

How to read data from a Database

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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 and write data items.

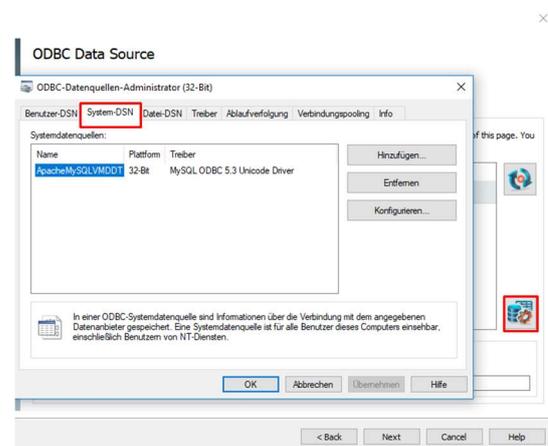
This manual only refers to a Database connection. In this “how to” we read some Data from a Database and provide them via OPC Classic. It is also possible to write them in a PLC or use another Data destination from the DataFEED SPC Suite.

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

2) What is an ODBC driver

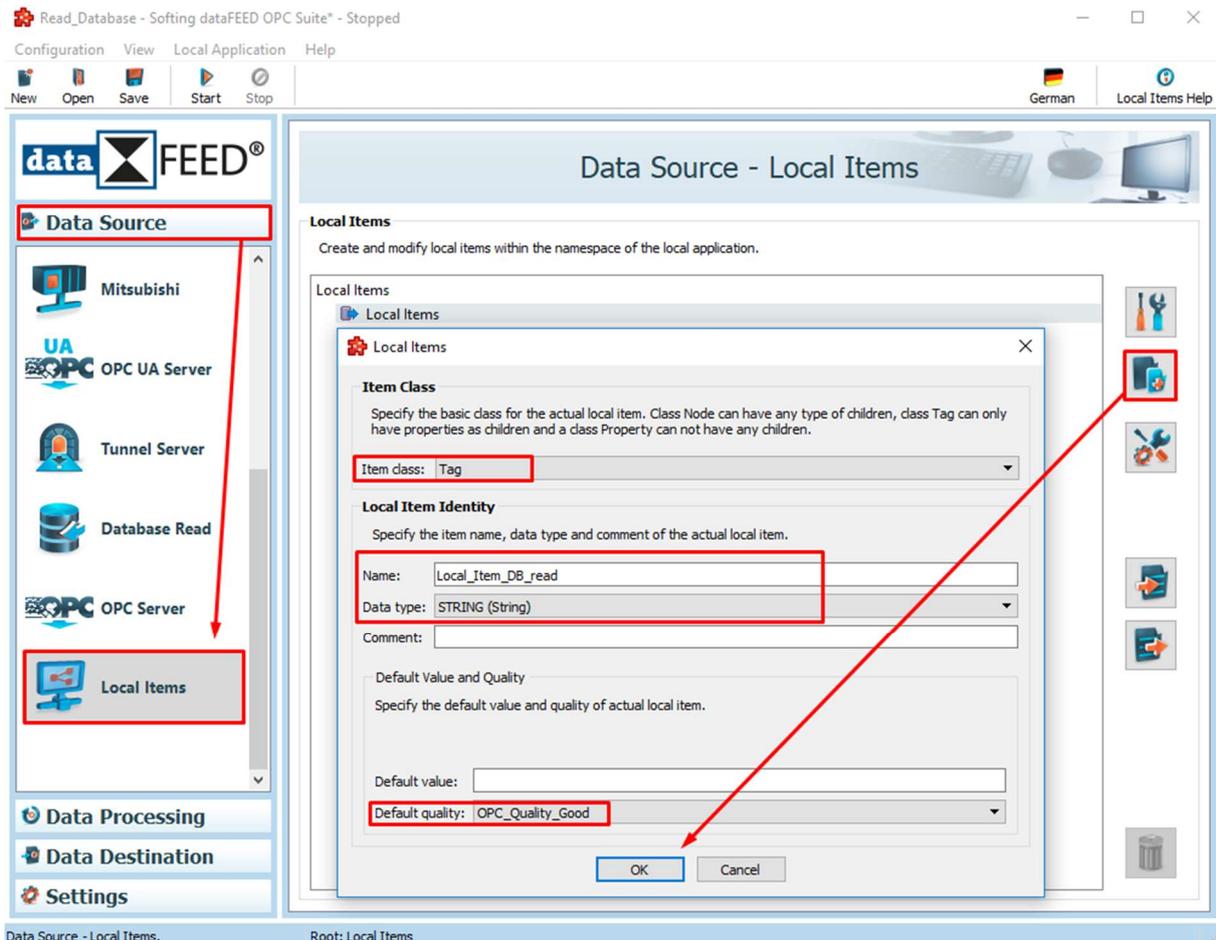
ODBC (Open Database Connectivity) is a standardized, open interface for accessing different database management systems. Via ODBC drivers, applications can directly issue instructions to databases or execute queries.

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



As the DataFEED OPC Suite is a 32 bit application, the ODBC driver must also be 32 bit. Most database vendors 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 installed under system DSN.

3) Insert Data into a Database



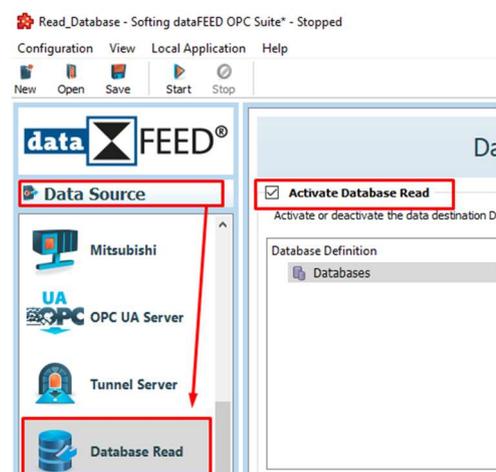
To read data from a database, it must also be stored somewhere. This could be a data in a PLC or a local item.

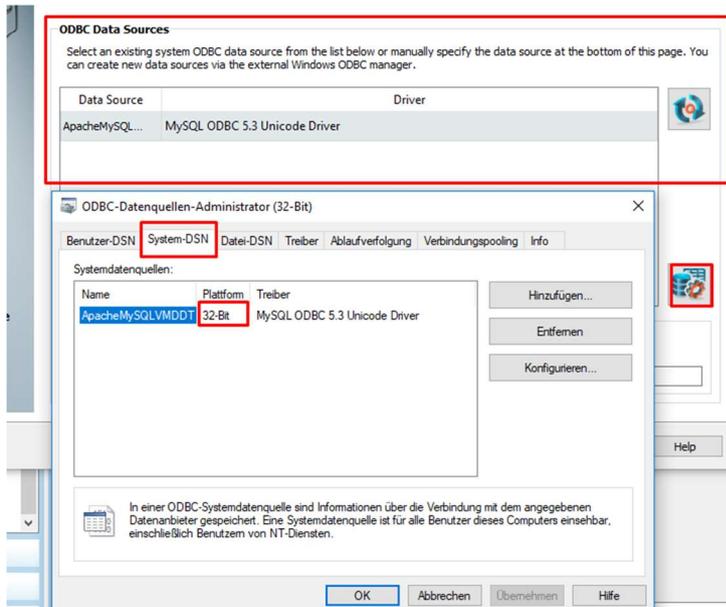
Create a "Local Item". You can freely choose the name and data type. Then confirm with "Ok". It is also useful to create a second item which will be used for the "Where condition".

Then navigate to "Database Read" and activate this function.

A window appears and you must enter a connection name.

Confirm with "Next".





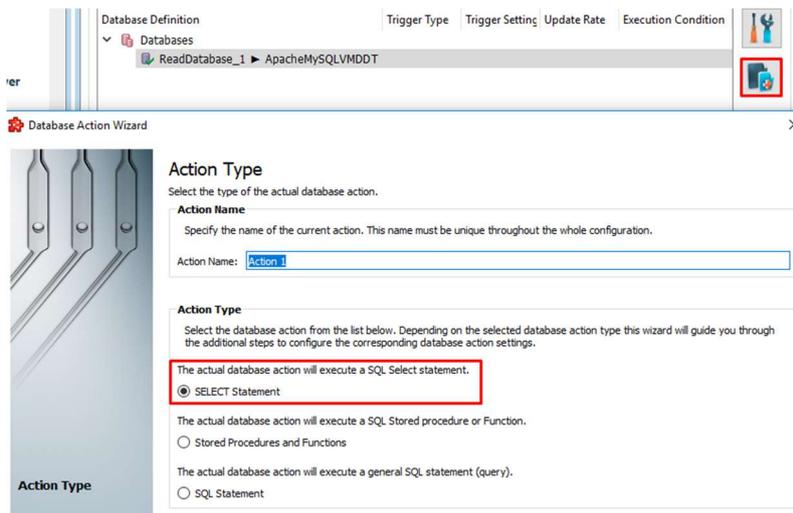
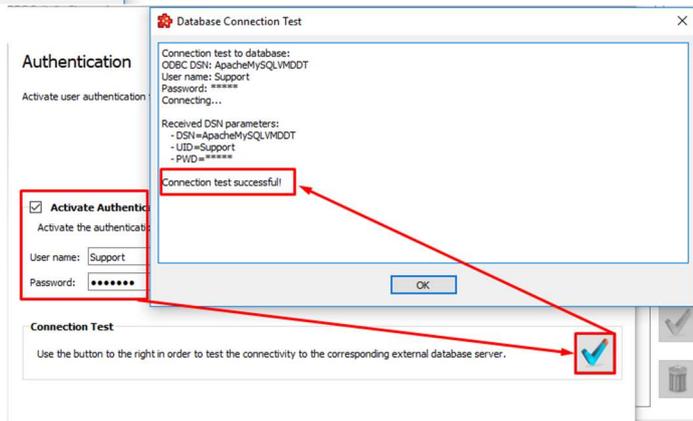
Now specify which ODBC driver should be used. If the required driver is not yet available, add it to the Windows data sources. The ODBC driver must be available under System-DSN as a 32Bit driver.

Confirm with "Next".

Please enter the user credentials for your database.

Now you can test the connection with the "hack".

Press "Finish" to finish the procedure.



Now select "Add Database action" and create a new select statement.

Confirm with "Next".

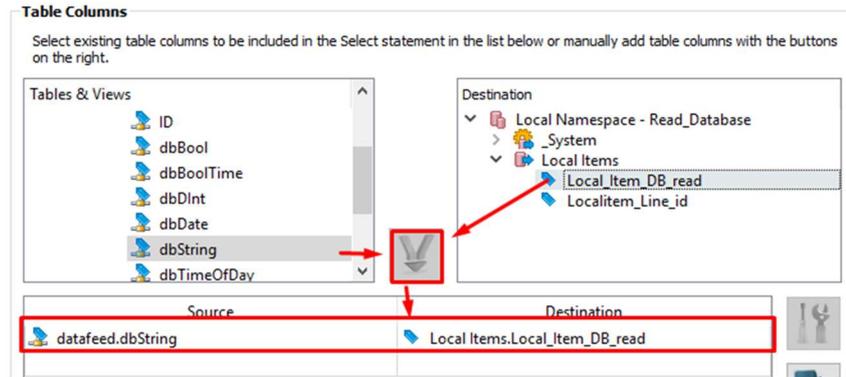
You can also call a Stored Procedure or create your own SQL Statement.

Specify which columns of a table should be read and to which items these values should be mapped.

Confirm with "Next".

SELECT Statement

Specify the database table columns to be included in the actual Select statement and assign corresponding data to items.



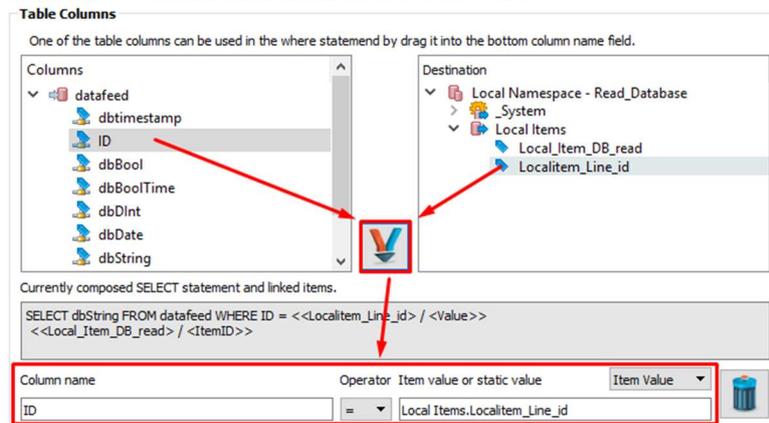
A column can have several rows. So, it is also important to specify in which row the values are to be read. You do this with the Where condition.

Confirm with "Next".

WHERE Condition

Enable WHERE Condition

Specify the database table column to be included in the where condition and the associated value.



Please use the Item Trigger in this manual.

Please use the Item Trigger in this manual. This Trigger Trigger, if the value or the quality of a certain data item changes. Select the same item that you use for the Where condition. If the data value of the

Where condition changes because you want to read out a new row, the trigger is triggered as well. Of course it is also possible to use another item to trigger the trigger.

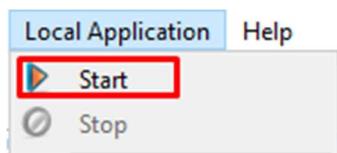
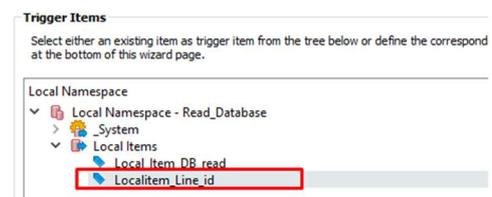
Confirm with "Next".

You can keep the action settings by default.

Press "Finish" to finish the procedure.

Trigger Items

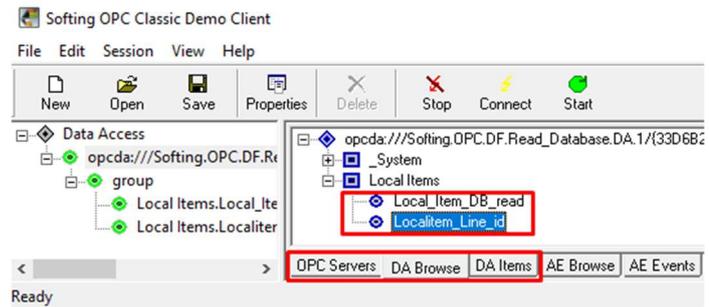
On this wizard page the trigger item for the actual item trigger is configured.



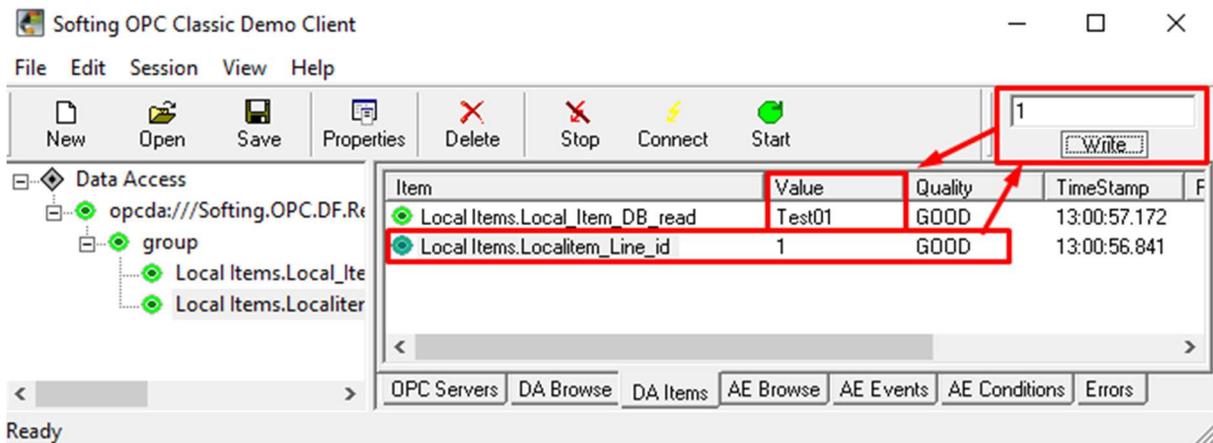
Please start the configuration now.

4) Check the read request

1. Start the Softing OPC Classic Demo Client and select: Local -> Data Access V3 -> double click to select your configuration

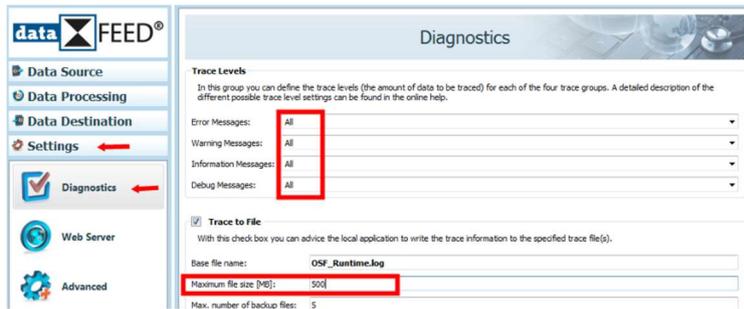


2. move to chapter DA Browse and browse to an item -> double click to select both items for testing



Now you can write a value for the item which is linked to the Where condition. Now the Select command is executed. The return value from database is displayed at the other local item.

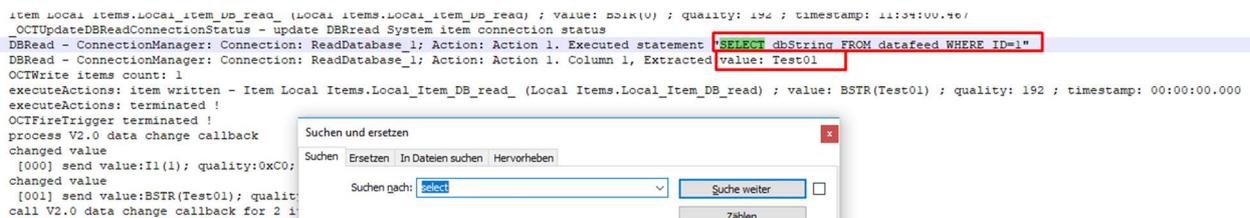
5) Find a fault by using the Logfile



If there are problems with the selected 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.)
- 4) Stop the configuration (Important)
- 5) Under the following path you can find the 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 select)



- 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 settings.
 - 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.
 - ii. Please check the Database configuration.
- 9) When you have fixed 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)