

Tech Note 448

Configuring the SST5136SD PCI Card Using the New SSTDHP I/O Server or the DASDHPlus Server

All Tech Notes and KBCD documents and software are provided "as is" without warranty of any kind. See the [Terms of Use](#) for more information.

Topic#: 002153

Created: April 2006

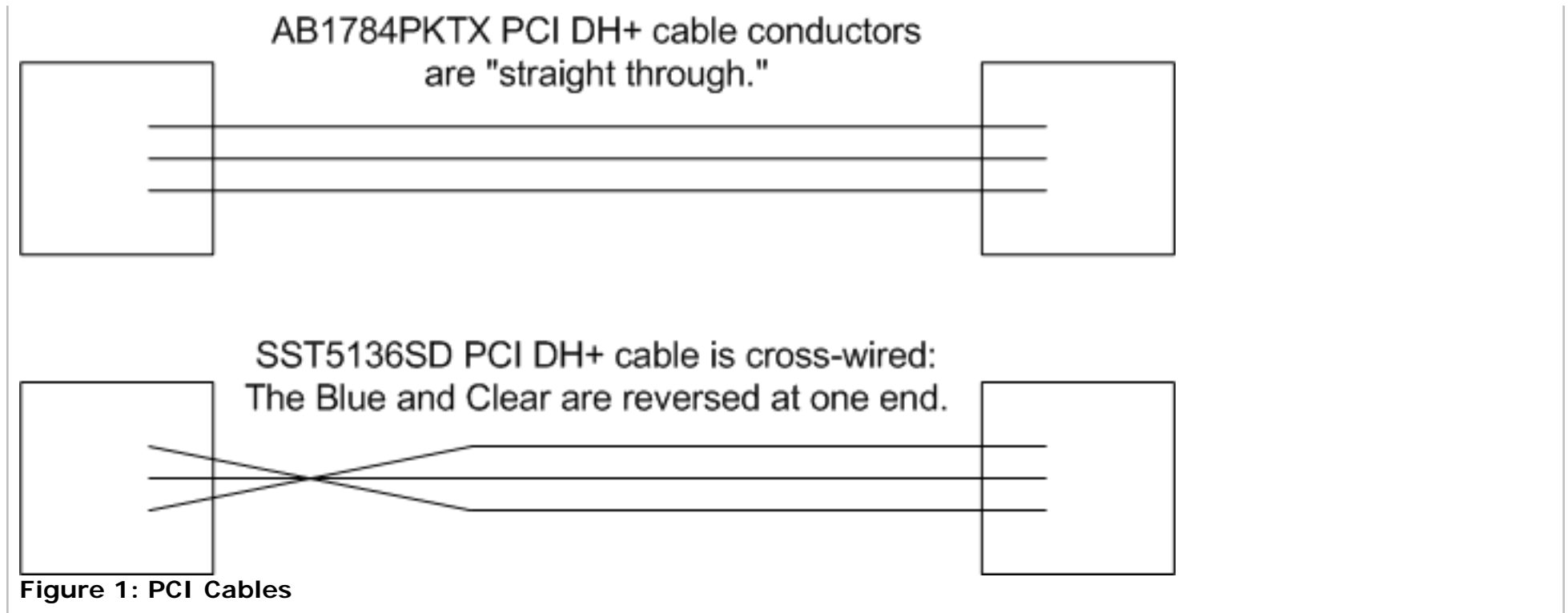
Introduction

The SST5136SD PCI adapter card is similar to the Allen Bradley's 1784PKTX adapter card, and provides the interface between the HMI machine and the Allen Bradley Data Highway Plus protocol.

The SST5136SD PCI card supports DH+ 57.6, 115.2, and 230.4 baud rates used in Allen Bradley PLC families.

The main difference with SST5136SD PCI card is that there are no jumper settings for base memory and Card ID. The firmware provided by Wonderware's I/O Server for this PCI card automatically determines how many PCI cards are installed, and what base memory to use for each PCI card installed on the machine.

Note: The cables used for the SST5136SD PCI card and those used for AB1784PKTX PCI card are different: The SST cable is a cross-over version of the 1784 cable:



Application Versions

This *Tech Note* uses the following I/O Server versions:

- SSTDHP Version 8.1
- DASDHPlus Server Version 1.0

Assumption

- The user has basic knowledge in working with the Allen Bradley PLC series.
- The adapter card(s) had been successfully installed in the PC that is to be configured.

Note: Wonderware's I/O Servers and DAServers support multiple PCI adapters and dual-channel port adapter cards. However, the following bug was identified in the DASABDHPlus DAServer: The second PCI card cannot be configured properly

(a CR has been created to fix this problem). This *Tech Note* demonstrates only the multiple PCI cards configuration with Wonderware's legacy I/O Server.

Configure the Interface SST5136 PCI Card Using SSTDHP I/O Server V8.1 (New Release)

Wonderware's new SSTDHP I/O Server V8.1 is the replacement for the SS5136SD I/O Server.

To check the version of this I/O Server, select **About SSTDHP** from the Help command in the main menu bar (Figure 2 below):

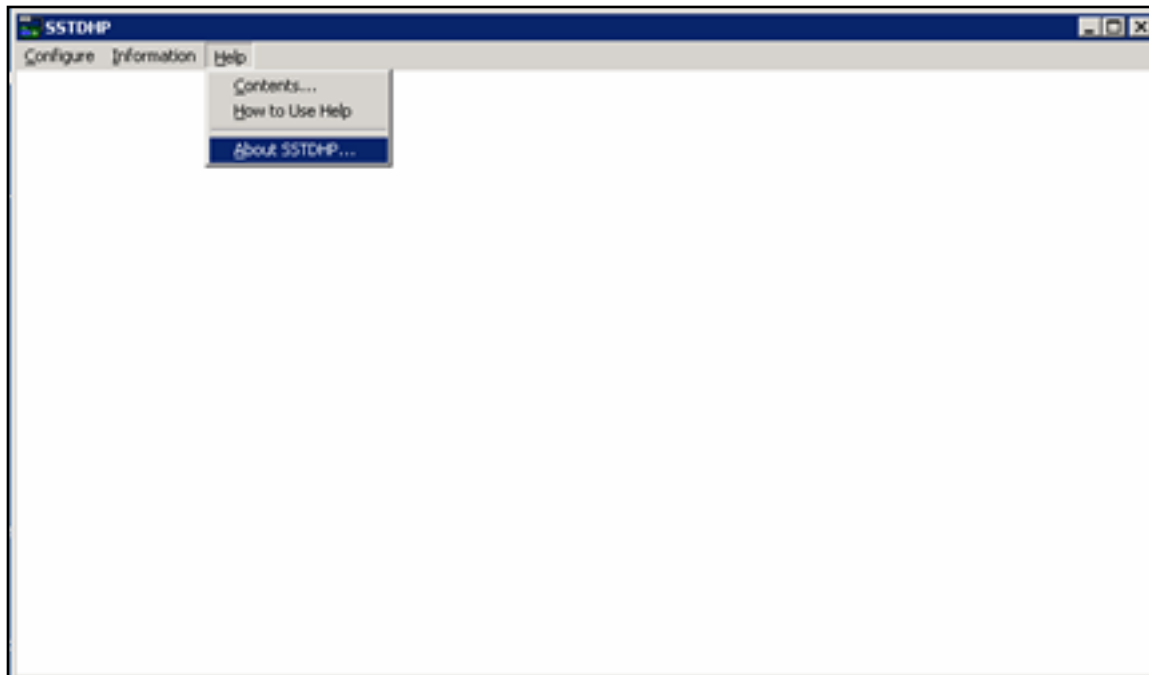


Figure 2: Help/About SSTDHP

The **About SSTDHP** dialog box appears, containing the version number (Figure 3 below):



Figure 3: About SSTDHP Dialog Box

Adapter Card Configuration

To configure the I/O Server, we'll begin with the Adapter Card Settings.

1. Select **Configure/Adapter Card Settings** from the menu bar.

The **Adapter Card Settings** dialog box appears.

If this is the first time you are configuring the I/O Server, click the **New** button to add a new card configuration (Figure 4 below):

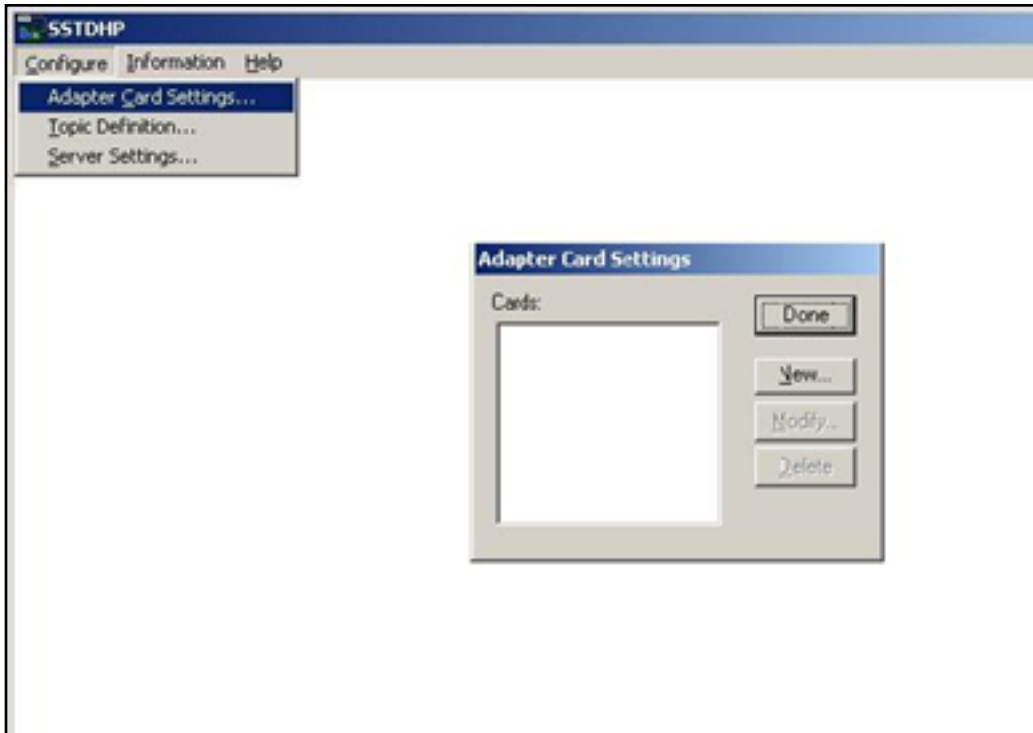


Figure 4: New Adapter Card Dialog Box

2. Configure the Adapter Card settings as explained in the following section.

Note: The **Modify** button is available after creating a configuration.

In Figure 5 (below), the SSTDHP Adapter Card Settings dialog box contains the default Card Name of **WonderO** for the first adapter card, with the parameters necessary to make the I/O Server work properly:

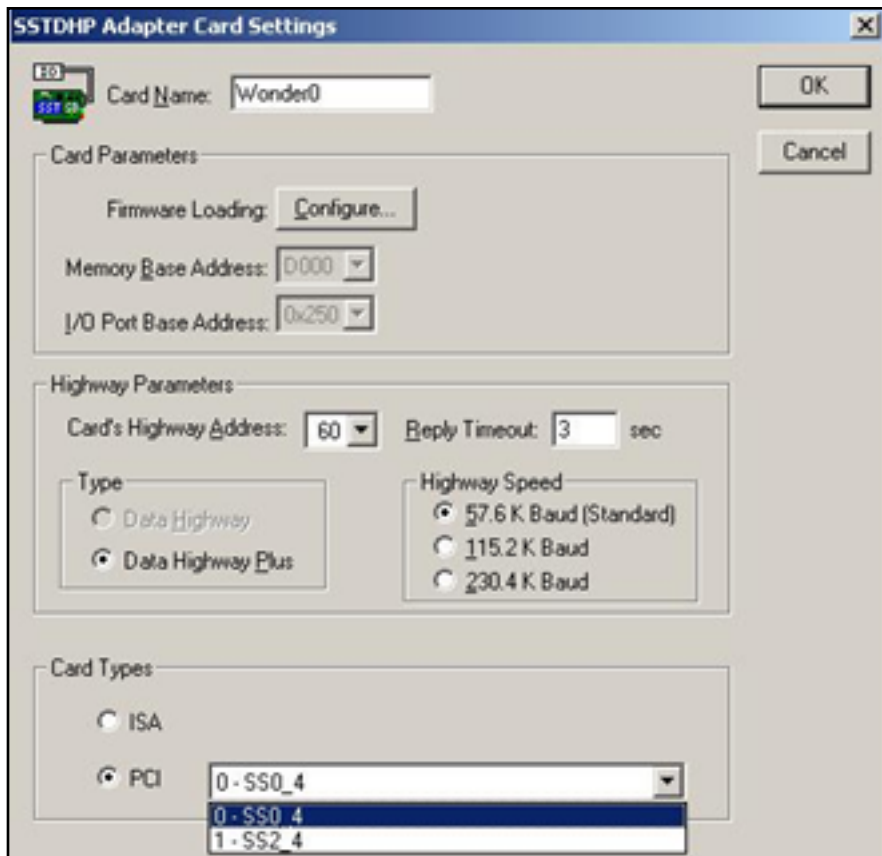


Figure 5: SSTDHP Adapter Card Settings Dialog Box

- The Memory Base Address and I/O Port Base Address options are disabled when the **PCI** option for the Card Types setting is selected.
- The **Card's Highway Address** must be unique but can be arbitrary between **0** and **77**.
- **Reply Timeout** default value is **3 seconds**. SSTDHP I/O sever supports all 3 DH+ baud rate. However, the speed configured in this server must match the speed that is configured in the PLC processor.
- In the **Card Types** area, selecting the **PCI** option displays all available cards in the drop-down list, with a unique card id value.

For this *Tech Note*, 2 PCI cards are installed on the machine. Each Adapter Card Setting (**Wonder0** and **Wonder1**) points to a different card as shown in Figure 4 and Figure 5.

Note: if you do not see any card in the PCI card list, please check your card installation.

The following graphic (Figure 6 below) shows the **Wonder1** SSTDHP Adapter Card settings for the second adapter card:

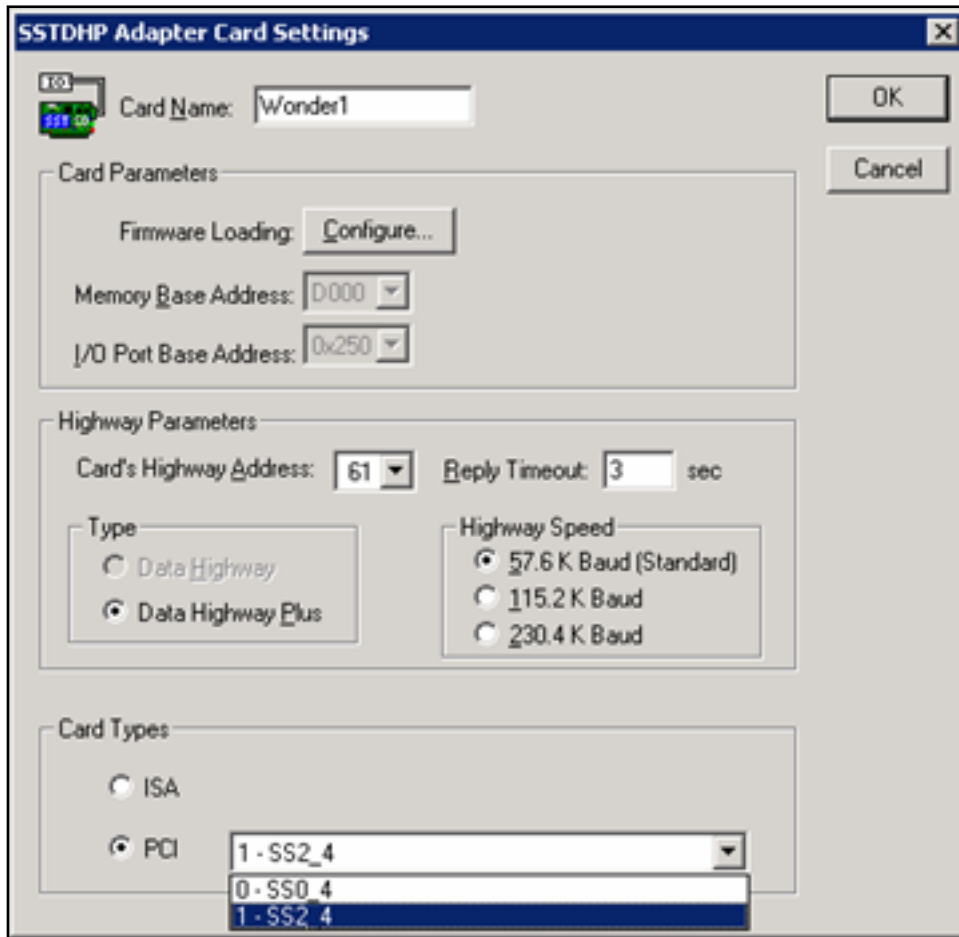


Figure 6: Wonder1 Adapter Card Settings Dialog Box

3. Press the **Configure** button. The **Firmware Configuration** dialog box appears (Figure 7 below).
4. Select the **Load Firmware** and **Server Supplied** options.

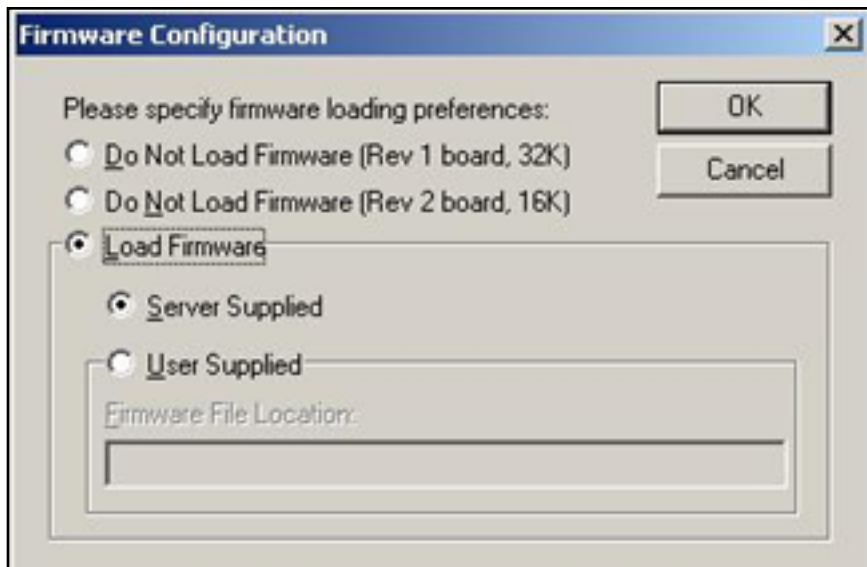


Figure 7: Firmware Configuration Dialog Box

Note that since the firmware is supplied by the Wonderware server, the LED pattern on the PCI card will not be the same as the manufacturer's description (from the manual).

The following table explains the LED pattern display in all combinations when using WW Server-supplied firmware:

	DH+ Cable Connected	No DH+ Cable
No Client Connected	Red LED ON solid , Green LED OFF	Red LED ON solid , Green LED OFF
Client Connected, No Data Request	Red LED OFF , Green LED ON solid	Red LED OFF , Green LED OFF
Client Connected and Polling Data	Green LED ON solid , Red LED ON flashing	Red LED OFF , Green LED OFF

5. Click **OK** to close the **Firmware Configuration** dialog box, then **OK** in the **SSTDHP Adapter Card Settings** dialog box.

This completes the Adapter Card configuration.

1. Select **Configure/Topic Definition**.

The **Topic** dialog box appears. If this is the first time you configuring the I/O Server, nothing appears in the **Topics** list panel.

2. Click the **New** button to create one or more topics. The topics are saved to the configuration file and can be modified later if required:

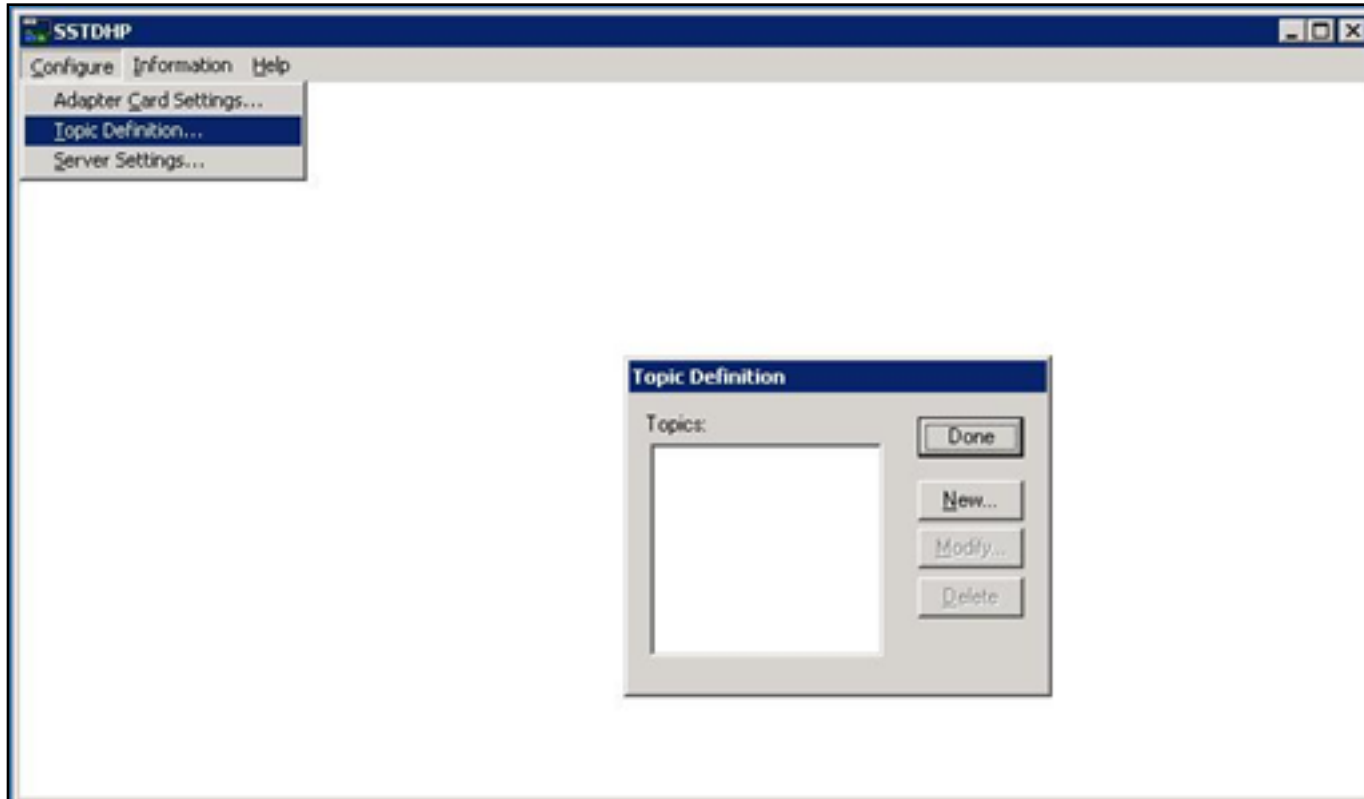


Figure 8: Configure/Topic Definition

The **Topic Definition** dialog box appears containing the default topic name **ABPLC** (Figure 9 below).

This topic name can be changed arbitrarily; for this *Tech Note* the first **Topic Name** is renamed **ABPLCO**:

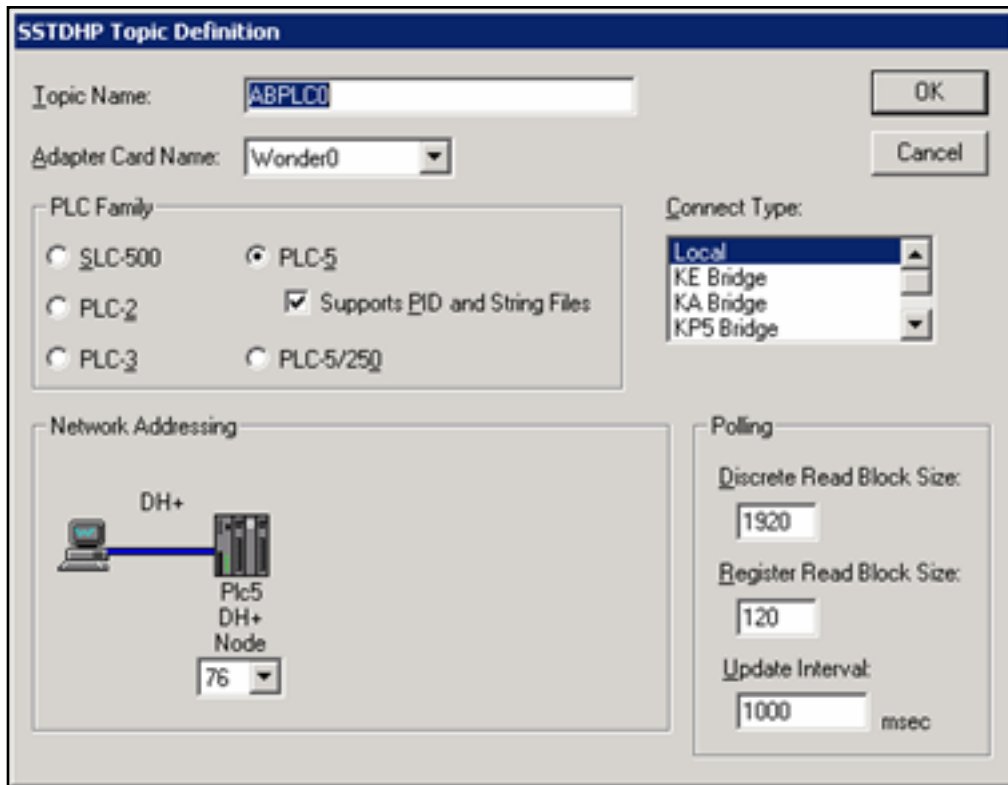


Figure 9: SSTDHP Topic Definition Dialog Box

- Each Topic must map to an Adapter card.
- The **PLC Family** area contains a list of all PLCs that are supported by this I/O Server.
- Note that with the **PLC5** family, if you need to work with the PID loops and String files, you must select the **Support PID and String Files** option. Other PLC families do not use this special parameter.
- For the **Connect Type** list, **Local** is the default selection for **PLC 5** and **SLC500** PLCs. If you are talking to other PLC family types, then you may have to use other connection types via different bridges.

Please refer to specific PLC family user's guide to determine the correct bridge to use.

Figure 10 (below) shows the second topic configured and using a different PCI card (**Wonder1**).

One very important parameter to mention is the **Networking Addressing** area, in which the **DH+ Node**

address is configured for the PLC: it must match the PLC address exactly.

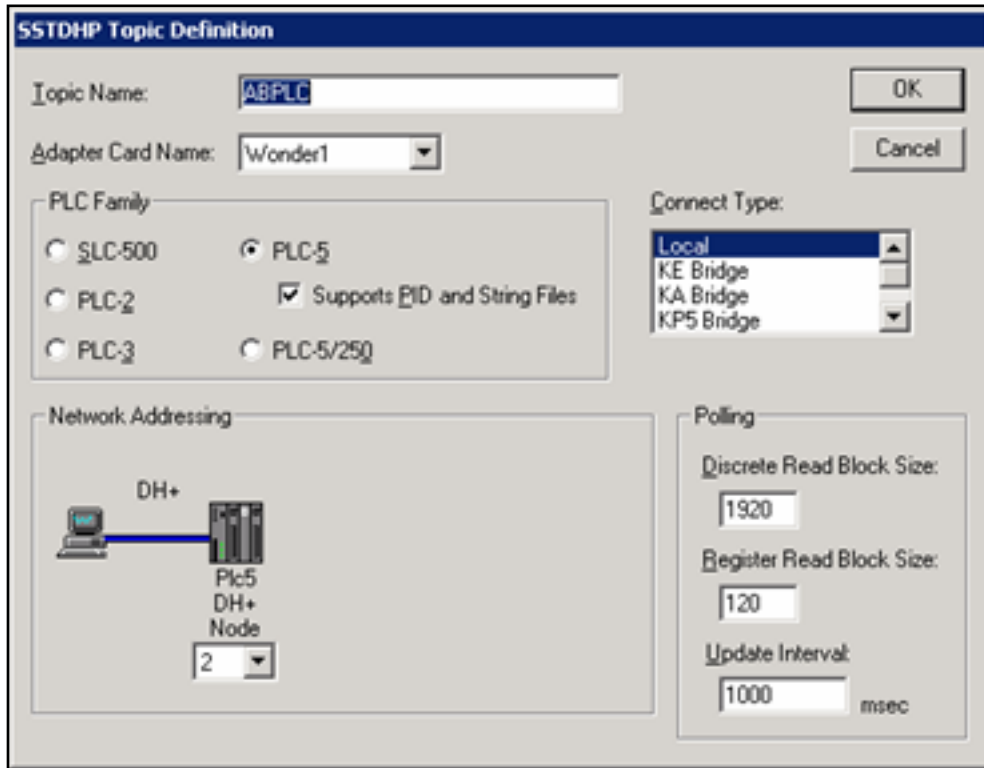


Figure 10: SSTDHP Topic Definition Dialog Box

This concludes our legacy I/O Server configuration.

Figure 11 (below) shows the **wwclient** test that indicates valid configurations and wwclient is receiving data updates from the PLC via our SSTDHP I/O Server, after completing its configuration:

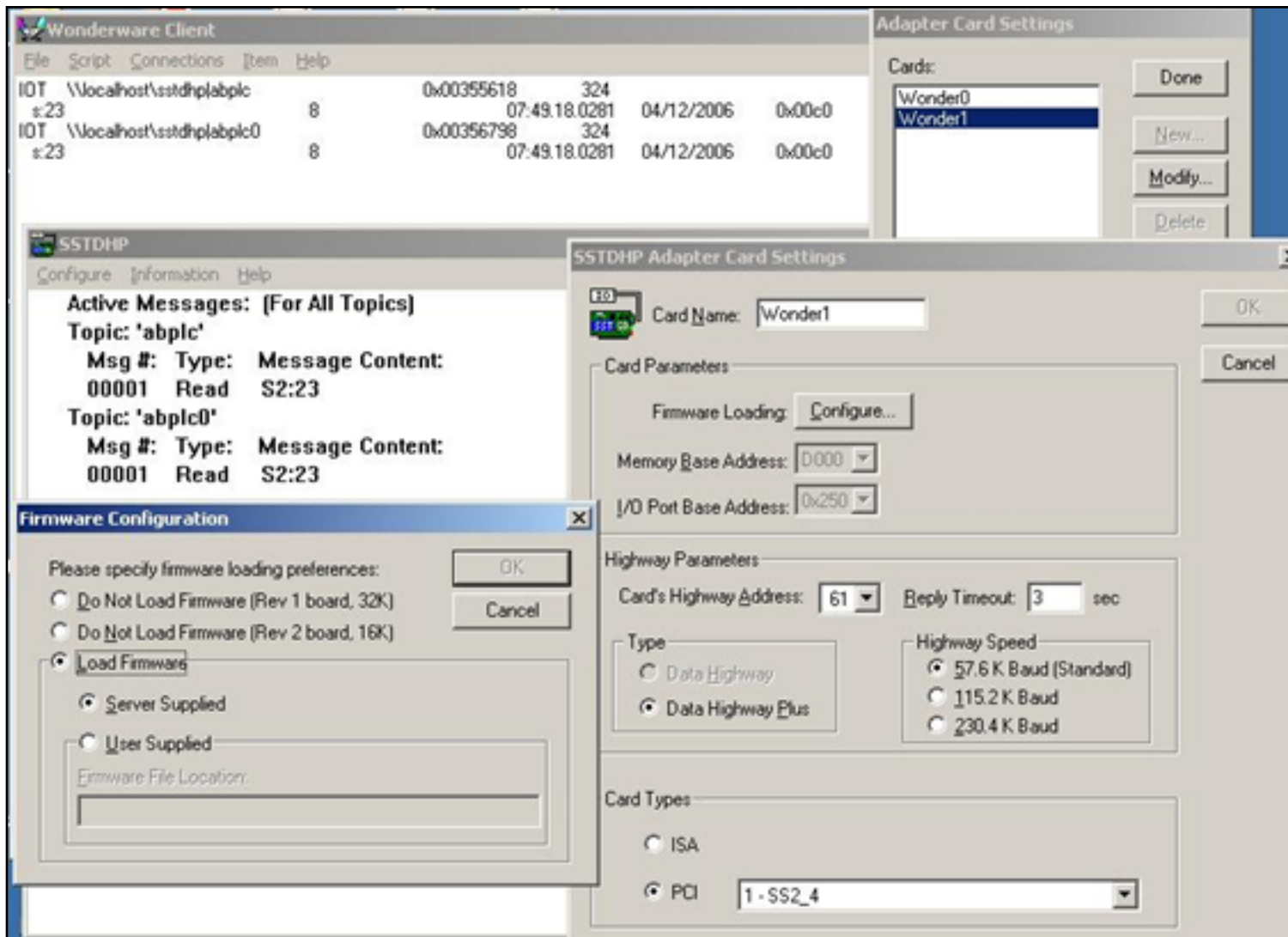


Figure 11: wwClient Connection Test

Configure the Interface SST5136 PCI Card Using ABDHPlus DAsServer

Wonderware's ABDHPlus DAsServer can also be configured for use with the SST5136 PCI adapter to communicate with the PLCs running in the DH+ network.

Assumptions

This *Tech Note* assumes the following:

- Basic knowledge of the System Management Console (SMC).
- Successfully installed PCI adapter and the DASABDHPlus on the machine that is to be configured.

If the reader is not familiar with SMC and having trouble installing the DASABDHPlus, please contact your local distributor or Wonderware Technical Support for assistance.

1. Launch the SMC from **Start/Program Files/Wonderware**, then select **System Management Console (SMC)**.
2. Expand the SMC to show **DA Server Manager/Default Group/Local**.
3. Locate **Archestra.DASABDHPlus.1** as shown in Figure 12 (below):

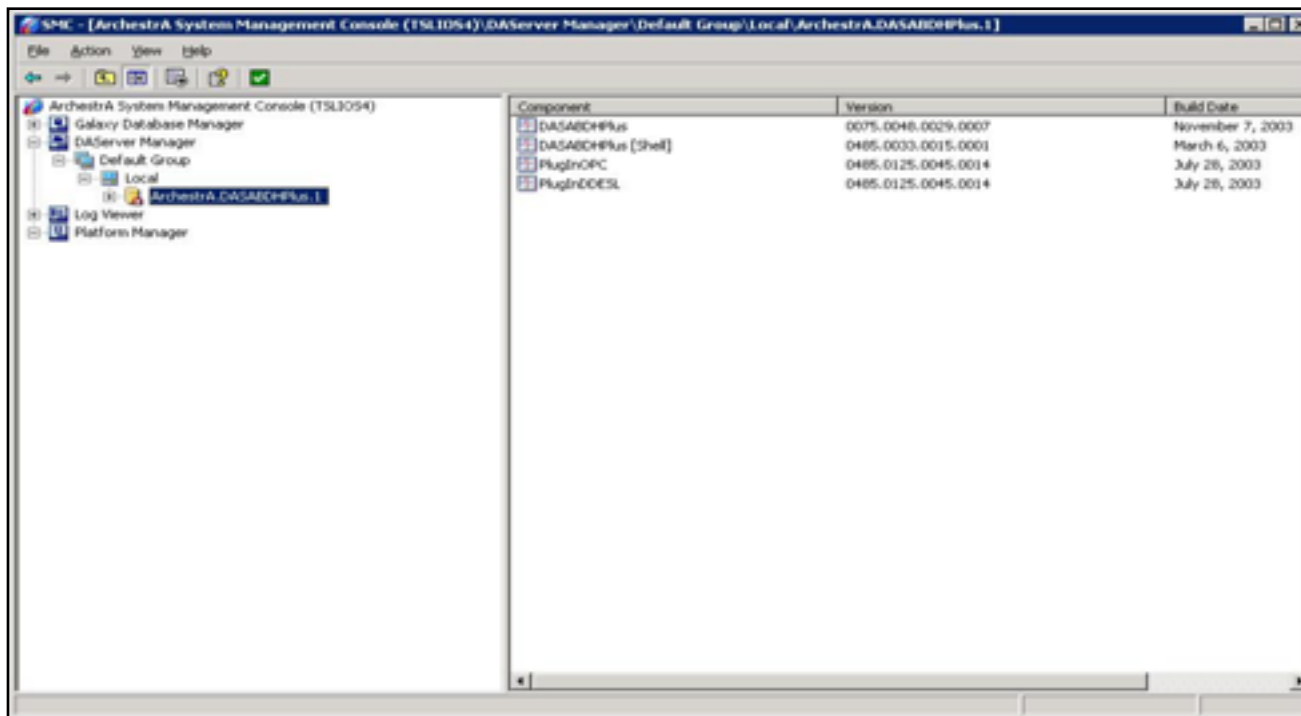


Figure 12: Orchestra.DASABDHPlus.1

Some customers may find after they expand the **Local** object, there is nothing under it, even though the

installation of the DAServer is complete.

This is caused by the User's Account information mismatch. Please refer to [Technote 343, Setting up the DAServer Account for Administrator Privileges](#) for instructions on how to resolve that issue.

The SMC window displays information about the version and release data of the major .dll files being used by the DAServer. Please keep this information available if you need to contact Wonderware Technical Support for assistance with the DAServer.

4. Expand the **Archestra.DASABDHPlus.1** icon. The configuration object is directly underneath.
5. Double-click this icon to open the **Global Parameters** Editor panel (Figure 13 below):

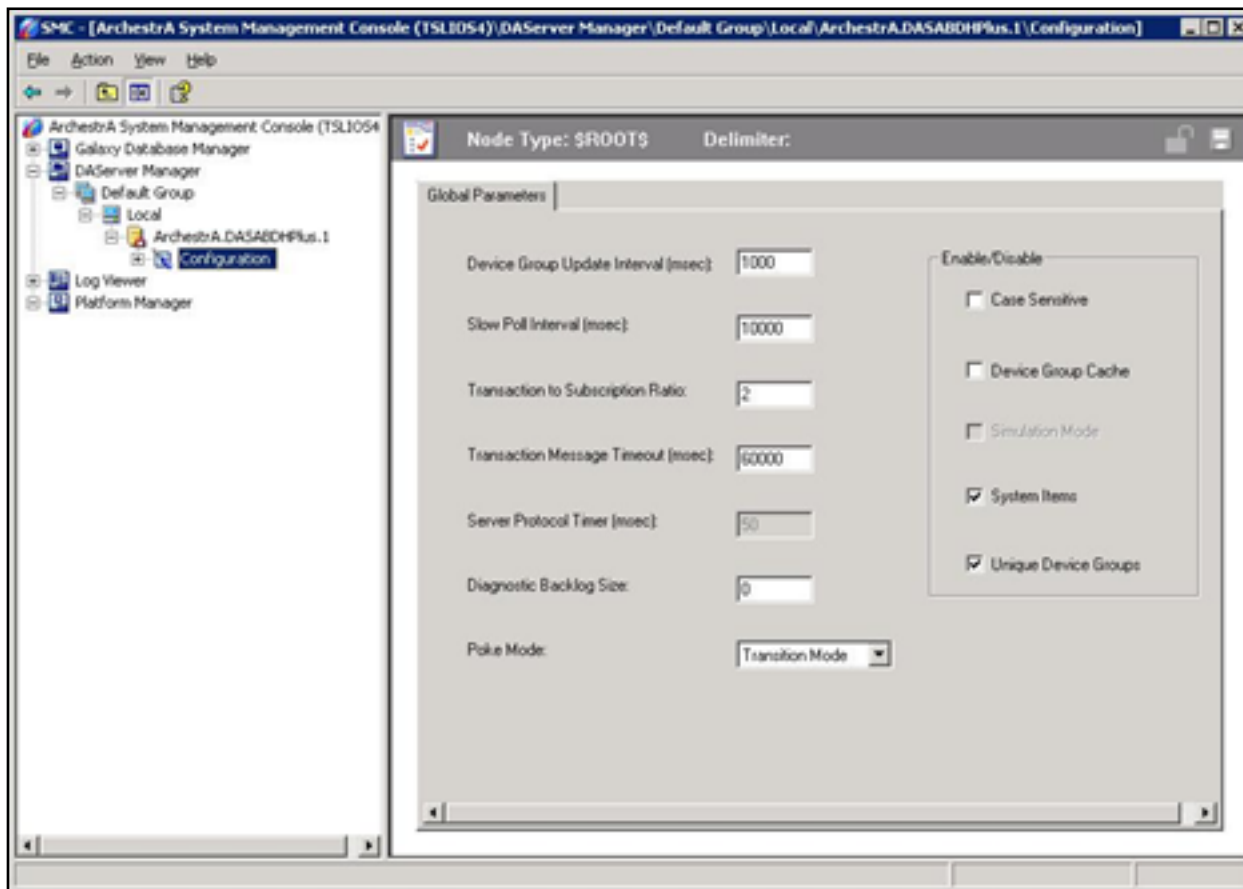


Figure 13: Global Parameters Editor

Global Parameters are used by all the objects within this DAServer. For the details of each parameter and their functions please refer to [Tech Note 424, Working with DAServers](#).

Wonderware recommends leaving the default values for all the parameters except the **Diagnostic Backlog Size**.

6. Change to **10** or **20** from 0. This reserves the registers for future diagnostics.
7. Save your changes by clicking the **Save** icon in the upper right-hand corner of the SMC.
8. Right-click the **Configuration** icon in the SMC tree.
9. Select **Add SSTPCI_CARD Object** from the sub-menu (Figure 14 below):

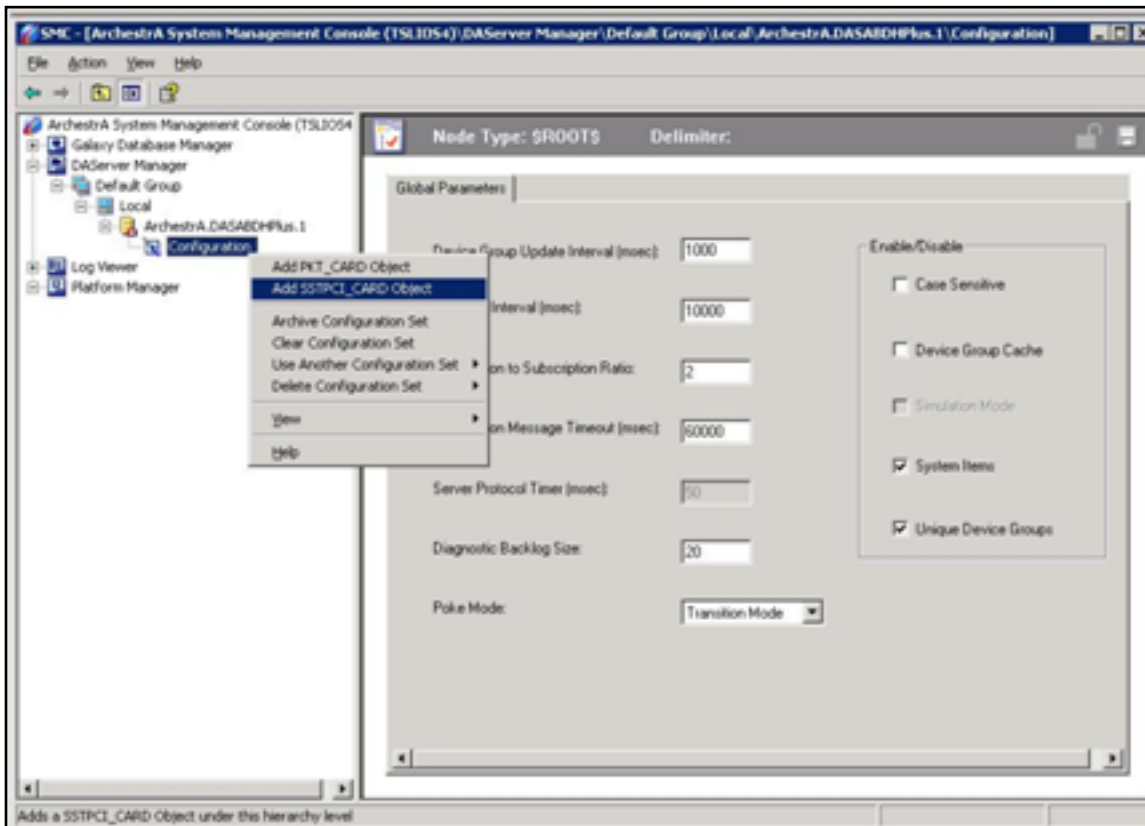


Figure 14: Add SSTPCI_CARD Object

The **New_SSTPCI_CARD_000 Parameters** editor panel appears (Figure 15 below):

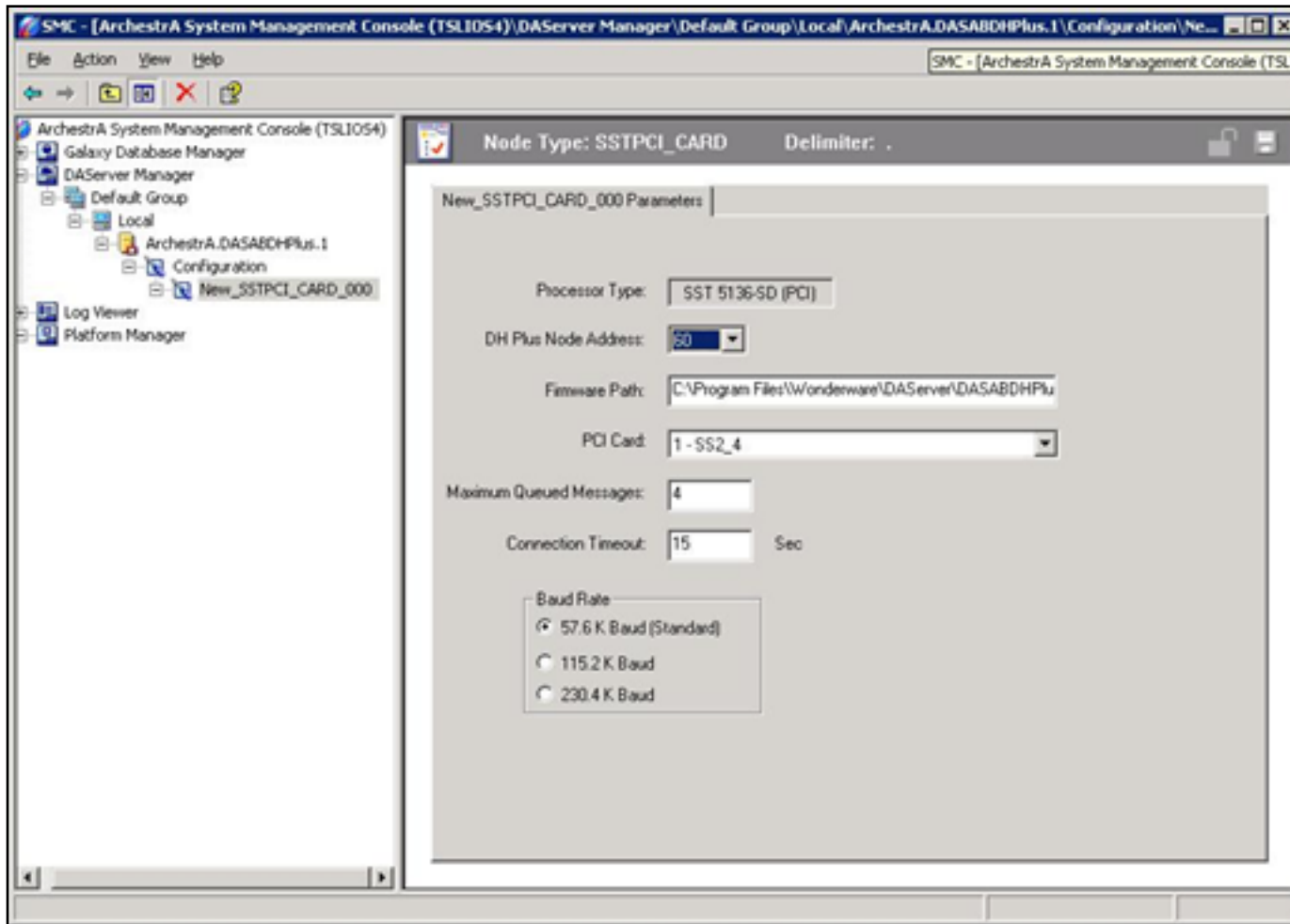


Figure 15: New...Parameters Editor Panel

- The **DH Plus Node Address** is the PCI card address installed in your PC. It can be arbitrarily defined between **0 – 77** but must be unique in the DH+ network.
- The **Firmware Path** field stores the location where the DAServer keeps the firmware for the PCI card.
- The **PCI Card** parameter displays all the available PCI cards installed in this machine. Recall that in this example, multiple PCI cards are supported with the DAServer.

Wonderware recommends keeping most parameters with their default value unless you are an experienced user who knows exactly the effect when changing each of them.

- The **Baud Rate** must match what is configured in the PLC.

10. Save your configuration.

The following prompt appears (Figure 16 below):

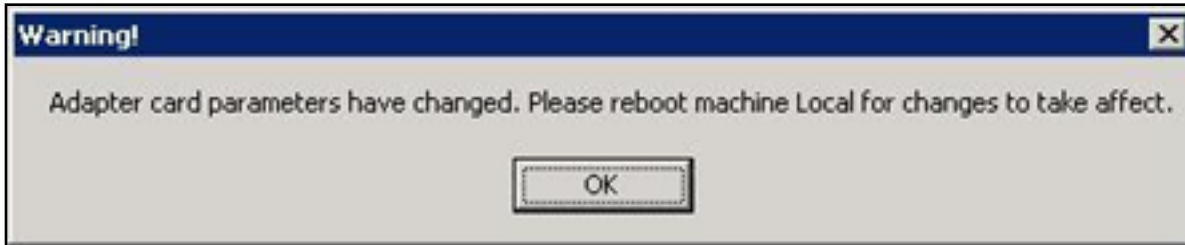


Figure 16: Parameter Change Warning Prompt

11. Click **OK**, and complete the configuration before restarting your computer.
12. After the PCI Card object configuration is completed, right-click the PCI Card object in the SMC tree.
For this *Tech Note*, add the PLC5 object. (Figure 17 below).
13. Select **AddPLC5_DHP Object** from the sub-menu.

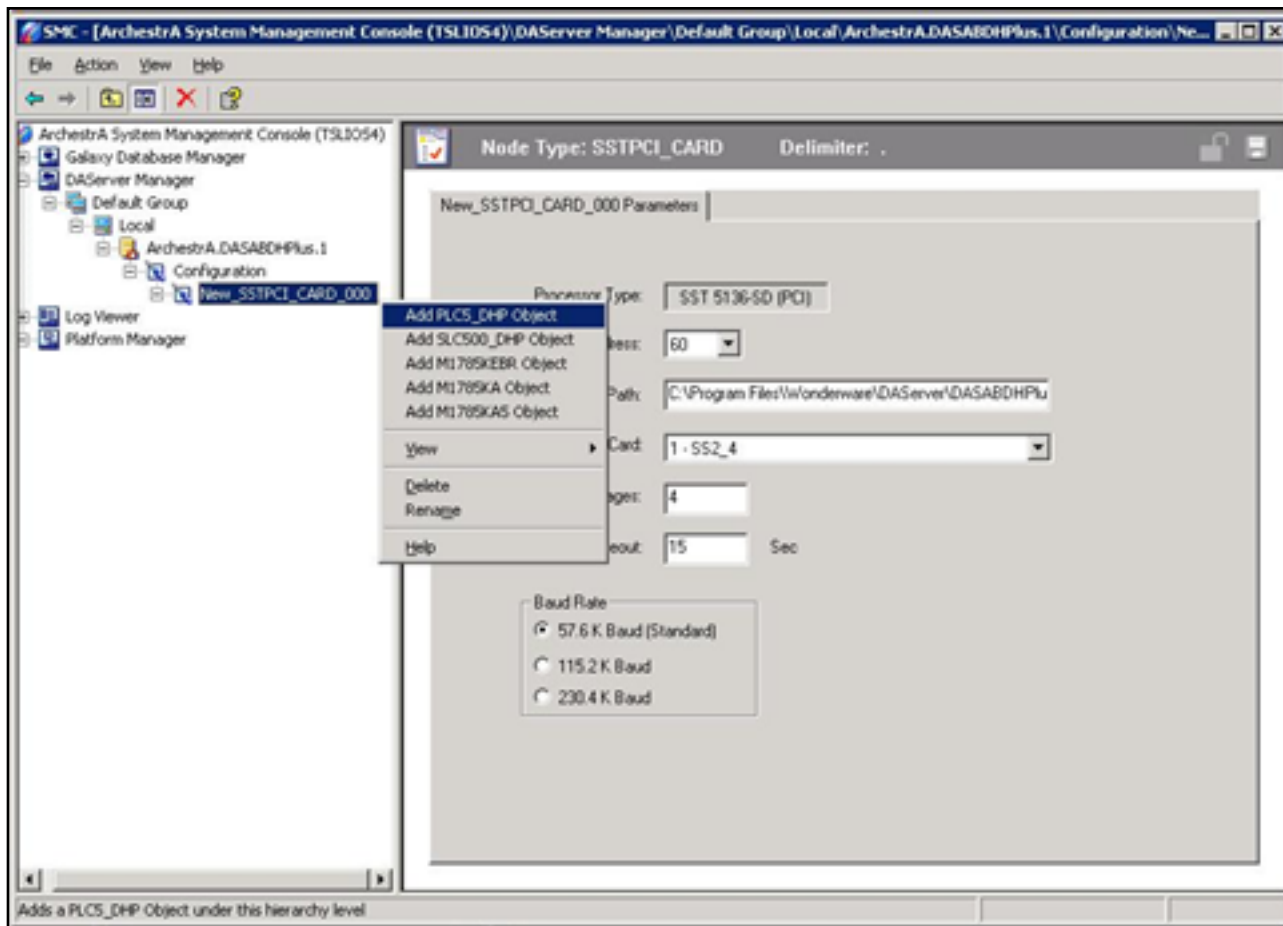


Figure 17: Add PLC5 Object

The object's configuration editor panel appears (Figure 18 below):

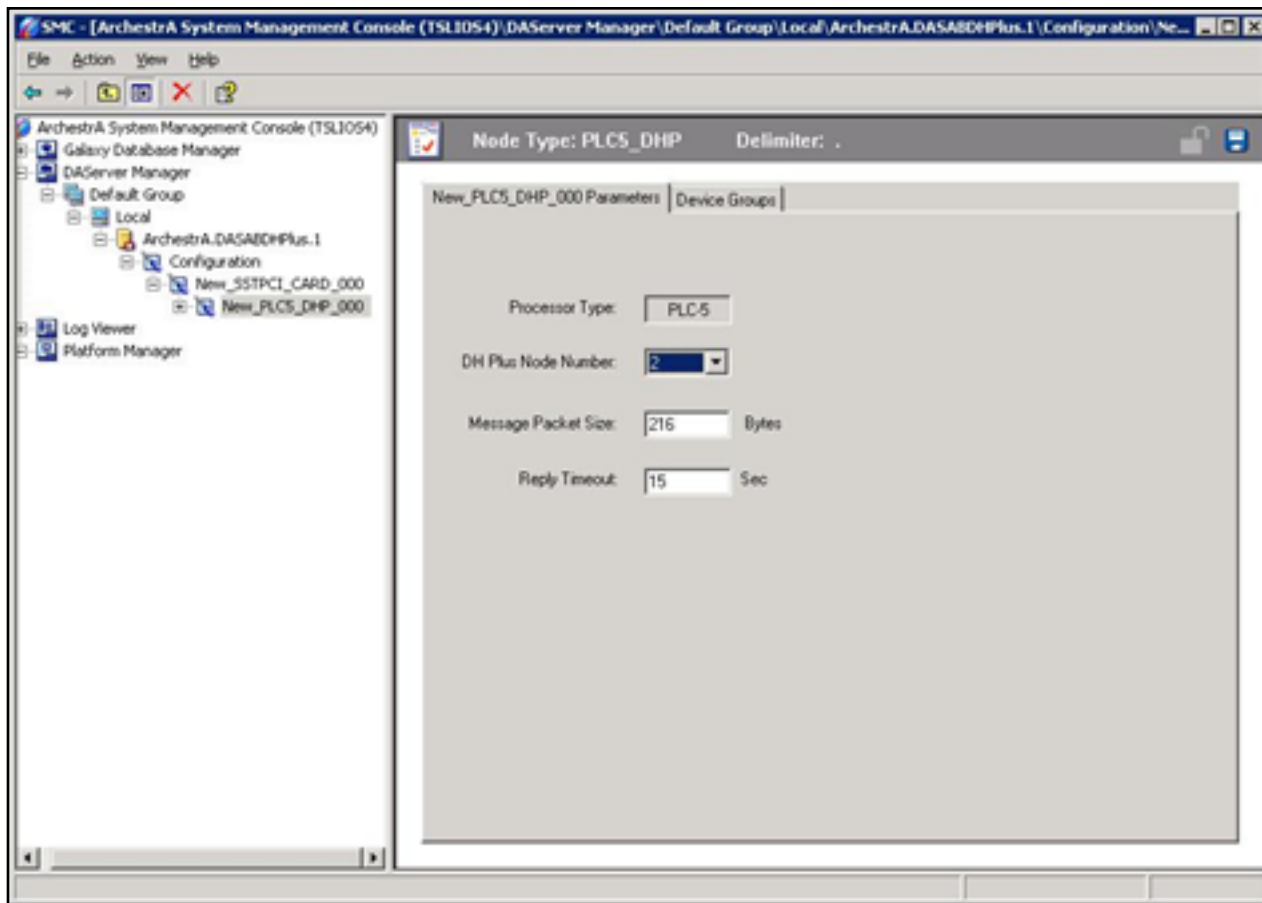


Figure 18: New PLC5_DHP Object Configuration Editor Panel

To configure the DAServer to talk to a PLC5

1. Enter the DH Plus network address of the PLC in the **DH Plus Node Number** field.

This address must be matched with the same address in the PLC5 processor. Leave the other parameters in this window with the default values.

2. Select the **Device Group** tab.
3. Right-click within the **Device Groups** tab field, and select **Add** to add device group(s) (Figure 19 below):

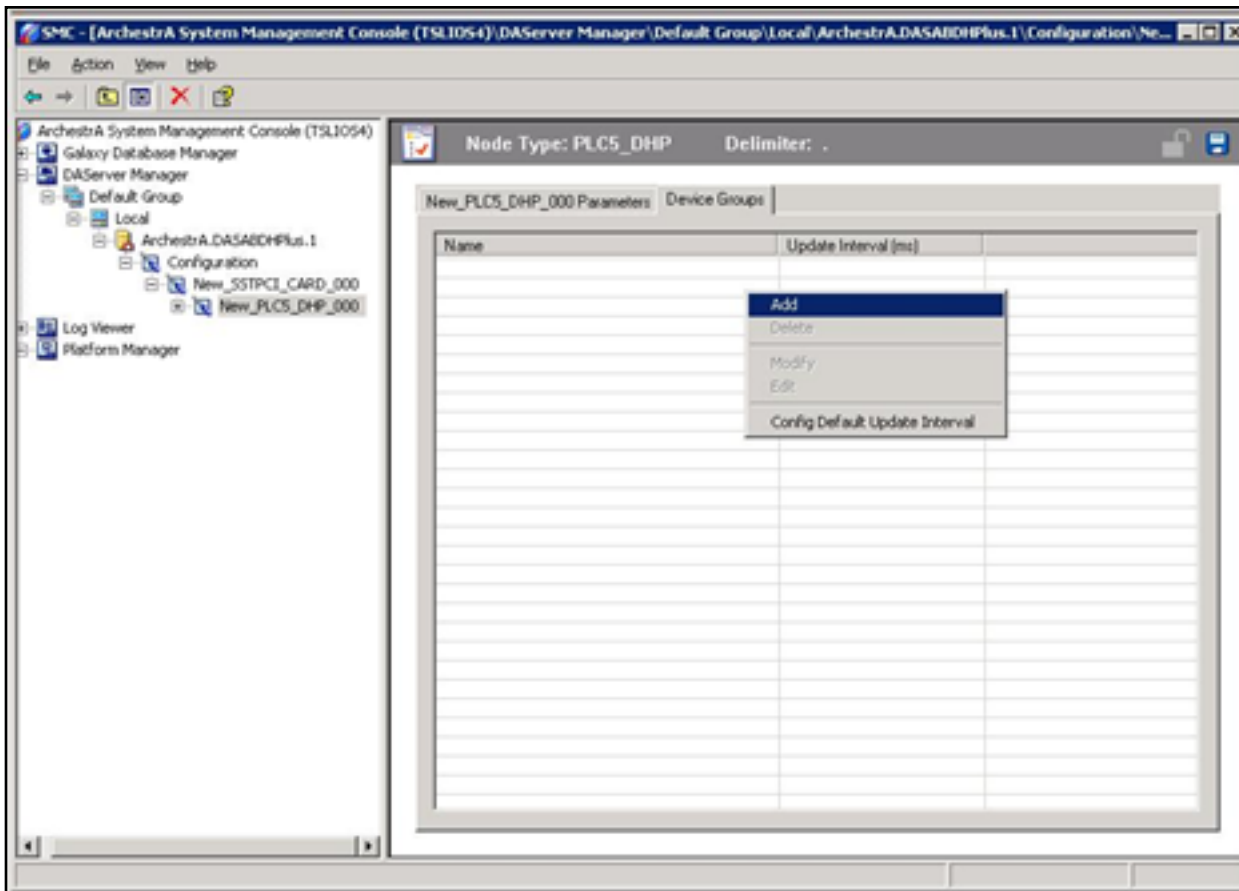


Figure 19: Add Device Group

At least one device group must be created for each PLC configuration.

In Figure 20 (below), the default device group is named **Topic_0**; however, this name can be anything. For this *Tech Note*, it is named **PLC520**.

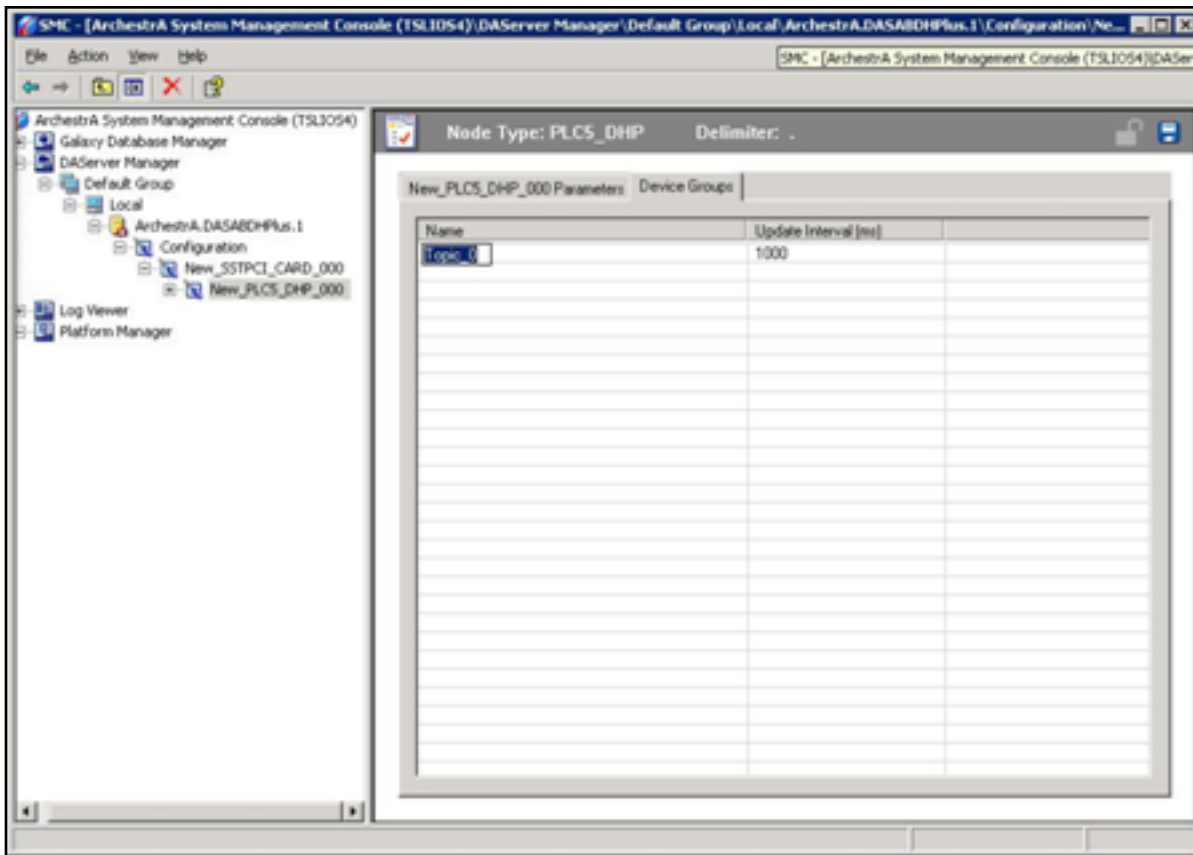


Figure 20: Default Device Group

Note: The Device Group to a DAServer is exactly the same as a Topic Name to a Legacy I/O Server.

Once the device group is created, the DAServer configuration is complete. One more step is required to run the DAServer online – to activate the DAServer.

4. Select the **Archestra.DASABDHPlus.1** icon, and right-click it. The available activation options are displayed in the dialog box (Figure 21 below).

Figure 22 (below) shows 2 configuration files in the **Bin** folder.

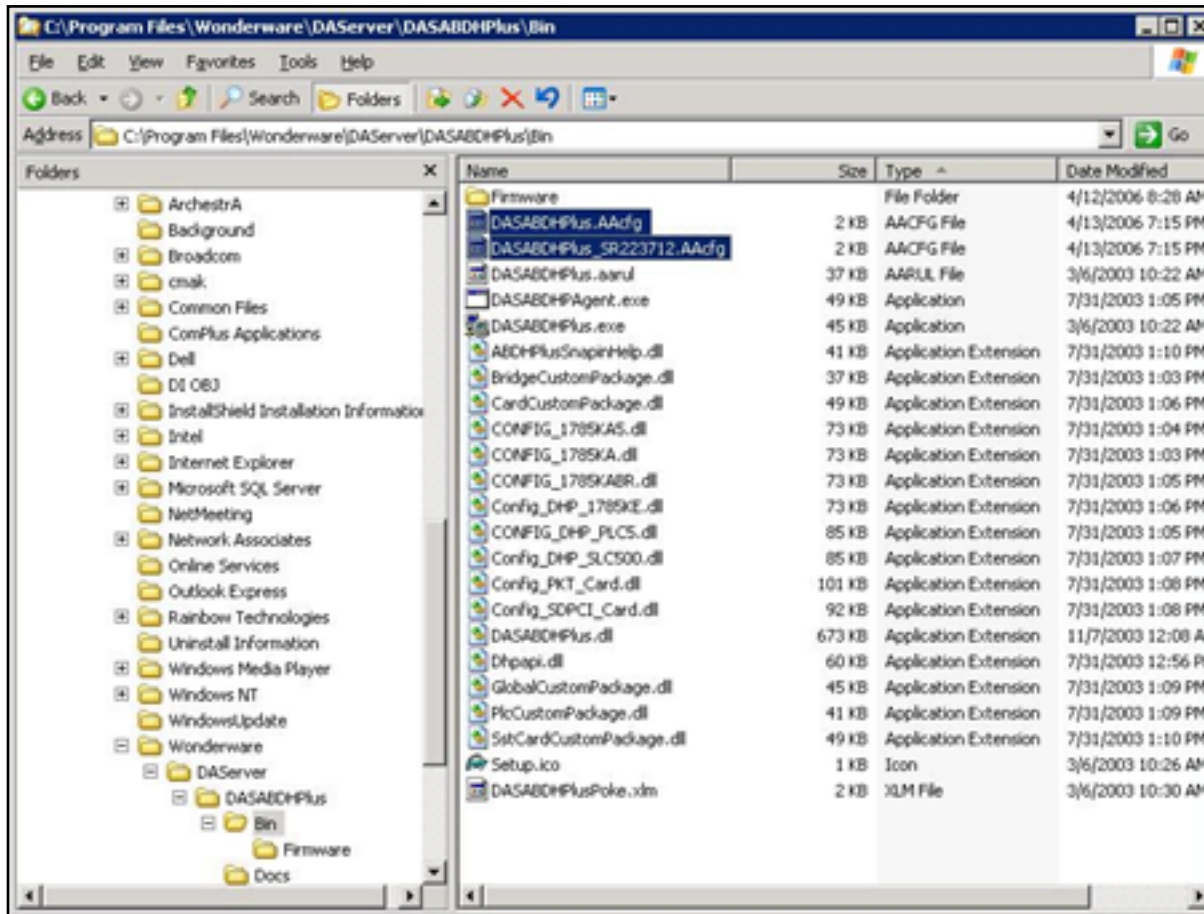


Figure 22: Multiple Configuration Files

To select a different configuration file from the SMC

1. Deactivate the server first (or you will not be able to find the proper option list).
2. Locate the **Configuration** object.
3. Open it (double-click) to show the Global Parameters editor.
4. Right-click the right mouse button to display the option sub-menu.

5. Select **Use Another Configuration Set** (Figure 23 below).

Note that the caption bar at the bottom of the window reads: **Changes Configuration Set used by the DAServer:**

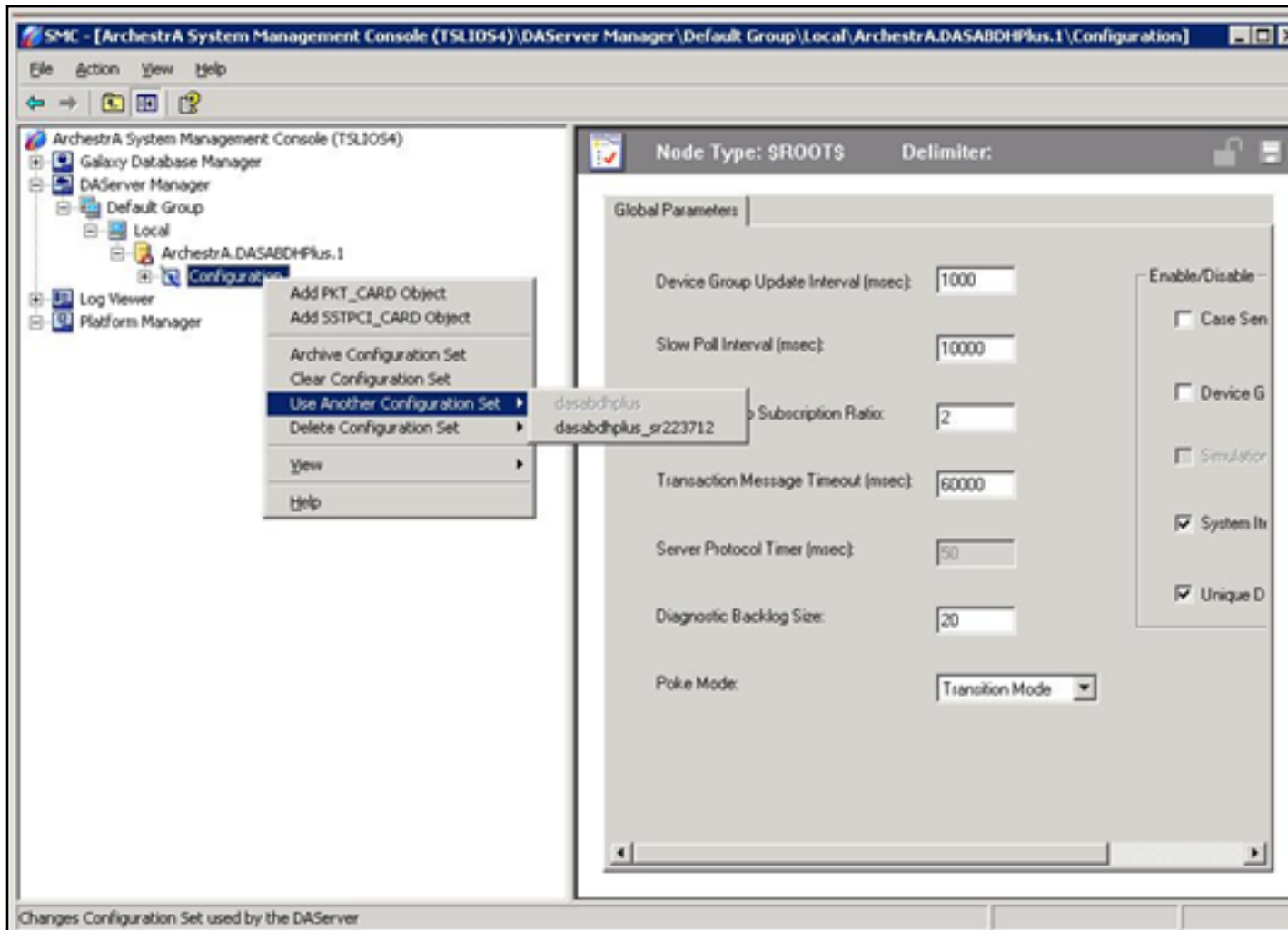


Figure 23: Use Another Configuration Set Sub-Menu Selection

When this menu command is selected, all the available configuration files in the **Bin** folder are listed, and the currently-loaded configuration set appears as disabled menu item.

Use the **Configuration** sub-menu to select any other configuration set and select it to load the different configuration set.

For this *Tech Note*, the wwClient utility is used to verify the connection to the PLC by obtaining data updates to the items being advised by the utility (Figure 24 below):

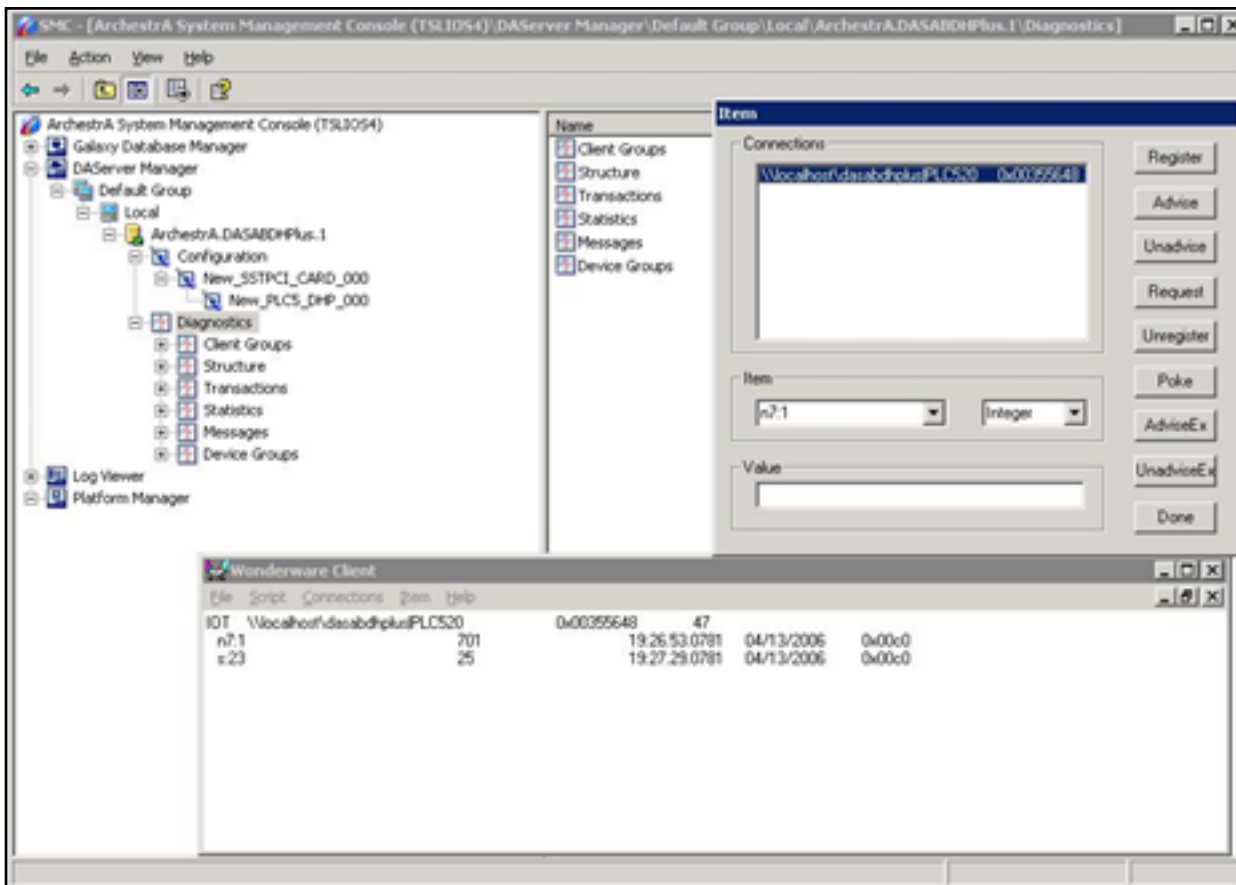


Figure 24: Wonderware Client on Advise

Figure 25 shows that when the DAServer is activated, the **Diagnostics** object is available in the SMC. 6 diagnostic components are available:

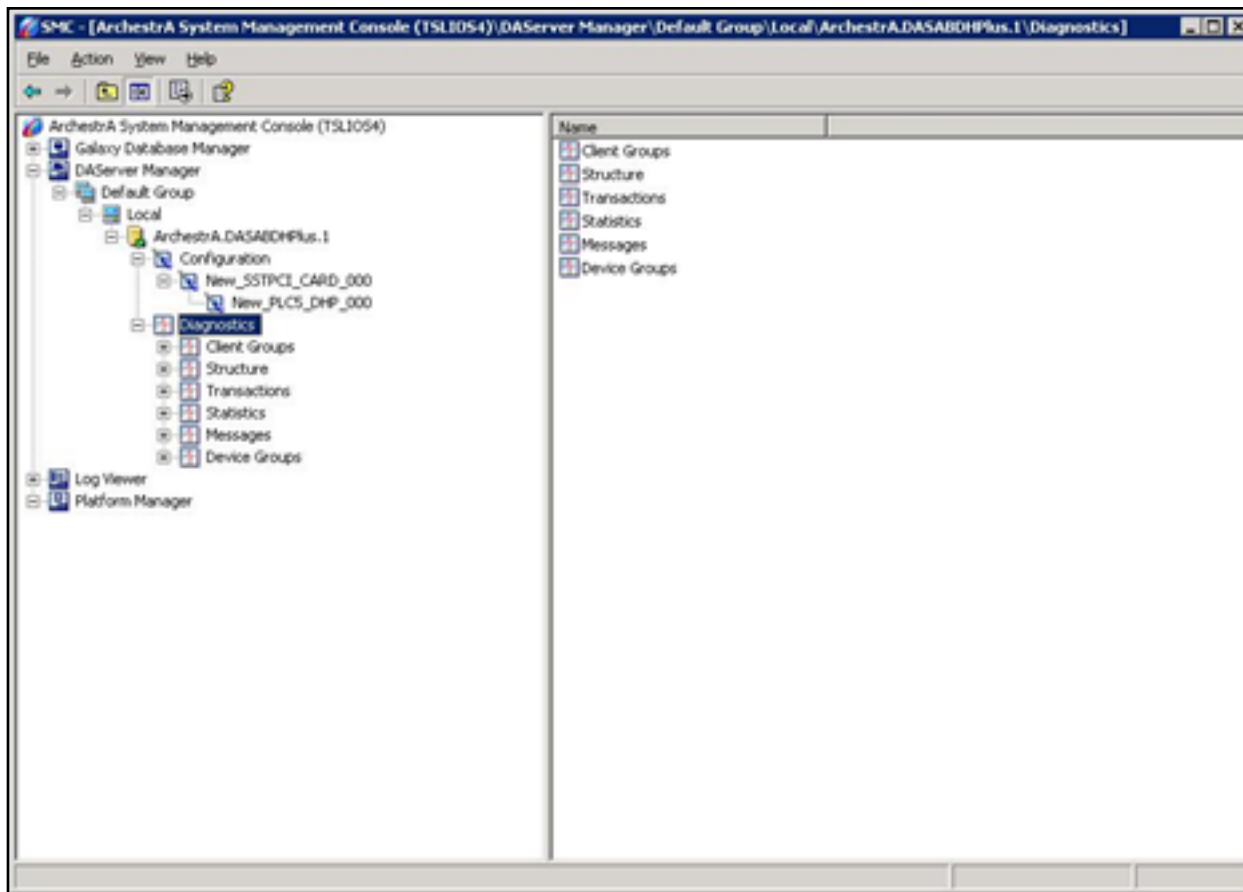


Figure 25: Diagnostics List

Figure 14 (above) shows reserving the Backlog Size of **20**. This parameter is used for monitoring the writing transactions.

Figure 26 (below) shows that for each poke command issue from the client (in this *Tech Note*, we have poked the register **N7:1** with one value from wwClient), each write is reported in an entry as a **Demand Write** transaction:

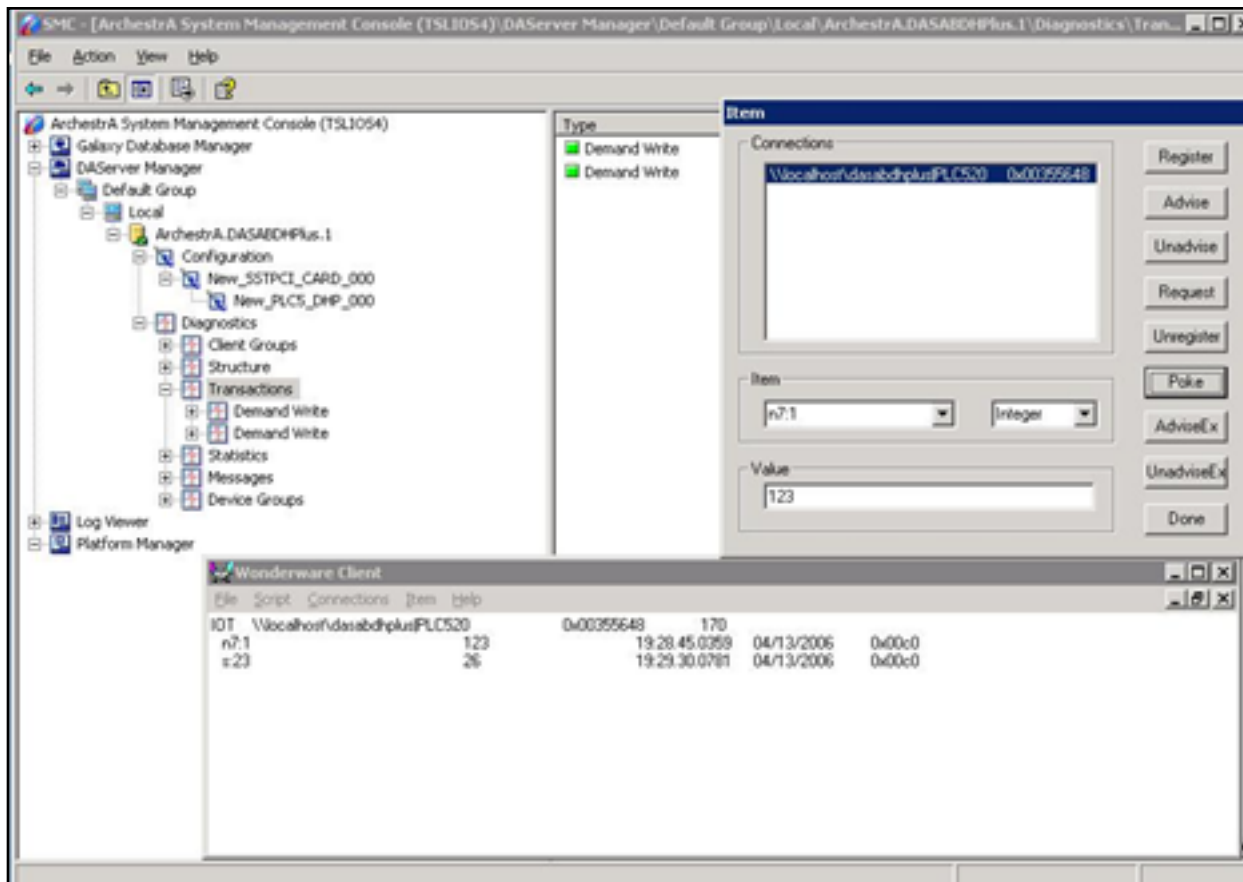


Figure 26: Transactions Entry

Other diagnostics components are outside the scope of the discussion in this Tech Note. For details on their use, see [Tech Note 424, Working with DA Servers](#).

A. Chaque

Tech Notes are published occasionally by Wonderware Technical Support. Publisher: Invensys Systems, Inc., 26561 Rancho Parkway South, Lake Forest, CA 92630. There is also technical information on our software products at www.wonderware.com/support/mmi

For technical support questions, send an e-mail to support@wonderware.com.



[back to top](#)

©2006 Invensys Systems, Inc. All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, broadcasting, or by any information storage and retrieval system, without permission in writing from Invensys Systems, Inc. [Terms of Use](#).