OPC UA Client plugin manual

Document type: Manual, Version: 1.0., Date: 8.6.2018

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1. Revision history

Table 1: Revision history

Revision	Plugin Version	Author	Date	Comment
1.0	1.0.0	Urban Baš	8.6.2018	

2. General information about the OPC UA Client plugin

The OPC UA Client plugin enables Dewesoft to acquire data from OPC UA servers. It works in two operation modes:

1. **Master clock:** OPC UA acts as clock provider for Dewesoft.
2. **Soft sync:** OPC UA and Dewesoft each run with their own clock and synchronize with Dewesoft algorithm.

Current plugin version: 1.0.0

3. Licensing

The plugin requires a valid Dewesoft license. To test the plugin, you can use an Evaluation license.

3.1.   Requesting an Evaluation license

You can request an Evaluation license from our homepage on the following LINK.

- Click on Evaluation license
- Fill out all the required fields
- Click the Request license button

Figure 1: Evaluation license

3.2. Activating the Evaluation license

When you have received your trial licence key, open Dewesoft, go to Options → Settings, select Licensing and expand the Create new license section. Enter the license code (3) and click the Register online (4) button. Then your new license key will show up in the list and have the *Status Valid.*
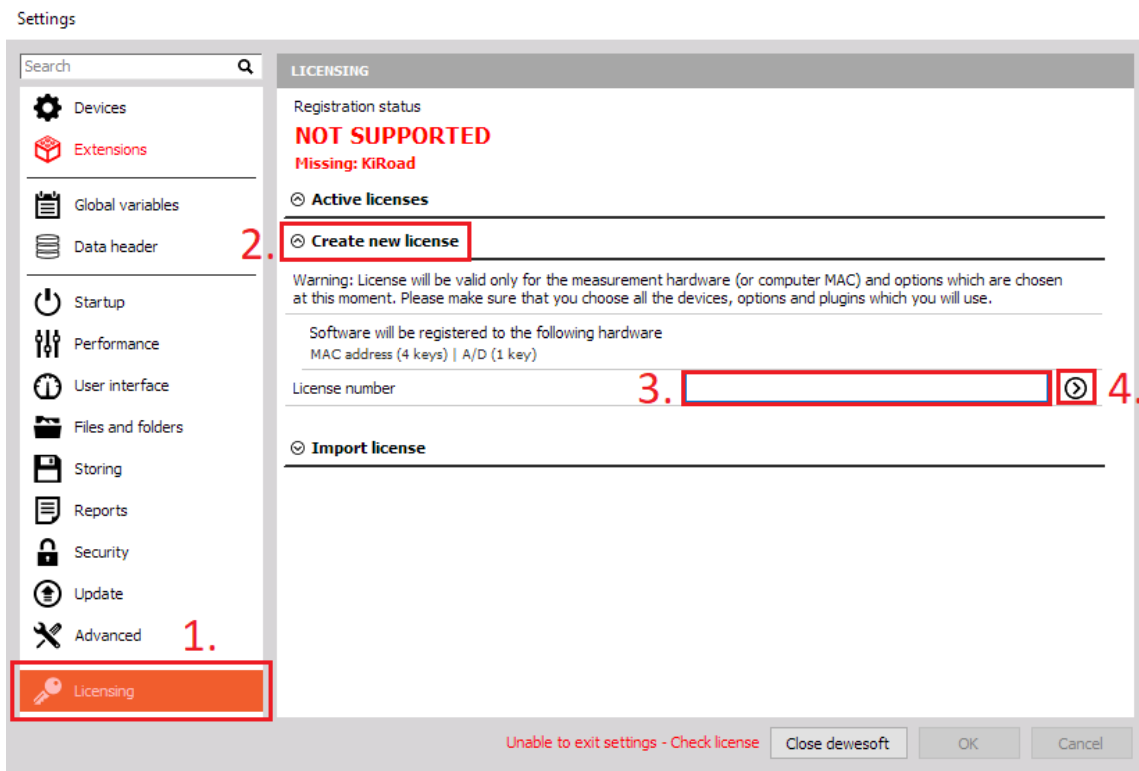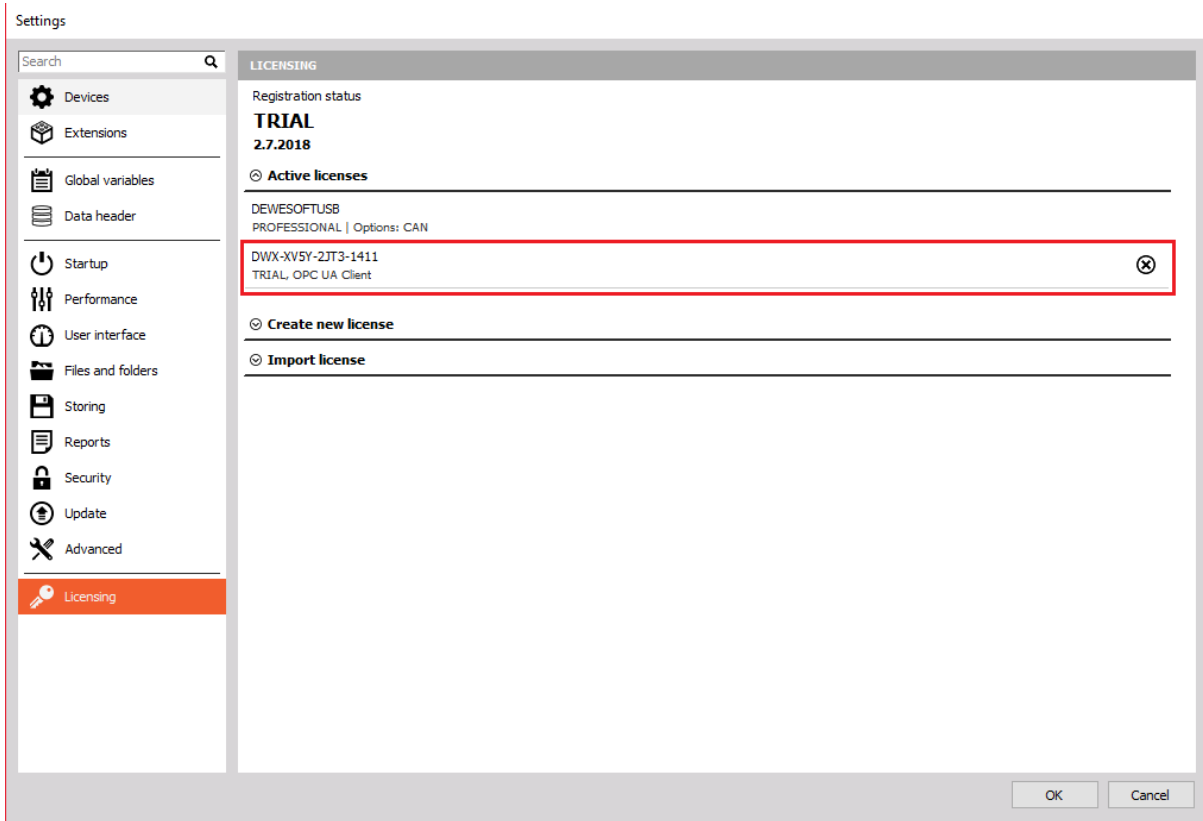

Figure 2: Enter license key

Figure 3: Valid trial license

3.3. Plug-in Installation

Simply extract the contents of **OpcUaClient.zip** archive into the Addons folder of your Dewesoft installation. (e.g., C:\DEWESoft\Bin\X3\Addons\).

Then you can start Dewesoft as an administrator and register the plugin (aka. extension). Click *Options →Settings*, select *Extensions* and click the *plus sign*. Then find the OPCUA Client plugin in the list and activate it (i.e. click the check-box in Figure 4) - when the plugin does not show up in the list, you may need to register it first.
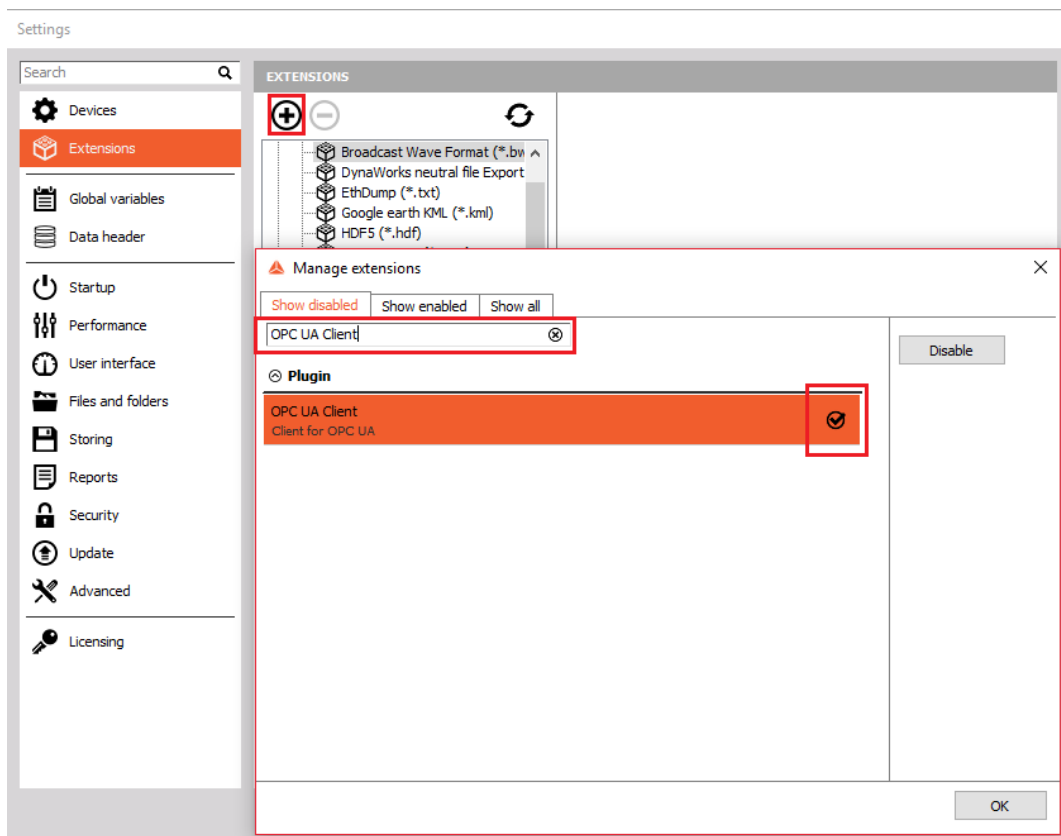

Figure 4: Add OPC UA Client extension

3.4. Registering the plugin

Before you can use Plugins in Dewesoft, they must be registered once. When Dewesoft is started it will try to register all plugins (*.dll files) that it finds in the Addons folder. In order to do that, DEWESoft® requires administrator permissions (because it must write to the Windows® registry). When Dewesoft is not run with administrator permissions, the registration cannot be done automatically.

When the plugin does not show up in the Extensions list, you must press the Refresh button (Figure 5 - Update extensions list). Note: you may need to start Dewesoft as administrator (depending on the UAC settings of your Windows user/installation). When you have pressed the Refresh button, the registration Window will be shown for a short time (Figure 6). After that, you need to restart Dewesoft.
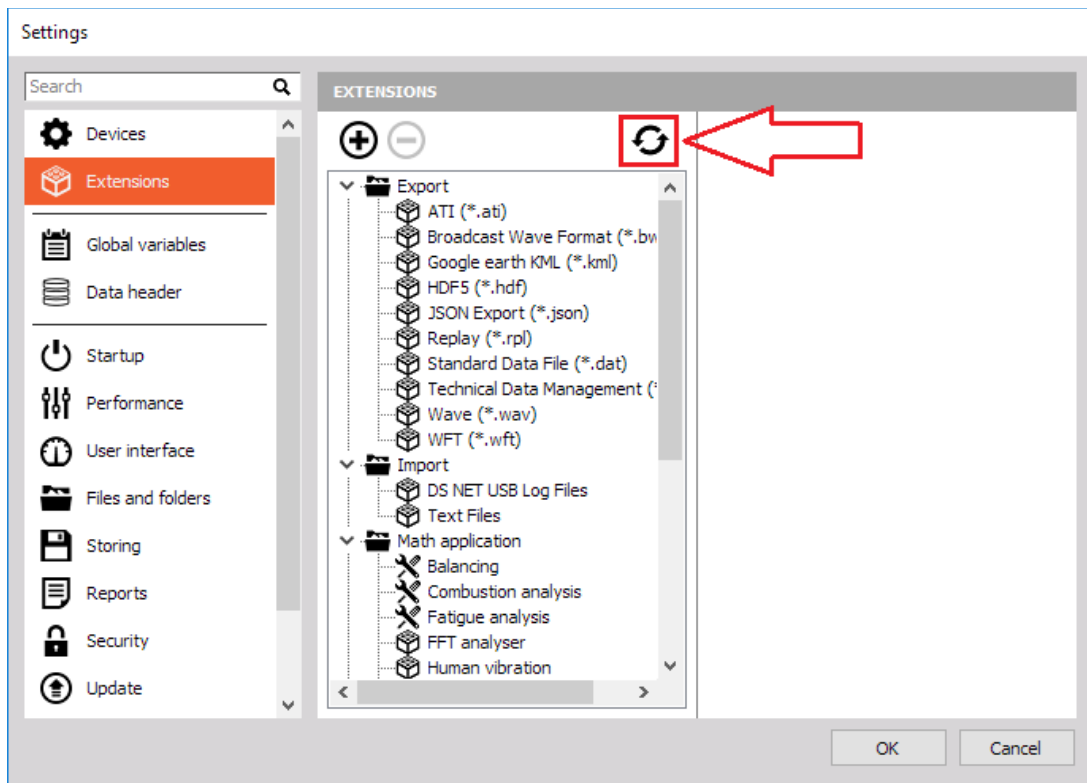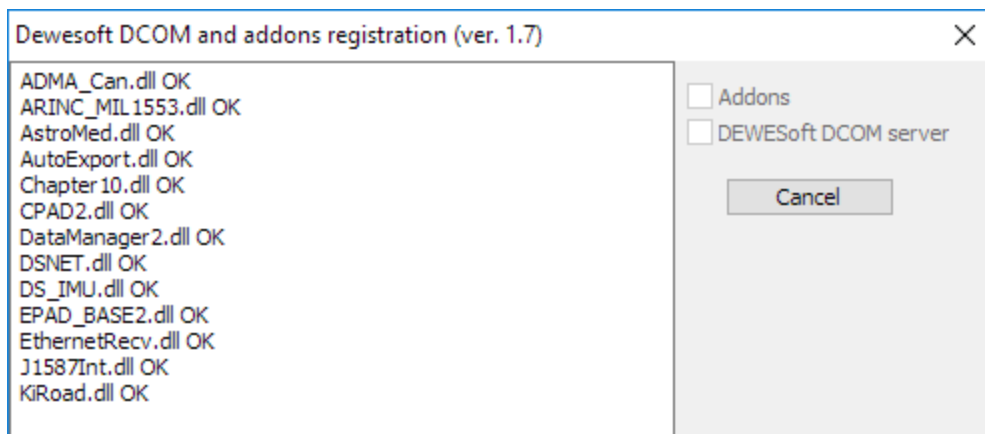
Figure 5: Update extensions list

Figure 6: Addons registration

4. Extensions setup

In the Extensions click on the OPC UA Client, then on the right the settings for the plugin will open. Here you can select the previous mentioned operation mode (clock mode). To add a server to connect to, you need to click on the "+" and enter the URL and optionally the Name. After this is done you can exit the settings by clicking "OK".
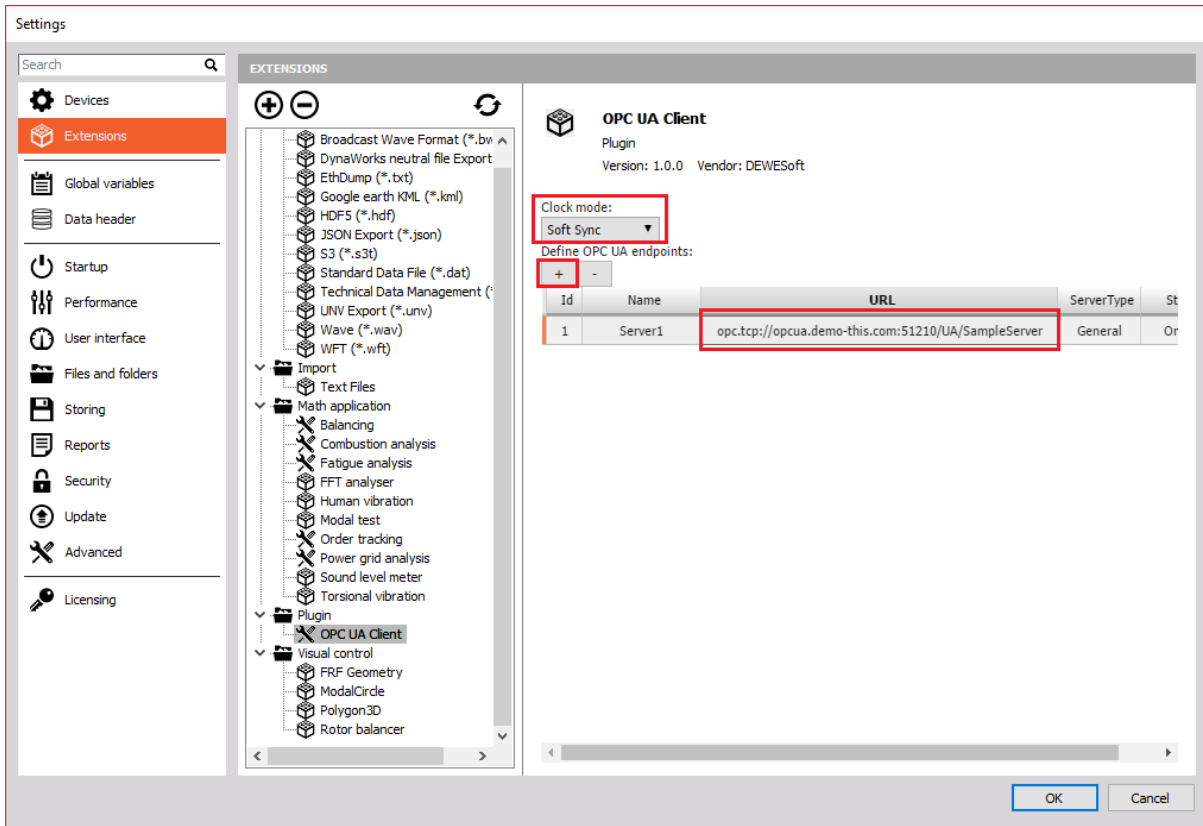
Figure 7: OPC UA Client plugin settings

5. OPC UA Client setup screen

The OPC UA Client setup screen allows you to select the Server by clicking the dropdown menu. In **Config** tab you can use the browser to browse through the information model. The current location is shown on top of the Browser. You can write the location path and click on **Go** to jump in the location. Under **Nodes** you can see nodes contained at chosen path along with properties: Identifier, Name, Type and Status of each nod. You can select which nodes you want to use in Dewesoft with the Used toggle (Off/On) button.

In the Channels tab (Figure 9) you can see all the used OPC UA channels. OPC UA method nodes and grouped as *Methods*, OPC UA variables and properties are grouped as *Variables*. For each channel you can see different information and attributes. Under Type you can see the data type of the variable. If "DsChannelType" is shown here then Dewesoft DAQ profile mode is enabled and data type is inherently Double. With **Sample rate** you can choose the rate at which data is being fetched from the server. If this attribute is read-only then it shows the original sampling rate at the source (Dewesoft OPC UA Server). **Throughput** shows incoming rate (samples per second) and this depends on network bandwidth. **Values** represents last node value and can give quick insight if channel us alive. With **Units** you can set the channels units.

The OPC UA Client plugin supports **Methods** with input and output parameters. The following section provides more details on this topic.
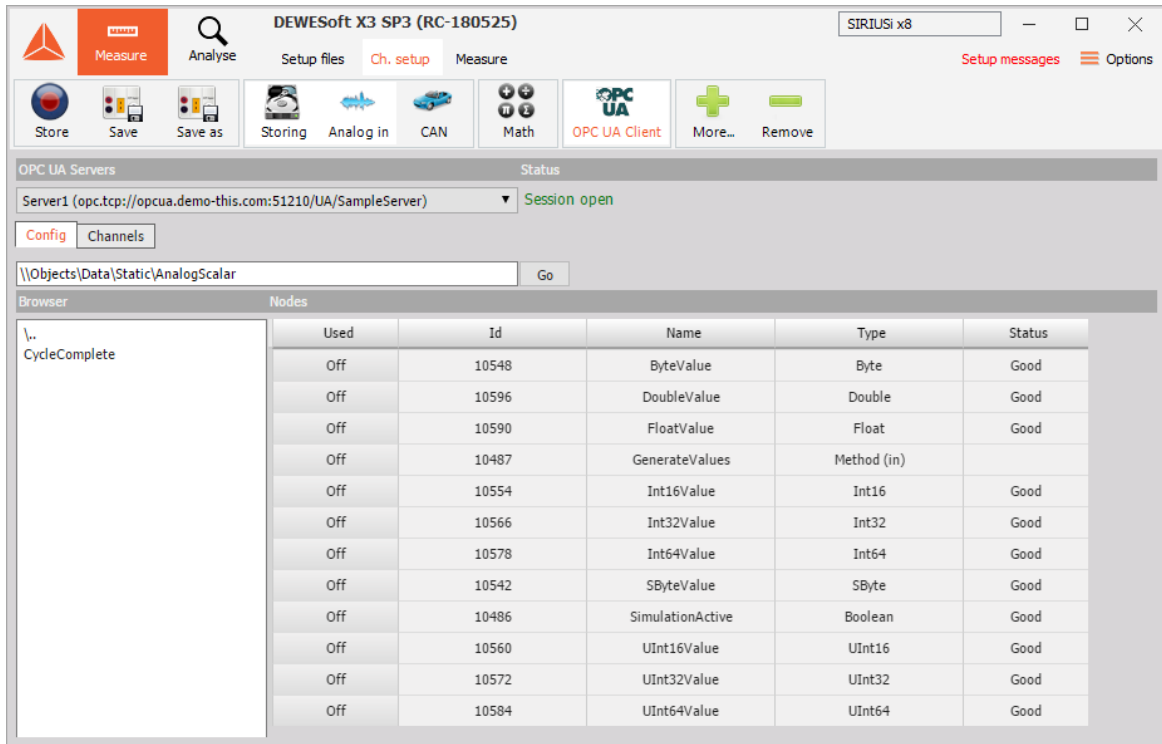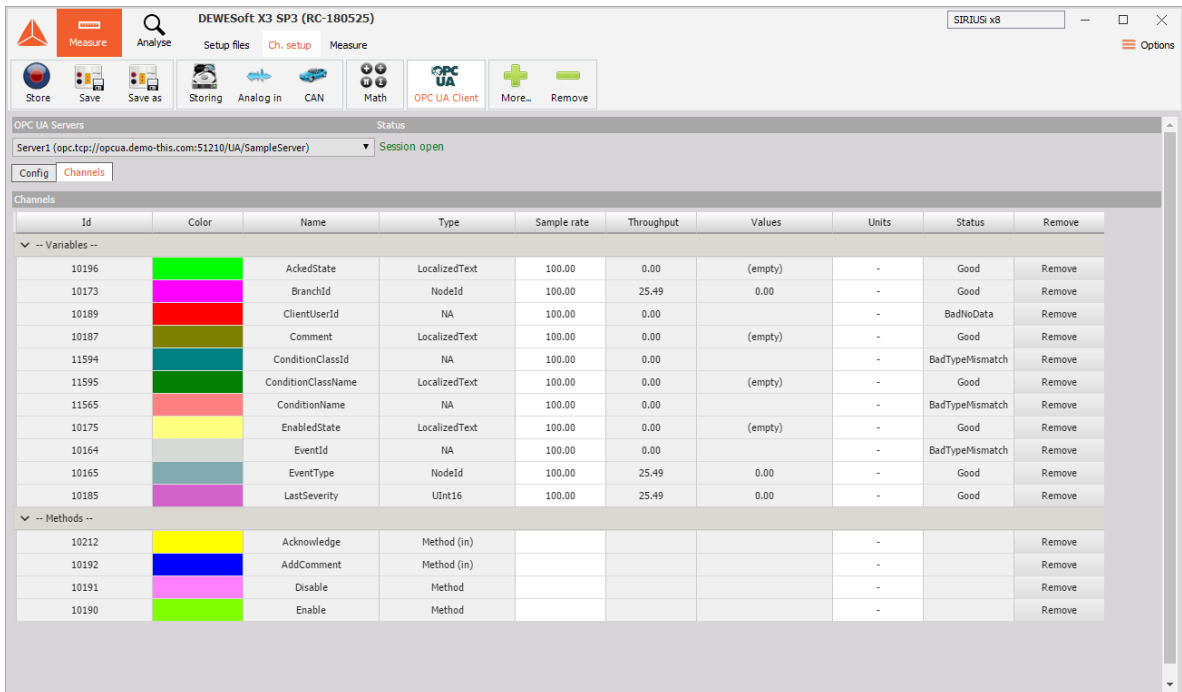
Figure 8: OPC UA Client Config setup screen

Figure 9: OPC UA Client Channels setup screen

6. Control channels

The OPC UA Client plugin supports calling OPC UA methods. You can easily associate method call, input or output with various **Input control display** visual controls and design a nice customized user interface.

Calling method is normally associated to push button. To do so go to design mode, add "Input control display", choose "Control channel" as Display type and pick "Push button" form the dropdown menu. You can also enter custom Button text. On the right select channel "Channel".

To use input or output parameters you can add another input control display, choose "Control channel" as Display type and pick "Input field" or other suitable type. On the right select channel containing either "outparam" or "inparam" (Figure 10).

Leave design mode, enter some parameters into your input control, press enter to confirm input and then click on the button and see the results in output associated control.
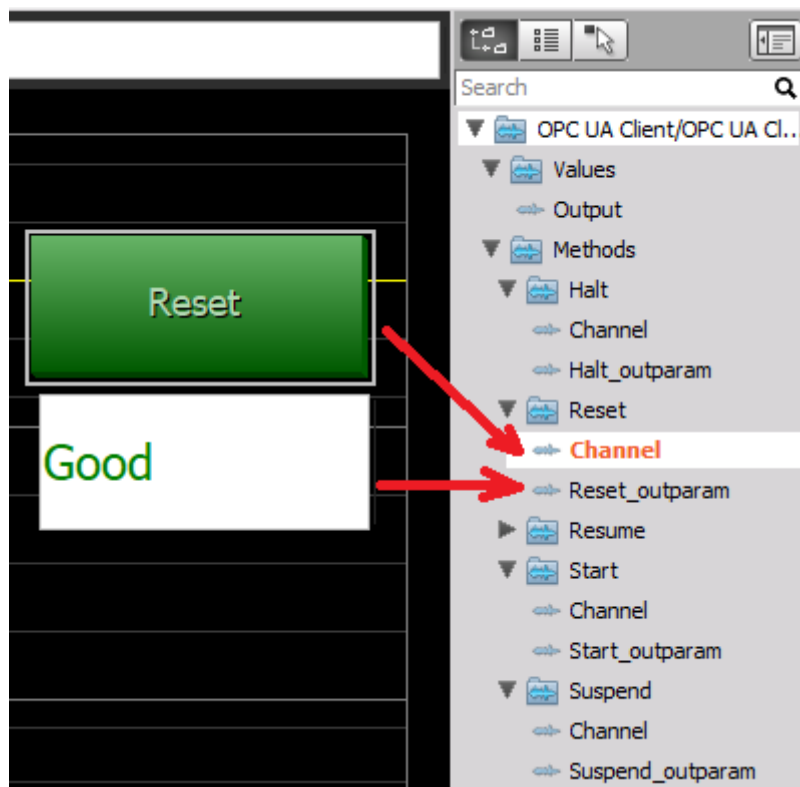

Figure 10: Methods visual control

With the Input control display we can also remotely change the values of the **OPC UA variables**. Variables should have writable permission on the server side. In design mode add Input control display, choose "Control channel" as Display type, from the dropdown menu choose Input field or any other suitable type (turn knob, slider, etc.) Then click the desired channel on the right. Leave design mode to preform control.