

S7 OPC Server Tutorial

Configure your S7 OPC Server in only three Steps by Import of STEP7 Projects

This example demonstrates how fast the Softing S7 OPC Server can be commissioned via import of an existing STEP7 project.

To run this tutorial you need the Softing S7 OPC Server, the S7 OPC Server Configurator and the Softing OPC Demo Client. All three programs are copied and registered on your computer during installation of the product OPC-S7. Furthermore you need a STEP7 programming tool to create a S7 project except you already have an existing STEP7 project available as *.s7p file on your computer.

1. Create a STEP7 Project

Start the STEP7 programming tool (SIMATIC Manager) and create a program for your S7 controller. The instructions how to create STEP7 projects please find in the manual of your STEP7 programming tool.

In our example one sample data block *DB2* for a S7-300 PLC named *Sample DB* has been created.

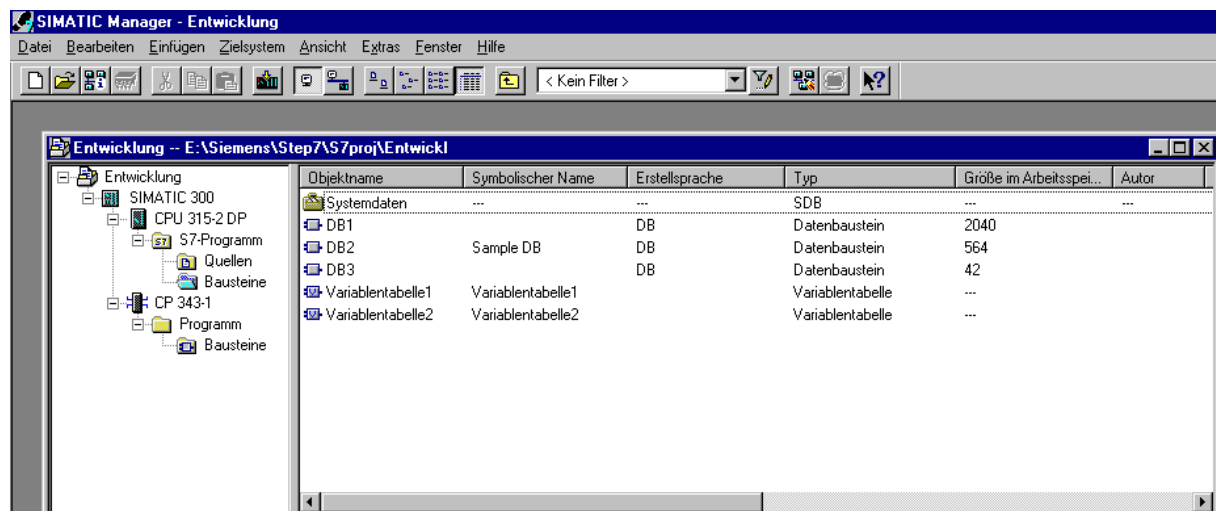


Fig. 1: Presentation of the sample data block *sample DB* in the SIMATIC Manager

KOP/AWL/FUP - [DB2 -- Entwicklung\SIMATIC 300\CPU 315-2 DP]

File Bearbeiten Einfügen Zielsystem Test Ansicht Extras Fenster Hilfe

Adresse	Name	Typ	Anfangswert	Kommentar
0.0		STRUCT		
+0.0	BYTE_0	BYTE	B#16#0	
+1.0	CHAR_1	CHAR	' '	
+2.0	WORD_2	WORD	W#16#0	
+4.0	INT_4	INT	0	
+6.0	DWORD_6	DWORD	DW#16#0	
+10.0	DINT_10	DINT	L#0	
+14.0	STRING_14	STRING[20]	' '	
+36.0	REAL_36	REAL	0.000000e+000	
+40.0	S5TIME_40	S5TIME	S5T#0MS	
+42.0	TIME_42	TIME	T#0MS	
+46.0	DATE_46	DATE	D#1990-1-1	
+48.0	BOOL_48	BOOL	FALSE	
+50.0	BYTE_ARRAY_50	ARRAY[0..19]	B#16#0	
*1.0		BYTE		
+70.0	CHAR_ARRAY_70	ARRAY[0..19]		
*1.0		CHAR		
+90.0	WORD_ARRAY_90	ARRAY[0..9]		
*2.0		WORD		
+110.0	INT_ARRAY_110	ARRAY[0..9]		
*2.0		INT		
+130.0	DWORD_ARRAY_130	ARRAY[0..9]		
*4.0		DWORD		
+170.0	DINT_ARRAY_170	ARRAY[0..9]		
*4.0		DINT		
+210.0	REAL_ARRAY_210	ARRAY[0..9]		
*4.0		REAL		
+250.0	S5TIME_ARRAY_250	ARRAY[0..9]		
*2.0		S5TIME		

Drücken Sie F1, um Hilfe zu erhalten. offline Abs Einfg

Fig. 2: Detailed view on the sample program in data block DB2

3. Setting up a Connection to the S7 PLC

Clicking on the button *PLC* opens a page with settings for the configuration of the connection to the S7-300 PLC with the logical PLC no. 2. Click on *New* to create all connections of the S7 OPC Server to S7 PLCs. In the column *Symbols* you can scan your computer for existing STEP7 projects.

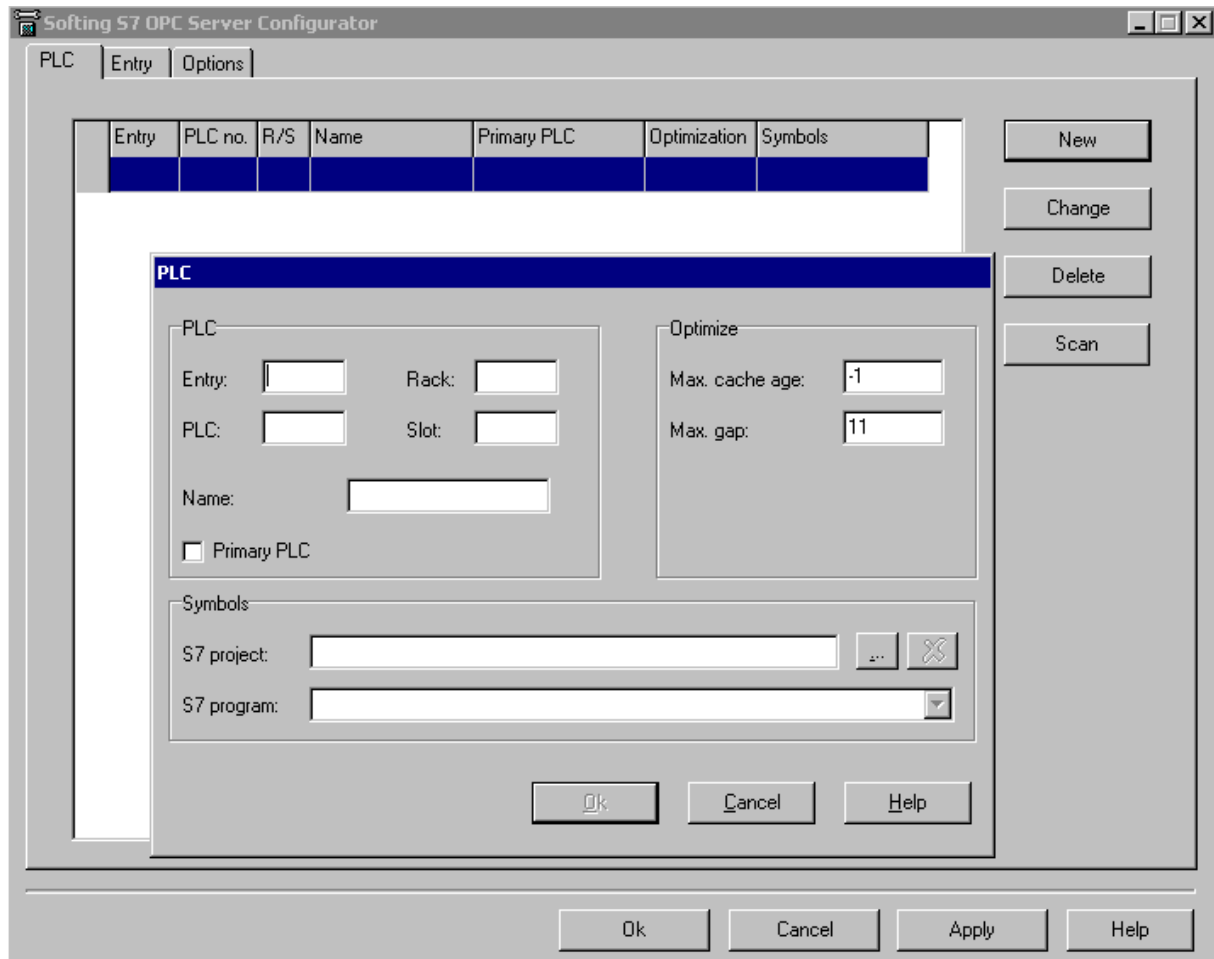


Fig. 4: Setting up a S7 connection and import of a STEP7 project

Fig. 5 shows how the sample project *Entwickl.s7p* has been imported. The imported sample project contains the configuration of the data block *DB2* with the symbolic names of the operands, as defined for the S7-300 with the logical PLC no. 2 named *S7-315-2*. The S7 OPC Server imports all data points of the STEP7 project into its OPC name space.

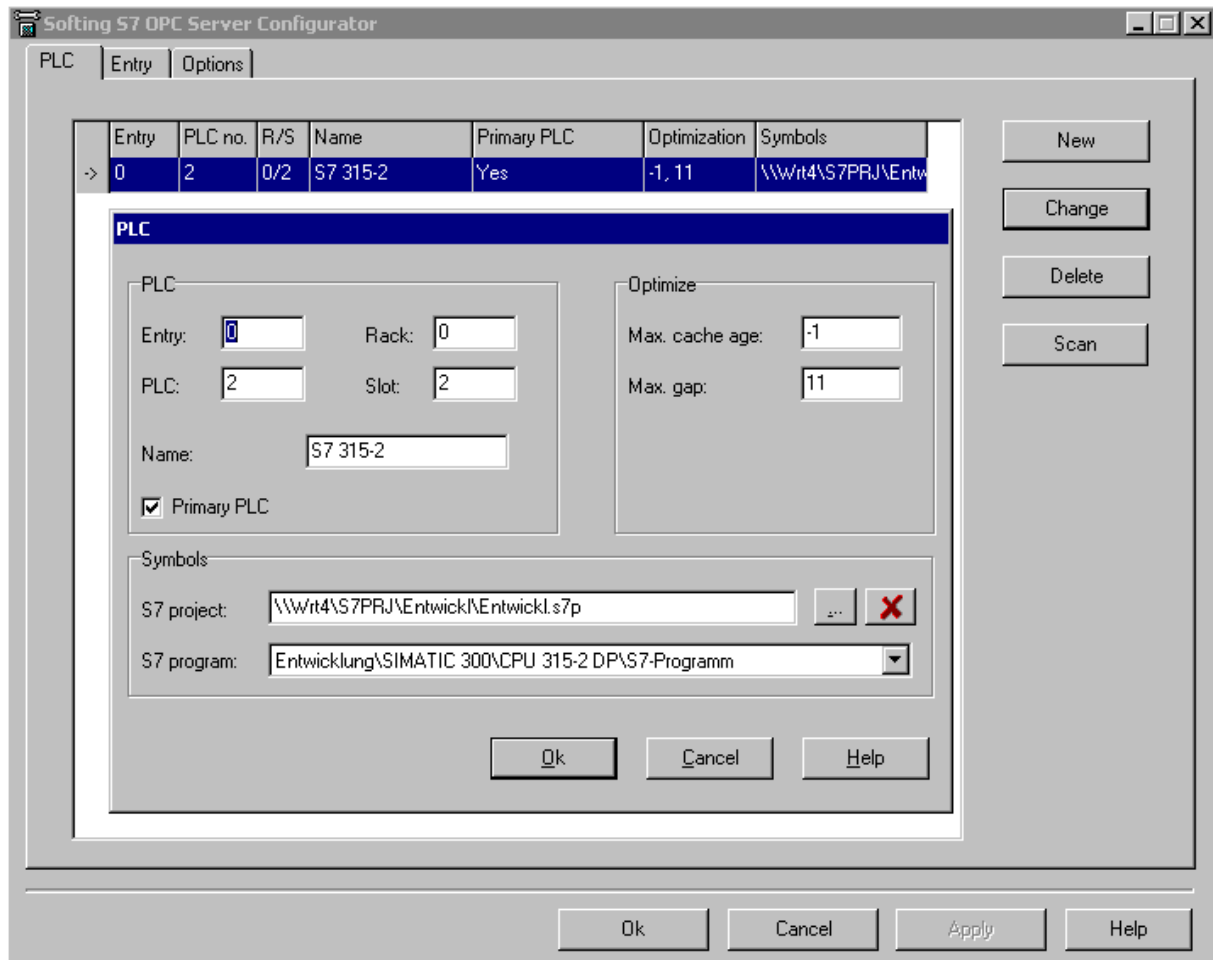


Fig. 5: Import of the STEP7 sample project in data block 2.

Finished!

Now you can view the result of your configuration. Start the Softing OPC Demo Client. Select the Softing S7 OPC Server in the folder *OPC Servers* under the node *Local* and sub node *Data Access V3*. In the folder *DA Browse* you can see the OPC name space of the S7 OPC Server as created automatically by import of the STEP7 project file. Comparison with Fig. 2 shows all OPC items with exactly the same data types and symbolic names as defined in the sample project at node *DB2* in the OPC Server's name space.

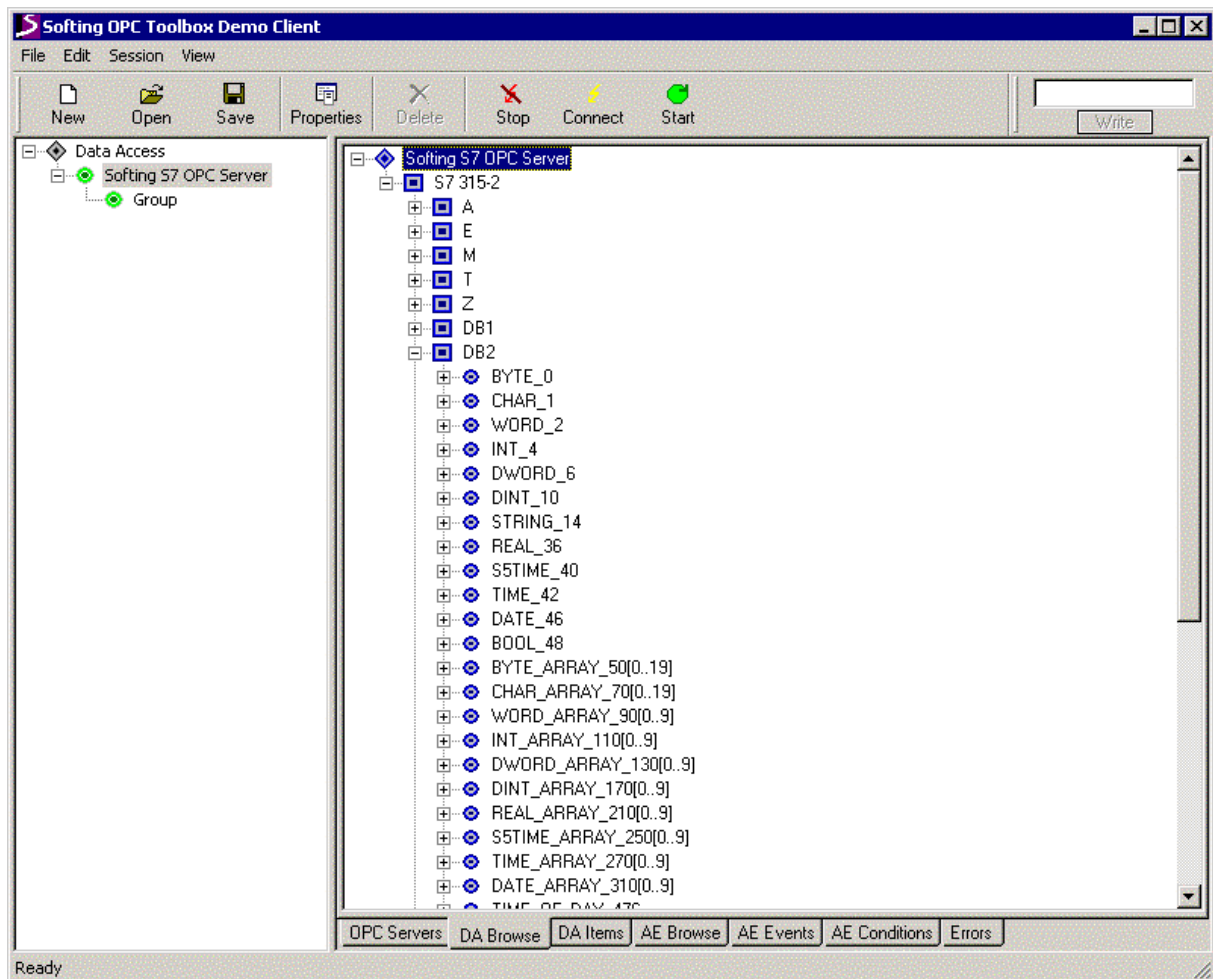


Fig. 6: View on the OPC name space with the sample project from the Softing Demo Client.

For every data point in the controller which can be selected in the OPC Server's name space, an OPC property exists. Properties are used to provide additional information on OPC items or nodes in the OPC name space. OPC item properties in the S7 OPC Server display the OPC item semantics in STEP7, i.e. the addressing of the data point in the PLC for the corresponding OPC item.

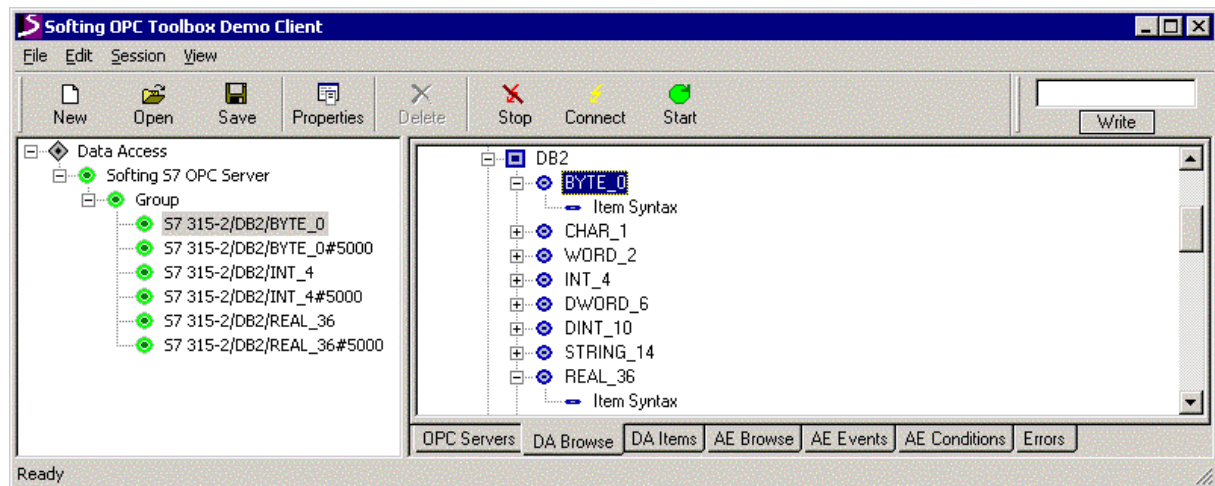


Fig. 7: Selected OPC items show item name, value, data type, time stamp etc. The corresponding properties display the addressing in the S7 PLC.