



HEXAGON

Firedac Connections

Since Version 12

FAQ
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1 Preface

As of version 12, FireDAC connections are used to access databases. This document will briefly show how to create, modify and distribute them in the networks.

2 Structure of the FireDAC.INI

Contrary to the old way of working with the UDL files, all database connections are managed in one file.

Four types of FireDAC connections exist:

```
[FDDbConnections]
FDDbConnStr_Text_001=Name=QDAS_TEXT_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_TEXT.MDB;
FDDbConnStr_Data_001=Name=QDAS_DATA_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_DATA.MDB;
FDDbConnStr_Conf_001=Name=QDAS_CONF_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_CONFIG.MDB;
FDDbConnStr_Conf_002=Name=QDAS_LIC_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_LIC.MDB;
FDDbConnStr_Data_002=Name=QDAS_CMM_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_CMM.MDB;
FDDbConnStr_Data_003=Name=QDAS_CENTRAL_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_DATA.MDB;
FDDbConnStr_Data_004=Name=QDAS_MONI_001;DriverID=MSAcc;Database=C:\Q-DAS\Share\PLANT\DEFAULT\DATABAS\QDAS_MONI.MDB;
```

- FDDbConnStr_Text
Database connection to text databases
- FDDbConnStr_Data
Database connection to data databases
- FDDbConnStr_Conf
Database connection to configuration databases
- FDDbConnStr_GLic
Database connection to licence databases

3 Uninstallation

When you uninstall a client, the system only deletes product INIs. The FireDAC connections are still part of the FireDAC.ini.

4 How the installation accesses the FireDAC.ini

Each product or installation combination has its own *%Product%.ini*. In case of client installations, each client has its own *%Windows_PC_NAME%_%Product%.ini*. Product INI files only contain the name of the FireDAC connection and no longer the entire path. This path is saved to the respective connection in the FireDAC.ini. The entries described in this chapter refer to the entries in the product INI files.

The previous INI entries up to version 11 were *sys_%dbtype%* given as a path to an Access database (*.mdb) and *sys_%dbtype%_connection* given as a path to an UDL file. When the system found a *sys_%dbtype%_connection* with an UDL file, it ignored the *sys_%dbtype%*.

```
; Datenbanken

; Text-DB
sys_lang_db=C:\Q-DAS\V_11\CommonFiles\PROGRAM\DATABASES\QDASTEXT32.MDB
sys_lang_connection=C:\Q-DAS\V_11\CommonFiles\PROGRAM\DATABASES\QDAS_TEXT.UDL

; Data-DB
sys_db=C:\Q-DAS\V_11\CommonFiles\PROGRAM\DATABASES\QDAS32.MDB
sys_db_connection=C:\Q-DAS\V_11\CommonFiles\Program\Databases\QDAS_DATA.UDL
```

What is new are the entries of the FireDAC connections *sys_%dbtype%_FDDBConn*. They precede the previous entries (*.udl or *.mdb). The paths *sys_%dbtype%* and *sys_%dbtype%_connection* registered by default only serve your guidance. The *sys_%dbtype%_FDDBConn* entry links to the respective connection in the FireDAC.ini.

```
; Datenbanken // Databases
; 1. Firedac-Connection, 2. DB-Connection (*.UDL), 3. Database (*.MDB)

; Text-DB
sys_lang_FDDBConn=FDDBConnStr_Text_001
sys_lang_connection=
sys_lang_db=

; Data-DB
sys_data_FDDBConn=FDDBConnStr_Data_001
sys_db_connection=
sys_db=

; Config-DB
sys_Config_FDDBConn=FDDBConnStr_Conf_001
sys_config_connection=
sys_config_db=

; License-DB
sys_config_global_FDDBConn=FDDBConnStr_GLic_001
sys_config_global_connection=
sys_config_global_db=
```

The information given under FireDACConnectionFile include the FireDAC connections and the path to the FireDAC.ini:

```
; FireDacConnectionFile
FDDBConnectionsIniFile=C:\Q-DAS\Share\PLANT\DEFAULT\DatabaseLinks\FIREDAC.INI
```

5 Basic architecture

The applied FireDAC connections depend on the type of installation.

5.1 Server provisioning

Server provisioning use the first FireDAC connections. (*FDDBCConnStr_%dbtype%_%no%*) genutzt.

- Text-database

FDDBCConnStr_Text_001=Name=QDAS_TEXT_001

- Configurations-database

FDDBCConnStr_Conf_001=Name=QDAS_CONF_001

- Licence-database

FDDBCConnStr_GLic_001=Name=QDAS_LIC_001

- Data-databases

The system always creates four data databases and are also assigned to a consecutive number. These four databases are the measured value database, the buffer database for CMM Reporting, the central database (referring to the measured value database QDAS_DATA.MDB by default) and the Monitoring database:

FDDBCConnStr_Data_001=Name=QDAS_DATA_001

FDDBCConnStr_Data_002=Name=QDAS_CMM_001

FDDBCConnStr_Data_003=Name=QDAS_CENTRAL_001

FDDBCConnStr_Data_004=Name=QDAS_MONI_001



As of version 13, a server provision is installed in a shared network drive. This means that all FireDAC connections already point to network drives.

5.2 Client-installationen

In the case of server provision, the connections stored in the product INI files already refer to UNC paths as of version 13..

```
DDBConnStr_Text_001=Name=QDAS_TEXT_001;DriverID=MSAcc;Database=\\%Servername%\Q-DAS\Shares\PLANT\DEFAULT\DATABASES\QDAS_TEXT.MDB
```

Furthermore, when setting up a client, a separate %Windows_PC_NAME%_%Product%.ini is created on the server for each product or installation combination. Accordingly, for a server-client system, the existing FireDAC connections are used as the main connections for the client.

In case your client accesses a local text database, the system also creates the respective FireDAC connection in the FireDAC.ini on the server. However, the entry is not based on an UNC path but contains the local path of the client.

```
FDDBConnStr_Text_003=Name=QDAS_TEXT_003;DriverID=MSAcc;Database=C:\ProgramData\Q-DAS\Client\PLANT\DEFAULT\Databases\QDAS_TEXT.MDB;
```



The option to store text databases locally through the setup for performance reasons is no longer recommended. As of version 13.0.3.x, the texts are only loaded from the central text database when a client is started for the first time and then kept as local %Language%.qdt in the local Temp folder. If necessary, these are updated. Therefore, it is no longer recommended to use the option to store text databases locally in the setup.

5.3 Local installation

For local installations, the first FireDAC connections (FDDBCConnStr_%dbtype%_%no%) are created and used.

- Text-database

FDDBCConnStr_Text_001=Name=QDAS_TEXT_001

- Configurations-database

FDDBCConnStr_Conf_001=Name=QDAS_CONF_001

- Licence-database

FDDBCConnStr_GLic_001=Name=QDAS_LIC_001

- Data-databases

The system always creates four data databases and are also assigned to a consecutive number. These four databases are the measured value database, the buffer database for CMM Reporting, the central database (referring to the measured value database QDAS_DATA.MDB by default) and the Monitoring database:

FDDBCConnStr_Data_001=Name=QDAS_DATA_001

FDDBCConnStr_Data_002=Name=QDAS_CMM_001

FDDBCConnStr_Data_003=Name=QDAS_CENTRAL_001

FDDBCConnStr_Data_004=Name=QDAS_MONI_001

6 Creating new connections

Even though there are basic possibilities to change and create database connections directly via the interface of the Q-DAS products (*File | Configurations | Databases | Q-DAS Database*), it is recommended to do this via the FireDAC Connection Tool.

With classic installations from version 13 onwards, there is no longer any reason to create or select text, licence or configuration databases via the software.

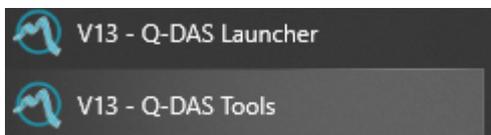


If this is necessary due to the desired architecture, it is advisable to carry it out in the workshop.

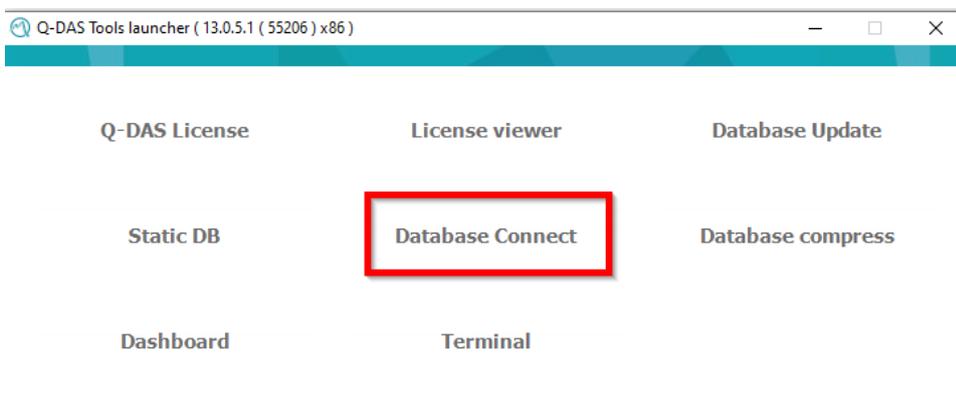
With the "FD Connection Tool", a tool was created with which the database connections can be managed. The tool reads out the content of the FireDAC.INI when it is started and displays it in a graphical interface. Here you have the possibility to adapt existing database connections, to test them or to create new ones.

Due to the different database drivers, the application is offered in 32-bit and 64-bit variant. You can find these in the FAQ section on our homepage at <https://www.q-das.com/en/>. If you start a Variant of the application for which the necessary database drivers have not yet been installed, you can adjust the database connections or create new ones, but you cannot test the database connection..

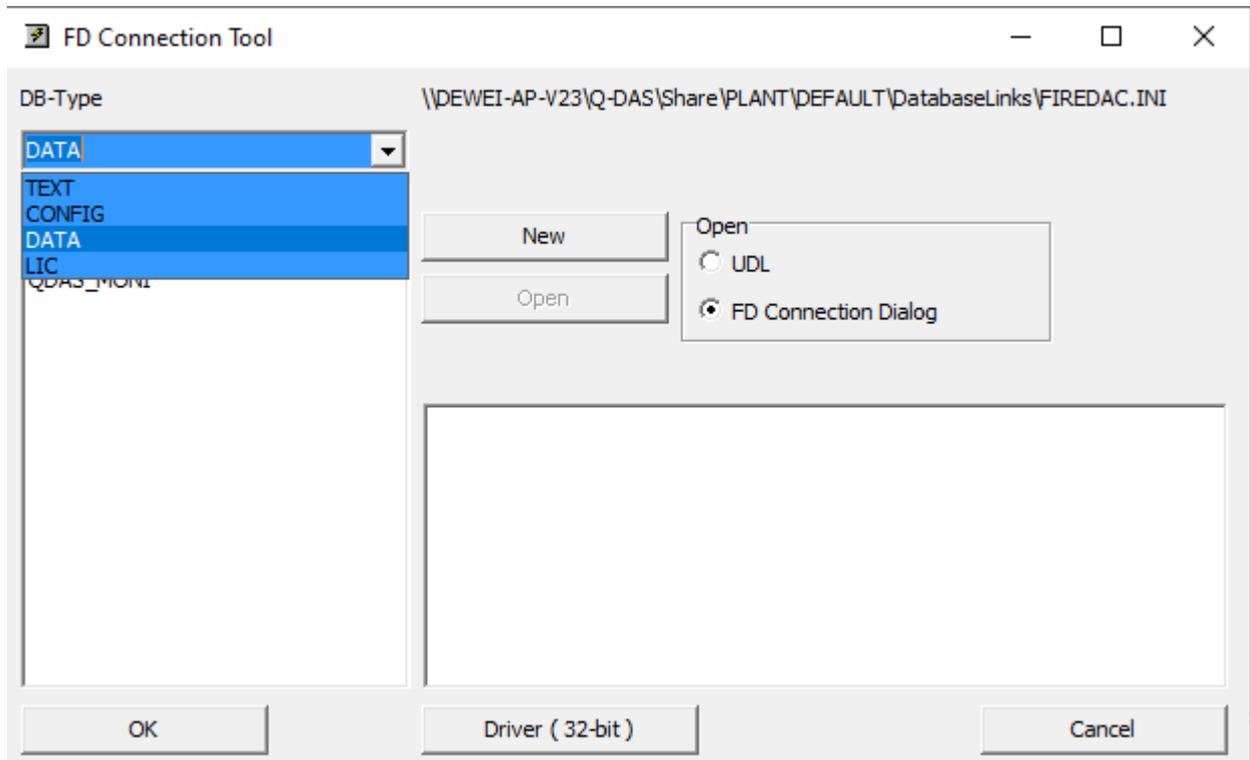
In the case of a local installation or a server provisioning, the launcher for the tools is displayed next to the launcher for the products.



One tool here is "Database Connect"



6.1 „FD Connection Tool“ handling



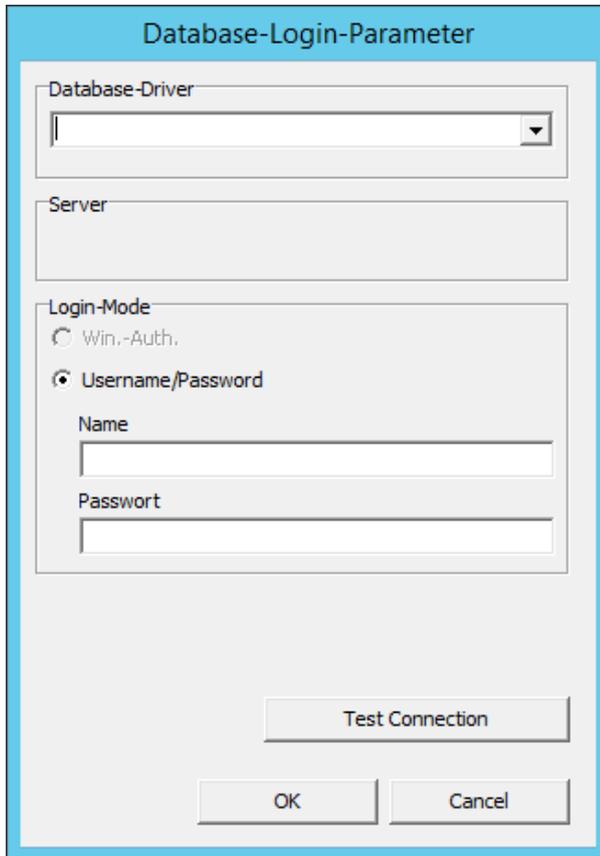
- - In the first line of the application, you will see the path of the FireDAC.INI used.
- - Combination field DB-Type

There are four different types of databases, which are grouped together as follows.

- Text: All text databases are grouped behind this entry.
- Config: This entry contains all connections to the configuration databases
- Data: Under this entry you will find the connections to the data databases.
- Lic: This entry contains all connections to the License databases.

- „New“ button

When you click on "New" with the option "FD Connection Dialogue", you will first be asked to enter the name for a new FireDAC connection. The application then opens an input window in which you can enter the database connection properties.



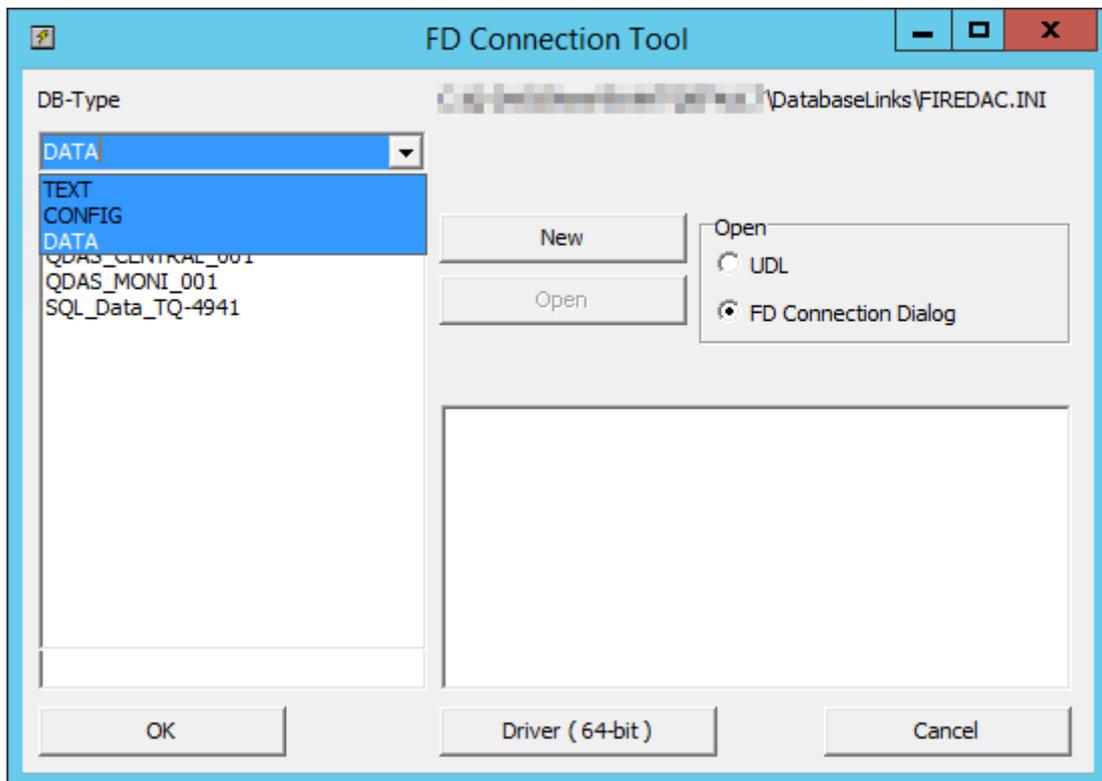
The message "Connection test not successful", received after clicking on the "Test Connection" button, means that you have either started the wrong Variant of the "FD Connection Tool" or that the database is not accessible.

- „Open“ button
 - FD Connection Dialog

When clicking on "Open" with the option "FD Connection Dialog", you have the possibility to adjust the existing FireDAC connection via the properties window.

- „OK“ button

When you click on "OK", all changes are saved. New entries are displayed in green and the changed entries in yellow.



- „Driver“ button

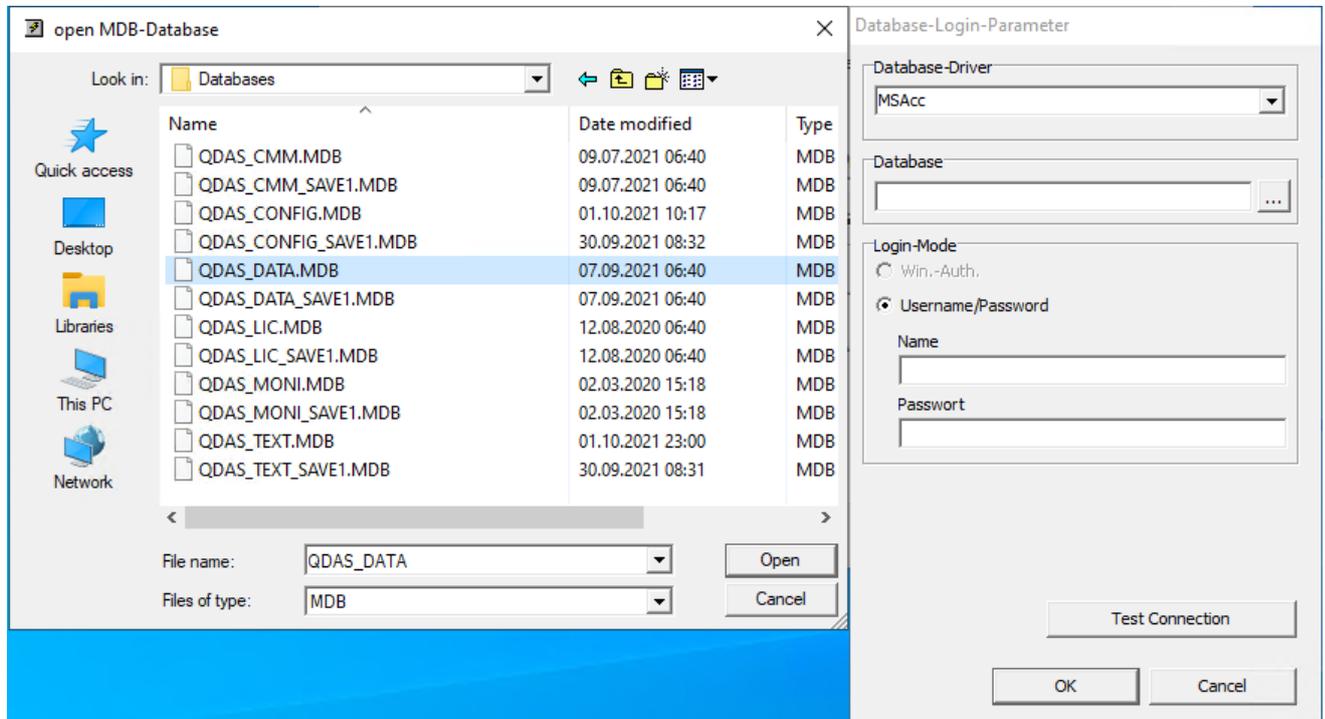
The button designation contains the bit Variant of the started application. It is used to check the drivers. Clicking on this button lists the database drivers. The list contains the drivers that are installed on the computer from which the application was started.

- „Cancel“ button

If you exit the application via this button, no changes will be applied.

6.1.1 New Creating an Access Connection

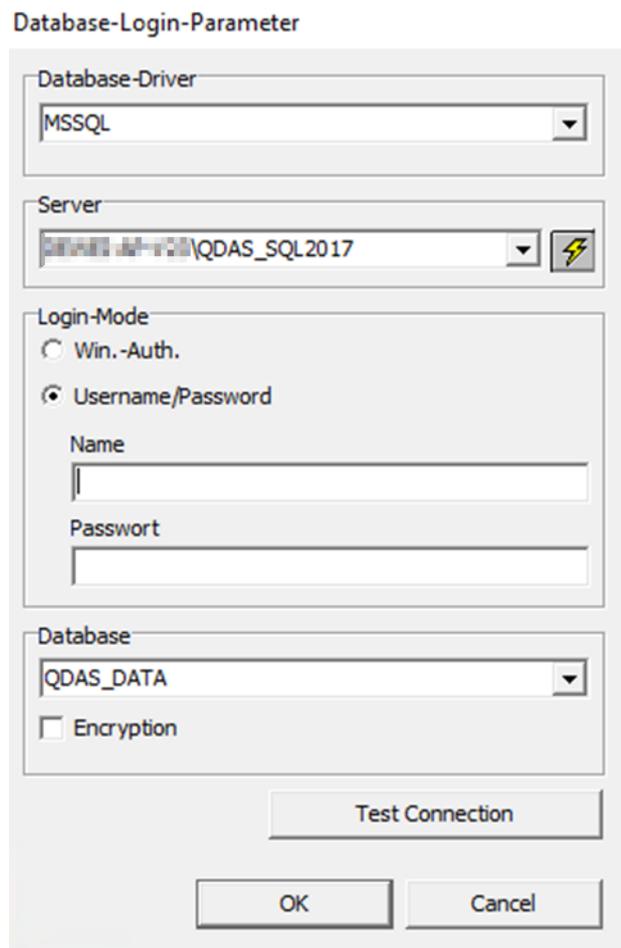
After specifying a name for the connection and selecting the database type "MSAcc", only the Access database must be selected.



When using Access databases, it is not necessary to enter the name and password. Select your database and confirm the selection by clicking on "OK".

6.1.2 New Creating an SQL Connection

After specifying a name for the connection and selecting the database type "MSSQL", the following dialogue is displayed:



Server: Select your SQL server.

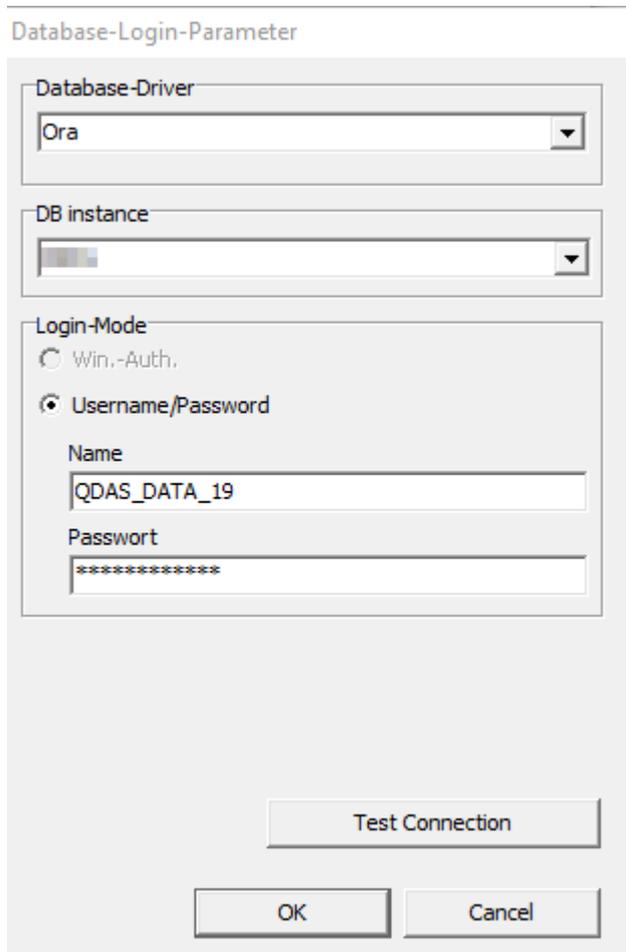
Name/Passwort: When you apply a SQL authentication to access your SQL server, enter the name and password. The system saves the coded password to the FireDAC.ini.

Win.-Auth.!!: Check this box when you want to apply your Windows authentication (direct Windows login or active directory login) to access your SQL server. You do not have to enter name and password.

Database: Enter the name of the SQL database.

6.1.3 New Creating an Oracle Connection

After entering a name for the connection and selecting the database type "ORA", the following dialogue is displayed:



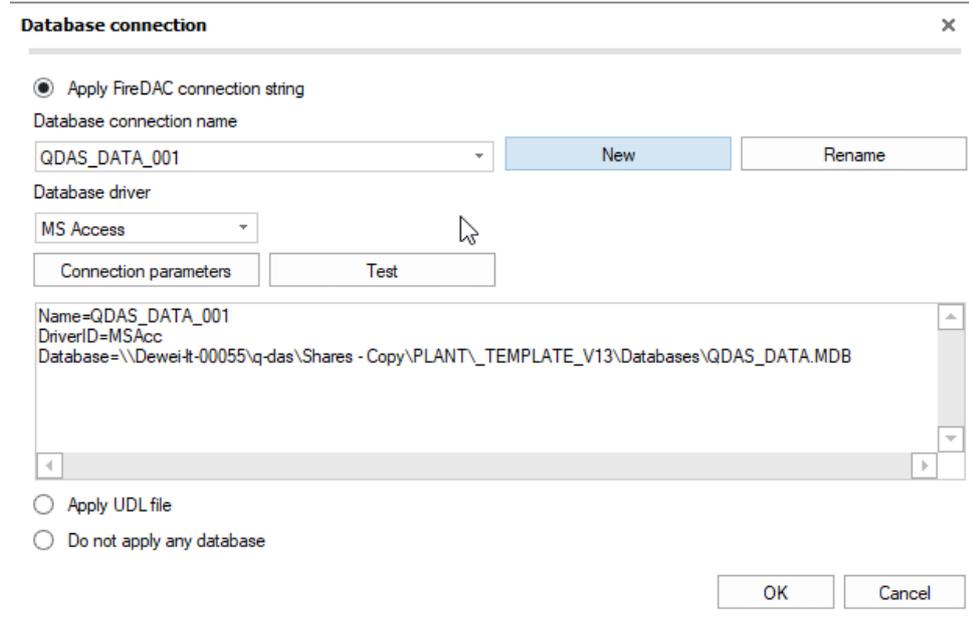
DB instance: Select the service including the Oracle server instance in the TNSNAMES.ORA file.

Name / Passwort: Enter name and password when you selected a password login for the server authentication.

6.2 New data database connection via the software

Within the software, the *File | Configurations | Databases | Q-DAS Database* dialogue can be used to select but also create data-database connections.

The dialogue is structured analogously:



Database connection [X]

Apply FireDAC connection string

Database connection name: QDAS_DATA_001 [New] [Rename]

Database driver: MS Access [Connection parameters] [Test]

Name=QDAS_DATA_001
DriverID=MSAcc
Database=\\Dewei-It-00055\q-das\Shares - Copy\PLANT_TEMPLATE_V13\Databases\QDAS_DATA.MDB

Apply UDL file
 Do not apply any database

[OK] [Cancel]

7 Note on handling the database connections

With version 13 and the direct installation of the server provision in a shared directory, the need to use duplicate connections has been eliminated.

As of version 13.0.5, it is already possible to add MS SQL or Oracle database connections to the setup when setting up version 13.

Therefore, all historical necessities of manually maintaining the database connections in the Firedac.ini have been eliminated.

The Firedac.ini should only contain the connections that are necessary.

The use of several data-database connections for different areas of a company is sometimes given. If this is necessary, the workshop should examine how the distribution can take place.

- Affected clients manually select their data database from the list
- During ACLP client setup, the predefined "Plant" is addressed with its Firedac.ini
- Manual specification by IT in the product INIs of the affected clients