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Installation guide: CoDeSys Ethernet I/P and PROFINET for ctrlX CORE

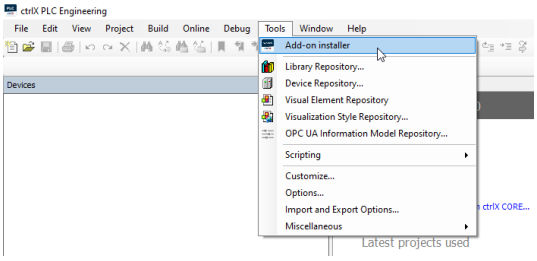
2022-02-07 Version 1:
First Revision
2022-05-11 Version 2:
Package Manager was replaced by the Add-On Installer with ctrlX WORKS 1.18

1 Preparation

Bosch Rexroth provides CoDeSys fieldbus communication drivers for Ethernet IP and PROFINET.
These drivers are provided by zip files and contain all the relevant add-ons (packages) to run the fieldbus drivers on a ctrlX CORE. Unzip the file to your file system.

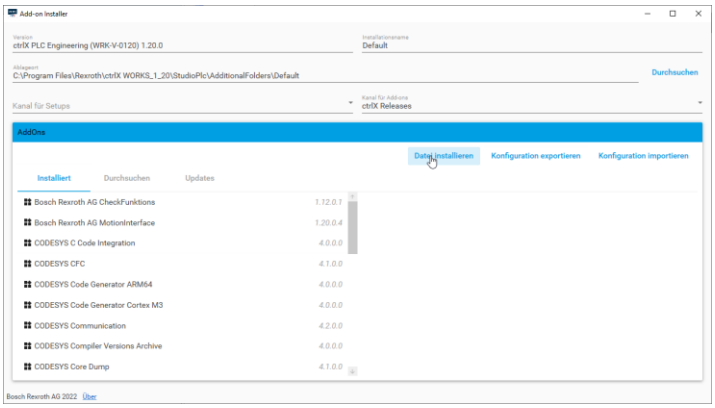
1) Start Add-on Installer

2) Start ctrlX PLC Engineering and select menu item *Tools -> Add-on Installer*.



3) Open the Add-On Installer by a double click.

   The Add-On Installer is currently only available in German language.

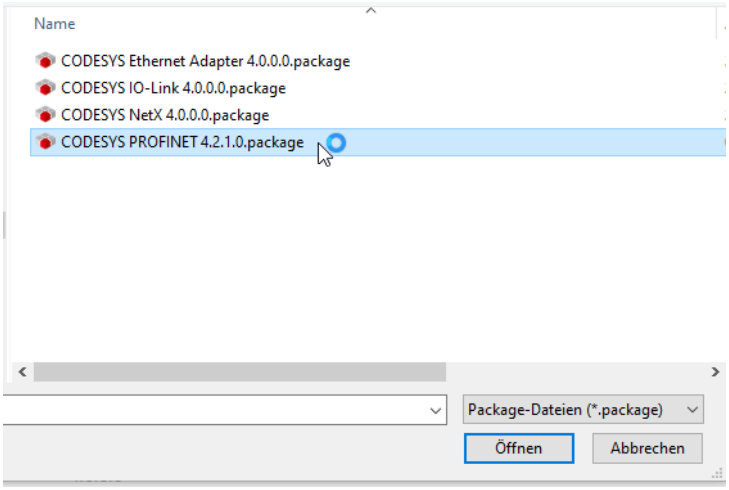


4) Close ctrlX PLC Engineering before you proceed!

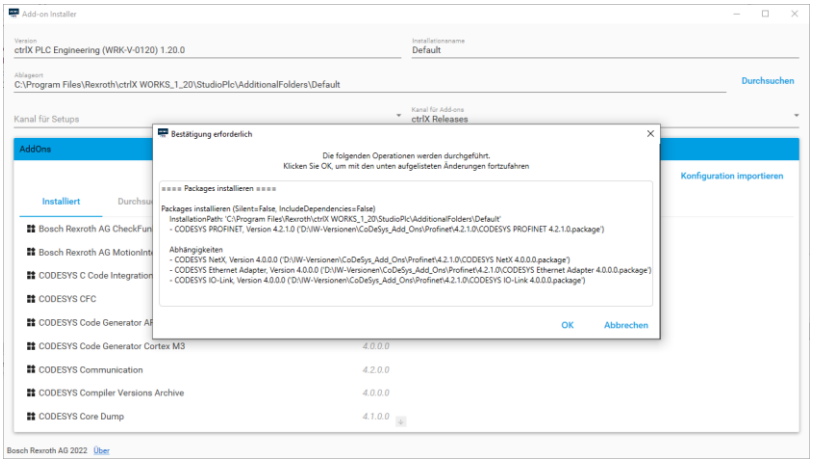
1.1 Installation of the relevant Add-Ons

1) Press button “*Datei installieren …*” to select the Add-Ons to install.

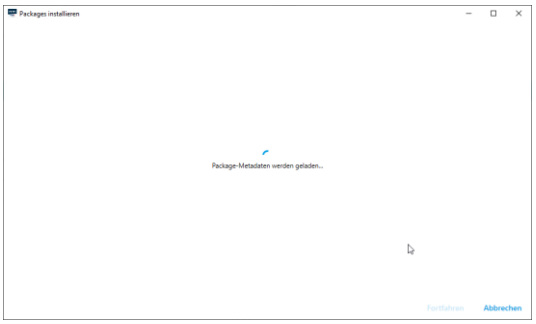
2) Depending on the fieldbus to install select CODESYS EthernetIP or CODESYS PROFINET package in the file browser and press button “*Öffnen*”.



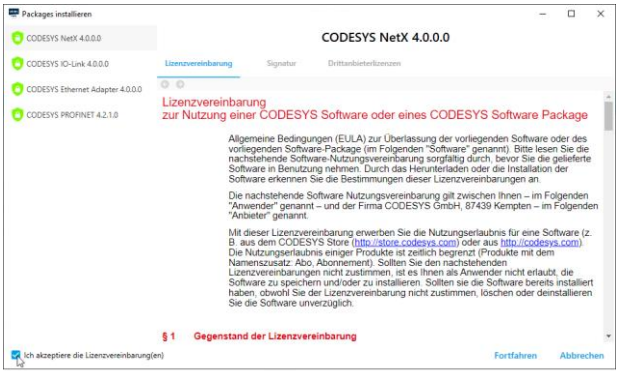
3) A hint is shown regarding installing packages, that shows some informations about the packages to install. Confirm this dialogue with “*OK*”.



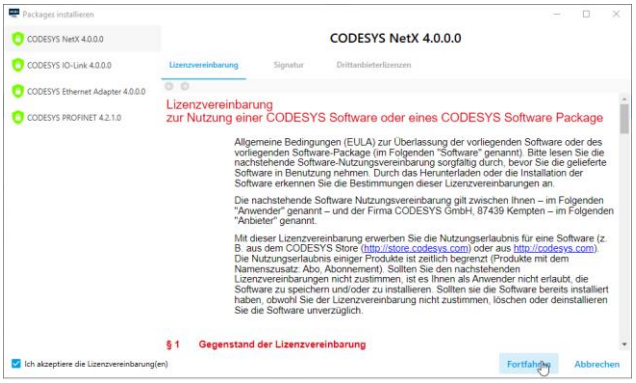
4) An information is shown that refers to loading the packages to be installed.



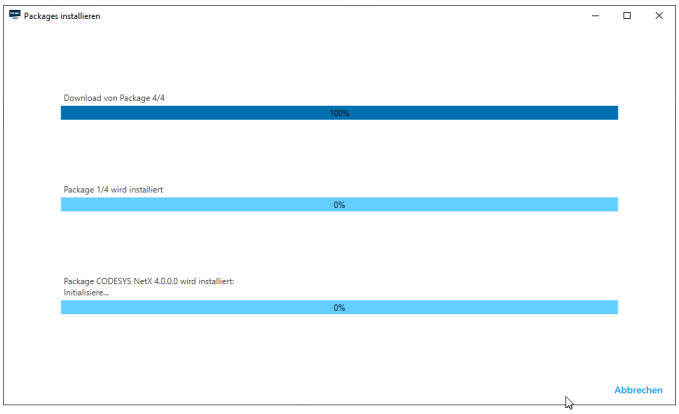
5) Read the licensing conditions and accept them by checking the corresponding box.



6) Press button "*Fortfahren*" to start the installation



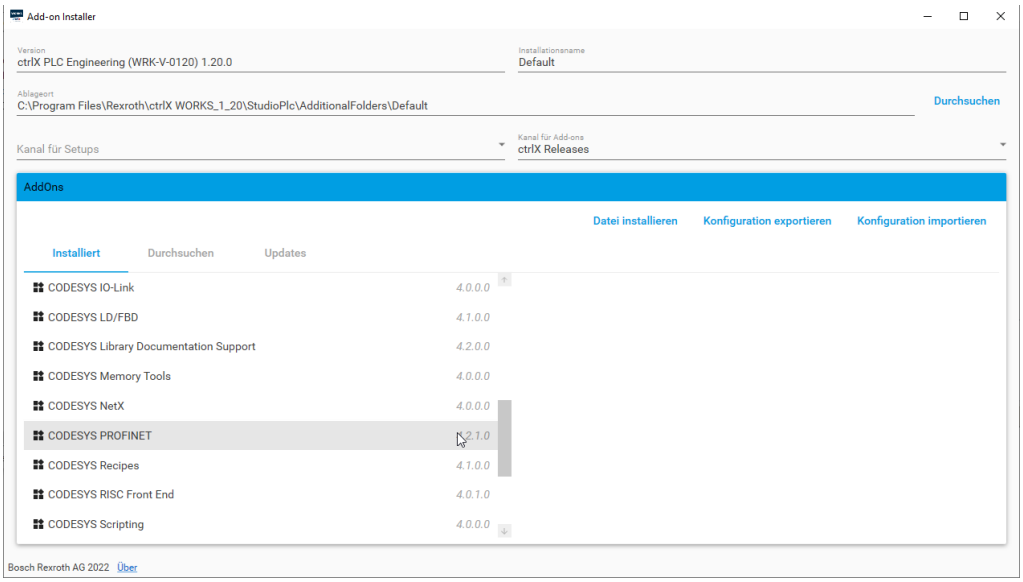
7) Installation is started now



8) As soon as the installation has been completed, the following message is shown:

Press “OK” to complete the installation

1.2 Check if the installed Add-Ons are available now

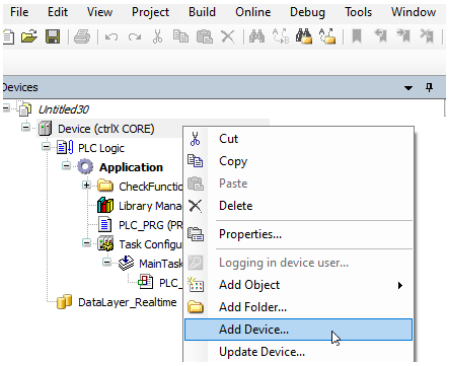


The installed packages are listed in the column “Installiert”.

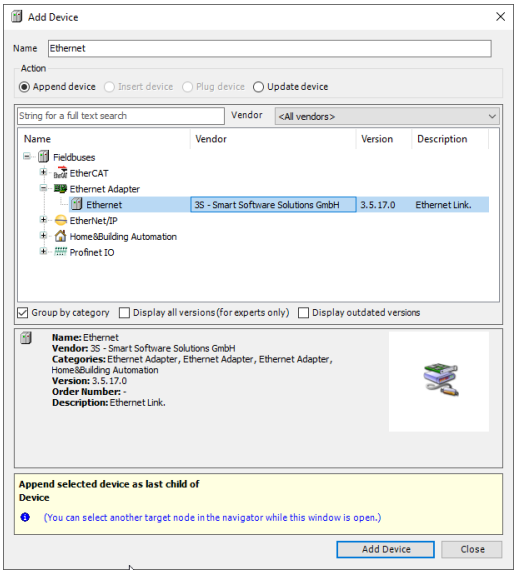
1.3 Running CoDeSys fieldbus drivers on ctrlX CORE

After successful installation the packages are listed in the Package Manager dialogue provided by ctrlX PLC Engineering.
To use the drivers with the application the following steps have to be done:

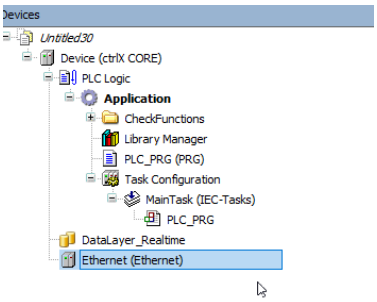
1. Click on the device node (e.g. Device (ctrlX CORE)) in the Devices view and press the right mouse button to open the corresponding menu. Exceute the command *Add Device...* .



2. Select the Ethernet-Device provided by the node *Fieldbuses –> Ethernet Adapter* and press button *Add Device*.

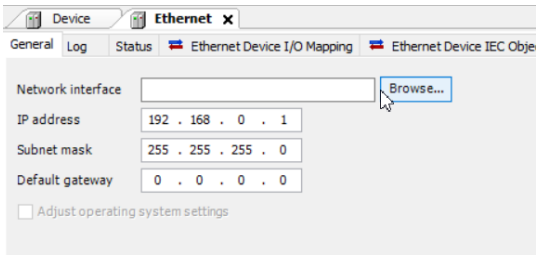


3. The Ethernet node has been added to the Device tree.

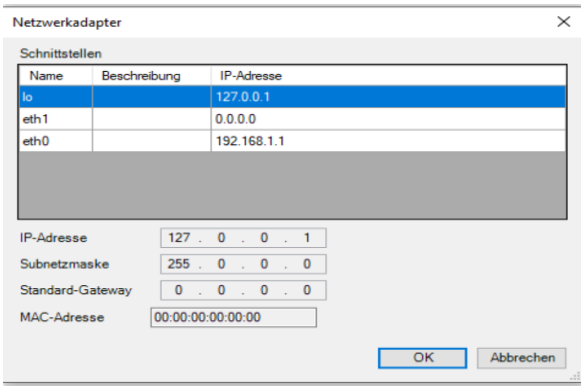


Mark the Ethernet node and execute the Add Device... command by right mouse click. Dialogue *Add Device* is shown now.

4. Open the *Browse* button on the tab *General*.

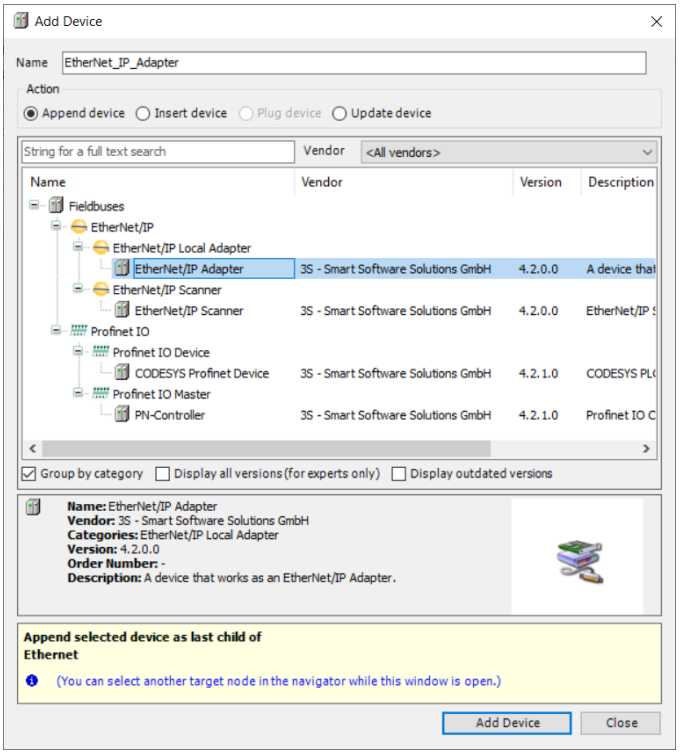


The available network adapters on ctrlX CORE are shown afterwards. Select the network adapter for the fieldbus communication and confirm by pressing button *OK*.



Be aware if you select eth0 and the check box *Adjust operating system settings* is enabled the network adapter is reconfigured after login. This changes the general device communication settings!! It is recommended to create multiple IP addresses on ctrlX CORE directly and refer to them.
PROFINET Device should not be configured on eth0, because the IP address may be changed by the connected PROFINET controller!

5. Choose the desired fieldbus driver and confirm your selection by pressing button *Add Device*.



6. The functionality of a CoDeSys fieldbus driver is implemented using two automatically generated IEC tasks. One task handles the cyclic IO data exchange, the other the acyclic communication (services). The functionality can be derived from the respective task name.
Please note that the associated task priorities for the ctrlX CORE must be adjusted. The IO task priority (default 1) should be set higher, e.g.

30, the service task (default priority 30) should be set to low, e.g. 39. These tasks are also removed again when the fieldbus node is removed from the project.

7. Log in to the ctrlX Device to run the fieldbus driver. This is necessary to identify the available network adapter and to enable the scan mechanisms (if supported) for the specific fieldbus driver.

8. Now the fieldbus is ready for configuration of IO data. This can be done by the context menu of the Device node. Use command *Add Device...* for adding IO modules.
   For further Help refer to the help of ctrlX PLC Engineering.