



**Where
Automation
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Technical Note



PC56-OPC/PC56-SLS Connection to OPC Client

How to create an OPC connection between PC56-OPC/PC56-SLS and an OPC client. (In this document we will be using Matrikon OPC Explorer as an OPC client and OPC test client. See [page 11](#) for download instructions.)

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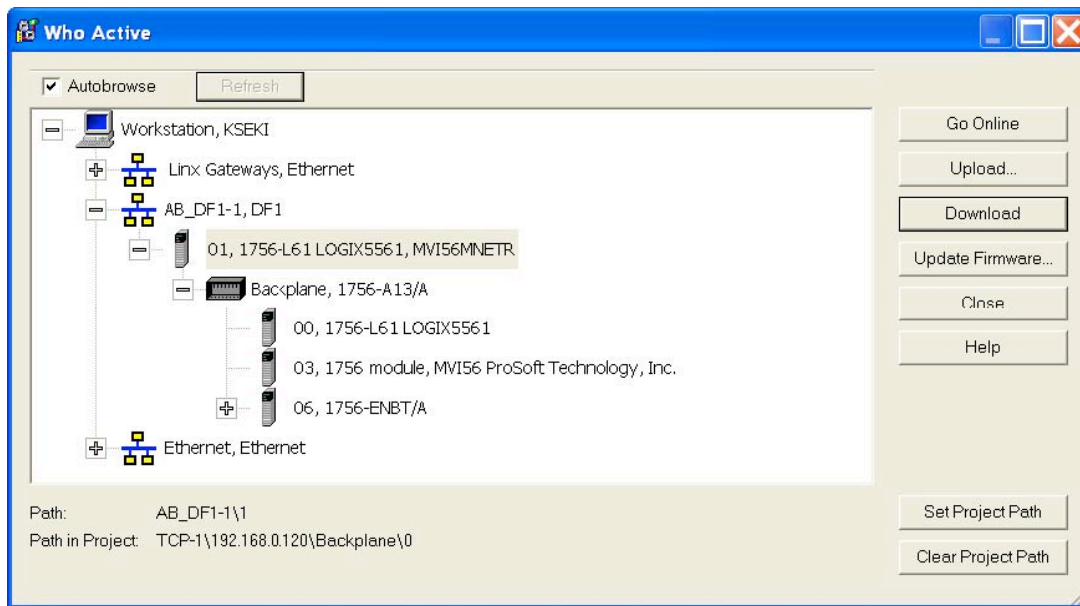
Equipment Required

You will need:

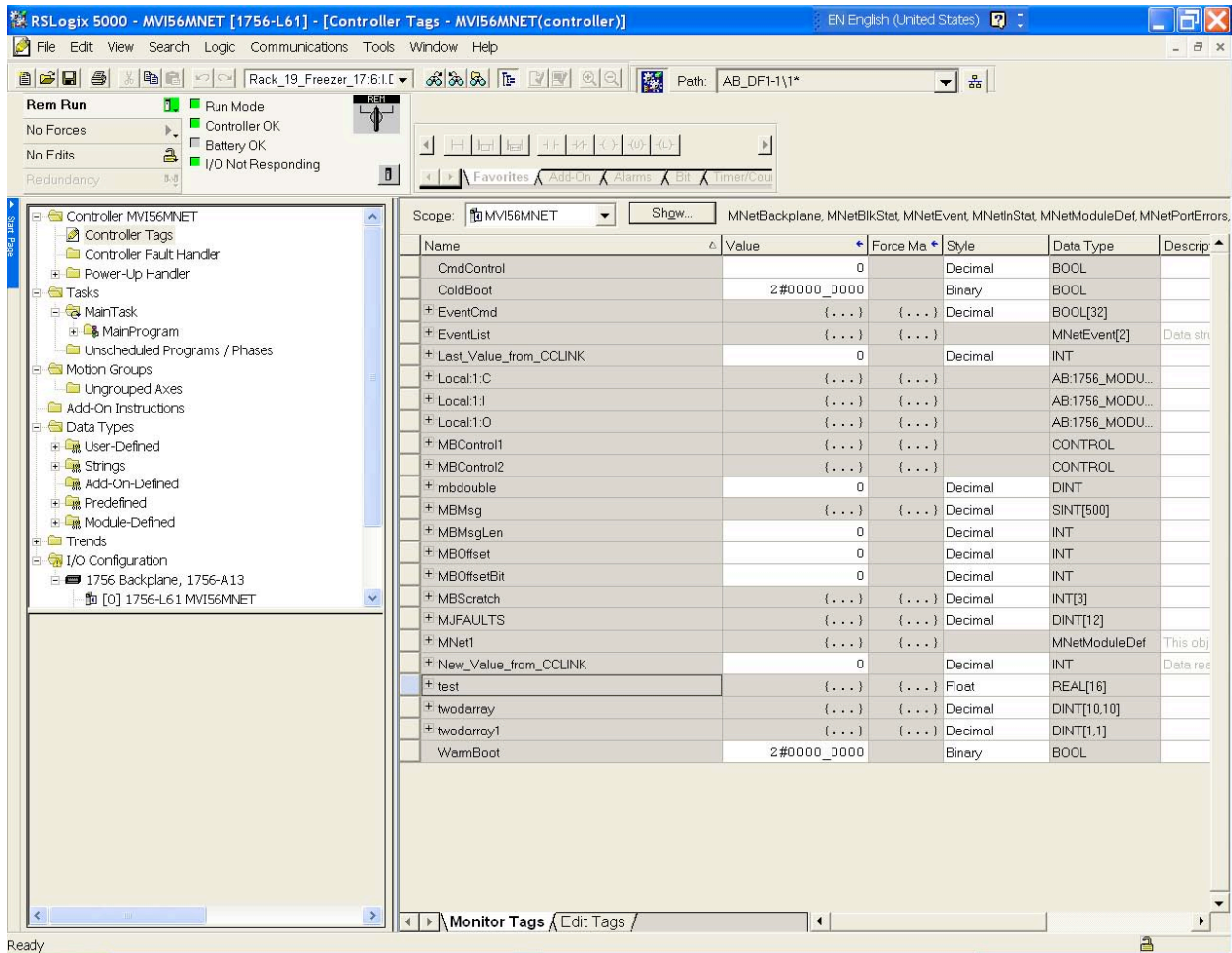
- ProSoft's PC56-OPC or PC56-SLS
- OPC Client (In this example Matrikon OPC Explorer and OPC Test Client were used)
- ControlLogix Processor with a ControlLogix program downloaded to it.
- ControlLogix Chassis
- Computer Screen for PC56-OPC/PC56-SLS
- Keyboard
- Mouse

Description

Download a ControlLogix program in ControlLogix processor.



Put ControlLogix into remote run after downloading a program.



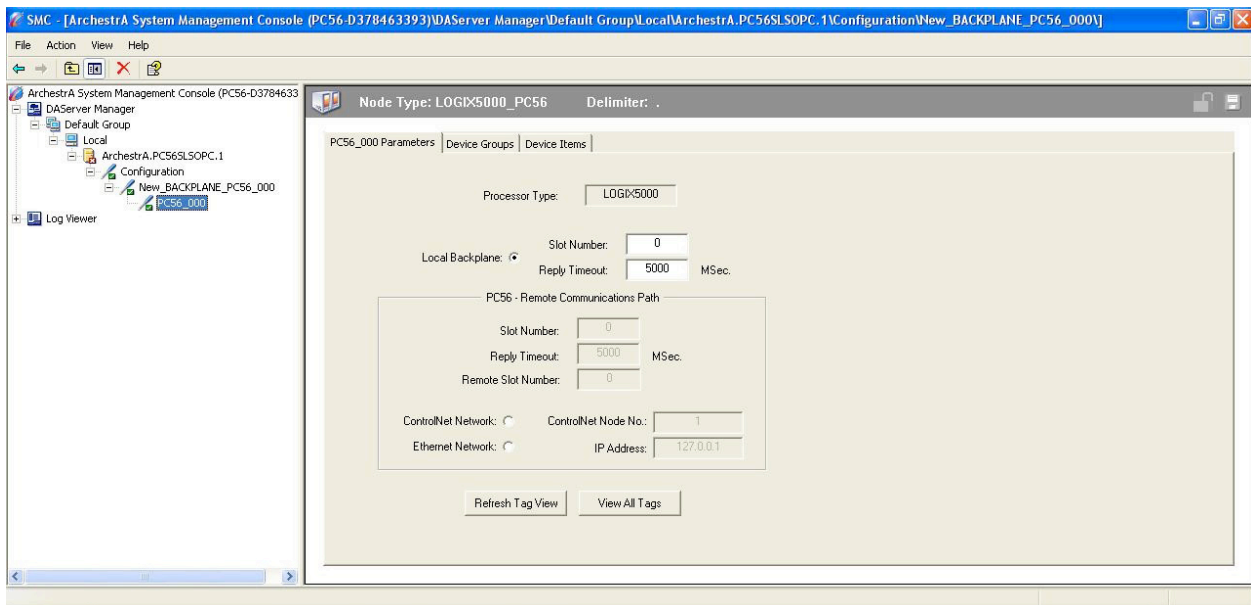
The screenshot shows the RSLogix 5000 interface for an MV156MNET controller. The 'Controller Tags' window is open, displaying a list of tags. The 'test' tag is selected and highlighted in blue.

Name	Value	Force Me	Style	Data Type	Descrip
CmdControl	0		Decimal	BOOL	
ColdBoot	2#0000_0000		Binary	BOOL	
+ EventCmd	{...}	{...}	Decimal	BOOL[32]	
+ EventList	{...}	{...}		MNetEvent[2]	Data str
+ Last_Value_from_CCLINK	0		Decimal	INT	
+ Local1:C	{...}	{...}		AB:1756_MODU...	
+ Local1:I	{...}	{...}		AB:1756_MODU...	
+ Local1:O	{...}	{...}		AB:1756_MODU...	
+ MBControl1	{...}	{...}		CONTROL	
+ MBControl2	{...}	{...}		CONTROL	
+ mbdouble	0		Decimal	DINT	
+ MBMsg	{...}	{...}	Decimal	SINT[500]	
+ MBMsgLen	0		Decimal	INT	
+ MBOffset	0		Decimal	INT	
+ MBOffsetBit	0		Decimal	INT	
+ MBScratch	{...}	{...}	Decimal	INT[3]	
+ MJFAULTS	{...}	{...}	Decimal	DINT[12]	
+ MNet1	{...}	{...}		MNetModuleDef	This obj
+ New_Value_from_CCLINK	0		Decimal	INT	Data rec
+ test	{...}	{...}	Float	REAL[16]	
+ twodarray	{...}	{...}	Decimal	DINT[0,10]	
+ twodarray1	{...}	{...}	Decimal	DINT[1,1]	
WarmBoot	2#0000_0000		Binary	BOOL	

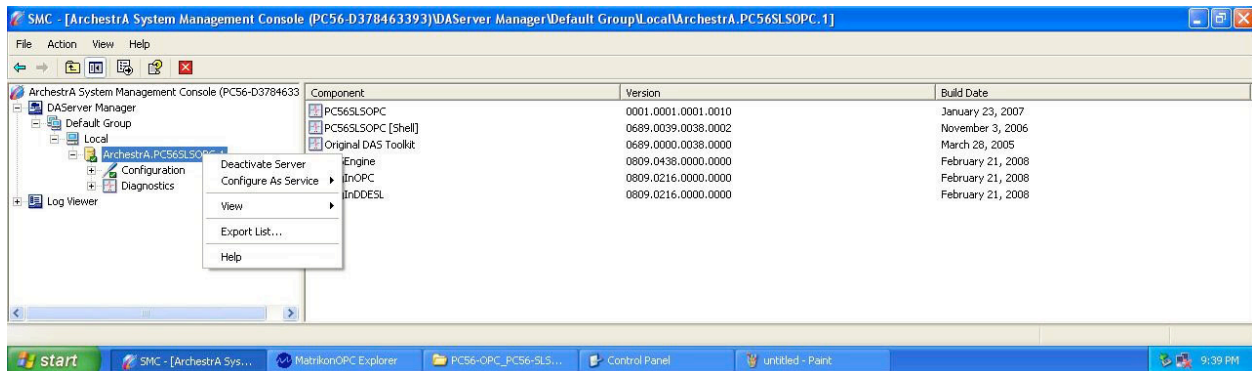
On PC56-OPC/PC56-SLS click the Start button and choose System Management Console. (It may also be under Start -> All Program -> Arcehstra -> System Management Console.)



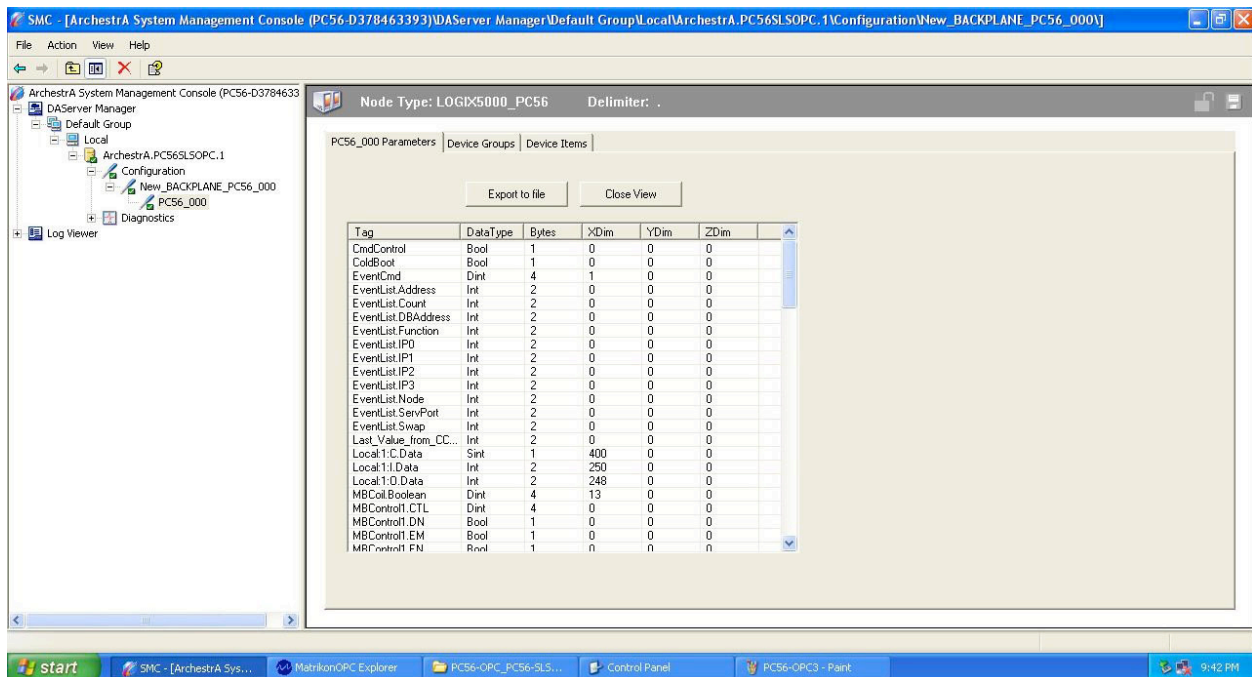
Create/Modify/Add Logix5000_PC56 Object to meet your application.



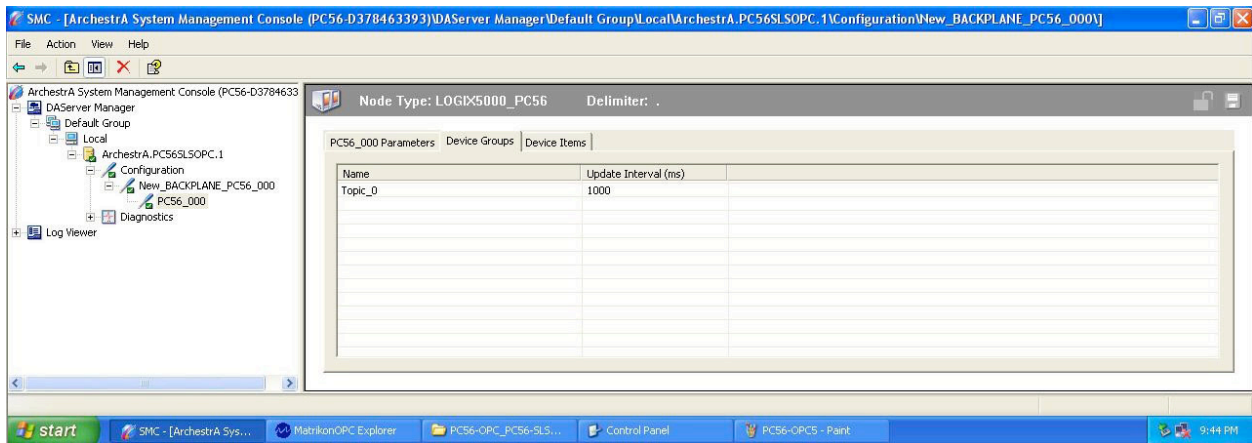
Right click on Archestra.PC56SLSOPC.1 and choose Activate Server.



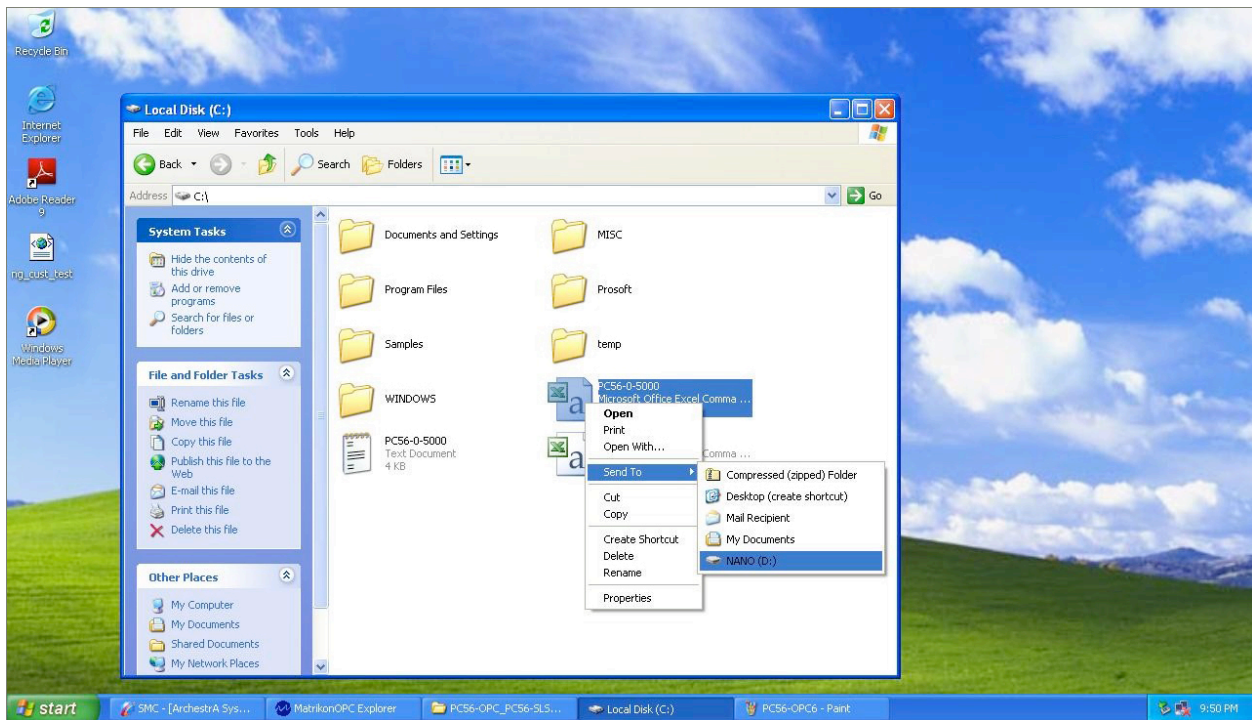
You should see the controller tags in the ControllLogix processor (see screenshot below).



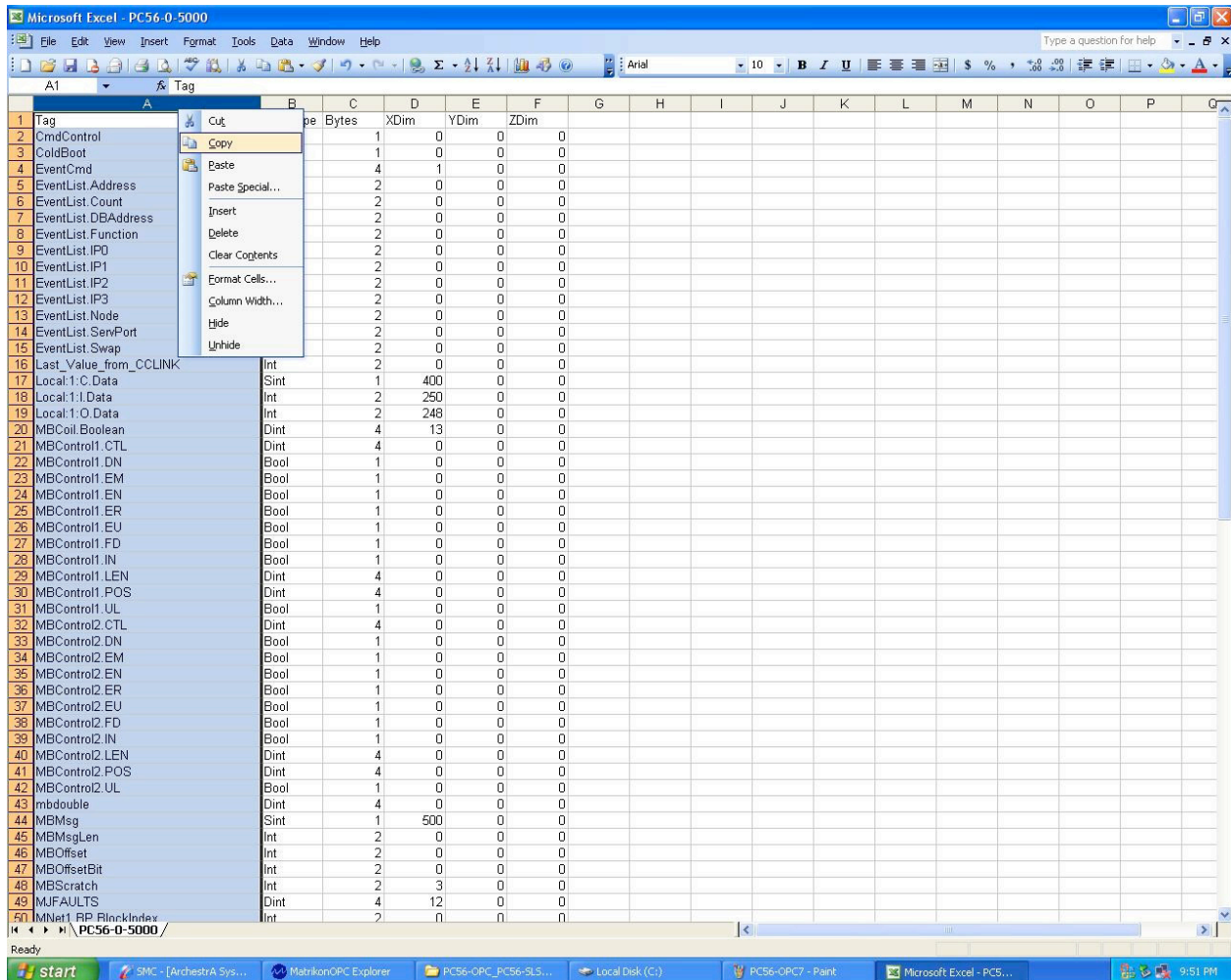
You should see Topic_0 in the name column and 1000 under Update Interval on the Device Groups tab.



Send/Copy PC56-0-5000.csv file onto the USB memory stick.

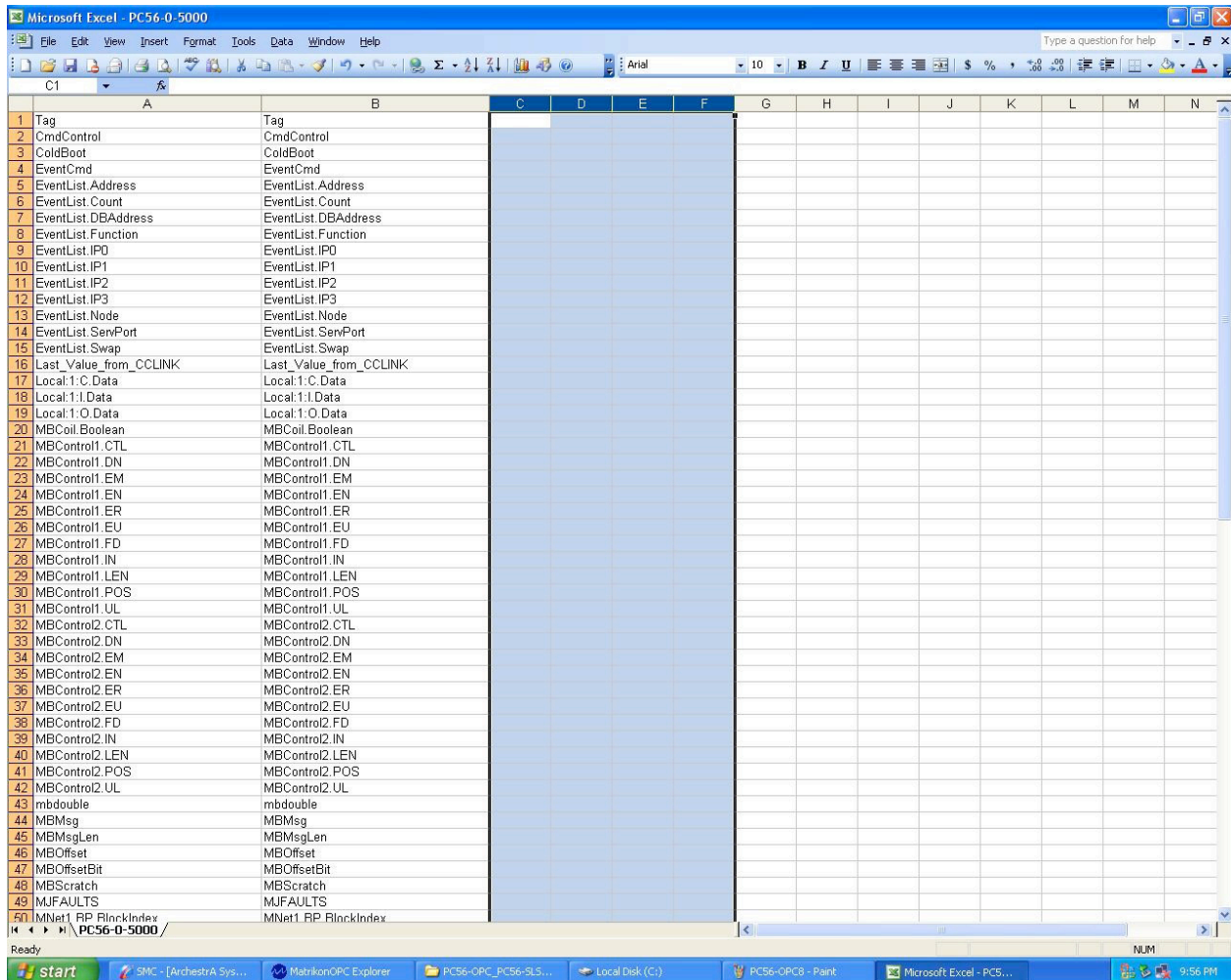


Open the PC56-0-5000.csv file using Excel on a computer with Microsoft Excel.



Tag	Type	Bytes	XDim	YDim	ZDim
CmdControl	Int	1	0	0	0
ColdBoot	Int	1	0	0	0
EventCmd	Int	4	1	0	0
EventList_Address	Int	2	0	0	0
EventList_Count	Int	2	0	0	0
EventList_DBAddress	Int	2	0	0	0
EventList_Function	Int	2	0	0	0
EventList_IP0	Int	2	0	0	0
EventList_IP1	Int	2	0	0	0
EventList_IP2	Int	2	0	0	0
EventList_IP3	Int	2	0	0	0
EventList_Node	Int	2	0	0	0
EventList_ServPort	Int	2	0	0	0
EventList_Swap	Int	2	0	0	0
Last_Value_from_CCLINK	Int	2	0	0	0
Local:1:C.Data	Sint	1	400	0	0
Local:1:I.Data	Int	2	250	0	0
Local:1:O.Data	Int	2	248	0	0
MBCoil_Boolean	Dint	4	13	0	0
MBControl1_CTL	Dint	4	0	0	0
MBControl1_DN	Bool	1	0	0	0
MBControl1_EM	Bool	1	0	0	0
MBControl1_EN	Bool	1	0	0	0
MBControl1_ER	Bool	1	0	0	0
MBControl1_EU	Bool	1	0	0	0
MBControl1_FD	Bool	1	0	0	0
MBControl1_IN	Bool	1	0	0	0
MBControl1_LEN	Dint	4	0	0	0
MBControl1_POS	Dint	4	0	0	0
MBControl1_UL	Bool	1	0	0	0
MBControl2_CTL	Dint	4	0	0	0
MBControl2_DN	Bool	1	0	0	0
MBControl2_EM	Bool	1	0	0	0
MBControl2_EN	Bool	1	0	0	0
MBControl2_ER	Bool	1	0	0	0
MBControl2_EU	Bool	1	0	0	0
MBControl2_FD	Bool	1	0	0	0
MBControl2_IN	Bool	1	0	0	0
MBControl2_LEN	Dint	4	0	0	0
MBControl2_POS	Dint	4	0	0	0
MBControl2_UL	Bool	1	0	0	0
mbdouble	Dint	4	0	0	0
MBMsg	Sint	1	500	0	0
MBMsgLen	Int	2	0	0	0
MBOffset	Int	2	0	0	0
MBOffsetBit	Int	2	0	0	0
MBScratch	Int	2	3	0	0
MJFAULTS	Dint	4	12	0	0
MNet1_RP_RlnckIndex	Int	2	0	0	0

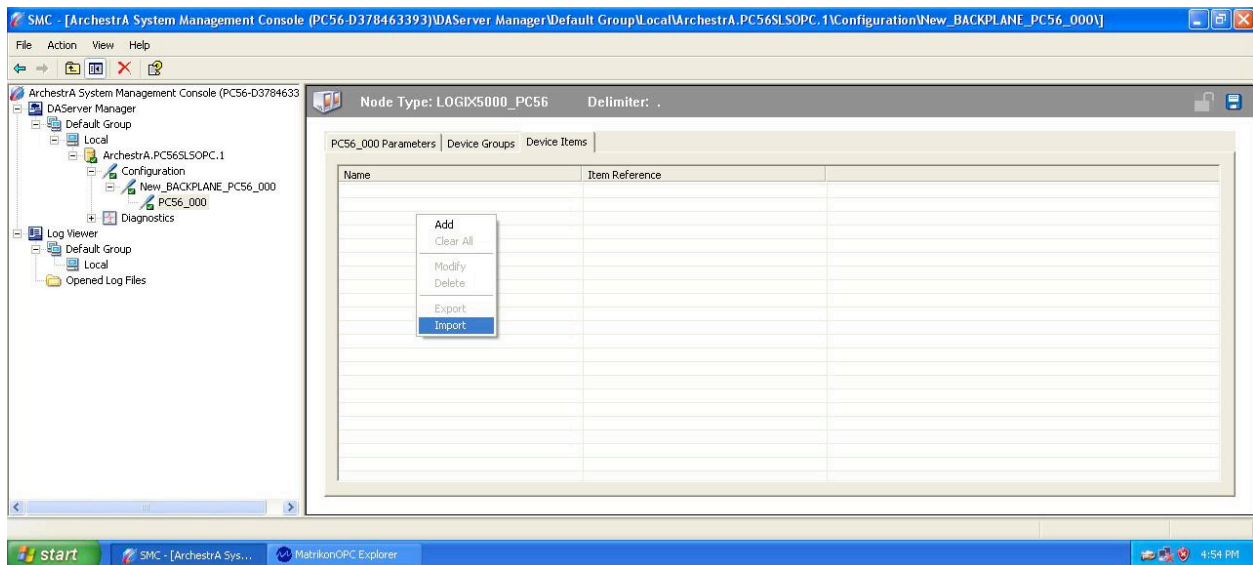
Copy column A then paste it in Column B. Delete Column C, D, E and F.



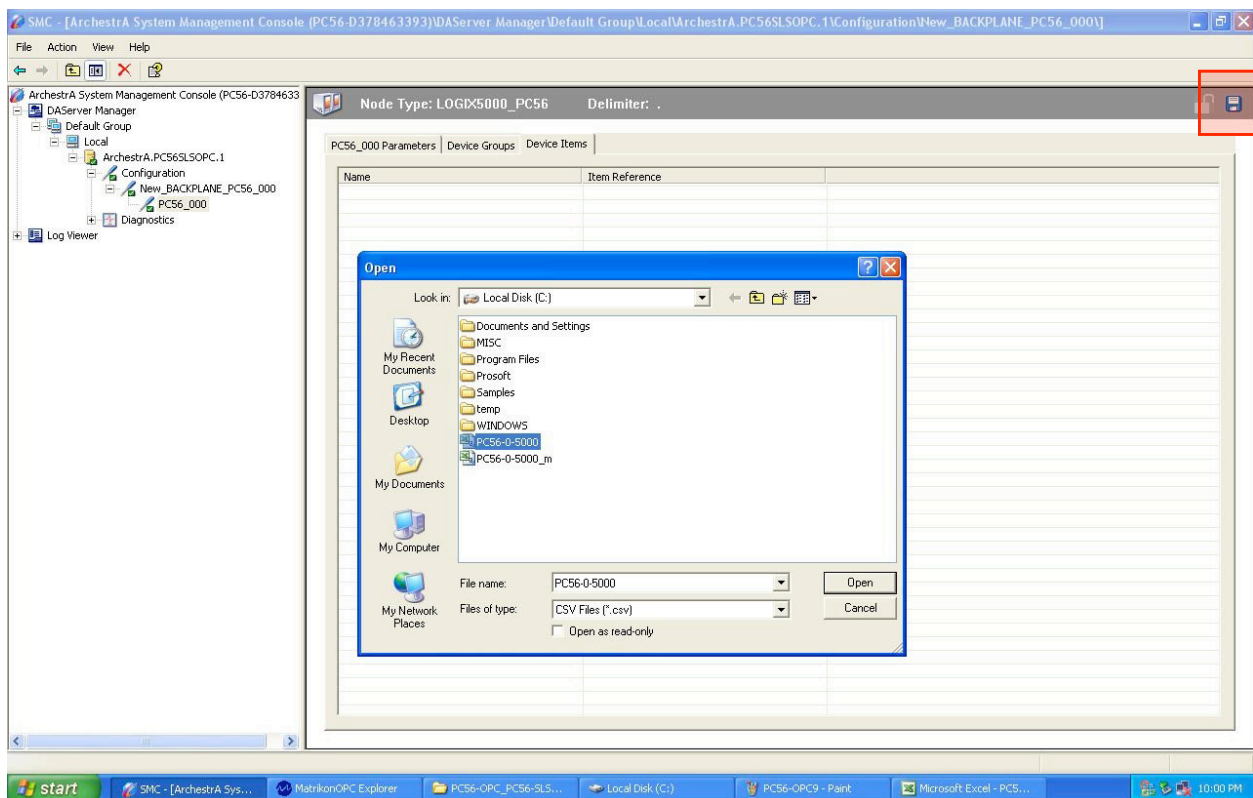
Save the Excel file back onto the USB memory stick.

Copy the Excel file on the C drive of the PC56-OPC/PC56-SLS.

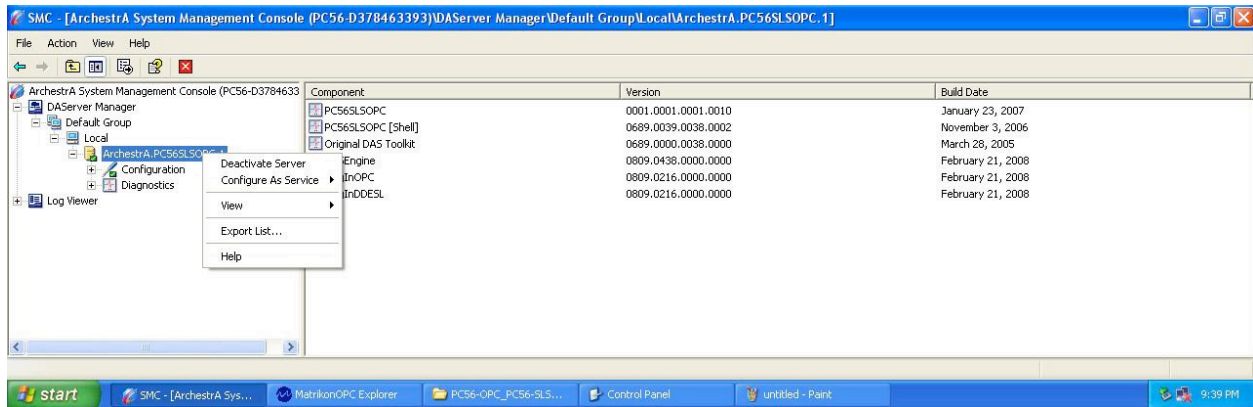
Right click on the Device Items tab on PC56-OPC/PC56-SLS then click import.



Go to C: drive and choose the PC56-0-5000.csv file then click Open. Click on the disk icon at the right corner to save on the Device Items tab.



Right click on Archestra.PC56SLSOPC.1 and choose deactivate server.



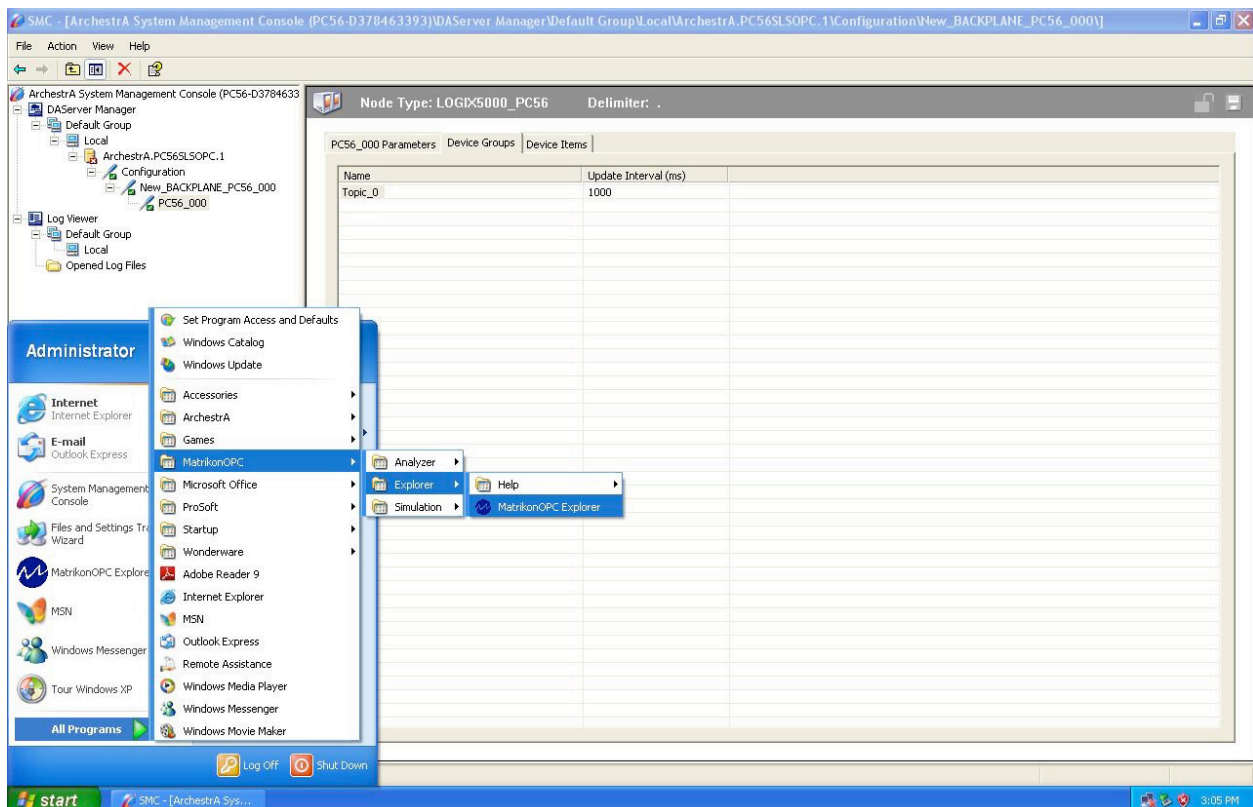
In this example Matrikon OPC Explorer is downloaded on the PC56-OPC/PC56-SLS module. This was done to simplify the connection configuration between Matrikon OPC Explorer and PC56-OPC/PC56-SLS. You will need additional configuration if you were connecting to PC56-OPC/PC56-SLS from a remote device.

Matrikon OPC Explorer can be downloaded at:

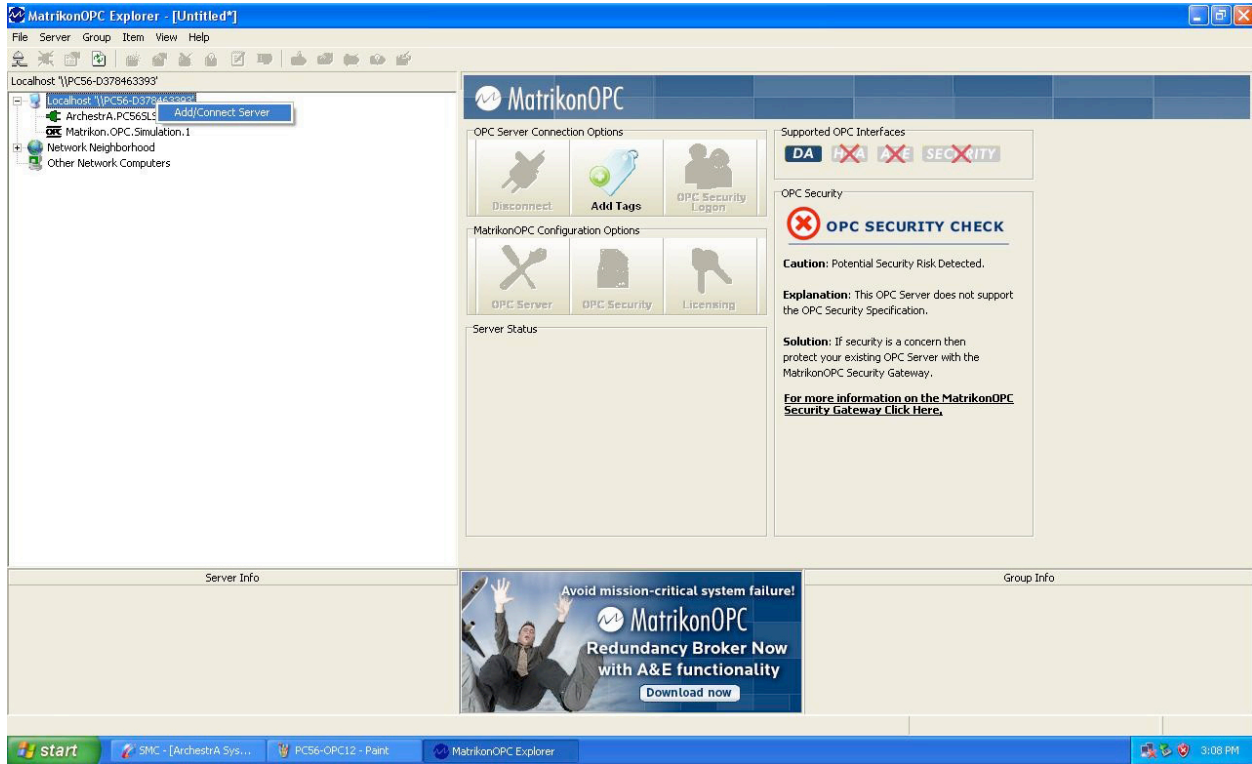
<http://www.matrikonopc.com/products/opc-desktop-tools/opc-explorer.aspx>

This link may be updated periodically, so if the link does not work please check <http://www.matrikon.com> for additional information.

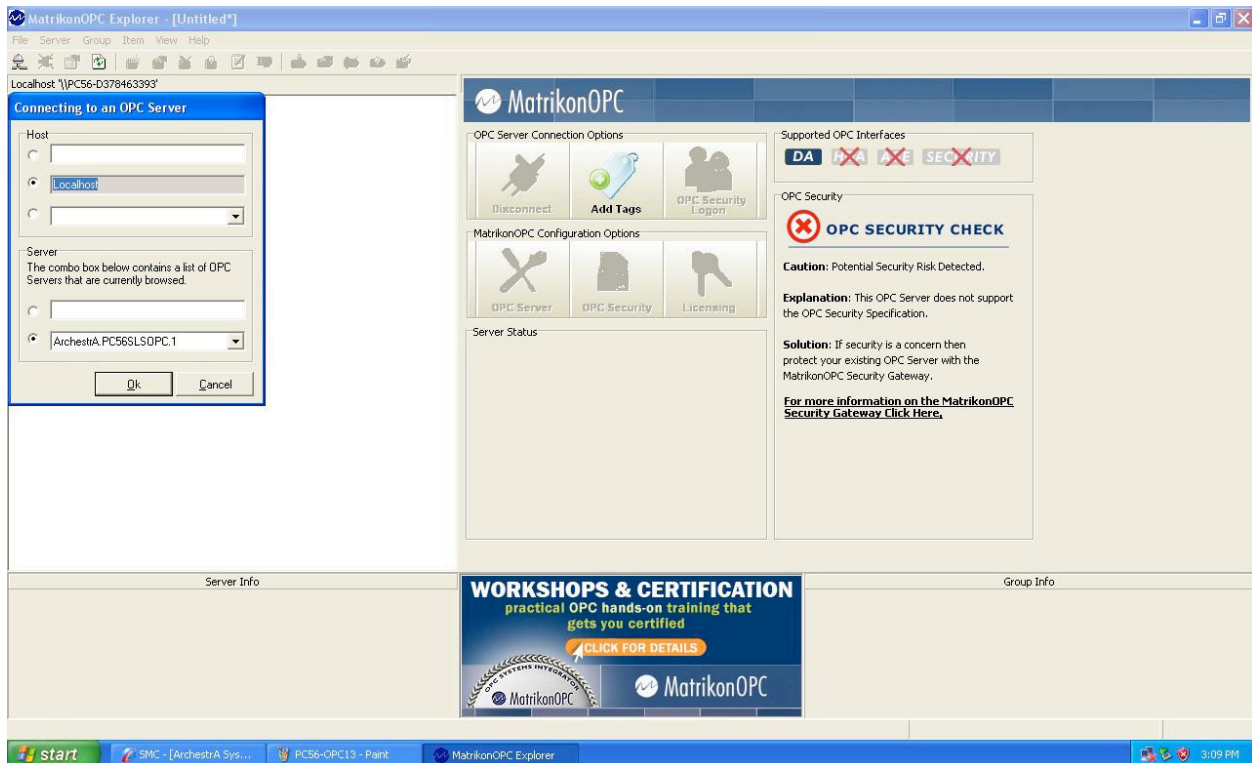
Open Matrikon OPC Explorer.



Right click on the Add/Connect Server.



Click OK.



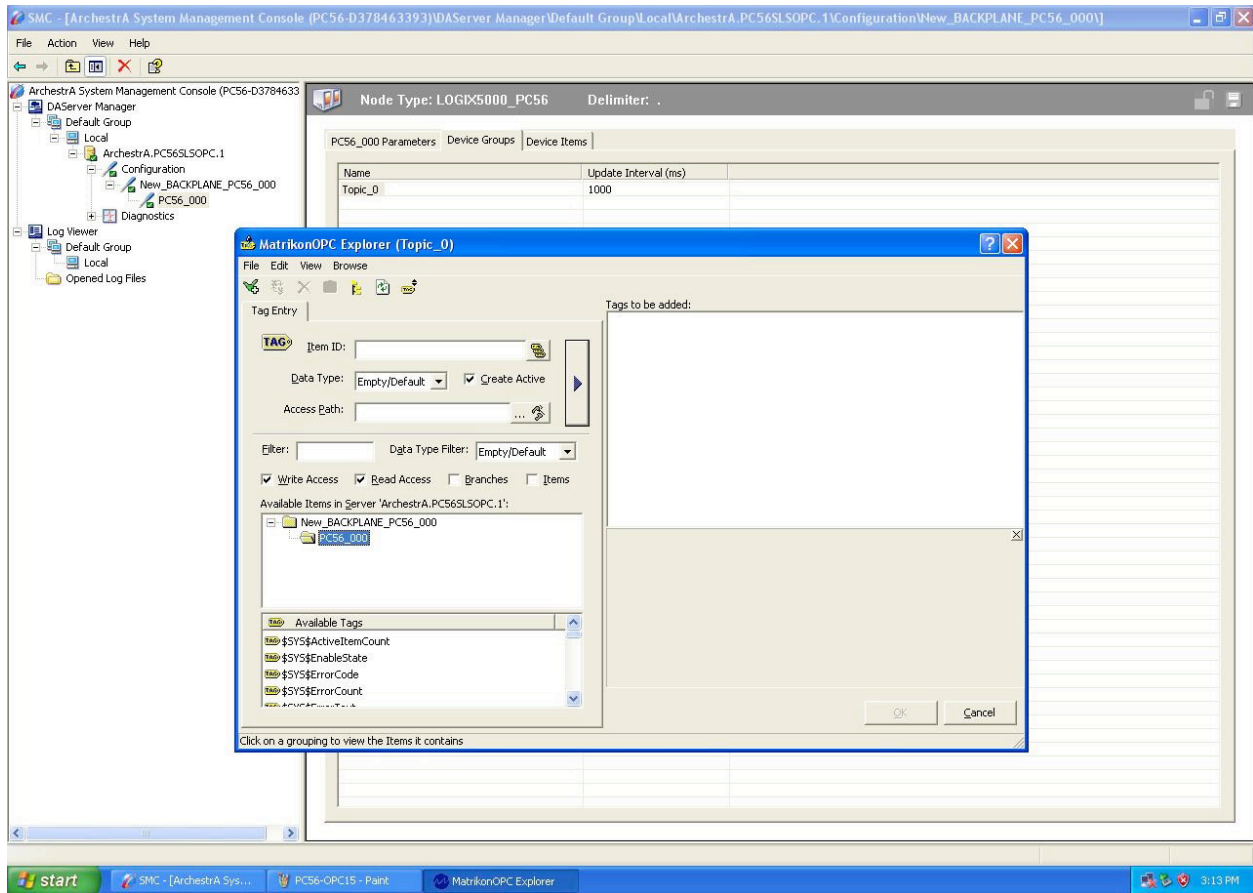
Click Add Tags.

The screenshot shows the MatrikonOPC Explorer application window. The main interface is divided into several sections:

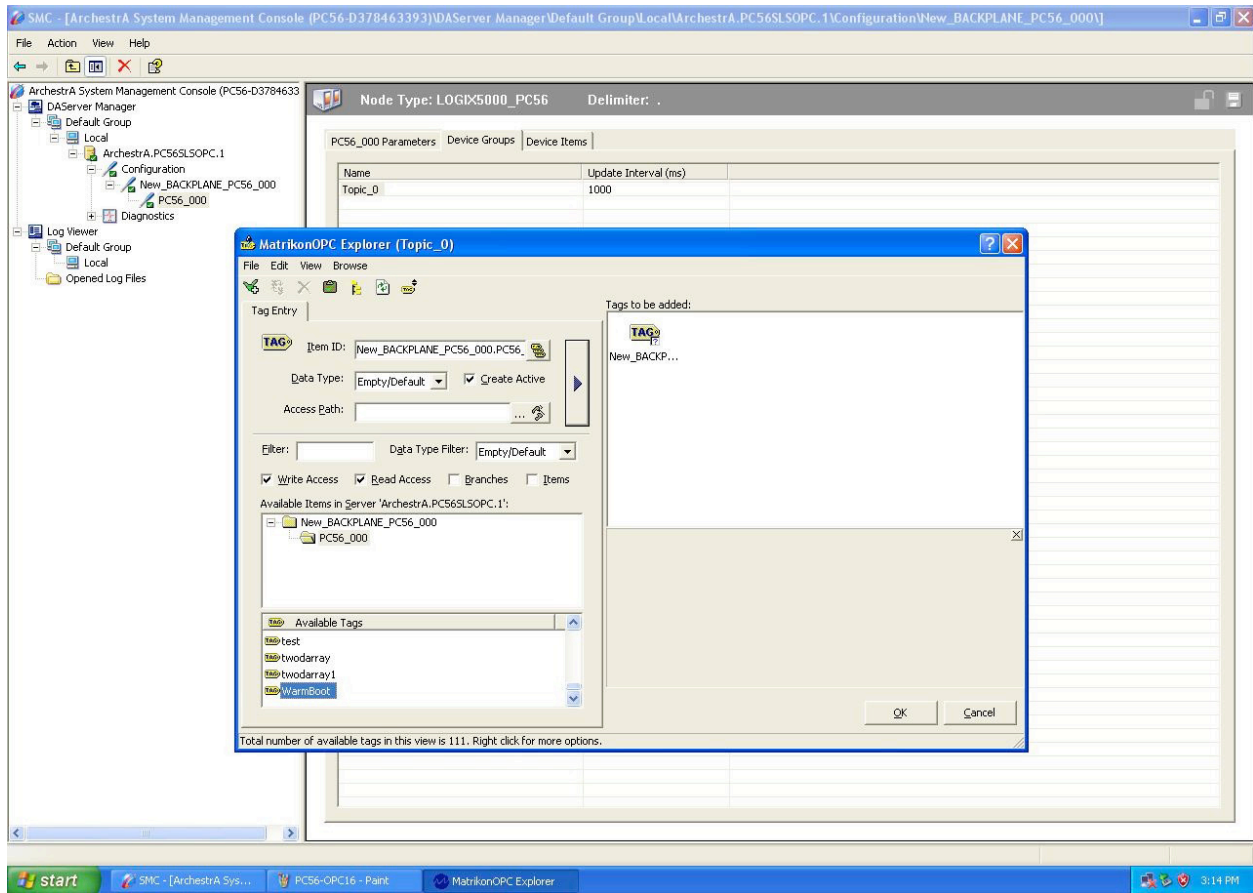
- Left Panel:** A tree view showing the network structure, including 'Localhost', 'Archestra.PC56SLSOPC.1', and 'Matrikon.OPC.Simulation.1'.
- Top Right Panel:** 'MatrikonOPC' header with 'OPC Server Connection Options' (Disconnect, Add Tags, OPC Security Logon) and 'Supported OPC Interfaces' (DA, FXA, AXE, SECURITY).
- Middle Right Panel:** 'MatrikonOPC Configuration Options' (OPC Server, OPC Security, Licensing) and 'Server Status' for 'Archestra.PC56SLSOPC.1'. The status shows 'Connected: Yes', 'State: Running', and 'Groups: 0'.
- Right Panel:** 'OPC Security' section with a red 'X' icon and the text 'OPC SECURITY CHECK'. It includes a 'Caution: Potential Security Risk Detected.' and an 'Explanation: This OPC Server does not support the OPC Security Specification.' A 'Solution' section suggests using the MatrikonOPC Security Gateway.
- Bottom Left Panel:** 'Server Info' section with detailed status: 'Server: Archestra.PC56SLSOPC.1', 'Connected: Yes', 'State: Running', 'Groups: 0', 'Total Items: 0', 'Current Local Time: 12/12/2007 3:11:52.052 PM', 'Update Local Time: 12/12/2007 3:07:56.834 PM', and 'Bandwidth Usage: 42'.
- Bottom Center:** A promotional banner for 'Secure Your OPC Data Now. OPC Security Gateway' with a 'Download Now!' button.
- Bottom Right Panel:** 'Group Info' section, currently empty.

The Windows taskbar at the bottom shows the Start button and several open applications: SMC - [Archestra Sys..., PC56-OPC14 - Paint, and MatrikonOPC Explorer. The system tray shows the time as 3:11 PM.

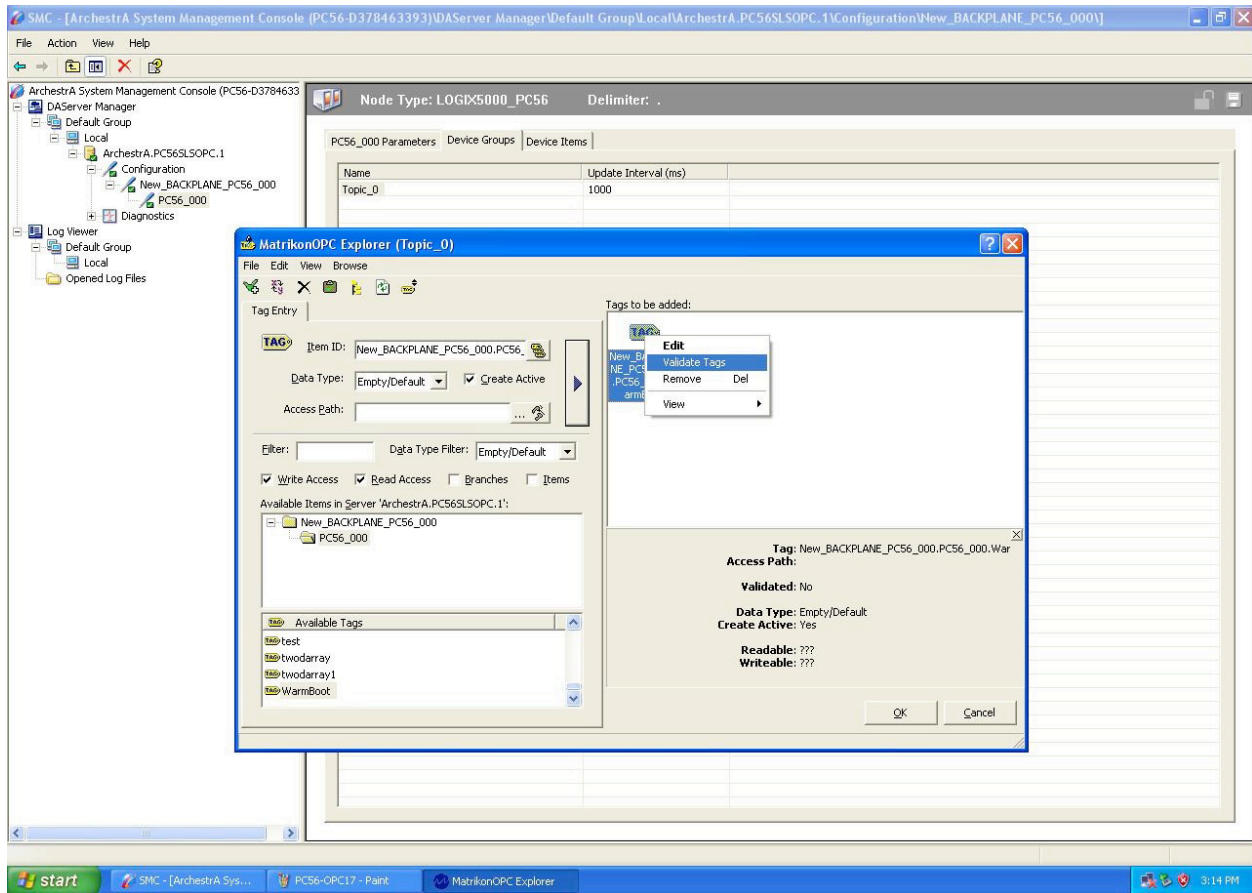
Expand New_BACKPLANE_PC56_000 by clicking the plus sign at the New_BACKPLANE_PC56_000 branch, which will then show PC56_000.



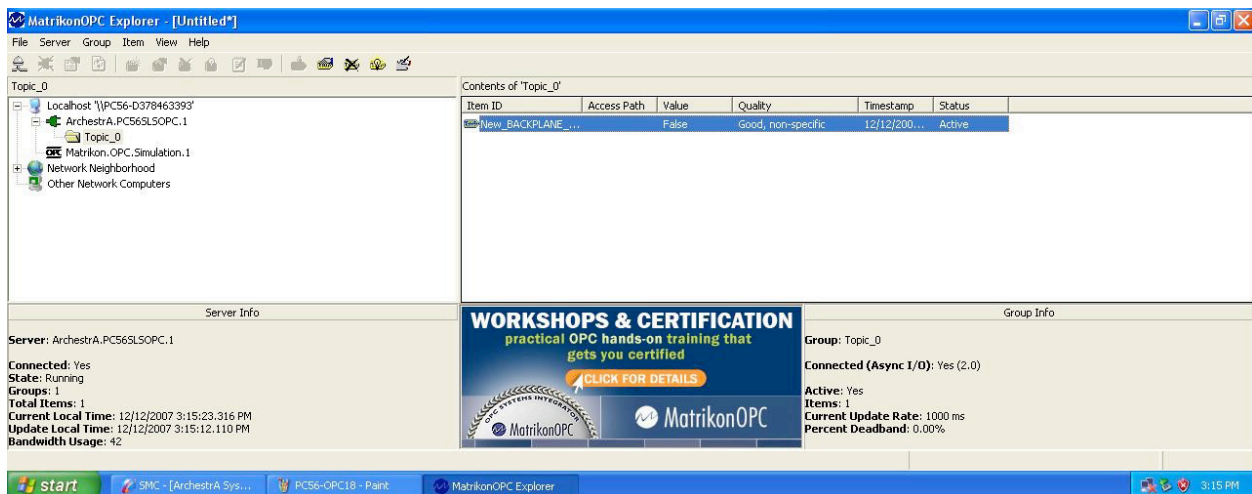
From the Available Tags list, choose a tag for Matrikon OPC Explorer to interrogate from the PC56-OPC/PC56-SLS. (In this example the WarmBoot tag was double-clicked.)



Right click on the Tag you have created in the Tags to be added: area. Click Validate Tag, and then click OK.

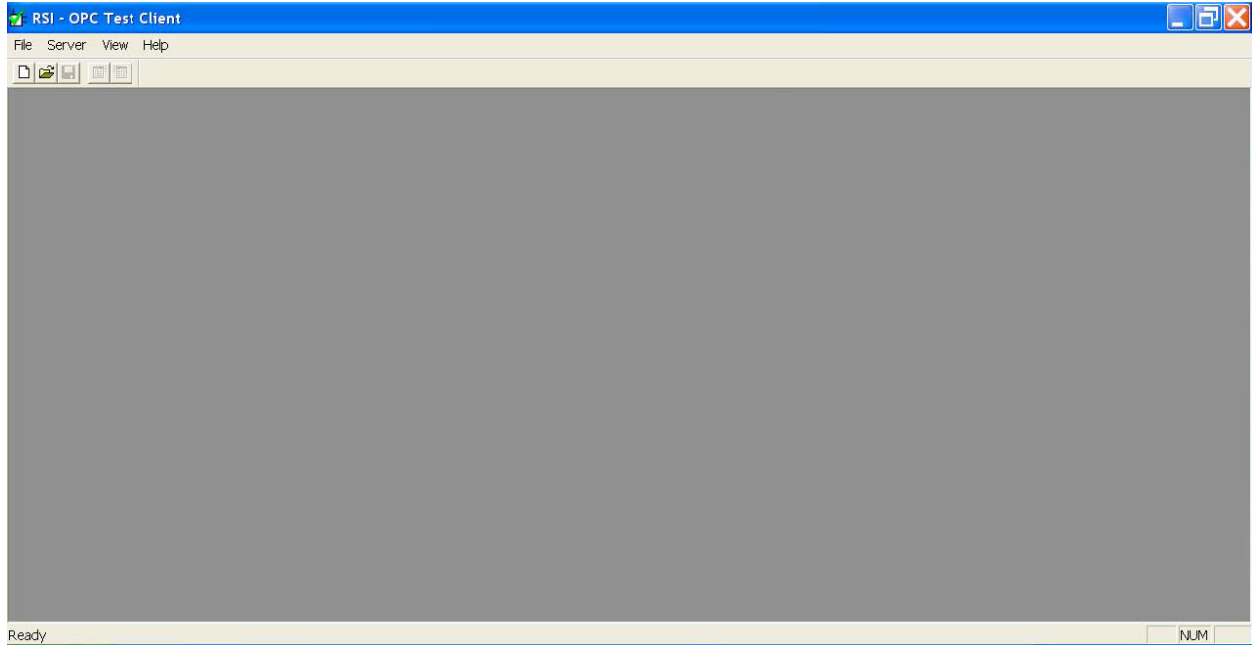


You have created a tag on Matrikon OPC Explorer.

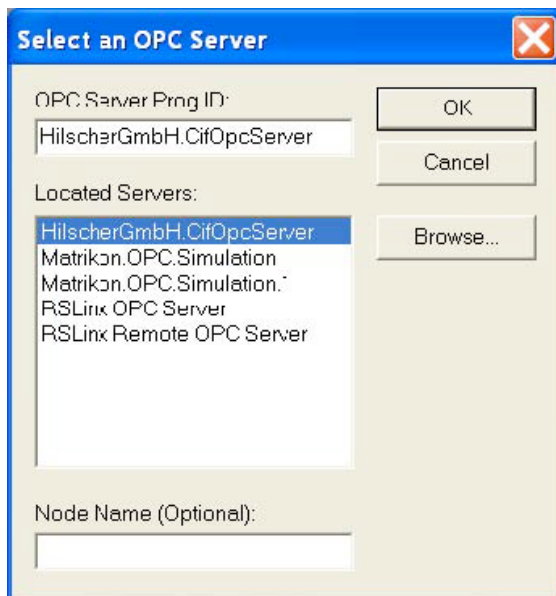


Testing Using OPC Test Client (Remotely)

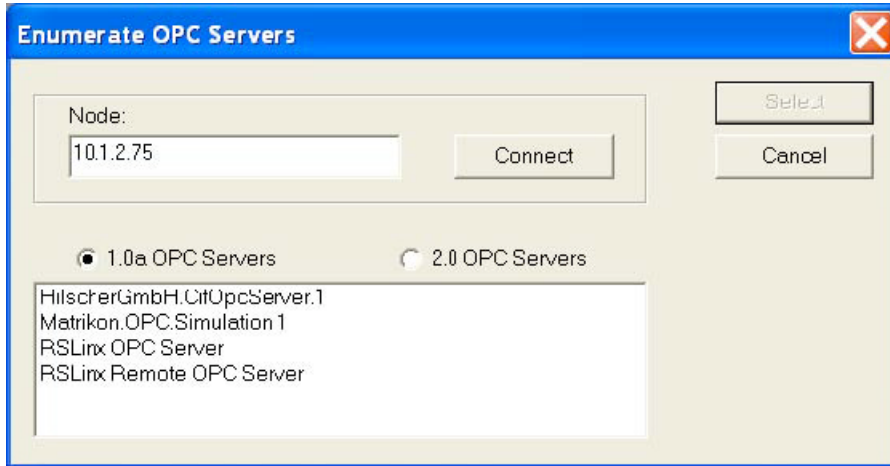
Click on Start menu → All Programs → Rockwell Software → RSLinx → Tools → OPC Test Client.



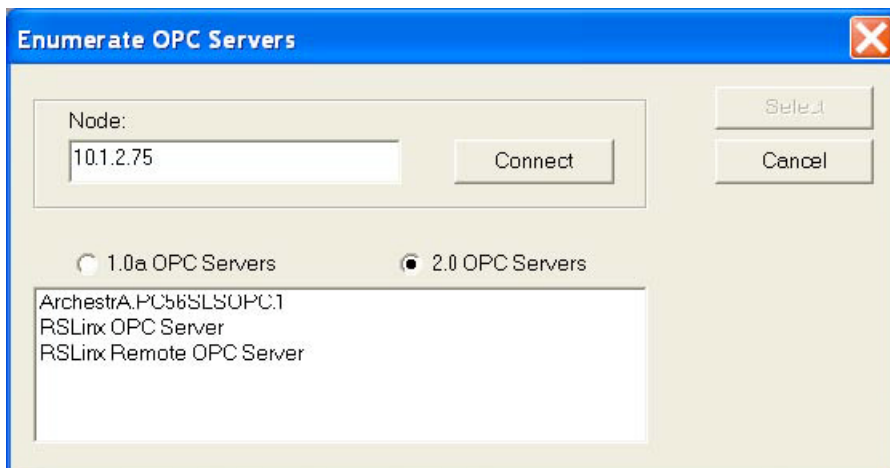
Go to the menu bar and click File → New. Click Browse...



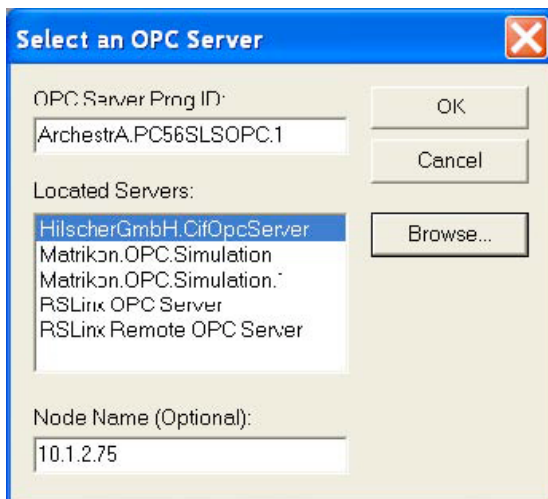
At Node type the IP address of the PC56-OPC, then click Connect.



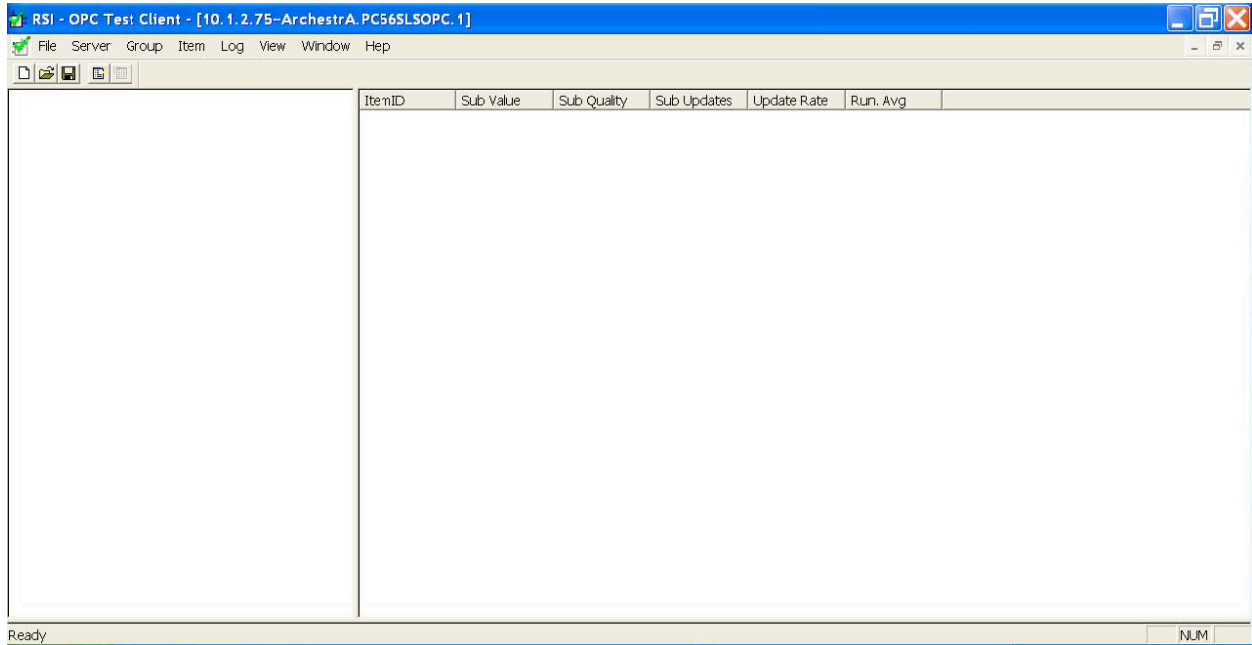
Choose the 2.0 OPC Servers. Highlight ArchestrA.PC56SLSOPC.1 then click Select.



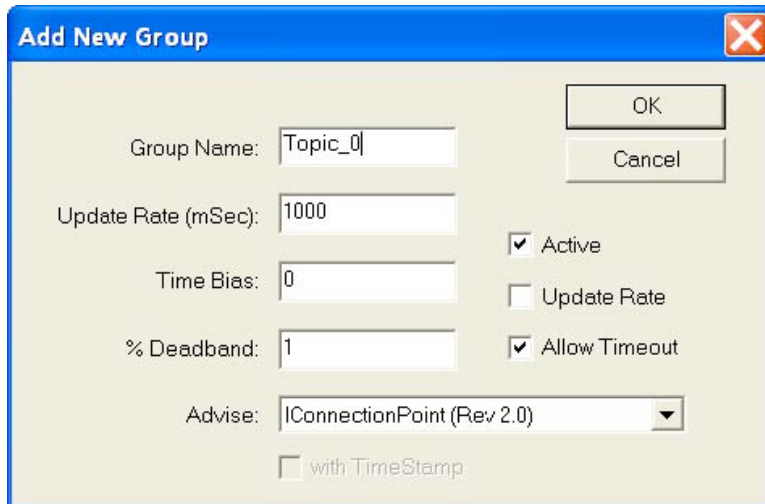
Click OK.



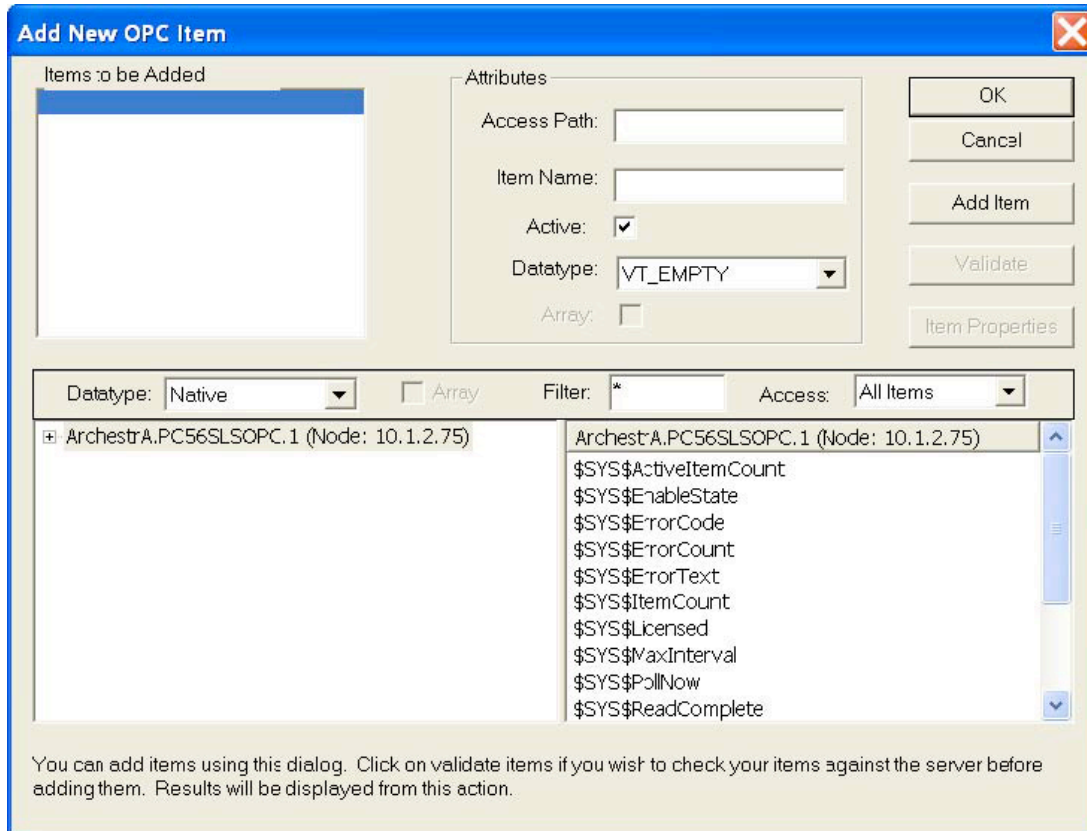
Go to the menu bar and click Group -> Add Group.



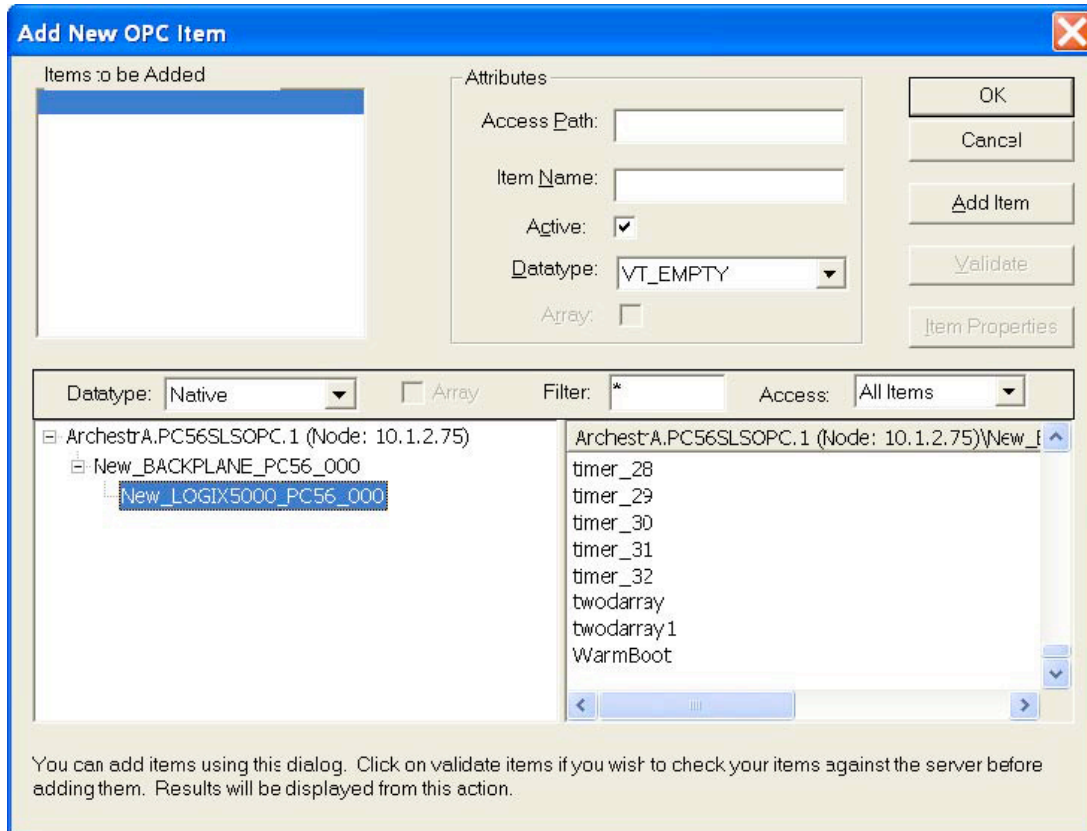
Type in the appropriate Group Name, then click OK.



Go to the menu bar and click Item -> Add Item.

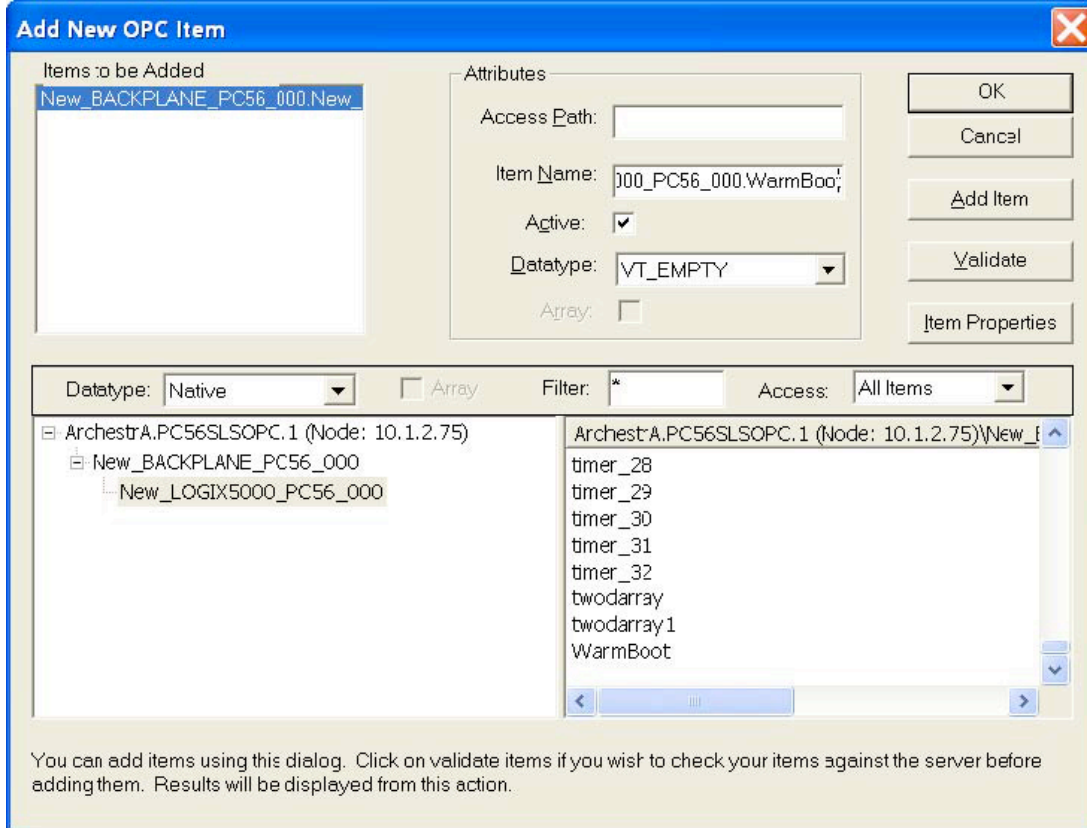


Open the ArchestrA.PC56SLSOPC.1 (Node: 10.1.2.75) branch, then open the New_BACKPLANE_PC56_000 branch. Highlight New_LOGIX5000_PC56_000.

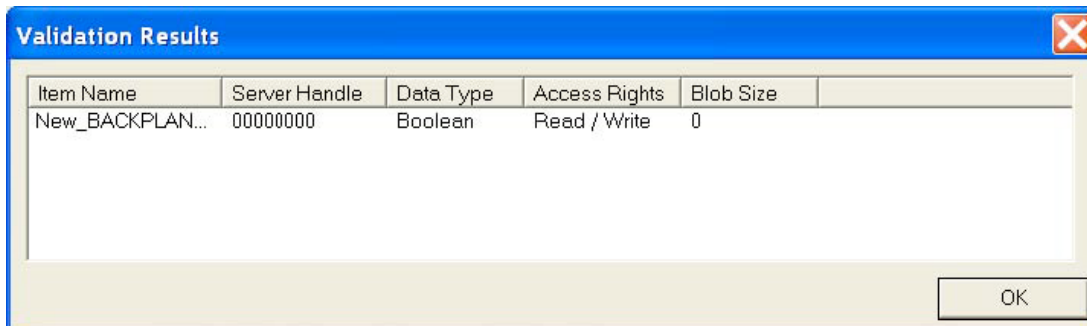


You'll need to type in the path and the item name in the Item Name: parameter, e.g. New_BACKPLANE_PC56_000.New_LOGIX5000_PC56_000.WarmBoot.

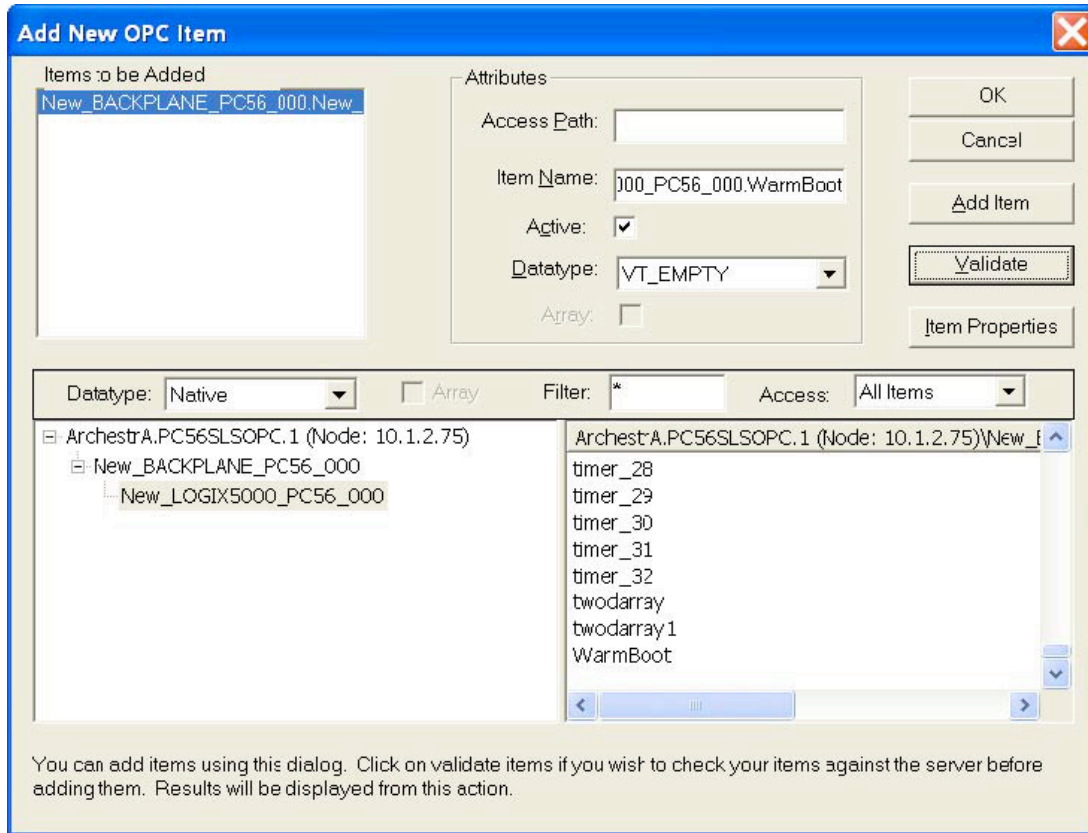
Click on Validate to check for the validity of the tag.



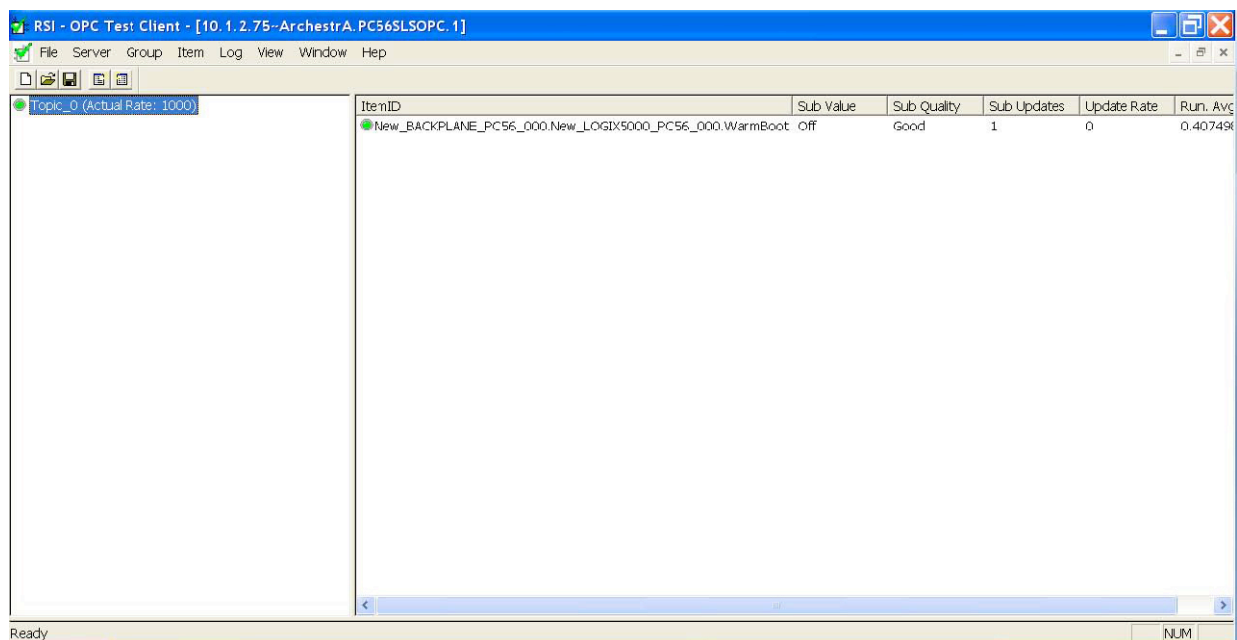
Click OK when you see the tag is valid.



Then Click OK on this window.



You have created a tag with OPC Test Client. Repeat this procedure for all other tags you want to test using OPC Test Client.



Conclusion

In this document you learned how to interrogate a tag from a ControlLogix processor to ProSoft's PC56-OPC/PC56-SLS modules to Matrikon OPC Explorer to OPC Test Client. If you need additional information, please contact us.

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