

# eFLOW Extract

## Quick Start Implementation Guide

Version 6.0

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# Introduction

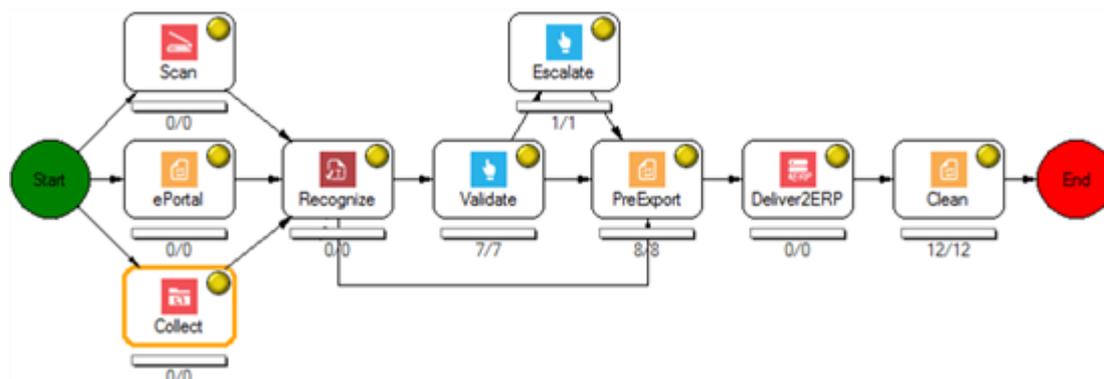
eFLOW Extract is an autonomous eFLOW application for automated processing and checking of incoming invoices.

In the standard version, eFLOW Extract is pre-configured in such a way that it can generally be deployed at once and integrated into existing systems in a short space of time. eFLOW Extract can also be adapted to your own particular requirements. The open programming interfaces to eFLOW and eFLOW Extract enable you to independently extend the free-form rules, to compile new validation functions and make other adaptations to the workflow.

This guide provides a basic overview of the eFLOW Extract application and explains how to perform the most common configuration tasks required for implementing an eFLOW Extract project. It is not intended as a comprehensive guide to eFLOW Extract.

## Application overview

The diagram below shows the standard eFLOW Extract application flow and stations.



### Input stations

By default, eFLOW Extract provides the following input stations to capture invoice documents.

Station	Purpose
Scan	Imports invoices from scanned paper documents.
ePortal	Imports invoices from emails. Email attachments are converted from the original format.
Collect	Imports invoices from the local file system.

## Recognize station

The Recognize station identifies and records data from the imported invoices. It also applies recognition rules to find the most likely candidates for field values, and performs validations to check and complete recognized data. Validation and completion can draw on a reference database containing master data and transaction data extracted from ERP systems.

Invoices that are fully recognized and validated move directly to the PreExport station. Invoices that could not be fully recognized or that did not pass the validation checks move to the Validate station for manual processing.

## Validate station

The Validate station is a manual station in which typists can correct and complete the fields. Users can access the station via a thick client installed on a PC or via a thin client in a web browser. eFLOW Extract provides lookup tables in which typists can search for the relevant field values. The thick client also provides a learning feature, which enables typists to manually teach the system how to find the correct field values. If typists are unable to correct or complete a field or an entire invoice, they can mark it as an exception, which can be handled by a more qualified user in the Escalate station.

## Escalate station

The Escalate station is a manual station in which users can process collections that have been marked with exceptions in the Validate station. It provides similar functionality to the Validate station.

## PreExport station

The PreExport station prepares the data for transfer to connected ERP systems. It performs activities such as data normalization (for example, converting formats). It is also responsible for dynamic learning and the preparation of statistics.

## Deliver2ERP station

The Deliver2ERP station exports data to connected ERP systems. It also provides an interface for importing master data and transaction data from the ERP systems into the eFLOW Extract reference database.

## Clean station

The Clean station holds invoices that have already been exported to the ERP systems. The Clean station can also be used to save a backup of the invoices before they are finally deleted from eFLOW Extract. The Clean station can be configured to finally delete invoices that are older than a specified number of days.

## Basic concepts

This section explains some basic terms and concepts that you should be familiar with when implementing eFLOW Extract.

### Invoice types/Document types

Every invoice has an invoice type. eFLOW Extract differentiates the following types of invoices:

- **MM:** Invoices with reference to a purchase order.

An invoice is identified as an MM invoice if a purchase order number is recognized on the image. Invoice line items can be matched to the purchase order line items. The term MM is derived from SAP and stands for Materials Management.

- **FI:** Invoices without reference to a purchase order.

Typically, these are invoices for services rather than goods. Only header information is captured, no line items. The term FI is derived from SAP and stands for Financial Accounting.

- **FIP:** Invoices without reference to a purchase order, but with line items.

Typically, FIP invoices are issued when there is a need to assign accounting information to individual items. They are usually enabled for specific suppliers only. The term FIP is derived from FI + Positions.

Every invoice also has a document type, which is usually an **Invoice** or a **Credit note**, but could also be another type, such as a **Down Payment**. The document type is identified and assigned during recognition based on predefined keywords.

### Key fields

Field values can be located in one of the following locations:

- **Header fields:** Fields that apply to the invoice as a whole, such as the supplier, invoice date, invoice number, document type, total amount, tax amount, tax rate, or currency.
- **Line item fields:** Fields that apply to individual items of the invoice, such as the item description, quantity or unit price.

The table below lists the main fields used in eFLOW Extract. You can add additional fields. See [Custom fields](#) for more information.

Header fields	Line items (MM)	Line items (FIP)
Company code	Purchase order number	Quantity
Receiver name	Position	Unit of measure
Supplier ID	Quantity	Unit price

<b>Header fields</b>	<b>Line items (MM)</b>	<b>Line items (FIP)</b>
Supplier name	Unit of measure	Description
Supplier street	Unit price	Identifier
Supplier postal code	Article number	Discount
Supplier city	Description	Total amount
Supplier VAT ID	Discount	Cost center
Supplier tax number	Total amount	GL account
Supplier bank sort code	VAT amount	
Supplier bank account number	Delivery note number	
Supplier IBAN		
Document type		
Invoice date		
Invoice number		
Purchase order number		
Delivery note number		
Net amount		
Discount (Before Tax)		
Discount (After Tax)		
VAT rate		
VAT amount		
Total amount		

Header fields	Line items (MM)	Line items (FIP)
Currency		
Additional Cost1 (before tax)		
Additional Cost2 (before tax)		

## Recognition rules and validations

For each field, rules are defined to enable the eFLOW Extract recognition workflow to identify the field on invoices and find likely candidates for the field value, including:

- Language
- Keywords, such as Invoice Date or Invoice Number
- Topographical rules, such the position on the invoice and relative positions between fields
- Logical rules, such as the calculation of totals
- Masks and regular expressions
- Field groups and tables
- Checks against reference data, such as vendor master data or purchase order data
- Validations

Validations are also applied after recognition and in the Validate station to check and complete field values.

eFLOW Extract provides a user interface, [Design Extract](#), for defining recognition rules and validations.

## Conditions

Conditions enable you to apply different configuration settings for different requirements, such as different clients or company codes. In previous versions of eFLOW Extract, this was achieved by specifying a <Case> or <Client> value in the relevant configuration parameters. The <Case> value or <Client> value defined the conditions under which a specific configuration setting should be used.

In eFLOW Extract 6.0, conditions are no longer limited to clients and company codes; you can now define conditions based on other values as well. eFLOW Extract provides a user interface, [Design Extract](#), for defining configuration settings and conditions. Design Extract provides a more flexible approach to defining configuration settings and conditions, enabling greater granularity and reuse, eliminating redundancy, reducing the need for additional coding, and facilitating the management of multiple environments. See [Use conditions](#) for information on applying conditions to configuration settings.

The terms *client* and *company code* are derived from SAP; *case* is an eFLOW Extract term.

In the context of SAP, a client is a separate business entity maintaining its own master data.

A company code is the smallest organizational entity for which a complete, self-contained accounting system can be replicated (for example, a branch within a company). Company codes refer to receivers of invoices, and are usually recognized based on the receiver address given on the invoice. A company code may also be referred to using the SAP term BUKRS.

An eFLOW Extract case can be a client, a company code, or a combination of both.

## Country packages

A country package is a set of configuration settings that applies for a specific country (that is, the vendor company, not the receiver company), such as languages, layouts, keywords, regular expressions, recognition rules, and validations. Installing country packages is part of the [installation procedure](#).

Currently country packages are available for the following countries:

- Australia
- Austria
- Belgium
- China (mainly for fapiao invoices)
- Czech Republic
- France
- Germany
- Italy
- Japan
- Poland
- Portugal
- Spain
- United Kingdom
- United States of America

## Reference data

eFLOW Extract can use supplier master data (such as address, bank and tax data) and transaction data (such as purchase order or delivery note details) from external systems to recognize, validate and complete invoice data. This reference data is also available to users in lookup dialogs in manual validation stations. Reference data is not required for recognition, but using it can improve recognition results and the quality of the data. See [Reference data](#) for more information.

## Learning

eFLOW Extract provides a dynamic learning feature that enables the system to automatically recognize field values based on previously processed invoices. When a field is recognized on an invoice, details of the field value and position are written to a history table. When another invoice is processed, the system checks whether a field candidate has a matching entry in the history table. Dynamic learning enables high levels of recognition even without reference data, although it can also be used in conjunction with reference data.

Users can also apply manual learning in the Validate station to "teach" the system how to find the correct field values. Manual learning can be applied if dynamic learning does not succeed in recognizing a field value.

# Installation

This step-by-step guide provides detailed instructions for installing eFLOW Extract.

eFLOW Extract provides a batch file for automated installation, which must be run on the machine on which eFLOW is installed. You should only use the batch file if you have a single eFLOW server on which all components will be installed. In complex environments with multiple servers, you should perform the installation manually.

## System requirements

- eFLOW 6.0 must be installed. eFLOW Extract 6 does not run on eFLOW versions prior to 6.0. See the *eFLOW Implementation Guide* for information on installing eFLOW.
- The Abbyy license must be activated. To check whether the license is activated, in the folder *C:\Program Files (x86)\TIS\eflow 6\OCRs\Abbyy\Bin*, double-click the *LicenseManager.exe* file. If there are no licenses, in the *C:\Program Files (x86)\TIS\eflow 6\OCRs\Abbyy\Bin* folder, copy the *.LocalLicense* file and paste it into the *C:\Program Data\ABBYY\SDK\11\Licenses* folder. Then double-click the *LicenseManager.exe* file again and check that the license is active.
- Deliver2ERP must be included in the eFLOW installation. By default, Deliver2ERP is not selected for installation when installing eFLOW, so you may need to run the eFLOW installation wizard again and install Deliver2ERP retrospectively.
- If you plan to use the email import feature of eFLOW Extract, the ePortal station must also be installed. See the *ePortal Implementation Guide* for information on installing ePortal.
- The SQL Server Agent Windows service is required to run an eFLOW Extract SQL job that deletes old dynamic data. If your SQL version does not support SQL Server Agent, or if it is not permitted due to IT constraints, contact the eFLOW Extract Product Manager.

## Installation package

The installation package is provided as a ZIP file named *Extract\_Install*. The file name includes the product version, build and date.

## Automated server installation

Most installation tasks are performed by the *ExtractInstallerServer.bat* file, but you must also perform a few steps manually. During the automated installation, you will be prompted to confirm or provide information, such as the SQL server connection string. All components are installed on the eFLOW server.

### Tasks performed by the batch file

The batch file performs the following tasks:

1. Copies the *Extract-Data* folder to the root of drive C.

eFLOW Extract uses the folder *C:\Extract-Data\* by default for the import of reference data from ERP systems.

2. Copies all files from the *Bin* folder to the *C:\Program Files (x86)\TIS\eFlow 6\Bin* folder.
3. Installs the web services.

The following web services are deployed as applications in IIS.

Web service	Description
ExtractConnectionConfigProvider	Required for establishing connections to the SQL databases.
ExtractConditionsProvider	Required by the <a href="#">Design Extract</a> configuration interface.
IRConfigurationProvider	Required to connect the Web Validate station to the eFLOW Extract configuration.
IRDataServicesProvider	Required by Web Validate to provide access to lookups and perform database validations against reference data.
WorkflowStatusTrackingService	Required to pass the status of eFLOW Extract invoices to eFLOW Control, the TIS automated invoice processing add-on for SAP. See <a href="#">Pass the eFLOW Extract status to eFLOW Control</a> for more information.

4. Installs the databases.

The following SQL databases are created automatically. By default, the [Prefix] is **Extract** (for example, **Extract\_Conditions**), but you can change this value during the installation.

If you use SQL authentication, only the SQL user needs permissions for the databases.

If you use Windows authentication, you must ensure that Scan and Validate station users have the appropriate permissions for the databases (R - read-only, or RW - read-write), where these are required.

Database	Scan	Validate	Purpose
[Prefix]_Conditions [Prefix]_Conditions_ Modules	None	R	Contain data related to the parameters defined in the <a href="#">Design Extract</a> configuration interface.
[Prefix]_DynamicData [Prefix]_DynamicLearning [Prefix]_DynamicLearning Analyzer	None	None	Contain data related to dynamic <a href="#">learning</a> .
[Prefix]_FieldLearning	None	RW	Contains data related to manual <a href="#">learning</a> .
[Prefix]_RefDB	None	RW	Contains reference data used in validation and completion. See <a href="#">Reference data</a> .
[Prefix]_SapCache	None	None	Temporary database for reference data. See <a href="#">Reference data</a> .
[Prefix]_Stats	RW	None	Contains statistical data for reporting.
[Prefix]_Workflow			Contains eFLOW related data. See the eFLOW documentation for information on required permissions.

5. Installs the application cab file. By default, the application name is **Extract**, but you can change this value during the installation.

6. Installs [country packages](#).

A confirmation message is issued when the installation has been successfully completed.

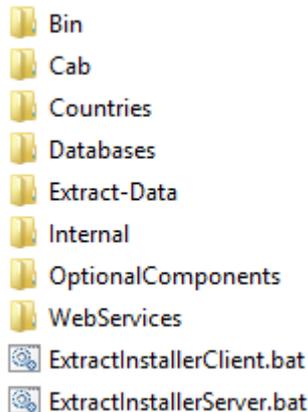
**Note:** Error messages may be displayed during installation, but as long as the installation continues, these messages can be ignored.

## Installation procedure

This procedure should be performed with the user account that was used to install eFLOW.

**Important:** If the *C:\Program Files (x86)\TIS\eFlow 6\Bin* folder already exists on the eFLOW server, make sure that the folder and all its files are not set to read-only before beginning the installation.

1. Copy the file *Extract\_Install.zip* to the server on which eFLOW is installed and unzip it.



2. Run the *ExtractInstallerServer.bat* file from the command prompt:
  - a. In the *Extract\_Install* folder, select **File > Open command prompt > Open command prompt as administrator**.
  - b. Type *ExtractInstallerServer.bat*.

During the installation, you will be prompted to provide the following information:

- The prefix to use for creation of the SQL databases.
- Your SQL server connection string. This is required to create the databases.
- Whether you want to use Windows or SQL authentication to connect to the SQL server. If you choose SQL, you must also provide the logon credentials.
- The name of the application.
- Which country packages you want to install. We recommend installing all country packages and activating only the packages that you need when you create your configuration profile in Design Extract. See [Create a configuration profile](#) for more information.

**Note:** The Japanese country package has some additional requirements. See the *Japanese Country Package Implementation Guide* for more information.

3. In the setup folder of the application (for example, *C:\ProgramData\TIS\eFLOW 6\AppData\Server\[ApplicationName]Setup*), in the file *ExtractSettingsGlobal.appconfig*, specify the [default case](#). If you change configuration settings in Design Extract, you also need to edit the *ProfileContextName* and *Deactivation ProfileContextName* properties. See [Create a configuration profile](#) for more information.

4. Make sure that the SQL Server Agent Windows service is running. This is required to run an eFLOW Extract SQL job that deletes old dynamic data.

## Automated client installation

The client installation on the eFLOW server is performed automatically as part of the automated server installation. The following procedure is therefore only required for client workstations on which eFLOW Extract stations will run.

**Important:** This procedure must be performed with the user account that was used to install eFLOW. If the `C:\Program Files (x86)\TIS\eflow 6\Bin` folder already exists on the eFLOW server, make sure that the folder and all its files are not set to read-only before beginning the installation.

For each client workstation:

1. Copy the file `Extract_Install.zip` to the client and unzip it.
2. Run the `ExtractInstallerClient.bat` file.

This batch file copies all files from the `Bin` folder to the `C:\Program Files (x86)\TIS\eflow 6\Bin` folder.

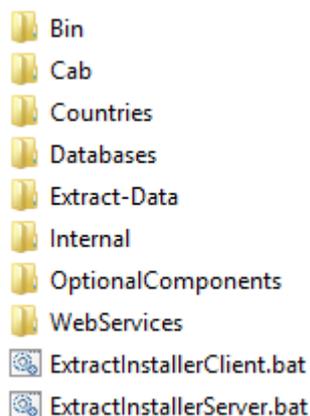
If you use Windows authentication, you must ensure that Scan and Validate station users have the appropriate permissions for the databases. See [Tasks performed by the batch file](#).

## Manual server installation

To manually install eFLOW Extract on the eFLOW server, complete the following steps. This procedure should be performed with the user account that was used to install eFLOW.

**Important:** If the `C:\Program Files (x86)\TIS\eflow 6\Bin` folder already exists on the eFLOW server, make sure that the folder and all its files are not set to read-only before beginning the installation.

1. Copy the file `Extract_Install.zip` to the server and unzip it.



2. Use the eFLOW Administrate module to install the *ExtractDemo.cab* file located in the *Cab* folder:
  - a. In eFLOW Administrate, select **File > New Application**.
  - b. Enter a name for the application and in the **Application archive** field, browse to and select the cab file.
3. Copy all files from the *Bin* folder to the *C:\Program Files (x86)\TIS\eFlow 6\Bin* folder.
4. Copy the *Extract-Data* folder to the root of drive C.

eFLOW Extract uses the folder *C:\Extract-Data\* by default for the import of reference data from ERP systems. If you copy this folder to a different location, you must change the path accordingly in the transformation package. See [Transformation Package Designer](#).

5. Install the web services:
  - a. If you are not installing the web services on the eFLOW server, copy the *WebServices* folder to the web server.
  - b. In the *WebServices* folder, double-click the *00\_InstallWebServices.bat* file.

The following web services are deployed as applications in IIS.

<b>Web service</b>	<b>Description</b>
ExtractConnectionConfigProvider	Required for establishing connections to the SQL databases.
ExtractConditionsProvider	Required by the <a href="#">Design Extract</a> configuration interface.
IRConfigurationProvider	Required to connect the Web Validate station to the eFLOW Extract configuration.
IRDataServicesProvider	Required by Web Validate to provide access to lookups and perform database validations against reference data.
WorkflowStatusTrackingService	Required to pass the status of eFLOW Extract invoices to eFLOW Control, the TIS automated invoice processing add-on for SAP. See <a href="#">Pass the eFLOW Extract status to eFLOW Control</a> for more information.

- c. In the setup folder of the application (for example, *C:\ProgramData\TIS\eFLOW 6\AppData\Server\*[ApplicationName]*Setup*), open the *ExtractConnectionConfigProvider.appconfig* file and edit the *EndpointAddress* property to point to the web server on which the web services are installed:

```
EndpointAddress = new EndpointAddress("http://[YourServer]/ExtractConnectionConfigProvider/
Configuration.ConfigProvider.svc")
```

- d. In the setup folder, open the *ConfigConditioning.appconfig* file and edit the *<Address>* parameter to point to the web server on which the web services are installed:

```
<Address>http://[YourServer]/ExtractConditionsProvider/
ConditioningEntitiesService.svc/</Address>
```

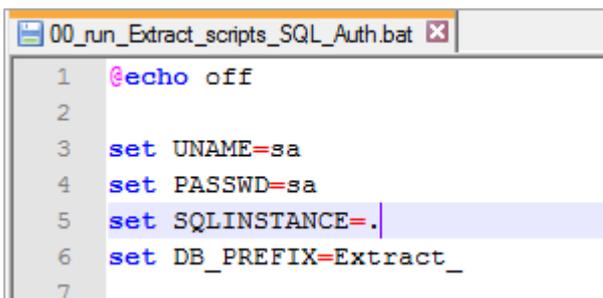
**Note:** If you want to use a secure connection to the web services, specify **https** instead of **http** in the address parameters. In the *ExtractConnectionConfigProvider.appconfig* file, change the *Binding = new BasicHttpBinding* parameter to *Binding = new BasicHttpsBinding*. You must also configure IIS to use HTTPS binding; see the IIS documentation for information on how to do this.

## 6. Install the databases:

- a. If you are not installing the SQL databases on the eFLOW server, copy the *Databases* folder to the SQL server.
- b. In the *Databases* folder, change the details in the batch file *00\_run\_Extract\_scripts\_SQL\_Auth.bat* or *00\_run\_Extract\_scripts\_Windows\_Auth.bat*, depending on whether you connect to the SQL database using SQL authorization or Windows authorization.

The names of the databases are prefixed with the value of the **set DB\_PREFIX** parameter. By default, this is **Extract\_** (for example, **Extract\_Conditions**), but you can change it.

If you use SQL authentication, you must specify the connection details.



```
00_run_Extract_scripts_SQL_Auth.bat
1 @echo off
2
3 set UNAME=sa
4 set PASSWD=sa
5 set SQLINSTANCE=.
6 set DB_PREFIX=Extract_
7
```

- c. Run the batch file.

The following SQL databases are created automatically.

If you use SQL authentication, only the SQL user needs permissions for the databases.

If you use Windows authentication, you must ensure that Scan and Validate station users have the appropriate permissions for the databases (R - read-only, or RW - read-write), where these are required.

Database	Scan	Validate	Purpose
[Prefix]_Conditions [Prefix]_Conditions_ Modules	None	R	Contain data related to the parameters defined in the <a href="#">Design Extract</a> configuration interface.
[Prefix]_DynamicData [Prefix]_DynamicLearning [Prefix]_DynamicLearning Analyzer	None	None	Contain data related to dynamic <a href="#">learning</a> .
[Prefix]_FieldLearning	None	RW	Contains data related to manual <a href="#">learning</a> .
[Prefix]_RefDB	None	RW	Contains reference data used in validation and completion. See <a href="#">Reference data</a> .
[Prefix]_SapCache	None	None	Temporary database for reference data. See <a href="#">Reference data</a> .
[Prefix]_Stats	RW	None	Contains statistical data for reporting.
[Prefix]_Workflow			Contains eFLOW related data. See the eFLOW documentation for information on required permissions.

#### 7. Install country packages:

In the *Countries* folder, double-click the corresponding batch file for each country package you want to install. For example, double-click *Country\_USA\_Import.bat* to install the United States country package. Alternatively, double-click *ImportAllCountryPackages.bat* to install all available country packages. We recommend installing all country packages and activating only the packages that you need when you create your configuration profile in Design Extract. See [Create a configuration profile](#) for more information.

**Note:** The Japanese country package has some additional requirements. See the *Japanese Country Package Implementation Guide* for more information.

8. Set the database connection strings for the *ExtractConnectionConfigProvider*:
  - a. In the *C:\inetpub\wwwroot\ExtractConnectionConfigProvider* folder, open the *Configurations.XML* file.
  - b. Edit the database connection strings to connect to your SQL server. If you changed the **DB\_PREFIX** value in the database installation batch file, adjust the **Initial Catalog** value accordingly.
9. Set the database connection strings for the *ExtractConditionsProvider*:
  - a. In the *C:\inetpub\wwwroot\ExtractConditionsProvider* folder, open the *Web.config* file.
  - b. Edit the database connection strings to connect to your SQL server. If you changed the **DB\_PREFIX** value in the database installation batch file, adjust the **Initial Catalog** value accordingly.
10. In the setup folder, in the file *ExtractSettingsGlobal.appconfig*, specify the **default case**. If you change configuration settings in Design Extract, you also need to edit the *ProfileContextName* and *Deactivation ProfileContextName* properties. See [Create a configuration profile](#) for more information.

## Manual client installation

**Important:** This procedure must be performed with the user account that was used to install eFLOW. If the *C:\Program Files (x86)\TIS\eflow 6\Bin* folder already exists on the eFLOW server, make sure that the folder and all its files are not set to read-only before beginning the installation.

For each client workstation:

1. Copy the file *Extract\_Install.zip* to the client and unzip it.
2. Copy all files from the folder *Bin* to the *C:\Program Files (x86)\TIS\eflow 6\Bin* folder.

If you use Windows authentication, you must ensure that Scan and Validate station users have the appropriate permissions for the databases. See [Manual server installation](#).

# eFLOW Extract Web Validate installation

eFLOW Extract Web Validate enables users to correct and complete fields that were not correctly recognized or that did not pass validations in the Recognize station. It is very similar to the standard eFLOW Web Validate station, but includes features specific to invoice processing.

## System requirements

- eFLOW 6.0
- eFLOW Extract 6.0

## Installation files

The eFLOW Extract Web Validate installation files are located in the eFLOW Extract installation folder in the *Optional Components/Web Validate* folder, which has the following subfolders:

Folder	Description
Deployed at IIS	Contains the subfolder <i>WebValidate</i> with the files required for installing Web Validate.
DynamicDataServiceCreator-Tool	Contains a tool to automatically create a new data service when you make changes to the application, such as adding new fields, or if you use multiple <a href="#">reference databases</a> .

## Installation procedure

This section explains how to install Web Validate.

### Install eFLOW Web Validate

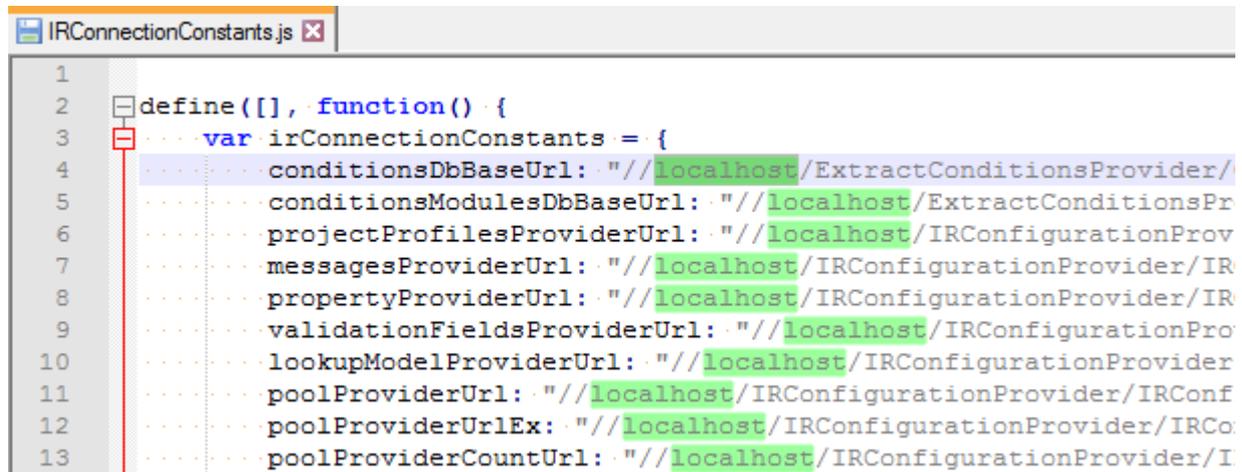
Make sure that the standard eFLOW Web Validate is already installed.

See the *eFLOW Web Stations Implementation Guide* for information on installing eFLOW Web Validate.

### Install Web Validate

1. In the eFLOW Extract installation folder, go to the *OptionalComponents/WebValidate/Deployed at IIS/WebValidate* folder and copy all files to the *C:/inetpub/wwwroot/WebValidate* folder. Select to replace existing files when prompted.
2. In the eFLOW Extract installation folder, go to the *Optional Components/Web Validate* folder and run the batch file *copy webcompletion-external binaries.cmd*.

- In the `C:/inetpub/wwwroot/WebValidate/Scripts/Customization` folder, open the `IRConnectionConstants.js` file and edit all strings to connect to the server on which Web Validate is installed.



```

1  define ([], function () {
2
3  var irConnectionConstants = {
4  conditionsDbBaseUrl: "://localhost/ExtractConditionsProvider/
5  conditionsModulesDbBaseUrl: "://localhost/ExtractConditionsPr
6  projectProfilesProviderUrl: "://localhost/IRConfigurationProv
7  messagesProviderUrl: "://localhost/IRConfigurationProvider/IR
8  propertyProviderUrl: "://localhost/IRConfigurationProvider/IR
9  validationFieldsProviderUrl: "://localhost/IRConfigurationPro
10 lookupModelProviderUrl: "://localhost/IRConfigurationProvider
11 poolProviderUrl: "://localhost/IRConfigurationProvider/IRConf
12 poolProviderUrlEx: "://localhost/IRConfigurationProvider/IRCo
13 poolProviderCountUrl: "://localhost/IRConfigurationProvider/I

```

- In the `C:/inetpub/wwwroot/ExtractConnectionConfigProvider` folder, open the `Configurations.xml` file and edit all occurrences of the property `DataServiceUrl` to connect to the server on which Web Validate is installed.



```

7  <Property Name="DBConnectionString" CLRType="String">
8  <Value Case="">Provider=SQLOLEDB.1;Data Source=.;Persist Security Info=Tru
9  <xxxValue Case="ConditionSets (ClientBelongsTo)">Provider=SQLOLEDB.1;Data :
10 </Property>
11 <Property Name="DataServiceUrl" CLRType="String">
12 <Value Case="">://localhost/IRDataServicesProvider/RefDb.svc</Value>
13 <xxxValue Case="ConditionSets (ClientBelongsTo)">://localhost/IRDataServices
14 </Property>
15 </RefDB>
16 <PoolManagement>
17 <Property Name="DBConnectionString" CLRType="String">
18 <Value Case="">Provider=SQLOLEDB.1;Data Source=.;Persist Security Info=Tru
19 <xxxValue Case="ConditionSets (ClientBelongsTo)">Provider=SQLOLEDB.1;Data :
20 </Property>
21 </PoolManagement>
22 </ConnectionStrings>
23 </ExtractSettingsGlobal>
24 <DBSearchConfig>
25 <ConnectionStrings>
26 <DBConnectionString>Provider=SQLOLEDB.1;Data Source=.;Persist Security Info=Tr
27 <DataServiceUrl>://localhost/IRDataServicesProvider/RefDb.svc</DataServiceUrl>

```

## Configuration

This section explains how to configure the web services to connect to the *ExtractSettingsGlobal.appconfig* file and the eFLOW Extract *RefDB* database.

**Note:** These steps are only necessary if you assigned your own application name during the eFLOW Extract installation.

### IRConfigurationProvider

1. In the folder *C:/inetpub/wwwroot/IRConfigurationProvider*, open the *Web.config* file.
2. In the `<appSettings>` section, in the first three lines, replace *Extract* with the name of your application.

```
<appSettings>
<add key="YourExtractApplicationName" value="ExtractSettingsGlobal.appconfig" />
<add key="YourExtractApplicationName.PM.DefaultRegex" value="(BUKRS=\d{3,5})|(BUKRS='.{3,5}')" />
<add key="YourExtractApplicationName.PM.BukrsQualifier" value="BUKRS" />
```

3. (Optional) If you have an additional project configuration file, add this file to the end of the first line, separated by a semi-colon from *ExtractSettingsGlobal.appconfig*.

```
<add key="YourExtractApplicationName"
value="ExtractSettingsGlobal.appconfig;ExtractSettingsYourProject.appconfig" />
```

### IRDataServices

1. In the folder *C:/inetpub/wwwroot/IRDataServicesProvider*, open the *Web.config* file.
2. Edit the `<connectionStrings>` section to connect to your application's RefDB.

```
<add name="RefDb" connectionString="Data Source=.;Initial Catalog=YourExtractApplicationName_
RefDB;User id=SQLUserID;Pwd=SQLUserPassword" providerName="System.Data.SqlClient" />
```

## Test

1. Open the web browser and enter **[YourServer]/WebValidate** in the address line.
2. The Web Validate **Sign in** page should be displayed.
3. Enter the user name and the password and click **Next**.
4. Select your application and a station and click **Next**.

# Configuration overview

This section provides an overview of configuring eFLOW Extract.

## Configuration files

Configuration is either done in:

- The Design Extract user interface. Most configuration tasks can be performed in Design Extract.
- *.appconfig* configuration files located in the setup folder of the application, for example, *C:\ProgramData\TIS\eFLOW 6\AppData\Server\[ApplicationName]\Setup*. The main configuration file is *ExtractSettingsGlobal.appconfig*, which you can edit with the eFLOW Extract [configuration editor](#).

## Design Extract

Design Extract provides an interface for defining recognition rules to find the most likely candidates for field values, and validations to check and complete recognized or manually entered data. In previous versions of eFLOW Extract, this was done in the *ConfigRecognitionCandidateValidation.appconfig* or *ValidationConf.xml* file, and the *IRSettingsGlobal.appconfig* file.

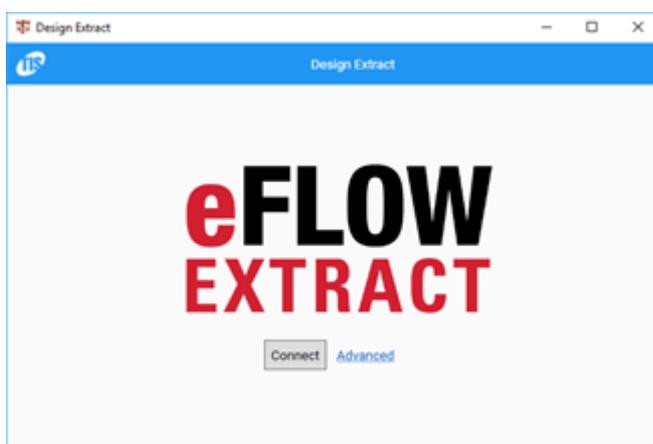
Design Extract also enables you to create conditions to apply different configuration settings for different requirements. In previous versions of eFLOW Extract, this was achieved by specifying a *<Case>* or *<Client>* value to the relevant configuration parameters. With Design Extract, you can now define conditions based on other values as well.

### Open Design Extract

We recommend creating a shortcut to provide easy access to Design Extract.

On the Windows desktop, create a new shortcut to the file *DesignExtract.exe* in the folder *...\TIS\DesignExtract*.

After starting Design Extract, click the **Connect** button at the bottom of the screen.

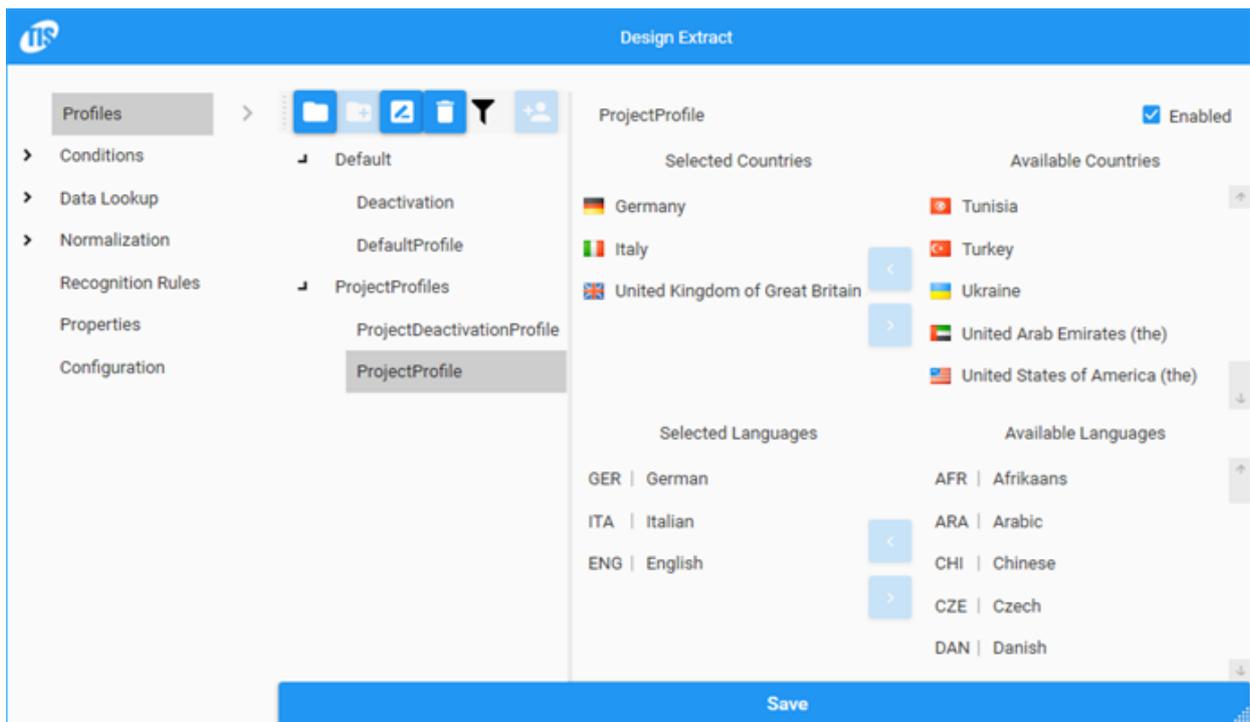


## Design Extract configuration

The configuration settings are presented in a tree view with the following nodes.

### Profiles

A profile provides the context for the configuration settings and conditions. For example, a profile may represent a specific customer or project, or a subdivision of a customer or project, such as separate configuration settings for the test system and the production system.



Design Extract provides a default profile, whose settings are used if no other profile is defined.

If you need to make changes to the configuration settings or specify conditions, you should not change the default profile, but create your own profile to provide the context for these specific settings. When you add a setting, you assign your profile to this setting.

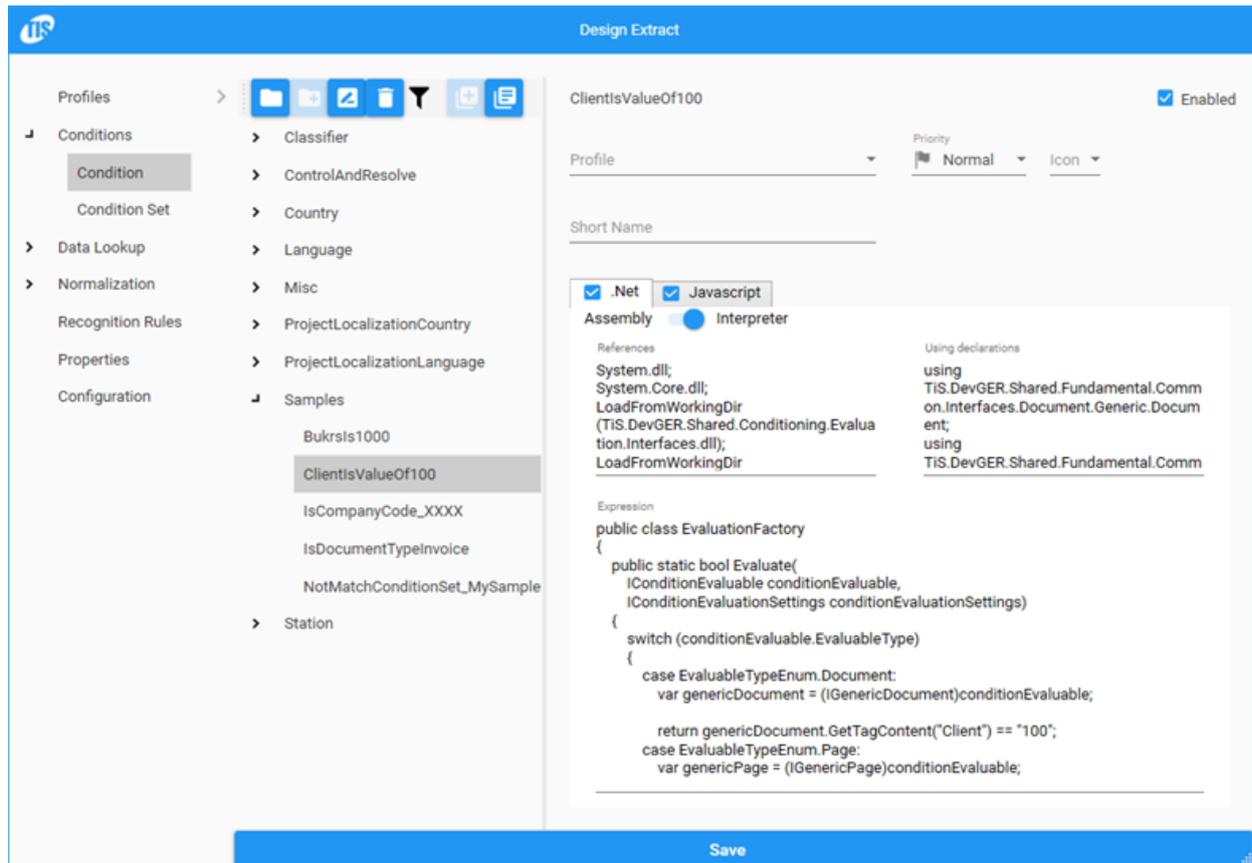
If you need to deactivate a standard setting, you must create a deactivation profile, then assign it to the setting.

See [Create a configuration profile](#) for detailed information on working with profiles.

## Conditions

Conditions enable you to apply different configuration settings for different requirements, such as different clients or company codes.

Design Extract provides some predefined conditions that you can use, for example, for specific countries and languages. It also provides sample conditions in the **Samples** folder, which you use as a basis to create your own conditions.

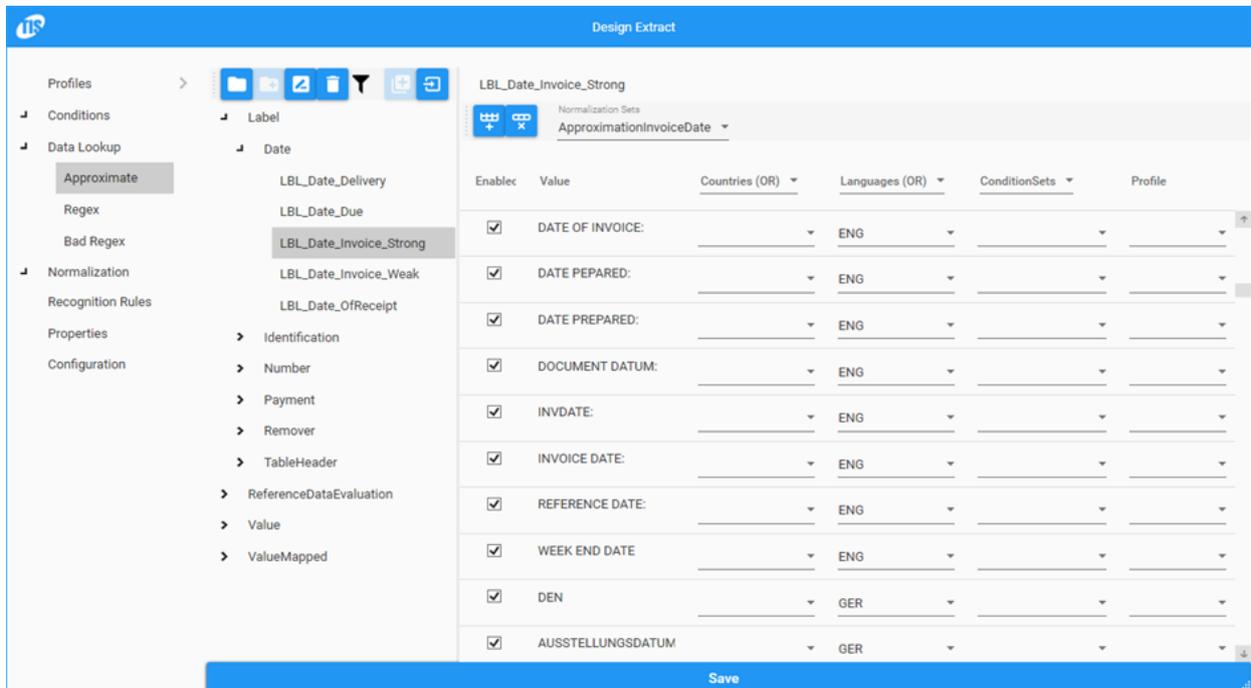


You can combine conditions in condition sets and assign these sets to recognition rules in Design Extract, and also to parameters in the *ExtractGlobalSettings.appconfig* file. When you assign a condition set to a recognition rule or parameter, the rule or parameter settings are only applied if the condition is fulfilled.

See [Use conditions](#) for detailed information on working with conditions.

## Data Lookup

In this node, you define approximations (keyword labels and field values) and regular expressions that enable eFLOW Extract to recognize the invoice language, and to locate, extract and validate field values on the invoice.

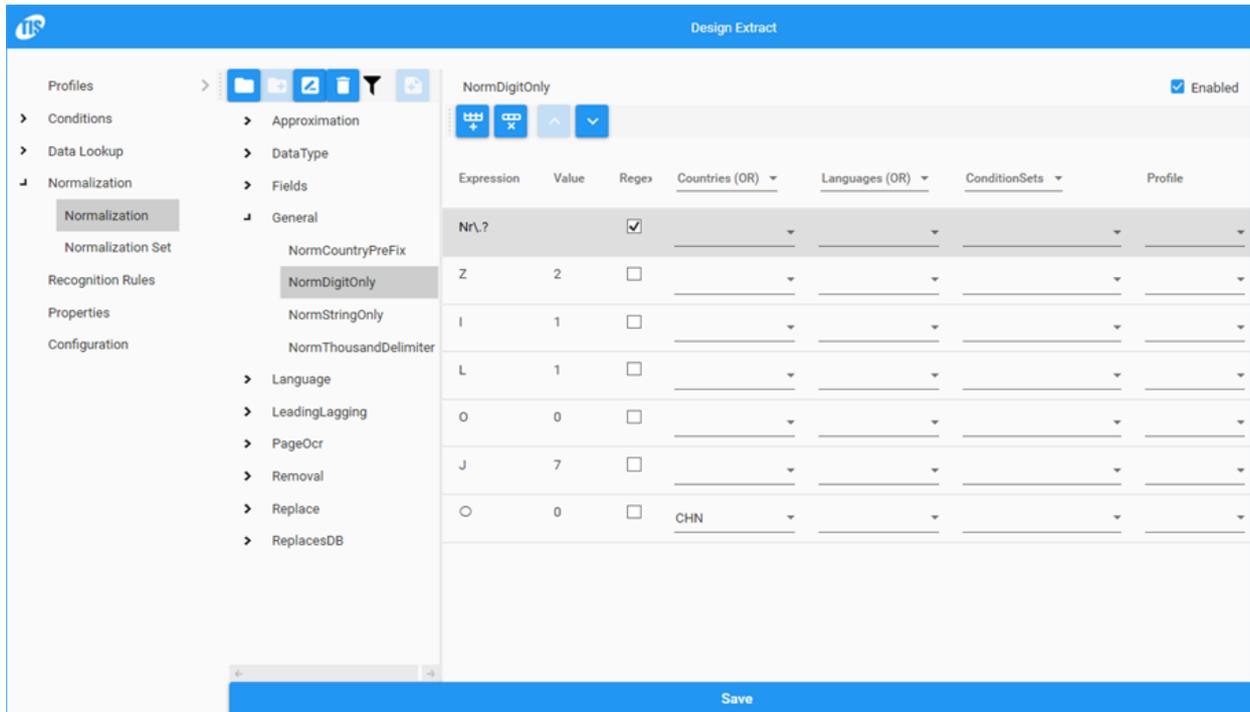


The screenshot shows the 'Design Extract' configuration window. On the left, a navigation tree is expanded to 'Data Lookup' > 'Approximate' > 'Date' > 'LBL\_Date\_Invoice\_Strong'. The main area displays a table for 'ApproximationInvoiceDate' with the following columns: 'Enable', 'Value', 'Countries (OR)', 'Languages (OR)', 'ConditionSets', and 'Profile'. All 'Enable' checkboxes are checked. The 'Value' column contains various date-related terms. The 'Countries (OR)' and 'Languages (OR)' columns contain dropdown menus with 'ENG' and 'GER' selected. A 'Save' button is visible at the bottom right of the configuration area.

Enable	Value	Countries (OR)	Languages (OR)	ConditionSets	Profile
<input checked="" type="checkbox"/>	DATE OF INVOICE:		ENG		
<input checked="" type="checkbox"/>	DATE PEPAED:		ENG		
<input checked="" type="checkbox"/>	DATE PREPARED:		ENG		
<input checked="" type="checkbox"/>	DOCUMENT DATUM:		ENG		
<input checked="" type="checkbox"/>	INVDAT:		ENG		
<input checked="" type="checkbox"/>	INVOICE DATE:		ENG		
<input checked="" type="checkbox"/>	REFERENCE DATE:		ENG		
<input checked="" type="checkbox"/>	WEEK END DATE		ENG		
<input checked="" type="checkbox"/>	DEN		GER		
<input checked="" type="checkbox"/>	AUSSTELLUNGSDATUM		GER		

## Normalization

Normalizations enable you to make changes to the data. Normalizations can be defined centrally here, and then applied as needed to recognition rules in Design Extract, or to validations in the *ExtractSettingsGlobal.appconfig* file. Normalizations are always grouped in normalization sets, which you assign to configuration settings.



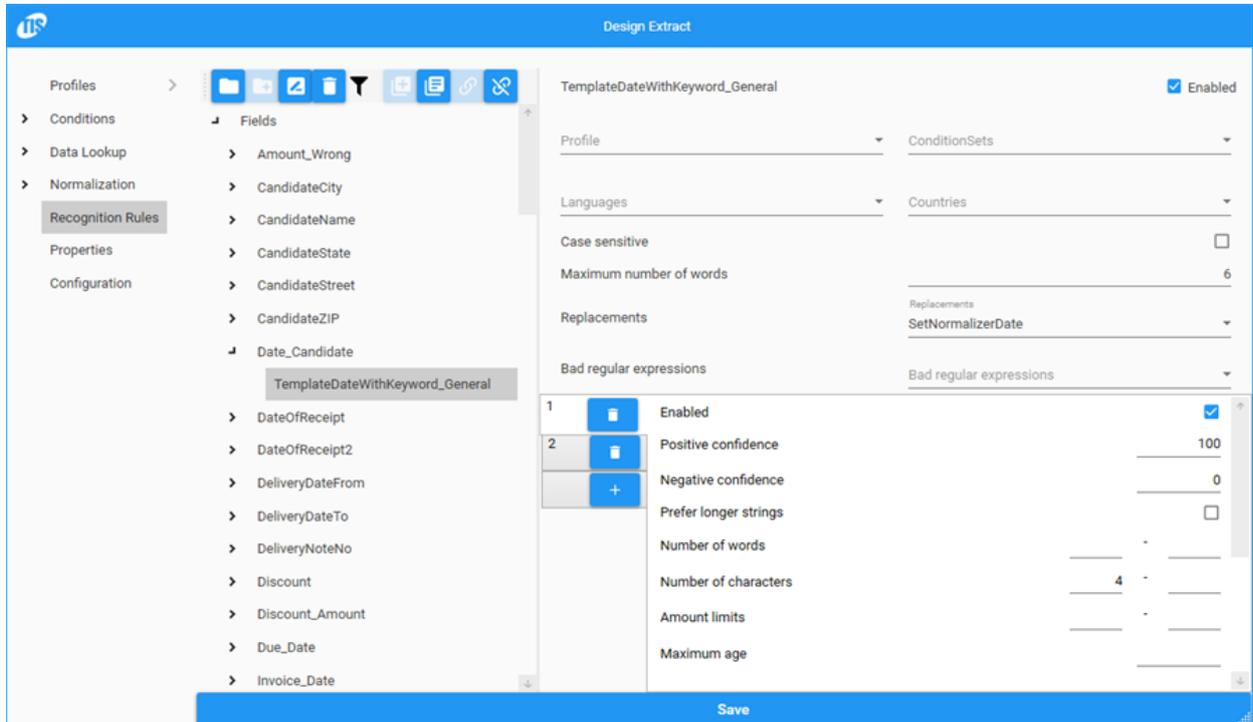
The screenshot shows the 'Design Extract' application window. On the left is a navigation tree with 'Normalization' selected. The main area displays the configuration for the 'NormDigitOnly' normalization set, which is currently 'Enabled'. Below the header, there is a table of normalization rules.

Expression	Value	Regexp	Countries (OR)	Languages (OR)	ConditionSets	Profile
Nr\,?		<input checked="" type="checkbox"/>				
Z	2	<input type="checkbox"/>				
I	1	<input type="checkbox"/>				
L	1	<input type="checkbox"/>				
O	0	<input type="checkbox"/>				
J	7	<input type="checkbox"/>				
○	0	<input type="checkbox"/>	CHN			

A 'Save' button is located at the bottom right of the configuration area.

## Recognition Rules

Recognition rules enable the eFLOW Extract recognition workflow to identify the field values on invoices and find likely candidates for the field value. See [Recognition rules and validations](#) for more information.



The screenshot displays the 'Design Extract' configuration window. On the left, a navigation pane shows a tree structure under 'Recognition Rules' with 'Date\_Candidate' expanded to 'TemplateDateWithKeyword\_General'. The main area shows the rule's configuration:

- TemplateDateWithKeyword\_General** (Enabled)
- Profile**: [Dropdown]
- ConditionSets**: [Dropdown]
- Languages**: [Dropdown]
- Countries**: [Dropdown]
- Case sensitive**:
- Maximum number of words**: 6
- Replacements**: SetNormalizerDate
- Bad regular expressions**: [Dropdown]

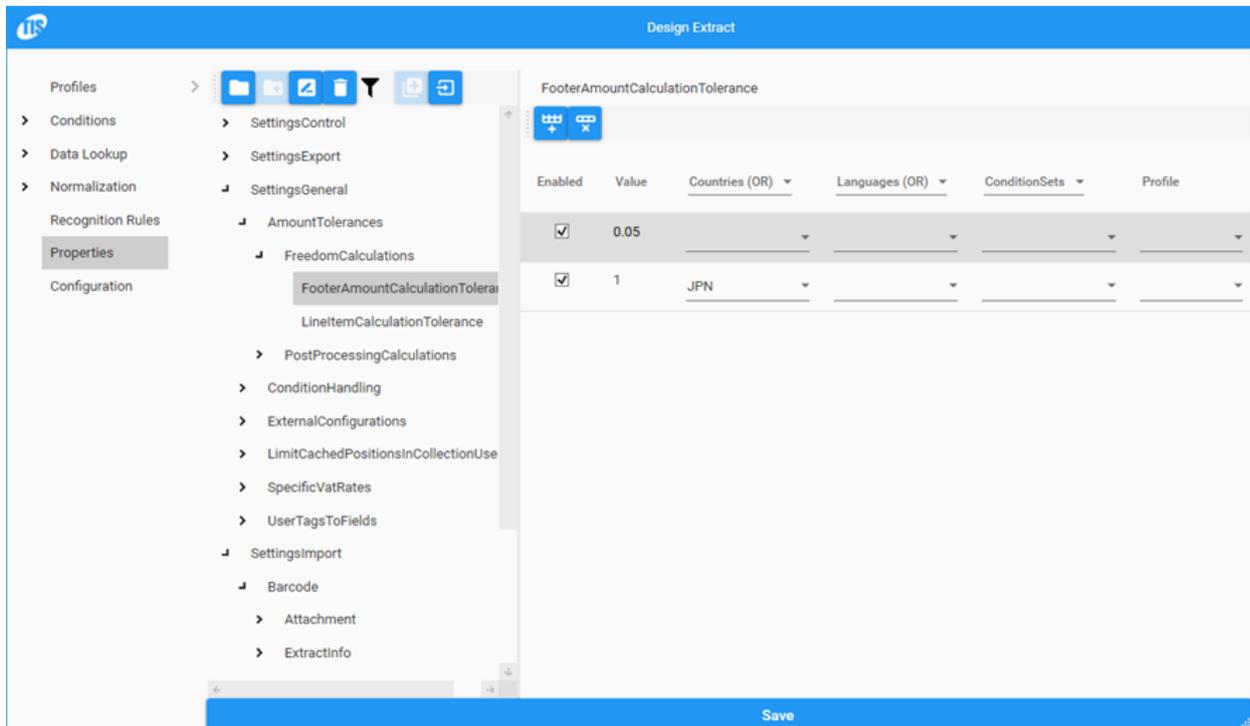
Below these settings is a list of validation rules:

ID	Enabled	Rule Name	Value
1	<input checked="" type="checkbox"/>	Enabled	
2	<input type="checkbox"/>	Positive confidence	100
	<input type="checkbox"/>	Negative confidence	0
	<input type="checkbox"/>	Prefer longer strings	
	<input type="checkbox"/>	Number of words	
	<input type="checkbox"/>	Number of characters	4
	<input type="checkbox"/>	Amount limits	
	<input type="checkbox"/>	Maximum age	

A 'Save' button is located at the bottom right of the configuration area.

## Properties

Properties define general settings, as well as settings for import, export, recognition, and data exchange with eFLOW Control and Resolve.



See the following sections for examples of using the configuration settings.

- [Invoice and attachment separation](#)
- [Export to ERP configuration](#)
- [Add keywords](#)
- [Define the PO format](#)
- [Define VAT rates](#)
- [Use conditions](#)

## Configuration editor

For easy editing of configuration files, eFLOW Extract provides an editor. You can also edit the files in any other editor, such as Notepad, but it is recommended that you use the eFLOW Extract editor.

### Open the configuration editor

We recommend creating a shortcut to provide easy access to the configuration editor.

1. On the Windows desktop, create a new shortcut to the file *TiS.DevGER.Shared.Configurator.exe* in the folder *...\TIS\eflow 6\Bin*.
2. Right-click the shortcut and select **Properties**.

- In the **Target** field, add **-dev=4** at the end of the path, then click **OK**.

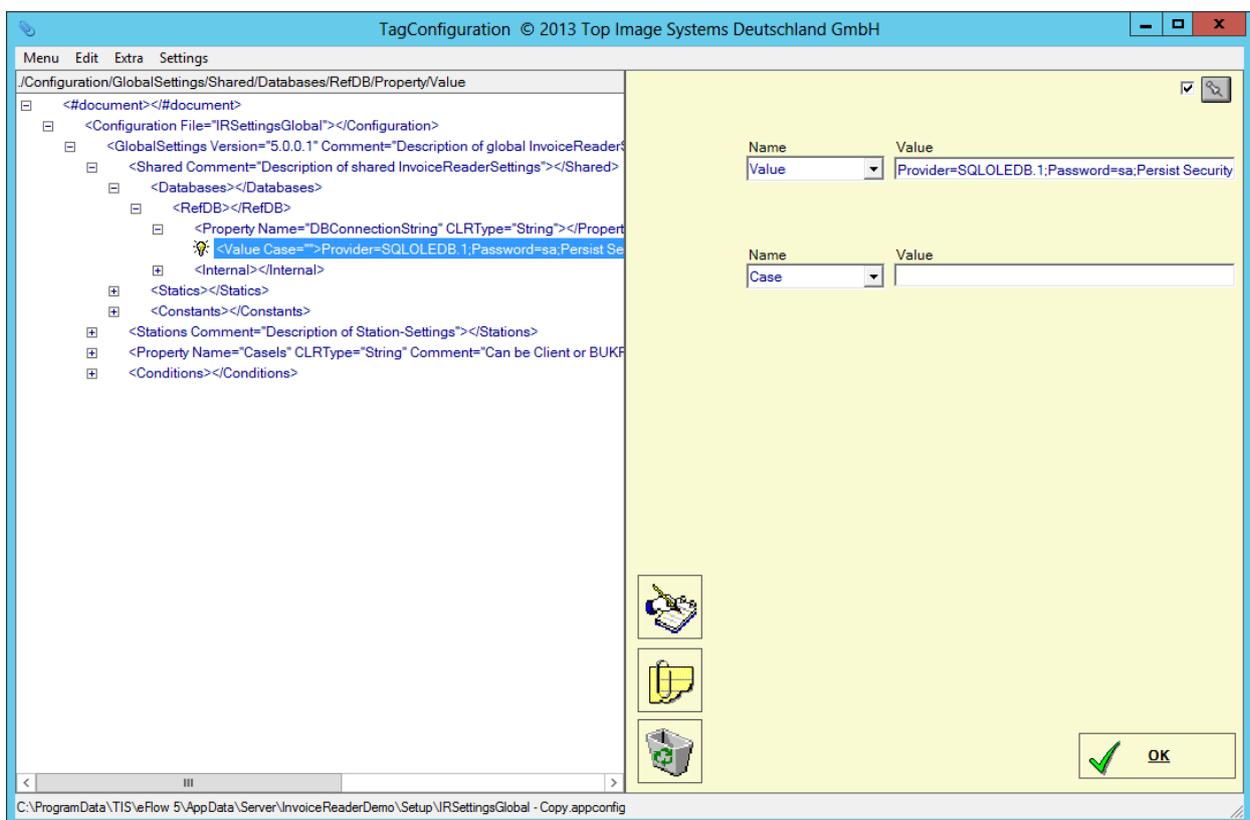
Target type: Application

Target location: Bin

Target:

- Double-click the shortcut.

## Working with the configuration editor



- To open a configuration file, select **Menu > Open**.
- Expand the nodes until the parameter you want to edit is displayed.  
You can also press **CTRL + F** or select the menu item **Edit > Find** to search the file.
- Select the parameter.

- Move the mouse to the right of the dialog box, or click the **Edit** button .
- Edit the values displayed on the right of the dialog box.

This area is hidden when you move the mouse to the left. To prevent this area from being hidden, click the **Dock/Undock** button .

## Common configuration tasks

The following are the most commonly performed configuration tasks when implementing eFLOW Extract. These tasks are explained in detail in the following sections.

[Create a configuration profile](#)

[Configure invoice and attachment separation](#)

[Configure reference data import](#)

[Configure data export to the ERP system](#)

[Add keywords](#)

[Define the PO format](#)

[Define VAT rates](#)

[Define supplier-specific settings](#)

[Define FIP suppliers](#)

[Add a custom field](#)

[Pass the eFLOW Extract status to eFLOW Control in SAP](#)

## Create a configuration profile

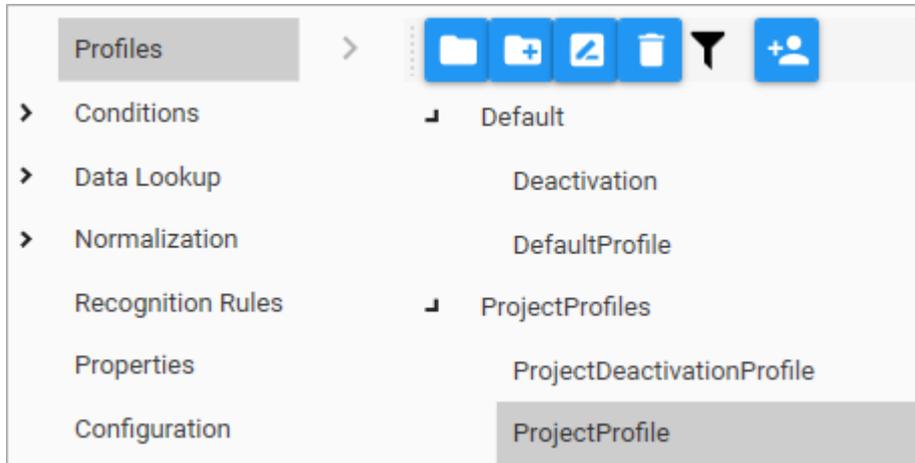
Configuration profiles enable you to define configuration settings for specific requirements. For example, a profile may represent a specific customer or project, or a subdivision of a customer or project, such as separate settings for the test system and the production system.

Design Extract provides a default profile, whose settings are used if no other profile is defined.

If you need to make changes to the configuration, you should not change the default profile, but create your own profile to provide the context for these specific settings. When you add a setting, you assign your profile to this setting.

If you need to deactivate the standard settings, you must create a deactivation profile, then assign it to the setting.

Design Extract provides a project profile and a project deactivation profile that you can use, or you can create your own.



## Create a profile

1. In [Design Extract](#), click the **Profiles** node.
2. Click on the **ProjectProfiles** grouping, or click one of the following buttons to create a new grouping:
  - **Add root grouping** : To create a new grouping at the top level of the tree.
  - **Add sub-grouping** : To create a grouping below another grouping.
3. Click the **Add new profile** button .
4. Enter a name for the profile and click **OK**.
5. Click on the new profile.
6. Add the countries and languages for the profile set by selecting each country or language and clicking the **Select** button .
7. Click **Save** at the bottom of the screen.

## Create a deactivation profile

1. In [Design Extract](#), click the **Profiles** node.
2. Click on the **ProjectProfiles** grouping, or click one of the following buttons to create a new grouping:
  - **Add root grouping** : To create a new grouping at the top level of the tree.
  - **Add sub-grouping** : To create a grouping below another grouping.

3. Click the **Add new profile** button .
4. Enter a name for the profile and click **OK**. Make sure you include the word **Deactivation** in the profile name so that you can easily recognize it as a deactivation profile.
5. Click **Save** at the bottom of the screen.

## Add profiles to ExtractSettingsGlobal

You must specify in the *ExtractSettingsGlobal.appconfig* file which profiles eFLOW Extract should use. If you do not add these properties, eFLOW Extract will use only the standard settings.

1. In the [Configuration Editor](#), open the *ExtractSettingsGlobal.appconfig* file.
2. In the `<GlobalSettings><ProfileContextName>` and `<Deactivation ProfileContextName>` sections, enter the name of your configuration profile and deactivation profile.
3. Save your changes.

## Assign a profile to a configuration setting

1. Select the setting.
2. In the **Profile** field, select the profile to which the setting applies.
3. To deactivate a standard setting, select your deactivation profile.

See the following topics for examples of assigning profiles to configuration settings:

- [Invoice and attachment separation](#)
- [Export to ERP configuration](#)
- [Add keywords](#)
- [Define the PO format](#)
- [Define VAT rates](#)
- [Pass the eFLOW Extract status to eFLOW Control in SAP](#)

# Invoice and attachment separation

You must define how invoices are separated from one another in the eFLOW Extract Scan and Collect stations. Some pages of an invoice document may not actually contain any invoice-relevant information. For example, utility invoices often contain the invoice data on the first page, with a detailed breakdown of the charges on the following pages. Pages containing non-relevant data that does not require recognition should therefore be identified as attachment pages and separated from the invoice itself.



Invoices and attachments are usually separated by barcodes that appear either on the documents themselves, or on a separate page inserted before each invoice or attachment. eFLOW Extract can extract meta data from the barcode, such as a client or company code, and assign this data to collections as user tags.

## Define barcode separation

You must define the barcodes used for invoice and attachment separation in the Scan and Collect stations, and in Design Extract.

### Definition in Scan or Collect

1. Open the Scan or Collect station and click the **Configure** button .
2. In the configuration tree, click on **Batch Separators > Software Separators**, then click the **Barcode** button.

- Under **Barcode Types**, select the barcode type that will appear on the invoices or attachments. If you do not know the barcode type, select **Auto**.

The **Separation action** should be set to **None**.

### Barcode

Separation action  
  Page is Separator

Decode barcode    Orientation  
 Use checksum         Horizontal  
 Enhanced mode         Vertical

Barcode Types

<input type="checkbox"/> EAN13	<input type="checkbox"/> Postnet	<input type="checkbox"/> UCC128
<input type="checkbox"/> EAN8	<input type="checkbox"/> QRCode	<input type="checkbox"/> UPC_A
<input type="checkbox"/> PDF417	<input checked="" type="checkbox"/> Type128	<input type="checkbox"/> UPC_E

< ||| >

Result Barcodes

Type Name	Orientation	Rectangle	Barcode	Barcode Type
Type 128	None	158, 165, 713, 235	Code 128	Type128

	Caption	Is Separator	
▶	Barcode	✔	<input type="button" value="✖"/> <input type="button" value="↑"/>

- Click the **Add** button.

### Definition in Design Extract

Click **Properties**, then navigate to the appropriate grouping:

- For invoice separation: **SettingsImport > Barcode > Separation**
- For attachment separation: **SettingsImport > Attachment**

Then set the properties listed in the table below. To set a property:

- Click on the property in the **Separation** or **Attachment** grouping.
- Click the **Add Table Row** button .
- In the **Profile** field, select your configuration profile.

4. (Optional) To restrict the settings to a specific country, language or condition, select a value in the **Countries, Languages** or **ConditionSets** list. For example, you can define different settings for the Scan and Collect stations by assigning the **IsStation\_Scan** and **IsStation\_Collect** condition sets. See [Use conditions](#) for more information.
5. Enter the value.
6. If default property settings are defined, in the **Profile** list, select the standard **Deactivation** profile to deactivate these default settings.
7. Click **Save** at the bottom of the screen.

Property	Value
Barcode	Regular expression that defines the barcode format.
BarcodeType	This must be exactly the same barcode type that you specified in the Scan or Collect station configuration.
BehaviorOnMatch	<p>Only required if the barcode appears on a separate page.</p> <p>Enter the appropriate value to specify what happens to the barcode page:</p> <p>0: None</p> <p>1: Custom</p> <p>2: Set page as attachment</p> <p>3: Set page and following pages as attachment</p> <p>4: Set page and following pages as attachment, force remove</p> <p>5: Remove page from collection</p> <p>6: Remove page and following from collection</p> <p>7: Remove page from collection set page and following as attachment</p> <p>8: Remove page from collection set page and following as attachment, force remove</p>
Enabled	<input checked="" type="checkbox"/> Checked

## Define meta data extraction

In Design Extract, click **Properties**. Navigate to the **SettingsImport > Barcode > ExtractInfo** grouping. Then set the properties listed in the table below. To set a property:

1. Click on the property in the **ExtractInfo** grouping.
2. Click the **Add Table Row** button .

3. Enter the value.
4. In the **Profile** field, select your configuration profile.
5. (Optional) To restrict the settings to a specific country, language or condition, select a value in the **Countries, Languages** or **ConditionSets** list. For example, you can define different settings for the Scan and Collect stations by assigning the **IsStation\_Scan** and **IsStation\_Collect** condition sets. See [Use conditions](#) for more information.
6. If default property settings are defined, in the **Profile** list, select the standard **Deactivation** profile to deactivate these default settings.
7. Click **Save** at the bottom of the screen.

Property	Value
BarcodeType	This must be exactly the same barcode type that you specified in the Scan or Collect station configuration.
Enabled	<input checked="" type="checkbox"/> Checked
Info-Mappings	<p><b>Value:</b> Regular expression that defines which part of the barcode contains the information that is to be extracted.</p> <p><b>Mapped value:</b> The type of information to extract, such as \$1 Client.</p>

## Reference data

eFLOW Extract can use reference data such as supplier master data and transaction data from external systems to recognize, validate and complete invoice data. This reference data is also available to users in lookup dialogs in manual validation stations. Reference data is not required for recognition, but using it can improve recognition results and the quality of the data.

Reference data is stored and updated in a reference database (RefDB) on an MS SQL server. The Deliver2ERP station imports the reference data from connected ERP systems into the eFLOW Extract reference database. If eFLOW Extract is used with SAP, the reference data is first imported into the SAPCache database and then transferred to the eFLOW Extract reference database.

Receiver data is also used in validation and completion. This data is not imported from the ERP system, but from a CSV file, which must be created and maintained manually.

As part of the import process, the eFLOW Extract Transformation Package performs tasks that are required to prepare the reference data for use with eFLOW Extract, such as importing receiver data from the CSV file, transferring data from the SAPCache database to the RefDB database, or merging all supplier data into a single table.

The Transformation Package is scheduled using the Windows Scheduler.

## Databases

eFLOW Extract uses the following SQL databases for reference data.

### SAPCache database

The SAPCache database is used to receive and temporarily store data from connected SAP systems.

The tables in the SAPCache database also exist in SAP. The SAPCache table and column names are the same as in the SAP tables. The data is transferred directly from the SAP tables into the SAPCache database by the Deliver2ERP station.

Table	Description
BNKA	Contains supplier bank account relations with SWIFT code.
/TISA/TAP_EXTR1	Defines the relationship between purchase orders and suppliers. Should be filtered by a custom SAP report that writes only open items to a table named /TISA/TAP_EXTR1. eFLOW Control provides the report /TISA/AP_EXTRACT_PO_UPDATE for this purpose.
/TISA/TAP_EXTR2	Contains purchase order line items. Should be filtered by a custom SAP report that writes only open items to a table named /TISA/TAP_EXTR2. eFLOW Control provides the report /TISA/AP_EXTRACT_PO_UPDATE for this purpose.
/TISA/TAP_EXTR3	Defines the relationship between delivery note numbers and purchase order line items. Should be filtered by a custom SAP report that writes only open items to a table named /TISA/TAP_EXTR3. eFLOW Control provides the report /TISA/AP_EXTRACT_PO_UPDATE for this purpose.
LFA1	Contains information about suppliers, such as the address or the VAT ID. Deliver2ERP downloads the entire table from SAP. If SPERR (blocked) or LOEVM (marked for deletion) is set for a supplier in SAP, that supplier's data is not imported into the eFLOW Extract reference database.
LFB1	Defines the relationship between company codes and suppliers. Deliver2ERP downloads the entire table from SAP. If SPERR (blocked) or LOEVM (marked for deletion) is set for a supplier in SAP, that supplier's data is not imported into the eFLOW Extract reference database.

Table	Description
LFBK	Contains suppliers' bank data.
TIBAN	Contains supplier bank account relations with IBAN.

## RefDB

The RefDB database is accessed directly by eFLOW Extract during validation and completion. It contains the following tables.

Table	Contents
EKKO	Defines the relationship between purchase orders and suppliers.
EKPO	Contains purchase order line items.
IRAccount	Used to assign accounts to identifiers for FIP invoices. See <a href="#">FIP configuration</a> for more information.
IRDeliveryNoteNoPOPos	Contains all data of delivery notes.  The transformation package merges the data from the SAPCache tables ZEKBE and EKKO into this table.  eFLOW Extract accesses the delivery data via the RefDB view <b>vPositionsEKBESight</b> , which joins the tables <b>EKPO</b> and <b>IRDeliverNoteNoPOPos</b> .
IRFieldValueTemplates	Contains default field values for suppliers. See <a href="#">Supplier specific settings</a> for more information.
IRFIPMapping	Defines suppliers as FIP suppliers. See <a href="#">FIP configuration</a> for more information.
IRReceiverAdressData	Contains all receiver address data.  The transformation package imports this data from the <i>Receiver.csv</i> file.
IRSuppliersFullData	Contains all supplier data.  The transformation package merges the supplier data from the SAPCache tables LFA1, LFB1, LFBK, TIBAN and BKNA into this table. The table may contain more than one entry per supplier if multiple supplier bank accounts exist.

## FDDBs

FDDBs are simple text files containing supplier and receiver data, such as addresses or bank information. They are used during recognition to find the invoice receiver and supplier.

The Recognize station generates the FDDB files at runtime from the reference database. The files are stored in the application setup folder, for example, `C:\ProgramData\TIS\eFLOW 6\AppData\Server\[ApplicationName]\Setup`.

## Configure reference data

The following steps are required to configure reference data. This procedure assumes that you are importing reference data from an SAP system running eFLOW Control.

1. Modify the supplied *Receiver.CSV* file in the `C:/Extract-Data/Runtime/Masterdata` folder, adding your own receiver address data.

Add each name and address in a separate line. Remember to add lines for variations that you expect suppliers to use. For example, the following four lines refer to the same receiver, but with variations of the name.

```
100;1000;Top Image Systems;Waterside;LS22 5NB;Wetherby;x;x;True
100;1000;Top Image Systems Limited;Waterside;LS22 5NB;Wetherby;x;x;True
100;1000;Top Image Systems Ltd;Waterside;LS22 5NB;Wetherby;x;x;True
100;1000;TIS;Waterside;LS22 5NB;Wetherby;x;x;True
```

2. Create an SAP report to restrict the PO and delivery data to open items only. The report should write open PO items to the `/TISA/TAP_EXTR2` table, and open delivery items to the `/TISA/TAP_EXTR3` table. In SAP, schedule the report to run at regular intervals, such as every night.  
eFLOW Control provides the report `/TISA/AP_EXTRACT_PO_UPDATE` for this purpose. See the *eFLOW Control Implementation Guide* for information on this report.
3. In the Deliver2ERP station, configure an [external destination](#) for reference data import.
4. Configure the [transformation package](#) to connect to your eFLOW Extract SQL databases and define the FDDB location, then run the transformation package.
5. [Create a task](#) in Windows Task Scheduler to run the transformation package at regular intervals.

## Deliver2ERP import configuration

To import reference data from an SAP system, you must configure an external destination in the Deliver2ERP station. eFLOW Extract provides a preconfigured external destination for import from an SAP system running eFLOW Control. If you need to connect to an SAP system running Maxpost, or to non-SAP systems, contact the eFLOW Extract product manager.

## Prerequisites

- Deliver2ERP was included in the eFLOW installation.
- An RFC user has been configured in the SAP system. Data exchange between eFLOW Extract and SAP takes place via this RFC user. See *Roles* in the *eFLOW Control and Resolve Implementation Guide* for more information.
- The latest SAP GUI for the SAP version that is used is installed on the eFLOW Server.
- The file *ERPEXportSetup.XML* in the folder *...Program Files (x86)\TIS\eflow 6\Bin* is not set to read-only. Deliver2ERP writes the configuration settings to this file.

## Configure the external destination

This procedure explains how to configure the external destination for import from an SAP system running eFLOW Control.

1. In **eFLOW Launch Pro**, select the station **Deliver2ERP**.
2. On the **Tools** menu, select **Configure**.
3. Expand the **External Destinations** node and then the **MDDownloadEflowControlDestination** node.
4. Click the **Connectivity Settings** node and enter the connection details for the SAP system.

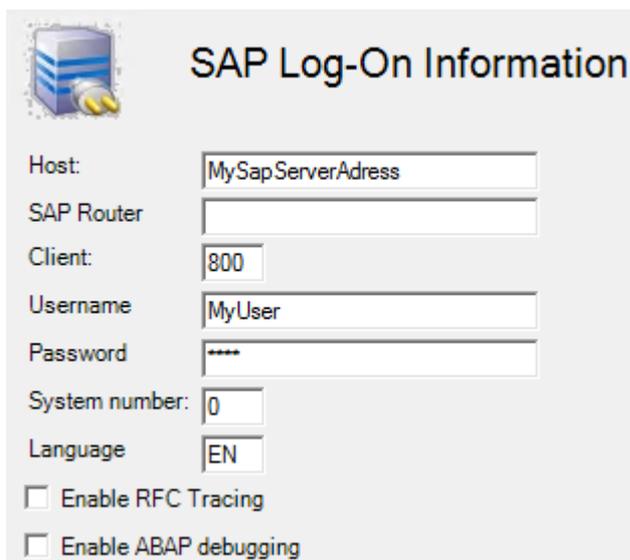
In the **Username** and **Password** fields, enter the user name and password of the RFC user.

In the **Host** field, specify the host, port, password and server:

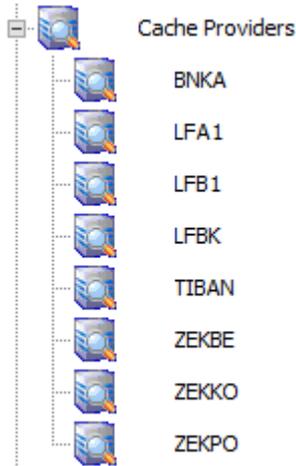
/H/[Host]/S/[Port]/W/[SAP router password]/H/[Server]

For example:

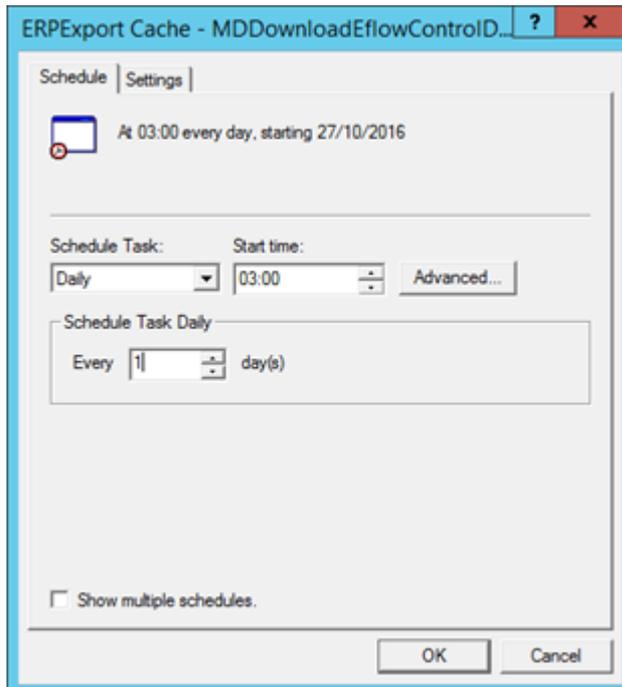
/H/123.456.78.123/S/3299/W/X\$Pw1/H/234.567.123.789



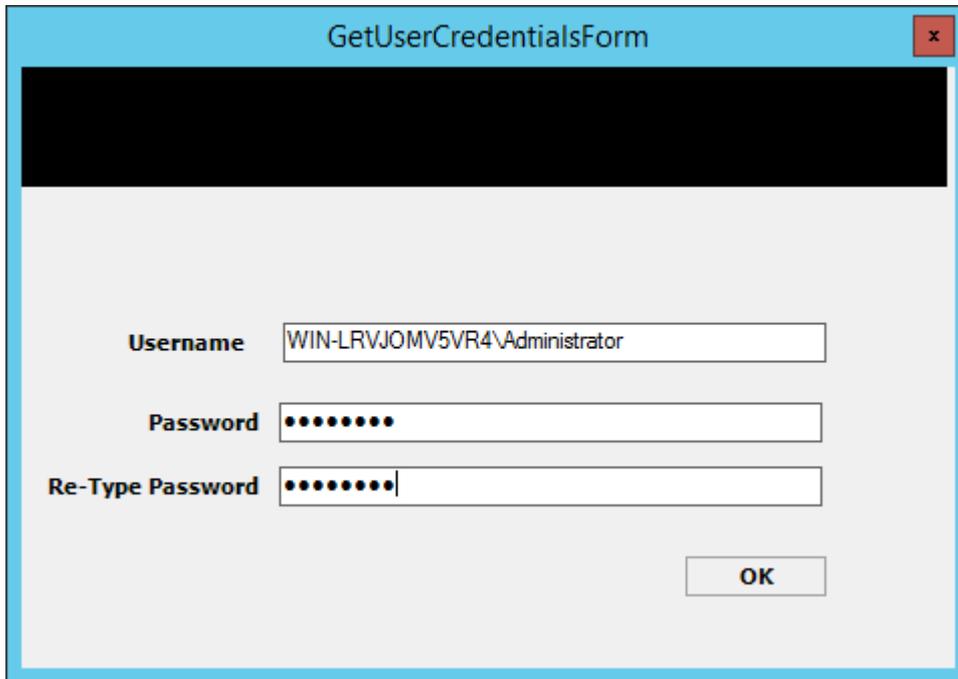
5. Set the import schedule. By default, data is imported daily at midnight. You only need to set the schedule if you wish to change the import frequency or time.
  - a. Expand the **Cache Providers** node and click on **BNKA**.



- b. Click the **Change Schedule** button and specify how often the data should be imported, then click **OK**.



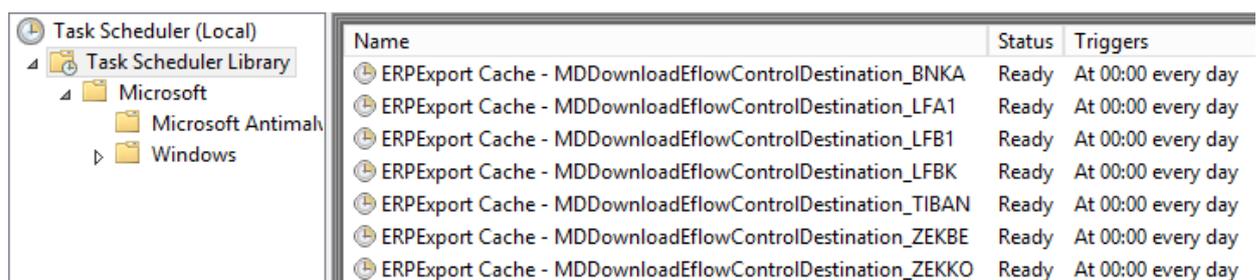
- c. If prompted, enter the SQL server credentials and click **OK**.



- d. Repeat these steps to set the schedule for all tables in the **Cache Providers** node.
6. Click the **Save** button  on the toolbar.

Deliver2ERP creates tasks in the Windows Task Scheduler with scheduling settings corresponding to those entered for the cache provider.

**Note:** The Deliver2ERP station must also be running in standby mode.



Name	Status	Triggers
ERPEXport Cache - MDDownloadEflowControlDestination_BNKA	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_LFA1	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_LFB1	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_LFBK	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_TIBAN	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_ZEKBE	Ready	At 00:00 every day
ERPEXport Cache - MDDownloadEflowControlDestination_ZEKKO	Ready	At 00:00 every day

After these tasks run for the first time, corresponding database tables are created in the SapCache database.

7. As a final step, you must change some settings in the SapCache database in Microsoft SQL Server Management Studio:
  - a. In the **LFBK** table, expand the **Columns** folder. Right-click the **DataVersion** column and select **Modify**. Activate the **Allow Nulls** check box.
  - b. On the **Tools** menu, select **Options**. Open the **Designers > Table and Database Designers** options and activate the **Prevent saving changes that require table re-creation** check box.

## Transformation Package Designer

The TIS Data Transformation Package Designer performs tasks that are required to prepare the reference data for use with eFLOW Extract, such as importing receiver data from the CSV file, transferring data from the SAPCache database to the RefDB database, merging all supplier data into a single table, or transferring supplier and receiver data to the FDDB files.

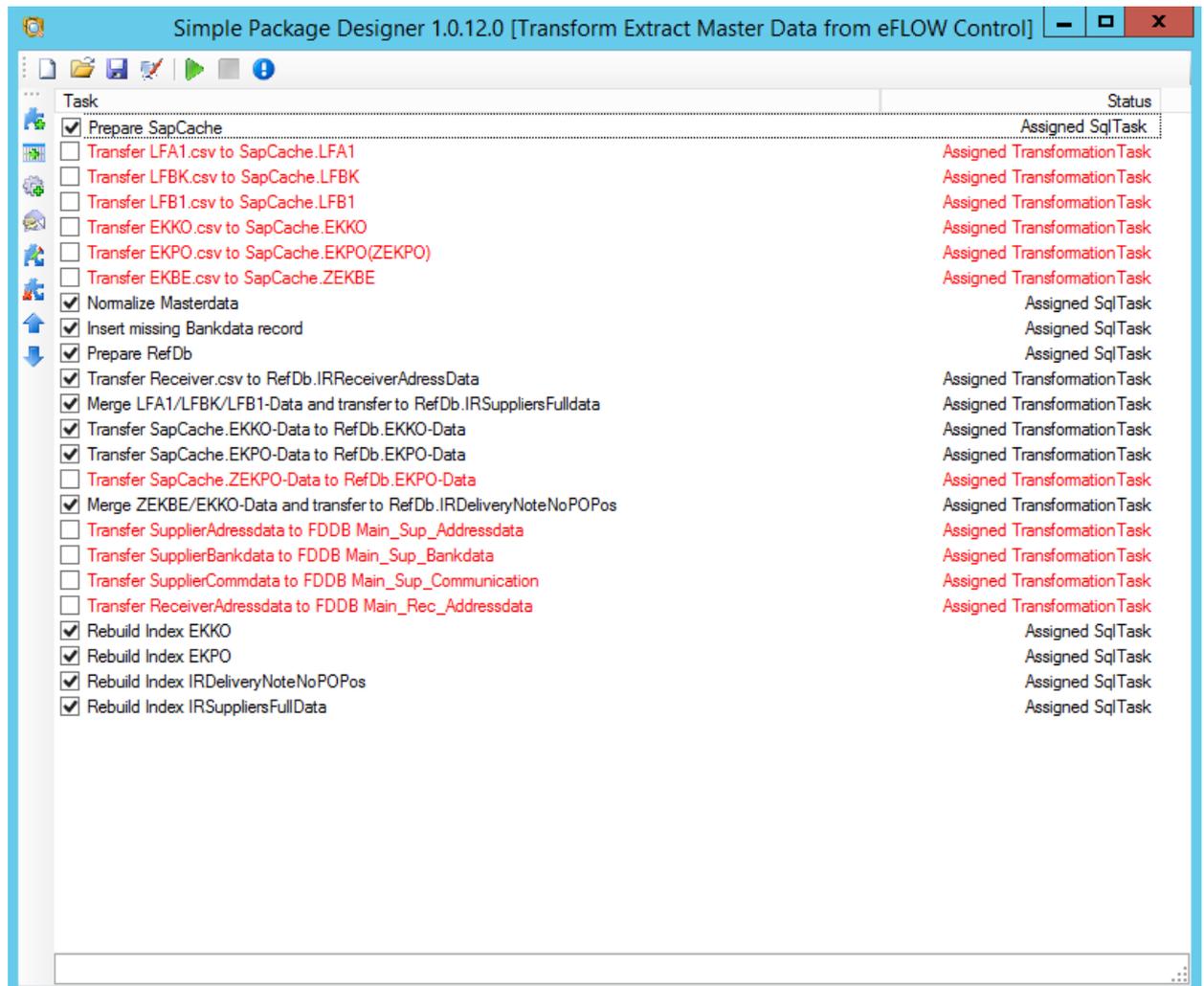
The executable for the Transformation Package Designer *TiS.DevGER.Shared.Data.PackageDesigner.exe* can be found in the *C:\Extract-Data\DTP Designer* folder.

eFLOW Extract provides a preconfigured transformation package file in the *C:\Extract-Data\Runtime* folder for SAP systems running eFLOW Control. This file contains all the steps required to transfer master and transaction data to the appropriate eFLOW Extract database tables. You only need to make minor changes to some of the tasks included in the package.

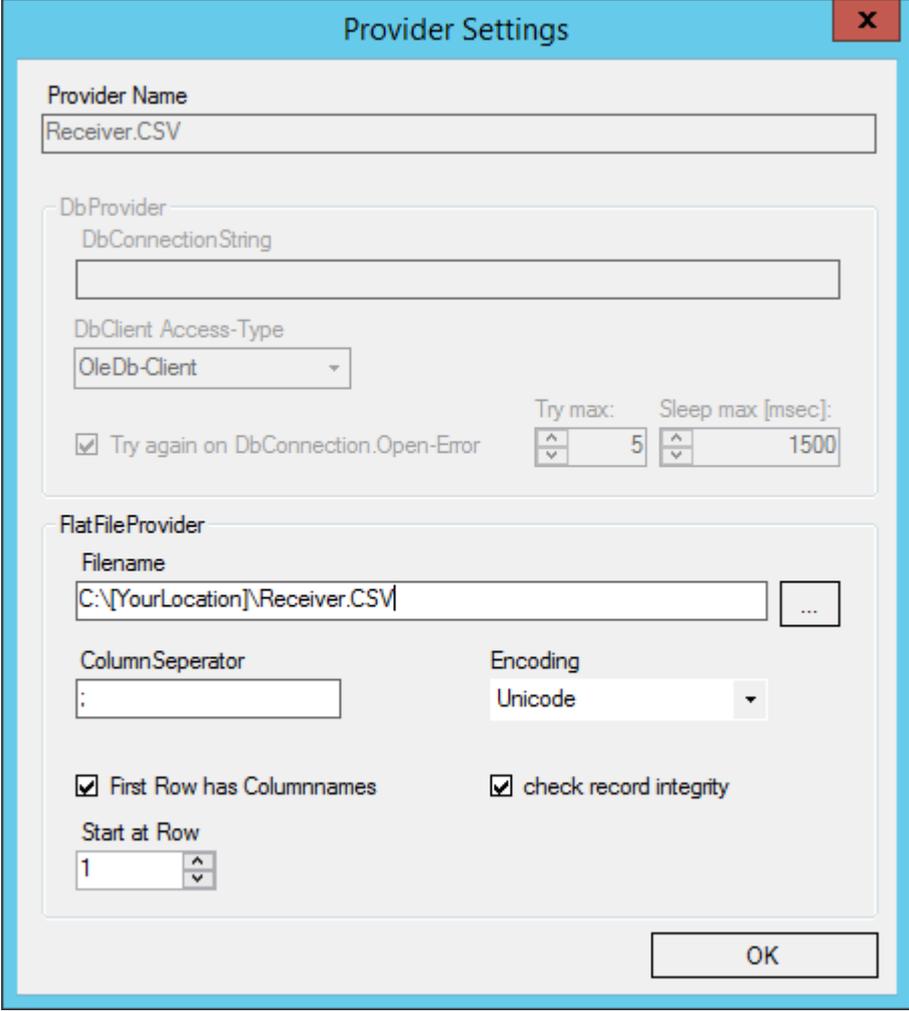
## Run the EFLOW Extract transformation package

1. In the *C:\Extract-Data\Runtime* folder, double-click the *Transform Extract Master Data from eFLOW Control.tpf* file.

All tasks required to transfer the data are selected by default.



- If you changed the location of the *Extract-Data* folder during installation of eFLOW Extract, change the location in the **Transfer Receiver.csv to RefDb.IRReceiverAddressData** task accordingly.



- Click the **Run** button .

After running the package, check the SQL databases to ensure that the data has been transferred successfully. You can also check the transformation package log file in the folder ...TIS\efLOW 6\Bin\Utilities\TisDatatransformations\DTP Designer\Log. To open this file, click the **Open DTP log** button  in the package designer.

## Schedule the transformation package

Use the Windows Task Scheduler to schedule the transformation package to run at regular intervals to update the eFLOW Extract databases with the latest data from the ERP system.

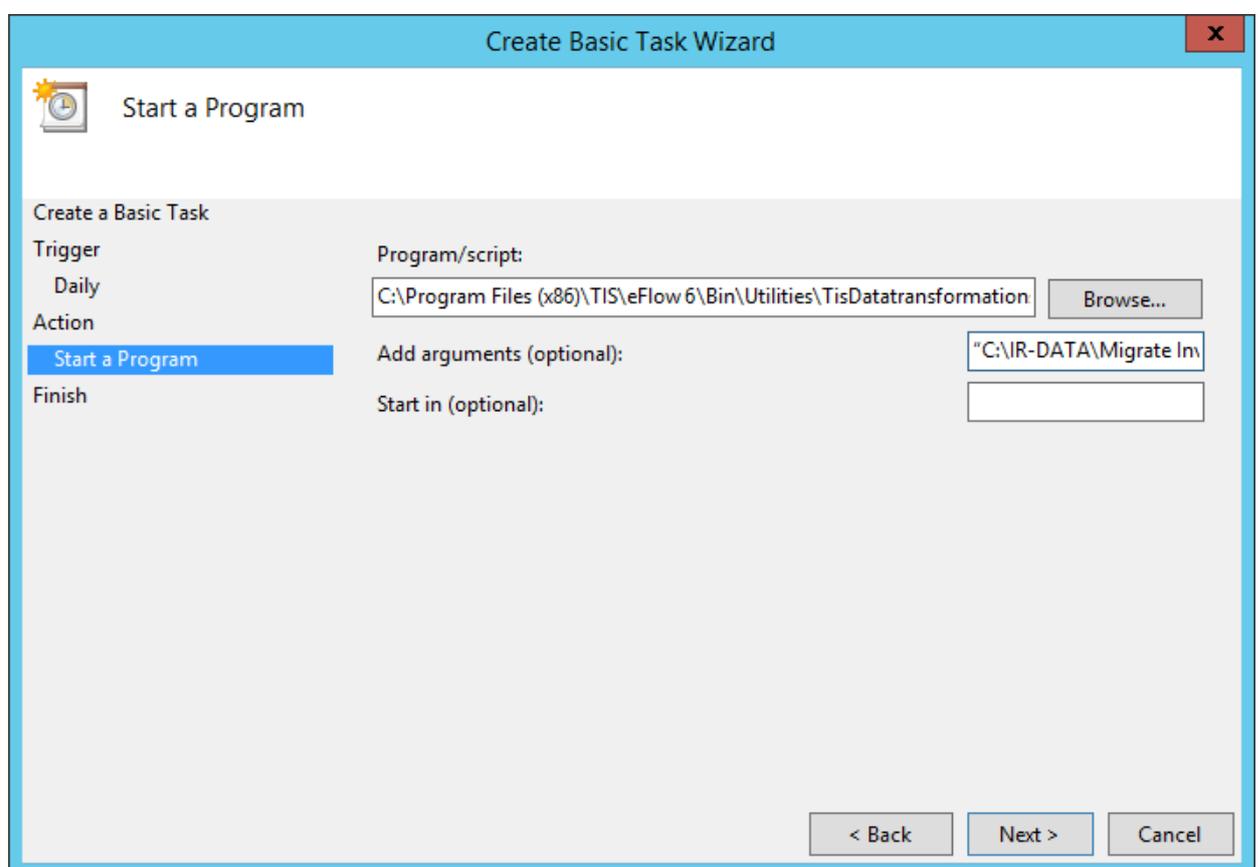
- Start Windows Task Scheduler.
- Right-click on **Task Scheduler Library** and select **Create Basic Task**.
- In the **Create Basic Task Wizard**, enter a name and description for the task.

4. Select a trigger and specify when the task should run, for example, daily.
5. Select the action **Start a program**.
6. In the **Program/script** box, enter the path to the Transformation Package Designer executable. For example (make sure you include the quotes):

*"C:\Extract-Data\DTP Designer\TIS.DevGER.Shared.Data.PackageDesigner.exe"*

7. In the **Add arguments (optional)** box, enter the path to the transformation package. For example (make sure you include the quotes and /ec):

*"C:\Extract-Data\Runtime\Transform Extract Master Data from eFLOW Control.tpf" /ec*



8. Click **Yes** when prompted to confirm the use of arguments.
9. Click **Finish**.

# Export to ERP

To export data from eFLOW Extract, you must configure an external destination in the Deliver2ERP station to represent the external system. eFLOW Extract provides a preconfigured external destination for export to an SAP system running eFLOW Control. If you need to connect to an SAP system running Maxpost, or to non-SAP systems, contact the eFLOW Extract product manager.

## Prerequisites

- Deliver2ERP was included in the eFLOW installation.
- An RFC user has been configured in the SAP system. Data exchange between eFLOW Extract and SAP takes place via this RFC user. See *Roles in the eFLOW Control and Resolve Implementation Guide* for more information.
- The latest SAP GUI for the SAP version that is used is installed on the eFLOW Server.
- The file *ERPEXportSetup.XML* in the folder *...Program Files (x86)\TIS\eflow 6\Bin* is not set to read-only. Deliver2ERP writes the configuration settings to this file.

## Configure the external destination

1. In Design Extract, click **Properties**.
2. Expand the **SettingsControl > SapConnectionParameters** grouping, then click **SapConnectionParameters**.
3. Click the **Add Table Row** button .
4. In the **Value** field, enter the connection details for the SAP system to which the data will be exported.
 

```
NAME="MySapSystem" USER="MyUser" PASSWD="MyPw" CLIENT="100" LANG="EN"
SYSNR="00" ASHOST="SapServerAdress"
```

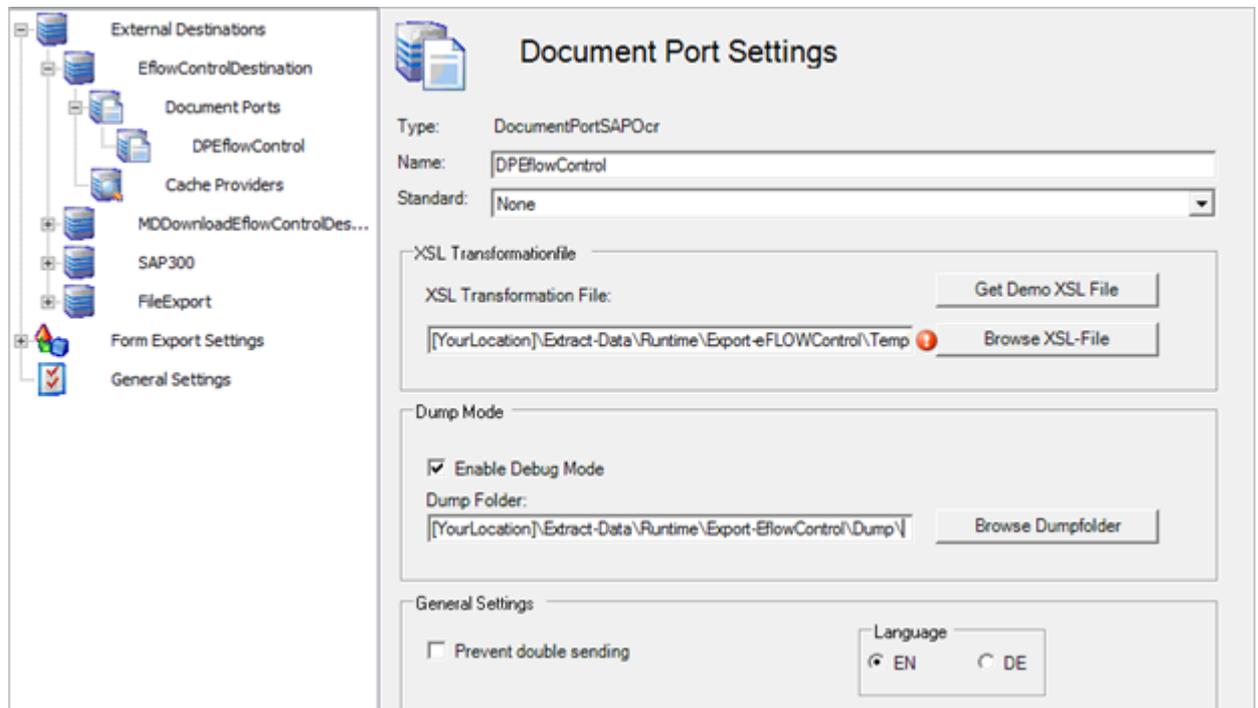
*NAME* refers to the name of the document port defined in Deliver2ERP. In the preconfigured external destination, this is *DPEflowControl*.

*USER* and *PASSWD* refer to the user name and password of the RFC user.
5. In the **Profile** field, select your configuration profile.
6. Click **Save** at the bottom of the screen.

If you changed the location of the *Extract-Data* folder and chose an application name other than **Extract** during installation, you must also perform the following steps:

1. In **eFLOW Launch Pro**, select the station **Deliver2ERP**.
2. On the **Tools** menu, select **Configure**.
3. Expand the nodes **External Destinations > EflowControlDestination > Document Ports**.

4. Click on the **DPEflowControl** port.
5. In the **XSL Transformation File** and **Dump Folder** fields, change the path to point to the location of the *Extract-Data* folder.



6. Expand the **Form Export Settings** node and click **Extract\InvoiceReader\Invoice**.
7. In the **Application** list, select the name of your application.
8. Click the **Save** button .

## Add keywords

Keywords enable eFLOW Extract to recognize the invoice language, and to locate, extract and validate field values on the invoice. eFLOW Extract provides a predefined list of keywords in various languages (depending on the installed country packages), and you can add your own keywords.

Keywords can be mapped to a specific value that is entered as the field value when the keyword is found. For example, in English, keywords such as BILL OF SALE can be mapped to the value INVOICE to identify the document type as an invoice, or CREDIT MEMO can be mapped to the value CREDITNOTE to identify the document type as a credit note.

**Note:** If you do not yet have a [configuration profile](#), create one first.

To add keywords:

1. [Open Design Extract](#).
2. In the **Data Lookup** node, click **Approximate**.
3. Expand the appropriate grouping. For example, to define a new keyword for a date, expand **Label** and then **Date**.
4. Click the label or value to which you want to add the keyword and then click the **Add Table row** button .
5. In the **Value** field, enter the keyword, then click in the **Languages** field and select the languages for which the keyword applies from the dropdown list.
6. In the **Profile** field, select your configuration profile.
7. Click **Save** at the bottom of the screen.

## Define the PO format

You may need to define a new recognition rule for the PO format so that eFLOW Extract can identify the receiver's purchase order numbers. Defining the PO format involves the following steps.

1. Create a new recognition rule for the **PO\_Number** header field.  
Design Extract provides a sample rule, **TemplateNumberPo\_Sample**, that you can copy and adapt.
2. Link this rule to the **PO\_Number\_Candidate** and **Position\_PO\_Number** fields. This saves you having to define the same rule again for these fields.
3. Create a normalization for the PO number field and deactivate the default normalizations.

**Note:** You must have already created a configuration profile and a deactivation profile. See [Create a configuration profile](#).

## Create a new rule for the header PO number

1. Click the **Recognition Rules** node.
2. Expand the **Fields** grouping, then click the **PO\_Number** grouping.
3. Click the **Add new recognition rule** button .

Alternatively, to copy and adapt the sample rule, expand the **PO\_Number** grouping, click on **TemplateNumberPo\_Sample**, then click the **Clone recognition rule** button .

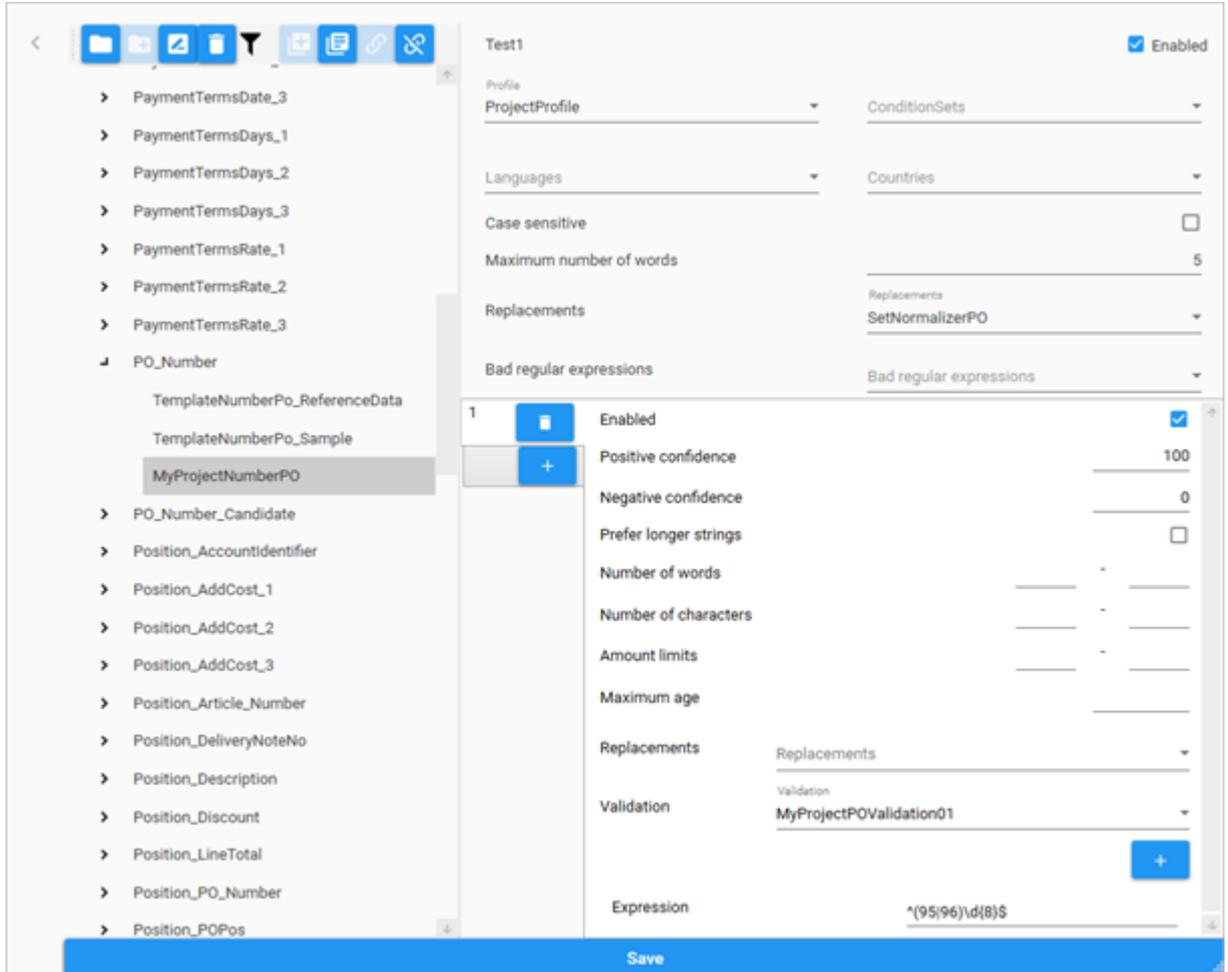
4. Enter a name for the rule and click **OK**.

5. In the **PO\_Number** grouping, click on the new rule.
6. In the **Profile** field, select your configuration profile.
7. Enter the general settings:

<b>Setting</b>	<b>Value</b>
Maximum number of words	Maximum number of words allowed for the value to be considered as a candidate.
Replacements	Select <b>Set NormalizerPO</b> .  This predefined normalization set contains normalizations that remove blank spaces and superfluous characters.

8. Click the **Add** button  on the left to add an evaluation.
9. Enter the evaluation settings. For example:
  - a. Enter a **Positive Confidence** value of 100.
  - b. Click the **Add** button  below the **Validation** dropdown list to add a new validation. Enter a validation name and click **OK**.

- c. In the **Expression** field, enter the regular expression `^(95|96)\d{8}$` to find PO numbers that begin with 95 or 96 followed by 8 digits.



The screenshot displays the configuration interface for a validation rule named "Test1". The left sidebar shows a tree view of templates, with "MyProjectNumberPO" selected under the "PO\_Number" category. The main configuration area includes the following settings:

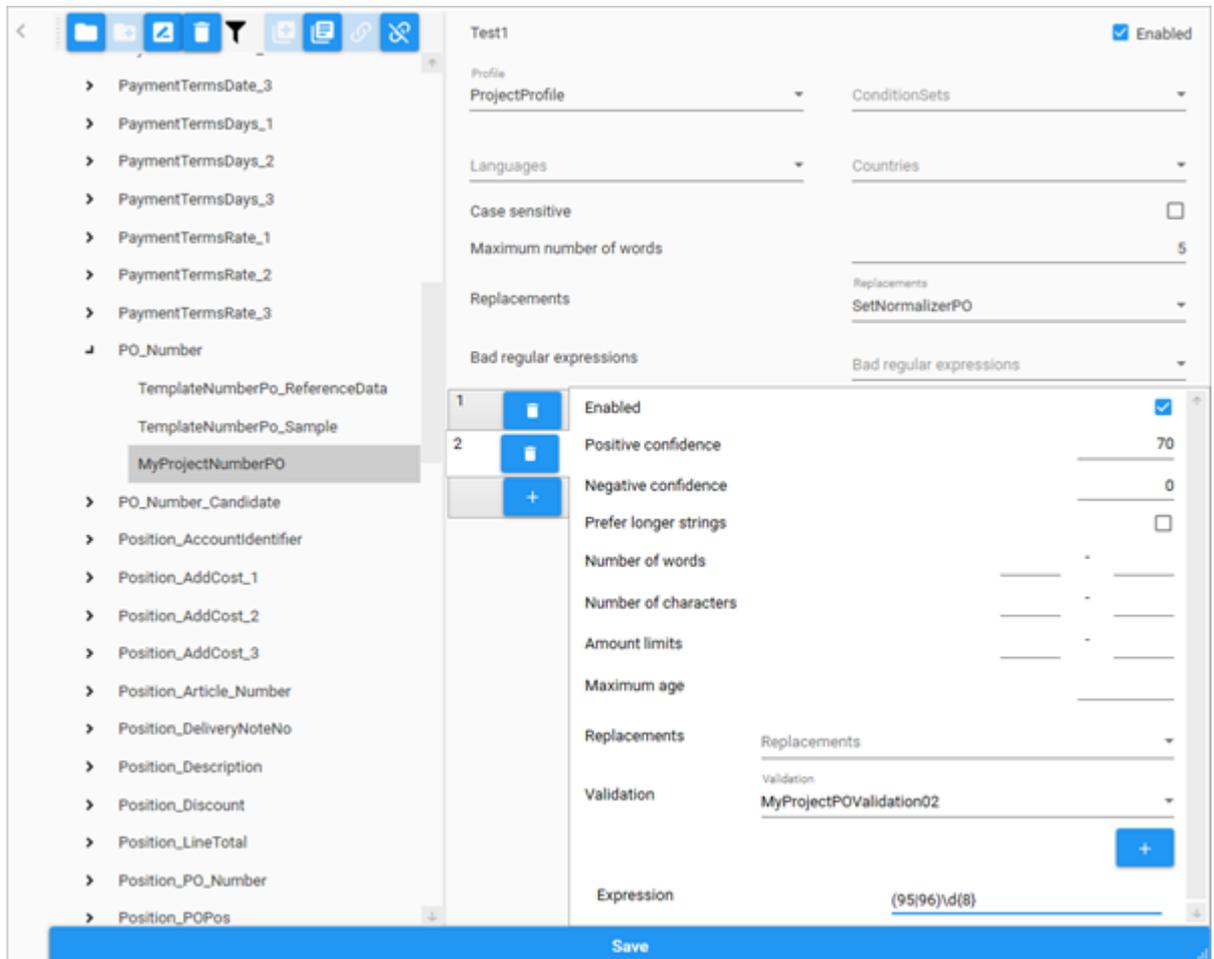
- Profile:** ProjectProfile
- ConditionSets:** ConditionSets
- Languages:** Languages
- Countries:** Countries
- Case sensitive:**
- Maximum number of words:** 5
- Replacements:** SetNormalizerPO
- Bad regular expressions:** Bad regular expressions

Below these settings is a table for rule instances:

Instance	Enabled	Positive confidence	Negative confidence	Prefer longer strings	Number of words	Number of characters	Amount limits	Maximum age	Replacements	Validation
1	<input checked="" type="checkbox"/>	100	0	<input type="checkbox"/>	-	-	-	-	Replacements	MyProjectPOValidation01

The **Expression** field for instance 1 contains the regular expression: `^(95|96)\d{8}$`. A "Save" button is located at the bottom of the configuration area.

- d. (Optional) Click the **Add** button  on the left to add another evaluation. For example, you can add a second evaluation with the regular expression (95|96)\d{8}, which is less strict, and assign a lower **Positive Confidence** value.



10. Click **Save** at the bottom of the screen.

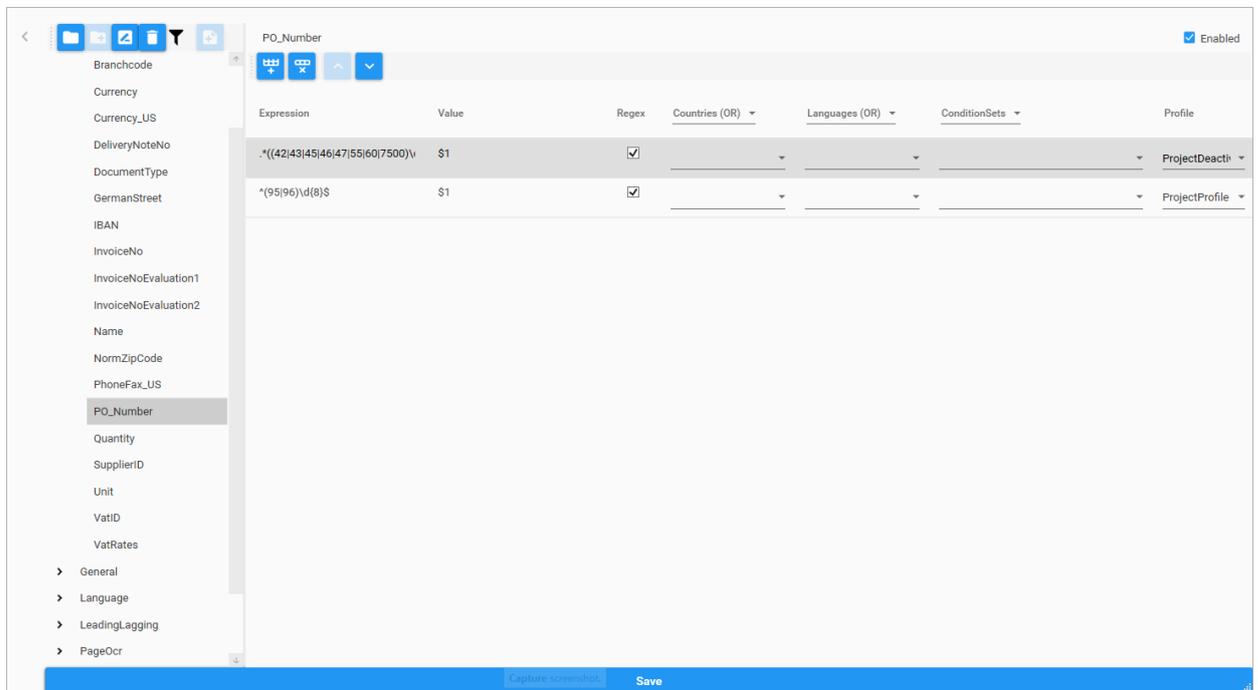
## Link the rule to other PO number fields

1. Click the **PO\_Number\_Candidate** grouping and then click the **Link recognition rule** button .
2. Select the new rule you just created and click **OK**.  
The rule is added to the **PO\_Number\_Candidate** grouping.
3. Repeat these steps for the **Position\_PO\_Number** grouping.
4. Click **Save** at the bottom of the screen.

Any changes you make to the rule will be reflected in all linked fields.

## Create and deactivate normalizations

1. In the **Normalization** node, click **Normalization**.
2. Expand the **Fields** grouping and click **PO\_Number**.
3. Click the **Add Table Row** button .
4. Enter your regular expression for the PO number and check the **Regex** check box.
5. Enter the **Value** to replace the expression.
6. In the **Profile** field, select your configuration profile.
7. For each default normalization in the table, in the **Profile** field, select your deactivation profile.



Expression	Value	Regex	Countries (OR)	Languages (OR)	ConditionSets	Profile
.*(42 43 45 46 47 55 60 7500)\v	\$1	<input checked="" type="checkbox"/>				ProjectDeacth
*[95 96].d(8)\$	\$1	<input checked="" type="checkbox"/>				ProjectProfile

8. Click **Save** at the bottom of the screen.

## Define VAT rates

By default, no VAT rates are activated in [Design Extract](#). You must therefore activate the VAT rates to be used in your project.

If you need to define your own VAT rates, the following steps are required:

1. Create a new rule for the **VAT1** field.
2. Link this rule to the **VAT2** and **VAT13** fields.

3. Create a new rule for **VAT12** field.
4. Deactivate the default rules for the **VAT1**, **VAT2**, **VAT12** and **VAT13** fields.

**Note:** You must have already created a configuration profile and a deactivation profile. See [Create a configuration profile](#).

## Activate VAT rates

1. Click the **Properties** node.
2. Expand the **SettingsGeneral > SpecificVatRates** grouping, then click **SpecificVatRates**.
3. For each VAT rate that you will use, in the **Profile** field, select your configuration profile.
4. Optionally, select the **Countries** and/or **Languages** for which the VAT rates apply.
5. If a needed VAT rate is not listed, you can add it:
  - a. Click the **Add Table Row** button .
  - b. Enter the VAT value.
  - c. In the **Profile** field, select your configuration profile.
6. Click **Save** at the bottom of the screen.

## Define new VAT rates

eFLOW Extract provides the standard recognition rule templates **TemplateRateVatStandard\_General** and **TemplateRateVatCalculation\_General** for VAT rates. If you need to use a VAT rate that is not defined in these templates, you must create a new recognition rule for that VAT rate.

### Create a new rule for the VAT1 field

1. Click the **Recognition Rules** node.
2. Expand the **Fields** grouping, then click the **VAT1** grouping.
3. Click the **Add new recognition rule** button .
4. Enter a name for the rule and click **OK**.
5. In the **Profile** field, select your configuration profile.
6. Enter the settings. In the **Expression** field, adjust the regular expression to find the VAT rates.
7. (Optional) Click the **Add** button  to add another evaluation.
8. Click **Save** at the bottom of the screen.

## Link the template to VAT2 and VAT13 fields

1. Click the **VAT2** grouping and then click the **Link existing recognition rule** button .
2. Select the new rule you just created and click **OK**.
3. Repeat for the **VAT13** field.
4. Click **Save** at the bottom of the screen.

## Create a new rule for the VAT12 field

1. Expand the **Fields** grouping, then click the **VAT12** grouping.
2. Click the **Add new recognition rule** button .
3. Enter a name for the rule and click **OK**.
4. In the **Profile** field, select your configuration profile.
5. Enter the settings. In the **Expression** field, adjust the regular expression to find the VAT rates.
6. (Optional) Click the **Add** button  to add another evaluation.  
Click **Save** at the bottom of the screen.

## Deactivate the default rules

1. In the **VAT1** grouping, click **TemplateRateVatStandard\_General**.
2. In the **Profile** list, select your deactivation profile.
3. Repeat for the **VAT2** and **VAT13** fields.
4. In the **VAT12** grouping, click **TemplateRateVatCalculation\_General**.
5. In the **Profile** list, select your deactivation profile.
6. Click **Save** at the bottom of the screen.

# Use conditions

Conditions enable you to apply different configuration settings for different requirements, such as different clients or company codes.

Design Extract provides some predefined conditions that you can use, for example, for specific countries and languages. It also provides sample conditions in the **Samples** folder, which you use as a basis to create your own conditions.

Conditions are always grouped in condition sets, which you can then assign to configuration settings. These settings are only used if the condition is fulfilled.

## Create a condition

The following procedure demonstrates how to define a condition for a specific company code. Design Extract provides a sample template for a company code condition, which you can copy and adapt to your requirements.

1. In [Design Extract](#), expand the **Conditions** node and then click **Condition**.
2. Expand the **Samples** grouping and click on **BukrsIs1000**, then click the **Clone Condition** button .
3. Enter a name for the condition and click **OK**.
4. In the **Samples** grouping, click on your new condition.
5. In the **Expression** box of your new condition, change all instances of ("BUKRS") == "1000" to match your company code, for example, change it to ("BUKRS") == "1234".
6. Click **Save** at the bottom of the screen.

## Create a condition set

1. Expand the **Conditions** node, then click **Condition Set**.
2. Click the **TestSample** grouping, then click the **Add new condition set** button .
3. Enter a name for the condition set and click **OK**.
4. In the **TestSample** group, click on your new condition set.
5. In the conditions list on the right, select your condition, then click the **Select** button .

The condition moves to the **Selected Conditions** list.

Click **Save** at the bottom of the screen.

## Apply a condition in Design Extract

1. Select the setting to apply the condition to.
2. Click in the **Condition Sets** field and select the condition set.
3. Click **Save** at the bottom of the screen.

## Apply a condition in ExtractSettingsGlobal

1. Open the *ExtractSettingsGlobal.appconfig* file.
2. Locate the setting to which the condition will apply.

3. Add a new `<Value Case>` parameter with the value `"ConditionSets([YourConditionSetName])"`, for example:

```
<Value Case="ConditionSets(CompanyCodels1234)">true</Value>
```

4. Save the file.

## Pass the eFLOW Extract status to eFLOW Control in SAP

eFLOW Control is part of eFLOW Control and Resolve, the TIS automated invoice processing add-on for SAP. It receives invoices from eFLOW Extract.

You can configure eFLOW Extract to pass information about the status of invoices in the eFLOW Extract workflow to eFLOW Control. eFLOW Control users can then see which invoice documents are currently queued in each eFLOW station and view the invoice images. See the eFLOW Control and Resolve documentation for more information on eFLOW Control.

You set the configuration parameters in [Design Extract](#).

### Prerequisites

- eFLOW Extract 6.0
- eFLOW Control 5.2 Service Pack 3 or higher
- An RFC user has been configured in the SAP system. Data exchange between eFLOW Extract and SAP takes place via this RFC user. See *Roles* in the *eFLOW Control and Resolve Implementation Guide* for more information.

### Define the SAP connection parameters

1. Click the **Properties** node.
2. Expand the **SettingsControl > SAPConnectionParameters** grouping, then click **SAPConnectionParameters**.
3. Click the **Add Table Row** button .

4. In the **Value** field, enter the connection details for the SAP system to which the status will be passed.

```
NAME="MySapSystem" USER="MyUser" PASSWD="MyPw" CLIENT="100" LANG="EN"
SYSNR="00" ASHOST="SapServerAdress"
```

*NAME* refers to the name of the document port defined in Deliver2ERP. In the preconfigured external destination, this is *DPEflowControl*.

*USER* and *PASSWD* refer to the user name and password of the RFC user.

5. In the **Profile** field, select your configuration profile.
6. Click **Save** at the bottom of the screen.

## Activate workflow status tracking

1. Click the **Properties** node.
2. Expand the **SettingsControl > ReportWorkflowProgress** grouping, then click **ReportWorkflowProgressEnabled**.
3. Click the **Add Table Row** button .
4. In the **Value** field, enter **true**.
5. In the **Profile** field, select your configuration profile.
6. (Optional) If the Recognize station runs on multiple machines, set the web service URL for each machine:
  - Click **ReportWorkflowProgressServiceUrl**.
  - For each additional machine that runs Recognize, click the **Add Table Row** button . In the **Value** field, enter the address of the *WorkflowStatusTrackingService* for that machine, and select your configuration profile in the **Profile** field.
7. Click **Save** at the bottom of the screen.

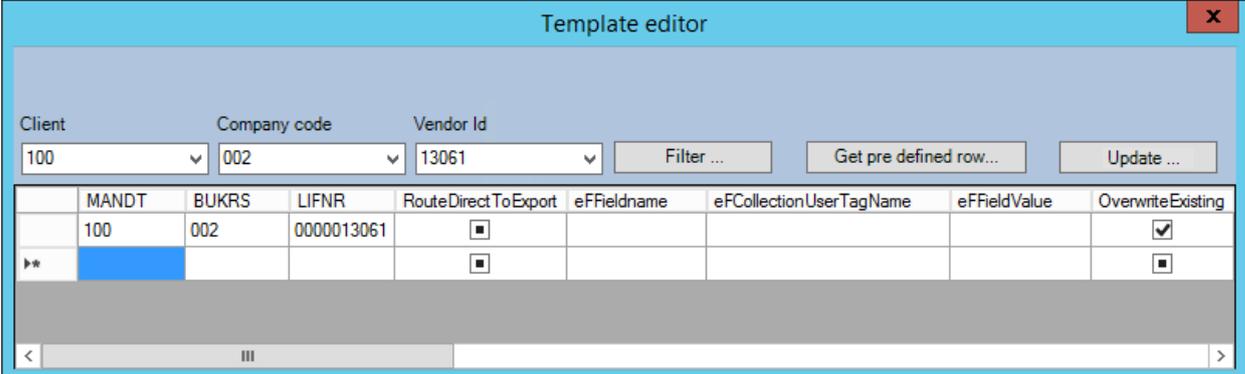
## Supplier-specific settings

You can configure the following default values to use for specific suppliers:

- Route collections that pass all validations directly to the Deliver2ERP station.
- Set fixed values for fields or user tags.
- Specify a learning template for supplier identification.
- Define a format for date and amount fields.
- Define replacement rules for fields.
- Skip dynamic learning for the supplier.

## Edit supplier specific settings

1. In the eFLOW Extract Validate station, press F5 to open the **Learning** window.
2. Select the menu item **Plugins > Template editor**.
3. Enter the client (**MANDT**), company code (**BUKRS**) and supplier ID (**LIFNR**).
4. Enter the required values in the appropriate field. See the following sections for detailed information.



Client	Company code	Vendor Id	Filter ...	Get pre defined row...	Update ...		
100	002	13061					
MANDT	BUKRS	LIFNR	RouteDirectToExport	eFieldname	eFCollectionUserTagName	eFieldValue	OverwriteExisting
100	002	0000013061	<input type="checkbox"/>				<input checked="" type="checkbox"/>
»»			<input type="checkbox"/>				<input type="checkbox"/>

**Note:** All records in the editor require an entry in the **LIFNR** field, except those configured for direct routing to export.

## Set routing to the Deliver2ERP station

In the *ExtractSettingsGlobal.appconfig* file, in the section `<Stations><Recognition><PostProcess><Routing><RouteDirect2Export>`, you can specify for each invoice type whether collections are by default sent directly to the Deliver2ERP station if all validations are passed.

```

❑ <PostProcess></PostProcess>
  ❑ <Routing></Routing>
    ❑ <RouteDirect2Export></RouteDirect2Export>
      ❑ <FI></FI>
        ❑ <Property Name="Supported" CLRType="Boolean" Comment="Specify EnabledState of the function"></Property>
          <Value Case="">>true</Value>
        ❑ <FIPosition></FIPosition>
          ❑ <Property Name="Supported" CLRType="Boolean" Comment="Specify EnabledState of the function"></Property>
            <Value Case="">>true</Value>
        ❑ <MM></MM>
          ❑ <Property Name="Supported" CLRType="Boolean" Comment="Specify EnabledState of the function"></Property>
            <Value Case="">>true</Value>
  
```

You can override these settings for a specific client, company code or supplier.

In the **Template Editor**, in the **RouteDirectToExport** field, check the check box to allow, or uncheck to disallow, direct export routing.

**Note:** This is the only setting that does not necessarily require a specific supplier ID. For example, you can disable direct routing for a specific client and company code, and the setting will apply to all suppliers of the specified company code in the specified client.

## Set fixed values for fields

You can force the content of a specific field to be set to a fixed value for a specific supplier, such as the currency or the document type.

Enter the name of the field and the fixed value in the **eFFieldName** and **eFFieldValue** fields.

To overwrite the existing field value, check the check box the **OverwriteExisting** field.

**Note:** This is the only setting for which the **OverwriteExisting** field is relevant.

## Set fixed values for user tags

You can force the content of a specific user tag to be set to a fixed value for a specific supplier. Typically, this is used to enforce the invoice type.

Enter the name of the user tag and the fixed value in the **eFCollectionUserTagName** and **eFFieldValue** fields.

## Specify a learning template

You can specify a text-based learning template to use for identifying a specific supplier. The company code must have been identified in advance. For information on creating a learning template, see the *eFLOW Extract Validate User Guide*.

Enter the template name in the **efTemplate** field.

## Define formats

You can define supplier-specific formats for date and amount fields.

1. Enter the name of the field in the **eFFieldName** field.
2. Enter the required values in the **Normalization\_** fields.

Field	Description
Normalization_ExecuteSpecial	Determines how three digits after a decimal separator are interpreted. For example: <input checked="" type="checkbox"/> Checked: 1.000 is interpreted as 1000 <input type="checkbox"/> Cleared: 1.000 is interpreted as 1
Normalization_LCID	Specifies the LCID (Microsoft locale ID) for the field.
Normalization_FormatString	Specifies the final format for dates and amounts.
Normalization_Replaces	Specifies characters to replace in the field. These settings override <i>&lt;Replace&gt;</i> settings for the field in the <i>ExtractSettingsGlobal.appconfig</i> file.

## Skip Dynamic Learning

If you do not want dynamic [learning](#) to be performed for the supplier, check the **Skip Dynamic Learning** check box.

## FIP configuration

By default, invoices that have no reference to a purchase order (FI invoices) are exported without line items. There may be cases, however, where line items are required on an FI invoice in order to record accounting information. Such invoices are known in eFLOW Extract as FIP invoices: FI + Positions.

If you expect to receive FIP invoices from a supplier, you must define that supplier as an FIP supplier. You can then assign default account assignments that are added to the line items based on identifiers quoted on the invoice, such as a mobile telephone number, a car registration number, and so on.

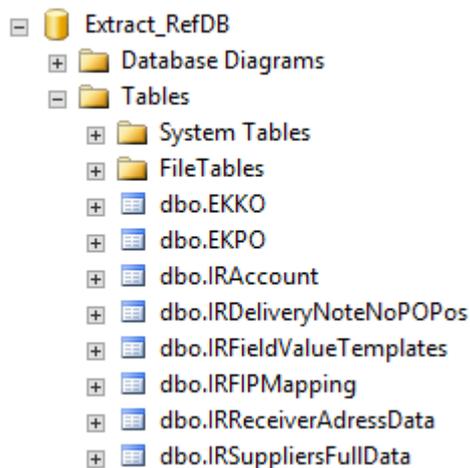
You must enable FIP in the Validate station.

**Note:** Users can also define FIP suppliers and account assignments in the Validate station. See the *eFLOW Extract Validate User Guide* for more information.

## Configure FIP suppliers

To configure suppliers that send FIP invoices:

1. Open Microsoft SQL Server Management Studio.
2. Expand the **Databases** tree to display the eFLOW Extract **RefDB** database tables.



3. Right-click on the table **IRFIPMapping** and select **Edit Top 200 Rows**.
4. Enter the client, company code and supplier ID.
5. In the **FIPositions** field, enter **1**.

## Define account identifiers

1. In Microsoft SQL Server Management Studio, expand the **Databases** tree to display the eFLOW Extract **RefDB** database tables.
2. Right-click on the table **IRAccount** and select **Edit Top 200 Rows**.
3. Enter the client, company code and supplier ID.
4. Enter the account identifier and the corresponding GL accounts and cost center.

	MANDT	BUKRS	SupplierId	AccountIdentifier	AccountNo	Costcenter	Deleted	CreatedAt
1	100	1000	0000013062	K-TI2000	1234	5678	0	2014-02-11 11:46:06.503
2	100	1000	0000013062	K-TI66	21	83748	0	2014-02-11 11:46:29.003
3	100	1000	0000013062	K-TI9999	13243	2321	0	2014-02-11 11:46:15.233
4	100	1000	0000013061	01636519043	9118	24382	0	2014-02-11 11:22:49.510
5	100	1000	0000013061	01636519045	131	24382	0	2014-02-11 11:23:06.153
6	100	1000	0000013061	01636519040	34344	24382	0	2014-02-11 11:23:28.260

**Note:** Validate users can also define account identifiers in the Validate station. See the *eFLOW Extract Validate User Guide* for more information.

## Enable FIP in Validate

To enable FIP in the Validate station, in the file *ExtractSettingsGlobal.appconfig* set the `<Stations><Validate><FIPosition><Supported>` property to **true**.

## Custom fields

eFLOW Extract comes preconfigured with most of the fields required in a project, but you can also add additional fields. Ten "extension" fields (**Ext\_1** to **Ext\_10**) are provided for this purpose, which are fully integrated in eFLOW Extract.

The following steps are required to use the extension fields.

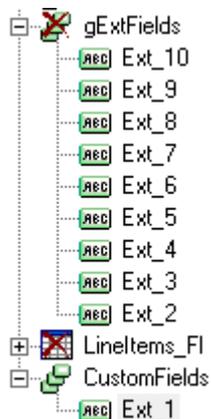
**Note:** Recognition, validation and learning configuration is only required for fields that should be recognized. Statistics configuration is only required if the field should be included in the eFLOW Extract Statistics reports.

## Add the field in Design Free

1. In eFLOW LaunchPro, select the eFLOW Extract application and the **Design Free** tool.
2. In the **Select form** dialog box, select the **Flow** and **Form** and then the appropriate **Script**. For example, select the **R\_Ext1** script to add the **Ext\_1** field.

**Note:** You may need to first select the menu item **File > Open** to display the **Select form** dialog box.

3. Right-click on **Groups** and select **New group**. To change the group name, click twice on the group and enter a new name.
4. Expand the **gExtFields** group, then drag and drop the field that corresponds to the selected script (for example, **Ext\_1**) into your new custom group.



5. Enter the properties for the field. The **Type** must be **Words group**. See the *Design Free User Guide* for more information on the field properties.
6. (Optional) If you need to connect your custom field to another previously recognized field (for example, to specify the field's location in relation to the recognized field), create an injection group:
  - a. Add a new group, for example, **gInjection\_Ext\_1**.
  - b. Drag and drop the field that is to connect to your custom field into the injection group. Set the **Type** value for the field to **Words group** and in the **Validation DLL** field, enter **"FreedomInvocationSharedValidation\_Native.ValidateInjectedField"**.
  - c. Drag the injection group into your new custom group.
 

The diagram shows a tree structure of groups and fields. On the left, there is a group named 'gInjection\_Ext\_1' containing a field 'Total\_Amount'. On the right, there is a group named 'CustomFields' containing a field 'Ext\_1'. A dashed line indicates that the 'gInjection\_Ext\_1' group is being moved into the 'CustomFields' group, as a second 'gInjection\_Ext\_1' group is now shown nested under 'CustomFields'.
  - d. Add rules to define the relationship between the fields. See the *Design Free User Guide* for more information.
  - e. Make sure that the injection group is located above your custom group in the **Groups** tree. Use the **Move object up**  or **Move object down**  button to change the group's location.
7. Click the **Save** button .

## Add the field to the layout in Design

Add the field to the Validate station layout using the Design module. See the *Layout Designer User Guide* for information on how to add fields to layouts.

## Configure field recognition

1. [Open Design Extract](#).
2. Click the **Recognition Rules** node.
3. Click on the **Fields** grouping, then click the **Add sub-grouping button** .
4. Enter the name of the field, then click **OK**. The name must be exactly the same as in Design Free, for example, **Ext\_1**.
5. Click the **Properties** node.
6. In the **SettingsRecognition > Freedom scripts > R\_Ext\_Enabled** grouping, click **R\_Ext\_Enabled**.
7. Click the **Add Table Row** button .
8. Enter the name of the **R\_Ext** script that you selected in Design Free, for example, **R\_Ext1**.

9. In the **Profile** field, select your configuration profile.
10. Click **Save** at the bottom of the screen.

## Configure field validation

1. In the [Configuration Editor](#), open the *ExtractSettingsGlobal.appconfig* file.
2. In the section <Shared><Statics><Validations><Fields>, locate the field (for example, <Ext\_1>) and specify the validation properties, such as the required format, normalizations, dependent fields, and so on.
3. Save your changes.

## Configure the field for manual learning

1. In eFLOW LaunchPro, select the eFLOW Extract application and the **Design Free** tool.
2. Select the field and change the Validation DLL to "**FreedomInvocationSharedFieldLearning\_Native.ValidateSchemaAndCandidateConfig**". This is not mandatory, but is strongly recommended.

The standard validation DLL for extension fields is "**FreedomInvocationSharedFieldLearning\_Native.ValidateSchemaOnly**", which checks whether the field value lies in the same area as the user marked in the Learning module. However, this validation only checks the rectangle, and not its contents. If more than one value lies within the rectangle, it is not possible to identify the correct value without defining a mask in Learning.

The "**FreedomInvocationSharedFieldLearning\_Native.ValidateSchemaAndCandidateConfig**" validation DLL checks both the rectangle and the required format that is defined in Design Extract.

3. Click the **Save** button .
4. Open the *ConfigFieldLearning.appconfig* file in a text editor.
5. Add the field and enter the properties.
6. Save your changes.

## Configure the field for dynamic learning

1. Open Microsoft SQL Server Management Studio.
2. Add the field to the history table. This ensures that history data is collected for the field.
  - a. Expand the **Databases** tree to display the eFLOW Extract **DynamicData** database tables.
  - b. Right-click on the **ConfigDynamicDataField** table and select **Edit Top 200 Rows**.
  - c. Add the field to the table and set **IsDataCollectionEnabled** to **True**.
  - d. Save your changes.

3. Add the field to the Dynamic Learning field base.
  - a. Expand the **Databases** tree to display the eFLOW Extract **DynamicLearning** database tables.
  - b. Right-click on the **ConfigDynamicLearningFieldBase** table and select **Edit Top 200 Rows**.
  - c. Add the field to the table and set the following properties:

Property	Value
ConfigDynamicLearning DataType	The field's data type. This must be one of the values defined in the <b>ConfigDynamicLearningDataType</b> table:  1: Amount  2: String  3: Number  4: Date  5: AmountDecimalOnly
Name	Name of the field, for example, <b>Ext_1</b> .
IsRecognitionEnabled	True
IsRequired	False
LocalRectangle	150
Sequence	Next highest number. For example, if the highest number in this column is 20, set the value to 21.
ApplyValidation	True
ApplyMasks	False if the field is normalized (such as a date or amount), otherwise True.

- d. Save your changes.
- e. Right-click on the **ConfigDynamicLearningField** table and select **Edit Top 200 Rows**.
- f. Add a new record with the same field ID as the record you just added to the **ConfigDynamicLearningFieldBase** table. Set the **FirstPageOnly** value to **False**.
- g. Save your changes.

4. Add the field to a group. Fields that are not part of a group cannot be dynamically learned. You should always add a new group unless the field needs to have a connection to other fields in one of the existing groups.
  - a. Right-click on the **ConfigDynamicLearningBundleStatic** table and select **Edit Top 200 Rows**.
  - b. Enter a **Name** for the group and set the properties.

Property	Value
Name	A name for the group, for example, <b>CustomFields</b> .
IsEnabled	True
Sequence	Next highest number. For example, if the highest number in this column is 7, set the value to 8.
MaxSpace	This value is used by the Dynamic Learning mechanism when checking the relations between fields within a group to find candidates for learning. It specifies the maximum vertical distance between the group's fields, that is, the maximum number of lines allowed between the topmost and the lowest recognized field in the group. Dynamic Learning normally calculates this value based on the history. If it fails to calculate a value for this group, the value specified in the <b>MaxSpace</b> property is used.
FirstPageOnly	False

- c. Save your changes.
- d. Right-click on the **ManyToManyStaticBundleField** table and select **Edit Top 200 Rows**.
- e. Add a new record with the ID of your group and the ID of the field.
- f. Save your changes.

## Include the field in statistics

1. Open the *StatisticsConfig.appconfig* file in a text editor.
2. Add the field to the section `<FieldStatistic><Fields>`.
3. Save your changes.