How to set up an OPC DA connection

1. **Short introduction**
2. **OPC DA and DCOM**
3. **Connect to an OPC DA Server**
4. **Provide Data via OPC DA**
5. **Check connection**
6. **Some useful tips**

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.

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

2) OPC DA and DCOM

DCOM is an object oriented RPC system that enables remote procedure calls. It was defined by Microsoft to enable the communication of COM based applications over a network. OPC uses the DCOM protocol for computer-to-computer communication.
DCOM permits only authenticated access between computers. We recommend registering the computers in the same domain and specifying a user group (e.g., "OPC Users") for OPC communication on all computers.

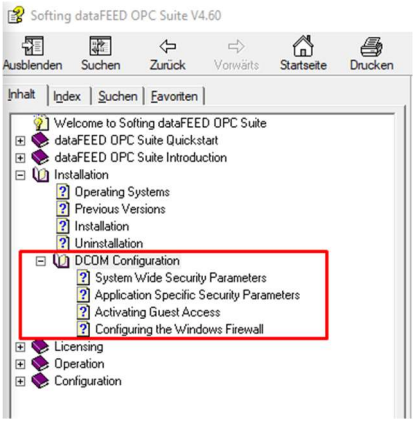
Attention: The DCOM configuration "dcomcnfg" reaches deep into the Windows operating system. Therefore, any wrong adjustment can result in an unstable operating system.

These DCOM settings require lowering the security of the system. The security settings to be selected in order to allow the communication between distributed computers via DCOM / OPC (e.g. authentication "None"; access authorization "Everyone") result in giving all users on the network unlimited access to all data and services provided by the current computer.

In particular the opening of port #135 creates a critical security hole – this allows applications to interfere with Windows components through "remote procedure calls" via the network without any restrictions

Actually this results in an open gateway for many computer viruses!

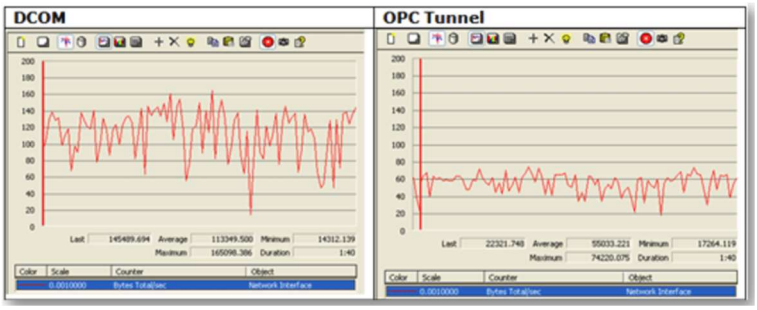
Further information can be found in the help of the DataFEED OPC suite



Softing does not support the setup and troubleshooting of cross-computer OPC DA communications!
DataFEED OPC Suite has other solutions for this: By-passing of DCOM communication by using the Softing OPC Tunnel or OPC UA

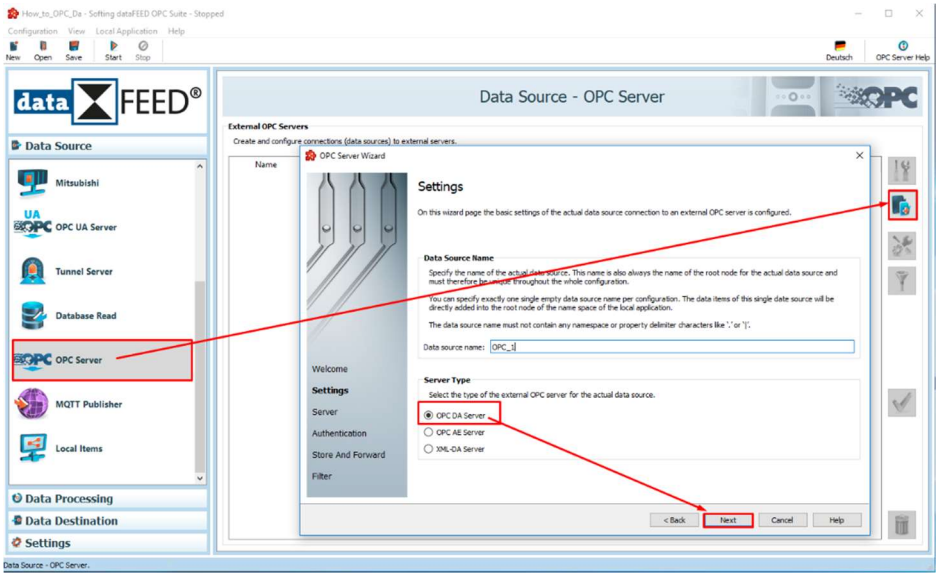
In order to avoid these security issues you should use the Softing OPC Tunnel protocol instead of pure OPC communication. By using the OPC Tunnel you will benefit from the following features:

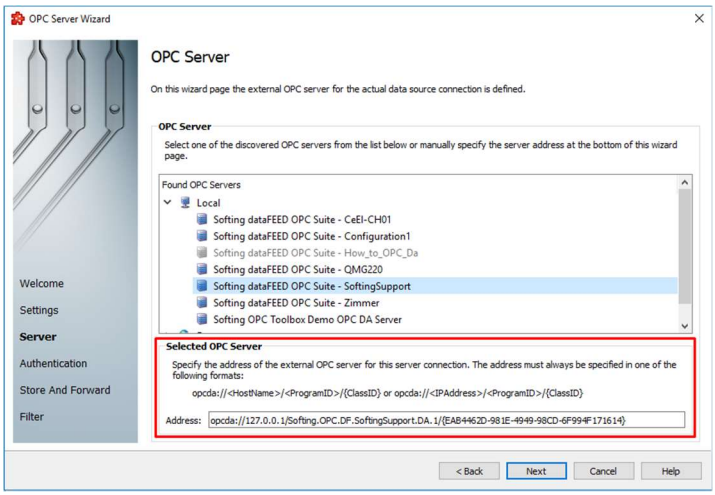
· Data transfer without security holes in your system.
· No time consuming trial-and-error approach to find the appropriate DCOM settings.
· Data communication beyond firewalls.
· Immediate detection of communication breaks (with DCOM this can take several minutes).
· Increased performance due to dramatically reduced bandwidth requirements.



3) Connect to an OPC DA Server

1) Start the dataFEED OPC Suite and select "OPC Server" as data source. Create a new connection and select the Server type "OPC Da Server". You can assign the connection name as you like. Press “Next” to confirm the entries.





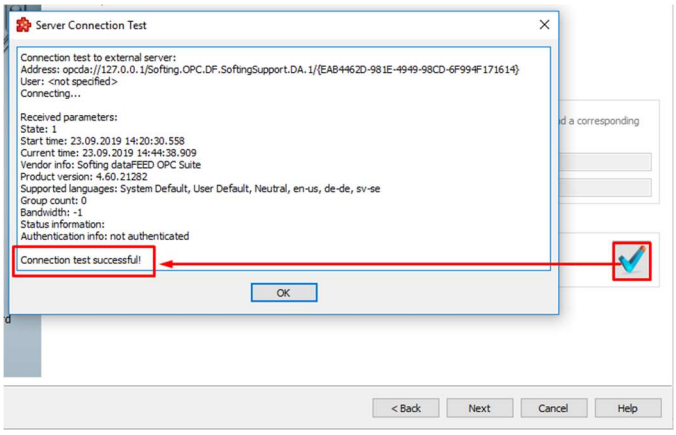
2) It is possible to Browse the OPC DA Server, but the better Option is to fill in the IP address, ProgramID and ClassID, which you can find in the OPC DA Server.
The Address looks like this:
opcda://<IPAddress>/<ProgramID>/{ClassID}

Press “Next” to confirm this entry

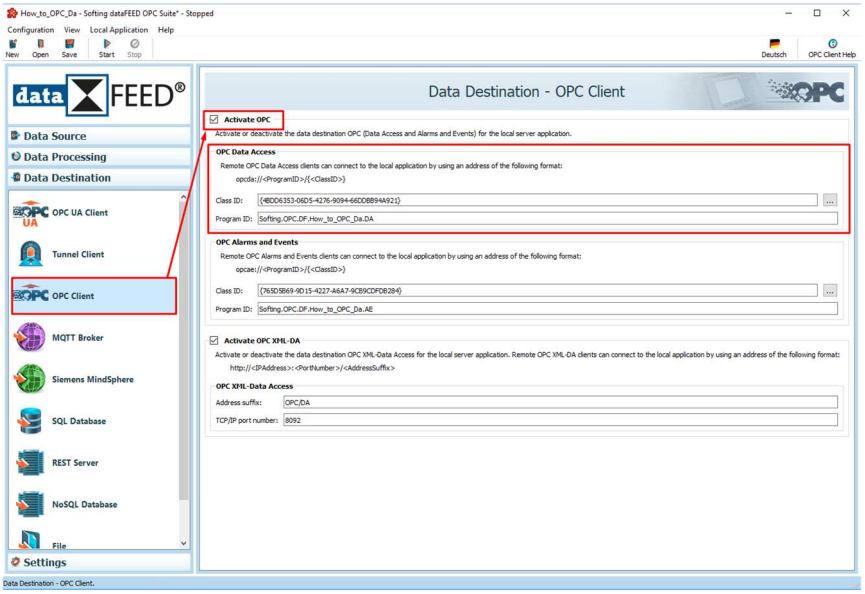
3) Test the connection to the server, if it is successful.
Press “Next” to continue.

4) You can skip "Store and Forward" and press "Next" again.

5) You don't have to set any filter options and you can finish the connection with "Finish".



4) Provide Data via OPC DA



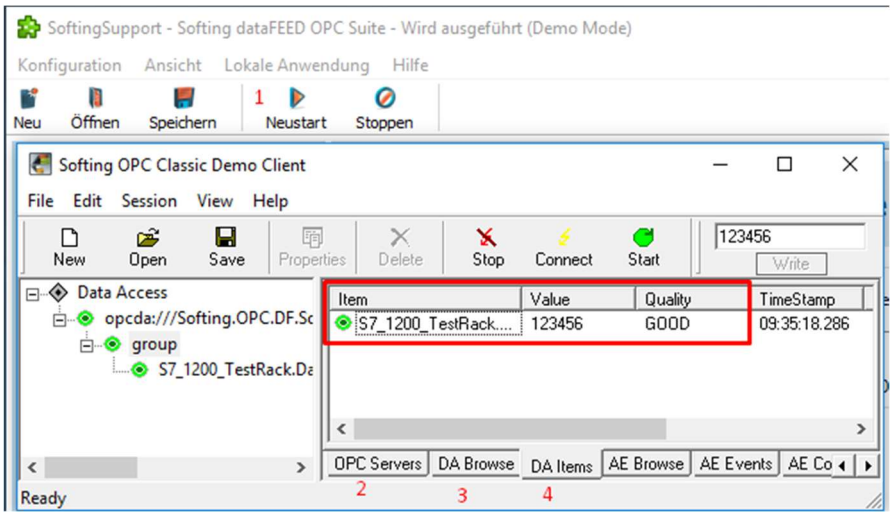
The OPC endpoint must be activated at "Data Destination".

As default setting this endpoint is already active.

Here you can also find out the "ClassID" and "ProgramID" of the server endpoint.

The DataFEED OPC Suite must be running to connect to this endpoint.

5) Check connection



You can check the Server connection with the Softing OPC DA Demo Client which is installed with the DataFFED.

1. Start the DataFEED Configuration and the Softing OPC Classic Demo Client

2. Move to the Demo Client and select: Local -> Data Access V3 -> double click on your configuration

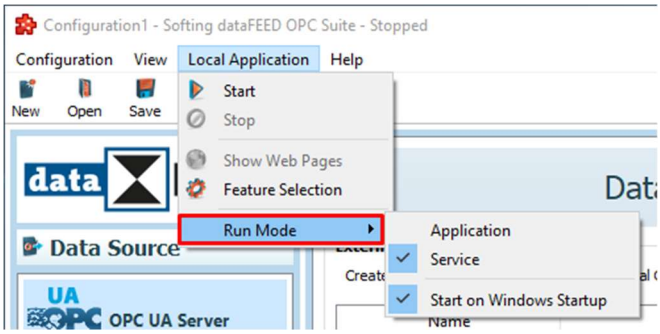
3. move to chapter DA Browse and browse to an item -> double click to select any item for testing

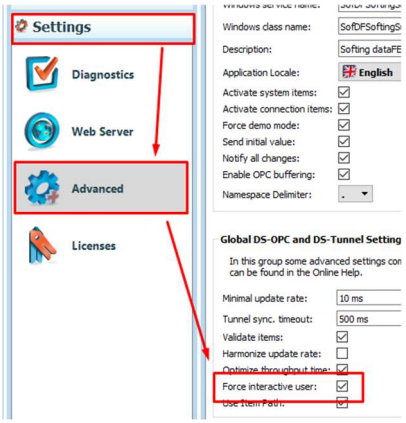
4. Now check the item if it is correct.
   The Item icon must be green, the value must be correct, and Quality must be GOOD

6) Some useful tips

Check that both programs (DA Client and Server) run under the same user and have Admin rights.

If you had some problems with the DA Connection, please try to run the DataFEED OPC Suit as Application or Service.





The option "Force interactive user:" may also help.