Microsoft Dynamics NAV 2013 Installation and Deployment New Features

Module: Upgrading to Microsoft Dynamics NAV 2013

Microsoft

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Module 1: Upgrading to Microsoft Dynamics NAV 2013

This module discusses how to upgrade a custom solution from a previous version to Microsoft Dynamics NAV 2013.

Before You Begin

Before starting this module, you should:

- Have access to both a Microsoft Dynamics NAV 2009 installation and a Microsoft Dynamics NAV 2013 installation

What You Will Learn

After completing this module, you will be able to:

- Upgrade a demo database to Microsoft Dynamics NAV 2013

Lesson 1: Doing a Platform Upgrade

This lesson explains how to update the platform and make the necessary changes to the application objects to let them run in Microsoft Dynamics NAV 2013. This is a pre-requisite before it is possible to do an application upgrade.

What You Will Learn

After completing this lesson, you will be able to:

- Do a technical upgrade

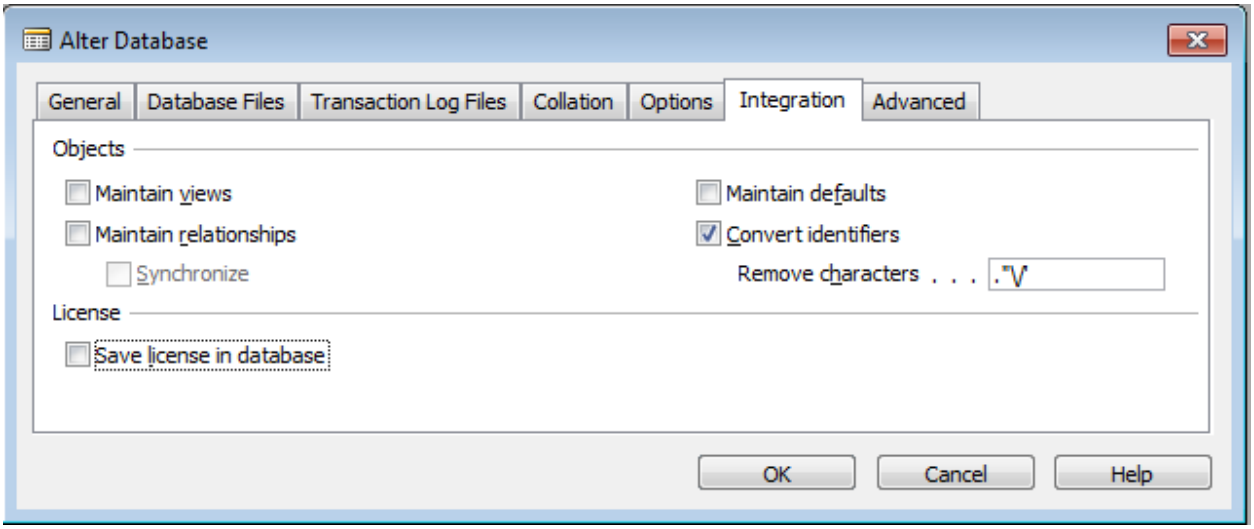
Preparations

Prepare the database

Open the database to be upgraded with an old version (Microsoft Dynamics NAV 2009). If either of these options have been enabled, then disable them, since the upgrade tool is not able to handle these options:

- Maintain views
- Maintain relationships
- Maintain defaults

All options are under **File** > **Database** > **Alter**:



Then run a database test (**File** > **Database** > **Test**), and compile all objects. The purpose of this is to check if there are any known issues in the database already. So if there are any

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issues after the upgrade it is known whether they existed before, or were created during upgrade.

Tip: On the Database Test screen, set Options to log any errors to either Event Log or to a File, to prevent each and every error for popping up on the screen. Therefore, you also have a log of errors that existed when you ran this database test.

Be sure to have a SQL Server 2008 or later. Microsoft Dynamics NAV 2013 does not run on SQL Server 2005, or on SQL compatibility level 90 or earlier.

Still in Microsoft Dynamics NAV 2009, delete all forms and dataports.

Convert the database

1. Open the database in Microsoft Dynamics NAV 2013 and say **Yes** to convert it.
2. Removing all references to forms:
    a. Export all objects as txt. Run TextFormatUpgrade2013.exe like this:
        - TextFormatUpgrade2013.exe AllObjects.txt

          Or
        - TextFormatUpgrade2013.exe c:\upgrade\
3. To run it on one file, or all files in the specified folder.

   See TextFormatUpgrade2013.exe.config for rules of that this does. For example:
    - <rule pattern="\bFORM.RUN(?=(MODAL)?\()(?=(?:(?:[^']*'){2})*[^']*\z)" replacement="PAGE.RUN" caseSensitive="false"/>
    - <rule pattern="(?<=\W)RunFormLink(?=\W)(?=(?:(?:[^']*'){2})*[^']*\z)" replacement="RunPageLink" caseSensitive="false"/>

Import the resulting file as txt, and then recompile all objects.

Tip: Instead of running this step on all objects it might be quicker to run it by object type. In that way if any errors occur during this step, it has to be repeated only for the current object type and not for every object.

Compiling object will likely throw a number of errors. Note that any object that did not compile successfully is shown as Marked in the Object Designer. Filter on **View** > **Marked Only** and design each uncompiled object and resolve any problems.

Why do so many objects not compile?

The previous tool (TextFormatUpgrade2013.exe) has removed any references to form and dataport objects. However, it may not have been able to remove every line of C/AL code that was using those objects. For example, Table 36 has lines of code like this:

```
ShowDocDim()
DocDim.SETRANGE("Table ID",DATABASE::"Sales Header");
DocDim.SETRANGE("Document Type","Document Type");
DocDim.SETRANGE("Document No.","No.");
DocDim.SETRANGE("Line No.",0);
DocDims.SETTABLEVIEW(DocDim);
DocDims.RUNMODAL;
GET("Document Type","No.");
```

The variable DocDim refers to table "Document Dimension". However, the variable DocDims used to refer to the variable of type Form "Document Dimensions". This variable is now deleted. To resolve this particular issue, create a new local variable names "DocDims" of type Page, subtype "Document Dimensions".

In a real upgrade scenario, this problem will not exist because one of the steps is to import all Microsoft Dynamics NAV 2013 objects, replacing existing ones.

Tip: In a standard upgrade, the TextFormatUpgrade2013.exe tool is not needed at all because you will import Microsoft Dynamics NAV2013 objects, replacing existing objects.

Tip: For this step, open a copy of the database in Microsoft Dynamics NAV 2009 so that you can see for each object what variables and C/AL code it used to have.

Tip: You can copy a whole variable of type Form from Microsoft Dynamics NAV 2009 into Microsoft Dynamics NAV 2013. In Microsoft Dynamics NAV 2013, it will automatically be pasted as a page, and not a form.

Other things to upgrade:

Client Extensibility add-ins must be recompiled with the new version of Microsoft.Dynamics.Framework.UI.Extensibility.dll

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Lesson 2: Upgrading application objects

This lesson explains how to upgrade application objects to Microsoft Dynamics NAV 2013

What You Will Learn

After completing this lesson, you will be able to:

- Upgrade application objects
- Run the upgrade tool

Introduction

Upgrading application objects works with merging of the following three versions into the new Custom version.

- The Old Base Version - This is a standard version of the Microsoft Dynamics NAV 2009 database.
- The Old Custom Version - This is the customer's current database including their changes and add-on solutions.
- The New Base Version - This is a standard version of the Microsoft Dynamics NAV 2013 database.

This work will be done on a development system. Once the new Custom version is complete, it gets exported as a .fob file to get imported into the customers database. While this work happens, the customer can continue working as usual on their current system.

The new Custom version is made by comparing the old Base version against the old Custom version and then applying any changes to the new base version. Alternatively, if the customer's version is highly customized, compare the new base version with the old base version and apply any changes there to the old custom version.

The amount of work required for this step entirely depends on how much the customer's system has been customized.

For comparing files, export all objects as txt and then use any file comparison tool. Currently there is no such tool available from Microsoft.

When working with files as .txt then a development license is required which has access to the objects that are being worked with. With a partner's license this is not a problem. The exceptions are:

- For example a UK partner with a UK license upgrading a DE customer. The UK license will not have permissions for the objects in the DE range.

- A partner upgrading a customer who bought an add-on from another partner. The partner who performs the upgrade may not have permissions for the add-on objects.

Upgrading data

The upgrade tool on the product CD contains a folder called "Data Conversion Tools". This is what is most often referred to as the "Upgrade Tool". The purpose is to handle any data that has to be converted. This happens if table structures have changed. Then the existing data may not fit with the new tables. In this case, the upgrade tool must move the existing data into a safe place, and then after all objects have been upgraded, move the data back to where it has to fit in the new objects.

The upgrade tool has two .fob files: Step 1 and Step 2.

- Step 1 is designed to run under the current table structure.
- Step 2 is designed to match the upgraded table structure.

Therefore, as a rule, Step 1 will run in the old version, and Step 2 will run in the new version. If you import a .fob into the "wrong" version, it may not even compile.

Example:

The upgrade tool contains these two files:

- Upgrade601700.1.fob
- Upgrade601700.2.fob

The first one should run in Microsoft Dynamics NAV 2009. The second one in Microsoft Dynamics NAV 2013.

Step by step

Once, all objects have been upgraded to the new version, the upgrade takes place in these steps:

1. Open the database in the new version of C/SIDE (after performing any pre-requisite steps like deleting all forms and dataports).
2. Import and run Step 1 from the upgrade tool.
3. Delete all objects except tables.
4. Import all objects for the new version.
5. Import and run Step 2 from the upgrade tool.

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Upgrading security

Security has been re-designed completely. Instead of Roles, we now have "Permission Sets". To upgrade permissions, these two XML Ports are part of the upgrade tool:

- 104001, Import/Export Roles
- 104002, Import/Export Permissions

Use them to export permissions, then modify and update them and then import them back into the new security tables.

Troubleshooting

Upgrading can have a number of potential issues, here are some of the common ones:

- It takes a long time to convert the database
- It takes a long time to run the data conversion tool
- It converts data wrongly

The database conversion does a number of functions including converting text data to Unicode, which can take a long time. If conversion does not make any progress, run sp_who2 on SQL Server to see if the session doing the conversion is active, or if it is idle (frozen) or blocked.

The Data conversion tool includes a Time Log. This will show which particular function in the upgrade tool is taking a long time. The Upgrade Tool, both step 1 and step 2 is structured with a lot of functions, each individual function performing one specific part of the upgrade. The time log will show which specific function is taking (too) long, and then the C/AL code in that function can be investigated.

For wrongly converted data, also begin by locating the function that would be responsible for the area of where data has been converted incorrectly, and then investigate that function.

Lab 1: Upgrade Microsoft Dynamics NAV 2009 to Microsoft Dynamics NAV 2013

During this lab session, you will complete **Lab #: Exercise(s) # - #** in the Lab Manual that accompanies this course. Refer to your Lab Manual for instructions to complete the exercise(s).

Estimated time to complete the exercise(s): 60 minutes

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