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READ ME FIRST

GETTING STARTED WITH THE PC-1500PFB AND PCI-1500 SERIES

Included with your Applicom board is a CD-ROM containing drivers, configuration software, utilities for testing your Profibus network, and Applicom hardware/software documentation. The CD-ROM also includes the Applicom OPC server, which you can use to connect to any OPC client application. National Instruments software products can connect to Profibus devices via the Applicom board in two ways: by direct connection to an Applicom board via Lookout or Lookout Protocol Drivers objects, or by connecting to the Applicom OPC Server from any OPC Client application. National Instruments OPC clients include Server Explorer, Lookout, LabVIEW (DataSocket), and LabVIEW Datalogging and Supervisory Control.

Installing Your Applicom Hardware and Software

Follow these steps to set up your system. For Windows 2000/NT installations, you must be logged onto an administrator-level account.

1. Insert the CD-ROM into your hard drive. The CD browser should start automatically. Choose **Install Products**. Select **Applicom v3.4**. The installer will prompt you for various install options.

   During installation, you are prompted to determine which components to install. Be sure to select **OPC Server**.

   For specific software installation issues, refer to the Applicom documentation included in the CD-ROM case or on the CD-ROM itself.

   After software installation is complete, you are prompted to reboot your computer.

2. If you have a PCI board, skip to step 5. However, if you are installing an ISA board, be sure that you have an available IRQ and DPRAM Memory address to use. To determine available IRQ and DPRAM settings, go to **Control Panel»System»Device Manager** and view device resources.

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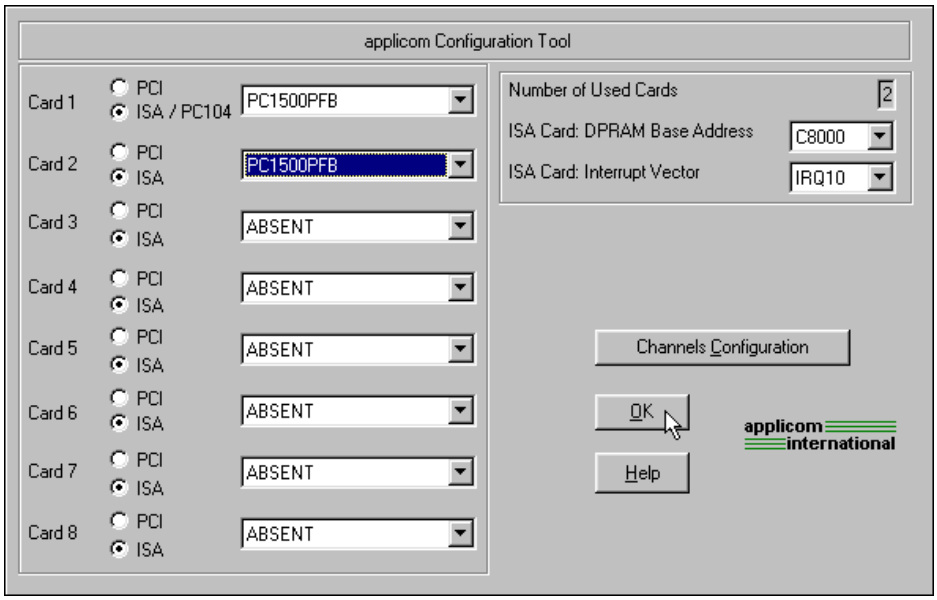
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3. Once you have determined which IRQ and memory settings are available, shut down the computer to continue with the board installation procedure.
4. Set the jumpers for the board number, IRQ, and DPRAM on the Applicom board appropriately. Refer to the Applicom documentation included in the CD-ROM case or on the CD-ROM itself for jumper location and configuration. If multiple Applicom boards are installed on your system, be sure they are using the same DPRAM address and IRQ number for all boards, but different board numbers.
5. With your computer shut down, physically install the board in an available ISA or PCI slot on your system. Restart your computer.
6. Run PCConf by selecting **Start»Programs»Applicom 3.4»PCConf**.
7. Click **Configuration**.

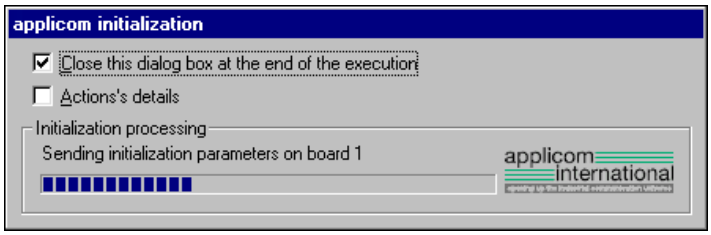


8. Enter the settings for your Applicom boards. The illustration below shows two Applicom PC-1500PFB ISA boards with DPRAM address C8000 and IRQ 10. When you are finished, click **OK**.



9. Save and exit PCConf. You will be prompted to restart your computer.
10. After restarting your computer, run PCInit by selecting **Start»Programs»Applicom 3.4»PCInit**.

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If the progress bar completes, you are ready to use the Applicom board. If not, it indicates problems with the board installation. Typical problems are board number conflict (make sure you assign a unique board number for each board), DPRAM, and IRQ (Interrupt Request) conflict. If you still have problems, change the board configuration to another available IRQ and DPRAM address. If multiple Applicom boards are installed on your system, be sure they are using the same DPRAM address and IRQ number but different board numbers.

For more information about Applicom board installation, refer to *Hardware Installation* in the Applicom online help included with the Applicom software package.

Configuring Your Board for Communication

The configurations shown here correspond to a Siemens S7 PLC and serve only as an example. A Siemens S7 PLC is a device that can communicate with a Profibus network through the MPI protocol using a Profibus interface such as your Applicom board. Your configuration may vary depending on your PLC and the protocol used. To configure your board, follow these steps:

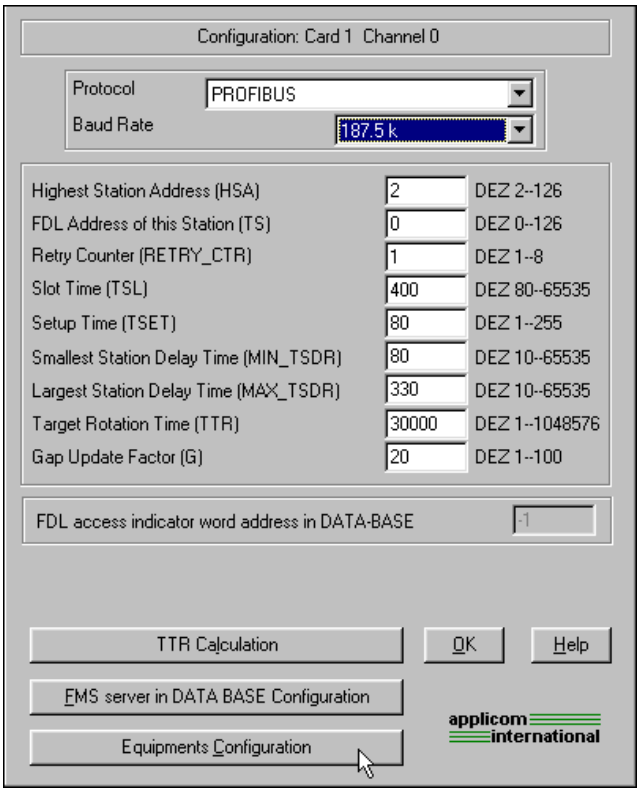
1. To connect the PLC to the Applicom board, use the appropriate Profibus cable. Connect one end of the cable to the communication port on the PLC and the other end to the Profibus port on the Applicom board.
2. Start PCConf.
3. Click **Configuration** to access the Applicom Configuration Tool.
4. Click **Channel Configuration**.

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5. The system shown has two Applicom boards installed. If only one Applicom board is installed on your system, you can skip this step. Otherwise, choose the Profibus board you want to configure with the PLC. Click **Configuration** to continue.

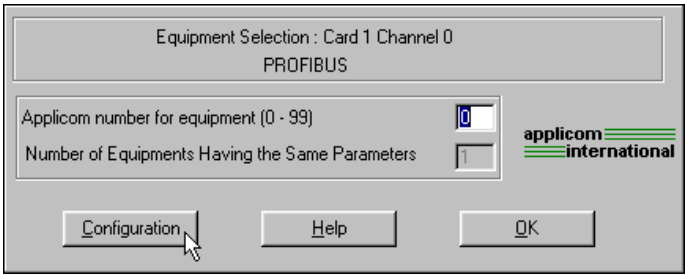


6. Select an appropriate protocol and baud rate. Check the device documentation for the proper baud rate and other communication settings. Click **Equipments Configuration** when you are finished.



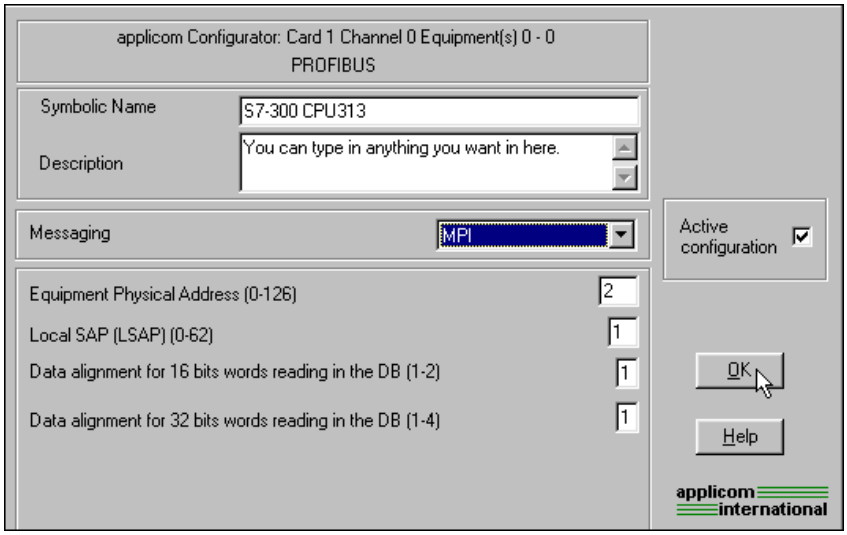
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7. Assign the equipment number for the device, which can be any number from 0–99. The equipment number is *not* the same as the board number. You can have multiple devices configured on a single board with different equipment numbers. For example, on board 1, you can configure a Siemens S7 PLC as equipment 0 and a Siemens S5 PLC as equipment 1.



In this example, the equipment number assigned is 0.
Click **Configuration** to continue.

8. Enter a **Symbolic Name** and **Description** for this connection. For **Messaging**, select the protocol you want to use. Enter the **Equipment Physical Address** for the PLC as the PLC proprietary software defines.



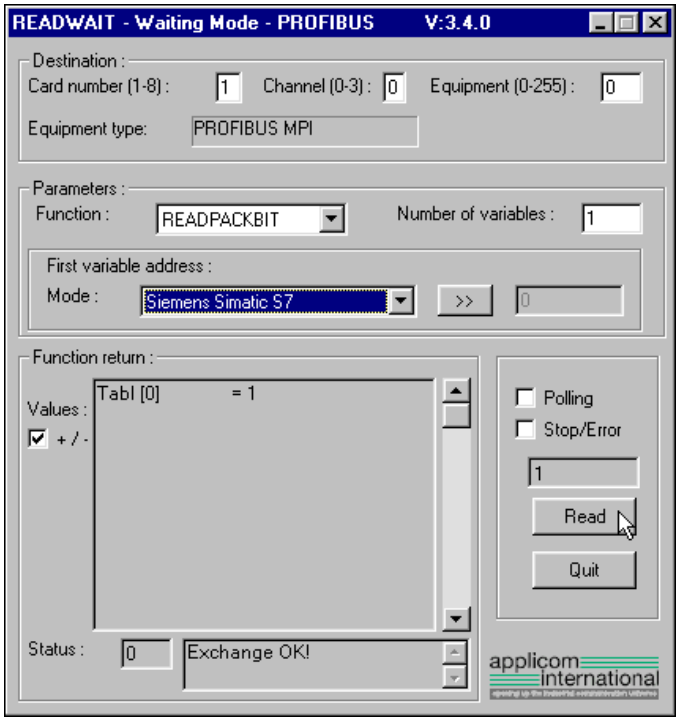
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9. Click **OK** until you return to the main panel of PCConf.
10. Save and exit PCConf. Reboot your machine if prompted to do so.
11. Run PCInit and initialize the Applicom board with the new configuration.

Note You *must* run PCInit after installing the Applicom board and prior to configuring any Profibus connection in PCConf to be sure that the board is installed properly in your system. If you did not do so, and PCInit indicates problems in this step, it is difficult to determine whether the problem comes from the board installation or the Profibus connection you just created.

12. Test the connection you just made. Launch the ReadWait utility included with the Applicom software by selecting **Start»Programs» Applicom 3.4»Tools»ReadWait**.

Note You can also use the WriteWait utility, also included in the Applicom software package, to test the connection. The procedure for this software is similar to ReadWait, which is discussed below.



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13. Be sure the board number, channel (as set in step 7), and equipment numbers (as set in step 8) are correct. Set the function as **READPACKBIT**, which reads a 1-bit value from the PLC. Click **Read** to poll a value from the PLC.
14. You should see **values returned**, and the **Status** number should be 0 with the message **Exchange OK!**. Your Profibus interface has been successfully installed at this point.

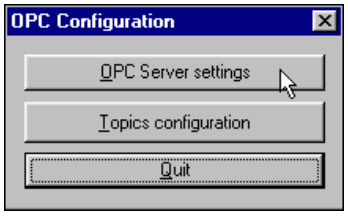
    For the complete reference on Applicom general status numbers and statuses according to the protocol, refer to the *Applicom Protocol Manual—Profibus* included with the Applicom software package.

Using the Applicom OPC Server

You can use the Applicom OPC Server to connect to any OPC client application. National Instruments software can connect to Profibus devices via the Applicom board in two ways: by direct connection to an Applicom board via Lookout or Lookout Protocol Driver objects, or by connecting to the Applicom OPC Server from any OPC Client software. National Instruments OPC clients include Lookout, LabVIEW (DataSocket), and LabVIEW DSC.

Configuring the Applicom OPC Server

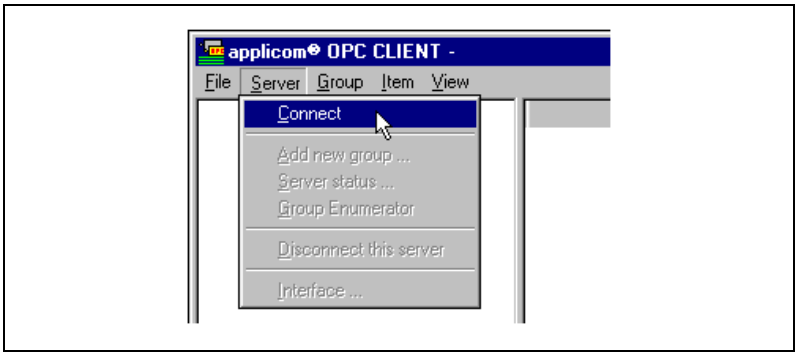
1. Connect your Applicom board to your Profibus hardware using the appropriate Profibus cable.
2. Select **Start»Programs»Applicom 3.4»OPC»OPC Configuration** to launch the Applicom OPC Server configuration utility.



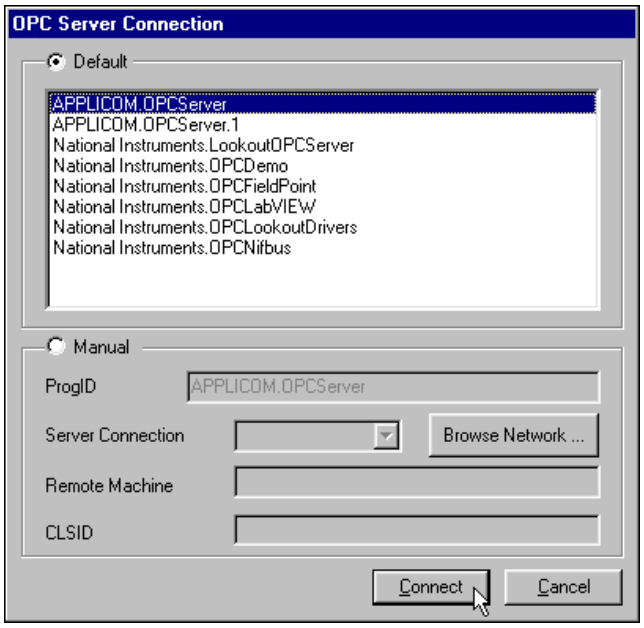
3. Click **OPC Server Settings**. Configure the OPC server as appropriate to the needs of your control system. Click **OK** when finished. Refer to the Applicom help documents installed with your Applicom software for details about OPC server configuration.
4. Click **Topics Configuration**. From here, you can specify multiple OPC communication configurations to be used through the Applicom OPC server. Each configuration is called a topic. Refer to the Applicom help installed with your Applicom software for details about topic configuration.

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5. Click **Quit**.
6. To test your configuration, launch the Applicom OPC client by selecting **Start»Programs»Applicom.3.4»OPC»OPC Client**.
7. Select **Server»Connect**.

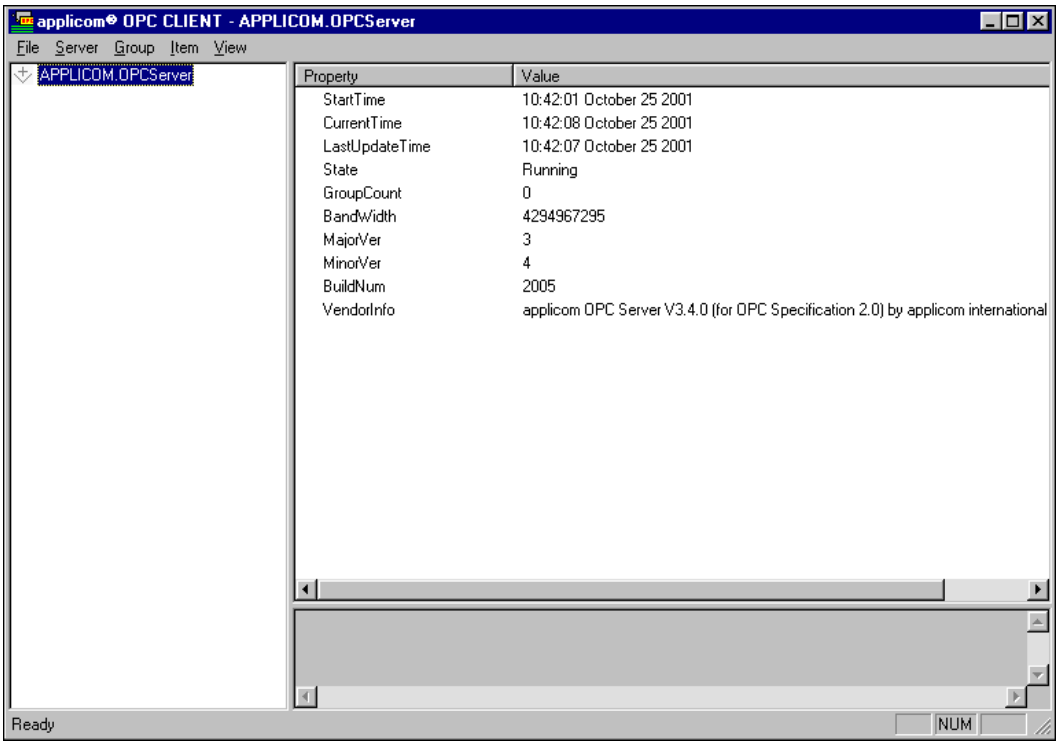


8. Select **Applicom.OPCServer** and click **Connect**.

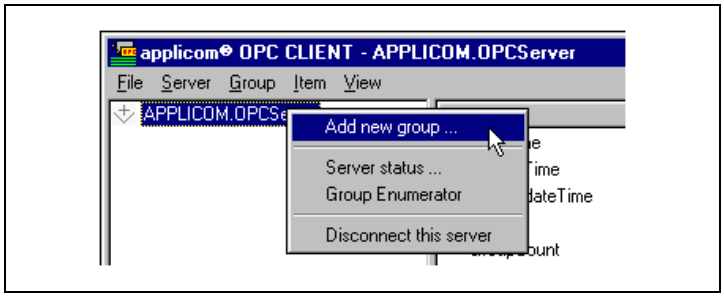


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9. You should now be back to the main OPC Client screen, which now indicates a connection to the Applicom OPC Server.

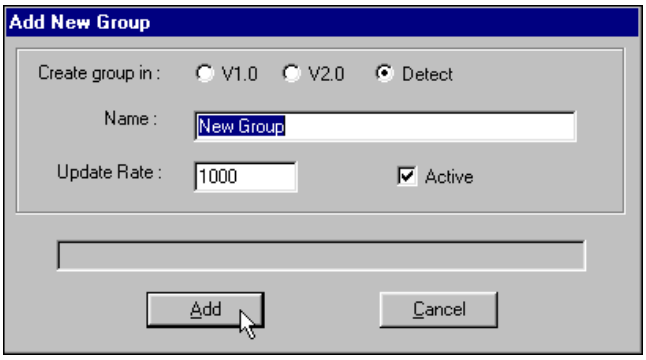


10. Right-click on the Applicom OPC Server connection and select **Add new group...**.

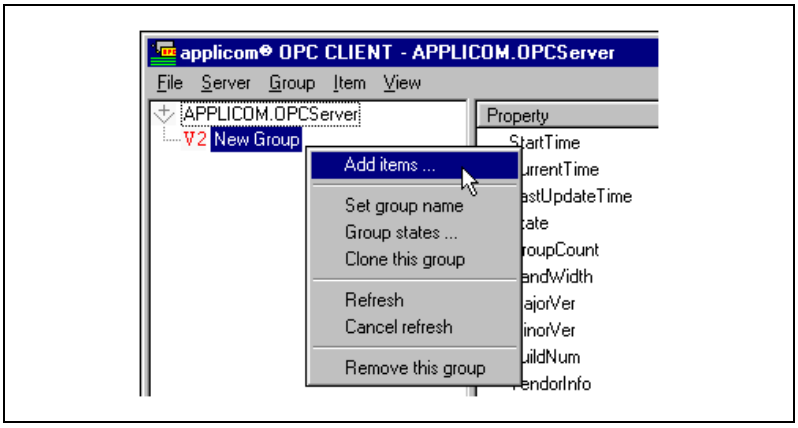


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11. Set the group name for the items you will want to view, select the update rate (in milliseconds), and click **Add**.

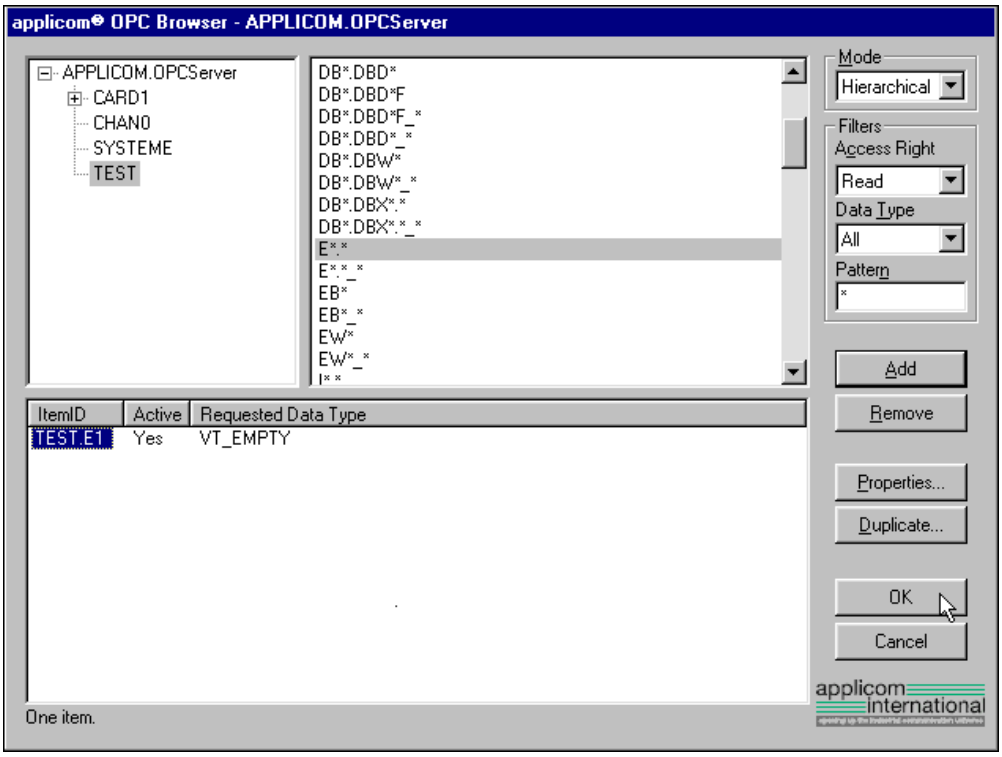


12. Right-click on the newly created group and select **Add Items**.



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13. Select the appropriate topic and datamember and click **Add**. Edit the item to reflect the correct register number and click **OK**.



14. You should now be in the main OPC Client screen with your items listed on the right side of the screen, showing good data values. If any steps have failed, either the Applicom board or the OPC Server are not configured correctly. Repeat the configuration process to ensure correct installation and configuration. If problems persist, contact Applicom International at `www.applicom-int.com` for technical assistance.

Using Your Applicom Board with Other Software

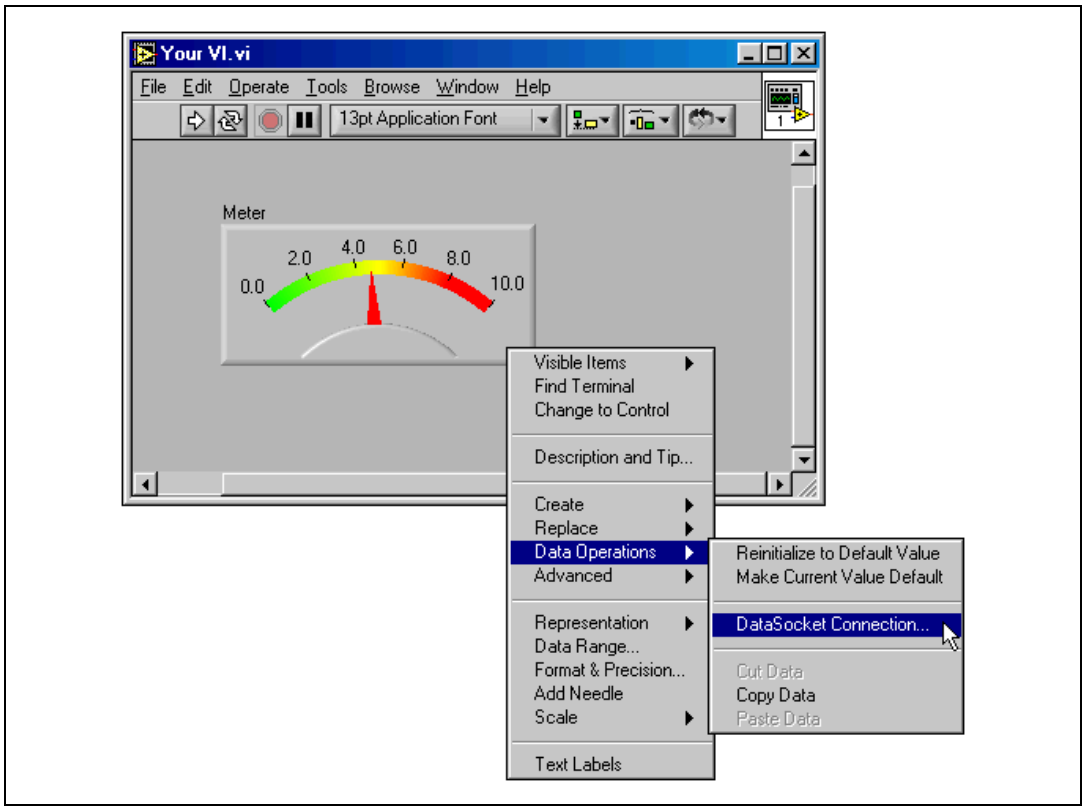
Other OPC clients employ a method similar to the one just described for subscribing to the Applicom OPC server. For specific information about subscribing to OPC Server data, consult the application documentation.

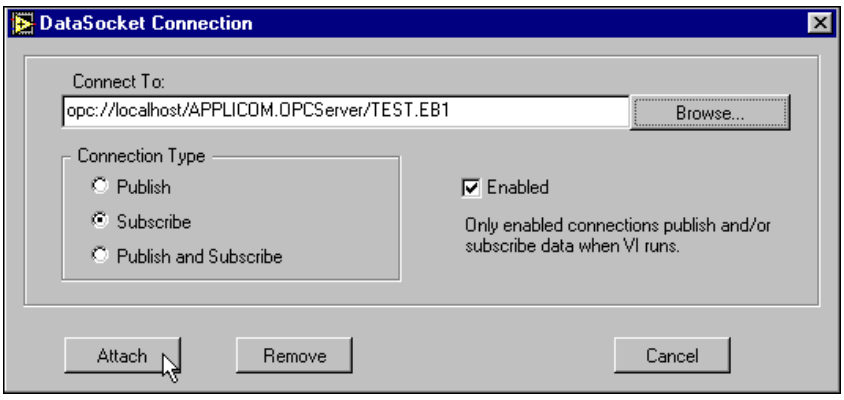
Some OPC clients may require a URL to set up the communication link. LabVIEW DataSocket is one such OPC client. A typical URL takes the form of:

`Opc://localhost/APPLICOM.OPCServer/`*`Topicname.Datamember`*

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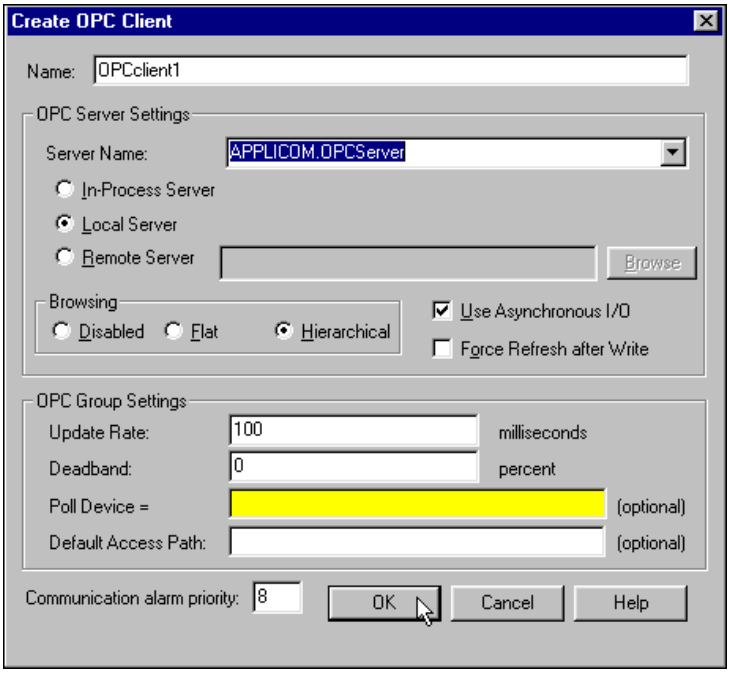
As the following illustration indicates, it is very easy to make an OPC connection in LabVIEW. Right-click on the control or indicator, select **Data Operations»DataSocket Connection**, browse the measurement data for the desired OPC server item, and click **Attach**. When the VI runs, the OPC Server starts automatically and communication begins.





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Another National Instruments OPC client environment is Lookout. Lookout is a configuration-based HMI/SCADA system. To connect to the Applicom OPC Server in Lookout, create an OPC client object, select **APPLICOM.OPCServer**, choose **Local Server** with hierarchical browsing, and click **OK**. Then make connections to the desired Profibus datamembers.



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