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# PeopleSoft 9.2: Data Transformer

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PeopleSoft 9.2: Data Transformer  
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# Preface

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## Understanding the PeopleSoft Online Help and PeopleBooks

The PeopleSoft Online Help is a website that enables you to view all help content for PeopleSoft applications and PeopleTools. The help provides standard navigation and full-text searching, as well as context-sensitive online help for PeopleSoft users.

### Hosted PeopleSoft Online Help

You can access the hosted PeopleSoft Online Help on the [Oracle Help Center](#). The hosted PeopleSoft Online Help is updated on a regular schedule, ensuring that you have access to the most current documentation. This reduces the need to view separate documentation posts for application maintenance on My Oracle Support. The hosted PeopleSoft Online Help is available in English only.

To configure the context-sensitive help for your PeopleSoft applications to use the Oracle Help Center, see [Configuring Context-Sensitive Help Using the Hosted Online Help Website](#).

### Locally Installed Help

If you're setting up an on-premise PeopleSoft environment, and your organization has firewall restrictions that prevent you from using the hosted PeopleSoft Online Help, you can install the online help locally. See [Configuring Context-Sensitive Help Using a Locally Installed Online Help Website](#).

### Downloadable PeopleBook PDF Files

You can access downloadable PDF versions of the help content in the traditional PeopleBook format on the [Oracle Help Center](#). The content in the PeopleBook PDFs is the same as the content in the PeopleSoft Online Help, but it has a different structure and it does not include the interactive navigation features that are available in the online help.

### Common Help Documentation

Common help documentation contains information that applies to multiple applications. The two main types of common help are:

- Application Fundamentals
- Using PeopleSoft Applications

Most product families provide a set of application fundamentals help topics that discuss essential information about the setup and design of your system. This information applies to many or all applications in the PeopleSoft product family. Whether you are implementing a single application, some combination of applications within the product family, or the entire product family, you should be familiar with the contents of the appropriate application fundamentals help. They provide the starting points for fundamental implementation tasks.

In addition, the *PeopleTools: Applications User's Guide* introduces you to the various elements of the PeopleSoft Pure Internet Architecture. It also explains how to use the navigational hierarchy, components, and pages to perform basic functions as you navigate through the system. While your application or implementation may differ, the topics in this user's guide provide general information about using PeopleSoft applications.

## Field and Control Definitions

PeopleSoft documentation includes definitions for most fields and controls that appear on application pages. These definitions describe how to use a field or control, where populated values come from, the effects of selecting certain values, and so on. If a field or control is not defined, then it either requires no additional explanation or is documented in a common elements section earlier in the documentation. For example, the Date field rarely requires additional explanation and may not be defined in the documentation for some pages.

## Typographical Conventions

The following table describes the typographical conventions that are used in the online help.

<b>Typographical Convention</b>	<b>Description</b>
Key+Key	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For Alt+W, hold down the Alt key while you press the W key.
... (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.
{ } (curly braces)	Indicate a choice between two options in PeopleCode syntax. Options are separated by a pipe ( ).
[ ] (square brackets)	Indicate optional items in PeopleCode syntax.
& (ampersand)	When placed before a parameter in PeopleCode syntax, an ampersand indicates that the parameter is an already instantiated object.  Ampersands also precede all PeopleCode variables.
=>	This continuation character has been inserted at the end of a line of code that has been wrapped at the page margin. The code should be viewed or entered as a single, continuous line of code without the continuation character.

## ISO Country and Currency Codes

PeopleSoft Online Help topics use International Organization for Standardization (ISO) country and currency codes to identify country-specific information and monetary amounts.

ISO country codes may appear as country identifiers, and ISO currency codes may appear as currency identifiers in your PeopleSoft documentation. Reference to an ISO country code in your documentation



does not imply that your application includes every ISO country code. The following example is a country-specific heading: "(FRA) Hiring an Employee."

The PeopleSoft Currency Code table (CURRENCY\_CD\_TBL) contains sample currency code data. The Currency Code table is based on ISO Standard 4217, "Codes for the representation of currencies," and also relies on ISO country codes in the Country table (COUNTRY\_TBL). The navigation to the pages where you maintain currency code and country information depends on which PeopleSoft applications you are using. To access the pages for maintaining the Currency Code and Country tables, consult the online help for your applications for more information.

## Region and Industry Identifiers

Information that applies only to a specific region or industry is preceded by a standard identifier in parentheses. This identifier typically appears at the beginning of a section heading, but it may also appear at the beginning of a note or other text.

Example of a region-specific heading: "(Latin America) Setting Up Depreciation"

### Region Identifiers

Regions are identified by the region name. The following region identifiers may appear in the PeopleSoft Online Help:

- Asia Pacific
- Europe
- Latin America
- North America

### Industry Identifiers

Industries are identified by the industry name or by an abbreviation for that industry. The following industry identifiers may appear in the PeopleSoft Online Help:

- USF (U.S. Federal)
- E&G (Education and Government)

## Translations and Embedded Help

PeopleSoft 9.2 software applications include translated embedded help. With the 9.2 release, PeopleSoft aligns with the other Oracle applications by focusing our translation efforts on embedded help. We are not planning to translate our traditional online help and PeopleBooks documentation. Instead we offer very direct translated help at crucial spots within our application through our embedded help widgets. Additionally, we have a one-to-one mapping of application and help translations, meaning that the software and embedded help translation footprint is identical—something we were never able to accomplish in the past.

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## Using and Managing the PeopleSoft Online Help

Select About This Help in the left navigation panel on any page in the PeopleSoft Online Help to see information on the following topics:

- Using the PeopleSoft Online Help
- Managing Hosted online help
- Managing locally installed PeopleSoft Online Help

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## PeopleSoft Enterprise Components Related Links

[PeopleSoft Information Portal](#)

[My Oracle Support](#)

[PeopleSoft Training from Oracle University](#)

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## Contact Us

Send your suggestions to [psft-infodev\\_us@oracle.com](mailto:psft-infodev_us@oracle.com). Please include the applications update image or PeopleTools release that you're using.

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## Chapter 1

# Getting Started with PeopleSoft Data Transformer

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## 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:

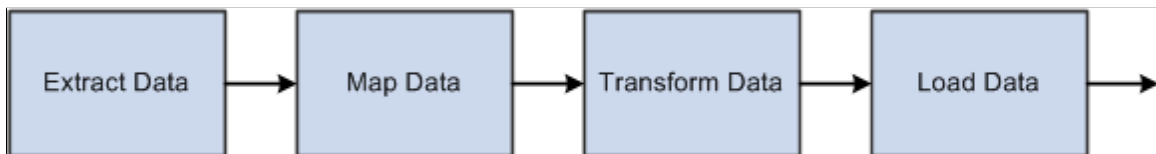
- Setting up default target fields.
- Defining transformation and filtering rules to convert data.
- Creating map rules.
- Creating map definitions.

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## PeopleSoft Data Transformer Business Processes

**Image: PeopleSoft Data Transformer business process flow**

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



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## 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:

<b>Step</b>	<b>Reference</b>
Define remote database connections.	See <a href="#">Defining Remote Database Connections</a> .
Define installation options.	See <a href="#">Defining Installation Options</a> .
Define subject areas.	See <a href="#">Defining Subject Areas</a> .

## Creating Source Data Objects

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

<b>Step</b>	<b>Reference</b>
Create basic source data objects.	See <a href="#">Creating Basic Source Data Objects</a> .
(Optional) Create expressions.	See <a href="#">(Optional) Creating Expressions</a> .
(Optional) Create filters.	See <a href="#">(Optional) Creating Filters</a> .
(Optional) Join records.	See <a href="#">(Optional) Joining Records</a> .

## Chapter 2

# Setting Up Core PeopleSoft Data Transformer Features

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## Defining Remote Database Connections

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

### Page Used to Define Remote Database Connections

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<u>Remote Database Access Management Page</u>	REMOTEDB	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.

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

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## High-Level Steps for Setting Up Data Transformation

Here is a recommended procedure for setting up data transformation in an environment (be sure to replace the sample information used in this procedure with your environment and database information):

1. Install JDBC driver for the test database.

For SQL Server, download the appropriate JDBC driver version from the Microsoft Download Center. After the installation, three jar files are created under the JDBC driver library directory, for example, *C:\Program Files\Microsoft SQL Server 2000 Driver for JDBC\lib*. To make these files accessible to

the application server, either copy them to `<ps_home>\class`, or add them to the CLASSPATH line in the psappsrv.cfg file (application server configuration file), for example:

```
CLASSPATH=C:\Program Files\Microsoft SQL Server 2000 Driver for JDBC\lib\msbase.jar;C:\Program Files\Microsoft SQL Server 2000 Driver for JDBC\lib\mssqlserver.jar;C:\Program Files\Microsoft SQL Server 2000 Driver for JDBC\lib\msutil.jar
```

2. Set up a local database connection (for example, H881C338).

In PIA, navigate to Enterprise Components > Data Transformation > Setup Remote Database Connection > Remote Database Access Management. Add a local database connection with sample information as follows:

Name: *H881C338*

Local Connect: Selected

Description: *H881C338*

Server: *ECHAN2091903*

User ID: *sa*

Password: *Peoples0*

Save the page and click the Test Connection button to verify that the connection information entered is correct. The *Good Connection* message appears if the information is correct.

3. Set up a remote database connection (for example, HC881TM1)

Navigate to Enterprise Components > Data Transformation > Setup Remote Database Connection > Remote Database Access Management. Add a remote database connection with sample information as follows:

Name: *HC881TM1*

Description: *HC881TM1*

Server: *ADDB0106*

User ID: *satst*

Password: *satst*

Save the page and click the Test Connection button to verify that the connection information entered is correct.

4. Set up data transformation installation options.

Navigate to Enterprise Components > Data Transformation > Data Transformation Installation Options. On the Data Transformation Installation Options page, enter the following sample information:

Maximum Rows to Preview: *10*

Tablespace Name: *EOECLRG*

Message Set Number: *18024*

Save the page.

5. Define subject area.

Navigate to Enterprise Components > Data Transformation > Setup Subject Areas. Add a subject area by entering the following sample information:

Subject Area: *NACNV*

Description/More Information: Enter some text

Default Subject Area: Selected

Create Temporary Table: Selected

Save the change.

6. Define source data object.

Navigate to Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object. Add a new source data object by entering the following sample information:

Source Data Object: *DEPARTMENT*

Subject Area: *NACNV*

Description: *Department*

Data Source Type: *Remote*

Data Source Name: *HC88ITMI*

Source Record (left field): *PS\_DEPT\_TBL*

Source Record (right field): *Department Table*

Navigate to the Fields page and click the Synchronize fields button. Select these fields:

*SETID, DEPTID, EFFDT, EFF\_STATUS, DESCR, DESCRSHORT, and COMPANY*

Save the page.

7. Set default values for target fields.

Navigate to Enterprise Components > Data Transformation > Set Target Field Defaults. Add two target fields using the following sample information:

Target Field: *SETID*

Source Input Value: *SNSZZ*

Target Field: *DEPTID*

Source Input Value: *ABCDE*

Save the change.

8. Define map information.

Navigate to Enterprise Components > Data Transformation > Define Maps. Add a map object using the following sample information:

Map Object: *DEPT*

Subject Area: *NACNV*

Description: *Department ETL*

Source: *DEPARTMENT*

Target: *DEPT\_TBL*

Navigate to the Map Field Detail page and click the Apply AutoMapper button. Next, click the Source Input Type column heading twice to bring the rows with non-blank source input type to the top of the list. Change the source input type for the SETID and DEPTID target fields to *Default*. Change the source input type for the EFFDT target field to *Source* and select *EFFDT* as the source prompt because the Auto Field Mapper sets this to blank by default. Now there should be seven fields with non-blank source input types. Navigate to the Preview Map Results page and click the Preview button. Note that 10 rows of DEPT\_TBL in HC881TM are displayed with SETID and DEPTID showing the default values set up in step 7.

9. Test the data transformation setup.

When testing the Data Transformer ETL, note that:

— The 3 jar files in step 1 will need to be added to psprcs.cfg (process scheduler configuration file) if they were not copied into *<ps\_home>\class*

— A successful run depends on what data exists in the source table and the target table, otherwise the job may end with a duplicate error.

To verify that the ETL can correctly access the remote table data, delete all the rows in my local PS\_DEPT\_TBL, set the seven fields in the map to use *Source* as source input type and run the ETL. To do so, navigate to Enterprise Components > Data Transformation > Run Data Transformations > Run Data Transformations. Add a run control using the following sample information:

Data Transformer Object Type: *Map*

Map Object: *DEPT*

Target Load Option: *Full Load*

Destructive Load: *Clear*

Parallel Processing: *Selected*

Click the Run button. Two processes are executed: *EOEW\_ETL\_EXE* and *EOEW\_ETL\_RUN*.

Note that as the two processes run to *Success*, in Query Analyzer, the PS\_DEPT\_TBL rowcount matches that in the source table.



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**Note:** If the data transformation process is not loading data into target tables, the problem may originate from the CLASSPATH, which was defined in your system. Also, this behavior can be caused by the process scheduler if it doesn't have the right access to the JDBC drivers.

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## Oracle Database Considerations

If you are using an Oracle database, you need to update the content of both psappsrv.cfg and psprcs.cfg to reflect your Oracle connectivity settings. Basically you should determine the Oracle home directory and specify it in both psappsrv.cfg and psprcs.cfg by adding the following two lines under the *;JavaVM Shared Library=* section:

```
; RDBA Oracle JDBC driver
```

```
Add to CLASSPATH=
```

```
Add to CLASSPATH=
```

PREPARE TO CONFIGURE ORACLE -

Before you can use remote data access with Oracle, the appropriate database connectivity software must be installed on the system where the application server or batch server is running. The minimum database connectivity that needs to be installed is the Oracle Client Net9i 9.2.0.2.0 Connectivity Package.

To connect to a remote Oracle database, you must manually edit the application server configuration file, psappsrv.cfg, as described below. If the batch server is being used, you must manually edit the batch server configuration file, psprps.cfg, as well.

From the Remote Database Connection page (PeopleTools > Utilities > Administration > Remote Database Connection), you can specify an Oracle datasource as *specific* or with TNSNAMES. *Specific* doesn't require a TNSNAMES entry, and will use the Oracle "thin" JDBC driver. If TNSNAMES is configured for the remote database, you can use the TNSNAMES style entry.

CONFIGURING ORACLE 9i OR ORACLE 10g ON UNIX -

Determine the Oracle home directory and specify it in the configuration files by adding the following two lines under the *;JavaVM Shared Library=* section:

```
; RDBA Oracle JDBC driver
```

```
Add to CLASSPATH=%ORACLE_HOME%\jdbc\lib\ojdbc14.jar
```

```
Add to CLASSPATH=%ORACLE_HOME%\jdbc\lib\orai18n.jar
```

CONFIGURING ORACLE 9i OR ORACLE 10g on WINDOWS -

Determine the Oracle home directory and specify it in the configuration file. For example, if Oracle the home directory is *C:\Apps\DB\Oracle901*, add the following lines under the *;JavaVM Shared Library=* section:

```
; RDBA Oracle JDBC driver
```

```
Add to CLASSPATH=C:\Apps\DB\Oracle901\jdbc\lib\ojdbc14.jar
```

```
Add to CLASSPATH=C:\Apps\DB\Oracle901\jdbc\lib\orai18n.jar
```

## Remote Database Access Management Page

Use the Remote Database Access Management page (REMOTEDB) to define remote database connections.

### Navigation

Enterprise Components > Data Transformation > Setup Remote Database Connection > Remote Database Access Management

### Image: Remote Database Access Management page

This example illustrates the fields and controls on the Remote Database Access Management page. You can find definitions for the fields and controls later on this 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.
Informix	Enter a description, server, user ID, password, and Inf Svr (Informix Server) name.

<b>Database Type</b>	<b>Required Information</b>
Oracle	<p>For Oracle and a Connection Type of <i>TNSNames</i>, enter a description, TNS Entry, user ID and password.</p> <hr/> <p><b>Note:</b> TNS Names is a preconfigured file (<i>tnsnames.ora</i>) with previously defined database connection information. Select a connection type of <i>Specific</i> 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.</p> <hr/>

<b>Name</b>	Displays the remote DB name entered on the Search page for your database.
<b>DB Type</b>	<p>Displays the database type of your PeopleSoft database.</p> <hr/> <p><b>Note:</b> Since your remote database must be of the same type, this field is defaulted to your current local database type.</p> <hr/>
<b>Local Connect</b>	<p>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).</p> <hr/> <p><b>Important!</b> 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.</p> <hr/>
<b>Server</b>	<p>Enter the name of the server where the database resides.</p> <hr/> <p><b>Note:</b> This field is platform specific.</p> <hr/>
<b>DB Server Port</b>	<p>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.</p>
<b>User ID and Password</b>	<p>Enter the user ID and password that are required to access the database.</p> <p>The password is not displayed.</p> <hr/> <p><b>Note:</b> This field is platform specific.</p> <hr/>
<b>Test Connect</b>	<p>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.</p>

## Defining Installation Options

This section discusses how to define installation options.

### Page Used to Define Installation Options

Page Name	Definition Name	Usage
Data Transformation Installation Options Page	EOEW_OPTIONS	Define installation options.

### Data Transformation Installation Options Page

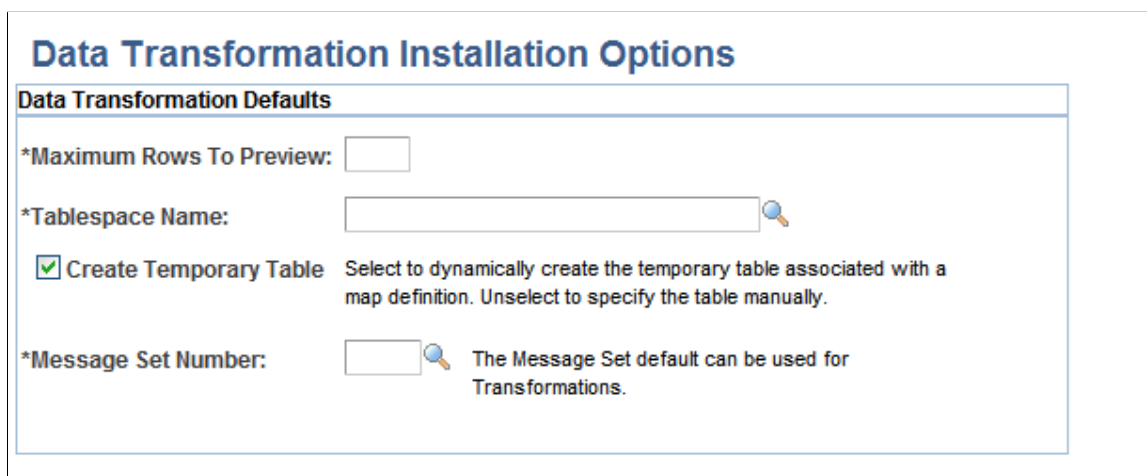
Use the Data Transformation Installation Options page (EOEW\_OPTIONS) to define installation options.

#### Navigation

Enterprise Components > Data Transformation > Data Transformation Installation Options

#### Image: Data Transformation Installation Options page

This example illustrates the fields and controls on the Data Transformation Installation Options page. You can find definitions for the fields and controls later on this 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.

**Related Links**

[Preview Map Results Page](#)

[Map Options Page](#)

[Transformation Wizard - Edit Page](#)

---

## Defining Subject Areas

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

**Page Used to Define Subject Areas**

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<a href="#">Subject Areas Page</a>	EOEW_OBJ_OWNER	Define subject areas to group translation sets, transformations, map rules, and map definitions.

## 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.

### Related Links

[Understanding the Mapping Process](#)

## Subject Areas Page

Use the Subject Areas page (EOEW\_OBJ\_OWNER) to define subject areas to group translation sets, transformations, map rules, and map definitions.

### Navigation

Enterprise Components > Data Transformation > Setup Subject Areas

### Image: Subject Areas page

This example illustrates the fields and controls on the Subject Areas page. You can find definitions for the fields and controls later on this page.

### Subject Areas

Subject Area is used as a grouping mechanism on translation sets, transformations, map rules and map definitions.

**Subject Area:** TEST

**\*Description:**   **Default Subject Area**

**\*More Information:**

**Tablespace Name:**

**Create Temporary Table**

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

**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

---

## 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

<b>Data Source</b>	One or more record definitions joined by common fields.
<b>Source Data Object</b>	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 create basic source data objects.

---

**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

<b>Page Name</b>	<b>Definition Name</b>	<b>Usage</b>
<a href="#">Source Data Object Page</a>	EOEW_SRCDO	Create source data object definitions.
<a href="#">Fields Page</a>	EOEW_SRCFIELD	Specify the fields to include in the source data object.
<a href="#">Preview Page</a>	EOEW_SRCPREVIEW	Review the results and check the validity of the source data object.

<b>Page Name</b>	<b>Definition Name</b>	<b>Usage</b>
<a href="#">View Query Page</a>	EOEW_SRCQUERY	Generate and view the SQL based on the source data object definition.

## Source Data Object Page

Use the Source Data Object page (EOEW\_SRCDO) to create source data object definitions.

### Navigation

Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object

### Image: Source Data Object page

This example illustrates the fields and controls on the Source Data Object page. You can find definitions for the fields and controls later on this 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.

### Related Links

[Defining Subject Areas](#)

## Fields Page

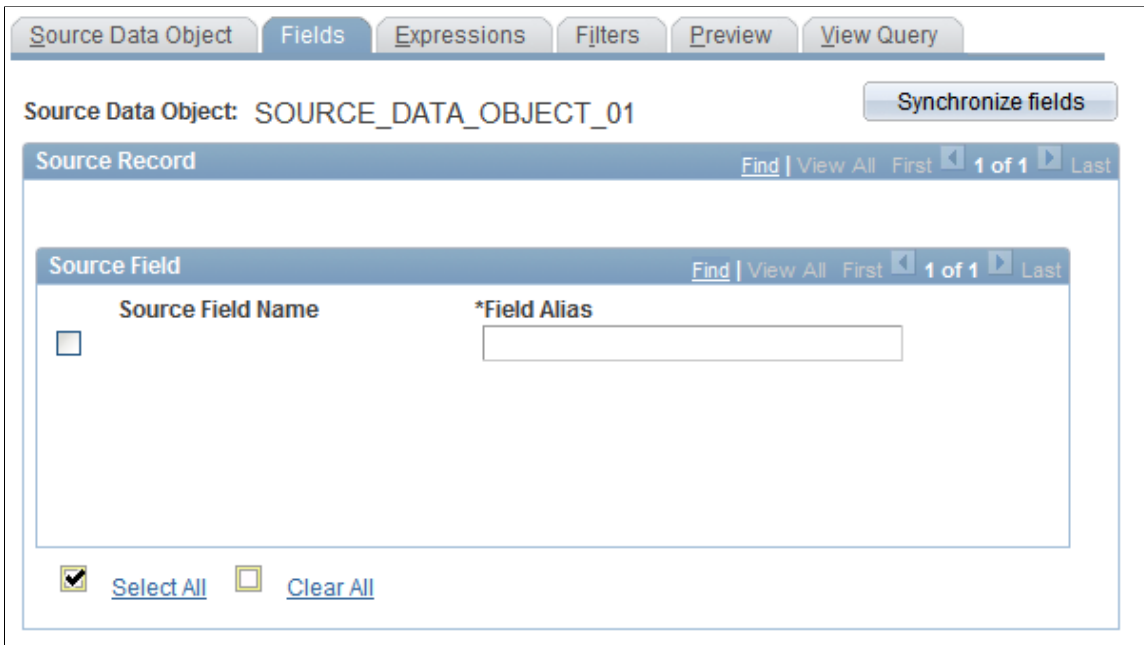
Use the Fields page (EOEW\_SRCFIELD) to specify the fields to include in the source data object.

### Navigation

Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object > Fields

**Image: Fields page**

This example illustrates the fields and controls on the Fields page. You can find definitions for the fields and controls later on this 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.

**Related Links**

[Creating Map Definitions](#)

## Preview Page

Use the Preview page (EOEW\_SRCPREVIEW) to review the results and check the validity of the source data object.

### Navigation

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.

---

### Related Links

[Defining Installation Options](#)

## View Query Page

Use the View Query page (EOEW\_SRCQUERY) to generate and view the SQL based on the source data object definition.

### Navigation

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 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.

## Page Used to Create Expressions

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<u>Expressions Page</u>	EOEW_SRCFIELDEXPR	Create expression statements by selecting operators, fields, and constant values.

## 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:

<i>Function</i>	<i>Explanation</i>	<i>Use</i>
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.
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.

<b>Function</b>	<b>Explanation</b>	<b>Use</b>
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.
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.

<b>Function</b>	<b>Explanation</b>	<b>Use</b>
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. <hr/> <b>Note:</b> 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. <hr/>
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.

## Expressions Page

Use the Expressions page (EOEW\_SRCFIELDEXPR) to create expression statements by selecting operators, fields, and constant values.

### Navigation

Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object > Expressions



## Image: Expressions page

This example illustrates the fields and controls on the Expressions page. You can find definitions for the fields and controls later on this 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.

### Page Used to Create Filters

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<a href="#">Filters Page</a>	EOEW_SRCFILTER	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:

<i>Operator</i>	<i>Description</i>
Like	<p>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 (_).</p> <p>The % matches any string of zero or more characters. For example, C% matches any string starting with C, including C alone.</p> <p>The _ matches any single character. For example, _ones matches any 5-character string ending with ones, such as Jones or bones.</p> <hr/> <p><b>Note:</b> 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\%.</p>

<b>Operator</b>	<b>Description</b>
=	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.

## Filters Page

Use the Filters page (EOEW\_SRCFILTER) to create filters.

### Navigation

Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object > Filters

### Image: Filters page

This example illustrates the fields and controls on the Filters page. You can find definitions for the fields and controls later on this 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.

### Page Used to Join Records

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
Join Conditions Page	EOEW_SRCJOIN	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.

### Join Conditions Page

Use the Join Conditions page (EOEW\_SRCJOIN) to define join conditions.

#### Navigation

Enterprise Components > Data Transformation > Define Source Data Objects > Source Data Object > Join Conditions

---

**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

---

## 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:

<b>Source Field</b>	<b>Target Field</b>	<b>Required Considerations</b>	<b>User Warning</b>
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
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.



## Related Links

[Map Field Detail Page](#)

# 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	Usage
<a href="#">Set Target Field Defaults Page</a>	EOEW_SET_DFLT_RUL	Set target field default values that are used in the map field detail definition.

## Set Target Field Defaults Page

Use the Set Target Field Defaults page (EOEW\_SET\_DFLT\_RUL) to set target field default values that are used in the map field detail definition.

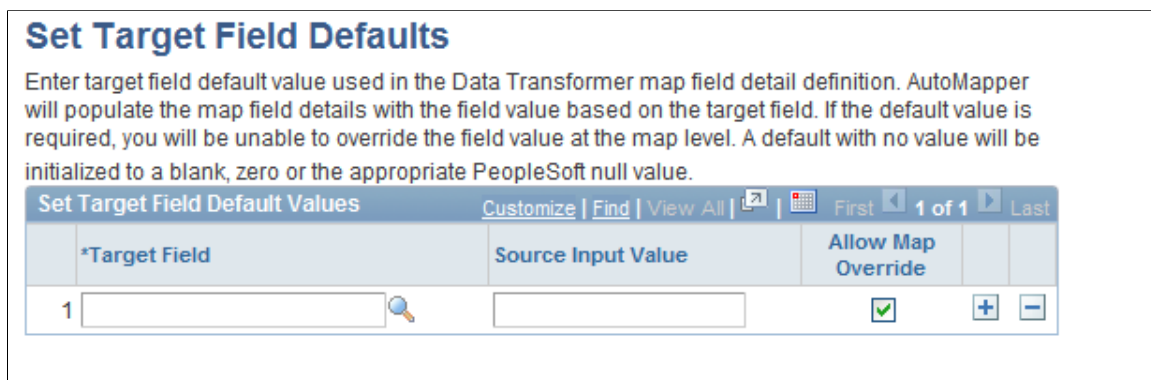
### Navigation

- 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.

### Image: Set Target Field Defaults page

This example illustrates the fields and controls on the Set Target Field Defaults page. You can find definitions for the fields and controls later on this 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

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<a href="#">Translation Sets Page</a>	EOEW_CODE_TBL	Enter translation set values for map definition details.

### Translation Sets Page

Use the Translation Sets page (EOEW\_CODE\_TBL) to enter translation set values for map definition details.

#### Navigation

- 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.

## Image: Translation Sets page

This example illustrates the fields and controls on the Translation Sets page. You can find definitions for the fields and controls later on this 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 have spaces inserted into the target field and then loaded in the target table.
- *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.

### Related Links

[Defining Subject Areas](#)

---

## Creating Transformations by Using the Transformation Wizard

This section provides an overview of the Transformation Wizard and lists common elements.

## Pages Used to Navigate Transformation Wizard

<b>Page Name</b>	<b>Definition Name</b>	<b>Usage</b>
<u>Transformation Wizard - Transformation Definition Page</u>	EOEW_TRN_DFN_INFO	Enter transformation definition information.
<u>Transformation Wizard - Look Up Page</u>	EOEW_TRN_DFN_LU	Enter a join condition to establish a relationship between this transformation and the look up definition.
<u>Transformation Wizard - Edit Page</u>	EOEW_TRN_DFN_EDIT	Select the message definition to use for edit processing.
<u>Transformation Wizard - Comments Page</u>	EOEW_TRN_DFN_COM	Enter addition information about this transformation.
<u>Transformation Wizard - Source Condition Page</u>	EOEW_TRN_DFN_SRC	Define the source input values for this transformation condition.
<u>Transformation Wizard - Look Up Condition Page</u>	EOEW_TRN_DFN_LUC	Enter look up transformation definition properties.

## 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:

	<b>Look Up</b>	<b>Edit</b>	<b>PeopleCode</b>
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.

## Transformation Wizard - Transformation Definition Page

Use the Transformation Wizard - Transformation Definition page (EOEW\_TRN\_DFN\_INFO) to enter transformation definition information.

### Navigation

Enterprise Components > Data Transformation > Define Transformation Definition

### Image: Transformation Wizard - Transformation Definition page

This example illustrates the fields and controls on the Transformation Wizard - Transformation Definition page. You can find definitions for the fields and controls later on this 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.

### Related Links

[Defining Subject Areas](#)

## Transformation Wizard - Look Up Page

Use the Transformation Wizard - Look Up page (EOEW\_TRN\_DFN\_LU) to enter a join condition to establish a relationship between this transformation and the look up definition.

### Navigation

- 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.

## Image: Transformation Wizard - Look Up page

This example illustrates the fields and controls on the Transformation Wizard - Look Up page. You can find definitions for the fields and controls later on this 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.

## Transformation Wizard - Edit Page

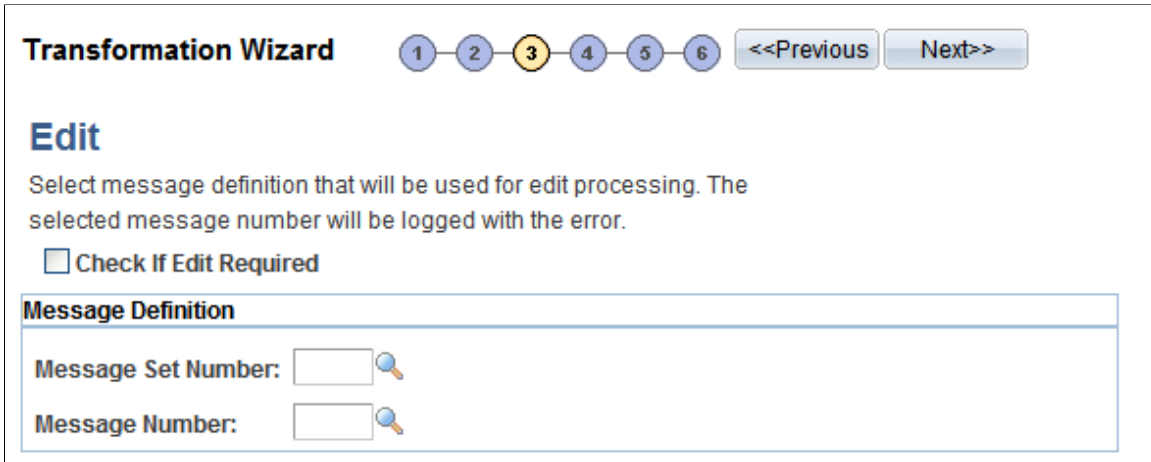
Use the Transformation Wizard - Edit page (EOEW\_TRN\_DFN\_EDIT) to select the message definition to use for edit processing.

### Navigation

- Click the Next button on the Transformation Wizard - Look Up page.
- Click the Transformation Wizard - Edit page number on the Transformation Wizard navigation tool.

### Image: Transformation Wizard - Edit page

This example illustrates the fields and controls on the Transformation Wizard - Edit page. You can find definitions for the fields and controls later on this 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.

### Transformation Wizard - Comments Page

Use the Transformation Wizard - Comments page (EOEW\_TRN\_DFN\_COM) to enter addition information about this transformation.

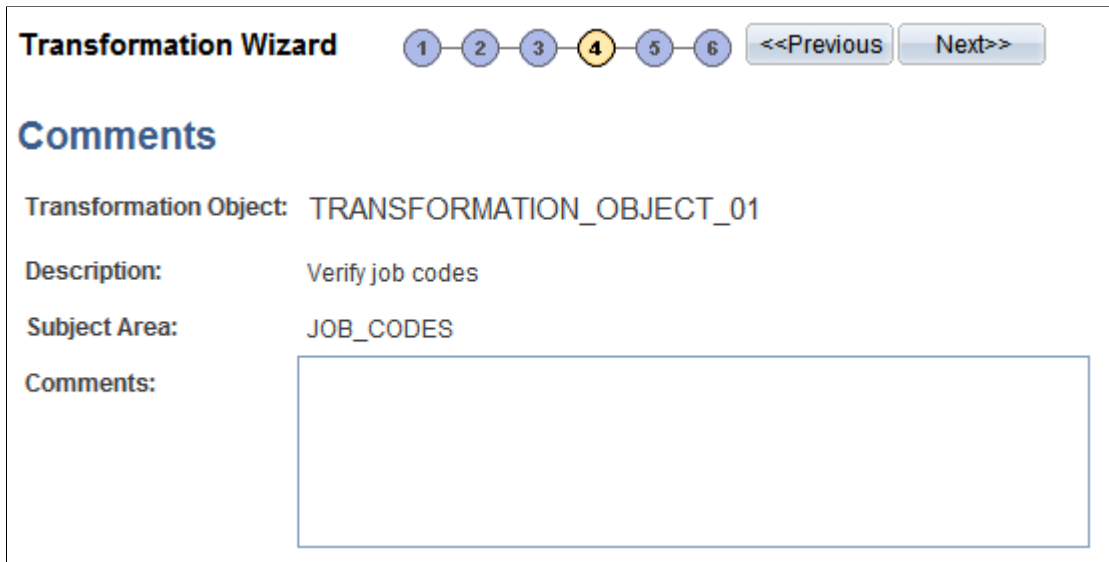
#### Navigation

- Click the Next button on the Transformation Wizard - Edit page.
- Click the Transformation Wizard - Comments page number on the Transformation Wizard navigation tool.



### Image: Transformation Wizard - Comments page

This example illustrates the fields and controls on the Transformation Wizard - Comments page. You can find definitions for the fields and controls later on this page.



**Transformation Wizard** 1 2 3 4 5 6 <<Previous Next>>

## Comments

Transformation Object: TRANSFORMATION\_OBJECT\_01

Description: Verify job codes

Subject Area: JOB\_CODES

Comments:

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

## Transformation Wizard - Source Condition Page

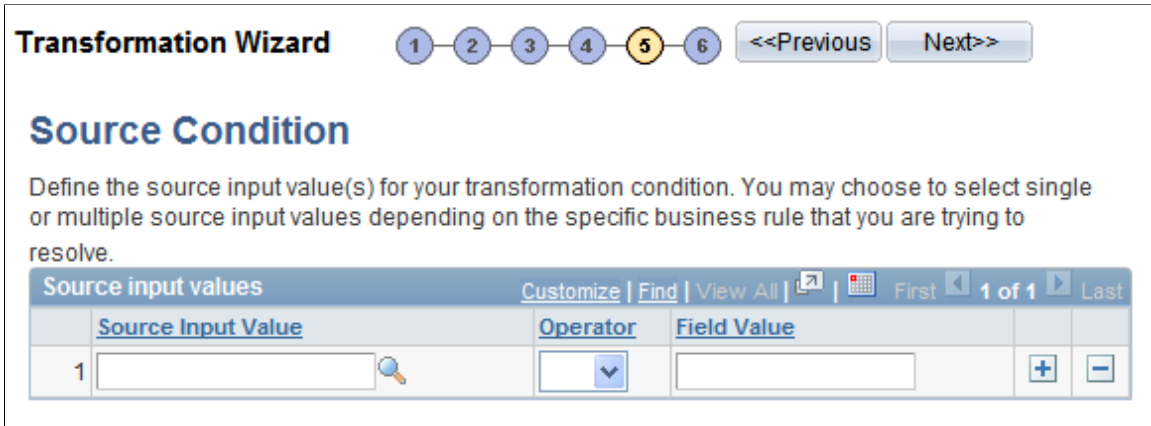
Use the Transformation Wizard - Source Condition page (EOEW\_TRN\_DFN\_SRC) to define the source input values for this transformation condition.

### Navigation

- Click the Next button on the Transformation Wizard - Comments page.
- Click the Transformation Wizard - Source Condition page number on the Transformation Wizard navigation tool.

**Image: Transformation Wizard - Source Condition page**

This example illustrates the fields and controls on the Transformation Wizard - Source Condition page. You can find definitions for the fields and controls later on this 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.

**Transformation Wizard - Look Up Condition Page**

Use the Transformation Wizard - Look Up Condition page (EOEW\_TRN\_DFN\_LUC) to enter look up transformation definition properties..

**Navigation**

- 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.

## Image: Transformation Wizard - Look Up Condition page

This example illustrates the fields and controls on the Transformation Wizard - Look Up Condition page. You can find definitions for the fields and controls later on this page.

**Transformation Wizard** 1 2 3 4 5 6 <<Previous Next>>

### Look Up Condition

Enter look up transformation definition properties. The definition captures information regarding which output table and field name will be used to return a data value.

**Look Up Object:** TRANSFORMATION\_OBJECT\_01      **Subject Area:** JOB\_CODES

**Description:** Verify job codes

**Output Properties**

**Record:** Select record name to be used to return a value.

**Field Name:** Select field name that will be used to return a data value.

**Default:**  Enter a default value that will be used to populate the target field if the look up fails or returns a null value.

**Return Look Up Record/Field Conditions** Customize Find View All First 1 of 1 Last

Look Up Field Name	Operator	Field Value		
<input type="text"/>	<input type="text"/>	<input type="text"/>	+	-

**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.

### Page Used to Create Map Rules

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<a href="#">Map Rule Definitions Page</a>	EOEW_RULE_DFN	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.

### Map Rule Definitions Page

Use the Map Rule Definitions page (EOEW\_RULE\_DFN) to define map rules.

#### Navigation

Enterprise Components > Data Transformation > Define Map Rules > Map Rule Definitions

**Image: Map Rule Definitions page**

This example illustrates the fields and controls on the Map Rule Definitions page. You can find definitions for the fields and controls later on this page.

**Map Rule Definitions**

Create rules to assign a default for source field, translation set or transformation to your target field to be used by AutoMapper in the map field detail definition.

**Map Rule**

Map Rule: MAP\_RULE\_01      Subject Area:

Active       Allow Map Override

\*Target Field:

\*Source Input Type: Source

Source Field Alias:

- 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

---

## Creating Map Definitions

This section discusses how to create map definitions.

### Pages Used to Create Map Definitions

<b>Page Name</b>	<b>Definition Name</b>	<b>Usage</b>
<a href="#">Map Information Page</a>	EOEW_MAP_DFN	Enter general mapping information.
<a href="#">Map Field Detail Page</a>	EOEW_MAP_FLD	Enter field-level mapping details.
<a href="#">Map Edits Page</a>	EOEW_MAP_EDIT	Edit map source input values that are used in transformations.
<a href="#">Preview Map Results Page</a>	EOEW_TARPREVIEW	View a subset of your data based on the defined map.
<a href="#">Map Options Page</a>	EOEW_MAP_OPT	Override or select options at the map level.
<a href="#">Map Definition - Comments Page</a>	EOEW_MAP_COMMENT	Enter comments that are related to the map definition.

### Map Information Page

Use the Map Information page (EOEW\_MAP\_DFN) to enter general mapping information.

#### Navigation

Enterprise Components > Data Transformation > Define Maps > Map Information

### Image: Map Information page

This example illustrates the fields and controls on the Map Information page. You can find definitions for the fields and controls later on this page.

The screenshot shows the 'Map Information' page with the following elements:

- Navigation tabs: Map Information (selected), Map Field Detail, Map Edits, Preview Map Results, Map Options.
- Map Object: MAP\_OBJECT\_01
- \*Subject Area: [Text Field]
- \*Description: [Text Field]
- Data Object section:
  - \*Source: [Text Field]
  - Buttons: [Add Source Data Object](#), [Update Source Data Object](#)
  - \*Target: [Text Field]
- Error Handling section:
  - No Error Handling Needed
  - Identify Error Row
  - Correct data error & reprocess

**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.

---

## Related Links

[Defining Subject Areas](#)

[Understanding Extracting, Transforming, and Loading Source Data](#)

## Map Field Detail Page

Use the Map Field Detail page (EOEW\_MAP\_FLD) to enter field-level mapping details.

### Navigation

Enterprise Components > Data Transformation > Define Maps > Map Information > Map Field Detail

### Image: Map Field Detail page

This example illustrates the fields and controls on the Map Field Detail page. You can find definitions for the fields and controls later on this page.

The screenshot shows the 'Map Field Detail' page with the following elements:

- Navigation tabs: [Map Information](#), [Map Field Detail](#) (active), [Map Edits](#), [Preview Map Results](#), [Map Options](#), [Comments](#)
- Map Object: MAP\_OBJECT\_01
- Save Map As button
- Data Object section:
  - Source: (input field)
  - Target: (input field)
- Error Handling section:
  - No Error Handling Needed (input field)

### 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 Details** Click to expand the grid to include field format and length information for both source and target fields. Click again to avoid the horizontal scroll.

## Related Links

[Understanding the Mapping Process](#)

## Map Edits Page

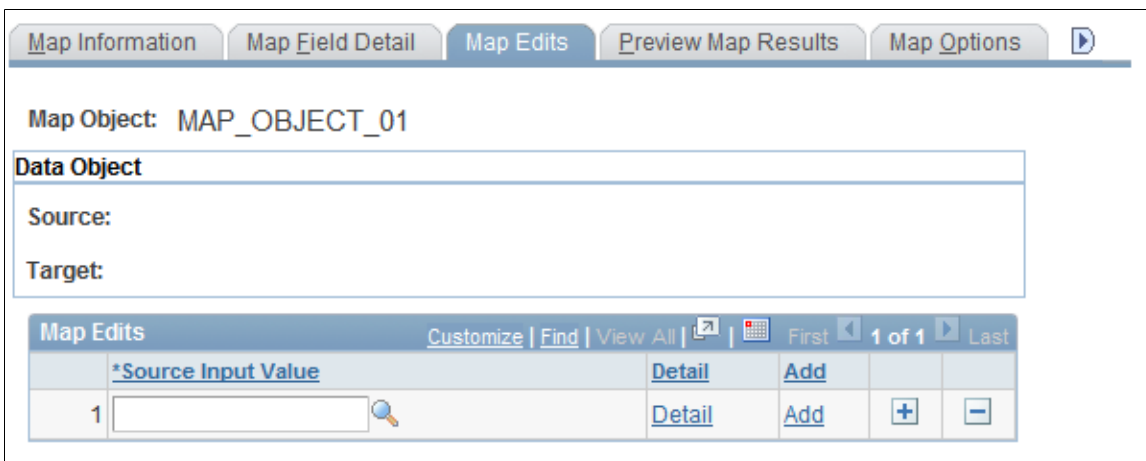
Use the Map Edits page (EOEW\_MAP\_EDIT) to edit map source input values that are used in transformations.

### Navigation

Enterprise Components > Data Transformation > Define Maps > Map Information > Map Edits

### Image: Map Edits page

This example illustrates the fields and controls on the Map Edits page. You can find definitions for the fields and controls later on this 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.

### Related Links

[Creating Transformations by Using the Transformation Wizard](#)

## Preview Map Results Page

Use the Preview Map Results page (EOEW\_TARPREVIEW) to view a subset of your data based on the defined map.

### Navigation

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.

---

## Related Links

[Data Transformation Installation Options Page](#)

## Map Options Page

Use the Map Options page (EOEW\_MAP\_OPT) to override or select options at the map level.

### Navigation

Enterprise Components > Data Transformation > Define Maps > Map Information > Map Options

### Image: Map Options page

This example illustrates the fields and controls on the Map Options page. You can find definitions for the fields and controls later on this page.

Map Object: MAP\_OBJECT\_01

Map Process Options

\*Duplicate Row Handling: Copy duplicate rows to target

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

Temporary Record (Table):

Override Tablespace Name From Subject Area Default.

Select Date/Time Field Name To Be Used For Incremental Load Processing.

---

**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 use 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.

**Related Links**

- [Defining Installation Options](#)
- [Defining Subject Areas](#)

**Map Definition - Comments Page**

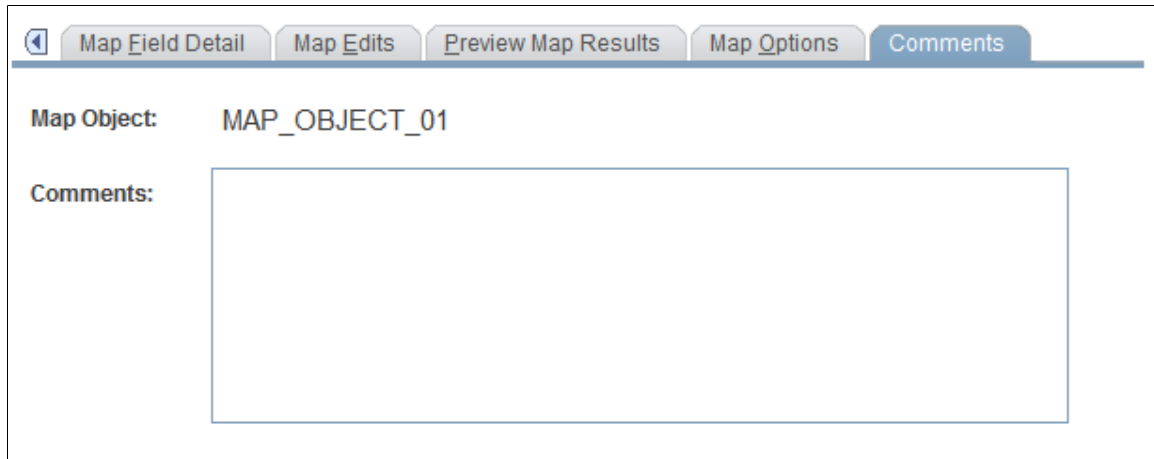
Use the Map Definition - Comments page (EOEW\_MAP\_COMMENT) to enter comments that are related to the map definition.

## Navigation

Enterprise Components > Data Transformation > Define Maps > Map Information > Comments

### Image: Map Definition - Comments page

This example illustrates the fields and controls on the Map Definition - Comments page. You can find definitions for the fields and controls later on this page.



The screenshot shows a web interface for defining a map. At the top, there is a navigation bar with five tabs: "Map Field Detail", "Map Edits", "Preview Map Results", "Map Options", and "Comments". The "Comments" tab is currently selected and highlighted. Below the navigation bar, the "Map Object" field is labeled "MAP\_OBJECT\_01". Below that, the "Comments" field is a large, empty text area for entering details about the map definition.

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





## Chapter 6

# Running the Data Transformation Process and Correcting Errors

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## Defining Map Groups and Map Group Chunking Criteria

This section discusses how to define map groups and 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

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<u>Map Groups Page</u>	EOEW_GRP_DFN	Create map groups.
<u>Map Group Filter Page</u>	EOEW_GRP_FLTR	Define chunking criteria for maps.

### Map Groups Page

Use the Map Groups page (EOEW\_GRP\_DFN) to create map groups.

#### Navigation

Enterprise Components > Data Transformation > Define Map Groups > Map Groups

**Image: Map Groups page**

This example illustrates the fields and controls on the Map Groups page. You can find definitions for the fields and controls later on this 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 [Map Group Filter Page](#).

---

**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.

---

**Related Links**

[Defining Subject Areas](#)

**Map Group Filter Page**

Use the Map Group Filter page (EOEW\_GRP\_FLTR) to define chunking criteria for maps.

## Navigation

Click the Chunking link on the Map Groups page.

### Image: Map Group Filter page

This example illustrates the fields and controls on the Map Group Filter page. You can find definitions for the fields and controls later on this page.

The screenshot shows the 'Map Group Filter' interface. At the top, there is a 'Map Object:' label and a checkbox for 'Parallel Processing'. Below this is a 'Chunking Criteria' table with a toolbar containing 'Customize', 'Find', 'View All', and navigation buttons for 'First', '1 of 1', and 'Last'. The table has five columns: 'Chunk Number', 'Column Alias', 'Operator', 'Field Value', and 'And/Or Switch'. The first row shows '1' in the 'Chunk Number' column, an empty 'Column Alias' field with a search icon, a dropdown 'Operator' menu, an empty 'Field Value' field, and an 'And/Or Switch' dropdown menu with '+' and '-' buttons.

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

This section provides an overview of source data extraction, transformation and loading.

## Pages Used to Extract, Transform, and Load Source Data

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<a href="#">Run Data Transformations Page</a>	EOEW_RUN_ETL	Define run control criteria for and run the data transformation process.
<a href="#">Run Data Transformations - Run Summary Page</a>	EOEW_RUN_ETL_SUM	View information about only the jobs related to a particular 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).

## Run Data Transformations Page

Use the Run Data Transformations page (EOEW\_RUN\_ETL) to define run control criteria for and run the data transformation process.

### Navigation

Enterprise Components > Data Transformation > Run Data Transformations > Run Data Transformations

**Image: Run Data Transformations page**

This example illustrates the fields and controls on the Run Data Transformations page. You can find definitions for the fields and controls later on this page.

## Run Data Transformations

User ID: VP1 [Report Manager](#) [Process Monitor](#)

Run Control ID: TEST\_01 [Run Summary](#)

### Run Data Transformer Parameter

\*Data Transformer Object Type:  ▼

\*Map Object:

\*Target Load Option:  ▼

Destructive Load Deletes all rows from the target record.

Parallel Processing [Chunking Criteria](#)

---

**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 [Map Group Filter Page](#).

---

**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.

For more information, refer the product documentation for *PeopleTools: Process Scheduler*.

## Run Data Transformations - Run Summary Page

Use the Run Data Transformations - Run Summary page (EOEW\_RUN\_ETL\_SUM) to view information about only the jobs related to a particular data transformation process run control.

**Navigation**

Click the Run Summary link on the Run Data Transformations page.

### Image: Run Data Transformations - Run Summary page

This example illustrates the fields and controls on the Run Data Transformations - Run Summary page. You can find definitions for the fields and controls later on this page.

**Run Summary**

**Run Data Transformations**

User ID: VP1 Refresh

Run Control ID: TEST\_01

**Run Data Transformer Parameter**

Data Transformer Object Type: Map

Map Object:

**Processes** Customize | Find | [Icons] | First 1 of 1 Last

Main Information | Times | Chunking Criteria

Process Instance	Map Group	Map Object	Run Status

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

This section provides an overview of data transformation process errors and discusses how to view and correct data transformer process errors.

### Page Used to Handle Data Transformation Process Errors

<i>Page Name</i>	<i>Definition Name</i>	<i>Usage</i>
<u>Error Correction Page</u>	EOEW_CORRECTION	View and correct data transformation process errors.

### 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.

For more information, refer the product documentation for *PeopleTools: PeopleCode Language Reference*.

## Error Correction Page

Use the Error Correction page (EOEW\_CORRECTION) to view and correct data transformation process errors.

### Navigation

Enterprise Components > Data Transformation > Correct Errors > Error Correction

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

<b>Edit</b>	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.
<b>Delete</b>	Select to remove the current row. This will physically delete the error row from the error table.
<b>Delete All Rows</b>	Select to remove all current rows. This will physically delete all error rows from the error table.
<b>Field</b>	Select the field you want to edit. Enter the new, corrected value for the field.
<b>Update</b>	Click to save the correction to the field.

# Setting PeopleSoft Data Transformer Security

---

## Understanding Security

This section discusses:

- User profiles, roles, and permission lists.
- Delivered roles and permission lists.

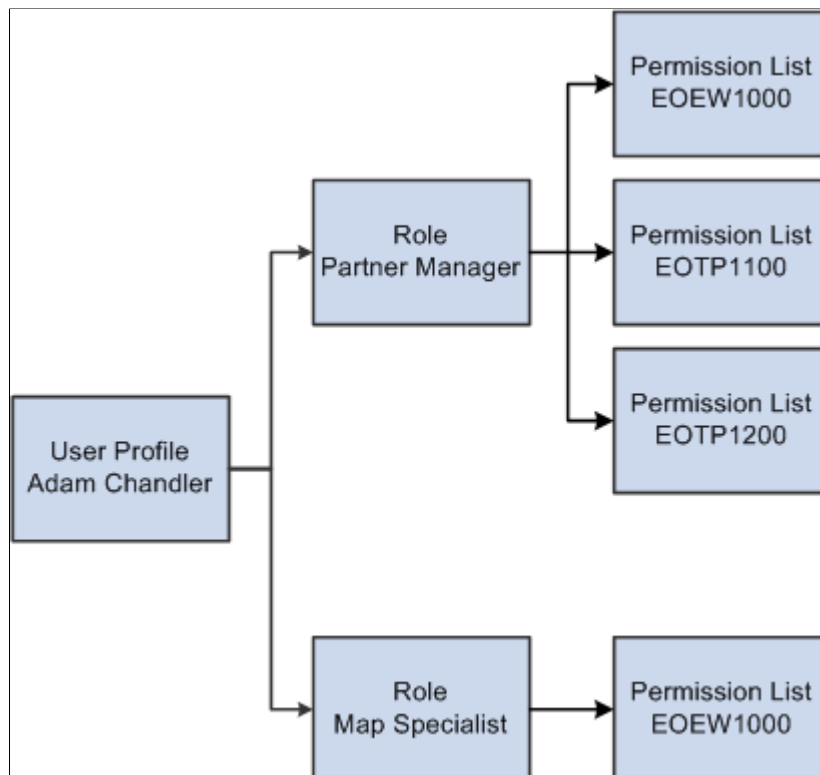
### User Profiles, Roles, and Permission Lists

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.

**Image: Security definition hierarchy**

This diagram illustrates the interaction between user profile, roles, and permission lists.



## 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:

<b>Role</b>	<b>Permission List Access</b>	<b>Responsibilities</b>
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.

<b>Permission List</b>	<b>Component</b>	<b>Component Name</b>
EOEW1000	EOEW_TOOLS_HOMEPEG	Warehouse Tools Home Page.
EOEW9000	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:

<b>Component</b>	<b>Page</b>
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.

For more information refer the product documentation for *PeopleTools: 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.