

## Manual: 3.3. Setup OPC Connection

In order to update your model in real-time, the model must have access to the process data via an OPC interface. We assume that your control system, archive system or other data source provides an OPC server. *algorithmica* provides an OPC client in order to read this data.

The basic data of a plant (click on [plant -> edit](#)) includes three fields relevant to the OPC connection:

1. *OPC Name*. This is the full name of the OPC server in your network. A sample name is `opcda:///Softing.OPCToolboxDemo_ServerDA.1/{2E565242-B238-11D3-842D-0008C779D775}`.
2. *OPC DA version*. OPC includes several protocol types. *algorithmica* applications make use only of the DA type, which means data access. It is used to query the most recent value of a tag only. This protocol is available in version 2 or 3. Please specify which version your OPC server supports.
3. *Subscription frequency (sec)*. This is the number of seconds that we should wait before querying a new value. Please choose this number with great care. The application will query every tag at this frequency, store the values in the database and perform the model computations. Choosing a low number will not only strain the computational resources of your network but it will probably not achieve practical benefits as the human reaction time may not be sufficient to cope. Choosing a very large number may cause a significant time delay between the physical effect modeled and any possible reaction. In case of doubt, we recommend choosing a time period somewhere in the range of 300 to 900 seconds, i.e. 5 to 15 minutes. Ideally this value is the same as the data cadence chosen in the historical dataset.

If you have not done so already, please input these values into the interface and save them. We assume that you have already provided each tag with the field "PLS tag", which is the full OPC item name of that tag. The combination of the information of the OPC server and the OPC item of each tag allows the application to read the values.

Please note that the application computer must be able to access the OPC server over the network. This may require changes to be made to the firewalls in your network.

In order to check that the OPC server can be reached and that the items are read correctly, please go to [plant -> OPC diagnostic](#). This form should display some basic information about the OPC server and also the current value of each tag. If there is a check mark next to the server status and each tag, then the connection is good and the item names have all been found. If there is an X next to server status, then either the server name is wrong or it cannot be reached on the network, please check with your network administrator. If there is a check mark next to server status but some tags have an X next to them, then their item names cannot be found on the OPC server. Please check these item names and correct them by going to [plant -> edit tags](#)

Having successfully provided all this information and checked it to be correct and

working does not turn real-time computing on. You may turn real-time computing on and off independently of providing all the information required for its use.

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