System Platform and TOP Server

Basic OPC Client Connectivity

Software Toolbox
International Corporate
Headquarters, USA

148A East Charles Street
Matthews, NC 28105 USA
www.softwaretoolbox.com

TOLL FREE: 888-665-3678
GLOBAL: 704-849-2773
FAX: 704-849-6388

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Introduction

The purpose of this guide is to demonstrate how to make a basic OPC connection to the TOP Server with Wonderware's System Platform 3 (Archestra). There are a number of different ways Application Server can connect to I/O tags. This basic example uses an Application Integration (AI) Object connecting to an OPC Device Integration (DI) Object which connects to the TOP Server.

The TOP Server in this example will use the ControlLogix Ethernet Driver. The same basic steps can be used to make an OPC connection using any of the 70+ drivers available for the TOP Server. If you do not already have TOP Server installed, the free two-hour demonstration version can be downloaded at http://www.toolboxopc.com/ .

This guide will also demonstrate System Platform's OPC browsing capabilities when building a tag database in System Platform. This can be especially useful with ControlLogix communications because the tag database can be imported from the devices or imported using the RSLogix .L5K file. This eliminates having to manually configure the tag, thereby lowering the risk of a syntax error in the tag name.

OPC Browsing for tags does require that a tag database exist in TOP Server. Please note that TOP Server does not have to have a tag database for System Platform to communicate with devices using TOP Server.[1] However, without a tag database, System Platform will not be able to take advantage of browsing for tags.

This document will also demonstrate the means for System Platform to import the desired tags from a .CSV file exported from the TOP Server tag database. This can be more efficient than browsing if there are a large number of tags that need to be created in System Platform.

The information provided here is not a substitute for your System Platform documentation. This procedure is being demonstrated in order to show a complete connection, not to provide comprehensive training on how to build System Platform projects.

[1] Please refer to section **Adding Scan Group Items for Dynamic Addressing**

Configuring TOP Server

Open the OPC Server from the Windows Start menu as shown in **Figure 1** below.

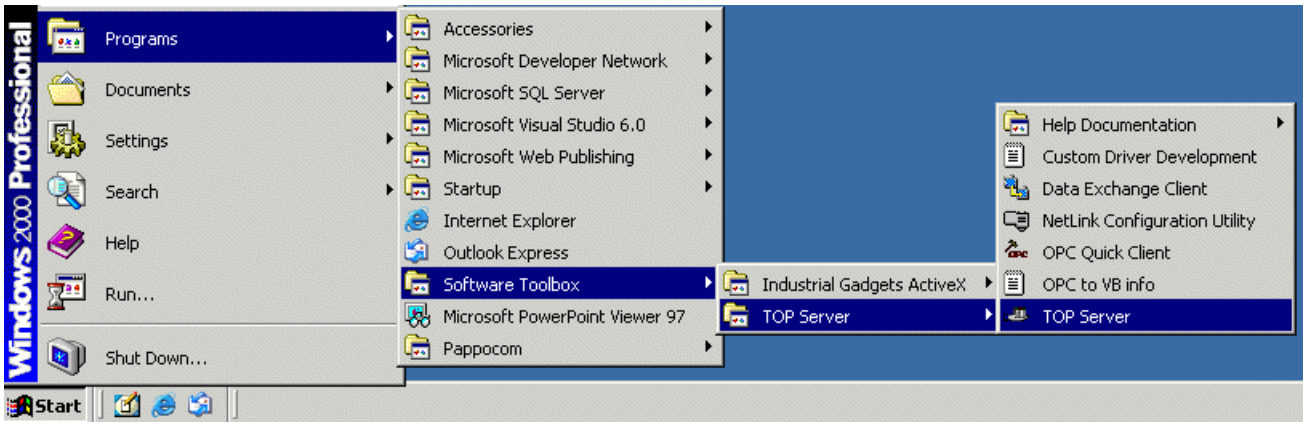


Figure 1: Launching TOP Server

When the TOP Server opens you will see the User-Interface in **Figure 2** below:

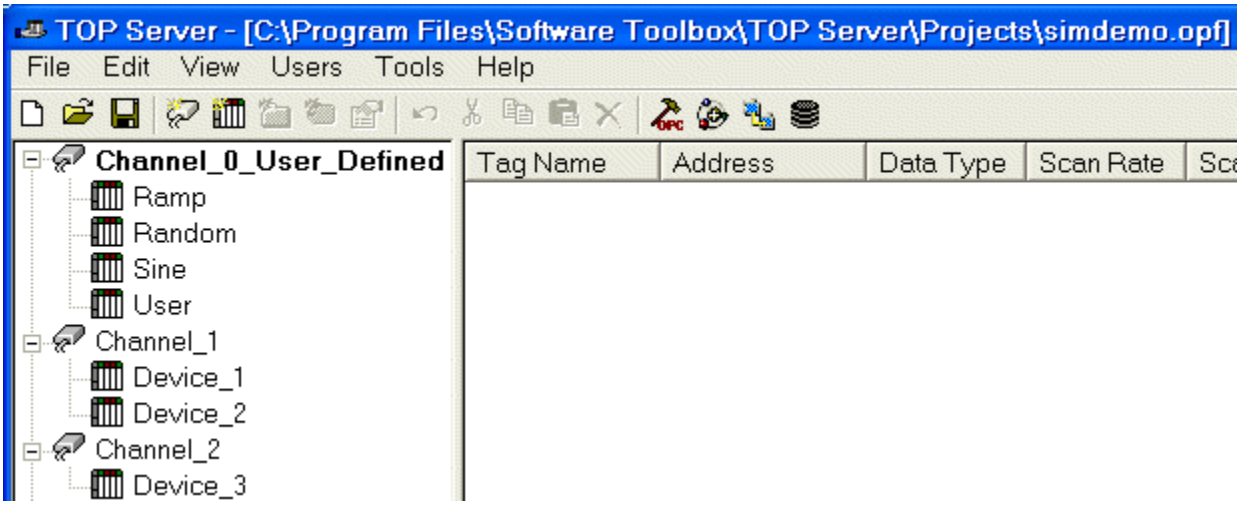


Figure 2: Opening TOP Server for the First Time

As you can see, TOP Server opens the simdemo project the first time it is opened. Should you ever need to access this project at a later time, it is located at C:/Program Files/Software Toolbox/TOP Server/Projects. All TOP Server projects are saved with the extension ".opf" and do not have to be saved to the default folder listed above, if you prefer a different location.

Since the simdemo project uses the Simulator driver, it is recommended to create a new project for communications with the device or devices, which will be a ControlLogix, in this example. For more information on configuring the TOP Server, please refer to the Quick Start Guide, which is available at: http://www.toolboxopc.com/Support/Quick_Start_Guide/quick_start_guide.html

Since the ControlLogix has so many configuration possibilities, there are also application notes with recommendations and explanations regarding the TOP Server ControlLogix Ethernet driver available at: http://docs.softwaretoolbox.com/Product_Names/showdocuments.asp?folder=%2E%2E%2FDocuments%2FTOPServer%2FControlLogix/

A TOP Server configuration requires a minimum of one channel and one device configured. Each channel represents a single network connection or thread of communication. When using an Ethernet connection it is normally best to create only one device under each channel, so that each device has its own connection.

Configuring tags is done by highlighting the device you created and then right clicking under the Tag Name column, then clicking “New Tag” as shown in **Figure 1** below.

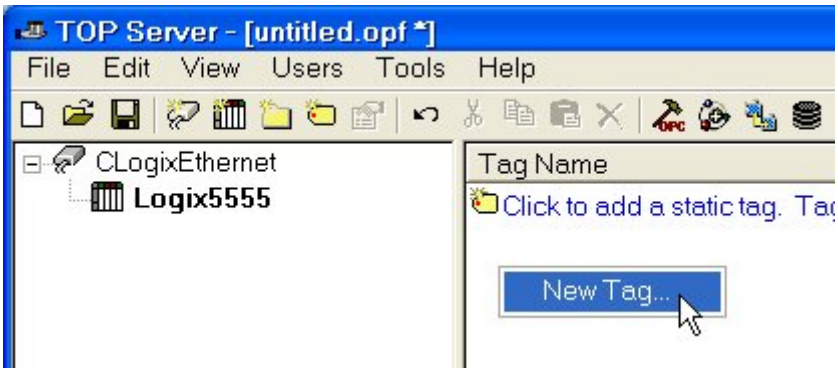


Figure 3: Creating a New Tag

This opens the Tag Properties window as you can see in **Figure 4** below. Here you can give a meaningful name to your tags, which is one of the major benefits of creating a static tag database in your TOP Server project as opposed to **dynamically addressing** the items from the client application.

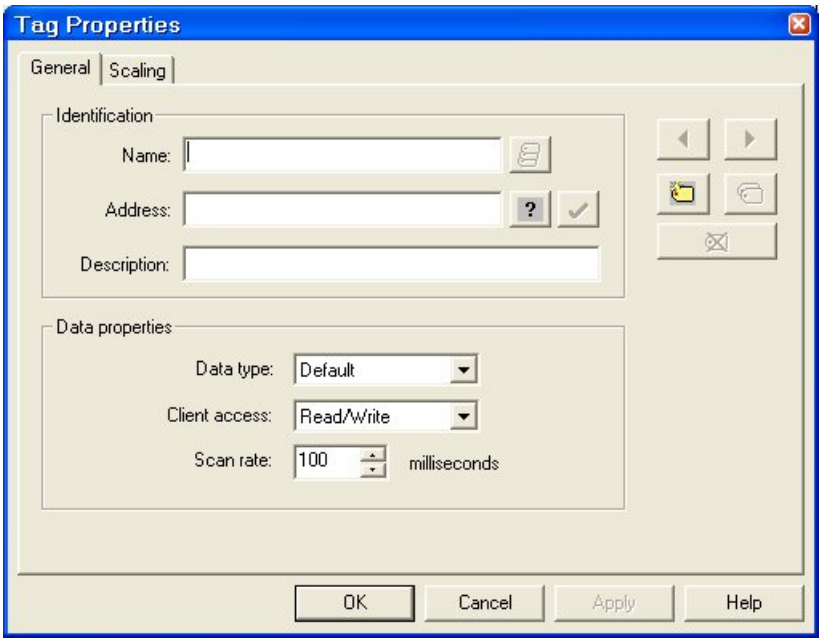


Figure 4: Tag Properties

With the TOP Server ControlLogix Ethernet driver, a major functional benefit is the ability to auto-generate a tag database in one of two ways.

1. The tag database can be created in TOP Server by accessing the ControlLogix processor and importing the tags directly.

2. The tag database can be created by importing from an .L5K export file from the RSLogix 5000 project that is loaded on the ControlLogix processor.

You can specify which method you prefer by accessing the Device Properties of the device you have created in TOP Server. This setting is found under the “Logix Database Settings” tab of the Device Properties window as you can see in **Figure 5** below.

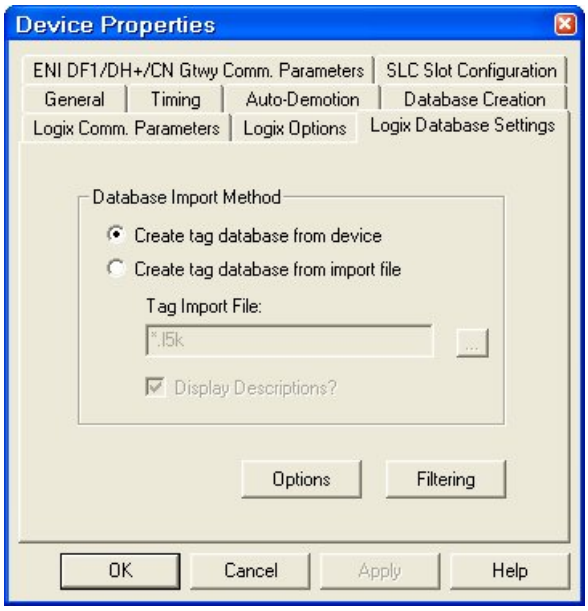


Figure 5: Logix Database Settings

Notice that selecting “Create tag database from import file” will allow you to browse for an .L5K file that you can create from your RSLogix5000 project.

Once a method is selected, you can generate the tag database from the “Database Creation” tab by clicking the “Auto Create” button as you can see in **Figure 6** below.

Figure 6: Database Creation

After clicking the “Auto Create” button, TOP Server will either connect to the ContolLogix Processor and access the controller project or access the .L5K file and begin generating OPC Tags. The tags are added underneath the device in groups named based on the programs in the project, as you can see in **Figure 7** below.

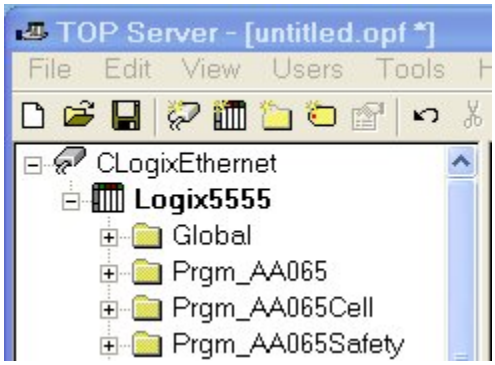


Figure 7: Created Tag Groups

With the tag database created, you are now ready to configure your System Platform to connect to TOP Server.

Configuring System Platform

System Objects Configuration

This example starts with the ArchestrA IDE open using a new Galaxy. Refer to your Wonderware documentation for instruction on how to create a new System Platform Galaxy. For the purposes of this tutorial, we will be using the Deployment View in our sample Galaxy, SWTB1, as seen in **Figure 8** below.

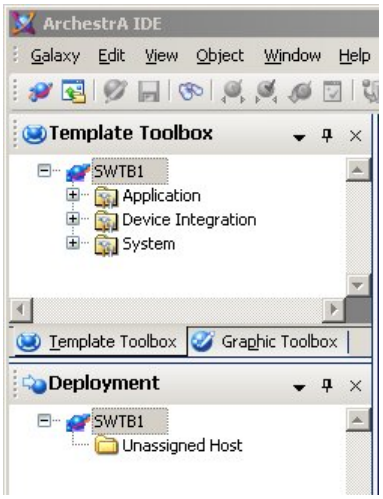


Figure 8: Deployment View

The first step in configuring a new project begins with the System Object in the Template Toolbox. Expand the System Object and highlight the $WinPlatform template object, as shown in **Figure 9** below.

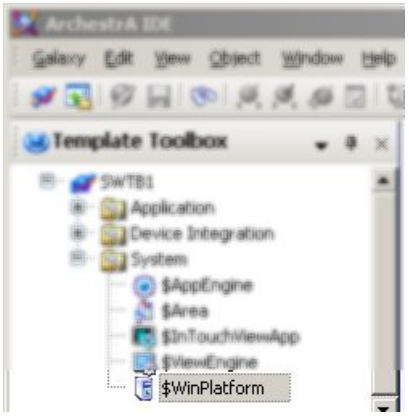


Figure 9: $WinPlatform

Drag and drop the $WinPlatform template object under the Galaxy in the Deployment View as shown in **Figure 10** below. This example will use the default names, but you can name these objects as needed for your project.

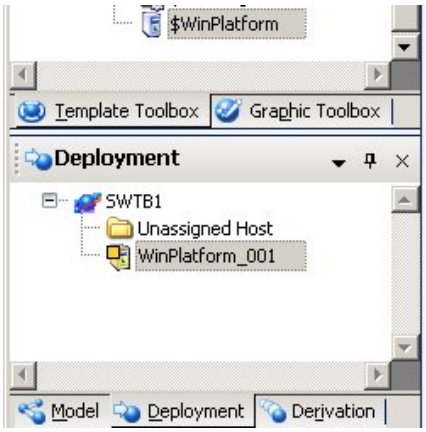


Figure 10: Adding $WinPlatform

The AppEngine is the next System Object we need to create for this project. Drag and drop the $AppEngine template object under the Unassigned Host folder to create your AppEngine_001 object as shown in **Figure 11** below.

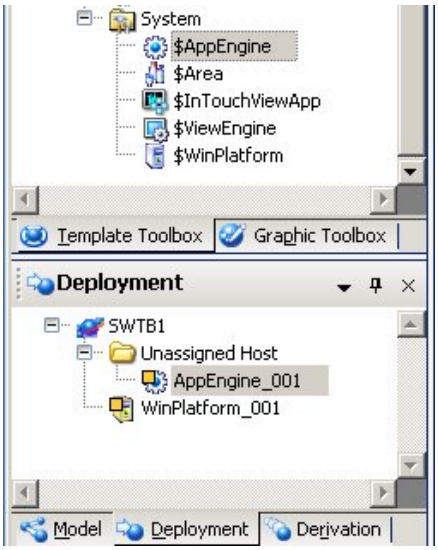


Figure 11: Adding $AppEngine

The final System Object required is the Area Object. Drag and drop the $Area template System Object to the Unassigned Host folder under the Deployment View to create the Area_001 object as shown in **Figure 12** below.

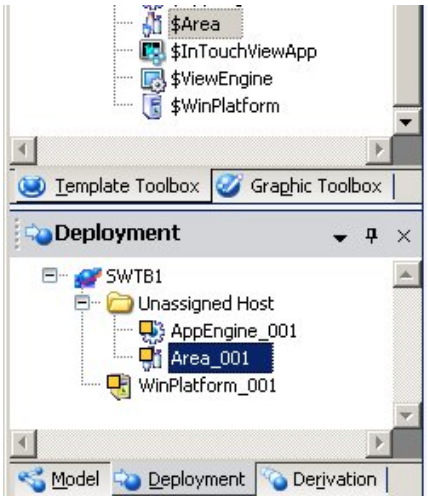


Figure 12: Adding $Area Object

Refer to your Wonderware documentation for a better understanding of how these logical objects work and how to best name them for your system.

The AppEngine_001 object can now be assigned under the WinPlatform_001 object and the Area_001 object can be assigned under the AppEngine_001 object, as shown in **Figure 13** below. There is no configuration of these objects required for this example.

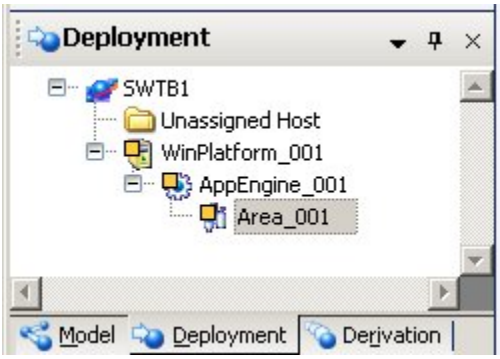


Figure 13: Assigning System Objects

Now that our System Objects are created and in place we can configure our DI or Device Integration object.

Device Integration Object Configuration

We start by selecting our template object from the Device Integration section of the Template Toolbox as shown in **Figure 14** below. The $OPCClient object template is selected because this example demonstrates an OPC to TOP Server connection.

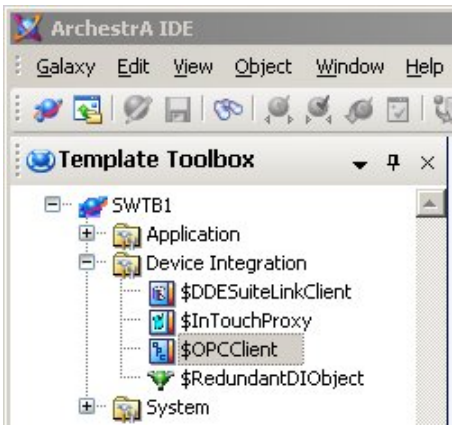


Figure 14: $OPCClient DI Object

Drag and drop the $OPCClient template object to the Unassigned Host folder in the Deployment View as shown in **Figure 15** below to create our OPCClient_001 DI Object.

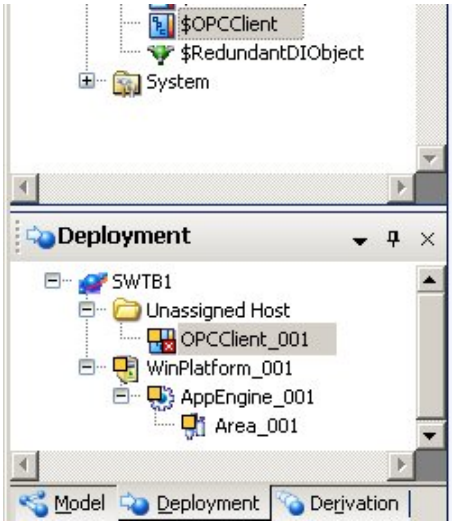


Figure 15: Adding OPCClient DI Object

Double-clicking the OPCClient_001 object under the Unassigned Host will open the object properties to the right of the Template Toolbox as shown in **Figure 16** below.

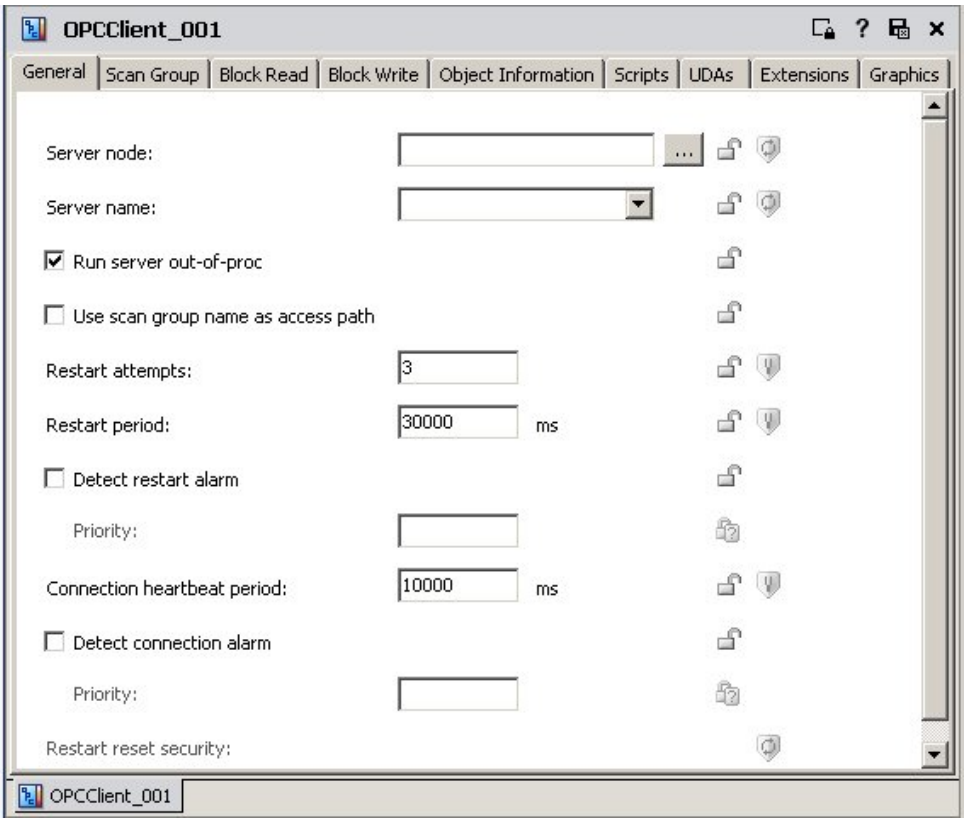


Figure 16: OPCClient Object Properties

Click on the Ellipses Button (…) to the right of the "Server node" text field, as shown in **Figure 17** below.

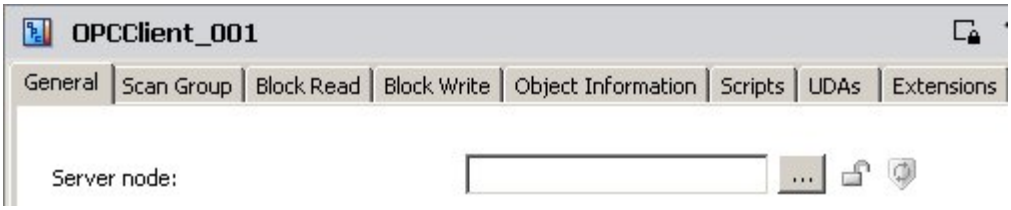


Figure 17: Selecting a Server Node

The Browse Node dialog box will open. You can select the Domain of the computer node where TOP Server is installed. This will then display a list of available computer node names that are available in that

domain. The name of the node for this example is “KMR-IAS-TEST”, so we will highlight that node name and select OK, as shown in **Figure 18** below.

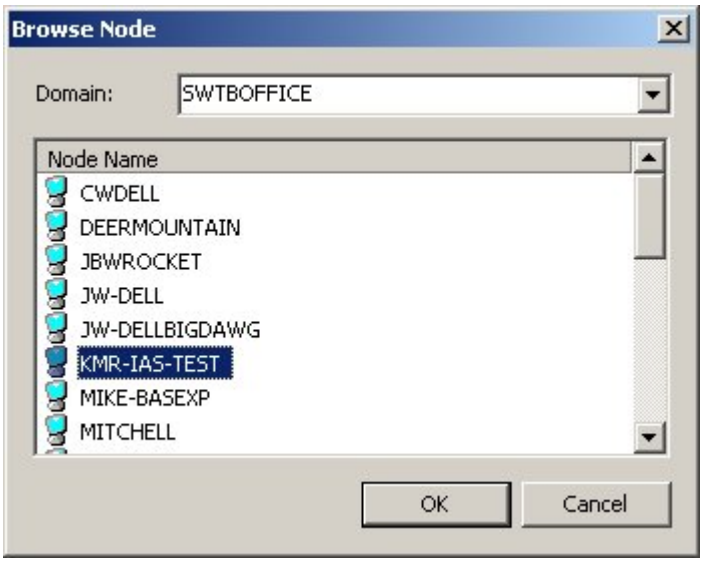


Figure 18: Browsing Nodes

Remote OPC Connections and DCOM

For this example, the node “KMR-IAS-TEST” is the local machine where both System Platform and TOP Server are installed. Connecting to a node with TOP Server installed that is not the same node where System Platform is installed will involve a remote OPC connection. This means Windows DCOM Security Settings will play a factor in the success of your connection to TOP Server.

If this will be the case, please refer to our DCOM Tutorial Videos and Guides, available at: http://www.opcactivex.com/Support/Tutorials/DCOM_Tutorial_-_Configuring_th/dcom_tutorial_-_configuring_th.html

Browsing the TOP Server Address Space

Once the Server node is selected, you will be able to browse for the available OPC Servers on the node you have selected by expanding the dropdown menu beside the Server name field as shown in **Figure 19** below.

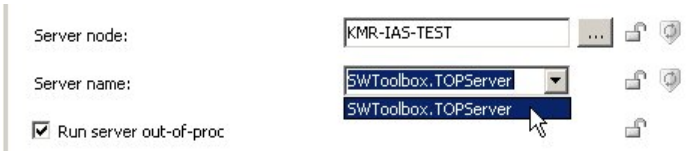


Figure 19: Browsing for OPC Servers

The options you have in your OPC Server list will depend on the number of OPC Servers installed on that machine. For connections to TOP Server, you will always select "SWToolbox.TOPServer" from the list. Problems browsing for OPC Servers typically indicate DCOM issues; please refer to the section of this document entitled **Remote OPC Connections and DCOM** for details on how to address this problem.

Once TOP Server has been selected, we can now proceed to the Scan Group tab of the OPCClient_001 object as shown in **Figure 20** below.

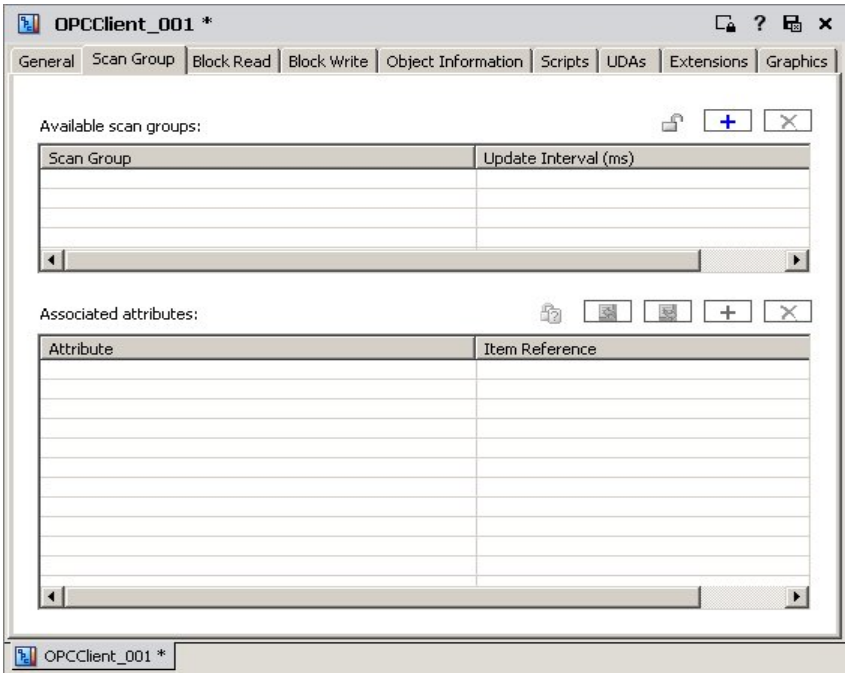


Figure 20: Scan Group Configuration

System Platform requires that at least one Scan Group be configured. If all of your items will need the same Update Interval, you would only need one Scan Group, unless you wanted to group your items in a certain way.

If different items need different Update Intervals, you would configure multiple Scan Groups using a different Update Interval for each. For the purposes of this example, we will only be configuring one Scan Group.

To add a new Scan Group, click the blue "+" symbol above the "Available scan groups" section, as displayed in **Figure 21** below.

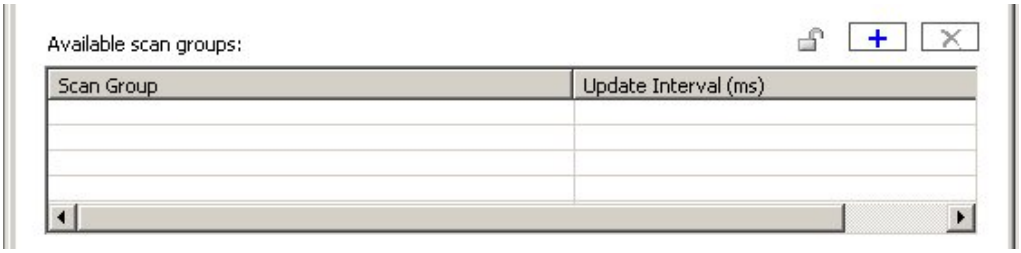


Figure 21: Adding a New Scan Group

This will allow you to give your Scan Group a meaningful name and define the rate at which System Platform will request updates for the items in this Scan Group, as seen in **Figure 22** below.

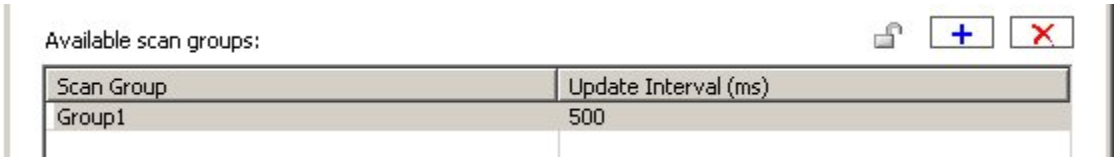


Figure 22: New Scan Group "Group1"

For the purposes of this example, the Scan Group has been named "Group1" and uses the default Update Interval of 500 milliseconds (which is automatically used if you do not specify an Update Interval).

With a Scan Group configured, there are now two options for adding items to the group.

1. We can browse the OPC Server tag database for items to add.

2. We can import a .CSV file containing the tag information.

The following sections will demonstrate both methods.

Adding Scan Group Items via OPC Browsing

First, we will add an item by browsing the TOP Server tag database that was created earlier. Highlight the scan group you have just created, and then click the blue "+" symbol above the "Associated attributes" section, as shown in **Figure 23** below.

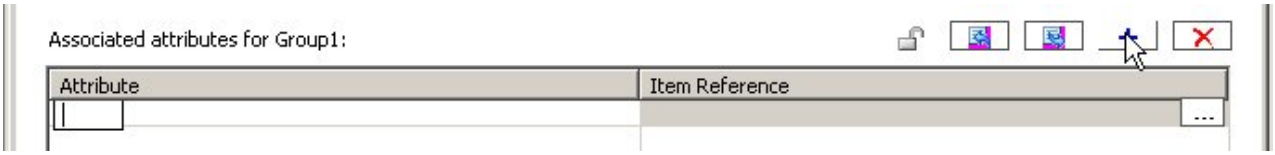


Figure 23: Adding Group Attributes

This will add a new "Attribute" to the scan group we have created. You are given the option of defining a name for this attribute or you can skip this step, in which case the full address including the Channel and Device Names from TOP Server will be used once an item is selected.

To browse the tag database of TOP Server, click the Ellipses Button (…) to the far right of the Item Reference column for the Attribute you are adding and this will open the OPC Item Browser, shown in **Figure 24** below.

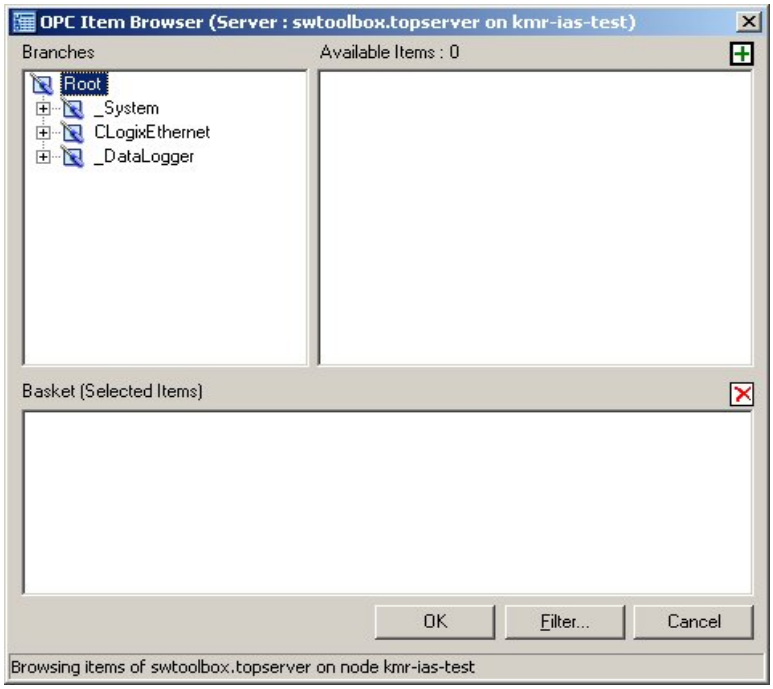


Figure 24: OPC Item Browser

The branch we are interested in is the “CLogixEthernet” branch, which you will notice is the name of our Channel that is configured in TOP Server. By expanding the “CLogixEthernet” branch (click the plus sign ‘+’ to the left of it), you will notice the “Logix5555” branch, which is the name of our Device configured in TOP Server, as you can see in **Figure 25** below.

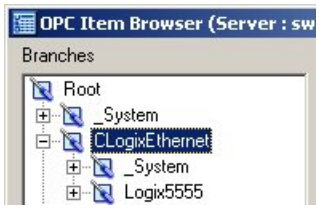


Figure 25: Browsing Devices

Expanding the “Logix5555” branch in the same way, we are able to browse the tag groups underneath the device configured in TOP Server, as you can see in **Figure 26** below.

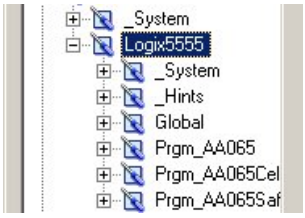


Figure 26: Browsing Tag Groups

If a group has tags available in it, highlighting the Group under the Branches view will display the available items to the right in the Available Items view, as shown in **Figure 27** below.

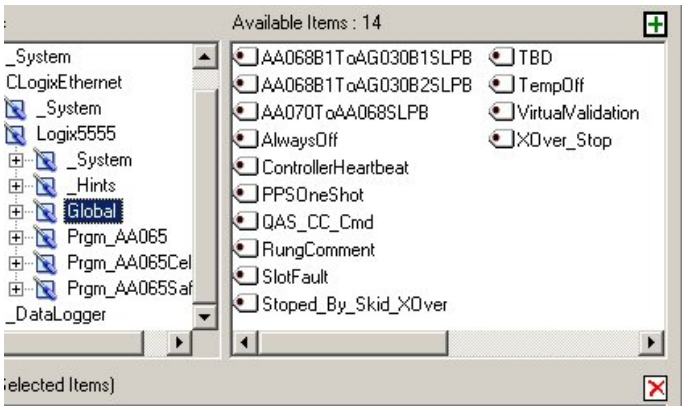


Figure 27: Browsing OPC Tags

To add an item to the scan group, we must first add the desired item or items to the Basket area of the OPC Item Browser. The easiest way to do this is by selecting the item and dragging and dropping the desired item into the Basket area, as shown in **Figure 28** below.

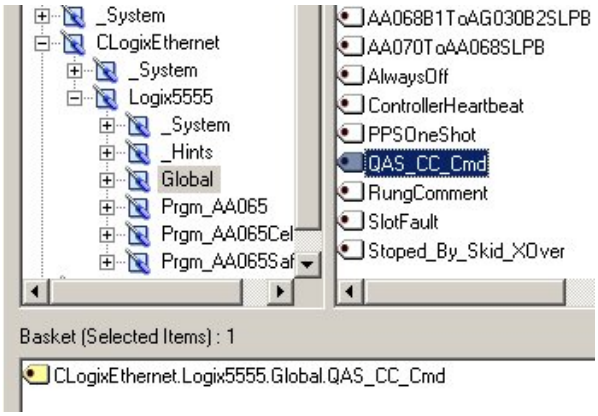


Figure 28: Adding an Item

Once the desired item or items are added to the Basket area, clicking OK will add the basket items to the Associated Attributes for the scan group, as seen in **Figure 29** below.

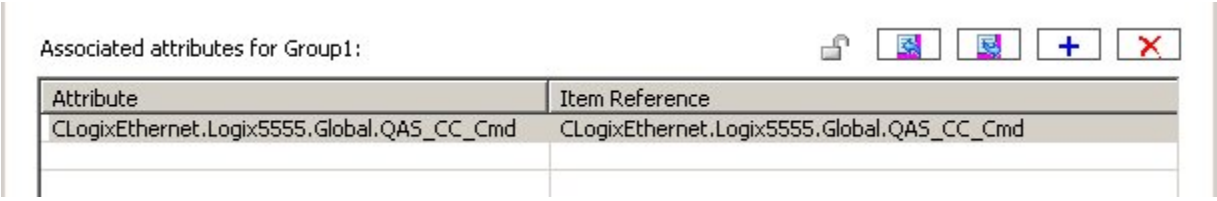


Figure 29: Attribute List

For the purpose of this example, we will change the attribute name to “QAS_CC_Cmd” to match the tag name in TOP Server. This name can be any meaningful name you would like, though. To change the attribute name, simply highlight the Attribute and click the current attribute name, then enter the desired name, as shown in **Figure 30** below.

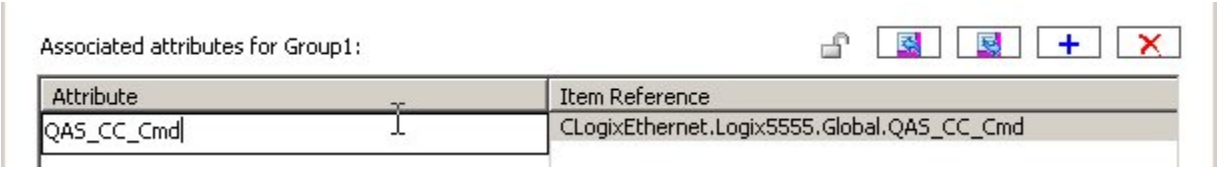


Figure 30: Changing Item Names

Since we are only adding one item for this example, we are finished configuring the OPCClient object. Save the changes made to the OPCClient object and close the configuration screen by clicking the Save icon at the top, as shown in **Figure 31** below.

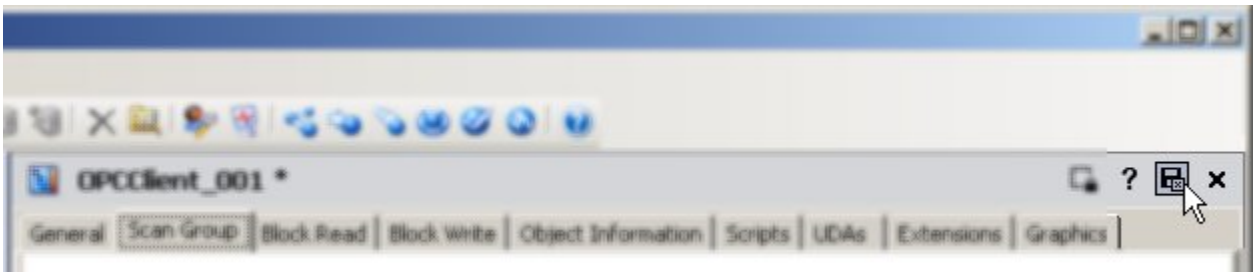


Figure 31: Save OPCClient Object

You will then be prompted to "Check In" the changes that have just been made. You can enter an optional comment here as well. Check in the changes by clicking the "OK" button, as shown in **Figure 32** below.

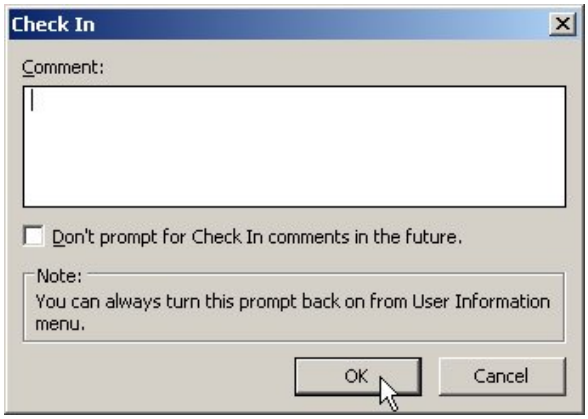


Figure 32: Check-In Object Changes

Adding Scan Group Items via .CSV Import

If you will need to add a lot of items to your System Platform project, browsing for individual OPC items may not be the most efficient way to add items to your project. System Platform does support importing .CSV files into Scan Group Attributes List for the OPCClient object.

The key to importing items in this way is the format of the .CSV file. The best way to determine the format System Platform expects for the .CSV file is to create one item for the scan group and then perform a .CSV export.

First, browse for an OPC item and add it to the Attributes List for the Scan Group. Please refer to the section in this document entitled **Adding Scan Group Items via OPC Browsing** for the steps necessary to add an item by OPC Browsing.

Exporting from System Platform

Once an item has been added to the Attributes List, we can export a .CSV file containing that item by clicking the Export button just above the Attributes List, as shown in **Figure 33** below.

Figure 33: Exporting System Platform .CSV

This will open a Save As dialog box, allowing you to give the export file a name and save it to an appropriate location. Once you have saved the file, you can open it with Excel to determine the format System Platform uses in import and export files. You can see the format for our previously configured item in **Figure 34** below.

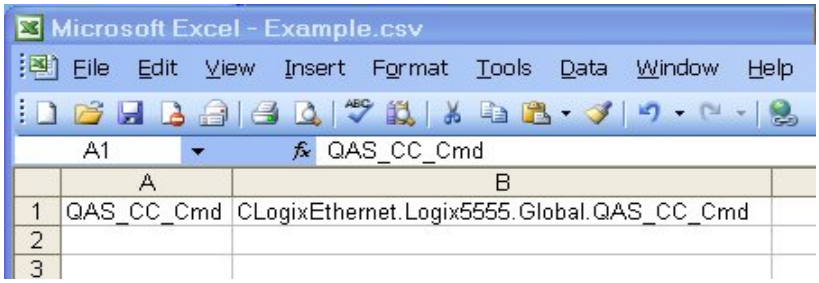


Figure 34: Import .CSV Format

As you can see, the format matches the format in the Attributes list: the first column represents the attribute name and the second column represents the Item Reference.

Knowing this format means we could add other items in the same format to the Excel .CSV file, as shown in **Figure 35** below.

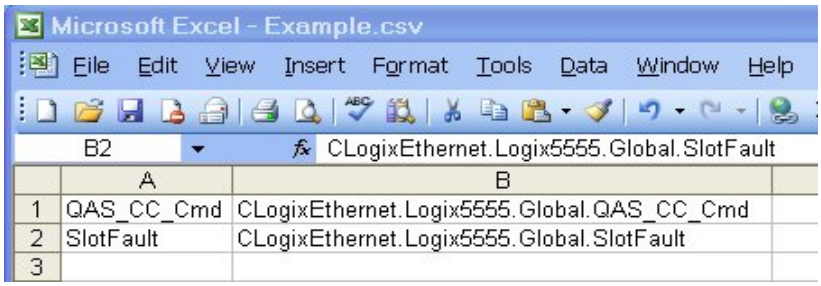


Figure 35: Adding Item to Import File

The format for the second column is in the form “ChannelName.DeviceName.GroupName.TagName”. Once the desired items have been added, save the .CSV file.

Importing into System Platform

We can then import this into the Attributes List in System Platform by clicking the Import button just above the Attributes List, as shown in **Figure 36** below.

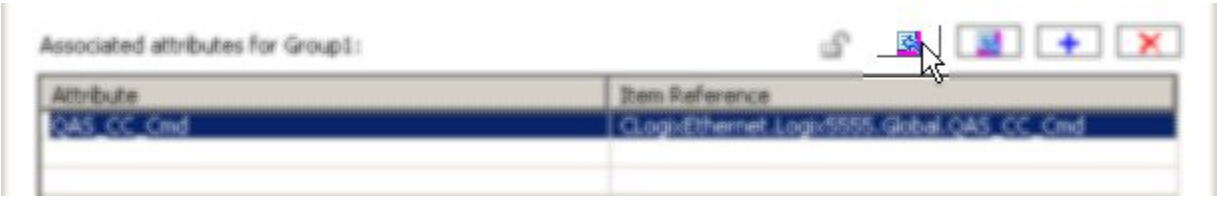


Figure 36: Importing .CSV File

This will open the Open dialog box where you can browse to the .CSV file you just added the items to and saved. Once you have imported the .CSV file, you will see the items from the file in your Attributes List, as seen in **Figure 37** below.

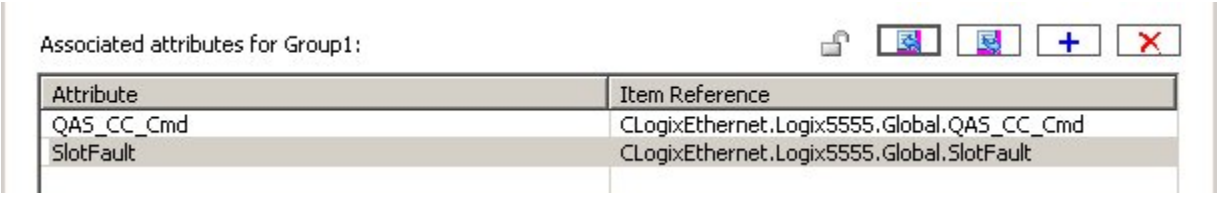


Figure 37: Imported Items

It is important to note that the Item Reference format used in **Figure 37** would only be used if you intend to maintain a tag database in your TOP Server project.

A tag database is not required in TOP Server for communicating with your devices. Should you choose to remove the tag database from TOP Server, a different addressing format (**Dynamic Addressing**) would be required.

Adding Scan Group Items for Dynamic Addressing

Dynamic addresses can be used with the TOP Server instead of adding tags in the TOP Server. In the examples above, we added the tag name from the TOP Server to the Topic name such that the address was “CLogixEthernet.Logix5555.Global.QAS_CC_Cmd”. Dynamically, this is not much different, since ControlLogix devices use Symbolic Addresses, so the syntax becomes: “CLogixEthernet.Logix5555.QAS_CC_Cmd”.

For a better example of how dynamic addressing works, let us turn to the Modbus protocol. For a static tag “Tag1” representing the holding register “40001” in Device1 of Channel1 in TOP Server, the syntax would be “Channel1.Device1.Tag1”. To address this holding register dynamically, the format would be “Channel1.Device1.40001” to access this address as a “Word” data type, since that is the default data type for that address.

With dynamic addressing, to access an address as a data type other than the default, the data type must be appending to the end of the address. To access “40001” from the example above as a “Float” data type, the syntax would be “Channel1.Device1.40001@float”. The default and supported data types for each address type are listed in the specific driver help files in TOP Server.

It is still possible to use the Import .CSV functionality of System Platform if you intend to dynamically address your devices (no tag database in TOP Server). The best way to accomplish this with devices that support importing a tag database, such as ControlLogix, is to import the database, use it for configuration and delete it when you are finished.

TOP Server supports exporting the tags for a configured device or group in the form of a .CSV file. This is accomplished by highlighting the desired device or group in the TOP Server project, right-clicking and selecting “Export CSV”, as shown in **Figure 38** below.

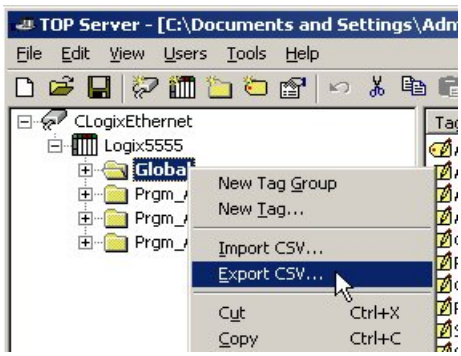


Figure 38: Exporting TOP Server Tags

This will open the “Export to CSV” dialog box, allowing you to save the .CSV file to an appropriate location. The file name will default to the device or group name, but you can give it any name you would like. Once saved, we can open the .CSV file and edit the format to match the required format for System Platform.

As you can see in **Figure 39** below, this .CSV format is different from the required format for import into System Platform.

Microsoft Excel - Global.csv

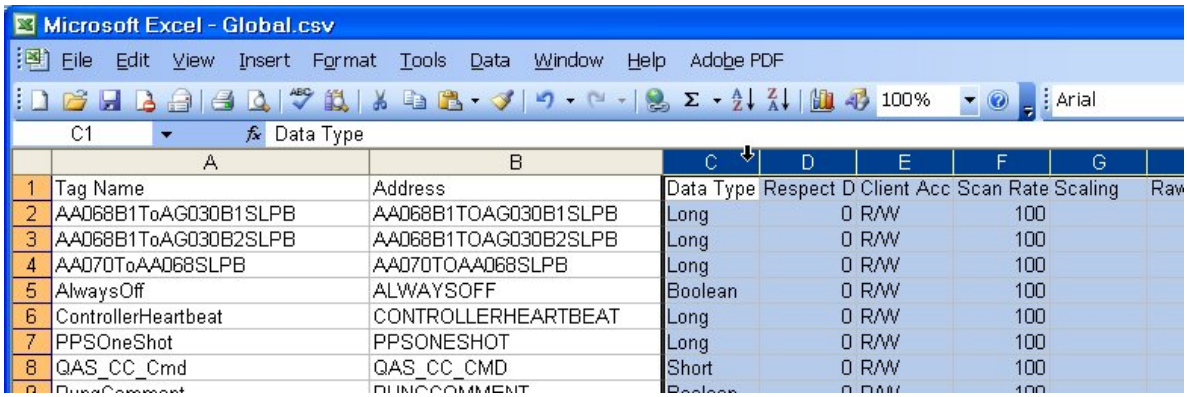
File Edit View Insert Format Tools Data Window Help Adobe PDF

A1 Tag Name

	A	B	C	D	E	F	G
1	Tag Name	Address	Data Type	Respect D	Client Acc	Scan Rate	Scaling
2	AA068B1ToAG030B1SLPB	AA068B1TOAG030B1SLPB	Long	0	R/W	100	
3	AA068B1ToAG030B2SLPB	AA068B1TOAG030B2SLPB	Long	0	R/W	100	
4	AA070ToAA068SLPB	AA070TOAA068SLPB	Long	0	R/W	100	
5	AlwaysOff	ALWAYSOFF	Boolean	0	R/W	100	
6	ControllerHeartbeat	CONTROLLERHEARTBEAT	Long	0	R/W	100	
7	PPSOneShot	PPSONESHOT	Long	0	R/W	100	
8	QAS_CC_Cmd	QAS_CC_CMD	Short	0	R/W	100	

Figure 39: TOP Server Exported Tags

Most of the columns imported contain tag formatting information that is not necessary in System Platform. So, the first modification that needs to be made is removing the unnecessary columns from the .CSV file. The only two columns required by System Platform are the first two (A & B). So Columns D-Q can be deleted. Highlight the columns, as shown in **Figure 40** below.

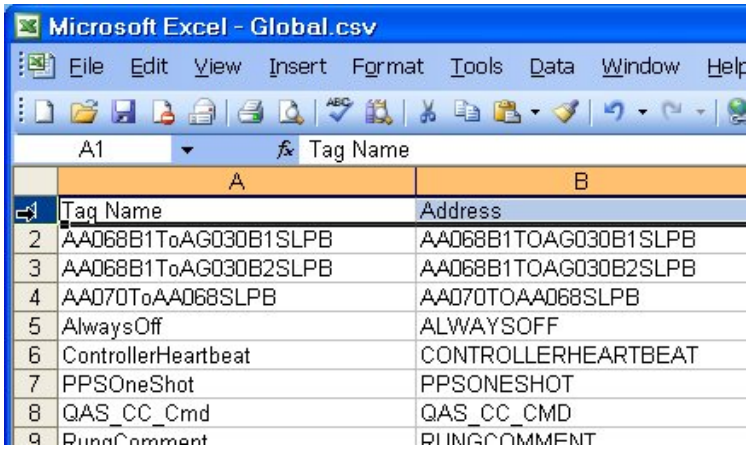


	A	B	C	D	E	F	G
1	Tag Name	Address	Data Type	Respect D	Client Acc	Scan Rate	Scaling
2	AA068B1ToAG030B1SLPB	AA068B1TOAG030B1SLPB	Long	0	R/W	100	
3	AA068B1ToAG030B2SLPB	AA068B1TOAG030B2SLPB	Long	0	R/W	100	
4	AA070ToAA068SLPB	AA070TOAA068SLPB	Long	0	R/W	100	
5	AlwaysOff	ALWAYSOFF	Boolean	0	R/W	100	
6	ControllerHeartbeat	CONTROLLERHEARTBEAT	Long	0	R/W	100	
7	PPSOneShot	PPSONESHOT	Long	0	R/W	100	
8	QAS_CC_Cmd	QAS_CC_CMD	Short	0	R/W	100	

Figure 40: Deleting Unnecessary Columns

Pressing the Delete key will remove these unnecessary columns.

Next, the first row contains heading information that is also not required in System Platform. So the next step is to remove Row 1 from the .CSV file. Highlight Row 1, as shown in **Figure 41** below, right-click the selection and select Delete to remove the row.



	A	B
1	Tag Name	Address
2	AA068B1ToAG030B1SLPB	AA068B1TOAG030B1SLPB
3	AA068B1ToAG030B2SLPB	AA068B1TOAG030B2SLPB
4	AA070ToAA068SLPB	AA070TOAA068SLPB
5	AlwaysOff	ALWAYSOFF
6	ControllerHeartbeat	CONTROLLERHEARTBEAT
7	PPSOneShot	PPSONESHOT
8	QAS_CC_Cmd	QAS_CC_CMD

Figure 41: Deleting Unnecessary Rows

There is one more modification necessary to make this .CSV file format compatible with System Platform such that the tag database in TOP Server can be removed. The second column in the .CSV contains the

address of a point on the device. Adding “ChannelName.DeviceName.” to the beginning of these addresses is the proper format for dynamically addressing these points from System Platform, allowing the TOP Server tag database to be removed.

For this example, the “ChannelName.DeviceName.” would be “CLogixEthernet.Logix5555.”, so this will need to be added to the beginning of each address in the second column of the .CSV file, as shown in **Figure 42** below.

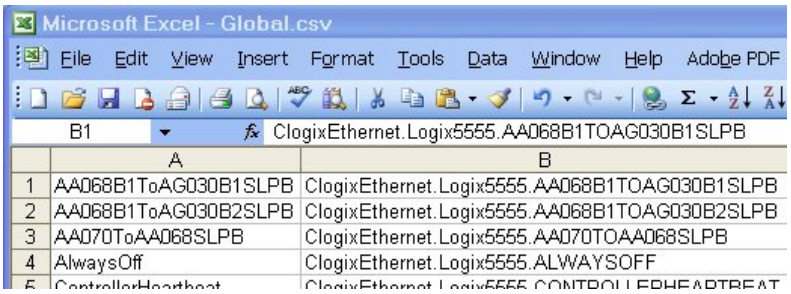


Figure 42: Dynamic Addressing .CSV

After saving the .CSV file, it can now be imported into System Platform, allowing the tag database in TOP Server to be removed. For instructions regarding importing a .CSV file into System Platform, please refer to the section of this document titled **Importing into System Platform**.

If you would now like to remove the tag database from TOP Server, it is just a matter of delete the groups and tags that were created for the device. Since multiple groups cannot be selected for deletion in TOP Server, they do have to be deleted individually.

It can be a relatively painless process, however, if you follow the following steps. In TOP Server, go to the Tools / Options menu, as shown in **Figure 43** below.

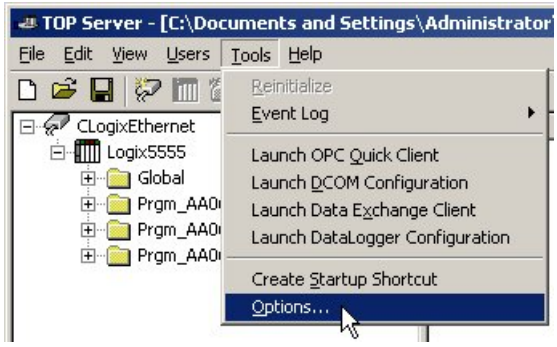


Figure 43: TOP Server Options Menu

This will open the General tab in the TOP Server Options menu. Under the Confirmations section, we will want to disable the "Ask for confirmation when deleting an object" checkbox, as shown in **Figure 44** below.

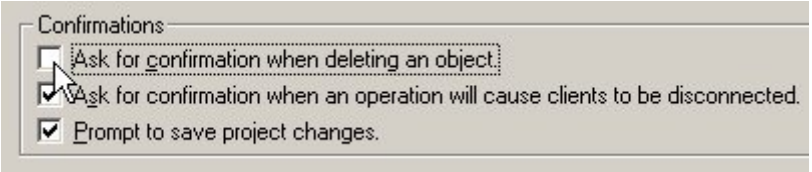


Figure 44: Remove Delete Confirmation

This will allow you to delete the tag groups more quickly, as you will not be asked to confirm the deletion each time. Click Apply, and then OK to accept this change. (Please note that this can be a useful setting to prevent inadvertently deleted items, so it would be a good idea to re-enable this setting when finished.)

You can now begin deleting the tag groups. The fastest way to do this is to highlight the first group closest to the device, as shown in **Figure 45** below, and then press the Delete key on your keyboard.

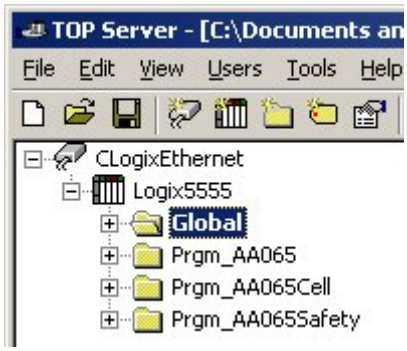


Figure 45: Deleting Tag Groups

In **Figure 45** above, deleting the "Global" group by pressing the Delete key would also delete any subgroups underneath it. To delete just certain subgroups, expand the group and delete the desired groups as above. As you delete a group, the next group below will be highlighted, so you can just continue pressing the Delete key until all of the groups are deleted.

Assigning the OPCClient Object

Now that the OPCClient Device Integration Object has been configured, it needs to be assigned. The OPCClient Object needs to be assigned underneath the AppEngine_001 System Object that was configured earlier. Assign the object by dragging OPCClient_001 from the Unassigned Host folder to AppEngine_001, as shown in **Figure 46** below.

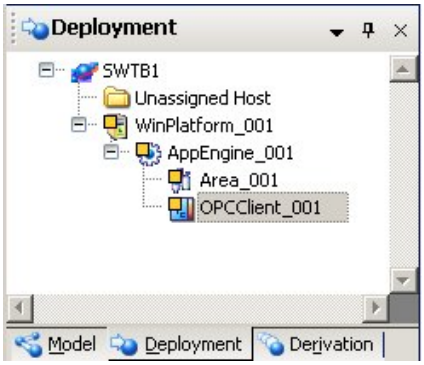


Figure 46: Assigning DI Object

Application Object Configuration

The final object needed in order to connect to the TOP Server is the $Integer Application Template, shown in **Figure 47** below. We are using this object because the tag in the TOP Server we will be connecting to in this example is an Integer. See your Wonderware documentation for more information on Application Objects.

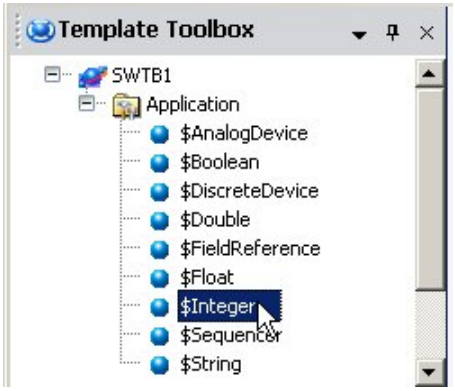


Figure 47: Integer Application Object

Drag and drop the $Integer Application Object under the Unassigned Host folder, as shown in **Figure 48** below, to create the Integer_001 Application Object.

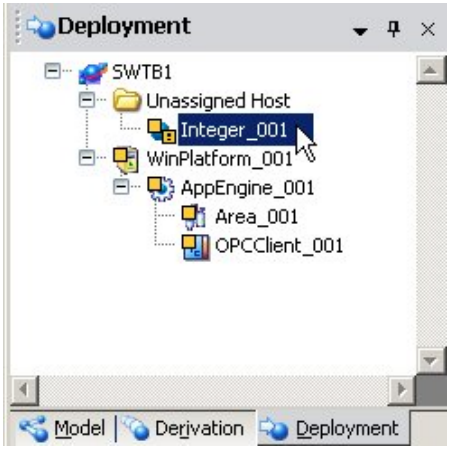


Figure 48: $Integer_001 Object

Open the Integer_001 Application Object properties, as shown in **Figure 49** below, by double-clicking the Integer_001 Object.

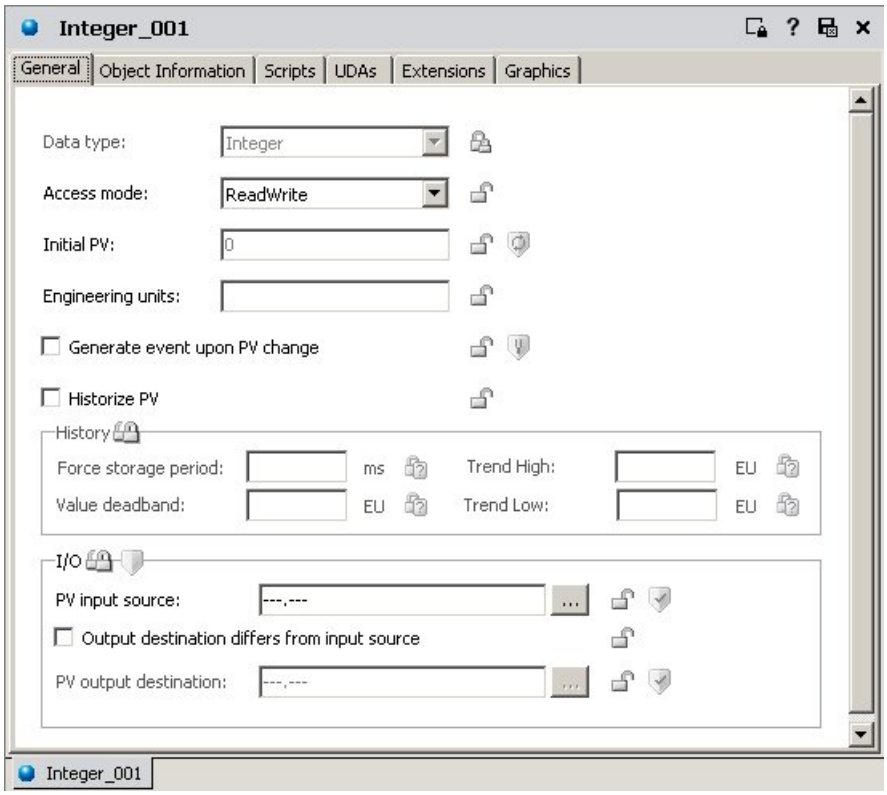


Figure 49: Integer_001 Properties

In the properties of our Integer object, we need to assign an item from our scan group in the OPCClient object. This assignment is made in the "PV Input Source" field, shown in **Figure 50** below.

Figure 50: PV Input Source

Items added to the Scan Group under the OPCClient Object can be browsed and selected. To browse those items, click the Ellipses (…) Button next to the "PV Input Source" field. This will open the Galaxy Browser as shown in **Figure 51** below.

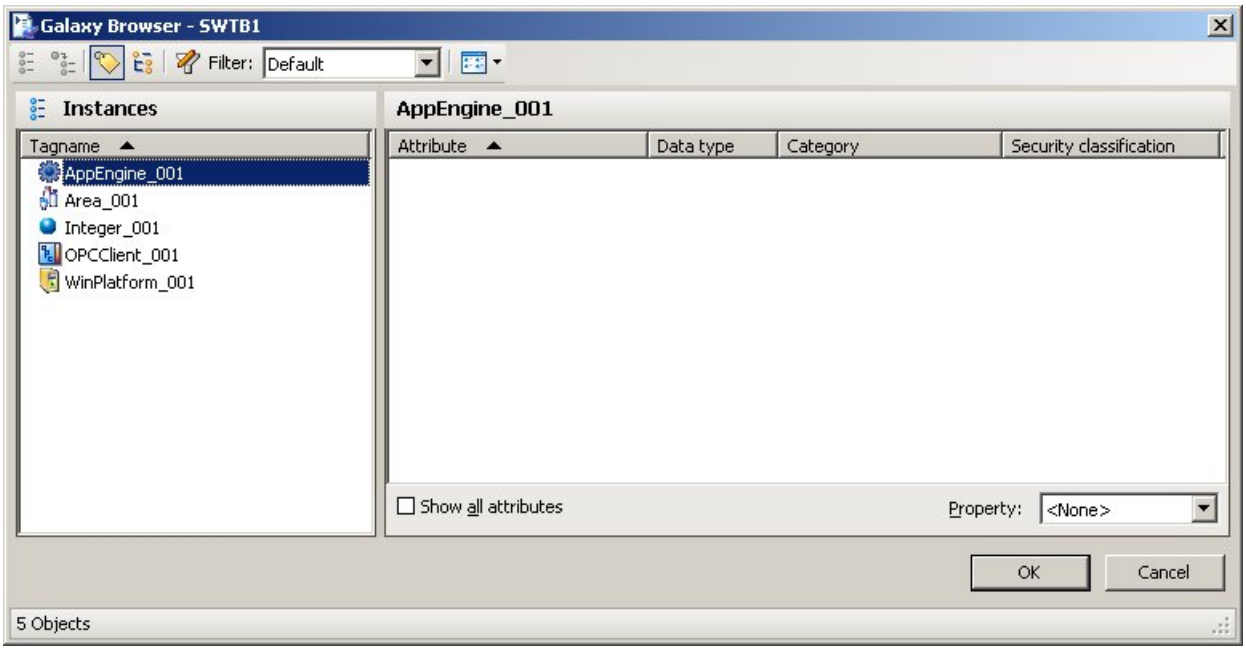


Figure 51: System Platform Galaxy Browser

To browse the item in the scan group in the OPCClient Object, we will simply highlight the OPCClient_001 object, as shown in **Figure 52** below.

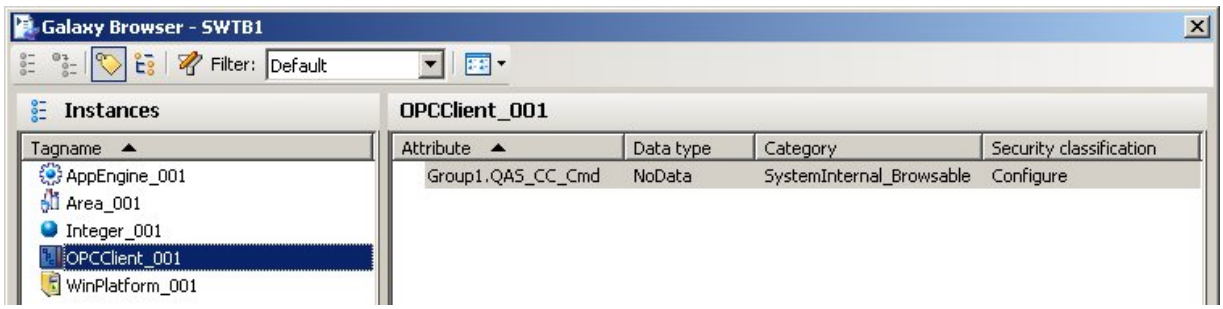


Figure 52: Browsing Scan Group Items

As you can see, the item in the scan group we configured earlier shows up in the list to the right of the "Instances" view. If multiple items had been added to the scan group, they would all show up here. To associate the item with our Integer_001 object, simply highlight the item and click OK.

This will populate the “PV Input Source” field with the tag, as shown in **Figure 53** below.

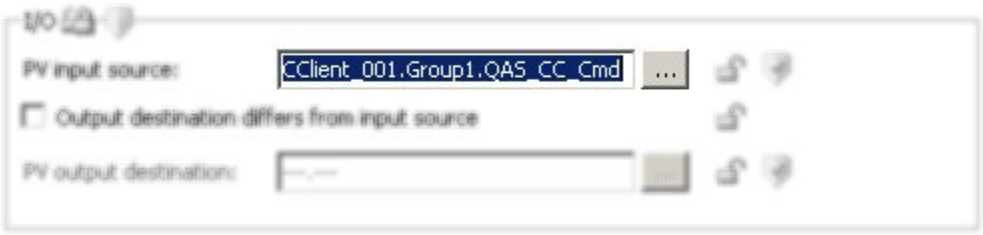


Figure 53: PV Input Source Selected

Now that the “PV Input Source” has been assigned, the Integer_001 object needs to be saved. Click the Save/Close button at the top right of the Integer_001 Properties, as shown in **Figure 54** below.

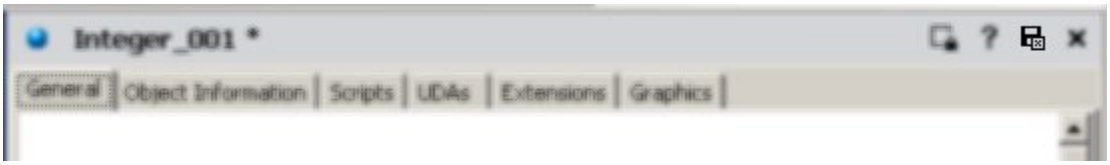


Figure 54: Saving Integer_001 Properties

You will be prompted to “Check In” the changes and need to do so by clicking OK. The Integer_001 object now needs to be assigned to the Area_001 System Object in the Deployment View. This is accomplished by dragging and dropping the Integer_001 object from the Unassigned Host folder onto the Area_001 object, as shown in **Figure 55** below.

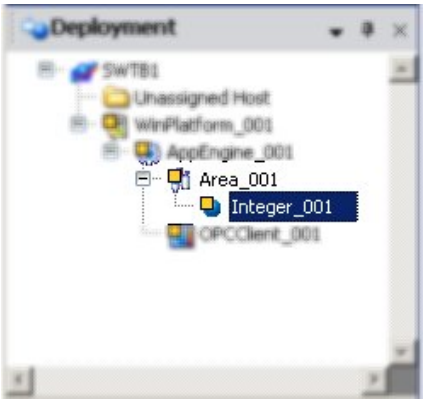


Figure 55: Assigned Integer_001 Object

All objects have now been configured and assigned, so the next step is to deploy the galaxy.

Deploying the Configured Galaxy Objects

To collect live data from TOP Server, the configured objects must now be deployed. To do so, right-click on the WinPlatform_001 object in the Deployment View and select Deploy, as shown in **Figure 56** below.

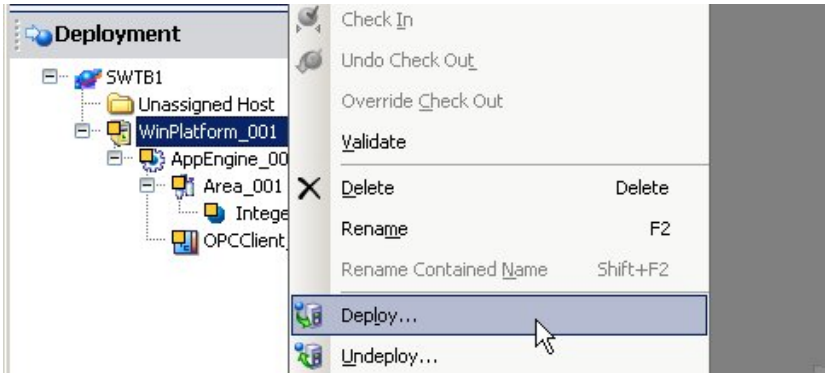


Figure 56: Deploying Objects

This will open the Deploy dialog box, as shown in **Figure 57** below.

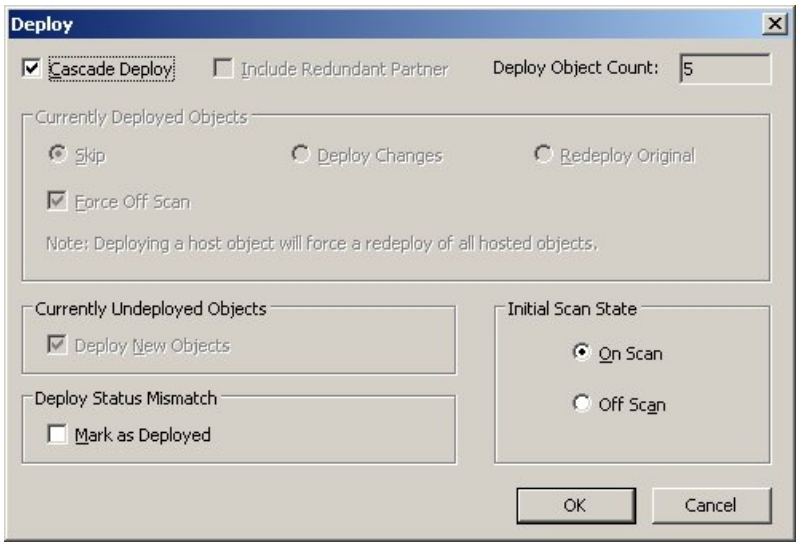


Figure 57: Deploy Window

You will want to use the default settings, which will deploy all of the objects we have configured. To do so, click the OK button at the bottom of the dialog box. The deploy status window will open and you will see the status bar as the various deployment steps are taken.

Once the deployment is completed at 100%, click the Close button, as shown in **Figure 58** below.

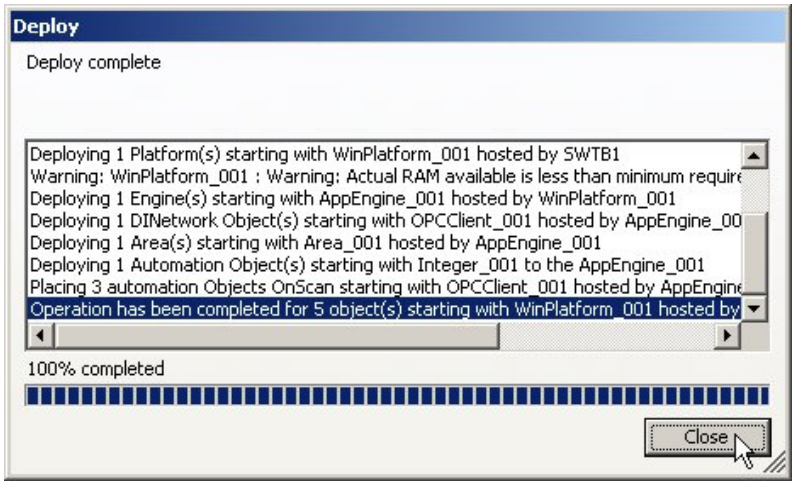


Figure 58: Deployment Complete

Viewing Data

You can now view data updates for the item we have configured by opening the System Platform Object Viewer. Highlight the Integer_001 object in the Deployment View and go to the Object menu of the ArchestrA IDE interface. Select “View in Object Viewer” as shown in **Figure 59** below.

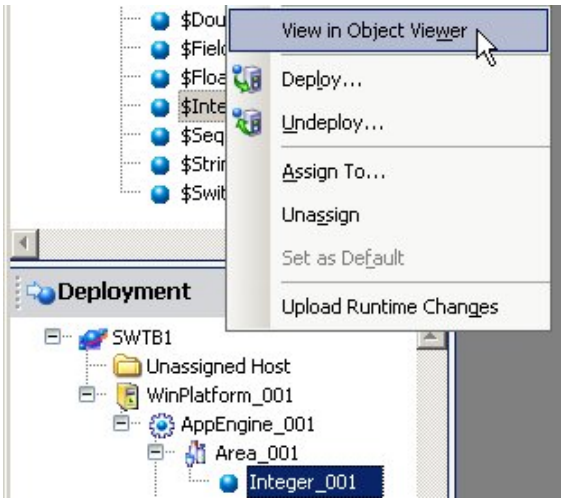


Figure 59: Opening Object Viewer

This opens the Object Viewer where you can view the value and quality of the item we have configured, as shown in **Figure 60** below.

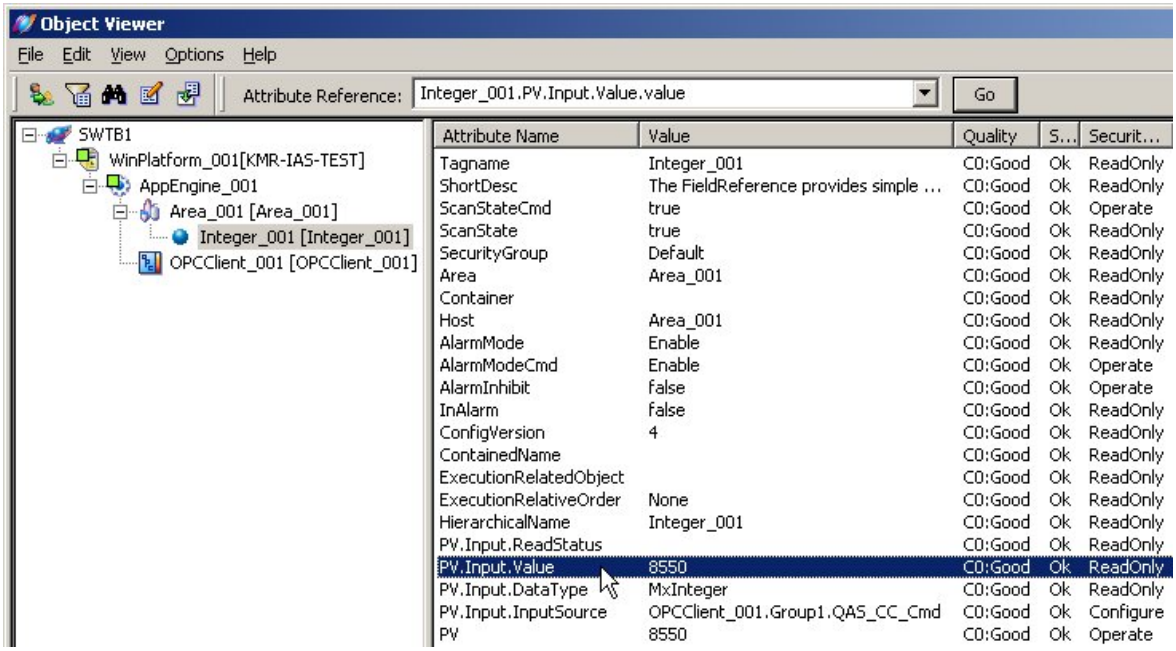


Figure 60: Viewing Data

As you can see, the quality for the item “QAS_CC_Cmd” is "Good" and the value is “8550”. This shows the present value. To subscribe to changing values for this item, right-click on the attribute and select “Add to Watch”, as shown in **Figure 61** below.

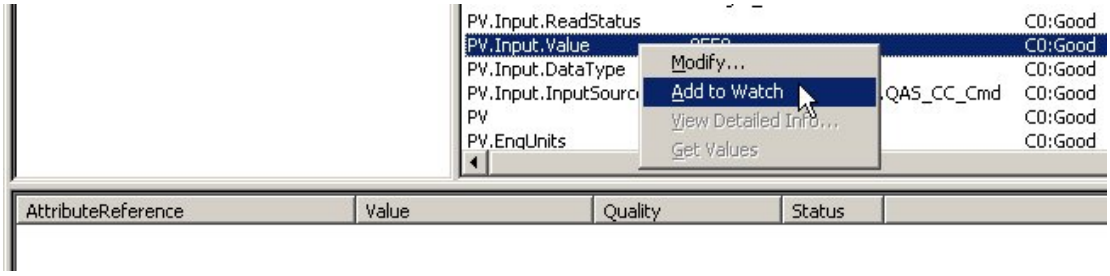


Figure 61: Add Attribute to Watch

This adds the attribute to the watch window at the bottom of the interface where it will receive value updates for the item at the update rate configured for the scan group, if the value changes, as shown in **Figure 62** below.

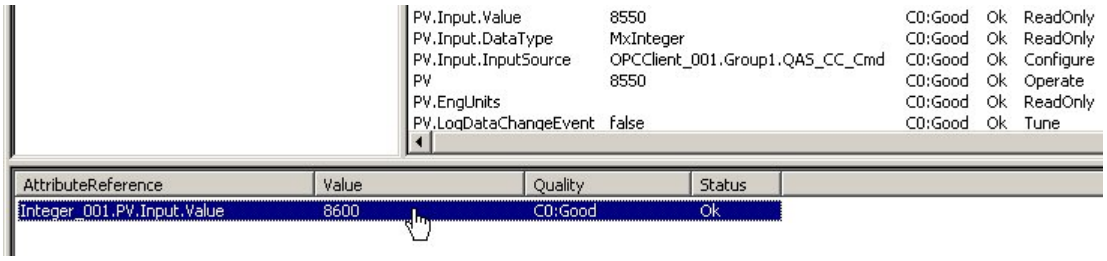


Figure 62: Viewing Live Data Values

If the item is not added to the watched list, the item will not receive updates unless the Value field is specifically clicked.

You can also write values to Read/Write eligible items from System Platform. This is accomplished by selecting the “PV” attribute, right-clicking and selecting “Modify”, as shown in **Figure 63** below.

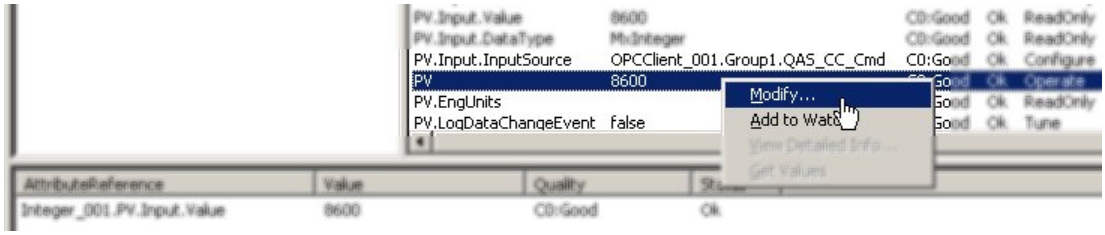


Figure 63: Open Modify Numeric Value Window

This opens the “Modify Numeric Value” window, where a value can be entered and written to the item by clicking Apply and then OK, as shown in **Figure 64** below.

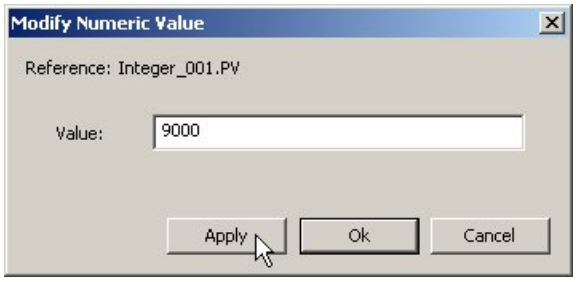


Figure 64: Writing a Value

After the write to the item has succeeded, you will see the value in the Watch List change for the item, as shown in **Figure 65** below.

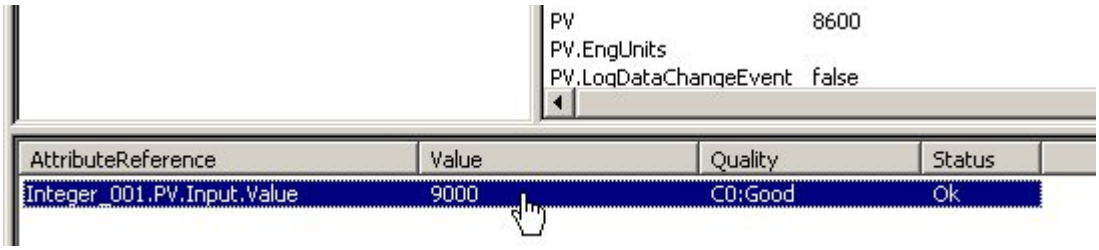


Figure 65: Successful Write

Summary

This guide has demonstrated the basic steps for configuring an OPC Client connection from System Platform to the TOP Server ControlLogix Ethernet driver. This guide should also be useful in configuring OPC Client connection from System Platform to all of TOP Server's other 70+ available device drivers.

If you do not have TOP Server but would like to evaluate what TOP Server can offer in terms of robust, reliable device data acquisition, you can download a free two hour demonstration of TOP Server at http://www.toolboxopc.com/ . This demonstration version is fully functional, only requiring that you restart it at the end of the two hour demonstration period.

TOP Server also fully supports Suitelink and DDE client connections in addition to OPC. For tutorials demonstrating connecting System Platform or InTouch to TOP Server using a Suitelink or DDE Client connection, please refer to our Wonderware Users Resource website by clicking HERE.

If you have further questions or need assistance, our experienced staff is here to assist you. We can be contacted in the methods outlined below.

Contact Us

If you have any questions or are seeking further information and help:

Online Support: http://support.softwaretoolbox.com/

Email Support: support@softwaretoolbox.com

Phone Support: +1 (704) 849-2773

Fax: +1 (704) 849-6388

Mailing Address: Software Toolbox, Inc. 148A East Charles Street, Matthews, NC, 28105 USA