



OPC Wrapper Settings Guide

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List of terms used in OPC Wrapper Settings Guide

OPC-server – server of OPC standard.

DataAccessServer – server (is one of OPC-server standards) for data exchange with controllers, control systems and other devices in a real time.

Alarms & Events Server –server (is one of OPC-server standards) of notification about events: alarm situations, operator actions, informational messages and other.

Introduction into OPC Wrapper Settings Guide

On the page:

- Purpose of the document
- General information about the OPC Wrapper integration module

Purpose of the document

The *OPC Wrapper integration module settings guide* provides comprehensive setup and operational guidance for *OPC Wrapper* module operators.

This Guide presents the following materials:

1. general information about the *OPC Wrapper* module;
2. *OPC Wrapper* module settings;
3. working with the *OPC Wrapper* module.

General information about the OPC Wrapper integration module

OPC Wrapper integration module is designed for connection to some OPC-server which is located on the local computer.

OPC Wrapper integration can perform the data exchange and receive events by Data Access and Alarms & Events standards. Also it can perform rules for elements of the OPC-server of Data Access standard. The following versions of the standards are supported:

1. DA 2.0
2. AE 1.0

Licensing and systems supported by OPC Wrapper

OPC Wrapper is licensed for 1 IP-address. Several OPC servers can be in one IP-address.

Systems which operation is guaranteed by OPC Wrapper universal integration are as follows:

Name	Functionality in the Intellect software package
Bosch (all devices works by the same OPC-server)	Monitoring, control (full list of supported states you can find here)
FSA SIEMENS Cerberus-PRO	<ul style="list-style-type: none">• receive the current state of object;• reset the object in its default state;• arm/include the object in the controlled area;• disarm/exclude the object from the controlled area;• set the object in Test mode;• set the object in active state from quiet;• set the object in quiet state from active.
ACS Gallagher 6000	<ul style="list-style-type: none">• receive events about passes;• door tampering;• exit by button.

MOXA cards (list of all cards which can be connected by the OPC-server is presented [here](#))

- control relay depending on type of card;
- receive the current state of connected sensors.

Configuration of the OPC Wrapper integration module

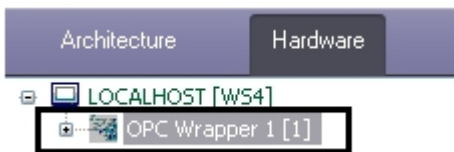
Configuration procedure for the OPC Wrapper integration module

The OPC Wrapper integration module is configured as follows:

1. Activate the *OPC Wrapper* integration module.
2. Connect to OPC-servers.
3. Receive elements of OPC-server.
4. Configure the monitoring of OPC-server elements.
5. Configure rules for OPC-server elements of Data Access standard.
6. Configure the displaying of the OPC-server elements of the Data Access standard on the map

Activate the OPC Wrapper integration

To activate the *OPC Wrapper* integration module create the **OPC Wrapper** object on the basis of **Computer** object on the **Hardware** tab of the **System settings** dialog box.



Connection to the OPC server

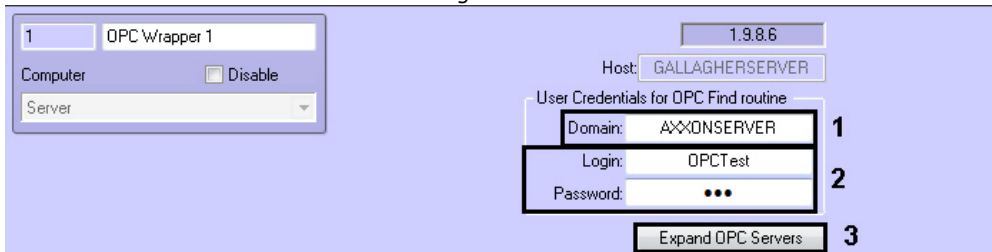
To connect to the OPC server, do the following:

1. In the **Host** field on the settings panel of the **OPC Wrapper** object enter the IP-address or name of computer on which OPC servers are located.



Note. Correct DCOM configuration is required to connect to and search for remote OPC servers.

2. Click the **Apply** button.
3. Go to another object and then come back to the settings panel of the **OPC Wrapper** object. Server address is saved and can't be changed.



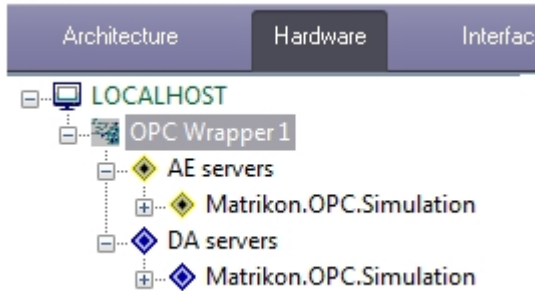
4. Set the authentication parameters to search for Servers:
 - a. Specify the name of domain the user, who has rights to search for Servers, belongs to (1).

Note If there is no domain in the system or the user who does not belong to any domain is to be selected, then the **Domain** field is to be left blank.

b. Specify the login and password of the user who has rights to search for Server (2).

Important!
If the authentication parameters are not set, then the current user performs search for Servers.

5. Click the **Expand OPC Server (3)** button.
Objects corresponding to found Servers will be created after the search completion.



AE servers objects group is OPC servers of Alarms & Events standard, **DA servers** is OPC servers of Data Access standard.

6. Go to the OPC server to which connection is required.
7. Set the authentication parameters to connect to the Server:
a. Specify the name of domain the user, who has rights to connect to the Server, belongs to (1).

The screenshot shows a dialog box titled 'Server parameters'. It has two input fields: 'Name' with the value 'gallagherserver.Matrikon.OPC.Simulation' and 'Uri' with the value 'ERVER/Matrikon.OPC.Simulation/{f8582cf2-88fb-11'. Below this is a section titled 'User Credentials for server connection' with three input fields: 'Domain' (empty), 'Login' with the value 'OPCTest', and 'Password' with three dots. To the right of these fields are numbers 1, 2, and 3. Below the 'User Credentials' section are two buttons: 'Expand child items' and 'Connect' with a checked checkbox. The 'Connect' checkbox is labeled with the number 3.

Note.
If there is no domain in the system or the user who does not belong to any domain is to be selected, then the **Domain** field is to be left blank.

b. Specify the login and password of the user who has rights to connect to the Server (2).

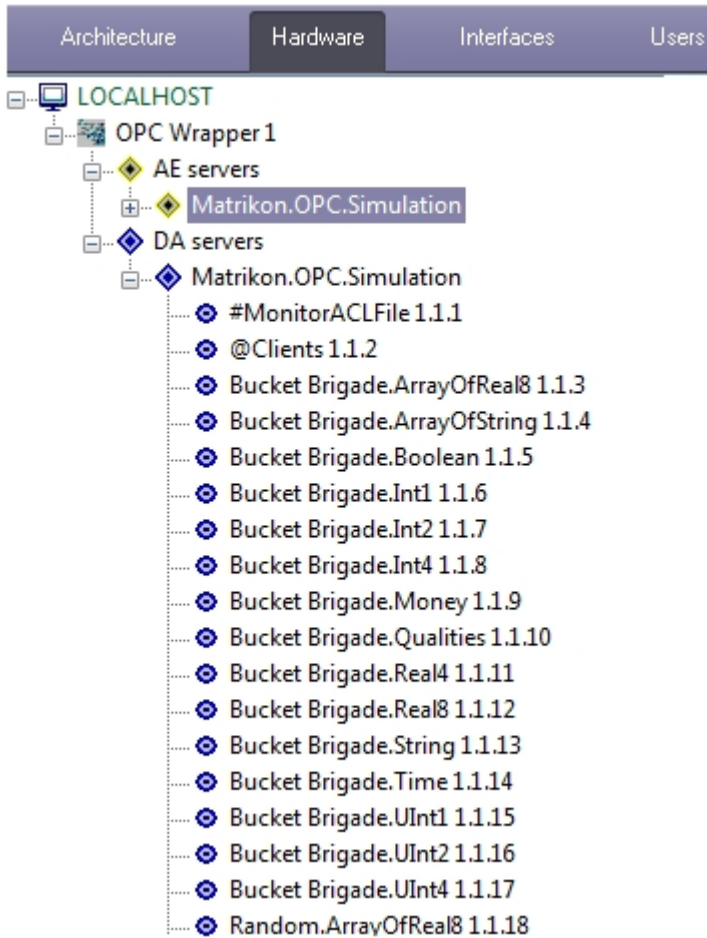
Important!
If the authentication parameters are not set, then the current user connects to the Server.

8. Set the **Connect (3)** checkbox.
9. Click the **Apply** button.

Connection to the OPC server is completed. Message about successful connection will be displayed in the *Events protocol*.

Receiving the elements of OPC-server

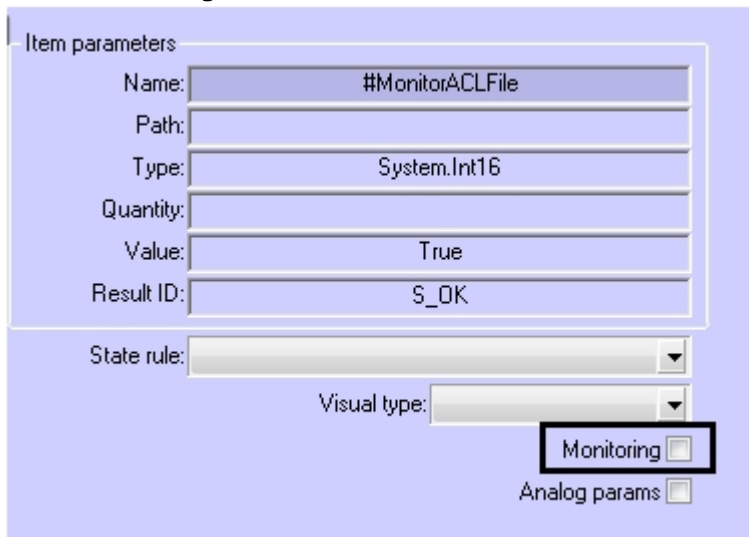
To receive elements of the OPC-server click the **Expand child items** button on the settings panel of corresponding object. Elements will be available as parent objects of the OPC-server.



Configure the monitoring of OPC-server elements

State of OPC-server element is not monitored on default. To monitor event states in the *Events protocol*, do the following:

1. Go to the settings panel of corresponding object.
2. Set the **Monitoring** checkbox.



3. Click the **Apply** button.
4. Restart the *ACFA Intellect* software package.

Monitoring of the element will be activated after the *ACFA Intellect* restart.

Configure rules for OPC-server elements of Data Access standard

There are 3 types of rules for OPC-server elements of Data Access standard:

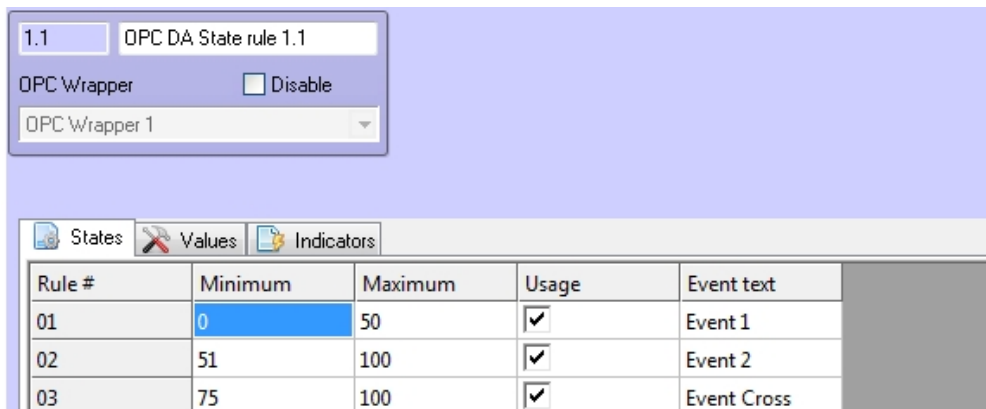
1. Change of element state while taking the element a value from the specified range.

2. Set the specified card value to the element (see the [Working with OPC-server elements of Data Access standard on the map section](#)).
3. Change of indicator state while taking the element a value from the specified range (see the [Working with OPC-server elements of Data Access standard on the map section](#)).

Configuring of rules is performed on the basis of the **OPC DA State rule** object which is created on the basis of the **OPC Wrapper** object. This object is a group of rules in which rules of all types can enter. Only one group of rules can be specified to each OPC-server element of Data Access standard.

Configure the rule of changing the element state

To configure this rule specify the following parameters on the **States** tab of the **OPC DA State rule** object's settings panel: in the **Minimum** column specify the start of interval, in the **Maximum** column – the end of interval, set the **Usage** checkbox to activate the interval, in the **Event text** column enter the message which will be displayed while taking the element a value from the specified range. It is possible to specify at most 10 intervals.



Rule #	Minimum	Maximum	Usage	Event text
01	0	50	<input checked="" type="checkbox"/>	Event 1
02	51	100	<input checked="" type="checkbox"/>	Event 2
03	75	100	<input checked="" type="checkbox"/>	Event Cross



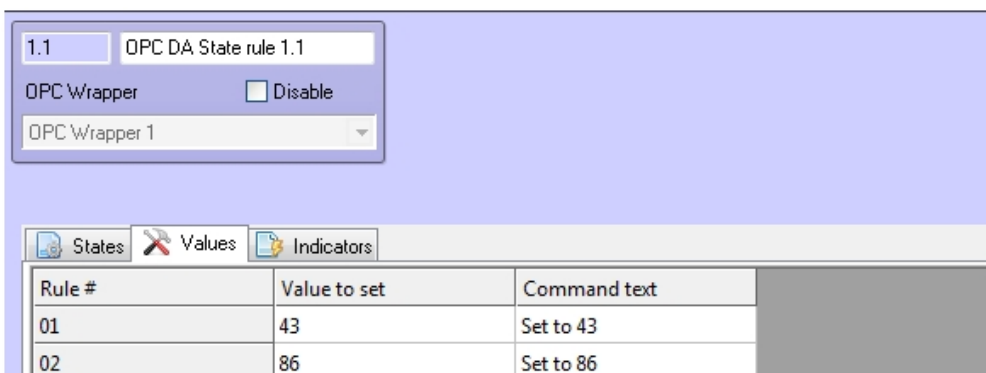
Attention!

If the value of element is involved into several intervals then it will have several states (multistate).

To save changes click the **Apply** button.

Configure the command to set value to the element

To configure this rule specify the following parameters on the **Values** tab of the **OPC DA State rule** object's settings panel: in the **Value to set** column enter the value which is to be set by command, in the Command text enter the name of command. It is possible to specify at most 10 intervals.



Rule #	Value to set	Command text
01	43	Set to 43
02	86	Set to 86

To save changes click the **Apply** button.

Commands are applied from the map (see the [Working with OPC-server elements of Data Access standard on the map section](#)).

Configure the rule of changing the indicator state

To configure this rule go to the **Indicators** tab of the **OPC DA State rule** object's settings panel. Description of parameters is given in the table. It is possible to specify at most 10 indicator states.

Parameter	Description
Rule #	Number of rule
V. min , V. max	Range of element values for the rule
S. min, S. max	Range of values which indicator will take according to the rule

Usage	Activate the interval
Red, Green, Blue	Specify the color of indicator by the RGB model



Attention!

If the value of element is included in several intervals at once the indicator takes a value corresponding to the rule with the smallest number.

To save changes click the **Apply** button.

Indicator and its value are displayed in the map (see the [Working with OPC-server elements of Data Access standard on the map section](#)).

Consider the working of this rule through the example.

Rule #	V. min	V. max	S. min	S. max	Usage	Red	Green	Blue
01	1000	1500	0	25	<input checked="" type="checkbox"/>	255	0	0
02	1500	1800	25	60	<input checked="" type="checkbox"/>	0	255	0
03	1800	3000	60	100	<input checked="" type="checkbox"/>	0	0	255

There are three rules of element values depending on which the indicator takes the defined proportional value and color. To

$$S = \frac{(V - V.min)(S.max - S.min)}{V.max - V.min} + S.min$$

count the correct value of the indicator use the following formula:

where V – exact value of the element.

$$S = \frac{(1300 - 1000)(25 - 0)}{1500 - 1000} + 0 = 15$$

For example, if V=1300 then the indicator value , the color will be red.

$$S = \frac{(2200 - 1800)(100 - 60)}{3000 - 1800} + 60 = 73$$

If V=2200 then the indicator value (approximated), the color will be blue.

Set the rule to the element

To set the rule to the element, select the defined group of rules in the **State rule** list on the settings panel of the corresponding object (the **OPC DA state rule** object).

Configure the displaying of the OPC-server elements of the Data Access standard on the map

To configure the elements displaying on the map, do the following:

1. Go to the settings panel of the object corresponding to the required element.

Item parameters

Name: Bucket Brigade.Int2

Path:

Type: System.Int16

Quantity:

Value: 0

Result ID: S_OK

State rule: OPC DA State rule 1.1

1 Visual type: Common icons

Monitoring

2 Analog params

2. From the **Visual type** list select the set of element state icons (1). Icons of the *ACFA Intellect* software package are corresponding to the **Common icons** value.

Note.
It is possible to create and apply own icons. To get the corresponding instructions refer to the support team of the AxxonSoft company.

3. Set the **Analog params** checkbox if it is required to allow displaying of element value on the map (2).
4. Click the **Apply** button.

Configuring of elements displaying on the map is completed.

Working with OPC Wrapper integration module

General information on Working with OPC Wrapper integration module

Events of elements of OPC-servers are sent to the *Events protocol*.

Information about configuring the **Events protocol** and **Map** interface objects is given in details in *Intellect software package. Administrator's Guide* document.

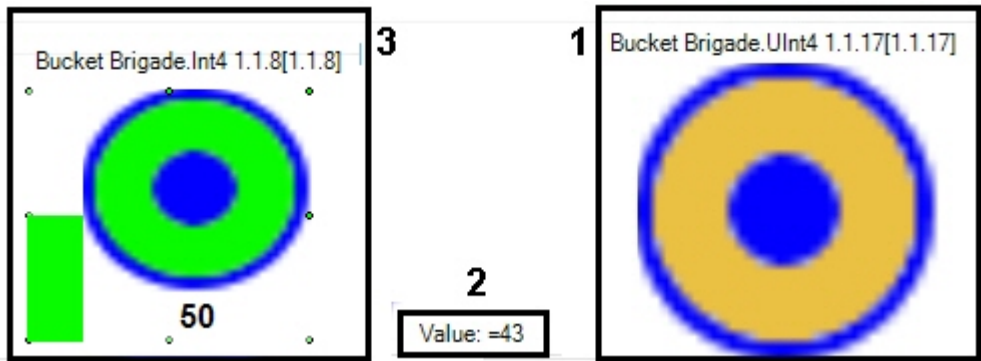
Working with **Events protocol** and **Map** interface objects is given in details in *Intellect software package. Operator's Guide* document.

It is possible to configure reactions on some values of elements with the help of scripts and macros. Working with scripts and macros is given in details in *Intellect software package. Programming Guide* and *Intellect software package. Programming Guide (Jscript)* documents.

Working with OPC-server elements of Data Access standard on the map

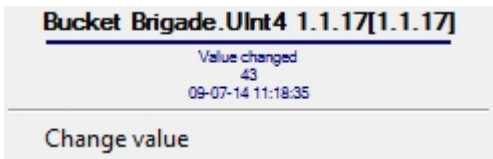
It is possible to add OPC-server elements of Data Access standard to the map in three views (perhaps simultaneously):

- As sign of state (1).
- As sign of state and indicator (3).
- In the text view (value of element, 2).

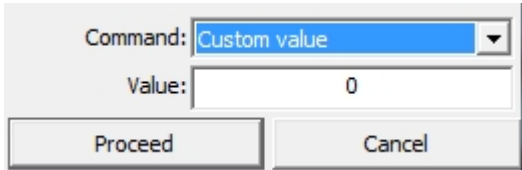


Note. View of object displaying on the map is selected while the object adding (see [Intellect software package Administrator's Guide](#)).

It is possible to change the value of corresponding element by means of any object on the map. For this purpose open the context menu by double clicking the right mouse button and select the **Change value** item.



Select one of created commands from the **Command** list (see the [Configure the command to set value to the element section](#)) or the **Custom Value** item which allows specifying of any element value in the corresponding **Value** field.



To accept command of changing the element value click the **Proceed** button.

The element indicator takes a value and color in accordance with the rule (see the [Configure the rule of changing the element state section](#)). If the new value doesn't get into some rule, it will disappear.

If the element value gets into several states (see the [Configure the rule of changing the element state section](#)) then its state sign will change running all states and while clicking it smaller signs of all element states are displayed.

