

Connect Kepware OPC UA Client to FactoryStudio

System Requirements

To make use of this feature, the following system requirements need to be matched.

- KepServerEx V5 (or superior).
- OPC UA Protocol

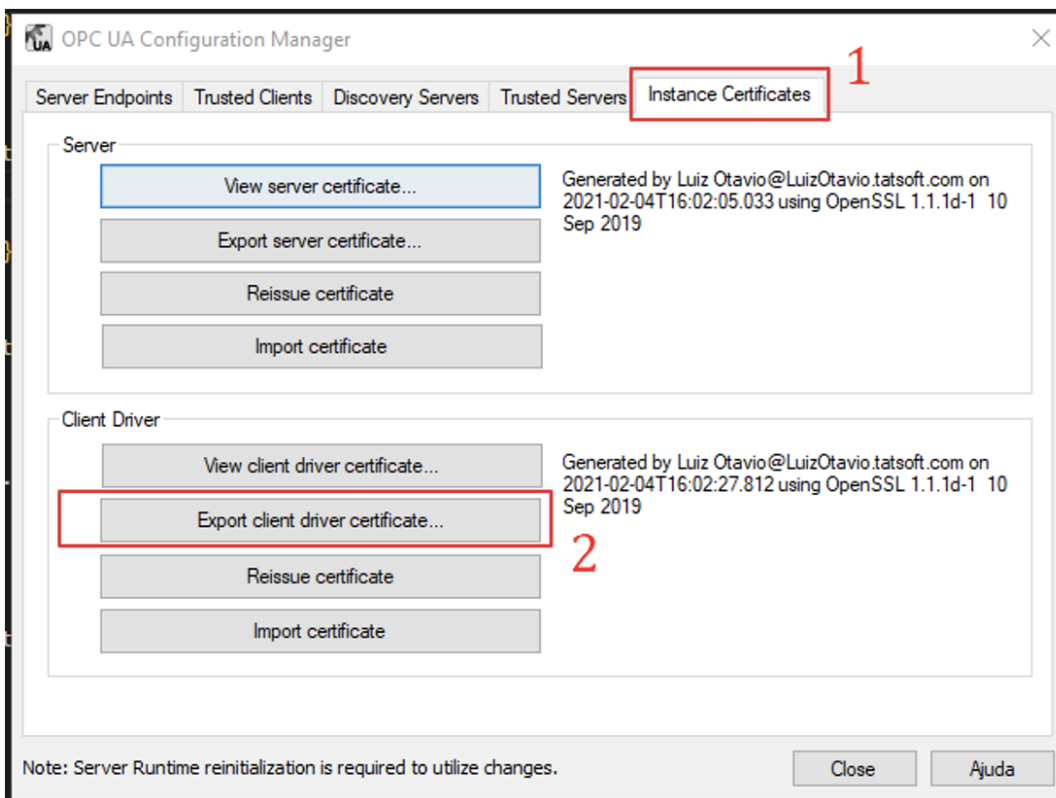
How to Use

The procedure for a successful OPC UA connection is divided into three main steps.

- KepServerEx OPC UA Client Certification
- Creating certificates for the OPC Server
- Kepware OPC Client Configuration

KepServerEx Client Certificate

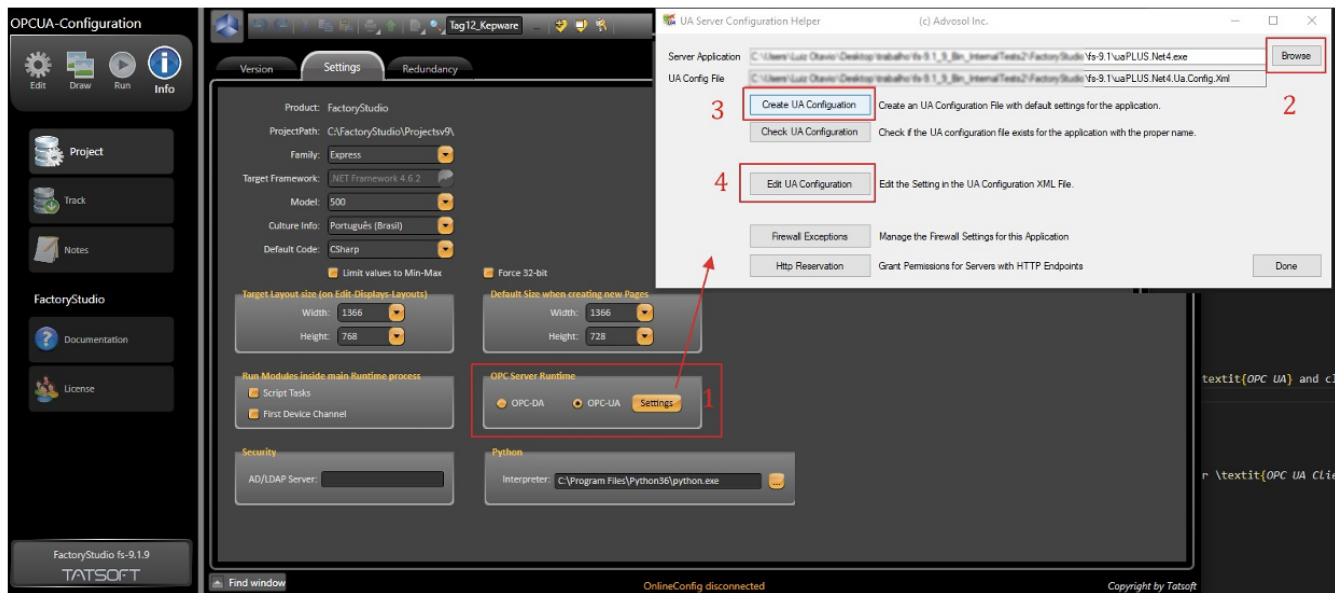
In the Kepware OPC UA Configuration Manager, navigate to *Instance Certificates* (1). In the *Client Certificate* portion, click on *Export Client Driver Certificate* (2), and save the file in any folder you want.



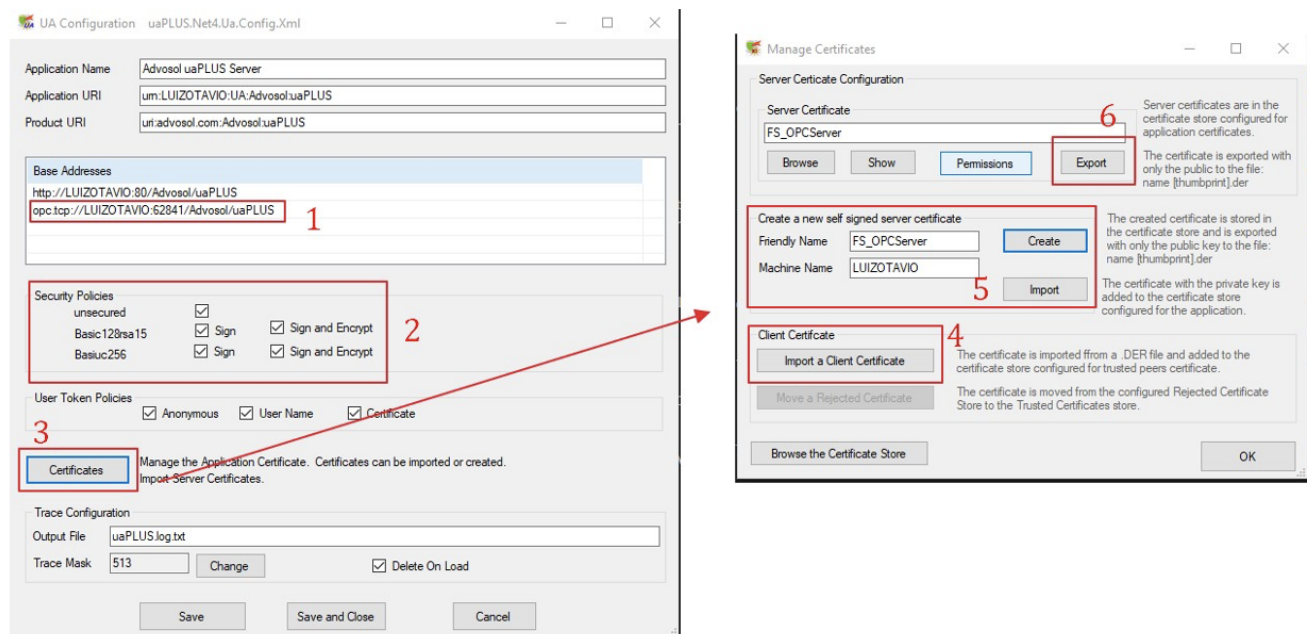
OPC UA Server Configuration

In your Engineering Environment, go to the **Info > Settings** tab, and look for the *OPC Server Runtime* configuration. Select *OPC UA*, and click on *Settings* (1).

You should see an application called *UA Server Configuration Helper* opening up. Click on *Browse* (2) and search for the file *.. fs-9.1uaPLUS.Net4.exe*. Then, click on *Create UA Configuration* (3) followed by *Edit UA Configuration* (4)



The *Edit UA Configuration* page is where the OPC UA Server properties are configured, such as *Endpoint* (1), *Security Policies* (2), and *certifications* (Client and Server) (3).

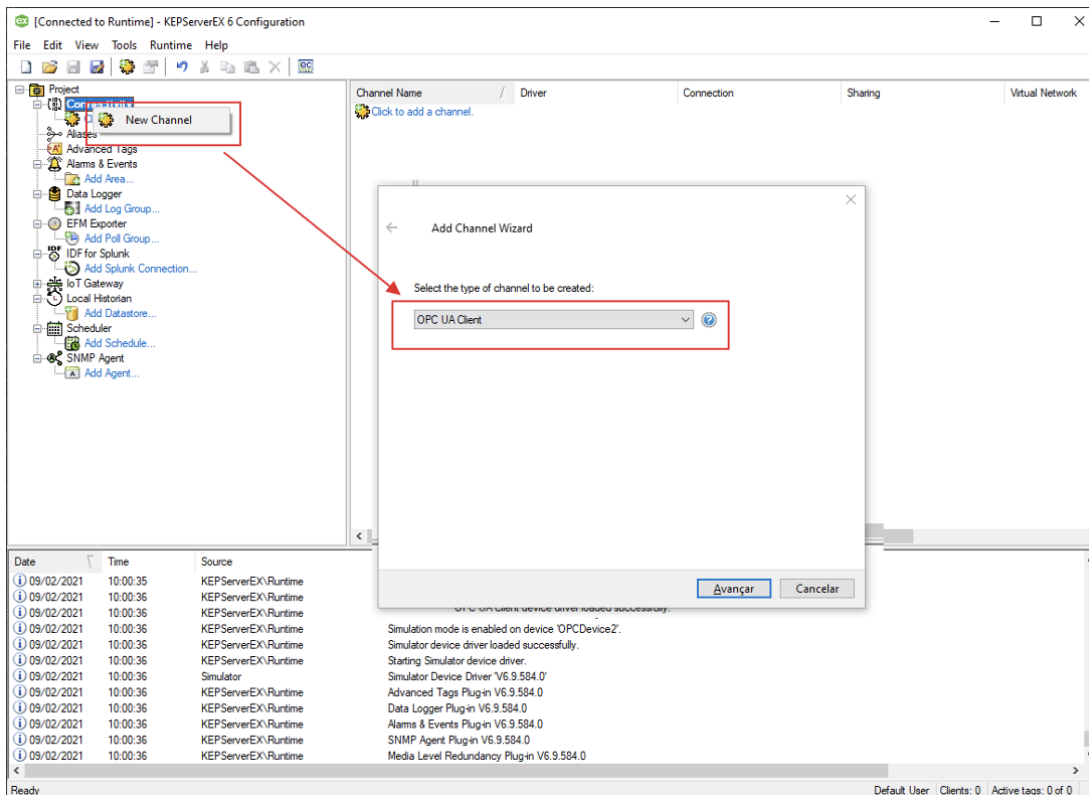


In the certificate popup, click on *Import a Client Certificate* (4) and browse for the Kepware Client Certificate. Then, *Create a new self signed server certificate* (5), give it a friendly name, and click on *Create*.

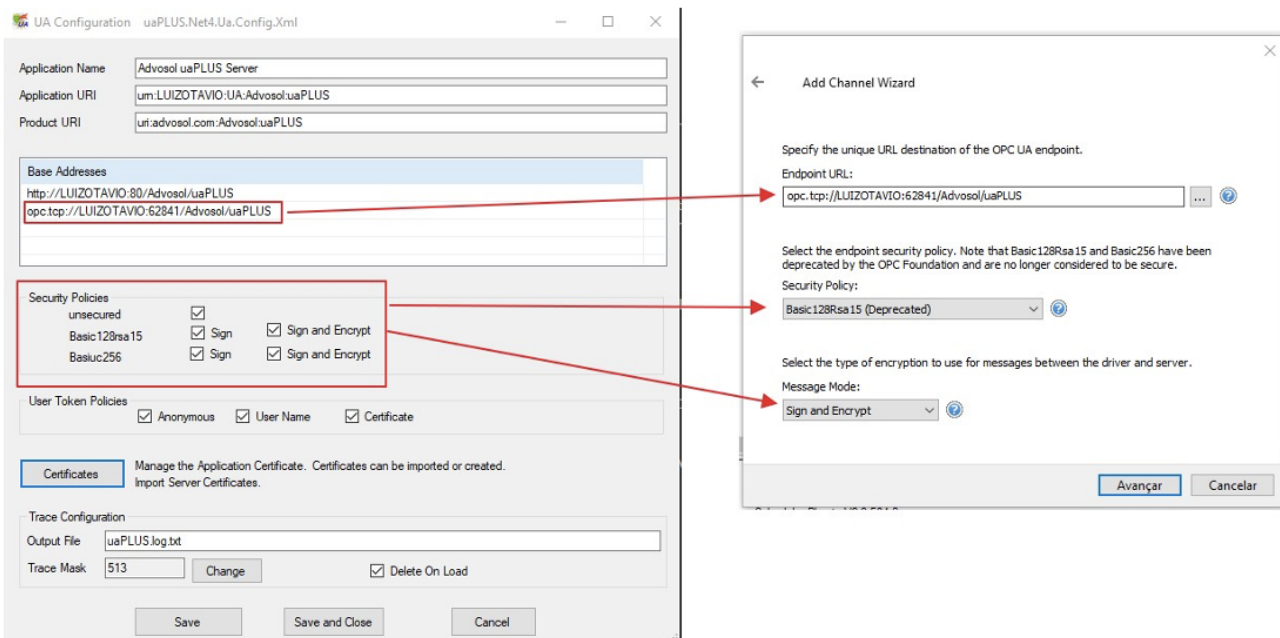
Finally, click on *Export* (6) to save the Server Certificate. Click on **OK > Save And Close > Done**

KepServerEx Configuration

In the KepServerEX Configuration display, right-click on *Connectivity* and select *New Channel*. From the Channel Wizard popup, browse for the *OPC UA Client*.

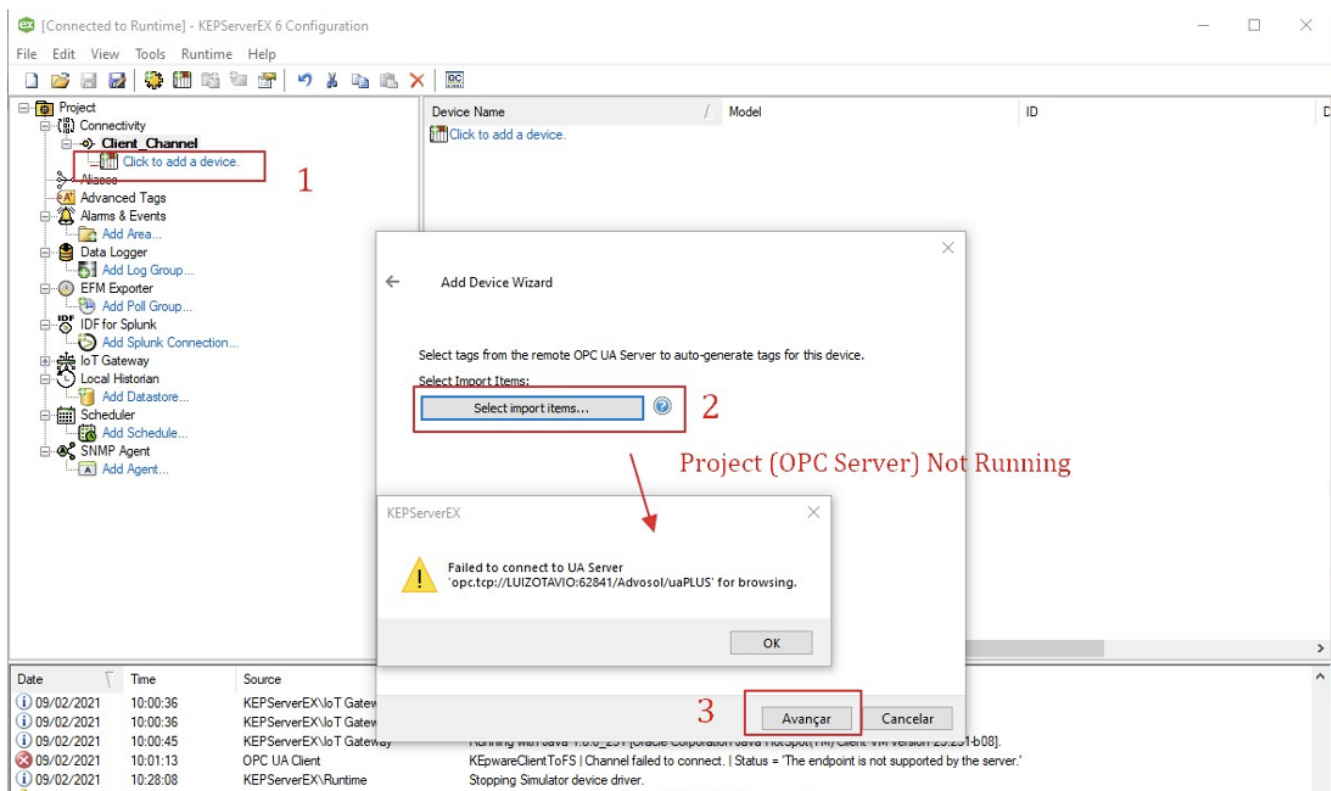


Fill in the Wizard configuration with the information from the OPC Server.



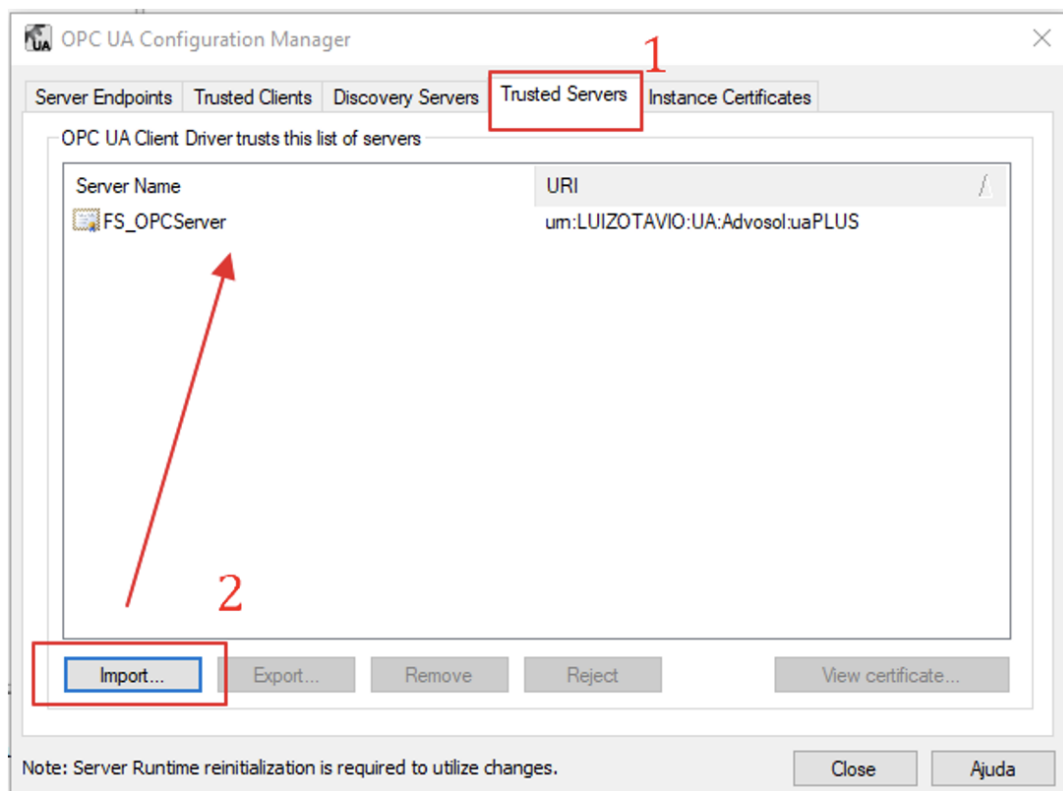
Click on *Add Device* (1) and give it a name. Fill in all the device parameters until you reach the *Import Items* (2) page.

The import tool **WILL NOT** work right now because the OPC Server (Project) is not running yet. Click on *Advance* (3) and finish your configuration.



Importing Server Certificate

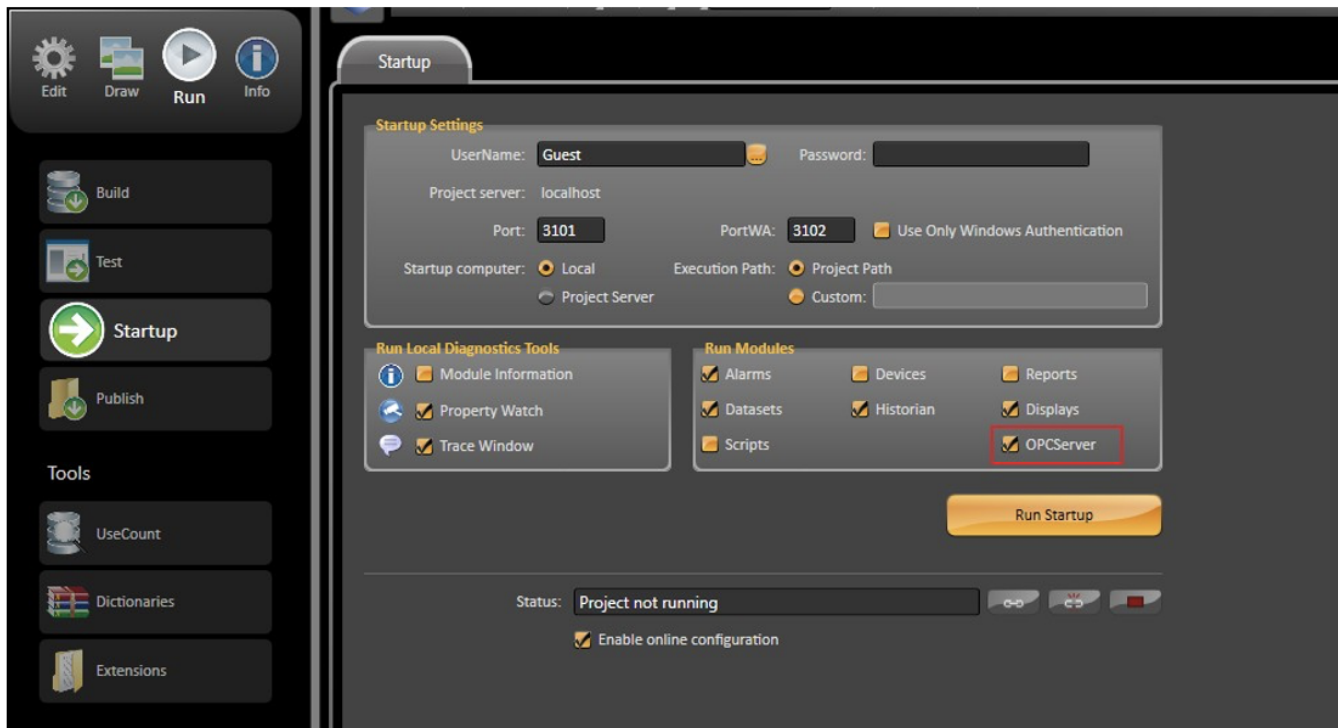
Back in the OPC UA Configuration Manager, go to the *Trusted Servers* (1) tab and Import (2) the OPC Server certificate.



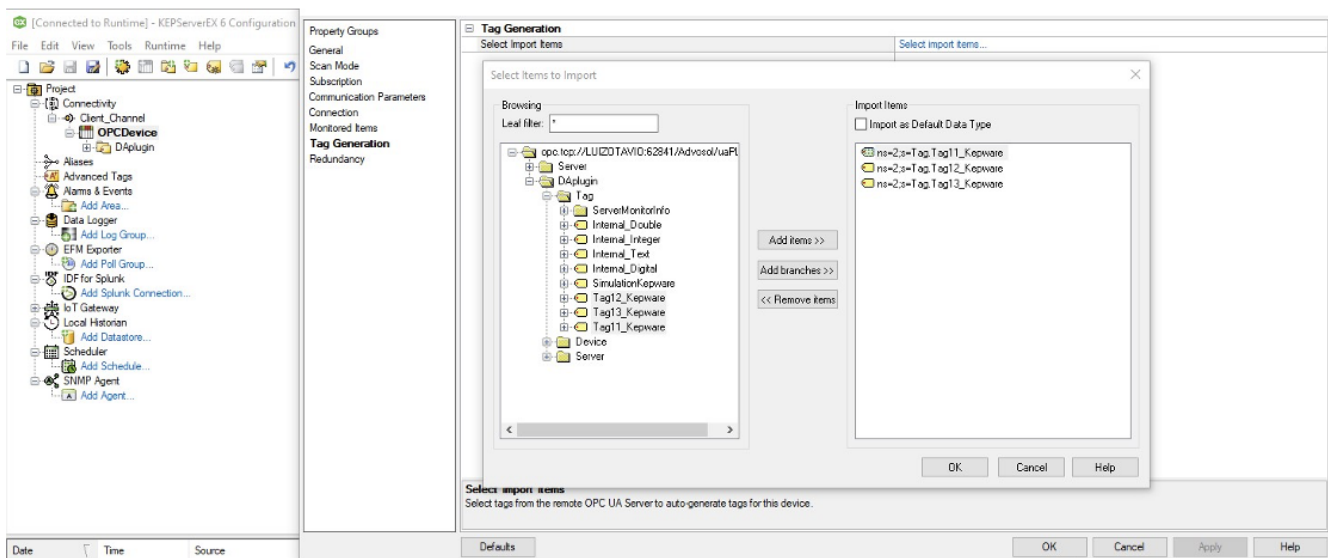
Reinitialize the Kepware service and Run your project.

Project Runtime

Once the configuration is done, you can launch the Project to test the communication exchange. Remember to have the *OPC Server Module* enabled on **Run > Startup**.



You can now go to your Kepware Device and Browse for the existing Tags.





The Tags *Visibility* property (in **Edit > Objects**) must be configured according to the description below:

- Public: Can be read and write in your OPC
- Protected: Can only be read
- Private: will not be seen or browsed

In the *Advosol UAplus Server* popup, you can keep an eye on the Clients connected to your server. As shown in the image below, we have one client (Kepware's OPC Quick Client) that is successfully communicating with our Project.

The screenshot displays two software windows. The top window, 'Advosol uaPLUS Server', shows the 'Sessions' tab with a table of active connections. The bottom window, 'OPC Quick Client - Untitled1', shows a tree view of the project structure and a data table of tag values.

Advosol uaPLUS Server - Sessions

SessionId	Name	User	Last Contact
Kepware_KEPServerEX_UA_Client_DriverClient_Channel		Anonymous	ms-31-2005693288 11:55:09

Advosol uaPLUS Server - Subscriptions

SubscriptionId	Publishing Interval	Item Count	Sec No
3	1000	3	5

Status: Running 11:55:10

OPC Quick Client - Untitled1

Tree View:

- Keplware KEPServerEX_V6
 - DataLogger
 - IoT_Gateway_Azure IoT Agent
 - IoT_Gateway_REST Agent
 - System
 - ThingWorks
 - Client_Channel_Statistics
 - Client_Channel_System
 - Client_Channel OPCDevice_System
 - Client_Channel OPCDevice.DAplugin

Data Table:

Item ID	Data Type	Value	Timestamp	Quality	Update Count
Client_Channel OPCDevice.DAplugin Tag Tag11_Kepw...	Long	3	11:53:02.108	Good	2
Client_Channel OPCDevice.DAplugin Tag Tag12_Kepw...	Long	1	11:52:55.752	Good	2
Client_Channel OPCDevice.DAplugin Tag Tag13_Kepw...	Long	2	11:53:00.388	Good	2

Ready Item Count: 76