



Parker Motion Controller

PAC340

Network Communication



ENGINEERING **YOUR** SUCCESS.

1 CODESYS OPCuA Server

1.1 Identification

Identification	
Short name	CODESYS OPCuA Server
Brief description	With this software option, it is possible to exchange variables and data via the OPCuA interface with other systems that have an OPCuA capable client
Revision ID document	V3.0

1.2 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	— IP network port network access
Restrictions	— No support for X.509 certificates

1.3 Product description

This software option activates the license for the in CODESYS integrated OPCuA server for the device.

OPCuA is a communication protocol to enable a direct communication between devices (M2M). It plays a key role in the sector of communication and networking for the Industrial Internet of Things. OPCuA compatible devices can directly communicate with each other through OPCuA. In contrast to simpler protocols, which support a binary exchange of data based on a simple memory map, OPCuA provides access on data through the symbolic level.

Especially to be emphasized is that the new OPCuA standard is platform-independent and is therefore available on devices with various operating systems. So OPCuA is the first choice for a standardized data exchange between devices with most diverse specifications. Beside the pure data exchange between OPCuA compatible devices, OPCuA often used for the connection of visualization or higher-level control units.

The configuration of the variables to be exported through OPCuA provides CODESYS through the system configuration. The to be exported data of the available symbols of the PLC program is compiled by mouse click and is enabled for access through OPCuA. It is possible to give every exported element the access right “read-only” or “read and write”.

OPCuA clients are able to identify data points of a server and can read and write those according to the access rights.

For full documentation of the OPCuA Server configuration menus please check the CODESYS Online help under:
https://help.codesys.com/webapp/_cds_runtime_opc_ua_server;product=codesys;version=3.5.15.0

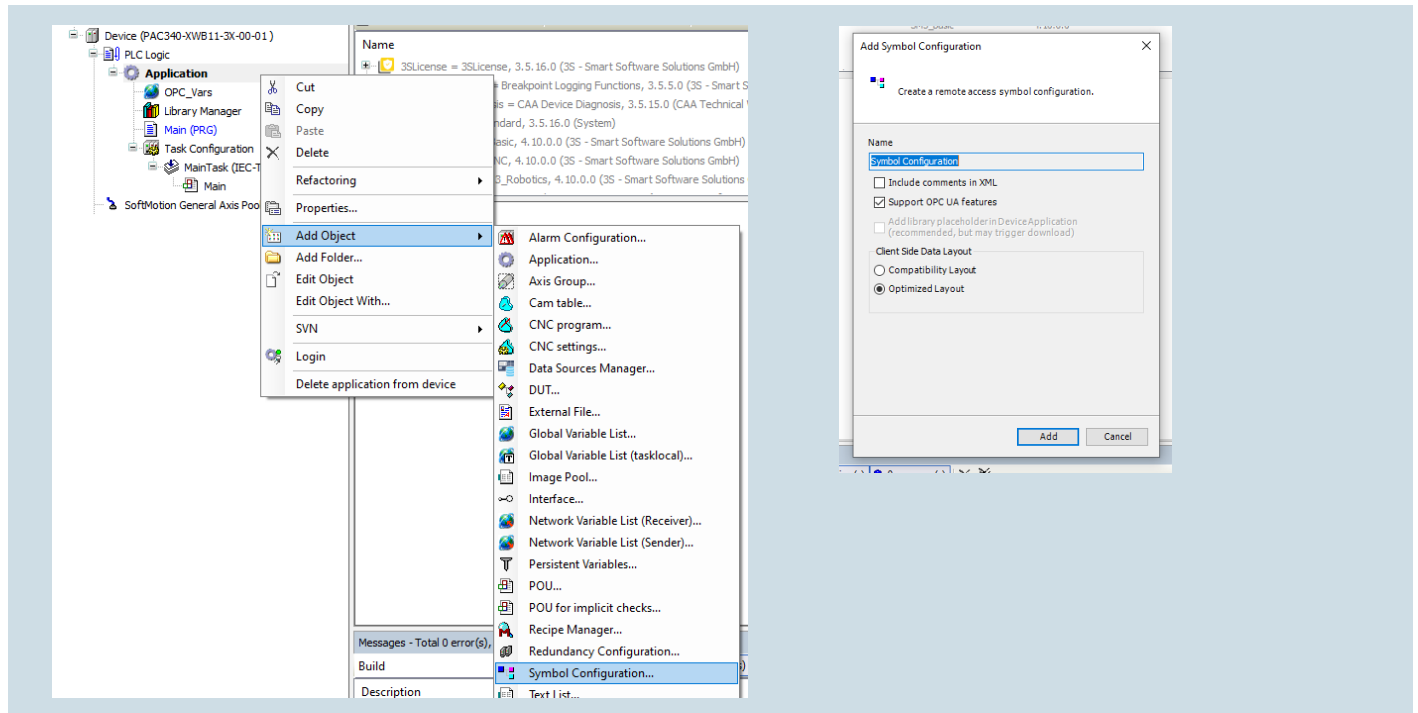
1.4 Technical data

Technical data	
Supported profile	Micro Embedded Device Server

1.5 Quick Start Guide

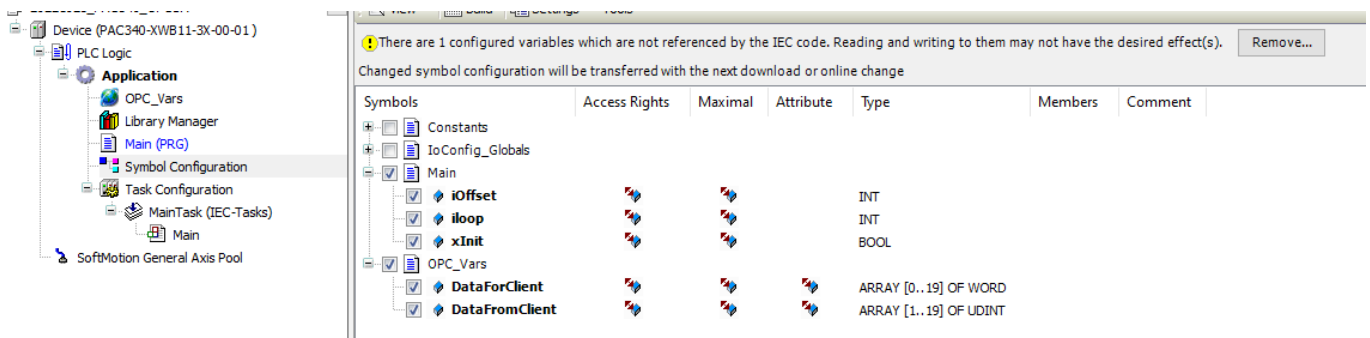
1.5.1 Control configuration

To export variables from the PLC application through OPCuA, first create a symbol configuration for your application.



The information that OPCuA should be supported, is important during the symbol configuration.

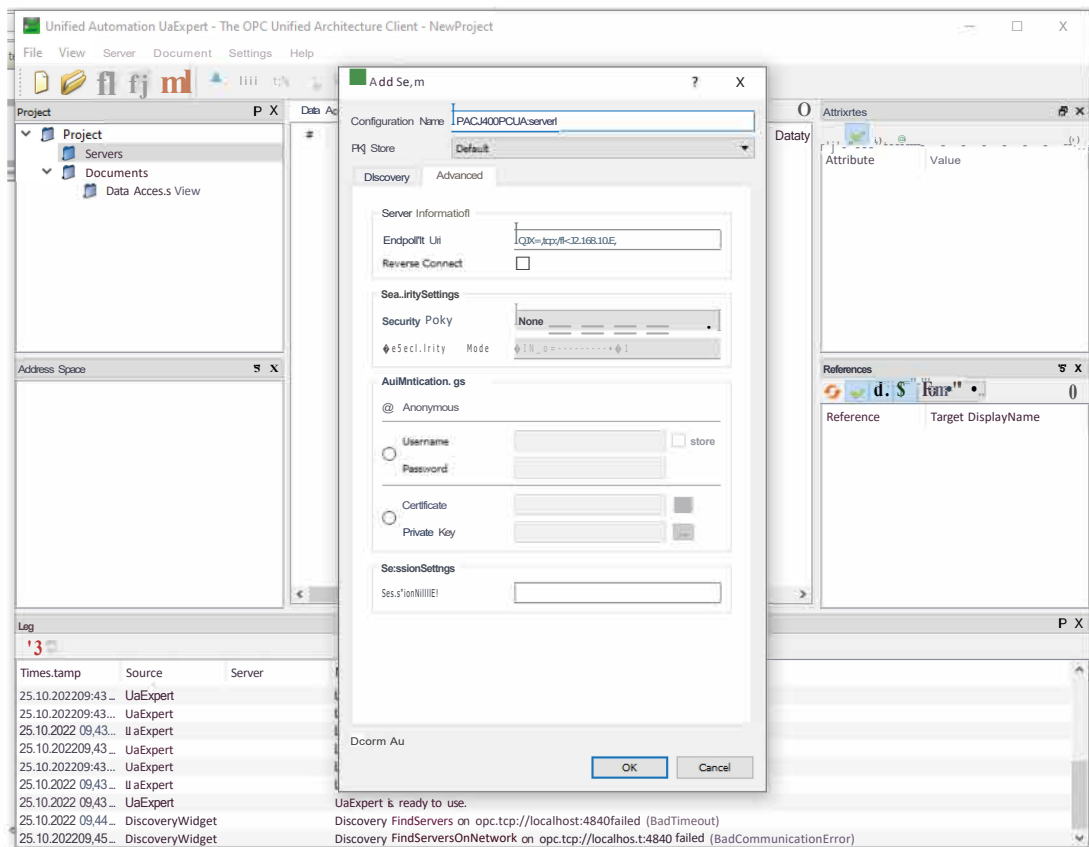
In a further step the to be exported variables are chosen and the authorized access mode configured. A correct Build of the PLC application is required.



The application is downloaded on a control and is started. With this the variables for OPCuA clients are available.

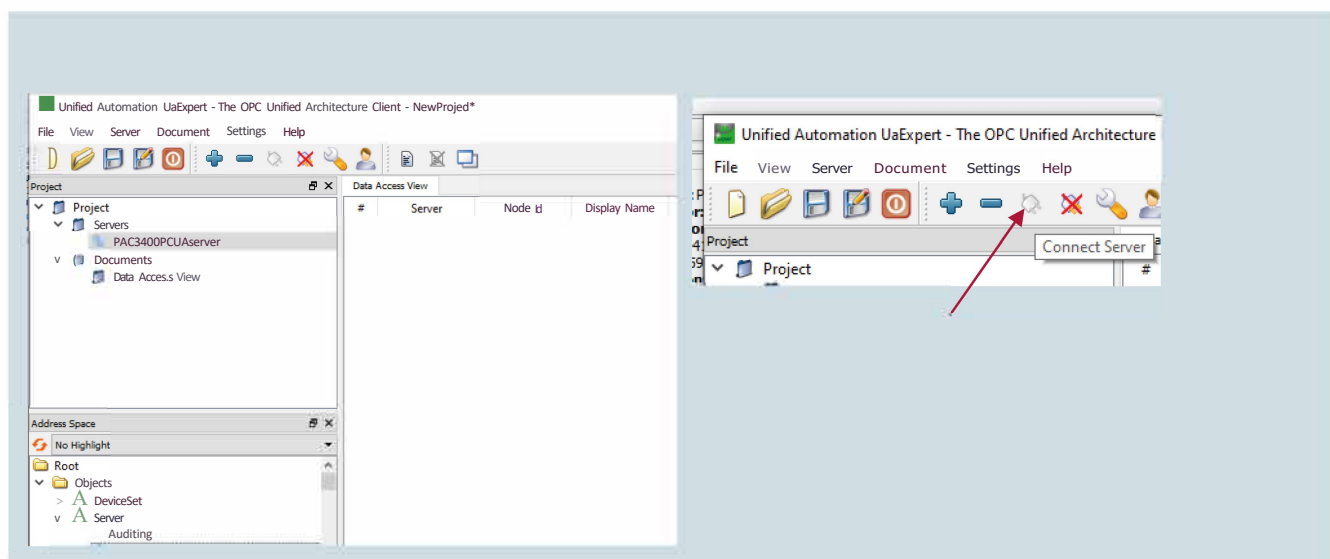
1.5.2 Access through OPCuA Client

For access on the OPCuA server on the control the PC program 'UaExpert' from Unified Automation is used as an example. This tool is free to download from the producer's website and is appropriate for first tests.



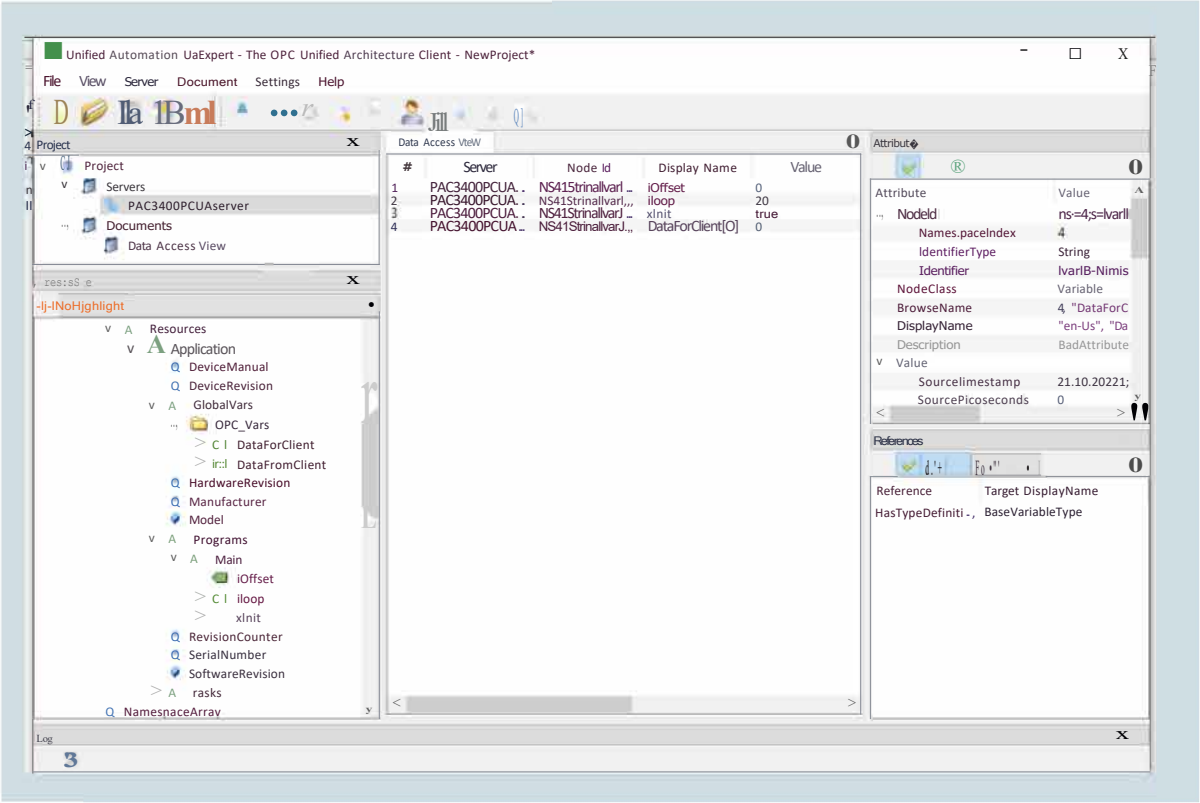
After starting the UaExpert program the control has to be added. Through the plus symbol of the icon bar a OPCuA server can be adopted to the configuration. For this you have to register the IP address of your control as URL and confirm with OK. The OPCuA server is now added.

The server now appears in the main window under 'Servers'.



To establish a connection with the OPCuA server, the 'Connect-Icon' has to be chosen. The exported information from the OPCuA server are available in the window 'Address Space'.

The exported variables can be dragged via drag&drop into the window ,Data Access View'. The data exchange with the control is now activated. Changes in value and status of value are apparent here. Through double click on the column ,Value' values for the particular exported variables can be written.



A cyclic data exchange between OPCuA client on the PC and the OPCuA server on the control is now provided.

2 FTP Server

2.1 Identification

Identification	
Short name	FTP Server
Brief description	With this software option it is possible to operate a FTP (File Transfer Protocol) server.
Revision ID document	V1.0

2.2 System requirements and restrictions

System requirements and restrictions	
Supported Platforms and devices	PAC340-CWB11-3X-00-01 and PAC340-MWB11-3X-00-01
Firmware	From version 1.17.0 or higher
Additional requirements	— FTP Client
Restrictions	

2.3 Product description

With this extension, it is possible to operate an FTP (File Transfer Protocol) server. The FTP server can be used to transfer files from the client to the server (upload) and/or from the server to the client (download). Via a user administration, access via FTP to the file system and the files contained therein can be regulated.

The user permissions are divided into three groups:

- ftp admin
Enables unrestricted access (files marked as ReadOnly cannot be changed) to the complete file system of the PLC.
The user can navigate outside the FTP base directory.
- ftp user
The user can read and write files. It is not possible to navigate outside the FTP base directory.
- ftp reader
The user can only read files. It is not possible to navigate outside the FTP base directory.

The FTP server can be accessed via a standard FTP client and/or via a web browser.

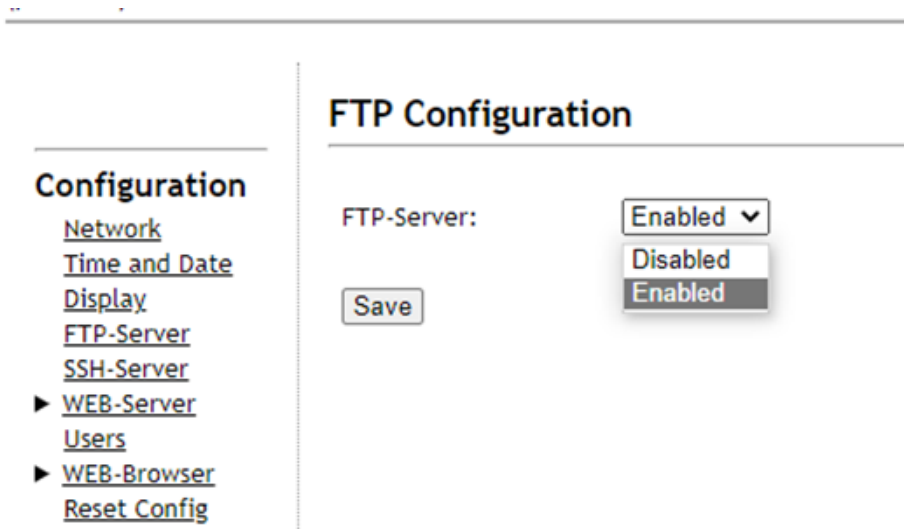
2.4 Technical data

Technical Data	
Integrated Version	Proftpd

2.5 Quick Start Guide

2.5.1 FTP Server start

To use the FTP server, it must first be activated via the web interface of the controller. After changing the settings, the "Save" button must be pressed. The changed settings are active after a reboot of the system.



2.5.2 FTP User configuration

The user configuration can be opened via the "User" configuration entry. The system has three fixed users (ftpuser, ftpadm, ftpreader) for which only the password for FTP access can be changed. FTP authorisation group and FTP Home directory are fixed for these users and therefore cannot be edited.

Furthermore, there are five other users who can be modified in their name, password, FTP Home directory and FTP authorization group. It is also possible to activate and deactivate the user.

Please note that the directory path specified in the FTP base directory must exist and is not automatically created by the system.

Changes to the user settings are applied after pressing the Change button.

The changed settings are active after a reboot of the system.

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PLC-Manager

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User Management

User Name	Password	Home Directory (FTP)	FTP Access	Active	Change
root		/root	ftp admin	☒	
admin		/dev/null	-	☒	
ftpuser		/flash/ftpupload	ftp user	☒	
ftpadm		/flash/ftpupload	ftp admin	☒	
ftpreader		/flash/ftpupload	ftp reader	☒	
webuser		/dev/null	-	☒	
avahi		/var/run/avahi-daemon	-	☒	
ftpuser1		/flash/ftpupload	ftp reader ▼	☒	
ftpuser2		/flash/ftpupload	ftp reader ▼	☒	
ftpuser3		/flash/ftpupload	ftp reader ▼	☒	
ftpuser4		/flash/ftpupload	ftp reader ▼	☒	
ftpuser5		/flash/ftpupload	ftp reader ▼	☒	

3 NTP Server

3.1 Identification

Identification	
Short name	NTP Client
Brief description	With this software option it is possible to get the actual date and time from a network time protocol server (ntp or time server) over the network.
Revision ID document	V1.0

3.2 System requirements and restrictions

System requirements and restrictions	
Supported Platforms and devices	PAC340-CWB11-3X-00-01 and PAC340-MWB11-3X-00-01
Firmware	From version 1.17.1 or higher
Additional requirements	— Network access to the internet or — ntp server (time server) in local network — at least one network interface with connection and settings for use of a local network or access to the Internet
Restrictions	— Only the IP address of the ntp server can be configured (no name server support)

3.3 Product description

With this extension it is possible to synchronize the local date and time with a network time protocol server (short: time server or ntp server). The time server can either be accessible via the Internet (access to the Internet must be possible) or be in the local network. The time server always has the current time and date and delivers it on request. This means that a system without its own real-time clock (RTC) can be supplied with the current time data. This can be important if the web browser at the web terminal has to check the validity of certificates.

The date and time are set once on boot-up, then once a day at 04:00 a.m. via a crontab entry (cron is a tool for the regular execution of tasks at specific times or at selectable time intervals). The date and time of a possibly existing RTC (real time clock) are not changed.

Setting the IP address of the time server to be used and the activation of this extension take place via the web interface. Within the E-Terminal or Web-Terminal, this setting can also be made by the configuration interface on the display.

3.4 Technical data

Technical Data	
Integrated Version	Ntp 4.2.6 (only ntpdate)

3.5 Quick Start Guide

3.5.1 NTP configuration of the PLC

For using a time server you have to enter the IP address of the server that provides this service. In the web interface select “Time and Date” from the left side in “Configuration”. Enter the IP address of the time server in the field called NTP Server (see green arrow). Click in the checkbox above the NTP Server field to enable this extension. Then click on the Save Button and re-boot.

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Time and Date Configuration

Date (Timezone: UTC)

Year (e.g. 2012)

2020

Month [1-12]

04

Day [1-31]

22

Hours [0-23]

08

Minutes [0-59]

14

Seconds [0-59]

18

Change Time and Date

Timezone

Timezone

UTC

Change Timezone

Time syncing

use ntpdate

☐

NTP Server

Save



3.5.2 NTP settings in configuration dialog

Configuration of a time server on an E-Terminal or Web-Terminal can be done either on the web interface as shown in the previous chapter or in the configuration dialog on screen. On the main screen (after boot-up) enter the configuration dialog by activating the “configuration” button. Activate the “Next” button until you reach the Ntpdate configuration screen as shown below. By activating the “Edit” button you can enter the IP address of the time server. State can be changed from disabled to enabled or vice versa by activating the “Change” button. Activate the “Next” button until you can save the new configuration and reboot the terminal.

E-Terminal Settings: Ntpdate

NTP-Server: 192.168.3 .250

Edit

State: disabled

Change

Back

Cancel

Next

(screenshot looks slightly different on a web terminal)