Deltek

Deltek Maconomy® 2.5.3

Upgrade Guide for Microsoft SQL

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Introduction

This document describes how to upgrade from 2.1 or later to the latest version of Maconomy.

> **Note:** For upgrades older than 2.1 a database conversion to Unicode is required. Consult your Technical Consultant.
>
> To upgrade to a version of Maconomy that is not the latest version, consult your Technical Consultant.

Process by Role

This document indicates which consultant role typically performs each step or sub-step, and includes the roles:

- TIA Consultant
- Business Consultant
- Extension Consultant
- BPM Consultant

You can quickly move to the processes in each role by searching on the role named above, by reviewing the workflows below, or searching by consultant type.

> **Note:** Some steps are performed by only one consultant type. In this case, the consultant type is listed under the top heading. For steps which are performed by multiple consultant types, the consultant type is listed by the relevant sub-step heading.

Compatibility

Refer to the Deltek Product Support Compatibility Matrix for compatibility information.

Deltek Product Support Compatibility Matrix

Revision History / What's New

The table below shows a quick reference of recent changes.

Update	Version	Description
Updated Execute Index Tool	2.5.3 / July 22, 2021	Updated upgrade version warning message.
Updated and removed sections	2.5.3 / June 16, 2021	Updated Execute Index Tool Removed Old Database Objects Updated Create Database Objects Removed Drop Constraints for Data Conversion

Update	Version	Description
		Updated Convert Data to the New Version Removed Recreate Constraints after Data Conversion Updated Create TimeStamp Triggers Updated Other Constraints
Added, updated, and removed sections to support new upgrade process	2.5.3	Added Execute Index Tools Updated Delete Old Database Objects Removed Dump Changes to the Standard Index Set Removed Delete Old Indexes Added warning in Drop Timestamp Triggers Updated Create Database Objects Added Drop Constraints for Data Conversion Added Recreate Constraints after Data Conversion Added Clean Up Duplicate Indexes Updated Consultant workflows
Error correction	2.5.2	Reversed the order of sections Update Common Relations and Field Length Verification for correct order.
Overview	2.5.1	Added a document Overview, including a link to the Compatibility Matrix, explanation of roles, and application references.
Workflows	2.5.1	Added overall workflow as well as workflows by role.
[Streamlining and editing]	2.5.1	In general, with this release, we have streamlined material, removed old content, and edited for clarity.
NameChanger	2.5.3	Edited for clarity, and updated Maconomy version mentioned in procedure.

MConfig

MConfig is the installation and configuration tool for Maconomy. Always use the most recent MConfig version unless you have been explicitly instructed otherwise.

You must execute SQL scripts using the commands that are installed by MConfig. For Microsoft SQL Server the command is StartSQL.cmd. When updating a Microsoft SQL Server database, make sure that you are using the scripts that have the string “ISQL” in their names.

Assumptions and References

Assumptions

This document describes each step needed for the upgrade. For consistency and ease of use, you can make the following assumptions:

- All examples are based on one company, and this company has the shortname **myshort**, and uses the password, **password.**
- The preferred version database is Oracle 12c. This document does not describe how to upgrade database versions.
- For the purpose of this guide we will assume two applications exist. We call the base application `<oldapplication>`’ and the target application `<application>`. See the full list of references below.
- We assume that the main drive is ‘C’ for Windows environments.
- When updating from one application to another, run scripts to ensure proper functioning of the new application version. The programs are located in the bin directory in the TPU that is installed for the application. For example, the ‘C:\maconomy\tpu.NTx86.17_0.p105.dir\bin’ folder (and not the ‘C:\maconomy\bin’ folder, which is the global TPU folder). In this document, we call the TPU directory `<tpudir>`.

References

In this document, we use a number of references like <application>, <shortname>, <MConfig program> and <password> to replace specific versions or details within command lines.

For example, these commands:

```
MaconomyServer.<application> -S<shortname> -xRemoveSolutionWindowLayouts
<MConfig program> -r <scriptlet file> <application> <shortname> <password>
```

might translate to:

```
MaconomyServer.w_20_0.prod -Smacoprod -xRemoveSolutionWindowLayouts
MConfig-9.5 -r DeleteAnalyzerViews w_20_0.prod myshort password
```

Reference	Examples
`<version>`	`w_20_0`
`<oldapplication>`	`w_17_0` `w_19_0.prod`

Reference	Examples
<application>	w_20_0 w_21_0.prod
<applicationpath>	C:\maconomy\w_21_0 /usr/maconomy/w_21_0.prod
<shortname>	macoprod
<password>	somepassword
<tpudir>	/usr/maconomy/tpu.NTx86.20_0.p104.dir C:\maconomy\tpu.NTx86.20_0.p104.dir
<MConfig>	C:\PUs\MConfig-9.5.exe ask Darius for Linux version
<packingunits>	C:\PUs ask Darius for Linux version
<oldschema>	w170sv3
<newschema>	W210sv1

Version Names

The directory names used for applications in the examples are the MConfig standard names.

The following table provides an overview of external and internal Maconomy versions.

External Maconomy Version	Internal Maconomy Version
X	10
X+	11
X1	12
2.0	15
2.1.1	16.0 SP1
2.1.4	16.0 SP4
2.2	17
2.3	19
2.4	20

External Maconomy Version	Internal Maconomy Version
2.5	21

Main Upgrade Phases

The steps covered in this guide can be divided into the following groups:

1 Review prerequisites and perform critical preparations prior to upgrade

2 Install tools and the application

3 Delete old components

4 Expand and convert databases and data

5 Create components

6 Install the new Portal

7 Convert source files

8 Install source files

Workflows

Overall Workflow

The following are the high-level tasks to accomplish with.

Step	Task	Consultant Role
Pre-Upgrade Tasks		
1	Prerequisites	TIA
2	Critical Preparations for Upgrade	Business Extension BPM TIA
3	Application Pre-Upgrade	TIA Business Extension
Upgrade		
4	Installation	TIA
5	Check Upgrade Preconditions	TIA
6	Delete Old Components	TIA
7	Update the Database Schema	TIA
8	Update Business Logic and Components	TIA
9	Validate Custom Components	TIA
Post-Upgrade Tasks		
10	Post-Upgrade Tasks	TIA

Consultant Workflow

TIA Consultants

Note: TIA Consultants perform tasks within each step. Note that in steps 2 and 3, TIA must coordinate with Business, BPM, and Extension consultants, as detailed below.

Pre-Upgrade Tasks			
Step 1	**Prerequisites**	Obtain Upgrade Kit	(TIA)
		SQL Server 3-Tier Setup	(TIA)
		Review Hardware and Resources	(TIA)
		Check Upgrade Preconditions	(TIA)
Step 2	**Critical Preparation for Upgrade**	Approval Hierarchies	(Business)
		Vendor Invoice Reallocation	(Business)
		Invoicing Finance Entry	(Business)
		Increasing System Numbers	(Extension)
		Increasing System Numbers	(BPM)
		Table Space Capacity	(TIA)
		Table Space Names	(TIA)
		Update Custom BPM Universes	(BPM)
		My Approvals	(Extension)
		MyxL Tool Convert Syntax Files	(Extension)
		NameChanger	(Extension)
		Remove BPM Database Objects	(TIA)
Step 3	**Application Pre-Upgrade**	Ensure Instancekeys in Userinformation	(TIA)
		Update Layouts for Dimensions	(Business)
		Local Chart of Accounts	(Business)
		Reporting Structures	(Business)
		Change References to Depreciated Fields	(Extension)

Upgrade Tasks			
Step 4	**Installation**	Install the New Tools	(TIA)
		Install the New Application	(TIA)
Step 5	**Check Upgrade Preconditions**	Check Preconditions for Upgrade	(TIA)
		Put the Application into Maintenance Mode	(TIA)
Step 6	**Delete Old Components**	Delete Old Database Objects	(TIA)
		Dump Materialized View Definitions	(TIA)
		Delete Views	(TIA)
		Delete Portal Standard Components	(TIA)
Step 7	**Update the Database Schema**	Expand Relations	(TIA)
		Create Access Control Views	(TIA)
Step 8	**Update Business Logic and Components**	[Version] Upgrade	(TIA)
		Update Common Relations	(TIA)
		Reinstall Standard Layouts	(TIA)
		Convert the Portal Database	(TIA)
		Convert Data to the New Version	(TIA)
		Recreate Constraints after Data Conversion	(TIA)
		Clean Up Duplicate Indexes	(TIA)
Step 9	**Validate Custom Components**	Validate Layouts	(TIA)
		Create Constraints	(TIA)
		Install and Upgrade the Portal	(TIA)
Step 10	**Post-Upgrade Tasks**	Recreate BPM Objects	(TIA)
		Clean Up	(TIA)
		Advanced Logging	(TIA)
		Disable Maintenance Mode	(TIA)

Business Consultants

Note: Business Consultants perform pre-upgrade tasks in steps 2 and 3 only.

Pre-Upgrade Tasks			
Step 1	Prerequisites		(TIA)
Step 2	**Critical Preparations for Upgrade**	Approval Hierarchies	(Business)
		Vendor Invoice Reallocation	(Business)
		Invoicing Finance Entry	(Business)
		Increasing System Numbers	(Extension)
		Increasing System Numbers	(BPM)
		Table Space Capacity	(TIA)
		Table Space Names	(TIA)
		Update Custom BPM Universes	(BPM)
		My Approvals	(Extension)
		MyxL Tool Convert Syntax Files	(Extension)
		NameChanger	(Extension)
		Remove BPM Database Objects	(TIA)
Step 3	**Application Pre-Upgrade**	Ensure Instance Keys	(Business)
		Update Layouts for Dimensions	(Business)
		Local Chart of Accounts	(Business)
		Reporting Structures	(Business)
		Change References to Depreciated Fields	(Extension)
Upgrade and Post-Upgrade Tasks			
Steps 4 - 10	Upgrade and Post-Upgrade		(TIA)

Extension Consultants

Note: Extension Consultants pre-upgrade tasks in steps 2 and 3 only.

Pre-Upgrade Tasks			
Step 1	Prerequisites		(TIA)
Step 2	**Critical Preparation for Upgrade**	Approval Hierarchies	(Business)
		Vendor Invoice Reallocation	(Business)
		Invoicing Finance Entry	(Business)
		Increasing System Numbers	(Extension)
		Increasing System Numbers	(BPM)
		Table Space Capacity	(TIA)
		Table Space Names	(TIA)
		Update Custom BPM Universes	(BPM)
		My Approvals	(Extension)
		MyxL Tool Convert Syntax Files	(Extension)
		NameChanger	(Extension)
		Remove BPM Database Objects	(TIA)
Step 3	**Application Pre-Upgrade**	Ensure Instance Keys	(Business)
		Update Layouts for Dimensions	(Business)
		Local Chart of Accounts	(Business)
		Reporting Structures	(Business)
		Change References to Depreciated Fields	(Extension)
Upgrade and Post-Upgrade Tasks			
Steps 4 - 10	Upgrade and Post-Upgrade		(TIA)

BPM Consultants

Note: BPM Consultants perform pre-upgrade tasks in step 2.

Pre-Upgrade Tasks			
Step 1	Prerequisites		(TIA)
Step 2	**Critical Preparation for Upgrade**	Approval Hierarchies	(Business)
		Vendor Invoice Reallocation	(Business)
		Invoicing Finance Entry	(Business)
		Increasing System Numbers	(Extension)
		Increasing System Numbers	(BPM)
		Table Space Capacity	(TIA)
		Table Space Names	(TIA)
		Update Custom BPM Universes	(BPM)
		My Approvals	(Extension)
		MyxL Tool Convert Syntax Files	(Extension)
		Namechanger	(Extension)
		Remove BPM Database Objects	(TIA)
Step 3	**Application Pre-Upgrade**	Ensure Instance Keys	(Business)
		Update Layouts for Dimensions	(Business)
		Local Chart of Accounts	(Business)
		Reporting Structures	(Business)
		Change References to Depreciated Fields	(Extension)
Upgrade and Post-Upgrade Tasks			
Steps 4 - 10	Upgrade and Post-Upgrade		(TIA)

1 Prerequisites

Be sure that the following prerequisites are met before you begin the upgrade process, including:

- Obtain the upgrade kit
- Prepare if this is a SQL Server 3-tier installation
- Review hardware and resources
- Check upgrade preconditions
- Perform any necessary critical actions prior to upgrade

1.1 Obtain Upgrade Kit 2.5.x

TIA Consultant

You must obtain the Upgrade Kit for 2.5 as well as the TPU and the APU. This document is included in the Upgrade Kit, found on DSM

The tools that the Upgrade Kit includes may provide automatic conversion of kernel strings and tools for converting data in the database. The Upgrade Kit consists of several SQL scripts to be run and tools to modify export files and localize customized data in the database, such as Windows and Print Layouts (MDL and MPL).

Some of the functionality that the Upgrade Kit provides is available only on Windows platforms. Thus, access to a Windows computer is required during the upgrade. The procedure is outlined in detail in the upgrade steps where this is required.

1.2 SQL Server 3-Tier Setup

TIA Consultant

Due to license issues, it is common to use a three-tier installation to keep license cost to a minimum. A 3-tier setup requires installation of Management Studio on the Application server.

Note: The instructions below are for Management Studio for SQLServer 2014. While there are different versions of SQLServer with more or less functionality, all versions ensure that all SQL jobs can be executed from the Application server, and the Management Studio 2014 Express package is free.

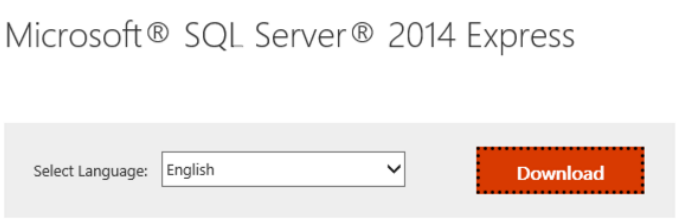
Management Studio Installation

To download Management Studio:

1. Navigate to the Management Studio to download. For example, download Management Studio for SQLServer 2014:

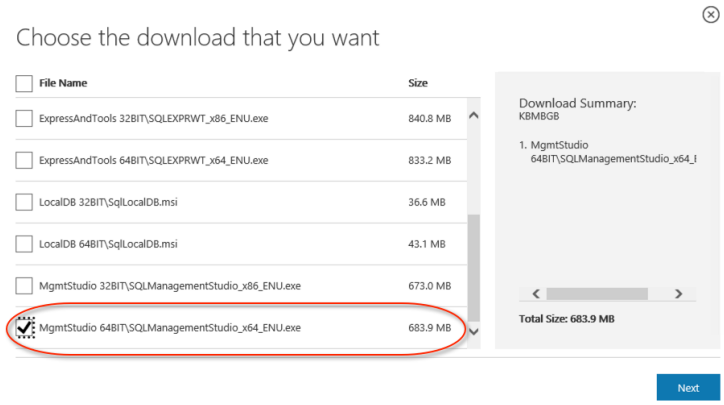
   https://www.microsoft.com/en-in/download/details.aspx?id=42299

2. Click **Download**.



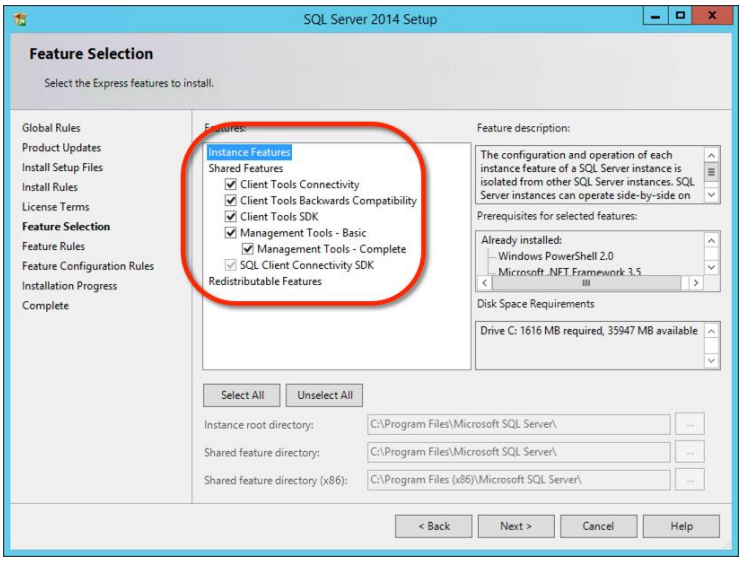
A list of download options displays.

3. Select the version to install (usually the 64-bit version) and click **Next**.



A list of features options displays.

4. Select all options under Shared Features.



Management Studio Workaround

If for some reason you are unable to install Management Studio on the Application server, as a workaround, copy the following folders to the database server:

```
<MaconomyHomeDir>\bin
<ApplicationHomeDir>\MaconomyDir\Database
```

Example:

```
E:\maconomy\bin
```

```
E:\maconomy\w_20_0\MaconomyDir\Database
```

In the Maconomy\bin directory, add the following option to StartSQLServer1:

```
<Application>.cmd: -S <DatabaseHostName>\<InstanceName>
```

If instance Name is the default, it can be ignored.

Example:

```
"c:\program files\microsoft sql server\client
sdk\odbc\110\tools\binn\sqlcmd.exe"  -S <Hostnname of database server> -U %1
-P %2 -i "%3" -o "%4" -fi:1252
```

1.3 Review Hardware and Resources

TIA Consultant

The recommended storage configuration is RAID 10. This is not required; however, the tools are I/O bound, and the database conversion time heavily depends on the I/O throughput.

A minimum of 4 physical CPU cores, 2.4 Ghz or higher, is recommended, but 12 cores or more are minimum for larger databases.

1.4 Check Upgrade Preconditions

TIA Consultant

Check that the UpgradePreCondition script runs without any errors or warnings before continuing the upgrade procedure. If you encounter errors, **STOP** and fix all errors before you continue.

1.5 Execute Index Tool

TIA Consultant

Perform this task performed when the new <application> is installed (Maconomy 2.5.3 or higher) and before any modifications to the database of <oldapplication> have been performed.

Version 2.5.3 implements a new method of managing indexes and constraints.

Perform the following steps before proceeding with the upgrade process:

1. Copy StandardIndexesAndConstraints.json file belonging to the new application (*not* the original file being upgraded) from

   <applicationpath>\MaconomyDir\Database

   to

   maconomy tmp folder (usually c:\maconomy\tmp)

2. Copy all files from:

   Upgradekit\dbmSripts\msql directory

to

maconomy bin folder (usually c:\maconomy\bin)

3. Execute the following commands (paths assume locations listed in previous steps):

   CD c:\maconomy\bin

   MaconomyServer.<application>.cmd –iMaconomyServer.<oldapplication> -S<shortname> --IndexScriptFile “idxm.primary.msql.txt”

   MaconomyServer.<application>.cmd –iMaconomyServer.<oldapplication> -S<shortname> --IndexScriptFile “getcustomindexes.txt”

   MaconomyServer.<application>.cmd –iMaconomyServer.<oldapplication> -S<shortname> --IndexScriptFile “consmDrop.msql.txt”

> **Note:** Executing the MaconomyServer belonging to <application> using the .I file from <oldapplication> allows accurate comparison of database objects between the two applications.

4. Review the two output files, found in the C:\maconomy\Tmp folder, to ensure there are no errors during execution, that all files exist, and that dropScript.txt as well as dropCons.txt are not empty. customCreate.txt can be empty if no custom indexes exist on the database.

> **Notes:**
>
> customCreate.txt will contain objects related to maconomy_users table in certain scenarios.
>
> customCreate.txt otherwise will contain only non standard indexes. *This file will not be referred to moving forward in the upgrade process.*
>
> If there is a need to recreate custom indexes, carry thisout after the upgrade is complete.
>
> Depending on the indexes, some manual adjustments may need to be done to account for changes in the Maconomy database schema.

5. Check that the following three files are created in c:\maconomy\tmp:

   dropScript.txt

   customCreate.txt

   dropCons.txt

Warning: It is only possible to execute the above described procedure utilizing new MaconomyServer on the database attached to the old application. This requires that the 2.5.3 MaconomyServer is compatible with the application being upgraded.

Currently the following versions are known to work for direct upgrades: Maconomy 2.4 and Maconomy 2.3, including all maintenance releases. Also, if upgrading from Maconomy 2.3, review 2.5.3 CU1 Release Notes for additional steps.

https://dsm.deltek.com/documentationlists/DeltekMaconomy23GA.html

If you are using a database platform other than one supported by MaconomyServer 2.5.3+, the recommended procedure is to upgrade into Maconomy 2.5.2 using the former upgrade procedure, and subsequently patch the application to 2.5.3.If taking this course of action, ensure that the 2.5.2 application has 2.5.2 CU3 applied prior to upgrading, to avoid a known data conversion issue.

See the Deltek Product Support Compatibility Matrix as needed for details.

Known Issue: When upgrading directly to 2.5.3, there is a known performance issue that slows down data conversion and may prevent it from completing entirely on large databases. This is expected to be fixed in an upcoming CU.

2 Critical Actions Prior to Upgrade

Warning: This section contains actions that MUST be performed prior to upgrade. Note that failure to do so could result in fatal errors requiring a full restart of the upgrade process, or worse, such as production environments running with inconsistent data.

2.1 Approval Hierarchy

Business Consultant

Job Quotes

Maconomy version 2.5 also has a simple approval hierarchy setup in place to allow automatic submission and approval of historic job quotes. This setup will allow companies who choose to opt out of approval hierarchies for job quotes to continue using their existing workflows.

Approve Quotes Action

The ApproveQuote action no longer runs an extension code. This impacts customers using a standard layout (in other words, not customized) in the Quote Editing workspace (**Jobs » Budgeting » Quote**) with an extension connected to the ApproveQuote. This occurs because approval hierarchies do not actually use the ApproveQuote action but the ApproveAll actions borrowed from the Approval Groups and Approval Objects dialogs. This will not be caught during compilation or during run time, which may cause an issue where the extension code is unused and unnoticed.

If you want to continue using the ApproveQuote extensions code, you must customize the layout in the Quote Editing workspace to not use the Approval actions from the approval group, but instead use an extension instead.

General Journals

If submitted general journals existed in the system prior to upgrading Maconomy to version 2.5, then a new simple approval hierarchy is created for General journal where approval on header is required, and everyone can approve.

Maconomy creates approval groups for all existing submitted general journals and sets them as approved.

2.2 Enhanced Vendor Invoice Reallocation

Business Consultant

In the vendor invoices workspace, the two dialogs Invoice Allocation and Invoice Reallocation are now combined into a single workspace, Invoice Allocation. In this workspace, the content of visible fields and actions change depending on the posted status of the vendor invoice. This change to the vendor invoices

workspace could affect customized layouts and extensions that previously were dependent on the Invoice Reallocation dialog. Note that as a result, updates to customized layouts could be required.

2.3 Invoicing: FinanceEntry of the A/R Control Account

Business Consultant

For A/R Control Finance Entries, the Customer Number field now contains the Delivery Customer and not the Payment Customer (bill to) as it did previously. As part of a bug fix, the field Payment Customer for A/R Control Finance Entries now correctly shows the Payment Customer.

Reports are changed to reflect this. If you are using the field in one of your reports, note that the content of the field is changed, and it could affect the reports which you may then have to make changes to accommodate.

2.4 Increasing System Numbers

Extension Consultant

With the Increase System Numbers feature, you must carry out the following actions during upgrade:

- All customizations must be upgraded, including BPM custom universes and reports.
- Data conversion

> **Note:** The data conversion is moderate and adds about 15 minutes for each 10 million rows in the database.

- Update Extensions to adapt to the changed API.

> **Additional Actions:**
>
> - **Import Programs** — Import programs have an optional double quote around the string fields and if they are left the out the field is parsed according to the type of the field which means that no import programs must be updated.
> - **BPM Universes** — BPM universes must be updated where the system numbers are used.
> - **Notifications** —All notifications are recalculated upon upgrade and the notifications are initially empty until a user refreshes the list or a background task refreshes the list.

Table Space Capacity

TIA Consultant

The Database must have sufficient free table space in order to make a copy of the largest table with a system number. The largest table will likely be one of `FinanceEntry`, `FinanceEntry`, `DailyTimeSheetLine`, `TimeSheetLine`, or `GeneralJournal` but it may be another.

Table Space Names

TIA Consultant

The default setup of Maconomy stores all relations in the same table space which also happens to be the default table space in the database. If the setup is changed to have tables in different table spaces (for example, utilizing separate hard drives), then the expand script must be altered manually or a post expand script cleanup is needed to move the relations to the desired table space.

If the current relations are not in the default table space, then all changed tables mentioned will end up in the default table space. Temporarily changing the default table space to point to the desired location of the relation during the expand script can solve the issue. Otherwise manual altering of the expand script or post expand cleanup is needed.

Update Custom BPM Universes

BPM Consultant

The Increase System Numbers feature changed some database fields from datatype Integer to datatype String. For all standard reports and universes, BPM defining objects on these changed fields are updated.

However, you must update these fields on custom universes and custom reports.

To update custom UNV universes:

1. In SAP Information Design Tool, import the needed universe.
2. Open each universe dfx-file, set the connection, and run Refresh Structure. This updates the meta information about tables and fields in the database.
3. Open each universe blx-file and run Integrity Check.
4. Correct any objects or universe part that appears to fail the check.
5. Save the universe files and publish the universes.

To update custom reports:

1. Open a custom report in Web Intelligence, and cancel refresh.
2. In the report, identify the objects that have changed datatype.
3. In each report document, look for errors in report cells and variables (typically marked with question marks [?]). These are references to universe objects that no longer exist.
4. Correct the missing parts and if needed customize the universe to include missing parts. If using custom universes, the reports should work without issues.
5. After the report has been corrected, refresh the report and test the results.
6. Save the report.

This must be done for each custom report that uses any of the corrected universes.

Places to Run Data Conversion

Run the Data Conversion (can be updated in parallel):

1. Production system
2. Data warehouse

2.5 My Approvals / Approval Center Name Change

Extension Consultant

The workspace has changed file name / workspace name from "MyApprovals" to "ApprovalCenter."

Customized global menus and workspace files (*.mwsl.xml and *.mdml.xml) must be updated to refer to "ApprovalCenter."

2.6 Use MyxL Tool to Convert Syntax Files

Extension Consultant

Between the major versions of Maconomy, syntax updates occur that may not be backwards compatible with some of the specification languages. This occurs when specification files delivered with the product in the new version are automatically converted to the new syntax, but customized specification files are not. To correct this, you must run a conversion of the relevant files to convert them to the new syntax. The MyxL tool facilitates the conversion of Maconomy's specification files, including MDML, MWSL, MMSL, MNSL, and MCSL.

To convert specification files, you must:

1. Check out all the specification files that are present in GitHub
2. Convert the files using the MyxL tool
3. Check the files back in to GitHub

Before You Begin

Make sure that you are running the Java version corresponding to the branch with which you are working, which is Java 8 for 19 and onwards. Verify that the correct version is picked up by using the typing 'java –version' at the command prompt.

If needed, install a correct 32-bit JDK.

Convert Specification Files

To convert files using the MyxL tool:

1. Go to the TPU in the **/bin** directory and find the MyxL tool.
2. Extract the tool to a local directory.

   > **Note:** As you extract, notice that there are **Convert{version}.exe** and **Convert{version}.ini** files present in the main directory, where **{version}** corresponds to the branch from which the tool was built. Check the version to verify that it corresponds to the correct TPU.

3. Supply various parameters to successfully run the conversion. The parameters are provided either in the Convert-20.0.101.0.ini file, or as command line arguments if the Converter is run from the command line.
   - convertdirectory — *Mandatory*. The path to the file or directory to convert. If no other output method is specified, all files in this directory (or this file) are converted in place.

- writeconversion — *Optional*. If this parameter is not set, no converted output is generated. Only a summary is written to the console and a summary report is generated. It is not set by default to prevent conversion errors. Must be explicitly set to write the conversion changes.
- outputdirectory — *Optional*. A path to a directory to write the converted files to, if writeconversion was set. If this parameter is set the original files in the convertdirectory are not altered.
- consolepreview — *Optional*. If this parameter is set the result of the conversion is written to the console and a summary report is generated, if writeconversion was set.
- convertreadonly — *Optional*. If this parameter is set read-only files are converted.
- debuginfo — *Optional*. If this parameter is set debug information such as stack trace is written to the error section of the summary report.
- logconfigpath — *Optional*. You can specify a path to a log configuration file here. As default the logback file provided with the Converter is used.

4. Check to verify the updated syntax of the specification language. This includes checking to ensure that all the breaking changes were fixed and no unnecessary conversions were made (meaning that the tool does exactly what it is supposed to do and no more).

   The output method precedence is:

   - outputdirectory (writeconversion was set)
   - consolepreview (writeconversion was set)
   - in-place conversion (none of the above parameters set and writeconversion was set)

Note: The tool takes different actions depending on what parameters are supplied. If both outputdirectory and consolepreview are set, then the action associated with outputdirectory takes precedence.

5. Submit the changes back to GitHub.

Note:

Ensure Correct Conversion

Technical Consultants are responsible for checking that the conversion is correct before submitting the changes back to GitHub.

If Errors Occur

At times, errors occur during the conversion process. If you experience errors you cannot resolve, refer to the Kona conversation (link below) or create a support case attaching the error message and possibly the file that caused the error when converting.

Example

The following example shows a change for 2.4 for MDML. The tool removes the **titleValue**, **firstTitleValue**, **secondTitleValue**, **titleSource**, **firstTitleSource** and **secondTitleSource** attributes from various elements and replaces those with **title** attributes that allow the use of placeholder expressions.

If the customized layouts do not include the removed attributes listed above, no conversion is necessary.

Note: See *Deltek Maconomy Language Quick Reference MDML* for details.

2.7 NameChanger

Extension Consultant

In Maconomy version 2.2, many names, especially of database fields, were changed. For version 2.2 onwards, you will need to modify source files for customizations during the upgrading process. The NameChanger is a tool, released as a part of the Upgrade Kit, to facilitate this process. It is released for all server platforms, including Windows and Linux.

NameChanger processes the following file types: MDL, MDML, MDXL, MEXL, MNSL, MPL, MUL, MWSL, and RDL.

The languages MDL, MPL, and MDML are processed in an advanced way, considering for example which source files belongs to which dialogs or relations.

Run the tool with option '-h' (for "help") to see a complete list of options.

Note: The tool DOES NOT make all required changes to the source files. The tool may even sometimes make changes that should not have been done. You must manually verify after running the tool.

To run NameChanger:

1. From a command line, enter a line such as the following example:

   ```
   NameChanger.exe -s C:\CustomizedFiles -t C:\ModifiedCustom -F 19 -T 21 -y MDL,MDML
   ```

   This command processed all files in the specified folder tree (in this example, C:\CustomizedFiles) and stores modified files in another folder tree (in this example, C:\ModifiedCustom).

   In this example, only files of types MDL and MDML are modified. All files in C:\CustomizedFiles will appear in C:\ModifiedCustomizations, some of them (for example, files of other types than MDL and MDML) possibly unchanged. The source files are for Maconomy version 19 (that is, 2.3), and the modified files for Maconomy version 21 (that is, 2.5).

2. Add the option '-p' (for "preview") to see which changes will be made prior to modifying any files.

   The log files, located in the same folder as the tool, list the changes. They also list occurrences of ambiguities where a term has multiple possible changes, as well as occurrences of terms that are removed.

   The log also lists where terms are changed to something starting with "Deprecated" or "Removed," since such terms are not likely supported in the new version.

3. Review two log files:
   - NameChangerLog.session.txt — Contains log data for the latest session.
   - NameChangerLog.accumulated.txt — Contains accumulates log data for all sessions.

4. Use the Extender's static validation to ensure that everything is correct. If the NameChanger made a mistake, it is flagged by the static validation/compilation of your MDMLs and MPLs.

5. Correct any errors flagged by the Extender manually.

6. Keep the log files and consult them later if issues later occur for certain files.

2.8 Remove BPM Database Objects

TIA Consultant

When upgrading to Maconomy 2.5.x, you must remove all BPM-related database objects from the Maconomy database, including materialized views, materialized view logs, database views, and triggers.

Everything except materialized views can be removed by using MConfig and deselecting all check boxes in the BPM section of shortname window. Materialized views and logs must be removed directly from the database.

To remove BPM-related objects from the database:

1. Deselect all check boxes in the BPM section found in MConfig shortname window and apply pending changes.
2. Check in the database that there are no Materialized views or Materialized view logs remaining. If Materialized views or Materialized view logs are present, delete them.

3 Application Pre-Upgrade

3.1 Ensure Instancekeys in Userinformation and Approvalgroup Tables

TIA Consultant

Ensure that the `approvalgroup` and `userinformation` tables have `instancekeys` prior to starting the upgrade. The instance keys are used to link user, user role, and user dialog group together. This enables the administrator user to expand the data base schema to the new version. Otherwise the upgrade will fail, as this is executed by the administrator user.

To enable instance keys, follow these steps prior to upgrade:

1. Go to **Setup > System Setup > Database Relations**.
2. Select the Relation Name **Approval**.
3. Ensure the **Instance Keys Applied** field shows **Yes**. If so continue to step 5.
4. If the **Instance Keys Applied** field shows **No**, click the action **Initialize Instance Keys.**
5. Select the Relation Name **User**.
6. Ensure the **Instance Keys Applied** field shows **Yes**. If so, no further action is needed.
7. If the **Instance Keys Applied** field shows **No**, click the action **Initialize Instance Keys.**

It is important that the **Approval** relation gets instance keys prior to **User**.

3.2 Update Layouts for Global and Local Dimensions

Business Consultant

> **Note:** This section applies only if you are upgrading from a pre-2.3 version. If upgrading from 2.3 LA or newer, skip this section.

Several global and local dimensions were added in Maconomy version 2.3. Maconomy assigns a default value to all of the new dimensions on existing transaction data. You can specify the default values before the upgrade. Maconomy uses [**-**] (dash) as the default value if you do not specify a default value before the upgrade.

A consultant can execute a script before you perform the technical upgrade. The script indicates whether there is a correctly specified conversion table for the new dimensions. Fields and variables for the existing global and local dimensions have been renamed; the same naming strategy was used in all places. You must update layouts.

Create Option Lists

Maconomy 2.3 introduced 13 new dimensions: Specification 4-10, Local Specification 4-10, and Local Account. Due to this, during the upgrade, we can create the specification 4-10 and local specification 4-10 lists.

However, we need to know what list names and standard names should be assigned to these new lists. Because of this you can create option lists with this information.

To create an option list for new Specification dimensions:

1. Go to **Single Dialogs » Set-Up » Set-up » Option Lists.**
2. Create an option list, and in the **Option List No.** column, select **Specification Data Conversion**. Now, each line in the table represents a new specification list.
3. Add a new line in the table as needed.

   For example, if you add a new line in the table with **Name** field set to **Specification5** and **Remarks 1** field set to **Test**, during the upgrade a **Specification5** list is created with the name specified in **Remarks 1** field, in this case, **Test**.

   Note: Lists for new dimensions are created even if you do not create this options list. In this case, the **Specification 5** list **Name** is set to [**-**] (dash).

To create an option list for new Local Specification dimensions:

1. Go to **Single Dialogs » Set-Up » Set-up » Option Lists**.
2. Create an option list, and in the **Option List No.** column, select **Local Specification Data Conversion**.

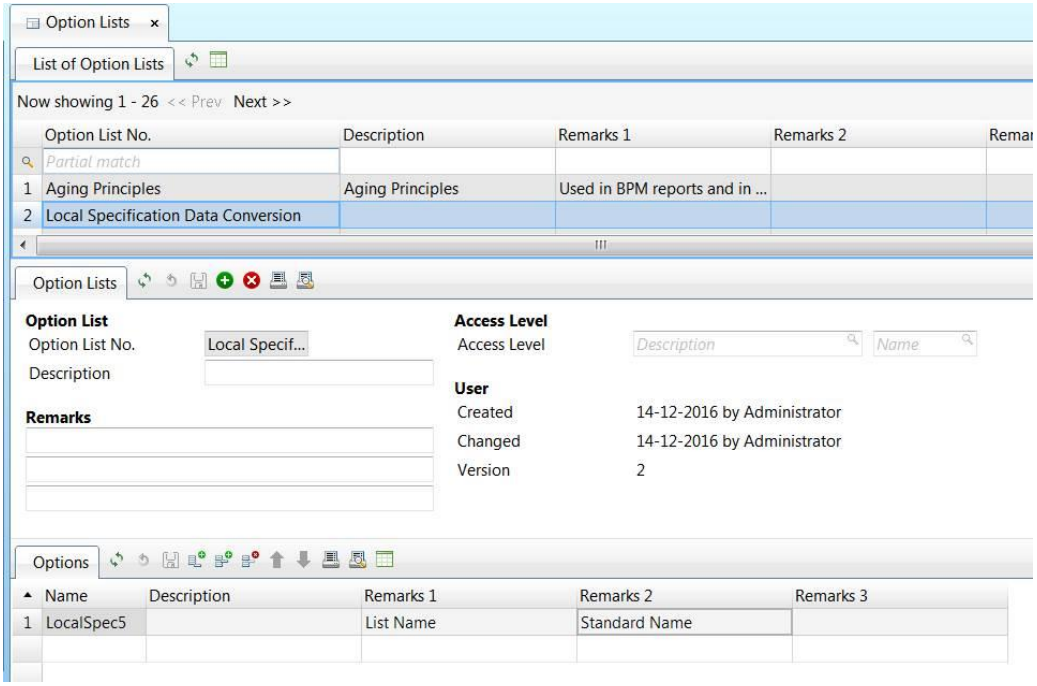
   Now, each line in the table represents a new local specification list.
3. Add a new line in the table as needed.

   For example, if you add a new line in the table with **Name** field set to **LocalSpec5** and **Remarks 1** field set to **Test** and **Remarks 2** field set to **Test 2**, during the upgrade a **Local Specification 5** list is created with the name specified in **Remarks 1** field, in this case **Test**, and standard name specified in the **Remarks 2** field.

   > **Note:** Lists for new dimensions are created even if you do not create this options list. In this case, the **Local Specification 5** list **Name** is set to **Local Spec. 5** list, and **Standard Name** is set to [-] (dash).

Example of Setup

The following is an example of the setup described above.



3.3 Local Charts of Accounts

Business Consultant

Maconomy introduced support for local charts of accounts in version 2.3. Previously you could use one of the local dimensions as a local chart of accounts.

The new local chart of accounts dimensions are validated as a local account dimension, so you must, for example, enter a link from the local account to the global account. This is not a requirement for the local dimensions. Maconomy cannot convert a local dimension to a local account if there are local dimension values that do not have global account references.

Note: Consultants can execute a script before performing the technical upgrade. The script displays any problems that might prevent the conversion. Those problems must be resolved before you can perform the upgrade.

To run the script:

1. Go to **SQL/Basics/LocalChartOfAccountsPreUpgrade.sql**.
2. Run **LocalChartOfAccountsPreUpgrade.sql**.

You can still use one of the local dimensions as a local chart of accounts, but all standard reports have been changed, and all future development will assume that you use the local chart of accounts dimension, rather than a local dimension.

The purpose of the LCoA Pre-upgrade script is to verify that there will not be issues when upgrading to 2.4 in relation to the Local Chart of Account functionality, ensure that dimension grouping setup is correct, and verify that deprecated fields are not used in some dialogs.

You must run this script prior to the upgrade to 2.3 LA and later, because it lists all of the problems that must be corrected before the upgrade to avoid various problems during or after the upgrade.

> **Note:** Because any issues must be resolved prior to upgrade, we recommend that business consultants execute this script a few days prior to upgrade to ensure sufficient time to resolve any issues.

Before You Begin

Before running the script you must change a setting in Preferences.

To change the Preferences Setting:

1. Open the Maconomy client and go to **Edit » Preferences**.
2. From the dropdown list, select **Formats**.
3. In the **No. of decimals** field, select **2** from the dropdown.
4. Click **Apply**.
5. Click **OK**.

Run the Script

To run the script:

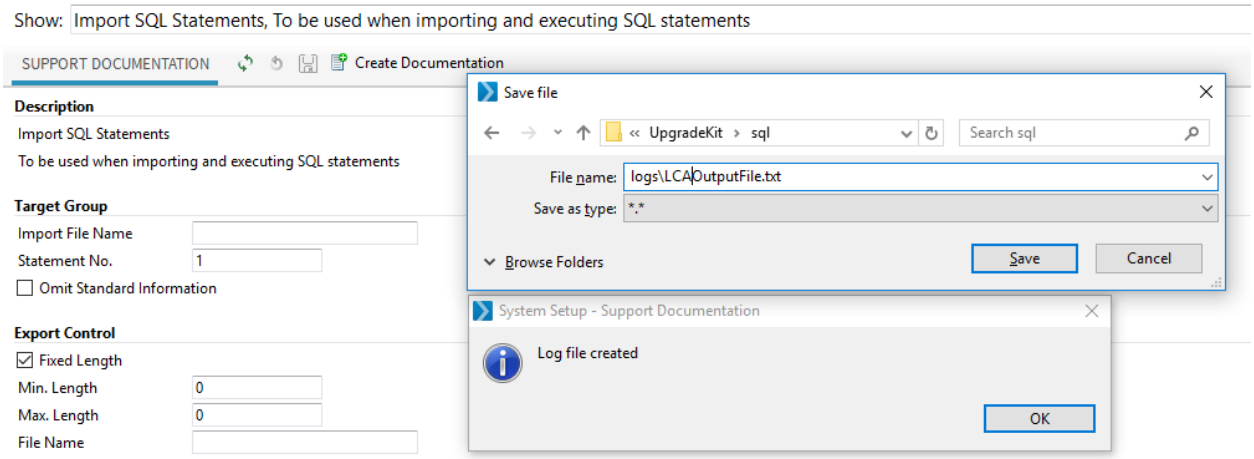
1. Locate the script in the Upgrade Kit:

   <UpgradeKit->\sql\LocalChartOfAccountsPreUpgrade.sql

2. Open the Workspace/Java client of the version you are upgrading. For example, if you are upgrading from 2.1, run the script in your 2.1 Maconomy system.
3. Open the Maconomy client and go to **Setup » System Setup » Support Documentation** and choose **Import SQL Statements** in the filter.
4. In the card part **Statement No.** field, select **1**.
5. Click **Create Documentation**. A new dialog opens.
6. In the new dialog, browse to the location of the LocalChartOfAccountsPreUpgrade.sql file and click **Open**.

   The SQL script runs and executes various SQL statements in the database. After it is done executing the SQL statements, it produces an output file with the feedback (see the following image).

7. Click **Save** to save this output file so that you can investigate and verify that the system setup fulfills the requirements for upgrade.



You must now evaluate the output and create options lists.

Evaluate the Output

The script simply runs various SQL statements against the database to make sure that the system is ready for the upgrade.

The following sample output is color-coded to more easily indicate the content of the output and any action that you must take.

- Yellow — Shows information on what the SQL statements are supposed to do.
- Green — Shows the exact SQL statements that will be run in the database.
- Red — Shows that the system has incorrect setup and / or issues that must be addressed before continuing the upgrade.

Example Output

```
--
-------------------------------------------------------------------------------------------
--------------------
-- Check to see if the option lists have been created for the new local spec. lists
and new
-- specification entries
-------------------------------------------------------------------------------------------
--------------------
--
select 'Could not find the option list with names for the new Local Spec. Lists' as
Message
from SystemInformation
where not exists (select 1
                  from OptionList
                  where OptionListNumber = 'Local Specification Data Conversion')
union
```

```
select 'Could not find the option list with names for the new Specification entries'
as Message
from SystemInformation
where not exists (select 1
                  from OptionList
                  where OptionListNumber = 'Specification Data Conversion')

|MESSAGE                                                                        |
|-------------------------------------------------------------------------------|
|Could not find the option list with names for the new Local Spec. Lists    |
|Could not find the option list with names for the new Specification entries|

2 rows processed
-------------
```

SQL Statement

In this case, we received two RED messages: **Could not find the option list with names for the new Local Spec. Lists** and **Could not find the option list with names for the new Specification entries**.

In this example, you create option lists, and then you can add entries to the tables of those options lists, where you specify default names for the new dimensions.

3.4 Reporting Structures

Business Consultant

The structure of financial reports was previously specified in three different places, depending on the reporting technology. Built-in MPL reports were based on structure tables (account structures, location structures, and so on), portal universe reports were based on reporting hierarchies, and BPM reports were based on dimension groupings.

Structure tables and dimension groupings are replaced by reporting structures. Reporting structures are used for both built-in MPL reports and BPM reports.

Dimension groupings are, where possible, converted into a reporting structure. Structure tables and reporting hierarchies do no longer exist. You must create a reporting structure for all of the structure tables (most important is the account structure) and reporting hierarchies that you need after the upgrade.

The new reporting structures are a tree structure (in the same format as finance budgets and job budgets), so it is important that lines in the existing dimension groupings are ordered in the same way as the report is printed. It is easier if you do the cleanup before the upgrade.

MPL reports and standard BPM reports are updated so that they are based on the new structures. You must update any BPM reports that you created.

3.5 Change References to Depreciated Fields

Extension Consultant

Below are changed references to depreciated fields for versions 2.1 – 2.5. Change the setup before you perform the upgrade.

The following fields were added in version 2.1:

- **Active Status** replaces **Blocked** on Customers, Company Customers, Vendors, and Company Vendors.
- **Allow Payments** replaces **Stop Payment** on Vendors and Company Vendors.
- **Allow Delivery** replaces **Blocked for Delivery** on Customers and Company Customers.

The following fields were added in version 2.5:

- CompensationType.NumberOfPayPeriods
- CompensationAgreement.NumberOfPayPeriods
- CompensationAgreement.ValueOfAgreementPaymentCurrency
- CompensationAgreement.ValueOfAgreementCurrency
- CompensationAgreement.ExpectedValueOfAgreementCurrency

4 Installation

TIA Consultant

This section describes how to install the new TPU and application to which you are upgrading Maconomy.

4.1 Install the New Tools (TPU)

You must install a new TPU when upgrading, preferably the most recent one that belongs to the application.

To install the upgrade:

1. Copy MConfig, TPU, and the APU to the <packingunits> directory on the server.
2. Use MConfig to specify the location of that directory. Go to 'Global Settings' and define the directory in the Packing Units Directory.

To use the new TPU and the new application, installing the new TPU as global tools is required.

To install the new TPU:

1. Start MConfig.
2. In the Tools window:
    a. Select the new TPU for installation.
    b. Use the new TPU as Global Tools.

4.2 Install the New Application (APU)

Use MConfig to install the new application. When upgrading a solution, you must install the new application with the same enterprise language. You select the solution as one of the final steps in the upgrade process—not when installing the APU and TPU.

To check the enterprise language on an existing database:

4. Type the following command on a query window for the shortname in, for example, SQL Plus Management Studio:

```
Select ENTERPRISETEXT from ENTERPRISETEXT where
ENTERPRISETEXTNAME='CountryCodeForEnterpriseLanguage';
```

Depending on how the shortname is transferred to the new application, you may not need to create a shortname when installing the new application.

This concludes the installation of the new application.

5 Check Upgrade Preconditions

TIA Consultant

Before starting the upgrade, you must check preconditions for the upgrade. Some versions require that specific conditions in the application be fulfilled to perform an upgrade. To check whether all of the requirements have been met, use the UpgradePreconditions script. Additionally, you must remove old BPM database objects.

> **Note:** It is a good idea to run this script well in advance of the update (for example, a week before) to let the customer know what they need to do, in addition to running it as part of the update.

5.1 Check Preconditions for Upgrade

> **Note:** There is one upgrade precondition script for each old version.
>
> You must select the appropriate script, for example:
>
> - SQL SERVER: ISQLUpgrPrecond.w120sv12-w200.sql

The old schema version must be taken into consideration when you upgrade the application. You can find the schema version in:

Win

```
<applicationpath>\MaconomyDir\Installation\version.info
```

To check preconditions for the upgrade on SQL Server:

1. Navigate to the target application folder and type the following commands:

   Win:

   ```
   cd <applicationpath>\MaconomyDir\Database
   StartOracleSQL2 <shortname> <password> UpgrPrecond.<oldschema>-
   <newschema>.sql c:\Logs\UpgrdPrecond.<shortname>.log
   ```

2. Verify results in the log file.

   The result should be 0 rows selected in all cases. If this is not your result, you cannot continue the upgrade until you have fixed the results. Check the Product Information for each version to see which requirements exist.

If the upgrade precondition script returns a message like “Please create a support case,” this is caused by duplicate keys in the DimensionPeriod table. You must resolve this issue before continuing with the upgrade.

5.2 Put the Application into Maintenance Mode

Prior to starting the upgrade, make sure the Maconomy application you are upgrading is set to Maintenance Mode using MConfig. This is required to ensure background tasks are not executed during the upgrade process. The new Maconomy application is in maintenance mode by default as a new installation. There is no maintenance mode for Maconomy versions earlier than 2.3.

Note: If you have extensions, you must reinstall these after installing a service pack before de-selecting the Maintenance Mode field.

To enable Maintenance Mode:

1. In the Application window, select the **Maintenance Mode** field.
2. Click **OK > Next > Next** to apply.
3. Complete your maintenance tasks.
4. Go back to the Application window, and de-select the Maintenance Mode field.
5. Click **OK > Next > Next** to apply.

6 Delete Old Components

TIA Consultant

6.1 Delete Old Database Objects

To delete old database objects:

1. Run the following commands:

   cd c:\maconomy\tmp

   c:\Maconomy\bin\StartSQLServer1.cmd <shortname> <password> dropScript.txt > c:\Logs\dropScript.log

   c:\Maconomy\bin\StartSQLServer1.cmd <shortname> <password> dropCons.txt > c:\Logs\dropCons.log

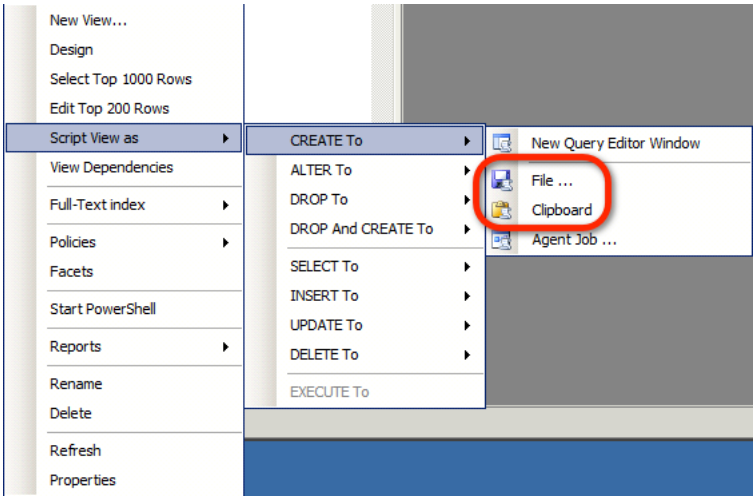
Once executed, check the log. Acceptable errors include those indicating not able to drop objects because they do not exist. Other errors should be investigated.

6.2 Dump Materialized View Definitions

Open Management Studio and select the materialized view. Standard materialized view names end with MV or MV_A, MV_B, and so on. (Examples are JOBENTRYJOBINVOICELINEMV, JOBENTRYJOBINVOICELINEMV_A, and JOBENTRYJOBINVOICELINEMV_B) Materialized views are called Performance Views in MConfig. If there are customized views, the easiest way to identify them is to delete all standard views and dump the remaining ones.

To dump materialized views:

1. Right-click on the view name and select either **File** or **Clipboard**.



2. Save the view.
3. Delete the view.

4. Repeat these steps for the remaining materialized views.

6.3 Delete Views

Three different types of views are in use by Maconomy:

1. Views used by the Maconomy Client for access control
2. Views used by third-party software using ODBC access to ensure proper access control
3. Views used by the Maconomy Analyzer

You must remove these before you can perform an upgrade.

To delete the views for the user run the following commands:

Win:

```
cd <tpudir>\MConfigScriptlets
DeleteDHViews <shortname> <password>
Delete3PStuff <shortname> <password>
<MConfig> -r DeleteAnalyzerViews <application> <shortname> <password>
```

The output from the delete views scripts for both platforms is:

Done!

If the scripts did not delete any views, the following error message is displayed (on all platforms).

Something went wrong (or nothing to delete)

It may be OK if the customer was not using the functionality. Check with the old access rights.

The DeleteAnalyzerViews script will report the number of views that it deletes. In case of errors, check the log file (the output of the script shows the path to the complete log file) to see the SQL that failed.

6.4 Drop Timestamp Triggers

StartSQLServer2 **`myshort myshort`** ISQLDropTimestampTriggers.sql c:\Logs\ISQLDropTimestampTriggers.log

Warning! Maconomy version 2.5.1 as well as 2.5.1 CU1 and CU2 contains incorrectly named timestamp triggers. To remove them, execute the same command as for dropping standard triggers, except with the following SQL file:

DropTimestampTriggersWithT.sql

Note: Executing this step on systems that do not have faulty triggers is harmless.

6.5 Delete Portal Standard Components

If you use the Portal, you must delete the standard components from the Portal, using the DeletePortalStandard.sql SQL script. This script deletes standard components and leaves only

customized components in the database. This ensures that no standard components are left in the database when upgrading and converting the Portal (names may have changed).

> **Note:** This script is part of the Upgrade Kit, so you must change the directory to that folder.

You must delete standard print and window layouts from the database, using the DeleteStandardLayouts script. This ensures that there are no orphaned layouts left in the database (names that have changed in later versions). The customized layouts are left in the database for conversion at a later step. To delete the standard layouts, you must run this SQL script.

To delete standard print and window layouts from the database:

> **Warning:** Do not run DeleteStandardLayouts when upgrading to Maconomy 2.4 or later as it will cause errors in the upgrade process.

Win:

```
cd \PUs\DeltekMaconomyUpgradeKit24GA\SQL\

StartOracleSQL.<oldapplication> <shortname> <password> DeletePortalStandard.sql
> c:\Logs\DeletePortalStandard.<shortname>.log
```

You must delete standard print and window layouts from the database, using the DeleteStandardLayouts script. This ensures that there are no orphaned layouts left in the database (names that have changed in later versions). The customized layouts are left in the database for conversion at a later step. To delete the standard layouts, you must run this SQL script.

> **Note:** This script is part of the Upgrade Kit, so you must change the directory to that folder.

Examine the log file. Locate and correct errors.

> **Note:** There may be SQL errors stating that a relation (for instance PDMCOMPONENT) does not exist. You can ignore these errors. However, only errors about tables not existing can be ignored. All other errors must be corrected.

7 Update the Database Schema

TIA Consultant

7.1 Expand Relations

The purpose of an expand script is to update the fields and relations of the existing database to the new fields and relations.

This can include the following tasks:

5. Create relations
6. Add new fields to an existing relation
7. Change the type of an existing field
8. Move existing fields in existing relations
9. Delete relations
10. Delete fields from relations
11. Extend field and relation names to 28 characters

An expand script is version-dependent, and you must never run “wrong” expand scripts on a database.

There are three important things to check regarding the version:

12. The source version
13. The source schema version
14. The target version

> **Note:** You should use the expand script “expand.<oldschema>-<newschema>.sql” The schema version of the old application is shown in the “<OldApplicationPath>/MaconomyDir/Installation/Version.info file.
>
> You will always get error messages when running expand scripts, but it is important to check that you only receive the expected messages. Thus, it is important to enable logging **before** you run the expand script. This script may run for several hours depending on database size and the version span to cover.

Expand Script

> **Warning:** You cannot restart the expand script. If there is an error in the expand script, it will stop. It is therefore VERY important to check if the script has processed all rows. In case of an error the script will stop. After fixing the error, remove the lines above the error and start the script again.

To run the expand script:

1. `cd c:\Maconomy\w_20_0.t\MaconomyDir\Database`

2. **StartSQLServer2 myshort myshort ISQLexpand.w120sv12-w200sv2.sql c:\Logs\ISQLExpand.myshort.log**

After completion, check the expand.myshort.log file using a text editor. No errors are accepted.

Make sure that there are no error messages.

> **Attention:** You cannot restart the expand script. If there is an error in the expand script, it will stop. It is therefore VERY important to check if the script has processed all rows. In case of an error the script will stop. After fixing the error, remove the lines above the error and start the script again.

If the existing tables do **not** match the tables from the expand script of Maconomy 2.5.x, it is a customization that you must deal with on a case-by-case basis, working with the Deltek Services team.

When upgrading to Maconomy version 2.4 a post-expand script must be executed before moving forward.

Postexpand Script

When upgrading to Maconomy version 2.3 or higher, a postexpand script must be executed before moving forward.

To run the post-expand script, enter the following commands:

1. **cd c:\Maconomy\w_20_0.t\MaconomyDir\Database**
2. StartSQLServer2 **myshort myshort ISQLPostExpand.sql c:\Logs\ISQLPostExpand.myshort.log**

> **Warning:** You cannot restart the expand script. If there is an error in the expand script, it will stop. It is therefore VERY important to check if the script has processed all rows. In case of an error the script will stop. After fixing the error, remove the lines above the error and start the script again.

7.2 Create Access Control Views

The access control views ensure that end users only have access to data that they are allowed to see. The access control itself is specified in the Maconomy application. These views are recognized by their name, which is AC<TableName>.

7.2.1 Create DHViews

You use the DHViewMake command to create data access security views for the client. You must run DHViewMake before you update common relations.

To create data access security views for the client, enter the following commands:

1. **cd c:\Maconomy\w_20_0.t\MaconomyDir\Database**
2. StartSQLServer2 **myshort myshort DHISQLViewMake.sql c:\Logs\ISQLDHViewMake.myshort.log**

7.2.2 Detach shortname from the Old Application

Use MConfig to detach the shortname from the old Maconomy environment. MConfig does not touch the database or the original environment. Wait until the upgrade is finished and approved by the customer before you delete the old environment.

To detach the shortname from the old application:

1. Open the old environment using MConfig.

2. Click **Delete** to detach the shortname.

8 Update Business Logic and Components

TIA Consultant

8.1 [Version] Upgrade

Remove the shortname from the old application and attach it to the new application using MConfig (if that is how the transfer of data from the old to the new application is being performed).

8.1.1 Attaching the Shortname

The following commands (in this step and the rest of this document) assume that the application has the shortname attached (so the MaconomyServer.<application> command is available).

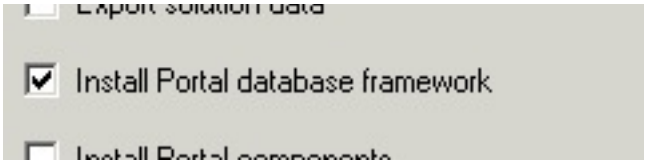
Attention: When attaching the shortname, be sure to install the new Portal database. Otherwise, the step in which you export part of the database for conversion with ModifyExportFile will fail.

Note: If the system that you are upgrading from has a Special.txt file in the MaconomyDir\Analyze folder, the file must be installed in the MaconomyDir\Analyze folder in the new application before new installation numbers are installed.

The Special.txt file contains definitions of special menus, and is needed when generating the Dependencies file. If the file is missing, dialog group assignments in the database for the special menus are automatically removed.

To install the new Portal database and attach the shortname:

1. Select the **Install Portal database framework** check box in the shortname window of the shortname that you are attaching to the new application.



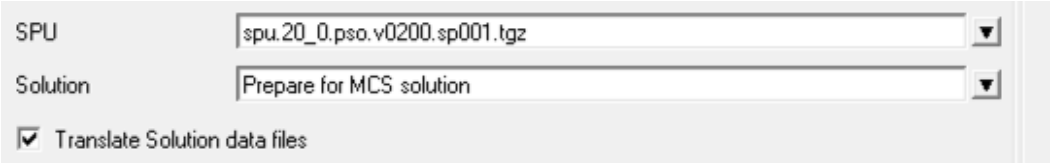
Note: If the shortname is not detached from the old application now, SQL scripts that run using StartSQLServer.cmd, and so on, may fail, so detach the shortname from the old application now.

If the system that you are upgrading from contains a solution, you must specify the right solution and install it when the shortname is attached.

In Maconomy, there is on Custom layer and one Extension layer. This means that adding new customizations or accelerators may overwrite already installed files. This means that the order in which accelerators are installed may be significant.

2. In MConfig go to the Application Instance window and select the SPU and the Solution.

   The following figure shows an example where MCS is selected as solution.



Warning: Be aware that these choices cannot be changed. A wrong selection in this section requires a database restore and a reinstallation of the application.

8.1.2 Create Other Views

Creation of data access security views for ODBC connections is a bit more complicated. First, you must create the views. Then you must add all windows to the Administrator user and recreate the internal relations between View Groups and views. Then you must recreate access to the views from the list of report users. Finally, you must clean up and reinstall the Analyzer views.

You must perform the following commands.

To create other views, enter the following commands:

1. `cd c:\Maconomy\w_20_0.t\MaconomyDir\Database`
2. StartSQLServer2 `myshort myshort ISQLViewMake.sql c:\Logs\ISQLViewMake.myshort.log`
3. StartSQLServer2 `myshort myshort ISQLViewInit.sql c:\Logs\ISQLViewInit.myshort.log`
4. `MaconomyServer.w_20_0.t -f -3 -Smyshort`
5. `Recreate3PStuff myshort myshort MSQL`
6. `MaconomyServer.w_20_0.t -Smyshort --ConvertAnalyzerFiles`

The analyzer views previously deleted are created when running the individual analyzer for the first time; therefore, no special action is needed.

8.1.3 Errors

In the log file for the SQL scripts, errors like the following occur, which is normal.

```
Cannot drop the view '*', because it does not exist in the system catalog.
```

Check the log file for errors related to CREATE VIEW statements. Errors are not allowed when these statements are processed.

8.2 Update Common Relations

This phase ensures that certain global relations that describe the relations and fields in the database contain the correct data. This data depends on the application version only, and is therefore updated during the upgrade procedure.

The command UpdateFieldsAndRelations imports the tables DatabaseField and DatabaseRelation from Newdb.dbd. Run this script as the maconomy user.

8.2.1 Field Length Verification

When using SQL Server you must run ISQLEnsureTypes.sql first to make sure that indexes created in this step do not get too long.

To ensure that indexes do not become too long:

1. Enter the following commands:

   ```
   cd c:\Maconomy\w_20_0.t\MaconomyDir\Database

   StartSQLServer2 myshort myshort ISQLEnsureTypes.sql
   c:\Logs\ISQLEnsureTypes.myshort.log
   ```

2. Check the log file for errors before continuing with the next steps. Note, however, that the following error messages can be ignored:

   ```
   The total row size (20322) for table '*' exceeds the maximum number of bytes
   per row (8060). Rows that exceed the maximum number of bytes will not be added.
   ```

   and

   ```
   Warning: The table '*' has been created but its maximum row size (19497)
   exceeds the maximum number of bytes per row (8060). INSERT or UPDATE of a row
   in this table will fail if the resulting row length exceeds 8060 bytes.
   ```

8.2.2 Update Common Relations

To update common relations for all platforms, enter the following command:

1. `UpdateFieldsAndRelations.<application> <shortname> <password> -NC`

   No errors may occur.

> **Warning:** This step may take a long time because it creates instance keys and constraints after importing new field and relation descriptions. **Do not cancel it under any circumstances as the step is not repeatable and if killed mid execution will require the upgrade to be restarted or at the very least the Database would have to be restored from a backup prior to the execution of this step if such a backup exists.**

To test for a successful completion, enter the following command in an interactive SQL session or in SQL Server Management Studio:

```
select RELATIONNAME from DATABASERELATION where INTERNALRELATIONNAME =
'Account';
```

The result should be expressions in the enterprise language of the system (the language of all fixed texts stored in the database, such as names of system parameters, and so forth). Be sure that UserLanguage in Maconomy.ini is set to the company's enterprise language.

8.2.3 Create Database Objects

To create indexes and other database objects,

1. Run the following commands:

   cd c:\maconomy\bin

   MaconomyServer.<application>.cmd -S<shortname> --IndexScriptFile “idxm.secondary.msql.txt”

cd c:\maconomy\tmp

StartSQLServer1.cmd <shortname> <password> createScript.txt > c:\Logs\createScript.log

Once executed, check the log. There may be errors concerning objects that cannot be created because they already exist. You can ignore those errors. Other kinds of errors should be investigated.

Notes: There is a post upgrade duplicate cleanup step that will clean up duplicated indexes.

On large databases, the creation of Database Objects typically runs for a long time.

Warning: Executing idxm.secondary.msql.txt via MaconomyServer may produce errors like these:

Error: Index FINANCEENTRY01 found in hints files cannot be found in the database

Error: Index INVOICETRANSFERJ01 found in hints files cannot be found in the database

These errors are meant to inform you of missing database objects. Note that the resulting createScript.txt file will have the required statements to create the missing objects.

8.3 Reinstall Standard Layouts for all Platforms

To reinstall standard layouts:

1. Type the following commands:

   ```
   cd c:\Maconomy\w_20_0.t\MaconomyDir\MSLScripts
   MaconomyServer.w_20_0.t -Smyshort -xRemove_Old_Layouts
   ```

2. Run the MaconomyServer command with the –UW –UP options to reinstall the standard layouts that were deleted earlier.

   The –UW option will return errors because the layer functionality is removed.

3. Type the following command to reinstall standard layouts:

   ```
   MaconomyServer.w_20_0.t –Smyshort -UW –UP
   ```

Warning: You should not install the layouts until after the conversion of exported data, and you must import them before running the MSL script to convert data, so you should install them in this step.

When you upgrade Maconomy, new versions of layouts are installed. If you do not install the solution because it is no longer in the release, there may not be a new version to install. See the Deltek Maconomy 2.5.x Release Notes for details.

8.4 Convert the Portal Database

To upgrade the Portal database, complete the following sets of steps (replace the base and target application main version numbers accordingly):

```
update Component
set Callbackscript = replace(Callbackscript, 'W_12_0', 'W_20_0')
where Callbackscript like '%W_12_0%';
update Maconomywindow
set SpecFileName = replace(SpecFileName, 'W_12_0', 'W_20_0')
where SpecFileName like '%W_12_0%';
update MScriptComponent
set Mscriptfilename = replace(Mscriptfilename, 'W_12_0', 'W_20_0')
where Mscriptfilename like '%W_12_0%';
update Pdmcomponent
set Configurationfile = replace(Configurationfile, 'W_12_0', 'W_20_0')
where Configurationfile like '%W_12_0%';
update Pdmcomponent
set Tabfunction = replace(Tabfunction, 'W_12_0', 'W_20_0')
where Tabfunction like '%W_12_0%';
```

Note: In rare cases, the letter W in the version name can be lowercase. For those situations, replace **W** with **w** in the preceding queries, and continue.

8.5 Convert Data to the New Version

The purpose of the Convert_Data.* MSL scripts is to update the database with the appropriate information for the new version. This can include entering required data in new fields and/or relations or calculating the values of specific fields.

You can restart Convert_Data; that is, if it stops because of an error, you can fix the error and then restart the program.

In Maconomy version 16 ServicePack 2 the enterprise languages were changed. You therefore update the current enterprise language to match the ones that are available in the new version.

To update the current enterprise language to match those that are available in the new version:

15. Run the following MConfig command:

    ```
    c:\PUs\MConfig-8.15.exe -r
    c:\maconomy\tpu.NTx86.20_0.p100.dir\MConfigScriptlets\ChangeToIsoLanguage.mcp
    w_20_0.t myshort myshort en_US
    ```

    In the preceding example, the enterprise language US is changed to en_US.

The output looks like the following:

```
MConfig will run the MCP-Scriptlet
'c:\maconomy\tpu.NTx86.20_0.p100.dir \MConfigScriptlets\ChangeToIsoLanguage.mcp'
-----------------------------------------------------------------------
c:\maconomy\tpu.NTx86.20_0.p100.dir\MConfigScriptlets\ChangeToIsoLanguage.log
Setting enterprise language to en_US for application w_20_0.t
Updating registry for application w_20_0.t
Updating Maconomy.ini
Updating database
-----------------------------------------------------------------------
Script done.
You may now close the window.
```

Before you run Convert_Data, check that the UserLanguage chosen in Maconomy.ini is the same as the Enterprise language of the installation, that is, the language for fixed texts that are stored in the database. You do this by running the CheckEnterpriseLanguage MSL script.

You must drop user-created statistics for Convert_Data to run; you can recreate these statistics after the script finishes.

To check whether there are any user-generated statistics and drop them before running Convert_Data, complete:

1. Type **`SELECT count(*) FROM sys.stats WHERE user_created = 1;`**

   If user-generated statistics exist, type the following to generate the required drop statements.

2. **`SELECT 'drop statistics ' + OBJECT_NAME(OBJECT_ID) + '.' + name + ';' FROM sys.stats WHERE user_created = 1;`**

All Platforms

```
cd c:\Maconomy\w_20_0.t\MaconomyDir\MSLScripts
MaconomyServer.w_20_0.t -xCheckEnterpriseLanguage -Smyshort
```

In general, MSL scripts might ask for input when run.

```
Variable to change ($ to list all, <return> to continue, $$ to exit)
```

If you are prompted for this, press **Return** to continue.

If the script completes without errors, the language setting is correct; otherwise, you must change it to the Enterprise language.

Four new variables are introduced in Convert_data.

16. AllowIndexCreationVar — Boolean. Default value 1 (or true)

    This variable indicates whether it is allowed for Convert_data to create needed indexes during the conversion.

17. TableSpaceNameVar:String — Default value ‘ ‘

    If AllowIndexCreationVar is true this variable specifies the table space for index creation.

18. OracleDataBaseVar: Boolean — Default value 0 (or false)

    This variable specifies whether the database is Oracle or SQL Server. The default is SQL Server.

19. TransactionTypeInitializationVar — Boolean. Default value 0 (or false)

    This variable specifies whether the optimization described in Unicode Conversion is performed. Convert_data checks the change in the expand script anyway.

Prior to running data conversion, the following constraint must be created either by using SQLCMD or SQL Server management studio:

ALTER TABLE DATABASERELATION ADD CONSTRAINT IKDATABASERELATION UNIQUE(INSTANCEKEY);

Start Convert_Data by using the following commands.

All Platforms

```
cd c:\Maconomy\w_20_0.t\MaconomyDir\MSLScripts
MaconomyServer.w_20_0.t -xConvert_Data_From_9.0 –Smyshort
```

> **Note:** The script may display lines that state that it is converting, for instance from 9.0 SP 5 to X, while the application installed is on, for instance, X1 SP 2. This is expected behavior, and these conversion steps will be skipped quickly.

To check the data conversion status manually:

20. Enter the following command:

```
select DATACONVERSIONSTATUS from SYSTEMINFORMATION;
```

If no language is specified in Maconomy.ini, the default language of the Maconomy version is selected (US). If in doubt about the enterprise language, select some fixed texts from the database.

```
select DESCRIPTION from SYSTEMPARAMETER where INTERNALNAME < '@B';
```

This should print some texts that are all in the enterprise language. If you are changing the setting for UserLanguage, remember to set it back after you run Convert_Data.

> **Note:** On large databases this script typically runs for a long time.

8.7 Clean Up Duplicate Indexes

This step ensures that, after the upgrade, the Maconomy database does not contain duplicate indexes.

To clean up duplicate indexes:

1. Copy duplicate.clean.msql.txt from

   Upgradekit\dbmSripts\msql directory

   to

   maconomy bin folder (usually c:\maconomy\bin)

2. Execute these commands (paths assume locations listed in previous steps):

   cd c:\maconomy\bin

   MaconomyServer.<application>.cmd -S<shortname> --IndexScriptFile “duplicate.clean.msql.txt”

   The above procedure creates a file in c:\maconomy\tmp named drop.duplicates.txt.

3. Confirm that the file is created. If it is not empty, run these commands:

   cd c:\maconomy\tmp

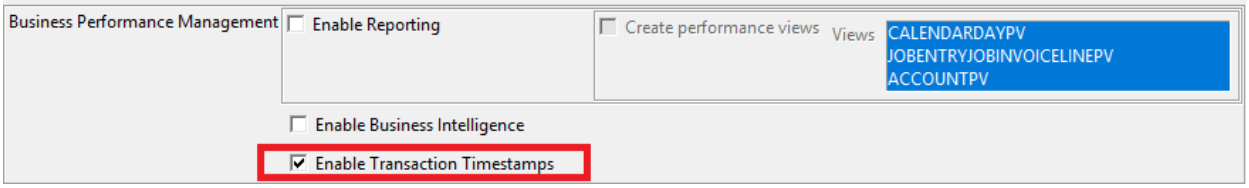
   StartSQLServer2 <shortname> <password> drop.duplicates.txt > C:\logs\dropDuplicates.log

8.8 Create TimeStamp Triggers

At this stage, timestamp triggers must be recreated if the application uses them.

To recreate timestamp triggers:

1. Using the the shortname window in MConfig, select the **Enable Transaction Timestamps** checkbox:



1 Validate Custom Components

TIA Consultant

All standard components are now upgraded, but there may still be customized layouts and Portal components that need to be validated by the new Maconomy version.

1.1 Validate Layouts

Modified layouts might need adjustments in the new application version if the following conditions are true:

- Database fields have been removed or renamed.
- Variables have been removed or renamed.
- Cursors have been removed or renamed.
- New mandatory fields have been added.
- The structure of a print layout's parent layout has changed.

Most of the possible problems (renamed fields and relations) should have been handled in the step that converts the database export files that also contain the layouts, so layouts should not fail to validate because of name changes.

However, you must still perform a validation of all modified screen and print layouts against the new application. You perform screen layout validation on the server only—there is no way to validate screen layouts from the Windows client.

You perform print layout validation on the server or from a Maconomy Client.

You must convert all layouts to MPL4. For custom layouts, you do this by running a Java script before importing them. The Java Runtime Environment is part of the TPU.

1.1.1 Screen Layout Validation on the Server

To validate all screen layouts for all platforms, enter the following command:

```
MaconomyServer.<application> -S<shortname> -UVW
```

This process validates all of the modified screen layouts in the database for the selected company.

1.1.2 Print Layout Validation on the Server

Run the following command to validate customized print layouts.

You can find the MPL3to4MigrationTool.jar tool in the TPU\JavaMPL directory. If you see the MPL3MigrationTool.jar file instead, you should be using a newer TPU. The MPL3to4MigrationTool.jar tool converts MPL 3 layouts to MPL 4. Any MPL 1 or MPL 3 layouts remain untouched.

To validate customized print layouts for all platforms, enter the following commands:

1. `c:\maconomy\bin\MaconomyServer.w_20_0.t -Smyshort –UEW`
2. `c:\maconomy\bin\MaconomyServer.w_20_0.t -Smyshort –UIW`
3. `c:\maconomy\bin\MaconomyServer.w_20_0.t -Smyshort –UVW`

4. `c:\maconomy\bin\MaconomyServer.w_20_0.t -Smyshort –UEP`
5. `c:\maconomy\tpu.NTx86.20_0.dir\jre\win32\x86\bin\java.exe -jar MPL3to4MigrationTool.jar --dir /data/maconomy/w_20_0/MaconomyDir/ExportedLayouts/`
6. `c:\maconomy\bin\MaconomyServer.w_20_0.t –Smyshort –UIP`
7. `c:\maconomy\bin\MaconomyServer.w_20_0.t –Smyshort -UVP`

1.2 Create Constraints

This step introduces consistency constraints that are checked by the database system during use.

1.2.1 Instance Keys

`c:\maconomy\bin\MaconomyServer.w_20_0.t –UC –Smyshort`

1.2.2 Other Constraints

To recreate SQL Server specific constraints, enter the following commands:

1. Run the following commands:

   Cd c:\maconomy\bin

   MaconomyServer.<application>.cmd -S<shortname> --IndexScriptFile “consmCreate.msql.txt”

   cd c:\maconomy\tmp

   StartSQLServer2 <shortname> <password> creCons.txt > C:\logs\creCons.log

1.3 Install and Upgrade the Portal

If you use the Portal, you must upgrade it to the newest Portal version. You use MConfig to install the new Portal that belongs to the upgraded application and run some scripts and tools to ensure that the sure the database is converted properly. In addition, you must upgrade customized files; however, the process for doing that is not covered in this document. The following information describes how to update the Portal.

In Maconomy, there is *one* Custom layer and *one* Extension layer. This means that adding new customizations or accelerators may overwrite already installed files. This means that the order in which accelerators are installed may be significant.

In the early PSO solutions, industry accelerators were considered customizations and treated as such; that is, they were installed in the custom layer on both the Maconomy server and the web server. This means that “standard” customizations are potentially mixed with “true” customizations.

Since PSO 1.4, industry accelerator files have been installed in a separate Extension layer.

In both cases, Portal components from accelerators are still marked as “not standard” in the Portal Designer.

When upgrading a system from a PSO solution prior to 1.4, you can take **one** of two possible paths for the upgrade:

- Keep the entire custom layer “as is” or

- Remove the accelerator parts and keep only true customizations

If you choose the first option, you should transfer all of the files in the custom layer to the new application both on the Maconomy server and the web server. Going forward, anything that is in the custom layer will be treated as true customizations. No service packs will be released supporting accelerators on the custom layer, and they may hide updated layouts and configurations in the extension layer released in later service packs.

If you choose the second option, the procedure for removing accelerator files from the custom layer depends on the previously installed industry accelerator. You should include this in the upgrade of customizations, which is not covered by this document.

1.3.1 Install the Web Server and Portal

You must install the new web server and the Portal for the new application, using MConfig.

To install the web server and Portal:

1. In MConfig, use the Web Products screen to set up web products for the application.
2. Select Install Portal database in shortnames and Install Portal components in shortnames.

> **Note:** Be sure to force the import of Portal components and upgrade of the database schema for the shortname in question.

3. Select **Install Unconditionally** in **(Re)Install Application component files**.
4. If you are installing industry accelerators, select the first accelerator in **Custom Portal files directory**.
5. Click **OK** in the main screen to install.
6. Repeat for each accelerator.

1.3.2 Install Maconomy Server Industry Accelerator Files

You can install the industry accelerators that are supplied with the PSO SPU by using the data import feature in MConfig:

To install the industry accelerators that are supplied with PSO SPU:

1. Access MConfig.
2. On the shortname screen, select **Solution Setup Data (import only)** in **Load shortname data**.
3. In **Data configuration options**, select the appropriate industry accelerators and select **Accelerator Runtime Files Only**. This installs files—but no data—in the database.

> **Note:** For third-party accelerators, select **IA.<Accelerator Name> (Import Only) in Load shortname data**. See the documentation for the accelerator for data configuration options, and verify that the upgrade without import option is supported.<Replace text>

1.3.3 Set Up the Portal Components

You can install updated versions of solution and industry accelerator components if appropriate. This may be necessary when upgrading from a “native” solution to a PSO solution or when upgrading from a pre-PSO1.4 solution if the “custom” industry accelerators are exchanged for the new standard accelerators.

Use the Portal Designer import features to install updated versions of solution and industry accelerator components, using **one** of the following methods:

- Inside the Portal — Open the Portal Designer » Import / Export component, choose Import, and select the files to be imported.
- From the command line — Type the following commands:

```
cd C:\maconomy\WebServers\<application>\cgi-bin\Maconomy

MaconomyPortal.<shortname>.en_US.exe -e -q
"filename=solution_module_comps.xml&username=Administrator&password=123456&impo
rttype=components" Framework/import/importportal.ms
```

Note: If you import from the command line, you must copy the import files to a location that the web server can see, for example, C:\WebServers\Production\MaconomyPortal.

The files to be imported are located in ‘c:\maconomy\w_20_0.t\Portal\Installation’ on Windows. Component definitions and default role setup and menus are available.

Import files for industry accelerators are located in c:\maconomy\<application>\IA.<Industry Accelerator>\Portal\Installation’ on Windows.

1.3.4 Validation of Portal Components

You must manually validate the customized Portal components for the upgraded Portal and database schema.

To manually validate customized Portal components, complete the following steps, using the Portal Designer:

1. Choose the component.
2. Click **Update** without changing anything.

If you have a large number of components to validate manually, it is easier to export all of the components using the Portal Designer export menu and then import the components again. Importing also performs the validation. You must export and import after the upgrade—exporting before the upgrade and importing after can cause unpredictable behavior.

You can also export component definitions using the command window. In the following example the web server is a Windows server, and the home directory for the web server is C:\maconomy\WebServers\<application>\’.

Example: Export the component definition

```
cd C:\maconomy\WebServers\<application>\cgi-bin\Maconomy

MaconomyPortal.<shortname>.en_US.exe -e -q
"filename=Maconomy2_1.portal_comps.xml&username=Administrator&password=123456&exportty
pe=components" Framework/export/exportportal.ms
```

The export file is located in:

```
C:\maconomy\WebServers\<application>\MaconomyPortal\Maconomy2_1.portal_comps.xml
```

Example: Import and validate the components

```
MaconomyPortal.<shortname>.W.exe -e -q
"filename=Maconomy2_1.portal_comps.xml&username=Administrator&password=123456&importty
pe=components" Framework/import/importportal.msselect
```

2 Post Upgrade Tasks

TIA Consultant

This section covers various cleanup tasks and items to check once the main upgrade process is complete and before allowing users onto the new Maconomy application

2.1 Recreate BPM Objects

Note: This section is only relevant if the original system has BPM.

To recreate all BPM-related database objects, use the Business Performance Management section in the shortname window in MConfig. At this point in the upgrade process, all of the check boxes in the BPM section should be unchecked. To recreate all BPM database objects, select the relevant values and proceed with the installation.

Warning: Skipping this step results in the database containing invalid BPM objects that do not match the upgraded schema.

2.2 Clean Up

After you have installed a new version you should make sure that no users can connect to the old Maconomy application version. You can decide to completely remove the old version or just to disable it (by changing the port number). Deltek recommends that you remove the version completely using MConfig.

2.3 Logging of Database Requests or Updates

Application Consultant

If “Advanced Logging” is used (add-on 32 and/or 33 is active) in the original Maconomy application, you must migrate it to the new Maconomy application after the upgrade.

To migrate Advanced Logging to the new application:

1. Check that the following names of tables and columns in the specification files are still valid after the upgrade:

   .../MaconomyDir/Definitions/RequestLog.cnf

   and

   .../MaconomyDir/Definitions/UpdateLog.cnf
2. Correct the names if necessary.
3. If a specification file is modified it must be stamped by HQ-Distribution (HQ-Distribution@deltek.com).

2.4 Disable Maintenance Mode

TIA Consultant

At this point, the Maconomy application should be put out of maintenance mode using MConfig. Putting the system out of maintenance mode will re-enable background tasks.

To disable Maintenance Mode:

1 Go to the Application window.

2 Deselect the **Maintenance Mode** field.

Appendix: Error Messages

There are two distinct groups of errors that you may run into during an upgrade:

- ORACLE ERRORS TYPICALLY RELATED TO ROLLBACK SPACE
- MACONOMY ERRORS TYPICALLY RELATED TO CONVERTDATA

Check Fatal Error

If you get a Check Fatal error, call Deltek Support.

About Deltek

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