Tech Note 366

Configure DASABDHPlus to Work with the 1784-PKTx Adapter

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Introduction

This technote explains step-by-step procedures on how to configure and use Wonderware®'s ABDHPlus DAServer to access data in a PLC connected to a Data Highway Plus network. This DAServer can provide connectivity to the Allen-Bradley families of PLC-5 and SLC 500 controllers, which are connected to the Data Highway Plus network.

The DASABDHPlus is setup on a computer using the Windows® 2000 Operating System.

We will try establish the communications to a SLC504 PLC as an example.

Before you continue, make sure you do the following:

- Install and configure the PLC. You will need the Rockwell Software RSLogix 500 to configure the SLC504 PLC.
- Read and follow the instructions in the ABDHPlus DAServer's readme file and related documents for System requirements, proper installation procedures, and supported Operating systems.
- Install the latest version of the ABDHPlus DAServer. If a previous version was installed, be sure to uninstall it using **Add/Remove Programs** in the Control Panel.
- We will use the Wonderware's WWClient utility to test the communications between the DASABDHPlus and the PLC. You can get a copy of the WWClient from an I/O server CD or you can also download it here: **WWClient Utility**.

This technote is written using ABDHPlus DAServer version **1.0.100**. To check the version number of the server, use **Control Panel/Add/Remove Programs** - select Wonderware ABDHPlus DAServer, then click on Support Information.

Note: This technote assumes the user has a basic working knowledge and understanding of Data Highway Plus (DH+) networking, Allen-Bradley software/hardware, Microsoft® operating systems, Wonderware FactorySuite® components, WWClient utility, and the ABDHPlus DAServer.

If you have problem configuring the 1784-PKTx adapter or the PLC, please contact Allen-Bradley for assistance at **www.ab.com**.

Configurating the 1784-PKTx Adapter

1. Install the 1784-PKTx adapter onto a PCI slot in your computer.

   Note: It is important that the adapter is installed on the computer *before* the ABDHPlus DAServer.

2. Verify that the Memory Jumper (JP2) on the card is set to the 32-bit position. If it is on the 1 Meg position, move the jumper to the 32-bit position.
3. Make sure the card ID jumper (JP3) is set correctly. For a single card, set it to ID number zero (**0**).
4. Connect a known good DH+ blue-hose cable from the 1784-PKTx adapter to a DH+ port on the PLC. Make sure to assign a valid Data Highway Plus node address to the port. You will need the Rockwell Software RSLogix 500 to configure the SLC504's DH+ port.

5. Turn on the computer. The Windows 2000 Operating System will recognize the 1784-PKTx adapter as New Hardware:

FIGURE 1: FOUND NEW HARDWARE

6. Click **Next**.

   The **Install Hardware Device Drivers** dialog box appears:

FIGURE 2: INSTALL HARDWARE DEVICE DRIVERS

7. Click **Next**.

   The Wizard will ask you to choose your search for driver files. Since we want the wizard to use the **AB1784KT.INF** file in the DAServer CD, select the **CD-ROM drives** option:

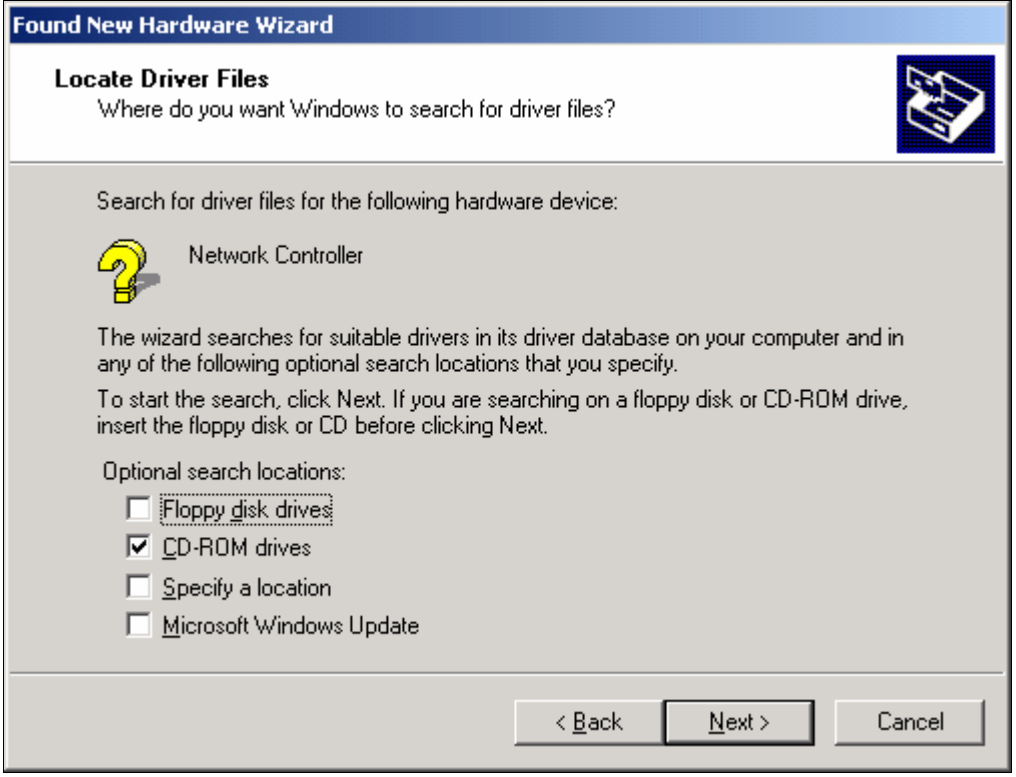

FIGURE 3: CD-ROM DRIVES DRIVERS OPTION

8. Click **Next**, and enter the path where the AB1784KT.INF file is located on the CD:

FIGURE 4: CD PATH

9. Click **Next**.

   The Wizard will let you know that the driver for the card has been found:

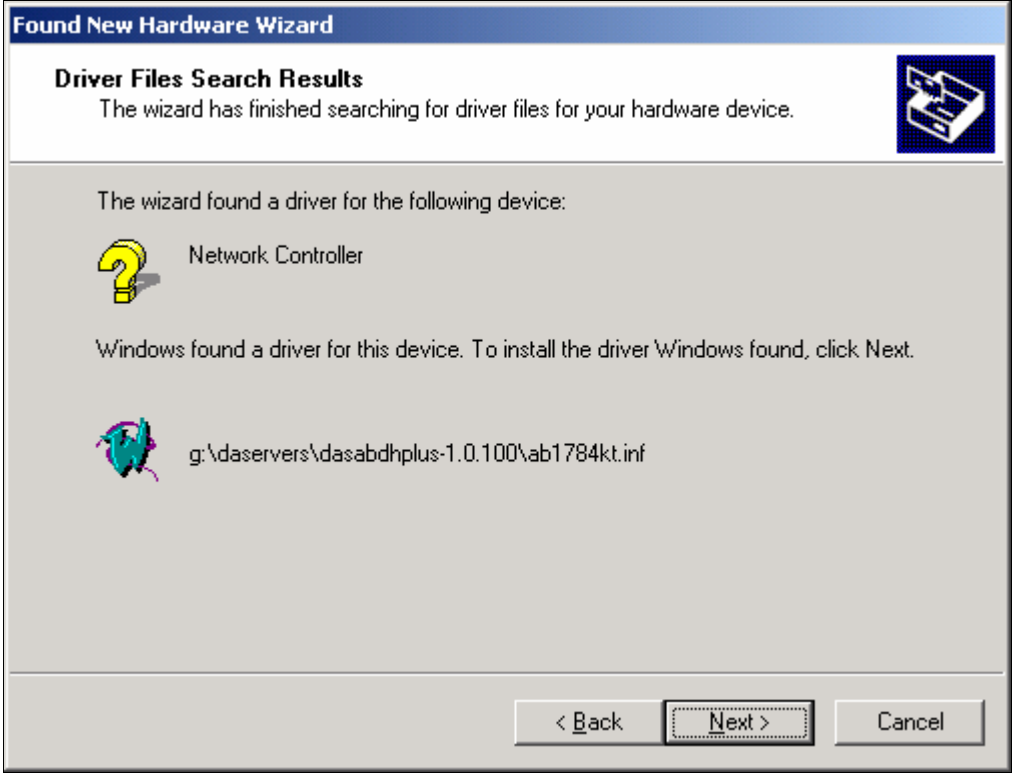

FIGURE 5: DRIVER SEARCH RESULTS

10. Click **Next** again to begin installation.

    The Wizard will let you know that the driver for the card has been installed.

11. Click **Finish** to close the wizard.

FIGURE 6: INSTALLATION COMPLETE

12. Open the computer's Device Manager to verify that the card has been installed properly.

    You should see the **Allen-Bradley AB1784-PKTx Communication Interface Card** below the **Industrial Network Adapters** root:

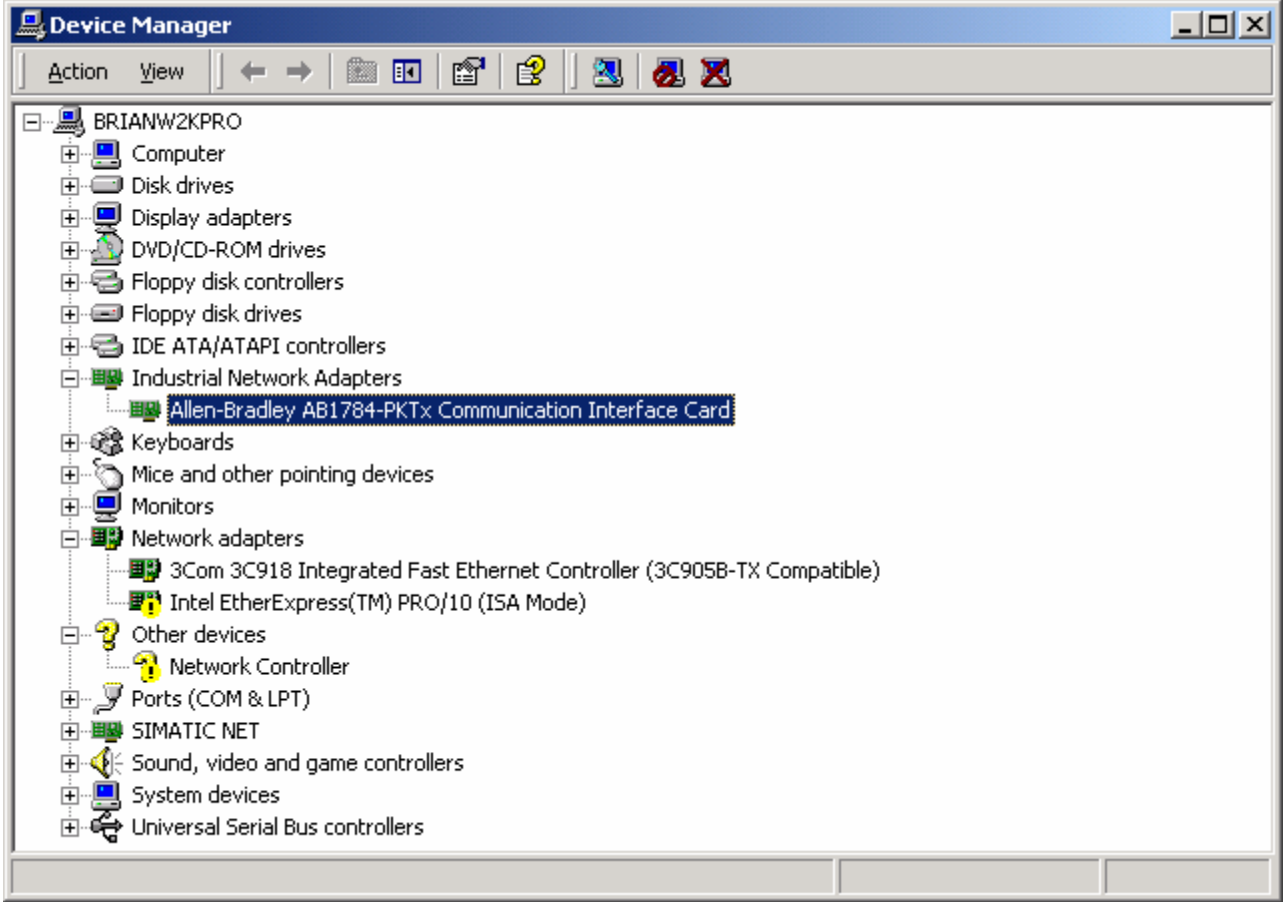

FIGURE 7: DEVICE MANAGER INSTALLATION CONFIRMATION

13. Double-click the **Allen-Bradley AB1784-PKTx Communication Interface Card** item to open the Allen-Bradley AB1784-PKTx Communication Interface Card Property dialog box.

14. Select the **Resources** tab. The **Conflicting Devices** list should display **No Conflicts**:

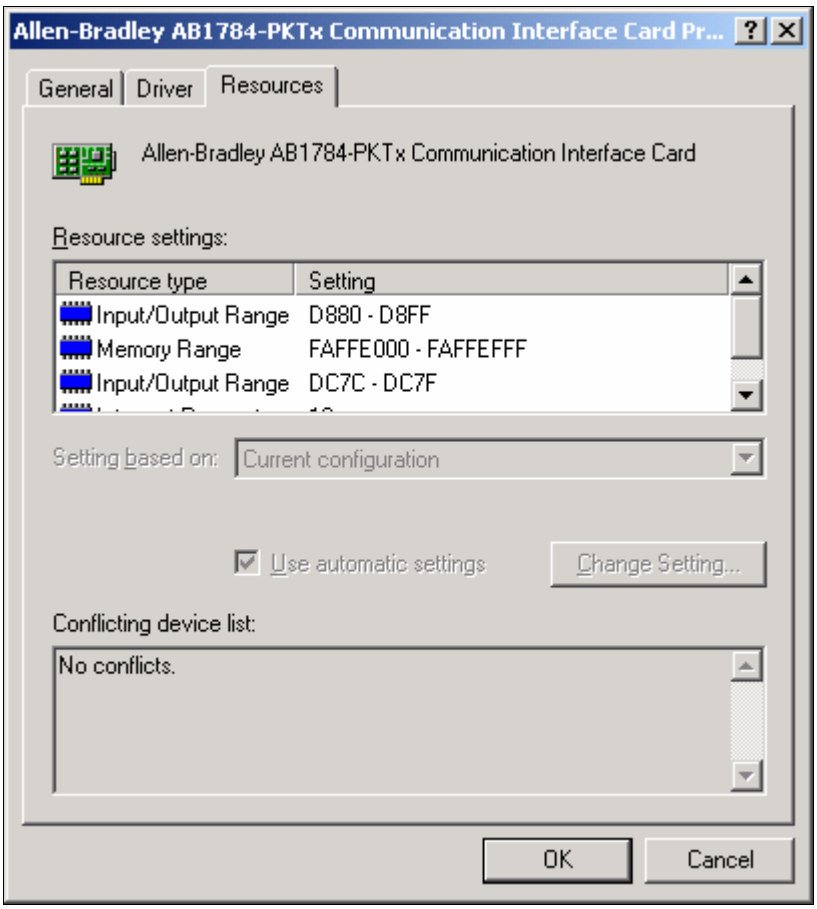

FIGURE 8: NO CONFLICTS

15. Click **OK** to exit the **Allen-Bradley AB1784-PKTx Communication Interface Card Property** dialog box.
16. Install the **DASABDHP** DAServer.
17. Click the **Start** button on the Windows taskbar to launch the System Manager Console.
18. Select **Programs/Wonderware**, then select **System Management Console**.
19. Click **DAServer Manager**.
20. Expand the **ArchestrA.DASABDHPlus.1** icon, then highlight **Configuration**.

    The following window appears:

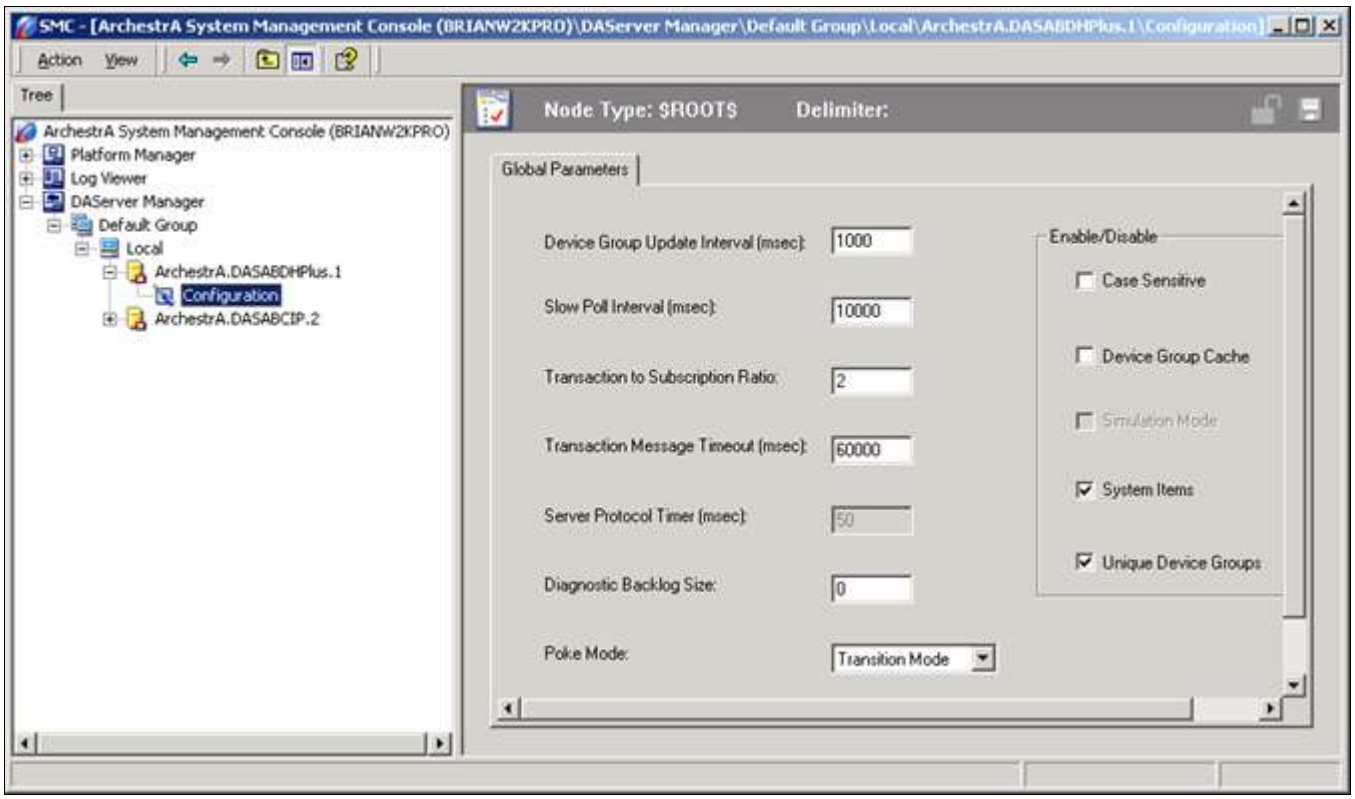

FIGURE 9: ARCHESTRA SMC

• **Device Group Update Interval:** Specifies the update interval of the default device group.

• **Slow Poll Interval:** Specifies the interval the DAServer polls the field device after it goes into slow poll mode when connectivity problems occur.

• **Transaction to Subscription Ratio:** Transactions are poke/read messages from a DDE/SL/OPC client. Subscriptions are messages generated by items being on advise, and they are sent periodically at the Update Interval. The Transaction to Subscription ratio defines the maximum number of transactions the DAServer sends before sending one subscription.

• **Transaction Message Timeout:** The timeout for transactions (read/write/refresh/property) per message. The timeout has to be set in such a way that the data acquisition on a message does not take longer than this timeout.

• **Server Protocol Timer:** Disabled.

• **Diagnostic Backlog Size:** Specifies the maximum number of transactions shown in the Transactions diagnostic root.

• **Poke Mode:** The following modes are available:
- Control Mode preserves the poke order without folding.

- Transition Mode preserves the poke order with minimum folding by keeping the first, second and last poke values of an item.
- Optimization Mode does not preserve the poke order and has maximum folding by only poking the last value of an item.

• **Case Sensitive:** Controls how the DAServer scans item and device group names with respect to upper/lower case.

• **Device Group Cache:** This parameter is for future use.

• **Simulation Mode:** Disabled.

• **System Items:** This parameter controls whether the system items appear in the browse interface and if they are recognized as valid ItemIDs by the DAServer's data acquisition interfaces.

• **Unique Device Groups:** This parameter controls whether the device group names are checked for uniqueness across all device nodes of a DAServer.

21. Select and then right-click **Configuration**.
22. Choose **Add_PKT_CARD Object**.

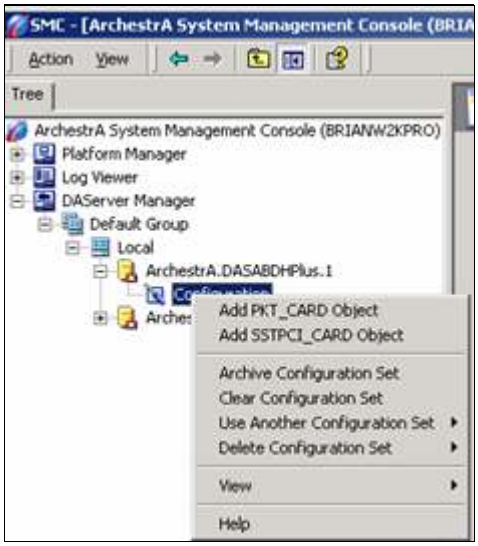

FIGURE 10: ADD_PKT_CARD OBJECT

The **New_PKT_CARD Parameter** dialog box should now appear as shown in the figure below:

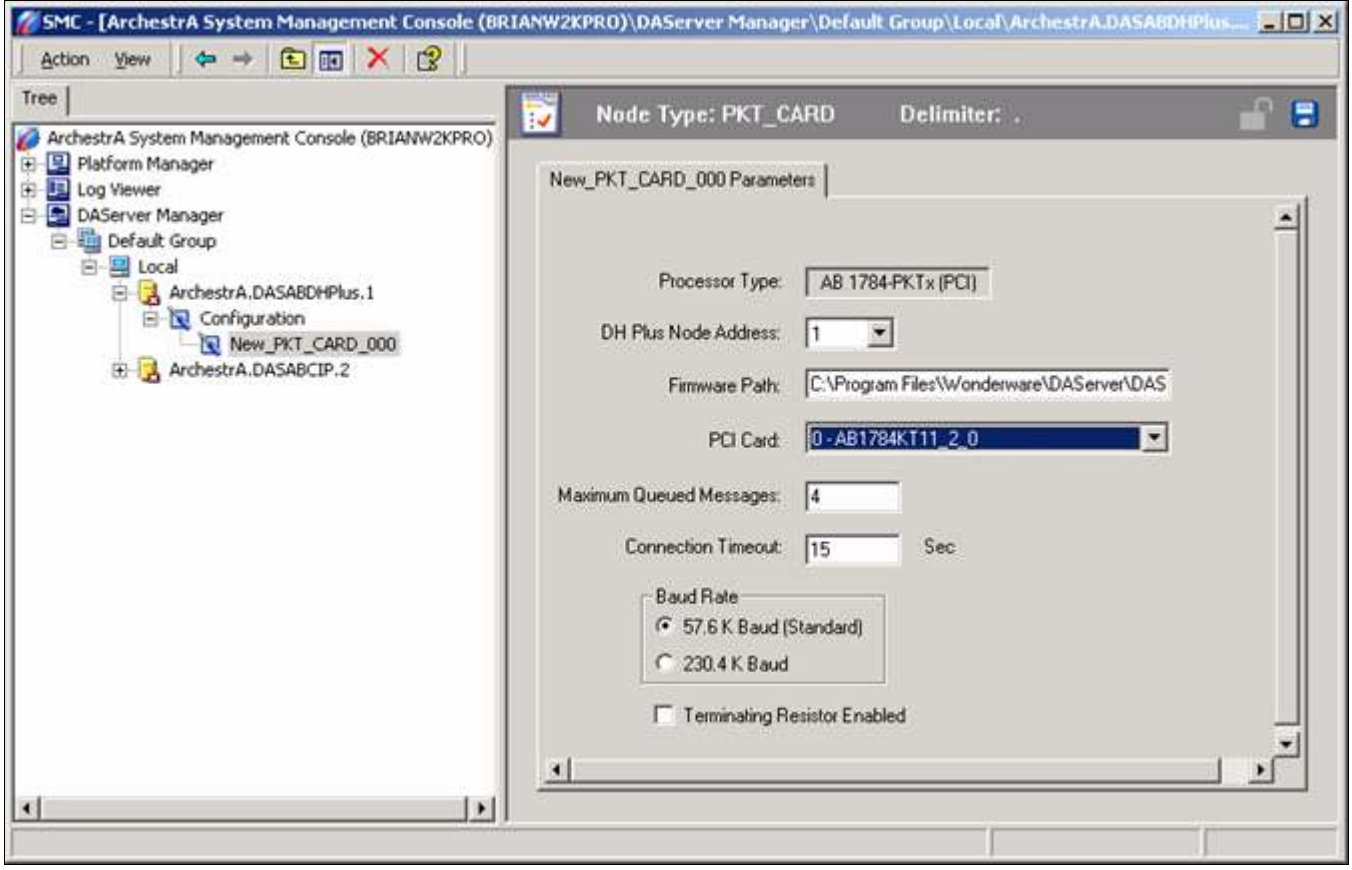

FIGURE 11: NEW_PKT_CARD PARAMETER

Where:

• **DH Plus Node Address:** is the node address for the adapter displayed as an Octal number. It should be a unique node number in the Data Highway Plus network.

• **Firmware Path:** is the location of the DASABDHPlus (copied) firmware files. Normally it is **C:\Program Files\Wonderware\DAServer\DASABDHPlus\Bin\Firmware**.

• **PCI Card:** Will display the card number if the DASABDHPlus recognizes the 1784-PKTX adapter.

23. Change the DH Plus Node Address to the one assigned for this card.

    In this test, they are assigned number **77** (node address).

24. Select and then right-click on the **New_PKT_Card_000**.

25. Select **Add SLC500_DHP Object**:

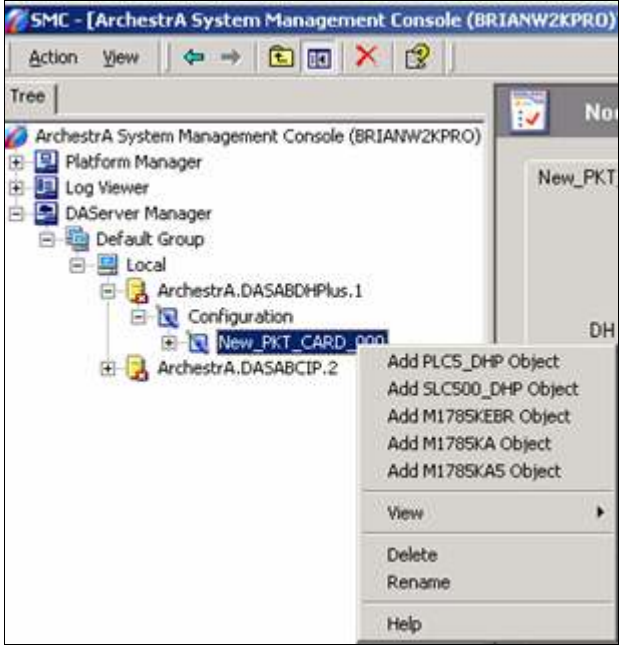

FIGURE 12: ADD SLC500_DHP OBJECT

The **New_SLC500_DHP_000** will be added to the tree.

The **New_SLC500_DHP_000 Parameters** tab field should now be similar to the following figure:

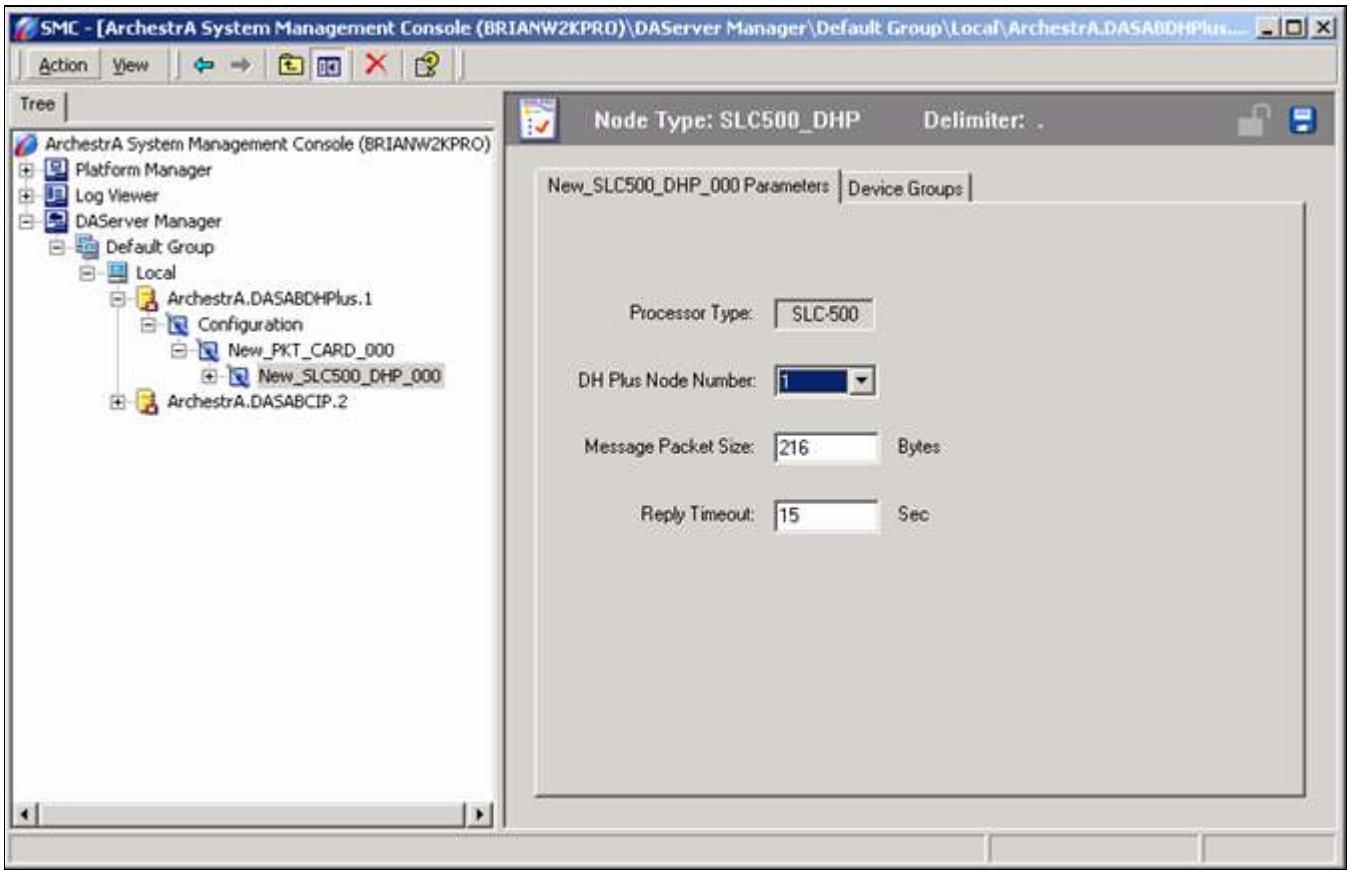

FIGURE 13: NEW_SLC500_DHP_000 PARAMETERS

Note that the DH Plus Node Number in the above dialog window is the PLC's Data Highway Plus node address.

26. Now, select the **Device Groups** tab.
27. In order to add a new device group (or topic), right click anywhere in the white space of the device groups window, and select **Add**.
28. Change the device group name to a meaningful one such as **SLC504** as shown in the following figure:

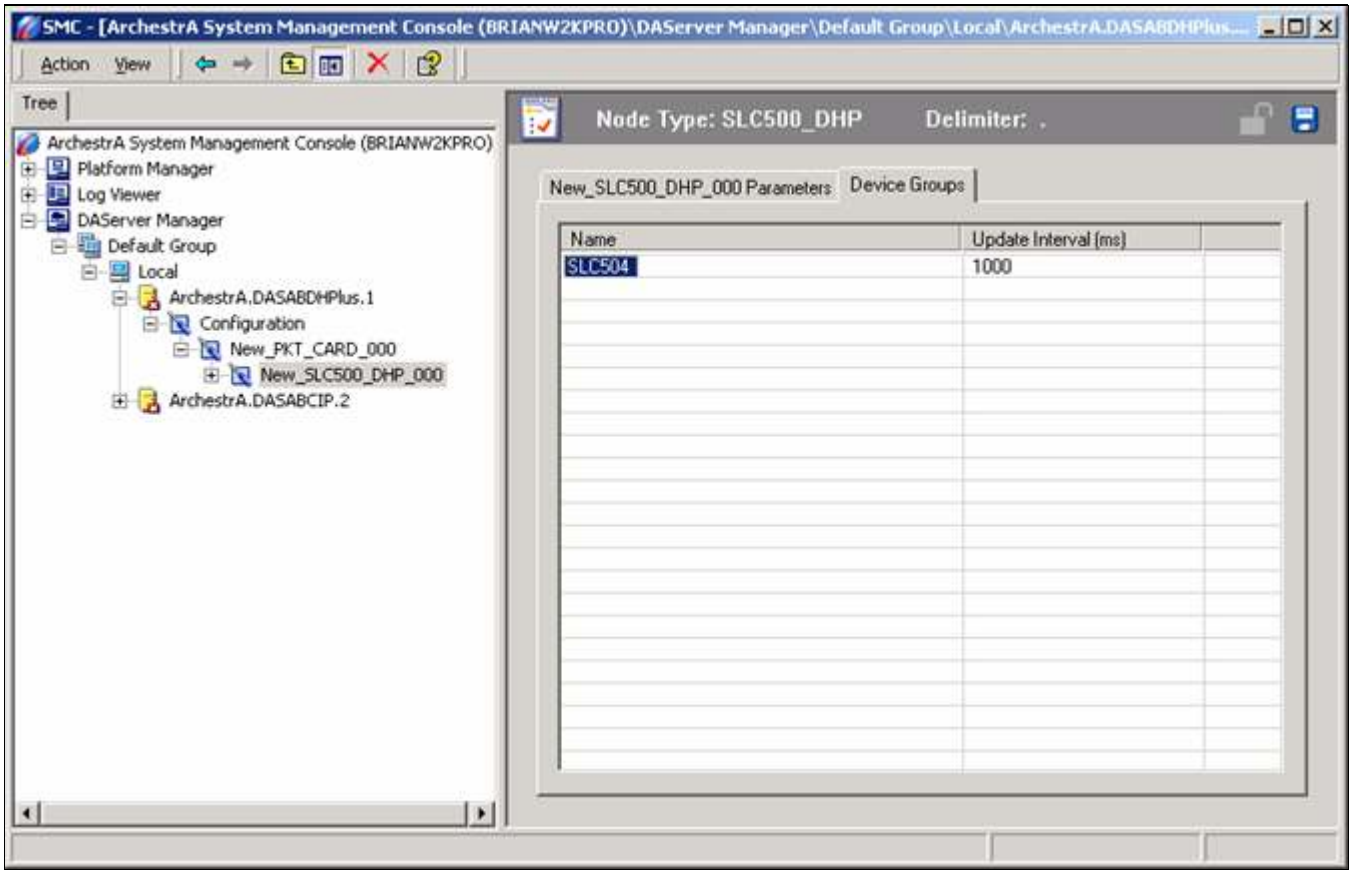

FIGURE 14: ADD DEVICE GROUP NAME

Now, we're ready to run the DASABDHPlus server.

29. Right click **ArchestrA.DASABDHPlus.1** and select **Activate Server**:

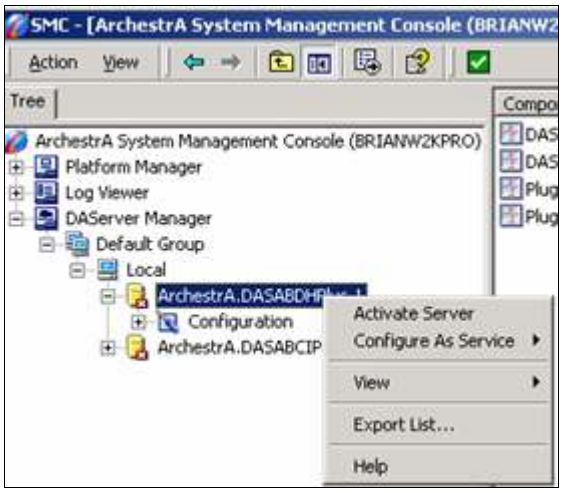

FIGURE 15: ACTIVATE SERVER

The icon for the **ArchestrA.DASABDHPlus.1** should appear similar to the one shown in the following figure:

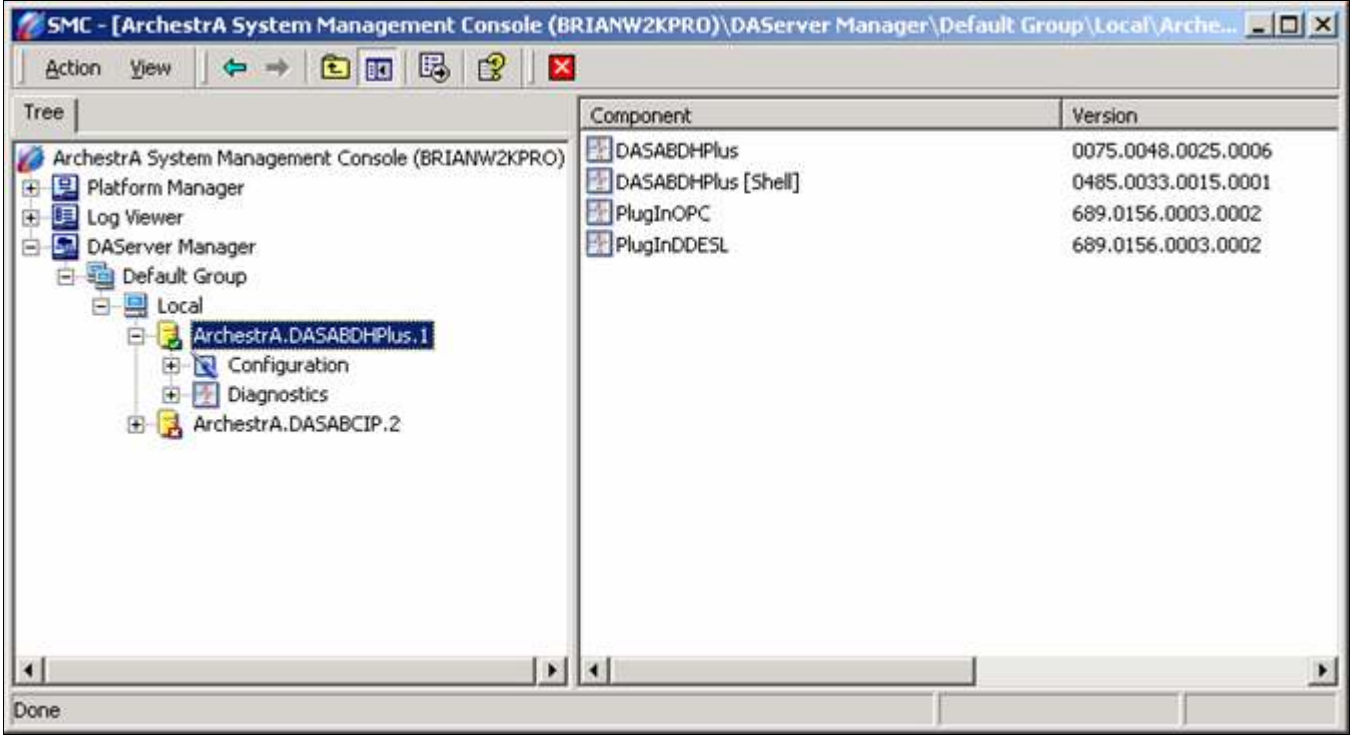

FIGURE 16: ACTIVATED SERVER ICON

Testing the Communications

You can now test the connections to the PLC. We will use the **WWClient** utility for the test (click **here** to download).

To launch the WWClient:

1. Click **Start/Run** from the Windows taskbar.
2. Enter **WWClient** to launch the Wonderware WWClient program.
3. Select **Connections/Create** from the main menu bar.

   The **Create Connection** dialog box appears.
4. Enter appropriate information as shown in the following figure:

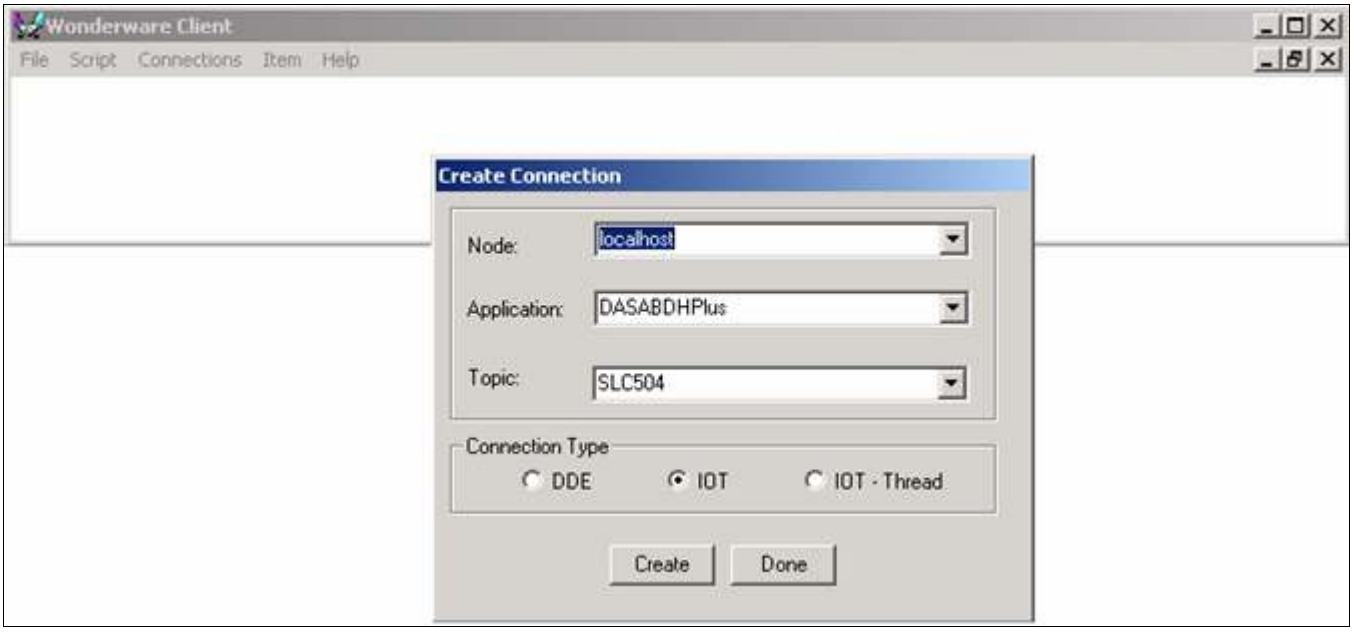

FIGURE 17: CREATE CONNECTION

Where:

• **Node:** is blank since the DASABCIP and the WWClient are on the same computer. Otherwise, enter the computer name of the machine running the DAServer.

• **Application:** DASABDHPlus, which is the application name of the DAServer.

• **Topic: SLC504**, which is the exact name of the new device group we just created in the DASABDHPlus's device groups window.

• **Connection Type:** IOT - the SuiteLink protocol used for this technote.

5. Click **Create** and **Done**.

   The **WWClient** window should appear similar to the following figure:

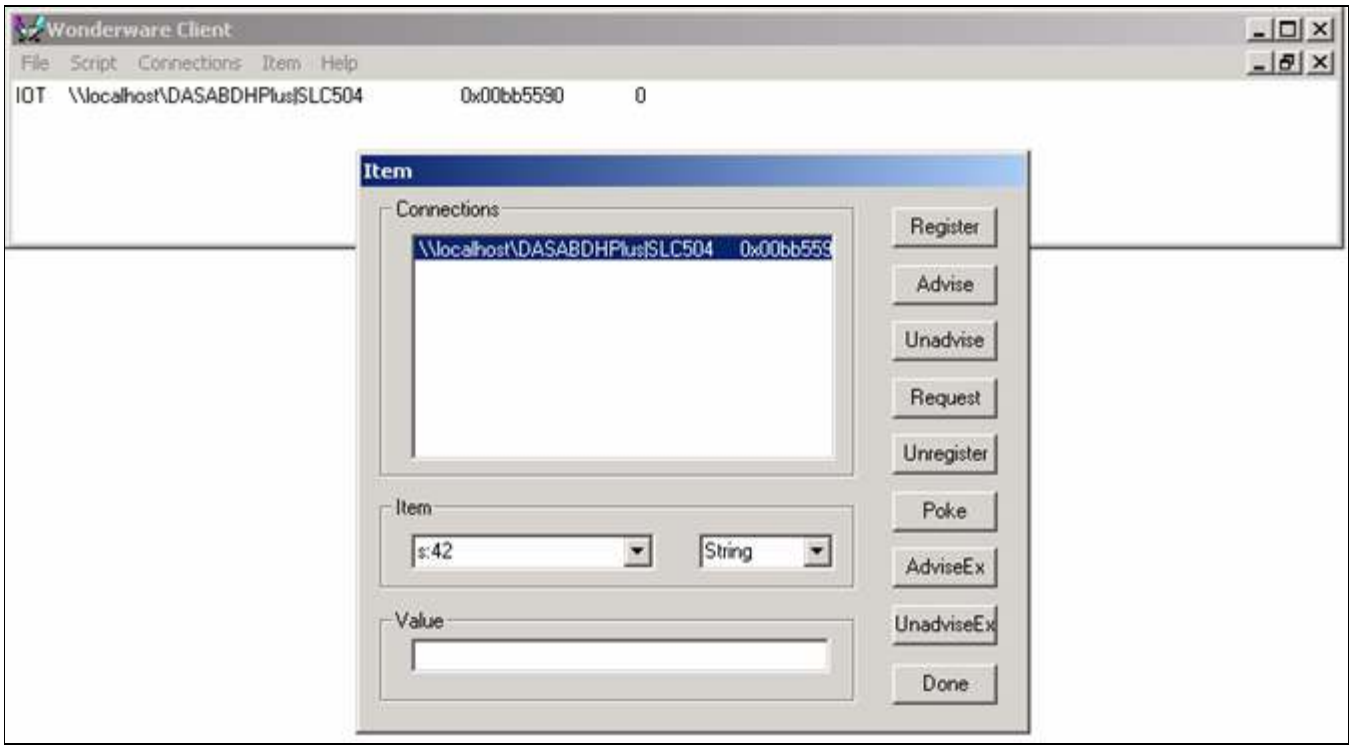

FIGURE 18: WWCLIENT CLIENT CONNECTION

6. Now, select **Item** on the main menu bar.

7. Enter a known good PLC register address.

   Note: The following figure (Figure 19 below) shows an example of WWClient successfully advising item **S:42** from the PLC.

8. Click the **AdviseEX** button to register and advise the item.

   If the Ethernet connection to the PLC is good, you should see the value for the register S:42 changing (following figure):

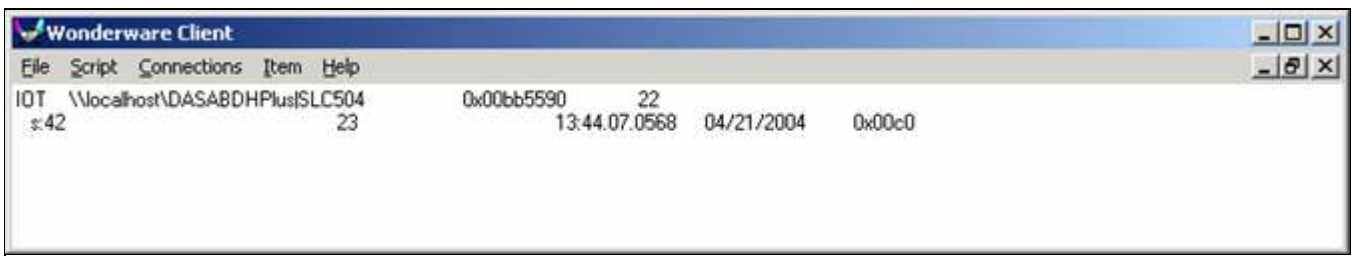

FIGURE 19: SUCCESSFUL ADVISE

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back to top