

Integration Objects' Solution for OPC/OPC UA tunneling

OPC UA Wrapper Version 3.2 Rev.0

QUICK USER GUIDE

OPC UA Wrapper Quick User Guide Version 3.2 Rev 0 Published September 2019 Copyright © 2016-2019 Integration Objects. All rights reserved.



ABOUT THIS USER GUIDE

This guide is a step by step guide that lists the main steps on how to install, configure and run OPC UA Wrapper.

INSTALLATION PRE-REQUISITES

In order to properly run the OPC UA Wrapper, install these software components on the target system:

- .NET Framework version 4.0 or higher.
- The OPC core components 3.00, which consist of all shared OPC modules including the DCOM proxy/stub libraries, the OPC Server Enumerator, .NET wrappers, etc.
- The OPC UA Discovery Server, which lists the OPC UA endpoints available on a given computer.

INSTALLING OPC UA WRAPPER

To install the OPC UA Wrapper, run the installation executable using an administrator account and the wizard will take you through the different installation steps.

Once the installation is complete, go to **Start => Programs => Integration Objects => OPC UA Wrapper => OPC UA Wrapper** to start the UA Wrapper configuration tool.



Figure 1: OPC UA Wrapper Start Menu

CONFIGURING OPC COM TO OPC UA WRAPPER

The first step is to add a wrapper by clicking the **Add** button available in the Home menu or by right clicking the COM to UA root node and selecting **Add Wrapper** as illustrated below.



Figure 2: Add Wrapper



The Add Wrapper dialog box will then be prompted:

📲 Add Wrapper	_ X
New Wrapper : WrapperTest	
Integration Objects' OPC UA Wrapper_W	/rapperTest_Service
HTTP Port : 48402 🐳 T	CP Port : 48403 🚔
Use Machine Name	
© Use IP Address 192.168.0.1	97 💌
ОК	Cancel

Figure 3: Add New Wrapper Dialog

Enter:

- The name for the wrapper you want to add. The name is a friendly one that will serve to identify your OPC UA server and must not contain any spaces or special characters.
- HTTP and the TCP ports numbers used for the Wrapper/Client communications.

To create the wrapper service URL, you can choose between:

- Using the machine name
- Using the IP address of the machine

After you click OK, a new node will be added to the COM to UA root node.

Right click on this wrapper node and select **Add Servers** from the displayed menu. The following dialog screen will appear where you can configure the OPC servers to be wrapped as OPC UA servers:



ᡖ Add OPC Server			_ X
Local Connection Local Connection Local Access 2. Connection Local Access 3. Connection Local Access 3. Connection Alarms & Even	0 0 Access ts		
Remote Connection OPC Server Name Host IP Address	IntegrationObjects.Advance	cedSimulatorV3.1	
Servers to be added		A&E HDA Host Nan	1e
	Add	ancel	

Figure 4: Add OPC Servers Dialog

You can either browse the list of the OPC servers available in your local machine, or manually configure a remote OPC server by entering:

- The OPC server name (ProgID),
- The IP Address of the machine that hosts this OPC Server,
- The OPC server type (DA, HDA or A&E server) as shown in the figure above.



To add multiple OPC local servers, you only need to select the server name from the servers tree view and the selected servers will be added to the grid view to facilitate the visualization of the servers to be added. Use the **X** button to delete servers from this list.

Local Connection					
🖃 📕 Localhost					i.
The Data Access 2	0				
⊡ Data Access 3	.0				
🖃 Historical Data	Access				
Integration(Dijects.AdvancedSimulato	r.1			
···· Integration(Dbjects.AdvancedSimulato	rV3.1			
···· Integration(Objects.DAHDASimulatorC	#2008Pe	rf.1		
Integration	Dijects.DAHDASimulatorC	#2010Se	rvice.1		
Integration(Dijects.DAHDASimulatorC	++VS200	8Servic	e.1	
Integration	Dijects.OPC.ADU	ator 1			
				•	
Remote Connection — OPC Server Name	IntegrationObjects.Advan	cedSimula	atorV3.1		_
Remote Connection OPC Server Name Host IP Address	IntegrationObjects.Advan	cedSimula	atorV3.1 A&E	•	(
Remote Connection OPC Server Name Host IP Address Servers to be added	IntegrationObjects.Advan	cedSimula	atorV3.1 A&E	¥	(
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Remote Connection OPC Server Name Host IP Address Servers to be added Server Progld IntegrationObjects.Adv IntegrationObjects.OP	IntegrationObjects.Advan 192.168.0.197 vancedSimulatorV3.1(DA) CAE.Simulation(A&E)	Host Ni DEV21-	atorV3.1 A&E ame PC.iodor	Tain.com	
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Figure 5: Add Local OPC Servers

Click the **Add** button to confirm your configuration. When you go back to the main window, you will be able to see that the servers have been successfully added under the desired wrapper as shown below:





Figure 6: Wrapped OPC Servers

Once you finished configuring the OPC Servers, you need to start the wrapper service. To do so, right click on the wrapper and choose **Start Wrapper** from the wrapper context menu. Furthermore, you can open Windows services manager, navigate to Services tab and look for the service you started.

```
🔍 Integration Objects' OPC UA Wrapper_test_Service Running
```

Figure 7: Services Manager View – Service Started

Now, you can use your OPC UA client to connect to the created OPC UA server. If you do not have an OPC UA client, you can use the one included with the OPC UA Wrapper package:

🌗 OPC UA Wrapper
🔯 OPC UA Client
OPC UA Wrapper License Authorization
🔁 OPC UA Wrapper Quick User Guide
🔁 OPC UA Wrapper User Guide
📑 OPC UA Wrapper
强 Uninstall OPC UA Wrapper

Figure 8: OPC UA Wrapper Start Menu – Open OPC UA Client

CONFIGURING OPC UA TO OPC COM PROXY

You can add a proxy by clicking the **Add** button available in the Home menu or by right clicking the UA to COM root node and selecting **Add Proxy** as shown below.



Figure 9: Add Proxy





The UA endpoint configuration dialog screen will then appear:

😵 UA Endpoint Configuration	X
Endpoint Url http://DEV21-PC:51211/	/UA/SampleServer 🔽 Discover
Transport Protocol Http Opc.tcp	Message Encoding Binary Sml
Https	Security Policy
 None 	None Basic128RSA15
 Sign Sign Encrypt 	Basic256
User Authentication Mode	basic2003na230
Certificate (.pfx)	erName © Certificate
Password	
Apply	Cancel

Figure 10: UA Endpoint Configuration Dialog

All the settings presented in this dialog screen are required to create an UA endpoint from the selected OPC UA server. You can refer to the user guide for more details about these settings.

After endpoint configuration is set, click the **Apply** button and the COM Server Configuration dialog will be displayed:

COM Serve	Configuration X	
Protocol	DA Server Rate 500 + ms	
CLSID	AE 76-35b8d765e4f6	
Prog ID	OpcDa.opc.tcp.dev21-pc.62560.IOServer	
	OK Cancel	

Figure 11: COM Server Configuration Dialog



There are four parameters that should be configured:

- Protocol: The user can choose between DA (Data Access), AE (Alarms & Events) and HDA (Historical Data Access) protocol.
- CLSID: A new CLSID is generated to be assigned to the server.
- Prog ID: The Prog ID is generated from the configured UA endpoint and can be edited by the user.
- Server Rate: the server scan rate in case the created OPC server is a DA server.

Then, click the **OK** button and a new node will be added to the UA to COM root node as shown below:

🖃 💼 UA to COM
OpcDa.http.dev21-pc.51211.UA.SampleServer.None

Figure 12: UA to COM Proxies List

Now, you can use your OPC client to connect to the created OPC server (DA, HDA or AE). If you need to download an OPC test client, you can click <u>here</u> to access our free OPC tools.



For additional information on this guide, questions or problems to report, please contact:

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