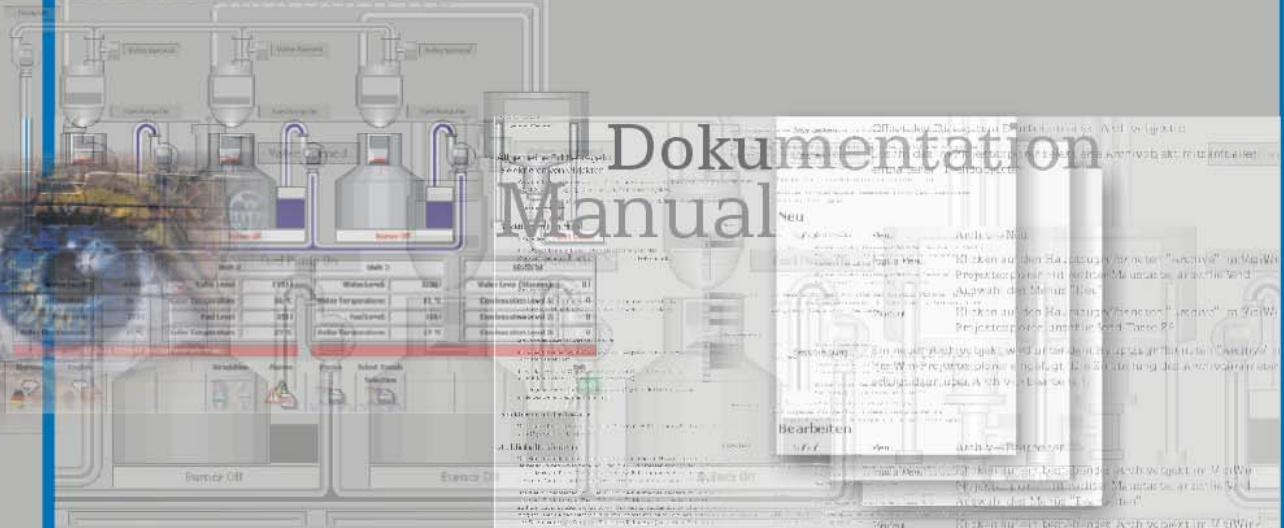


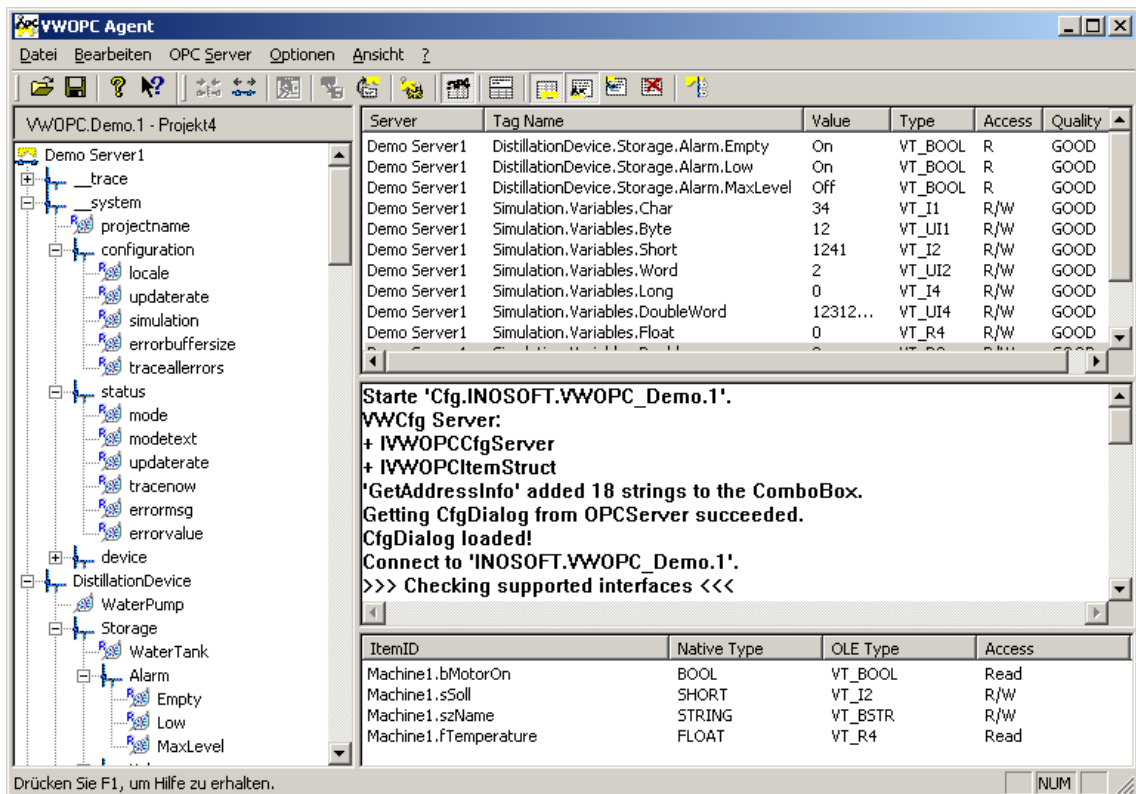
VisiWinNET INOSOFT OPC Server



- **VisiWin**
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 - Common
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INOSOFT OPC Server



Live Picture: VWOPC Agent starting the VWOPC Demo Server







The contents of this manual must not otherwise be used without explicit written consent from INOSOFT GmbH.

We have checked the contents of this manual for compliance with the described software. Discrepancies can, however, not be ruled out. For this reason we cannot guarantee full compliance. The contents of the manual are subject to regular checking for necessary updates/amendments. Such amendments will be made in the subsequent edition.

Suggestions for improvement are welcome.

Legend

In order to point out particular paragraphs the following symbols are used in the INOSOFT documentations:

	Attention	Passages with this sign should be read – and observed – with particular attention.
	Hint	Important paragraph "additional information"
	Tip	Many roads lead to Rome; here a shortcut is to be found.
	In work	Functions that are in preparation or already implemented but not yet prepared for documentation.
	Example execute	Instructions to be carried out in an example
	Observe result	Results to be observed with carrying out the exemplary instructions

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INOSOFT GmbH created on

VisiWinNET Version: from 6.04.000

created on 08.06.2010

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1 Preamble

About this manual

This document is to provide an overview of the OPC standard, and show and explain the functionalities of the VWOPC servers with the affiliated programs.

The first part roughly describes the OPC standard with the appropriate enhancements.

Subsequently the VWOPC server with its properties, objects and functionalities is described.

In the third part the VWOPC agent is explained as a configurator, variable editor and diagnosis tool.

The final part deals particularly with the Client/Server architecture, and the setup of a COM server in the Windows network..

Questions and Problems

For technical questions and problems please contact your responsible INOSOFT agent or the INOSOFT GmbH Support under +49 (5221) 16 66 02 or email: Support@INOSOFT.com

Frequent questions and problems are dealt with on our homepage under www.inosoft.com

There you will also find a support area for direct contact with our Main Office.

2 OPC - OLE for Process Control

OPC is an abbreviation for OLE process control.

By this term various services for process run information access are specified. The specification distinguishes here between three basic services:

- Variable access (OPC Data Access)
- Alarms (OPC Alarms and Events)
- Data storage (OPC Historical Data Access)

This document exclusively informs about the OPC Data Access specification. Standardized and vendor-independent services for variable access (data) of the process level are described.

OPC services are specified through the OPC Foundation. The association of almost 200 automation technology companies and organizations by now establishes the OPC Foundation.

2.1 OPC Background (Why was OPC developed)

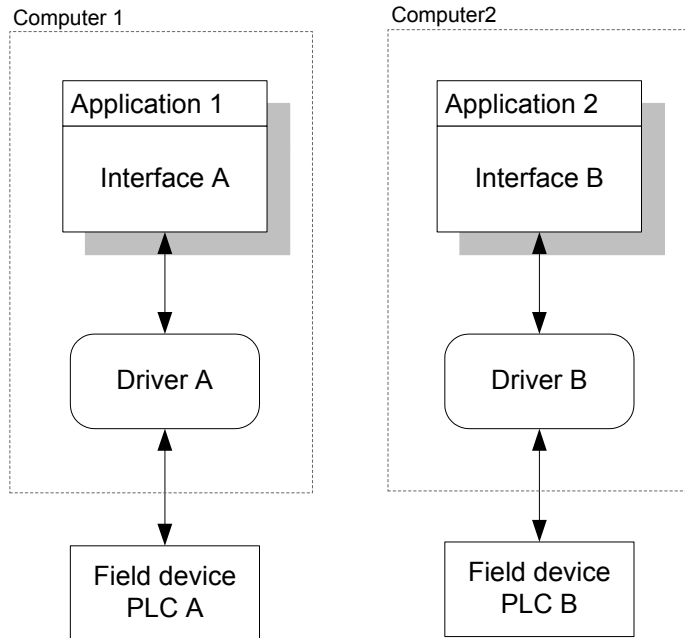
From automation technologies point of view an industrial enterprise will be divided in three layers:

- Field layer (Data recording)
- Control layer (Process control/Visualization)
- Routing layer (Data management)

While the field layer is mainly determined by proprietary hardware in form of sensors and actors, the control- and routing layer is more and more determined by standardized PC-components.

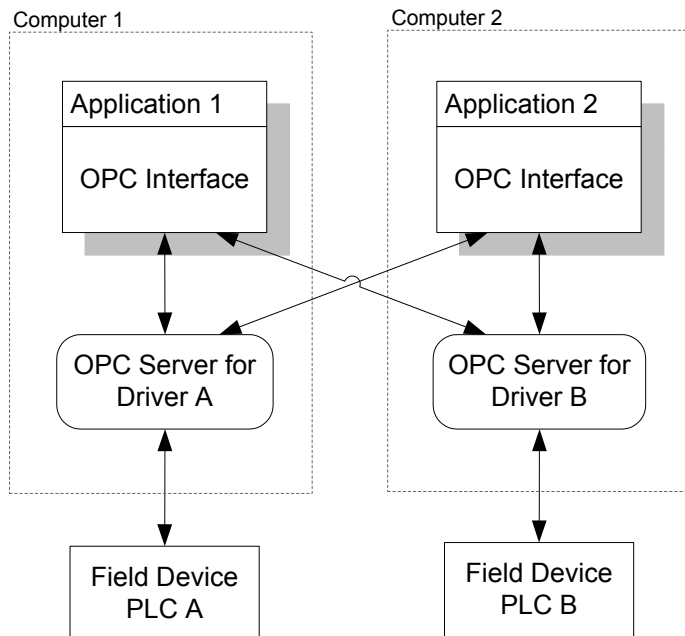
It is the job of manufacturers of PC-based automation solutions to implement a qualified process link to enable data access to the field layer.

The drive-technology is characterized by data exchange ability with the PC-application through a specific driver with connection of process hardware. The problem here is that each hardware requires its specific driver and because of that, the actual application must be adapted to the specific hardware.



The ulterior motive for developing the OPC Data Access Specification was the establishment of an universal driver for automation technology.

With it encapsulation of the actual driver by the universal driver is processed and general intelligible services are provided by an universal interface.



The actual automation technological application must not care about the way of data access to the field layer, as with the help of OPC constantly a standardized interface is provided.

2.2 Engineering foundation

2.2.1 OPC Client/Server - Architecture

To achieve the utmost independence between process linkage and the actual application, the process linkage is realized through an independent application, which is designated as OPC-server. The application, prepared to make use of data access to the OPC-server is designated as so-called OPC-Client.

The connection between both applications represents the classic client/server-relation, in which the server provides service to the client. In this case, the OPC-Server service enables process data access.

The advantage of the client/server-architecture is that the server can provide service to several clients, respectively the clients' ability to use service of various servers at the same time.

2.2.2 COM and OLE – the basis for OPC

Because of the highly spreading in the automation technology the OPC-specification was specialized to the operating system group (Windows 9x/NT/2000/CE) of Microsoft.

The most stable and at the same time common communication model under Microsoft Windows is COM (Component Object Model). This prompted the OPC-Foundation to choose this model as OPC-Standard basis.

As COM is concerned with a binary standard, not restricted to the usage under Windows on principle, it is quite possible that OPC-services are also provided for further operating systems in the future.

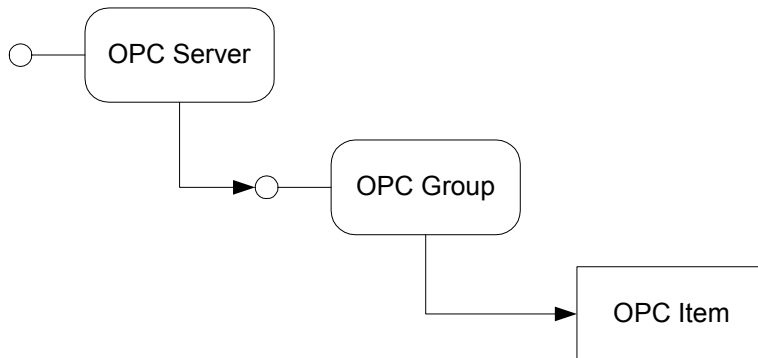
COM means component object model and defines the „general“ object access and definition under Windows. This is documented in an extensive specification, which complete illustration would go beyond the scope of this introduction. The basic properties, which have an impact on the OPC architecture as well, will be mentioned instead.

COM defines various services for different application areas. The OLE service („Object Linking and Embedding“) helped OPC to get its name.

The communication principle of COM and OLE is obviously based on objects. An object with specific basic properties and methods was defined in the COM-server to provide server services for the client. On the other hand the COM-object owns various interfaces, through which methods and properties the COM-object can be operated and consequently the server services can be used. The COM-object access and its interface methods and properties are clearly defined by COM and run constantly equal.

2.2.3 OPC-Server COM objects

The OPC-server is a COM-server, which provides clients services through three COM-objects, structured hierarchically:



OPC Server Object

The OPC-server is managed through the OPC-server object. Apart from state information methods and failure handling the object mainly provides methods for group creation and management, in which again items can be set up. If the client creates a new group in the OPC-server through the OPC-server object, automatically an OPC-group object referring to the group is created and transferred to the client.

OPC Group Object

Items can be created and managed through the OPC Group Object. Besides, read- and write access methods to the group items are provided.

OPC Item Object

An item represents the process variable connected to, within the OPC-server.

2.2.4 The OPC Server Item

The process variable is represented by the OPC server item. It is so to speak the data transport medium. The data are saved in the internal item cache from the underlying hardware. The most important components of this cache are explained below:

Item definition (ItemID)

The item definition is a string consisting of max. 128 printable UNICODE characters. As it serves to identify an item in the process space of the OPC server it has to be unequivocal there. The structure of the Item ID is dependent on the hardware.

Access Rights

Here the rights for access to the item are defined. The following access rights are defined: read only, write only, read and write.

Canonical Datatype

An item has the variant data type, and thus can assume a multitude of different canonic data types. The canonic data type is the type with which the raw data of the item are saved in the cache.

Timestamp

For every value change of the item in the cache the current time (as FILETIME) is saved.

OPC Quality

These flags represent the state of the OPC item. Here communication errors and value exceedances are noted independent from the return values of the functions.

2.2.5 OPC in practice

In practice the communication between OPC-Server and OPC Client through the OPC-objects runs as follows:

- The user configures the OPC-Server by the definition of items, connected with real process size, i.e. PLC data, within the OPC-Server. The configuration data is stored in the OPC-Server afterwards.
- The OPC Client starts the OPC-Server and with it receives a reference to the OPC-Server Object of the OPC-Server.
- Through the OPC-Server Object the client inquires the items, provided by the server.
- Through the OPC-Server Object, the client creates a group in the OPC-Server and receives a reference to the dynamic generated OPC-Group Object for the new created group. If required, the client can create several groups as well. With it, an OPC Group Object for each generated group will be created.
- Through the OPC Group Object the client generates all items, which process values are relevant for the client, in this group.
- Through the OPC Group Object the client can access to the process data of all items, generated in the group.

On the occasion, each OPC Client generates its characteristic, private groups in the OPC-Server and there, includes only the items, relevant for the client.

2.2.6 Communication principles

When groups are created, a parameter is provided, which allows switching between hardware and cache reading. Reading from the hardware means that the respective task is forwarded directly to the PLC. With serial communications, working with blocks, any optimized access would be destroyed.

The cache is a storage area on the OPC-Server, where converted data is stored as variant. The memory access does not necessarily lead to a PLC task. Which means that the data may not necessarily be current data then.

2.2.6.1 Synchronous communication

Synchronous means, that the client directs a reading and writing task to the client, which will not be acknowledged with a message until the task was completely processed.

Reading from the hardware means for synchronous tasks, that the task will not be acknowledged to the PLC or with a failure message to the client, until it was successfully processed. With slow communication this can lead to considerable delay with the client.

2.2.6.2 Asynchronous communication

With asynchronous communication set up the client hands over a joint to the OPC-server. Through this joint the OPC-Server can forward messages to the OPC-Client asynchronously.

An asynchronous task returns to the client immediately then. The transaction runs only in the OPC-Server. If the task is processed, the client receives data and success or failure information about the task through the joint.

In the same way as described so far the OPC-Client always runs an enquiry on the OPC-Server to receive the process variable value. There is a possibility however that the OPC-Server informs the clients automatically with every change of items, created by the clients.

This can be handled in the same way as a usual task, with the difference that not only ONE reading task is being forwarded through the joint but all following value changes as well.

2.2.7 OPC-Server address space

The OPC-Server item database is designated as address space. Through the interface `IOPCBrowseServerAddressSpace`, the OPC-Client can inquire data from the address space.

With hardware access, address space items must be valid, that means they must own a respective counterpart in the PLC. Due to this OPC-Server functionality a client must not have information about the address structure anymore and thus is released from the necessity to be aware of the server- respectively hardware specific syntax for the addressing.

The address space inquiry distinguishes between hierarchically and plane structured address space. If a plane address space is inquired about the items, a list is presented including all OPC-Server items. A hierarchic inquiry distinguishes between nodes and items. If an item is selected, the OPC-Server can be inquired about the respective Item ID. A list, including all superior nodes, separated through points or a respective ID corresponding to this item, will be presented.

With VisiWinOPC-Servers, this address space is processed and stored through an additional interface.

2.3 OPC – Specification enhancement

Designing an all-embracing specification is a very time-consuming task. The OPC-Foundation could reach a first agreement on the Data Access 1.0 specification and consequently disseminate the OPC-Standard. Provided the acceptance and experience with the practical application further processing and designing of specifications on this basis (Alarms & Event, Historical Data Access etc.) respectively improvement in some points is enabled (Data Access 2.0 und Data Access 3.0).

By far the widespread OPC-Standard with both clients and servers could be achieved with the Data Access 2.0. This release is supported in VWOPC Servers and used with the VisiWin applications.

2.3.1 Callr

Several companies, particularly in the German-speaking area complement the OPC-Standard especially referring to the item management and creation. The enhancements are optional so there is no restriction for any OPC-Client.

We only use the two interfaces ICallrServer and IcallrItemConfig, which function is explained in the following.

2.3.1.1 ICallrServer

OPC-Servers can be started on a system only once, however, for it many Client applications can access arbitrarily the same data.

This interface enables the formation of authorities in the OPC-Server, therefore hardware connections (i.e. COM Ports). A client, which makes use of this interface, receives a list of the existing authorities (i.e. COM1, COM2) and can select the OPC-Server from the list then.

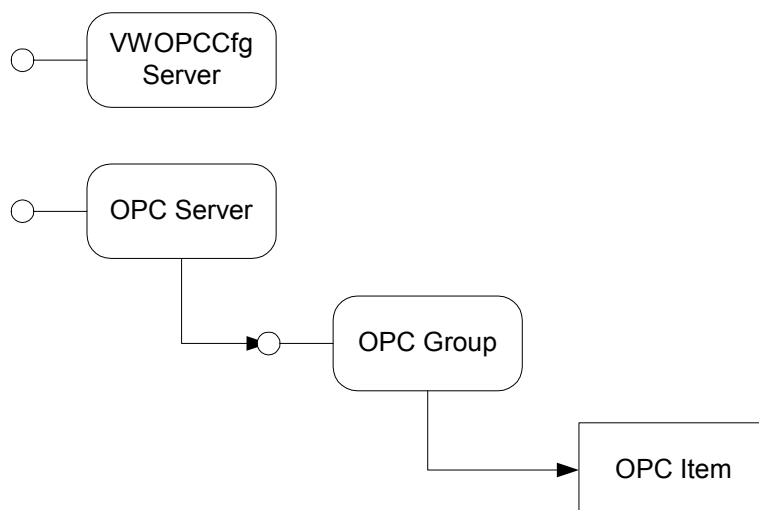
2.3.1.2 ICallrItemConfig

This interface is responsible for the VWOPC-Server Item database management. For item creation the structure CALLRITEMATTR, which includes all item information, is utilized. The item, being created is initialized in the hardware level and added to the OPC-Server address space.

2.3.2 VisiWin specific enhancements

All OPC specification enhancements could not result in the configuration specification yet.

To resolve this dilemma, an object was inserted in the VWOPC-Servers, situated parallel to the OPC-Server



Beside the configuration the object enables a detailed OPC-Server diagnosis and can trigger an interface reconfiguration even during run time. The object call and activation affects neither the running communication nor an active client on the server.

3 VWOPC Server

The special feature of the VWOPC Servers is, that they own an additional COM-Object for configuration, which can be started independent of the OPC Server. Through this object the VWOPC Server is in the position to respond appropriately to varying clients.

On this property basis the OPC Server can store data independently or together with other INOSOFT products.

3.1 Set up and registration

Call the menu „Setup.exe“. This will run the set up program for the VWOPC Server. The VWOPC-Server standard set up directory reads as follows „INOSOFT\OPC\<Prot>“. <Prot> and is a directory with the short designation of the record, i.e. „INOSOFT\OPC\Demo“

File name	Path	Description	Reg
VWOPCDemo.EXE	INOSOFT\OPC\ Demo	Demo OPC-Server for the VisiWin engine, the drink water desalination plant and simulation functions.	Yes

Project- and log files are prepared in this directory as well.

The VWOPC Server registration is processed automatically during the set up. If the VWOPC-Server is not yet identified by the data processor, the file can be called through „/regserver“ or „/install“. The VWOPC-Server will process the necessary entries then.

If the VWOPC-Server will not be utilized on a data processor anymore, the registration entries can be deleted with following instruction: „/unregserver“.

For communication with the VWOPC Server over COM/DCOM following files on the part of client and server are required. These files are automatically installed during the set up as well.

Network set up

The remote access release must be processed through „DCOM Config“, onto the following OPC-components.

- VWOPC Server <xyz>
- OPC Enum

The COM/DCOM Basic communication items must be set up on the client data processor.

COM/DCOM Basic communication items

File name	Path	Description	Reg
opcproxy.dll	Windows\ system32	Proxy Stub DLL for OPC Data Access 1.0 and 2.0.	Yes

callrproxy.dll	Windows\ system32	Proxy Stub for the Callr enhancement. Required for OPC-Server initializing for item creation during run time.	Yes
opccommon_ps.dll	Windows\ system32	Proxy Stub for the OPC-Server Browser and the Common Interface	Yes
vwopccfgproxy.DLL	INOSOFT\ Common	Proxy Stub for VisiWin OPC Servers, the configuration objects. The objects control the OPC-Server start behaviour.	Yes

Communication aid

File name	Path	Description	Reg
opcenum.exe	Windows\ system32	OPC Foundation OPC-Server Browser. Module for OPC-Server listing of a data processor and remote access to the ProgID. Interdependence: Actxprxy.dll(V5.0)	Yes

Optional Modules for the OPC-Client

File name	Path	Description	Reg
Vwopcdaauto.dll	INOSOFT\ common	A VB Client requires a specific „Wrapper“ DLL for communication, as the standard OPC interfaces are not accessible for the client.	Yes

VWOPC Configurator

File name	Path	Description	Reg
Vwcfgdemo.dll	INOSOFT\OPC	This file presents the VWOPC Server configurator	Yes

3.2 Configuration

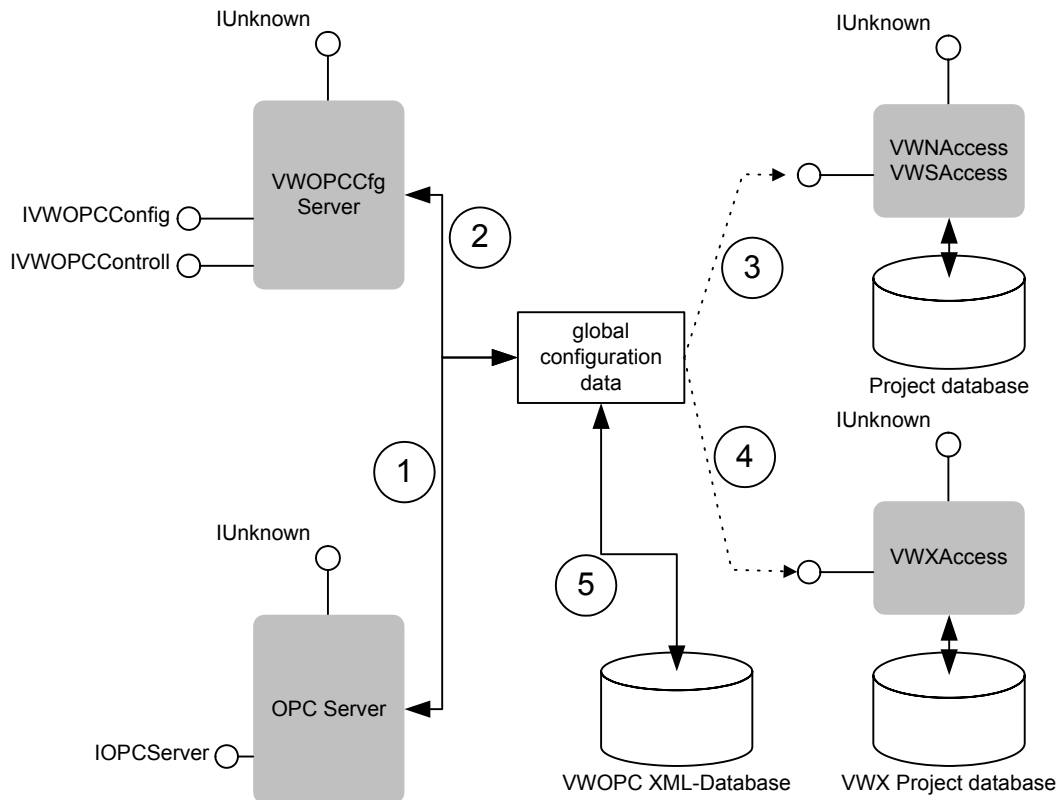
The VWOPC Servers are configured by the configurator.

This dialog is an OPC-Server component, but will not be called within the VWOPC-Server. The dialog can be requested and processed from the client, the VWOPC Agent or else from another VWOPC Client. The dialog will be set up on the OPC Server system.

3.2.1 VWOPC Config

For configuration management a new object, which can be called parallel with the OPC-Server object, was added to the VWOPC Server.

This object manages the configuration dialog request, as well as loading and storage of configuration data.



1. The VWOPC Server will be started as Standard OPC Server. Configuration data will be loaded into the general configuration data either from the single project file or else from the file, entered as default in the registration.

2. The VWOPC Server will be loaded together with the configuration object. So far, there is no existing configuration on the OPC Server.

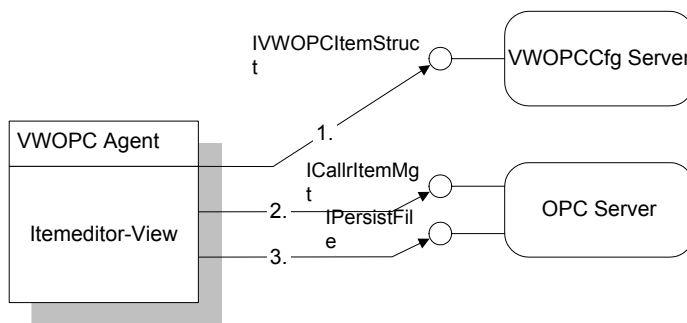
3. A configuration exists for the VWOPC server in the VisiWinNET/VisiWinStudio project database. This configuration is loaded from the project database through the VWNAccess/VWSAccess object. These data can be displayed and edited through the configurator in VisiWinNET/VisiWinStudio.

4. There is an existing configuration for the VWOPC Server on the VisiWinX Process database. The configuration will be loaded through the VWXAccess Object. With the help of the configurator the data can be displayed and processed in VisiWinX.

5. The standard configuration data is stored in a XML file. With the help of the configurator the data can be displayed and processed in the VWOPC Agent.

3.3 Item creation and management

1. The item database is structured over the VWOPC Agent (also see: Chap. Item database creation and storage).
2. For end-user information about syntax and item data type, there is a specific interface in the configuration object. Here, possibly Item IDs are listed with '*' as wild card.
3. After processing, the information will be forwarded to the VWOPC-Server over the Callr interface.



Over the standard interface IPersistFile, the VWOPC-Server will be requested to store the characteristic variables.

Then the items will be stored in a file with the suffix vox' (VisiWinOPC Ini File) together with the VWOPC Server system data in CSV-format (comma separated values).

This file is located in the same directory as the VWOPC Server program file.

3.4 VWOPC Server system items

Through the system items the current OPC Server configuration can be inquired. Beside the current configuration, the OPC Server state is displayed.

Over system items with write access several settings can be affected temporary. Persistent configuration alteration is permitted in the VWOPC configuration dialog only (also see VWOPC configuration dialog).

3.4.1 Node ,__system`

In the system node three further nodes „configuration“, „status“ and „device“ are located. Beside the node there is an item.

Item	Variant type	Description	Access authority
projectname	VT_BSTR	Project name indication of the current OPC Server project.	Read only

3.4.1.1 Node ,configuration`

Here, the system configuration is displayed in the form of items. With Server start the items are used with the current configuration and from then will not be updated anymore.

Item	Variant type	Description	Access authority
local	VT_UI4	The language set in the VWOPC Server.	Read only

updaterate	VT_UI4	The smallest possible updating time of the VWOPC Server.	Read only
simulation	VT_BOOL	Indicates, if a hardware connection must be established in the log level.	Read only
errorbuffersize	VT_UI2	Number of lines for error messages in the VWOPC Server.	Read only
traceallerrors	VT_BOOL	Error recording.	Read only

3.4.1.2 Node ,status'

The status node indicates the current state of the OPC Server. Here, the essential OPC Server and log information can be inquired. These items are updated cyclic.

Item	Variant type	Description	Access authority
Mode	VT_UI2	General OPC state value.	Read only
Mode text	VT_BSTR	Textual output of the OPC state.	Read only
Updaterate	VT_UI4	Read cycle period, reading from the hardware. If the value is smaller than the current cycle time, the difference time will be suspended.	Read only
Tracenow	VT_BOOL	Indicates, if reading is activated or deselected	Read only
errmsg	VT_BSTR	Last line of the error list	
errorvalue	VT_UI4	The HRESULT value of the last error from the error list	Read only

3.4.1.3 Node ,device'

Under this node the hardware configuration level can be displayed. Information, shown in this sector is only concerned with log and hardware.

3.4.2 Node ,__trace'

Here, the trace sheet configuration settings are presented. The settings are updated only with the VWOPC Server start just like the system settings.

Item	Variant type	Description	Access authority
Tracetofile	VT_BOOL	All trace output is written in a single file.	Read only
Tracefile	VT_BSTR	Trace output file.	Read only
File format	VT_UI4	Date format for VWOPC Server output. The string presents the start date.	Read only

The trace items indicate the VWOPC Server sector just being recorded. Beside the trace output the data is written into the log file.

The items are subdivided in the appropriate COM objects according to the OPC-specification and represent the single VWOPC Server interface for log functions. All items own the data type VT_BOOL and can be read and written. If an item is set to „true“, the method calls will be recorded in the appropriate interface.

Node	Description	Items
OPC Server	The interfaces, defined in the OPC Server object are located under this node.	IConnectionPointContainer, IOPCServer, IOPCServerPublicGroups, IOPCBrowseServerAddress-Space, IPersistFile, IOPCCommon and IOPCItemProperties
OPC Group	The interfaces, defined in the OPC Group object are located under this node.	IOPCSyncIO, IOPCGroupStateMgt, IOPCPublicGroupStateMgt, IEnumOPCItemAttributes, IOPCItemMgt, IOPCAsyncIO and IOPCAsyncIO2
Callr	Under this node the Callr specification enhancement interfaces are located.	ICallrProgram, ICallrItemMgt, ICallrItemConfig, ICallrProgramGroup and ICallrServer
VWOPC	Under this node the VisiWin specific interfaces are located.	IVWOPCCfgServer, IVWOPCItemStruct and IVWOPCSimIO
ClientSide	Interfaces, forwarded from the client to the OPC Server are located under this node. If „true“ is activated with an item, the client will record the OPC Server method calls.	IDataObject, IOPCAdviseSink, IOPCDataCallbackOn and IOPCShutdown
device	Log functions will be recorded. This can be processed individually for each log. The log functions are speech-dependent and include more detailed information than the recording through interface tracing.	InitItems, InitPort, InitPLCHeader, PLCRead and PLCWrite

3.5 VWOPC Server window

For VWOPC Server feedback to the user a window is provided by the server. The window is represented by a symbol in the task bar.

3.5.1 The symbol in the task bar

The VWOPC Server symbol (Tray Symbol) is presented on the right bottom of the page next to the system clock in the task bar.



VWOPC Server states are presented through this symbol.



Configuration The VWOPC-Server will be configured. The state is passed back either with OPC_STATE_SUSPENDED or OPC_STATE_NOCONFIG.



Normal The VWOPC-Server is running and communication with the PLC is accurate. The state is passed back as OPC_STATE_RUNNING.



Test Without hardware connection the VWOPC-Server runs in the test mode. The state is passed back as OPC_STATE_TEST.



Error The VWOPC-Server is running but with PLC communication an error occurred. An error specification can be inquired either from the error dialog or the error item. The state is passed back as OPC_STATE_FAIL.

Mouse functions

Function

Description

Mouse over symbol

If the mouse is moved over the symbol for two seconds, the name of the VWOPC-Server and condition state is displayed.



Double click

Double click on the symbol opens the VWOPC Server error list.

Right click

Right click on the symbol opens the VWOPC Server menu.

3.5.2 VWOPC Server menu

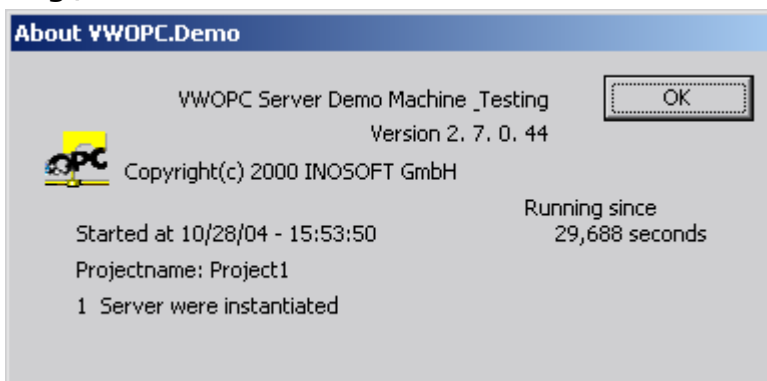
With right click on the VWOPC Server symbol in the task bar the menu is opened.

Instruction	Description
Above	Opens the dialog ‚Above‘.
Display error list	Presents the VWOPC Server error list.
Error acknowledgement	A queuing error will be deleted and additionally a function test will be processed on the log level.
Find trace window	If a trace window for trace data output (VWOPC Agent) exists, all trace output will be forwarded to the window.
Close	The VWOPC-Server will be closed. This can lead to bad error with linked clients. Therefore this should be processed just in case of need, i.e. if an unintentional abnormal termination occurred and the VWOPC Server will not close automatically anymore.

3.5.3 OPC-Server dialogs

For the presentation of information without client application the VWOPC Server provides two dialogs.

3.5.3.1 Dialog ‚About‘

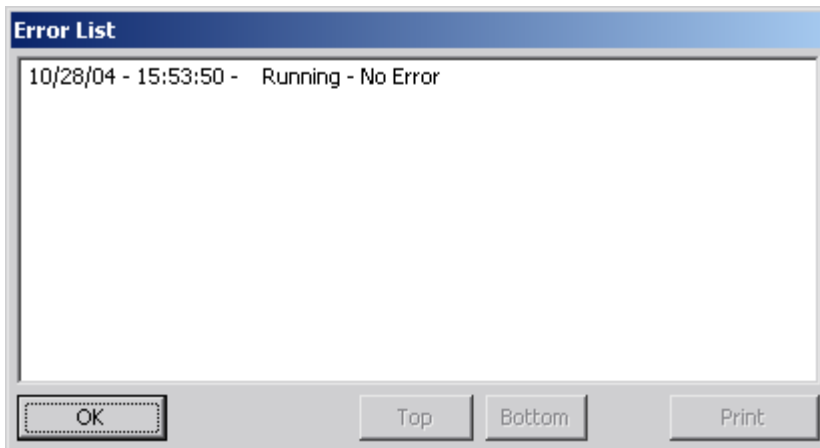


VWOPC-Server and log information.

Operating item	Description
VisiWin OPC-Server Demo Machine & Simulation	Detailed VWOPC Server designation including log.
Version 2. 4. 0. 11	Release number

Acceleration time:	Acceleration time in the format, set during the configuration.
Project name	Project name of the current running project.
Server were instantiated	Number of OPC-Server instatiated. (also see Callr Server)
Running since	Time passed since VWOPC Server start.

3.5.3.2 Dialog ,Error list'



Here the VWOPC Server errors from the log area are being listed with online language change ability for the list.

The item "ErrorList" under the node "State" represents the list.

Operating item	Description
OK	The dialog will be closed.
Start	Presents the beginning of the list.
End	List ending is presented.
Print	The list will be printed.

4 The VWOPC XML-Database

Each VWOPC - Server owns characteristic configuration data. Here, format and syntax data are specified.

Furthermore tools for database processing are introduced; afterwards the database structure is described.

4.1 VWOPC Server Database

Project files will always be created in the executable file directory of the VWOPC Server.

The file name will be generated from the project name and the suffix „vox“ (VisiWinOPC XML-Database).

The data is stored as XML document and therefore can be processed with any text editor.

4.2 XML

XML (Extensible Markup Language) is an extensible language for distinction. Markup languages use a specific notation to characterize various components of a document.

Simplicity of the language and above all the combination ability with enhanced specifications enable XML multiple utilization. Because of that XML was accepted as worldwide standard for data storage and e-mail.

In XML the appropriate document marking is generated dynamically through the internal OPC Server structure.

Terms enclosed in angle brackets (i.e.:<tag name>) are designated with tags.

4.2.1 The well-formed document

Here, XML document structure regulating is briefly described. The stated rules are very important for the VWOPC XML -Database.

An XML-document is called well formed (well formed) as soon as it meets the specification.

The general XML-document is structured hierarchically. There is only ONE root item (main item). Further items are arranged under the main item. Beside the items, attributes and comments are used in the VWOPC XML - files.

Items

Each item must begin and end with a tag or else be represented as blank item.

On the occasion following syntax is valid:

Start tag <name>

End tag </name>

Blank item <name/>

XML items can be nested, so that a XML item includes another XML item i.e.:

```
<name1><name2/></name1>
```

Attributes

Attributes represent extensive information within an item. An attribute can only be inserted with an item start tag.

The value is assigned to the attribute through the equal sign and set in inverted commas.

The item attribute must be unique.

I.e.: <Item name Attribute name="value"><Blank Item\><\Item name>

Comments

Comments are ignored by the VWOPC Server and thus represent the database specification ability without becoming illegible.

A comment text starts with <!-- and ends with -->.

Structure of item and attribute name

Names consist of at least one character. No blank character.

A single character must be an alphabetic character.

Names must always begin with an alphabetic character or else with an underscore

Case sensitivity.

Unprintable characters are !"\$\$%&/'()[]{}=?`´*+~#'-,;`

Permitted characters are a...z A...Z 0...9 .:_`

If it is unavoidable to use an unprintable character with an item, the item will be replaced by _char<n>: in doing so, in the position n the ASCII -value of the character is inserted. So the name „Test!N“ becomes „Test_char39:N“

4.2.2 View and Edit of a XML file

All XML- files are text files and therefore can be edited with any text editor.

If only item components in a XML- file are changed, the file can become unserviceable prompt. In the XML specification a readable XML- file is called well formed (well formed).

Therefore two standard tools for viewing and editing of XML- files are provided.

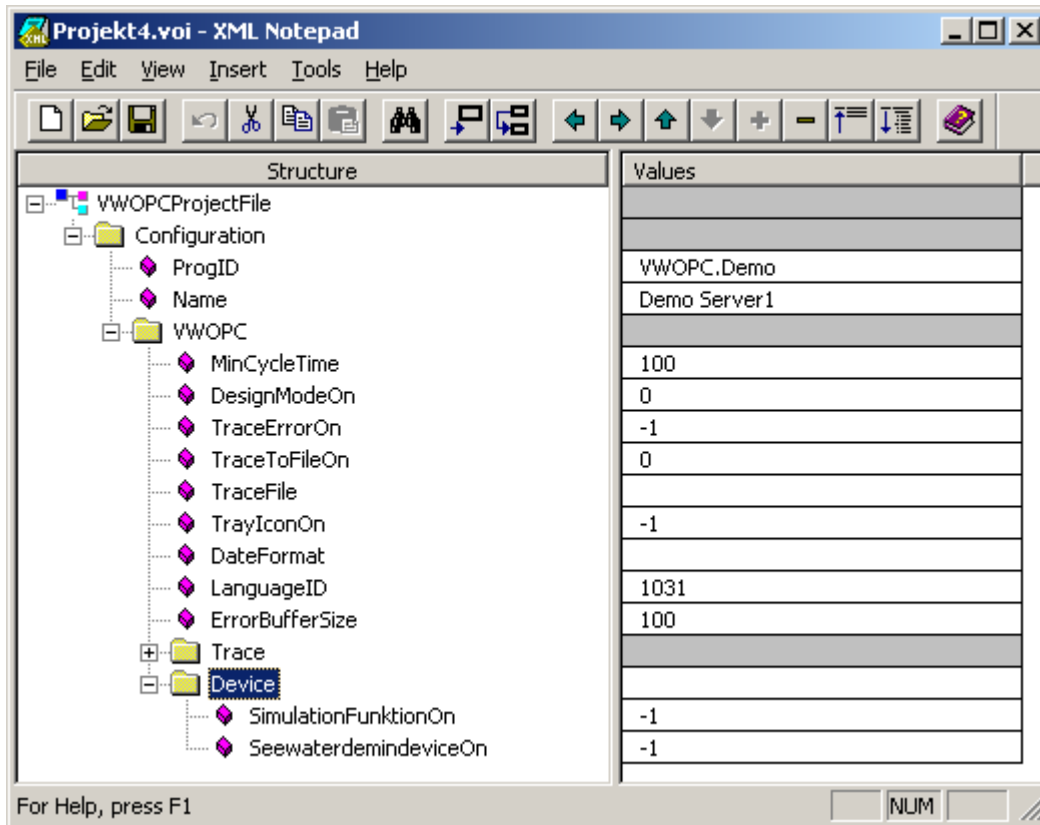
```

- <VWOPCProjectFile>
- <Configuration ProgID="VWOPC.Demo"
  Name="Demo Server1">
- <VWOPC MinCycleTime="100" DesignModeOn="0"
  TraceErrorOn="-1" TraceToFileOn="0"
  TraceFile="" TrayIconOn="-1" DateFormat=""
  LanguageID="1031" ErrorBufferSize="100">
+ <Trace>
  <Device SimulationFunktionOn="-1"
  SeewaterdemideviceOn="-1" />

```

For viewing and for syntax test the Internet Explorer 5.0 is extremely qualified. The Internet Explorer displays items and attributes in red colour, the attribute values are presented in bold type and black colour. In front of the item there is either a plus or a minus sign. Through left click on the minus sign all subordinated items and attributes will be hidden. With left click on the plus sign the hidden items and attributes are represented.

If an error was located in the file, the appropriate text passage and error type will be indicated.



For editing a XML document, a tool like the Microsoft SML Notepad should be utilized. In this program XML file items and attributes are presented in a clearly arranged tree. Beside the tree the accessory values are presented in a table. If an XML-file is edited with this tool, syntax error can be excluded.

For editing any text editor can be utilized as well. With a text editor there is the disadvantage of an unclear file and the creeping-in of syntactic error. Therefore the files should be opened with the Internet Explorer once to avoid such error.

4.3 VWOPC XML-Database Structure

The VWOPC XML-Database has no document type definition.

The database main item is called „VWOPCProjectFile“. On the database this item must be unique.

```
<VWOPCProjectFile>
...
<\VWOPCProjectFile>
```

4.3.1 Configuration

The configuration data is stored under the item „Configuration“. The attributes ProgID and Name dedicate the file to the specified OPC-Server.

The configuration file is valid for a single OPC-Server only.

```
<VWOPCProjectFile>
  <Configuration ProgID="VWOPC.Demo" Name="Demo
Server1">
    <VWOPC MinCycleTime="100" DesignModeOn="0" ...>
      <Trace>
        <OPC IConnectionPointContainerOn="0" ... />
        <Callr ICallrProgramOn="0" ... />
        <Device InitItemsOn="-1" InitPortOn="-1"
... />
      </Trace>
      <Device SimulationFunktionOn="-1" .../>
    </VWOPC>
  </Configuration>
  ...
</VWOPCProjectFile>
```

In the XML file the configuration is subdivided in different sectors. An item is created for each sector. The configuration data is stored as attribute under the accessory items.

VWOPC

The major group for the OPC Server data referring to. Here, the OPC Server system data is stored.

Entry	Description	Default value
MinCycleTime	Smallest possible cycle time of the OPC Server.	100
DesignModeOn	The OPC Server will not connect to the hardware.	0
TraceErrorOn	All error will be displayed through the appropriate trace function.	-1
TraceToFileOn	The data will be written into the appropriate file.	0
TraceFile	Output file.	""
DateFormat	Date format for output.	""
LanguageID	OPC Server system language.	System default
ErrorBufferSize	Error lines in the internal output area.	100

Trace/OPC

In this area all trace settings referring to the OPC are stored. Following interfaces can be activated:

IConnectionPointContainerOn, IOPCServerOn, IOPCServerPublicGroupsOn,
IOPCBrowseServerAddressSpaceOn, IPersistFileOn, IOPCCommonOn,
IOPCItemPropertiesOn, IOPCSyncIOOn, IOPCGroupStateMgtOn,
IOPCPublicGroupStateMgtOn, IEnumOPCItemAttributesOn, IOPCItemMgtOn,
IOPCAsyncIOOn, IOPCAsyncIO2On, IDataObjectOn, IOPCAdviseSinkOn,
IOPCDataCallbackOn und IOPCShutdownOn,

Trace/VWOPC

In this area all trace settings referring to the Callr and VisiWinOPC specific enhancements are stored. Following interfaces can be activated:

ICallrProgramOn, ICallrItemMgtOn, ICallrItemConfigOn, ICallrProgramGroupOn,
ICallrServerOn, IVWOPCCfgServerOn, IVWOPCItemStructOn, IVWOPCSimIOOn

Trace/Device

As the log level is separated from the COM-level the trace activation is repeatedly stored especially for the log level.

InitItemsOn, InitPortOn, InitSPSHeaderOn, SPSReadOn, SPSWriteOn

Device

All hardware specific information is stored under this item, i.e. the COM-port with serial communication.

With the VWOPC Demo the internal items for following areas can be deselected: distillation device, simulation

4.3.2 Items

VWOPC Demo items cannot be stored. Here, they are represented only by way of illustration of the XML-Database.

```

<VWOPCProjectFile>
  ...
  <Items>
    <Simulation>
      <Variables>
        <Char ItemID="Simulation.Variables.Char"
          Access="R/W" Type="VT_I1"/>
        <Long ItemID="Simulation.Variables.Long"
          Access="R/W" Type="VT_I4"/>
        ...
      </Variables>
      <Dummy>
        ...
      </Dummy>
    </Simulation>
    ...
  </Items>
</VWOPCProjectFile>

```

The item database is structured hierarchically and will be initiated through the element „Items“.

The hierarchic structure is processed by the representation of all ItemID sectors, separated through a period, as item (Branch) without attributes, therefore as node. The last ItemID sector will be inserted as an item (Leaf) with the attributes ItemID, Access and Type.

Attribute	Description
ItemID	Once more the ItemID will be represented explicit to prevent loss of information through unprintable characters.
Access	Item access authorities will be stored here.
Type	Item data type. Established with hardware log on.

5 VWOPC Configuration- Dialog

Each OPC-Server has its own configuration dialog. The dialog is loaded from the OPC-Server through an interface and processed by the client application.

The configuration data matching with the OPC-Server is realized through the OPC-Server configuration object.

5.1 Set up and registration

There is no set up required for the VWOPC Agent. The dialog can be requested and performed directly from the VWOPC-Server by the VWOPC Agent.

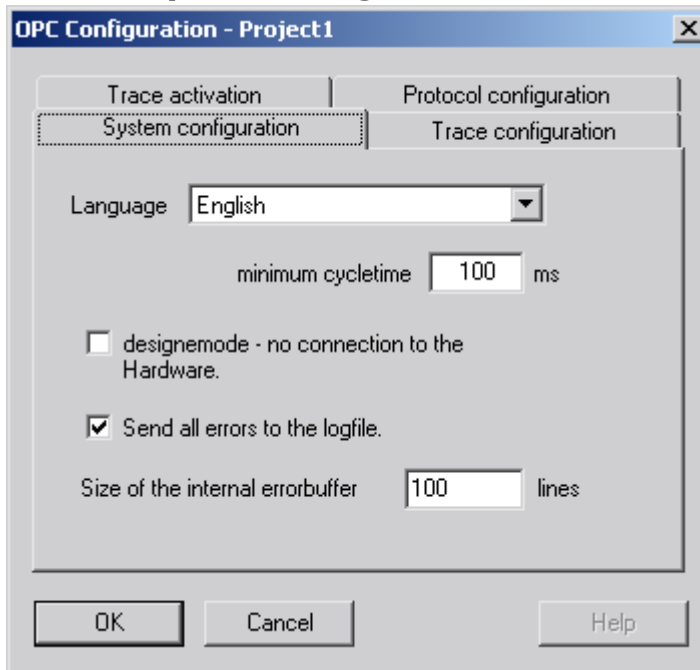
VisiWinX can access the dialog through the dispatch object. In this case the dialog must be set up on the data processor. The set up can be processed in two different ways.

1. Through the OPC – Server set up.
2. The dialog for OPC Server display, initiated by VisiWinX or VisiWinStudio demands, stores and registers the dialog under the appropriate directory.

File name	Path	Description	Reg
VWCFGDemo.DLL	INOSOFT\OPC	OPC Item browser for the former process database. Interdependence: MSVCRT.DLL, MFC42.DLL, OLEAUT32.DLL	Yes

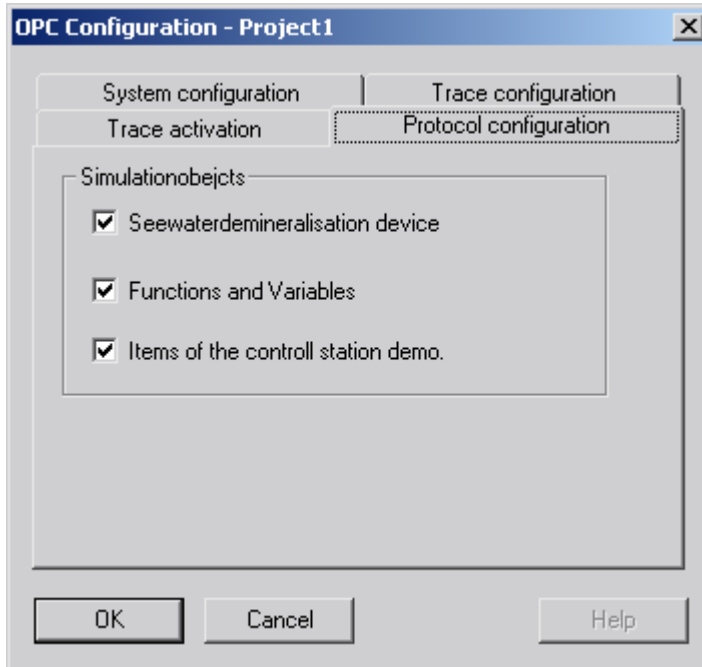
5.2 Dialog index cards

5.2.1 Index card ‚System Configuration‘



OK	The dialog will be closed including configuration data adoption.
Cancel	The dialog will be closed. The alterations will be dropped.
Language	In this selective list the language for the surfaces and output of the OPC server can be set.
Design mode - no connection to hardware	If this option is activated the OPC server does not attempt to establish a connection with the hardware. It creates, however, a core image of the items made up by the project data. Thus, a visualization can for test purposes communicate with the OPC server.
Send all error to log file	All Errors will be recorded.
size of Internal error buffer	Max. number of failure within the internal error list. If the number is exceeded the first failure will be overwritten. Failure which occur repeatedly will be provided with a number and recorded in the list together with the last occurred time index. Therefore they appear only twice in the list. First error and last error with number

5.2.2 Index card ‚Protocol configuration‘

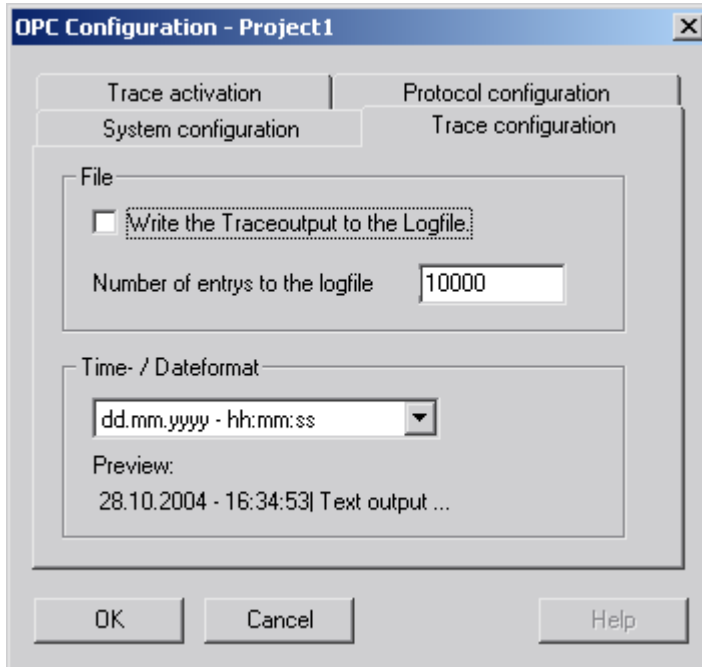


These settings are valid for a single OPC Server instance only and therefore are being stored in the interface configuration.

Simulation objects

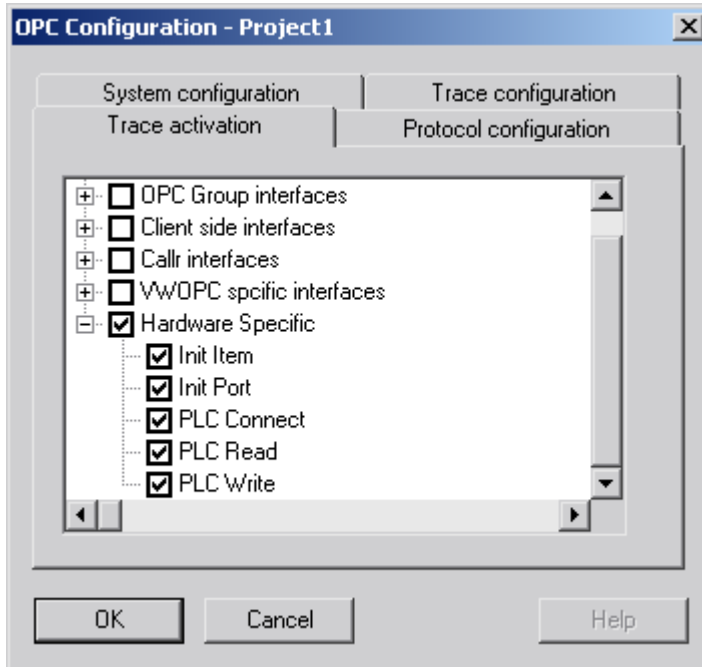
Specific log level settings. Here, the VisiWin Demo OPC-Server settings are located.

5.2.3 Index card, Trace Configuration`



- Write trace output into the log file** The output is not only handled in form of messages but will be written into a log file as well.
- Number of entries in logFile** Specifies the maximum number of log file entries. The log file functions like a circular buffer in which the oldest entries are deleted when the maximum number of entries is reached.
- Log file** Log file name.
- Time- / Date format** Time- or date format for failure output.

5.2.4 Index card ‚Trace activation‘



The hierarchic structure represents the apportionment of activation flags. The apportionment results from the accessory COM-objects. For hardware component structure and activation a typical node was created in which specific log level areas can be activated.

When a box is checked with the OPC Server, everything called within this port will be recorded through the trace function.

With node activation everything called within this object will be recorded through the trace function.

The single node specification for the dialog is located in the chapter „VWOPC Server system items“

6 VWOPC Agent

The VWOPC Agent is a tool with extensive functionalities. In conjunction with VWOPC Servers this is the configuration-, edit-, test- and diagnostic environment.

Other OPC-Servers can be started and tested with this tool. In this case internal recording by the agent might be helpful.

6.1 Set up and registration

There is no set up required for the VWOPC Agent. However, the program requires several DLLs for communication (Proxy and Stub DLLs) with the OPC Servers. For this reason set-up performance is constantly useful.

Through the set up the agent, the dependent DLLs and the Proxy-Stub DLLs are copied.

File name	Path	Description	Reg
VWOPCAgent.EXE	INOSOFT\ Common	Configuration- and edit tool for all VisiWin OPC-Servers. Interdependence: COMDLG32.DLL, COMCTL32.DLL, OLEDLG.DLL, OLEPRO32.DLL, OLEAUT32.DLL ProxyStub: opcproxy.dll, opccommn_ps.dll, vwopccfgproxy.dll, callrproxy.dll	Yes

6.2 VWOPC-Server selecting and designing

Select the menu entry „load new server...” from the menu „OPC-Server”.

A small dialog with two entries for the OPC-Server and the machine name will appear. The upper field shows the entry „VWOPC.Demo”, the field below is blank.

For OPC-Server connection acknowledge with OK. This is the VisiWin Demo and Simulation OPC Server. To find another OPC-Server on the local system or in the network enter „Find”.

The VWOPC.Demo Server was selected. The dialog box „Project selection” will be shown. In this dialog the name of a new project can be stated. Then select „new”.

As a result the VWOPC-Server will store all project settings together with the project name in a „vox”-file.

If there is no configuration for the project yet, the configuration dialog will be started automatically.

6.2.1 OPC-Servers of other manufacturers

OPC-Servers, not equipped with the VisiWinOPC specific configuration interface can be called through the VWOPC Agent for diagnostic purposes.

In this case there is no designing or configuration possibility. After acknowledgement with OK in the dialog box „connecting” the OPC-Server will be indicated in the Item tree structure view with variable writing and reading ability.

6.3 VWOPC-Server Configuration

For VWOPC-Server configuration a project name must be assigned to the server and at the same time there must not be a connection to the hardware.

Start the configuration dialog through the instruction „configure...” in the „OPC Server” menu.

6.3.1 Minimum updating cycle change

After configuration dialog opening you will get to the index card „System configuration”. The input field for minimum cycle time is located below the language combo box.

The minimum cycle time defines the time in which a read and write cycle must have been held. Consider, that the items are not always read simultaneously, but always just a certain part of the items, which is being requested by the clients.

6.3.2 Start of OPC Server in test mode

The checkbox "Development mode – no connection to the hardware" is located on the index card „System Configuration” as well.

Through checkbox activation the log level can be uncoupled, which means that the VWOPC Server functionalities can be tested as far as to the log level without having set up the appropriate hardware.

6.3.3 Language / Date format change

Furthermore the combo box „Language” is located on the index card „System Configuration”. Here, languages supported by the OPC-Server are listed to choose from.

These settings are valid for all direct data output, dialogs, menus and the VWOPC Server log files.

For date setting alteration, switching to the index card „Trace Configuration” is necessary. A combo box, containing possible date output formats is located on the index card. The smallest resolution is equivalent to 1 ms, the highest is an hour.

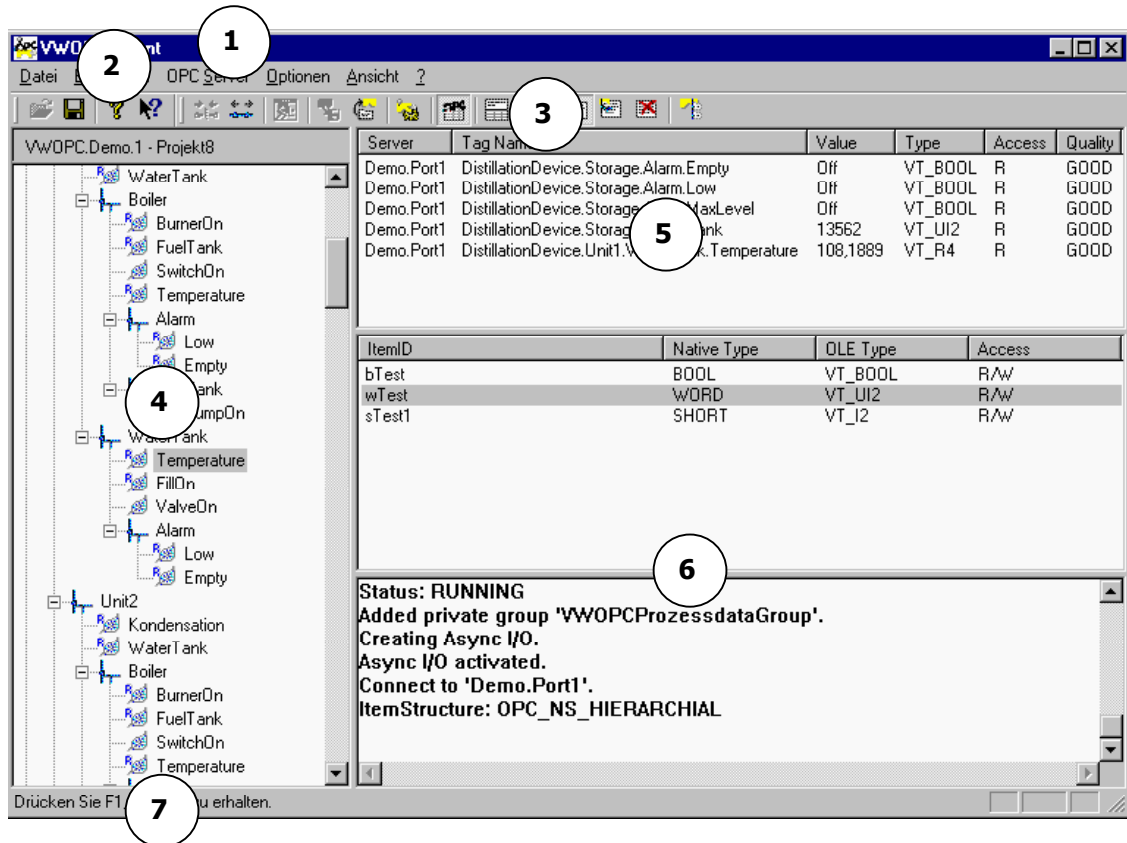
6.3.4 Log file creation

For log file creation the index card „Trace Configuration” must be selected. In this index card the check box „Trace output to file” is activated. After check box activation the edit field below will be activated. Here, the project name is automatically registered.

Select the area, which is being recorded.

If you want to record the connection to the log layer, switch back to the index card „Basic configuration” and click the button „Configure”. Select the index card „Protocol Trace” in the following dialog and activate the check box „Init/Exit”. With VWOPC-Server start in the log file the log connections and the item log on will be recorded in the PLC.

6.4 Views

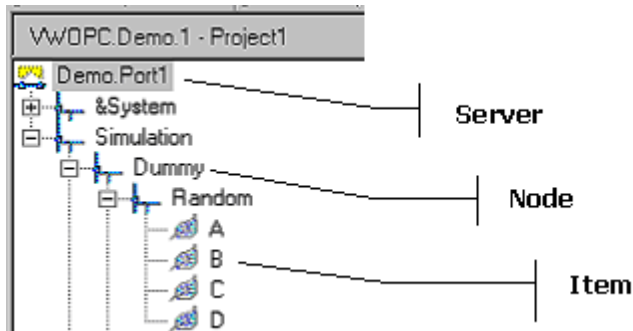


3. Title bar
4. Main menu
5. Icon bars
6. Item tree
7. Item monitoring view
8. Item edit, trace view
9. State bar.

The VWOPC Agent is subdivided in three windows (Views). The first two windows are standard views, which cannot be altered. With VisiWin OPC-Servers, in the third view the item edit view will appear. With all remaining OPC-Servers the connection process recording will be shown as trace view.

Besides, the view can be subdivided so that working with the item edit view and the trace view at the same time is possible.

6.4.1 Item Tree View



The OPC Server address range is displayed in the Item tree. All VisiWin OPC-Servers are represented hierarchically. That means there is a branching in nodes and items.

In the field above the tree the current OPC-Server together with the project name is represented.

Through press and hold of the left mouse key (Drag and Drop) both, items and nodes can be adopted from the item tree into the item monitoring- and the item edit view.

Right click on a tree item opens a menu. The menus differ in the tree items. They offer fast access to the instructions, provided for the appropriate node.

6.4.1.1 Server menu

The menu provides fast access to the server functions.

Connect	Current OPC-Server initializing and item indication.
Disconnect	OPC-Server disconnection and cycle stop.
Group Options ...	The dialog window for group options will be opened.
Save Items	The OPC-Server stores created items in the project.
Add Items	Items, selected in the OPC Edit View will be forwarded to the VWOPC-Server.
Configure	The OPC-Server configuration dialog will be started.

6.4.1.2 Node menu

The menu provides for collective access to all subordinated items. Items, located directly under this node are edited only.

Instruction	Description
View items	Items under this node are represented in the OPC item monitoring view.
Edit items	Items under this node are relocated to the OPC item edit view for editing.
Copy items	Items under this node are copied into the OPC item edit view.
Delete items	Items under this node are deleted from the VWOPC-Server.
Add items	Items, selected in the OPC edit view are forwarded to the VWOPC-Server.

6.4.1.3 Item menu

The menu provides for the appropriate item editing according to the selection.

Instruction	Description
View	Items under this node are represented in the OPC item monitoring view.
Edit	For editing, items under this node are relocated to the OPC item edit view.
Copy	Items under this node are copied into the OPC item edit view.
Delete	Items under this node are deleted from the VWOPC-Server.

Abbreviations

Ctrl + N	A new item with values of the previous one will be inserted. The last numerical ID value will be increased.
Del	Item deletion from the list.
Esc	The edit field will be abandoned without adopting the value.

6.4.2.1 Menu in the column ItemID

Instruction	Description
Insert item	The combo box will be opened
Insert next item	A new item including the value of the previous one will be inserted. The last numerical ID value will be increased.
Delete item	Item deletion from the list.
Relocate items to the Server	The items will be added to the VWOPC Server address range.

6.4.3 Item monitoring view

Server	Tag Name	Value	Type	Access	Quality
Demo.Port1	Simulation.Dummy.Random.A	9050	VT_I2	R/W	GOOD
Demo.Port1	Simulation.Dummy.Random.B	3792	VT_I2	R/W	GOOD
Demo.Port1	Simulation.Dummy.Random.C	8342	VT_I2	R/W	GOOD
Demo.Port1	Simulation.Dummy.Random.D	11617	VT_I2	R/W	GOOD
Demo.Port1	Simulation.Dummy.Rollight.Left	256	VT_UI4	R/W	GOOD
Demo.Port1	Simulation.Dummy.Rollight.Right	1073741824	VT_UI4	R/W	GOOD
Demo.Port1	Simulation.Tutorial.Power	21	VT_I2	R	GOOD
Demo.Port1	Simulation.Tutorial.Windspeed	30	VT_I2	R	GOOD

Variables including values, data type and state are represented in this view.

The state „Quality“ explains the variable quality. Three states are indicated in this column. More detailed state information is provided through the internal log.

GOOD	The state indicates a successful communication process with the PLC.
UNKNOWN	This state is set with variables, provided with writing access authority only or with variable limit exceed.
BAD	A failure occurred during the communication between OPC-Server and PLC.

Mouse functions

Double click on the column Value	If a variable is defined with writing access (R/W or W) under „Access“, with Boolean values a combo box for selection will be opened. Otherwise an edit field will be opened in which the writing values can be entered.
---	--

Abbreviations

Del	A failure occurred during the communication between OPC-Server and PLC.
------------	---

6.4.4 Trace Views

Trace views can be displayed both alternative and parallel to the item editor view.

6.4.4.1 VWOPC-Server Log

Trace data will be forwarded to the VWOPC Agent through SendMessage and will be displayed there. Through Trace items and over Device Trace items the functions for tracing can be switched on/off.

This window is recorded with data only with the local VWOPC-Server.

6.4.4.2 Internal Log

Here, OPC-Server connections will be recorded. The recordings protocol the OPC-Server interfaces, the communication state, occurrence of failure and the address range structure.

6.5 VWOPC Agent Menus

Menus described in the following are located in the main menu of the VWOPC Agent.

6.5.1 Menu ‚File‘

The menu file contains following instructions

Instruction	Description
New...	Creates a new document
Open...	Opens an existing document
Save	Stores an open document under the file name
Print...	Printout of active view content
Print preview	Represents the current document in the print preview
Print set up...	Selects a printer as well as a printer connection
Open project	Opens the dialog window „Project selection“
Close	Close of VWOPC Agent

6.5.1.1 Sub menu ‚Last projects‘

The menu ‚Last projects‘ contains the last five processed VWOPC-Servers together with the respective projects.

6.5.2 Menu ,Edit'

The menu ,Edit' contains following instructions

Instruction	Description
Undo	Backing out of the last processing operation
Cut	Cuts data from the document and forwards them into the clipboard
Copy	Copies document data into the clipboard
Insert	Inserts data from the clipboard into the document
Save OPC-Server Items	Created items are stored in the OPC-Server project.
Add all Items	All items are written into the Server and stored there.
Add selected Items	Items, selected in the OPC edit view are forwarded to the VWOPC-Server.
Delete Trace	The active log view content will be deleted.

6.5.3 Menu ,OPC Server'

The menu ,OPC Server' contains following instructions

Instruction	Description
Load new Server...	A new OPC-Server will be initialized.
Select running Server...	An already running Server will be contacted.
Close Server	The OPC-Server will be closed.
Load configuration...	Project configuration load with the VWOPC-Server.
Configure...	The OPC-Server configuration-dialog will be started.
Connect	Initializes the current OPC-Server and displays the items.
Disconnect	Disconnects the OPC-Server and stops the cycle.
Initialize Server	The Server will be initialized and all edited items will be written into the Server.

6.5.4 Menu ,Options'

The menu ,Options' contains following instructions

Instruction	Description
Send report...	Information collected through the current OPC-Server will be sent.
Group Options...	Current group options will be inquired and set.
Update values	Values in the item monitoring view will be updated.
Initial image	The initial image will be switched on/off.
Last project load with start	With activation the last processed project will be initialized automatically.
Flat address space	The OPC-Server address space is represented flat.

6.5.5 Menu ,View'

The menu ,View' contains following instructions

Instruction	Description
Icon bar	Hides/ shows the icon bar.
State bar	Hides/ shows the state bar.
Window split	The current window in the OPC item edit view or log view will be subdivided.
OPC Variables	The OPC item monitoring view will be enlarged or reduced.
OPC Item Editor	The OPC item edit view will be represented.
Internal Log	The internal log view will be represented
VWOPC-Server Log	The VWOPCServer-Log view will be represented

6.5.6 Menu ,?'

The menu ,?' contains following instructions














Instruction	Description
Help topics	Displays the topic directory to which help is provided
Info	Displays the Release number of this application

6.6 Icon bars

Horizontal icon bar below the menu bar. Fast access to VWOPC Agent tools is provided through mouse operation.

6.6.1 VWOPC Agent



Icon	Instruction	Description
	Connect	OPC-Server start and display of items.
	Disconnect	Disconnection of OPC-Server and cycle stop.
	Initialize Server	The server will be initialized and all items edited, will be written into the Server.
	Save OPC-Server Items	Created items are stored in the OPC-Server project.
	Add all items	All items are written into the Server and stored there
	Configure...	The OPC-Server configuration-dialog will be started.
	OPC Variables	Displays the OPC-Item window.
	Window Split	The window is subdivided either in a table or else the logbook
	OPC Item Editor	Displays the OPC-Item editor.
	Internal Log	Internal OPC Agent log data view.
	VWOPC-Server Log	OPC Server log data view.
	Delete Trace	The active log view content will be deleted.
	Flat address space	The OPC-Server address space is represented flat.

6.6.2 System

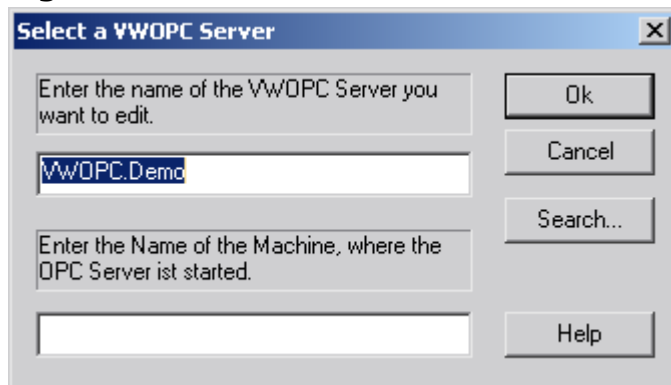


Icon	Instruction	Description
	Open	Opens a new document
	Save	Saves the active document.
	Info	Displays program information, Release number and copyright.
	Help	Indicates help to selected buttons, menus and windows.

To hide or show the icon bar ,System`, the instruction select icon bar can be chosen in the menu view. (ALT, A, S).

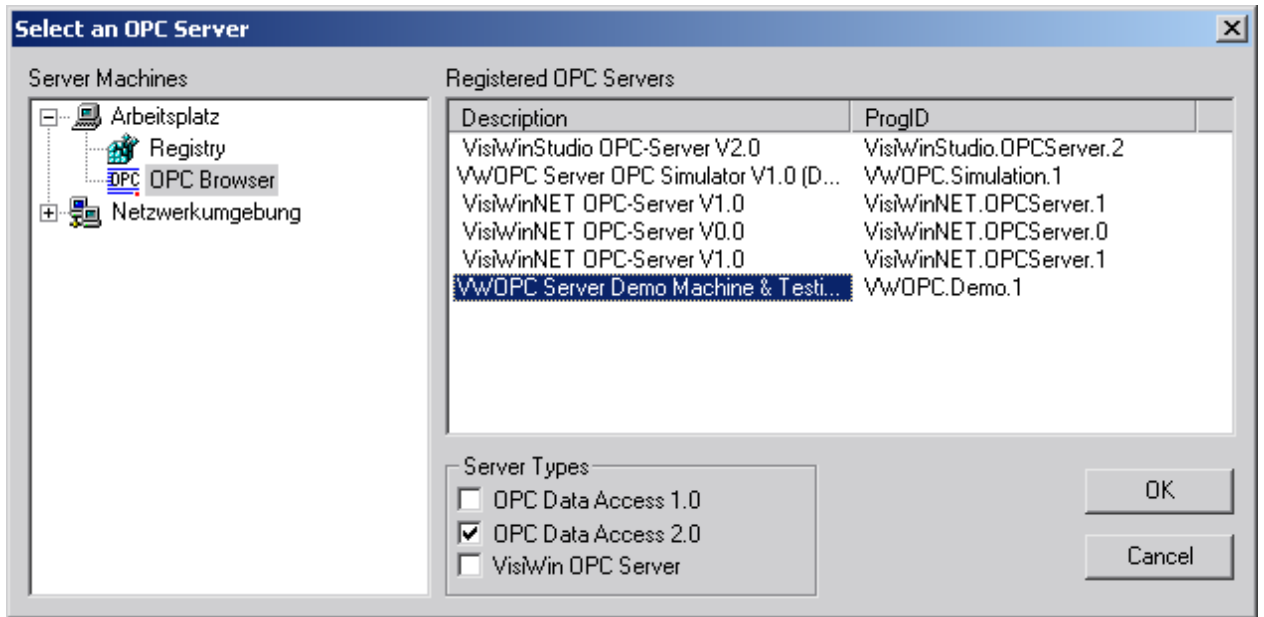
6.7 VWOPC Agent dialogs

6.7.1 Dialog ,Connect`



Control item	Description
Ok	The dialog will be closed. A connection to the selected OPC-Server will be established.
Cancel	The dialog will be closed.
Find...	The dialog „Select OPC-Server“ will be opened.
Help	The document will be indicated.

6.7.1.1 Dialog ‚Select an OPC-Server‘



Control item

Description

Server Systems

The network environment is represented in the tree view.

Registered Servers

Here, OPC-Servers, set up and registered will be displayed.

If the item Registry is selected, OPC-Servers will be searched directly in the Registry.
 With OPC Browser selection an OPC-Foundation object will be utilized to find the OPC-Servers.

Server Types

OPC-Servers of the OPC Data Access 1.0 specification will be displayed.

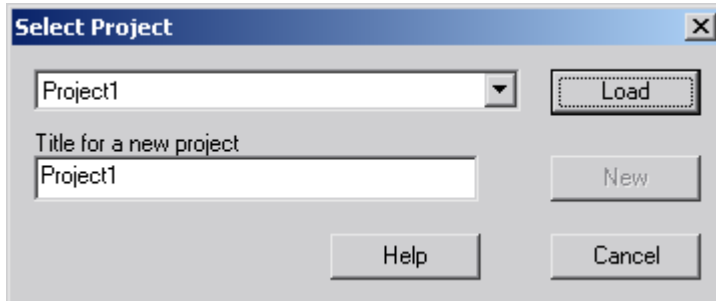
OPC Data

OPC-Servers of the OPC Data Access 2.0 specification will be displayed.

VWOPC Server

OPC-Servers including VisiWin specific enhancements will be displayed.

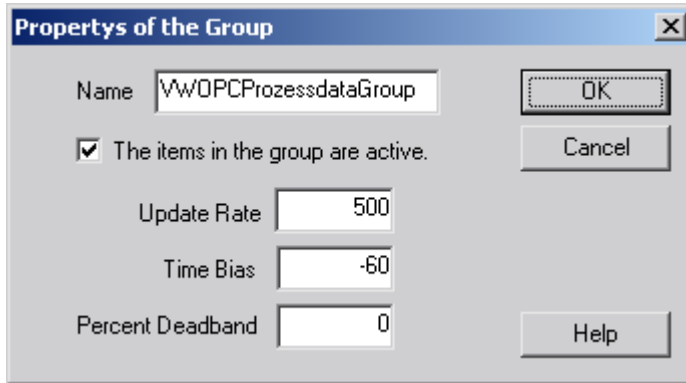
6.7.2 Dialog ‚Project selection‘



Existing projects on the VWOPC Server are listed in the combo box.

Control item	Description
Load	The selected project will be loaded into the VWOPC-Server.
New	New project creation on the OPC-Server.
Cancel	The dialog will be closed without closing the designing.
New project title	Here, either the selected project title or a new project name is displayed.

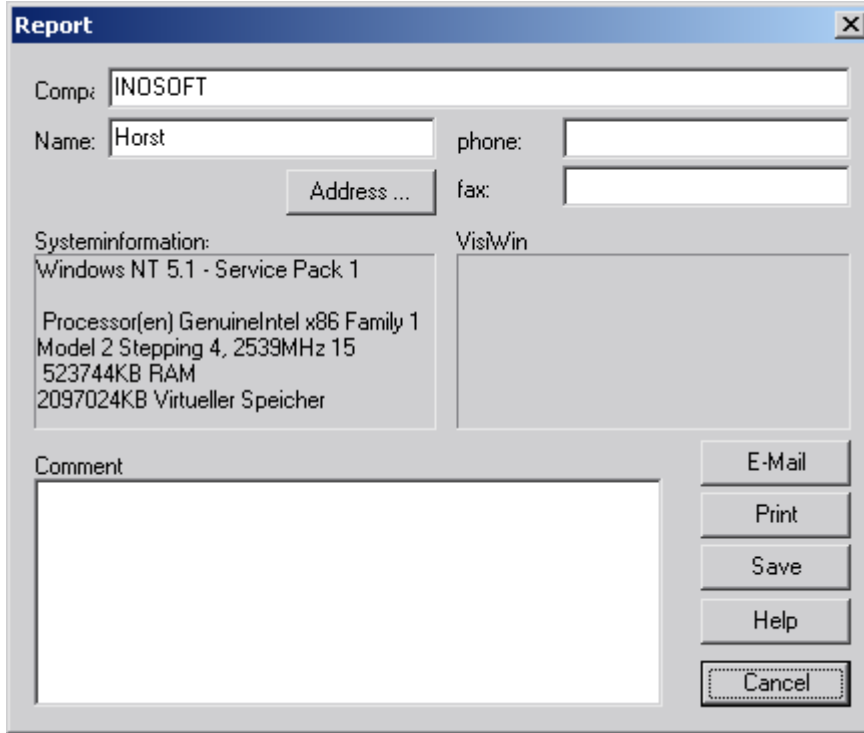
6.7.3 Dialog ‚Group properties‘



In this dialog the communication group parameterization of the VWOPC Agent can be inquired and altered. The communication group is responsible for item representation in the OPC item monitoring view.

Control item	Description
Name	Group name for OPC-Server log on.
Group items are activated	The items will be updated automatically.
Updating rate	The time in which, in the OPC Server, an item value is checked for change. With value change only, the data is forwarded to the VWOPC Agent.
TimeBias	Time delay between Client and OPC Server.
PercentDeadband	Value change in percent of the last forwarded value. Value change below will be ignored.

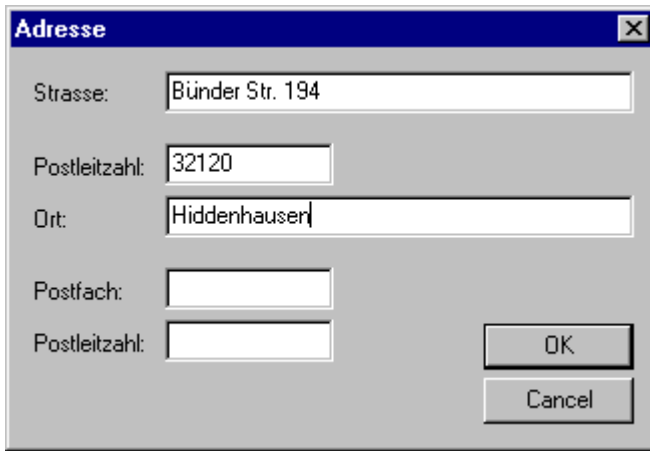
6.7.4 Dialog „Report“



This dialog is utilized for system fault diagnosis. Here, the system settings necessary for fault diagnosis are inquired and displayed. If an email is sent, both log files will be sent as well.

Control item	Description
Company, Name, Phone, FAX	Address information for support inquiry processing.
Address	Opens the dialog „Address“ for extended address information.
System information	Current system information.
VisiWin	Registry information about VisiWin setups.
Comment	Space for further comments.
Email	An email including above mentioned information is sent automatically toSupport@INOSOFT.com.
Print	Current gathered information will be printed on the standard printer device
Save	Information will be stored to a file.
Cancel	The dialog will be closed.

6.7.4.1 Dialog ,Address'



Here, the address PO box with zip code can be registered on our customer databank. This information will not be passed to a third party.

6.7.5 Dialog ,OPC – Server state'



In this dialog the OPC-Server state during connection is displayed. The dialog will be closed with both, the state RUNNING and TEST. If the dialog is being closed through Cancel or the latency time runs out no connection to the OPC-Server will be established.

Operating item	Description
RUNNING	The OPC-Server is running.
TEST	The OPC-Server runs in test mode, therefore is not connected to the hardware.
SUSPENDED	The OPC-Server is hanging.
NO CONFIG	No configuration data provided for the OPC-Server.
FAIL	A failure occurred with OPC-Server start.

6.8 Instruction explanations

6.8.1 New... (Menu File)

Use the instruction to create a new VWOPC-Server project. If the OPC-Server is not yet selected, the dialog „Connect“ will appear first, in which you will be asked to start a VWOPC-Server.

Abbreviations


Keyboard: CTRL+

6.8.2 Open... (Menu File)

Use the instruction to load an existing document into the item edit view.

The instruction sleeps if no VWOPC-Server was loaded.

Abbreviations

Icon bar: 


Keyboard: CTRL+O

6.8.3 Save (Menu File)

Use the instruction to save the current document under the current name and directory.

With first document storage the VWOPC Agent indicates the dialog box Save as, so that you can name the document. If you intend to change the name and directory of an existing document you can also select the instruction Save as.

Abbreviations

Icon bar: 

Keyboard: CTRL+S

6.8.4 Print... (Menu -File)

Use the instruction for document printout. With selection of this instruction the dialog box PrintAFX_HIDD_PRINT appears, in which you can specify the page, being printed, the number of copies, the objective printer as well as further options for printer settings.

Abbreviations

Keyboard: CTRL+P

6.8.5 Print preview (Menu File)

Use the instruction to display the preview of the current document to be printed. With selection of this instruction the main window is replaced by the preview through display of one or two pages in print format. Through the icon bar of the preview there is the possibility to define if one or two pages are to be viewed at the same time. Furthermore there is the possibility to move forward and backwards within the document, to represent pages maximized or minimized or to start a print job.

6.8.5.1 Icon bar of the preview

The icon bar of the preview provides following options:

Control element	Description
Print	This will lead you to the dialog box Print, where you can start a print job.
Next page	Displays print preview of the next page.
Previous page	Displays print preview of the previous page.
Pages: 1 or 2	Determines if one or two pages are previewed at the same time.
Enlarge	With this option you have a closer look at the page.
Reduce	Print preview of the whole page.
Close	Returns from print preview to the edit window.

6.8.6 Print set up... (Menu File)

Use the instruction to define a printer and printer port. After selection of this instruction the dialog box Printer appears in which you can define a printer and printer port.

6.8.7 Open project (Menu File)

Use the instruction to open a VWOPC-Server project. After selection of the instruction a dialog box „Project selection“ appears in which a project can be selected.

6.8.8 Close (Menu File)

Use the instruction to close the session with the VWOPC Agent. Alternative you can select the instruction Close from the application system menu. The VWOPC Agent will ask if documents with unsaved data shall be stored.

Abbreviations

Mouse: Double click on the application system menu.

{bmc appexit.bmp}

Keyboard: ALT+F4

6.8.9 Undo (Menu Edit)

Use the option to undo the last processing action if this is possible. Dependent on the last processed action the instruction name will change. If the last action cannot be cancelled the menu instruction Undo will change to Undo not possible.

Abbreviations

Keyboard: CTRL+Z or
 ALT- +Backspace key

6.8.10 Cut (Menu Edit)

Use the instruction to cut and transfer current selected data from the document into the clipboard. The instruction cannot be chosen if no data was selected before.

Data cut and transfer into the clipboard will replace the data located in the clipboard before.

Abbreviations

Keyboard: CTRL+X

6.8.11 Copy (Menu Edit)

Use the instruction to copy selected data into the clipboard. The instruction cannot be chosen if no data was selected before.

The data copying into the clipboard will replace the data located in the clipboard before.

Abbreviations

Keyboard: CTRL+C

6.8.12 Insert (Menu Edit)

Use the instruction to insert a copy of the clipboard content at the insertion point. The instruction cannot be selected if there is no data in the clipboard.

Abbreviations

Keyboard: CTRL+V

6.8.13 Delete (Menu Edit)

Use the instruction to delete the selected data. In edit mode the character right of the cursor will be deleted

Abbreviations

Keyboard: DEL

6.8.14 Save OPC-Server Items (Menu Edit)

Use the instruction to store created items in the VWOPC-Server.

The items will not be stored by the VWOPC Agent but by the VWOPC Server together with the current project name and the file suffix „vox“. There is no possibility of path alteration for this file as the operations work with the network as well.

Abbreviations

Icon bar:



6.8.15 Add all items (Menu Edit)

Use the instruction to write the total content of the Item edit view into the VWOPC-Server.

The items are written into the VWOPC-Server over the Callr-Interface. Only through the instruction „Save OPC-Server Items“ the project items will be persistent.

The instruction is inactive as long as no items were edited.

Abbreviations

Icon bar:



6.8.16 Add selected items (Menu Edit)

Use the instruction to write selected items from the Item edit view into the VWOPC-Server.

The items are written into the VWOPC-Server over the Callr-Interface. Only through the instruction „Save OPC-Server Items“ the project items will be persistent.

The instruction is inactive as long as no items were edited.

Abbreviations

Drag and Drop

6.8.17 Delete Trace (Menu Edit)

Use the instruction to delete the content of the current view. The window content together with the internal data memory content will be deleted.

The instruction is inactive if no log view is activated.

Abbreviations

Icon bar:



6.8.18 Load new Server... (Menu OPC Server)

Use the instruction to initialize a new OPC-Server. After selection of the instruction the dialog box „Connect“ appears. In this dialog you can register the OPC-Server as well as the data processor on which the OPC-Server is to be run.

The instruction is inactive, if the VWOPC-Server is linked with the instruction „Connect“. To load a new OPC-Server call the instruction Disconnect first.

In connection with VisiWinX the instruction is automated.

6.8.19 Close Server (Menu OPC Server)

Use the instruction to close an OPC-Server. The instruction will release all client references on the OPC-Server and thus enables to close the OPC-Server. As soon as a further Client apart from the VWOPC Agent was connected with the OPC-Server, the OPC-Server will close only when the further Client also closed its connection to the OPC-Server.

The instruction is inactive if a VWOPC-Server is linked with the instruction „Connect“. To close the VWOPC-Server call the instruction „Disconnect“ first.

In connection with VisiWinX the instruction is automated.

6.8.20 Load Configuration... (Menu OPC Server)

Use the instruction to load a configuration in the in the OPC-Server. After selection of the instruction a dialog box „Project selection“ appears, in which a project can be selected. The VWOPC Server configuration is determined by the project name.

The instruction is inactive if no VWOPC-Server was selected.

6.8.21 Configure... (Menu OPC Server)

Use the instruction to process the current OPC Server configuration. After selection of the instruction the VWOPC Server configuration dialog appears.

The instruction is inactive if no VWOPC-Server was selected, if there is no configuration interface available.

Abbreviations

Icon bar:



6.8.22 Connect (Menu OPC Server)

Use the instruction to initialize the VWOPC Server Object.

The instruction is inactive if no OPC-Server was selected or else if the Server is connected already.

Abbreviations

Icon bar:



6.8.23 Disconnect (Menu OPC Server)

Use the instruction to close the VWOPC Server Object.

The instruction is inactive if no OPC-Server is connected.

Abbreviations

Icon bar:



6.8.24 run OPC Server (Menu OPC Server)

This command starts the OPC-Server and loads all Items from Item editor view.

The instruction is inactive if no VWOPC-Server was selected.

Abbreviations

Icon bar:



6.8.25 No Configuration

This command switches the configuration function of the OPC Agent off. Within this mode the OPC Server works like a pure OPC-Client.

The instruction is inactive if no VWOPC-Server was started.

6.8.26 Group Options... (Menu Options)

Use the instruction to alter standard group settings of the VWOPC Agent. After selection of the instruction the dialog box „Group properties“ appears.

The instruction is inactive if no OPC-Server is connected.

6.8.27 Automatic update (Menu Options)

With this option the automatic item update with changes is switched on and off. The OPC server does no longer have to collect data for the agent.

The command is inactive if no OPC server is connected, or the OPC server is of the DA1.0 specification.

6.8.28 Value update (Menu Options)

Use the instruction to update values in the item monitoring view. Using this instruction all active OPC-Server items are updated, irrespective of value change and group updating cycle.

The instruction is inactive if no OPC-Server is connected and no items are displayed in the item monitoring view.

6.8.29 Start image (Menu Options)

Use the instruction to switch off the start image with VWOPC Agent boot up.

If the instruction is checked then the start image will be displayed with the VWOPC Agent boot up.

The instruction is inactive, working with VisiWinX.

6.8.30 Load last project at startup (Menu Options)

Use the instruction with VWOPC Agent start to load the last processed VWOPC Server together with the respective project.

The instruction is inactive, working with VisiWinX.

6.8.31 Flat address space (Menu Options)

Use the instruction to switch between flat and hierarchic view.

If the instruction is checked, respectively the symbol is displayed pressed then the address space is represented in flat view.

The instruction is inactive if the flat address space is provided only.

Abbreviations

Icon bar: 

6.8.32 Icon bar (View menu)

Use the instruction to hide or show the icon bar. The icon bar includes several buttons of VWOPC Agent common instructions, i.e. Open file. If the icon bar is displayed, the menu entry is checked.

Help for Icon bar use you will find under the menu Icon bars.

6.8.33 Language (Options menu)

In this submenu the language can be alternated between English and German.

With the next start of the VWOPC agent this will assume the appropriate language.

6.8.34 Performance check (Options menu)

With the performance check option a protocol of all incoming data is created. If this function is activated only the first item of the list is updated in order to avoid time corruption by the display with greater amounts of data.

Every value change is then recorded in the internal output display..

6.8.35 Log active (Options menu)

With this option the internal recording is switched on and off. All important information about the connection with the OPC server is displayed in the internal output display.

6.8.36 Check registration (Options menu)

With this command the registration of the OPC server is checked. The command can only be used for a local OPC server as the check is for the existence of files and –mainly- registration entries.

The command is inactive if no OPC server was selected.

6.8.37 Send report... (Options menu)

With this command a report can be printed out, saved or emailed to the INOSOFT Support address. After selection of the command the "Report" dialog field appears.

The command is inactive if no data have been established so far.

The data for the report are assembled from an internal or external connection protocol.

6.8.38 Enhanced SyncIO... (Options menu)

This command allows to conduct automatic synchronized writing. After selection of the command the "Signal" dialog field appears.

The command is inactive if no OPC server is connected, and there are no items in the item checking display.

6.8.39 Path settings... (Options menu/Windows CE)

With this command the paths for the Windows CE appliance can be configured.

The command is inactive if the Windows CE platform manager is not available.

6.8.40 Configure platform... (Options menu/Windows CE)

With this command the Windows CE platform manager is configured so that file downloads and uploads are possible.

The command is inactive if the Windows CE platform manager is not available.

6.8.41 Symbol bar (View menu)

With this command the symbol bar is shown/hidden. The symbol bar contains several control buttons for the most used VWOPC agent commands such as "Open file". A checkmark appears next to this menu item when the symbol bar is displayed.

Help as to using the symbol bar can be found under "Symbol bars".

6.8.42 State bar

Use the instruction to hide or show the state bar. The state bar describes the action executed by the selected menu entry or a pressed button of the icon bar and indicates the state of the stay-down keys. If the state bar is displayed the menu entry of this instruction is checked.

6.8.42.1 State bar



The state bar is displayed in the lower window margin of the VWOPC Agent. Hide or show the state bar in the menu view with the instruction State bar hide/show.

While moving through the menus with the direction key the left area of the state bar describes the function of the menu entries. Respective to it in this area also descriptions to the button operation of the icon bar are displayed with press and hold of the button. If you do not intend to run the instruction belonging to the button of the icon bar, after having read the description, let go of the mouse key while the cursor is no longer over the button.

The right area of the state bar displays, which of the following keys are stay-down keys:

UF	The stay-down key is activated
NUM	The key NUM is activated as stay-down key
RF	The SCROLL key is activated as stay-down key

6.8.43 Update items tree (View menu)

With this command the items tree display is updated. With changes of the addresses area in the OPC server this command updates the display. The function is automatically carried out when the VWOPC agent conducts changes of the address area.

6.8.44 Split Window (Menu View)

Use the instruction to subdivide the item edit view or the log view or to display both views at the same time.

Abbreviations


Icon bar: 

6.8.45 OPC Variables (Menu View)

Use the instruction to enlarge or reduce the OPC Item monitoring view.

If the instruction is checked, respectively the symbol is displayed pressed then the view is displayed in the full size.

Abbreviations


Icon bar: 

6.8.46 OPC Item Editor (Menu View)

Use the instruction to enlarge or reduce the Item edit view.

If the instruction is checked, respectively the symbol is displayed pressed; the item edit view is activated.

Abbreviations


Icon bar: 

6.8.47 Internal Log (Menu View)

Use the instruction to display the internal log view.

If the instruction is checked, respectively the symbol is displayed pressed; the internal log view is activated.

Abbreviations

Icon bar: 

6.8.48 VWOPC-Server Log (Menu View)

Use the instruction to display the VWOPC Server Log view.

If the instruction is checked, respectively the symbol is displayed pressed; the VWOPC-Server Log view is activated.

Abbreviations

Icon bar: 

6.8.49 Help Topics (Menu ?)

Use the instruction to display the document.

Abbreviations

Keyboard: F1

6.8.50 Information about the VWOPC Agent... (Menu ?)

Use the instruction to call the dialog box through the VWOPC Agent.

Abbreviations

Icon bar: 

6.8.51 **Send Report... (Menu Options)**

Use the instruction to print, store or to send a report per email to the support address of INOSOFT GmbH. After selection of the instruction a dialog box „Report“ appears.

The instruction is inactive if no data was located yet.

The report data are combined from an internal or external connection protocol.