



Programmable Controller

FP OPC Server



User's Manual

Preface

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Warnings used in this manual

One or more of the following warnings may be used in this documentation:



DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Indicates a hazardous situation which, if not avoided, could result in serious or moderate injury.



CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a property damage message.

Table of contents

Preface.....	2
Warnings used in this manual.....	3
1 Overview.....	11
1.1 Introduction to the Panasonic FP OPC Server.....	11
1.2 OPC and its underlying technology.....	11
1.2.1 OPC Foundation.....	11
1.2.2 COM.....	12
1.2.3 DCOM.....	12
1.2.4 OPC Data Access (DA).....	12
1.3 Features of the FP OPC Server.....	13
1.3.1 Connectivity.....	14
OPC connectivity.....	14
Device connectivity.....	14
1.3.2 Interruption tolerance.....	15
1.3.3 Communication driver test and protocol adaptation.....	15
1.3.4 User interface.....	15
1.3.5 Namespaces.....	16
1.3.6 Basic version.....	16
1.3.7 Online changes.....	17
1.4 Hardware and software requirements.....	17
2 First steps using the FP OPC Server.....	19
2.1 Install the FP OPC Server.....	19
2.2 Start/Stop the FP OPC Server application.....	20
2.2.1 Start the FP OPC Server application.....	20
2.2.2 Stop the FP OPC Server application.....	21
2.3 Channels.....	21
2.3.1 Add a New Channel.....	22
2.3.2 Update an Existing Channel.....	23
2.4 Element Structure.....	24
2.5 Devices.....	24
2.5.1 Add a New Device.....	25
2.5.2 Update an Existing Device.....	25

2.6 Tag Groups.....	25
2.6.1 Add a New Tag Group.....	26
2.6.2 Update an Existing Tag Group.....	26
2.7 Tags.....	27
2.7.1 Add a New Tag.....	27
2.7.2 Update an Existing Tag.....	28
2.8 Server Operation.....	29
2.8.1 Start the Server.....	29
2.8.2 Stop the Server.....	30
2.9 Transferring Project Information.....	31
2.9.1 Open/Save Project.....	31
2.9.2 Import/Export Tag Data.....	32
3 Graphical User Interface (GUI).....	36
3.1 Configure the Working Area.....	36
3.2 Menu Names and Commands.....	37
3.2.1 File Menu.....	37
3.2.1.1 New of File Menu.....	37
3.2.1.2 Open.....	38
3.2.1.3 Save.....	38
3.2.1.4 Save As.....	38
3.2.1.5 Import.....	38
3.2.1.6 Export.....	39
3.2.1.7 Recent File List.....	39
3.2.1.8 Exit.....	39
3.2.2 Edit menu.....	39
3.2.2.1 New of Edit Menu.....	40
3.2.2.2 Cut.....	41
3.2.2.3 Copy.....	41
3.2.2.4 Paste.....	42
3.2.2.5 Delete.....	42
3.2.2.6 Select All.....	42
3.2.3 View Menu.....	43
3.2.4 Server Menu.....	43
3.2.4.1 Start Server.....	43
3.2.4.2 Stop Server.....	44

3.2.4.3 Communication settings.....	44
3.2.5 Tools Menu.....	45
3.2.5.1 DCOM Configuration of Tools Menu.....	45
3.2.5.2 Options.....	45
3.2.6 Help Menu.....	50
3.2.6.1 Contents.....	50
3.2.6.2 Search for Help on.....	50
3.2.6.3 What's This?.....	50
3.2.6.4 Dynamic Help.....	51
3.2.6.5 About FP OPC Server.....	51
3.3 Panes.....	51
3.3.1 Navigator Pane.....	51
3.3.1.1 Elements.....	52
3.3.1.2 Navigator Pane's Pop-Up Menu.....	52
3.3.2 Tag Pane.....	53
3.3.2.1 Dummy Element of Tag Pane.....	55
3.3.2.2 Pop-Up Menu of Tag Pane.....	55
3.3.3 System Log Pane.....	56
3.3.4 Server Status Pane.....	57
3.3.4.1 Pop-Up Menu of Server Status Pane.....	58
3.3.5 Help Pane.....	58
3.4 Toolbars.....	58
3.4.1 Main Toolbars.....	58
3.4.2 Navigator Pane Toolbar.....	59
3.4.3 Tag Pane Toolbar.....	60
3.4.4 Server Status Pane Toolbar.....	60
3.5 Wizard.....	60
3.5.1 New Channel Wizard.....	61
3.5.1.1 Channel Name.....	61
3.5.1.2 Driver Selection.....	62
3.5.1.3 Communication Settings.....	62
3.5.1.4 Process all write requests.....	62
3.5.2 New Device Wizard.....	63
3.5.2.1 Device Name.....	63
3.5.2.2 Station No.....	63

3.5.2.3 Test Communication.....	64
3.5.3 New Tag Group Wizard.....	64
3.5.3.1 Tag group name.....	64
3.5.3.2 Time stamp address for all tags in the group.....	64
3.5.4 New Tag Wizard.....	66
3.5.4.1 Tag Name.....	66
3.5.4.2 Address.....	66
3.5.4.3 Data type.....	66
3.5.4.4 Description.....	67
3.5.4.5 Enable Tag.....	67
3.5.4.6 Access Right.....	67
3.5.4.7 Buttons of New Tag Mode.....	67
3.6 Project Information Input/Output.....	68
3.6.1 Load/Save The Project.....	68
3.6.2 Import/Export Tag Information.....	68
3.7 “Communication settings” dialog.....	68
3.7.1 Serial Communication Settings.....	69
3.7.2 Ethernet communication settings.....	69
3.7.3 Ethernet (local) communication settings.....	71
3.7.4 USB (GT) communication settings.....	73
3.8 System tray.....	73
4 Namespaces.....	74
4.1 Introduction to namespaces.....	74
4.2 Static, Manually Defined Namespace.....	74
4.3 System Status Namespace.....	75
4.4 MEWTOCOL OPC server compatibility namespace.....	76
5 Appendix.....	79
5.1 Panasonic Addresses.....	79
5.1.1 FP addresses.....	79
5.1.2 Memory areas.....	80
5.2 Panasonic Data Types.....	81
5.2.1 Undefined - Undefined Data Type.....	81
5.2.2 Boolean - Boolean Data Type (1-bit).....	81
5.2.3 Signed 16-bit.....	82
5.2.4 Unsigned 16-bit.....	82

5.2.5 Signed 32-bit.....	82
5.2.6 Unsigned 32-bit.....	82
5.2.7 Word 16-bit.....	82
5.2.8 Word 32-bit.....	83
5.2.9 Float 32-bit.....	83
5.2.10 String - String Data Type (Variable Length).....	83
5.2.11 BCD 16-bit.....	83
5.2.12 BCD 32-bit.....	84
5.2.13 Date.....	84
5.2.14 Date And Time.....	84
5.2.15 Time Of Day.....	84
5.3 Panasonic FP PLC Network Types.....	85
5.3.1 Serial Network.....	85
5.3.2 Ethernet Network.....	86
5.4 DCOM configuration.....	87
5.5 Troubleshooting, warnings and error dialogs.....	89
5.6 List of abbreviations.....	89
6 Record of Changes.....	91
Index.....	92

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1 Overview

1.1 Introduction to the Panasonic FP OPC Server

The Panasonic FP OPC Server is a 32-bit Windows application with a modern user interface. It realizes the server end in the standard client/server model and incorporates the OPC DA standard. It allows you to share information between our proprietary devices (Panasonic FP Series PLCs) and any other device or application that supports the OPC DA standard.

OPC DA technology succeeds Microsoft's Dynamic Data Exchange (DDE) technology in the demanding industrial environment.

1.2 OPC and its underlying technology

OPC (**O**LE (Object Linking and Embedding) for **P**rocess **C**ontrol) is the successor of DDE technology.

According to the OPC Foundation, "OPC is open connectivity in industrial automation and the enterprise systems that support industry. Interoperability is assured through the creation and maintenance of open standards specifications. There are currently seven standards specifications completed or in development ("What is OPC?"; www.opcfoundation.org)".

OPC is based on a series of approved standards and technologies of the consumer computer world. It was originally based on **OLE COM** (Component **O**bject **M**odel) and **DCOM** (Distributed **C**omponent **O**bject **M**odel), which provide the framework. Microsoft even added OPC standard to the OLE specification. OPC interface applications are built once and used several times, thus are approved and under constant quality control.

With OPC, data can be exchanged efficiently using a standardized interface, hence vendors do not have to implement their own communication drivers. Therefore it allows vendors to reduce implementation costs and save time, thus reducing the project cycle time.

1.2.1 OPC Foundation

The OPC Foundation defines itself as being "dedicated to ensuring interoperability in automation by creating and maintaining open specifications that standardize the communication of acquired process data, alarm and event records, historical data, and batch data to multi-vendor enterprise systems and between production devices. Production devices include sensors, instruments, PLCs, RTUs, DCSs, HMIs, historians, trending subsystems, alarm subsystems, and more as used in the process industry, manufacturing, and in acquiring and transporting oil, gas, and minerals (OPC Foundation; "What is the OPC Foundation?"; www.opcfoundation.org)".

The OPC Foundation is a cooperation of automation control product vendors and Microsoft. As of 2006, the foundation had about 300 members worldwide. The main standard, with which it all began, is the OPC DA (Data Access) specification.

Compliance tests are provided to the members to test OPC conformity.

1.2.2 COM

The **COM** (Component Object Model) interface defines the externally visible binary structure of a COM object. The COM object is hereby the implementation of this model and can be based on several interfaces which define access to the object. It offers runtime access to the incorporated interfaces of a COM object and interprocess communication. Reference counting is implemented to manage the object's life cycle. Interactions between components are based on method-accesses defined in interfaces. COM applications are restricted to run locally on single computers only.

1.2.3 DCOM

Upon inception, **DCOM** (Distributed Component Object Model) faced two major challenges:

- program-based processing of information, which led to information being represented differently
- backwards compatibility to existing COM and DDE applications

OLE is based directly on DCOM. The DCOM interface allows COM applications to be distributed on several computers, providing a single security concept.

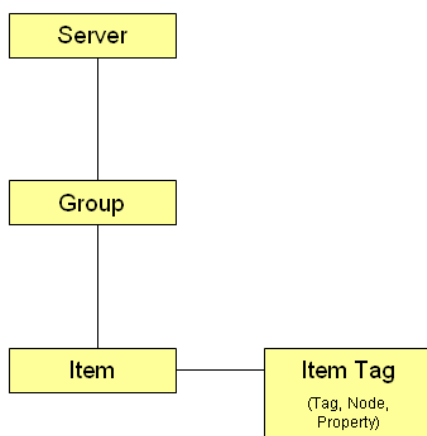
DCOM applications are restricted by not:

- running over firewalls
- being platform independent (only Microsoft operating systems are supported)

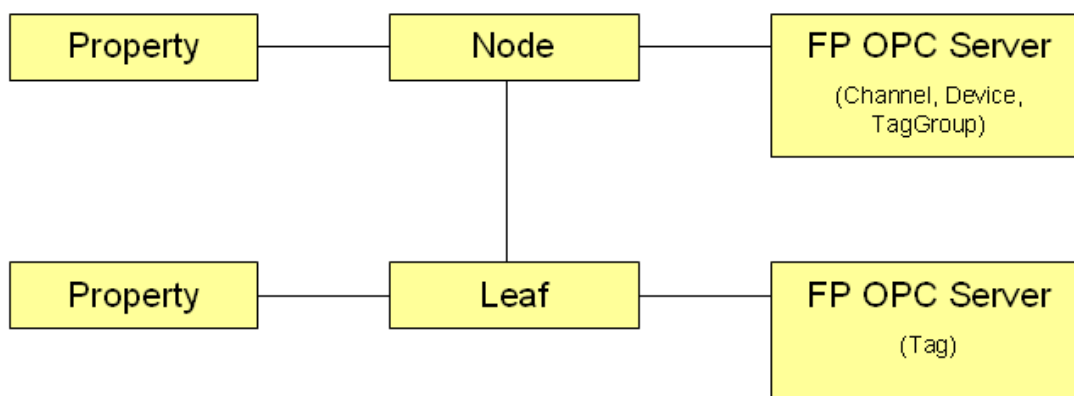
1.2.4 OPC Data Access (DA)

Version 1 of the OPC DA (Data Access) standard was released in 1996. Today version 3.0 is available. A task force within the [OPC Foundation](#) maintains and revises the OPC DA specification.

The specification shows and describes how to construct client and server applications and allows vendors to quickly develop their own applications. It defines object hierarchy consisting of several **OPC server objects**, which in turn can consist of several **OPC group objects**. The group objects themselves can be composed of **OPC item objects**. OPC items correspond to process values and represent connections to data sources.



The COM interface incorporated in the server offers the client two object types: group and item. A server object is automatically created after the client connects to the server. Associated with each item is a time stamp, its quality and the value of the item as a VARIANT type. The item tags--tag, node or property objects--have to be realized on the server side.



The node objects can contain either other node objects or leaf objects. Node objects are implemented as channel, device or tag group elements within the FP OPC Server. Tag objects, which are implemented as tag elements, represent the leaf objects in the object tree.

The OPC client connected to the OPC server is responsible for the type of information it retrieves. It has to define the group structure, the poll rate and the read type, i.e. asynchronous or synchronous data retrieval. Using synchronous data retrieval, the client has to wait until the read operation is finished; using asynchronous data retrieval, on the other hand, allows the client to be informed immediately when data changes.

1.3 Features of the FP OPC Server

The Panasonic FP OPC Server is a **OutProc Server**, thus the server application is started from an autarkic executable file. The server allows high-performance data transfer between applications that support the OPC DA standard and Panasonic FP Series PLCs.

The following features are provided:

Connectivity

[Interruption Tolerance](#)

[Communication Driver Test and Adaptation](#)

[Element Structure](#)

[User Interface](#)

[Namespaces](#)

[Basic Software](#)

[Online Changes](#)

1.3.1 Connectivity

The server provides “two-sided” connectivity: one side provides access to applications that support OPC DA; the other side provides access to FP Series PLCs.

In order to enable the user to perform functional tests, a simulation mode is implemented. This mode allows you to design the application without any PLC being connected to the computer.

[OPC Connectivity](#)

[Device Connectivity](#)

OPC connectivity

The server complies to the following OPC DA client/server technologies:

- OPC DA 1.0a
- OPC DA 2.05a
- OPC DA 3.0

Data can be exchanged between client and server in asynchronous, synchronous and refresh mode.

Device connectivity

A standardized interface allows you to:

- Monitor data from Panasonic FP PLCs
- Synchronize data access and data writing
- Use various communication types

PLCs can be accessed via [serial port](#) and [Ethernet](#). The server offers modem support to connect to remote stations via dial-up phone calls.

Specify the communication mode at the communication channel level when you configure the application. Setting up the communication channel to use the modem means that dialing and connecting to the remote device is fully transparent to the OPC client application. Modem connections and direct serial communication work similarly.

1.3.2 Interruption tolerance

In case a connected device stops responding, for instance because of a line interruption, the optimized communication is carried on for the still connected devices. Thus, the communication breakdown does not influence the time-out or response behavior of the devices which are still online. If the device starts being responsive again, the data transfer from / to the previously disconnected PLC is reinitialized and carried out normally.

1.3.3 Communication driver test and protocol adaptation

If the server or application created with the server should be tested, the user can use a simulation driver to simulate reading and writing from and to virtual devices.

To test MEWTOCOL protocol communication, the channel settings made by the user can be tested directly in the server application. Furthermore, the user can influence the type of protocol (use of RD commands instead of MD commands) to be used to prevent interdependencies with other applications using the MEWTOCOL protocol, for instance.

For detailed information, please refer to the [Options](#) dialog of the Tools menu in the online help.

1.3.4 User interface

A modern, intuitive [user interface](#) allows you to configure the server. While creating the application, sophisticated user assistance is available at any time. Various hints and error notifications help you configure the server. Online documentation is omnipresent to clarify the server configuration application. You are warned of possible faulty settings or changes while the server is running. Wizard dialogs assist you in creating and altering elements.

The server allows you to change the display of the main window. The server can appear minimized as an icon in the system tray or maximized on the desktop. If started by an OPC client, the server is automatically started minimized in the tray icon, but can be brought to the foreground by simply double clicking the icon in the [system tray](#).

1.3.5 Namespaces

The OPC client browsable namespace provided by the server represents a description of all process values an OPC client can query from. It can be distinguished between three different types of namespace elements.

For detailed information, please refer to [Namespaces](#).

Static, Manual Namespace

The manual, "static" namespace is specified in the configuration user interface of the server. The user who administrates the server, creates channels, devices, tag groups and tags. The user specifies the settings of the communication lines, the PLC and the data sources to be provided to the client.

For detailed information, please refer to [Static, Manually Defined Namespace](#).

System Status Namespace

This namespace contains system tags, which are used to provide status feedback on the server running. The client simply creates items of these tags and thereby retrieves the server status directly in the client application. The system status namespace shows the system date, system time, uptime, project path, number of tags, number of tags active in the clients and the number of clients connected.

For detailed information, please refer to [System Status Namespace](#).

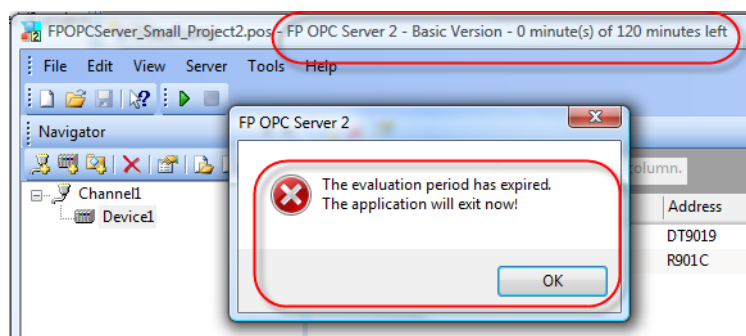
MEWTOCOL OPC Server Compatibility Namespace

A MEWTOCOL OPC Server (the predecessor of this server) compatibility namespace is also provided. The user configures the communication settings, which are common for the communication lines ([serial](#) or [Ethernet](#)). To use this namespace, the OPC client has to create the items such that they follow a certain syntax. The item path can be adapted to the specific needs.

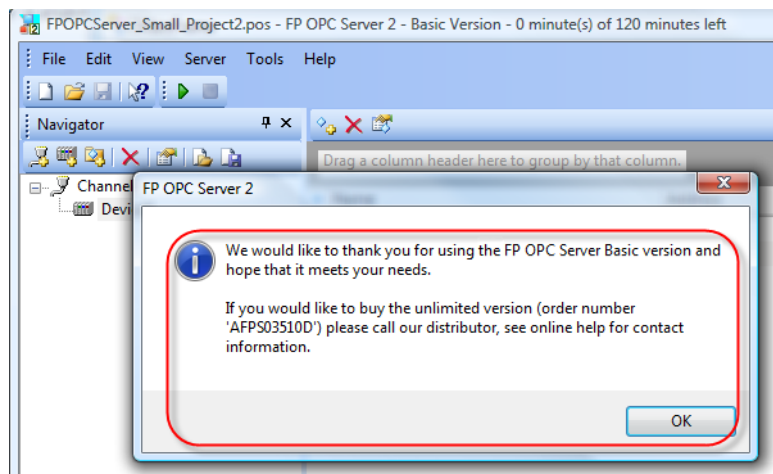
For syntax regulations and restrictions, please refer to [MEWTOCOL OPC Server compatibility namespace](#).

1.3.6 Basic version

The FP OPC Server is also available in a basic version, which can be installed **without** a license number. After using the basic version for 120 minutes, you will be asked to save your project and all connections to the server are terminated. Watch the title bar to see how many minutes are left.



You must confirm the message box displayed before you can restart the server.



This message box is also displayed if the connection is closed before the time has expired.

Please contact your local [Panasonic distributor](#) for the unlimited version.

1.3.7 Online changes

During online sessions, i.e. when OPC clients are connected to the FP OPC Server, you can make comprehensive changes to the currently opened project. You can add new elements such as [channels](#), [devices](#), [tag groups](#) or [tag elements](#) to the project. You can apply all kinds of changes, except deleting and renaming, to all elements.

Note

You can only delete and rename elements which are not currently being used by the client.

1.4 Hardware and software requirements

	Item	Required
Hardware	Hard disk space	20MB or more
	Lowest capacity memory	128MB or more

	Item	Required
	Available display resolution	1024 x 768 or more
Operating Systems	Microsoft Windows 10	

2 First steps using the FP OPC Server

2.1 Install the FP OPC Server

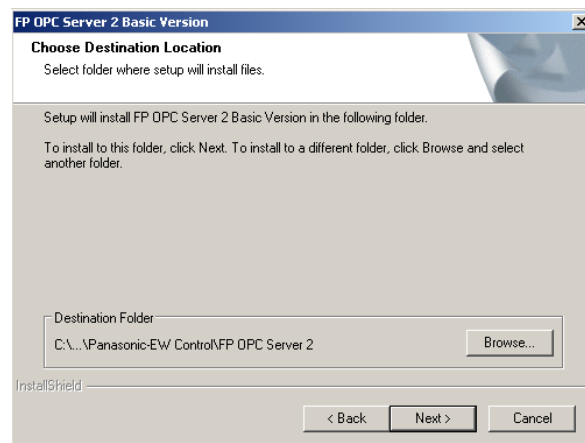
Before you begin the installation, unzip "SetupFPOPCServerxx.zip" and save it on your hard drive.

1. Double-click "SetupFPOPCServerxx.exe" to run the installer
2. Select [Next]
3. Read and accept the "License Agreement"
4. Select [Next]

Enter your customer information and serial number (for the unlimited version only).
The Basic version (see Basic Software in the online help) runs without serial number.

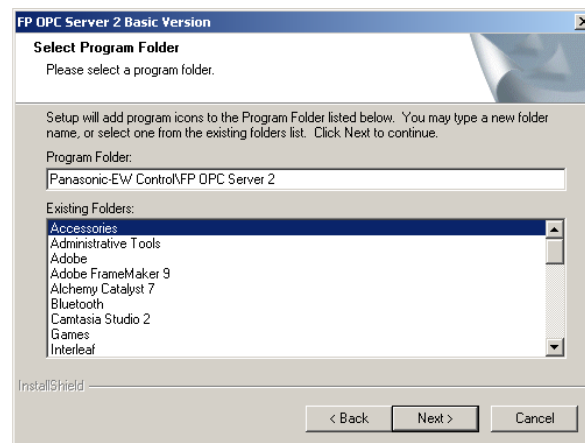
5. Select [Next]

The following dialog appears and allows you to review the path you entered.



6. Select [Browse] to select the installation directory
7. Select [Next]

The following dialog appears.



8. Specify the location of the program icons in the start menu
9. Select [Next]
The dialog "Start Copying Files" appears so you can review your settings.
10. If the settings are OK, select [Next] to install the software
11. Select whether to restart your PC and then [Finish] to finish the installation
The Panasonic FP OPC Server is now installed on your system.

Note

Start the FP OPC Server at least once to register the application in the windows system.


2.2 Start/Stop the FP OPC Server application

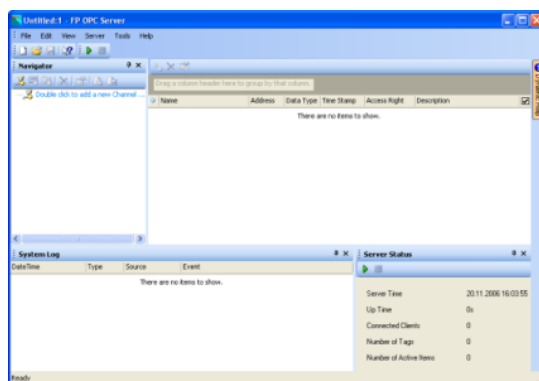
2.2.1 Start the FP OPC Server application

The OPC server can start in two modes:

- manually
- automatically, when an OPC client application tries to connect to the server.

Manual start

1. Double-click the FP OPC Server icon 
The configuration user interface with an empty project is started.



Automatic start

2. Start the OPC client application
The Softing Demo Client is started.
3. Browse the available server list, select FP OPC Server and connect to the by double-clicking the icon

 Desktop V3
FP OPC Server

Now the OPC server is started automatically and the server icon is displayed in the system tray.



The default project file (specified under “Tools” > “Options”) is automatically loaded, the OPC subsystem is started and the client is connected to the server. If no default project has been specified, the most recently used project is loaded.

Note

If the OPC server application is started manually but the OPC subsystem has not been started, a new client connect starts the OPC subsystem and connects to this server instance.

Related topics

[Options](#) (page 45)

[System tray](#) (page 73)

2.2.2 Stop the FP OPC Server application

The OPC server application can be stopped in two ways:

- manually, e.g. by user intervention
- automatically: The OPC server automatically stops when all clients have disconnected and when the configuration window is minimized to the system tray.

Manual stop

1. Stop the FP OPC Server application manually
 - Select “Exit” in the “File” menu or tray icon menu



- Select the close button of the application window

2.3 Channels

A channel represents a means of communication. The following means of communication are possible:

- [Serial communication](#) (RS232)
- [Ethernet](#)
- [USB](#)

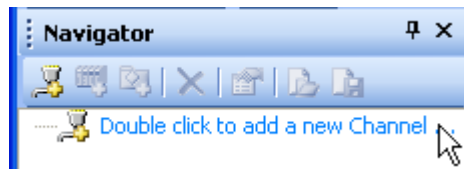
Please also refer to:

- [Channel element](#) in the online help
- [New Channel Wizard](#)

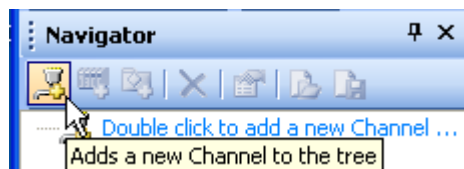
2.3.1 Add a New Channel

There are four ways to add a new channel element:

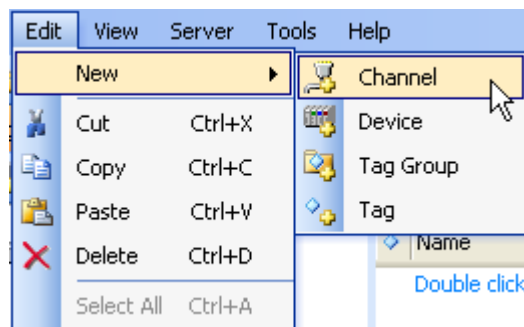
1. Double-click the dummy element



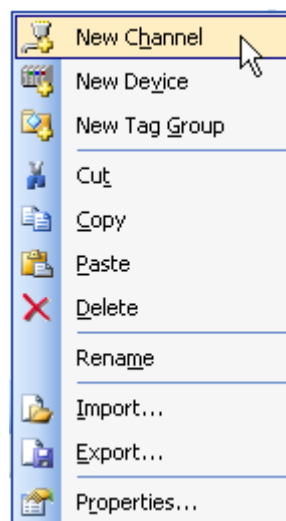
2. Click a toolbar icon



3. "Edit" > "New" > "Channel"

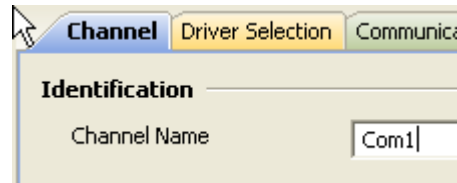


4. Select "New Channel" from the navigator pane's pop-up menu.

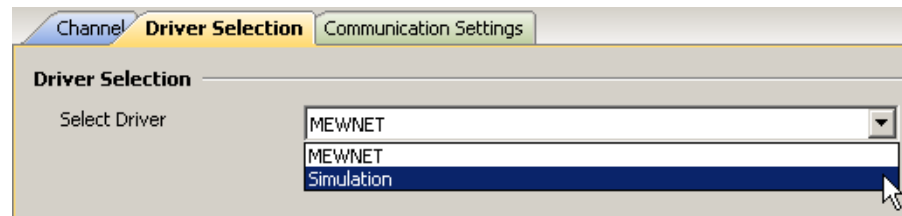


In all cases the wizard starts. Now create the new channel.

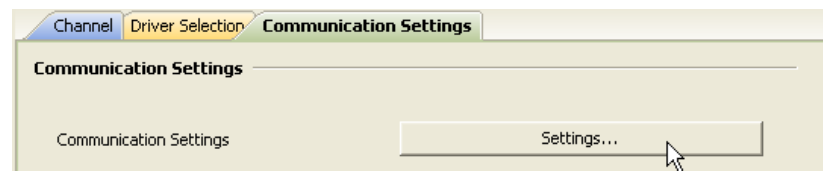
- Specify a name for the new channel



- Select the driver



- Fill in the communication settings in the "Communication settings" dialog by clicking "Settings..."



Related topics

[Dummy Elements of Navigator Pane](#) (page 52)

[New of File Menu](#) (page 37)

[Navigator Pane](#) (page 51)

[New Channel Wizard](#) (page 61)

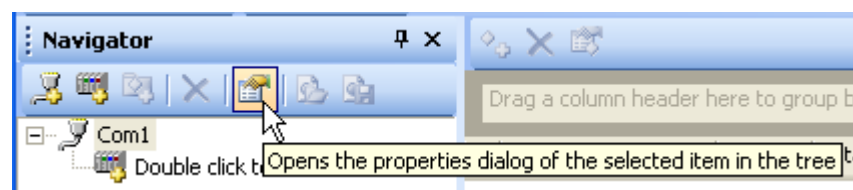
[Driver Selection](#) (page 62)

["Communication settings" dialog](#) (page 68)

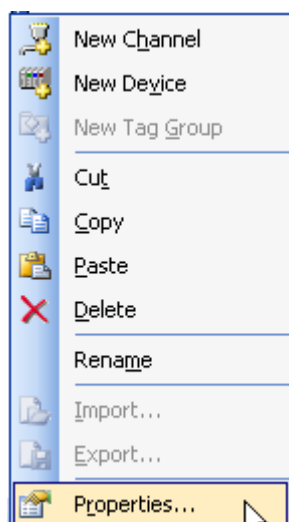
2.3.2 Update an Existing Channel

To update an existing channel element:

- double-click the [channel element](#), or
- select **Properties** from the [toolbar](#) or [pop-up menu](#).



Select "Properties" from the toolbar.



Select "Properties" from the pop-up menu.

2.4 Element Structure

The FP OPC Server allows the creation of a clearly membered hierarchical element structure that fits the nature of the application. The hierarchy consists of several layers: On the first layer, multiple communication [channels](#) specify the mean communication. The channels comprise multiple [devices](#) to specify the PLC and its station number. Devices can contain multiple [tag groups](#) to segregate tag data on a group-by-group basis. Devices or tag groups themselves contain the [tag data](#).

A state-of-the-art import/export mechanism allow you to save, exchange or edit the data in the XML file format. Exchanging data can also be done using a CSV file. For further information, please refer to [Import/Export Tag Information](#).

2.5 Devices

A device represents a hardware device, a Panasonic FP series PLC, connected to the OPC server.

The data sources provided by the server application in the [namespaces](#) are situated on these devices. Data sources are hereby [flag or register addresses](#), which can be accessed by the OPC server.

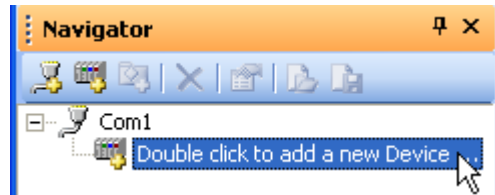
Please also refer to:

- [Device element](#) in the online help
- [New Device Wizard](#)

2.5.1 Add a New Device

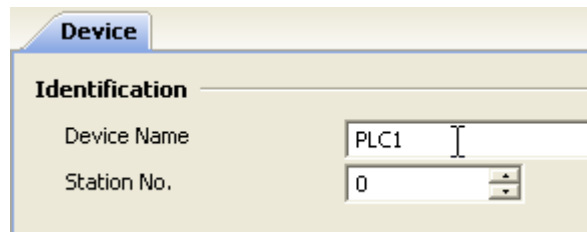
1. Open the [wizard](#) to create a new device element in one of the four ways described in ["Add a New Channel"](#)

Here the dummy item is used to create a new device.

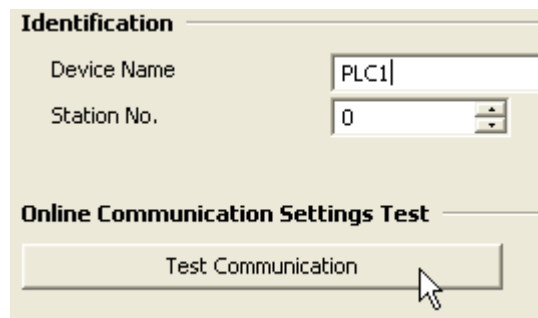


The wizard opens.

2. Specify a name for the new device.



3. To test the communication settings specified for the ["Channel"](#), select [Test Communication]




To update an existing device, please refer to the procedure of [update an existing channel](#).

2.5.2 Update an Existing Device

Update the element as described in ["Update an Existing Channel"](#).

2.6 Tag Groups

A tag group  represents a structural element for grouping tag elements according to your application's needs. For instance, a group "Temperature" and "Liquid Level" can be created

in the same device to distinguish between data sources related to temperature and those related to liquid levels.

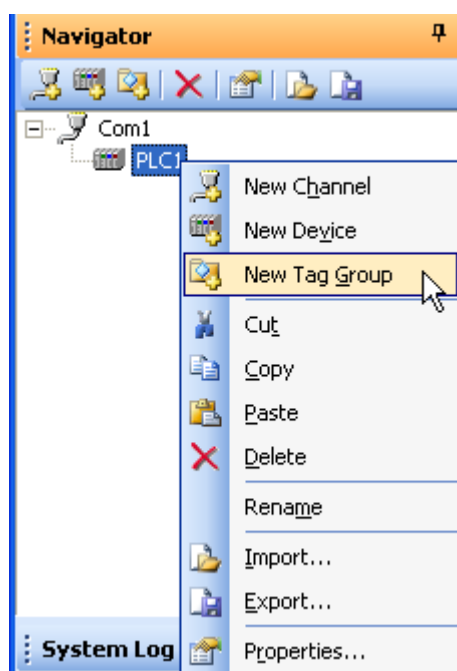
Additionally a tag group can be used to assign a certain time stamp to all tags included in the tag group. The time stamp can be specified by a DATE_AND_TIME variable in the PLC project.

Please also refer to: [New tag group wizard](#)

2.6.1 Add a New Tag Group

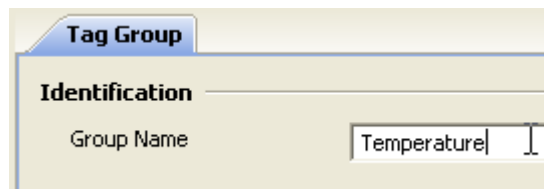
1. Open the [wizard](#) to create a new tag group element in one of the four ways described in "[Add a New Channel](#)"

Here the pop-up menu is used to create the new tag group.



The wizard opens.

2. Specify the name of the tag group element



To update an existing tag group, please refer to the procedure of [update an existing channel](#).

2.6.2 Update an Existing Tag Group

Update the element as described in "[Update an Existing Channel](#)".

2.7 Tags

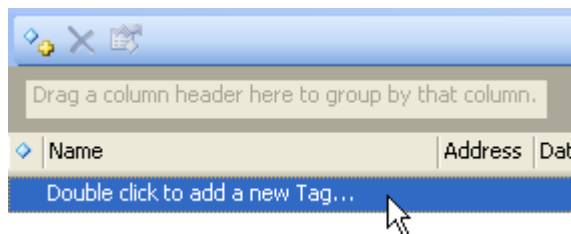
A tag represents a single PLC variable ([address](#)).

Please also refer to:


- [Tag pane](#)
- [New Tag Wizard](#)

2.7.1 Add a New Tag

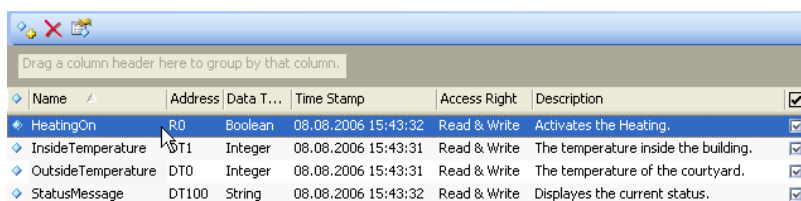
1. Create a tag as described in "[Add a New Channel](#)" section
Here, the [dummy item](#) is used to create the new tag.
2. Double-click to add a new tag



The wizard opens.

3. Specify the name, correct address, data type, description and the access type of the tag element
4. Select [Insert] to add the element directly to the list without closing the dialog
Repeat selecting [Insert] to create a series of tag elements that count up tag names and addresses.
5. Select  when you have finished adding all elements

An example namespace.

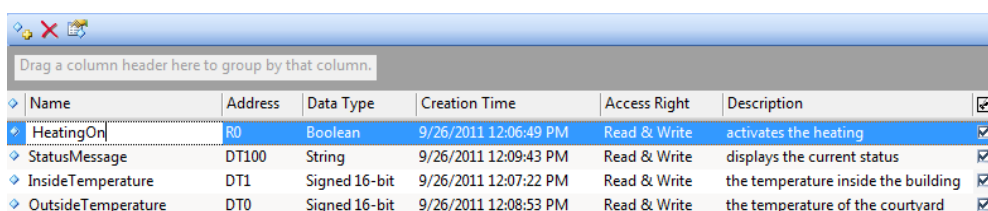


Name	Address	Data Type	Time Stamp	Access Right	Description
HeatingOn	R0	Boolean	08.08.2006 15:43:32	Read & Write	Activates the Heating.
InsideTemperature	DT1	Integer	08.08.2006 15:43:31	Read & Write	The temperature inside the building.
OutsideTemperature	DT0	Integer	08.08.2006 15:43:31	Read & Write	The temperature of the courtyard.
StatusMessage	DT100	String	08.08.2006 15:43:32	Read & Write	Displays the current status.

2.7.2 Update an Existing Tag

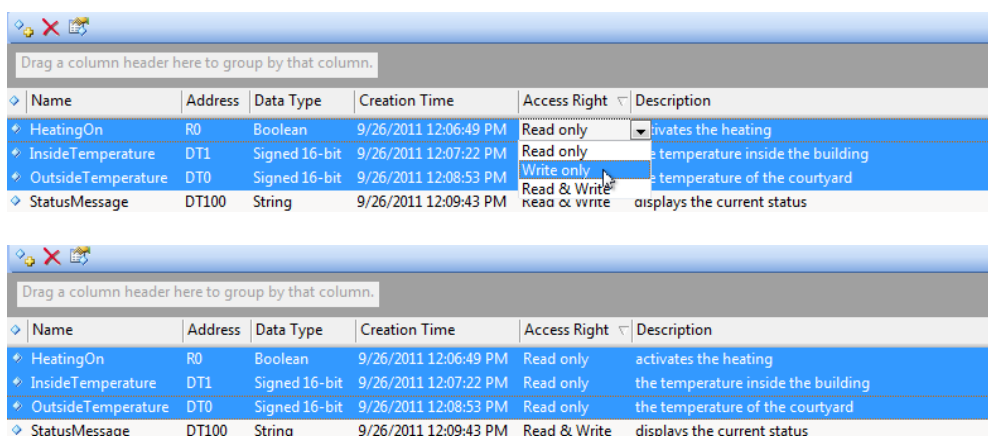
You can update an existing tag in several ways.

For example, simply click in the field which should be changed, e.g. to update a name.



Name	Address	Data Type	Creation Time	Access Right	Description
HeatingOn	R0	Boolean	9/26/2011 12:06:49 PM	Read & Write	activates the heating
StatusMessage	DT100	String	9/26/2011 12:09:43 PM	Read & Write	displays the current status
InsideTemperature	DT1	Signed 16-bit	9/26/2011 12:07:22 PM	Read & Write	the temperature inside the building
OutsideTemperature	DT0	Signed 16-bit	9/26/2011 12:08:53 PM	Read & Write	the temperature of the courtyard

Change multiple elements by selecting the desired elements and typing or selecting the new value. In this case, 3 elements were selected and their access rights changed to "read only".



Name	Address	Data Type	Creation Time	Access Right	Description
HeatingOn	R0	Boolean	9/26/2011 12:06:49 PM	Read only	activates the heating
InsideTemperature	DT1	Signed 16-bit	9/26/2011 12:07:22 PM	Read only	the temperature inside the building
OutsideTemperature	DT0	Signed 16-bit	9/26/2011 12:08:53 PM	Read only	the temperature of the courtyard
StatusMessage	DT100	String	9/26/2011 12:09:43 PM	Read & Write	displays the current status

You can also change the tag's properties by double-clicking the tag to activate the wizard.

Tag

Identification

Tag Name: StatusMessage ☒ Enable

Address: DT100

Data Type: String

Description: Displays the current status.


Data Properties

Access Right: Read & Write (dropdown menu open showing: Read only, Write only, Read & Write)

Note

You can only update values for individual elements when you use the wizard.

2.8 Server Operation

In order to accept connections for an OPC client application, you must start the server's OPC subsystem by clicking . After the server is started, clients can connect to the server.

Note

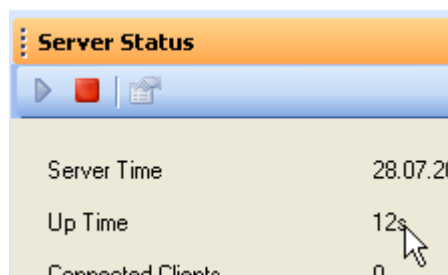
If the OPC server application is started manually but the OPC subsystem has not been started, a new client connect starts the OPC subsystem and connects to this server instance.

2.8.1 Start the Server

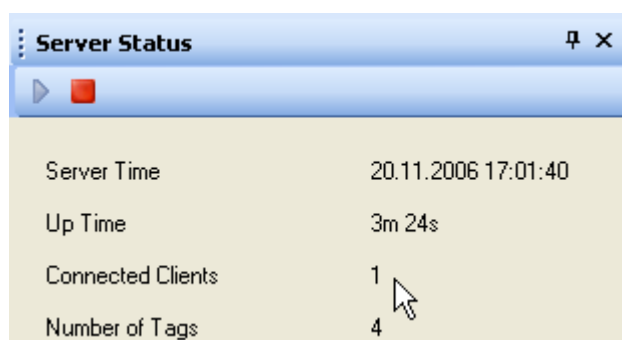
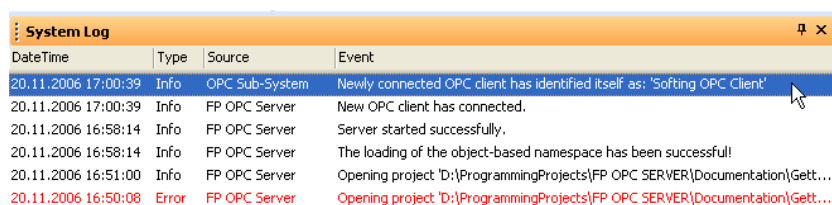
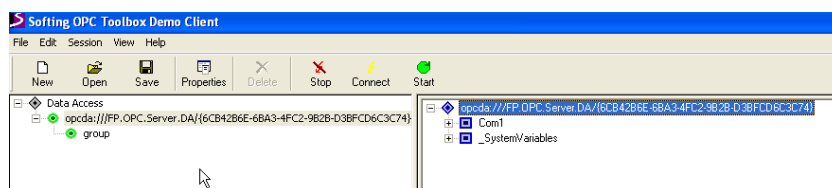
You will be notified when the server has been started successfully by:

- a [log message](#) in the system log pane and
- an incrementing "[Up Time](#)" value in the [server status pane](#).


DateTime	Type	Source	Event
20.11.2006 16:58:14	Info	FP OPC Server	Server started successfully.
20.11.2006 16:58:14	Info	FP OPC Server	The loading of the object-based namespace has been successful!
20.11.2006 16:51:00	Info	FP OPC Server	Opening project 'D:\ProgrammingProjects\FP OPC SERVER\Documentation\Gett...
20.11.2006 16:50:08	Error	FP OPC Server	Opening project 'D:\ProgrammingProjects\FP OPC SERVER\Documentation\Gett...



You can also see that a client is connected (here the Softing Demo Client) in the system log and server status panes.

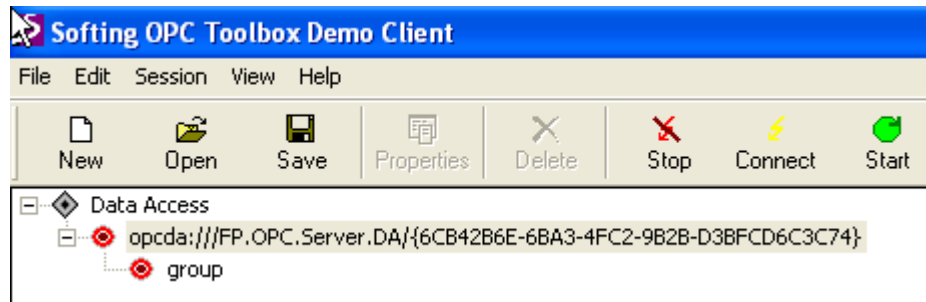


2.8.2 Stop the Server

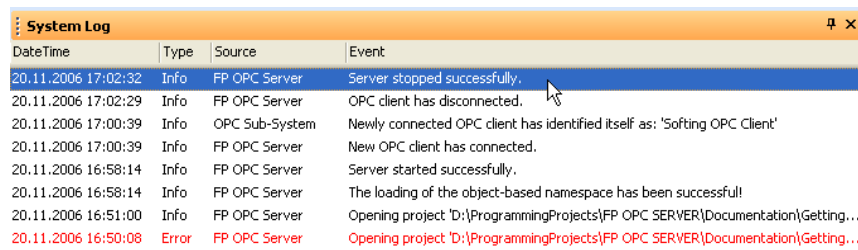
To stop the OPC subsystem, press .

Note

All connections to OPC clients are terminated.



Now the demo client has been disconnected. A log message informs you that the OPC client has been disconnected and that the server has stopped.




2.9 Transferring Project Information

You can save project data in XML or CSV format and exchange tag data between various OPC servers, e.g. Kepware or Beijers. You can also import global variables from Control FPDWIN Pro in CSV format.

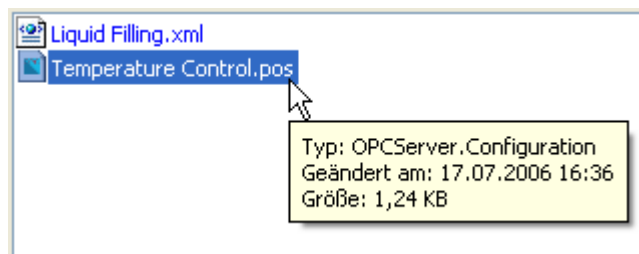
2.9.1 Open/Save Project

Open Project

1. Select "File" > "Open" or  from the toolbar



In the file open dialog all supported file formats (*.pos, *.xml) are displayed.



2. Select the desired file and click [Open]
Alternatively, select a file from the recently opened file list.



Note

If no default project is specified in the options dialog, the most recently used project is automatically loaded when the client application starts the OPC server.

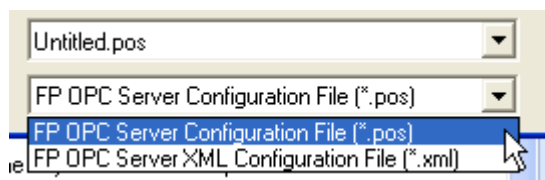
Save Project

3. Select "File" > "Save" or "Save As..." or  of the toolbar



The file save dialog opens:

4. Specify the project file name and file type (binary (*.pos) or XML (*.xml) format)



5. Select [Save]

Related topics

[Options](#) (page 45)

[Save](#) (page 38)

[Save As](#) (page 38)

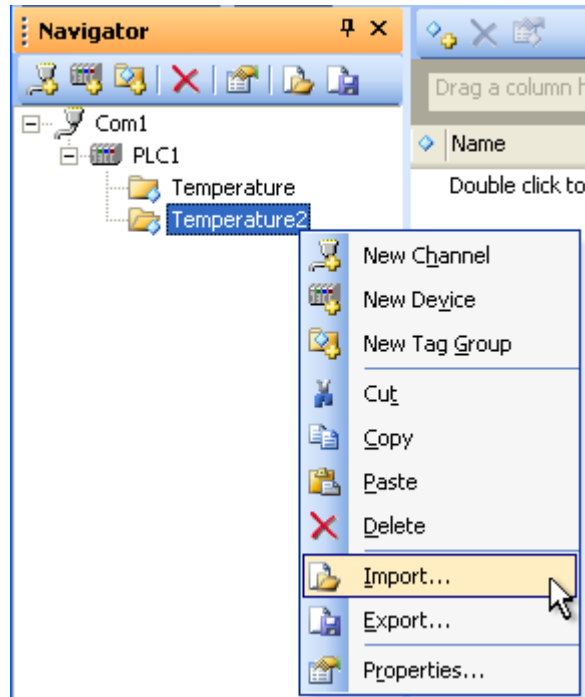
2.9.2 Import/Export Tag Data

In order to exchange, import, export or edit tag data, an export/import mechanism is available.

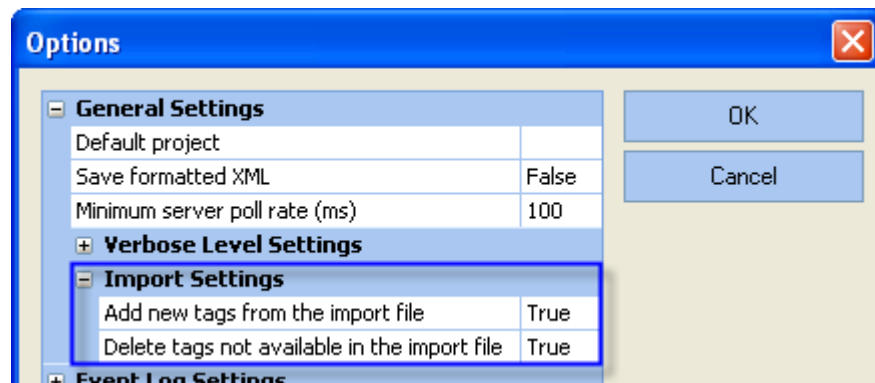
Import tag data

1. Select the device or tag group element for which you want to import data

2. Select "Import" from the pop-up menu, the File menu or the navigator's toolbar

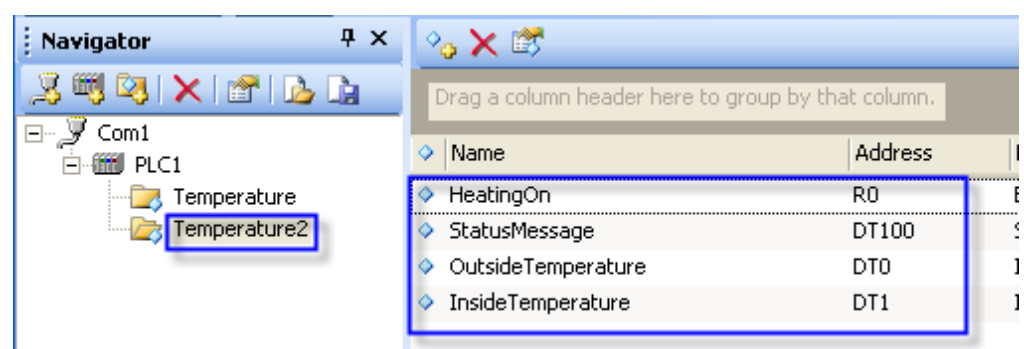


3. In the "File Open" dialog, select the XML or CSV file you want to import
According to the import settings under "Tools" > "Options", you can select whether:
 - tags available in the import file but not in the project are added to the project
 - tags not available in the import file but in the project are deleted from the project:



Tags available in the import file and in the project will be updated.

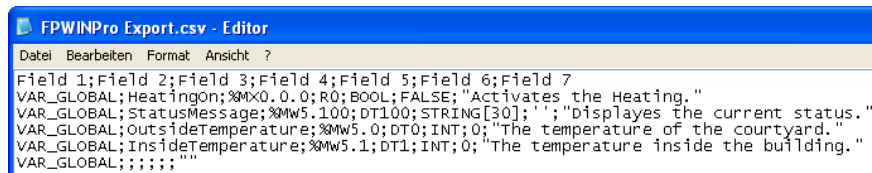
The data is imported into the selected device or tag group item.



Import other file formats

The OPC Server can import global variables exported from FPWIN Pro or tag data exported from OPC Servers (Panasonic FP OPC Server, Kepware OPC Server, Beijers OPC Server). The various file formats are displayed below.

- FPWIN Pro

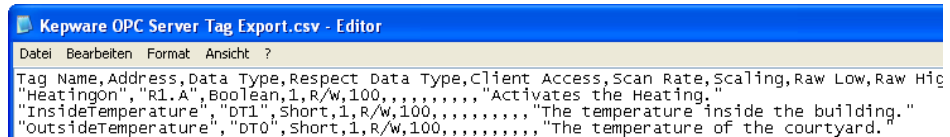


```

Field 1;Field 2;Field 3;Field 4;Field 5;Field 6;Field 7
VAR_GLOBAL;HeatingOn;%MX0.0.0;R0;BOOL;FALSE;"Activates the Heating."
VAR_GLOBAL;StatusMessage;%MW5.100;DT100;STRING[30];"";"Displays the current status."
VAR_GLOBAL;OutsideTemperature;%MW5.0;DT0;INT;0;"The temperature of the courtyard."
VAR_GLOBAL;InsideTemperature;%MW5.1;DT1;INT;0;"The temperature inside the building."
VAR_GLOBAL;;;;;

```

- Kepware OPC Server

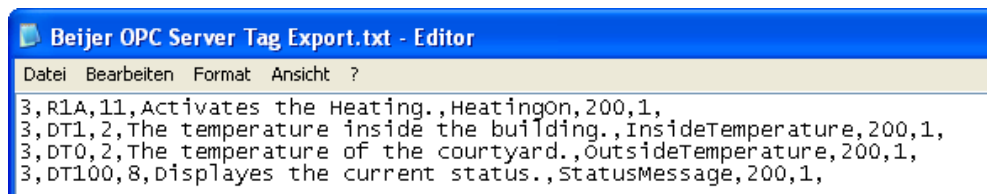


```

Tag Name,Address,Data Type,Respect Data Type,Client Access,Scan Rate,Scaling,Raw Low,Raw High
"HeatingOn","R1.A",Boolean,1,R/W,100,,,,,,,,,"Activates the Heating."
"InsideTemperature","DT1",Short,1,R/W,100,,,,,,,,,"The temperature inside the building."
"OutsideTemperature","DT0",Short,1,R/W,100,,,,,,,,,"The temperature of the courtyard."

```

- Beijer OPC Server



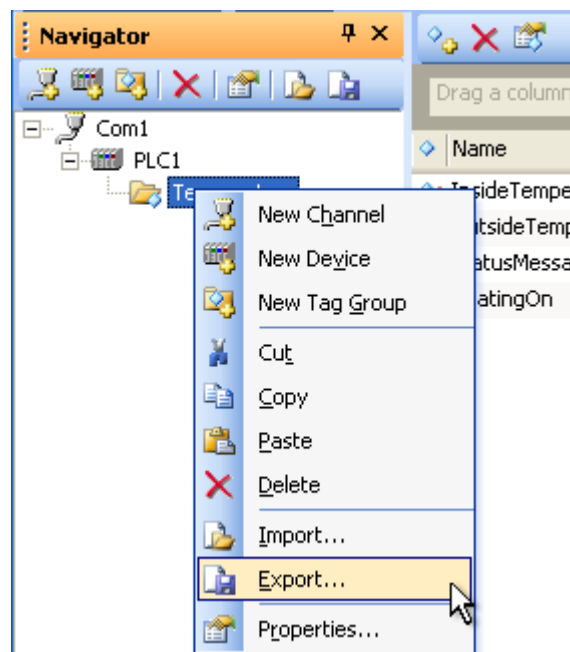
```

3,R1A,11,Activates the Heating.,HeatingOn,200,1,
3,DT1,2,The temperature inside the building.,InsideTemperature,200,1,
3,DT0,2,The temperature of the courtyard.,OutsideTemperature,200,1,
3,DT100,8,Displays the current status.,StatusMessage,200,1,

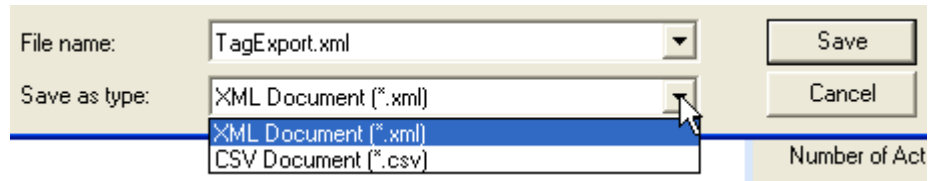
```

Export tag data

4. Select the device or tag group element you want to export
5. Select "Export" from the pop-up menu, the File menu or the navigator's toolbar



6. Specify the file name and type



7. Select where you wish to save the file

8. Select "[Save]"

Now you can edit the file if desired, e.g. with a text editor:

Example for tag data exported in XML format

```

TemperatureTagExport.xml - Editor
Datei Bearbeiten Format Ansicht ?
<?xml version="1.0" encoding="UTF-8"?>
<FPOPCServerTags CompactMode="1" TotalElementCount="4">
  <Tags Name="InsideTemperature" AccessType="Read/write" Address="DT1" Descripti
  <Tags Name="OutsideTemperature" AccessType="Read/write" Address="DT0" Descript
  <Tags Name="StatusMessage" AccessType="Read/write" Address="DT100" Description
  <Tags Name="Heatingon" AccessType="Read/write" Address="R0" Description="Activ
</FPOPCServerTags>

```

Example for tag data exported in CSV format

```

TemperatureTagExport.csv - Editor
Datei Bearbeiten Format Ansicht ?
Name;AccessType;Address;Description;DataType;PollRate;Scaling;Enabled;
InsideTemperature;Read/write;DT1;The temperature inside the building.;Integer;100;0;1;
OutsideTemperature;Read/write;DT0;The temperature of the courtyard.;Integer;100;0;1;
StatusMessage;Read/write;DT100;Displays the current status.;String;100;0;1;
Heatingon;Read/write;R0;Activates the Heating.;Boolean;100;0;1;

```

Related topics

[Device Element](#) (page 52)

[Tag Group Element](#) (page 52)

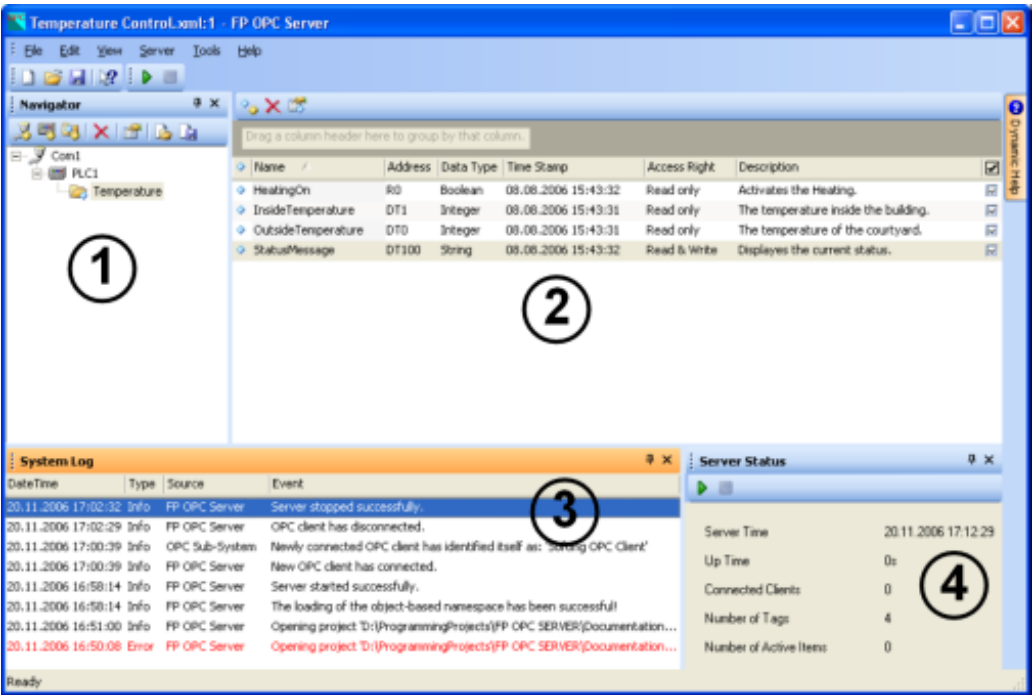
[Options](#) (page 45)


3 Graphical User Interface (GUI)

3.1 Configure the Working Area

The FP OPC Server configuration user interface consists of various panes. All panes offer a pop-up menu and you can access most functions related to the panes with toolbar icons. For each item in the panes, context sensitive help can be displayed in the [help pane](#). Tool tips assist the user in understanding the topics when the cursor passes over them. You can dock all panes except the [tag pane](#) (2). You can close unneeded panes to enlarge the working area. Use the [view menu](#) to display the panes after they have been closed.

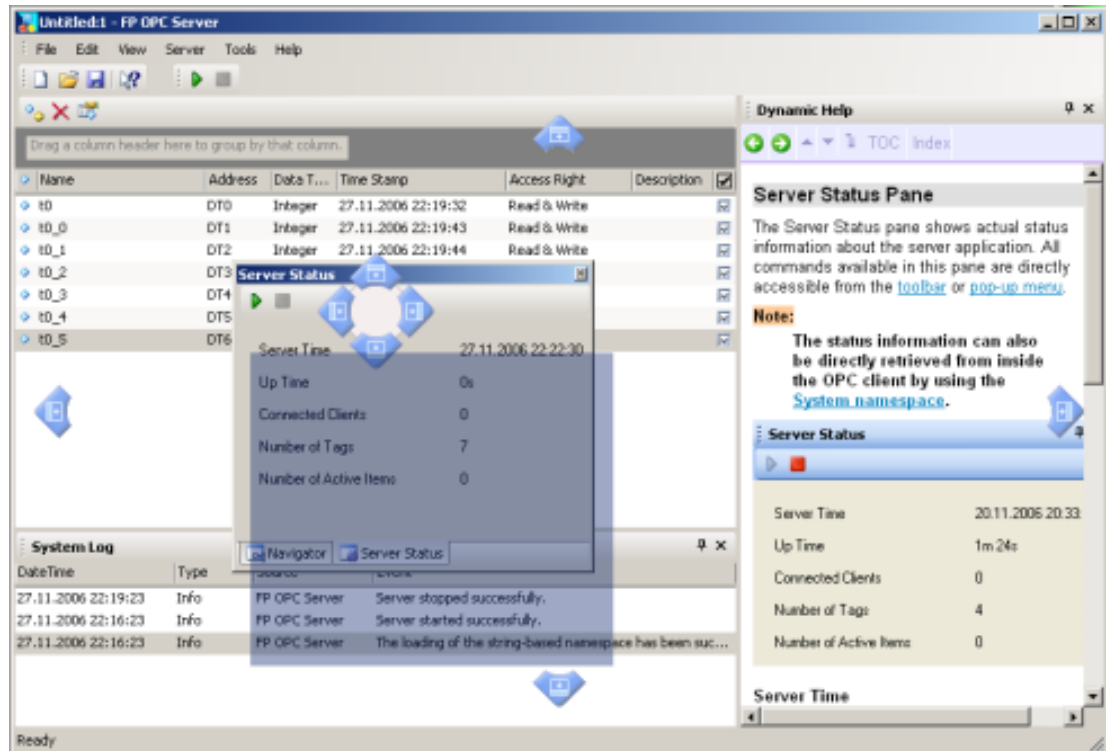
You can resize and move the entire application anywhere on the desktop. All user-defined layout settings, pane status and window position are saved upon closing and restored when the server is restarted.



- | | |
|---|--|
| (1) | The navigator pane shows the hierarchical structure of channel , device and tag group elements. Elements of these types can be created and changed in this pane. |
| (2) | The tag pane is where tag elements are created or updated. |
| (3) | The system log pane shows the latest log messages, such as server status messages, client connections or connection timeouts and informs the user about these events. |
| (4) | The server status pane shows the server status information. |
|  | The help pane displays the online help. You can temporarily slide open the pane by moving the mouse over the icon. Click on the icon if you prefer the pane to stay visible. |

Customize your working area

You can move or dock all panes except the tag pane anywhere in the window.



3.2 Menu Names and Commands



The menu bar contains 6 menu names shown above. Please refer to the online help for detailed information under the keyword of the respective menu name.

3.2.1 File Menu

The File menu offers access to all file and project operations.



3.2.1.1 New of File Menu

1. Select "File" > "New" to create a new, empty project.
The user is prompted if the actual project has not been saved.

3.2.1.2 Open

1. Select "File" > "Open..." to open a project file.
Supported formats are XML project files (*.xml) and the binary file format (*.pos).

Related topics

[Load/Save The Project](#) (page 68)

3.2.1.3 Save

1. Select "File" > "Save" to save the current project as a binary (*.pos) or XML file (*.xml).

Related topics

[Load/Save The Project](#) (page 68)

3.2.1.4 Save As

1. Select "File" > "Save As" to save the current project data as a file with a different name and/or location in binary (*.pos) or XML (*.xml) format.

Related topics

[Load/Save The Project](#) (page 68)

3.2.1.5 Import

Select the "Import" command to import stored tag data into the currently selected device or tag group (for detailed information, please refer to [navigator pane](#)). Two import file formats are supported: XML and CSV. The file type is hereby selected in the FileOpen dialog presented after selecting the "Import" command.

- **Import from CSV**

Select the CSV file type to import tag data from a CSV file (**C**haracter **S**eparated **V**alues). The file contains global variables exported from FPWIN Pro or tag data exported from OPC Servers (Panasonic FP OPC Server, Kepware OPC Server, Beijers OPC Server). For detailed information, please refer to [Accessing/Storing Project Information](#).

- **Import from XML**

Select the XML file type to import tag data from a previously exported XML file.

For detailed information, please refer to [Accessing/Storing Project Information](#).

3.2.1.6 Export

Select the "Export" command to export tag data from the currently selected [element](#) (device or tag group). The two export file formats are supported: XML and CSV.

- **Export to CSV**

Select the CSV file type to export tag data to a CSV file (**C**haracter **S**eparated **V**alues). The data can be easily changed for example using a simple text editor.

For detailed information, please refer to [Accessing/Storing Project Information](#).

- **Export to XML**

Select "Export to XML" to export tag data to a XML file. The data can be easily altered for example using a simple text editor.

For detailed information, please refer to [Accessing/Storing Project Information](#).

3.2.1.7 Recent File List

The recent file list contains the last 16 project files loaded or saved. Open the files by clicking on the file name. If the files have been moved or deleted from the hard drive, their names will disappear in the file list.

Note

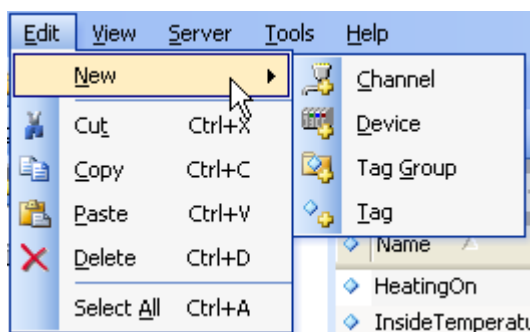
Only project files are listed, not export/import files.

3.2.1.8 Exit

1. Select "File" > "Exit" to close the application.

3.2.2 Edit menu

The Edit menu allows you to create new channels, devices, groups and tags as well as execute the standard Windows editing commands: cut, copy, paste, delete and select all.



3.2.2.1 New of Edit Menu

Under "New", select submenu commands to create new elements.

For detailed information, please refer to:

- [Add a New Channel](#)
- [Add a New Device](#)
- [Add a New Tag Group](#)
- [Add a New Tag](#)

New Channel

1. Select "Edit" > "New" > "New Channel" to create a new channel element in the navigator pane.

With this command a wizard appears and offers easy creation of the new element.

Related topics

[Channel Element](#) (page 52)

[Navigator Pane](#) (page 51)

[New Channel Wizard](#) (page 61)

New Device

1. Select "Edit" > "New" > "New Device" to create a new device element in the navigator pane.

With this command a wizard appears and offers easy creation of the new element.

Related topics

[Device Element](#) (page 52)

[Navigator Pane](#) (page 51)

[New Device Wizard](#) (page 63)

New Tag Group

1. Select “Edit” > “New” > “New Tag Group” to create a new tag group element in the navigator pane.
With this command a wizard appears and offers easy creation of the new element.

Related topics

[Tag Group Element](#) (page 52)

[Navigator Pane](#) (page 51)

[New Tag Group Wizard](#) (page 64)

New Tag

1. Select “Edit” > “New” > “New Tag” to create a new tag element in the tag pane.
With this command a wizard appears and offers easy creation of the new element.

Related topics

[New Tag Wizard](#) (page 66)

3.2.2.2 Cut

1. Select “Edit” > “Cut” to cut out the selected elements.
You can then paste the element into another channel, device or tag group, for instance.

Related topics

[Channel Element](#) (page 52)

[Device Element](#) (page 52)

[Tag Group Element](#) (page 52)

3.2.2.3 Copy

1. Select “Edit” > “Copy” to copy the currently selected elements.
You can paste the element into another or even the same channel, device or tag group, for instance. If you paste the element into the same parent element, the element name is adapted and the element is added as a new element.

Related topics

[Channel Element](#) (page 52)

[Device Element](#) (page 52)

[Tag Group Element](#) (page 52)

3.2.2.4 Paste

1. Select “Edit” > “Paste” to paste the elements from the clipboard into another or the same channel, device or tag group, for instance.

Related topics

[Channel Element](#) (page 52)

[Device Element](#) (page 52)

[Tag Group Element](#) (page 52)

3.2.2.5 Delete

1. Select “Edit” > “Delete” to erase the currently selected elements from the tree (within the navigator pane), or from the list (within the tag pane).

Note

If the items selected for deletion contain subitems, they will be deleted as well.

Related topics

[Navigator Pane](#) (page 51)

[Tag Pane](#) (page 53)

3.2.2.6 Select All

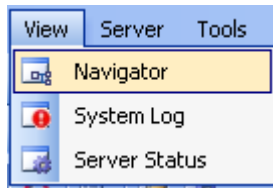
1. Select “Edit” > “Select All” to select all tag elements in the list (within the tag pane).

Related topics

[Tag Pane](#) (page 53)

3.2.3 View Menu

Display the [navigator](#), [system log](#) and [server status panes](#) via this menu if they are hidden.



Note

Display the help pane via the [help menu](#).

Further information:

- [Configure the working area](#)

3.2.4 Server Menu

The Server menu contains commands to control the server and set global communication parameters.



3.2.4.1 Start Server

1. Select "Server" > "Start" to start the server.
The command invokes the specified namespace to be loaded. After the server has been started successfully, it accepts incoming OPC client connections. For an detailed description, please also refer to start the server (First Steps).

Note

- The "Start" command is only available if the server is not already running.
- The server is started automatically if the client invokes a connection to the OPC server.

Related topics

[Namespaces](#) (page 74)

[Start the Server](#) (page 29)

3.2.4.2 Stop Server

1. Select “Server” > “Stop” to stop the server.
The command invokes the namespace to be unloaded. After the server has been successfully stopped, no incoming OPC client connections are accepted. For an detailed description, please also refer to stop the server (First Steps).

Note

- All connected clients will be disconnected.
- The “Stop” command is only available if the server is not already stopped.
- If the FP OPC server is stopped and the client invokes a new connection, another instance of the OPC server is started.

Related topics

[Namespaces](#) (page 74)

[Stop the Server](#) (page 30)

3.2.4.3 Communication settings

1. Select “Server” > “Communication Settings” to open the “Communication settings” dialog.
Use these settings to configure the MEWTOCOL OPC Server compatibility namespace.
The following network types are available:
 - Serial communication
 - Ethernet (Local) communication
 - USB communication

Related topics

[MEWTOCOL OPC server compatibility namespace](#) (page 76)

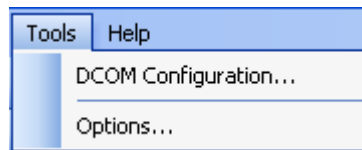
[Serial Communication Settings](#) (page 69)

[Ethernet \(local\) communication settings](#) (page 71)

[USB \(GT\) communication settings](#) (page 73)

3.2.5 Tools Menu

The Tools menu offers commands to start configuration and option dialogs.



3.2.5.1 DCOM Configuration of Tools Menu

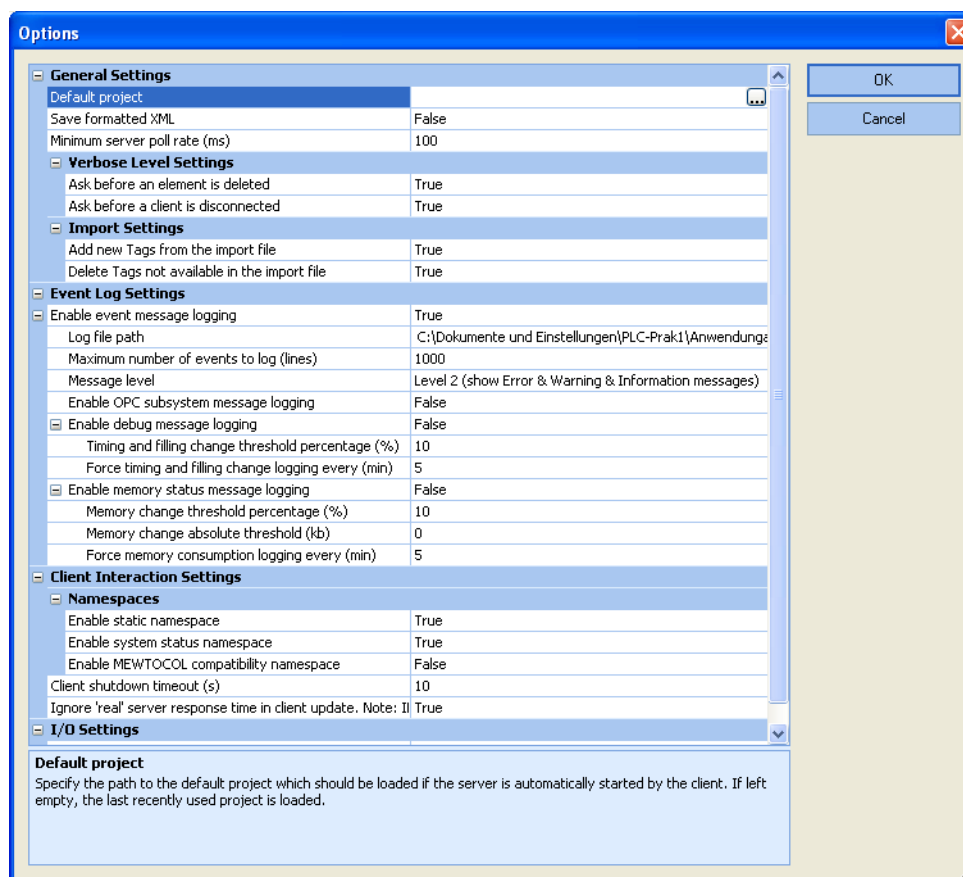
1. Select “Tools” > “DCOM Configuration” to start the external Windows DCOM configuration dialog.

Related topics

[DCOM configuration](#) (page 87)

3.2.5.2 Options

Select “Tools” > “Options” to configure the server application.



The options dialog (here every option is expanded) is divided into two areas: The configuration area and the description area at the bottom of the view. By selecting an item in the configuration area, the corresponding help information is displayed in the help area.

General Settings

Setting	Description	Default setting
Default Project	Specify the path to the default project which should be loaded if the server is automatically started by the client. If left empty, the last recently used project is loaded.	Empty
Save formatted XML	Turn this option on if the XML project file should be formatted to be able to read it properly. Turning on this option may lead to an increased time to save the project and a bigger project file size.	False
Minimum server poll rate (ms)	Specify the minimum poll rate the client application can request. If for instance all the PLCs are connected using Modem communication, increase this value to meet the current communication timings. Also if debug message logging is turned on, this value should be increased. Note: If this value is changed, the server has to be stopped and restarted to make the changes effective.	100

- Verbose Level Settings

Setting	Description	Default setting
Ask before an element is deleted	If set to true, the user gets prompted if the element should be deleted. Turning on this option may prevent false deleting of elements.	True
Ask before a client is disconnected	If set to true, the user gets prompted if his current changes lead to a disconnection of the connected clients.	True

- Import Settings

Setting	Description	Default setting
Add new tags from the import file	If set to true, all tags that are available in the import file but not in the project configuration are added.	True
Delete tags not available in the import file	If set to true, all tags that are available in the project configuration but not in the import file are deleted.	True

Event Log Settings

Setting	Description	Default setting
Enable event message logging	If set to true, event logging into a file is enabled and the subsettings of this item are enabled.	True
Log file path	Specify the path to the file where the logging information should be written to.	C:\Documents and Settings \ <username> \ Applications \ Panasonic MEW Control \ FPOPCServer \ FPOPC ServerLog.txt
Maximum number of events to log (lines)	Specify the maximum number of lines to be stored in the log file.	1000

Message level	<ul style="list-style-type: none"> Specify the kind of log messages to be stored in the log file and printed in the log pane. Select "Level 0 (show Error messages)" if only error messages should be enabled. Select "Level 1 (show Error & Warning messages)" if error and warning messages should be enabled and "Level 2 (show Error & Warning & Information messages)" to enable error, warning and information messages. 	Level 2 (show Error & Warning & Information messages)
Enable OPC subsystem message logging	If set to true, messages of the OPC subsystem are written to the log file with the prefix 'OPC_'. Enabling this option may have negative effects on the performance. Also think about increasing the "Minimum server poll rate".	False

- Enable debug message logging

Setting	Description	Default setting
	<p>If set to true, additional debug messages are written to the log file.</p> <p>Enabling this option may have negative effects on the performance. Also think about increasing the "Minimum server poll rate".</p> <p>Note: If this value is changed, the server has to be stopped and restarted to make the changes effective.</p>	False
Timing and filling change threshold percentage (%)	Specifies the threshold value in percent. Any change to the current timing (e.g. Driver response time) or internal hash tables that exceed this threshold is written to the log file. By setting this value to '0' all debug messages are written to the log file.	10
Force timing and filling change logging every (min)	If set to any value greater than 0, timing or filling changes are written to the log file at the interval specified.	5
Enable debug message logging to CSV files.	If set to true, additional I/O debug messages are created for each thread and are written to specific CSV files. The files can be found in the path specified with the log file path option.	False

- Enable memory status message logging

Setting	Description	Default setting
	<p>If set to true, additional memory status messages are written to the log file.</p> <p>Note: If this value is changed, the server has to be stopped and restarted to make the changes effective.</p>	False

Memory change relative threshold (%)	Specifies the threshold value in percent. Any change to the current memory status message that exceeds this threshold is written to the log file. Note: Either percentage or absolute threshold can be set!	10
Memory change absolute threshold (kb)	Specifies the absolute threshold value in kilobytes. Any change to the current memory status message that exceeds this threshold is written to the log file. Note: Either absolute or percentage threshold can be set!	0
Force memory status message logging every (min)	If set to any value greater than 0, a memory status message is written to the log file at the interval specified.	5

Client Interaction Settings

Setting	Description	Default setting
Enable static namespace	Enable the static namespace to allow the OPC client to browse the manually defined namespace.	True
Enable system status namespace	Enable the system status namespace to allow the OPC client to browse the system status namespace.	True
Enable MEWTOCOL compatibility namespace	Enable the MEWTOCOL compatibility namespace to allow the OPC client to create the compatibility namespace of the previous MEWTOCOL OPC Server.	False
Client shutdown timeout (s)	Set the timeout after which it can be assumed that the OPC client has received the termination signal and has disconnected from the server.	10s
Ignore "real" server response time in client update	If set to true, quality status of the item shown in the OPC client is not toggling between "Good" and "Bad" if the response time of the server is greater than the OPC client's poll rate. Note: If this value is changed, the OPC subsystem has to be stopped and then started again to make the changes affective.	True

I/O Settings

Setting	Description	Default setting
Enable MEWTOCOL monitor commands	Disable this option if a second application, besides the FP OPC Server, also uses MEWTOCOL monitor commands to retrieve data from the PLC. Disabling this function may lead to a decreased I/O performance of the server.	True

Related topics

[Import/Export Tag Data](#) (page 32)

[Import/Export Tag Data](#) (page 32)

[System Log Pane](#) (page 56)

[Static, Manually Defined Namespace](#) (page 74)

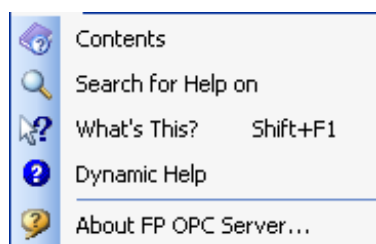
[System Status Namespace](#) (page 75)

[MEWTOCOL OPC server compatibility namespace](#) (page 76)

3.2.6 Help Menu

The help menu contains commands to access the online documentation, which can be displayed inside the application or as an external help window.

See also [help pane](#).




3.2.6.1 Contents

1. Select "Help" > "Contents" to open the online documentation in an external help window with the "Contents" tab displayed.

3.2.6.2 Search for Help on

1. Select "Help" > "Search for Help on" to open the online documentation in an external help window with the "Search" tab displayed.

3.2.6.3 What's This?

1. Select "Help" > "What's This?" to get help on the topic or item selected with the help cursor .

3.2.6.4 Dynamic Help

1. Select "Help" > "Dynamic Help" to open or show the help pane:

3.2.6.5 About FP OPC Server

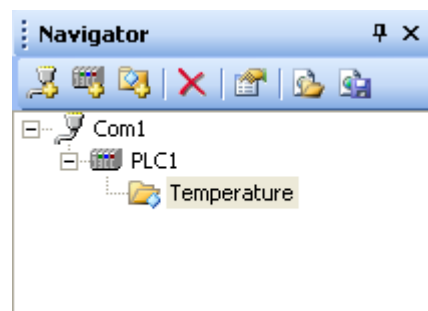
1. Select "Help" > "About FP OPC Server..." to get the version information.

3.3 Panes

The FP OPC Server user interface contains 5 panes described as follows.

3.3.1 Navigator Pane

The navigator pane shows [channel](#), [device](#) and [tag group elements](#) in a hierarchical structure. A [wizard](#) starts at each level to help you create new elements. To update existing elements, simply double-click the item; a wizard will appear in this case, too. You can directly access all commands available in this pane via the [toolbar](#) or [pop-up menu](#).



Drag&Drop allows you to conveniently move [device elements](#) and [tag group elements](#).

Note


On each hierarchical level, the name of the element has to be unique! For instance, only one channel element can be named "Com1".

For a detailed description of the navigator pane, please refer to the online help under the keyword "Navigator pane".


3.3.1.1 Elements

You can insert channel, device, tag group or dummy elements into the navigator.


Channel Element

A channel element  represents the communication channel via which data is retrieved from or written to the connected device. In this element, the driver used (simulation or MEWTOCOL) and the communication settings are stored. For further information, please refer to [wizard](#) (new channel mode) and [channel operations](#).

Device Element

A device element  represents a device communicating via its parent's communication line. The element contains information about each device's station number connected via the same channel. For further information, please refer to [wizard](#) (new device mode) and [device operations](#).

Tag Group Element


A tag group  represents a structural element for grouping tag elements according to your application's needs. For instance, a group "Temperature" and "Liquid Level" can be created in the same device to distinguish between data sources related to temperature and those related to liquid levels.

Additionally a tag group can be used to assign a certain time stamp to all tags included in the tag group. The time stamp can be specified by a DATE_AND_TIME variable in the PLC project.


For further information, please refer to the [new tag group wizard](#) and [add a new tag group](#).

Dummy Elements of Navigator Pane

To simplify creating new elements, two kinds of dummy elements exist:

1.  [Double click to add a new Channel ...](#)

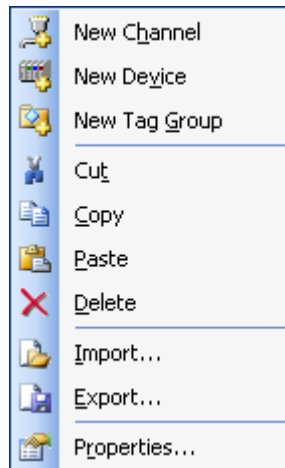
The dummy channel element is available if the element tree is empty. It is used to [create a new channel element](#) by simply double-clicking the item. The [wizard](#) that opens helps you create a new element.

2.  [Double click to add a new Device ...](#)

The dummy device element is available whenever the element has no siblings. It is used to [create a new device element](#) by simply double-clicking the item. The [wizard](#) dialog that opens helps you create a new element.

3.3.1.2 Navigator Pane's Pop-Up Menu

Using the pop-up menu (right-click within the navigator pane), you can conveniently access all commands available in the pane.



Menu	Description
"New Channel"	New Channel Wizard (page 61)
"New Device"	New Device Wizard (page 63)
"New Tag Group"	New Tag Group Wizard (page 64)
"Cut"	"Edit" > "Cut"
"Copy"	"Edit" > "Copy"
"Paste"	"Edit" > "Paste"
"Delete"	"Edit" > "Delete"
"Import"	Import/Export Tag Data (page 32) Note: The data can only be imported into a device or tag group element.
"Export"	Import/Export Tag Data (page 32) Note: The data can only be exported from a device or tag group element.
"Properties"	Opens the wizard to update the element parameters.

Related topics

[Cut](#) (page 41)

[Paste](#) (page 42)

[Paste](#) (page 42)

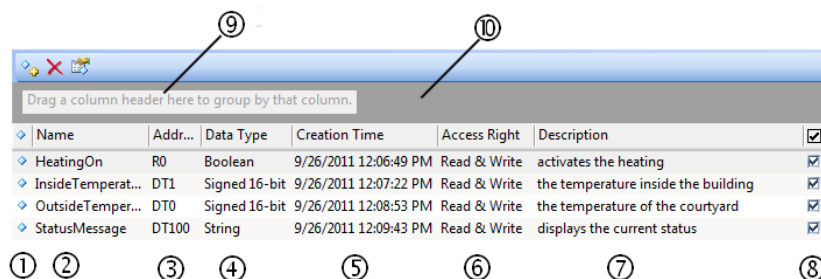
[Delete](#) (page 42)

[New Channel Wizard](#) (page 61)

3.3.2 Tag Pane

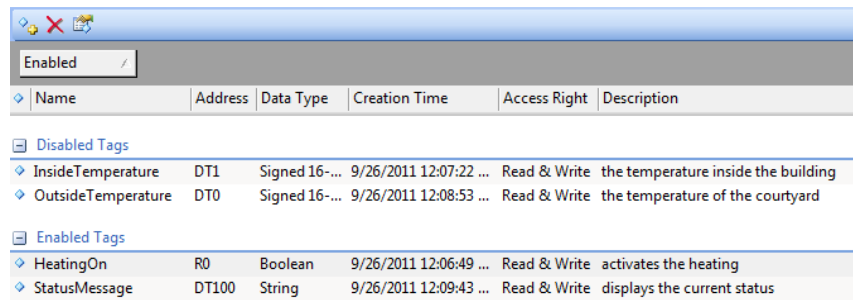
The tag pane shows the **tag elements** in a list structure. A [wizard](#) is started to help you create new elements. To update existing elements, simply double-click the item to open the

wizard. You can make direct changes to the tag elements in the list by placing the cursor in the list cell or selecting an item from the combo box lists. To ease handling of many items, multiple rows can be selected and changes applied to all selected elements. The list shows all properties of the tag element in a clearly arranged manner. All commands available in this pane are directly accessible from the [toolbar](#) or [pop-up menu](#).




Column number	Column Header	Explanation
(1)		Shows the status of the element: correct warning error Hint: check the tool tip for help on configuring the element correctly.
(2)	Name	Shows the tag's name Each tag element that is child to the same parent must have a unique tag name, e.g. only one tag can be named "OutsideTemperature".
(3)	Address	Shows the element's address
(4)	Data Type	Shows the element's data type
(5)	Creation Time	Displays the creation time and date
(6)	Access Right	Shows the access rights of the tag
(7)	Description	Allows you to enter a description for the tag
(8)		You can disable elements by deactivating this check box (multiple selection with <Ctrl> and/or <Shift>). Disabled elements are not visible inside the OPC client.

Arrange elements in meaningful groups



Name	Address	Data Type	Creation Time	Access Right	Description
Disabled Tags					
InsideTemperature	DT1	Signed 16-...	9/26/2011 12:07:22 ...	Read & Write	the temperature inside the building
OutsideTemperature	DT0	Signed 16-...	9/26/2011 12:08:53 ...	Read & Write	the temperature of the courtyard
Enabled Tags					
HeatingOn	R0	Boolean	9/26/2011 12:06:49 ...	Read & Write	activates the heating
StatusMessage	DT100	String	9/26/2011 12:09:43 ...	Read & Write	displays the current status

For example, you wish to group elements by their enabled or disabled state. Simply drag the column (8) header  inside the field "Drag a column header ..." (9).

You can also sort the list of tag items by simply clicking on the column header (10).

Note

To deselect multiple selected rows, simply click into column (1), (2) or (3). Only the currently selected row will remain selected.

For a detailed description of the tag pane, please refer to the online help under the keyword "Tag pane".

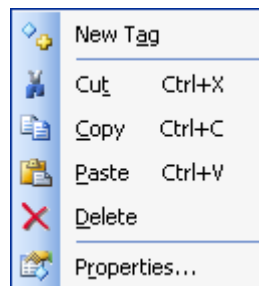
3.3.2.1 Dummy Element of Tag Pane

In simplify creating a new element, a tag dummy element exists.

The dummy element [Double click to add a new Tag...](#) is only available if the list is empty. It is used to [create a new tag element](#) by simply double-clicking the item. The [wizard](#) that opens helps you create a new element.

3.3.2.2 Pop-Up Menu of Tag Pane

Using the pop-up menu (right-click within the tag pane), you can conveniently access all commands available within the pane.



Menu	Description
New Tag	New Tag Wizard (page 66)
Cut	“Edit” > “Cut”
Copy	“Edit” > “Copy”
Paste	“Edit” > “Paste”
Delete	“Edit” > “Delete”
Properties	Opens the wizard to update the element parameters.

Related topics

[Cut](#) (page 41)

[Paste](#) (page 42)

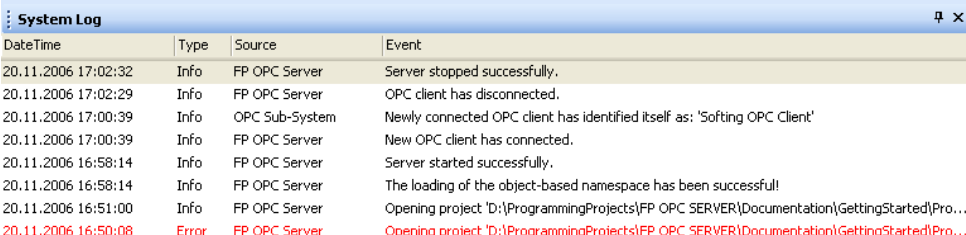
[Paste](#) (page 42)

[Delete](#) (page 42)

[New Tag Wizard](#) (page 66)

3.3.3 System Log Pane

The system log pane displays information, warnings and error event messages.



System Log			
DateTime	Type	Source	Event
20.11.2006 17:02:32	Info	FP OPC Server	Server stopped successfully.
20.11.2006 17:02:29	Info	FP OPC Server	OPC client has disconnected.
20.11.2006 17:00:39	Info	OPC Sub-System	Newly connected OPC client has identified itself as: 'Softing OPC Client'
20.11.2006 17:00:39	Info	FP OPC Server	New OPC client has connected.
20.11.2006 16:58:14	Info	FP OPC Server	Server started successfully.
20.11.2006 16:58:14	Info	FP OPC Server	The loading of the object-based namespace has been successful!
20.11.2006 16:51:00	Info	FP OPC Server	Opening project 'D:\ProgrammingProjects\FP OPC SERVER\Documentation\GettingStarted\Pro...
20.11.2006 16:50:08	Error	FP OPC Server	Opening project 'D:\ProgrammingProjects\FP OPC SERVER\Documentation\GettingStarted\Pro...

For example, information about server start and stop events, client connects and disconnects are data time-outs are displayed. While the server application is running, log information is written into a log file. The log file path can be changed under “Tools” > “Options”.

Related topics

[Options](#) (page 45)

[Configure the Working Area](#) (page 36)

3.3.4 Server Status Pane

The server status pane shows actual status information about the server application. All commands available in this pane are directly accessible from the [toolbar](#) or [pop-up menu](#).

Note

The status information can also be directly retrieved from inside the OPC client by using the [System namespace](#).



Server Time

The server time indicates the actual date and time of the server hosting system.

Up Time

The Up Time property is available when the server is running and displays how long the server has been up in "xxd(ays) xxh(ours) xxm(inutes) xxs(econds)".

Connected Clients

The number of connected OPC clients is displayed.

Number of Tags

"Number of Tags" shows the total number of tags created within all devices and tag groups.

Note

All tags including disabled elements are counted.

Number of Active Items

The number of tags actively monitored within any of the OPC clients (created as Items) is displayed.

Note

The total number of tag instances is counted; if one client monitors the same element twice or two clients monitor the same element, the property counts both elements.

For a detailed description of the Server status pane, please refer to the online help under the keyword "Server status pane".

3.3.4.1 Pop-Up Menu of Server Status Pane

Using the pop-up menu (right-click within the server status pane), you can conveniently access the commands [Start Server](#) and [Stop Server](#).



3.3.5 Help Pane

The help pane can be docked and reacts context-sensitively to the current mouse or cursor position. You can "pin" it open or have it slide open and closed by passing the cursor over it.

See also: [Help menu](#).

3.4 Toolbars





Each of the [panes](#) in the FP OPC Server's [configuration user interface](#) contains a toolbar that allows you easy access to all commands available within the pane.

For a detailed description of the toolbar functions, please refer to the online help under the keyword "Toolbars".

3.4.1 Main Toolbars

General options that are available everywhere appear in the main toolbars. You can undock these toolbars from their original position and move them anywhere on the windows desktop.










Symbol	Description
	New Project Please refer to New Project .
	Open Project Please refer to Open Project . See also: Project information input/output .
	Save Project Please refer to Save Project . See also: Project information input/output .
	What's This? Please refer to What's This? .
	Start Select "Start" to start the server OPC subsystem.
	Stop Select "Stop" to stop the server OPC subsystem

3.4.2 Navigator Pane Toolbar

The [navigator pane](#) toolbar offers you easy access to the commands available in this pane.



Symbol	Description
	New Channel Please refer to new channel and new channel wizard .
	New Device Please refer to new device and new device wizard .
	New Tag Group Please refer to new tag group and new tag group wizard .
	Delete element Please refer to Delete .
	Element properties Depending on the element selected the respective wizard displays the properties.
	Import Please refer to Import .
	Export Please refer to Export .

3.4.3 Tag Pane Toolbar

The tag pane toolbar offers easy access to the pane's options.



New Tag

Click on [New Tag](#) to create a new tag element.

Delete Tag

Click on [Delete](#) to delete the currently selected single or multiple tag element(s).

Tag Properties

Click on "Properties" to display the element properties dialog filled with the tag element's properties.

Further information:

- [Tag Pane](#)
- [Wizard](#)

3.4.4 Server Status Pane Toolbar

The server status pane's toolbar offers easy access to all commands available within the pane.



See also:

[Server Status Pane](#)

3.5 Wizard

To simplify creating and modifying [namespace elements](#), a wizard-like configuration dialog has been implemented. The wizard is opened to help you create a new element when you have double-clicked a [dummy element](#) (see also [dummy element of tag pane](#)). You can likewise modify an existing element's properties by double-clicking on the element. The

wizard also opens when you execute similar commands via the menu, pop-up menu or [toolbar](#) icon.

Enter text

On the left side of the dialog text input fields, you must enter an element name, for example. If the text you have entered is wrong, the field turns red and a tool tip assists you with an error message.

Buttons

On the right side, the buttons, such as [OK], [Cancel] and - if available - the navigation buttons [Next] and [Previous] can be found. By pressing [Next], the next page (also accessible via a tab flag) is displayed.

Help

At the bottom of the dialog, the omnipresent, context-sensitive online help can be found embedded. By selecting another control, for instance the next edit field, the help automatically displays the corresponding help page.

3.5.1 New Channel Wizard

When you create or modify a channel element, the wizard is started in "(new) channel mode". You can view or modify an existing element, or create a new element.

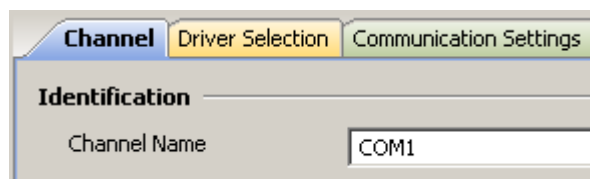
The first page identifies the [channel element](#). The channel's name is specified here.

On the second page, you select the [I/O driver](#). If you have selected the MEWNET driver, a third page allows to you to edit the [communication settings](#).

For detailed information, please refer to the online help under the keyword "New Channel Wizard".

3.5.1.1 Channel Name

Specify a valid name for the channel element. The name has to be unique among its siblings and may not contain white spaces or non-alphanumeric characters. The only exception is the underscore character "_".



The screenshot shows a dialog box with three tabs: 'Channel' (selected), 'Driver Selection', and 'Communication Settings'. Under the 'Channel' tab, there is a section titled 'Identification'. Within this section, there is a label 'Channel Name' followed by a text input field containing the text 'COM1'.

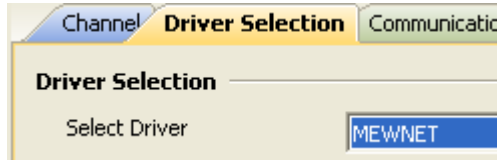
On the next tab, you can select the I/O driver.

3.5.1.2 Driver Selection

Select Driver

Select the driver with which the device should be accessed. Available drivers are:

MEWNET



The MEWNET driver accesses Panasonic FP Series PLCs using the MEWTOCOL protocol.

If you have selected the MEWNET driver, a third page allows you to edit the [communication settings](#).

Note

The MEWTOCOL driver automatically uses the most efficient MEWTOCOL commands to retrieve and send data to the PLC. In certain cases they can be adapted manually.

Simulation

The Simulation driver allows OPC client data to be monitored without having a PLC connected to the PC running the FP OPC Server. Random values are set for the items the client is monitoring.

Note

If the Simulation driver is selected, the "Communication Settings" tab is deactivated.

3.5.1.3 Communication Settings

Click on [Settings...] to open the [Communication Settings Dialog](#).

3.5.1.4 Process all write requests

Writing data can be a very important task in your application. Depending on the [communication settings](#) and the response time of the connected device, the OPC client application may send write requests to the PLC faster than the data can be transferred. In this case, only the last write request is processed and sent to the PLC.

In certain instances, e.g. when using sliding switches in HMI applications, it may be important for every write request to be processed and sent to the PLC. In such cases, select the check box "Process all write requests".

Note

If more write requests are sent to the server than the server can send to the PLC, it may negatively impact the transfer time between server and PLC.

3.5.2 New Device Wizard

When you create or modify a [device element](#), the wizard is started in "(new) device mode". You can view or modify an existing element, or create a new element.

The wizard shows the identification page of the device element. The device's name and station number are specified here.

For detailed information, please refer to the online help under the keyword "New Device Wizard".

3.5.2.1 Device Name

Specify a valid name for the device element. The name has to be unique among its siblings and may not contain white spaces or non-alphanumeric characters. The only exception is the underscore character "_".

3.5.2.2 Station No.

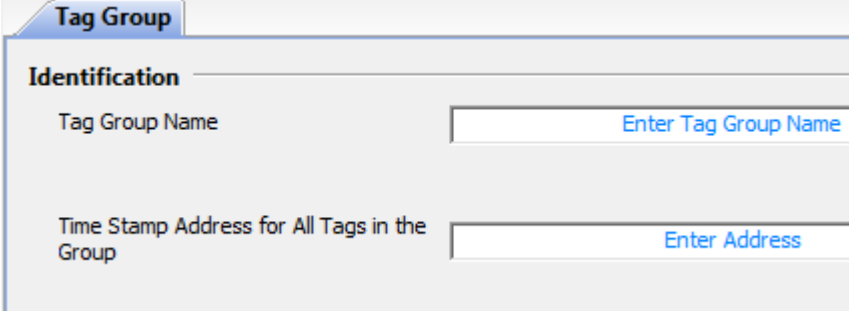
Specify the station number of the device. This number is used to distinguish between devices if more than one device (e.g. PLC) is connected using the same communication channel.

3.5.2.3 Test Communication

Select [Test Communication] to test the current settings for the [channel element](#)'s device element.

3.5.3 New Tag Group Wizard

With the Tag Group Wizard, you can view or modify an existing [tag group element](#), or create a new element.

The screenshot shows a software window titled "Tag Group" with a tab labeled "Identification". Inside the window, there are two input fields. The first field is labeled "Tag Group Name" and contains the placeholder text "Enter Tag Group Name". The second field is labeled "Time Stamp Address for All Tags in the Group" and contains the placeholder text "Enter Address".

The wizard shows the identification page of the tag group element.

For detailed information, please refer to the online help under the keyword "New Tag Group Wizard".

3.5.3.1 Tag group name

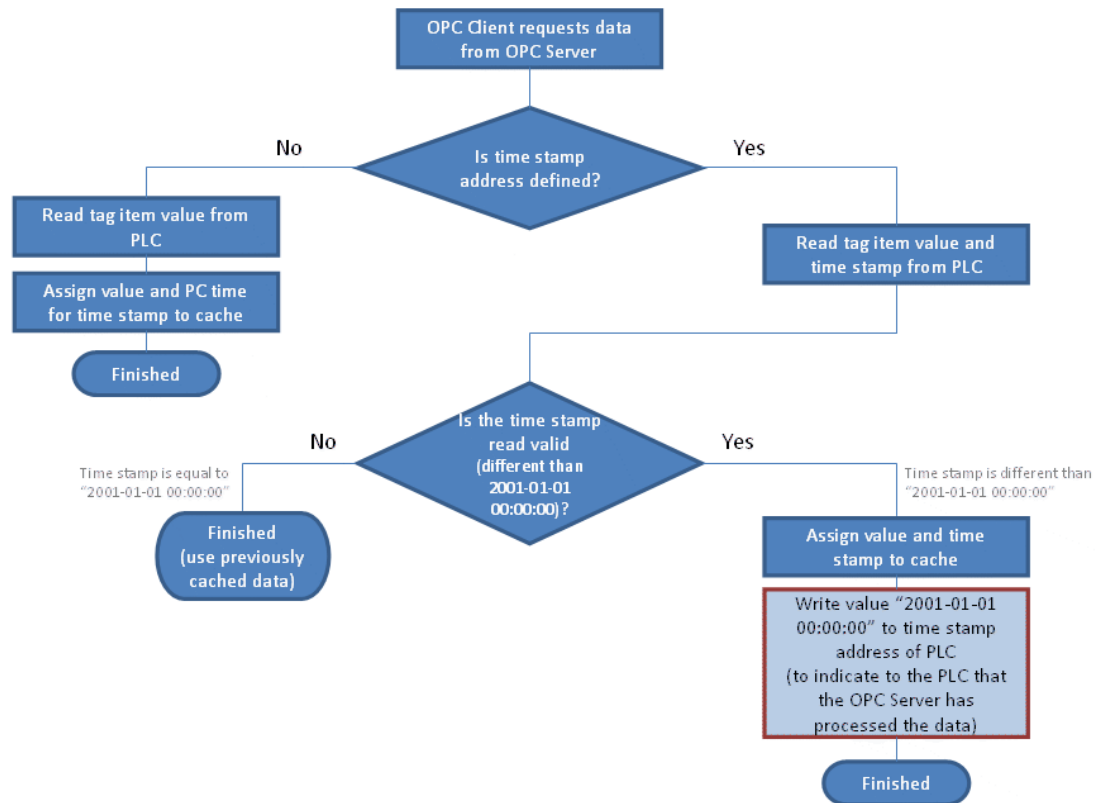
Specify a valid name for the tag group element. The name has to be unique among its siblings and may not contain white spaces or non-alphanumeric characters. The only exception is the underscore character "_".

3.5.3.2 Time stamp address for all tags in the group

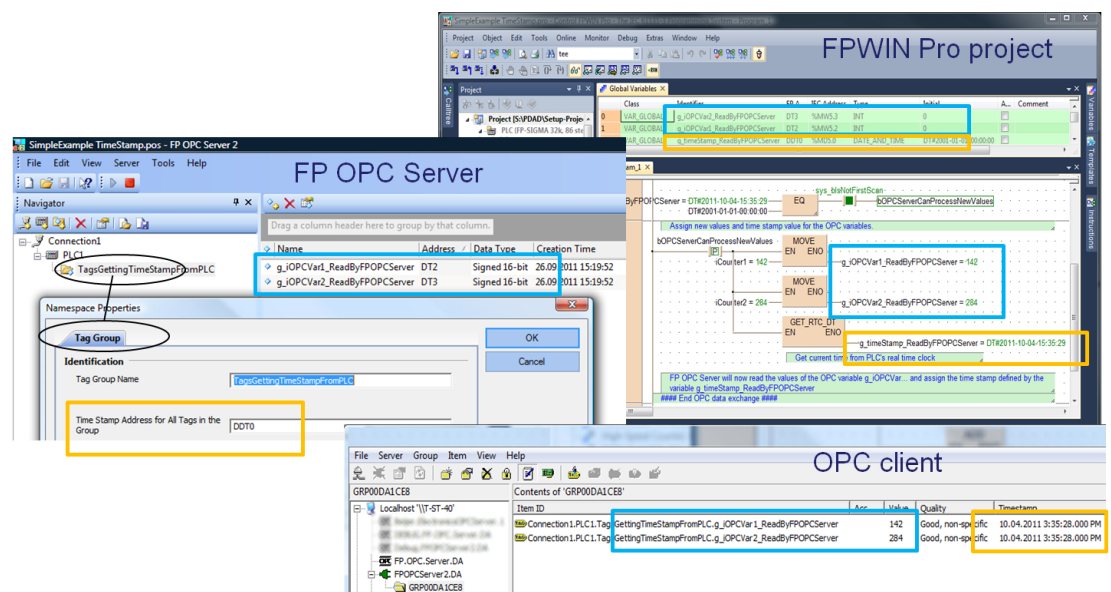
Reading values, the OPC Server sends OPC Client application information on the value, quality, and time stamp of a tag item.

The tag's time stamp will be set to the PC time when the tag value was read from the PLC. Instead of using the PC time for the time stamp, the time stamp can be specified by a DATE_AND_TIME variable in the PLC program. If you enter the address of a PLC's DATE_AND_TIME variable, the OPC Server will read the time stamp value from the PLC.

The following diagram illustrates this process.



The following picture shows the use of a time stamp in an FPLIN Pro project, FP OPC Server and OPC client application.



Please find example projects for the FP OPC Server and FPLIN Pro in your software installation directory.

3.5.4 New Tag Wizard

When you create or modify a [tag element](#), the wizard is started in "(new) tag mode". You can view or modify an existing element, or create a new element.

The wizard shows the identification page of the tag element. The tag's name, address, data type, access type and enabled state is set here.

For detailed information, please refer to the online help under the keyword "New Tag Wizard".

3.5.4.1 Tag Name

Specify a valid name for the tag element. The name has to be unique among its siblings and may not contain white spaces or non-alphanumeric characters. The only exception is the underscore character "_".

3.5.4.2 Address

Declare the [address](#) of the tag element, such as DT0. For further information, please also refer to [data types](#).

3.5.4.3 Data type

Enter a valid data type corresponding to the address, e.g. "Integer" if the address is DT0. For further information, please refer to [data types](#).

Note

The field turns red if the data type does not match the address. The data type "Undefined" is indicated with yellow.

3.5.4.4 Description

Enter the description of the tag value. The description can also be seen inside the OPC client application.

3.5.4.5 Enable Tag

Deactivate this check box to disable the tag element. In this case the element can be created and updated within the configuration user interface, but the element is not visible from inside the OPC client application. For further information, please refer to [namespaces](#).

3.5.4.6 Access Right

Select the access type of the element to restrict the client access to the element. Possible types are read only, write only and read & write.

Read only	The OPC client can only read data from the item. Note: A write request to the client leads to an access error.
Write only	The OPC client application can only write data to the item. Note: This setting leads to read errors if the client tries to retrieve data from the item.
Read & Write	With this option, data can be read from and written to the item.

3.5.4.7 Buttons of New Tag Mode

- “[Insert]”
(only available if new tag element is created)
Adds the currently specified element to the tag list and the name is updated to <Name>_xx, where xx is an incremented digit (e.g. Tag → Tag_0). The address is likewise incremented (e.g. DT0 → DT1).
- “[Remove]”
(only available if new tag element is created)
Removes the element last entered.

Note

“[Insert]” and “[Remove]” are only available if the dialog has been opened to create new tag elements.

3.6 Project Information Input/Output

3.6.1 Load/Save The Project

To save a new project or change an existing project, data can be stored in a project file on the hard disk in *.pos or *.xml format.

For further information on loading and saving project data, please refer to [Open/Save Project](#).

3.6.2 Import/Export Tag Information

Tag group and tag elements can be exported to an XML (*.xml) or CSV (*.CSV) file. The CSV file is compatible with the GVL CSV export file of FPWIN Pro. Project data (tags) can also be exchanged with other OPC server providers. For further information, please refer to: [Import/Export Tag data](#).

3.7 “Communication settings” dialog

Use this to set communication parameters if you are using the MEWNET driver or if you want to configure the [MEWTOCOL OPC server compatibility namespace](#)MEWTOCOL OPC Server compatibility namespace.

The following network types are provided:

- Serial
- Modem
- Ethernet
- USB

All communication settings are made in the “Communication settings”, which can be opened in two ways:

- Via the channel properties. In this case the settings are stored in the channel properties in the project file.
- Via “Server” > “Communication Settings (MEWTOCOL OPC Server compatibility namespace)”. In this case the settings are stored in the folder C:\Users\UserName\AppData\Roaming\Panasonic-ID SUNX Control\PxMEWNET. The user name in the folder is the Windows login name of the current user.

The file names for the different network types are as follows:

- The serial communication settings are stored in the file "PxMEWCOMM.INI".
- The Ethernet communication settings are stored in the file "PxMewMultiEther.dat".
- From version 2.100, communication is done via the PxMewnet manager. In former versions (lower than 2.100) the communication is done via the NAI S MEWNET manager, which stores the communication settings in different files. To keep the settings, please refer to the corresponding troubleshooting section.

Related topics

3.7.1 Serial Communication Settings

If you select "C-Net (RS232, UBS)" as the network type, the following options are available:

Parameter	Description
"Port number"	Select the port number.
"Baud rate"	Depending on the PLC, select a baud rate between 1200 and 115200bit/s for communication between PLC and PC. The default setting is 9600bit/s.
"Data length"	Select either 7 or 8bits (default setting: 8 bit).
"Stop bits"	Select either 1 or 2 bits (default setting: 1 bit).
"Parity"	Select the parity setting (default setting: odd).
"Timeout"	Set a timeout from 0 to 60s to connect to the PLC (default setting: 5s).
"Automatic communication setting"	The software will automatically find matching communication settings (default: all check boxes are activated). Warning: Disabled parameters will be excluded from automatic configuration.

Note

The FP OPC Server automatically searches for the suitable parameters unless you have deactivated this feature.

3.7.2 Ethernet communication settings

The Ethernet communication settings can only be accessed via the channel properties. Set the communication parameters according to your hardware. This connection is based on TCP/IP protocol.

Set or change the following parameters if necessary:

Parameter	Description
"Title"	Enter a title up to 38 characters long.
"Use ET-LAN unit"	Activate the checkbox when you use the ET-LAN unit. Do not activate the checkbox when using the Ethernet-RS232C converter, etc., for example.
"Automatically acquire IP address"	Set automatically. If not displayed, set properties of TCP/IP from network setting in control panel. (The setting procedure differs depending on the operating system used. Please refer to the manuals and help of the operating system.)
"Port number"	Specify a value between 1025 and 32767 in decimal format (default: 1025). The Port No. for the IP address must be a unique, i.e. it cannot be used twice on your computer.
"Station No."	Specify a value between 1 and 64 in decimal format (default: 64). Specify a Station No. different from the destination Station No. (PLC) that follows. (If no ET-LAN unit is used, the setting under "Station No." is ignored.)
"IP address"	Specify the IP address of destination (PLC) to communicate with.
"Port number"	Specify a value between 1 and 32767 in decimal format (default: 1025) different from above.
"Station No."	Specify a value between 1 and 64 in decimal format (default: 1). Specify a Station No. different from the computer's Station No. above. (If no ET-LAN unit is used, the setting under "Station No." is ignored.)
"Communication timeout"	Specify a value between 1 and 950 seconds (default: 10).
"Connection timeout"	Specify a value between 1 and 180 seconds (default: 60).

The following command buttons are available:

"OK"	Use this command button to save the communication settings. However, the current settings are not entered in the list of registrations. If you want to enter them to the list, use "Add registration" before selecting "OK".
"Initialize"	Use this command button to reset the current parametersettings to the default values.
"Browse"	Use this command button when another program (a PEW application) is communicating with the PLC via Ethernet and you want to connect to the same PLC. Then you can connect to the PLC easily by selecting the task in the TCP/IP Run List. Refer to the other task's settings for details.
"List registrations..."	Use this command button to reuse already registered parameters.
"Add registration"	Use this command button to add the current setting parameters to the list of parameters.

3.7.3 Ethernet (local) communication settings

The dialog is only available via “Server” > “Communication Settings” when you have set the parameter “Enable MEWTOCOL OPC Server compatibility namespace” to TRUE under “Tools” > “Options” in the “Client Interaction Settings” pane.

Note

You can only change the communication parameters for the OPC Server if the OPC subsystem has not been started.

Set the communication parameters according to your hardware. This connection is based on TCP/IP protocol.

Read the "ET-LAN SYSTEM Technical Manual" when you are using the ET-LAN unit.

If you select “Ethernet (local)” as the network type, the following options are available. Note that the bottom half of the dialog looks different depending on whether you have activated the option “Use link station No.” or not.

Parameter		Description
“Computer”	“Automatically acquire IP address”	Activated by default. If not displayed, set properties of TCP/IP from network setting in control panel. (The setting procedure differs depending on the operating system used. Please refer to the manuals and help of the operating system.)
	“IP address”	Specify the IP address of destination (PLC) to communicate with if the option “Automatically acquire IP address” is deactivated.
	“Port number”	Specify a value between 1025 and 32767 in decimal format (default: 1025). The port number for the IP address must be a unique, i.e. it cannot be used twice on your computer.
	“Station No.”	Specify a value between 1 and 64 in decimal format (default: 64). The station number must be different from the destination station number (PLC) that follows. (If no ET-LAN unit is used, the setting under “Station No.” is ignored.)
“Communication timeout”		Specify a value between 1 and 950 seconds (default: 15).
“Connection timeout”		Specify a value between 1 and 180 seconds (default: 60).

- If “Use link station No.” is deactivated (default setting), use the command buttons “Add” or “Change” to open the dialog “Register destination”. Here you can add new or change existing destinations.

Parameter		Description
"Use ET-LAN unit"		Activate the option when you are using the ET-LAN unit. Do not activate the option when using the Ethernet-RS232C converter, etc., for example.
"Station No."		Specify a value between 1 and 64 in decimal format (default: 1). The destination station number must be different from the station number entered under "Computer". (If no ET-LAN unit is used, the setting under "Station No." is ignored.)
"IP address"		Specify the IP address of the destination (PLC) to communicate with.
"Port number"		Specify a value between 1 and 32767 in decimal format (default: 1025) that is different from the port number shown next to "Computer port no.".
"Computer port no."		Read-only field displaying the port number you have entered in the previous dialog for information.

- When the option "Use link station No." is activated, only **one** destination can be entered.

Parameter		Description
"Destination"	"Use ET-LAN unit"	Activate the option when you are using the ET-LAN unit. Do not activate the option when using the Ethernet-RS232C converter, etc., for example.
	"IP address"	Specify the IP address of the destination (PLC) to communicate with.
	"Port number"	Specify a value between 1 and 32767 in decimal format (default: 1025) that is different from the port number entered under "Computer".
	"Station No."	Specify a value between 1 and 64 in decimal format (default: 1). The destination station number must be different from the station number entered under "Computer". (If no ET-LAN unit is used, the setting under "Station No." is ignored.)

The following command buttons are available:

"OK"	Use this command button to save the communication settings. However, the current settings are not entered in the list of registrations. If you want to enter them to the list, use "Add registration" before selecting "OK".
"Initialize"	Use this command button to reset the current parametersettings to the default values.

Related topics

[MEWTOCOL OPC server compatibility namespace](#) (page 76)

[Start/Stop the FP OPC Server application](#) (page 20)

3.7.4 USB (GT) communication settings

If you select “USB (GT)” as the network type, you can configure transparent PLC communication via the USB port of a GT panel.

Specify a timeout value between 1s and 60s (default setting: 15s).

3.8 System tray

When the server application is started, a tray icon appears in the window's system tray. The icon offers easy access to the main server functions, such as starting and stopping the server and maximizing or exiting the application.

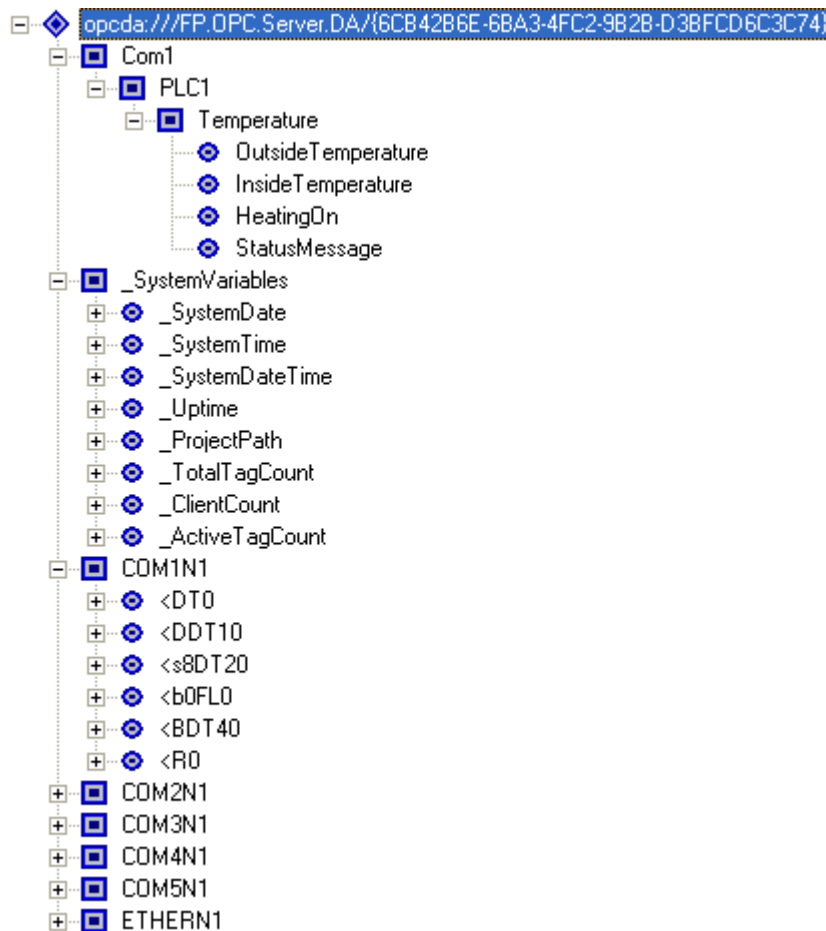


In case of an automatic start, i.e. the OPC client starts the FP OPC Server, the OPC Server is minimized to the tray only. To maximize the FP OPC Server configuration user interface, either double-click the tray icon or select “Minimize/Maximize to/from Tray” from the System Tray menu.

4 Namespaces

4.1 Introduction to namespaces

A namespace is a hierarchical tree structure of elements. Namespaces are set up within the server and can be browsed for with an OPC client application.



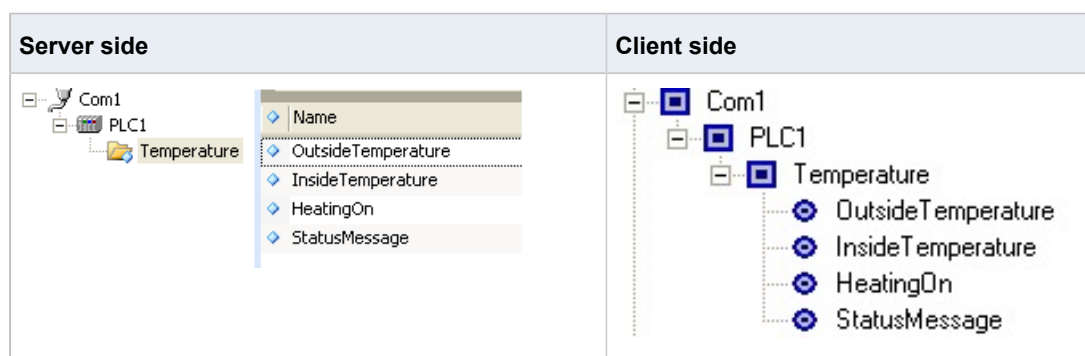
Three different namespaces can be built within the server:

1. [User-defined manual namespace](#)
2. [System status namespace](#)
3. [MEWTOCOL OPC Server compatibility namespace](#) that ensures backward compatibility with the previous MEWTOCOL OPC Server.

4.2 Static, Manually Defined Namespace

The static namespace has to be defined by the user in the FP OPC Server configuration user interface as described in the previous chapters (left hand image).

The root elements in the tree are the channel elements, which embody the means of communication, i.e. the communication line.



Each [channel element](#) can contain [device elements](#), which represent the devices where the data sources are located. On the next level, [tag groups](#) combine elements in a way that makes sense for the particular application. The leaves of the tree are the [tag elements](#). These elements directly represent the data sources offered to the OPC client application.

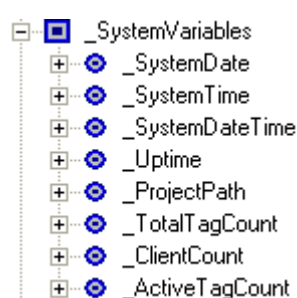
On the right, the namespace representation within the OPC client can be seen.

Note

You cannot use elements named COMXXNXX or ETHERNXXNXX (e.g. COM1N64) in accordance with the regulations of [MEWTOCOL OPC server compatibility namespace](#) MEWTOCOL OPC Server compatibility namespace.

4.3 System Status Namespace

The system status namespace provides the client application with general feedback about the server.



For a detailed description of the read only tags, please refer to the online help under the keyword "System Status Namespace".

Note

The following tags are read only.

_SystemDate

Indicates the current date of the system on which the server is running. The format of this string is defined by the operating system date/time settings.

_SystemTime

Indicates the current time of the system on which the server is running. The format of this string is defined by the operating system date/time settings

_SystemDateTime

Indicates the GMT date and time of the system on which the server is running. The format of the string is "2006-07-26 07:50:30"

_Uptime

Indicates the time span between the current time and when the server was started. It shows how long the server has been running. The format of the string is "... 1d 13h 27m 55s", for instance.

_ProjectPath

Indicates the full path and file name of the currently loaded project.

_TotalTagCount

Indicates the total number tags defined in the [static namespace](#).

_ClientCount

Indicates the total number of connected OPC client applications.

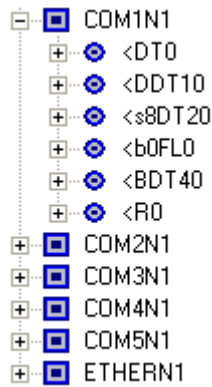
_ActiveTagCount

Indicates the number of item instances in all OPC client applications of [static Tags](#).

4.4 MEWTOCOL OPC server compatibility namespace

The previous OPC server, the MEWTOCOL OPC Server, did not support the definition of a [static namespace](#). The tags are accessed by defining the access path according to a certain syntax.

In order to be backward compatible, the FP OPC Server supports the MEWTOCOL OPC Server namespace. You must define the communication settings beforehand in the [communication settings dialog](#) that opens via "Server" > "Communication Settings".

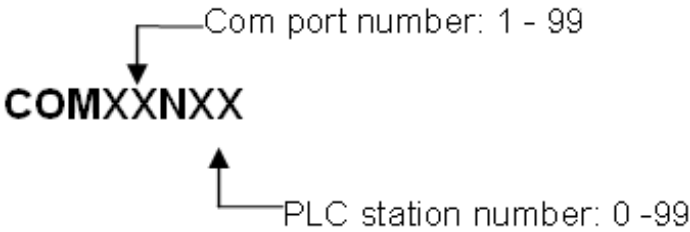


Note

- In this case the settings are stored in the files "PxMEWCOMM.INI" and "PxMewMultiEther.dat" in the folder C:\Users\UserName\AppData\Roaming\Panasonic-ID SUNX Control\PxMEWNET. The user name in the folder is the Windows login name of the current user.
- From version 2.100, communication is done via the PxMewnet manager. In former versions (lower than 2.100) the communication is done via the NAI S MEWNET manager, which stores the communication settings in different files. To keep the settings, please refer to the corresponding troubleshooting section.

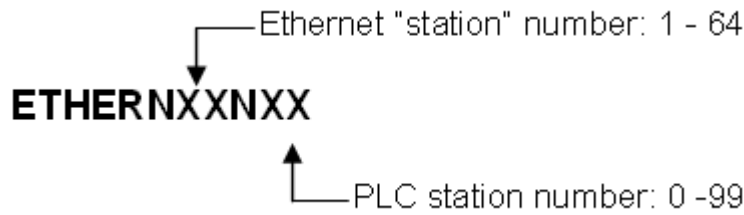
You must specify the communication channel on the first layer:

COM (serial and modem) communication



XX	The first two placeholders should specify the communication port to be used.
N	Optional. For C-NET must be "N".
XX	Optional. The second two placeholders specify the PLC station number if the PLC is connected via C-NET.

Ethernet communication



Note

For further information, please refer to [Panasonic FP PLC Network Types](#).

The second layer represents the Tag layer directly. Here, the item corresponding to the data source is created according to the following syntax conventions:

<[1][2][3][4]Address where:

Optional				Description	Values	Notes
[1]				Specifies a memory bank number	b0 to b15	If empty, no bank is specified.
	[2]			<ul style="list-style-type: none"> Specifies the number of numerical data words. 	w1 (1 word) w2 (double word)	If empty, 1-word data types are used.
				<ul style="list-style-type: none"> Specifies the number of character data words. 	s1 to s256	
		[3]		Specifies the Item as a real or BCD value.	Real: f BCD: B	If empty, the value is displayed as decimal
			[4]	Specifies double word.	D	If empty, 1-word data types are used. D overrides w1 specified in [2]

Note

- In contrast to the MEWTOCOL OPC Server, modem connections can also be used via COMXXNXX nodes.
- This namespace can also be used to dynamically create item instances within the OPC client application.

5 Appendix

5.1 Panasonic Addresses

Panasonic FP Series PLCs use addresses from which you can read data or to which you can write data. Both bit and word addresses are used.

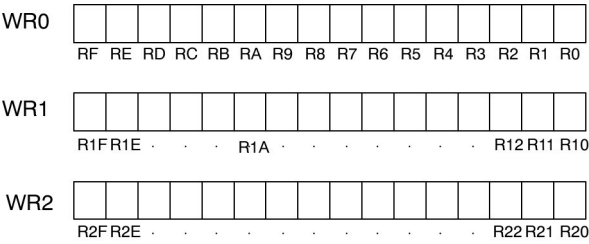
- Bit addresses

If, for example, you wish to provide the address of the first unit's (an input unit) first input and the second unit's (an output unit) fourth output, the FP address for an FP1 is **X0** (1st input) and **Y3** (4th output).

For internal memory areas, supply the reference letter and the number of the memory area as the FP address, e.g. R9000 for the 9000 link or DT9001 for the 9001 data register. The addresses for the memory areas are contained in your hardware description.

- Word addresses

Individual bit addresses for inputs (X), outputs (Y) and flags (R) can also be saved in words. 16 bits form a word. A word address containing 16 flags looks like this:



The bits are numbered hexadecimally from right to left. How the individual bits are assigned can be seen from the 3 flag words WR0 to WR2:

R5 is the 6th bit in word WR0

R1A is the 11th bit in word WR1

R2E is the 15th bit in word WR2

When the status of a bit changes, the value of the whole word changes.

5.1.1 FP addresses

Example

WX4, S23:UM4A, Y3E, S12, R100A, E1234, DT1234

Format:

- Slot address prefix for unit memory addresses, e.g. S23:UM4A (FP7 only)

- Slot address specifier **S**
- Slot number “dd”, e.g. 23 of S23:UM1A0
- Separator ‘:’
- Double size prefix **D** only for 32-bit values of words
- FP address prefix:
 - For 1-bit values, e.g. X, Y, R
 - For 16-bit words with bits, e.g. WX, WY, WR
 - For 16-bit words without bits, e.g. DT, FL
- Address offset:
 - For bits in word data “dddX”, e.g. 100A of R100A
 - For bits not in word data “dddd”, e.g. 1234 of E1234
 - For word data “dddd”, e.g. 1234 of DT1234
 - For word data in the unit memory “XXXX”, e.g. ABCD of S3:UMABCD

Note

dd, placeholder for decimal numbers

XX, placeholder for hexadecimal numbers

Index modifiers cannot be used.

5.1.2 Memory areas

The default initial values are 0 or FALSE.

Availability of memory areas:

The FP series PLCs have many different memory areas, which support 1-bit, 16-bit, or 32-bit addressing. Availability of the memory areas varies, depending on the PLC's processor. Addresses may be specified in FP format (e.g. X) or IEC format (%IX).

Memory area	1-bit	16-bit	32-bit	16-bit PLCs	32-bit PLCs
Input	X	WX	DXW	•	•
Output	Y	WY	DYW	•	•
Internal relay	R	WR	DWR	•	•
Timer relay	T			•	• ¹⁾
Timer set value register		SV		•	
			TSV		• ¹⁾
Timer elapsed value register		EV		•	
			TEV		• ¹⁾

Memory area	1-bit	16-bit	32-bit	16-bit PLCs	32-bit PLCs
Counter relay	C			•	• ¹⁾
Counter set value register		SV		•	
			CSV		• ¹⁾
Counter elapsed value register		EV		•	
			CEV		• ¹⁾
Data register		DT	DDT	•	•
File register		FL	DFL	•	•
Link relay	L	WL	DWL	•	•
Link register		LD		•	
			DLD		•
System relay	SR	WSR	DWS		•
System data		SD			•
			DSD		
Unit memory		Sx:UM	Sx:DUM		•
Index register		IX		•	
			DIX		•
Error alarm relay	E			•	•
Pulse relay	P			•	

¹⁾ On the FP7, these addresses are reserved for the system.

5.2 Panasonic Data Types

Panasonic's FP OPC Server supports several data types described hereafter.

5.2.1 Undefined - Undefined Data Type

An undefined data type is selected per default. If this data type is not changed, the OPC Server automatically adopts the data type according to the address of the variable.

5.2.2 Boolean - Boolean Data Type (1-bit)

Variables of the data type BOOL are binary variables. They can either have the value 0 or 1, and are 1 bit long.

Condition	Meaning	Explanation
0	FALSE	The variable is switched off, i.e. it is not set.
1	TRUE	The variable is switched on, i.e. it is set.

5.2.3 Signed 16-bit

Variable values of the data type **Signed 16-bit** are natural numbers without decimal places.

Range: -32768–32767

5.2.4 Unsigned 16-bit

Variable values of the data type **Unsigned 16-bit** are numerical numbers without decimal places.

Range: 0–65535

5.2.5 Signed 32-bit

Variable values of the data type **Signed 32-bit** are natural numbers without decimal places.

Range: -2147483648–2147483647

5.2.6 Unsigned 32-bit

Variable values of the data type **Unsigned 32-bit** are numerical numbers without decimal places.

Range: 0–4294967295

5.2.7 Word 16-bit

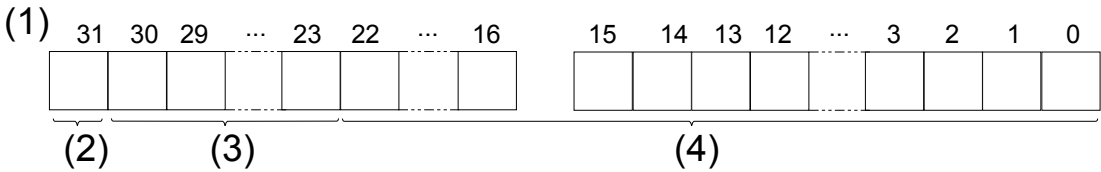
A variable of the data type **Word 16-bit** consists of 16 binary states. The switching states of 16 in/outputs can be combined in one word.

5.2.8 Word 32-bit

A variable of the data type **Word 32-bit** consists of 32 binary states. The switching states of 32 in/outputs can be combined in one double Word.

5.2.9 Float 32-bit

Variables of the data type **Float 32-bit** consist of real numbers or floating point constants and can include up to seven effective digits. The mantissa consists of 23 bits and the exponent of 8 bits (based on IEEE754).



- (1) Bit position
- (2) Sign bit: 0 positive, 1 negative
- (3) Exponents (8-bit)
- (4) Mantissa (23-bit)

Range:	-3.402823466*E38 to -1.175494351*E-38
	0.0
	+1.175494351*E-38 to +3.402823466*E38

5.2.10 String - String Data Type (Variable Length)

The data type **STRING** consists of a series of up to 255 ASCII characters. All ASCII characters are considered as characters.

5.2.11 BCD 16-bit

The BCD represents a code scheme for numbers that allows base-ten computer calculation instead of the more common base two. BCD manipulation preserves accuracy by reducing round-off errors. BCD encoding is performed by using a four-digit binary number to encode each digit of the base ten number.

BCD	Decimal
0000	0
0001	1

BCD	Decimal
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9

5.2.12 BCD 32-bit

The encoding of the **BCD 32-bit** is similar to the [BCD 16-bit](#) data type, but instead of being 16 bits long, the **BCD 32-bit** consists of 32 bits.

5.2.13 Date

Variable values of the data type **Date** are date literals.

Range: 2001-01-01–2099-12-31

5.2.14 Date And Time

Variable values of the data type **Date And Time** are date and time literals.

Range: 2001-01-01-00:00:00– 2099-12-31-23:59:59

5.2.15 Time Of Day

Variable values of the data type **Time Of Day** are time of day literals.

Range: 00:00:00–23:59:59

5.3 Panasonic FP PLC Network Types

A Panasonic FP Series PLC can be connected to the PC in various ways. The PLC can be connected using the [serial port](#) or [Ethernet](#).

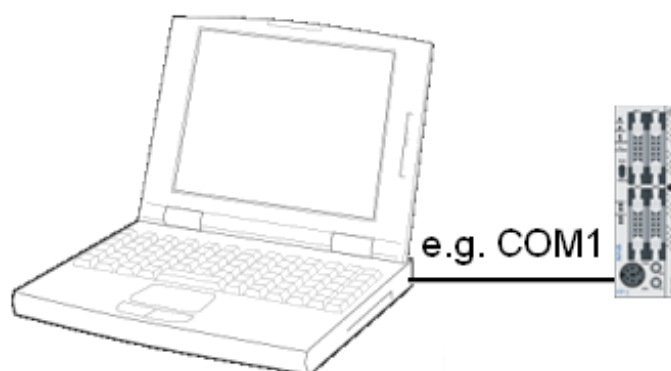
Tip

For further information on the different network types and how to connect and to wire the PLC, please refer to the appropriate hardware manual.

5.3.1 Serial Network

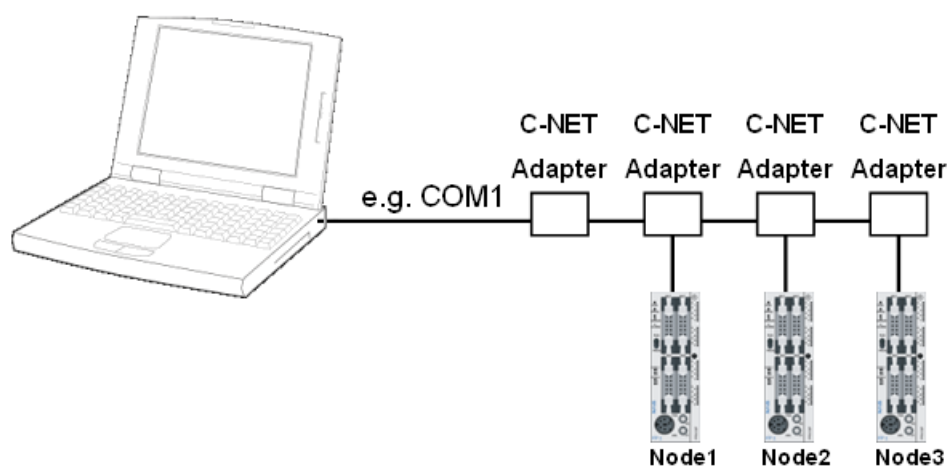
Direct connection

The PLC is directly connected to the PC using the serial communication line.



C-NET adapter connection

A maximum of 99 PLCs (FP-Sigma PLCs) can be connected to a single PC.



The access path is for example (using the MEWNET compatibility syntax):

- Node1: COM1N1
- Node2: COM1N2
- Node3: COM1N3

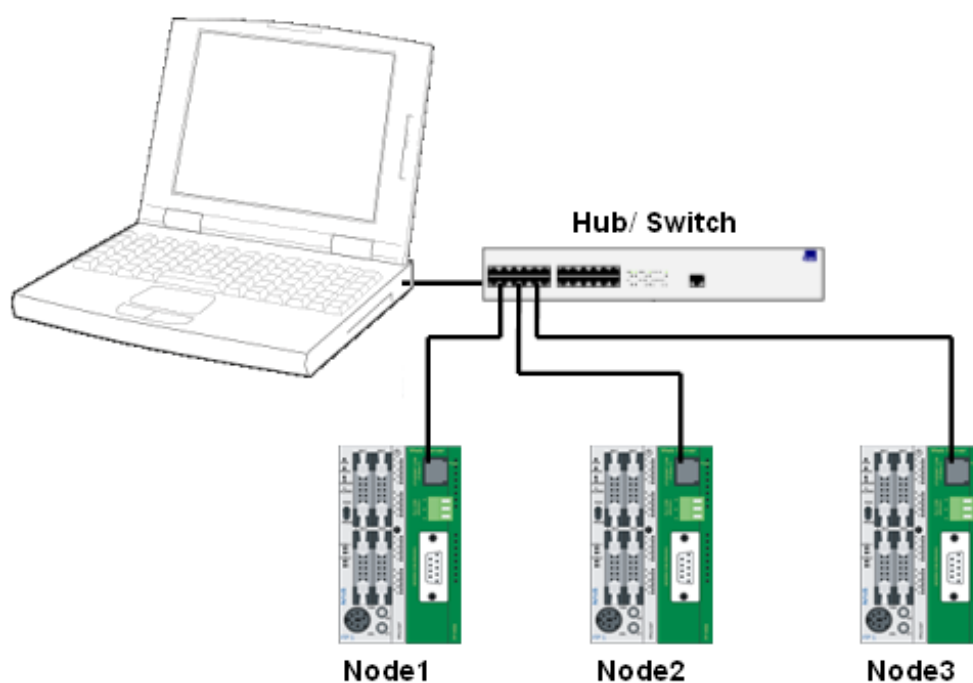
Note

This version of the FP OPC Server does not support the MEWNET W/W2 remote access.

5.3.2 Ethernet Network

PLCs can be connected to the PC via Ethernet.

Each PLC is connected to a hub or switch.



The access path is for example (using the MEWNET compatibility syntax):

- Node1: ETHERN1
- Node2: ETHERN2
- Node3: ETHERN3

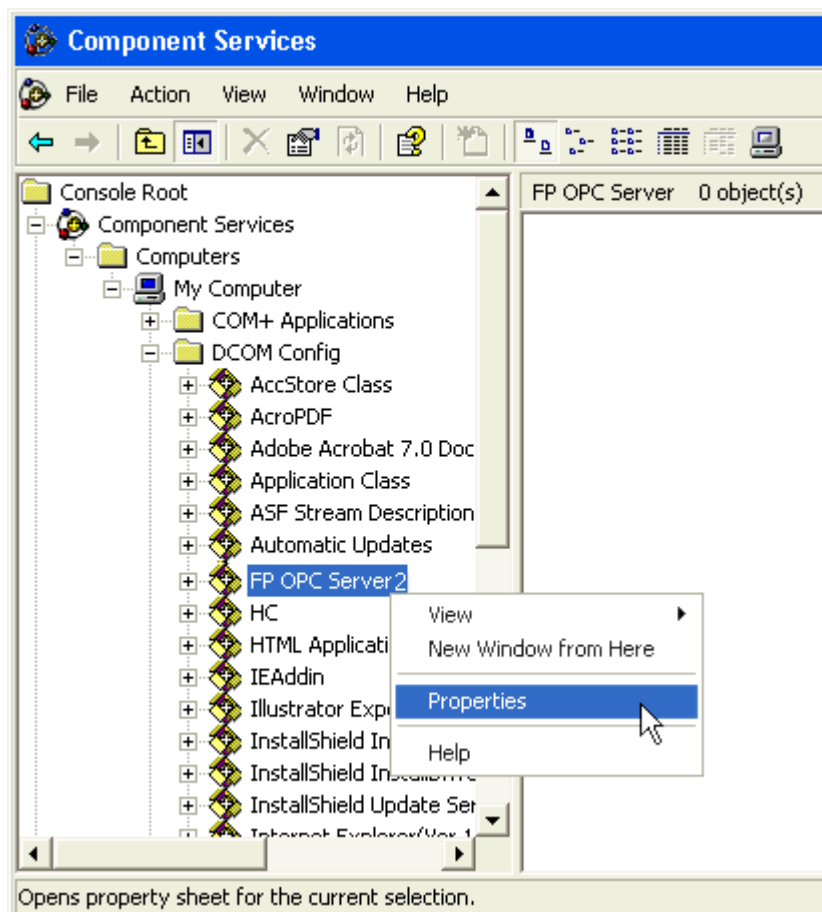
Note

This version of the FP OPC Server does not support the MEWNET W/W2 remote access.

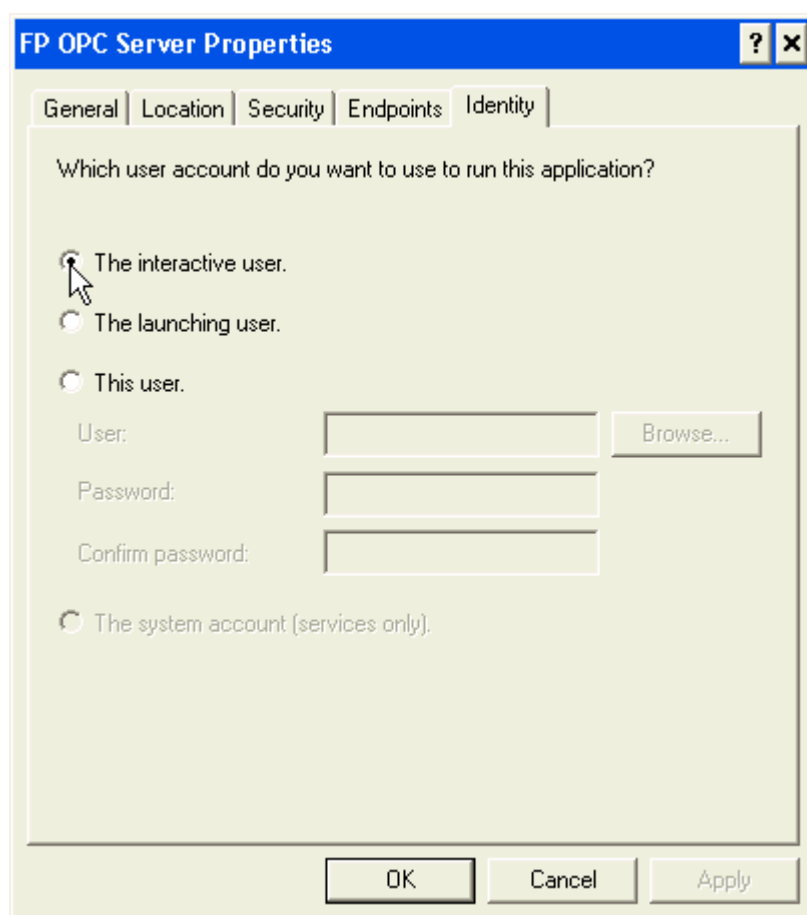
5.4 DCOM configuration

Step 4: Activate the interactive user

1. Under “My Computer”, expand “DCOM Config”
2. Select “FP OPC Server 2”



3. From the pop-up menu, open the FP OPC Server properties
4. Select the “Identity” tab and activate “The interactive user” who shall run the OPC Server



5. "OK"

Step 5: Reboot your PC after changing the DCOM security settings

5.5 Troubleshooting, warnings and error dialogs

How to keep the communication settings for the MEWTOCOL OPC Server compatibility namespace

Note

The Ethernet and serial communication settings for the MEWTOCOL OPC Server compatibility namespace are stored by the corresponding MEWNET manager.

Because from this version the PxMEWNET manager is used instead of the NAIS MEWNET manager you have to execute the following steps to keep the communication settings:

1. Close the FP OPC Server
2. Copy the files "NAIS_MewMultiEther.dat" and "NAIS_MEWCOMM.INI" from folder `C:\Users\UserName\AppData\Roaming\Panasonic MEW Control\MEWNET Manager` into folder `C:\Users\UserName\AppData\Roaming\Panasonic-ID SUNX Control\PxMEWNET`
Replace <UserName> in the folder name with your Windows login name.
3. Rename "NAIS_MewMultiEther.dat" to "PxMewMultiEther.dat"
4. Rename "NAIS_MEWCOMM.INI" to "PxMEWCOMM.INI"

5.6 List of abbreviations

The following abbreviations are used throughout this documentation:

Abbreviation	Explanation
BCD	Binary Coded Decimal
COM	Component Object Model
CSV	Character Separated Values
DA	Data Access
DCOM	Distributed Component Object Model
DDE	Dynamic Data Exchange
GVL	Global Variable List (Control FPCWIN Pro)
OLE	Object Linking and Embedding
OPC	OLE for Process Control

Abbreviation	Explanation
OutProc	An OutProc server realizes one of three characteristics of a standardized OPC server. If implemented as an OutProc server, the application is started by an OPC client from an autarkic executable file. The server application can reside on the local or a remote machine.
PLC	Programmable Logic Controller
XML	Extended Markup Language

6 Record of Changes

Manual No.	Date	Description of Changes
ACGM0143V1.0END	Dez. 2006	First edition
ACGM0143V1.1END	Jan. 2007	Updated documentation: notes on removing the software .
ACGM0143V1.2END	Apr. 2007	The description of Ethernet (Local) communication has been moved to the section Communication Settings .
ACGM0143V1.3END	Mai 2007	Microsoft Windows Vista compatible
ACGM0143V1.4EN	Sept. 2007	MEWNET W/W2 connection removed
ACGM0143V1.5EN	Mai. 2008	New options are available under Tools→Options→Event Log Settings : <ul style="list-style-type: none"> • Enable debug message logging • Enable memory status message logging
	Jan. 2010	Update for release of FP OPC Server 2. See the section "New in this version" in the online help.
	Sept. 2010	Update for release of FP OPC Server 2.01. See the section "New in this version" in the online help.
ACGM0143V2EN	Oct. 2011	Update for release of FP OPC Server 2.02. See the section "New in this version" in the online help.
ACGM0143V3EN	July 2013	Update for release of FP OPC Server 2.021. See the section "New in this version" in the online help.
ACGM0143V4EN	March 2020	Update for release of FP OPC Server 2.1.0.0. See the section "New in this version" in the online help.

Index

A

Addresses [80](#)

C

Connected Clients [57](#)

D

Data Types [81](#)

F

Features of the OPC Server [13](#)

M

MEWTOCOL Driver [62](#)

N

Number of Active Items [57](#)

Number of Tags [57](#)

S

Server Time [57](#)

Simulation Driver [62](#)

T

Troubleshooting [89](#)

U

Up Time [57](#)



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