules.

Defining Map Rules

Access the Map Rule Definitions (EOEW_RULE_DFN) page (Enterprise Components, Data Transformation, Define Map Rules, Map Rule Definitions).

Map Rule Definitions page

Active	Select to make the rule active. Only active rules get used during an AutoMapper run.
Allow Map Override	Select to allow the rule to be overridden on the Map Field Detail page.
Target Field	Select the target field on which to base this rule.
Subject Area	Select a subject area. For new rules, the default subject area is defined on the Subject Area page.
Source Input Type	*Source:* Select to enable the Source Field Alias field, where you enter an alias for your source field if one is defined. If not, leave this field blank. AutoMapper always maps the alias into the selected target field. *Transformation:* Select to enable the Source field, where you enter a transformation object. AutoMapper always maps this transformation into the selected target field. *Translation Set:* Select to enable the Source Field Alias and Source fields, where you enter an alias and translation set. When AutoMapper sees the alias on the source, it always maps this translation set into the selected target field.

Chapter 5

Creating Maps

This chapter discusses how to create map definitions.

Creating Map Definitions

This section discusses how to:

- Define map information

- Define map field details.

- Perform map edits.

- Preview map results.

- Updating map processing options.

Pages Used to Create Map Definitions

Page Name	Definition Name	Navigation	Usage
Map Information	EOEW_MAP_DFN	Enterprise Components, Data Transformation, Define Maps, Map Information	Enter general mapping information.
Map Field Detail	EOEW_MAP_FLD	Enterprise Components, Data Transformation, Define Maps, Map Information, Map Field Detail	Enter field-level mapping details.
Map Edits	EOEW_MAP_EDIT	Enterprise Components, Data Transformation, Define Maps, Map Information, Map Edits	Edit map source input values that are used in transformations.
Preview Map Results	EOEW_TARPREVIEW	Enterprise Components, Data Transformation, Define Maps, Map Information, Preview Map Results	View a subset of your data based on the defined map.

Page Name	Definition Name	Navigation	Usage
Map Options	EOEW_MAP_OPT	Enterprise Components, Data Transformation, Define Maps, Map Information, Map Options	Override or select options at the map level.
Map Definition - Comments	EOEW_MAP_COMMENT	Enterprise Components, Data Transformation, Define Maps, Map Information, Comments	Enter comments that are related to the map definition.

Defining Map Information

Access the Map Information (EOEW_MAP_DFN) page (Enterprise Components, Data Transformation, Define Maps, Map Information).

Map Information page

Subject Area	Select a subject area. For new maps, the subject area will be set to the default as defined on the Subject Area page.
Source	Enter the source data object for this map. **Note.** The source data object prompt is restricted by subject area. You see only those objects that are in the map definition's current subject area and those in the default subject area.

Add Source Data Object	Click to navigate to the Source Data Object component and create a new source data object to use as the source.
Update Source Data Object	Click to navigate to the Source Data Object component and change the source data object that you selected as the source.
Target	Select the target data object.
	This value controls the target fields that are available on the Map Field Details page.
Error Handling	*No error handling needed:* Select to have the system perform no data validation and insert all rows into the target table.
	Identify error row: Select to have the system perform data validation and insert both valid and invalid rows into the target table. You must select a target field to contain the error flag on the Map Field Detail page.
	Note. The error flag will not be available for any other type of mapping.
	Correct data error & reprocess: Select to have the system perform data validation, insert valid rows into the target table, and insert invalid rows into a user-defined error table. You will be prompted to create an error record on the Map Field Detail page
	Note. The system administrator must build the user-defined error table in PeopleSoft Application Designer before you load the defined map.
	The create error record push button will create a record in PeopleSoft metadata that has all of the necessary columns needed at runtime. It must then be build using Application Designer. If your map changes (different transformations, translation sets, and so on), you will need to recreate the error table because it must match exactly.

See Also

Defining Map Field Details

Access the Map Field Detail (EOEW_MAP_FLD) page (Enterprise Components, Data Transformation, Define Maps, Map Information, Map Field Detail).

| Map Information | Map Field Detail | Map Edits | Preview Map Results | Map Options | Comments |

Map Object: MAP_OBJECT_01   [Save Map As]

Data Object

  Source:

  Target:

Error Handling

  No Error Handling Needed

Map Field Detail page

|	
Source Input Type	*Blank:* If this field is left blank, the description field will default to a blank, zero, or the appropriate PeopleSoft null value. This null value will be inserted to the target field.
	Source: Select if the value is from the source file. You are prompted to select a source prompt field from the source data object.
	Constant: Select if the value is a constant value, and then enter that value. If a constant needs to be applied to more than one map, a default target field should be created.
	Default: Select to use a default value, and then select a source prompt to select the appropriate target field default. Click the Default link to access the Set Target Field Default page to see the actual prompt value.
	Transformation: Select to use a transformation, and then select a source prompt to select the appropriate transformation. Click the Transform link to view transformation definitions, or click the Add link to add a new definition by using the Transformation Wizard.
	Translation Set: Select to use a translation set, and then select a source prompt to select the appropriate source data object field. Select a description which will be the appropriate translation set to apply to the source field. Click the Translation link to view translation set values, or click the Add link to add a new set.
Source Prompt	Select a source prompt based on your source input type. The prompt will change based on the source input type. Be aware of the mapping that you are setting up.
	Note. Translation set and transformation source prompts are restricted by subject area and transformation type. Only objects that are in the map definition's current subject area and those in the default subject area appear on the page. Only Look Up and PeopleCode type transformations appear.
Description	The description will change based on the source input type and source prompt selected. Be aware of the mapping that you are setting up.
	Enter a description if you selected *Constant* as the input type. The description is the value that you want mapped to the target field.
	Enter a translation set if you selected *Translation Set* as the input type.

Target Field   Lists the name of all of the fields in your target file.

Detail   Displays the Transform,Default, or Translation link, based on the selected input
                                    type. This link transfers to the definition page of the selected item.

Add   Appears if the selected input type is *Transformation* or *Translation Set.* This link
                                    transfers to the definition page of the selected item in Add mode.

Save Map As   Click to save an existing map definition under a new map name.

                                    Use this function to create a new map definition that will only slightly differ from
                                    the original map. Once saved, you can make the necessary changes to the new
                                    map. The new map is maintained separately.

Apply AutoMapper   Click to initially define map field details.

                                    AutoMapper automatically attempts to match the source to the target field list. It
                                    also applies any required map rules, including target field defaults, translation set
                                    values, and transformations. AutoMapper then maps remaining target fields with
                                    constant values from the PSRECFIELD.DBFIELDNAME.SQL assembler and
                                    coordinates the transformation steps.

                                    If you must modify the mapping that is defined by AutoMapper, you can make
                                    these changes using the fields on this page.

                                    Warning! Rerunning the AutoMapper overrides any mappings that you have
                                    already done. Use caution before doing this-it is as if you are starting over with
                                    an Add function.

Synchronize fields   Click to realign the source and target fields on the map with any changes that
                                    may have occurred since its origination.

                                    You can add new fields to the target with PeopleSoft Application designer once a
                                    map has been saved. Using Synchronize fields will insert these new fields in the
                                    map field detail grid. Additional synchronization is done on source fields (based
                                    on the current source data object definition) and prompts. Selecting this button
                                    will not override previously saved mappings.

Show/Hide Fields   Click to expand the grid to include field format and length information for both
Details   source and target fields. Click again to avoid the horizontal scroll.

See Also

Chapter 4, "Preparing to Create Maps," page 27

Performing Map Edits

Access the Map Edits (EOEW_MAP_EDIT) page (Enterprise Components, Data Transformation, Define
Maps, Map Information, Map Edits).
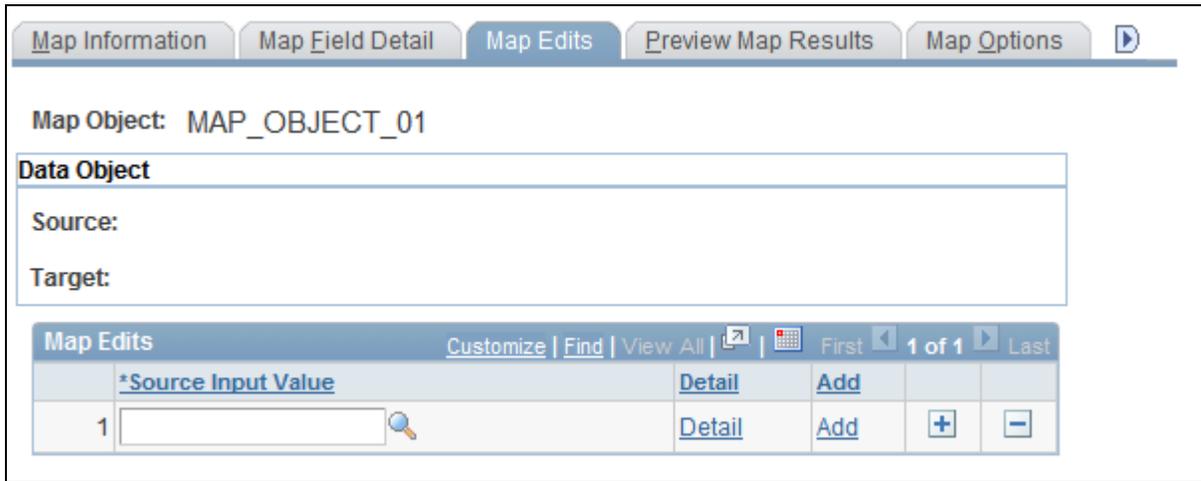
Map Edits page

Source Input Value	Select an Edit transformation.
	Note. The source input value prompt is restricted by subject area and transformation type. You see only those objects that are in the map definition's current subject area and those in the default subject area. You also see only edit transformations.
Detail	Click to access the Transformation Definition page and edit transformation definition information.
Add	Click to access the Transformation Definition page and add a new transformation.

See Also

Chapter 4, "Preparing to Create Maps," Creating Transformations by Using the Transformation Wizard, page 32

Previewing Map Results

Access the Preview Map Results (EOEW_TARPREVIEW) page (Enterprise Components, Data Transformation, Define Maps, Map Information, Preview Map Results).

Click the Preview button to view a subset of the results based on your map definition.

Use this feature to check the validity of the map. By previewing what the results of running the map would be against a small set of data, you can determine if your mappings are defined correctly.

Note. Attempting to preview complex maps can quickly consume processing and memory resources on your application server.

The preview maximum row count is set using the Data Transformer Installation Options page. Large row counts take more time and resources to preview. Consider setting your preview row count relatively low.

See Also

Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Installation Options, page 6

Updating Map Processing Options

Access the Map Options (EOEW_MAP_OPT) page (Enterprise Components, Data Transformation, Define Maps, Map Information, Map Options).

Map Options page

Note. Only system administrators may access this page.

Duplicate Row Handling	*Copy Duplicates to Error Table:* Select to have the system copy all duplicate rows to the error table.
	Copy first row to Target: Select so that if the system finds a duplicate row in the error table, it inserts only the first row of the duplicates into the target.
	Copy last row to Target: Select so that if the system finds a duplicate row in the error table, the system inserts only the last row of the duplicates into the target.
	Reject all duplicate rows: Select to have the system reject all duplicate rows and not log them in the error table.

Note. Values are based on the error handling that is specified on the Map Information page. If you don't see all of the preceding values, adjust the error handling option.

(Optional) Create Temporary Table	Select if you want to override the Data Transformer installation options and Subject Area selections for this map to create a temporary table at runtime.
	This is needed only when an implementation allows or disallows the dynamic temporary table creation per subject area.
	This temporary table is only needed by the engine and will be deleted at engine completion. It is not available in PeopleSoft metadata.

Note. If you do not select this check box, you will be required to specify a temporary table record name on the map for use at runtime. This record will be available in PeopleSoft metadata and live permanently after the engine execution. Determining which of these options to used needs to be carefully considered. A dynamic temporary table will automatically change when the map changes, a non-dynamic temporary table requires maintenance.

|	
Override Tablespace Name From Subject Area Default	Select to override the Data Transformer installation options and Subject Area options for specific maps. This is only necessary if the implementation chooses to spread the temporary tables that are generated at runtime over multiple tablespaces.
Select Date/Time Field Name To Be Used For Incremental Load Processing	Only datetime field types appear in the prompt. This field is used at run time to determine the next segment of data to incrementally load.

See Also

Entering Map Definition Comments

Access the Map Definition - Comments (EOEW_MAP_COMMENT) page (Enterprise Components, Data Transformation, Define Maps, Map Information, Comments).
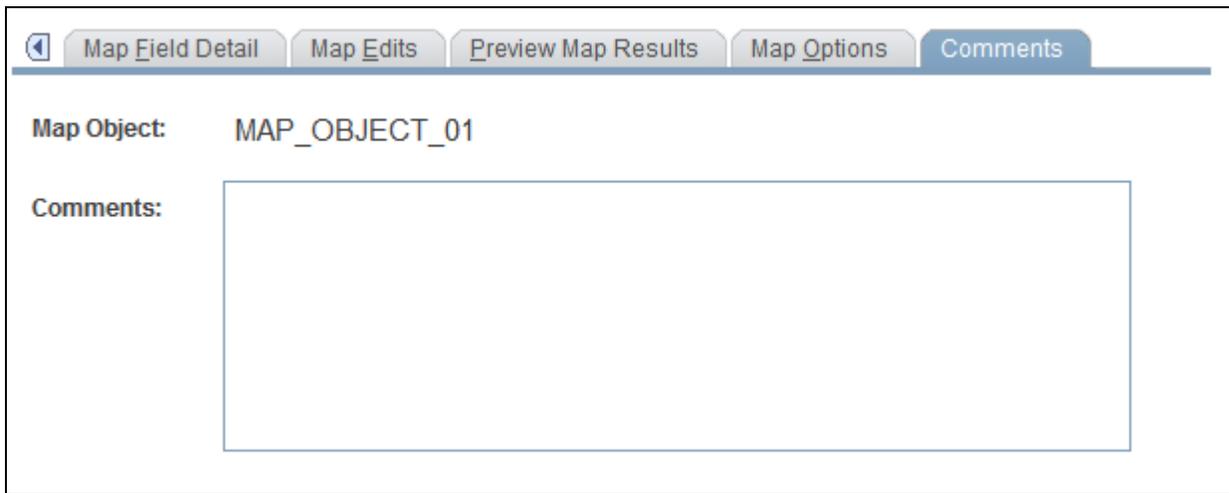
Map Definition - Comments page

Use the Comments field to provide details about the purpose of the map definition.

Chapter 6

Running the Data Transformation Process and Correcting Errors

This chapter discusses how to:

*   Define map groups and map group chunking criteria.

*   Extract, transform, and load source data.

*   Handle data transformation process errors.

Defining Map Groups and Map Group Chunking Criteria

This section discusses how to:

*   Define map groups.

*   Define chunking criteria.

You can configure the data transformation process to run on maps as a group. A map group may contain map groups within the main map group, as well as one or more individual maps. Map groups are submitted as a job unit and can run either in serial or parallel mode. To optimize performance by processing data more efficiently, you can define chunking criteria on the Map Group Filter page.

Pages Used to Define Map Groups and Chunking Criteria

Page Name	*Definition Name*	*Navigation*	*Usage*
Map Groups	EOEW_GRP_DFN	Enterprise Components, Data Transformation, Define Map Groups, Map Groups	Create map groups.
Map Group Filter	EOEW_GRP_FLTR	Click the Chunking link on the Map Groups page.	Define chunking criteria for maps.

Defining Map Groups

Access the Map Groups (EOEW_GRP_DFN) page (Enterprise Components, Data Transformation, Define Map Groups, Map Groups).

Map Groups page

Subject Area	Select a subject area.
	For new maps groups, the subject area will be set to the default as defined on the Subject Area page.
Parallel Processing For Group	Select to run the process in parallel mode, which runs the processes simultaneously. Clear to run it in serial mode, which runs each process in the map group sequentially.
Group Type and **Map Object**	Select the maps and/or map groups that you want in the order in which you want them to run.
	Note. Map object prompts are restricted by subject area. Only objects that are in the map group's current subject area and those in the default subject area appear.
(Optional) Chunking	Click to access the Map Group Filter page to define chunking criteria for the associated map.
	See Chapter 6, "Running the Data Transformation Process and Correcting Errors," Defining Chunking Criteria, page 57.
	Note. The Chunking link is only available for Group Types of Map. If you want to chunk a group, you need to go to that group's definition to define the criteria.

See Also

Chapter 2, "Setting Up Core PeopleSoft Data Transformer Features," Defining Subject Areas, page 7

Defining Chunking Criteria

Access the Map Group Filter (EOEW_GRP_FLTR) page (Enterprise Components, Data Transformation, Define Map Groups, Map Groups. Click the Chunking link.).

Map Group Filter page

Chunking is a mechanism that makes large amounts of processing easier through the use of multiple small parallel processes. By enabling chunking, multiple jobs are spawned from one job stream. These jobs run in parallel or serial to process data efficiently. It is an optional mechanism to help with performance. The user is responsible to define chunks that include all of the source data without duplicating any rows. The system will not verify this. The map group is still the unit of work. The group job is not complete until all of the chunks are also complete.

Parallel Processing	Select to run the process in parallel mode, which runs the processes simultaneously. Clear to run it in serial mode, which runs each process in the chunk sequentially.
Column Alias	Select a column alias. Available values are derived from the source data object for the map you are currently chunking.
Operator	Select an operator to define the chunking condition
Field Value	Enter the field value that completes criteria for the chunk number.
And/Or Switch	Select *And* or *Or* to compound multiple sets of criteria.

Note. The chunks you define must be configured to capture all of the source data without duplicating rows.

Extracting, Transforming, and Loading Source Data

In this section, we discuss how to:

- Extract, transform, and load source data.

- View summaries of a data transformation process run control.

Understanding Extracting, Transforming, and Loading Source Data

The data transformation process can be run to extract, transform and load source data by a single map or by map groups. When a map or group is executed, it is compiled at runtime. No SQL or code, only metadata, is stored. This reduces the risk of encountering problems late in a multi-map process, guarantees that each parallel process is executing the same version, and insulates the current running job from any changes to the actual map definition.

The data transformation process is run using the Data Transformation Application Engine process (EOEW_ETL_EXE).

Pages Used to Extract, Transform, and Load Source Data

Page Name	Definition Name	Navigation	Usage
Run Data Transformations	EOEW_RUN_ETL	Enterprise Components, Data Transformation, Run Data Transformations, Run Data Transformations	Define run control criteria for and run the data transformation process.
Run Data Transformations - Run Summary	EOEW_RUN_ETL_SUM	Click the Run Summary link on the Run Data Transformations page.	View information about only the jobs related to a particular data transformation process run control.

Running the Data Transformation Process

Access the Run Data Transformations (EOEW_RUN_ETL) page (Enterprise Components, Data Transformation, Run Data Transformations, Run Data Transformations).

Run Data Transformations

		Report Manager Process Monitor
User ID:	VP1	
Run Control ID:	TEST_01	Run Summary **Run**

Run Data Transformer Parameter

*Data Transformer Object Type: Map

*Map Object: [   ] 🔍

*Target Load Option: Full Load

☐ Destructive Load   Deletes all rows from the target record.
☐ Parallel Processing   **Chunking Criteria**

Run Data Transformations page

Note. The data transformation process uses the Data Transformation Application Engine process (EOEW_ETL_EXE).

Data Transformer Object Type	Select a Data Transformer object type. You can run either a *Map* or *Map Group*.
	Note. PeopleSoft Catalog Management uses the run control ID *RUN_MAP* to load partner source data. When using this run control ID, the Data Transformer object type must be *Map*.
Map Object	Select a map object. The prompt for available field values is based on the Data Transformer object type.
Target Load Option	Select a target load option. *Full Load.* Extracts all data from the source as defined by the source data object and inserts into the target. *Incremental Update.* Copies all rows from the source table that have been updated or modified since the last load, based on the date/time the row was updated or modified. The Map Options page must have a date/timestamp field defined in order to use incremental load.
Destructive Load	Select to delete all rows from the target table before the new rows are inserted. ***Warning!*** Use this option with caution, as this will delete all rows in the target table.

Parallel Processing   Select to run the process in parallel mode, which runs the processes simultaneously. Clear to run it in serial mode, which runs each process in the chunk sequentially.

Note. This option is only available if the Object Type is *Map.*

Chunking Criteria   Click to access the Map Group Filter page to define chunking criteria for the associated map.

See Chapter 6, "Running the Data Transformation Process and Correcting Errors," Defining Chunking Criteria, page 57.

Note. This link is only available for Group Types of *Map.* If you want to chunk a group, you need to go to that group's definition to define the criteria.

Run   Click to run the data transformation process. A process request is submitted.

Click the Process Monitor link to monitor the status of the request.

Run Summary   Click to view information that is related to the status of the data transformation process.

See Also

Enterprise PeopleTools 8.50 PeopleBook: PeopleSoft Process Scheduler

Viewing the Run Summary

Access the Run Data Transformations - Run Summary (EOEW_RUN_ETL_SUM) page (Enterprise Components, Data Transformation, Run Data Transformations, Run Data Transformations. Click Run Summary.).

Run Data Transformations - Run Summary page

After running a data transformation process by clicking Run on the Run Data Transformations page, you can access the Run Summary page just as you would access Report Manager or Process Monitor.

Although the Process Monitor provides information regarding a process run, the Run Summary feature offers a more granular view of the individual subprocesses, such as chunks, that are not exposed in the Process Monitor. For example, a single map containing chunks or a group can spawn numerous jobs. If you use the Process Monitor to view these jobs, you find that the numerous jobs that are associated with a single map are mixed in with all of the other jobs that are currently running. Depending on the number of jobs that are running, this can make it difficult to view only those jobs that are associated with a particular Data Transformer process run control.

However, by using the Run Summary feature you can view all of the jobs that were spawned for the run control that is associated with a particular run on of the Data Transformer process. The Run Summary feature is especially useful when running parallel processes that are associated with multiple maps. By using the Run Summary feature, you can associate a process instance with each chunk as it runs.

The Run Summary feature enables you to see:

• Which subprocesses are involved within a particular data transformation process run control.

• When a particular subprocess (chunk or map) begins.

• When a particular subprocess (chunk or map) completes.

• Which subprocesses didn't complete successfully.

• Which process instance is associated with a particular chunk or map.

Main Information

Select the Main Information tab.

Process Instance   Displays the PeopleSoft Process Scheduler process instance that is assigned to the individual process. This value also appears on the Times and Chunking Criteria tabs for consistent identification.

Note. For parallel processes, you see different process instances; for serial processes, you see the same process instance.

Run Status   Reflects the same status that appears in the Process Monitor. If the run status displays an error, go to the Process Monitor to troubleshoot and restart the process.

Times

Select the Times tab.

Use these times to track the performance of the processes.

Chunking Criteria

Select the Chunking Criteria tab.

Chunking Where clause Displays information about the chunking criteria that is specified for a particular map, including:

- Relational operators ($=$, $<$, $>$, and so on).

- Boolean operators (AND and OR).

Note. This page also displays information that is relevant only to the internal aspects of the PeopleSoft mapping functionality.

The field names that are used for chunking are converted to an internal format; therefore, the format of the Chunking Where clause may not necessarily be a true reflection. That is, it may contain an extra "AND (", for example. However, determining the chunking criteria that is used can be very useful when you are troubleshooting.

Also, values that are similar to EOEW_FP_CHAR30_0 are used internally by the PeopleSoft system to store data in a temporary table while the data is being transformed and loaded.

Handling Data Transformation Process Errors

In this section, we discuss how to view and correct data transformation errors that arise from a run of the data transformation process.

Understanding Data Transformation Process Errors

After you run the data transformation process for a map with the *Correct data error & reprocess* option selected, use the Error Correction page to check for any errors that were logged during runtime. You can correct these errors online and rerun the data transformation process with the *Include Errors* option selected.

The Error Correction page sources its information from a PeopleSoft table specified on the Map Field Detail page. When the data transformation process runs and finds an error (such as a look-up or edit on an entry not found), it writes an entry into this error table.

The error table comprises:

•   Two key fields, PROCESS_INSTANCE and EOEW_ETL_SEQNUM.

•   Error message fields from the EOEW_ERRMSG_SBR subrecord
     (EOEW_ERR_MSG01..EOEW_ERR_MSG10).

•   All the fields being sourced from the Source Data Object.

Whenever an error is encountered for a look-up or edit transformation, the data transformation process stores the associated error message set number and message number in the error fields (EOEW_ERRMSG_XX) that are found in the error table so that the user can then troubleshoot the rows with errors.

By default, PeopleSoft allocates 10 error messages on the EOEW_ERRMSG_SBR subrecord (each error message field includes the message set number and message number), but users can delete or add more error message fields on the subrecord, as needed.

If more errors are encountered during the data transformation process run than are allocated on the error table, those errors that are encountered after the limit was reached are not written to the error table. Every error record must include one or more EOEW_ERRMSG_XX fields. The errors that are encountered during the data transformation process appear on the Error Correction page. The Error Correction page displays error messages that are associated with each specific row of data that is found to be in error by the data transformation process.

See Also

Enterprise PeopleTools 8.50 PeopleBook: PeopleCode Language Reference

Page Used to Handle Data Transformation Process Errors

Page Name	Definition Name	Navigation	Usage
Error Correction	EOEW_CORRECTION	Enterprise Components, Data Transformation, Correct Errors, Error Correction	View and correct data transformation process errors.

Viewing and Correcting Data Transformer Process Errors

Access the Error Correction (EOEW_CORRECTION) page (Enterprise Components, Data Transformation, Correct Errors, Error Correction).

Error Correction page

After you use this page to correct all errors, rerun the map.

Edit	Select for the row that you want to correct. The Field list appears at the top of the page with the associated error message for that row.
Delete	Select to remove the current row. This will physically delete the error row from the error table.
Delete All Rows	Select to remove all current rows. This will physically delete all error rows from the error table.
Field	Select the field you want to edit. Enter the new, corrected value for the field.
Update	Click to save the correction to the field.

Appendix A

Setting PeopleSoft Data Transformer Security

This appendix provides an overview of security and discusses how to implement security:

Understanding Security

This section discusses:

- User profiles, roles, and permission lists.

- Delivered roles and permission lists.

User Profiles, Roles, and Permission Lists

You assign roles to user profiles. Roles link user profiles to permission lists, which group authorizations.

Permission lists store sign-on times, page access, PeopleTools access, and so on. You can assign multiple roles to a user profile, and you can assign multiple permission lists to a role.

This diagram illustrates the interaction between user profile, roles, and permission lists:
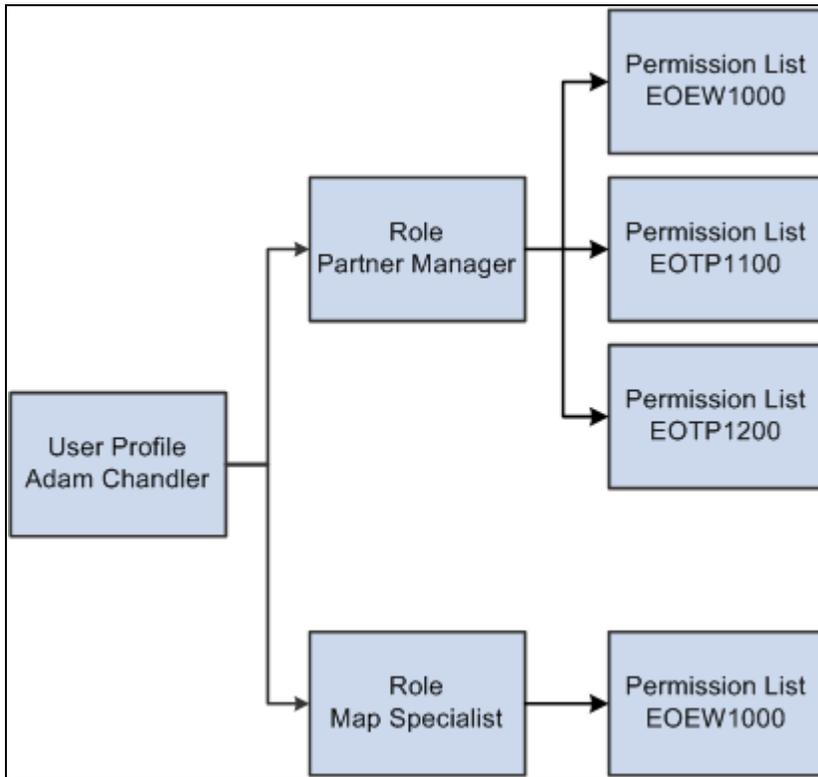
Security definition hierarchy

Delivered Roles and Permission Lists

Access to PeopleSoft Data Transformer is based on roles and permission lists that are attached to user IDs.

PeopleSoft delivers the following roles that are configured to perform PeopleSoft Data Transformer functions:

Role	Permission List Access	Responsibilities
Enterprise Administrator	EOEW9000	Has access to all warehouse objects and performs all tasks that are related to PeopleSoft Data Transformer, including creating and maintaining source data objects, default target values, translation set values, and map definitions, and running Data Transformer maps.
Map Specialist	EOEW1000	Performs all tasks that are related to PeopleSoft Data Transformer, but typically does not set up complex source data objects or transformations.

Permission lists are delivered to support all PeopleSoft Data Transformer features. This table lists the components that are attached to each of the delivered permission lists.

Note. Both permission lists have access to all PeopleSoft Data Transformer-related components.

Permission List	Component	Component Name
EOEW1000 EOEW9000	EOEW_TOOLS_HOMEPG	Warehouse Tools Home Page.
	EOEW_OPTIONS	ETL Installation Options.
	EOEW_OBJ_OWNER	Subject Area.
	EOEW_SRCDO	Source Data Object.
	EOEW_SET_DFLT	Set Default Values.
	EOEW_CODE_SET	Translation Set Values.
	EOEW_LU_DFN_INFO	Look up Definition Info.
	EOEW_TRN_DFN_WIZ	Transformation Definition.
	EOEW_RULE_DFN	Map Rule Definition.
	EOEW_MAP_DFN	Map Definition.
	EOEW_GRP_DFN	Map Group.
	EOEW_CORRECTION	Error Correction.
	EOEW_RUN_ETL	Run Data Transformer.

Although both permission lists have access to all PeopleSoft Data Transformer-related components, the following pages are not accessible for permission list EOEW1000:

Component	Page
EOEW_OPTIONS	ETL Installation Options - Display Only.
EOEW_OBJ_OWNER	Subject Area Owner - Display Only.
EOEW_RULE_DFN	Map Rule Definition - No Access.
EOEW_MAP_DFN	Map Options - No Access.
EOEW_MAP_DFN	Publish Map Option - No Access.

Implementing Security

This section provides an overview of security tasks and discusses how to:

- Associate the EOEW1000 permission list with a role.

- Assign the Map Specialist role to a user profile.

See Also

"Setting Up Permission Lists," "Setting Up Roles," and "Administering User Profiles" in *Enterprise PeopleTools 8.50 PeopleBook: Security Administration*

Understanding Security Tasks

To allow map specialists to perform data transformer activities you must:

- Associate the permission list EOEW1000 with *all* roles that are assigned to be map specialists.

  Note. PeopleSoft delivers the Map Specialist role for this purpose.

- Assign the Map Specialist role to the necessary user profiles.

Associating the EOEW1000 Permission List with a Role

To associate the EOEW1000 permission list with a role:

1. Select PeopleTools, Security, Permissions & Roles, Roles.

2. Enter a role.

3. Access the Permission List page.

4. Add the EOEW1000 permission list to the list of permission lists that are currently attached to the role.

5. Click Save.

Assigning the Map Specialist Role to a User Profile

To assign the Map Specialist role to a user profile:

1. Select PeopleTools, Security, User Profiles, User Profiles.

2. Enter a user profile.

3. Access the Roles page.

4. Add the Map Specialist role to the list of roles that are currently attached to the user profile.

5. Click Save.

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