



Parker Motion Controller

PAC340

Fieldbusses



ENGINEERING **YOUR** SUCCESS.

1 CODESYS Modbus RTU/TCP

1.1 Identification

Identification	
Short name	CODESYS Modbus RTU/TCP
Brief description	With this software option it is possible to operate the control as Modbus Master or as Modbus Slave. Modbus TCP through Ethernet as well as Modbus RTU through serial link are supported.
Revision ID document	V3.0

1.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	From version 1.3.1, CODESYS from 3.5 SP5 Patch 4
Additional requirements	— Free RS232 or RS485 port for Modbus RTU — IP network port for Modbus TCP
Restrictions	— Modbus Master supports maximum 32 Modbus-Slaves — Modbus ASCII not supported

1.3 Product description

This software option activates the license for the in CODESYS integrated Modbus RTU/TCP stack.

Modbus is a common protocol which makes it possible to exchange data between systems through serial line or through Ethernet/TCP. Modbus knows two roles: Modbus Master and Modbus Slaves. Modbus Master is the active part in communication, the data is set and read on the Modbus Slave devices.

The data exchange with Modbus takes place through prescribed function codes with whom you can access to single bits or bit groups and to 16 bit registers or register groups.

The configuration of the Modbus Master- und Slave-communication is done through the in CODESYS integrated Modbus-configurator.

For that the communication interfaces (Modbus_COM or Ethernet) are integrated into the device tree. The Modbus Master and the Modbus Slave devices are hung under these communication drivers.

In case of a Modbus Masters designated Slave devices have to be configured.

The configuration of the communication interfaces of the Master and Slave devices is done through the Modbus configurator in CODESYS.

The Modbus variables are provided through the scheduling mechanism in the Modbus stack over the IO image of the PLC application. Various update mechanism like cyclic update or edge triggered update are selectable in the configurator for the particular channels.

For full documentation of the different Modbus device configuration menus please check the CODESYS Online help under: https://help.codesys.com/webapp/_mod_f_configurator;product=core_modbus_configuration_editor;version=3.5.14.0

1.4 Technical data

Technical data	
Supported roles	Modbus Master RTU, Modbus Slave RTU, Modbus Master TCP, Modbus Slave TCP
Supported function codes	FC 01 – Read Coils FC 02 – Read Discrete Inputs FC 03 – Read Holding Registers FC 04 – Read Input Registers FC 05 – Write Single Coil FC 06 – Write Single Register FC 15 – Write Multiple Coils FC 16 – Write Multiple Registers FC 23 – Read/ Write Multiple Registers

2 CODESYS EtherCAT Master

2.1 Identification

Identification	
Short name	CODESYS EtherCAT Master
Brief description	With this software option, it is possible to operate the control as an EtherCAT Master in an EtherCAT network.
Revision ID document	V1.0

2.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	All
Additional requirements	— Module PACIO 400-02 — All CODESYS V3 IDE
Restrictions	—

2.3 Product description

Integrated EtherCAT master support in the IEC 61131-3 development system

EtherCAT is a powerful real-time Ethernet fieldbus system with an open protocol. With its short cycle times, low jitter values and different network topologies, the system is standard in many industrial automation application today.

The EtherCAT master integration in the IEC 61131-3 development system CODESYS comprises

- an integrated configurator for the master and the connected slaves
- a portable protocol stack in form of a CODESYS library
- a runtime system component for direct access to the Ethernet interface
- diagnostics functionality in the Development System and possibility to monitor the process through the IEC 61131-3 application
- optional support of EtherCAT gateway modules to other fieldbus systems such as IO-Link, Profibus or the like

Advantages of the seamless integration:

One tool with an integrated infrastructure for PLC programming and fieldbus configuration:

- Simple configuration
- Fewer sources of error
- Fast engineering

Without valid license the EtherCAT Master runs for 30 minutes without restrictions in demo mode.

After the installation of the software license it is possible to use the EtherCAT Master on the PLC without temporal limitation.

The licensing takes places per PLC.

For full documentation of the different EtherCAT Master and Device configuration menus please check the CODESYS Online help under:

https://help.codesys.com/webapp/_ecat_f_configurator;product=core_EtherCAT_Configuration_Editor;version=3.5.14.0

2.4 Quick Start Guide

With this illustrated Quick Start Guide it is possible to create a functional EtherCAT Master within a few minutes.

2.4.1 Preparatory tasks

In the web configuration of the control the „ethernet“ mode for the ETH1 Interface under the configuration item „Network“ has to be selected. The control needs to reboot for the settings to become operative.

Configuration

[Network](#)[CAN](#)[Time and Date](#)[Display](#)[FTP-Server](#)[SSH-Server](#)[WEB-Server](#)[Users](#)[SVC Config](#)[Config Protection](#)[Reset Config](#)

System

[Info](#)[Licenseinfo](#)[Screenshot](#)[Update](#)[Reboot](#)

PLC-Manager

[Control](#)[Config](#)[Application Info](#)[Application Files](#)[Font Files](#)

Diagnostics

[PLC Log](#)[System Log](#)[Ethernet](#)[CAN](#)[Storage](#)

Network Configuration

COMMON

Hostname 270011200-00035

DNS Server 1 0.0.0.0

DNS Server 2 0.0.0.0

ETH0

Mode: static ▼

IPAddress 169.254.255.35

NetMask 255.255.255.0

Gateway 0.0.0.0

ETH0:1

Mode: inactive ▼

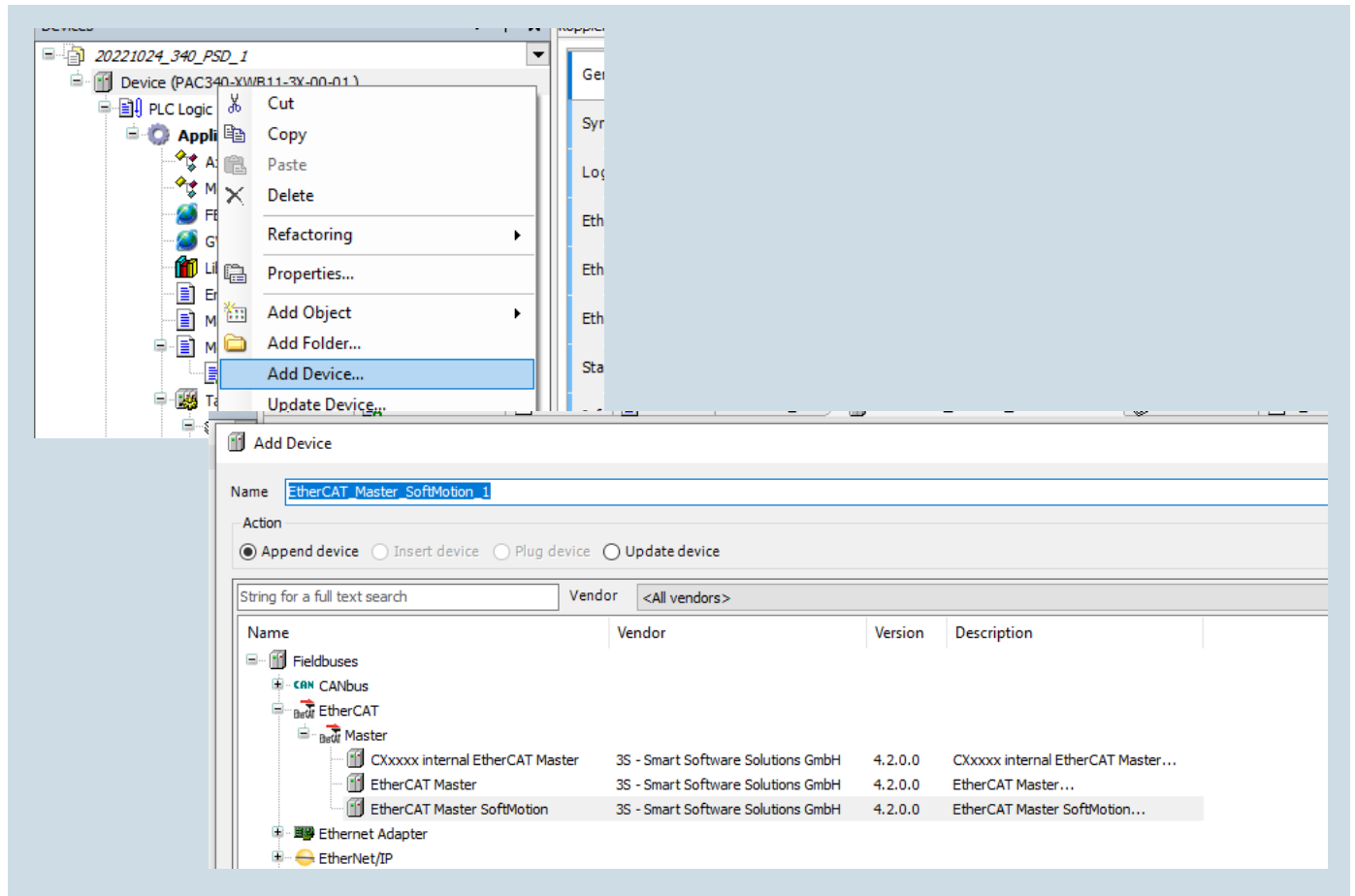
ETH1

Mode: ethernet ▼

Save

2.4.2 Addition of the EtherCAT Master

At first the EtherCAT Master has to be integrated into the CODESYS project, through the CODESYS function “Add Device” by right clicking on the PLC-Device in the devices window in CODESYS.

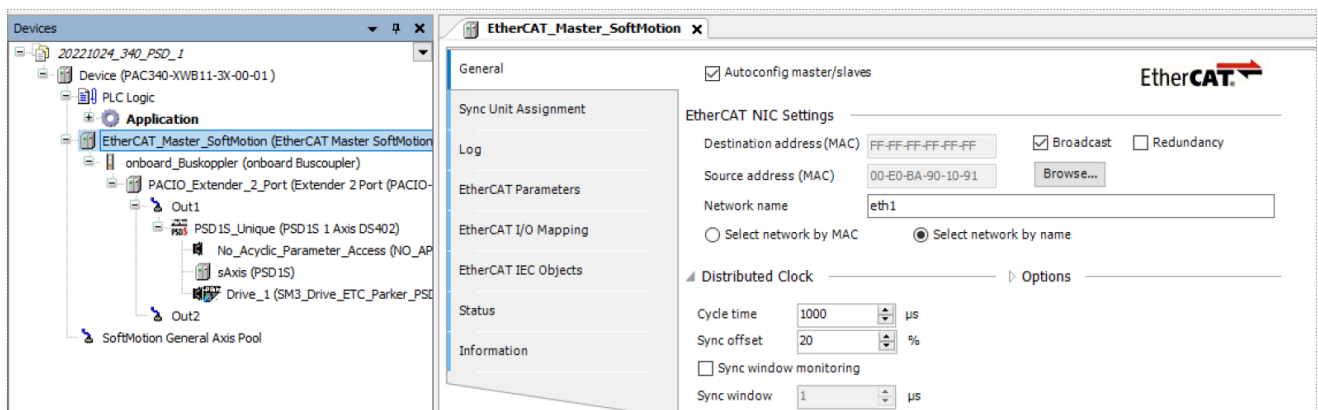


2.4.3 Configuration of the EtherCAT Master

With a double click on the newly added EtherCAT Master, you can open the configuration.

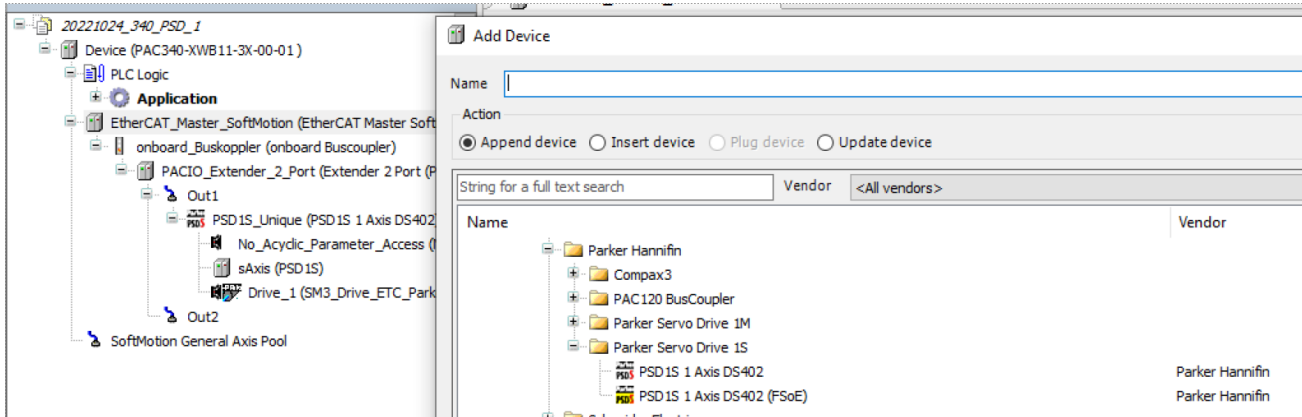
Select the option “select network by name” and set the Ethernet interface same as configured in the webinterface.

If needed activate the “Automatic restart slaves” option.



2.4.4 Addition of the EtherCAT device

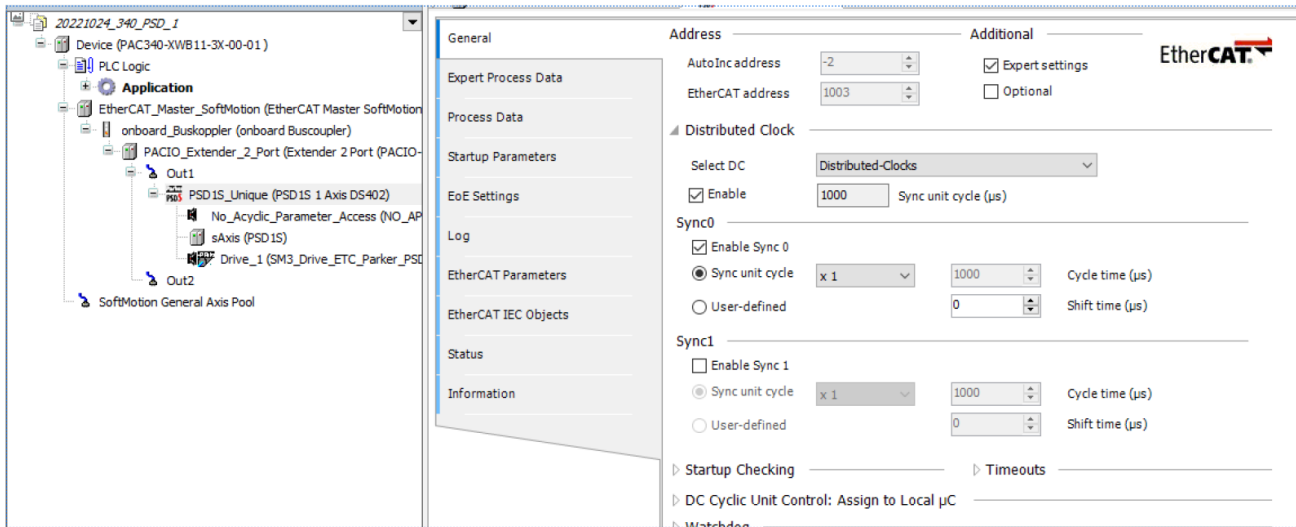
By using the “Add Device” function on the EtherCAT Master it is now possible to add your EtherCAT devices. Please be aware that your EtherCAT device will only be shown in the device list the hardware description file (XML) has been installed in CODESYS.



2.4.5 Configuration of the EtherCAT devices

With a double click on the newly added EtherCAT device, you can open the configuration.

For a default EtherCAT network between slaves and a master, no additional options must be set in the EtherCAT device.



Repeat the adding and configuration of EtherCAT devices until the device configuration in CODESYS matches the real hardware configuration which is connected to the PLC. When this is done download the project onto the PLC and start the application.

3 CODESYS Profinet Device

3.1 Identification

Identification	
Short name	CODESYS Profinet Device
Brief description	With this software option, it is possible to operate the control as a Profinet Device in a Profinet network.
Revision ID document	V3.0

3.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 and PAC340-MWB11-3X-00-01
Firmware	From version 1.16.0, CODESYS from 3.5 SP10 Patch 1
Additional requirements	— IP Networkconnection to a Profinet Master — CODESYS IDE >= 3.5.10.0
Restrictions	—

3.3 Product description

With this expansion it is possible to run the control as Profinet Device in an IP-Network with a Profinet Master (z.B. of the company Siemens).

The Profinet Device is based on a standard Ethernet interface and the software Profinet Device Stack from the company 3S. Through a variable IO description the Profinet Device can individually adapt to the given requirements and circumstances. The configuration of the Profinet Device is done easily and comfortably through the CODESYS IDE. The sizes of the input and output areas, the Profinet device name and further parameters and options of the Profinet Devices are set in the IO configuration of the particular CODESYS project. Application scenarios can be found in the plant network of the automotive sector, in intralogistics or process automation where Profinet is often given as communication protocol.

The Profinet Device is completely integrated into the CODESYS development environment. An installation of an additional module is not necessary.

For full documentation of the Profinet-Device configuration menus please check the CODESYS Online help under:
https://help.codesys.com/webapp/_pnio_f_slave_device;product=core_ProfinetIO_Configuration_Editor;version=3.5.15.0

3.4 Technical data

Technical data	
Profinet Version	V2.3
Profinet Conformance Class	CC-A
Transmitting medium	Ethernet 100 Base TX/FX
Profinet Norm	Technical Specification for PROFINET IO Version 2.3Ed2MU3 – Date: March 2016

3.5 Quick Start Guide

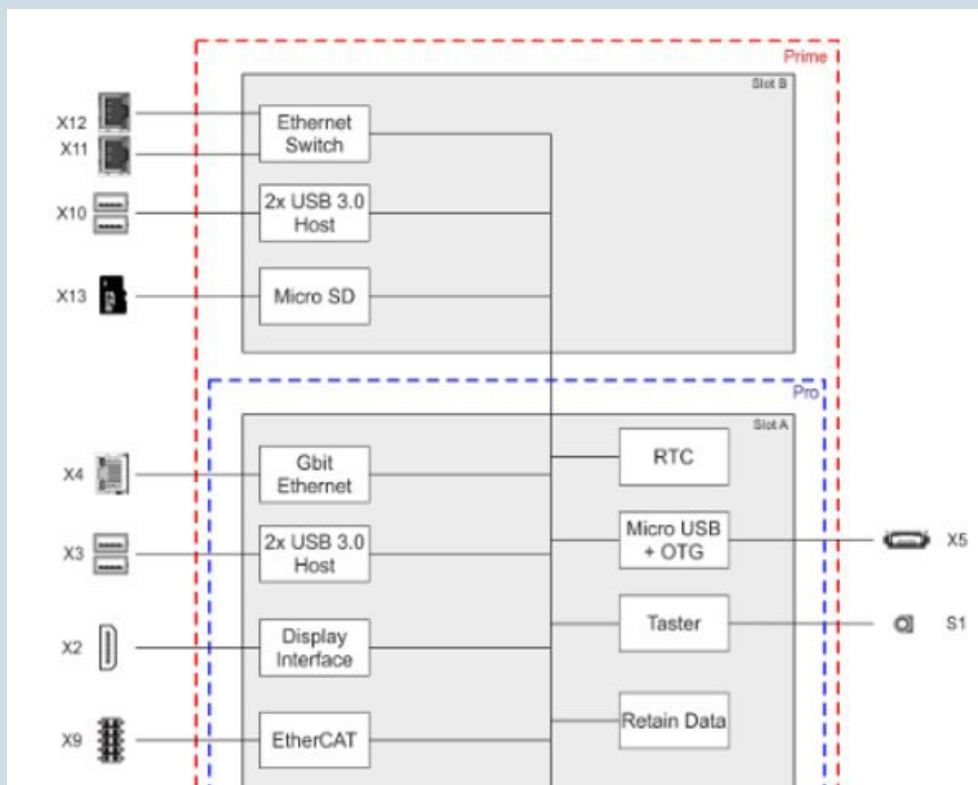
With this illustrated Quick Start Guide it is possible to create a functional Profinet Device within a view minutes.

3.5.1 Abstract

The PAC340 offers three physical LAN ports that can be used differently depending on the application. Corresponding settings are made via the web interface of the PAC340. Analogously, the interfaces are configured within the CODESYS application.

3.5.2 Overview

The available LAN interfaces can be used as described below



		Static	DHCP	EtherCAT	<u>ProfinetDevice</u>
Eth0 /	X4	✓	✓	✓	✓
Eth0:1	X4	✓	✗	✗	✗
Eth1	LVDS	✗	✗	✓	✗
Eth2	X11	✓	✓	✗	✓
Eth2:1	X12	✓	✗	✗	✓

3.5.3 Configuring the Network in the PAC340 web interface

The log in to the web interface is done by
https://ip address.

username = admin. The initial password can be found on the name plate of the device.



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User Login:

Name:

Password:

Configuration

- Network
 - Time and Date
 - Display
 - FTP-Server
 - SSH-Server
 - WEB-Server
 - Users
 - WPS-Router
 - Reset Config
- System
 - Info
 - LicenseInfo
 - Update
 - Reboot
- PLC-Manager
 - Control
 - Config
 - Application Info
 - Application Files
- Diagnostics
 - PLC Log
 - System Log
 - Ethernet
 - Storage
 - System Dump

Network Configuration

COMMON

Hostname:

DNS Server 1:

DNS Server 2:

ETH0

Mode:

Gateway:

ETH0:1

Mode:

IPAddress:

NetMask:

ETH1

Mode:

ETH2

Mode:

IPAddress:

NetMask:

Gateway:

There are two different possibilities how to use the interfaces of the PAC340 here.

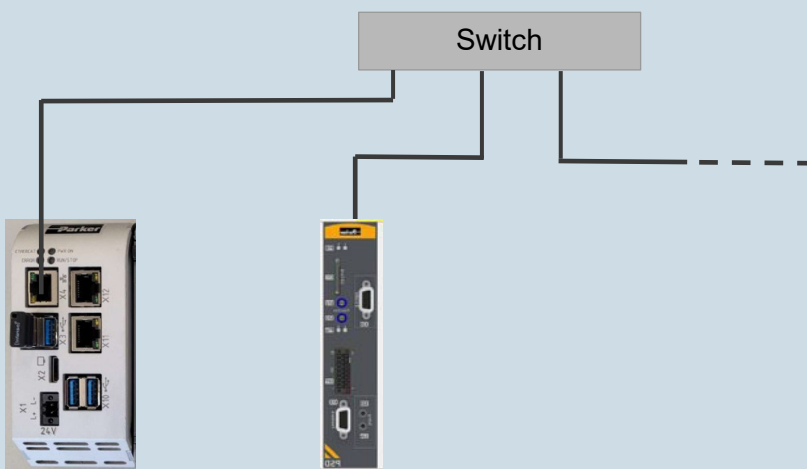
In both cases the selected interface is set to the Profinet device mode.

This allows the Profinet controller to remotely set the communication parameters IP address and Profinet device name.

3.5.4 Profinet Device with ETH0

The screenshot displays the 'Common' configuration page for a PLC. On the left, a sidebar lists various configuration categories: Network, Time and Date, Display, FTP-Server, SSH-Server, WEB-Server, Users, WEB-Browser, and Reset Config. Below these are 'System' settings including Info, Licenseinfo, Update, Reboot, and PLC-Manager. The main area is divided into two panes. The left pane shows the 'Common' settings for the 'ETH0' interface, with fields for Hostname (S-01030302-0100-00106), DNS Server 1 (0.0.0.0), and DNS Server 2 (0.0.0.0). The 'Mode' dropdown menu is open, showing options: static, dhcp, ethercat, profinet device, and inactive. A blue arrow points from the 'profinet device' option in this menu to the 'profinet device' option in the 'Mode' dropdown of the right pane. The right pane, titled 'Network Configuration', shows the same settings for the 'ETH0' interface, with the 'Mode' dropdown set to 'profinet device'.

A Profinet communication via port X4 is suitable for a star topology.



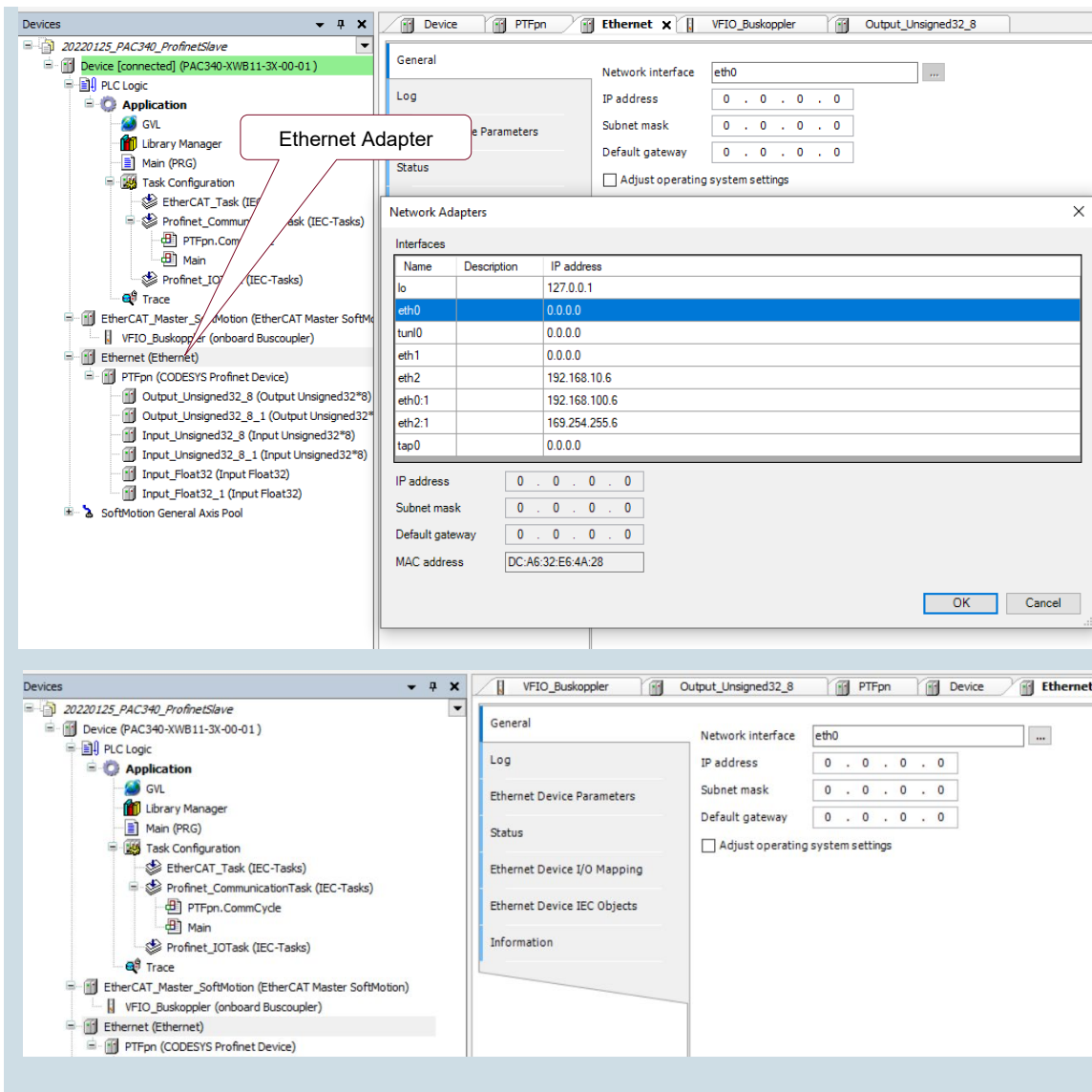
Configuration in CODESYS, Ethernet Settings

The CODESYS programming system must be online to the PAC340 controller to be able to select a network interface.

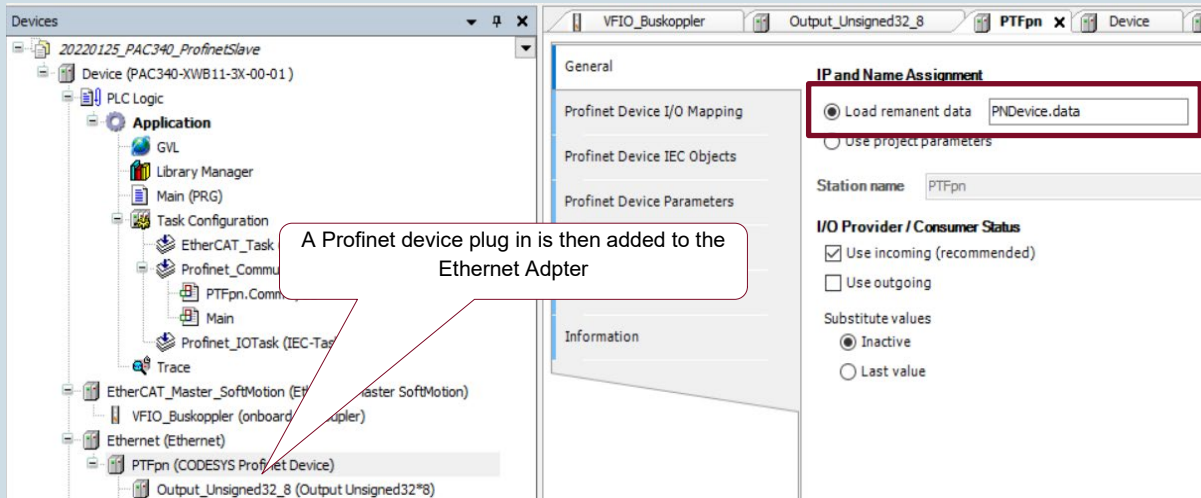
The first step is to add an Ethernet Adapter to the device tree (default name = Ethernet).

In the tab General the available network interfaces are then listed.

Here ETH0 is then selected to be used for the Profinet communication, as defined before in the web interface.



The ip-address is set by the Profibus controller. The following IP – and name assignment is then required (load remanent data).



The file PNDevice.data is located in the application folder of the PAC340 (Application Files).

PLC Application Download

Configuration

- [Network](#)
- [Time and Date](#)
- [Display](#)
- [FTP-Server](#)
- [SSH-Server](#)
- ▶ [WEB-Server](#)
- ▶ [WEB-Browser](#)
- [Reset Config](#)

System

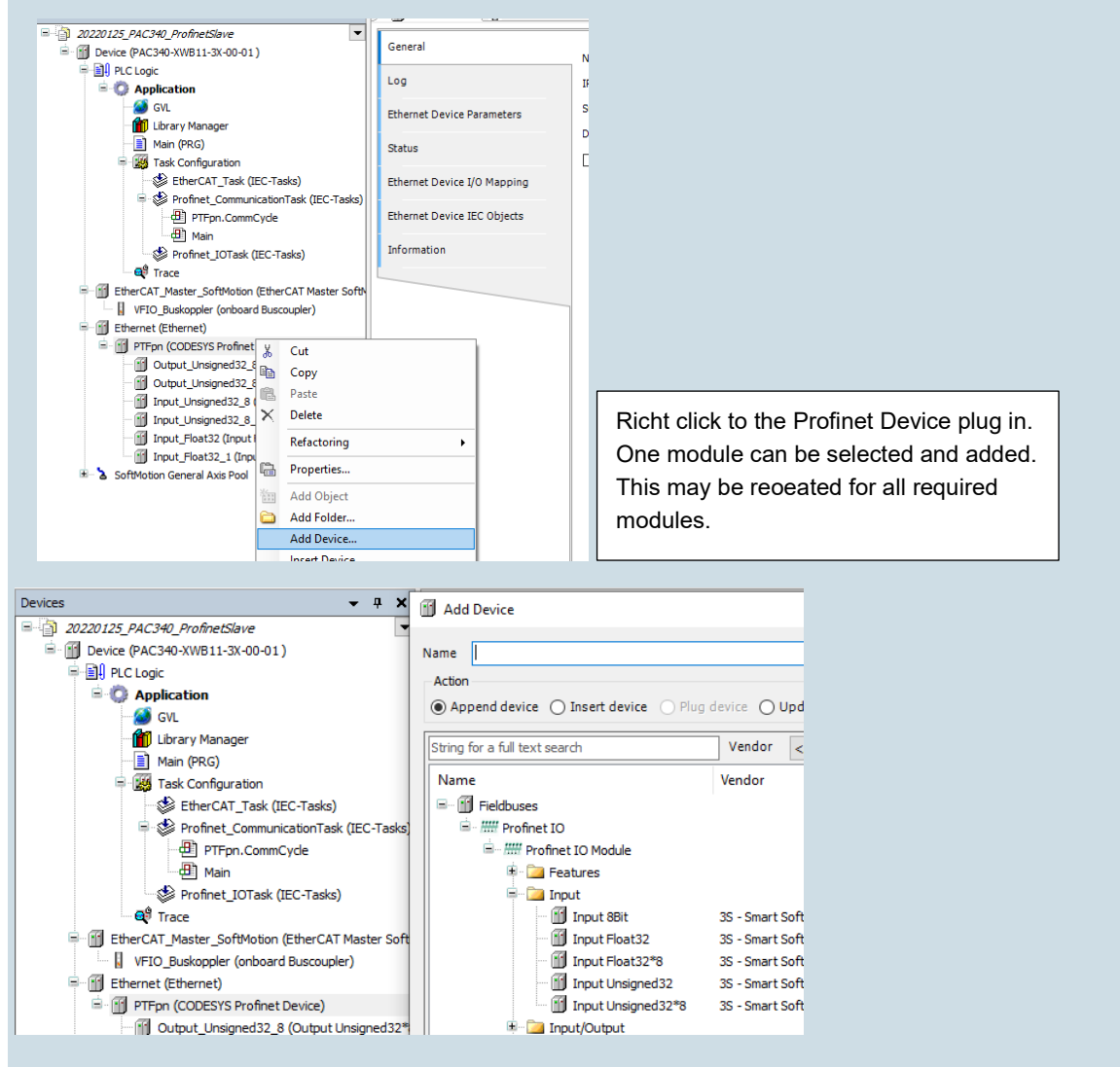
- [Info](#)
- [Licenseinfo](#)
- [Update](#)
- [Reboot](#)

PLC-Manager

- [Control](#)
- [Config](#)
- [Application Info](#)
- [Application Files](#)

```
/home/plc/applications/CODESYSControl.cfg
/home/plc/applications/PlcLogic/PNDevice.data
/home/plc/applications/PlcLogic/visu/element-lamp-lamp1-red-off.svg
/home/plc/applications/PlcLogic/visu/sm3_cnc.textlistforcombobox_smc_int_velmode.txt
/home/plc/applications/PlcLogic/visu/tl_setup_1_referenzen.txt
/home/plc/applications/PlcLogic/visu/removeimage.bmp
/home/plc/applications/PlcLogic/visu/webvisu.js
/home/plc/applications/PlcLogic/visu/screen.svg
/home/plc/applications/PlcLogic/visu/tl_analyze_3_statistik.txt
/home/plc/applications/PlcLogic/visu/arrowboldup.svg
/home/plc/applications/PlcLogic/visu/visuelemsalarm.tl_alarmtablecolumnntitles.txt
/home/plc/applications/PlcLogic/visu/tl_windowinputs.txt
/home/plc/applications/PlcLogic/visu/sm3_basic.textlistforcombobox_smc_backlash_startstate.txt
/home/plc/applications/PlcLogic/visu/sm3_cnc.textlistforcombobox_smc_al_status.txt
/home/plc/applications/PlcLogic/visu/arrowboldright.svg
/home/plc/applications/PlcLogic/visu/element-lamp-lamp1-yellow-on.svg
/home/plc/applications/PlcLogic/visu/tl_sensortyp.txt
/home/plc/applications/PlcLogic/visu/sm3_basic.textlistforcombobox_smc_backlash_mode.txt
/home/plc/applications/PlcLogic/visu/tl_setup_7_pac_coldstart.txt
/home/plc/applications/PlcLogic/visu/touch.htm
/home/plc/applications/PlcLogic/visu/title.bmp
/home/plc/applications/PlcLogic/visu/tl_debugipm.txt
/home/plc/applications/PlcLogic/visu/arrowboldleft.svg
/home/plc/applications/PlcLogic/visu/flag_of_the_united_states.svg.png
/home/plc/applications/PlcLogic/visu/tl_setup_6_pac_firstsetup.txt
```

Configuration in CODESYS, add IO modules to the Profinet device

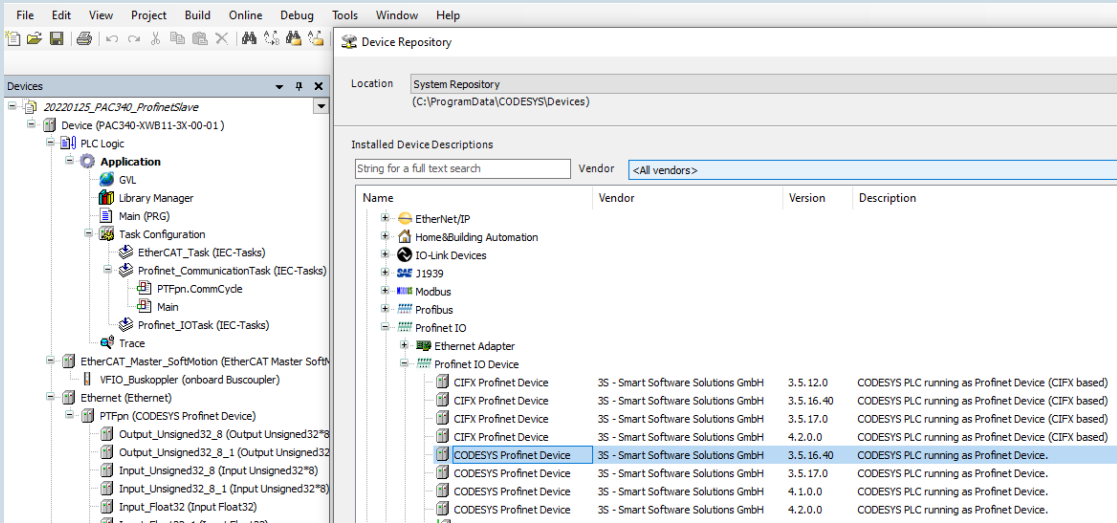


The image shows two screenshots from the CODESYS software interface. The top screenshot shows the 'Device (PAC340-XWB11-3X-00-01)' configuration tree. A right-click context menu is open over the 'PTFpn (CODESYS Profinet Device)' entry, with the 'Add Device...' option highlighted. The bottom screenshot shows the 'Add Device' dialog box. The 'Action' section has 'Append device' selected. The 'String for a full text search' field is empty. The 'Vendor' dropdown is set to '3S - Smart Soft'. The 'Name' list shows the following items:

Name	Vendor
Fieldbuses	
Profinet IO	
Profinet IO Module	
Features	
Input	
Input 8Bit	3S - Smart Soft
Input Float32	3S - Smart Soft
Input Float32*8	3S - Smart Soft
Input Unsigned32	3S - Smart Soft
Input Unsigned32*8	3S - Smart Soft
Input/Output	

Right click to the Profinet Device plug in. One module can be selected and added. This may be repeated for all required modules.

Configuration in CODESYS, generate the GSDML device description for the Profinet Controller



The screenshot shows the CODESYS software interface. On the left, the 'Devices' tree is expanded to '20220125_PAC340_ProfinetSlave' > 'Device (PAC340-XWB11-3X-00-01)' > 'PLC Logic' > 'Application' > 'Main (PRG)'. On the right, the 'Device Repository' window is open, showing the 'System Repository' location. The 'Installed Device Descriptions' table lists various device types. The 'CODESYS Profinet Device' is highlighted in blue.

Name	Vendor	Version	Description
EtherNet/IP			
Home&Building Automation			
IO-Link Devices			
J1939			
Modbus			
Profibus			
Profinet IO			
Ethernet Adapter			
Profinet IO Device			
CIFX Profinet Device	3S - Smart Software Solutions GmbH	3.5.12.0	CODESYS PLC running as Profinet Device (CIFX based)
CIFX Profinet Device	3S - Smart Software Solutions GmbH	3.5.16.40	CODESYS PLC running as Profinet Device (CIFX based)
CIFX Profinet Device	3S - Smart Software Solutions GmbH	3.5.17.0	CODESYS PLC running as Profinet Device (CIFX based)
CIFX Profinet Device	3S - Smart Software Solutions GmbH	4.2.0.0	CODESYS PLC running as Profinet Device (CIFX based)
CODESYS Profinet Device	3S - Smart Software Solutions GmbH	3.5.16.40	CODESYS PLC running as Profinet Device.
CODESYS Profinet Device	3S - Smart Software Solutions GmbH	3.5.17.0	CODESYS PLC running as Profinet Device.
CODESYS Profinet Device	3S - Smart Software Solutions GmbH	4.1.0.0	CODESYS PLC running as Profinet Device.
CODESYS Profinet Device	3S - Smart Software Solutions GmbH	4.2.0.0	CODESYS PLC running as Profinet Device.

Within the menu ,Tools/Device Repository the Profinet Device description can be exported.
 This will generate a zip folder with the following two files:
 Folder: 83_0000 1017_3.5.16.40.zip
 Files: 83_0000 1017_3.5.16.40.devdesc.xml, GSDML-V2.32-3S - Smart Software Solutions GmbH-

3.5.5 Profinet Device with ETH2

ETH2

Mode: static

IPAddress:

NetMask:

Gateway: 0.0.0.0

ETH2

Mode: profinet device

Gateway: 0.0.0.0

ETH2:1

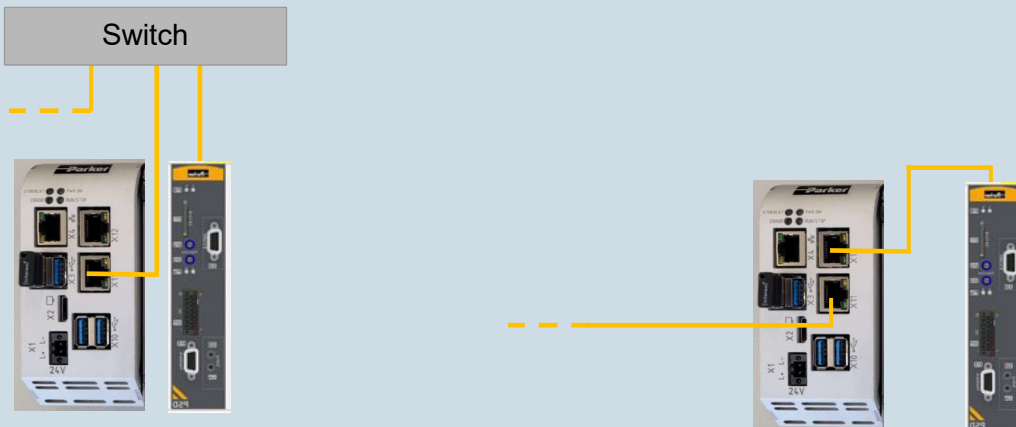
Mode: static

IPAddress: 0.0.0.0

NetMask: 0.0.0.0

A Profinet communication via port X11 can be used for a star topology...

Or - together with connection X12 - for a ring topology.



The procedure for ETH2 is similar to that for ETH0.

In the example below, a connection has already been established between a Profinet controller and the Profinet device. The log file shows the received DCP set received by the Profinet controller.

The screenshot displays the Profinet configuration environment. On the left, a tree view shows the project structure, including 'TCP_Com', 'Profinet_IOTask (NewGroup)', 'ProfinetTIF', 'CopyProfinetVars', 'ReloadStructures (NewGroup_2)', 'DeleteAllIWP_Traces', 'DeleteSelectedCurve_1', 'DetermineNumberOfTraces', 'SchnittstelleZuPTF', 'VISU_TASK (NewGroup_1)', 'VisuElems_Visu_Prg', 'PLC_PRG', 'Loginstate', 'VisuHelper', 'TextMaschinenPara', 'DisplayMousePosImGraf', 'DetermineProfileIndexNumberForTolWindow', 'InitPositionReferenceSelector', 'Enable_Start_StopButtonOnAutPage', 'Init_PTF_Types', 'ZeitReferenz (NewGroup)', 'Zeit_Referenz', 'ZeitErfassung', 'Visualization Manager', 'EtherCAT_Master_SoftMotion (EtherCAT Master SoftMotion)', 'Koppler (onboard Buscoupler)', 'PACIO_Extender_2_Port (Extender 2 Port (PACIO-4', and 'Out1'.

The 'General' tab of the 'ProfinetTIF' configuration is active, showing the 'Network interface' set to 'eth2'. The 'IP address' is '0 . 0 . 0 . 0', 'Subnet mask' is '0 . 0 . 0 . 0', and 'Default gateway' is '0 . 0 . 0 . 0'.

The 'Network Adapters' dialog box is open, showing a list of interfaces:

Name	Description	IP address
lo		127.0.0.1
eth0		0.0.0.0
tunl0		0.0.0.0
eth1		0.0.0.0
eth2		192.168.1.10
usbnet0		192.168.10.8
tap0		0.0.0.0

Below the list, the 'IP address' is set to '127 . 0 . 0 . 1', 'Subnet mask' is '255 . 0 . 0 . 0', 'Default gateway' is '0 . 0 . 0 . 0', and 'MAC address' is '00:00:00:00:00'.

The log window at the bottom shows the following entries:

Severity	Time Stamp	Description
i	10.10.2022 12:51:43.081	AR in Data Exchange
i	10.10.2022 12:51:42.991	Received ApplicationReady.cnf
i	10.10.2022 12:51:42.976	Received PrmEnd.req
i	10.10.2022 12:51:42.931	Received Connect.req from 'controller'
i	10.10.2022 12:51:42.914	Received DCP-Set: IP=192.168.1.10 / 255.255.255.0 / 0.0.0.0
i	10.10.2022 12:51:39.841	Remove System-Diag for Port-1: Remote Mismatch - No peer detected
i	10.10.2022 12:51:39.834	Ethernet Link-Status: Up

4 CODESYS EtherNet/IP Scanner

4.1 Identification

Identification	
Short name	CODESYS EtherNet/IP Scanner
Brief description	With this software option, it is possible to integrate EtherNet/IP based slave devices (Adapter) into the IO image.
Revision ID document	V3.0

4.2 System requirements and restrictions

System requirements and restrictions	
Supported platforms and devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	From version 1.16.0, CODESYS from 3.5 SP10 Patch 1
Additional requirements	— Ethernet port
Restrictions	—

4.3 Product description

This software option activates the license for the in CODESYS integrated Ethernet/IP scanner (master) for the device. The EtherNet/IP scanner expansion is based on the implementation of the company 3S for CODESYS.

With the EtherNet/IP configurator, the CODESYS development system supports the project planning of EtherNet/IP Networks. The configurator allows to parameterize the EtherNet/IP network and that the EtherNet/IP adapter (slave) is integrated into the application. Data can be exchanged with the connected adapters through the IO image.

An acyclic access on remote Adapters is possible with the supplied service library.

For full documentation of the different Ethernet/IP Scanner and Adapter configuration menus please check the CODESYS Online help under:
https://help.codesys.com/webapp/_enic_f_scanner:product=core_EthernetIP_Configuration_Editor;version=3.5.15.0

4.4 Technical data

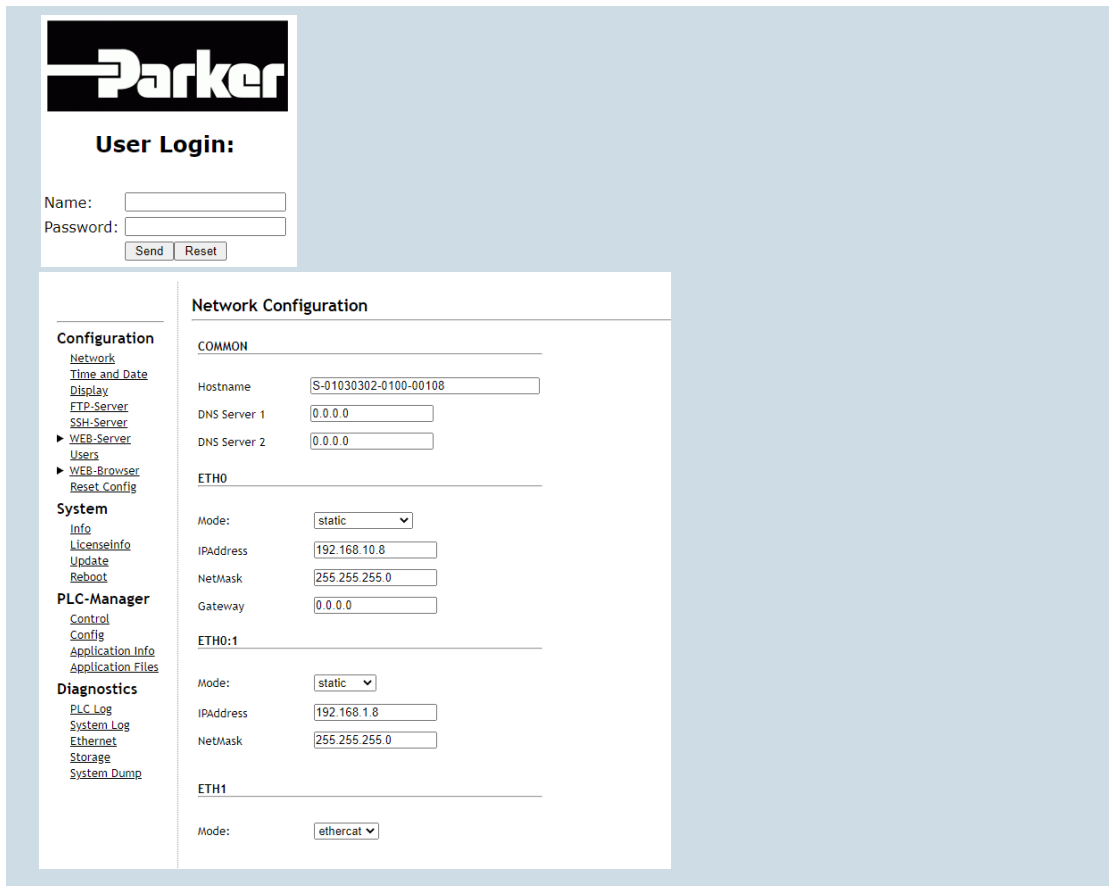
Technical data	
Compatibility	Combination with Ethernet/IP scanner possible

4.5 Quick Start Guide

With this illustrated quick start guide it is possible to create a functional Ethernet/IP Scanner within a few minutes.

4.5.1 Preparatory tasks

The ETH0 or ETH2 adapter can be used for the Ethernet/IP interface. Typically, an Ethernet/IP network is set up in a star topology. Therefore, ETH0 is recommended. The selected interface must be used in the 'static' operating mode.



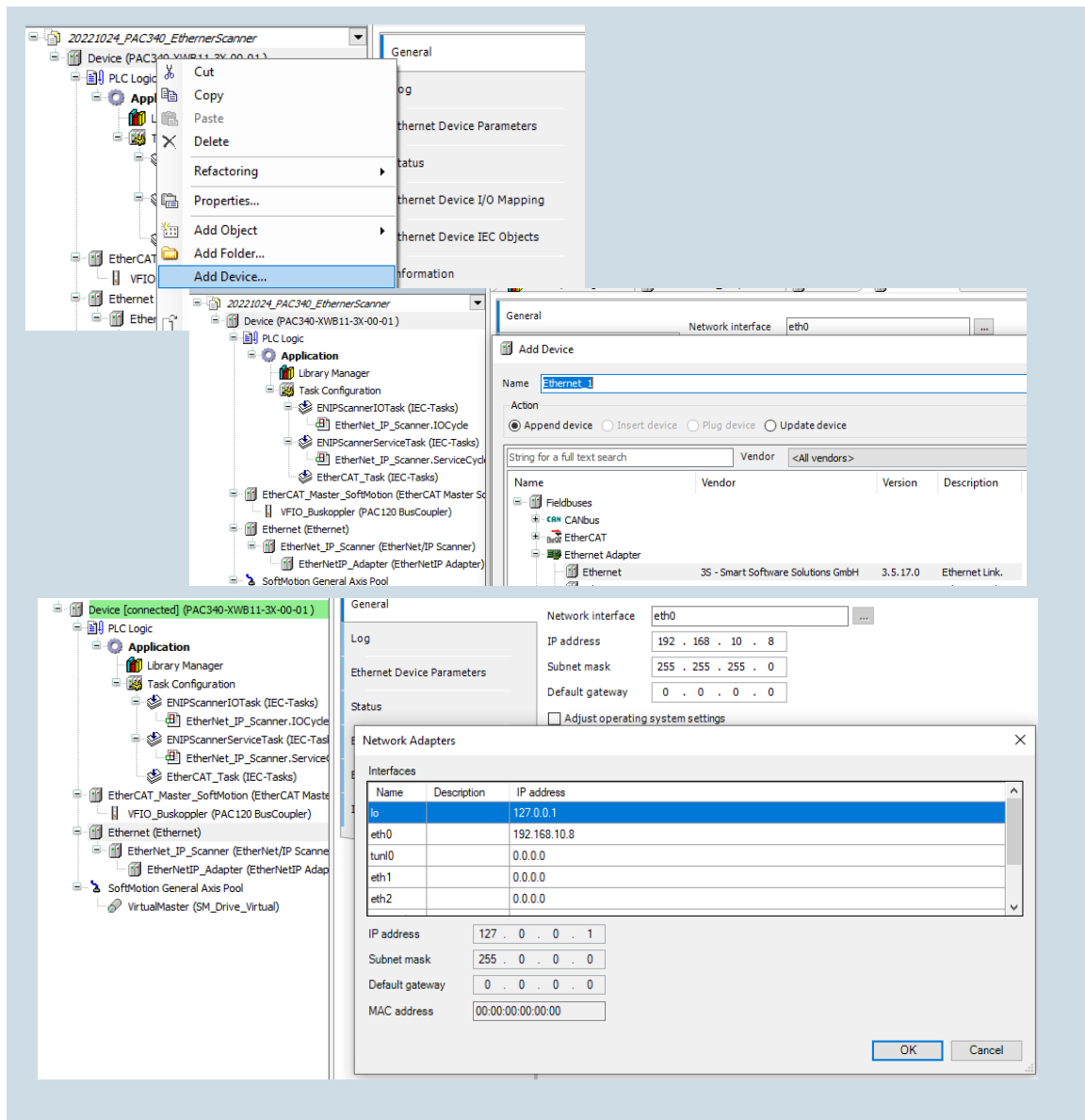
The screenshot displays the Parker web interface. At the top left is the Parker logo. Below it is a 'User Login' section with fields for 'Name:' and 'Password:', and buttons for 'Send' and 'Reset'. The main content area is divided into a left sidebar and a right main panel. The sidebar contains a 'Configuration' menu with links for Network, Time and Date, Display, FTP-Server, SSH-Server, WEB-Server, Users, WEB-Browser, and Reset Config. Below this is a 'System' menu with links for Info, Licenseinfo, Update, and Reboot. Further down is a 'PLC-Manager' menu with links for Control, Config, Application Info, and Application Files. At the bottom of the sidebar is a 'Diagnostics' menu with links for PLC Log, System Log, Ethernet, Storage, and System Dump. The main panel is titled 'Network Configuration' and contains three sections: 'COMMON', 'ETH0', and 'ETH0:1'. The 'COMMON' section has fields for Hostname (S-01030302-0100-00108), DNS Server 1 (0.0.0.0), and DNS Server 2 (0.0.0.0). The 'ETH0' section has a 'Mode' dropdown set to 'static', and fields for IP Address (192.168.10.8), NetMask (255.255.255.0), and Gateway (0.0.0.0). The 'ETH0:1' section has a 'Mode' dropdown set to 'static', and fields for IP Address (192.168.1.8) and NetMask (255.255.255.0). At the bottom of the main panel is the 'ETH1' section with a 'Mode' dropdown set to 'ethernet'.

4.5.2 Addition of the ethernet adapter

The CODESYS programming system must be online with the PAC340 controller in order to select a network interface. The first step is to add an Ethernet adapter to the device tree (default name = Ethernet).

The available network interfaces are then listed in the 'General' tab.

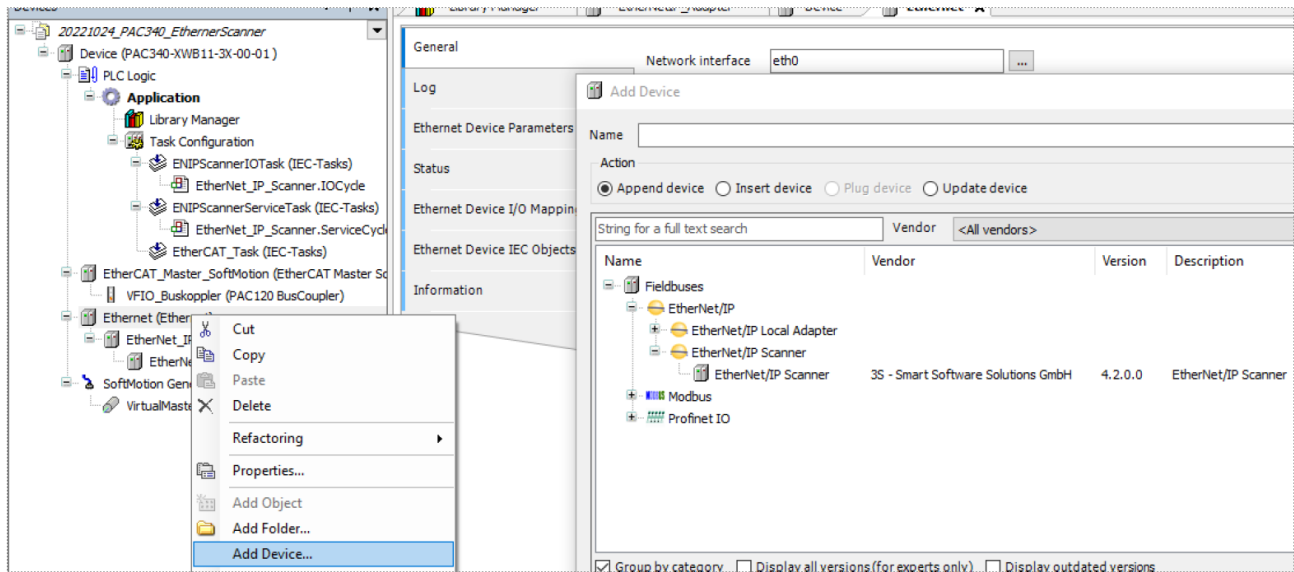
ETH0 is then selected here.



When the adapter is selected, its parameters are transferred to the CODESYS project.

4.5.4 Addition of the Ethernet/IP Scanner

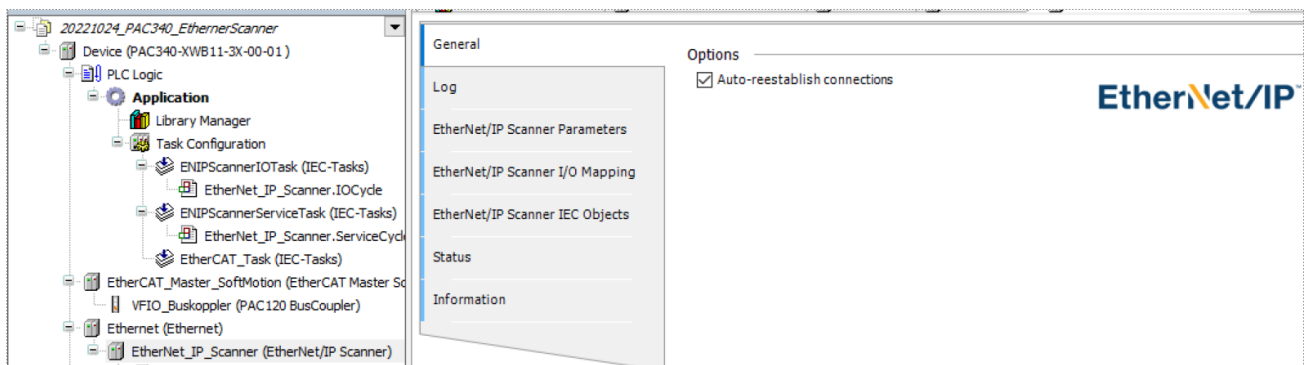
After that the Ethernet/IP Scanner can be added under the ethernet adapter.



4.5.5 Configuration of the Ethernet/IP Scanner

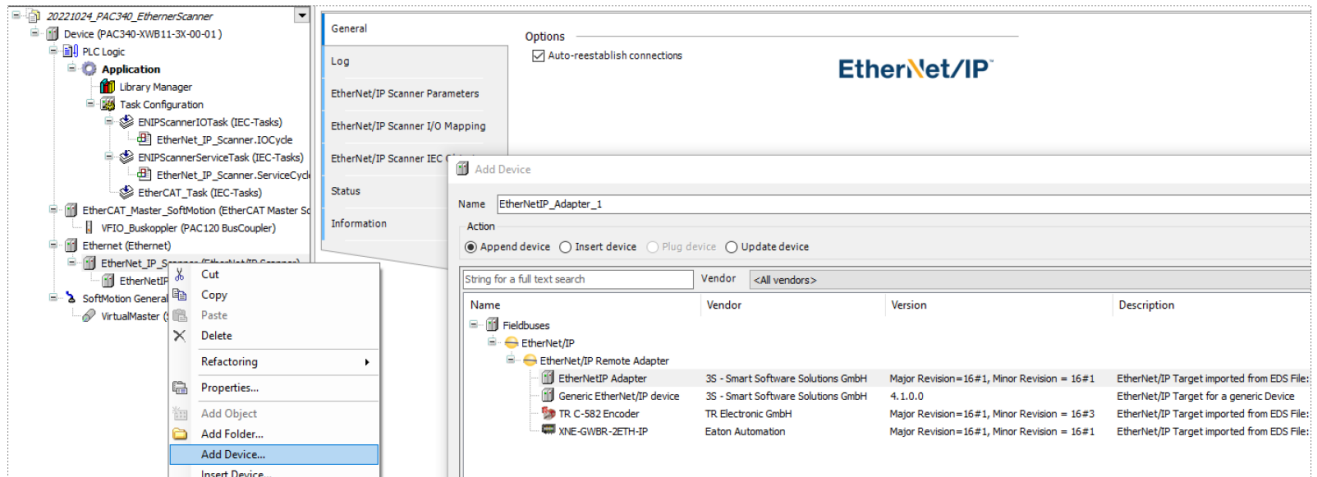
With a double click on the newly added Ethernet/IP Scanner, you can open the configuration.

The only option available is to reestablish connections to Ethernet/IP adapters automatically.



4.5.6 Addition of the Ethernet/IP Adapter

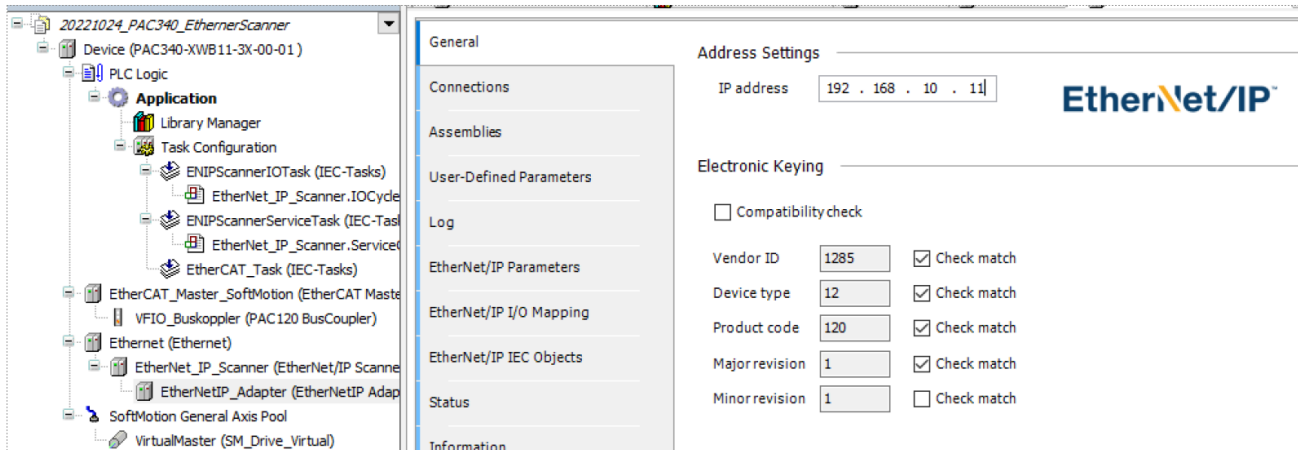
By using the “Add Device” function on the Ethernet/IP Scanner it is now possible to add your Ethernet/IP Adapters (devices). Please be aware that your Ethernet/IP Adapter will only be shown in the device list the hardware description file (EDS) has been installed in CODESYS.



4.5.7 Configuration of the Ethernet/IP Adapter

With a double click on the newly added Ethernet/IP Adapter, you can open the configuration.

Check that the IP of the Ethernet/IP Adapter is set the same as the actual device and check the Keying Options.



Repeat the adding and configuration of Ethernet/IP Adapters until the device configuration in CODESYS matches the real hardware configuration which is connected to the PLC. When this is done download the project onto the PLC and start the application.

5 CODESYS EtherNet/IP Adapter

5.1 Identification

Identification	
Short name	CODESYS EtherNet/IP Adapter
Brief description	With this software option, it is possible to integrate the control as an EtherNet/IP Adapter (Slave) in an EtherNet/IP network.
Revision ID document	V3.0

5.2 System requirements and restrictions

System requirements and restrictions	
Supported platforms and devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	From version 1.16.0, CODESYS from 3.5 SP10 Patch 1
Additional requirements	— Ethernet port
Restrictions	—

5.3 Product description

This software option activates the license for the in CODESYS integrated EtherNet/IP Adapter (Slave) for the device. The EtherNet/IP Adapter expansion is based on the implementation of the company 3S for CODESYS.

With the EtherNet/IP configurator, the CODESYS development system supports the project planning of EtherNet/IP Networks. The configurator allows that all EtherNet/IP settings for the EtherNet/IP Adapter can be comfortable set. With the EtherNet/IP Adapter, it is possible to exchange data with EtherNet/IP Scanners inside the network. All parameters for communication are predefined in the configurator. An Adapter-EDS-file can be created out of the CODESYS IDE.

For full documentation of the different Ethernet/IP Adapter and Module configuration menus please check the CODESYS Online help under:

https://help.codesys.com/webapp/_enic_f_adapter:product=core_EthernetIP_Configuration_Editor:version=3.5.15.0

5.4 Technical data

Technical data	
Conformity	ODVA tested
Compatibility	Combination with Ethernet/IP scanner possible

5.5 Quick Start Guide

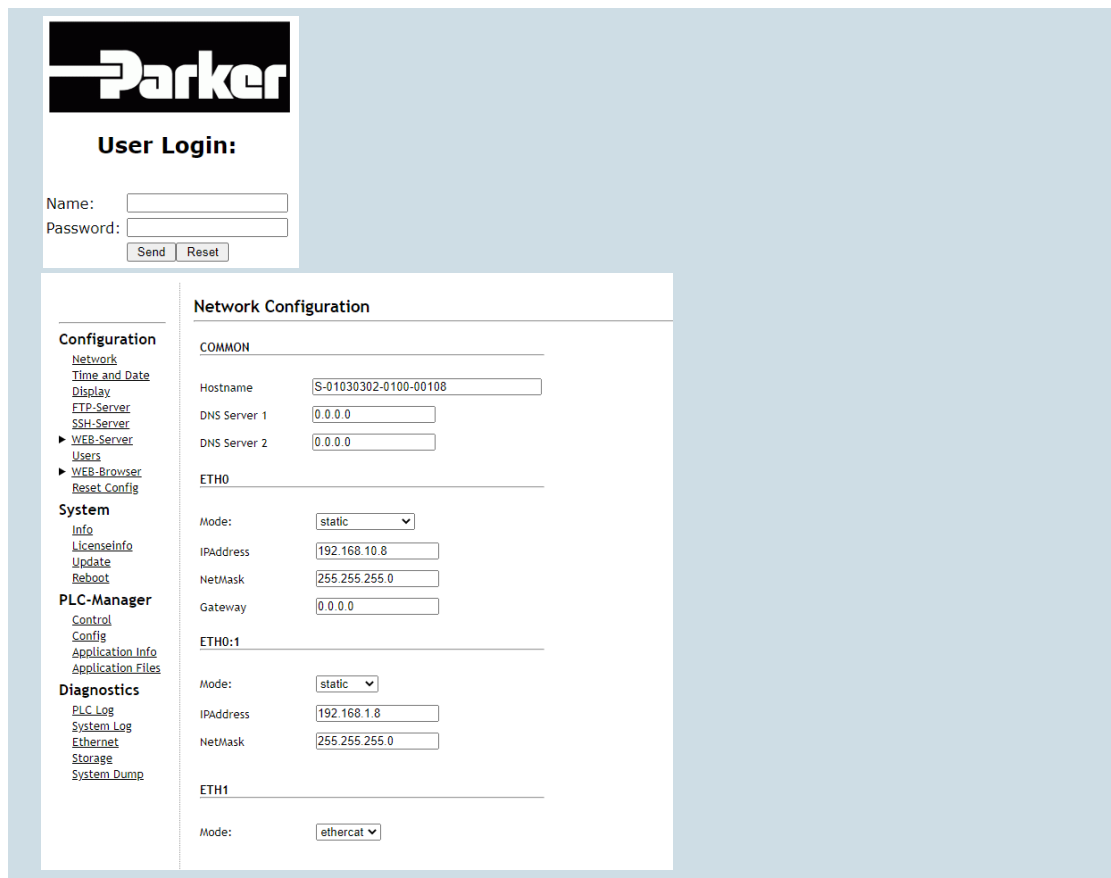
With this illustrated quick start guide it is possible to create a functional Ethernet/IP adapter within a few minutes.

5.5.1 Preparatory tasks

The ETH0 or ETH2 adapter can be used for the Ethernet/IP interface.

Typically, an Ethernet/IP network is structured as a star topology. Therefore, ETH0 is recommended.

The selected interface must be used in the 'static' operating mode.



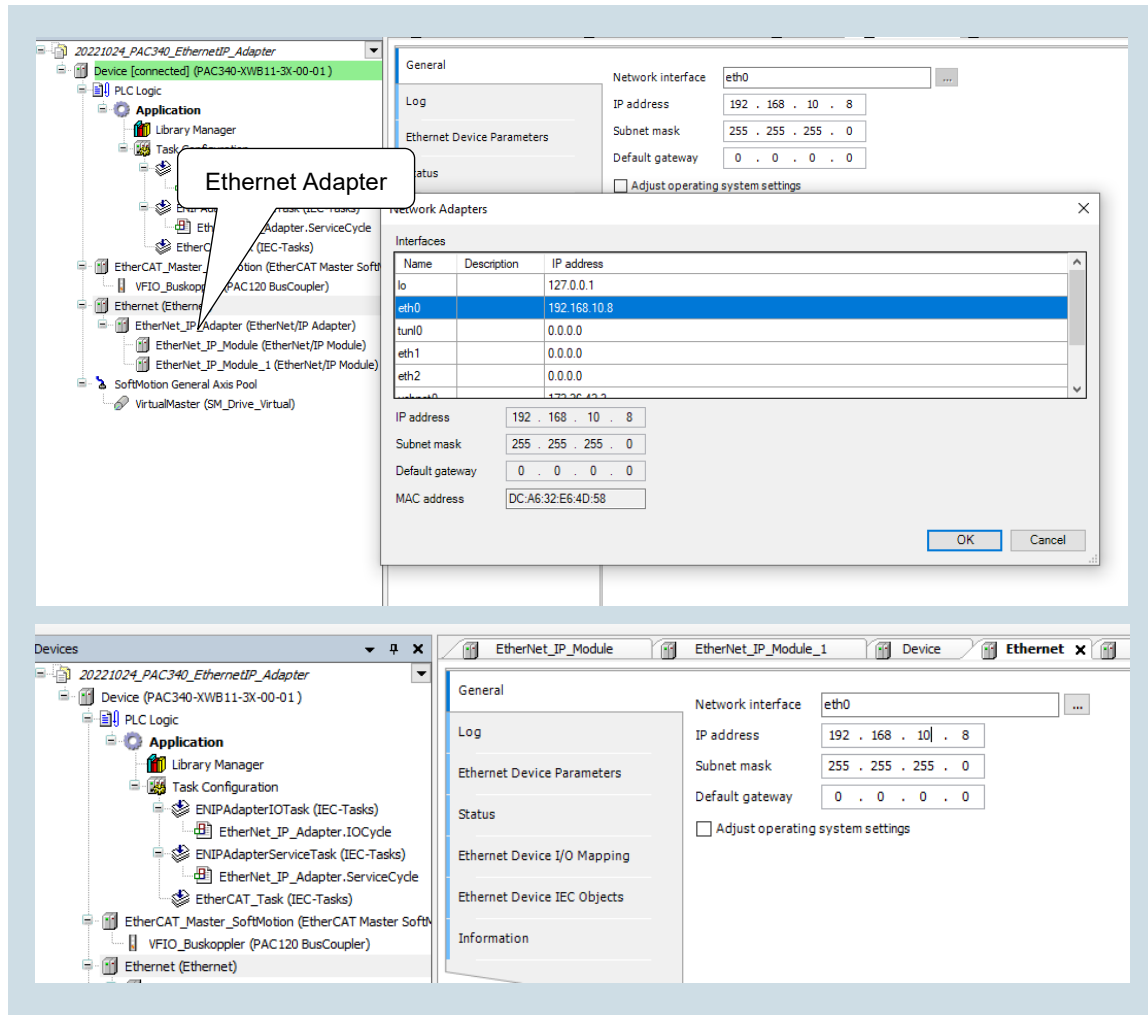
The screenshot displays the Parker web interface. At the top left is the Parker logo. Below it is a 'User Login' section with fields for 'Name:' and 'Password:', and 'Send' and 'Reset' buttons. The main content area is titled 'Network Configuration' and is divided into two columns. The left column contains a 'Configuration' menu with links for Network, Time and Date, Display, FTP-Server, SSH-Server, WEB-Server, Users, WEB-Browser, and Reset Config. Below this is a 'System' menu with links for Info, LicenseInfo, Update, and Reboot. The right column contains the 'Network Configuration' settings. It is divided into three sections: 'COMMON', 'ETH0', and 'ETH1'. The 'COMMON' section has fields for Hostname (S-01030302-0100-00108), DNS Server 1 (0.0.0.0), and DNS Server 2 (0.0.0.0). The 'ETH0' section has a 'Mode' dropdown set to 'static', and fields for IP Address (192.168.10.8), NetMask (255.255.255.0), and Gateway (0.0.0.0). The 'ETH0:1' section has a 'Mode' dropdown set to 'static', and fields for IP Address (192.168.1.8) and NetMask (255.255.255.0). The 'ETH1' section has a 'Mode' dropdown set to 'ethernet'.

5.5.2 Addition of the ethernet adapter

The CODESYS programming system must be online with the PAC340 controller in order to select a network interface. The first step is to add an Ethernet adapter to the device tree (default name = Ethernet).

The available network interfaces are then listed in the 'General' tab.

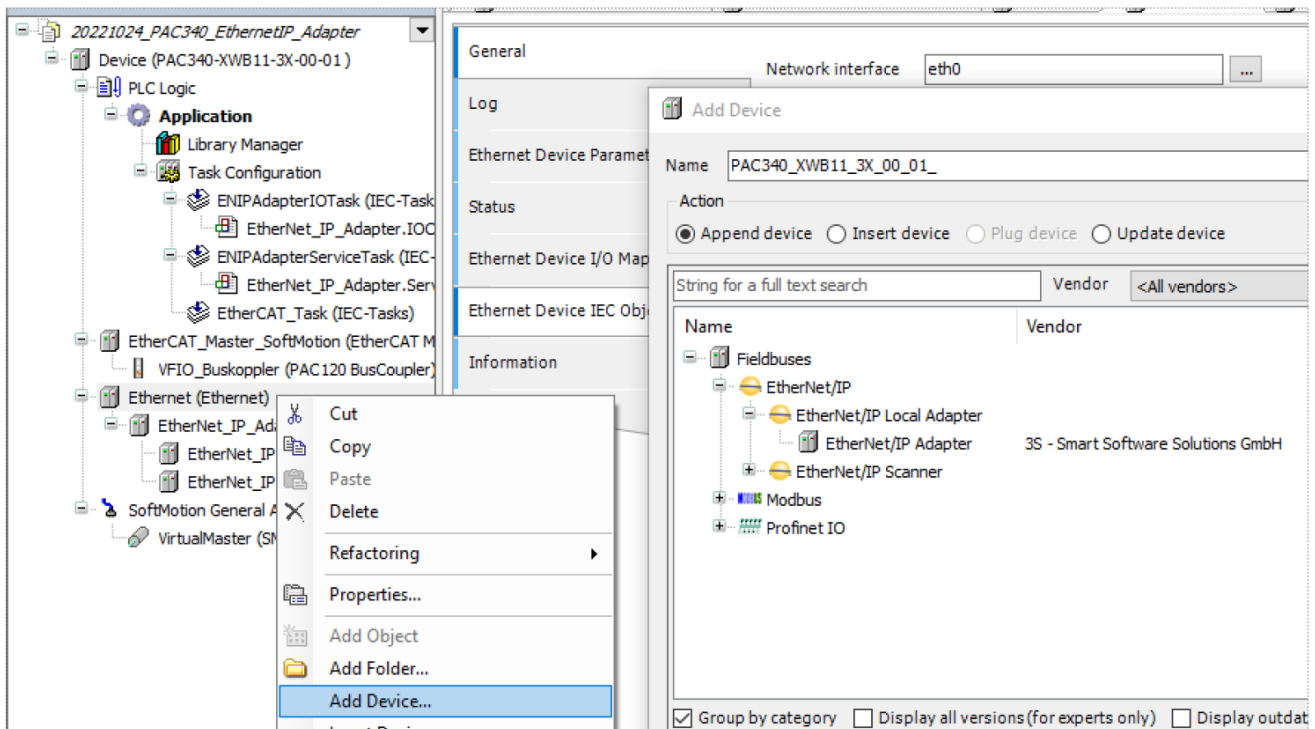
ETH0 is then selected here.



When the adapter is selected, its parameters are transferred to the CODESYS project.

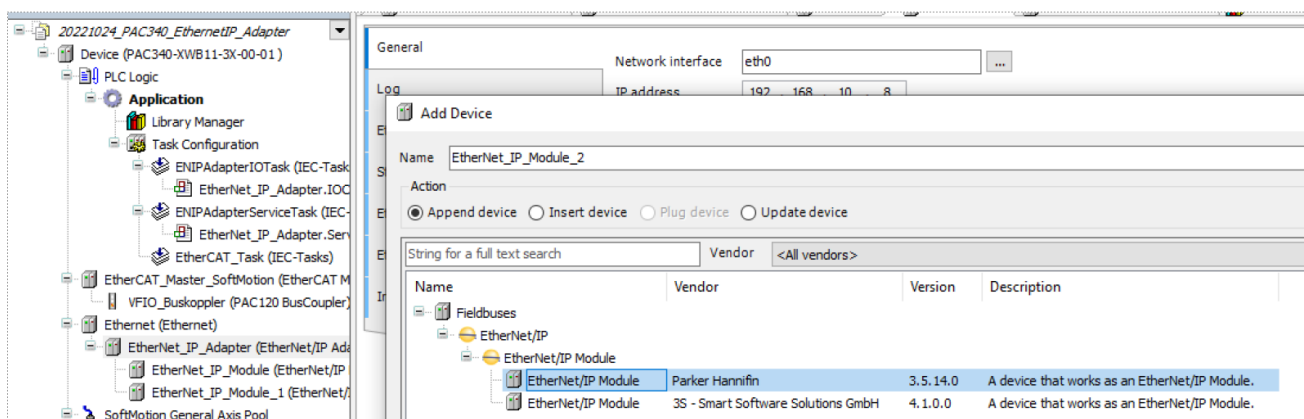
5.5.4 Addition of the Ethernet/IP Adapter

After that the Ethernet/IP Adapter can be added under the ethernet adapter via „Add Device“.



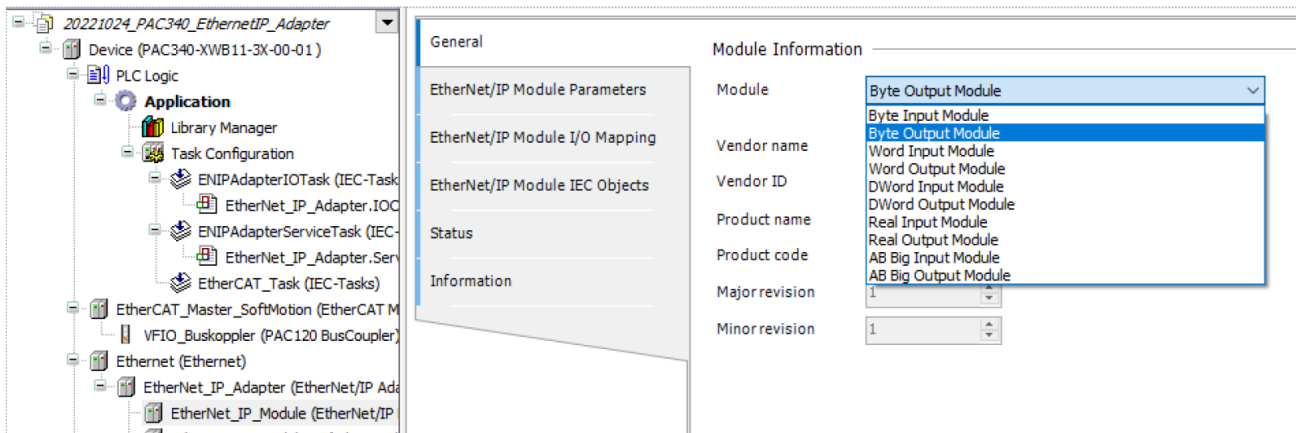
5.5.5 Addition of Ethernet/IP Modules

Depending on the desired configuration, one or more Ethernet/IP Modules must then be added to the Ethernet/IP Adapter with "Add Device".



5.5.6 Configuration of the Ethernet/IP Module

With a double click on the newly added Ethernet/IP Module you can open the device configuration. Under „Module“ you set the data type of the module and whether it is an input or output value.



Repeat adding and configuring Ethernet/IP Modules until you have all data you want to communicate via Ethernet/IP in your I/O image.

5.5.7 Configuration of the Ethernet/IP Adapter

With a double click on the Ethernet/IP Adapter you can open the device configuration after the module configuration. Here you can set the device information such as manufacturer, product name, etc. and automatically generate an EDS file matching the adapter and module configuration. The EDS file then allows easy integration into an Ethernet/IP scanner.

