ProConOS
OPC Server 2.0
Manual

August 2002

Contents

Introduction

This chapter provides information about...

- ☐ the OPC Server
- ☐ the documentation for the OPC Server
- ☐ conventions used in this manual

What is the OPC Server?

The OPC Server was especially designed to enable the communication between any OPC Client (e.g. a visualization) and your PLC. It allows an OPC Client to read and write the current values from and to your PLC in order to visualize or control the running processes. The OPC Server is mainly working in the background and can be started either automatically by an OPC Client or manually.

The OPC Server offers the possibility to read and write the current values of variables stored in the CSV file of any project created with the MULTIPROG programming system.

Only variables stored in the CSV file of a project can be used by an OPC Client to visualize the running control processes. This requires that the CSV check boxes in the resource setting dialog of the programming system are set otherwise the variables are not stored in the CSV file.

What kind of documentation do you get for the OPC Server?

The documentation for the OPC Server consists of several parts: the OPC Server Manual and the OPC Server Help.

The OPC Server Manual is divided into the following chapters:

* Introduction - gives you general information about the OPC Server and its features.
* Getting started with the OPC Server - describes the handling of the OPC Server.
* How to use the OPC Server - describes the required steps for the correct usage of the OPC Server.

Overview of Main Features

The ProConOS OPC Server 2.0 bases on a component based architecture with new developed software modules.

The following operating systems are supported:

* Windows CE 3.0 Intel x86
* Windows CE 3.0 StrongARM,
* Windows NT 4.0 SP 6,
* Windows 2000 SP 2,
* Windows XP.

Supported Features

- ***Data Access 2.04***
  The *ProConOS OPC Server 2.0* supports *Data Access 2.04*. On the desktop version an automation interface is available.
- ***MULTIPROG project* not necessary**
  The *OPC Server 2.0* can be configured without access to the *MULTIPROG project* data structure as it was required in the OPC Server 1.x version. Therefore it is not further necessary to get access to a MULTIPROG project or to copy it.
- ***Remote configuration***
  The *OPC Server 2.0* provides *remote configuration* by uploading the configuration data (CSV file with tag names etc.) during start up from the target device (ProConOS PLC).
- ***Automatic update***
  The *OPC Server 2.0* provides *automatic update*. Changes of the program on a ProConOS PLC are detected during runtime of the *OPC Server* and an automatic update is performed. Changed variable addresses, added and deleted variables are supported.
- **Error and diagnostic messages**
  The *OPC Server 2.0* provides a simple graphical user interface for error and diagnostic messages. The messages are more detailed compared to the OPC Server 1.1x.
- **Multi Resource type support**
  Several different devices (*OPC Resource types*) can be supported simultaneously. The *OPC Server 2.0* can be adapted to support further specific devices and protocols without modification of the OPC kernel by adding a new specific adapt component.
- **Communication Performance increased**
  The *OPC Server 2.0* supports large ProConOS communication blocks up to 1428 Byte. This increases the performance up to factor 4.
- **Number of variables increased**
  The max. amount of OPC variables for each resource is increased from 3200 to 4500.
- **Test Client**
  The OPC Server is delivered together with a Test Client program. This Test Client can be used to check the correct function of the OPC Server.

Getting started with the OPC Server

This chapter provides information about...

- ☐ system requirements
- ☐ installing the OPC Server
- ☐ starting the OPC Server

Getting started with the OPC Server

Windows CE System Requirements

Hardware Requirements

To run the OPC Server a Windows CE 3.0 operating system must be installed on one of the following hardware platforms:

* Intel x86 hardware
* StrongARM hardware.

Software Requirements for Windows CE 3.0

The Windows CE image must support the following components:

* DCOM support, needed for OPC Server/ OPC-Client communication
* Network/ TCP/IP support.

Windows Desktop System requirements

Desktop Hardware requirements

To run the OPC Server on a Windows Desktop PC, the following hardware requirements must be at least fulfilled:

* PC with Pentium or compatible processor
* 64 MB of RAM
* Hard disk with at least 50 MB free memory space

Desktop Software requirements

To run the OPC Server one of the following software requirements must be at least fulfilled:

* Microsoft Windows® NT 4.0 SP 6
* Microsoft Windows® 2000 SP 2
* Microsoft Windows® XP

Installing the OPC Server on Windows Desktop

The installation program is a program which performs the actions necessary for installation by itself. The simplest method of installation is to use the Explorer to run the installation program 'ProConOS_OPC20_Desktop_Setup.EXE'.

Installing the OPC Server on Windows CE

Installation by Setup program

Start the Setup program 'ProConOS_OPC20_X86_Setup.EXE' or respectively 'ProConOS_OPC20_ARM_Setup.EXE' from a host Desktop PC linked to the Windows CE target via '*ActiveSync*'. All further installation steps are performed automatically.

Installation by Hand

This information is only valid if an automatic installation is not possible.

- Following Windows DLLs are required: mfcce300.dll, atlce300.dll and olece300.dll. If they are not available the may be copied from the target specific WINCE3.0 SDK to the windows directory on the target.
- Start the REGISTER.BAT file with the WINCE “Command Prompt”. This is necessary to register the COM components.

Overview about the necessary File Architecture

```
CeTarget:.
|
+---OpcServer
|       Adapt3x.dll                 COM object
|       cf.dll                      COM object
|       Config.dll                  COM object
|       Init.dll                    COM object
|       Kernel.dll                  COM object
|       kwopcdaps.dll               COM object
|       OpcClient.exe
|       PcosOpc.exe                 COM object
|       PcosOpc.ini
|       Register.bat
|       socomm.dll
|       opcproxy.dll                COM object
|       opccomn_ps.dll              COM object
|       Subscriber.dll              COM object
|       +---OpcProject              In this directory all the Resources are placed,
|               ResourceX.opc       the OPC Server will be work with.
|               ResourceY.opc
|               XXX.opc
|
\---Windows                         Windows directory
      ...
      mfcce300.dll                  necessary Windows DLLs...
      ATLCE300.DLL                  necessary Windows DLLs...
      olece300.dll                  necessary Windows DLLs...
      ...
```

How to use the OPC Server

This chapter provides information about...

- ☐ the correct usage of the OPC Server
- ☐ creating a project
- ☐ automatic update

How to use the OPC Server

Configuring the start up project

OPC projects are stored in a flat directory (workspace) that contains all data files required by the OPC Server. Thus *OPC project name* and subdirectory name are identical.

The current OPC project (start up project) is selected by the 'PcosOPC.ini' file with the "CustomWorkspace" settings. There the directory path defines the current OPC working directory respectively the *OPC project name*.

The following example shows an PcosOPC.ini file. The *OPC project name* in this case is ".\OpcProject".

```
[Settings]
WorkspaceToLoad=FIXED
CustomWorkspace=.\OpcProject
Language=1033

[AddIns]
KW.OPC.Kernel.20=3
KW.OPC.Config.20=3
KW.OPC.Init.20=3
```

Configuring the OPC Resources

An *OPC project* can have any number of *Resources* (ProConOS PLCs). For each *Resource* a configuration file with the extension '*.opc' must exist. Thus the configuration of every *Resource* is placed in a separate file.

One of the most important configuration settings are the communication parameters. With these settings it is determined how the OPC Server gets access to the PLC. The communications parameters are similar to the configuration of the MULTIPROG programming tool in the Dialog 'Resource settings...'.

To work with TCP/IP, the user only must adjust the respective IP-Address. In this case it is recommended to configure the maximal telegram block size with 1428 Bytes. Please find an resource configuration file '*.opc' example below.

```
[GeneralSettings]
AdaptationComponent=KW.OPC.AdaptPCOS3x.LE.20
Description=KW-Software Adaptation for ProConOS PLC´s

[Online]
ComTeleLength=1428
ComPort=DLL socomm.dll -ip192.168.1.225
```

Starting the OPC Server

There are two possibilities to start the OPC Server:

* Start your OPC Client program and connect it to the OPC Server. The OPC Server is automatically started.
* Click the Windows menu 'Start' and choose 'Program'. Click on the program name of the OPC Server application. You can also start the OPC Server by double clicking on the corresponding icon on your desktop.

User interface

After starting the OPC Server a welcome dialog is displayed.

At the OPC Server Desktop version there is only a reduced user interface functionality provided. It appears after a right mouse click on the tray icon. Following parts are available: About, Server Status and Exit. At the Windows CE version the functionality's are available as a normal Window application.

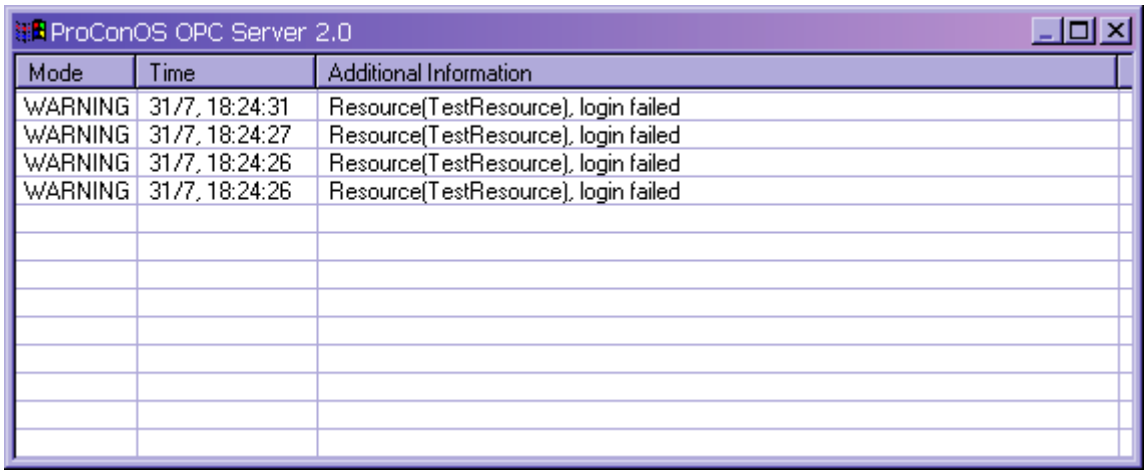

Figure 3-1: User interface

Remote Configuration

The *OPC Server 2.0* provides *remote configuration* by uploading the configuration data (CSV file with tag names etc.) during start up from the target device (ProConOS PLC). The required configuration data can be downloaded via MULTIPROG to the ProConOS PLC by marking the checkbox 'Include OPC data' in the dialog 'Download'.

The *OPC Server 2.0* does not support zipped CSV files. Thus MULTIPROG must send uncompressed data to the ProConOS PLC.

The MULTIPROG programming tool sends automatically unzipped OPC data (CSV files) if the resource type ' PCOS_CE ' is used. This resource type is available for the configuration types 'IPC_xx' and 'ARM_L_xx'.

Please select resource type ' PCOS_CE ' by creating PLC programs with the MULTIPROG programming tool in order to get unzipped OPC data (CSV files).

If you want to configure the MULTIPROG programming tool individually to generate uncompressed OPC data (CSV files) for each resource of a project the file "@$@$@$@$.SET", placed in the resource directory has to be modified. Please include "ZIP=NO" under the section name "CSV". Please refer to the following illustration.

```
[CSV]
ZIP=NO
```

To send uncompressed OPC data is supported by MULTIPROG version 3.02 Build99 or higher.

Automatic update

The *OPC Server 2.0* provides an *automatic update* if the PLC program is changed. Changes of the PLC program on a ProConOS system are detected by the *OPC Server* during runtime and an automatic update is performed. Changed variable addresses, added and deleted variables are supported.

Therefore it is no longer necessary to reimport a project, that you have changed and built in the programming system.

To allow this automatic update process you have to mark the checkbox 'Include OPC data' in the dialog 'Download' of the programming system. In this case the CSV file is included into the program download process. After having downloaded the PLC program the OPC Server performs an automatic upload of the new CSV data from the PLC and updates its configuration. So immediately the OPC Client can get the current values of the edited project from the connected PLC.

Use existing OPC client projects

The ProConOS OPC server 1.1x sets the item names like this:

* MULTIPROG-Project name,
* MULTIPROG-Configuration name,
* MULTIPROG Resource name
* and so on.

The access path (OPC-Client ItemID) for the global variable " GlobalItemName" for example will be:

* 'Project.Configuration.Resoure.GlobalItemName'.

With the new OPC server 2.0 the path for the item names is defined by the file name of the *.opc Resource file. Therefore the file name can be choused by the user.

If for example the Resource file is named "Resource1.opc" the OPC-Client ItemID will be:

* "Resource1.ItemName"

The following example is related to the item names like they are used by MULTIPROG in conjunction with the OPC Server 1.1x.

The name of the Resource file is:

* "Project.Configuration.Resoure.opc".

In this case the OPC-Client ItemID will be:

* "Project.Configuration.Resoure.GlobalItemName ".

Document History

Version	Date	Description
1.0	31.7.2002	First release, English version

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