

How to set up a S7 connection

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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.

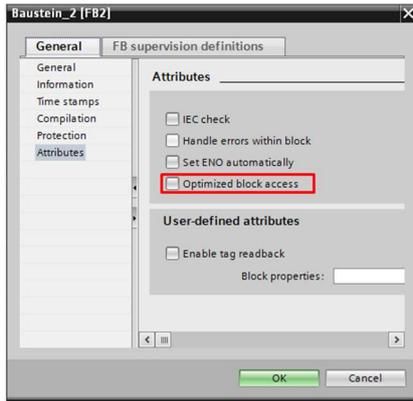
The different data destination functionalities use already existing data items from the local namespace – they do not introduce any data items to the local namespace.

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 from and write to these data items.

This manual only refers to the connection of a Siemens S7 data source with the two most frequently used protocols.

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

2) The difference of the S7 connection protocols (S7 vs S7-2 protocol)



With the standard S7 protocol all controllers can be reached (S7-200; S7-300, S7-400, S7-1200, S7-1500) but only data blocks which are not optimized. It is always a symbol import needed.

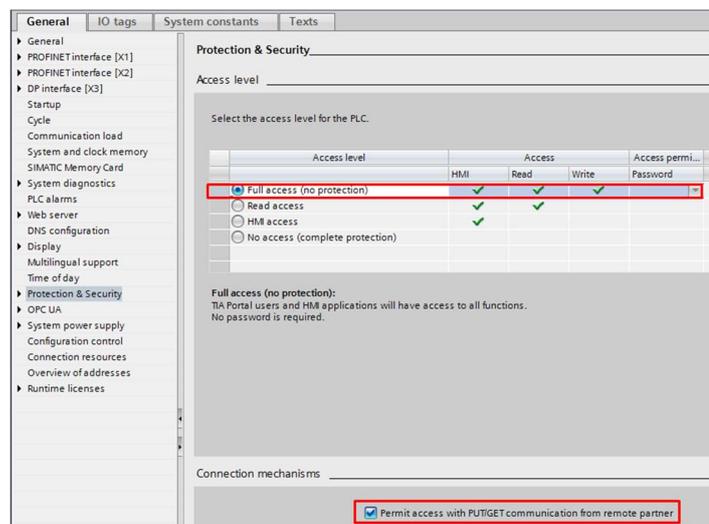
Only S7-1200 and S7-1500 support the S7-2 protocol. With the S7-2 protocol all data blocks including optimized data blocks can be accessed and a symbol import is no longer required (This means you don't need sdfi File). You can browse the data directly.

3) Requirements of the PLC

1) The S7-1500 has a Put/Get access protection, this must be set in the device configuration and must be deactivated. (Option only relevant for S7 protocol)

2) Full access should be allowed.

3) The PLC must not be password protected.



4) Generate an .sdfi file

The Softing dataFEED Exporter is used to convert Siemens TIA project files from Siemens TIA portal version V13, V13 SP1, V14, V14 SP1, V15, V15.1 into a format that can be used by Softing products. You can download the software (for free) from our homepage.

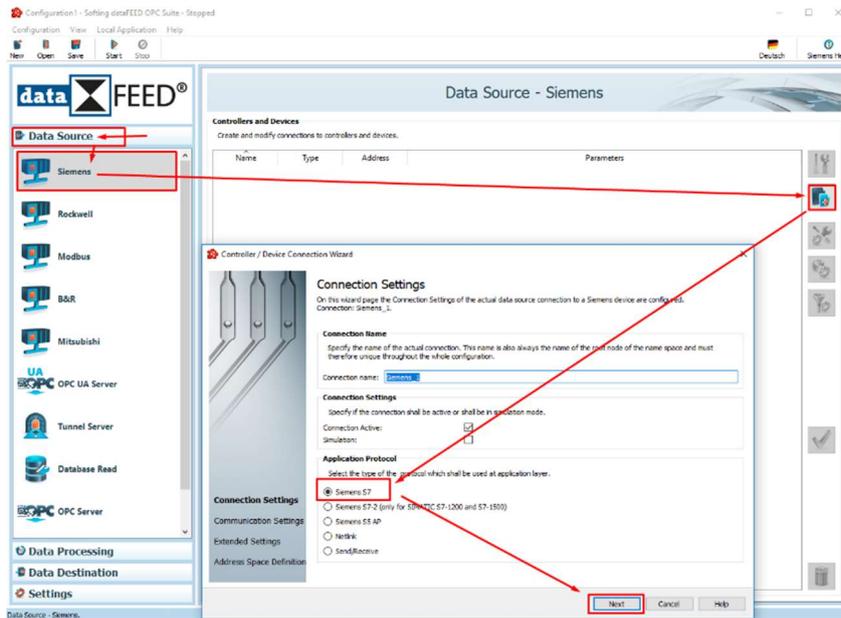


Select that you want to create a .sdfi file for the dataFEED OPC Suite and load the project into the Exporter. The exporter then creates the file.

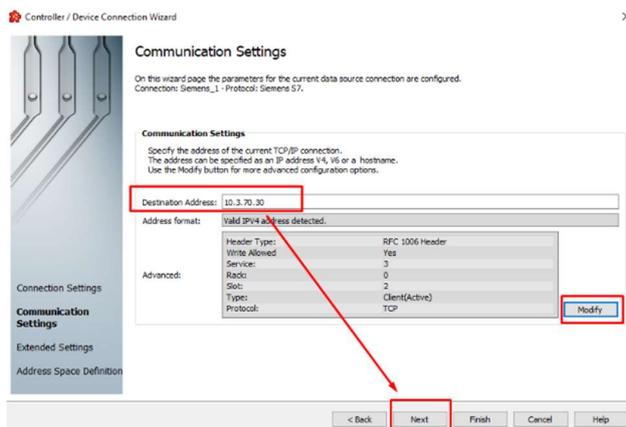
If you have a Step 7 project, you can directly import the file into the dataFEED OPC Suite. You do not need the dataFEED Exporter.

The creation of an sdfi file is only needed for a S7 connection not for a S7-2 connection.

5) Set up a S7 connection

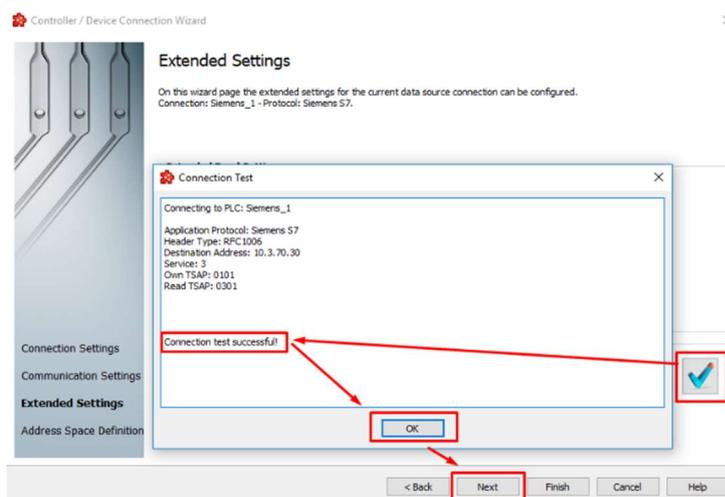


1. Start the dataFEED OPC Suite and select "Siemens" as data source. Create a new connection and select the application protocol "Siemens S7". You can assign the connection name as you like. Press "Next" to confirm the entries.

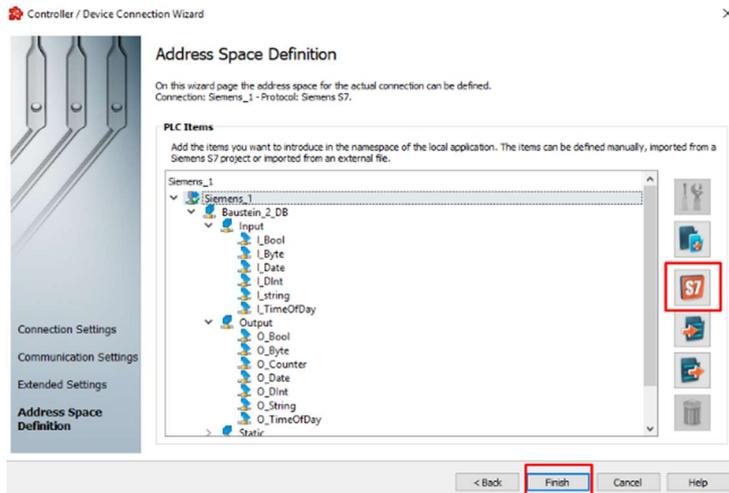


2. Enter the IP address of your PLC. Sometimes it is necessary to adjust the settings of the TSAP or Rack & Slot. Click on Modify and enter the appropriate communication partners depending on the PLC. No settings should be necessary here for controls of the 200 and 300 series. For 1200 and 1500 test the following settings: (Service: 3 / Rack: 0 / Slot: 1) Own TSAP: 01 01

If in doubt, please ask the PLC-programmer, he should know what TSAP are used by the PLC.



3. Perform a connection test

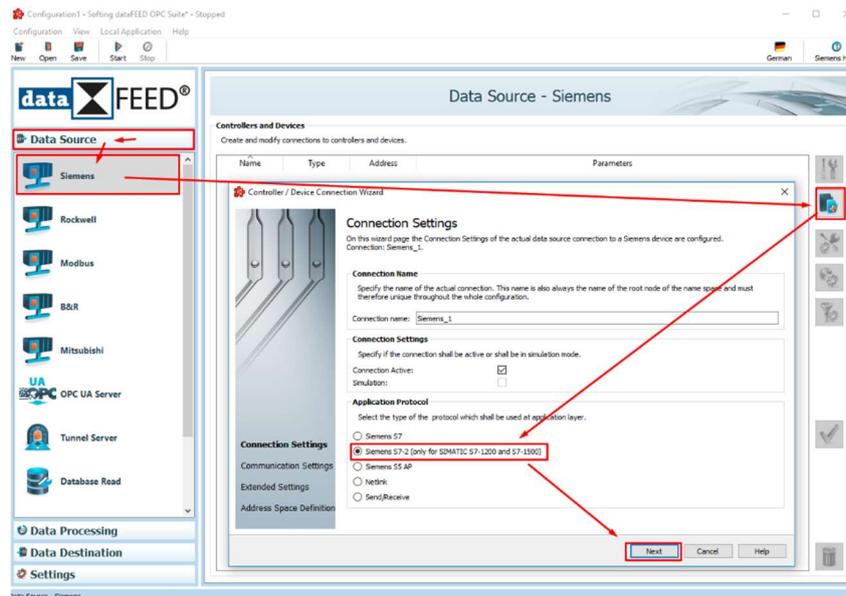


4. The data items for the actual PLC connection can be defined. The address space can be defined by manually adding items, by importing the address space from an external file or by importing a device symbol file.

Here you can insert your .sdfi file created in step 4 or your Step 7 project.

5. Press "Finish" to finish successfully.

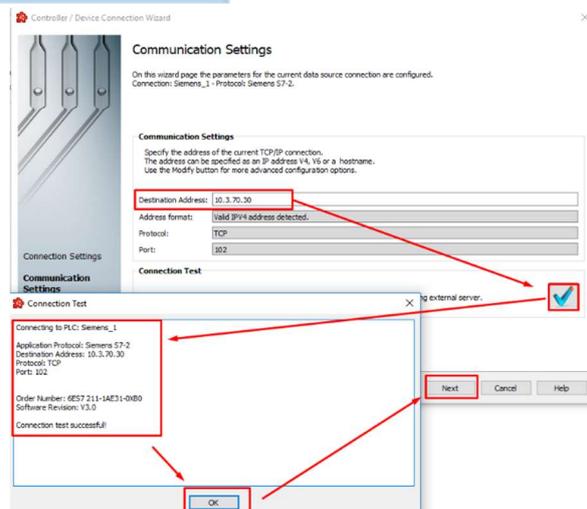
6) Set up an S7-2 connection

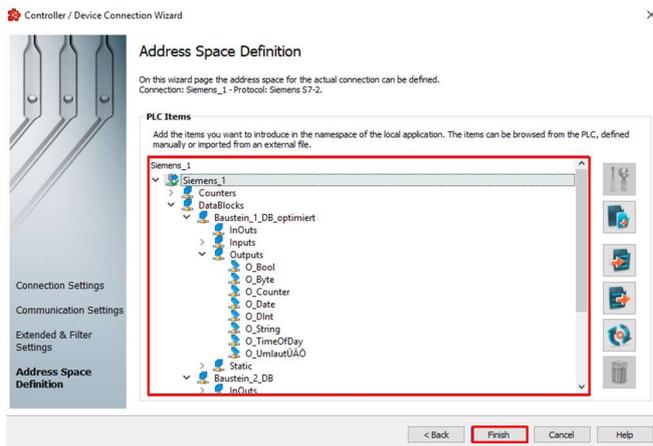


1. Start the dataFEED OPC Suite and select "Siemens" as data source. Create a new connection and select the application protocol "Siemens S7-2". You can assign the connection name as you like. Press "Next" to confirm the entries.

2. Enter the IP address of your PLC.

3. Perform a connection test



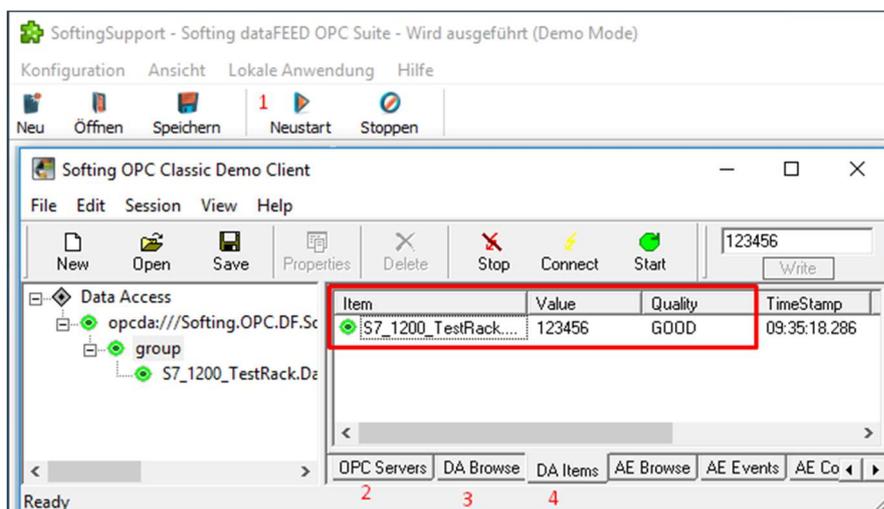


4. The Extended Settings & Filters can be left to default.

5. The last step is the address space definition, you do not need to import a symbol for an S7-2 connection. It is possible to browse the data easily.

6. Press "Finish" to finish successfully.

7) Check connection



You can check the S7 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