



## Knowledge Base

### How to Enable Native Citect Scada OPC DA Server on EcoStruxure Process Expert?

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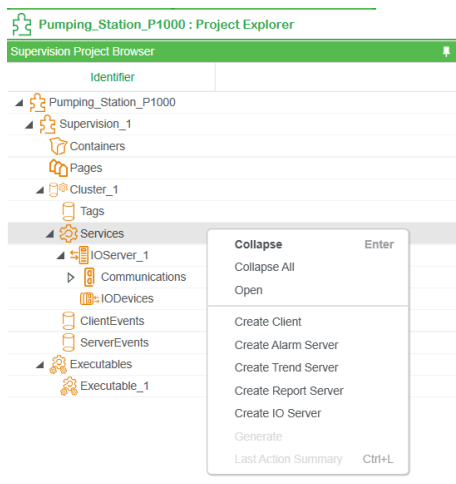
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# 1 INTRODUCTION

In EcoStruxure Process Expert 2019 (former HDCS) and previous versions the communication between the supervision participant Citect Scada and Modicon PAC controllers are handle by OFS – OPC Factory Server. The OFS is an OPC DA Server which is installed in the same server as the EPE operation server(s). Whenever a third-party software needs to collect data from EPE it can be done by connecting to OFS Server in either primary or standby operation server.

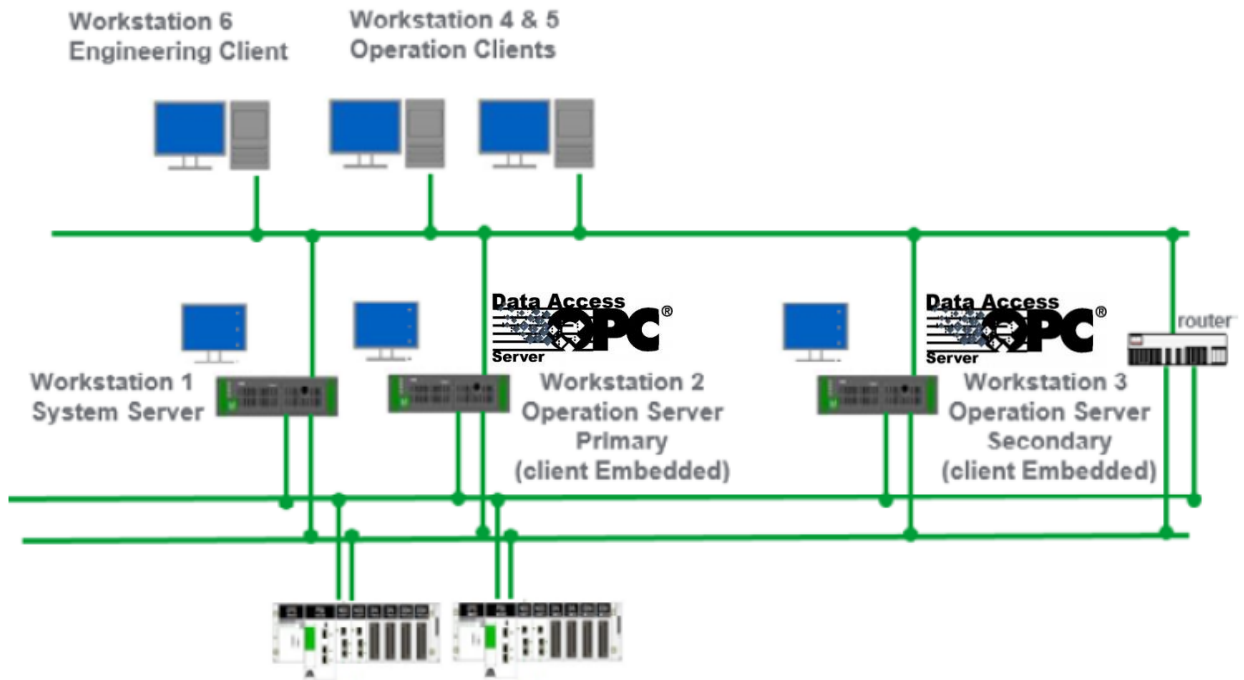
This solution using OFS Server as an unique OPC DA Server to interface with other system works fine but some customers standard/ customers best practice doesn't allow other systems to collect data direct from the controllers. These customers prefer third-party software collecting data from the supervision servers. Another motivating force to have an OPC DA server enabled on supervision participant is that some projects could have calculate variables on supervision which does not exist on control project.

Currently there is no option to create OPC DA Server from EcoStruxure Process Expert interface as below. The only way to enable it is from inside out using an include project.



This article shows a step-by-step process to enable and test the native OPC DA Server in supervision participant Citect Scada 2018.

## 2 REFERENCE ARCHITECTURE



EcoStruxure Process Expert redundant operation Servers with Citect Scada OPC DA server enabled

### 3 CREATING AN INCLUDE PROJECT

In order to create an Include Project you must use Citect Scada 2018 outside of EPE 2019.

1. Create a new project and unselect [Create project based on starter project] as below.

2. On the Topology, Edit, select [Network Addresses] on the drop list and type [Name] and enter with IP address in [Address]. The computer which will be the OPC DA Server can be any operation client or any operation server.

Citect Studio - OPC\_DA\_SERVER [Active Project]

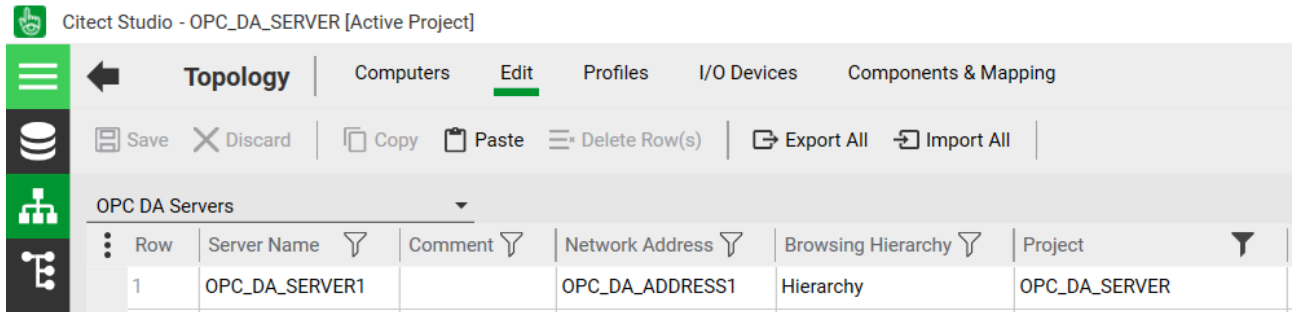
Topology | Computers | **Edit** | Profiles | I/O Devices | Components & Mapping

Save | Discard | Copy | Paste | Delete Row(s) | Export All | Import All

Network Addresses

Row	Name	Address	Comment	Computer	Project
1	OPC_DA_ADDRESS1	192.168.15.168	OPC DA SERVER PC		OPC_DA_SERVER

3. On the Topology, Edit, select [OPC DA Servers] on the drop list and type [Server Name] and select the address on [Network Address]. On Browsing Hierarchy select [Hierarchy] from the drop list.

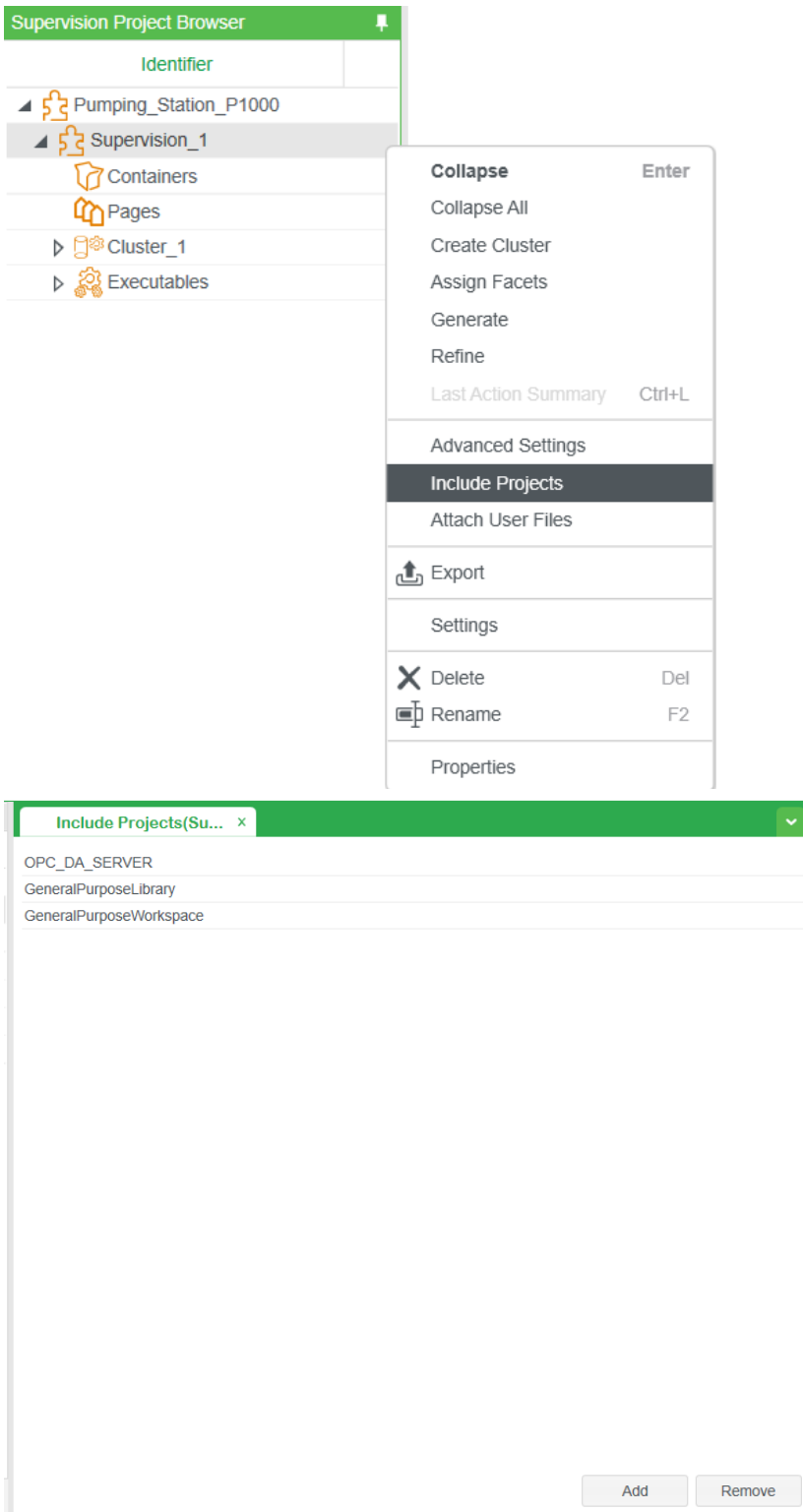


4. Compile save and backup the OPC\_DA\_SERVER include project.

## 4 IMPORTING THE INCLUDE PROJECT WITH OPC DA SERVER CONFIGURATION

Select your supervision project on Project Explorer of EPE 2019.

1. Right-click [Include Projects] button and [ADD] to include the include project for OPC DA Server.





2. Select your executable from the executables, Right-Click [Generate and build] and then [Deploy Build Project].
3. Restore the OPC\_DA\_SERVER in each computer over the network and restart the runtime. The computer which match with the IP Address configured for the OPC DA Server will became the OPC DA Server after the runtime has been restarted.

## 5 CONFIGURING DCOM

The help of Citect Scada 2018 has an extensive topic to configure the DCOM for remote connections to the native OPC DA Server. You can find this help on: Extensibility > Using an OPC DA Server > Configuring an OPC DA Server > OPC DA Server DCOM settings

Here is a summarized step to follow to enable DCOM extracted from Citect Help:

### To configure the machine-wide user group DCOM settings

1. Launch the Windows Component Services manager. To do this, go to Control Panel, open **Administrative Tools** and then **Component Services**.
2. Expand the **Component Services** folder, and the **Computers** folder.
3. Right click on the **My Computer** folder and select **Properties**.
4. Go to the **COM Security** tab.
5. In the **Access Permissions** section, click on the **Edit Limits** button. Make the following adjustments:
  - add the OPC DA Server users group you have created
  - allow both **Local Access** and **Remote Access** for the users group
  - click **OK**

In the **Access Permissions** section, now click on the **Edit Default...** button. Make the following adjustments:

- add the OPC DA Server users group you have created
  - allow both **Local Access** and **Remote Access** for the users group
  - click **OK**
6. In the **Launch and Activation Permissions** section, click on the **Edit Limits** button. Make the following adjustments:
    - add the OPC DA Server users group you have created
    - allow **Local Launch, Remote Launch, Local Activation** and **Remote Activation** for the users group
    - click **OK**
  7. You can now exit the Properties dialog.

## To configure the OPC DA Server specific settings

1. Launch the Windows Component Services manager. To do this, go to Control Panel, open **Administrative Tools** and then **Component Services**.
2. Expand the **Component Services** folder, the **Computers** folder, the **My Computer** folder, and the **DCOM Config** folder.
3. Locate the "Schneider Electric SCADA OPC DA Server" component and select **Properties**.
4. Go to the **Security** tab.
5. In the **Launch and Activation Permissions** section, select **Customize** and click on the **Edit** button. Make the following adjustments:
  - add the OPC DA Server users group you have created
  - allow **Local Launch**, **Remote Launch**, **Local Activation** and **Remote Activation** for the users group
  - click **OK**
6. Go to the **Identity** tab. This is where you define which user accounts can run the OPC DA Server. The setting you choose will have the following implications:
  - **The interactive user** is the default option. This means the OPC DA Server will run using the security context of the Windows user currently logged in to the local computer. If there is no active Windows user logged in, or if the current user identity doesn't have the launching and activation permissions for the OPC DA Server, a connection will be unsuccessful.
  - **The launching user** - a connection will not be successful on Windows XP or 2003 if there is already an instance of the Runtime Manager running under the active Windows session. Similarly, launching the Runtime Manager using a local Windows login will be unsuccessful if an instance of the Runtime Manager has already been launched by a DCOM connection.

This scenario will work on Windows Vista and Windows 7. In this case, a local active Windows login is not required. However, each login session invisibly spawns multiple instances of the Runtime Manager, the OPC DA Server and the client if multiple users connect at the same time. This setting is considered a resource consuming option.

- **This user** allows you to identify a specific user. A connection will not be successful if there is already an instance of the Runtime Manager running under the active Windows session. Similarly, launching the Runtime Manager using a local Windows login will be unsuccessful if an instance of the Runtime Manager has already been launched by a DCOM connection. However, this option does avoid the situation where multiple instances of the Runtime Manager and the OPC DA Server are launched.
7. Once you have selected an option, you can exit the Properties dialog.

## To configure the connectivity environment settings

The way you configure a server's connectivity settings depends on whether it is on a domain or part of a workgroup. The following points describe how you should set up different client/server combinations.

- **If the server is on a domain and the client is on a domain:**

On the server computer, add the domain login identity that the client uses to the OPC DCOM users group you have created.

- **If the server is on a domain and the client is part of a workgroup:**

Create a matching Windows login identity on the server with the same password as the Windows login identity on the client machine. Add this Windows login identity to the OPC DCOM users group you have created.

- **If the server is part of a workgroup and the client is on a domain:**

Create a matching Windows login identity on the server with the same password as the domain login identity on the client machine. Add this Windows login identity to the OPC DCOM users group you have created.

- **If the server is part of the same workgroup as the client:**

Create a matching Windows login identity on the server with the same password as the Windows login identity on the client machine. Add this Windows login identity to the OPC DCOM users group you have created.

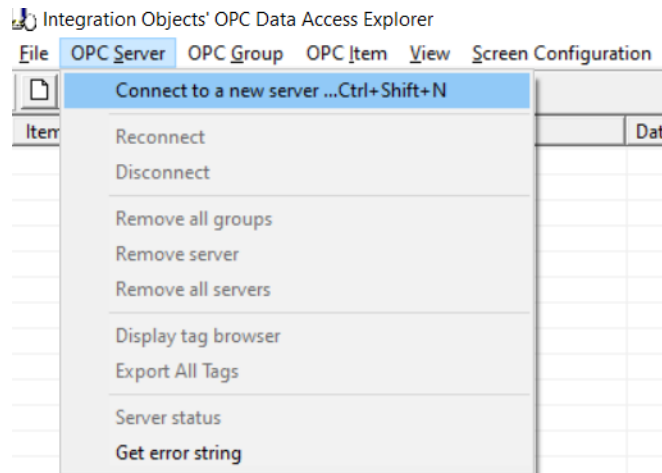
## 6 TESTING THE OPC DA SERVER CONFIGURATION

To test the Citect Scada OPC DA Server the easiest way is to use OFS Client to connect with Citect Scada and browser the tags.

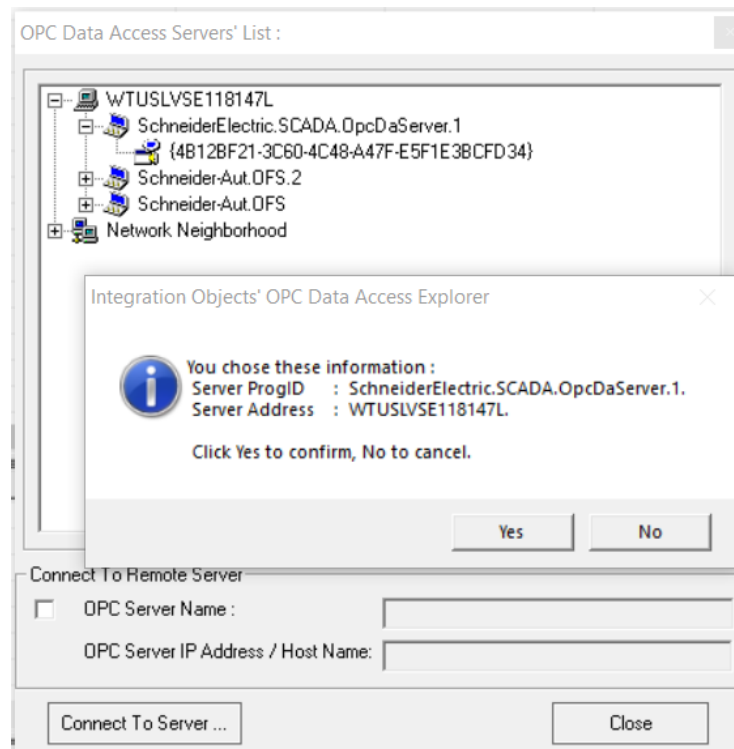
Alternatively, you can use any other OPC DA Client. In this example we use a client from OPC Training Institute: <http://www.opcti.com/opc-da-test-client.aspx>

To test a local OPC client installed on the same computer which has the OPC DA Server:

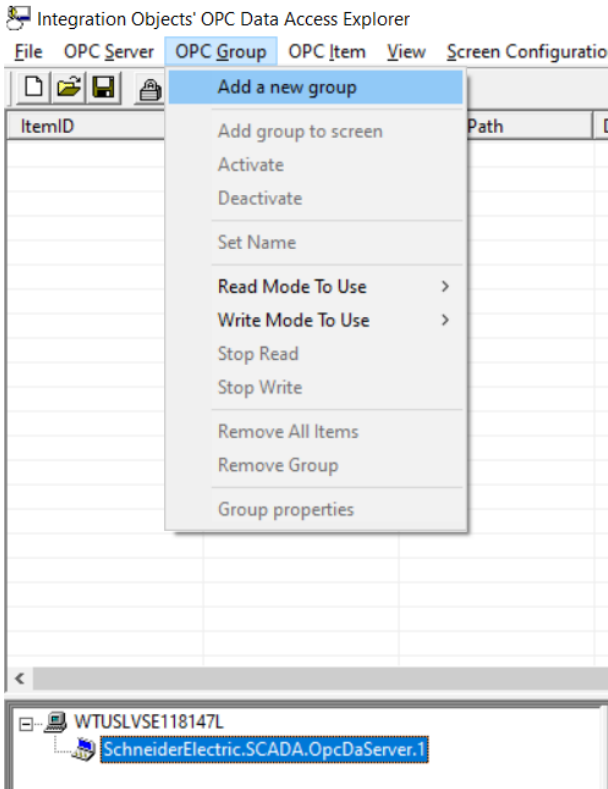
1. Open the OPC DA Explorer, click on [OPC Server] and [Connect to a new server...]



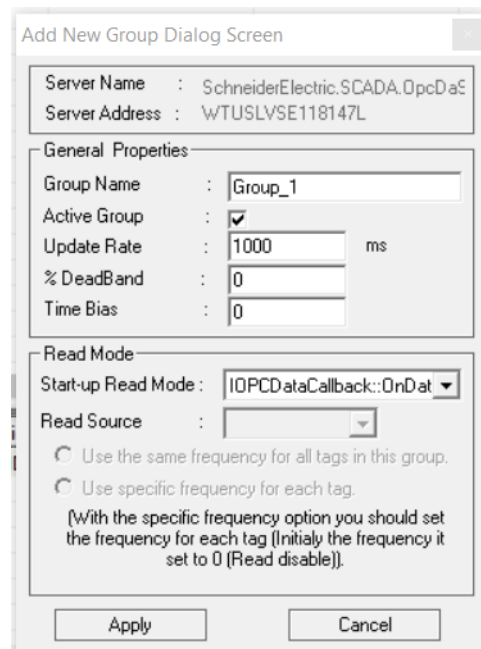
2. Click to Expand on the computer name and then select on the list [SchneiderElectric.Scada.OpcDaServer.1] next click on [Connect To Server] and then click [Yes].



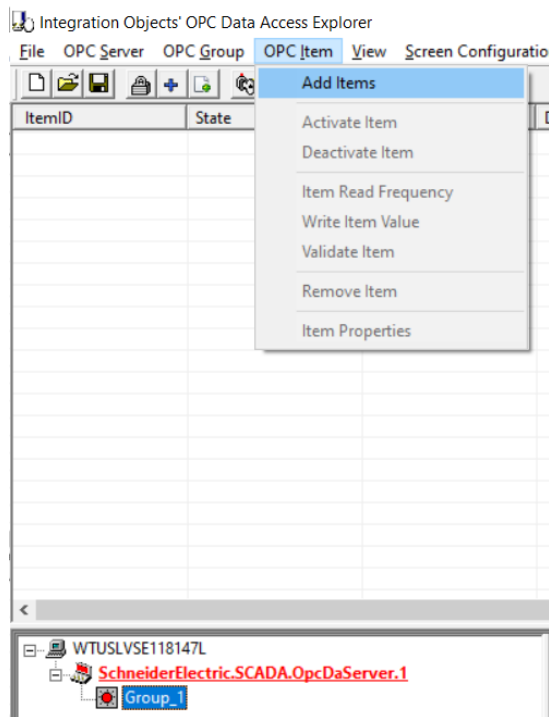
3. With [SchneiderElectric.Scada.OpcDaServer.1] selected on the bottom, click [OPC Group] and [Add a new group]:



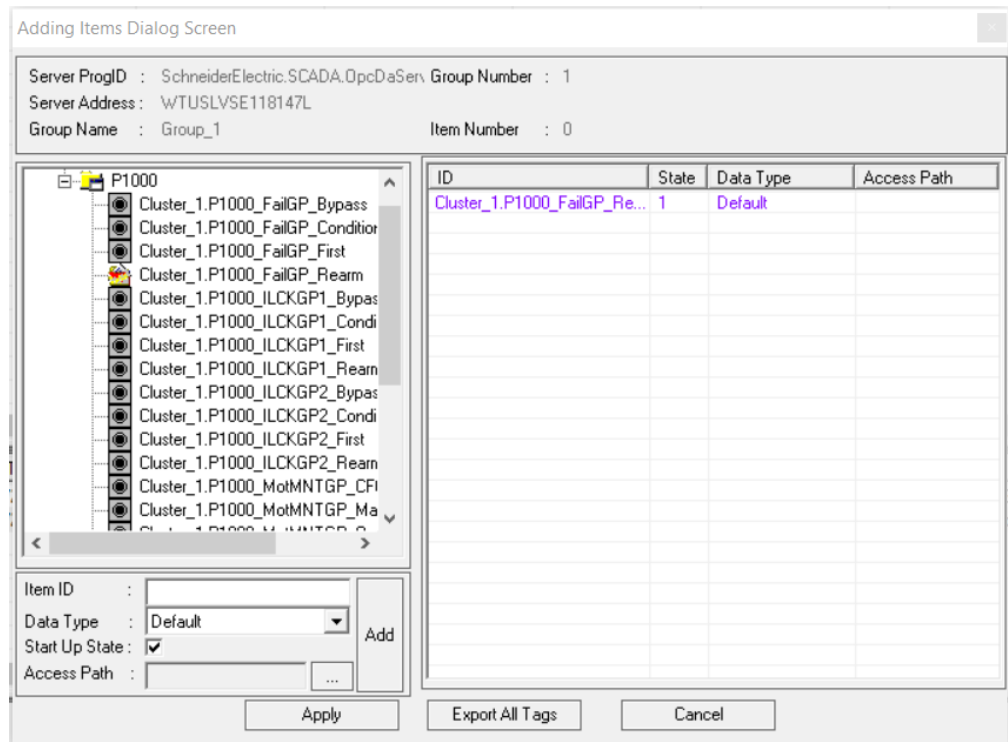
4. Click [Apply] on Add New Group Dialog Screen.



5. With [Group\_1] selected on the bottom, click [OPC Item] and [Add Items]:



6. Expand [Cluster] and [select a tag] from the list by double clicking, click [ADD] and then click [Apply].





7. As result the tag is added to the OPC DA Client session with the state set as Active.

The screenshot shows a software window titled "Integration Objects' OPC Data Access Explorer". The window has a menu bar with "File", "OPC Server", "OPC Group", "OPC Item", "View", "Screen Configuration", and "Help". Below the menu bar is a toolbar with various icons. The main area contains a table with the following data:

ItemID	State	Access Path	DataType	Value	Quality	Access Right	Time Stamp
Cluster_1.P1000_FailGP_Rearm	Active		VT_UI2	0	Good,Non-specific,Not Limited.	rw	12/9/2019 2:43:00.939 PM

## 7 CONCLUSION

Enabling OPC DA Server through a include project is a seamless way to answer customer critical requirement to have their third-party software collecting data direct from the supervision instead collecting data from the Modicon controllers.

As of December 2019, the supervision participant of EcoStruxure Process Expert, Citect Scada 2018 only can be configured as OPC DA Server but as the Aveva roadmap the next version of Citect Scada will be possible to configured as OPC-UA server and will support IPV6.