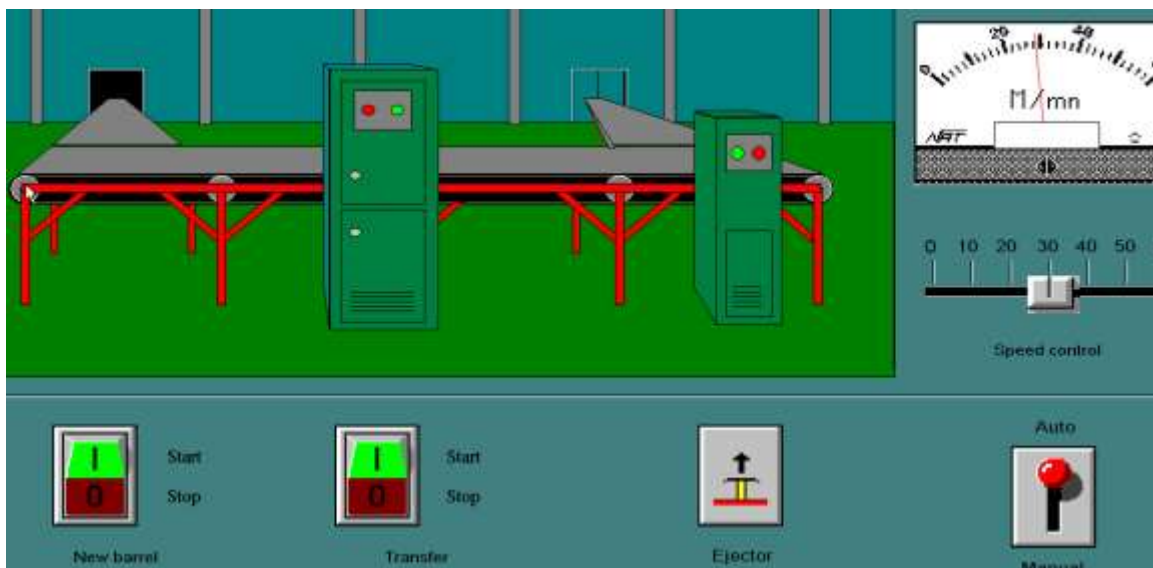


Module 7



PLC220 M7 Student Lesson 6

I/O Communications using RSLinx

I/O Communications with RSLinx

Lesson Objective

By the end of this session, students should be able to:

1. Set-up DDE Topics in RSLinx
2. Linking items in Wonderware applications to RSLinx.
3. View active Topics in RSLinx.

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I/O Communications for Wonderware Applications Using RSLinx

1. The following example will set-up an I/O link from a Wonderware application to an Allen-Bradley ControlLogix PLC. RSLinx will be used as the application for the communication driver.

DDE – Dynamic Data Exchange – will be the communication protocol used to exchange information between the Wonderware application and the PLC.

Note: RSLinx Lite does not support DDE configuration.

RSLinx OEM, Professional and Gateway support DDE.

2. From the WindowMaker window, expand the Configure selection in Application Explorer (WindowMaker).

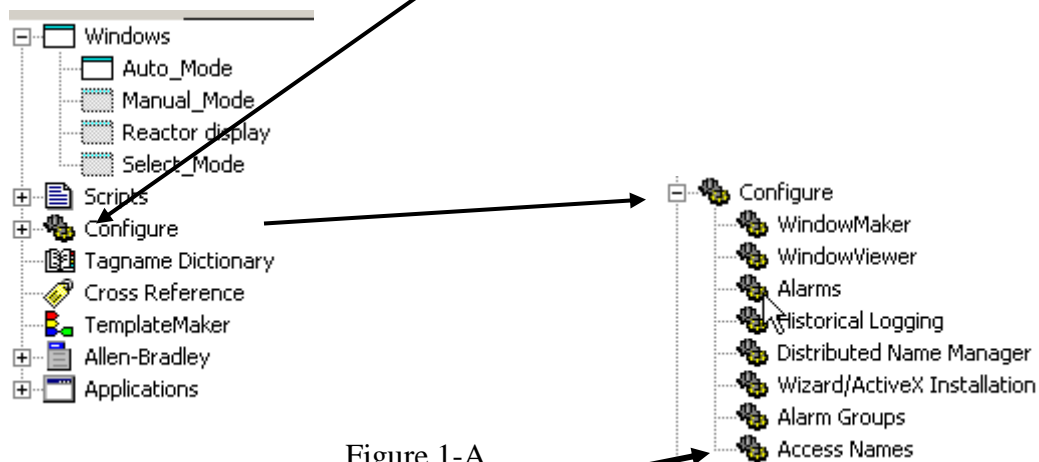


Figure 1-A

3. Click Access Names to open the Access Name window.

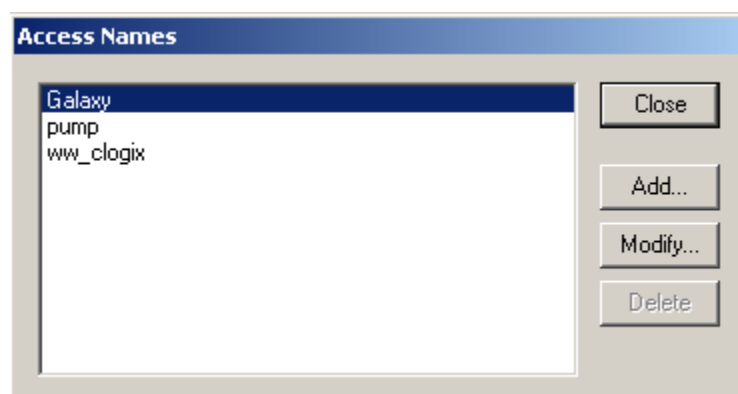


Figure 2-A

Access Names Window

The Add button will allow configuration of a new Access Name.

Modify used to change a previously configured Access Name. Highlight the Access Name from list and click Modify.

Delete button to remove an Access Name from the list. Highlight the Access Name from list and click Delete.

Add Access Name window.

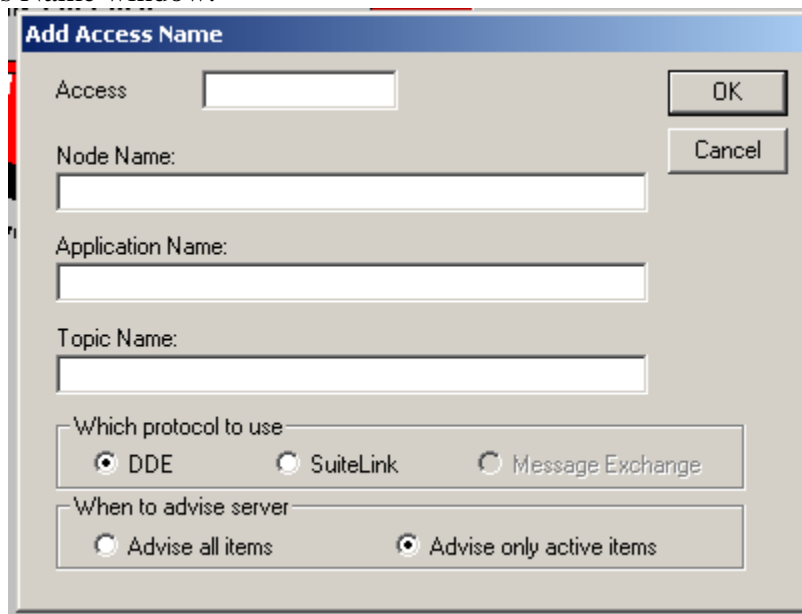
The image shows a dialog box titled "Add Access Name". It contains several input fields and two groups of radio buttons. The fields are: "Access" (a short text field), "Node Name:" (a longer text field), "Application Name:" (a longer text field), and "Topic Name:" (a longer text field). To the right of the "Access" field are "OK" and "Cancel" buttons. Below the text fields are two groups of radio buttons. The first group is labeled "Which protocol to use" and has three options: "DDE" (selected with a radio button), "SuiteLink", and "Message Exchange". The second group is labeled "When to advise server" and has two options: "Advise all items" and "Advise only active items" (selected with a radio button).

Figure 3-A
Add Access Names Window

Modify Access Name window.

Figure 4-A
Modify Access Names Window

4. For the example : Access – pump
Node Name is blank
Application Name – rslnx
Topic Name – pump
Which protocol to use – DDE
When to advise server – Advise only active items

Note: Wonderware recommends that the Access and Topic Name are the same for clarity. They do not need to be the same.

DDE requires three (3) pieces of information to establish a link.

1. Application – name of the application providing data (i.e. server)
RSLinx uses an Application Name of RSLinx.
2. Topic – name of a topic within an Application that contains the data.
The example uses pump as the topic. – User Defined
3. Item – the specific data to access.
In a ControlLogix PLCs, the item is the tag in a PLC program.
ControlLogix / CompactLogix tags must be Controller Scoped Tags
For SLC 500 / PLC 5 the Item will be a PLC address.

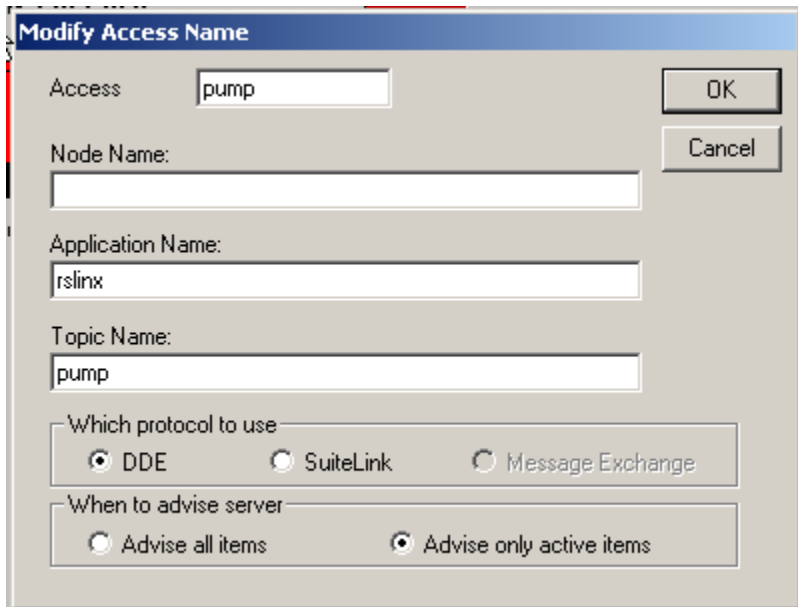


Figure 5-A
Modify Access Names Window

The a modified Access Name window will appear as Figure 5-A.
Click the OK button.to save settings and close Modify Access Name window

5. The new / modified Access Name will appear in the Access Name list. Click Close button.

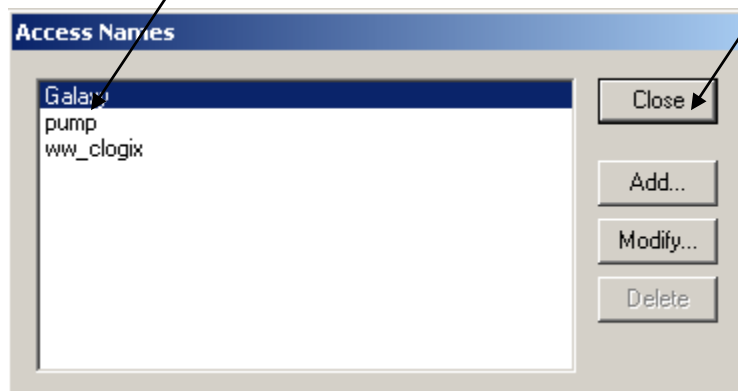


Figure 6-A
Access Names Window

6. Wonderware InTouch I/O tags that will access / modify data in a PLC.

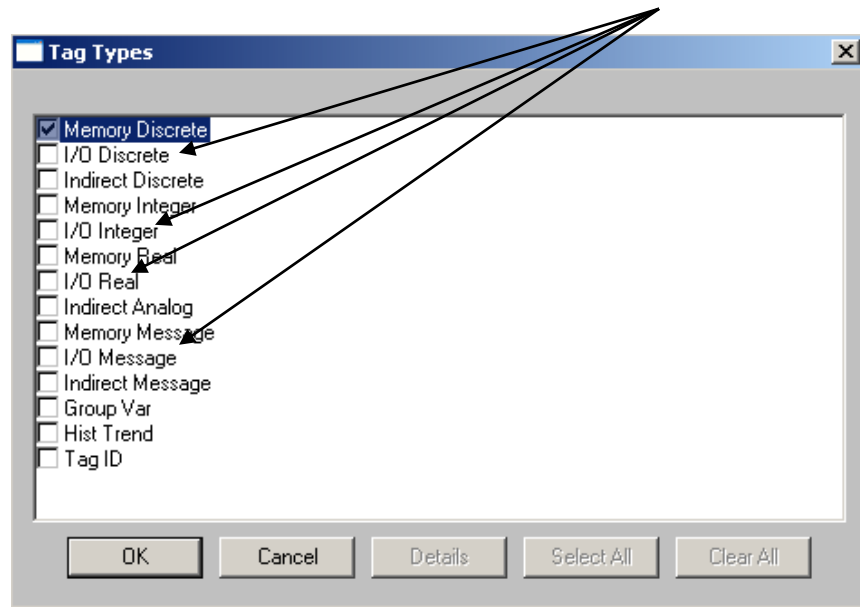


Figure 7-A
I/O Tags InTouch Application

Note: Tags Types need to match between PLC and Wonderware InTouch
Integer tag in PLC match to Integer tags in InTouch

Wonderware InTouch Integer tags – 32 bits

Discrete tags are – 1bit

Tags in ContoLogix / CompactLogix tags must be Controller Scoped Tags

7. A send or receive data from a PLC a tag requires the following information.
I/O type

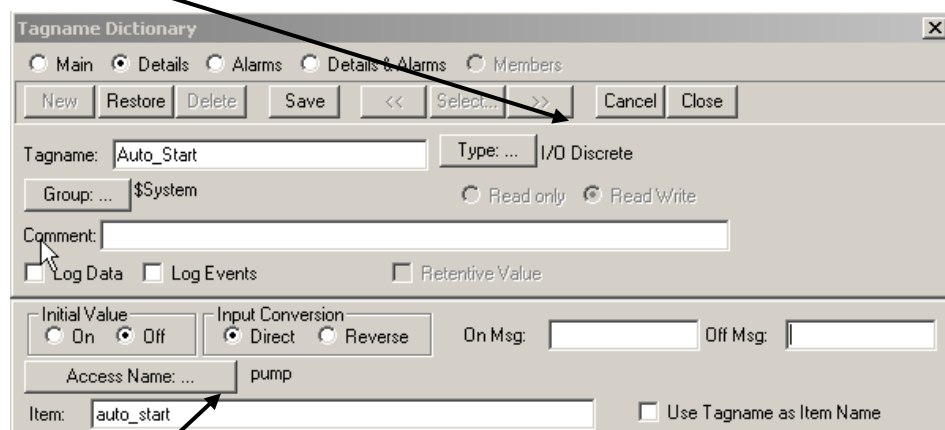


Figure 8-A
Tagname Dictionary Window

Access Name- matches a configured Access Name in the Access Name window.

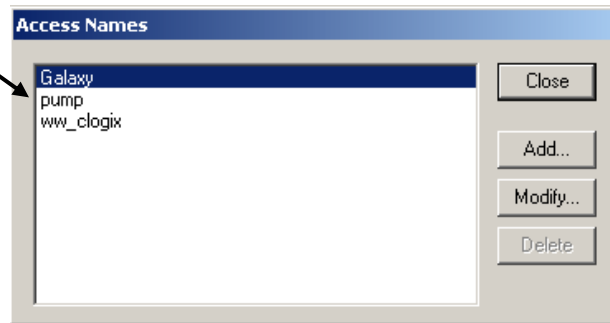


Figure 9-A
Access Names Window

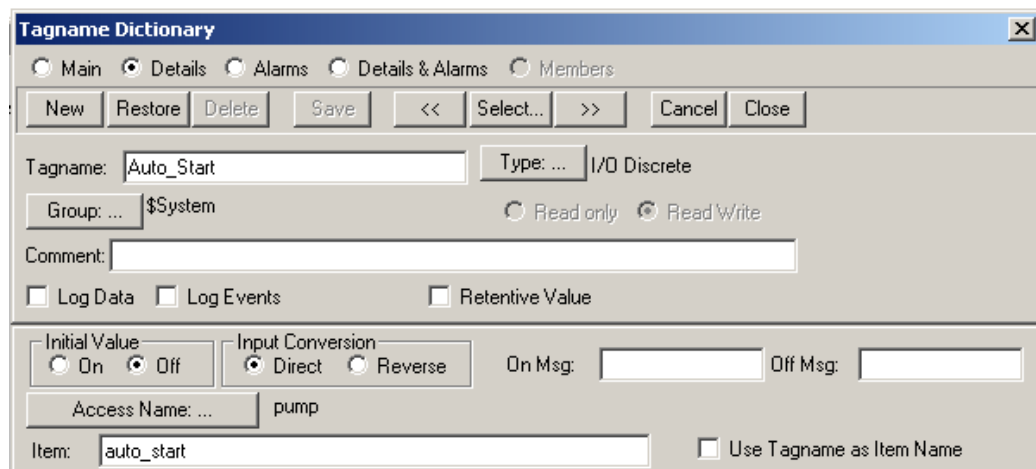
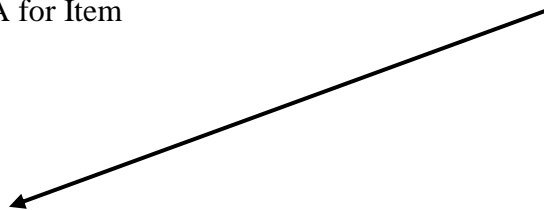


Figure 10-A
Tagname Dictionary Window

Item in TagName Dictionary matches a tag name in the ControlLogix PLC
See Figure 10-A for Item



| Scope: | PUMP(controller) | Show: | Show All | Sort: | Tag Name | |
|--------------------------|------------------|----------------|----------------|------------|----------|--------|
| P | Tag Name | Alias For | Base Tag | Type | Style | Descri |
| | auto_manual_... | B3[2].0 | B3[2].0 | BOOL | Decimal | |
| | Auto_Start | B3[1].0 | B3[1].0 | BOOL | Decimal | |
| | Auto_Stop | B3[1].1 | B3[1].1 | BOOL | Decimal | |
| <input type="checkbox"/> | +B3 | | | DINT[50] | Decimal | |
| <input type="checkbox"/> | +C5 | | | COUNTER[1] | | |
| <input type="checkbox"/> | +F8 | | | REAL[1] | Float | |
| | +I1 | | | INT[1] | Binary | |
| | +I1_0 | Local:1:I.Data | Local:1:I.Data | DINT | Binary | |

Figure 11-A
Tagname Dictionary Window

8. Open RSLinx to configure DDE link information in RSLinx.

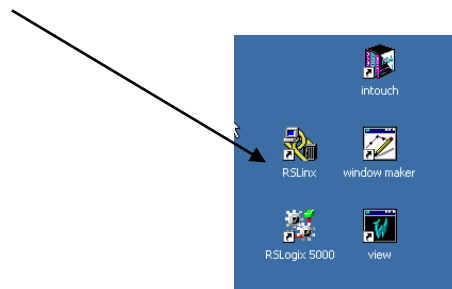


Figure 12-A-RSLinx Shortcut

9. The RSWho screen displays communication drivers currently configured in RSLinx.

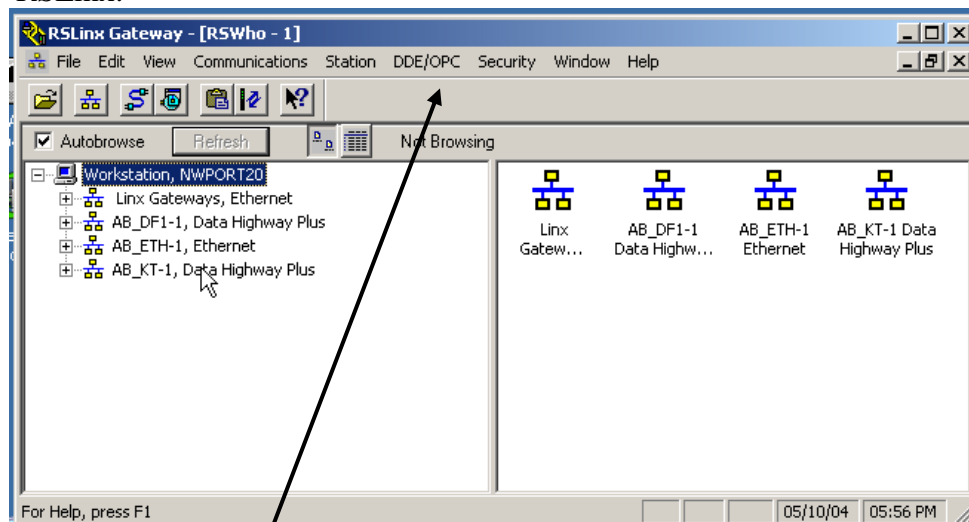


Figure 13-A
RSLinx Shortcut

From the Menu Bar click on DDE/OPC.

10. From the DDE/OPC menu select Topic Configuration.

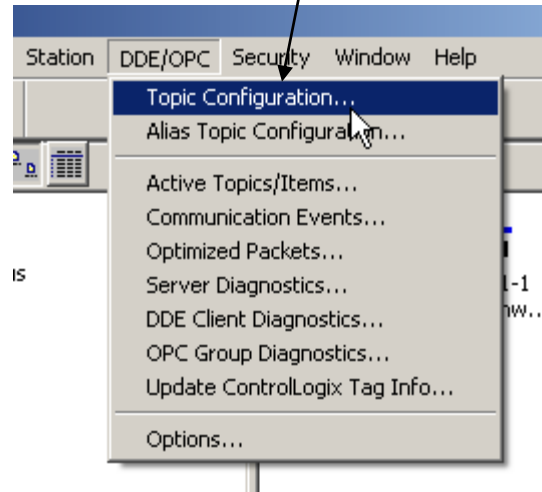


Figure 14-A
DDE/OPC ->Topic Configuration

11. The Topic Configuration window opens.

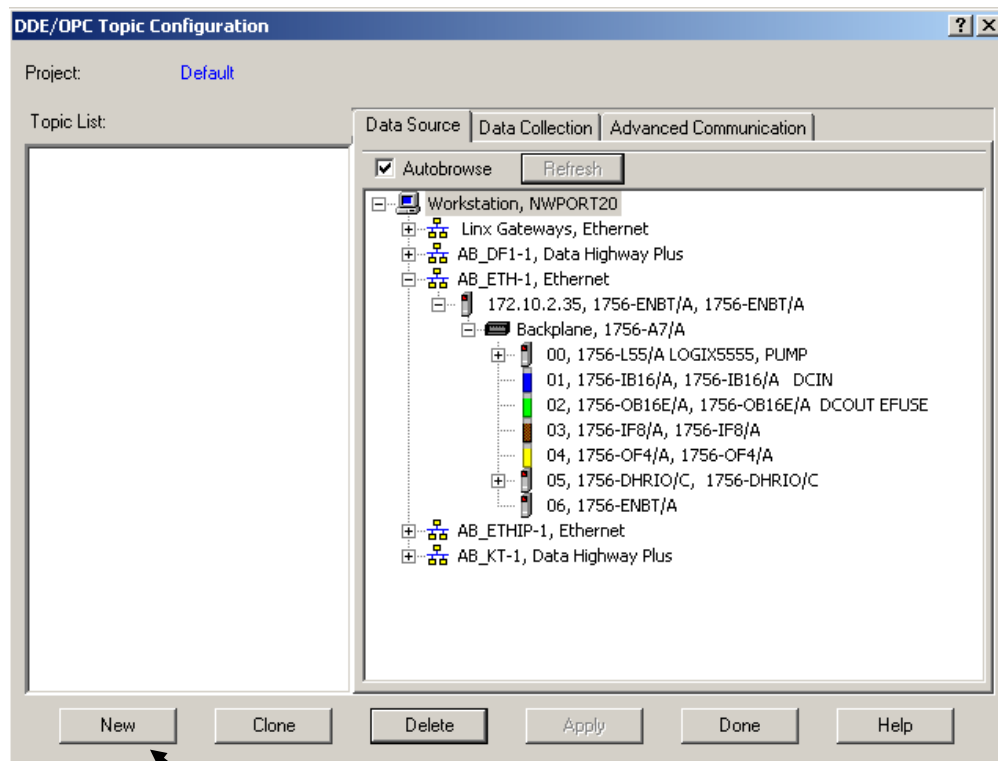


Figure 15-A
RSLinx DDE/OPC ->Topic Configuration

To configure a new topic, click the new button.

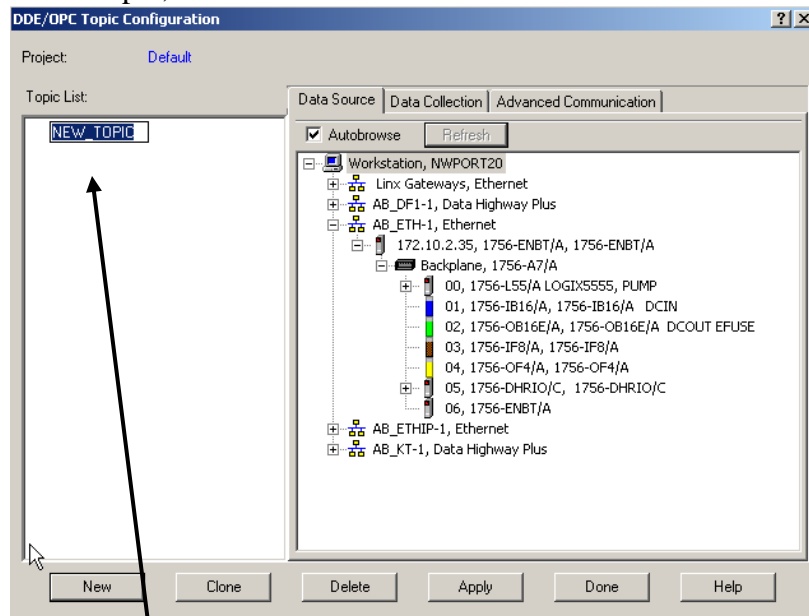


Figure 16-A- RSLinx DDE/OPC ->Topic Configuration

Rename NEW_TOPIC

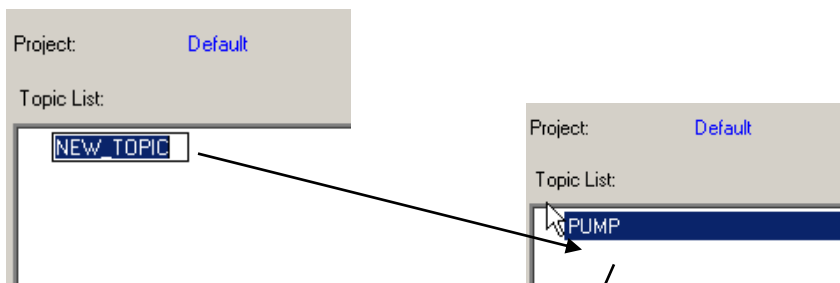


Figure 17-A-RSLinx DDE/OPC ->Topic Configuration

The topic name in RSLinx must match the Access Name Topic in the Wonderware application

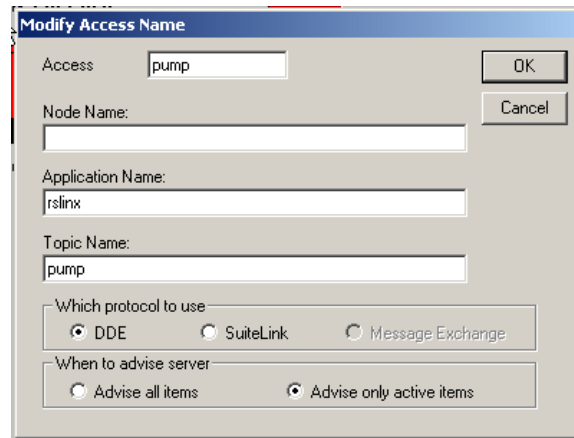


Figure 18-A

Access Name Screen from Wonderware.

12. Highlight a Topic and expand the communication driver that will connect the Wonderware application to the PLC. Highlight the processor for the communication driver.

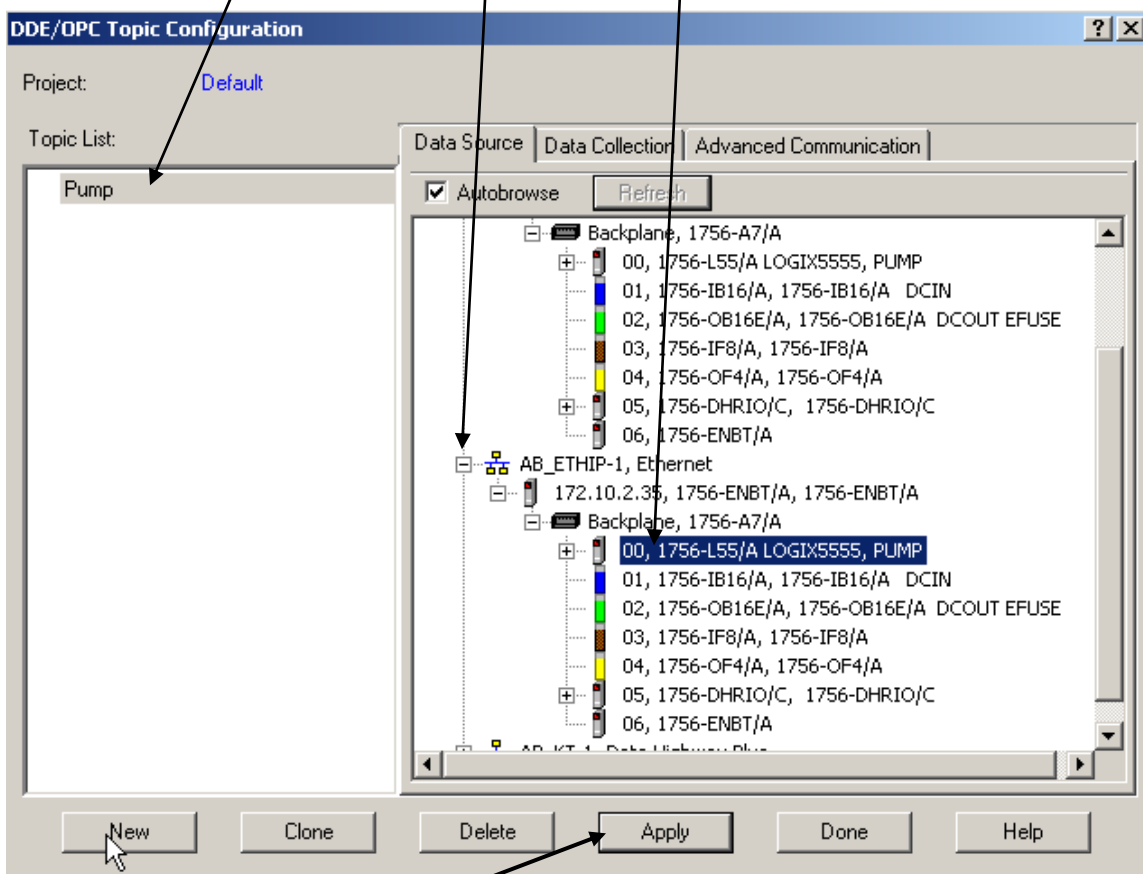


Figure 19-A-RSLinx

DDE/OPC ->Topic Configuration

Click the Apply button.

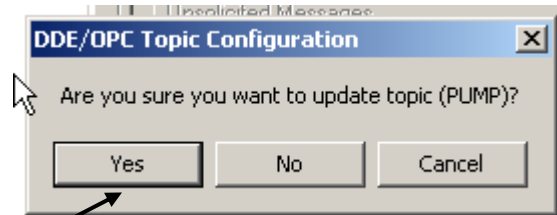


Figure 20-A-RSLinx
DDE/OPC ->Topic Configuration

Click Yes button to update the topic.

Note: The DDE/OPC Topic Configuration screen may appear before clicking the Apply button.

13. Click the Done button to close the Topic Configuration window.

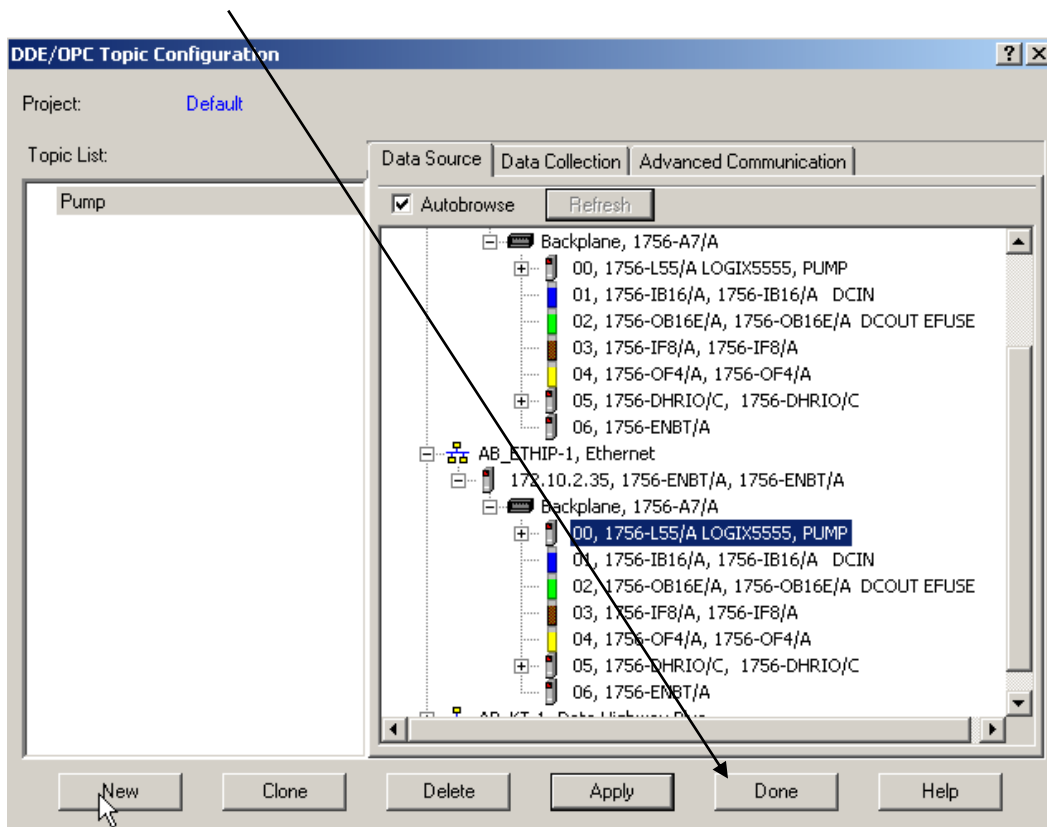


Figure 21-A-RSLinx
DDE/OPC ->Topic Configuration

RSLinx is now configured to work with the Wonderware application.

14. Active DDE links can be monitored. From the RSWho screen menu toolbar
Select Active DDE/OPC ->Topics / Items

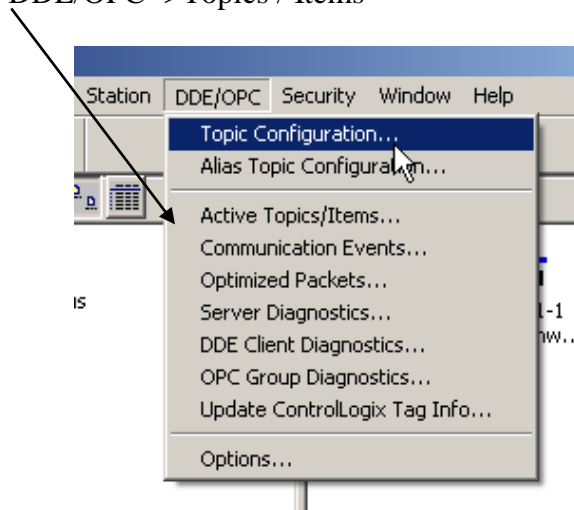


Figure 22-A

View RSLinx Active Topics/Items

15. The Active DDE/OPC Topic/Item List windows shows active Items and active Topic(s)



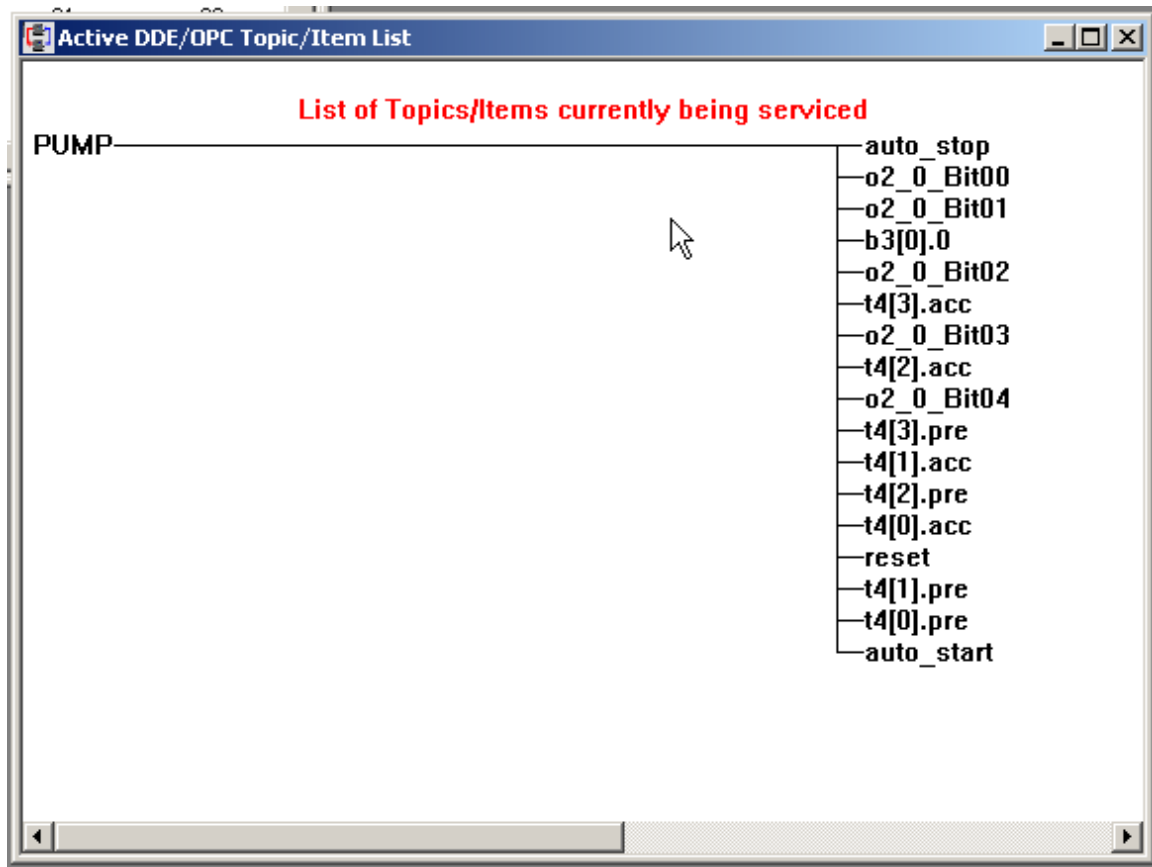


Figure 23-A
RSLinx Active Topics/Items

Note: Wonderware InTouch does not require using RSLinx to connect to an Allen-Bradley processor

Wonderware application software contains its own I/O Servers for connecting to numerous hardware devices including Allen Bradley PLCs.

Other companies (third party) have DDE/OPC communication servers to connect Wonderware InTouch applications to a numerous automation components, including Allen Bradley PLCs.

Review Questions

1. T F Wonderware requires RSLinx to work with Allen Bradley controllers
.
2. Which version of RSLinx will not work with Wonderware
 - a) Linx Lite
 - b) Linx Gateway
 - c) Linx Professional
 - d) Linx OEM.
3. DDE topic configuration are set-up in
 - a) RSLogix 5000.
 - b) RSLinx.
 - c) RSNetWorx.
 - d) A and C.
4. T F The Access and Topic must be the same on Wonderware Access Name screen.
5. To access information from a PLC, the Wonderware tag type is:
 - a) Memory Discrete
 - b) Indirect Analog.
 - c) I/O Discrete
 - d) I/O Real
 - e) Memory Message

6. T F The application name in the Access Name Screen will be Logix 5000 when using RSLinx to connect Wonderware to a ControlLogix processor.
7. T F ControlLogix tags must be Controller Scoped to exchange data to a Wonderware application .
8. T F The item in the Wonderware Tag Name Dictionary matches the tag Name in the ControlLogix's Controller Tag Database.
9. T F The Access Name screen is found under Configure icon in Wonderware's Application Explorer
10. A DDE link consists of which components :
 - a) Application .
 - b) Topic
 - c) Item
 - d) All the above.

Review Questions Answers

- 1) F
- 2) a
- 3) b
- 4) F
- 5) c, d
- 6) F
- 7) T
- 8) T
- 9) T
- 10) d



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