



MANUAL

PROFIBUS Configurator

Configuration Tool for PROFIBUS DP



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Disclaimer of liability

We have checked the contents of the document for conformity with the hardware and software described. Nevertheless, we are unable to preclude the possibility of deviations so that we are unable to assume warranty for full compliance. The information given in the publication is, however, reviewed regularly. Necessary amendments are incorporated in the following editions. We would be pleased to receive any improvement proposals which you may have.

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Important notes

Read the manual before the start. For damages due to improper connection, implementation or operation Softing refuses any liability according to our existing guarantee obligations.

The recent version of this manual is available in the Download Area of Softing at: <http://industrial.softing.com>.

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Chapter 1

Overview

1 Overview

PROFIBUS Configurator is a versatile configuration tool. It allows the user to define PROFIBUS networks from a master's point of view. PROFIBUS Configurator can be used in various application scenarios to configure Softing PROFIBUS DP masters.

Depending on the use case the functionality reaches from defining the network structure with its connected devices and their individual device parameters over interactive online tests of particular inputs and outputs up to the definition of tag names and data types for all available process data as they are used by Softing's PROFIBUS OPC server.

1.1 Use Cases

- Offline configuration

The goal of an offline configuration is to prepare a binary configuration file for a controller that uses a Softing PROFIBUS DP master.

The PROFIBUS DP master may either be based on a PC interface board or implemented as an embedded solution using Softing's protocol stacks and IP cores.

- Online configuration

Online configuration makes use of a PROFIBUS interface boards installed on the PC where the PROFIBUS Configurator is used.

This allows for scanning the network for connected devices and for interactive communication with these devices.

A network configuration can be activated using the interface board as the active master for the devices connected to it.

- Defining tag names for process variables

For each configured device it is possible to assign named process variables to its inputs and output. These variable are also assigned a data type (e.g. Boolean for single bits or Signed Byte for an analog input).

These variables may subsequently be used inside the PROFIBUS Configurator for purposes like commissioning the network. For that purpose variables can be read and written as soon as the current configuration is activated.

Furthermore, the named variables serve as so-called "OPC items" if such a configuration is used by a Softing PROFIBUS OPC server.

1.2 How to get started

The remainder of this manual focuses on how to get started with offline configuration. Online configuration, OPC operation and a more detailed description of all configuration parameters are covered by the online help.



Chapter 2

Installation

2 Installation

2.1 System requirements

To run the PROFIBUS Configurator, the PC must meet the following requirements:

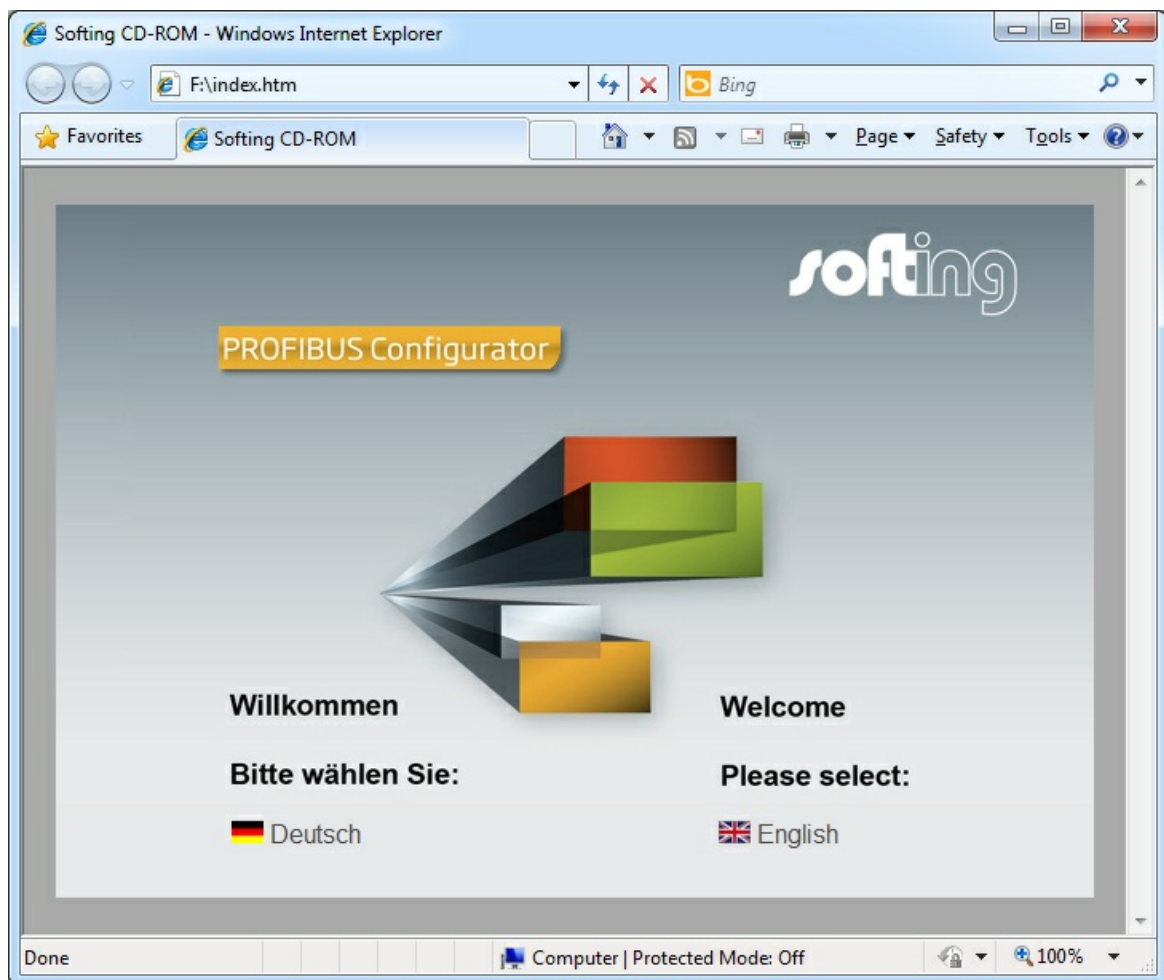
- Windows7 (32 or 64 bit version), Windows 8, Windows Vista or Windows XP installed
- Free USB 2.0 port for the USB hardlock

2.2 Software installation

Please insert the product CD-ROM in your PC's CD drive.

If the CD does not start automatically double-click on `index.htm`.

The following screen opens in your web browser. All subsequent screen shots are taken from Internet Explorer. Other web browsers may show a slightly different behaviour.

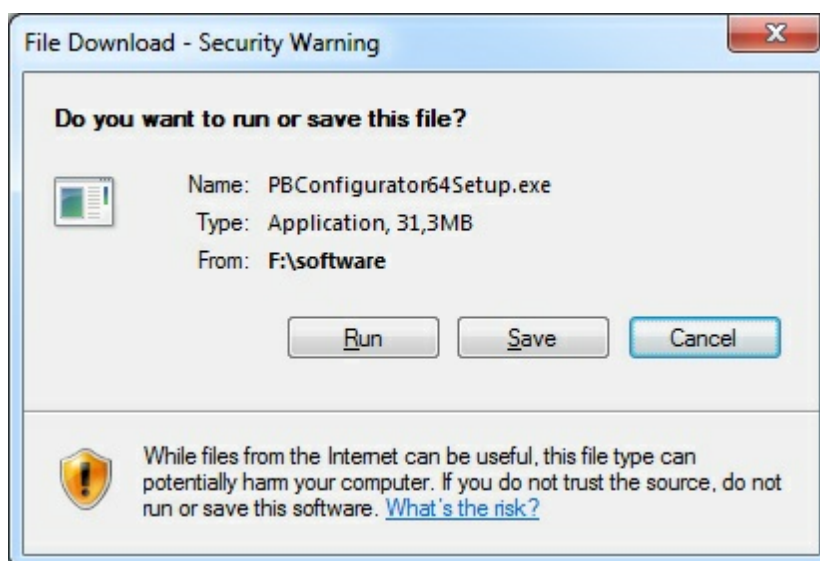


Please click on your preferred installation language.

On the following screen please select the installation package that suits your operating system.



When you are prompted with the following screen please choose "Run" in order to start the installation process.



Please choose "Run" if the following security warning is shown.



The installation wizard appears.



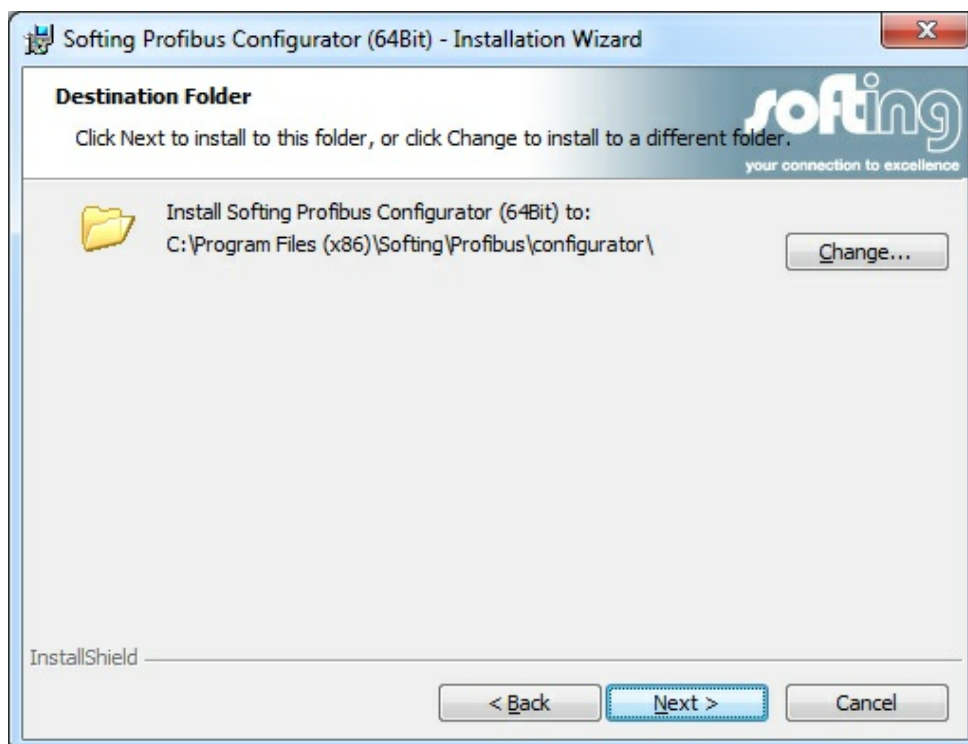
Click on "Next"

and accept the terms of the license agreement.

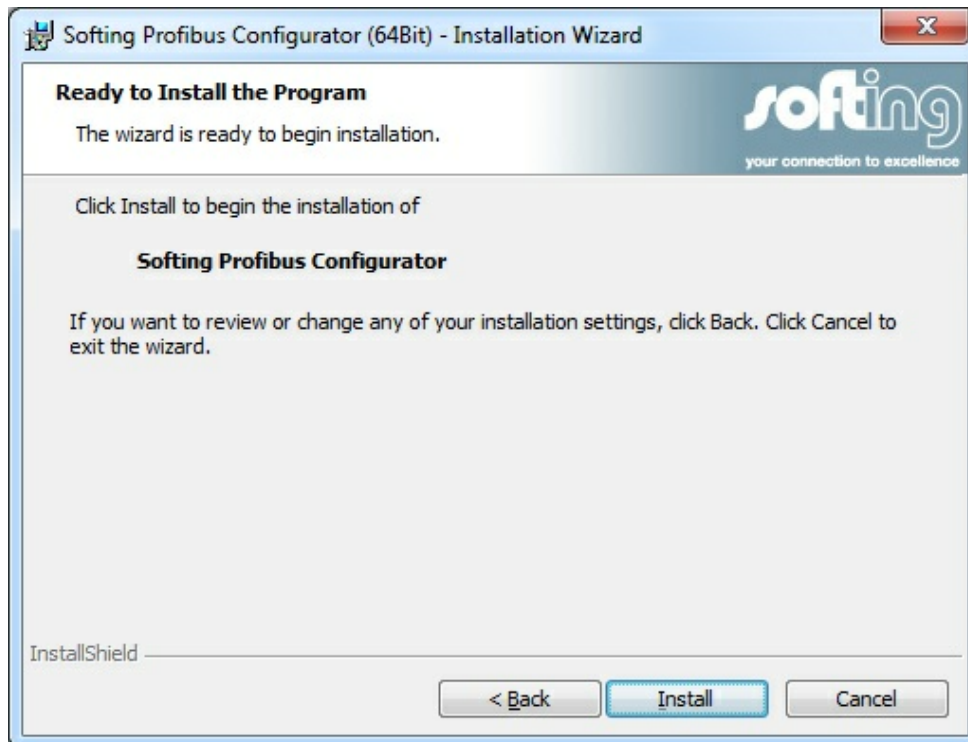


Click on "Next".

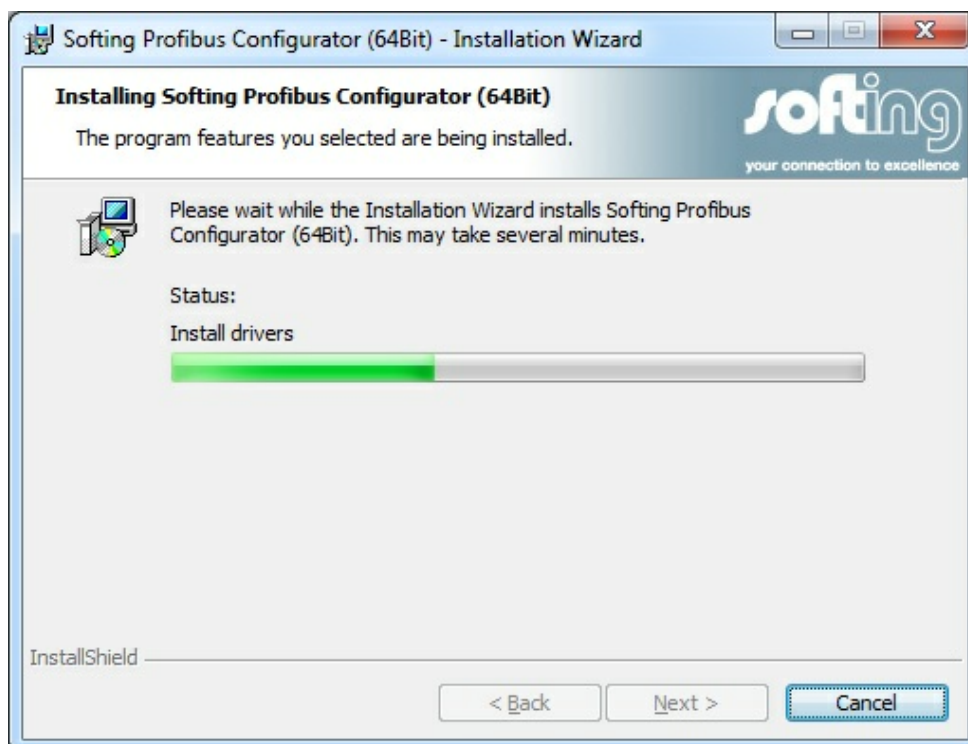
Here you may change the installation directory. Otherwise just stay with the proposed default destination folder.



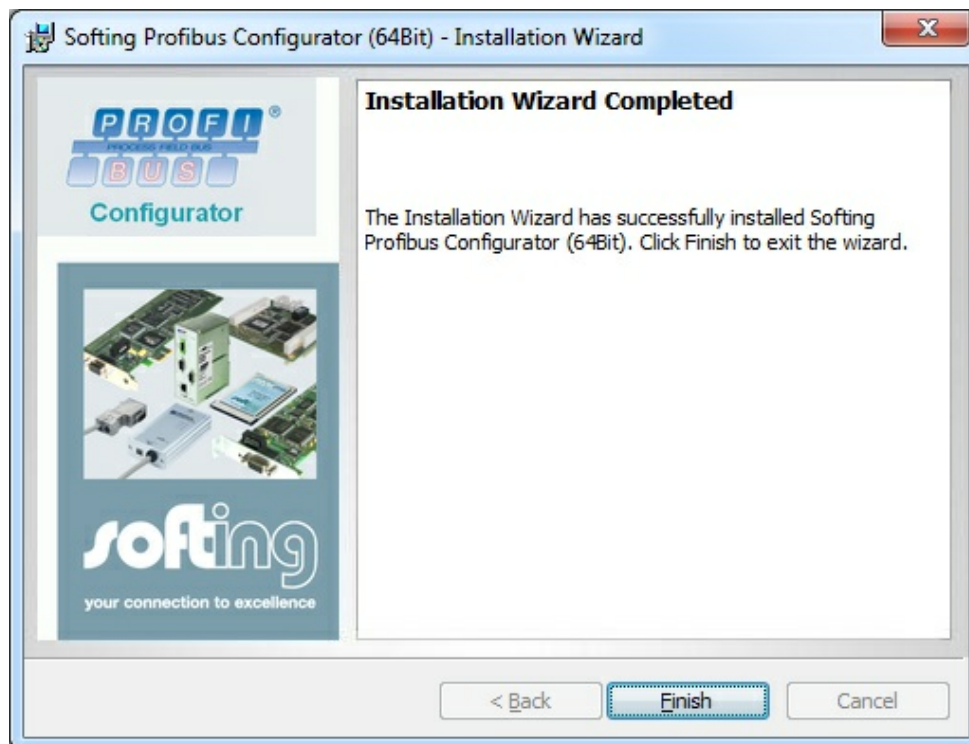
Click on "Next" once more.



When you click on "Install" software installation begins. This process may take some time.



Finally, the installation will terminate.

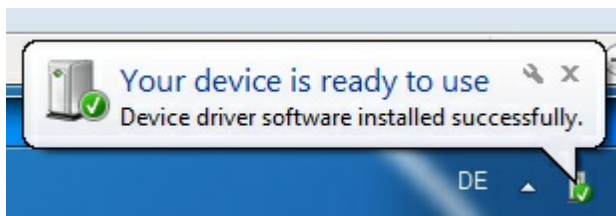


Please confirm this final step by clicking on "Finish".

2.3 Hardlock installation

Insert the supplied blue USB hardlock in a free USB port of your PC.
After a short while the hardlock will be recognized.

If it is the first time the hardlock is installed on your PC you typically get a success message from Windows.



Successful installation and operation of the hardlock is signalled by switching on a red LED indicator inside the translucent housing of the hardlock.



Chapter 3

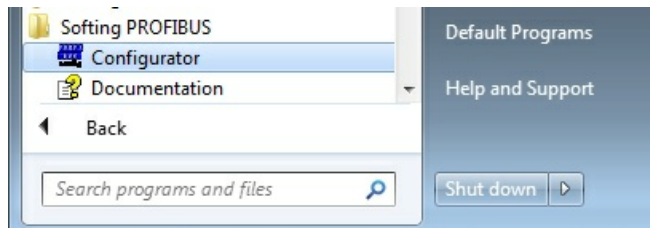
Working with PROFIBUS Configurator

3 Working with PROFIBUS Configurator

The following simple example shows how to create a binary configuration file for a PROFIBUS DP master based on Softing's protocol stacks.

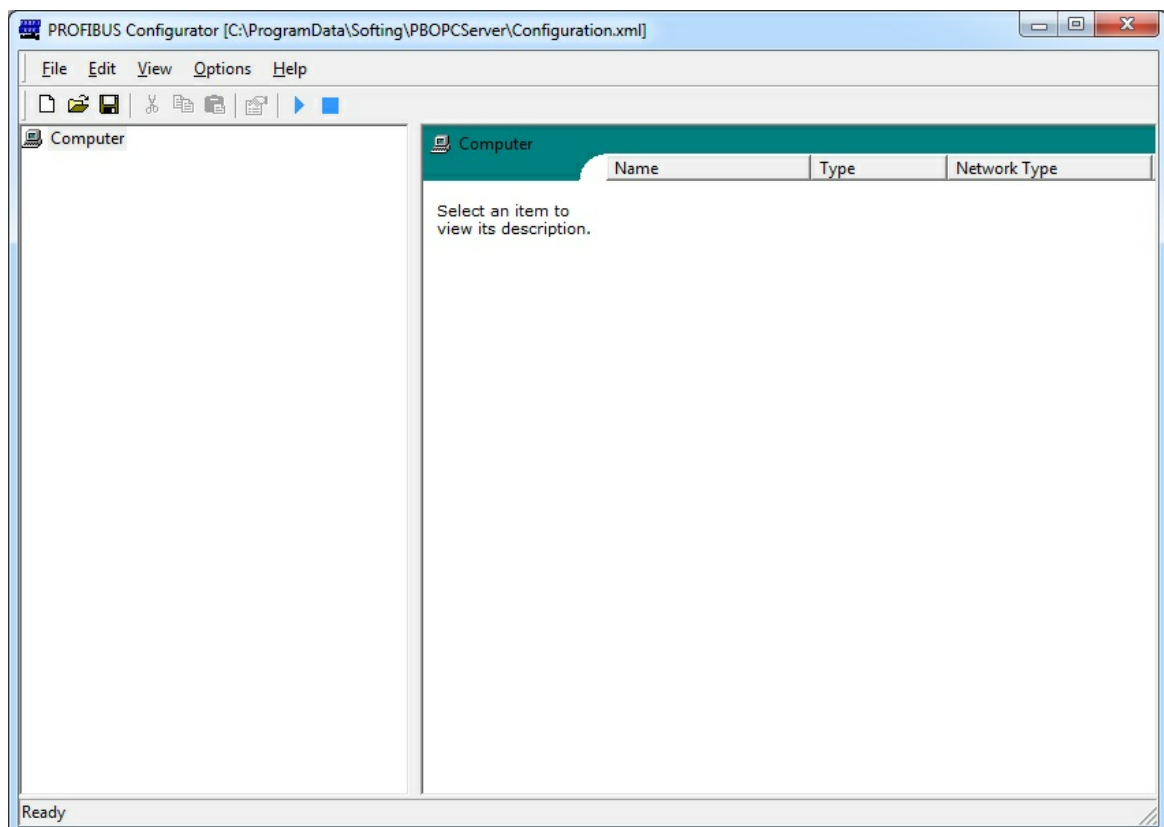
3.1 First start

Click on the Windows start button and select "all programs" - "Softing PROFIBUS"



There you can launch the "Configurator".

When you start it the first time there is no recent project file. In this case an empty configuration project opens.

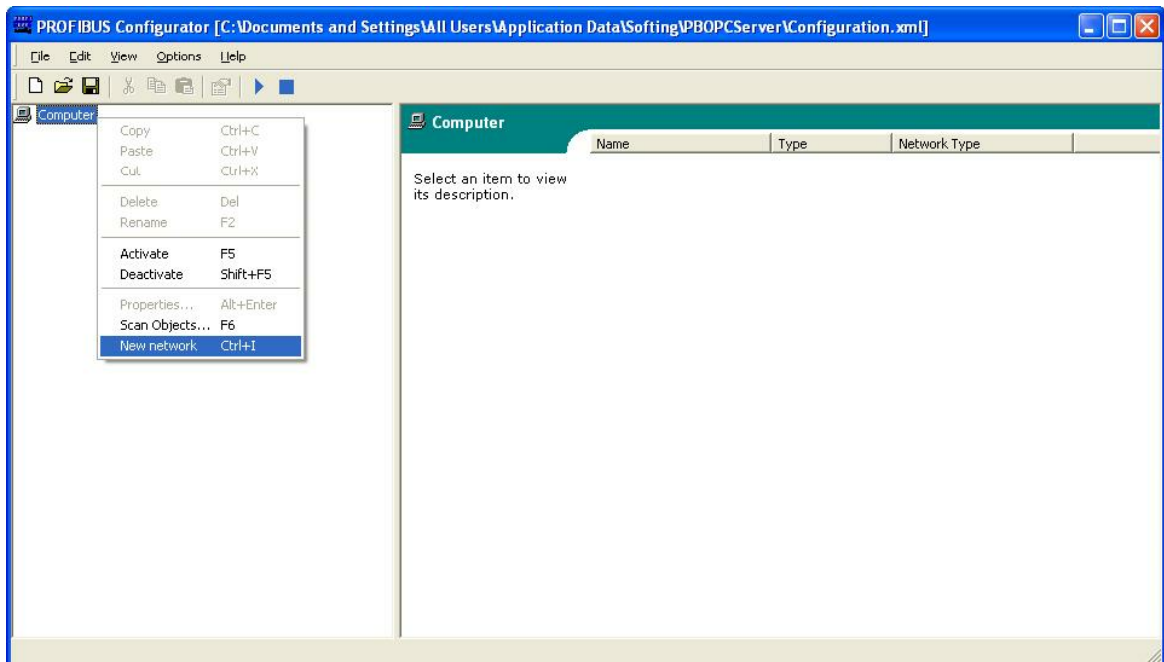


3.2 Adding a network and a segment

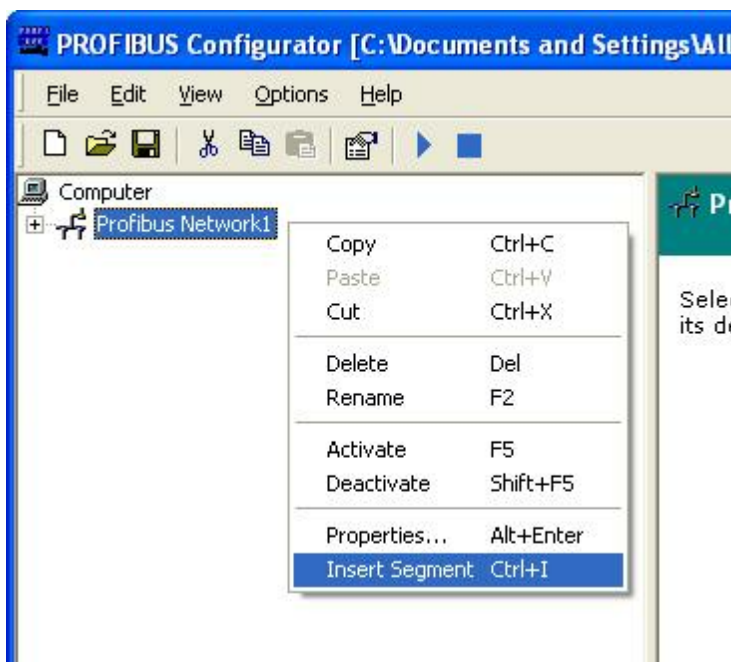
The configuration tool follows a structured approach for the modeling of automation systems. All master and slave devices are connected to network segments.

First we need to create a network.

Right-click on the computer symbol and select "New network".



Then right-click on the new network and select "Insert Segment".

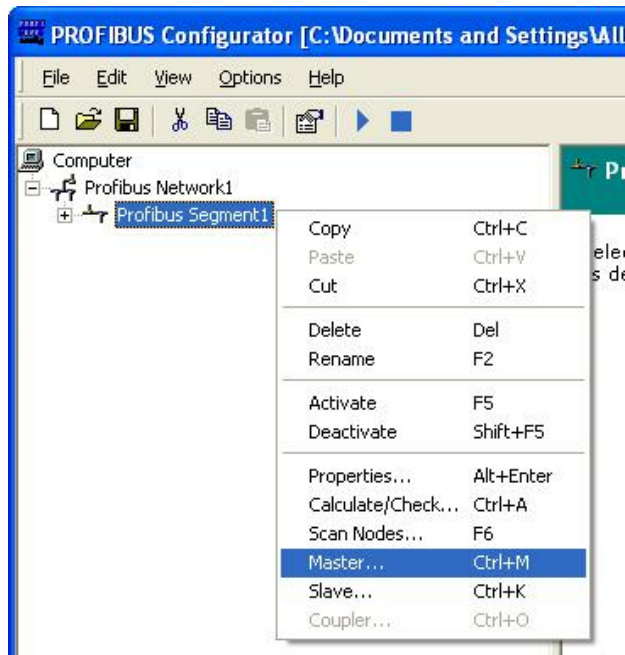


3.3 Adding a master

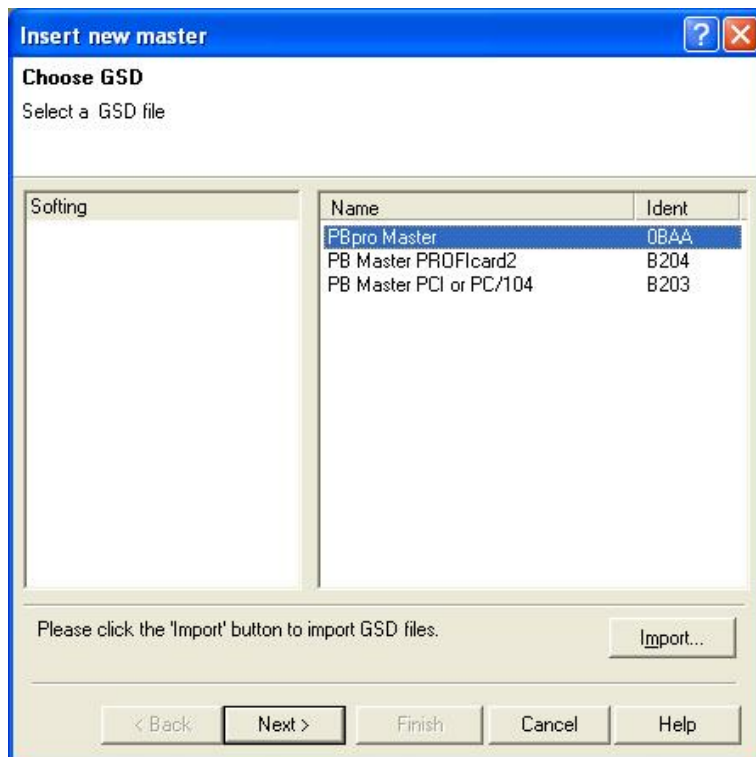
We need to add a PROFIBUS master device. This master represents the target device for our binary configuration file.

A configuration project may have more than one master, each with its own binary configuration. In our example we stay with only one master.

Right-click on the new segment and select "Master...".



The following dialog will open.

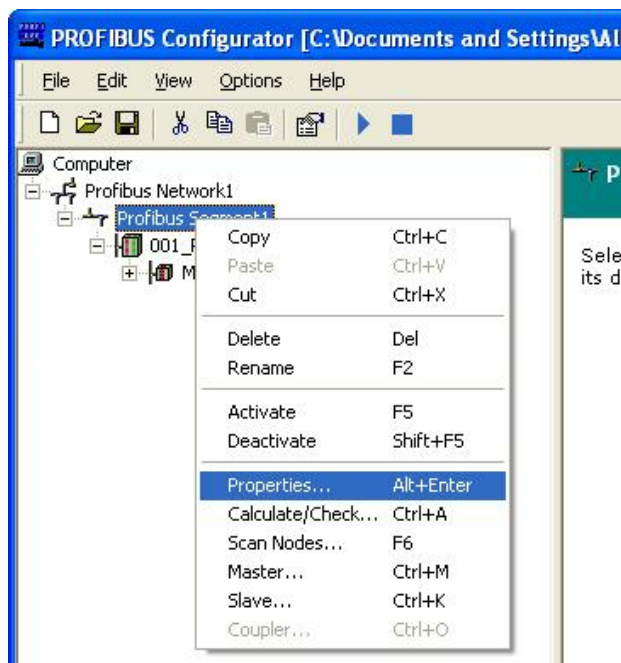


It does not matter which master type we select. The master entry only acts as a placeholder for our target controller to be configured. In our example we select PBpro Master and click on "Next".

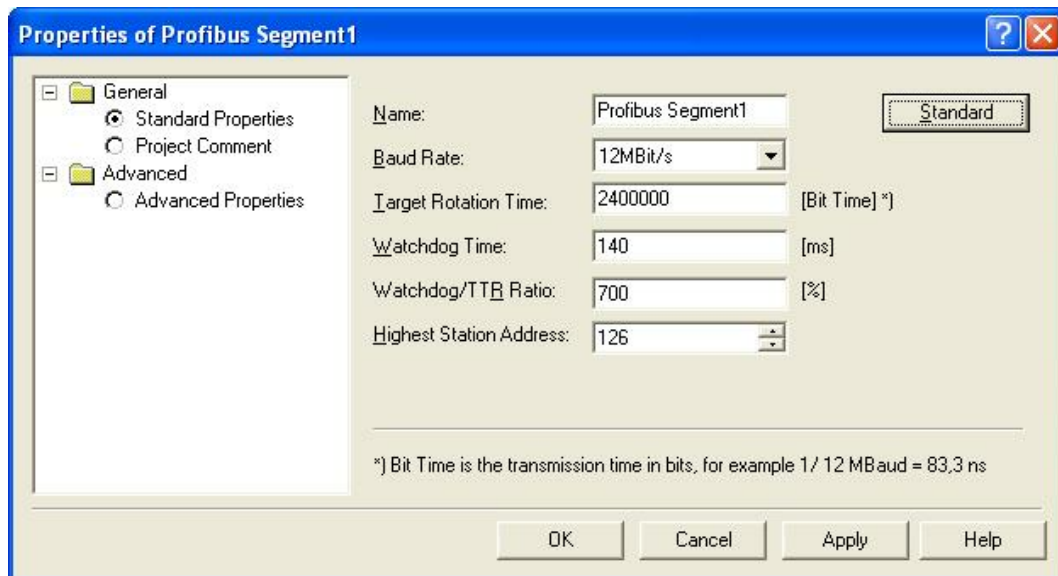
In the following dialog we may adjust our master's station address and click on "Finish".



We also want to define the baud rate setting for our master. This is a segment parameter. Right-click on the segment and select "Properties...".



Here we choose the desired baud rate from the select box and click on the "Standard" button. This adjusts the bus parameters to typical values for the selected baud rate which we confirm by clicking on "OK".

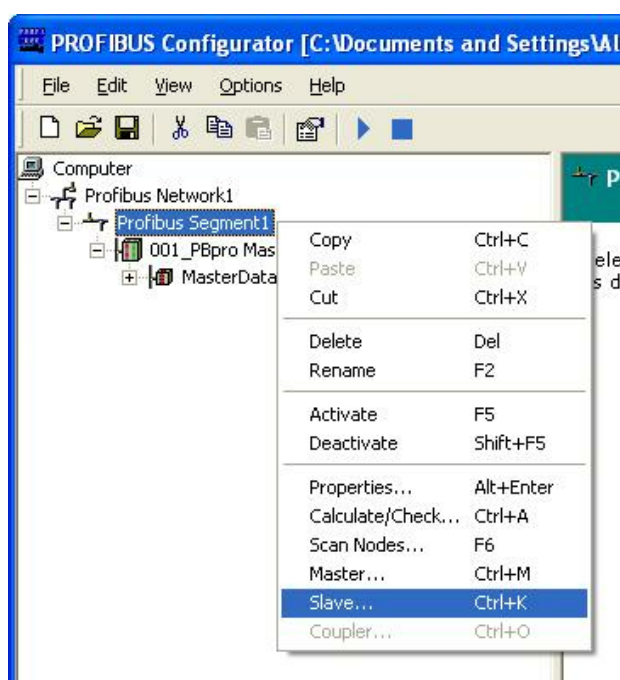


3.4 Adding a slave

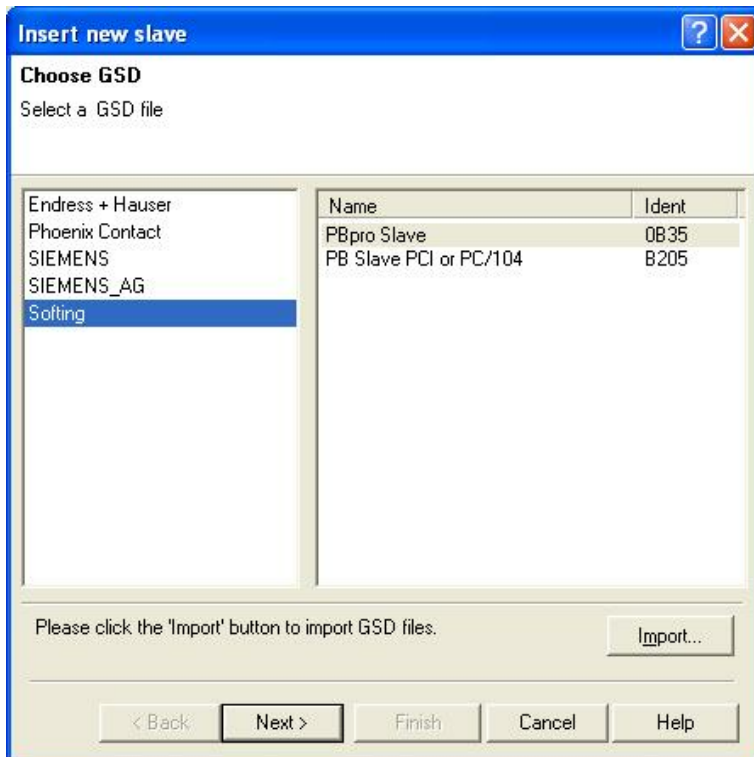
Slave devices represent the peripherals connected to a master via the PROFIBUS network. The characteristics of such slave devices are modeled in a so-called "GSD file" that is available from the vendor of the slave device.

Please make sure you have all GSD files at hand for your specific devices.

Right-click on the segment again and select "Slave...".



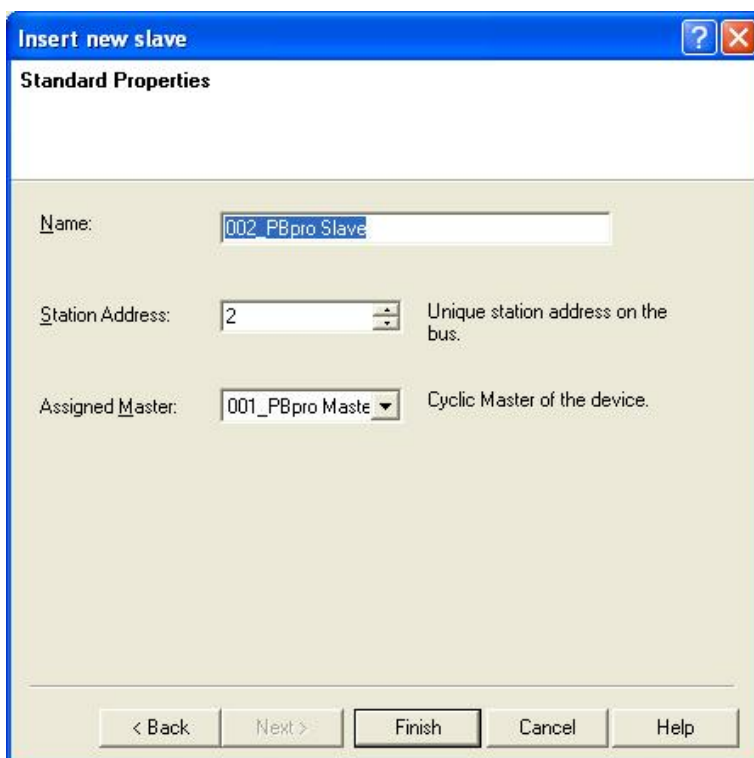
This opens the following dialog:



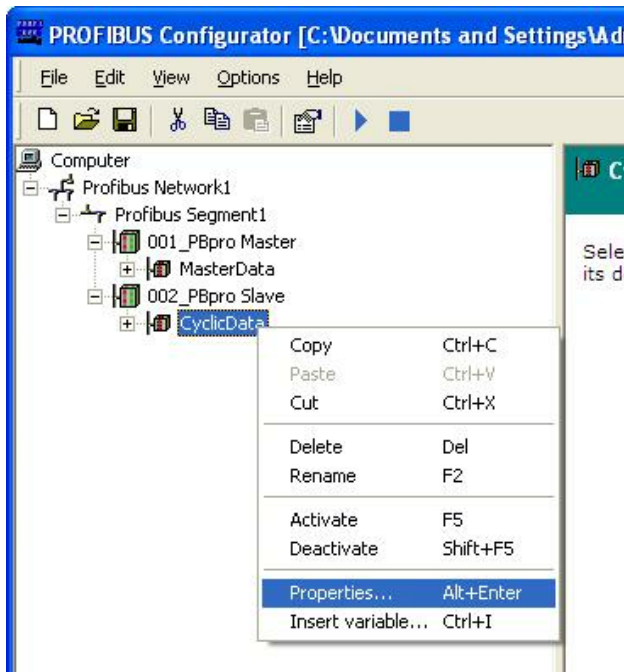
Here you can select from already available GSD files. For any other slave device click on "Import..." and browse the fitting GSD file.

When the correct slave is selected continue with "Next".

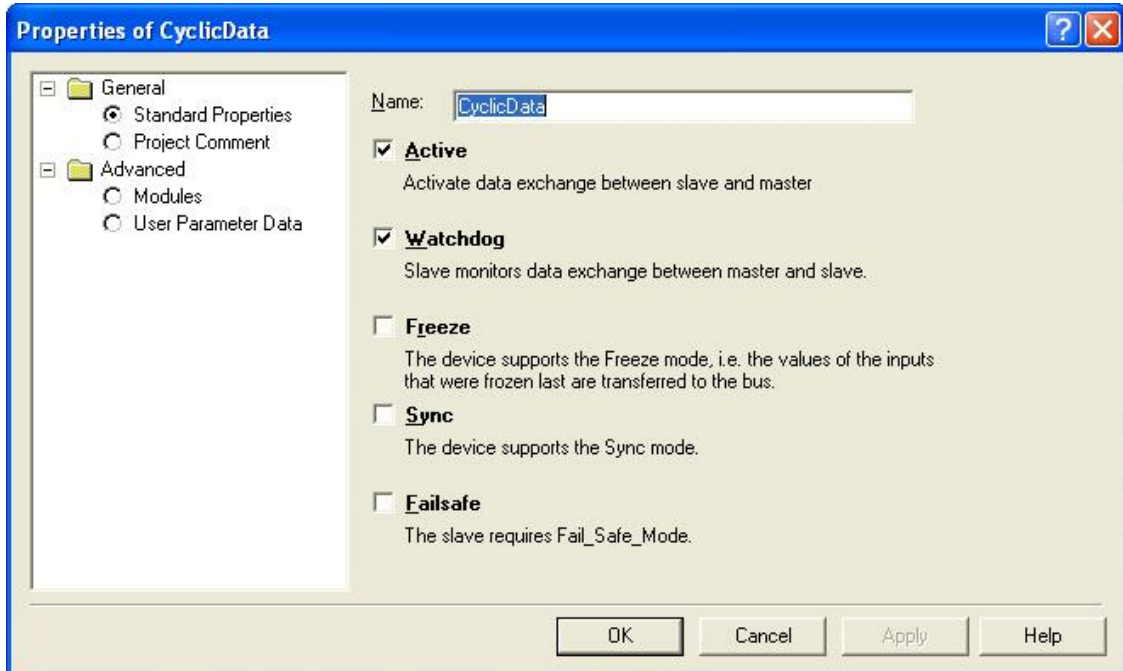
In the following dialog we may adjust the slave's station address and click on "Finish".



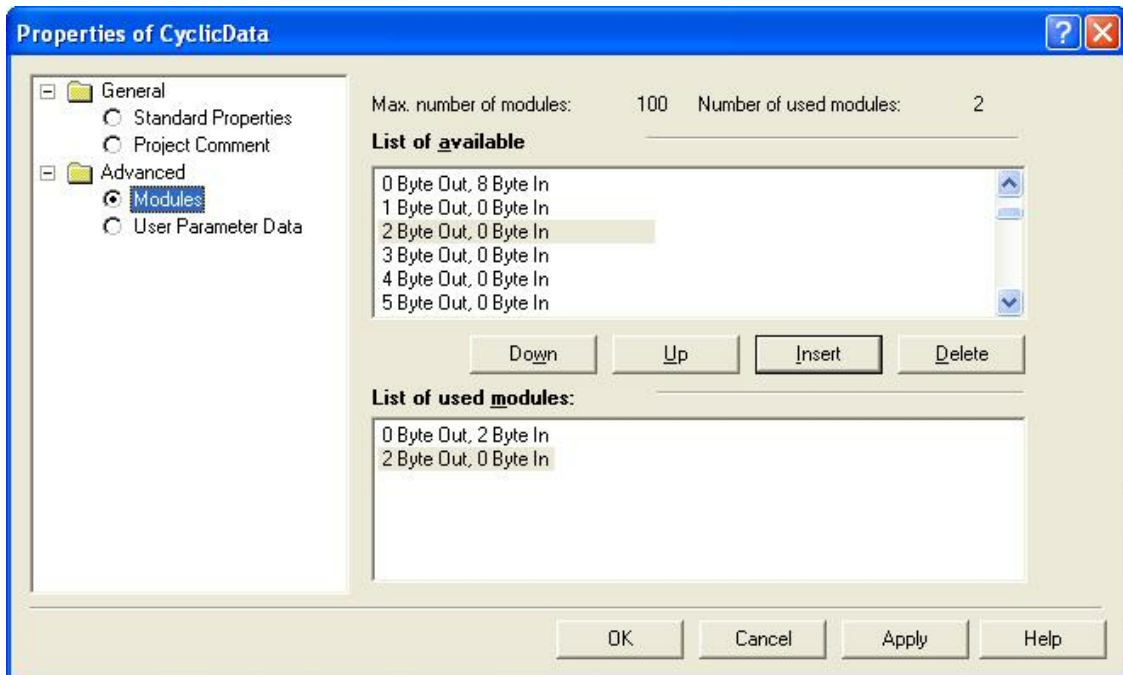
Now we need to define some slave parameters.
Right-click on "CyclicData" of the slave and select "Properties...".



In the following dialog we may adjust some general characteristics:



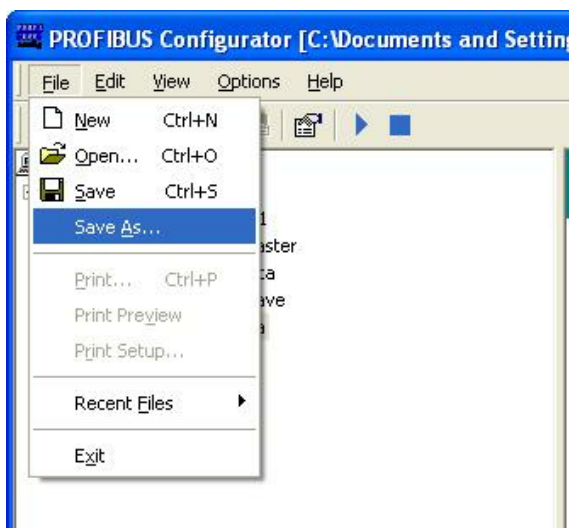
Now we need to define the i/o data of the slave.
Click on "Modules".



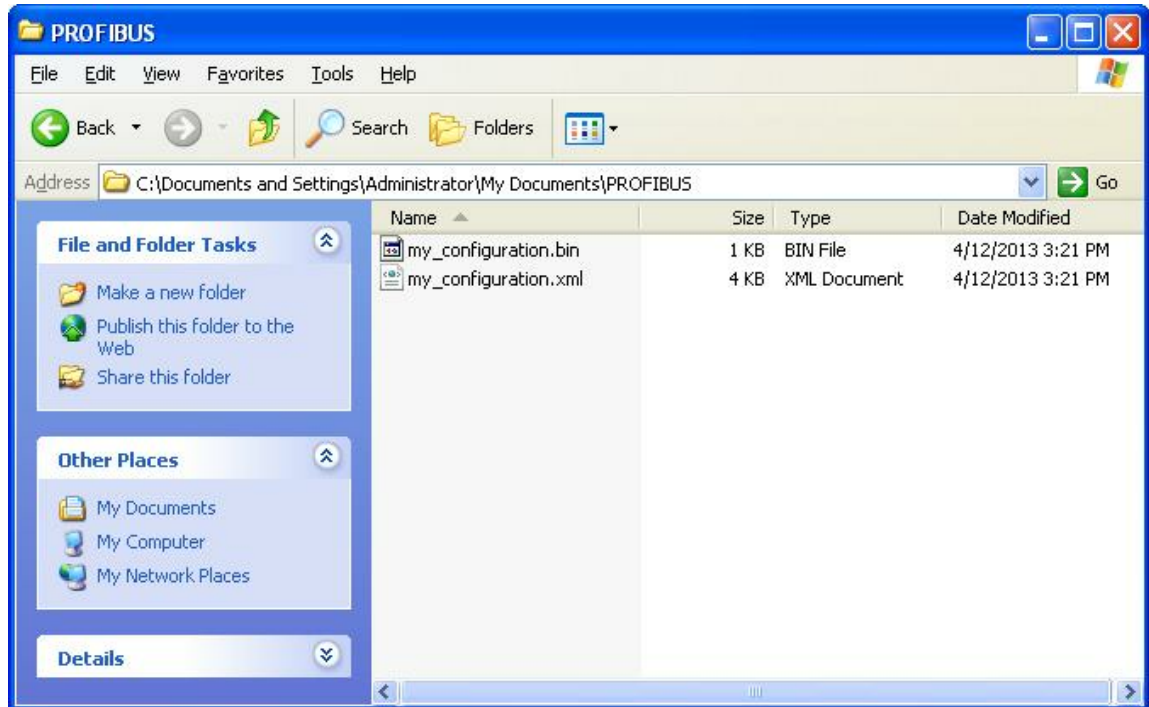
Here we can select and "Insert" the modules that we want to add to the master's process image. Some slaves have user parameters that may be adjusted by clicking on "User Parameter Data". Finally click on "OK".
Further slaves may be added in the same way.

3.5 Saving the project

Finally we save the project. Selecting "Save As..." allows us to choose the name and location of the project individually.



PROFIBUS configurator stores two types of files. The project information is contained in an XML file. In addition to that BIN files are created for each PROFIBUS master that is contained in the project. These files contain the configuration information for a particular master device. Transfer this BIN file to the corresponding target master device.



There are two types of PROFIBUS DP master stacks available from Softing that use different BIN file formats.

By default the PROFIBUS Configurator uses the "Version 5" format. This typically fits controllers based on Softing's PC interface boards.

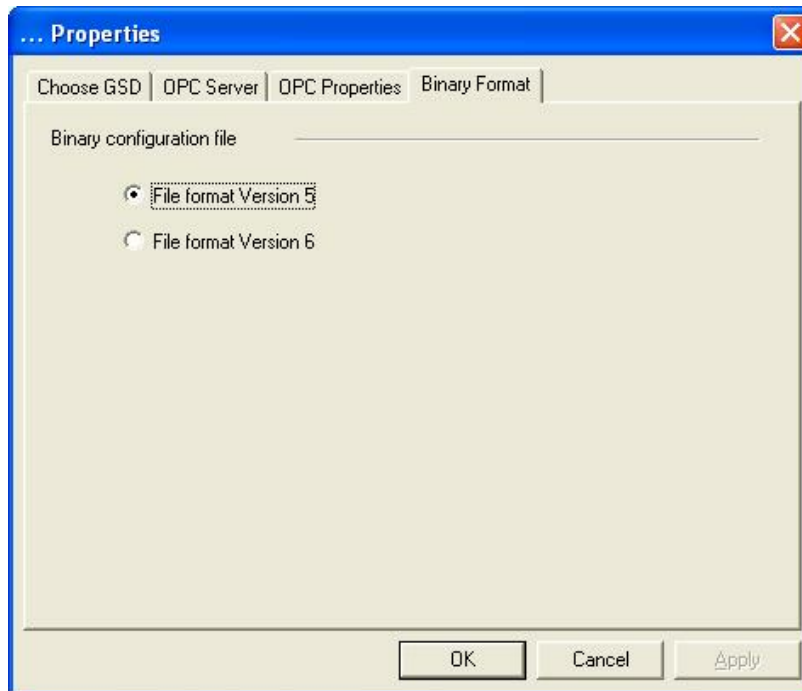
Controllers using Softing's IP Core solutions use "Version 6" format.

Please ask the vendor of your PROFIBUS master controller about the appropriate format.

The format to be generated by PROFIBUS Configurator may be changed by clicking on "Settings..." in the "Options" menu.



Choose the desired format on the "Binary Format" tab and click on "OK".



3.6 Further information

For further information on the features of PROFIBUS Configurator please use the online help (F1).