

InduSoft Web Studio Integration to SE PacDrive LMC and Modicon devices

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Introduction

This document describes the necessary steps to integrate Wonderware InduSoft Web Studio Software with the Schneider-Electric controllers such as PacDrive LMC and Modicon.

This document does not include any installation procedure. For this purpose, please refer to the technical reference guide of the appropriate tools.

Please notice, all network addresses as well as hostnames must be adjusted to the appropriate subnet in use, i.e., where the devices and computers are located.

Environment

For this document generation it has been used two devices from Schneider-Electric as listed below.

1. PacDrive LMC 600 C;
2. Modicon TM251MESE.

The following Tools are required for the execution of this process:

- Schneider-Electric SoMachine and SoMachine Motion;
- Wonderware InduSoft Web Studio v8.0 or later;
- Wonderware InduSoft COSYS communication driver v2.7 or later.

The following Systems have been used for the creation of this document:

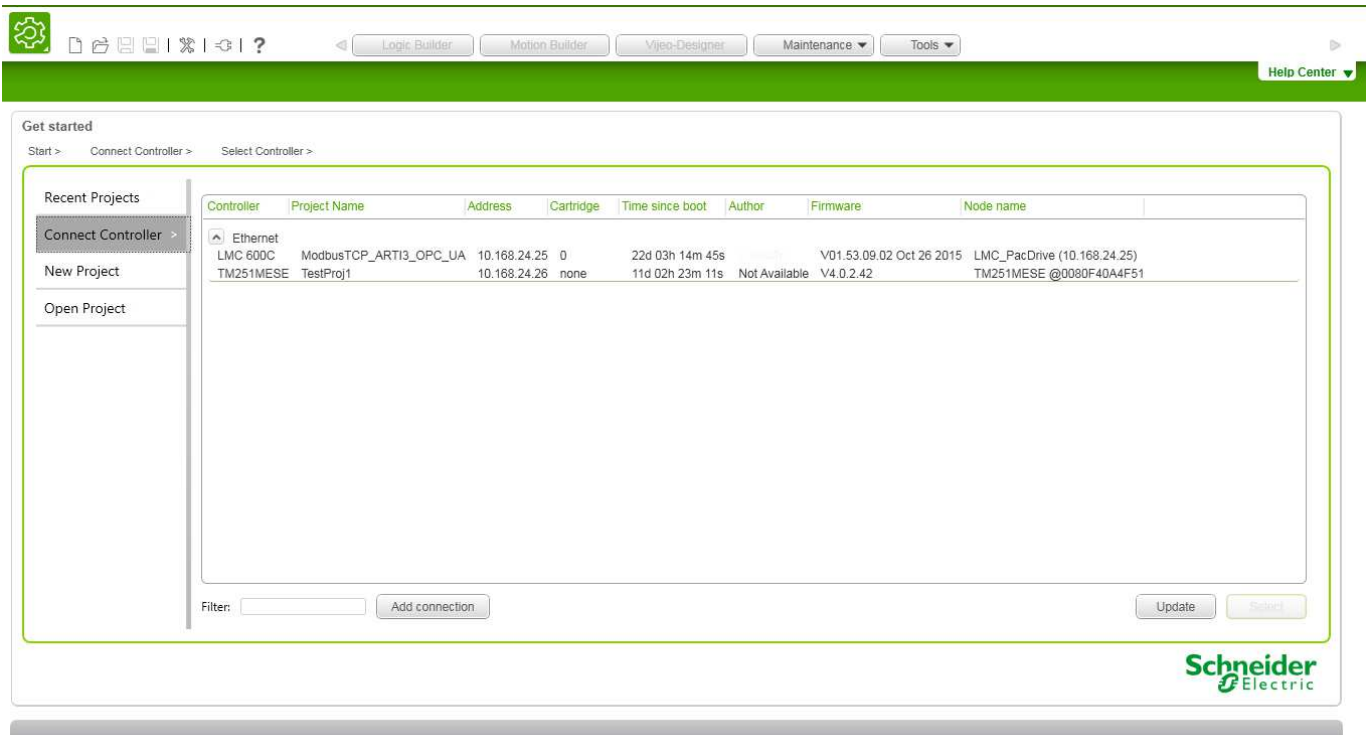
- Windows 7 x64 PC with SoMachine v4.1.0.1 and SoMachine Motion v4.2 from Schneider-Electric;
- Windows 8.1 x64 PC with InduSoft Web Studio v8.0 plus InduSoft COSYS driver v2.7.

Integration Settings

The following steps describe the procedure to integrate InduSoft Web Studio to the PacDrive LMC and the Modicon devices.

First of all, you need to find the Node Name of the device on the network.

1. Open SoMachine (e.g. SoMachine or SoMachine Motion Central);
2. Select **Connect Controller** on the left menu bar – the available devices on the network will be listed on the right side. The Node Name of each device can be found on the last column of the devices table;

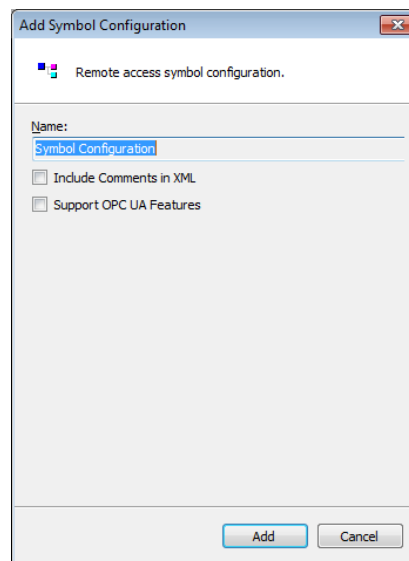


The screenshot shows the 'Connect Controller' screen in the InduSoft Web Studio interface. The interface has a green header bar with navigation buttons: Logic Builder, Motion Builder, Vijeo-Designer, Maintenance, and Tools. Below the header, there is a 'Get started' section with a breadcrumb trail: Start > Connect Controller > Select Controller >. On the left, there is a sidebar with 'Recent Projects' and 'Connect Controller' selected. The main area contains a table of detected devices:

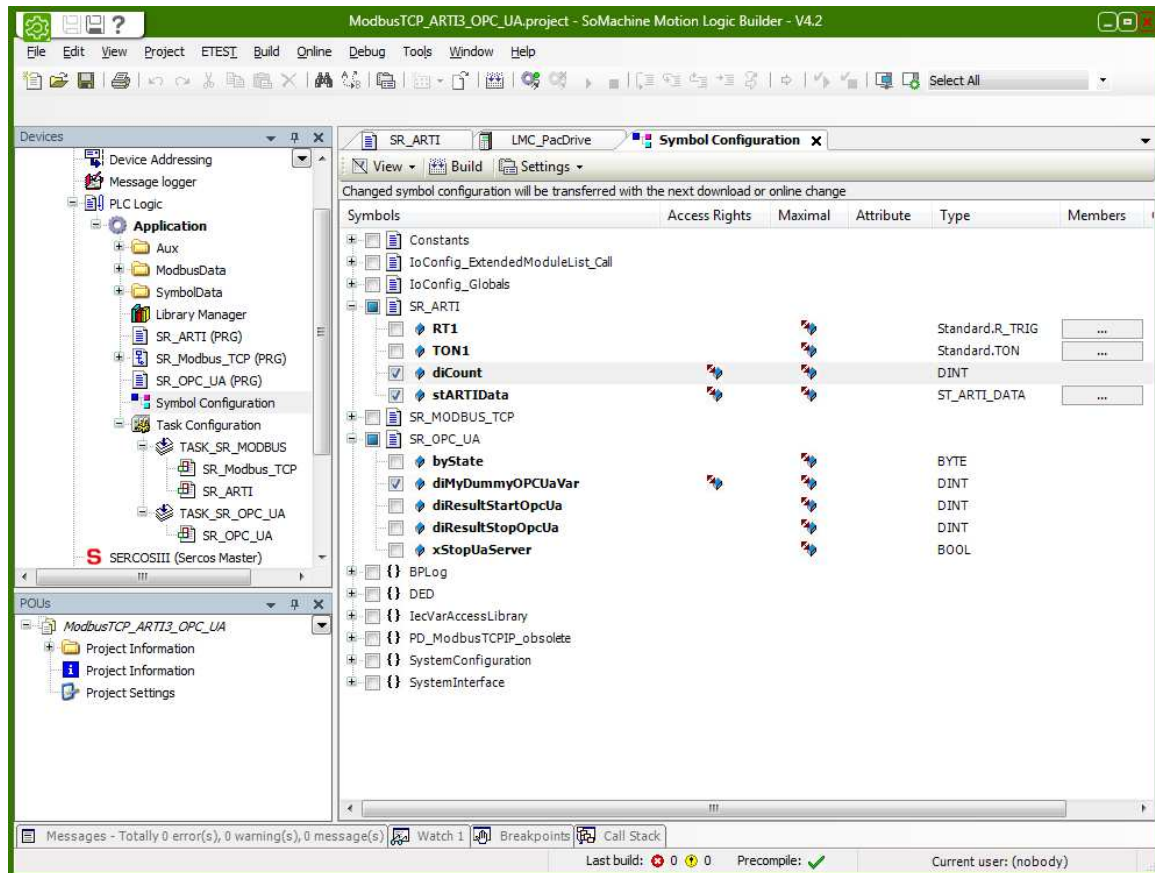
Controller	Project Name	Address	Cartridge	Time since boot	Author	Firmware	Node name
Ethernet							
LMC 600C	ModbusTCP_ARTI3_OPC_UA	10.168.24.25	0	22d 03h 14m 45s		V01.53.09.02 Oct 26 2015	LMC_PacDrive (10.168.24.25)
TM251MESE	TestProj1	10.168.24.26	none	11d 02h 23m 11s	Not Available	V4.0.2.42	TM251MESE @0080F40A4F51

At the bottom of the table, there is a 'Filter:' input field, an 'Add connection' button, and 'Update' and 'Save' buttons. The Schneider Electric logo is visible in the bottom right corner of the interface.

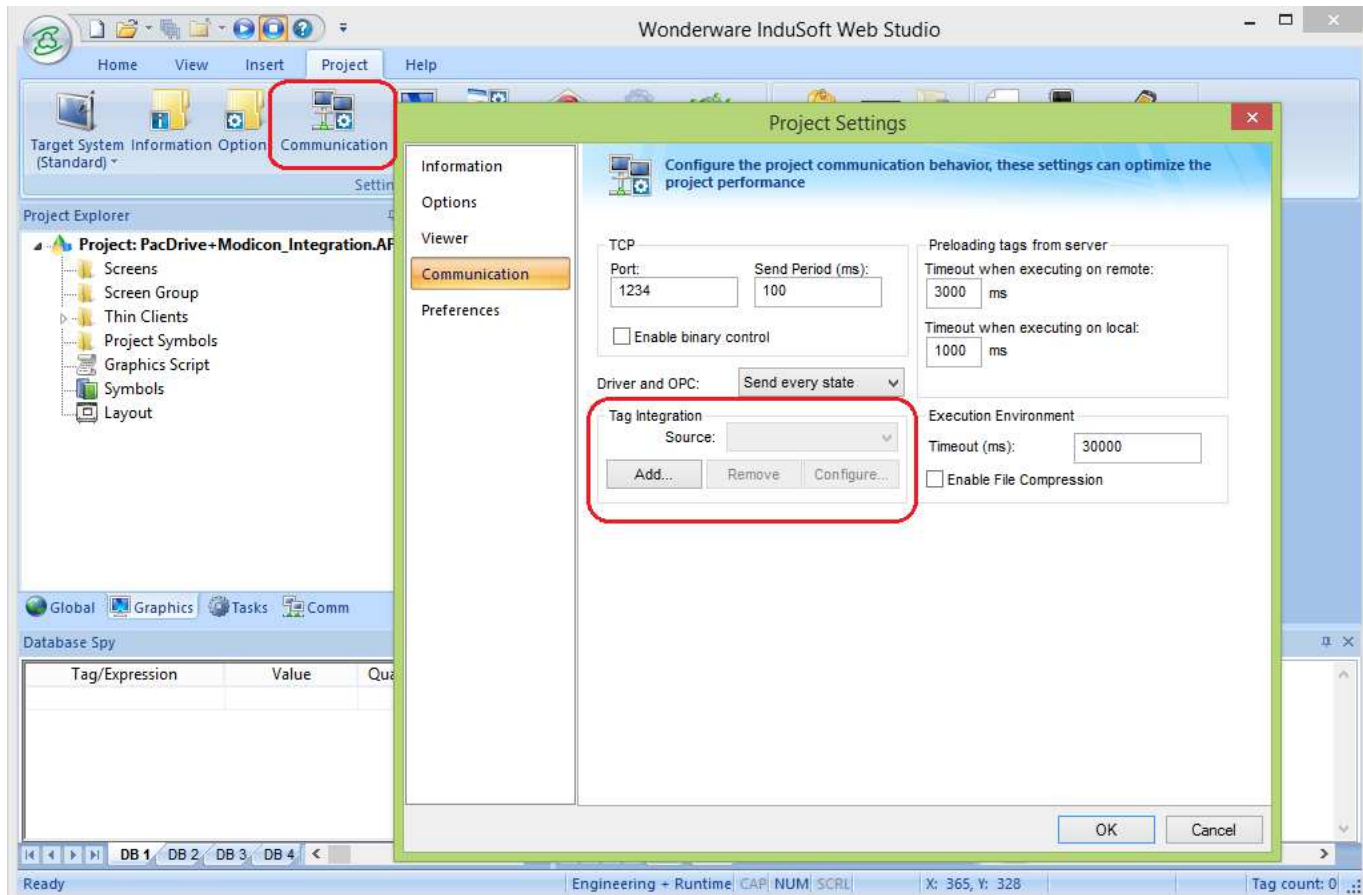
3. If there is no PLC program available on the device, open the Logic Builder, open or create a new PLC program and make sure that the variables are shared as described on the next steps;
4. In the project explorer, right-click **Application**, select **Add Object** on the shortcut menu, and click Symbol configuration. A new dialog opens. Click on the **Add** button to confirm;



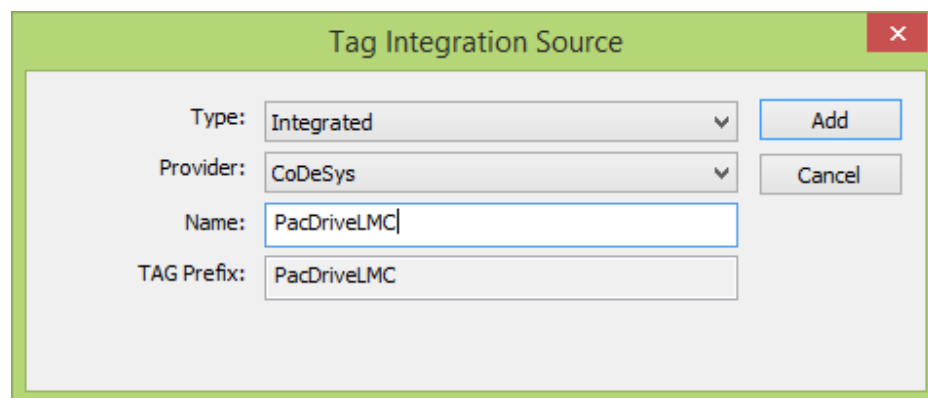
5. A new Symbol Configuration object is added to your project and it is opened for editing. Select the variables you want to communicate to;



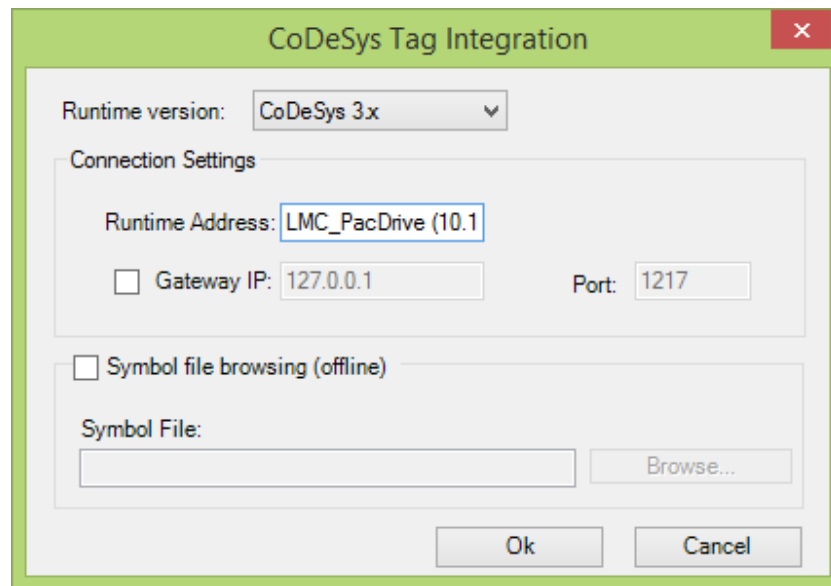
6. Build and send your program to the target device;
7. Open **Wonderware InduSoft Web Studio** and create a new project;
8. Go to the Project tab on the ribbon and click on **Communication**;
9. Under **Tag Integration** area, click on the **Add** button to add a new device to the project;



10. On the new open dialog, select the Provider **CoDeSys** on the appropriate ComboBox as shown below and give a name to your device (e.g. "PacDriveLMC"). Then click **Add**;



11. On the CoDeSys Tag Integration dialog, select the Runtime Version **CoDeSys 3.x** and enter the device **Node Name** (see step 2 above) on the **Runtime Address** field (e.g. “LMC_PacDrive (<IP Address>)” for PacDrive LMC and “TM251MESE @<MAC Address>” for Modicon TM251MESE);

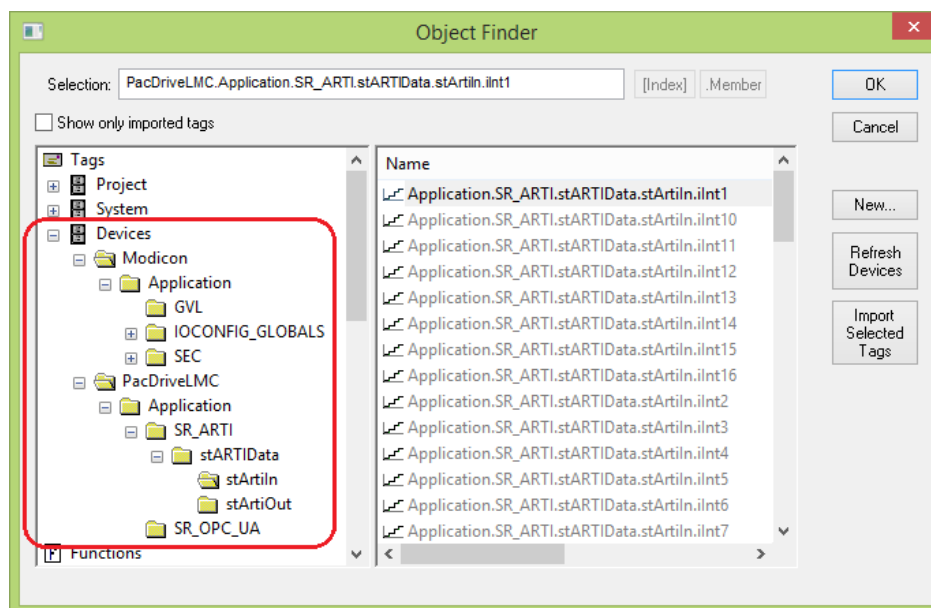


Note: at this point you may or may not select a Symbol file (XML file) generated by the SoMachine Logic Builder. If you do not enable Symbol file browsing (offline), Wonderware InduSoft Web Studio tries to connect the online device while the application development in order to browse for PLC tags.

12. If you also want to browse the PacDrive or Modicon tags when the PLC is not running, enable offline browsing and locate the symbol file (XML file) generated by the SoMachine Logic Builder.
 - a. Select the Symbol file browsing (offline) check box.
 - b. Click Browse, and then locate the symbol file.
13. Click **OK** to confirm and close the open dialogs.

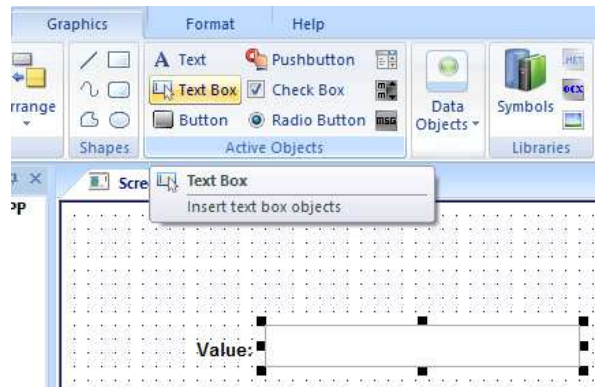
Browsing for PLC tags during development

After setting the Integration devices on the Wonderware InduSoft Web Studio project, device tags can be browsed during the application development. Whenever the Studio Object Finder dialog opens, the new Integration devices will be listed under the node **Devices** on the left side and by selecting the sub-nodes of a device the internal PLC tags can be selected on the right side.

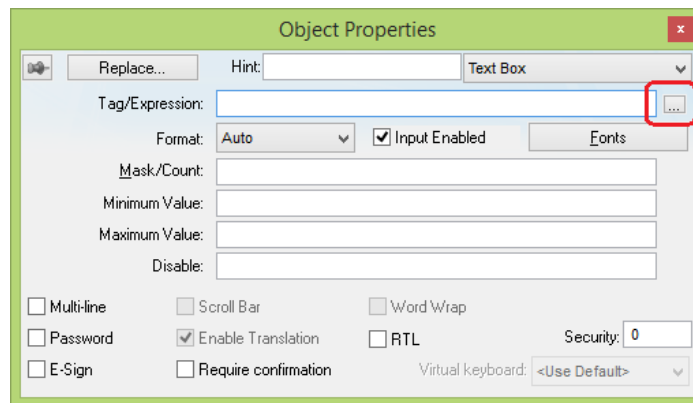


The following steps show how to add one or more device tags to the project using a Text Object:

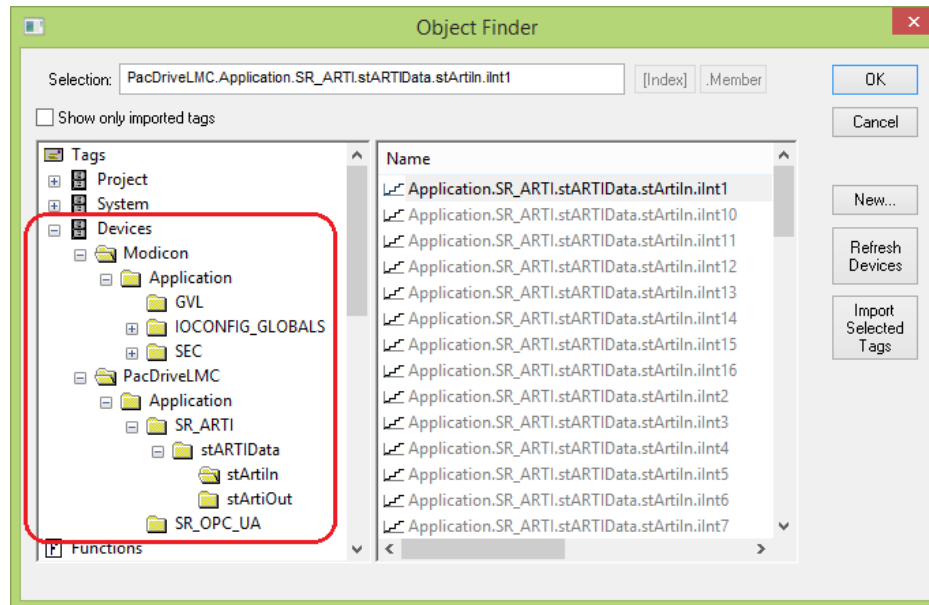
1. Create a new Screen and under the Graphics tab on the ribbon, click on **Text Box** to add a new Text Box object on the screen;



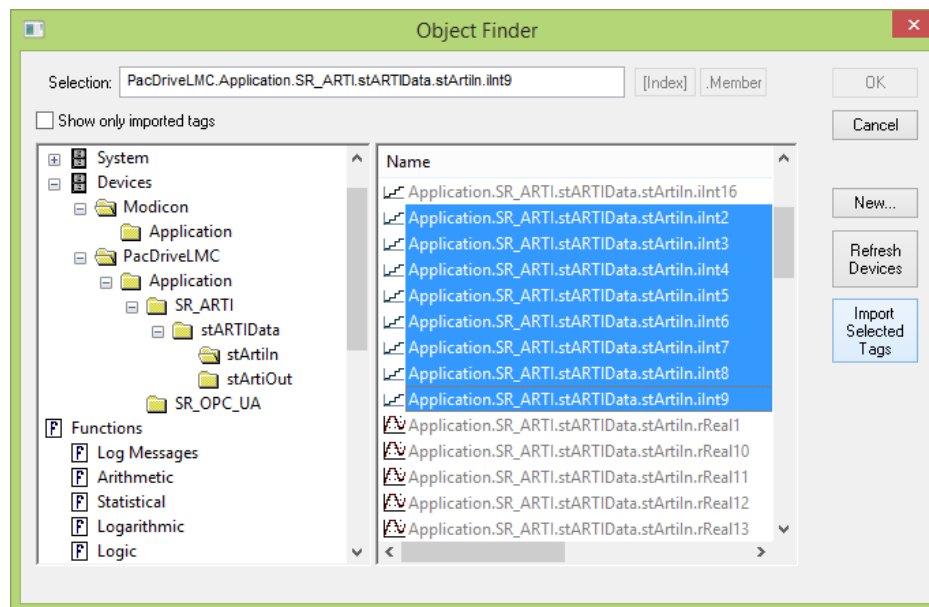
2. Double click on the object to open the Object Properties dialog and then click on the Browse button;



3. The Object Finder dialog opens on which you can select one or more device tags as shown below;

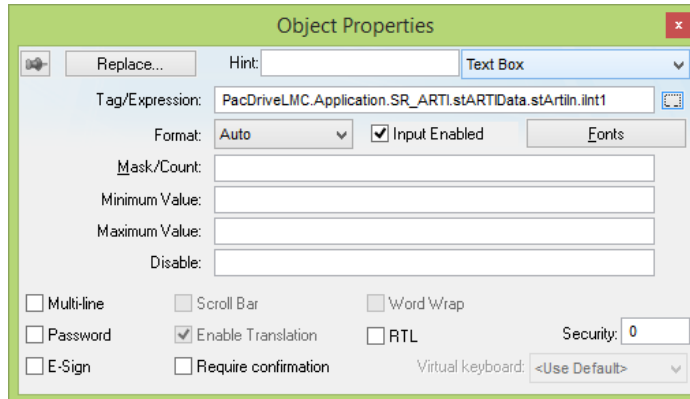


4. In order to Import multiple device tags at the same time, select the desired tags on the right list and click **Import Selected Tags**;

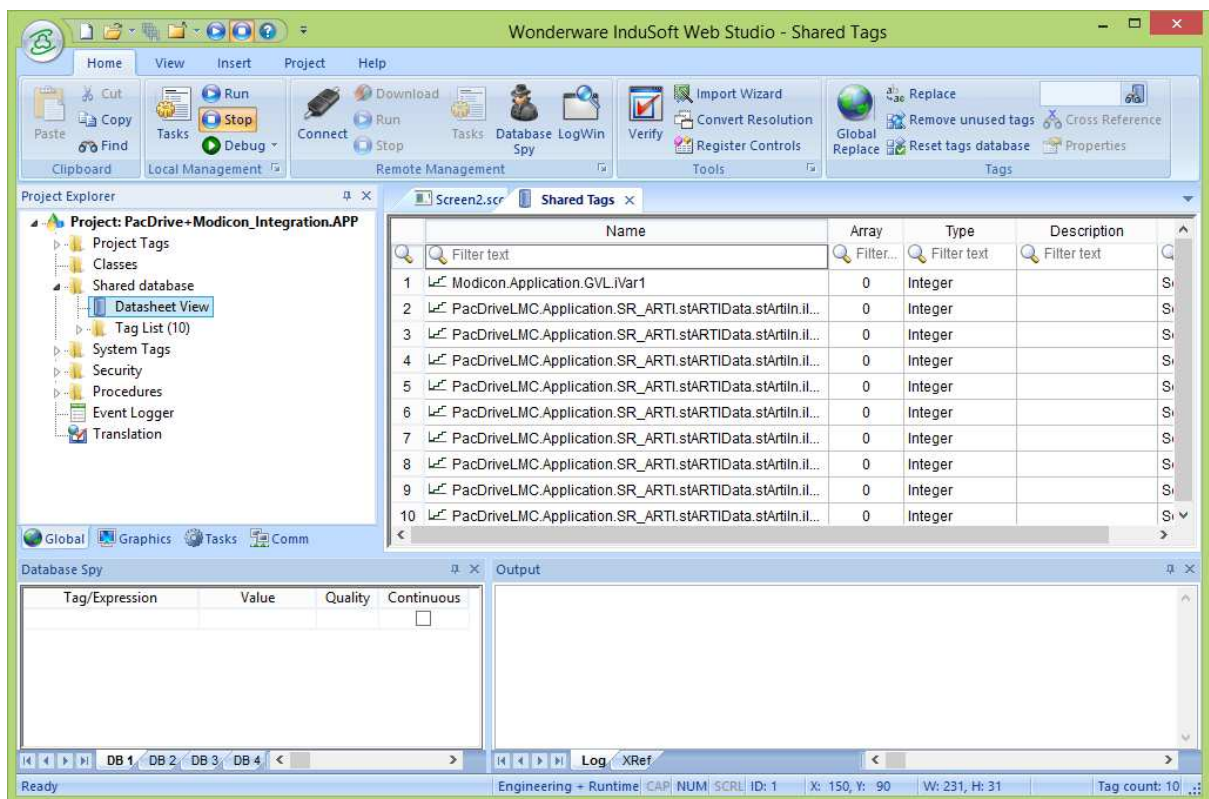


Note: importing multiple device tags at the same time may take several minutes depending of the number and type of variables selected.

- Click **OK** and the selected device tag is added to the object;



- If you want to see the list of current imported device tags, go to the **Global** tab on the Project Explorer, expand the node **Shared database** and double click on **Datasheet View**;

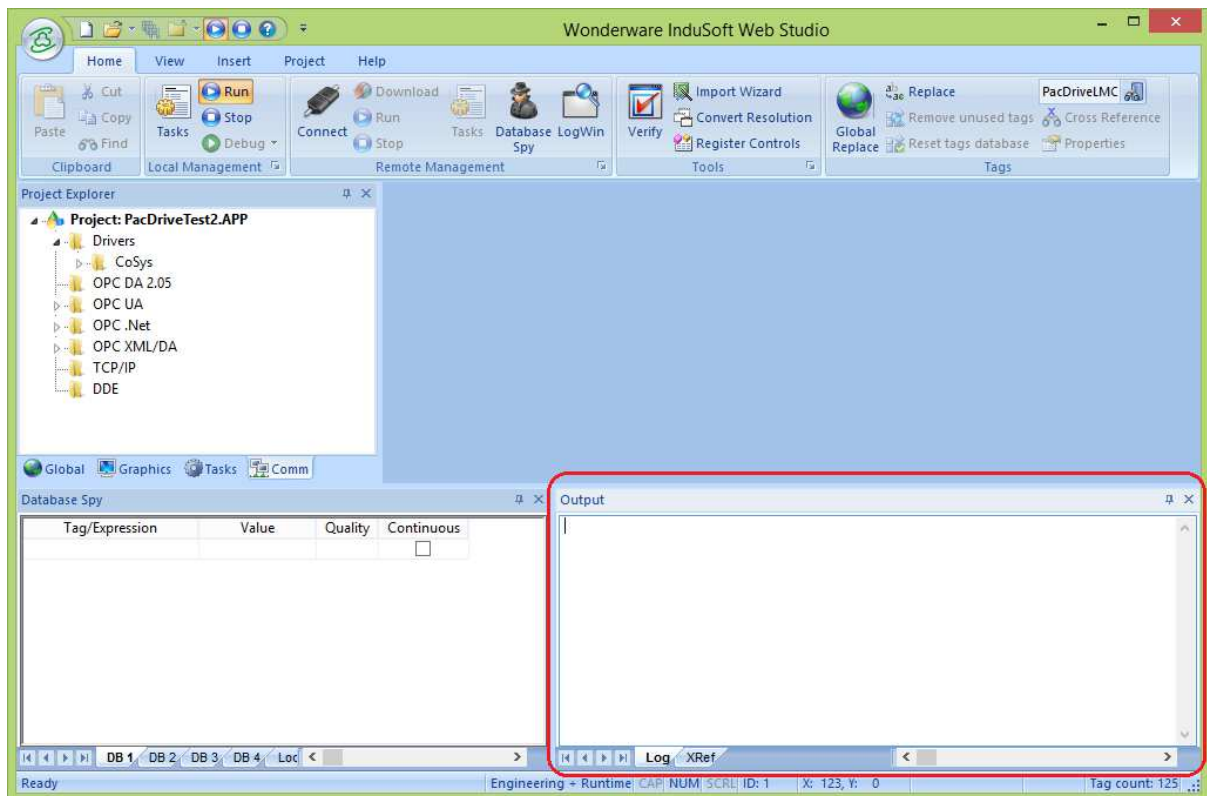


Note: with a right click on any place on the tags list, the user has options such as Synchronize with Database (devices in this case) or to remove specific lines/tags from the list.

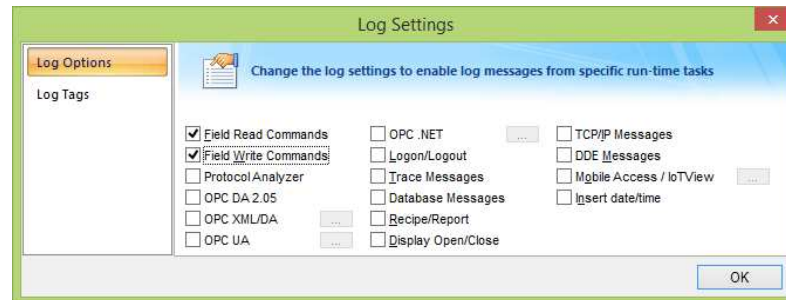
Running and debugging the project

Make sure all screen and configuration files are saved before starting the project.

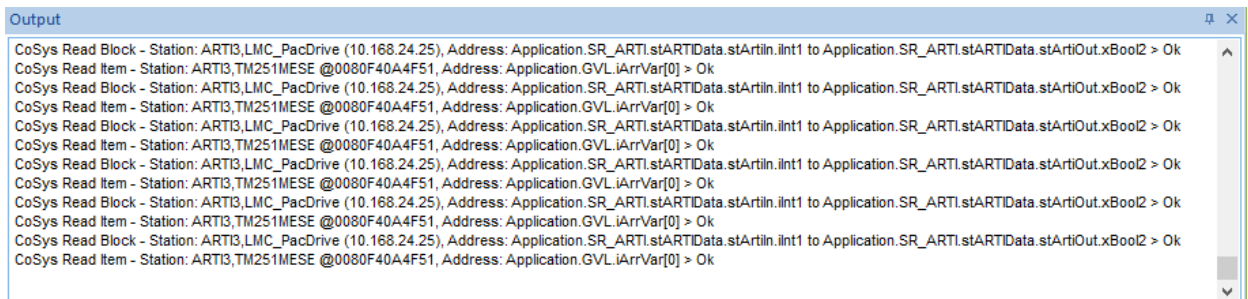
1. Click on **Run** to start the Studio runtime;
2. Should you have any connection issues during the runtime, go back to the Engineering environment and locate the **Output** window (by default at the right-bottom side);



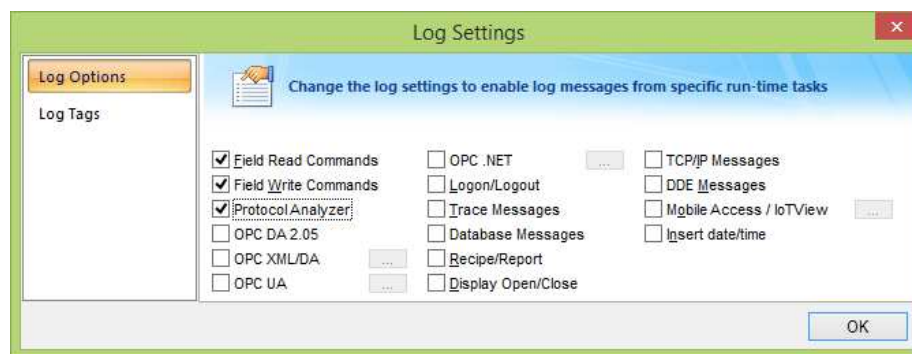
3. Right click anywhere inside the Output window and pick **Settings**;
4. On the **Log Settings** dialog enable the options (check the boxes) **Field Read Commands** and **Field Write Commands** and click **OK**;



5. At this point you should see some log messages on the Output window with details about the connectivity to the devices and the requested symbols;



6. For a more detailed log message, go back to the Output Settings dialog and enable the third option **Protocol Analyzer**. Click **OK** to confirm.



Final considerations

By default, the Tag Integration feature uses the system tag BlinkSlow as read trigger. This tag is internally toggled every 600 milliseconds. Meaning, the update rate of the communication tags are also set to 600 milliseconds. If required, this rate can be adjusted.

To adjust the rate, manually edit the project file (i.e., *projectname.APP*) to add the following entry:

[Options]

MainDrvAlwaysTrigger=*tagname*

tagname can be either another system tag (e.g., BlinkFast, Second, Minute) or a tag that you have created. Whenever the value of the tag changes, the worksheet will be scanned and the tags will be read.

Map of Revision

Revision	Author	Date	Comments
A	Ricardo Marroni	December 3 rd , 2015	▪ Initial Revision