How to insert data into a Database

1) Short introduction

The configuration concept of Softing dataFEED OPC Suite is mainly based on so called data sources and data destinations.

The different data source functionalities are responsible for building up the local namespace of the corresponding local dataFEED OPC Suite applications. This local namespace is organized in the form of an item tree with nodes, tags and properties as elements.

The different data destination functionalities use already existing data items from the local namespace – they do not introduce any data items to the local namespace.

Note: Data Source and Data Destination do not define a data flow direction. These terms only serve to indicate who is responsible for defining data items and who uses these already defined data items. In fact, the actual data flow is normally bidirectional, i.e. an OPC client would be a typical data destination using data items from the local namespace – however it generally can read from and write to these data items.
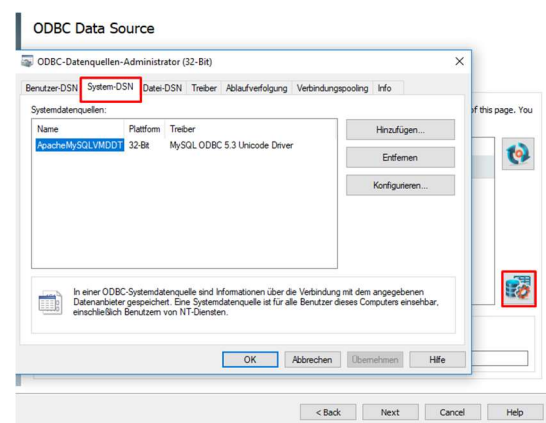
This manual only refers to a Database connection. We explain how to insert Data into a Database and check the insert statement. And to read Data from a database, which is then made available to the Data targets.

Further information on the configuration options can be found in our Help menu of the the DF Suite.

2) What is an ODBC driver

ODBC (Open Database Connectivity) is a standardized, open interface for accessing different database management systems. Via ODBC drivers, applications can directly issue instructions to databases or execute queries.

The ODBC driver is not installed with the dataFEED and must be installed for the respective database itself.

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The DataFEED is a 32 bit application, the ODBC driver must also be 32 bit.

Most database vendors also provide ODBC drivers for their databases.

In the dataFEED you can open the Windows ODBC data source manager with the button (Open the Windows ODBC Data source Manager). The ODBC driver must be created as a system DSN.symbol import is no longer required (This means you need no sdfi File). You can browse the data directly.
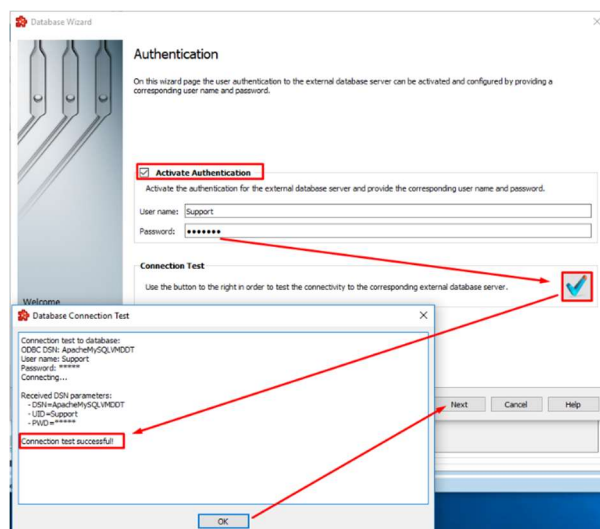
3) Insert Data into a Database
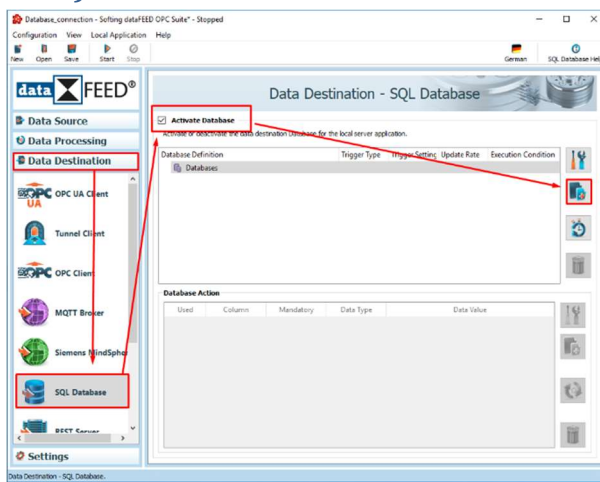
Start the dataFEED OPC Suite and select "SQL Database" as data destination. Activate the option "Activate Database" and create a new connection.
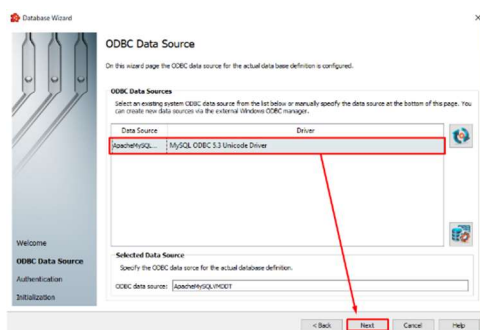
Select the ODBC Driver which is connected to the correct Database.

Press "Next" to confirm the entries.

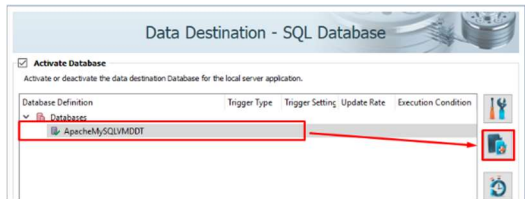Activate the option "Activate Authentication" and fill in Username and Password.
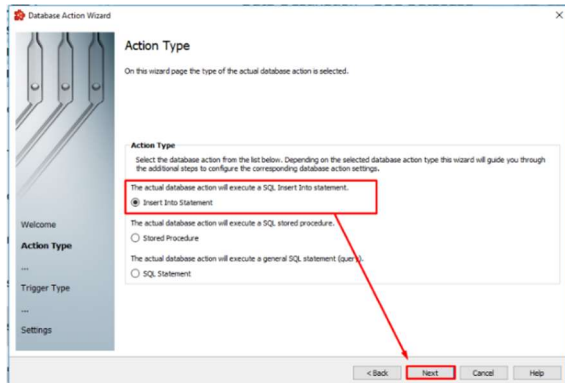
Then check the connection to the database.

Press "Next" to confirm the entries.

You can leave the "Initialization" default for now.

Press "Finish" to confirm the entries.

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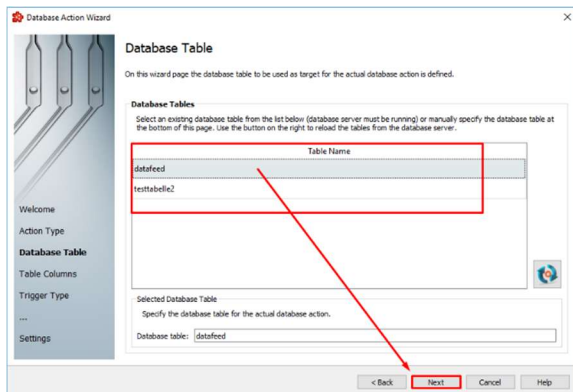Web: www.data-intelligence.softing.com

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Select the Database connection and add a new database action

In this tutorial we set up an insert into statement, but it is also possible to connect to a stored Procedure or write your own SQL Statement.

Select "Insert Into Statement" and press "Next" to confirm the entries.

Select exactly the table of the database in which the data should be insert.

Press "Next" to confirm the entries.
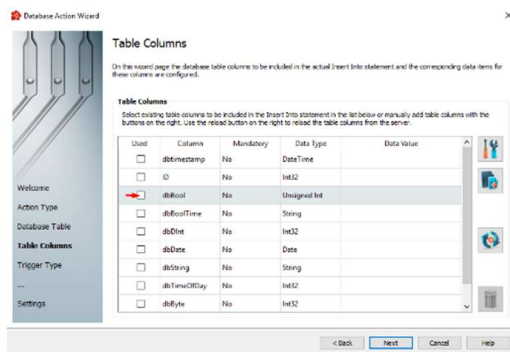
Here you can see the columns of the selected table. Now you can link which item (data source) is to be written to which column. Not all of them have to have a link, some can remain empty. It is not possible to write two items in the same column.
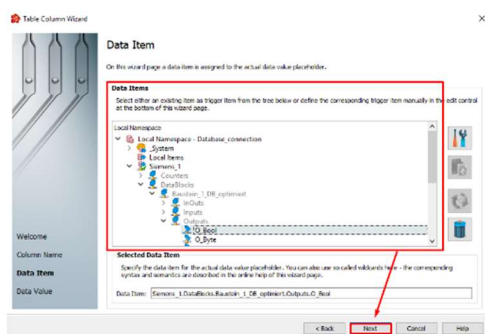
A window will then open in which you can select the item to be written in this column.

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Specify what you want to write from this item to the database column. The default settings are enough for a first test.

Press "Finish" to confirm the entries.

If all data and the columns are linked together, which should be written into the database one database command, then press "Next".

Configure when the database action should be executed. A timer trigger is useful for a first test.

Press "Next" to confirm the entries.

Press "Add timer Trigger" to create a new trigger that is then triggered cyclically.

First you have to give your trigger a name.

Then you need to choose which type of timer you want. I recommend you to configure an interval trigger.

Afterwards you have to define the time interval how fast the trigger should trigger again. The default settings are sufficient for a test.

Now a trigger is listed in the list select it and continue by pressing "Next".

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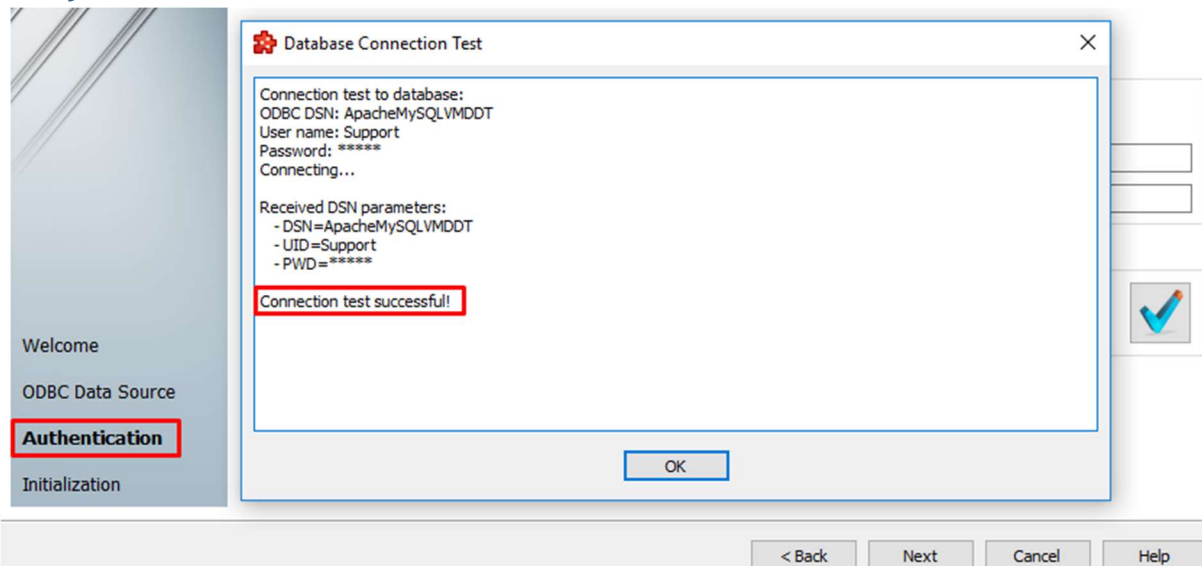Version: 1.0
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At the "Action Settings" you can make further settings, which are however sufficient as default for the time being.

Press "Finish" to finish successfully.

Now a database action with trigger is listed here.

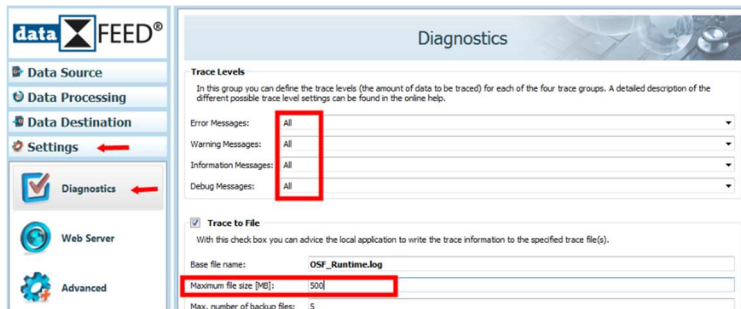Start the DataFEED to execute the configuration.

4) Check the connection to the Database

Please always check first if the DataFEED can connect to the database using the ODBC driver. This means authentication and general access to the database.
Some ODBC drivers also require authentication settings to log on to the database, some even offer a connection test.

Whether data arrive in the database and are successfully stored must be checked in the database itself.

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5) Find a fault by using the Logfile

If there are problems with insert action. It is useful to check in the Logfiles what is written there.

To get useful logfiles please proceed step by step as described:

1) Set the logger as shown in the picture (Trace Level to All and File size to 500MB)
2) Restart the configuration
3) The trigger must trigger (You would have expected data to be written to the database now.)
4) Stop the configuration (This is very important because the Log file is close now)
5) Under the following path you can find log files:
   C:\ProgramData\Softing\dataFEED OPC Suite\<name of your configuration>
6) OSF_Runtime_currentA & B are always the current log files
7) Open the files and use the search option (Strg +F) and search for the key word from your SQL statement (like insert)

8) Normally you should now find a line in which the DataFEED passes a statement to the ODBC driver and the driver should execute it.
   a. If you do not find such an executed statement, no database action has been triggered.
      i. Please check your trigger settings.
   b. If the ODBC driver outputs an error, it is logged one line below it.
      i. Is the ODBC driver compatible to the database?
      ii. Please check your ODBC driver and the connection ODBC to database.
   c. It also makes sense to copy this statement (but only the statement you read here) into the command line of your database. Then try to execute it there directly. Is there the same effect as when DataFEED tries to write to the database?
      i. Please check the statement correct.
      ii. Please check the Database configuration correct.
9) When you have fixed and tested the problem please reset the logger settings to default because if it runs full it can sometimes lead to performance problems.
   (Trace Levels All, All, DCC_CLT_Plugin, Nothing and Max file size to 50)