

Application Note No. 3

Product: Softing Modbus/TCP OPC Server

Keywords: OPC Server

Problem: How can I activate the slave functionality of the Modbus/TCP OPC Server?

Solution:

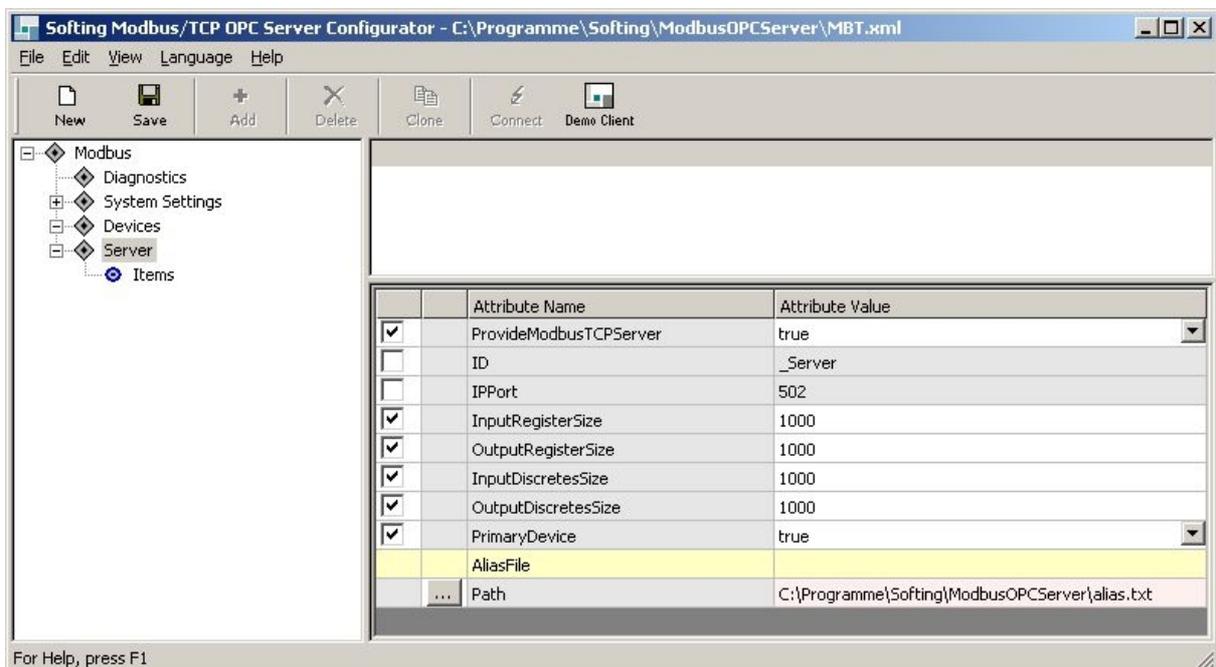
The slave functionality of the Modbus/TCP OPC server supports the configuration of a Modbus address range in the OPC server. Modbus Master Devices can access this address range using the Modbus/TCP protocol.

A user has to configure an address space in the OPC server that is accessible via Modbus. This address space is **not** associated with any hardware. Both Modbus Masters and OPC clients can read and write data in this address space to, for example, exchange data between a Modbus master and an OPC client.

The naming of this feature in the configurator as "Server" is misleading and will be changed in a future version!

To configure the Modbus/TCP OPC Server as a Modbus Slave follow the steps below using the included configurator.

Start the configurator and select the element "Server."



- Set the attribute "ProvideModbusTCPServer" to true. After that additional attributes are displayed. The attribute name "ProvideModbusTCPServer" is a somewhat confusing. In fact, if this attribute is set to true, the server acts as a Modbus Slave device.
- Change the value of the attribute "ID" if you don't want to use the default name "_Server." This name is being used in the OPC Item ID.
- Change the IPPort if necessary, the default setting is 502.

- The attributes "InputRegisterSize", "OutputRegisterSize", "InputDiscretesSize," and "OutputDiscretesSize" determine the size of the server's Modbus/TCP address range. These values should be as large as you need them. The maximum value is 65535.
- If you set the attribute "PrimaryDevice" to true, you will not need to define the device ID in advance of the OPC-Item names.

Example:

PrimaryDevice = true -> you can address your items in the OPC client with or without the device ID:

_Server.MyModbusDevice.MyItem or
MyModbusDevice.MyItem

PrimaryDevice = false -> You must specify the device ID in any case:

_Server.MyModbusDevice.MyItem

- In addition, it is possible to configure the OPC items using a description file. Enter the absolute path in the attribute "AliasFile | Path". If you use an Alias File, you can access the Modbus data either directly via the Modbus addresses or via the configured names in the Alias File.

Example of an Alias File:

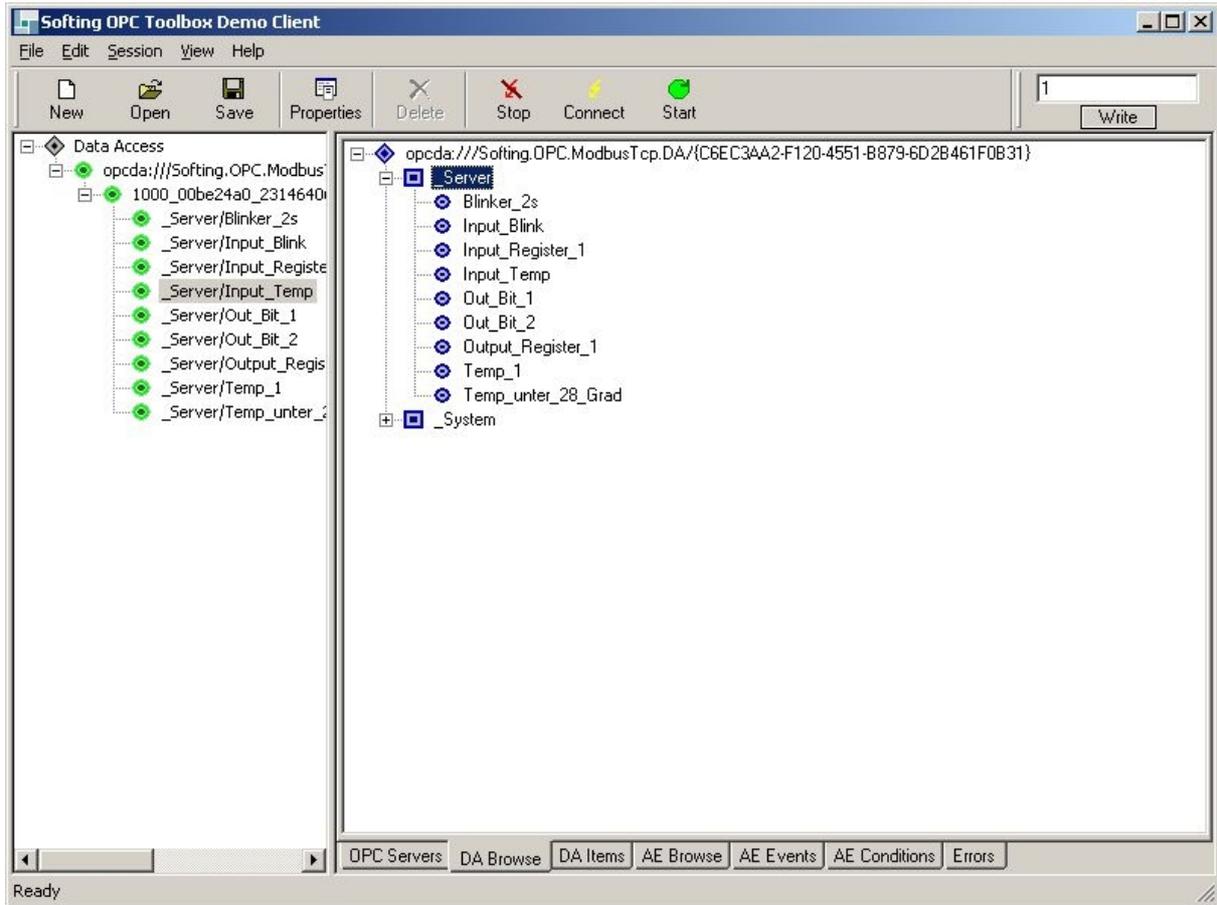
```
#      Alias      Syntax
      Server_AO_0 40001: INT
```

In this example, the Modbus address 40001 is defined as the OPC-Item "Server_AO_0".

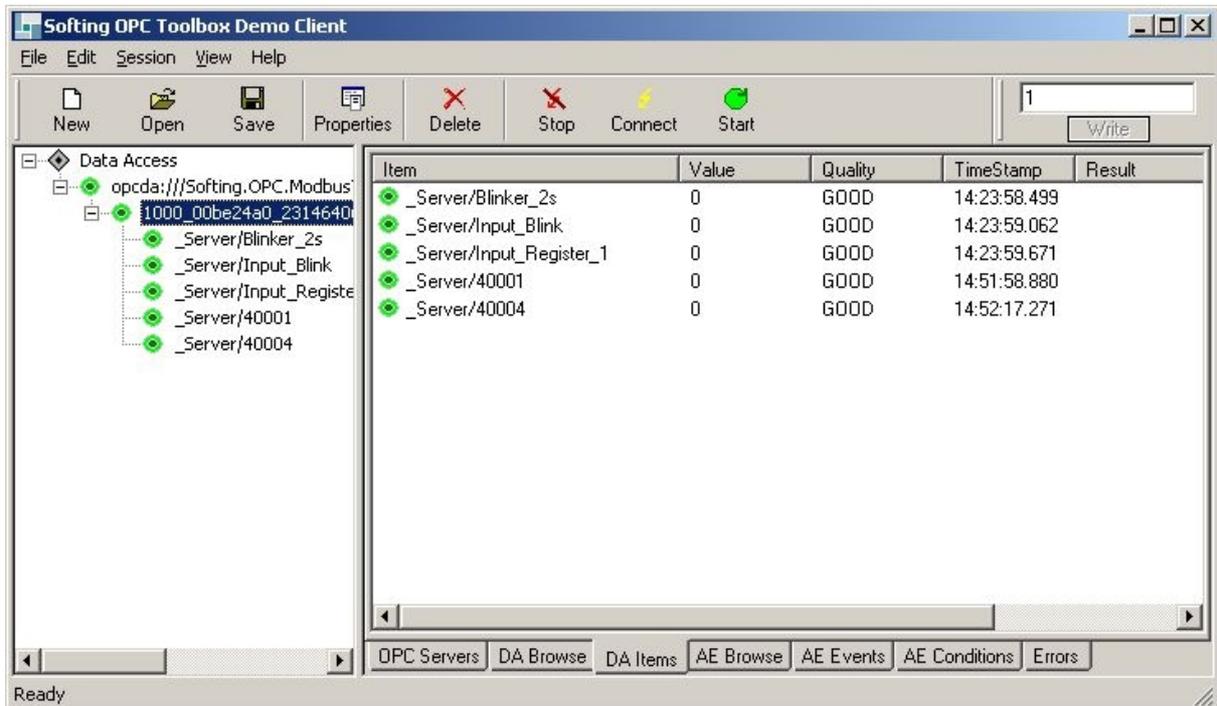
We recommend to use the included Template.xls file to create the Alias File and then save it as "Text (tab) from *. txt"..

Save your configuration settings and restart the Modbus/TCP OPC Server via the system tray.

If you use the Softing OPC Toolbox Demo Client to connect to the Softing Modbus/TCP OPC Server, you will see the items from the alias file in the area "DA Browse." You can create OPC items either by double-clicking the name space elements or by the pop-up menu "Add Item for all Tags" at the "_Server" element.



You can see the values for the created OPC items in the area "DA Items".



It is possible to access the data of the Modbus slave either via the Modbus address
_Server/40001
or via the configured OPC item names in the Alias File
_Server/Blinker_2s



Note:

If you want to access the OPC items via the Modbus address directly, select the entry
“Add Item” (right click on “group” and enter an item ID as the Modbus address).