




Deltek

# Deltek Maconomy®

BPM Admin Guide

August 11, 2021



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# Overview

## How this Document is Organized

This document is organized so that you can go quickly to the section you need. Use Ctrl+F to easily find the term you are searching for, or see the table below to find the section to help you.

Section	Description	Use it when...
Install	Steps to enable BPM in Maconomy and People Planner, as well as install SAP Business Object, and set up Pentaho.	<ul style="list-style-type: none"><li>You must perform an installation and enable BPM in Maconomy and People Planner.</li></ul>
Upgrade	Steps to upgrade BPM, including ETL, universes and documents, and customizations.	<ul style="list-style-type: none"><li>You must upgrade your BPM system.</li></ul>
Setup and Configuration	Provides setup and configurations for your BPM system, including	<ul style="list-style-type: none"><li>You need to set up particular aspects of your system, such as.</li></ul>
Statutory	Provides general statutory setup steps as well as country-specific setup.	<ul style="list-style-type: none"><li>You must install or upgrade statutory reports or components.</li></ul>
Customizations	Details all the ways you can extend your BPM system through different customizations and localization.	<ul style="list-style-type: none"><li>You want to maximize your Maconomy system through the various customizations and extensions available.</li><li>You need localization steps.</li></ul>
System Maintenance and Regular Use	Includes details for performing overall maintenance on your BPM system, including....	<ul style="list-style-type: none"><li>You need to perform routine system admin duties, such as running regular maintenance.</li></ul>
Other Setup	Miscellaneous setup material.	<ul style="list-style-type: none"><li>Review non-typical procedures, such as USync installation, and using a non-standard web server port.</li></ul>
Troubleshooting	Includes troubleshooting as well as frequently asked questions for key areas of BPM.	<ul style="list-style-type: none"><li>You have issues or questions when running BPM or related systems or processes.</li></ul>

# INSTALL

Business Performance Management (BPM) Reporting consists of a collection of universes and standard reports. Universes provide actuals, budget amounts, and dimensions for producing standard reports and ad hoc queries in Business Objects Web Intelligence. All standard reports run on Maconomy's transactional database through one or more universes.

This section provides steps for installing BPM Reporting and setting up Maconomy. This process includes:

- Installing and configuring SAP BusinessObjects.
- Importing universes and reports that are contained in Business Intelligence Archive Resource (BIAR) files.
- Managing users and single sign-on settings.
- Entering the necessary setup data in Maconomy.

This data is required for the universes and reports to work correctly. Detailed explanations of the setup procedures are included in appendices to this document.

For specific requirements for hardware, see the documentation for BusinessObjects, Pentaho, Maconomy, Oracle, and SQL Server.

**Tip:** This document does **not** contain information about hardware, sizing, performance tuning, or maintenance.

## **Note: Access Control**

In BPM, access control applies in the same way as in Maconomy. In BPM Analysis, access control is not applied on dimension tables. The reason is that the analysis universes are used in another way where fact tables are typically involved in queries. When doing so, access control applies in the same way as in Maconomy.

# Installation Files

## SAP BusinessObjects

SAP BusinessObjects is required for *BPM Reporting*, *BPM Analysis*, and *BPM People Planner*.

Installation files for SAP BusinessObjects (including SAP LiveOffice), are located on the download server:

<\\d\\applications\\Released\\BPM\\Business Objects\\BO BI 4.2\\4.2 SP 8>

## Pentaho Data Integrator

Pentaho Data Integrator is required for *BPM Analysis* and *BPM People Planner*.

Installation files for Pentaho Data Integrator are located on the download server:

<\\d\\applications\\Released\\BPM\\Pentaho\\Pentaho Data Integration\\Pentaho-8.2-InstallationBundle>

## Reporting Packing Unit (RPU)

The installation package containing BPM is comprised in a zipped folder called a *Reporting Packing Unit* (RPU).

RPUs are available in zipped format on the DSM under the matching Maconomy version as a sub-product.

An RPU is named after the version and solution it contains. For example,

`rpu.21.sp101.cu001.1.s-std.zip`

The general format of the folder name is:

`rpu.<main version>.<service pack>.<cumulative update>.<build number>.<solution>.zip`

The solutions available are:

- Standard
- PSO
- CPA

A packing unit has the following content:

**biars** This folder contains a BIAR file for Oracle and one for MS SQL Server:

Example format:

`bpm-<product>.<main version>.<sp>.<cu>.<build number>.<solution>.<database>.biar`

Furthermore, it contains a file `bpmtoc.txt`, which is a table-of-content file listing the CMS folders, documents, and universes the bpm BIAR files contain.

**css** This folder contains the file `bpmdefault.css` which provides WebI document the default BPM style. The file is only necessary to install if changes need to be made to the style of documents (see section 0)

## Installation Files

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<b>dashboards</b>	This folder contains the JSP files and additional files to be installed on the web server in order for BPM Reporting Dashboards to function (see section 0)
<b>dbcheckscripts</b>	This folder contains SQL scripts that can be executed on the Maconomy database in order to check that Maconomy setup supports BPM. The scripts are divided into two sub-folders - one for Oracle and one for MS SQL Server (see <i>Deltek Maconomy BPM Functional Setup Guide</i> for details).
<b>documentation</b>	This folder contains detailed documentation of the BPM universes. The documentation consists of an HTML file for each universe. This HTML file can be viewed in a browser and lists the folders, dimension objects, measure objects, attribute objects, and filters that the universe offers. For each object, a description is provided.
<b>etl</b>	<p>This folder contains XML files for the ETL of BPM Analysis and BPM People Planner, respectively.</p> <p>Example format:</p> <p>bpm-analysis-etl.&lt;main version&gt;.&lt;service pack&gt;.&lt;cumulative update&gt;.&lt;build number&gt;.xml</p>
<b>performanceviews</b>	This folder contains drop and create scripts for the performance views of BPM Reporting. Furthermore, it contains scripts for installing the flush mechanism of the shared pool. Both performance views and the flush mechanism are installed using MConfig. It also contains drop scripts of the old MV-named performance views. The files in the folder are merely for documentation or relevant if manual installation or deinstallation is needed.

## Licenses

SAP BusinessObjects installation and Pentaho Installation require license keys and license files, respectively.

All licenses can be requested by contacting **Deltek Distribution** at [HQ-Distribution@deltek.com](mailto:HQ-Distribution@deltek.com).

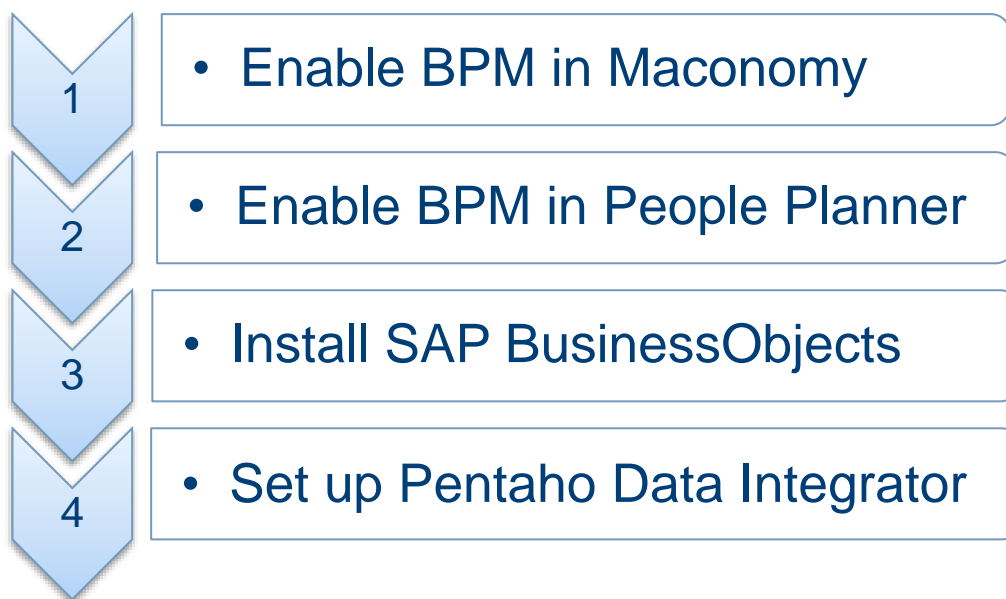
## Certified Versions

All certified versions of SAP BusinessObjects, Pentaho, and other BPM related tools and platforms are stated in the Deltek Maconomy Supported Products document. Specific updates are announced in TechNews.

## New Installation

### Workflow

This process of new installation is divided into four main steps, described below.



### Enable BPM in Maconomy

Enabling BPM in MConfig is required for *BPM Reporting* and *BPM Analysis*.

To prepare the Maconomy database for BPM, enabling is needed. The enabling will install the necessary database views, triggers, and indexes that BPM uses, on the Maconomy database.

1. Start MConfig and then select the relevant Maconomy application.
2. On the Application Configuration dialog box, select the relevant shortname, and click **Edit**.
3. On the Shortname Configuration dialog box, enable
  - **Reporting** to prepare for installing BPM Reporting
  - **Business Intelligence** to prepare for installing BPM Analysis.

Enabling **Reporting** will install EX-views and access control views for BPM Reporting. It will also install the necessary performance views and for Oracle databases a flushing mechanism that automatically cleans up in the shared pool.

Enabling **Business Intelligence** will install EX-views, apply transaction time stamps, and trigger managing the marking of deleted records in Maconomy for certain tables.

4. Set a time for when the flushing mechanism is to run.

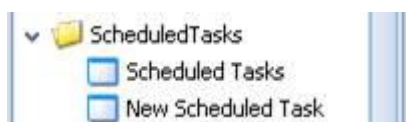
**Note:** If **BPM Reporting** or **BPM Analysis** is already enabled, but there are problems with the views, disable it, complete the installation change, and then complete the above steps again to reinstall the reporting views, transaction time stamps, and delete triggers.

## Enable BPM in People Planner

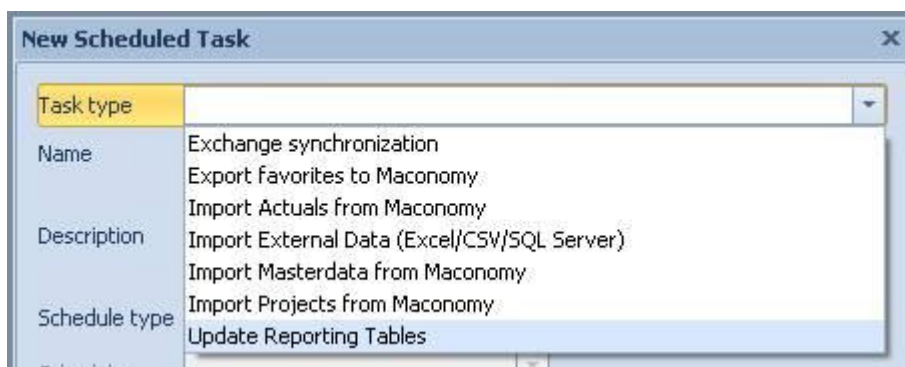
Enabling BPM in People planner is required for *BPM People Planner*.

You have to create a task in PeoplePlanner preparing data for ETL. Follow these steps:

1. Run CreateExternalViewsMSSQL.sql. This will create the required Views.
2. Select New Scheduled Task from the ScheduledTasks node in the Views:



3. Create a scheduled task with type Update Reporting Tables:



4. Set schedule for the Task.
5. Install the PeoplePlannerService (if it is not installed already.)

To refresh the data immediately, you can open the Scheduled Tasks window. There you can see your tasks and you can select the task and press the Execute button.

## Install SAP BusinessObjects

SAP BusinessObjects is required for *BPM Reporting*, *BPM Analysis*, and *BPM People Planner*.

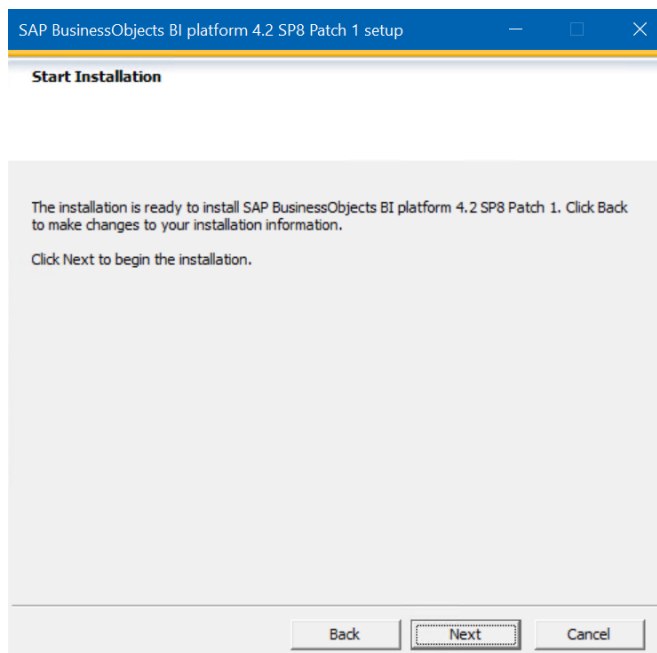
Complete the steps of installing SAP BusinessObjects on the reporting server.

**Note:** We are now using “One-Installer” starting from BO 4.2 SP8 Patch 1. You can use this installer for Upgrading or Full Installation. For example, you can install BO 4.2 SP8 Patch 1 directly without the need for BO 4.2 SP8 base.

### To install SAP BusinessObjects:

1. It is strongly recommended that all Windows programs be closed before running the installation. Then, run the installer.
2. Check prerequisites. Failed critical dependencies must be addressed before the installation can continue, while failed optional dependencies might result in some components not installing.
3. Enter the SAP BusinessObjects BI platform 4.2 product key.

4. Select "Full" for the type of installation.
5. Select "Configure and install a Sybase SQL Anywhere database." This will serve as the storage of data for the SAP BusinessObjects BI platform.
6. For the Java Web Application Server solution, select "Install the default Tomcat Java Web Application Server and automatically deploy web applications."
7. For the version management, select "Do not configure a version control system at this time."
8. The succeeding steps will be asking for port numbers but the standard for those are already preset in the setup.
9. Set a name and port number for the SIA node. The node name is usually the name of the machine.
10. Set a port number for the CMS.
11. Set the administrator account password and cluster key for the CMS. The cluster key is used to connect multiple CMS servers together.
12. If Sybase SQL Anywhere was set to be installed, set the server port and administrator password for the Sybase SQL Anywhere database.
13. Set port information for Tomcat.
14. Set the HTTP listening port for connecting to WACS and RESTful Web Services.
15. For the server profiling and diagnostics, select "Do not configure connectivity to SMD Agent."
16. Select "Do not configure connectivity to Introscope Enterprise Manager."
17. After the setup, the program is ready to begin the installation of SAP BusinessObjects BI platform 4.2 SP8 Patch 1.



**Tip:** See the material at the link below for SAP Business Object tutorials.

<http://scn.sap.com/docs/DOC-7725>

**Tip:** If you have installed SAP BusinessObjects Business Intelligence 4.1 Support Pack 7 or BI 4.2 onward, it is recommended to disable the Enable Memory Analysis feature to improve performance.

If you are using an earlier version on the Windows Platform, enable this feature to prevent a possible crash of the Web Intelligence Processing Server.

**Note:** Ensure that you have enough RAM and monitor the memory usage of your server. If your server runs out of RAM, it will start to use swap, which may cause performance issues.

If you have limited RAM and you find your server is using swap, keep this feature enabled to ensure maximum performance.

When you upgrade to SAP BusinessObjects 4.2 SP8 Patch 1, you must enable JavaScript content in Web Intelligence to ensure links to the workspace client work.

## Enable JavaScript Content

**To enable JavaScript content in Web Intelligence, follow these steps:**

1. Log in to the Central Management Console (CMC).
2. Go to **Applications » Web Intelligence**.
3. Select the **Enable javascript content into Web Intelligence documents** check box.
4. Click **Save**.

## Set up BPM Data Warehouse

Pentaho Data Integrator is required for *BPM Analysis* and *BPM People Planner*. Where names for these two products differ, it is stated.

To set up Pentaho Data Integrator, you must:

- Install Pentaho Data Integration tools
- Set up kettle.properties
- Prepare the Pentaho repository
- Install the ETL
- Create the Data Warehouse

## Install Pentaho Data Integration Tools

Pentaho is the third-party tool that is used for data integration. You can download Pentaho Data Integration (PDI) from the Deltak download server.

**To install Pentaho data integration tools, you must:**

- Do all items listed in “Before You Begin”
- Perform Pentaho Installation (Server + Client tools)
- Install Patch 5 for Pentaho Data Integration (Client tool)



- Activate the PDI license

## Before You Begin

Before you begin the installation of Pentaho, you must do the following:

- Uninstall previous versions of Pentaho.
- Delete the folders .kettle and .Pentaho, typically located on **C:\Users\<username>**.
- Ensure that J2SE Runtime Environment is installed and that the PATH environment variable references the Java SE folder. For 64-bit operating systems, you need to have JRE 32-bit installed.

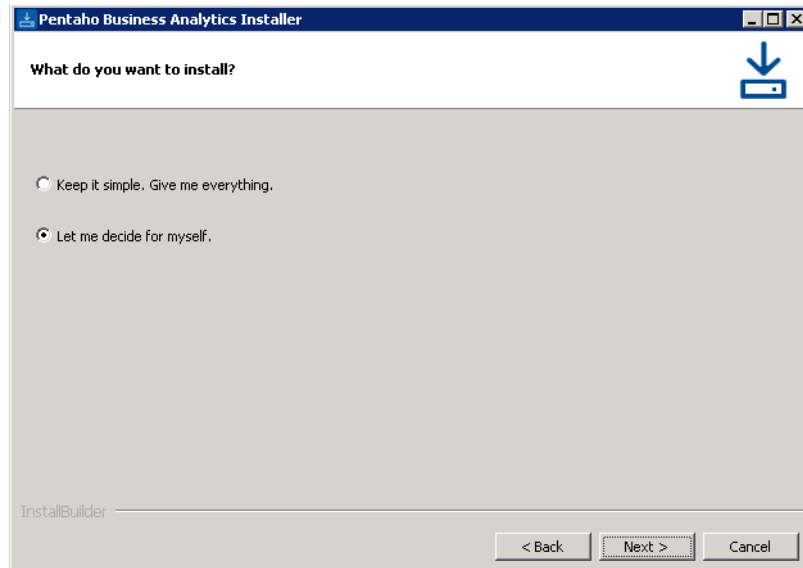
## Perform Pentaho Installation

There are various ways to install Pentaho: Evaluation, Archive, Manual, or Client tools only. This guide describes a quick way to start using the evaluation installation. The archive installation is described later for backend database customizations.

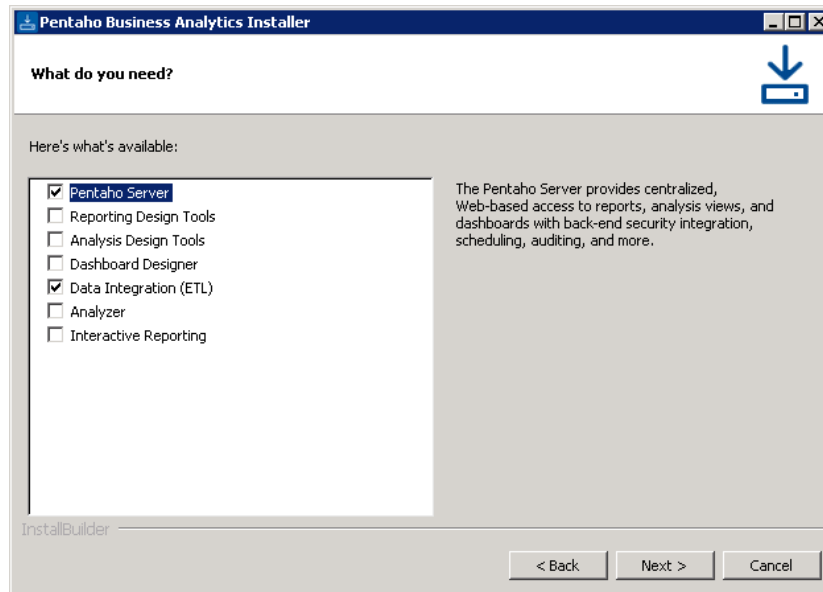
**Note:** More information about Pentaho installation is available in the [Pentaho documentation](#).

### To install Pentaho:

1. Run **pentaho-business-analytics-8.2.0.0-342-x64.exe** to open the installation wizard.
2. Accept the License Agreement, and then click **Next**.

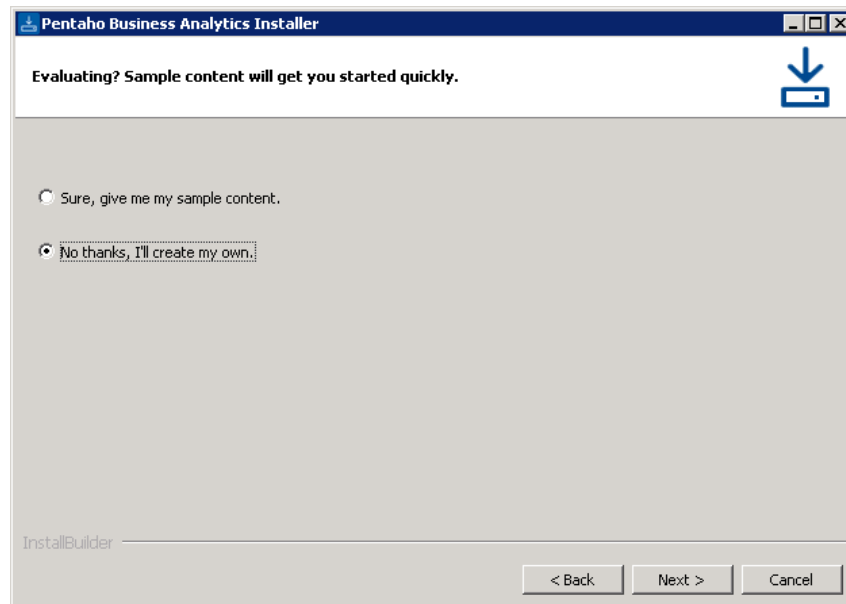


3. Select **Let me decide for myself**, and then click **Next**.
4. Select **Pentaho Server and Data Integration ETL**, and then click **Next**.



Pentaho Server will host the repository. Data Integration (ETL) is the client tools.

5. Select **No thanks, I'll create my own** to skip generating sample contents.



6. Enter a password for the Postgres user.
7. Click **Next** until finished.
8. Once finished, a Pentaho Server is installed using tomcat and PostgreSQL as a database with Data Integration client tools.

## Activate PDI License

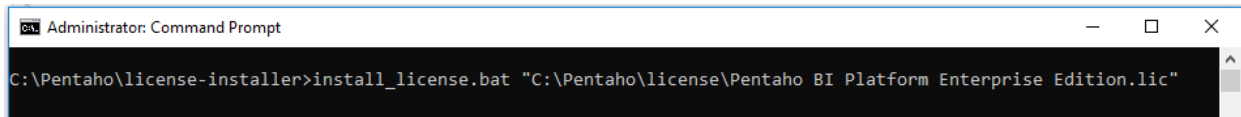
### To activate the PDI License

1. Log in to the Pentaho User Console.
2. Click the drop down menu on the upper left side of the screen and select **Administration**.

## New Installation

3. Select the Licenses tab.
4. In the upper right corner, click the + icon.
5. Select the following files:
  - a. Pentaho BI Platform Enterprise Edition.lic
  - b. Pentaho PDI Enterprise Edition.lic

Alternatively, run **install\_license.bat** from **<Installation directory>\Pentaho\license-installer** in a command prompt or shell. Input the directory of the license files in the command, for example:



## Install Patch 5 for Pentaho Data Integration (Client tool)

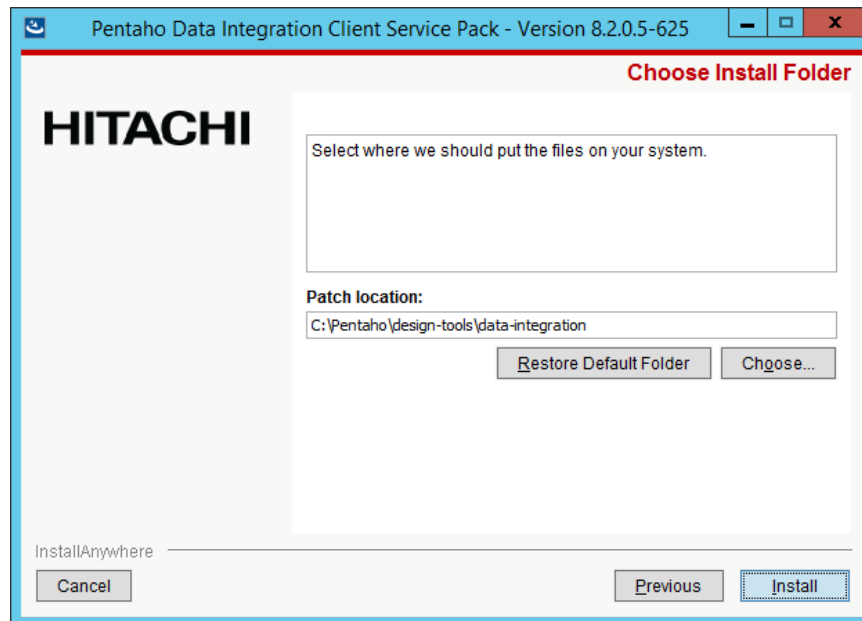
This section describes the installation process to update Pentaho Data Integration (Client tool) to Patch 5. This is necessary to avoid data type conversion errors when running "Load" and improve stability.

Before you Begin:

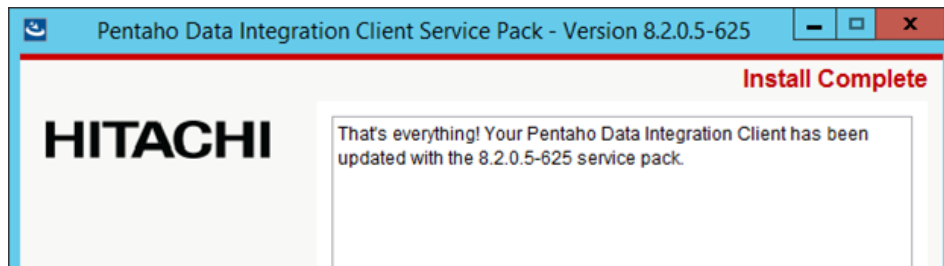
- Ensure Pentaho Data Integration 8.2 is installed (internal version 8.2.0.0-342).
- Make sure that Pentaho Data Integration is closed.

### Installation

1. Run **PDIClient-SP-8.2.0.5-625.exe** to open the installation wizard.
2. Accept the License Agreement.
3. Set the Patch location to where Pentaho Data Integration is installed.



4. Click **Install**.
5. Once the installation is complete, you should see the following message.



## Using MS SQL Server as Pentaho Server Database

This section describes how to change the backend database of Pentaho Server from the default PostgreSQL installed by the evaluation installation to MS SQL Server. This is **not** required when using MS SQL Server as data source for the ETL.

**Note:** More information is available [here](#).

Prepare the environment

1. Extract **pentaho-server-ee-8.2.0.0-342-dist.zip**.
2. Run **installer.bat** as Administrator.
3. Accept the license term agreement, then click **Next**.
4. Change the installation path to **<Installation\_directory>/Pentaho/server**.
5. A warning message that the directory already exists appears. Click **Yes**. Any existing files in the directory will be retained.

Configuring MS SQL Pentaho Repository Database

**Note:** More information is available [here](#).

1. Adjust MS SQL Server configuration settings:
  - a. **Use mixed authentication** – on MS SQL Server Management Studio object explorer, right-click the server > Properties > Security > select SQL Server and Windows Authentication mode.
  - b. **Enable TCP/IP for MS SQL Server** – on SQL Server Configuration Manager > SQL Server Network Configuration > Protocols for MSSQLSERVER > right-click TCP/IP > Enable.
  - c. **Configure MS SQL Server to listen on an external IP and not localhost** - on SQL Server Configuration Manager > SQL Server Network Configuration > Protocols for MSSQLSERVER >, right-click TCP/IP > Properties > IP Addresses > Update the IP Addresses.

2. Navigate to `<INSTALL_DIR>\server\pentaho-server\data\sqlserver` to find the following SQL scripts:
  - a. `Create_jcr_sqlServer.sql`
  - b. `Create_repository_sqlServer.sql`
  - c. `Create_quartz_sqlServer.sql`
3. To change the passwords, go to the `pentaho/server/pentaho-server/data/sqlserver/` directory and use any text editor to change the passwords in the SQL scripts from item #2.
4. Run SQL Scripts using Microsoft SQL Server Management Studio in the following order:
  1. File > Open > File...
  2. Select all the scripts.
  3. Execute each script.

Alternatively, you can run the scripts using `sqlcmd` (Requires admin privileges)

- `-i <filepath to DDL>/create_quartz_sqlServer.sql`
  - `-i <filepath to DDL>/create_repository_sqlServer.sql`
  - `-i <filepath to DDL>/create_jcr_sqlServer.sql`
5. Verify that databases and user roles have been created:
    - a. Open MS SQL Server Management Studio.
    - b. In the Object Explorer section of the window, make sure that the Quartz, Jackrabbit (JCR), Hibernate, and Pentaho Operations Mart databases are present.
    - c. Navigate to **Security > Logins** and make sure that the appropriate users have been created.
    - d. Exit the MS SQL Server Management Studio tool.

### Set Up Quartz

1. Open the `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/quartz/quartz.properties` file in any text editor.
2. Locate the `#_replace_jobstore_properties` section and set the `org.quartz.jobStore.driverDelegateClass` as shown here.

```
org.quartz.jobStore.driverDelegateClass =
org.quartz.impl.jdbcjobstore.oracle.MSSQLDelegate
```

3. Locate the `# Configure Datasources` section and set the `org.quartz.dataSource.myDS.jndiURL` equal to Quartz.
4. Save the file and close the text editor.

### Set Hibernate Settings

```
org.quartz.dataSource.myDS.jndiURL = Quartz
```

1. Open `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/hibernate/hibernate-settings.xml` file in any text editor.
2. Change the `<config-file>` :  
From: `<config-file>system/hibernate/postgresql.hibernate.cfg.xml</config-file>`  
To: `<config-file>system/hibernate/sqlserver.hibernate.cfg.xml</config-file>`
3. Open `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/hibernate/sqlserver.hibernate.cfg.xml` and update the following properties:

```
<property
name="connection.driver_class">com.microsoft.sqlserver.jdbc.SQLServerDriver</property>
<property
name="connection.url">jdbc:sqlserver://<Server>:<port>;DatabaseName=<SID></property>
<property name="dialect">org.hibernate.dialect.SQLServerDialect</property>
<property name="connection.username">hibuser</property>
<property name="connection.password"><password></property>
<property name="connection.pool size">10</property>
```

**Note:** Connection.username and connection.password is from create\_repository\_ora.sql.

#### Set Audit Log file with SQL Server version

1. Copy the file `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/oracle10g/audit_sql.xml`.
2. Paste and replace the existing `audit_sql.xml` in `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/`.

## Set Jackrabbit Repository Information

1. Open `<INSTALL_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/jackrabbit/repository.xml` file in any text editor
2. Comment out (`<!--code-->`) the code section for PostgreSQL and uncomment the Oracle counterpart of the following and then update the parameters:

Code Section
<b>Repository</b> <pre> &lt;FileSystem class="org.apache.jackrabbit.core.fs.db.MSSqlFileSystem"&gt;   &lt;param name="driver" value="com.microsoft.sqlserver.jdbc.SQLServerDriver"/&gt;   &lt;param name="url" value="jdbc:sqlserver://&lt;Server&gt;:&lt;Port&gt;;DatabaseName=jackrabbit"/&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt;   &lt;param name="schemaObjectPrefix" value="fs_repos_"/&gt; &lt;/FileSystem&gt; </pre>
<b>DataStore</b> <pre> &lt;DataStore class="org.apache.jackrabbit.core.data.db.DbDataStore"&gt;   &lt;param name="url" value="jdbc:sqlserver://&lt;Server&gt;:&lt;Port&gt;;DatabaseName=jackrabbit"/&gt;   &lt;param name="driver" value="com.microsoft.sqlserver.jdbc.SQLServerDriver"/&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt;   &lt;param name="databaseType" value="mssql"/&gt;   &lt;param name="minRecordLength" value="1024"/&gt;   &lt;param name="maxConnections" value="3"/&gt;   &lt;param name="copyWhenReading" value="true"/&gt;   &lt;param name="tablePrefix" value=""/&gt;   &lt;param name="schemaObjectPrefix" value="ds_repos_"/&gt; &lt;/DataStore&gt; </pre>
<b>Workspaces</b> <pre> &lt;FileSystem class="org.apache.jackrabbit.core.fs.db.MSSqlFileSystem"&gt;   &lt;param name="driver" value="com.microsoft.sqlserver.jdbc.SQLServerDriver"/&gt;   &lt;param name="url" value="jdbc:sqlserver://&lt;Server&gt;:&lt;Port&gt;;DatabaseName=jackrabbit"/&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt;   &lt;param name="schema" value="mssql"/&gt;   &lt;param name="schemaObjectPrefix" value="fs_ws_"/&gt; &lt;/FileSystem&gt; </pre>
<b>Persistence Manager (Part 1)</b> <pre> &lt;PersistenceManager class="org.apache.jackrabbit.core.persistence.bundle.MSSqlPersistenceManager"&gt;   &lt;param name="url" value="jdbc:sqlserver://&lt;Server&gt;:&lt;Port&gt;;DatabaseName=jackrabbit "/&gt;   &lt;param name="driver" value="com.microsoft.sqlserver.jdbc.SQLServerDriver "/&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt;   &lt;param name="schema" value="mssql"/&gt;   &lt;param name="schemaObjectPrefix" value="\${wsp.name}_pm_ws_"/&gt; &lt;/PersistenceManager&gt; </pre>
<b>Versioning</b> <pre> &lt;FileSystem class="org.apache.jackrabbit.core.fs.db.MSSqlFileSystem"&gt;   &lt;param name="url" value="jdbc:sqlserver://&lt;Server&gt;:&lt;Port&gt;;DatabaseName=jackrabbit"/&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt; </pre>

```
<param name="schema" value="mssql"/>
<param name="schemaObjectPrefix" value="fs_ver_"/>
</FileSystem>
```

#### Persistence Manager (Part 2)

```
<PersistenceManager
class="org.apache.jackrabbit.core.persistence.bundle.MSSqlPersistenceManager">
  <param name="url" value="jdbc:sqlserver://<Server>:<Port>;DatabaseName=jackrabbit"/>
  <param name="driver" value="com.microsoft.sqlserver.jdbc.SQLServerDriver"/>
  <param name="user" value="jcr_user"/>
  <param name="password" value="password"/>
  <param name="schema" value="mssql"/>
  <param name="schemaObjectPrefix" value="pm_ver_"/>
</PersistenceManager>
```

**Note:** "password" for jcr\_user is the one defined in create\_jcr\_oracle.sql.

3. Comment out the DatabaseJournal code section:

```
<!--
<Cluster id="node1">
  <Journal class="org.apache.jackrabbit.core.journal.DatabaseJournal">
    <param name="revision" value="{rep.home}/revision.log" />
    <param name="url" value="jdbc:postgresql://localhost:5432/jackrabbit"/>
    <param name="driver" value="org.postgresql.Driver"/>
    <param name="user" value="jcr_user"/>
    <param name="password" value="password"/>
    <param name="schema" value="postgresql"/>
    <param name="schemaObjectPrefix" value="cl_j_"/>
    <param name="janitorEnabled" value="true"/>
    <param name="janitorSleep" value="86400"/>
```

4. Apply JDBC Drivers to the Pentaho Server.
  - a. Download the mssql-jdbc-6.2.2.jre8 from <TBD>.
  - b. Copy the jar file to <INSTALL\_DIR>/pentaho/server/pentaho-server/tomcat/lib.



## Update Tomcat Context XML File with JDBC Connection

1. Open `<INSTALL_DIR>/pentaho/server/pentaho-server/tomcat/webapps/pentaho/META-INF/context.xml` in any text editor.
2. Comment out the existing `<Resources>` in the file and add the following lines:

```
<Resource
    validationQuery="select 1"
    url="jdbc:sqlserver:// <Server>:<Port>;DatabaseName=hibernate"
    driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
    password="password" username="hibuser"
    initialSize="0" maxActive="20" maxIdle="10" maxWait="10000"
    factory="org.apache.tomcat.jdbc.pool.DataSourceFactory"
    type="javax.sql.DataSource" auth="Container" name="jdbc/Hibernate"/>

<Resource
    validationQuery="select 1"
    url="jdbc:sqlserver:// <Server>:<Port>;DatabaseName=hibernate"
    driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
    password="password" username="hibuser"
    initialSize="0" maxActive="20" maxIdle="10" maxWait="10000"
    factory="org.apache.tomcat.jdbc.pool.DataSourceFactory"
    type="javax.sql.DataSource" auth="Container" name="jdbc/Audit"/>

<Resource
    validationQuery="select 1"
    url="jdbc:sqlserver:// <Server>:<Port>;DatabaseName=quartz"
    driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
    password="password" username="pentaho_user"
    initialSize="0" maxActive="20" maxIdle="10" maxWait="10000"
    factory="org.apache.tomcat.jdbc.pool.DataSourceFactory"
    type="javax.sql.DataSource" auth="Container" name="jdbc/Quartz"/>

<Resource
    validationQuery="select 1"
    url="jdbc:sqlserver:// <Server>:<Port>;DatabaseName=pentaho_operations_mart"
    driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
    password="password" username="pentaho_operations_mart"
    initialSize="0" maxActive="20" maxIdle="10" maxWait="10000"
```

**Note:** `jdbc/pentaho_operations_mart` and `jdbc/PDI_Operations_Mart` resources needs to be included even if the `pentaho_mart_oracle.sql` was not run.

## Clean Pentaho Server Repository Cache

The evaluation installation created samples that are still referencing the previous PostgreSQL database. This need to be removed for Pentaho Repository to recreate the cache with the right database references. Follow these simple instructions:

1. Stop Pentaho Server.
  - a. Open a command prompt.
  - b. Run stop-pentaho.bat in <INSTALL\_DIR>/server/pentaho-server/.
2. Navigate to <INSTALL\_DIR>/server/pentaho-server/pentaho-solutions/system/jackrabbit/.
3. Rename or delete the repository folder.

## Start Pentaho Server

1. Open a command prompt.
2. Run **start-pentaho.bat** as Administrator in <INSTALL\_DIR>/server/pentaho-server/.
3. Verify that the server is running by opening Pentaho User Console. In any browser open http:<hostname>:<port>/pentaho.

## Using Oracle Server as Pentaho Server Database

This section will describe how to change the backend database of Pentaho Server from the default PostgreSQL installed by the evaluation installation to Oracle database. This is **not** required when using Oracle database as a data source for the ETL.

**Note:** More information is available [here](#).

### Prepare the environment

1. Extract pentaho-server-ee-8.2.0.0-342-dist.zip
2. Run installer.bat as Administrator
3. Accept the license term agreement, then click *Next*
4. Change the installation path to <Installation\_directory>/Pentaho/server
5. A warning message that the directory already exists appears. Click Yes. Any existing files in the directory will be retained.

### Configuring Oracle Pentaho Repository Database

**Note:** More information is available [here](#).

## Initialize Values

1. Navigate to <INSTALL\_DIR>\server\pentaho-server\data\oracle10g to find the following SQL scripts:
  - a. Create\_jcr\_ora.sql
  - b. Create\_repository\_oral.sql

- c. Create\_quartz\_ora.sql
2. Edit the above files and uncomment the following lines:
  - conn admin/password@pentaho
3. Update the files with the proper database credentials

Example when connecting to a remote host:

```
conn admin/password@(DESCRIPTION=(ADDRESS = (PROTOCOL = TCP)(HOST =
XXXXXXXXX)(PORT = 1521))(CONNECT_DATA=(SERVER = DEDICATED)(SERVICE_NAME =
XXXXXXXXX))
```

4. Update the default passwords in the SQL scripts

```
create user jcr_user identified by "password" ...
```

5. Run SQL Scripts using SQL\*Plus (or any Oracle SQL development tool) in the following order:
  - start <INSTALL\_DIR>/server/pentaho-server/data/oracle10g/create\_jcr\_ora.sql
  - start <INSTALL\_DIR>/server/pentaho-server/data/oracle10g/create\_repository\_ora.sql
  - start <INSTALL\_DIR>/server/pentaho-server/data/oracle10g/create\_quartz\_ora.sql
  - start <INSTALL\_DIR>/server/pentaho-server/data/oracle10g/pentaho\_mart\_ora.sql (*Optional*)
6. Verify that databases and user roles have been created by running the following in SQL\*Plus (or any Oracle SQL development tool):

```
SELECT USERNAME FROM DBA_USERS;
```

## Set Up Quartz

1. Open the <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/quartz/quartz.properties file in any text editor.
2. Locate the #\_replace\_jobstore\_properties section and set the org.quartz.jobStore.driverDelegateClass as shown here.

```
org.quartz.jobStore.driverDelegateClass = org.quartz.impl.jdbcjobstore.oracle.OracleDelegate
```

3. Locate the # Configure Datasources section and set the org.quartz.dataSource.myDS.jndiURL equal to Quartz, like this.

```
org.quartz.dataSource.myDS.jndiURL = Quartz
```

4. Save the file and close the text editor.

## Set Up Hibernate Settings

1. Open <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/hibernate/hibernate-settings.xml file in any text editor and then change the <config-file>.

From:

```
<config-file>system/hibernate/postgresql.hibernate.cfg.xml</config-file>
```

To:

```
<config-file>system/hibernate/oracle10g.hibernate.cfg.xml</config-file>
```

2. Open <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/hibernate/oracle10g.hibernate.cfg.xml and update the following properties:

```
<property name="connection.driver_class">oracle.jdbc.driver.OracleDriver</property>
<property name="connection.url">jdbc:oracle:thin:@<host>:<port>:<SID></property>
<property name="dialect">org.hibernate.dialect.Oracle10gDialect</property>
<property name="connection.username">hibuser</property>
<property name="connection.password"><password></property>
<property name="connection.pool_size">10</property>
<property name="show_sql">false</property>
<property name="hibernate.jdbc.use_streams_for_binary">true</property>
```

**Note:** Connection.username and connection.password is from create\_repository\_ora.sql.

### Set audit log file with Oracle version

1. Copy the file <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/oracle10g/audit\_sql.xml.
2. Paste and replace the existing audit\_sql.xml in <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/.

### Set Jackrabbit Repository Information

1. Open <INSTALL\_DIR>/pentaho/server/pentaho-server/pentaho-solutions/system/jackrabbit/repository.xml file in any text editor
2. Comment out (<!--code -->) the code section for PostgreSQL and uncomment the Oracle counterpart of the following and then update the parameters:

Code Section
<b>Repository</b> <pre>&lt;FileSystem class="org.apache.jackrabbit.core.fs.db.OracleFileSystem"&gt;   &lt;param name="url" value="jdbc:oracle:thin:@&lt;host&gt;:&lt;port&gt;:&lt;SID&gt;" /&gt;   &lt;param name="user" value="jcr_user"/&gt;   &lt;param name="password" value="password"/&gt;   &lt;param name="schemaObjectPrefix" value="fs_repos_" /&gt;   &lt;param name="tablespace" value="pentaho_tablespace"/&gt; &lt;/FileSystem&gt;</pre>
<b>DataStore</b>

### Code Section

```
<DataStore class="org.apache.jackrabbit.core.data.db.DbDataStore">
  <param name="url" value="jdbc:oracle:thin:@<host>:<port>/<SID>" />
  <param name="driver" value="oracle.jdbc.OracleDriver" />
  <param name="user" value="jcr_user" />
  <param name="password" value="password" />
  <param name="databaseType" value="oracle" />
  <param name="minRecordLength" value="1024" />
  <param name="maxConnections" value="3" />
  <param name="copyWhenReading" value="true" />
  <param name="tablePrefix" value="" />
  <param name="schemaObjectPrefix" value="ds_repos_" />
</DataStore>
```

### Workspaces

```
<FileSystem class="org.apache.jackrabbit.core.fs.db.OracleFileSystem">
  <param name="url" value="jdbc:oracle:thin:@<host>:<port>/<SID>" />
  <param name="user" value="jcr_user" />
  <param name="password" value="password" />
  <param name="schemaObjectPrefix" value="fs_ws_" />
  <param name="tablespace" value="pentaho_tablespace" />
</FileSystem>
```

### Persistence Manager (Part 1)

```
<PersistenceManager
class="org.apache.jackrabbit.core.persistence.bundle.OraclePersistenceManager">
  <param name="url" value="jdbc:oracle:thin:@<host>:<port>/<SID>" />
  <param name="driver" value="oracle.jdbc.OracleDriver" />
  <param name="user" value="jcr_user" />
  <param name="password" value="password" />
  <param name="schema" value="oracle" />
  <param name="schemaObjectPrefix" value="${wsp.name}_pm_ws_" />
  <param name="tablespace" value="pentaho_tablespace" />
</PersistenceManager>
```

### Versioning

```
<FileSystem class="org.apache.jackrabbit.core.fs.db.OracleFileSystem">
  <param name="url" value="jdbc:oracle:thin:@<host>:<port>/<SID>" />
  <param name="user" value="jcr_user" />
  <param name="password" value="password" />
  <param name="schemaObjectPrefix" value="fs_ver_" />
  <param name="tablespace" value="pentaho_tablespace" />
</FileSystem>
```

### Persistence Manager (Part 2)

## Code Section

```
<PersistenceManager
class="org.apache.jackrabbit.core.persistence.bundle.OraclePersistenceManager">
  <param name="url" value="jdbc:oracle:thin:@<host>:<port>/<SID>" />
  <param name="driver" value="oracle.jdbc.OracleDriver" />
  <param name="user" value="jcr_user" />
  <param name="password" value="password" />
  <param name="schema" value="oracle" />
  <param name="schemaObjectPrefix" value="pm_ver_" />
  <param name="tablespace" value="pentaho_tablespace" />
</PersistenceManager>
```

**Note:** “password” for jcr\_user is the one defined in create\_jcr\_ora.sql.

3. Comment out the DatabaseJournal code section:

```
<!--
<Cluster id="node1">
  <Journal class="org.apache.jackrabbit.core.journal.DatabaseJournal">
    <param name="revision" value="{rep.home}/revision.log" />
    <param name="url" value="jdbc:postgresql://localhost:5432/jackrabbit" />
    <param name="driver" value="org.postgresql.Driver" />
    <param name="user" value="jcr_user" />
    <param name="password" value="password" />
    <param name="schema" value="postgresql" />
    <param name="schemaObjectPrefix" value="cl_j_" />
    <param name="janitorEnabled" value="true" />
    <param name="janitorSleep" value="86400" />
    <param name="janitorFirstRunHourOfDay" value="3" />
  </Journal>
</Cluster>
```

## Apply JDBC Drivers to the Pentaho Server

1. Download the ojdbc8.jar oracle driver.
2. Copy the jar file to <INSTALL\_DIR>/pentaho/server/tomcat/lib.

## Update Tomcat Context XML File with JDBC Connection

1. Open <INSTALL\_DIR>/pentaho/server/tomcat/webapps/pentaho/META-INF/context.xml in any text editor.
2. Comment out the existing <Resources> in the file and add the following lines:

```

<Resource
  validationQuery="select 1 from dual"
  url="jdbc:oracle:thin:@<host>:<port>/<SID>"
  driverClassName="oracle.jdbc.OracleDriver"
  password="password" username="hibuser"
  maxWaitMillis="10000" maxIdle="5" maxTotal="20"
  factory="org.apache.commons.dbcp.BasicDataSourceFactory"
  type="javax.sql.DataSource" auth="Container" name="jdbc/Hibernate"/>

<Resource
  validationQuery="select 1 from dual"
  url="jdbc:oracle:thin:@<host>:<port>/<SID>"
  driverClassName="oracle.jdbc.OracleDriver"
  password="password" username="hibuser"
  maxWaitMillis="10000" maxIdle="5" maxTotal="20"
  factory="org.apache.commons.dbcp.BasicDataSourceFactory"
  type="javax.sql.DataSource" auth="Container" name="jdbc/Audit"/>

<Resource
  validationQuery="select 1 from dual"
  url="jdbc:oracle:thin:@<host>:<port>/<SID>"
  driverClassName="oracle.jdbc.OracleDriver"
  password="password" username="quartz"
  maxWaitMillis="10000" maxIdle="5" maxTotal="20"
  factory="org.apache.commons.dbcp.BasicDataSourceFactory"
  type="javax.sql.DataSource" auth="Container" name="jdbc/Quartz"/>

<Resource
  validationQuery="select 1 from dual"
  url="jdbc:oracle:thin:@<host>:<port>/<SID>"
  driverClassName="oracle.jdbc.OracleDriver"
  password="password" username="hibuser"
  maxWaitMillis="10000" maxIdle="5" maxTotal="20"
  factory="org.apache.commons.dbcp.BasicDataSourceFactory"
  type="javax.sql.DataSource" auth="Container" name="jdbc/pentaho_operations_mart"/>

<Resource
  validationQuery="select 1 from dual"
  url="jdbc:oracle:thin:@<host>:<port>/<SID>"
  driverClassName="oracle.jdbc.OracleDriver"
  password="pentaho_operations_mart" username="pentaho_operations_mart"
  maxWaitMillis="10000" maxIdle="5" maxTotal="20"
  factory="org.apache.commons.dbcp.BasicDataSourceFactory" type="javax.sql.DataSource"
  auth="Container" name="jdbc/PDI_Operations_Mart"/>

```

**Note:** Jdbc/pentaho\_operations\_mart and jdbc/PDI\_Operations\_Mart resources needs to be included even if the pentaho\_mart\_oracle.sql was not run.

## Clean Pentaho Server Repository Cache

The evaluation installation created samples that are still referencing the previous PostgreSQL database. This need to be removed for Pentaho Repository to recreate the cache with the right database references. Follow these simple instructions:

1. Stop Pentaho Server.
  - a. Open a command prompt.
  - b. Run stop-pentaho.bat in `<INSTALL_DIR>/server/pentaho-server/`.
2. Navigate to `<INSTALL_DIR>/server/pentaho-server/pentaho-solutions/system/jackrabbit/`.
3. Rename or delete the repository folder.

## Start Pentaho Server

1. Open a command prompt.
2. Run start-pentaho.bat as Administrator in `<INSTALL_DIR>/server/pentaho-server/`.
3. Verify that the server is running by opening Pentaho User Console. In any browser open `http:<hostname>:<port>/pentaho`.

## Set Up Kettle.Properties

The ETL for Business Performance Management Analysis utilizes the kettle.properties file to provide default values to variables used when running Jobs and/or Transformations. This section will describe the parameters that need to be added and the values they should contain.

The kettle.properties file is located at the following directories by default:

- For Windows: `C:\Users\<username>\.kettle\`
- For Unix/Linux: .kettle folder is placed in the \$HOME folder.

If multiple users are to share the properties, we recommend you to make a copy of the file to another commonly accessible folder. Create a new system environment variable KETTLE\_HOME and assign the path of the file to that variable. After this is done and a Pentaho application is run, the folder .kettle is created automatically in the path designated by KETTLE\_HOME. Make sure to copy the .kettle.properties file down into that folder.

To set up kettle.properties, you must:

- Set up parameters for BPM.
- Test the value is set correctly.

## Set Up Parameters for BPM

**To set up parameters for BPM, follow these steps:**

1. Open kettle.properties in any text editor.
2. Remove all contents of the kettle.properties, if it is automatically generated. The evaluation installer includes pre-defined log schema in the kettle.properties file which conflicts with the logging configuration of the ETL provided by Deltak.
3. If the Maconomy database runs Oracle, add the parameter:

```
MAC_CONNECTION_TYPE=ORACLE
```



If the Maconomy database runs MS SQL Server, add the parameter:

```
MAC_CONNECTION_TYPE=SQL
```

4. If the Data Warehouse runs Oracle, add the parameter:

```
DWH_CONNECTION_TYPE=ORACLE
```

If the Maconomy database runs MS SQL Server, add the parameter:

```
DWH_CONNECTION_TYPE=SQL
```

5. Add the parameter stating whether to run a *full load* or an *incremental load*.

```
FULL_LOAD=YES
```

The FULL\_LOAD parameter is not used in the pure standard flows of creating a data warehouse or performing a full or incremental load. These Pentaho jobs set the parameter themselves. But if other jobs are run the parameter may be read.

**Note:** Pentaho tools read these variables when starting. Whenever a Pentaho tool is open at the moment of resetting the variables, you must restart the tool to use new variable settings.

## Test the Value is Set Correctly

To test that the value has been set correctly, run the "Test FULL\_LOAD variable" transformation. The job is part of the BPM Analysis ETL and will be available after you have installed that in section 0.

## Prepare the Database

The Pentaho Data Integration tool requires the creation of the actual data warehouse database. To prepare the Pentaho repository, you must:

- Create database users in either Oracle or SQL Server.
- Create storage for BPM People Planner.

## Create Database Users

### To create database users in Oracle:

1. From the command prompt, run the following:

```
sqlplus system/manager
```

It may be necessary to specifically connect to the database to be used.

2. In sqlplus, enter the following:

```
create user MACONOMY_DWH identified by MACONOMY_DWH;
grant dba to MACONOMY_DWH;
```

3. If you do not want to use default database settings for the user's default table space and temporary table space, you can change them with statements such as the following in sqlplus:

```
alter user MACONOMY_DWH default table space <x1> temporary table space <y1>;
where <x1>, <x2>, <y1>, <y2> should be replaced by relevant values.
```

4. To confirm that the settings work, enter the following:

```
connect MACONOMY_DWH / MACONOMY_DWH;
```

6. Exit sqlplus.

#### To create database users in MS SQL Server:

1. Log in to Microsoft SQL Server Management Studio with the user name **sa**.
2. Right-click **Databases** and create the database `MACONOMY_DWH`.
3. In the Options tab, set collation to **SQL\_Latin1\_General\_CP1\_CS\_AS**.  
**Note:** This makes the SQL data warehouse case-sensitive to match with Maconomy database for an accurate comparison of data for the ETL.
4. Expand **Security**, right-click **Logins**, and select **New Login**.
5. Enter the name **MACONOMY\_DWH** for the login.
6. Set **Authentication** to **SQL Server Authentication**.
7. Enter a password.
8. On the left-hand side of the window, click **User Mappings**.
9. On the User Mappings dialog box, map the database to the corresponding user.
10. Specify the role **db\_owner**.
11. To check that the databases work, log out and then log in again with the data warehouse database credentials.

**Note:** The Oracle database for the BPM data warehouse requires a table space called `macindex_dwh`, where indexes for the DWH are created. This table space must be created in addition to the normal table space of `MACONOMY_DWH`.

For more information, see [Build the BPM Data Warehouse](#).

## Create Storage for BPM People Planner

Use the steps above to create storage for BPM People Planner. Replace (what) with the user `PEOPLEPLANNER_DWH`.

#### For BPM People Planner other parameters in the `kettle.properties` file are needed:

- `#DWH_CONNECTION_TYPE = ORACLE`
- `DWH_CONNECTION_TYPE = SQL`
- `#PP_CONNECTION_TYPE = ORACLE`
- `PP_CONNECTION_TYPE = SQL`
- `#PP_STAND_ALONE = YES`
- `PP_STAND_ALONE = NO`
- `# How many years old AvailableHours data should be loaded into DWH`
- `PP_ACTUAL_YEAR_RANGE_MIN = 2`
- `# How many years in future since current date`

- # should be loaded for AvailableHours into DWH
- PP\_ACTUAL\_YEAR\_RANGE\_MIN = 2

The “#” symbol means that all strings following it are comments. By changing its position, you can switch which RDBMS system to use to access the DWH database and which one to use for PeoplePlanner.

Parameter PP\_STAND\_ALONE defines how PeoplePlanner is used, meaning, is it used in integration with Maconomy system or as a standalone system.

**Note:** Existing Business Performance Management PeoplePlanner Reporting assumes that PeoplePlanner is used in integration with Maconomy – so, the reports do not work for a stand-alone solution (in this case you will be able to use the DWH only).

The last two parameters define how many years before and after the current date should be loaded in the DWH.

**Warning:** Remember that for every additional year, a significant number of additional data is loaded. Therefore, use these parameters with care and only include the number of years required to cover the user's business needs.

## Install the ETL

The ETL (Extract-Transform-Load) is the mechanism which reads (extracts) data from Maconomy or People Planner, transforms it, and stores it (loads it) in the data warehouse database.

The steps below take origin in a data warehouse on Oracle. If the data warehouse is on MS SQL Server, change the connection type from Oracle to MS SQL Server accordingly.

Furthermore, the steps assume the setup of a data warehouse for BPM Analysis (Maconomy). If a data warehouse is set up for BPM People Planner, import the DataIntegrationRepository.xml from the *peopleplanner* folder in the RPU.

To install the ETL, you must:

- Connect to a Pentaho Server
- Import the BPM ETL. The file name is DataIntegrationRepository.xml.
  - Standard ETL is under etl\reporting
  - PeoplePlanner ETL is under etl\peopleplanner

## Connecting to a Pentaho Server

To connect to a Pentaho Server, follow these steps:

1. Go to **Start > Pentaho Enterprise Edition > Data Integration**
2. Click the **Connect** button on the upper-right corner of the window.
  - a. For the first connection, it will open the Repository Manager automatically.
  - b. For subsequent connections, select **Repository Manager** in the drop-down list, then click **Add**.
3. Click **Get Started** on the Repository Manager window.
4. Fill in the details:

- a. Display Name – name to identify the connection.
  - b. URL – URL to open Pentaho User console. Make sure to enter the correct port no.
  - c. Description – additional information to help identify the connection
5. Click **Finish**.
6. A test will be automatically performed, if successful click **Connect Now**. Otherwise, review the connection details.
7. Log in with username **admin** and password **password**.

## Import the BPM ETL

To import the BPM ETL, follow these steps:

1. Select **Tools > Repository > Import Repository...**
2. Browse to the location of the *BPM Analysis* or *BPM People Planner* ETL XML file. The file is named *DataIntegrationRepository.xml*.
3. At the prompt "Do you want to apply a set of rules to the import?" select **No**.
4. Select the root as directory (default). Click **OK**.
5. Click **Yes** to create the suggested folders. The transformations and jobs are now imported.
6. Click **Close**.

## Create the Data Warehouse


This section describes how to create and load the data warehouse. To prepare for creating the data warehouse, you must set up the connections to the Maconomy/People Planner database and the data warehouse database. Then you must run the ETL job that creates the data warehouse itself. All this is done in Spoon.

To create the data warehouse, you must:

- Set up a connection to Maconomy / People Planner
- Set up the Table Space
- Create the date warehouse


## Set Up a Connection to Maconomy / People Planner

To set up a connection to Maconomy / People Planner, follow these steps:

1. Select **Tools > Repository > Explore...**
2. Switch to the **Connections** tab.
3. Select the **Maconomy** connection and click .

Fill in the following fields:

- **Host Name** – Enter the name of the Maconomy / People Planner server.
- **Database Name** – Enter the name of the Oracle SID or MS SQL Server database name.
- **Tablespace for Data** – Enter the name of the tablespace if the default is not used.

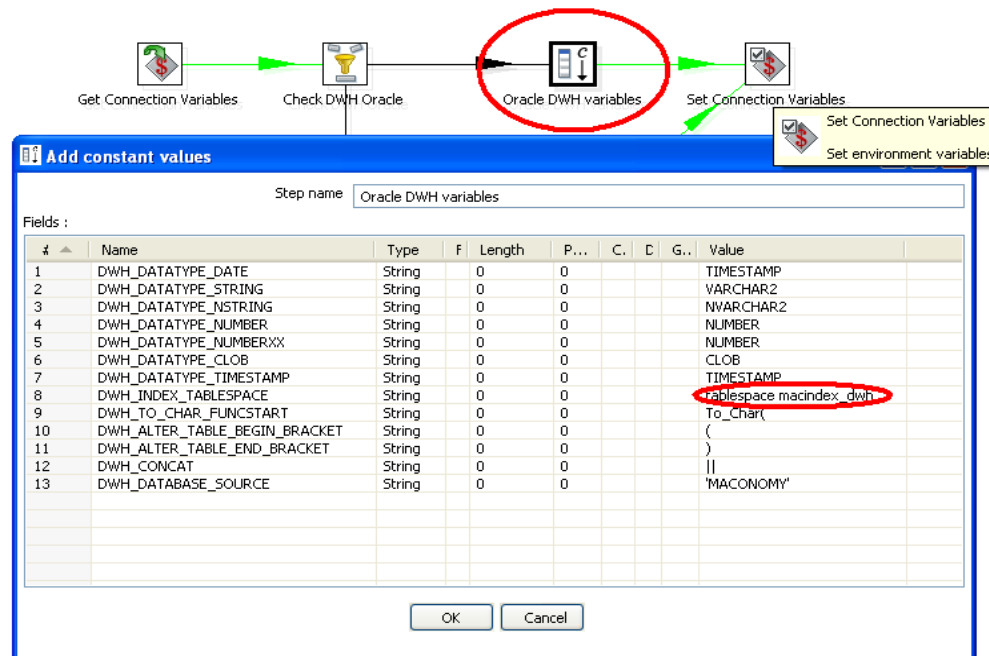
- **Tablespace for Indices** – Enter the name of the tablespace for indices if the default is not used.
  - **Port Number** – Enter the port of Maconomy, typically 1521.
  - **User Name** – Enter the name of the Maconomy database user (short name).
  - **Password** – Enter the password for accessing the database user.
4. Click **Test** to test the connection. Click **OK**.
  5. Select the **DWH** connection and click .
  6. Fill in the following fields:
    - **Host Name** – Enter the name of the Data warehouse server.
    - **Database Name** – Enter the name of the Oracle SID or MS SQL Server database name.
    - **Tablespace for Data** – Enter the name of the tablespace if the default is not used.
    - **Tablespace for Indices** – Enter the name of the tablespace for indices if the default is not used.
    - **Port Number** – Enter the port of Maconomy, typically 1521.
    - **User Name** – Enter MACONOMY\_DWH
    - **Password** – Enter MACONOMY\_DWH
  7. Click **Test** to test the connection. Click **OK**.
  8. Click **Close**.

## Set Up the Table Space

For BPM People Planner, set up the right table space.

**To set up the table space, follow these steps:**

1. In this transformation you should edit either do the **Oracle DWH Variables** step or the **Oracle DWH Variables** step (depending upon your DWH connection type) and set the right tablespace for the constant **DWH\_INDEX\_TABLESPACE**:



2. Click **OK** and **Save**.

## Create the Data Warehouse

### Before You Begin

Before you begin this section, note the following:

- Because the **Create** job starts by dropping the full data warehouse, it should **not** be used for upgrading a data warehouse.
- Drop indexes on facts could fail the first time you run this job. If the enhanced reporting views are not in place, the job fails. This may take a long time to finish, depending on the size of the Maconomy database.
- Only run the **Drop** or **DropTablesAndViews** jobs if you really want to remove the full data warehouse completely. Performing a full load does not require running DropTablesAndViews first.

To create the data warehouse, follow these steps:

1. Select **Tools > Repository > Explore**.
2. Double-click the job **Create**.

**Note:** For *BPM People Planner* the jobs are **PP\_CreateTablesAndViews** and **PP\_LoadData**.

3. Run this job.

**Note:** For *BPM People Planner* first run **PP\_CreateTablesAndViews** and then **PP\_LoadData**. The **PP\_DropTablesAndViews** removes the People Planner data warehouse.

The above **Create** job drops the full data warehouse (in case one should already exist), then creates tables and views and performs a full load. This could take some time depending on the size of the Maconomy / People Planner database.

The job initiates by dropping the data warehouse. If this is the first time this is done, errors may occur because the job tries to drop something that does not exist. Ignore these errors.

**Note:** To verify, open the command prompt, type **sqlplus maconomy\_dwh/maconomy\_dwh**, and then select **table\_name** from **user\_tables**.

**Note:** The People Planner reports and universe use data from Maconomy data warehouse and therefore cannot be used when Business Performance Management BI for PP is installed in standalone. The universe for standalone mode has not been implemented at the moment.

# Install Universes and Documents

Universes and documents are required for all three products: *BPM Reporting*, *BPM Analysis*, and *BPM People Planner*. The universes and documents for each product are contained in individual BIAR files of the RPU.

The following procedure is the same for the BIARs of *BPM Reporting*, *BPM Analysis*, and *BPM People Planner*.

To install universes and documents, you must:

- Import BIAR files
- Set Universe Connection

## Importing BIAR File with Promotion Management

All BPM Analysis universes, reports, and dashboards are enclosed in the BIAR files, which are imported using Promotion Management.

This section shows how Promotion Management can be used to deploy BPM reports on client systems. Promotion Management is a tool that is integrated with the Central Management Console to promote (or move) contents such as reports, universes, and connections to other systems. The source system can be either be another system or a BIAR file. It can be especially useful for structures in which a client uses separate DEV, QA, and Production systems.

**Note:** There is a similar tool for transferring content called Upgrade Management tool, but it is only available on the server, and its main function is for making BIARs created from previous versions usable on BO 4.1. It must be modified to keep it from checking versions; otherwise, it throws a version check failed (UMT 20012) error.

## Features

### Server-to-Server

Promotion Management can be used to transfer contents from one server to another. It is similar to Import Wizard of BO XI 3.1, but it is web-based and integrated with the CMC.

### LCMBIAR-to-Server (and Vice Versa)

Both LCMBIAR and BIAR files can be imported to the CMS repository via Promotion Management, but only an LCMBIAR can be exported from the CMS. You can do this via the command line.

### Overrides

Overrides enable the automatic update of connection when contents are transferred from another server or BIAR.

### Rollback

You can restore a part of or the whole promoted content on the repository to its previous state. Note that this is only applicable if the source is another system and NOT a BIAR.



## Scheduling

You can schedule when content will move to another system.

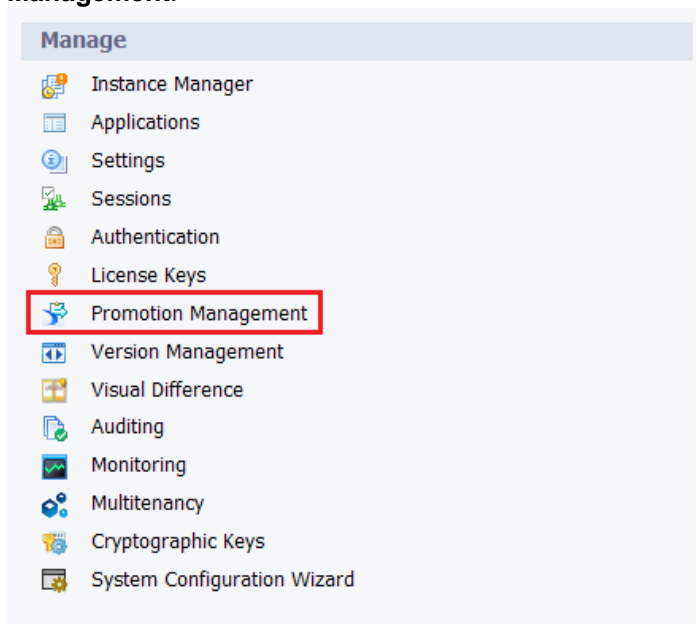
## LCM CLI

This command-line interface can be used to run Promotion Management features without the need to access CMC. This section shows the steps for how to import and export an LCMBIAR using the LCM CLI tool.

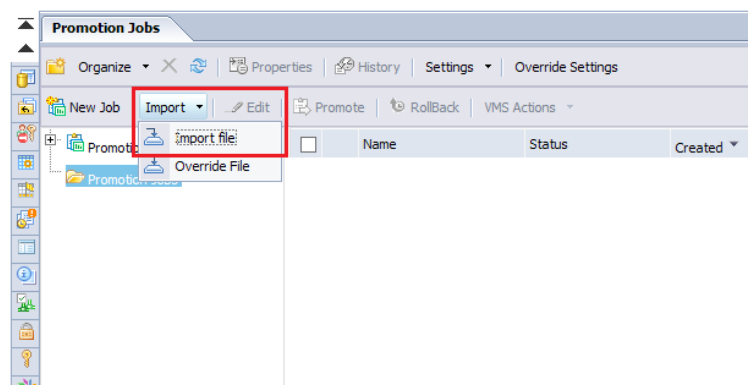
## Implementation

### To do a BIAR-to-server promotion:

1. Log in to the Central Management Console at <https://<server>:<port>/BOE/CMC>.
2. On the CMC homepage, find the Manage island at the right side and click **Promotion Management**.



3. Click the Import drop-down and select **Import file**.  
The Import from file window appears.



4. Select **File System**, then click **Browse**.
5. Select the BIAR or LCMBIAR, then click **Open**.
6. The text beside the “Browse...” button is updated with the location and file name of the BIAR. Click **OK** to create the new job.

**Note:** A password can be set for LCMBIAR. Importing a password-protected LCMBIAR displays another window that allows a user to input the password.

7. A new job with the Source set as “From File” is automatically created. Update the Name and Destination of the new job and click **Create**.

Fields marked with an asterisk (\*) are mandatory fields

Name\*:

Description:

Keywords:

Save Job in\*:

Source :

Destination :

8. All objects from the BIAR are pre-selected, including all dependencies. Click **Promote** to display a new window that contains the Summary, Security Settings, and Test Promote.
  - **Select Security Settings** — Specify whether there are any rights that must be included for the objects to be promoted.
  - **Select Test Promote** — Select this option to check whether there are any errors in the promotion before you click **Promote** again in Step 8 and commit to the changes.
9. Click **Promote** to start the transfer, or **Schedule** to have the promotion run at a later date (or a recurring schedule, depending on the need).

## Setting Universe Connection

After you import the BIAR file, universes and connections are stored in the CMS. To set database connection on the universes, you must create a project and a relational connection, retrieve universe files, assign a connection, and publish the universes.

This is all done in **Information Design Tool**. In **Information Design Tool**, a session to the CMS is required for certain operations. For information about sessions, as well as for more information and guides about creating projects, connections, and handling universe files, see documentation and tutorials on **Information Design Tool**.

**Tip:** See SAP for details about Information Design Tool:

<http://scn.sap.com/docs/DOC-8461>

To set a universe connection, you must:

- Create a project
- Create a relational connection
- Retrieve the universe files
- Set universe connections and publish

## Create a Project

**To create a project (skip this if a project is available already):**

1. Select **File » New » Project**.
2. Enter a name for the project.
3. Select a Project Location.

This is the folder where universe and connection files are stored in the project. By default, a folder under the user's profile is chosen. If other universe developers are to access the files, it is recommended that you select another folder (not under the user profile).

## Create a Relational Connection

**To create a relational connection (skip this if a connection is available already):**

1. Select **File » New » Relational Connection**.
2. In the Resource Name window, enter a name for the connection. Click **Next**.
3. In the Database Middleware Driver Selection window, choose a database type.  
BPM supports Oracle and MS SQL Server connections.  
For BPM Reporting, you must choose the database type of the Maconomy database.  
For BPM Analysis and BPM People Planner, you must choose the database type of the BPM Data Warehouse or People Planner Data Warehouse database, respectively.
4. In the Parameters window, enter the name of the database user, password, reference to TNS, service/database, port number, and SID/database. The parameters required depend on whether an Oracle or MS SQL Server connection is chosen, as well as whether a Client, ODBC, or JDBC connection is selected. Click **Next**.
5. Choose default settings for the next Parameters screen.
6. Set up the ALL\_ROWS hint to speed up performance. Enter the following value for the custom property Hint:  
  
`/*+ ALL_ROWS */`
7. Enable Cursor Sharing, if needed. Enter the following value for the custom property ConnectInit.

- On Oracle connections:

```
ALTER SESSION SET CURSOR_SHARING = FORCE
```

- On MS SQL Server connections:

```
FORCE PARAMETERIZATION
```

On many installations, performance is improved by applying Cursor Sharing. However, it can reduce performance on some systems.

If the system has performance issues while Cursor Sharing is disabled, enable it to help improve performance. If the system has performance issues while Cursor Sharing enabled, disabling it may improve performance.

8. Click **Finish**. A new connection file (type cnx) is added to the project.  
A cnx connection is a local connection and can be used for publishing universes locally on disk. However, it is recommended that you publish universes on the CMS. This requires a secure connection.
9. To create a secure connection of the new connection file, right-click the cnx file and choose Publish Connection to a Repository.
10. In the window that appears, browse for the CMS location in which the connection is to be stored. For example, select the default Connections folder of the CMS. Click **Finish**.
11. A question window appears. Click **Yes** to retrieve a shortcut file to the secure connection. A secure connection file (type cns) is added to the project.

#### Note:

##### ALL\_ROWS Information

By default, the Maconomy database is set to retrieve a small number of records at a time for each query. This is convenient when entering and working in Maconomy workspaces or dialogs where you typically only see 10, 50, or 100 records at a time. However, when reporting, it is beneficial to retrieve all records at once, because a report document or dashboard is not refreshed until all records are retrieved.

##### Cursor Sharing Information

Often the reports that are run have the same query outline. Oracle and SQL Server can use this by saving a template of the queries that are executed. In many cases, this means that even if restrictions are changed (and the queries thereby differ), the database can skip the analysis of how to execute the queries, such as the creation of the explain plan. For many reports, the creation of the explain plan takes most of the time, so there is significant value in being able to reuse query templates.

## Retrieve the Universe Files

To retrieve the universe files, follow these steps:


1. Make sure the project is selected in the Local Projects view.
2. Select **File » Retrieve a Published Universe » From a Repository...**

3. In the window that appears, browse to the location of the universes.  
If the universe is an old BO 3.1 universe, it has no extension; otherwise, it has a **unx** extension. Retrieving a universe of type **unv** migrates the universe to the new BI 4 **unx** format.  
If a BO 3.1 universe should be kept in the BO 3.1 **unv** format, set connection with the Universe Designer tool instead.
4. Select **Save for All Users**. Click **OK**.  
The Universe files (**blx** and **dfx**) are retrieved to a **timestamp** named folder under the project folder selected.

**Note:** If needed, the universe files can be moved to another folder (for example, out of the **timestamp** named folder). However, this may break the local dependency that the **blx** file has to the **dfx** file and the local dependency that the **dfx** file has to the **cnx/cns** file. If this happens, open the **dfx** file and choose the connection again and possibly make some other minor change to force Information Design Tool to mark the **dfx** file as changed. Then save the file. Then open the **blx** file and choose **Change Data Foundation**. Here select the **dfx** file and possibly make some other small change to force Information Design Tool to mark the **blx** file as changed. Then save the file.

## Set Universe Connections and Publish

To set universe connections and publish, follow these steps:

1. Open the **dfx** file of a universe.
2. Click the **Connections** tab.
3. Click **Change Connection...** .
4. Select the connection file (for example, the newly created **cns** connection shortcut file). Click **Finish**.
5. Save the **dfx** file.
6. Right-click the **blx** file and choose **Publish » To a Repository**.
7. Optionally, mark areas for checking integrity. Click **Next**.
8. Browse to the CMS folder in which the universe is to be published. Click **Finish**.  
The universe has now been published with the selected database connection.
9. Continue this process for all universes needed.

# UPGRADE

## Upgrade Workflow

This process of upgrading is divided into three main steps, described in the following.



## Upgrade ETL

Upgrading the ETL is required for upgrading *BPM Analysis* and *BPM People Planner*.

To upgrade the ETL you must:

- Upgrade the ETL and BPM Data Warehouse
- Upgrade the ETL and People Planner Data Warehouse

## Before You Begin

Before upgrading, it is recommended that you make a [backup of the ETL](#) and a backup of the data warehouse database.

**Note:** Since there are many methods to back up a data warehouse database, and methods differ for Oracle and MS SQL, consult your Database Administrators for this task.

## Upgrade the ETL and BPM Data Warehouse

To upgrade the ETL and BPM Data Warehouse, follow these steps:

1. Install the ETL of the new RPU.
2. Run the ETL job **Upgrade**.

The Upgrade job truncates the fact tables, upgrades the database schema of the data warehouse, and performs a full load. Dimension tables remain unchanged and keep the history of dimensions.

## Back Up the ETL

To back up the ETL, follow these steps:

1. Run **Spoon.bat**.
2. Select **Tools » Repository » Connect...**
3. In the **Repository Connection** window, select the repository that contains the ETL to back up.
4. Select **Tools » Repository » Export Repository...**
5. Choose a location and a file name for the XML file to be created.
6. Click **Save**.

## Upgrade the ETL and People Planner Data Warehouse

To upgrade the ETL and People Planner Data Warehouse, install the ETL of the new RPU.

## Upgrade Universes and Documents

Upgrading universes and documents is required for upgrading *BPM Reporting*, *BPM Analysis*, and *BPM People Planner*.

Upgrading is done by installing the respective BIARs from the new RPU. Before installing, make a backup of the CMS, for example, a shape of a BIAR export using Promotion Management.



## Upgrade Customizations

Customizations are the responsibilities of the consultant who applies them. There is no automatic resolving mechanism that safely upgrades BPM without the risk of overwriting customizations or that automatically makes customized BPM components adjust to upgraded BPM components.

However, there are several precautions that you can take when customizing BPM that help to protect the customizations from being overwritten when upgrading.

The following outline the procedures for upgrading customizations, which include:

- Upgrading custom ETL
- Upgrading custom universes
- Upgrading Custom Documents on Standard Universes
- Upgrading Custom Documents on Custom Universes

### Upgrading Custom ETL

Customized ETL is typically create as separate ETL pieces—that is, separate jobs and tasks that are called from the standard ETL. When a new standard ETL is installed, any modifications to it are overwritten, including the places that called the custom ETL. This *link* to the custom ETL then must be reestablished. The custom ETL itself should have facilities for upgrading to new database schemas of tables, and so on.

### Upgrading Custom Universes

Customized universes are typically created in one of two ways:

- **Copied** — A copy of a standard universe. In this case, upgrading is not needed except for running refresh structure on the custom universe to update it to fit the present Maconomy database.
- **Linked** — A universe linking to a standard universe. In this case, there should be no need for doing modifications to the custom universe.

There are exceptions, namely if deprecated elements have been removed from the standard universe or that universe has undergone substantial changes, as happens on occasion.

Also, the custom universe may have introduced tables, objects, and so on, which are also introduced in the new standard universe. Therefore, it is always a good idea to inspect the link from the custom universe to the standard universe and make sure it is intact.

## **Upgrade Custom Documents on Standard Universes**

Custom documents running on standard universes typically work without any changes.

If the principles for customization have been followed, installing a new standard package does not overwrite custom documents.

However, as standard universes from time to time may undergo some changes or fixes, or because deprecated elements may be removed from universes, it is always recommended to test run custom documents and inspect for any issues.

## **Upgrade Custom Documents on Custom Universes**

If customizations have been performed following the recommended principles, upgrading to a new BPM standard package should not ruin any custom documents or custom universes.

It is always a good idea to inspect custom documents, and especially universes, to ensure that they are still functioning correctly after an upgrade; the Maconomy database could have been changed and made custom universe elements invalid or require a refresh of the structure.

## SETUP AND CONFIGURATION

# Set Up Maconomy

You must set up Maconomy before you can take full advantage of BPM Reporting's features.

## Calendar Day

Universes and reports in BPM Reporting use dates that refer to the Calendar Day table in Maconomy. To use this table, you must specify a system parameter that identifies the starting date of the calendar and the number of years for which it should run.

**To set up the calendar day:**

1. Open the System Parameters workspace.
2. Click **Use Calendar Day Table**.
3. Specify the number of years and the start date in the following format: **MM/DD/YYYY**.

System Parameter	
Group	Base
Use Calendar Day Table	<input checked="" type="checkbox"/>
Number of Years	50
	0.0
	0.00
Start Date	1/1/1980

This creates an entry in the CalendarDay table for each date starting with 1/1/1980 and 50 years beyond.

## Split Week Time Sheet

You need to set up the split week time sheets to use BPM Reporting. Split week time sheets are mandatory when using monthly time reporting. For more information, see the *Deltek Maconomy Online Help* and *Deltek Maconomy Concepts Guide*.

**To enable the split week time sheet:**

1. Go to **Setup » System Setup » Parameters and Numbers » System Parameters**.
2. Double click the **Split Week Time Sheet** system parameter.
3. On the System Parameter sub-tab, select the **Split Week Time Sheet** check box.
4. Click **Save**.
5. Restart the Workspace Client.

## Reporting Structures

The Finance universe of BPM Reporting and the General Ledger universe of BPM Analysis use reporting structures to structure and filter accounts.

### Reporting Structure for Finance Measures

To set up dimension grouping:

1. Open the Option List window.
2. In the **Option List No.** field, enter **Finance**.
3. In the **Name** field, enter **Standard**.

The screenshot shows the 'Option Lists' window. The 'Option List' section has 'Option List No.' set to 'Finance' and 'Description' set to 'Finance descr.'. The 'Remarks' section is empty. Below this is a table with the following data:

	Name	Description	Remarks 1
1	Standard	Standard descr.	

4. Open the Reporting Structures window in the workspace Reporting.
5. Create a reporting structure with the following settings:
  - **Type** — Account
  - **Option List** — Finance
  - **Selected Value** — Standard
6. Insert group headers, sub-group headers to provide the desired account structure.
7. Add accounts to the individual groups of the reporting structure.

Each group states the header labels for the finance report using the reporting structure. For example, account number **1110** is displayed in the group with the top-level header **RESULT**, then **RESULT BEFORE EXTR. ENTRIES, REVENUE**, and so on.

**Note:** If using Local Charts of Accounts, reporting structures should be setup for these as well. The **Type** for these is Local Account.

## Reporting Structures for Cashflow

**Note:** If Maconomy is already set up for BPM Reporting, this reporting structure may already exist. If it does, you do not need to perform the following procedure.

**To select the accounts for which postings are considered as contributing to cash flow (cash flow statement):**

1. Open the **Option Lists** window.
2. Create an option list named **Finance**.
3. Enter a value with the name **Cashflow Statement**.  
If Business Performance Management Reporting has already been set up in Maconomy, the option list might already exist; if so, add only the value Cashflow Statement.
4. Open the Reporting Structure window in the workspace Reporting.
5. Create a new reporting structure with the following settings:
  - **Type** — Account
  - **Option List** — Finance
  - **Selected Value** — Cashflow Statement
6. Create grouping headers and add accounts similar as done above. Cashflow usually only include a small subset of accounts. Thereby, the reporting structure works as a filter on accounts in addition to providing a hierarchical structure.
7. Create another reporting structure with the option list value **Cashflow Forecasting**.

## Reporting Structure for Cashflow Statement Indirect Method

**To create a reporting structure for Cashflow Statement Indirect Method:**

1. Go to **Setup » System Setup » Parameters and Numbers » Option Lists**.
2. Click **+ New Option List**.
3. In the **Option List No.** field, enter **Finance**.
4. Click **Create**.
5. On the Options sub-tab, click **Add Option** or press **Ctrl + M**.
6. In the **Name** and **Description** fields, enter **Cashflow Statement**.
7. Click **Save Option (Enter)**, then click **Save Option List (Enter)**.
8. Go to **Setup » Reporting » Reporting Structures**.
9. Click **+ New Reporting Structure**.
10. In the Create Reporting Structure dialog, enter the following setting:
  - **Name** — Cashflow Statement
  - **Description** — Cashflow Statement Reporting Structure
  - **Type** — Account

- **Option List** — Finance
- **Selected Value** — Cashflow Statement

If Business Performance Management Reporting has already been set up in Maconomy, the option list might already exist; if so, add only the value Cashflow Statement and description.

11. Click **Create**.
12. Insert group headers, sub-group headers to provide the desired account structure, similar as done above. Cashflow usually only include a small subset of accounts. Thereby, the reporting structure works as a filter on accounts in addition to providing a hierarchical structure.
  - a. Add two top-level groups for **Net Cashflow** and **Cash Reconciliation**.
  - b. Under Net Cashflow, add three sub-level groups for **Operating**, **Investing**, and **Financing Activities**.
  - c. Then, you can configure the next levels based on your preference.

## Reporting Structure for Dashboard Components

The dashboard components and dashboards in BPM Reporting also require the same kind of reporting structure as is needed for the dashboards in BPM Analysis. The following replicates the setup steps. However, it is not necessary to define all dimension categories, only Revenue on level 5 and Gross Profit on level 4. Deltek recommends that you set up a meaningful structure that includes all of the groups.

### To classify accounts that are used to calculate finance key metrics:

1. Open the **Option Lists** window.
2. Create an option list with the number Finance and a value with the name Key Metrics.  
If BPM Reporting has already been set up in Maconomy, this option list might already exist. If so, add only the Key Metrics value.
3. Open the Reporting Structure window in the workspace Reporting.
4. Create a reporting structure with the following settings:
  - **Type** — Account
  - **Option List** — Finance
  - **Selected Value** — Key Metrics
5. The reporting structure needs to have specific grouping headers and a certain structure. This is described below:
6. Place each account in the group where it belongs.

Assign	To the Value	For All Accounts in which
Grouping 1	NET PROFIT	Posted amounts should contribute to the calculation of Net Profit.
Grouping 1	ASSET	Posted amounts should contribute to the calculation of Assets.
Grouping 1	LIABILITY	Posted amounts should contribute to the calculation of Liability.

Assign	To the Value	For All Accounts in which
Grouping 1	EQUITY	Posted amounts should contribute to the calculation of Equity.
Grouping 2	EBIT	Posted amounts should contribute to the calculation of EBIT.
Grouping 3	EBITDA	Posted amounts should contribute to the calculation of EBITDA.
Grouping 4	GROSS PROFIT	Posted amounts should contribute to the calculation of Gross Profit.
Grouping 5	REVENUE	Posted amounts should contribute to the calculation of Revenue.
Grouping 5	COST	Posted amounts should contribute to the calculation of Cost.
Grouping 5	DEPRECIATION	Posted amounts should contribute to the calculation of P&L depreciation.
Grouping 5	INTEREST	Posted amounts should contribute to the calculation of P&L interest.
Grouping 5	TAX	Posted amounts should contribute to the calculation of P&L TAX.

## Reporting Structure for NSAFT

The NSAFT report uses a reporting structure to group finance data.

### To create a reporting structure for NSAFT:

1. Go to **Setup » System Setup » Parameters and Numbers » Option Lists**.
2. Click **+ New Option List**.
3. In the **Option List No.** field, enter **Finance**.
4. Click **Create**.
5. On the Options sub-tab, click **Add Option** or press **Ctrl + M**.
6. In the **Name** and **Description** fields, enter **NSAFT**.
7. Click **Save Option (Enter)**, then click **Save Option List (Enter)**.
8. Go to **Setup » Reporting » Reporting Structures**.
9. Click **+ New Reporting Structure**.
10. In the Create Reporting Structure dialog, enter the following setting:
  - **Type** — Accounts or Local Accounts
  - **Option List** — Finance
  - **Selected Value** — NSAFT



11. Click **Create**.
12. Insert group headers, sub-group headers to provide the desired account structure.
13. Add accounts to the individual groups of the reporting structure.

### Grouping Headers

The grouping headers specified in the reporting structure is mapped to the generated XML file following the structure below:

Tags (attributes indented)	Mapping
<MasterFiles>	
<GeneralLedgerAccounts>	
<Account>	
<AccountID>	[Account No.]
<AccountDescription>	[Account Description]
<StandardAccountID>	[Grouping Level 1]
<GroupingCategory>	[Grouping Level 2]
<GroupingCode>	[Grouping Level 3]
<Account>	
<GeneralLedgerAccounts>	
<MasterFiles>	

## Reporting Structure for Statement of Changes in Equity

The Statement of Changes in Equity report uses a reporting structure to group data.

#### Notes:

- Only Grouping Level 1 is used for this report. No other grouping levels need to be set for this report as it does not utilize them.
- The reporting structure does not need to have Option List and Option Value set as the report prompts the user to select a reporting structure instead.

To set up a reporting structure for the Statement of Changes in Equity report:

1. Go to **Setup » Reporting » Reporting Structures**.
2. Click **+ New Reporting Structure**.
3. Add a group for each of the columns to be displayed.

#### Example:

**Column 1:** "Share Capital"

**Column 2:** “Statutory Reserve”

**Column 3:** “Other Reserve”

**Column 4:** “Retained Earnings”

**Note:** The naming groups and naming of them can be adjusted to your business needs. However, it is usually standard to have one group named “Retained Earnings” or something similar. This group should include the Year-end-Result Account and all the profit and loss accounts.

Each of the other groups should include the respective Equity accounts for which you want the postings to appear for in the respective columns.

4. Click **Create**.

For more information on the column structure and how it is utilized in the report, see the **Deltek Maconomy BPM Report Description Guide**.

## Aging Principles Setup

Beginning with version 2.1 (internally 16.0) you must set up aging principles in Maconomy to be able to run the various aging reports (WIP Aging, AR Aging, AP Aging, and variants). A number of BPM Reporting reports also require this setup, even though they are not—as such—aging reports. This includes the various transaction sub-reports to the aging reports and, in general, job cost, AR, and AP reports that show balances.

**Note:** The functionality is only used and available in BPM Reporting.

## What is an Aging Principle?

An aging principle is a named collection of aging periods. Each aging period marks the start and end of a period. Periods can either be backward- or forward-looking. You use backward-looking periods to display aged figures that have passed the statement date; you use forward-looking periods to display figures that are after the statement date.

Periods can also be open intervals such that it is possible to report on aged figures that are more than 90 days old. For each period you can provide a title that appears as the header for the aging column in the aging reports.

Each aging principle states whether the periods are measured in months or in days. In addition, it states whether or not aging is based on the entry date.

**Tip:** For information about how to set up aging principles, see the [Maconomy Reference Manual](#) or [single dialog online help](#).

## Changes to the Standard Reports

From Maconomy version 2.1.5 and 2.2.1, all standard reports that use an aging principle no longer prompt users for an aging principle. Maconomy assumes that certain aging principles have been set up.

## Customized Reports

If you are upgrading to Maconomy 2.2, you should note that customized reports typically use the aging objects that were available before Maconomy 2.2. Those aging periods are hard-coded, and the reports

prompt users to indicate whether they should use the entry date. The hard-coded aging objects are deprecated as of Maconomy 2.2. They are located in the DEPRECATED universe class and have “DEPRECATED” as a suffix to their titles.

**Note:** These aging objects are no longer maintained and are not included in the universes after the release of version 2.2. It is therefore important to migrate customers' reports to use aging principles instead.

## Mandatory Aging Principle Setup

Version 2.1 of BPM includes a collection of dashboard components that you can combine in different ways to create performance dashboards on company and customer levels. These dashboards are also embedded in the Workspace Client for the solutions.

Some of the components assume a specific kind of aging principle. The following procedure shows you how to create that kind of aging principle.

### To set up that aging principle:

1. Open the Option List workspace.
2. In the **Option List No.** field, enter **Aging Principles**.
3. Enter **Dashboards** in the **Name** field.

The screenshot shows the 'Option List' workspace. At the top, there's a toolbar with icons for search, save, delete, and navigation. Below the toolbar, the 'Option List' section is visible. It contains two fields: 'Option List No.' with the value 'Aging Principles' and 'Description' which is empty. Below these fields is a table with two columns: 'Name' and 'Description'. The table has one row with the index '1', the name 'Dashboards', and an empty description field.

	Name	Description
1	Dashboards	

4. Open the Aging Principles workspace.
5. Create an aging principle; use any appropriate name.
6. Enter **Aging Principles** in the **Option List** field.
7. Enter **Dashboards** in the **Selected Value** field.
8. In the table, create four periods. Enter an appropriate title and choose appropriate settings.

	Title	Entries to Include	Interval Start	Interval End	Open Ended	First Date in Period, Example	Last Date in Period, Example
1	0-30	Due	0	30	<input type="checkbox"/>	7/31/2013	8/30/2013
2	31-60	Due	31	60	<input type="checkbox"/>	7/1/2013	7/30/2013
3	61-90	Due	61	90	<input type="checkbox"/>	6/1/2013	6/30/2013
4	90+	Due	91	0	<input checked="" type="checkbox"/>	5/31/2013	

Beginning with version 2.1.5, standard reports do not prompt you to select an aging principle. Reports that require an aging principle assume that you have set one up, and that you can indicate it via the option list and selected value, as explained in the preceding steps.

These aging principles assume the same **Aging Principles** option list as described in the preceding procedure:

- **WIP Aging** reports — Designated by having the value **WIP Aging** in the **Selected List** field.
- **AR Aging** reports — Identified by having the value **AR Aging** in the **Selected Value** field.
- **Aging reports** — Identified by having the value **AP Aging** in the **Selected Value** field. Utilization-Specific Setup

To take full advantage of the utilization facilities in Business Performance Management Reporting (including the Utilization and Realization reports and the Utilization universe), you must set up activities and employees to comply with the assumptions that are made.

## Employee Utilization Pop-Up Literals

Some utilization figures are calculated by using the employee utilization pop-up that is defined on activities. BPM Reporting complies with the PSO setup, and you should set up Pop-Up Literals accordingly.

### To set up employee utilization pop-up literals:

1. Open the Popup Fields window.
2. From the drop-down list for **Popup field**, select **Employee Utilization Levels**.
3. Insert the lines that are shown in the following figure.

Name			
1 Productive Time, Invoiceable		0.00	0.00
2 Productive Time, Non-Invoiceable		0.00	0.00
3 Non-Productive		0.00	0.00
4 Absence		0.00	0.00
5 New Business/Sales		0.00	0.00
6 Training		0.00	0.00
7 Sickness		0.00	0.00
8 Holiday		0.00	0.00

- For each activity, assign the appropriate pop-up value for **Employee Utilization**, as shown in the following figure.

If other employee utilization literals are needed, you must insert them in the Popup Fields window (see the figure that follows step 2 in the preceding procedure). You can then customize the objects in the Custom Utilization Figures class to use the literals.

## Fixed Hours Setup for Employees

Fixed hours are calculated from the week calendars, from the employee revisions, or as the minimum of fixed hours that are defined on both. Therefore, you must assign a week calendar to each employee and set up fixed hours for both week calendars and employees.

**To set up fixed hours for employees:**

1. Open the Week Calendars window.
2. For each week calendar to be referenced by employees, ensure that all of the necessary days within the weeks show the appropriate fixed working hours.

The screenshot shows the 'Week Calendars' window. It has a 'Week Calendar' section with 'Week Calendar No.' set to 37,5 and 'Name' set to 37,5. The 'Selection Criteria' section shows 'Show 1 / 2010 - 52 / 2010'. Below this is a table with the following data:

	Week No.	Year	Entry Date	Date,	Total	Monday	Tuesday	Wednesday	Thursday
1	1	2010		1/4/2010	37.5	7.5	7.5	7.5	7.5
2	2	2010		1/11/2010	37.5	7.5	7.5	7.5	7.5
3	3	2010		1/18/2010	37.5	7.5	7.5	7.5	7.5
4	4	2010		1/25/2010	37.5	7.5	7.5	7.5	7.5
5	5	2010		2/1/2010	37.5	7.5	7.5	7.5	7.5
6	6	2010		2/8/2010	37.5	7.5	7.5	7.5	7.5
7	7	2010		2/15/2010	37.5	7.5	7.5	7.5	7.5
8	8	2010		2/22/2010	37.5	7.5	7.5	7.5	7.5

3. Open the Employees window.
4. For each employee, assign a week calendar number to the current employee revision.

The screenshot shows the 'Employees' window. It has sections for 'Secretary', 'Mentor', and 'Outlay Settlement', each with 'Employee No.' and 'Name' fields. The 'Fixed Working Hours' section has a 'Week Calendar No.' field set to 37,5. Below this is a table with the following data:

Week Calendar No.	Job Price Group No.	Popup 1	Popup 2	Popup 3	Popup 4
1 37,5					

5. Assign employee-specific fixed working hours.

The screenshot shows the 'Employees' window. The 'Employee Information' section includes fields for Employee No. (11), Name (Jeff Porcario), and a red 'X' icon. The 'Company' section includes fields for Company No. and Name. Below these is a table of Working Hours for Employee 1.

	Working Hours Monday	Working Hours Tuesday	Working Hours Wednesday	Working Hours Thursday	Working Hours Friday	Working Hours Saturday	Working Hours Sunday
1	8.0	8.0	8.0	8.0	8.0	0.0	0.0

## Derived Dimensions for Employees

In utilization and realization reports, you can drill down on employees' dimensions. This is different from other reports, where you drill down on the dimensions of transactional entries that to which standard dimensions are assigned. For drilling down to be meaningful, you must assign values for all ten standard dimensions for each employee.

### To set up derived dimensions for employees:

1. Open the Derived Dimensions window.
2. For each employee that is displayed in the upper pane, assign values to all ten standard dimensions in the lower pane.

The screenshot shows the 'Derived Dimensions' window. The 'Derived Dimensions' section includes fields for Used in Relation (Employee), Key 1 (11), Key 2, Description, and Option List. The 'User' section includes fields for Created by (Administrator), Created on (10/25/2010), Changed by (Administrator), Changed on (11/12/2010), and Version (11). Below these is a table of Derived Dimensions for Employee 1.

	Location	Location, Description	Overwrite Location	Entity	Entity, Description
1	OAK	Oakland, California	<input type="checkbox"/>	12	Formal Specifications Group

**Note:** Previously, you were required to enable split weeks on time sheets. BPM version 2.1 and newer can handle split weeks being enabled or **not** enabled.

## Set Up BPM Reporting Images

To set up BPM Reporting Images, you must copy the files from the images folder of the Reporting Packing Unit (RPU) and paste them in the destination folder for graphical images in SAP BusinessObjects.

**To copy and paste the image:**

1. Go to images folder of the Reporting Packing Unit (RPU) and copy the image files.
2. Go to the destination folder for graphical images in SAP BusinessObjects, and paste the image files in this folder.

For example:

C:\Program Files (x86)\SAP BusinessObjects\SAP BusinessObjects Enterprise XI 4.0\images



## Set Up BPM Reporting Dashboard Components

This setup is required for BPM Reporting Dashboard Components only.

BPM Dashboard Components allows you to view different dashboard components in a window tab.

To properly view the Company Performance, Customer Performance, and Job Performance workspaces in the Workspace Client, copy the **BPMDashboards.war** file from the download server to the local machine.

**To copy and prepare the Dashboard Component iFrames, follow these steps:**

1. Copy the **BPMDashboards.war** file from the download server and place in an appropriate location on the local machine.
2. Navigate to `C:\Business Objects\Tomcat7\conf` and update **tomcat-users.xml**
3. Insert the following lines between the above `</tomcat-users>` end tag. This creates the user **admin** that has the role for **manager-gui**:
  - a. `<role rolename="manager-gui"/>`
  - b. `<user username="admin" password="admin" roles="manage-gui"/>`
4. Navigate to the <http://<servername>:8080/> Tomcat interface.
5. Click on the **manager webapp** link and use the credentials that you created for **admin**.
6. In the **Deploy directory or WAR file located on the server** section, deploy the **BPMDashboards.war** and complete the following:
  - Context Path (required) — (Starts with a backslash (/) and is concatenated with the war file name, for example, /BPMDashboards).
  - WAR or Directory URL — (Complete URL of the WAR file to be deployed, including the name of the war file, for example, C:\temp\BPMDashboards.war).
7. Click **Deploy**.
8. Once the webapp is deployed, check whether the web app is started. If not, start the web app.

# STATUTORY

## Statutory Overview

Maconomy's Statutory offering supports regulatory requirements in various countries, and includes reporting, an audit of compliance analysis for specific countries, and where applicable, setup requirements to facilitate an interface with a country's tax authority website.

Maconomy provides specific statutory-related functionality relevant within select countries, including tax settlement, foreign transactions, and related reports. Additionally, Maconomy's robust and sophisticated extensibility provides extensive capabilities to tailor the solution to specific localized needs.

Benefits of implementing statutory reporting include: targeted statutory-related reporting; easy interface between Maconomy system and a country's tax authority, where applicable.

**To use Maconomy Statutory, you must perform:**

- [Setup by Country](#)

**Note:** IA SPU Installation is no longer required to install the statutory and BPM report support in Maconomy. Statutory reports are now part of the APU for Maconomy version 2.5.

## Compliance

Deltak maintains a foundational ISAE 3000 audit conducted by BDO as a baseline representation of Maconomy's ability to satisfy global statutory requirements. This audit includes standard financial reports, financial statements, trial balances, and statements of cash flows in a GAAP/IFRS format.

Regulatory documents for specific countries detail that country's requirement with an analysis of Maconomy's compliance, as determined by BDO.

For details on compliance and Regulatory documents by country, Consultants can get the latest information in the following locations:

### Teams

- [Teams » Maconomy Knowledge Center » Area-Statutory](#)

### Product Central

- [Statutory Documents](#)

## Reporting Documents

See the BPM Report Description Guide for details on specific reports, as well as workflow information.

## BPM Statutory Reports Upgrade

Valid through Maconomy 2.4.5. From Maconomy 2.4.6 APU and higher, ensure that the Maconomy standard extension is installed and go to [Statutory Reports Setup](#).

**Note:** This only applies to upgrades from IA SPU to another SPU version or from SPU to APU version.

To upgrade the Statutory Reports from either a major or a CU version, follow the instructions below:

## Workflow of Upgrade



## Uninstallation of Existing BPM IA SPUs

To be able to fully uninstall BPM Statutory Reporting extensions, please note the following parameters:

- “ - **-uninstall-extensions**” - This Command only uninstalls custom extensions.
- “ - - **override-extension-features**” - This Command used in conjunction with the above command but has the <feature\_id> parameter.
- “<feature\_id> parameter” - This is used to get the feature ID of the IA SPU, we need to:
  1. Extract the SPU itself to .tar then to folder level.
  2. Go to the path and unzip  
“..\CustomInstallation\JavaExtensions\ia.UKTaxSubmission.extensions.zip”
  3. In the folder, open the content.xml

BIAR Files > CustomInstallation > JavaExtensions > ia.UKTaxSubmission.extensions

Name	Date modified	Type	Size
plugins	7/10/2019 6:07 PM	File folder	
artifacts.xml	7/10/2019 6:07 PM	XML Document	2 KB
content.xml	7/10/2019 6:07 PM	XML Document	9 KB

4. Copy the unit ID with the feature.group suffix.

Note: There will be other unit IDs per project; we need the unit ID of the whole feature.

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```
<?xml version="1.0" encoding="UTF-8"?>
<?metadataRepository version="1.1.0"?>
<repository version="1.0.0" type="org.eclipse.equinox.internal.p2.metadata.repository.LocalMetadataRepository"
name="file:/C:/Users/CRYSTA~1/AppData/Local/Temp/MaconomyExtender/build/MEBuildTmp/buildRepo - metadata">
  <properties size="2">
    <property name="p2.timestamp" value="1562753256107"/>
    <property name="p2.compressed" value="false"/>
  </properties>
  <units size="3">
    <unit id="com.maconomy.ia.UKTaxSubmission.container.extensions.feature.group" version="1.0.0.201907101807-a508ba2" singleton="false">
      <update id="com.maconomy.ia.UKTaxSubmission.container.extensions.feature.group" severity="0" range="[0.0.0,1.0.0.201907101807-a508ba2)"/>
      <properties size="1">
        <property name="org.eclipse.equinox.p2.type.group" value="true"/>
      </properties>
      <provides size="1">
        <provided version="1.0.0.201907101807-a508ba2" name="com.maconomy.ia.UKTaxSubmission.container.extensions.feature.group"
namespace="org.eclipse.equinox.p2.iu"/>
      </provides>
      <requires size="2">
        <required name="com.deltek.maconomy.bpm.uktaxsubmission" range="[1.0.0.201907101807-a508ba2,1.0.0.201907101807-a508ba2)"
namespace="org.eclipse.equinox.p2.iu"/>
        <required name="com.deltek.maconomy.reporting.bpm.util" range="[1.0.0.201907101807-a508ba2,1.0.0.201907101807-a508ba2)"
namespace="org.eclipse.equinox.p2.iu"/>
      </requires>
      <touchpoint id="null" version="0.0.0"/>
    </unit>
    <unit id="com.deltek.maconomy.reporting.bpm.util" version="1.0.0.201907101807-a508ba2" singleton="false">
      <update id="com.deltek.maconomy.reporting.bpm.util" severity="0" range="[0.0.0,1.0.0.201907101807-a508ba2)"/>
    </unit>
  </units>
</repository>
```

5. Once done, follow the instructions below.

Example of uninstallation of an IA SPU (UK MTD statutory):

1. Run the command prompt as administrator.
2. Go to <Maconomy\_INST\_DIR>\<shortname>\CouplingService (Or where the CouplingService of the said maconomy installation is located).
3. Run this command (feature ID is only an example):  
**"CouplingService.exe --uninstall-extensions --override-extension-features  
com.maconomy.ia.UKTaxSubmission.container.extensions.feature.group -console -noexit"**
4. Check if the plugins are already removed in the plugins folder. Otherwise, remove the **uktaxsubmission** and **reporting.bpm.util** in the plugins folder.(see highlighted example below)

his PC > Windows (C:) > maconomy > w\_20\_0 > CouplingService > plugins

Name	Date modified	Type	Size
com.deltek.maconomy.bpm.belgium.ico_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.belgium.lk_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.belgium.tva_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.france.aef_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.norway.nsaf_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.sweden.sie_1.0.0.201905162041-a58771c	7/31/2019 2:24 AM	File folder	
com.deltek.maconomy.bpm.uktaxsubmission_1.0.0.201901301727-c60a3bb	7/31/2019 2:25 AM	File folder	
com.deltek.maconomy.bpm.util_1.0.0.201905162041-a58771c	7/31/2019 2:25 AM	File folder	
com.deltek.maconomy.reporting.bpm.util_1.0.0.201901301727-c60a3bb	7/31/2019 2:25 AM	File folder	
com.maconomy.coupling.service.log.resources_1.0.0	7/31/2019 2:25 AM	File folder	

5. Restart the Coupling Service.

**Note:** The IA SPU name would be the same as the unit ID of the released BPM IA SPU. So for example the file **spu.20\_0.ia\_BPMStatutoryReporting244CU13.sp104.tgz** would have a feature ID of

**com.maconomy.ia.BPMStatutoryReporting244CU13.container.extensions.feature.group**

This only pertains to removing the Java Extensions. The manual deletion of Workspace definition files and Dialog Layouts is a different story. You would still need to do that to completely wipe out remnants of the SPU.

## STATUTORY

6. Make sure that Workspace Definition and Dialog Layout files for BPM Statutory and UK Tax Submission are removed.
7. In the Maconomy Workspace Client, clear the Client Caching under **Preferences**.
8. Restart the Workspace Client.

## Update Registry of BPM IA SPU's for Maconomy

To remove further remnants of old version of BPM Statutory or UK MTD IA SPU's, follow the instructions below:

1. Run the Registry Editor.
2. Navigate to the folder below:

Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\WOW6432Node\PPU  
Maconomy\Maconomy\Installation\Server\Applications\<maconomy  
shortname>\OSGiProducts\Setup\<Coupling Service name>

3. Find the **InstalledJavaExtensions** key value and edit.

 EnableSSLProxy	REG_SZ	0
 EnableTA	REG_SZ	0
 HasParallelCouplingService	REG_SZ	0
 <b>InstalledJavaExtensions</b>	REG_SZ	IA.UKTaxSubmission245CU10
 KerberosAccountPassword	REG_SZ	

4. Remove all instances of previous versions for BPMStatutoryReporting and/or UKTaxSubmission.

## Installation of New BPM IA SPU's (SPU to SPU)

This is only applicable until 2.4.4 CU 22 and 2.4.5 CU 25.

For upgrading to versions 2.4.4 CU 21 and lower, and 2.4.5CU24 and lower, follow the steps below:

1. Run MConfig as Administrator.
2. Select the shortname from which you want to install the new BPM IA SPU's.  
Note: Installation of both BPMStatutoryReporting and UKTaxSubmission would require doing the succeeding steps twice.
3. Install the new version of BPMStatutoryReporting or UKTaxSubmission IA SPU.
4. Verify that the BPM Statutory Reporting and/or UKTaxSubmission jar files has been installed:

### For BPM Statutory Reporting:

com.deltek.maconomy.bpm.belgium.ico\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.belgium.lk\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.belgium.tva\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.france.aef\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.norway.nsaf\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.sweden.sie\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.bpm.util\_<automatically\_generated\_version\_number>.jar

For UK Tax Submission:

com.deltek.maconomy.bpm.uktaxsubmission\_<automatically\_generated\_version\_number>.jar  
com.deltek.maconomy.reporting.bpm.util\_<automatically\_generated\_version\_number>.jar

5. Verify that the Dialog Layouts and Workspace Definition files have been installed successfully under the CustomizationDir/Extension folder.

## Upgrade from SPU to APU

For versions 2.4.4 CU 21 and lower, and 2.4.5 CU 24 and lower upgrading to 2.4.6 or higher of standard extensions, follow the instructions below.

1. Run MConfig as Administrator.
2. Edit the application name
3. Scroll down and click **OSGI Products**.
4. Edit the Coupling Service used by the application.
5. Scroll down to **(Re) install Java Extensions** and select **MaconomyDir\JavaExtensions**.
6. Click **OK** up until the top dialog.
7. Click **Next » Next** to install the changes

# Statutory Reports Setup

To use statutory reports for any country, you must first set them up using the instructions below.

Beginning with 2.4.3, you must set up the Maconomy system parameters and coupling service to run all statutory reports.

**Important:** Proper setup must be followed or statutory reports will not work as intended.

## Workflow for Statutory Setup



## Statutory Setup Steps

### Set Data Export Path and Server Timeout

1. In the Maconomy installation folder, go to the designated Coupling Service configuration folder in relation to the Maconomy shortname. (i.e. C:\Maconomy\<Maconomy Install DIR>\CouplingService\configuration).
2. Select and open the Server.ini file.
3. Locate server.timeout.and change the value from 600 (default for 10 minutes) to 2400 (40 minutes).

4. Locate filepath.<file-path-id> = <file path> (This will serve as a template to the BPM export path.)
5. Create a new uncommented line following the template above and with the file path ID as bpmexportpath. (i.e. filepath.bpmexportpath.<Shortname of maconomy installation>=C:\BPMSTATFOLDER).
6. Make sure that system.maintenance is set to false.
7. Save the file.
8. Restart the coupling service.

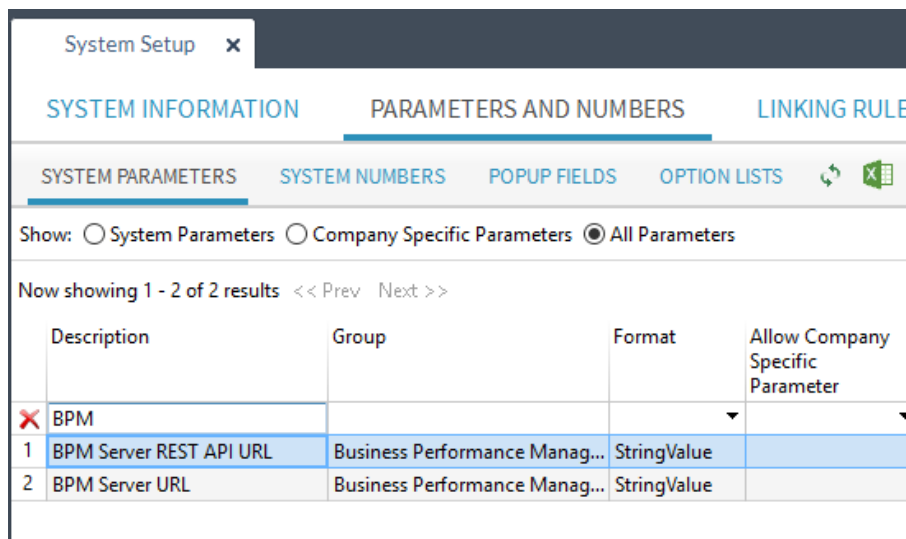
**Note:** You must use a local drive as BPM Statutory reports are created on the Maconomy server only.

## Update System Parameters for BPM

The statutory reports need to connect to a SAP BusinessObjects Server with the installed BPM package to be able to run.

**To set up these system parameters:**

1. Open the **System Setup** workspace.
2. Go to the **Parameters and Numbers » System Parameter** to view the System Parameter tab.
3. Look for two BPM parameters as shown below:



System Setup				
SYSTEM INFORMATION		PARAMETERS AND NUMBERS		LINKING RULE
SYSTEM PARAMETERS		SYSTEM NUMBERS	POPUP FIELDS	OPTION LISTS
Show: <input type="radio"/> System Parameters <input type="radio"/> Company Specific Parameters <input checked="" type="radio"/> All Parameters				
Now showing 1 - 2 of 2 results << Prev Next >>				
	Description	Group	Format	Allow Company Specific Parameter
	BPM			
1	BPM Server REST API URL	Business Performance Manag...	StringValue	
2	BPM Server URL	Business Performance Manag...	StringValue	

4. Select each parameter and update the URL textbox with the appropriate <http://Servername:Port>



## Statutory Reports Setup

SYSTEM PARAMETERS   SYSTEM NUMBERS   POPUP FIELDS   OPTION LISTS   ↺   📄

Show: BPM Server REST API URL

SYSTEM PARAMETER   ↺   ↻   📄   📄   📄

System Parameter	User
BPM Server REST API URL	Created
	Changed
Group	Version

Business Performance Manage...

**Remarks**

Standard value is: http://<SERVERNAME>:6405

5. Save both parameters.
6. Restart the Workspace Client.
7. BPM Statutory reports can now be seen on the Path: **Reporting >> Statutory Reporting**

File Edit Window Help

Workspace Client   Statutory Reporting x

Search menu

Sales Orders

Subscription Orders

Human Resources

Reporting

Reports

Manager Reporting

Employee Reporting

**Statutory Reporting**

UK Tax Submissions

Company Performance

Customer Performance

Job Performance

Setup

24 (2 x) / 50,101.0.21000.10100 (1 x)

BELGIUM   FRANCE   SWEDEN   NORWAY   INDIA   GERMAN

CUSTOMER LISTING   INTRA COMMUNITY LISTING   TAX DECLARATION   ↺   📄   📄   📄   Run Report

**Selection Criteria**

Representative E-mail Address

Company No.

Year

Lower Limit

Include Customers in Credit

2020

0.00

## Enable Background Task

The statutory reports run as background tasks to extract huge amounts of data without compromising simultaneous entry in the Workspace Client. Background Tasks are enabled by default. Set the task duration as described below.

### To set the Task Duration:

1. Go to **Background Tasks » Management » System Defaults**.
2. In **Default Max. Task Duration**, enter **40** minutes.

## Additional SSI Setup

In addition to the SSI Setup detailed in the System Admin Guide, additional steps are necessary to allow Trusted Authentication in REST API to run the statutory reports.

### To configure Trusted Authentication for statutory reports:

1. On the BO server, log in to the Central Management Console (CMC) with administrative rights.

2. Go to **Servers** area of the CMC Client and open the properties for the Web Application Server.
3. In the **Command Line Parameters** textbox, look for the parameter - *Dbobj.trustedauth.home* and note down its corresponding value. (i.e. "-  
*Dbobj.trustedauth.home=C:/Program Files (x86)/SAP BusinessObjects/SAP BusinessObjects Enterprise XI 4.0/java/pjs/container/bin*")
4. Go to the **Authentication Management** area of the CMC Client, and on the Enterprise tab, scroll down to the Trusted Authentication section.
5. Under **Trusted Authentication**:
  - a. Click **Trusted Authentication is enabled**.
  - b. Click **New Shared Secret**.
  - c. Enter the number of days for the **Shared Secret Validation Period** and timeout for the **Trusted Authentication** request.
  - d. Click **Update** to save the settings.
  - e. Reopen the **Enterprise tab**.
  - f. Click **Download Shared Secret**. The File Download dialog box displays.
  - g. Click **Save** and copy the **TrustedPrincipal.conf** file to:
 

```
<INSTALLDIR>\SAP BusinessObjects Enterprise XI 4.0\win32_x86\
```

```
<INSTALLDIR>\SAP BusinessObjects Enterprise XI 4.0\win64_x64\
```

The Trusted Authentication Home folder as mentioned in Step 3 (i.e. *C:/Program Files (x86)/SAP BusinessObjects/SAP BusinessObjects Enterprise XI 4.0/java/pjs/container/bin*).
  - h. Restart the SIA.

**Note:** There is a chance the generated Shared Secret will be too long and will cause an unnecessary line break. If this happens, generate a new Shared Secret.

After this is completed, you must enable **Trusted Authentication on the Coupling Service**. To do so:

1. Update the OSGi settings in MConfig.
2. Select the Trusted Authentication check box, and then copy the value of the shared secret inside TrustedPrincipal.conf to the Password from the preceding list.

## Restart Programs

After SSI setup, you must restart the following programs:

1. Tomcat
2. Server Intelligence Agent (SIA)

## Follow Country-Specific Instructions

1. Click Ctrl + F to search for the country.
2. Follow the country-specific instructions as needed.

## Belgium

See [Statutory Reports Setup](#) to begin.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
	2.5.3	

### Tax Declaration Report

Define tax declaration fields for the **Tax Declaration** report that lists financially posted amounts and their tax amounts, for a specific company and fiscal year. Maconomy automatically creates tax report records when posting amounts and each record has a field that states which tax declaration box to place the tax amount in the tax declaration.

### Setup in Maconomy

To enable this feature:

1. Go to **System Setup » System Information » Finance**.
2. Select the **Extended Tax Reporting** parameter check box.
3. Go to **General Ledger » Tax » Tax Report Fields** and create the tax declaration fields.
4. Go to **General Ledger » Tax » Tax Report Specification** and specify the amounts that should go into the fields.
5. Perform postings as usual.

**Note:** If you need to reference the XML schema for the report, refer to *the Deltek BPM Description Guide*.

### Setup in Tax Authority

Not applicable for this report.

## France

See [Statutory Reports Setup](#) to begin. No Additional Setup Required.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
--------	---------	-------------

Statutory Reports Setup

---

	2.5.3	
--	-------	--

## Germany

See [Statutory Reports Setup](#) to begin. No Additional Setup Required.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
	2.5.3	

## India

See [Statutory Reports Setup](#) to begin. No Additional Setup Required.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
	2.5.3	

## Norway

See [Statutory Reports Setup](#) to begin.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
Norwegian SAFT Report	2.5.3	<ul style="list-style-type: none"> <li>Merging two company numbers into one report limitation</li> </ul>

### Norwegian SAFT Report

The use of Maconomy's Tax Settlement functionality must be in place for the Tax Information details to populate in the report, as required by Norwegian SKAT.

- The mapping fields below need to be filled in the appropriate dialogs, as provided. For example, the <Company> attribute means that the Company Information card has certain fields that must be completed, such as Company Registration No.
- Header information is populated via selection criterion or other means. You do not need to do anything for this area.
- Most of the fields should already be filled in the system. To confirm this, double-check each line to ensure that the fields are populated and the correct data is extracted in the report.

#### Reference Materials

**Note:** SKAT updates these documents periodically. Make sure you have downloaded the most recent versions.

<http://www.skatteetaten.no/no/Bedrift-og-organisasjon/frister-attester-og-regnskap/Bokforing-og-regnskap/standardformat-regnskap-saf-t/dokumentasjon/>

- Norwegian SAF-T Financial data – Documentation (this section)
- Norwegian SAF-T Financial data – Technical description (XML elements)
- Diagrams (picture files) of the XSD Schema
- Norwegian SAF-T Standard VAT codes

The export is based on the XML Schema – ([www.github.com/skatteetaten/saf-t](http://www.github.com/skatteetaten/saf-t))

**Note:** This version of the SAF-T data export is limited to the general ledger level, including customer and supplier transactions. Necessary master data is also included.

### Important Note: Running NSAFT as an Administrator without a Designated Employee

The following is an issue with NSAFT in Maconomy versions prior to 2.5.4.

Use the workaround described below.

#### Scenario:

When a user marked as an Administrator runs NSAFT and the “Administrator” user does not have a designated employee, NSAFT execution will fail.

#### User Type

Type      Standard

☐ Template

☒ Administrator

#### Workaround:

Assign an employee to the “Administrator” user or run NSAFT with a non-admin user who has an employee assigned to them.

### Tags and Mappings

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>			
<AuditFile xmlns="urn:StandardAuditFile-Taxation-Financial:NO">			
<Header>			
<AuditFileVersion>	Hardcoded	1.10	
<AuditFileCountry>	Company Information	Country	Derived Country ISO: System Setup > Regional Settings > Countries
<AuditFileDateCreated>		Current System Date	
<SoftwareCompanyName>	Hardcoded	Deltek, Inc.	
<SoftwareID>	Hardcoded	Deltek Maconomy	
<SoftwareVersion>	Internal Value	Application Version and Application Patch Level	Help > About Deltek Maconomy > Installation Details: Application Version and Application Patch Level
<Company>			



Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<RegistrationNumber>	Company Information	Company Reg. No.	
<Name>		Name	
<Address>			
<StreetName>		Address 1	
<Number>		Address 2	
<AdditionalAddressDetail>		Address 3	
<City>		City	
<PostalCode>		Postal Code	
<Country>		Country	Derived Country ISO: System Setup > Regional Settings > Countries
</Address>			
<Contact>			
<ContactPerson>			
<FirstName>	Hardcoded	<i>NotUsed</i>	
<LastName>	Company Information	Employee Name 1 up to Employee Name 5	
</ContactPerson>			
<Telephone>		Phone	
<Fax>		Fax	
<Email>		Text 10	Generic field used temporarily
</Contact>			
<TaxRegistration>			
<TaxRegistrationNumber>	Company Information	Company Information Vat No.	

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<TaxAuthority>	Hardcoded	<i>Skatteetaten</i>	
<TaxVerificationDate>	Company Information	Date 1	Generic field used temporarily
</TaxRegistration>			
<BankAccount>			
<IBANNumber>	Company Information	Giro	Condition: If Giro is available display <IBANNumber> If Giro is not available display <BankAccountNumber>
<BankAccountNumber>		Bank	
<CurrencyCode>		Base Currency	
</BankAccount>			
</Company>			
<DefaultCurrencyCode>	Company Information	Base Currency	
<SelectionCriteria>			
<CompanyEntity>	Norway Statutory Reports	Company No.	
<SelectionStartDate>		Year-Period From	Set to 1st day of the Period selected
<SelectionEndDate>		Year-Period To	Set to last day of the Period selected
</SelectionCriteria>			
<HeaderComment>	Norway Statutory Reports	Header Comment	
<TaxAccountingBasis>	Hardcoded	A	
<TaxEntity>	Company Information	Text 9	Generic field used temporarily
<UserID>	Employees	Name 1	Derived from the current logged in user
</Header>			

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<MasterFiles>			
<GeneralLedgerAccounts>			<p>Setup Required: Reporting Structure Option List = Finance Selected Value = NSAFT</p> <p>*they need to include accounts to be mapped under the reporting structure.</p>
<Account>			
<AccountID>	Account Information Card or Local Account Information Card	Account Number	
<AccountDescription>		Account Name	
<StandardAccountID>	Reporting Structures	Grouping level 1	
<GroupingCategory>		Grouping level 2	
<GroupingCode>		Grouping level 3	
<AccountType>	Hardcoded	GL	
<AccountCreationDate>	Account Information Card or Local Account Information Card	Created Date	
<OpeningDebitBalance> OR <OpeningCreditBalance>	Account Ledger or Local Account Ledger	Opening (Currency)	<p>Condition: If Balance is greater than 0 display as &lt;OpeningDebitBalance&gt; If Balance is less than 0 display as &lt;OpeningCreditBalance&gt;</p>
<ClosingDebitBalance> OR <ClosingCreditBalance>		Closing (Currency)	<p>Condition: If Balance is greater than 0 display as &lt;ClosingDebitBalance&gt; If Balance is less than 0 display as &lt;ClosingCreditBalance&gt;</p>
</Account>			
</GeneralLedgerAccounts>			
<Customers>			
<Customer>			

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<RegistrationNumber>	Company Specific Customer Information Card	Comp. Reg. No.	
<Name>		Name	
<Address>			
<StreetName>		Address 1	
<Number>		Address 2	
<AdditionalAddressDetail>		Address 3	
<City>		City	
<PostalCode>		Postal Code	
<Country>		Country	Derived Country ISO: System Setup > Regional Settings > Countries
</Address>			
<Contact>			
<ContactPerson>			
<FirstName>	Hardcoded	<i>NotUsed</i>	
<LastName>	Company Specific Customer Information Card	Contact Person	
</ContactPerson>			
<Telephone>	Company Specific Customer Information Card	Phone	
<Fax>		Fax	
<Email>		Personal E-mail	
</Contact>			
<TaxRegistration>			

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<TaxRegistrationNumber>	Company Specific Customer Information Card	Tax No.	
<TaxAuthority>	Hardcoded	Skatteetaten	
</TaxRegistration>			
<BankAccount>			
<IBANNumber>	Company Specific Customer Information Card	Giro	Condition: If Giro is available display <IBANNumber> If Giro is not available display <BankAccountNumber>
<BankAccountNumber>		Bank Acct. No.	
<BIC>		SWIFT	
<CurrencyCode>		Base Currency	
<GeneralLedgerAccountID>		Control Account	Control Account No. derived from: Popup Fields > A/R Control Accounts > Control Account
</BankAccount>			
<CustomerID>		Customer No.	
<AccountID>		Control Account	Control Account No. derived from: Popup Fields > A/R Control Accounts > Control Account
<OpeningDebitBalance> OR <OpeningCreditBalance>	Periodic Customer Statement	Balance, Base (Opening)	Condition: If Balance is greater than 0 display as <OpeningDebitBalance> If Balance is less than 0 display as <OpeningCreditBalance>
<ClosingDebitBalance> OR <ClosingCreditBalance>		Balance, Base (Closing)	Condition: If Balance is greater than 0 display as <ClosingDebitBalance> If Balance is less than 0 display as <ClosingCreditBalance>
<PartyInfo>			

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<PaymentTerms>			
<Days>		Payment Terms	Days derived from: Popup Fields > Payment Terms > (No. of Months x 30) + No. of Days
<CashDiscountDays>	Company Specific Payment Information	Cash Discount Code	Days derived from: Popup Fields > Cash Discount Code > No. of Days
<CashDiscountRate>		Cash Discount Code	Rate derived from: Popup Fields > Cash Discount Code > Discount %
</PaymentTerms>			
<CurrencyCode>	Company Specific Customer Information Card	Base Currency	
</PartyInfo>			
</Customer>			
</Customers>			
<Suppliers>			
<Supplier>			
<RegistrationNumber>	Company Specific Vendor Information Card	Comp. Reg. No.	
<Name>		Name	
<Address>			
<StreetName>		Address 1	
<Number>		Address 2	
<AdditionalAddressDetail>		Address 3	
<City>		City	

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<PostalCode>		Postal Code	
<Country>		Country	Derived Country ISO: System Setup > Regional Settings > Countries
</Address>			
<Contact>			
<ContactPerson>			
<FirstName>	Hardcoded	<i>NotUsed</i>	
<LastName>	Company Specific Vendor Information Card	Contact Person	
</ContactPerson>			
<Telephone>	Company Specific Vendor Information Card	Phone	
<Fax>		Fax	
<Email>		Personal E-mail	
</Contact>			
<TaxRegistration>			
<TaxRegistrationNumber>	Company Specific Vendor Information Card	Tax No.	
<TaxAuthority>	Hardcoded	<i>Skatteetaten</i>	
</TaxRegistration>			
<BankAccount>			
<IBANNumber>	Company Specific Vendor	Giro	Condition: If Giro is available display <IBANNumber>
<BankAccountNumber>		Bank Acct. No.	

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
	Information Card		If Giro is not available display <BankAccountNumber>
<BIC>		SWIFT	
<CurrencyCode>		Base Currency	
<GeneralLedgerAccountID>		Control Account	Control Account No. derived from: Popup Fields > A/P Control Accounts > Control Account
</BankAccount>			
<CustomerID>		Customer No.	
<AccountID>		Control Account	Control Account No. derived from: Popup Fields > A/P Control Accounts > Control Account
<OpeningDebitBalance> OR <OpeningCreditBalance>	Periodic Vendor Statement	Balance, Base (Opening)	Condition: If Balance is greater than 0 display as <OpeningDebitBalance> If Balance is less than 0 display as <OpeningCreditBalance>
<ClosingDebitBalance> OR <ClosingCreditBalance>		Balance, Base (Closing)	Condition: If Balance is greater than 0 display as <ClosingDebitBalance> If Balance is less than 0 display as <ClosingCreditBalance>
<PartyInfo>			
<PaymentTerms>			
<Days>	Company Specific Payment Control	Payment Terms	Days derived from: Popup Fields > Payment Terms > (No. of Months x 30) + No. of Days
<CashDiscountDays>		Cash Discount Code	Days derived from: Popup Fields > Cash Discount Code > No. of Days
<CashDiscountRate>		Cash Discount Code	Rate derived from: Popup Fields > Cash Discount Code > Discount %
</PaymentTerms>			



Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<CurrencyCode>	Company Specific Vendor Information Card	Base Currency	
</PartyInfo>			
</Supplier>			
</Suppliers>			
<TaxTable>			
<TaxTableEntry>			
<TaxType>	Hardcoded	MVA	
<Description>	Hardcoded	Merverdiavgift	
<TaxCodeDetails>			
<TaxCode>	Tax Tables and G/L Tax Tables	Tax Code	NSAFT has the capability to override the tax code using the remarks 2 field from the same option list for mapping standard tax code. This feature overrides <TaxCode> under <TaxTable> and <TaxInformation>. Character limit of 9 is still enforced for the values from the remarks 2 field.  If the Tax Code is neither in the option list nor mapped with a remarks 2 field, it will show the original tax code from the Tax Code dialog in Maconomy.
<EffectiveDate>		Period From	
<ExpirationDate>		Period To	
<Description>	Tax Codes and G/L Tax Codes	Tax Type, Taxable	
<TaxPercentage>		Tax Rate	
<Country>		Country ISO Code	
<StandardTaxCode>	Option Lists	Remarks 1	Setup Required: Option List with Option List No.= NSAFT

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<BaseRate>	Tax Codes and G/L Tax Codes	Ratio	<BaseRate> is always 100 for tax codes from 'Tax Codes' dialog
</TaxCodeDetails>			
</TaxTableEntry>			
</TaxTable>			
</MasterFiles>			
<GeneralLedgerEntries>			
<NumberOfEntries>		Total count of <Transaction> elements	
<TotalDebit>		Sum of all <DebitAmount> in the exported file	
<TotalCredit>		Sum of all <CreditAmount> in the exported file	
<Journal>			
<JournalID>	Show Journals	Journal No.	
<Description>	Show Journals	Journal Type	
<Type>		Values 'A', 'AP', 'AR', or 'GL' based on the Journal Type	Reference Journal Type list mapping
<Transaction>			
<TransactionID>	Show G/L Entries	Trans. No.	
<Period>		Fiscal Period	
<PeriodYear>		Fiscal Year	
<TransactionDate>		Entry Date	

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<SourceID>	Show Journals	Created By	
<TransactionType>	Show G/L Entries	Aut. Entry	Condition: If Aut. Entry is Yes, <TransactionType> is set to "Automated". If Aut. Entry is No, <TransactionType> is set to "Normal".
<Description>	Show G/L Entries	Transaction Type	
<SystemEntryDate>	Show Journals	Created On	
<GLPostingDate>	Show G/L Entries	Date Posted	
<SystemID>	Show G/L Entries	Combined Sequence No.	
<Line>			
<RecordID>		<i>Auto-generated number</i>	sequence number is generated per <Line> per <Transaction>
<AccountID>	Show G/L Entries	Account No.	
<SourceDocumentID>	Show G/L Entries	Journal No.	
<CustomerID>	Show Customer Reconciliation	Customer No.	Condition: If the <Line> is an A/R sub ledger entry, show <CustomerID>
<SupplierID>	Show Vendor Reconciliation	Vendor No.	If the <Line> is an A/P sub ledger entry, show <SupplierID>
<Description>	Show G/L Entries	Entry Description	
<DebitAmount> OR <CreditAmount>			Condition: If <Amount> is greater than 0, display as <DebitAmount> If <Amount> is less than 0, display as <CreditAmount>

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<Amount>	Show G/L Entries	Debit, Base - Credit, Base	Displayed in absolute value
<CurrencyCode>	Show G/L Entries	Original Currency	
<CurrencyAmount>	Show G/L Entries	Original Amount	
<ExchangeRate>		<Amount> divided by <CurrencyAmount>	
<TaxInformation>			
<TaxType>	Hardcoded	MVA	
<TaxCode>	Show Tax Settlement Entries	Tax Code	<p>NSAFT has the capability to override the tax code using the remarks 2 field from the same option list for mapping standard tax code. This feature overrides &lt;TaxCode&gt; under &lt;TaxTable&gt; and &lt;TaxInformation&gt;. Character limit of 9 is still enforced for the values from the remarks 2 field.</p> <p>If the Tax Code is neither in the option list nor mapped with a remarks 2 field, it will show the original tax code from the Tax Code dialog in Maconomy.</p>
<TaxPercentage>	Show Tax Settlement Entries	Tax Rate	
<TaxBase>	Show G/L Entries	Debit, Base - Credit, Base	
<TaxAmount>			
<Amount>	Show G/L Entries	Debit Tax - Credit Tax	
<CurrencyCode>	Show Tax Settlement Entries	Original Currency	

Tags (attributes indented)	Dialogs	Field/Value	Technical Details
<CurrencyAmount>	Show Tax Settlement Entries	Calculated from Debit, Currency - Credit, Currency and Ratio	
</TaxAmount>			
</TaxInformation>			
<ReferenceNumber>	Show G/L Entries OR Show Vendor Invoice Journals	Transaction No. OR Vendor Invoice No.	Condition: If Journal Type is Invoice, <ReferenceNumber> shows the Transaction No. If Journal Type is Vendor Invoice, <ReferenceNumber> shows the Vendor Invoice No.
</Line>			
</Transaction>			
</Journal>			

**Note:** This is the setup of IBAN and Bank Account Numbers:

- <IBANNumber> displays if it has a value, regardless if there is bank account.
- <Bank Account No.> displays if IBANNumber is blank and Bank Account has a value.
- If both tags are blank, <IBANNumber>NA</IBANNumber> displays.

**Note:**

If tax code is an EU acquisition, <TaxPercentage>0.00</TaxPercentage> = EU Acquisition Tax Rate

## Enable Logging

To enable logging, add the following entries to logback.xml of the coupling service configuration:

```
<logger name="com.deltek.maconomy.bpm.norway.nsft"
additivity="false">
  <level value="DEBUG" />
  <appender-ref ref="FILE"/>
</logger>

<logger name="com.deltek.maconomy.bpm.util" additivity="false">
  <level value="DEBUG"/>
  <appender-ref ref="FILE"/>
</logger>
```

## Setup in Maconomy

To enable this report:

1. Go to **System Setup » Parameters and Numbers » System Parameters**.
2. Double-click the **BPM Server REST API** parameter.
3. On the System Parameter sub-tab, enter the IP and not DOMAIN address.
4. On the System Parameters tab, select the **BPM Server URL** parameter.
5. On the System Parameter sub-tab, enter the BPM server URL.

## Journal Type Mapping

Maconomy Journal Types	NSAFT Type
Asset	A
Asset Acquisition	A
Asset Depreciation	A
Asset Internal Sale	A
Asset Relocation	A
Asset Sale	A
Asset Transfer	A
Bank Reconciliation	A
Commission	A
Expense Sheet	A
Fixed Price Inclusion	A
Follow-up Selection	A
Invoice Reallocation	A

Maconomy Journal Types	NSAFT Type
Item	A
Job	A
Job Accrual	A
Job Invoice Allocation	A
Job Item	A
Job Pre-Invoice Reconciliation	A
Job Reallocation	A
Job Revenue Recognition	A
Job Transfer	A
Mileage Sheet	A
Royalty	A
Time Sheet	A
Intercompany Settlement Vendor Invoice	AP
Payment	AP
Vendor	AP
Vendor Invoice	AP
Automatic Customer Payment	AR
Collection	AR
Customer Payment	AR
Customer Reconciliation	AR
Debtor Provisions	AR
Interest Charge Notice	AR
Invoice	AR
Reminder	AR
G/L Reallocation	GL

Maconomy Journal Types	NSAFT Type
General	GL
Gross Pay	GL
Intercompany Grouping	GL
Intercompany Interest Note	GL
Tax Settlement	GL
Unrealized Exchange Rate Variance	GL

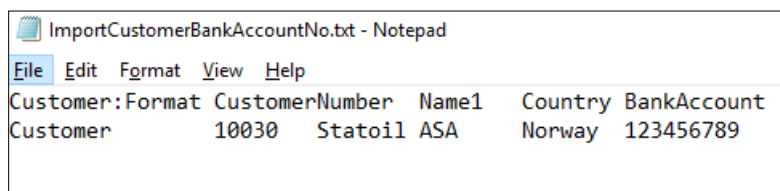
### Import Bank Account Numbers for Customers

Bank Account No. is an optional field from Maconomy that you can leave empty for the Norwegian SAFT report. This field is not visible in the standard layout in the Customers workspace. To use the Bank Account No field, you must create an import file to fill the field with bank account numbers.

**Note:** The import file is only applicable in the Customers workspace.

To add bank account numbers:

1. Create a tab-separated data file with customer information, as shown.



2. In Maconomy, go to **Single Dialog » Import » Customer » Import Customers**.
3. On the Import Customers tab, select the **Internal Names**, **Progress Bar**, and **Logging** check boxes.
4. Click **Import**.
5. Select the import file.
6. In the Customers workspace, right-click in the customer table and select **Customize Columns**.
7. Select the **Bank Acct. No.** column. The values you imported into the Bank Acct. No. column are displayed.

### Import SWIFT Code for Customers and Vendors

SWIFT Code is not a visible field in the standard layout in the Customers and Vendors workspaces. You must use an import file to fill this field with bank account numbers.

To add bank account numbers:

1. Create a tab-separated data file with SWIFT code information, as shown.



1	Customer:Format	CustomerNumber	Name1	Country	SWIFTCode
2	Customer	4470377113	Nice Homes Ltd.	United Kingdom	192020393
3					

2. Open the Customers or Vendors workspace:
  - a. Go to **Single Dialog » Import » Customer » Import Customers** to import the SWIFT code values into the Customers workspace.
  - b. Go to go to **Single Dialog » Import » Vendor » Import Vendors** to import SWIFT code into the Vendors workspace.
3. Select the **Internal Names**, **Progress Bar**, and **Logging** check boxes.
4. Click **Import**.
5. Select your import file.
6. Customize the layout to display the SWIFT column and values in the Customers and Vendors workspaces.

## TaxCode Uniqueness Requirement

### Background

Deltek Maconomy customers in NO typically have their VAT setup going across multiple countries for the Norge 0% Export rates.

See the following example:

### Limitation: Merging Two Company Numbers into One Report

Note the following limitation around merging two company numbers into a single report:

#### Scenario:

- Companies under the selected Tax Settlement Unit is a mix of Global and Local Accounts. (For example, Company 1 uses global accounts while Company 21 is using Local Accounts)

#### Issue:

- GL Entries will not match Master Data

#### Reason:

GL Entries are filtered by either Global or Local Charts of Account Type. However, there is no filter like this for Vendors and Customers. This will result in having more vendors and customers displayed on the <MasterFiles> compared to the entries shown under <GeneralLedgerEntries>.

## Statutory Reports Setup

Tax Code	Period From	Period To	Country
1 Norge Inland 25%			Norway
2 Norge Interdivision			Norway
3 Norge Export 0%			Sweden
4 Norge Export 0%			United King...
5 Norge Export 0%			Denmark
6 Norge Export 0%			France
7 Norge Export 0%			Belgium
8 Norge Export 0%			Finland
9 Norge Export 0%			USA
10 Norge Export 0%			Germany
11 Norge Export 0%			Luxembourg
12 Norge Export 0%			Latvia
13 Norge Export 0%			Spain
14 Norge Export 0%			Switzerland
15 Norge Export 0%			Canada
16 Norge Export 0%			Iceland
17 Norge Export 0%			Japan
18 Norge Export 0%			Netherlands
19 Norge Export 0%			Austria
20 Norge Export 0%			Poland
21 Norge Export 0%			Italy
22 Norge Export 0%			Vietnam
23 Norge Export 0%			Irish Republic
24 Norge Export 0%			Russia
25 Norge Export 0%			China
26 Norge Export 0%			Gibraltar
27 Norge Export 0%			Malta
28 Norge Export 0%			Estonia
29 Norge Export 0%			Faroe Islands
30 Norge Export 0%			Australia
31 Norge Export 0%			Lithuania
32 Norge Export 0%			Turkey
33 Norge Export 0%			South Korea

As a result of this setup, you see the following extract in the SAF-T XML Output:

```
<TaxCodeDetails>
  <TaxCode>Norge Exp</TaxCode>
  <Description>NO - 12. Norge export försäljning</Description>
  <TaxPercentage>0.00</TaxPercentage>
  <Country>SE</Country>
  <StandardTaxCode></StandardTaxCode>
  <BaseRate>100.00</BaseRate>
</TaxCodeDetails>
<TaxCodeDetails>
  <TaxCode>Norge Exp</TaxCode>
  <Description>NO - 12. Norge export försäljning</Description>
  <TaxPercentage>0.00</TaxPercentage>
  <Country>GB</Country>
  <StandardTaxCode></StandardTaxCode>
```

```

    <BaseRate>100.00</BaseRate>
  </TaxCodeDetails>
  <TaxCodeDetails>
    <TaxCode>Norge Exp</TaxCode>
    <Description>NO - 12. Norge export försäljning</Description>
    <TaxPercentage>0.00</TaxPercentage>
    <Country>DK</Country>
    <StandardTaxCode></StandardTaxCode>
    <BaseRate>100.00</BaseRate>
  </TaxCodeDetails>
  <TaxCodeDetails>
    <TaxCode>Norge Exp</TaxCode>
    <Description>NO - 12. Norge export försäljning</Description>
    <TaxPercentage>0.00</TaxPercentage>
    <Country>FR</Country>
    <StandardTaxCode></StandardTaxCode>
    <BaseRate>100.00</BaseRate>
  </TaxCodeDetails>
  <TaxCodeDetails>
    <TaxCode>Norge Exp</TaxCode>
    <Description>NO - 12. Norge export försäljning</Description>
    <TaxPercentage>0.00</TaxPercentage>
    <Country>BE</Country>
    <StandardTaxCode></StandardTaxCode>
    <BaseRate>100.00</BaseRate>
  </TaxCodeDetails>
  <TaxCodeDetails>
    <TaxCode>Norge Exp</TaxCode>
    <Description>NO - 12. Norge export försäljning</Description>
    <TaxPercentage>0.00</TaxPercentage>
    <Country>FI</Country>
    <StandardTaxCode></StandardTaxCode>
    <BaseRate>100.00</BaseRate>
  </TaxCodeDetails>
  <TaxCodeDetails>
    <TaxCode>Norge Exp</TaxCode>
    <Description>NO - 12. Norge export försäljning</Description>
    <TaxPercentage>0.00</TaxPercentage>

```

```

<Country>US</Country>
<StandardTaxCode></StandardTaxCode>
<BaseRate>100.00</BaseRate>
</TaxCodeDetails>
<TaxCodeDetails>
  <TaxCode>Norge Exp</TaxCode>
  <Description>NO - 12. Norge export försäljning</Description>
  <TaxPercentage>0.00</TaxPercentage>
  <Country>DE</Country>
  <StandardTaxCode></StandardTaxCode>
  <BaseRate>100.00</BaseRate>
</TaxCodeDetails>
<TaxCodeDetails>

```

Note that in each instance, although the TaxCode is Norge Exp (Norge Export), there is **no uniqueness** as required by SKATT to differentiate each code.

## Requirements

SKATT Requires that the TaxCode name can only be used once and it must be unique according to the SKATT technical guide referenced below:

**Repetitions** (Rep) states how many times the element can or must be repeated. 0..1

1..1

0..U

1..U

The element can be used once.

The element must be used once.

The element can be used from none to an unbounded amount of times.

The element must be used from one to an unbounded amount of times.

## TaxCodeDetails

*Mandatory. Repetitions: 1..U*

XML Element	Description	Type	Req/Rep.		Example
TaxCode	Tax Code for lookup in tables.	SAFmiddle1textType	M	1..1	14
EffectiveDate	Representing the starting date for this entry.	xs:date	O	0..1	2005-01-01
ExpirationDate	Representing the ending date for this entry.	xs:date	O	0..1	
Description	Description of the Tax Code.	SAFlongtextType	O	0..1	Inngående avgift, høy sats
TaxPercentage	Tax percentage.	xs:decimal	O	0..1	25
FlatTaxRate	Not in use.	AmountStructure	O	0..1	

## Statutory Reports Setup

Country	Two-letter country code according to ISO 3166-1 alpha 2 standard.	ISOCountryCode	M	1..1	NO
<i>Region</i>	<i>Not in use.</i>	<i>SAFcodeType</i>	<i>O</i>	<i>0..1</i>	
StandardTaxCode	Standard Tax Code. <i>See attached overview of standard codes.</i>	SAFmiddle1textType	M	1..1	1
Compensation	Indicates if the Tax Code is used for compensation.	xs:boolean	O	0..U	true

According to Norwegian SKATT, the tax codes must be unique as noted above per the SKATT technical documentation.

In order to file the SAF-T report, you must change your NO tax code setup to reflect a more unique set of codes (For example, NorgeExport0%1, NorgeExport0%2, etc.).

This should be discussed with your business consultant as new codes need to be set up and assigned to the tax tables and then tagged to new transactions going forward.

We understand this is not an easy undertaking but it is important from a compliance perspective.

## Reporting Structure for NSAFT

The NSAFT report uses a reporting structure to group finance data.

### Setup in Maconomy

To create a reporting structure for NSAFT:

1. Go to **Setup » System Setup » Parameters and Numbers » Option Lists**.
2. Click **+ New Option List**.
3. In the **Option List No.** field, enter **Finance**.
4. Click **Create**.
5. On the Options sub-tab, click **Add Option** or press **Ctrl + M**.
6. In the **Name** and **Description** fields, enter **NSAFT**.
7. Click **Save Option (Enter)**, then click **Save Option List (Enter)**.
8. Go to **Setup » Reporting » Reporting Structures**.
9. Click **+ New Reporting Structure**.
10. In the Create Reporting Structure dialog, enter the following setting:
  - **Type** — Accounts or Local Accounts
  - **Option List** — Finance
  - **Selected Value** — NSAFT
11. Click **Create**.
12. Insert group headers, sub-group headers to provide the desired account structure.
13. Add accounts to the individual groups of the reporting structure.

## Reporting and Account Structure Examples

**Customers:** Please contact Customer Care for examples if needed.

### Standard Tax Codes Mapping

NSAFT uses option list to map Maconomy tax codes with the [Standard Tax Codes](#) provided by the tax authority.

### Option List Setup in Maconomy

To create the mapping, follow these steps:

1. Go to **Setup » System Setup » Parameters and Numbers » Option Lists**.
2. Click **+ New Option List**.
3. In the **Option List No.** field, enter **NSAFT**.
4. Click **Create**.
5. On the Options sub-tab, click **Add Option** or press **Ctrl + M**.
6. In the **Name** fields, enter the tax code name (**Name** field from Tax Codes or G/L Tax Codes)
7. In the **Remarks 1** field, enter the corresponding standard tax code.
8. Click **Save Option (Enter)**, then click **Save Option List (Enter)**.

OPTION LIST

Option List

Option List No.

NSAFT

Description

Access Level

Access Level

User

OPTIONS

	Name	Description	Remarks 1
1	25%		1
2	10%, Level 2		2
3	17,5%		3

*Sample configuration*

## Override Tax Code Names

NSAFT can use the option list to override the tax code to maintain unique tax code names within the 9-character limit.

## Spain

See [Statutory Reports Setup](#) to begin.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
	2.5.3	

### Include Tax for Debtor Provisions System Parameter

Set up the inclusion of tax in debt provisions for new customer entries or to update existing open customer entries. Enable this company-specific parameter to select whether tax should be included or excluded for debtor provisions.

Enter or select a date to update existing open customer entries without approved or posted debtor provisions to include tax. If you do not choose a date, all open customer entries without approved or posted debtor provisions are updated to include tax.

**Note:** Customer entries that already have approved debtor provisions are not affected by this parameter.

## Sweden

See [Statutory Reports Setup](#) to begin.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
Sweden SIE Setup	2.5.3	<ul style="list-style-type: none"><li>Change in Dimension Setup for Transactions</li></ul>

### Sweden SIE Setup

The Finance universe of BPM Reporting use reporting structures to structure and filter accounts. Sweden BPM reports require the setup of reporting structures. Refer to the [Reporting Structure for Finance Measures](#) section for more information.

Please contact your Customer Success Manager if you require assistance in reporting structures.

#### Dimension Setup for Transactions

Note the following behavior that occurs for #TRANS and #VER for transactions under the following scenarios:

#### Scenario 1: Not Using Updated localspec1 in Transaction

The following will behavior will occur when you change the setup in the dimension after creating a transaction but don't use the updated localspec1:

1. If no checkbox is selected, the transactions if the specific Fiscal Period are shown.
2. If the localspec1 checkbox was selected, then #TRANS and #VER is blank.

#### Scenario 2: Using Updated localspec1 in Transaction

The following behavior will occur if you create a new transaction using the updated localspec1:

1. Regardless if the checkbox is selected, #TRANS and #VER will be shown for a specific Fiscal Period.

### Sweden SIE Export

It is standard in some countries, like Sweden, for companies to transfer accounting data to accountants and auditing systems in the SIE text file format. The purpose of the report is to show details of the accounts balances. The SIE report shows the opening and closing of the balance sheet accounts and balances of the profit and loss accounts.

The SIE report exports the following information in two SIE file formats:

- Year-end balance (SIE 1)
- All recorded transactions and vouchers (SIE 4 and 4i)



## Producing the Sweden SIE Report

1. In the Workspace Client, go to **Reporting » Statutory Reporting » Sweden**.

2. Enter the selection criteria for running the report and click **Run Report**.

You will receive a message stating “Background task created.” The file is produced in the next 40 minutes.

3. To retrieve the file follow the steps in the next section.

## Retrieving the Sweden SIE Report

1. For DFME clients — In the Workspace Client, go to **Reporting » Statutory Reporting » Statutory Report Retrieval**.

For on-premise clients — Go to the path you indicated in the server.ini file.

2. The report you produced will be listed in the Statutory reports available for retrieval tab (the report will take up to 40 minutes after you followed the production steps to appear in this list)
3. Click on the report in the list and click **Download report**.
4. Choose the location to which you want to save the report.

## Setup

The Finance universe of BPM Reporting use reporting structures to structure and filter accounts. Sweden BPM reports require the setup of reporting structures.

Please contact your Customer Success Manager if you require assistance in reporting structures.

## SIE Export

The report is created as an SE file. The name of the file is based on the file type (“1” for SIE 1 and “4” for SIE 4). For every header it will create a new line.

Field	Description	SIE Type 1	SIE Type 4
#FLAGGA	Flag item that specifies whether the file has	Compulsory	Compulsory

## Statutory Reports Setup

Field	Description	SIE Type 1	SIE Type 4
	been received by the recipient		
#PROGRAM	The program that generated the file	Compulsory	Compulsory
#FORMAT	The character set that is used	Compulsory	Compulsory
#GEN	When and who generated the file. Dates are specified using the YYYYMMDD format	Compulsory	Compulsory
#SIETYP	The type of SIE format the file follows	Optional	Compulsory
#ORGNR	CIN of the exported company	Optional	Optional
#ADRESS	Company address information	Optional	Optional
#FNAMN	Complete name of the exported company	Compulsory	Compulsory
#RAR	Financial year from which the exported data is retrieved	Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>	4I - Optional  4E - Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>
Chart of Accounts Information			
#KONTO	Account information	Compulsory	4I - Optional 4E - Compulsory
#SRU	RSV code for standardized accounts extract	Compulsory	Optional
#DIM	Dimension	Not Applicable	Optional

Field	Description	SIE Type 1	SIE Type 4
#UNDERDIM	Sub-dimension	Not Applicable	Optional
#OBJEKT	Object	Not Applicable	Optional
Balance Items/Verification Items			
#IB	Opening balance for balance sheet account	Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>	4I - Not Applicable  4E - Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>
#UB	Closing balance for balance sheet account	Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>	4I - Not Applicable  4E - Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>
#RES	Balance item for a profit and loss account	Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>	4I - Not Applicable  4E - Compulsory <i>Items for both current and previous financial years are to be present. Previous year items can be omitted where these figures are not available.</i>
#VER	Verification item	Not Applicable	Optional
#TRANS	Transaction item	Not Applicable	Optional

## Prompts

Prompt Title	Description	Mandatory
Charts of Account Type	Answering this prompt should restrict to only show accounts on the selected Charts of Account Type. Accepts single value.	Yes
Company No.	Answering this prompt should restrict to only show accounts on the selected company. Accepts single value.	Yes
Fiscal Year-Period (YYYY-MM)	Restricts account transactions on the specified period.	Yes
Reporting Structure Name	Answering this prompt should restrict to only use the reporting structure input. Accepts single value.	Yes
Number of Previous Year	Shows comparative years. If the user selects "0" then only current year will be shown, while user selects "1" it will show current and previous year and so on.	Yes
Enter [1] for SIE 1 or Enter [4] for SIE 4	Shows what file type should be created. ("1" for SIE 1 and "4" for SIE 4)	Yes

## United Kingdom

See [Statutory Reports Setup](#) to begin.

### Revision History / What's New

The table below shows a quick reference of updates.

Update	Version	Description
<a href="#">UK MTD</a>	2.5.3	<ul style="list-style-type: none"> <li>Updated BREXIT</li> <li>Updated Postponed VAT Accounting Rules (PVA)</li> <li>Added Northern Ireland Protocols</li> <li>Updated Server.ini setup</li> </ul>

### Making Tax Digital (MTD) Tax Submission Report

As of April 1, 2019, the UK HM Revenue and Customs (HMRC) tax authorities implemented the Making Tax Digital (MTD) process to use for various tax-related information, including submission of VAT returns.

The report also includes fraud prevention headers, which are HTTP headers that help monitor and audit transactions to protect taxpayers' data from fraudulent activities. The UK Tax Submissions workspace enables companies to send these particular types of user audit data to HMRC.

**Note:** In 2021, several changes were made to the MTD filing to reflect BREXIT, the Northern Ireland Protocols, and Postponed VAT Accounting Rules (PVA). See the sections below for more details.

#### Prerequisites

This feature has a data prerequisite using the Popup Fields. The popup TaxPopup1 is used to distinguish transactions about goods from other kinds of transactions. This popup should already be assigned to GL Tax Codes and Tax Codes. For the UK MTD functionality to work, please ensure that in TaxPopup1 the Boolean1 field for Goods is checked and for Non Goods is unchecked. This setup ensures that Boxes 8-9 of the VAT 100 form are populated appropriately. This setup is required because Maconomy does not otherwise delineate between goods and services on the GL and Tax Codes.

1. Open the Workspace Client.
2. Go to **Setup » System Setup » Parameters and Numbers » Popup Fields**, and find the Popup **Tax Popup 1** and open the record.
3. If needed, add the Boolean 1 column to the table. Right-click on that table and select **Customize columns**.
4. For the line related to **Goods**, select the Boolean 1 checkbox.
5. For the line not related to Goods, ensure the Boolean 1 checkbox is unchecked.
6. Set up country codes for each country that will be included in the report.
  - Go to **Setup » System Setup » Regional Settings » Countries Tab**.
  - Select a country.

- In the **Country Code** field, enter the country code and click **Save**.
- Repeat these steps for each country.

## Setup in Tax Authority

**If you have not done so already, you must register with HMRC as either a filer or an agent using the following links before you can use this functionality in Maconomy.**

**Filers:** <https://www.gov.uk/guidance/use-software-to-submit-your-vat-returns>

**Agents:** <https://www.gov.uk/guidance/agents-use-software-to-submit-vat-returns>

**Note:** Direct any questions about your filing status to your tax advisors or HMRC, as Deltek does not act in an advisory capacity in this area.

## HMRC Authentication

Register Maconomy on the HMRC website to receive an access token to VAT information. The access token is valid for four hours and can be refreshed after an access token has expired. The tokens last for 18 months so you will only need to repeat the authentication process every 18 months.

### HMRC API Authentication

1. In Maconomy, go to **Integrations » UK Tax Submissions » UK Tax Submission**
2. In the **VAT Submission** tab, click on an existing record or create a new record, then click the **HMRC Login** link.
3. Enter your personal or company login credentials, and then click **Sign In**.
4. Click **Grant Authority**.
5. Click **Copy** to copy the code on the screen.  
**Note:** The code expires in about 10 minutes. If expired, see steps below.
6. On the **VAT Submission** tab, paste the code in the **Code** field.
7. Click **Get Authentication Token**. The **Authenticated** field in the dialog updates to show **Yes**.  
**Note:** You can [refresh](#) an expired token as needed.

### Refresh an Expired Authorization Token

If the authorization token you applied in the HMRC section expires, you can refresh it.

1. In the UK Tax Submissions workspace, click the **Refresh authentication token** action as needed to refresh your token.  
The workspace search window shows the token is refreshed, and will show a refresh code from HMRC to facilitate tracking.

### Request and Submit VAT Obligations

To request and submit VAT obligations for the selected company for a specific time period:

1. In the Selection Criteria island, enter the **Tax Reporting Unit**, **From Date**, and **To Date** to define the selection criteria.  
**Note:** The Tax Reporting Unit field is only used if you are using the Tax Settlement feature. If not, leave blank.
2. Click **Get VAT Obligations**. The VAT Submission Entry tab populates with VAT information.

**Note:** You are not able to obtain or view any VAT obligations in the table dialog unless you follow steps 2-7 in the HMRC section above and received HMRC authentication. Otherwise, you will need to complete steps 2-7 and get an authorization code before continuing.

3. Select a line in the table for which you would like to retrieve data (the obligation you wish to complete) and click **Get VAT Data**. This action connects to the BPM system and runs the VAT query.

**Note:** Information populates in the line relating to the submission you are about to send to HMRC. If you believe that the information is incorrect, you may make any necessary corrections in Maconomy via the adjustment of client or vendor invoices, and click **Get VAT Data** to run this action again.

Note that if you are using the Tax Settlement features and you do not fill in the **Tax Reporting Unit** field from step 2, an error occurs.

4. Click **Submit VAT Obligation** to submit the selected obligation.

**Note:** A given obligation can only be submitted once, trying to submit it again will return an error from HMRC. When an obligation has been submitted, it will be marked as “Finalized” in the table.

#### Retrieve Previously Submitted VAT Obligations

1. Click **Get VAT Return** to retrieve an already submitted VAT return. This should update the line to the values that were originally submitted.
2. Select a line in the table for which you would like to retrieve an already submitted VAT return. Click **Get VAT Return**. This should update the line to the values that were originally submitted.

#### Setup in Maconomy

##### Notes:

**Workspace Not Default** — The UK Tax Submissions workspace is not added to the Menu as default. Add the workspace per usual procedures, or engage Services as needed.

**Tax Settlement Setting** — The required setting for the UK MTD functionality is to use the Tax Settlement functionality in Maconomy. Otherwise, UK MTD will be able to produce any data in the Table for submission.

**Period Change Keys** — Period change keys are in alphanumeric format. They are in NNAN format for quarterly filing and NNAA for monthly/annual filing. The **Date Submitted** field is included in the table to check if the entry has been submitted to HMRC.

**Brexit and Northern Ireland Protocols** – Following Brexit effective 1/1/2021, setup for Boxes 2, 8, and 9 are only applicable for companies from the Country of Northern Ireland or using the Tax Code setup for Northern Ireland. Furthermore, EU Tax Acquisition fields are only setup for tax codes used under this rule.

**Postponed VAT Accounting** – Following Brexit effective 1/1/2021, Tax Popup 2 is utilized to be setup for transactions under the Postponed VAT Accounting rule. Tax Type is also recommended to be setup for PVA for auditing purposes.

#### Enable MTD Integration

To enable the MTD Integration feature:

1. In Maconomy, go to **System Setup » Parameters and Numbers » System Parameters**.
2. Double-click the **BPM Server REST API URL** parameter.

3. On the System Parameter sub-tab, enter the URL to the server in the **BPM Server REST API URL** field.
4. VAT data is calculated using **Tax Settlements Period**, by default. If you need to calculate VAT date using **Entry Dates**:
  - a. Double-click the **Use Entry Dates for UK Tax Submission (Making Tax Digital)** parameter.
  - b. On the System Parameter sub-tab, select the **Use Entry Dates for UK Tax Submission (Making Tax Digital)** check box.

5. Go to **Single Dialogs » Set-Up » Access Control » Groups** to set up or confirm access to the VAT Submissions and VAT Submission Entries windows.

6. Go to **Single Dialogs » Integrations » Integration Line**. Using the normal Extender process, add the following line to display in the GlobalMenu:

```
<Workspace title="UK Tax Submissions"
source="uktaxsubmission:UKTaxSubmissionVatSubmissions" />
```

7. Verify in the following binding to the **couplingconfiguration.mcs1.xml** file if the standard couplingconfiguration exists. Otherwise, add the following lines:

```
<Binding namespace="mtd">
  <Fields>
    <Field name="HmrcUrl" value="urlRef('mtdhmrcurl') defaultTo
''' />
    <Field name="ClientId" value="urlRef('mtdclientid') defaultTo
''' />
  </Fields>
</Binding>
```

**Note:** Ensure that there are no customized binding with the same namespace and fields as this result to an error when you run the report.

8. To enable logging, add the following statement to the logback.xml file (<Path to Maconomy installation>\CouplingService\configuration\logback.xml):

```
<logger name="com.deltek.maconomy.bpm.uktaxsubmission"
additivity="false">
  <level value="TRACE" />
  <appender-ref ref="FILE" />
</logger>
```

**Note:** Other level values available for debugging the errors and fraud header values: **ERROR, INFO**.

9. Add parameters to the Server.ini file as follows:
  - a. Add the following parameters to the Server.ini file (<Path to Maconomy installation>\CouplingService\server.ini):

```
url.mtdhmrcurl = <URL for MTD API>
```



```
url.mtdservertoken = <Maconomy server token>
url.mtdclientid = <Maconomy client ID>
url.mtdclientsecret = <Maconomy client secret>
```

**Please reach out to PDM via Customer care for the values of these items.**

- b. The following items must also be added to the server.ini file and can be found by running the DXDIAG (DirectX Diagnostic Tool) command on your machine.

```
url.mtdsysmanufacturer = <Machine System Manufacturer in the
Computer Information>
```

```
url.mtdsysmodel = <Machine System Model in the Computer
Information>
```

To add these items:

- i. Go to **Run** in Windows.
- ii. Type **DXDIAG** and click **OK**.
- iii. In the System Information window that appears:
  1. Find the **System Manufacturer** and add it to the `url.mtdsysmanufacturer` item referenced above.
  2. Find the **System Model** number and add it to the `url.mtdsysmodel` item referenced above.

**Example:**



```
url.mtdsysmanufacturer= LENOVO
```

```
url.mtdsysmodel= 20NYS6C501
```

## Import Program for UK MTD Tables

We have added an import program for customers who previously have used a customization to complete VAT submissions, which allows you to import rows into UK MTD history tables. Customers can now move from a customized to standard solution.

The import is available for the following tables:

VATSubmission

VATSubmissionEntry

To move from the customized solution to the standard solution, you have a one-time import where you must move old data from custom tables to the new standard tables to consolidate data it in one database table. Once you import the historic data, you need no further imports.

**Note:** This program is intended for historic (submitted) entries only. Maconomy does not validate the correctness of the import data.

**To import data:**

1. Log in to the server.
2. Create a new import folder and insert the import files (VATSubmissions and ImportVATSubmissions).

Example: C:\Import

3. Ensure the path under VATSubmissions file is correct, based on the folder created above.
4. Open the command prompt and enter:

```
c:\maconomy\tpu.NTx86.21_0.p100f.dir\bin\MaconomyServerMSQL.exe -f -
iMaconomyServer.w_21_0.us-std-msql-1 -Sm21usst1 -xC:\maconomy\w_21_0.us-
std-msql-1\MaconomyDir\MSLPrograms\Import\Integration\VatSubmissions <
C:\Import\ImportVATSubmissions.txt
```

5. In Workspace Client, go to the UK Vat Submission workspace.
6. Verify if records successfully imported.
7. Verify the data in the records.
8. Re-execute the steps 2 to 7 as needed.

## Northern Ireland Protocols

Setup in Maconomy

### Determine Transactions for Northern Ireland Protocols

The functionality assumes the ability to distinguish transactions received, sold to, from, or via Northern Ireland.

- A new country is created named “Northern Ireland”.
- It is assumed that a UK Company can have an office in Northern Ireland. This distinction is set with the **Country** field in Company Information. However, if a UK Company is needed to transact via the Northern Ireland protocol, this distinction is not available in Maconomy.
- Therefore, it is assumed that the Country field in the Tax Code\ G/L Tax Code table is setup so that this will be used instead.
- Northern Ireland is also assumed to be set up as an EU Member but with the same Country Code as the UK Country to distinguish interrelations between UK and Northern Ireland.

In order to account for this, the following setup instructions include values needed for the Countries table.

### Set Up Countries Table

For UK companies that sell and receive goods/services from an EU member state, such as Northern Ireland, set up a country code to specify this.

1. Go to **Single Dialogs » Set-Up » Set-up » Countries » Countries**.
2. Click **+New County Code**.
3. In the **Name** field, enter **Northern Ireland**.
4. In the **Country Code** field, use the same code for United Kingdom.
5. Select the **Member of EU** check box.
6. Click **Save**.

**Important:** Country Code and Member of EU fields should be setup for all countries being utilized by UK MTD.

### Set Up Tax Codes for Northern Ireland Protocols

1. Go to **General Ledger » Tax » Tax Codes (or G/L Tax Code)**.

**Note:** For G/L tax codes, you must edit the layout of the MDML file. Please contact Services as needed for assistance.

2. Under **Country**, select **Northern Ireland**.
3. Click **Save**.

**Attention:** For EU transactions, see Setup for EU Tax Acquisitions on Tax Code.

### Set Up EU Acquisition on Tax Codes

**Note:** When setting up EU Acquisition, it is necessary to use the **EU Tax Rate** for the Tax Code instead of the normal Tax Rate field.

To be able to report on MTD as well as changes for PVA and under the Northern Ireland Protocols, the EU Acquisition check box should be setup for transactions on either of the following conditions:

- Transactions that should be included for the VAT Due Acquisitions field (Box 2)
- Total Goods Supplied Excl. VAT field (Box 8)
- Total Acquisitions Excl. VAT field (Box 9)
- Transactions that are under the Northern Ireland Protocol

Transactions that may or may not be for Reverse Charge Mechanism

**Note:** Acquisition Tax for RCM will not be displayed in Box 2. Instead, see RCM Box definitions and uses in the Deltak Maconomy BPM Report Description Guide.

To setup this up, follow the steps below:

1. Go to **Tax Code/G/L Tax Code**
2. Select the appropriate tax code that needs to be set up
3. In the Card Pane for Tax Code, select the **EU Acquisition** checkbox

## UK PVA and RCM

### Setup in Maconomy

Set up in Maconomy for UK PVA and RCM includes:

- Popup Field Setup
- Popup Type Setup
- EU Acquisition Setup
- System Parameter Setup

### Popup Field Setup

To be able to report and display the correct tax related information into UK MTD, you must set up the following popup fields with their corresponding values for PVA and RCM.

This table is provided as an overview. Specific steps are provided below.

Popup Field	Name Value	Boolean 1 Value
<b>Tax Popup 1</b>	Goods	<b>true</b>
	Services/Non-Goods	<b>false</b>
	Gold RCM	<b>true</b>
	Services/Non-Goods RCM	<b>false</b>
	Mobile phones and Computer Chips RCM	<b>true</b>
	Telecom cellular service RCM	<b>false</b>
<b>Tax Popup 2</b>	PVA	<b>true</b>
<b>Tax Type</b>	PVA	

**Note:** Tax Popup 1 should be set up correctly in Tax Codes that are intended to be included for the UK MTD filing. Otherwise, incorrect amounts on boxes display in the report.

### Determining Transactions for Reverse Charge Mechanism

The functionality assumes the ability to distinguish additional transactions for reverse charge mechanism. However, this distinction is not available in Maconomy, aside from determining as to which transaction is for goods or services. In order to account for this, the following setup instructions include values needed for Tax Popup 1.

### Determining Goods Transactions

The functionality assumes the ability to distinguish transactions between goods and other kinds of transactions. This is needed for boxes 2, 8, and 9. However, this distinction is not available in Maconomy. This also considers transactions that are for reverse charge mechanism.

To account for this, the following conditions should be setup depending on the transactions:

Field	Boolean 1 value
<b>Goods transactions</b> (Goods, Gold RCM, Mobile phones and Computer chips RCM)	<b>true</b>
<b>NonGoods transactions</b> (Services/NonGoods, Services RCM, Telecom cellular service RCM)	<b>false</b>

### Set Up Values for Tax Popup 1

1. Go to **Single Dialogs »Set-Up »Set-up » Popup Fields**.
2. Search for **Tax Popup 1** and open it.
3. Under **Values**, make sure that the following setup is in place:

Name	Boolean 1
Goods	<input checked="" type="checkbox"/>
NonGoods	<input type="checkbox"/>
Gold RCM	<input checked="" type="checkbox"/>
Mobile phones and Computer chips RCM	<input checked="" type="checkbox"/>
Services RCM	<input type="checkbox"/>
Telecom cellular service RCM	<input type="checkbox"/>

4. Make any necessary changes and save.

**Note:** Gold RCM value should also be used for transactions on Gold for PVA.

### Set Up Values for Tax Popup 2

1. Go to **Single Dialogs »Set-Up »Set-up » Popup Fields**.
2. Search for **Tax Popup 2** and open it.
3. Under **Values**, make sure that the following setup is in place:

Name	Boolean 1
PVA	<input checked="" type="checkbox"/>

4. Make any necessary changes and save.

### Set Up Values for Tax Type

1. Go to **Single Dialogs »Set-Up »Set-up » Popup Fields**.
2. Search for **Tax Type** and open it.
3. Under **Values**, make sure that the following setup is in place:

Name
PVA

4. Make any necessary changes and save.

### Set Up Tax Codes for Tax Popup 1 and 2 and Tax Type

1. Go to **General Ledger » Tax »Tax Codes (or G/L Tax Code)**.

Note: For G/L tax codes, you must edit the layout of the MDML file. Please contact Services as needed for assistance.

## Statutory Reports Setup

2. Under the Extra Fields section of the Tax Code sub-tab, select the appropriate value from **Popup 1**. This includes the Goods, NonGoods, and values related to RCM.
3. Under **Tax Type**, select PVA for Tax Codes used under the PVA rule. Otherwise, leave blank.
4. Perform the same steps for **Popup 2**.

**Warning: Tax Codes set up for previously posted transactions are still displayed in the report historically. Only newly posted transactions will retrieve the new setup for these tax codes.**

## System Parameter Setup

**Note:** This pertains to UK MTD as a whole. If you have not already enabled this, follow these steps.

To enable using Entry Dates for MTD instead of Tax Settlement Periods, follow the steps below:

1. Go to **System Setup » Parameters and Numbers » System Parameters**.
2. Double-click the **Use Entry Dates for UK Tax Submission (Making Tax Digital)** parameter.
3. On the System Parameter sub-tab, [select / deselect] the **Use Entry Dates for UK Tax Submission (Making Tax Digital)** check box.

Parameter	Description
Use Entry Dates for UK Tax Submission (Making Tax Digital)	<p>Select this parameter to <u>report on MTD based on Entry Dates</u>.</p> <p>Deselect this parameter to <u>report on MTD based on Tax Settlement Periods</u>.</p>

## United States

See [Statutory Reports Setup](#) to begin.

### 1099 Misc Report

Set up a 1099 Misc option list for vendors who need to report 1099-Misc income.

#### Setup in Maconomy

To configure Maconomy to use the 1099 report:

1. Go to **Setup » System Setup » PARAMETERS AND NUMBERS » OPTION LISTS** to open the Option Lists workspace.
2. Click **New Option List**.
3. In the **Option List No.** field, enter "**1099 Misc**".
4. In the **Description** field, enter a brief description for the option list.
5. Click **Create** and then complete the required fields on the Option List tab.
6. Double-click the created option list.
7. In the Options sub-tab, add the options for the 1099 Misc option list. Each option represents a specific box number of the 1099 Misc form. Complete the following fields for each box:

Name: Fill in the name of the box.

Remark 1: Fill in the box number.

Remark 2: Fill in an integer representing the amount limit.

Remark 3: Fill in the G/L account used for Withholding tax. Note that the G/L account should have "Transfer to Vendor" enabled.

Also note, that if employees are used as vendors, the activities they post on must have "Settle via Vendor" enabled.

To set up vendors to include on the 1099 Misc report:

Note: Vendor invoices should already be created.

1. Go to **Accounts Payable » Vendors**. Select a vendor, then go to Information tab.  
OR  
Go to **Single Dialogs » Accounts Payable » Set-up » Vendor Information Card** to open the Vendor Information Card workspace.
2. Select a vendor.
3. In the General Information island of the Vendor Information Card sub-tab or Information tab, select the **Disclosable** check box.
4. In the Print Control island, in the **Statistics 1 Value** field enter the name of the option defined above.
5. In the **Statistics 1 List** field, select "Misc 1099".

**Note:** A vendor can only be assigned to **one** option in the Statistics 1 field. This means that each vendor can only be defined for trades that goes into **one** 1099 Misc box. If this is not sufficient (e.g. if a vendor sends invoices related to e.g. Rent and invoices related to healthcare, it must be handled by defining two different vendors assigned to each of these categories. Also note that 1099 NEC report has a similar setup for vendors.

Setup in Tax Authority

No setup required.

## 1099 NEC Report

Setup in Maconomy

To configure Maconomy to use the 1099-NEC report:

1. Go to **Setup » System Setup » PARAMETERS AND NUMBERS » OPTION LISTS** to open the Option Lists workspace.
2. Click **New Option List**.
3. In the **Option List No.** field, enter "**1099 Nec**".
4. In the **Description** field, enter a brief description for the option list.
5. Click **Create** and then complete the required fields on the Option List tab.
6. Double-click the created option list.
7. In the Options sub-tab, add the options for the 1099 Nec option list. Each option represents a specific box number of the 1099 Nec form. Complete the following fields for each box:

Name: Fill in the name of the box.

Remark 1: Fill in the box number.

Remark 2: Fill in an integer representing the amount limit.

Remark 3: Fill in the G/L account used for Withholding tax. Note that the G/L account should have "Transfer to Vendor" enabled.

Also note, that if employees are used as vendors, the activities they post on must have "Settle via Vendor" enabled.

See the **1099-NEC Option List Values** section for information for specific values to enter for this report.

### 1099-NEC Option List Values

To populate the 1099-NEC Option list, enter the following details:

LINE	OPTION	VALUE TO ENTER
1	Name	Nonemployee Compensation
	Description	Nonemployee Compensation
	Remark1	1 (corresponds to the box on the 1099 form)
	Remark2	Number representing the amount limit (For example, 600)



## Statutory Reports Setup

	Remark3	G/L Account used for withholding tax
2	Name	Federal Income Tax Withheld
	Description	Federal Income Tax Withheld
	Remark1	<b>4</b> (corresponds to the box on the 1099 form)
	Remark2	Number representing the amount limit (For example, 600)
	Remark3	G/L Account used for withholding tax
3	Name	State Tax Withheld
	Description	State Tax Withheld
	Remark1	<b>5</b> (corresponds to the box on the 1099 form)
	Remark2	Number representing the amount limit (For example, 600)
	Remark3	G/L Account used for withholding tax
4	Name	State Payers State No.
	Description	State Payers State No.
	Remark1	<b>6</b> (corresponds to the box on the 1099 form)
	Remark2	Number representing the amount limit (For example, 600)
	Remark3	G/L Account used for withholding tax
5	Name	State Income
	Description	State Income
	Remark1	<b>7</b> (corresponds to the box on the 1099 form)
	Remark2	Number representing the amount limit (For example, 600)

## Vendor Setup

To set up vendors to include on the 1099-NEC report:

Note: Vendor invoices should already be created.

1. Go to **Accounts Payable » Vendors**. Select a vendor, then go to Information tab.  
OR  
Go to **Single Dialogs » Accounts Payable » Set-up » Vendor Information Card** to open the Vendor Information Card workspace.
2. Select a vendor.
3. In the General Information island of the Vendor Information Card sub-tab or Information tab, select the **Disclosable** check box.
4. In the Print Control island, in the **Statistics 1 Value** field enter the name of the option defined above.
5. In the **Statistics 1 List** field, select "Nec 1099".

**Note:** A vendor can only be assigned to **one** option in the Statistics 1 field. This means that each vendor can only be defined for trades that goes into **one** 1099 Nec box. If this is not sufficient (e.g. if a vendor sends invoices related to e.g. Rent and invoices related to healthcare), it must be handled by defining two different vendors assigned to each of these categories. Also note that 1099 MISC report has a similar setup for vendors.

# CUSTOMIZATIONS

## Workflow

This process of customization is divided into four main sections, described in the following.



All parts of BPM can in principle be customized in the sense that ETL, Universes, and Report Documents can all be modified to fit the needs of customers.

However, such modifications may be overwritten when upgrading to a new version or service pack of BPM. Therefore it is recommended as a general rule that all customizations are done on copies of the instances. In the following we shall explain further what that means.

## Customizing ETL

### General Rules

- All customizations to ETL (that is, jobs or transformations) should be done by new jobs and transformations dedicated to handle a certain customization.
- These custom jobs and transformations must be placed in a folder called “custom” or “Custom” in the repository.
- No standard jobs or transformations should be changed.
- The folder structure (aside from that in the “custom” folder) should remain unchanged.
- New jobs/transformations for loading custom-defined data should be scheduled or manually run after the standard LoadData or a custom version of LoadData can be made.
- When upgrading, customizations may need to be reconsidered:
  - An upgrade may introduce standard functionality that previously has been implemented by customizations. It is recommended to include the standard functionality in favor of the customizations, if they fully satisfy the needs of the customer.

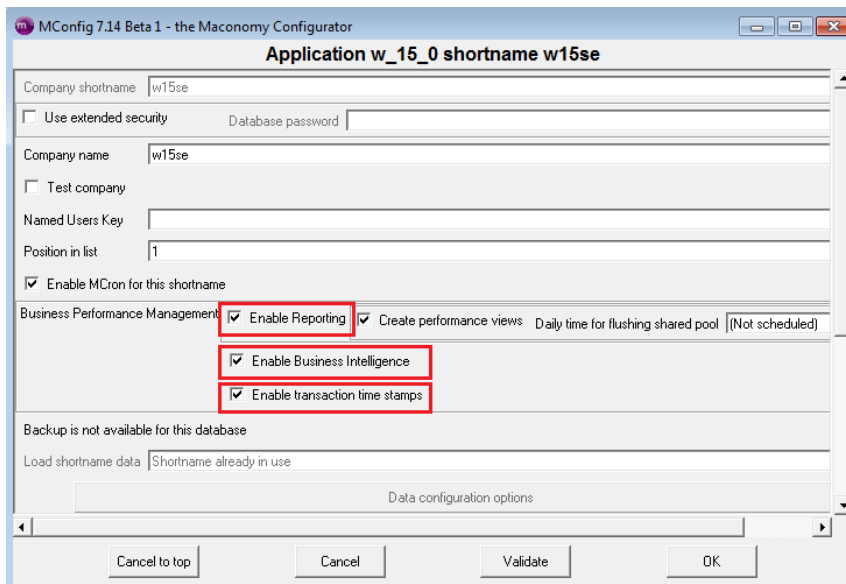
## CUSTOMIZATIONS

- An upgrade may change field names or semantics of fields. Consequently, customizations need to be adjusted carefully.
- An upgrade may declare fields or tables as deprecated (for example, if they are replaced by others or not included in Maconomy anymore). Customizations that rely on such fields and tables should be considered changed. In some situations it may be convenient for the customer to change the customizations such that they still rely on old functionality, for example, deprecated fields. Deprecated fields or tables that are removed by the upgrading process can then be reintroduced in custom tables. Note that a dump of the content of the deprecated table then must be done as part of the upgrade process.
- Carefully document the steps performed in the customization such that these can easily be reconsidered and possibly redone after an upgrade. Primarily, document the following:
  - Which standard tables the custom tables are copies of.
  - Which fields have been added to the copies of the standard tables.
  - The links that have been made.

## Transaction Time Stamps for Customized ETL

If the data warehouse ETL has been customized, additional tables may need to have transaction time stamps enabled. For example, if additional tables are maintained by the customized ETL, and incremental load is defined for these tables, the corresponding tables in Maconomy must have transaction time stamp triggers enabled.

Check **Enable Transaction Time Stamps** in MConfig for the database short name. This action enables transaction time stamp triggers for all Maconomy tables, and thus also the tables used in the ETL customization.



## Customizing Universes

To ensure that custom universes are not ruined when installing a new BPM package, it is best practice to always introduce a custom universe as a copy of a standard universe or a whole new universe.

## CUSTOMIZATIONS

To customize a standard universe, complete the following steps:

1. In Information Design Tool, retrieve the desired universe to universe files (see [Retrieve the Universe Files](#))
2. Choose another project or folder than the one used for the universe files of the standard universes.
3. The universe files can be edited freely to fit the customer's needs.
4. Publish the universe. You can choose whether to overwrite the existing universe or publish it with another name or to another folder. If you overwrite the existing (Standard) universe, make sure that all documents that use that universe (for example, Standard documents) indeed should run on the custom universe; otherwise, choose another name or folder for the custom universe.

When upgrading, custom universes that are stored with another name or in another folder are not overwritten. However, it is still recommended that you keep the universe files in case you need to publish the custom universes again.

## Customizing Report Documents

This section describes how to complete report documents and universe customizations.

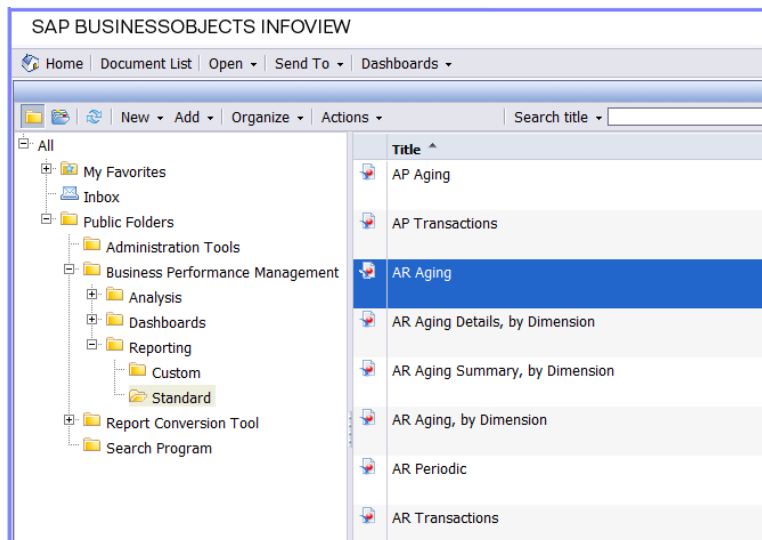
You can create the following customizations:

- Customize a single report
- Customize multiple reports
- Customize document styles

### Customizing a Single Report

To customize a single standard report, complete the following steps:

1. In Web Intelligence, locate the standard report to customize (in this example, AR Aging).



2. Open the selected standard report and click **Document » Save As**, then select a custom folder. Click **OK**.

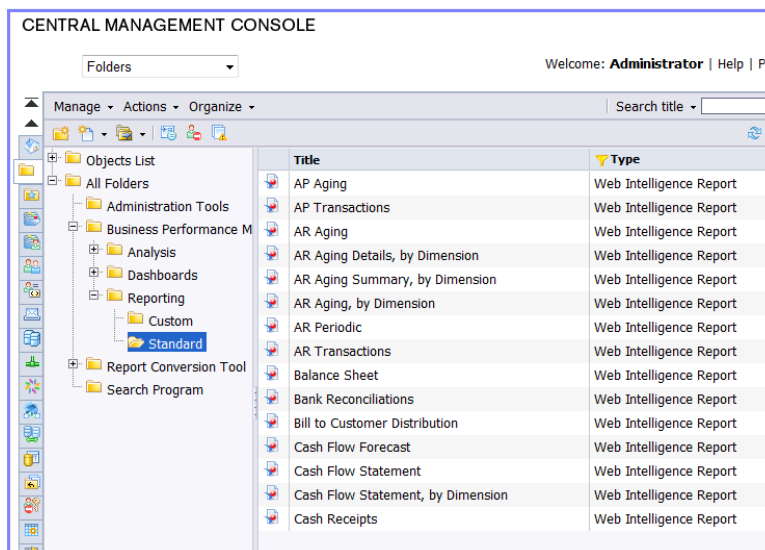
**Note:** Choose the **Refresh on open** option on the Save As dialog to refresh the report each time that you open it.

3. Make changes to the report and save the document.

## Customizing Multiple Reports

To copy all or selected standard reports to a custom location, complete the following steps:

1. In the Central Management Console, click **Business Performance Management » Reporting » Standard** to open the standard reports.



2. Select the report documents that you need, then right-click and select **Organize » Copy To**.
3. On the Copy To screen, select a Custom folder and click **Copy**.

The selected standard reports are now available as copies in the Custom folder.

## Customizing Document Styles

The standard report documents are prepared for customization concerning document style. Most of the layout elements use a default setting, which means that their style is taken from a cascading style sheet. An example is that font family, color, and border style in data tables follow the settings of the cascading style sheet.

The cascading style sheet is built into each report document and is not read dynamically.

If you want to use another style, you can import a new style sheet into each document. For convenience the cascading style sheet of the standard report documents is included in the RPU. This cascading style sheet is a good starting point for creating a custom one.

You can do the following with custom cascading style sheets:

- Modify
- Apply the style
- Export

## Modify the Style

### To modify a cascading style sheet, follow these steps:

1. Copy the cascading style sheet from the RPU to the local machine from which WebIntelligence is run.
2. Open the style sheet in a text editor.
3. Modify the style sheet to the style that you want.
4. Save the style sheet.

Now you can apply the style sheet to your documents.

## Apply the Style

### To apply the style of a custom cascading style sheet, follow these steps:

1. Open the WebIntelligence document to be modified.
2. Click **Properties**.
3. Click **Document**.
4. In the window that appears, click **Change Default Style...**
5. Click **Import Style**.
6. Browse to and select the modified style sheet file. Click **Close**, **OK**, and **Save**.

The styles of the cascading style sheet are now reflected in the document.

## Export the Style

### To export the cascading style sheet of a document, follow these steps:

1. Open the WebIntelligence document that contains the style sheet that you want to export.
2. Click **Properties**.
3. Click **Document**.
4. In the window that appears, click **Change Default Style...**
5. Click **Export Style**.
6. Browse to the location of the style sheet file that you want to export.
7. Click **Save**.

A cascading style sheet file that reflects the styles of the document is saved to the file system. You can use this as a foundation for customizing the styles, similar to using the cascading style sheet delivered in the RPU.

## Customizing BPM Dashboards

You can do the following to customize BPM dashboards:

- Edit the JSP files

### Editing the JSP Files

Each of the three BPM Dashboards has a JSP page that contains four iFrames that reference dashboard components (WebI Documents) in InfoViewApp.



The three JSP pages that are found in the RPU are as follows:

For Standard Dashboards:

**/dashboards/reporting/**

- CompanyPerformance.jsp
- CustomerPerformance.jsp
- JobPerformance.jsp

For CPA Dashboards:

**/dashboards/reporting/cpa/**

- CustomerPerformance.jsp
- JobPerformance.jsp

**Note:** CompanyPerformance.jsp is also used in CPA solution dashboards as the document names used are the same in Standard.



## CUSTOMIZATIONS

You can see the layout of the iFrames in this part of the code in each JSP:

```
out.println("<table>");
out.println("<tr>");
out.println("<td>");
out.println("<iframe src='" + ProductionRevenue + "' height='100%' width='100%'>"
+"</iframe>");
out.println("</td>");
out.println("<td>");
out.println("<iframe src='" + CashReceipts + "' height='100%' width='100%'>"
+"</iframe>");
out.println("</td>");
out.println("</tr>");
out.println("<tr>");
out.println("<td>");
out.println("<iframe src='" + ArAging + "' height='100%' width='100%'>" + "</iframe>");
out.println("</td>");
out.println("<td>");
out.println("<iframe src='" + WIPaging + "' height='100%' width='100%'>"
+"</iframe>");
out.println("</td>");
out.println("</tr>");
out.println("</table>");
```

The **src** attribute contains the path to the dashboard component.

The following figure shows a sample variable that contains the source path to the dashboard components.

```
//OpenDocument URLs for each of the Job Dashboards Components

String ProductionRevenue="http://" + cmsName +
":8080/OpenDocument/opendoc/openDocument.jsp?sType=wid&sPath=[B
usiness+Performance+Management],[Reporting],[Dashboard+Component
s],[Job]&sDocName=Registered+Billing+Price,+Top+10+Jobs+%28Bar
+Chart%29&token=" + wscToken + ...
```

The **sPath** parameter indicates the location of the report/dashboard component.

The **sDocName** indicates the name of the report. Note that the name of the report must be properly URL-encoded with spaces converted to "+" instead of "%20".

You can also pass prompt values to the dashboard components via the URL by using the URL-encoded name of the prompt. Thus, if you want to pass a value to the prompt "Account Manager No:" add the following part to the URL:

```
&lsSAccount+Manager+No%3A=" + accountMgrVal
```

**Note:** The name must be preceded by **lsS**.

An example of how to change the dashboard is shown in the following:

## CUSTOMIZATIONS

1. Open the file to be changed.

```

1 <%@ page language="java" contentType="text/html; charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>
2 <%@ page import="com.businessobjects.rebean.wi.ReportEngines" %>
3 <%@ page import="com.businessobjects.rebean.wi.ReportEngine" %>
4 <%@ page import="com.crystaldecisions.sdk.exception.SDKException" %>
5 <%@ page import="com.crystaldecisions.sdk.framework.CrystalEnterprise" %>
6 <%@ page import="com.crystaldecisions.sdk.framework.IEnterpriseSession" %>
7 <%@ page import="com.crystaldecisions.sdk.framework.ISessionMgr" %>
8 <%@ page import="com.crystaldecisions.sdk.occa.security.ILoginTokenMgr" %>
9 <%@ page import="com.crystaldecisions.sdk.occa.infostore.IInfoStore" %>
10 <%@ page import="com.crystaldecisions.sdk.occa.security.IUserInfo" %>
11 <%@ page import="com.crystaldecisions.sdk.occa.infostore.CeSecurityID" %>
12 <%@ page import="java.net.*", java.util.*, java.io.*" %>
13 <!--<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd"
14 <html>
15 <head>
16 <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1"/>
17 <title>Customer Performance</title>
18 <style>
19 *{margin:0;padding:0}
20 html, body {height:100%;width:100%}
21 table {height:100%;width:100%;table-layout:static}
22 iframe {height:100%;width:100%;margin:0;padding:0}
23 td{margin-bottom:0px;margin-left:0px;margin-right:0px;margin-top:0px;margin:0px}

```

2. Scroll down to the section where the four dashboard components are referenced.

```

64 iLManager = enterpriseSession.getLoginTokenMgr();
65 token = null;
66 reportEngines = (ReportEngines)enterpriseSession.getService("ReportEngines");
67 ReportEngine widocRepEngine = reportEngines.getService(ReportEngines.ReportEngineType.WI_REPORT_ENGINE);
68 widocRepEngine.setLocale("en_US");
69 session.setAttribute("widReportEngine", widocRepEngine);
70
71 token = iLManager.createLoginToken("",700,100);
72
73 String tokenEncode = URLEncoder.encode(token, "UTF-8");
74 String ProductionRevenue="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?sType=wid&sPath=[Business+Performance+ProductionRevenue]&token=" + tokenEncode;
75 String CashReceipts="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?sType=wid&sPath=[Business+Performance+CashReceipts]&token=" + tokenEncode;
76 String ARaging="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?sType=wid&sPath=[Business+Performance+ARaging]&token=" + tokenEncode;
77 String WIPaging="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?sType=wid&sPath=[Business+Performance+WIPaging]&token=" + tokenEncode;
78
79
80 out.println("<table>");
81 out.println("<tr>");
82 out.println("<td>");
83 out.println("<iframe src=" + ProductionRevenue + " height='100%' width='100%'>" + "</iframe>");
84 out.println("</td>");
85 out.println("<td>");
86 out.println("<iframe src=" + CashReceipts + " height='100%' width='100%'>" + "</iframe>");
87 out.println("</td>");
88 out.println("<tr>");
89 out.println("<td>");
90 out.println("<iframe src=" + ARaging + " height='100%' width='100%'>" + "</iframe>");
91 out.println("</td>");
92 out.println("<td>");
93 out.println("<iframe src=" + WIPaging + " height='100%' width='100%'>" + "</iframe>");
94 out.println("</td>");
95 out.println("</tr>");
96 out.println("</table>");

```

3. Create a copy of the line to be changed and comment one out.

## CUSTOMIZATIONS

```

64 iManager = enterpriseSession.getLogonTokenMgr();
65 token = null;
66 reportEngines = (ReportEngines)enterpriseSession.getService("ReportEngines");
67 ReportEngine widocRepEngine = reportEngines.getService(ReportEngines.ReportEngineType.WI_REPORT_ENGINE);
68 widocRepEngine.setLocale("en_US");
69 session.setAttribute("widocRepEngine", widocRepEngine);
70
71 token = iManager.createLogonToken("", 700, 100);
72
73 String tokenEncode = URLEncoder.encode(token, "UTF-8");
74 String ProductionRevenue="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?styleType=widocRepEngine=[Business+Performance+Management]&token=" + tokenEncode;
75 String CashReceipts="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?styleType=widocRepEngine=[Business+Performance+Management]&token=" + tokenEncode;
76 String ArAging="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?styleType=widocRepEngine=[Business+Performance+Management]&token=" + tokenEncode;
77 String WFAging="http://" + cmsName + ":8080/OpenDocument/opendoc/openDocument.jsp?styleType=widocRepEngine=[Business+Performance+Management]&token=" + tokenEncode;
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80 out.println("<table>");
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83 out.println("<iframe src='" + ProductionRevenue + "' height='100%' width='100%'>" + "</iframe>");
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86 out.println("<iframe src='" + CashReceipts + "' height='100%' width='100%'>" + "</iframe>");
87 out.println("</td>");
88 out.println("<tr>");
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90 out.println("<iframe src='" + ArAging + "' height='100%' width='100%'>" + "</iframe>");
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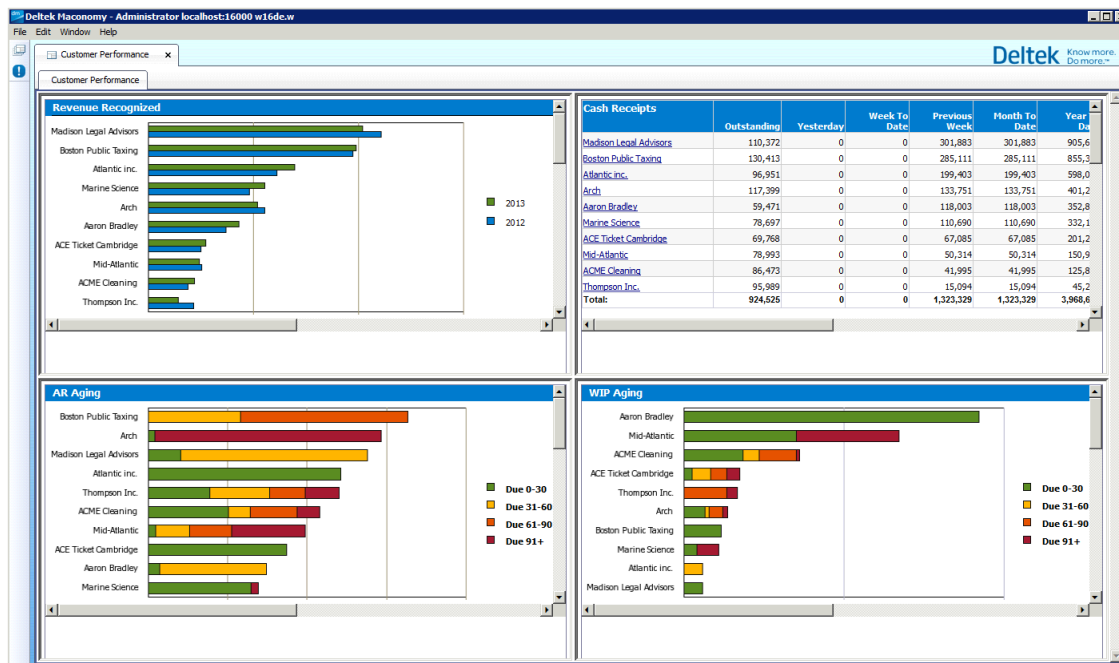
## CUSTOMIZATIONS

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74 type=widthPath=[Business+Performance+Management], [Reporting], [Dashboard+Components], {Customer}4sDocName=Registered+Billing+Price, +Top+10+Cu
75 type=widthPath=[Business+Performance+Management], [Reporting], [Dashboard+Components], {Customer}4sDocName=Revenue+Recognized, +Top+10+Cu
76 type=widthPath=[Business+Performance+Management], [Reporting], [Dashboard+Components], {Customer}4sDocName=Cash+Receipts, +Top+10+Customer+428Table
77 stb=[Business+Performance+Management], [Reporting], [Dashboard+Components], {Customer}4sDocName=AR+Aging, +Top+10+Customer+428Stacked+Bar+Chai
78 stb=[Business+Performance+Management], [Reporting], [Dashboard+Components], {Customer}4sDocName=WIP+Aging, +Top+10+Customer+428Stacked+Bar+Chai
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```

The following shows the result.



## Localization

In BPM, you perform tasks for localization using the BusinessObjects Translation Manager tool, which is part of BOE. The Translation Manager uses the standard XLIFF XML-schema that defines the word or term translation between all standard languages. You cannot create languages, but you can maintain several versions that represent different dialects. For example, for the language “English,” there are different kinds (dialects) such as US English and UK English.

You can localize both universes and reports.

This section includes the following material and procedures:

- BPM translator tool overview
- Perform a translation

### BPM Translator Tool Overview

Maconomy uses simple text files that are called dictionaries that contain word-to-word translations. These dictionaries are translated to XLIFF format using BPM's Translator tool.

The Translator tool takes two input parameters:

- A Maconomy dictionary
- Initial XLIFF file

The Maconomy dictionary is a text file that contains word combinations (terms) of items such as universe object names and descriptions. The dictionary associates these terms with corresponding terms in another language. The terms in the two languages are tab-separated. The Translator tool recognizes space symbols as part of the terms so that, for example, “good night” can be translated into “buenas noches.”

The Translator tool takes the Maconomy dictionary and an initial XLIFF-file and generates another XLIFF-file by substituting dictionary terms that occur before the tab symbol with dictionary terms that occur after the tab symbol. The initial XLIFF-file is generated from the universe and reports and thus contains all of the terms that are necessary for the translation.

### Perform a Translation

This section describes how to perform a translation. To perform a translation, you must:

- Generate the initial XLIFF file
- Modify the initial XLIFF file
- Perform the translation

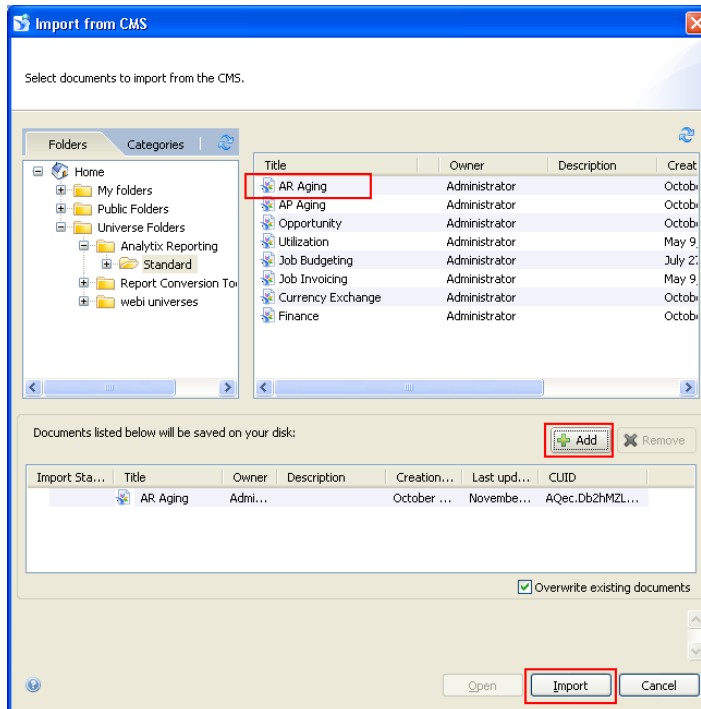
### Generate the Initial XLIF File

**To generate the initial XLIF file, follow these steps:**

1. Run the BusinessObjects Translation Manager.
2. Click **File » Import from CMS**.
3. Browse to and select the universe to be localized, and then click **Add**.

4. Click **Import**.

The following example shows selections for steps 3 and 4.



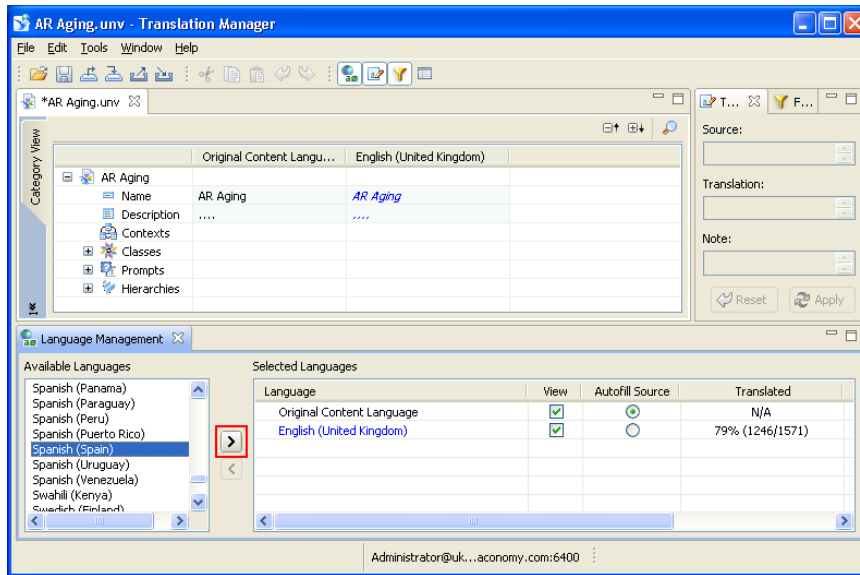
5. Click **Add**.

6. On the Language Management tab, select the **From** and **To** languages.

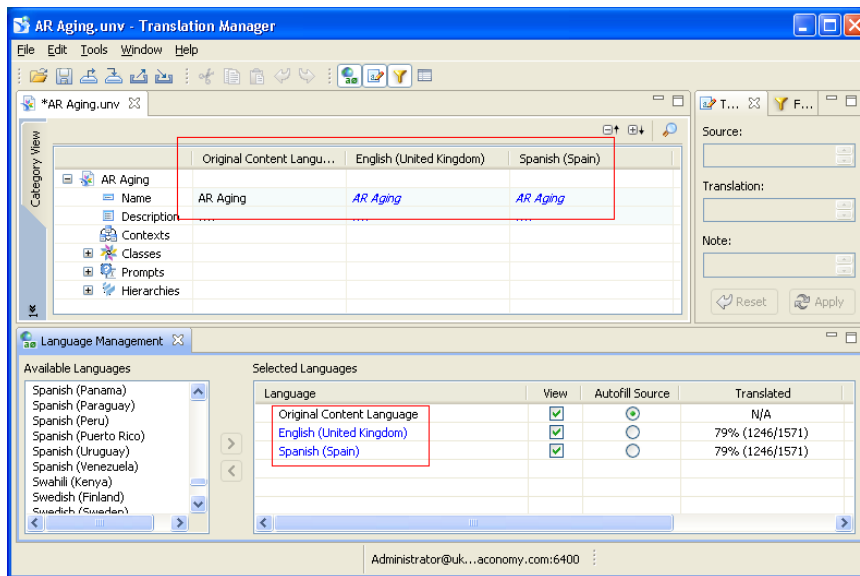
The original language is already selected. You must select two additional languages.

- **Original language** — Refers to the language of the universe (Maconomy W language). This is selected from the start.
- **From-language** — The language to which the Maconomy W language refers in XLIF. This is usually English (United Kingdom), and terms are provided in UK English by default.
- **To-language** — The language into which you want to translate, such as Spanish.

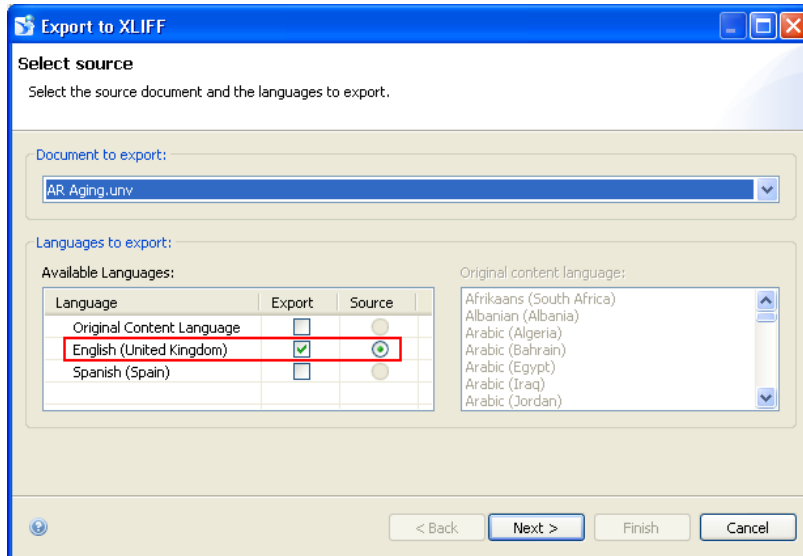
## Localization



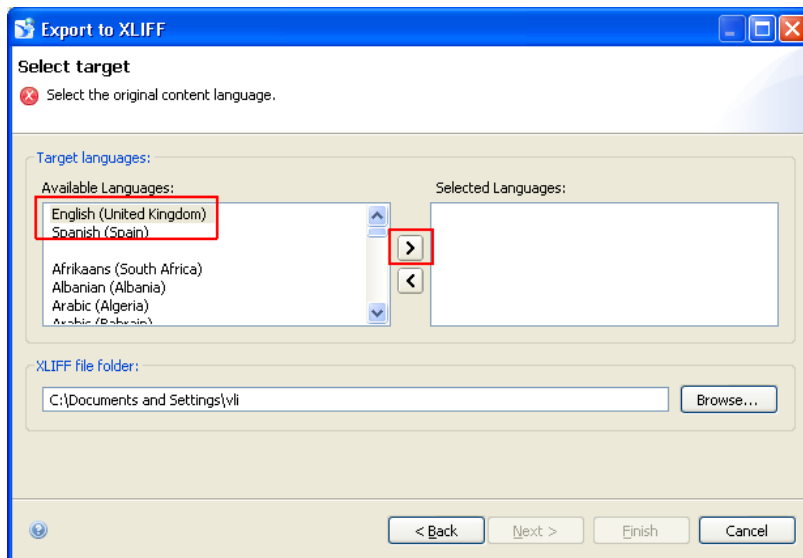
After you have designated the languages, the following is displayed.



7. Click **File » Export to XLIFF**.

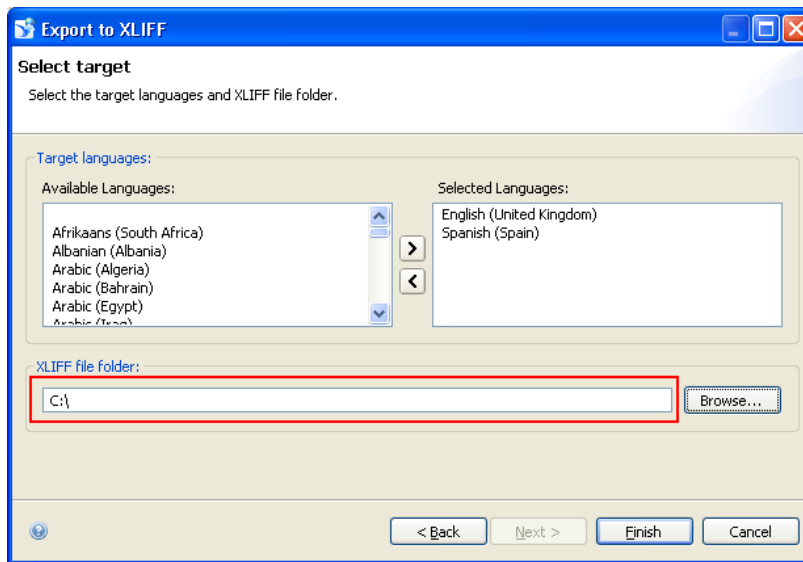


8. Select **Source** to designate one of the languages as the language in which the universe is provided. In the preceding example, it is English (United Kingdom). The source should be the same as the language from the first **Dictionary-file** column.
9. Click **Next**.
10. From the **Available Languages** list, select the **From** language for the XLIFF file.





11. Click the arrow to move the languages to the **Selected Languages** list.  
These are the **To** languages for translation.



12. Click **Finish**.

Two files are available in the XLIFF file folder:

- AR Aging.unv\_en\_GB\_en\_GB.xlf
- AR Aging.unv\_en\_GB\_es\_ES.xlf

The file that has different languages in its name should be the initial XLIFF file that is used as one of the tool's input files.

## Modify the Initial XLIFF File

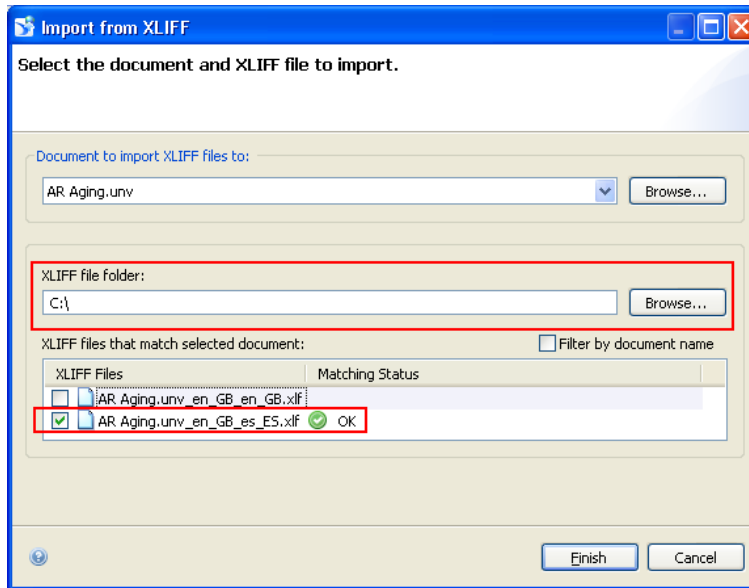
The initial XLIFF file contains all of the terms of the universe; however, you must incorporate the translation principles of the Maconomy dictionary. Therefore, you should apply this tool to modify the initial XLIFF file before continuing.

**Tip:** Refer to the **readme.txt** file that is provided with the tool for translating the Maconomy dictionary file into XLIFF for information about how to run that tool.

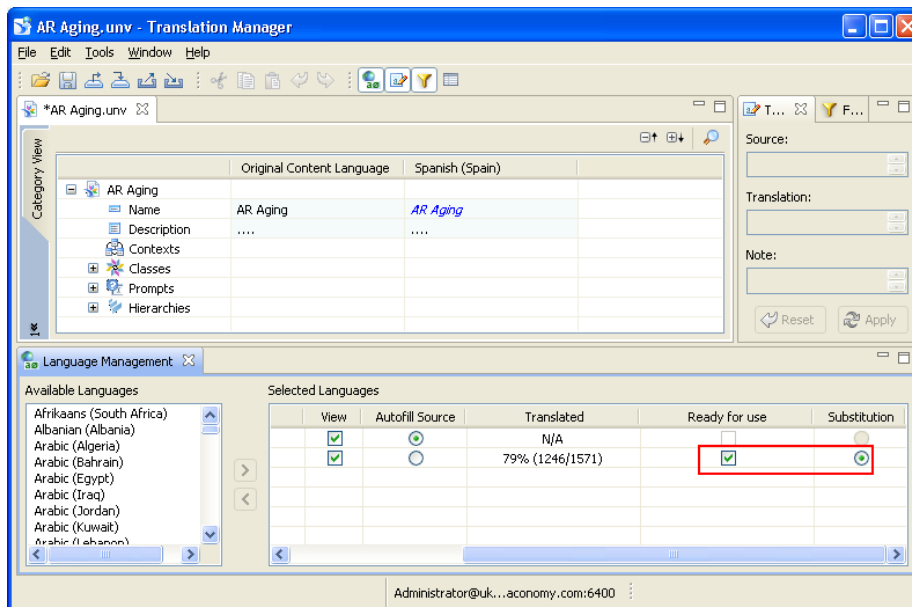
## Perform the Translation

**To perform the translation, follow these steps:**

1. Click **File » Import from CMS** and import the universe to the Translation Manager.
2. Click **File » Import from XLIFF** and import the output file created in the previous steps.



- After you import the XLIFF file, select the second language in the list as **Ready for use**.



- Export the universe to the CMS and run Webl to validate that the translation has been applied.

**Tip:** It is recommended that you export a copy to another location, so that future upgrades of the standard delivery do not overwrite the changes. See the *Business Performance Management Reporting Customization and Upgrade Guide*.

## **SYSTEM MAINTENANCE and REGULAR USE**

## Data Warehouse Maintenance

Data warehouse maintenance includes:

- Creating ETL jobs
- Scheduling loads
- Processing manual loads

### Top-Level Jobs for Maintaining the Data Warehouse

The following are top-level jobs for maintaining the data warehouse. The first two jobs are for loading data. The third is for upgrading. Once a data warehouse is successfully created, you want to load data regularly, such as once a day or once a week, using Incremental Load. Once a month or so, run Full Load to get any missing dependencies corrected. Run Upgrade when you install service packs or new versions.

Use the following jobs for maintaining the data warehouse once it has been created:

**Full Load** This job resets the fact tables and loads all data in again. Over time the data in incrementally loaded fact tables may become out of sync with some data in their dimension tables for certain scenarios. For example, a record in a dimension table may change without resulting in corresponding fact records to be adjusted.

Therefore, it is recommended to do a full load, for example, once a month.

**Incremental Load** This job loads data that have changed, been inserted or deleted, such as once the data warehouse has been created, new or modified data are retrieved by running this job.

It is recommended to schedule this job to run regularly.

**Upgrade** This job upgrades the data warehouse.

### Scheduling Loads

For periodic updates of the BPM DWH, you must use incremental loads. The Kitchen tool, which is part of Pentaho Data Integration, allows you to launch jobs, such as **Incremental Load**, from the command line.

**Tip:** For more information, see documentation about [Pentaho Data Integrator](#).

The call may be displayed as follows:

```
Kitchen.bat /rep: Pentaho repository /job: "Incremental Load" /dir:/ /user:admin  
/pass:admin /level:Basic
```

**Note:** Periodic updates are accomplished by writing a batch script that launches Kitchen and then schedules the launch of the script.

Start a text editor, such as Notepad, paste the following text, and then save it as updateDWH.bat.

```
@echo off
rem remove '-' from the date
for /F tokens=1-4 delims=- %%i in ('date/t') do set filedate=%%i%%j%%k
rem remove ':' from the date
for /F tokens=1-4 delims=: %%i in ('time/t') do set filetime=%%i%%j%%k
rem set the log filename with date and time
set logfilename=C:\Kettle-2[1].3.0\MyLogFiles\Log_%filedate%_%filetime%.log
call Kitchen.bat /rep: Pentaho repository /job: "Incremental Load" /dir:/
/user:admin /pass:admin /level:Basic > %logfilename%
echo Load finished. See the logfile %logfilename%
```

**To schedule loading of data through a Scheduled Task, follow these steps:**

1. Create a folder named **MyLogFiles** in the Kettle folder.
2. Open a command prompt and make the Kettle folder the current directory.
3. To test the script, write **updateDWH.bat**. This may take some time, since the script loads the data warehouse.
4. Open the control panel and then open **Scheduled Tasks**.
5. Click **Add Scheduled Task**, browse to select the script **updateDWH.bat**, and specify how often to perform the task (for example, daily or weekly).
6. Go through the rest of the wizard. You must enter the password of the user for whom the task is scheduled.

## Process Manual Loads

**To process manual updates of data warehouse, follow these steps:**

1. On the repository, start Spoon.
2. Log in as **admin/admin**.
3. Open the **Incremental Load** job.
4. Run the job (**F9**).

**Note:** The tab **Log view** should display **Success** in the result column. If you cannot open the repository, it may be because a firewall is blocking the access. Deactivate the firewall or consult your network administrator.

## Other Setup

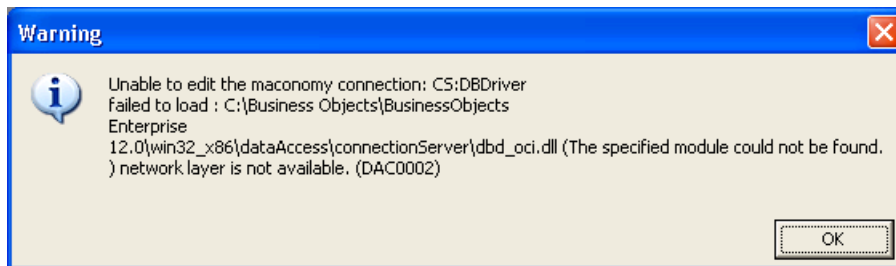
### In this section...

This section includes these additional procedures:

- Install the Oracle Instant Client Drivers (Windows)
- Set Up an ODBC Connection for SQL Server
- Enable Unicode
- Increase the Number of WebI Connections
- Configure Characterset Settings if Using Oracle
- User Setup and Single Sign-On
- Configure Logon Token on BusinessObjects
- Localization
- Handling BusinessObjects Services
- Use a Non-Standard Web Server Port
- Set Templates for Web Intelligence
- Burst Publishing
- Materialized Views on Oracle

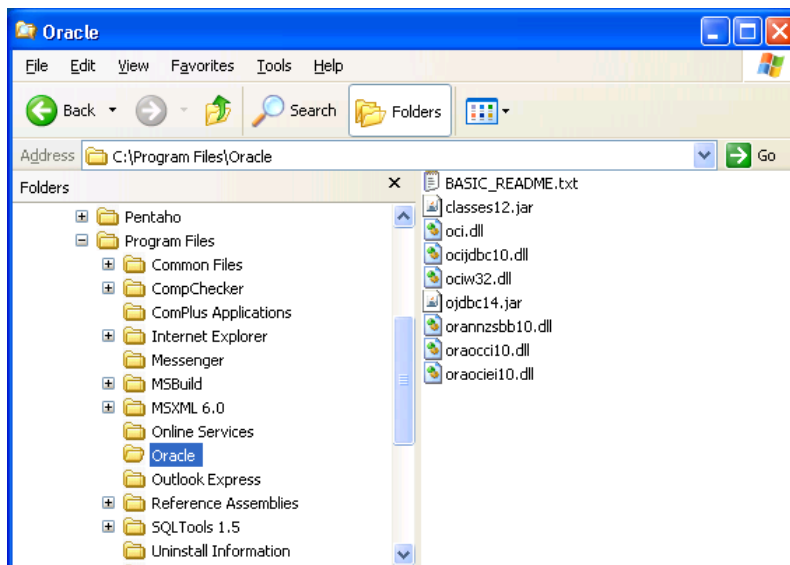
## Install the Oracle Instant Client Drivers (Windows)

If your Maconomy system uses Oracle DBMS, and the BPM server is different from the one that has the Maconomy database, you must install Oracle drivers to allow BusinessObjects access to the database and to prevent the following warning.



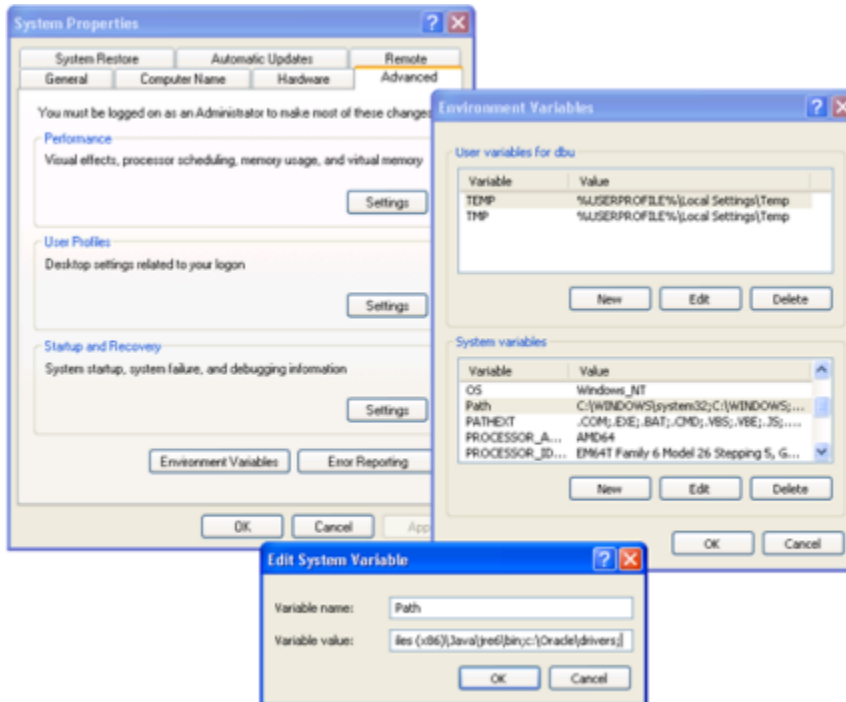
To install the Oracle Instant Client Drivers, follow these steps:

1. Navigate to: <http://www.oracle.com/technology/software/tech/oci/instantclient/index.html>.
2. Select your operating system.
3. Review and accept the license agreement and click **Next**.
4. Download either **Instant Client Package-Basic** or **Instant Client Package-Basic Lite**.
5. Unpack the drivers to a folder (for example, C:\Program Files\Oracle).



## Install the Oracle Instant Client Drivers (Windows)

6. Add the path to the drivers to the PATH variable.



7. Create the variable **TNS\_ADMIN** with the path to the same folder.
8. Create **tnsnames.ora** in the folder, for example:

```
maconomy =
(DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP) (HOST = MACONOMYSERVER) (PORT = 1521))
  )
  (CONNECT_DATA =
    (SERVICE_NAME = maconomy)
  )
)
```

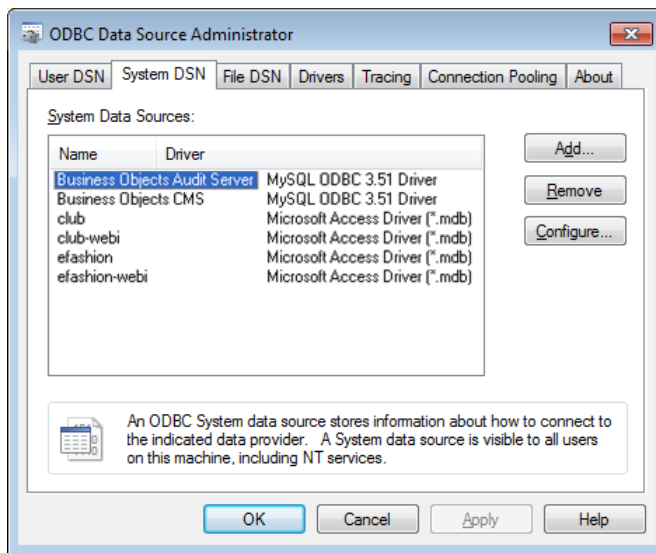
In this example, MACONOMYSERVER is the server that hosts the maconomy database, and maconomy is the SID of that database.



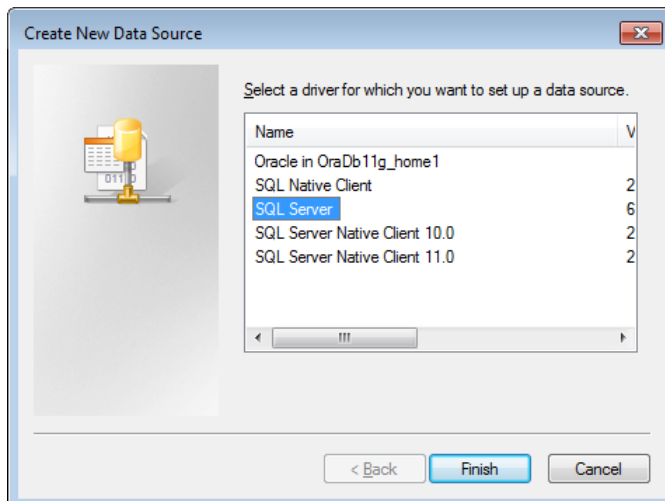
# Set Up an ODBC Connection for SQL Server

To set up the ODBC connection, follow these steps:

1. Run Data Sources (ODBC) using the appropriate path:
  - For 32-bit Windows — Click **Control Panel » Administrative Tools » Data Sources (ODBC)**.
  - For 64-bit Windows — Click **All Programs » BusinessObjects XI 3.1 » BusinessObjects Enterprise » 32-bit Data Source (ODBC)**.
2. Click **Add**.

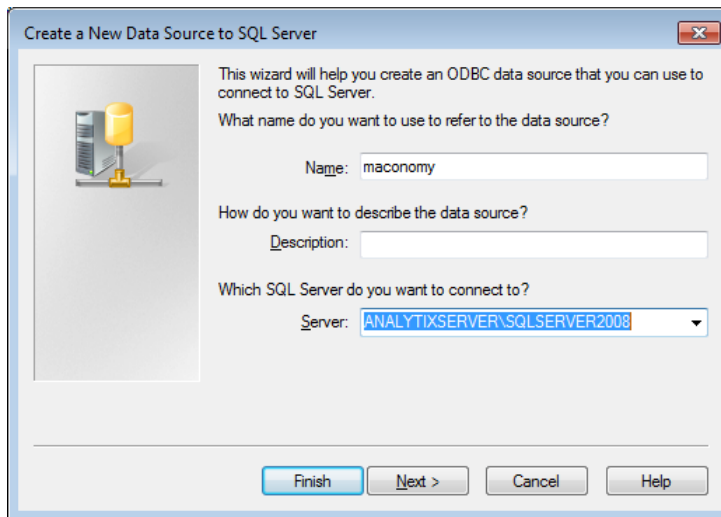


3. Select **SQL Server** and click **Finish**.



The Create a New Data Source to SQL Server wizard is displayed.

4. Enter the **Name**, **Description**, and **Server** information, and click **Next**.



**Create a New Data Source to SQL Server**

This wizard will help you create an ODBC data source that you can use to connect to SQL Server.

What name do you want to use to refer to the data source?

Name:

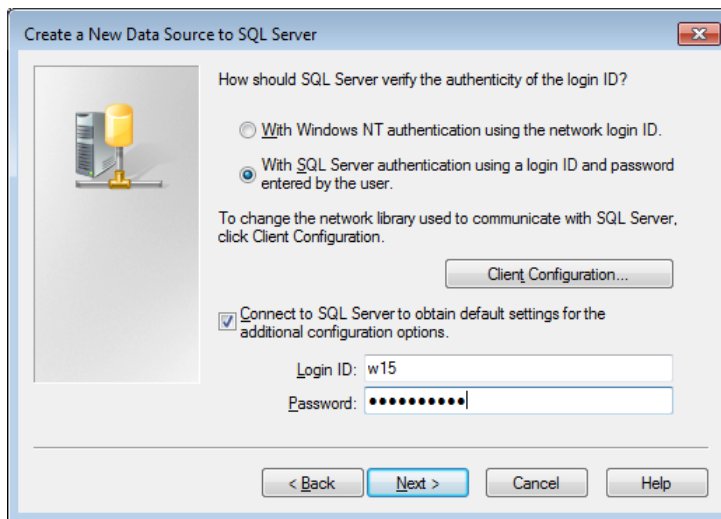
How do you want to describe the data source?

Description:

Which SQL Server do you want to connect to?

Server:

5. Select the method to use for authentication and click **Next**.



**Create a New Data Source to SQL Server**

How should SQL Server verify the authenticity of the login ID?

☐ With Windows NT authentication using the network login ID.

☒ With SQL Server authentication using a login ID and password entered by the user.

To change the network library used to communicate with SQL Server, click Client Configuration.

☒ Connect to SQL Server to obtain default settings for the additional configuration options.

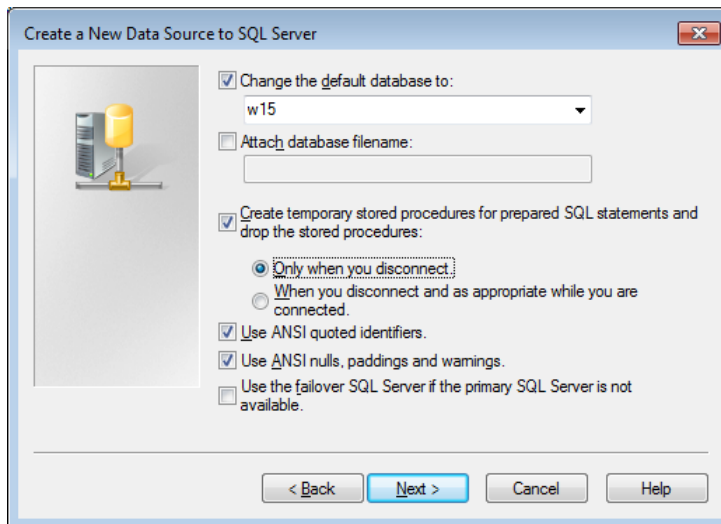
Login ID:

Password:

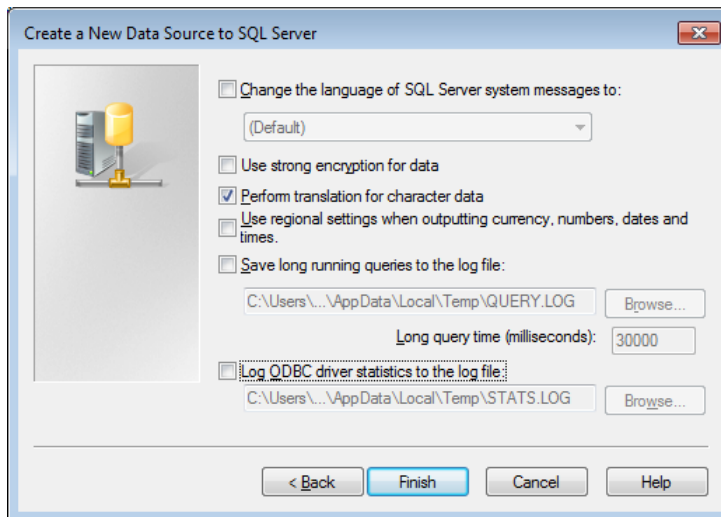
6. Enter the default database and ANSI information and click **Next**.

The following dialog box is displayed.

## Set Up an ODBC Connection for SQL Server



7. Click **Finish** to complete the process.



## Enable Unicode

Beginning with version 16.0 (2.1), the Maconomy database and BPM must be Unicode-enabled. You do this as part of the installation or upgrade.

**To set up BPM for supporting Unicode, follow these steps:**

1. After you enable the Maconomy database for Unicode, follow the same steps for enabling the BPM Datawarehouse database for Unicode. See the documentation for information about how to enable Unicode on the Maconomy database.
2. If you are upgrading BPM Analysis, perform the upgrade steps as described in the [Upgrade](#) section.
3. If this is a new installation, perform the installation steps that are described in the BPM Analysis Installation Guide. Note that the database for the data warehouse must be Unicode-enabled.
4. If you have BusinessObjects installed on Windows, perform the following steps:
  - a. In the Windows registry set the following key:  
`HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\KEY_OraDb11g_home1\NLS_LANG`  
to  
`AMERICAN_AMERICA.AL32UTF8`
  - b. Create a system variable `NLS_LANG` and assign it the value:  
`AMERICAN_AMERICA.AL32UTF8`
5. If you have BusinessObjects installed on Linux or AIX, perform the following steps:
  - a. Set up an environment variable `NLS_LANG` with the value `AMERICAN_AMERICA.AL32UTF8`.
  - b. Restart the BusinessObjects services.

Ensure that universes have the parameter `UNICODE_STRINGS` set to `YES` (this is the default value).

## Increase the Number of WebI Connections

In the solutions, the Workspace Client embeds various BPM Reporting reports. To support this, you must increase the default number of parallel connections.

**To increase the number of parallel connections, follow these steps:**

1. Log in to BusinessObjects Enterprise Central Management Console (CMC).
2. Click **Servers**.
3. Expand **Server Categories** and click **Web Intelligence**.
4. Under **Server name**, double-click **WebIntelligenceProcessingServer**.  
The **Properties** window appears.
5. In the **Properties** window, under **Web Intelligence Processing Service**, enter the appropriate number of parallel connections.

The default value is 50. It is recommended that you increase the value to at least 100.

Alternatively, add more servers. Adding one more server with the default of 50 parallel connections yields the same number of connections (100) as the preceding steps.

On large production systems, it is recommended that you increase the number of servers and then lower the number of parallel connections on each of those servers. However, note that each user who runs the Workspace Client occupies a number of WebI connections.

**Note:** It is recommended that you **not** have more than one Web Intelligence Report server per available CPU core.

## Configure Characterset Settings if Using Oracle

BusinessObjects needs to know the character set of Oracle to correctly display characters. You should set the environment variable NLS\_LANG on the BO server.

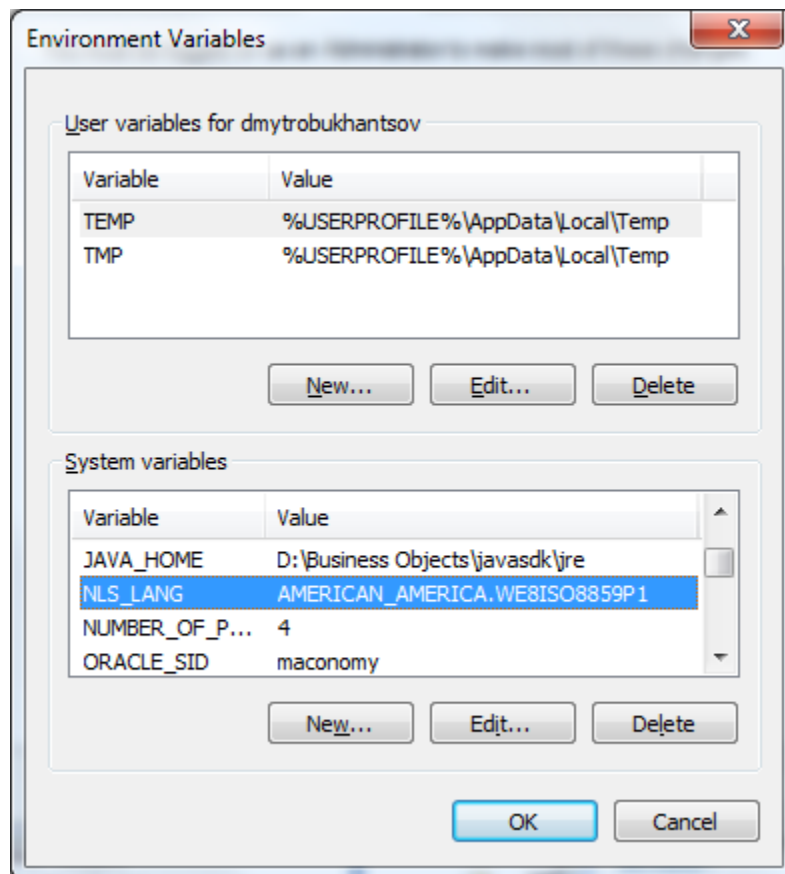
To configure character set settings, follow these steps:

1. Determine the NLS\_LANGUAGE and NLS\_CHARACTERSET using the following statement:

```
SELECT * FROM NLS_DATABASE_PARAMETERS WHERE PARAMETER IN  
( 'NLS_LANGUAGE', 'NLS_CHARACTERSET' )
```

**Tip:** For the default setup, the result is AMERICAN, WE8ISO8859P1.

2. Set the environment variable NLS\_LANG to the concatenation of these two strings separated by a dot, for example, AMERICAN.WE8ISO8859P1.



## User Setup and Single Sign-On

This section contains the following topics:

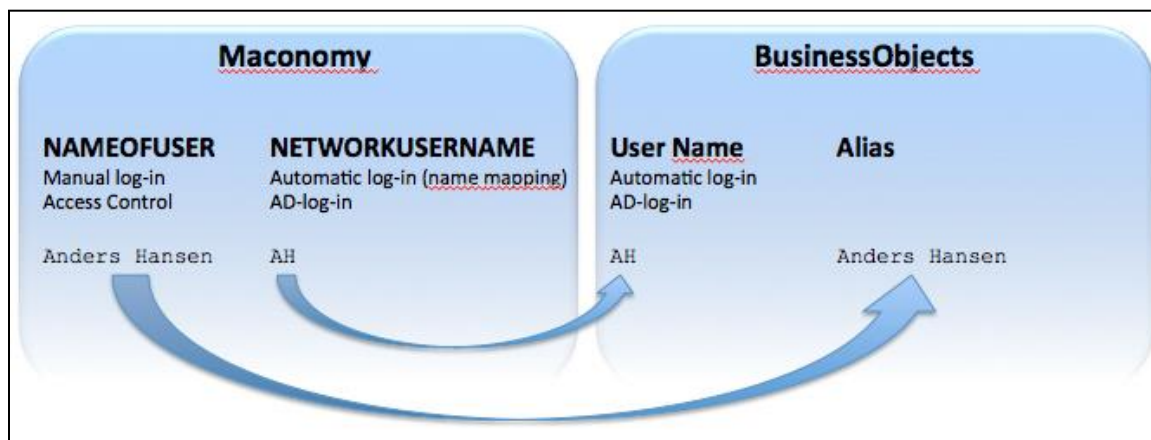
- User setup and single sign-on overview
- Active desktop and Maconomy configurations
- USync
- Configure a tenant in a multitenancy environment
- Control which users to create
- Error handling
- Assign report and universe rights

In Maconomy, access to data is controlled by the user name (**NameOfUser**). If single sign-on (SSO) is not defined and used, a user must log in to BusinessObjects using the same user name to be able to access data.

However, most often SSO is defined both in Maconomy and BusinessObjects.

- In Maconomy, a network user name is defined for each user. This network user name is equal to the active directory (AD) (Windows) user name. When you log in to the network, log-in is automatically performed in Maconomy using the network user name. Access to data is controlled by the user name with which the network user name is associated.
- In BusinessObjects, the AD (Windows) user name is the normal user name and thus equal to the network user name. To have access to Maconomy data, you create an alias for that user name. This alias is equal to the user name (**NameOfUser**) in Maconomy. When you log in to the network, log-in is also automatically performed in BusinessObjects using the user name. Access to the Maconomy data is via the alias that matches the user name (**NameOfUser**) in Maconomy.

The following figure illustrates this.



### Example

- In Maconomy, Anders Hansen uses **AH** as the network user name (and thus also AD log-in).
- Anders Hansen logs in to the network and automatically logs in to Maconomy as **AH**.
- This gives Anders Hansen access to all of the Maconomy data that his user name is defined to have access to.

- When opening WebIntelligence in BusinessObjects, Anders Hansen is automatically logged in as **AH**.
- The BusinessObjects user **AH** has the alias Anders Hansen. Therefore, the user has access to all of the Maconomy data that Anders Hansen is defined to have access to.

**Note:** With multi-user roles, Maconomy passes the login name as the user name.

## Active Desktop and Maconomy Configurations

Users must exist as AD (Windows) users on the domain. The mapping in Maconomy must be set up properly so that each Maconomy user has his or her AD (Windows domain) user name specified in the **Network Username** field in the Users workspace in Maconomy.

For example, the person **Anders Hansen** might have the user name **AHA** on the domain. The Network user name for the Maconomy user **Anders Hansen** should therefore be filled in as **AHA**.

## USync

You can use the USync tool to create users, user groups, and user aliases in BusinessObjects. USync creates BusinessObjects users and groups that correspond to the users in the Maconomy system. You can configure USync to create only users for which certain criteria are met.

USync can also remove BusinessObjects users or groups. This is convenient if users and groups have been removed from Maconomy.

Use the USync tool to complete the following tasks:

- Create users and groups in BusinessObjects that correspond to the ones that are defined in Maconomy. This allows users to access Maconomy data when running reports.
- Create aliases for each user so that, when logged in using another name by means of SSO, users can still access data.
- Synchronize users and groups for a tenant in a multitenant environment.

It is assumed that both Maconomy and BusinessObjects are set up for SSO.

## Install USync

### To install and prepare the USync tool:

1. Log in to the Maconomy server system.
2. Start MConfig and select the appropriate Maconomy application.
3. Click **Web products** and select the web server.
4. Click **OK** and apply the change with MConfig.
5. On the Web Products screen, enable **Web Services**.
6. Download the file **USync.zip** from the download server:  
<\\d\\applications\\Released\\BPM\\Tools\\USync\\BO 4.2\\>
7. Extract the zip file to a folder on the server where BusinessObjects is installed. Make sure that both the USync.jar file and the “external” folder are within the same folder.



## Create Users and Groups

### To transfer users and groups from Maconomy with USync:

1. Log in to the server on which BusinessObjects is installed.
2. Open a command prompt.
3. Run the USync java tool and enter the following parameters in the exact sequence as listed:
  - **<Maconomy administrator username>** – Enter the username of the Maconomy administrator to access the Web Service.
  - **<Maconomy administrator password>** – Enter the password of the Maconomy administrator to access the Web Service.
  - **<URL to MaconomyWS executable on web server>** – Enter the Maconomy web service URL from which USync derives the list of users to create in BusinessObjects.
  - **<BO username>** – Enter the username of the BusinessObjects user that has access to view, create, modify, and delete users in the CMS.
  - **<BO password>** – Enter the password of the BusinessObjects user that have the rights to view, create, modify and delete users in the CMS.
  - **<BO Server name>** - Enter the BusinessObjects server where users are created.
  - **<BO Authentication Type>** – Enter the authentication type that USync uses to log in the provided BO user above. It is recommended to use **secEnterprise**.
  - **<Log level>** – Set the value to **100** to show the minimum amount of information in the logs or to **500** to show a detailed trace of information.
  - **<Path and file name of log file>** – If there is no log file, the tool creates a new log file. If a log file already exists, the tool appends the logs to it. Note that USync does not create folders.
  - **<Delete-user-data (true/false)>** – This determines whether to allow USync to automatically delete a user in BusinessObjects that no longer matches with a user in Maconomy.
  - **<Create named BO users (true/false)>** – This determines the license type used to create the users. Set this to **true** to create named users (one license required per user) or **false** to create concurrent users (number of license pertains to the number of users that can login at the same time, no limit on the number of users that can exist in the CMS)
  - **<Create AD aliases in BO (true/false)>** – This determines whether BusinessObjects requires the configuration of the Windows AD plugin. Set this to **true** to automatically assign an alias to users that exists in Windows Active Directory.
  - **<Domain name used for AD alias creation>** – Enter the combined prefix and extension of the domain name used for AD alias creation (for example, trifolium.com). This is only necessary if the “Create AD aliases in BO” parameter is set to **true**.
  - **<Default password for new BO users>** – Enter a default password that all new created BusinessObjects users can use. This is only used for Enterprise authentication.
  - **<Passwords never expire (true/false)>** – To determine the expiration of passwords, enter **true** to ensure the user’s password will never expire. If you enter **false**, the user’s password expires according to the configured user restriction in **CMC » Authentication » Enterprise**. By default, this parameter’s value is set to **false**.
  - **<Must change password (true/false)>** – To determine whether the user must change the default password when first logging in, enter **true** to force users to change password on first

log in. Note that you cannot set this parameter to **true** if the “Can’t change password” parameter is also set to **true**.

- **<Can’t change password (true/false)>** – To determine whether who can set passwords, enter **true** to allow only the system administrators to set passwords. Note that you cannot set this parameter to **true** if the “Must change password” parameter is also set to **true**.
- **<Whitelisted group>** – Use this parameter to determine which users should not be deleted by USync when the “delete-user-data” parameter is set to **true**. Leave this blank if no group needs to be whitelisted.
- **<Allow update of existing BO users>** – This parameter controls whether the properties of an existing user in BusinessObjects is updated by USync. By default, this parameter’s value is set to **false**.

For example, if you enter:

```
java -jar USync.jar "Administrator" "123456" "http://BPMServer:20001/cgi-bin/Maconomy/MaconomyWS.w15p2mc.US_MCS.exe/" "Administrator" "ppu"
"macsrv.trifolium.com" "secEnterprise" "100" "C:\temp\usync.log" "false"
"false" "true" "trifolium.com" "1234-Pass" "true" "false" "false" "" "true"
```

This does the following:

- Creates users and groups that correspond to users and groups that are set up in Maconomy. If only certain users are wanted, you can define criteria for them.

**Note:** See [Configuring a Tenant in a Multitenant Environment \(Optional Installation\)](#).

- Creates aliases for these users to handle access control.
  - Does not remove existing users that are defined in BusinessObjects. The users that are created are in addition to the users that are already there.
  - Sets the default password of the new users to **1234-Pass**.
  - Uses the web server executable (a 15.0 sp 2 MCS system in the preceding example) to determine the Maconomy system that is used.
  - Stores the log output from USync in the file **C:\temp\usync.log**.
4. Open the Central Management Console and click **Groups** or **Users** to confirm that the synchronization succeeded.

For each user, you can see the group memberships on the Member of tab. For each group, you can see the members of the group on the Users tab. If you chose to create AD aliases, you can see them under each user in the lower part of the window.

## Configuring a Tenant in a Multitenant Environment (Optional Installation)

Multitenancy enables you to host multiple clients on one server where each client has their own access sites and properties. These additional steps are optional and not part of the Usync default installation.

The setup of multitenancy includes the following steps:

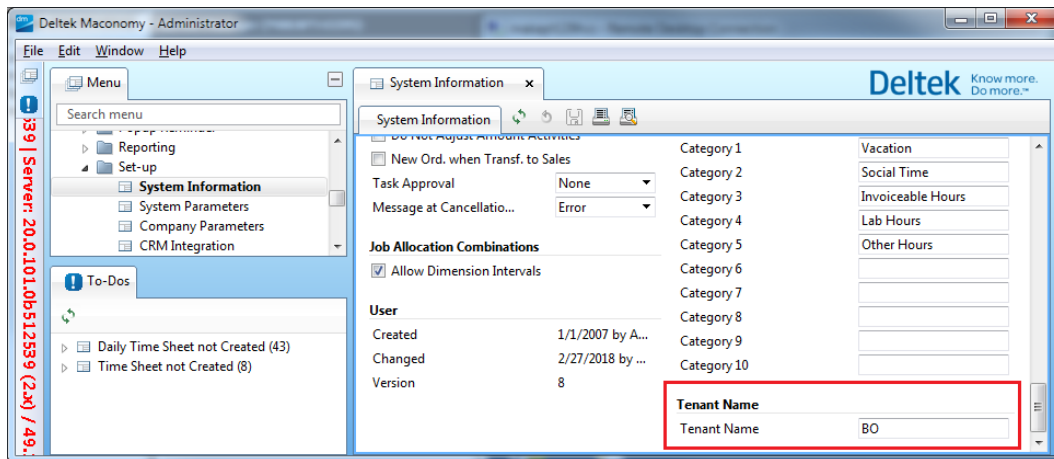
- Tenant configuration in the Maconomy Workspace client.
- Set up corresponding tenant in BusinessObjects server.

- Synchronize users using Usync.

## Set Up a Tenant Name in Maconomy

### To set up a tenant name in Maconomy:

1. Open the **System Information** single dialog workspace.
2. Scroll down to the Tenant Name island and enter a unique name in the **Tenant Name** field.



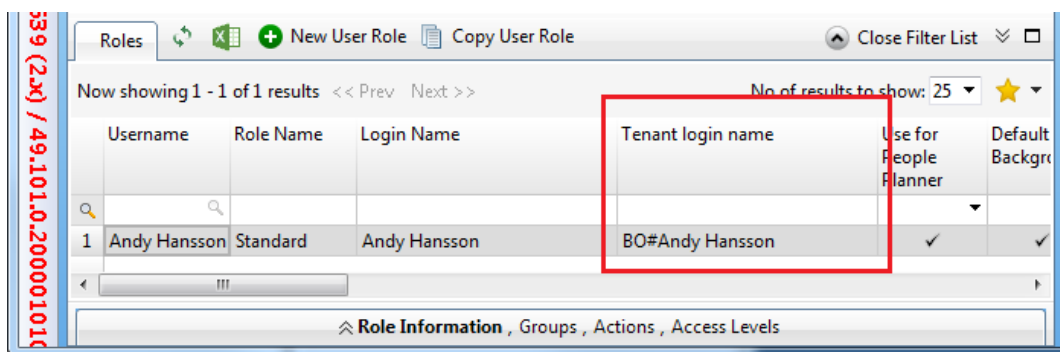
**Note:** To check if a tenant name is already in use, go to BusinessObjects CMC » Multitenancy.

3. Click **Save**.

## Validate the Tenant Name in Maconomy:

### To validate the tenant name in Maconomy:

1. Log in to the Maconomy Workspace Client with the necessary rights to access system setup, preferably as Administrator.
2. Open the **Users** workspace (Setup » Users) and expand the **User Information** tab.
3. Add the **Tenant Name** column to the Roles tab.
  - a. Right-click any column on the Roles tab and click **Customize columns**.
  - b. In the Available Columns section, select **Tenant Login Name**.
  - c. Click **Add** and move the column up or down, depending on the desired location.
  - d. Click **OK**.
4. In the Tenant Login Name column, verify that the tenant name is prefixed in the login name with the format **tenantName#LoginName**.



Register Tenant with BusinessObjects 4.2 Multitenancy Management Tool (Windows)

BusinessObjects 4.2 Business Intelligence Platform comes pre-installed with the Multitenancy Management Tool (MTM). This tool handles the registration of a tenant and other configurations controlled through a template definition file.

**Tip:** Refer to the [SAP Multitenancy Guide](#) for more information.

#### To define MTM properties:

1. Open the **tenant\_template\_def.properties** file in a text editing application. The file is located in the same directory as the BusinessObjects 4.2 Multitenancy Management Tool.

**Note:** The default location and file name is <InstallDir>\SAP BusinessObjects Enterprise XI 4.0\java\apps\multitenancyManager\jars\multitenancymanager.jar.

2. In the **tenant\_template\_def.properties** file:
  - a. Add the desired tenant name to the tenantName parameter. For example, tenantName=XXX.
  - b. Add the mandatory login information:
    - cms
    - auth
    - user
    - pwd (Optional. If left blank, user is prompted for password to proceed.)
3. Save the file.

Run the MTM tool

#### To run the MTM tool:

1. Open a command prompt. It is recommended that you run this as Administrator to avoid permission conflicts.
2. Change the directory to the location of the multitenancymanager.jar file (<InstallDir>\SAP BusinessObjects Enterprise XI 4.0\java\apps\multitenancyManager\jars)
3. Run the following command:

```
java -jar multitenancymanager.jar -configFile
```

## Verify the Tenant is Created Successfully

**To verify the tenant is created successfully:**

1. Log in to the **Central Management Console**.
2. On the Multitenancy tab, verify the tenant name is listed in the **Name** column.

## Synchronize Users with USync

**To synchronize users with USync:**

1. Download the **USync.zip** from the dl server at \\dl\applications\Released\BPM\Tools\USync\BO 4.2 Multitenancy\.
2. Extract the zip files.
3. Open a command prompt (run as Administrator).
4. Change the directory to the location of the extracted zip file, **USync.jar**.
5. Run the command: **java -jar USync.jar** with the following parameters:

PARAMETER	VALUE
Maconomy Username	Maconomy Admin username
Maconomy Password	Maconomy Admin password
Web Service URL	MaconomyWS URL found in ..\maconomy\index.html
BO Username	BO Admin username
BO Password	BO Admin password
CMS	BO Server
BO Authentication	secEnterprise, secWinAD, etc.
Log Level	0 = no message, 500 = debug mode
Log File Name	File for the log file including directory
Delete User Data	delete users that does not exist in Maconomy
Named Users	Boolean, true=named user or false=concurrent user
Create AD Aliases	Boolean, create AD Alias for SSO
AD	Domain used for AD Alias Creation
Default Password	Password assigned to created BO users
Passwords Never Expire	Boolean, user attribute
Must Change Password	Boolean, user attribute
Can't Change Password	Boolean, user attribute
White List Groups	Groups ignored by delete user data parameter

PARAMETER	VALUE
Allow Update	Allows USync to update existing users

Example:

```
C:\USync>java -jar USync.jar "Administrator" "MaconomyPassword" "http://localhost:20003/cgi-bin/Maconomy/MaconomyWS.shortname.en_US.exe/" "Administrator" "BOPassword" "BOServer" "secEnterprise" "500" "C:/USync.log" "false" "true" "false" "" "DefaultPassword" "true" "false" "false" "SysAdmins" "false"
```

6. When completed, verify that the users and groups are created in BusinessObjects CMC.
  - a. Log in to **Central Management Console**.
  - b. On the **Users and Groups** tab, verify both users and groups are prefixed with the tenant name.

## Control which Users to Create

To create only specific users, or users that satisfy certain conditions, configure USync.

**To configure USync, follow these steps:**

1. In the Maconomy web server folder **WmaconomyWS\Services\Standard** locate the **USyncSQL.txt** file.
2. Edit the file so that it contains an SQL-like expression that selects the users.

Examples

### Example 1: Select Users by Means of Popup 1

You want to control which user to import by using Popup 1 on the employee who is associated with the user. If you set up this pop-up with one value, BusinessObjects, so that it either has this value or is blank on each employee, you can insert the following additional condition in the WHERE clause for the import of user data and role membership data.

```
0 = (select EmployeePopup1 from Employee
     where EmployeeNumber = UserInformation.EmployeeNumber)
```

If there is no employee on the user, the selected value is **null**. If Popup 1 is blank on the employee, the selected value is **-1**.

### Example 2: Select Users Based on Roles

You want to import only those users who have certain roles. In this case, use the following additional condition:

```
EXISTS (SELECT 'OK' FROM EXUserDialogGroup
        WHERE NameOfUser = UserInformation.NameOfUser
        AND GroupName IN ('FinancialManagement', 'LineManagement'))
```

In an MAS solution, this imports 19 users, including Andy Polansky, Lisa Welsh, and Sue French. In the MCS solution you could change the restriction on the group name to **GroupName IN (FinancialManagement, DepartmentManagement, AccountManagement)**, and then you would get 17 users, including Edward Powers and Micho Spring.

## Error Handling

The output message may contain errors.

- If the output message contains:
  - “This user does not exist” — You did not enter a valid Maconomy user name.
  - “Password is not correct” — You did not enter a correct password for the Maconomy user.
  - “Enterprise authentication could not log you on” — There is a problem with the BusinessObjects username or password.
  - If you cannot open the <http://localhost/index.html> page, there may be an error in the global parameters in M-Config. Open M-Config, click the **Global settings** button and make sure that the **Export HTML index file to** field has the correct value (for example: C:\Apache\Apache2\htdocs).

#### (404) Not Found

- If the output message contains “(404) Not Found,” there is a problem with the URL in the **Web service URL** field. This is also the case if the output message refers to SAXParseException, ConnectException, UnknownHostException, or “unknown protocol.”

One possible reason for the 404 error could be that the Webserver URL in M-Config is incorrect.

#### To fix the 404 error, follow these steps:

1. Open M-Config.
2. Select the relevant application.
3. Click **Web products**.
4. Select the appropriate web server.
5. Click **Web server parameters** and make sure that the **Webserver URL** (host and port) field has the correct value.

For example, if the installation uses a virtual web server, the field should be **http://** followed by the name of the server, followed by the virtual web server port number (separated by a colon), with a / (slash) at the end. If you make a change in M-Config, you may need to restart the web daemon before the changes take effect.

## Assign Report and Universe Rights

Before you perform this procedure, you must consider which users or groups should be given access to which reports and universes.

#### To manually set up access rights in BusinessObjects, follow these steps:

1. Open the Central Management Console.
2. Click **Folders** and then locate the reports in the Maconomy folder.
3. For each report, set up the access rights by clicking on the report and opening the Rights tab.
4. Make sure that the rights for the group **Everyone** are set to **No Access**, click **Add/Remove** to insert a line (for example, a new group), and then click **OK**.
5. Change the rights to a different setting, for example, **View On Demand**.

**Note:** You must grant each universe and connection to the specific groups of users. This may take some time if there are many groups and many reports.

It is recommended that you assign rights to groups (containing users), rather than directly to users.



## Configure Logon Token in BusinessObjects

With the Dashboard Components iFrames installed, an “obsolete token error” might occur if the token that is used for signing in to BusinessObjects has expired.

There are two ways to avoid this error, both of which involve changing the files that are deployed in BusinessObjects:

- Increase available document instances
- Prevent users from using outdated tokens

### Increase Available Document Instances

To increase the number of document instances that are available on the system, modify the parameters in the `webi.properties` file.

**To modify the `webi.properties` file appropriately, follow these steps:**

1. Locate the `webi.properties` file at `C:\Program Files(x86)\Business Objects\Tomcat55\webapps\AnalyticalReporting\WEB-INF\classes\webi.properties`.
2. Uncomment the `WID_FAILOVER_SIZE=11` and `WID_STORAGE_TOKEN_STACK_SIZE=11`.
3. Save and close the file.
4. Restart the web application server.

### Prevent Users from Using Outdated Tokens

To prevent users from using outdated tokens, set the `logontoken.enabled` parameter in the `web.xml` file.

**To modify the `web.xml` file appropriately, follow these steps:**

1. Locate the `web.xml` file at `C:\Program Files(x86)\Business Objects\Tomcat55\webapps\InfoViewApp\WEB-INF\web.xml`.
2. Find the `logontoken` phrase and change the parameter value from `true` to `false`.

```
<context-param>
    <param-name>logontoken.enabled</param-name>
    <param-value>>false</param-value>
</context-param>
```

3. Save and close the file.
4. Restart the web application server to apply the changes.

## Handling BusinessObjects Services

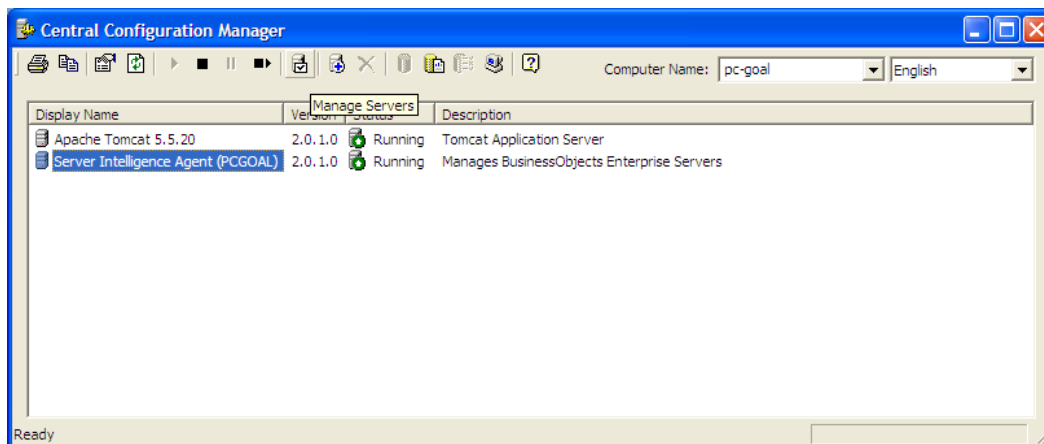
The standard BusinessObjects Enterprise installation has several services that are set up to start automatically. For this reason, the server startup is slower. However, if you do not need all of the services, the following information explains how to change the startup type on some of them, including:

- Changing the start-up type
- Removing Performance Manager

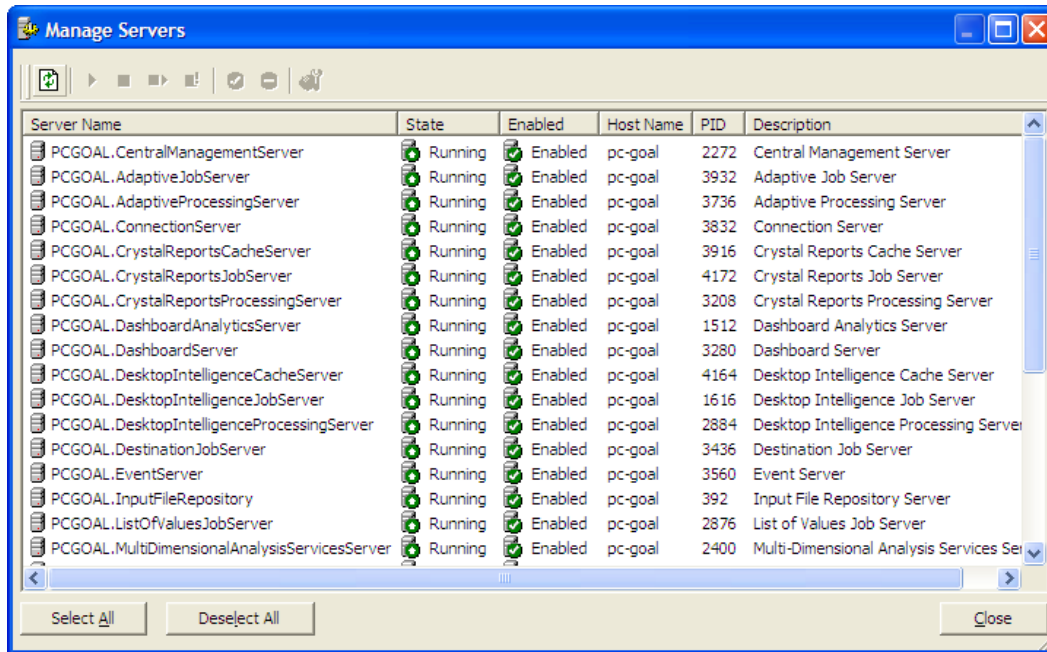
### Change Start-Up Type

To change the start-up type, follow these steps:

1. Click the Windows **Start** button, then click **All programs » SAP Business Intelligence » SAP BusinessObjects BI platform 4 » Central Configuration Manager » Manage Servers**.



2. Log in to the CMS.  
A list of the BusinessObjects servers is displayed.



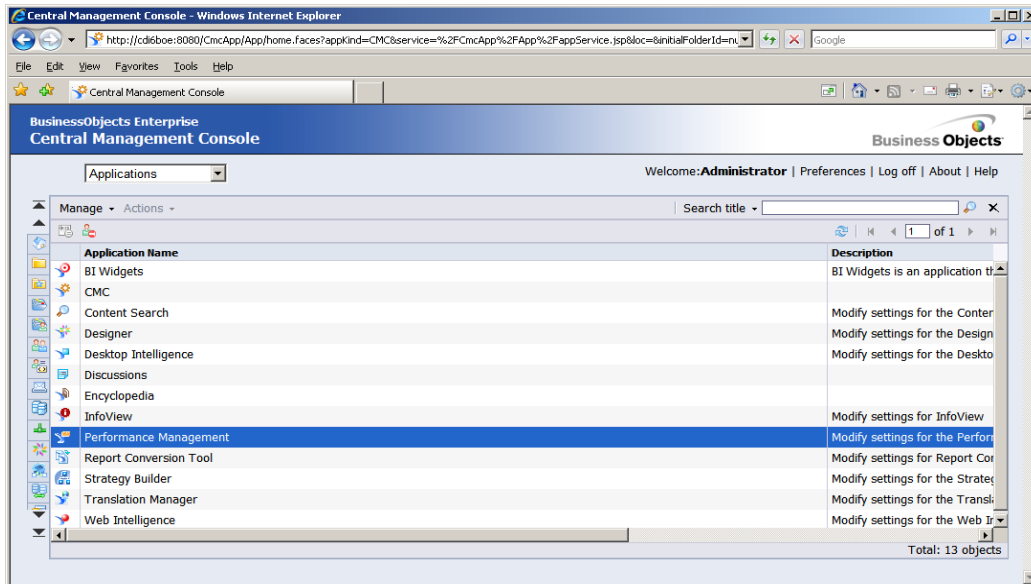
3. You might want to stop the following list of servers and change their startup type to **Manual** in their properties:
  - Crystal Reports Cache Server
  - Crystal Reports Job Server
  - Crystal Reports Processing Server
  - Desktop Intelligence Cache Server
  - Desktop Intelligence Job Server
  - Desktop Intelligence Processing Server

## Remove Performance Manager

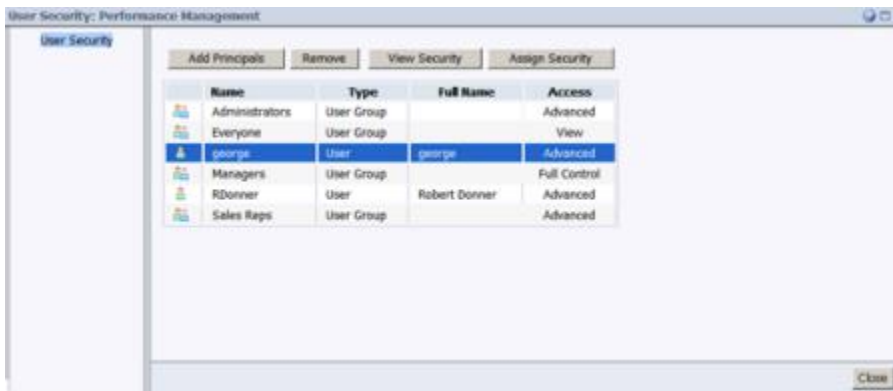
To restrict access to Performance Manager, follow these steps:

1. Click the Windows **Start** button, then click **All programs » SAP Business Intelligence » SAP BusinessObjects BI platform 4 » SAP » BusinessObjects Enterprise Central Management Console**.

- Click the Applications tab.

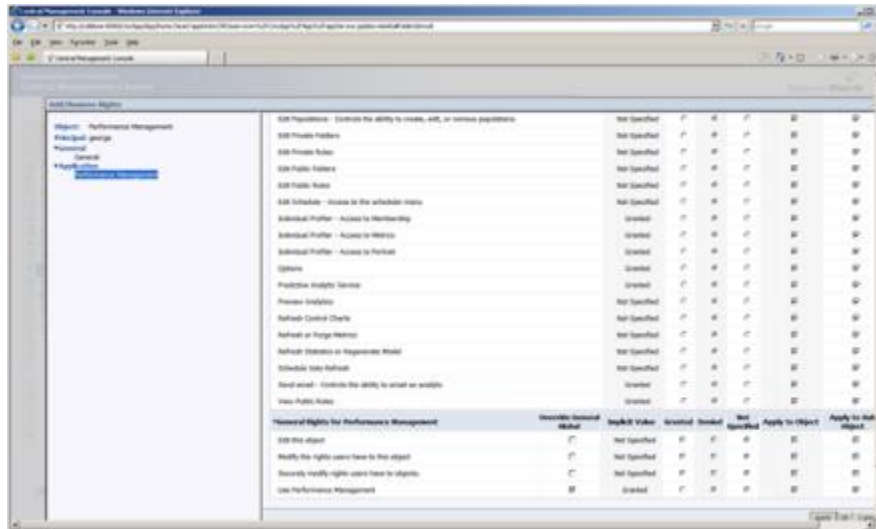


- Right-click **Performance Management**.



- Choose a group and click **Assign Security**.

5. Click the Advanced tab, and then click **add/remove rights**.



6. Clear all options, including **Use Performance Management**.
7. Click **Apply** and then click **OK** to save your entries.

## Use a Non-Standard Web Server Port

If the port specified for the Tomcat server is already in use, you cannot log in to InfoView. You must reconfigure the Tomcat server by changing the port number in `...\\Tomcat\\conf\\server.xml` under the Connector tag and restart the Apache Tomcat service.

**To avoid this issue, follow these steps:**

1. Open a Command Prompt and enter the following:

```
netstat -a > netstat.txt
```

This displays an `etstat.txt` text file in the current directory that contains, among other information, a list of the port numbers that are currently in use.

2. Open this text file and search for **8080**.
3. If **8080** is already in use, insert a unique number and use that port number, instead of 8080, throughout this section.

## Set Templates for Web Intelligence

You must change the template for WebI when there is a new document. This is not an option for existing documents. The Maconomy standards are implemented in the defaultConfig.xml released file.

To set templates for WebI, follow these steps:

1. Make a backup copy of the **AnalyticalReporting.war** file from (default) **C:\Program Files\Business Objects\BusinessObjects Enterprise 12.0\java\applications**.
2. Open the **AnalyticalReporting.war** file and replace the three versions of **defaultConfig.xml** with the changed versions. Note the original paths:
  - webApplet\AppletConfig\defaultConfig.xml
  - webApplet\AppletConfig\AppletConfig\defaultConfig.xml
  - WEB-INF\classes\defaultConfig.xml
3. From services, **Stop tomcat**.
4. From a command-line prompt, change the current directory to **C:\Program Files\Business Objects\deployment**.
5. Enter the command **wdeploy tomcat55 predeployall**.
6. If no errors are displayed, enter the command **wdeploy tomcat55 deployall**.
7. From services, **Start tomcat**.
8. Create a WebI document to check the template's performance.
9. Restart the server if necessary.

## Enabling Cache and Pre-Load of Cache in ETL

Enabling cache on ETL effectively improves the load speed of both incremental and full loads in the data warehouse. It stores the values of keys that had been looked up at least once and returns these values the next time that these are looked up again. This reduces the need to do a database call every time a lookup step is processed.



**Note:** Cache uses memory to store the looked-up key, and you risk **running out of memory** when it is enabled on very large tables.

You can enable cache:

- Manually
- Using an SQL Script

### Enable Caching Manually

To enable caching manually, follow these steps:

1. Open the transformations that contain dimensional  or database lookup  steps.
2. Right-click the lookup step and select **Edit Step** or double click it.
3. Select the **Enable the cache?** check box.

4. If **Pre-load the cache?** is enabled, select it as well. This check box is disabled if the **Update the dimension?** check box is selected.
5. Set **Cache size in rows** to **0** to enable caching of all rows.
6. Click **OK** to apply changes.
7. Apply these changes to all other lookup steps except **Pre-load the cache?** on **TASK\_ID** because this is typically a very large table and will result in an out of memory error. Set **Cache size in rows** to **1** for this lookup and then append **ORDER BY TASK\_LIST, TASK\_NAME** on the SQL statement of the Table Input step. TASK\_ID lookup step is present on the following transformations:
  - Job Entry
  - Purchase Order Line
  - Job Invoice Line
  - Budget Entry
  - Finance Entry
  - Job Budget Line



## Enable Caching Using an SQL Script

Another way to enable the cache and pre-load the cache is by using an SQL script.

**To enable caching using an SQL script, complete the following steps:**

1. Log in to the database repository for your ETL and run the following SQL statements.

```
-- enables cache for Dimensional Lookup steps except TASK_ID
UPDATE R_STEP_ATTRIBUTE
SET VALUE_NUM = 0, VALUE_STR = NULL
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DimensionLookup')) AND
NAME <> 'TASK_ID') AND
CODE IN ('cache_size')
);
--enables pre-load cache for Dimensional Lookups except TASK_ID
UPDATE R_STEP_ATTRIBUTE
SET VALUE_STR = 'Y'
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DimensionLookup')) AND
NAME <> 'TASK_ID') AND
CODE IN ('preload_cache')
);
--set cache-size to 1 for Dimensional Lookup TASK_ID
UPDATE R_STEP_ATTRIBUTE
SET VALUE_NUM = 1, VALUE_STR = NULL
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DimensionLookup')) AND
NAME = 'TASK_ID') AND
CODE IN ('cache_size')
);
--disables pre-load cache for TASK_ID Dimensional Lookup steps
UPDATE R_STEP_ATTRIBUTE
SET VALUE_NUM = 0, VALUE_STR = 'N'
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
```

```

FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DimensionLookup')) AND
NAME = 'TASK_ID') AND
CODE IN ('preload_cache')
);
--enables cache for Database Lookup Steps (VALUE_STR = 'Y')
UPDATE R_STEP_ATTRIBUTE
SET VALUE_STR = 'Y'
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DBLookup')))) AND
CODE IN ('cache')
);
--set cache size to 0 for Database Lookup Steps (VALUE_NUM = 0)
UPDATE R_STEP_ATTRIBUTE
SET VALUE_NUM = 0, VALUE_STR = NULL
WHERE ID_STEP_ATTRIBUTE IN (
SELECT ID_STEP_ATTRIBUTE
FROM R_STEP_ATTRIBUTE
WHERE ID_STEP IN (
SELECT ID_STEP
FROM R_STEP
WHERE ID_STEP_TYPE IN
(SELECT ID_STEP_TYPE
FROM R_STEP_TYPE
WHERE CODE IN ('DBLookup')))) AND
CODE IN ('cache_size')
);
COMMIT;

```

After running the provided SQL statement, commit the changes. Then you must manually update transformations that contain TASK\_ID (see step 7 on how manually enable cache.)

## Servers with Low Memory (RAM)

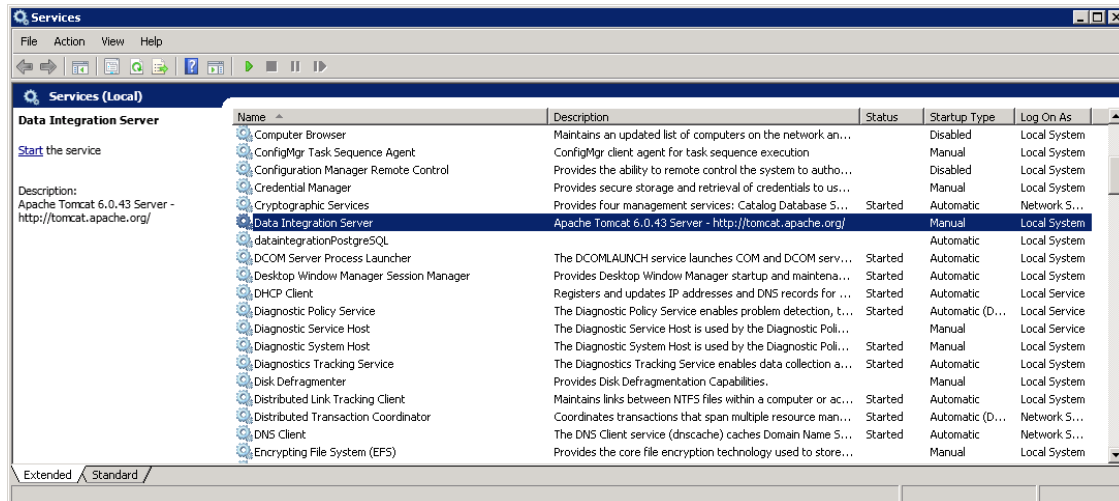
Pentaho Data Integration 5.4 has a high memory consumption. This is due to Pentaho Data Integration 5.4 installation, as well as installing Tomcat 6 as a necessary component to run the Data Integration Server. However, it consumes a steadily increasing amount of memory, which could be detrimental to systems with low memory.

Data Integration Server is mainly used for scheduling, execution, security, and content management. Since Deltek currently uses a different method of scheduling ETL loads, you can disable it.

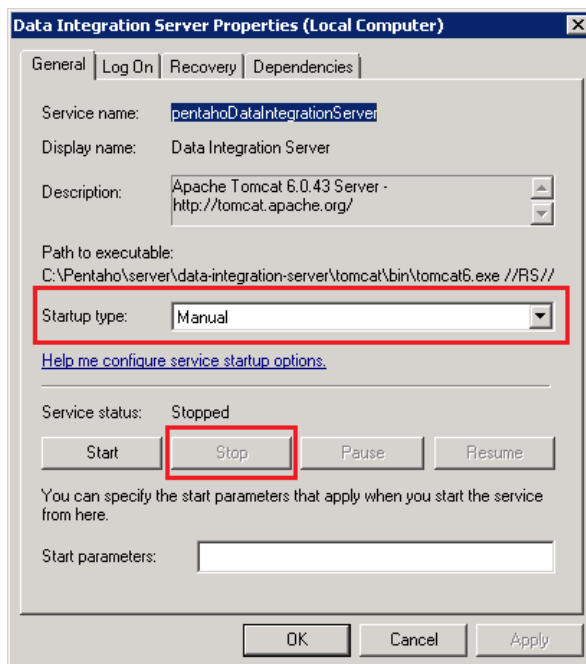
**Note:** This process is optional and is only necessary for servers with low memory (RAM).

To disable Data Integration Server, complete the following steps:

1. Click **Start**, then type *Services.msc*.
2. The Services window is displayed. Locate a service called **Data Integration Server**.



3. Right-click and select **Properties**. The Data Integration Server Properties dialog is displayed.
4. In the **Startup type** field, change the selection to **Manual** so that the service does not run automatically when you restart the system.



5. Click **Stop** to disable the service, then **OK**.

## Burst Publishing

Burst Publishing is the ability to schedule documents to refresh and then automatically distribute them out to receivers. The main benefit is that the recipients (Maconomy users) can get the refreshed documents automatically in their in boxes, and that the documents are only run once.

For information about how to set up burst publishing of documents in SAP BusinessObjects, see <http://scn.sap.com/docs/DOC-56056>

## Materialized Views on Oracle

A materialized view on Oracle is a database view that is stored physically and provides a view on which indexes and keys can be defined. BPM Reporting uses one materialized view in the Job Information universe because the Maconomy transaction database lacks a table that combines job entries (JobEntry) with corresponding invoice lines (JobInvoiceLine).

This section describes how materialized views on Oracle work and how to manage them.

### JobEntryJobInvoiceLinePV

The materialized view that is used in BPM Reporting is called JobEntryJobInvoiceLinePV. It consists of the following elements:

- Two view logs, one on JobEntry and one on JobInvoiceLine
- Materialized view JobEntryJobInvoiceLinePV
- EX view EXJobEntryJobInvoiceLinePV

When records change in the JobEntry table, the changes are recorded in the view log. Similarly, if records are inserted or deleted, changes are recorded in the JobInvoiceLine table.

### The Materialized View

The materialized view is set to update on commit. This means that when a transaction changes, inserts, or deletes records in JobEntry or JobInvoiceLine, the changes that are recorded in the view logs are transferred as changes that update the materialized view. The view is designed to perform a fast refresh because only delta changes are considered; it is not the whole view that is updated. In addition, the view does not use the query rewrite mechanism in Oracle.

### The EX View

The EX view is a database view that is on top of the materialized view. The EX view provides meaningful values for pop-up numbers (enumerated data types) and date values of data types (in addition to the string format).

For technical reasons, the date definitions are done in the materialized views, and only pop-up value fields are handled in the EX views (in other EX views, date fields are also handled in the EX views).

### Explain the View Definition

This section provides the view definition file and explains what each statement does.

## Materialized Views on Oracle

Statement/Section	Definition
ALTER SYSTEM SET "_mv_refresh_use_stats =TRUE"	This statement tells Oracle to use statistics when refreshing materialized views.
CREATE MATERIALIZED VIEW LOG ON JOBENTRY	This statement creates the view log on JobEntry.
WITH ROWID	The reference of ROWID is important because it is used for unique identification.
INCLUDING NEW VALUES;  CREATE MATERIALIZED VIEW JOBENTRYJOBINVOICELINEPV	This statement creates the actual materialized view.
REFRESH ON COMMIT AS	This is the definition of "refresh on commit."
SELECT	This statement starts the select statement that defines the view.
-- Technical fields JOBENTRY.ROWID JOBENTRYROWID	Both parts of the union that make the select statement use the ROWID internally for unique identification.
,NULL JOBINVOICELINEROWID ,1 MARKER	This field is used to distinguish the upper and lower union parts.
-- Shared Dimensions ,JOBENTRY.INSTANCEKEY	This starts the field list.
CREATE VIEW EXJOBENTRYJOBINVOICELINEPV AS : SELECT INSTANCEKEY ,JOBNUMBER ,ENTRYNUMBER	This defines the EX view on the materialized view.

## Check the Materialized View

Use the following select statements to check the view.

```
SELECT MVIEW_NAME, REFRESH_MODE, REFRESH_METHOD, LAST_REFRESH_TYPE, LAST_REFRESH_DATE
FROM USER_MVIEWS;
```

This lists a record for the materialized view that is defined. The **last\_refresh\_date** provides the date when the view was last refreshed, and the other fields indicate how it was refreshed.

```
SELECT LOG_OWNER, MASTER, LOG_TABLE FROM DBA_MVIEW_LOGS;
```

This lists two records, one for each view log.

```
SELECT COUNT(*) FROM MLOG$_JOBENTRY;
SELECT COUNT(*) FROM MLOG$_JOBINVOICELINE;
```

These statements display the number of changes currently recorded in the view logs. Under normal circumstances, they should display zero. If they do not, it is because they currently store changes that are not transferred to the materialized view.

If it appears that the preceding tables are not emptied at any time, it can be because the materialized view is not able to empty them as it should. One reason can be that more than the two view logs have been installed, but without the corresponding materialized views to empty them.

**To check that `_mv_refresh_use_stats` system parameter is set up, use the following command:**

```
SHOW PARAMETER _mv_refresh_use_stats;
```

It should display the following.

NAME	TYPE	VALUE
<code>_mv_refresh_use_stats</code>	boolean	TRUE

If no data is displayed, the parameter is not set up.

## Flush the Shared Pool

Over time, SQL statements for updating the materialized view compile in the shared pool. This is a known issue in Oracle and requires that you empty the shared pool. A stored procedure has been developed for flushing the shared pool every night.

**Tip:** See [Performance Views](#) for instructions on how to install the stored procedure.

To check that the flushing procedure runs as expected, execute the following command. FAILED should be zero and BROKEN should be "N."

```
select job, what, last_date, next_date, failures, broken from dba_jobs where what like '%maconomy_flush_shared_pool%';
```

To check that the flushing procedure cleaned the shared pool, execute the following command. If it is successful, it should return no entries.

```
SELECT sql_text FROM v$sql WHERE sql_text LIKE '/* MV_REFRESH%';
```

## Handling Issues

If the Maconomy database performs poorly, it may be because of an incorrect installation of the materialized view.

**To resolve this issue, follow these steps:**

1. Run the select statements mentioned in [Check the Materialized View](#). Check the results to find out whether the view is updated at all, and whether it is refreshed quickly.
2. Run the select statements mentioned in [Flush the Shared Pool](#) to find out whether the stored procedure is not flushing correctly and how many entries there are in the shared pool.
3. Drop the view. Use the drop statements of the view definition file. Start with dropping the actual materialized view and then drop the view logs. There is no need to drop the indexes.
4. Apply the view again and check its installation.
5. Install the flushing mechanism again and check its installation.

# TROUBLESHOOTING

## Determine BPM Version and Solution

The internal version number, the external version number, and the solution appear in universes and documents of a BPM release. In universes, the version numbers and solution are stated as custom properties of the data foundations (DFX files). In documents, they are stated in variables.

The format of internal version numbers is:

```
<version>.<sub-version>.<service pack>.<fix pack>
```

For example: 17.0.102.0

## Problem with Login to Infoview through the Portal

You cannot log in to BusinessObjects in the Portal using Internet Explorer (IE). The Login screen is displayed, but nothing happens when you try to log in (you stay on the same page). Instead, you can log in directly in **infoview**.

The reports are embedded into the Maconomy Portal using IFrame. IE gives a lower level of trust to IFRAME pages (IE calls this "third-party" content). If the page inside the IFRAME does not have a Privacy Policy, its cookies are blocked. This is indicated by the eye icon in the status bar. When you click this icon, it lists the blocked URLs. The cookies are used to store the BusinessObjects session. Because the session cannot be saved, the user cannot log in.

**To resolve the login problem, follow these steps:**

1. Create a folder named **w3c** in [Business Objects] \Tomcat55\webapps\
2. Create a file called **p3p.xml** in the same folder with the following code:

```
<META>
  <POLICY-REFERENCES>
    <POLICY-REF about="/w3c/policy.xml">
      <INCLUDE>/</INCLUDE>
    <COOKIE-INCLUDE/>
  </POLICY-REF>
</POLICY-REFERENCES>
</META>
```

**Note:** This procedure does not work when you use an IP instead of a server name in the OpenDocument link.





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