

## Using Intellution® Fix™ with Hach's OPC Servers

### Introduction

This document details the connection of Hach OPC (OLE for Process Control) Servers to Intellution® Fix32™ or iFix™ using the Intellution OPC Power Tool driver. OPC Power Tool acts as a translator between OPC and the proprietary format used by Intellution drivers.

### System Requirements

- Pentium 166 mHz or faster processor with CD ROM Drive
- Windows® 95, 98, NT 4.0 or higher (NT recommended)
- At least one Hach OPC Server (such as MOD I/O Explorer)
- Intellution Fix32 or iFix
- Intellution Power Tool driver Version 7.20 or higher

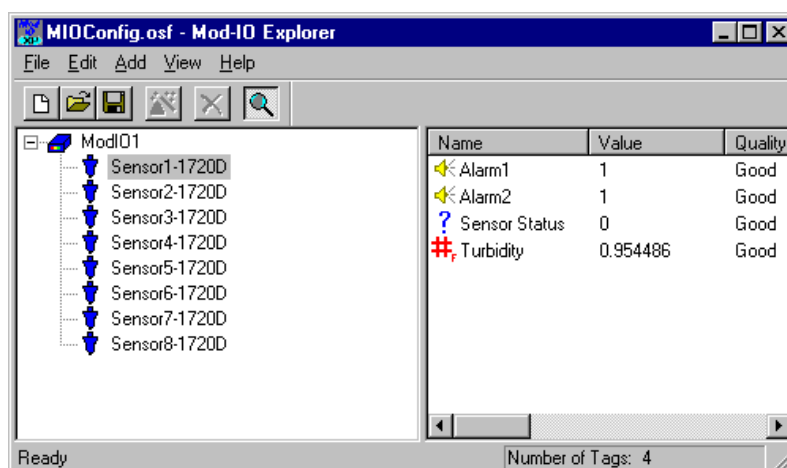
### What is OPC?

OPC is a specification that defines the communication between two software applications and is specific to the process control industry. Created by manufacturers and users of process control equipment, the OPC specification is managed by the OPC Foundation ([www.opcfoundation.org](http://www.opcfoundation.org)). OPC allows clients (such as SCADA packages) and servers (such as Hach's OPC Explorer) to communicate using common names without complicated setup procedures. OPC is similar to the DDE (Dynamic Data Exchange) specification, but much more robust and reliable.

### Configuring an OPC Server

Hach provides a full suite of OPC Servers for various process instrument lines. Before running the Power Tool driver and iFix, configure the OPC Server (the MOD I/O Explorer OPC Server in this example) as follows:

1. Click Start, Programs, Hach, MOD I/O Explorer.
2. Search for devices by clicking the magic wand toolbar button.
3. Once all devices have been discovered, click File, Save. For more information, see the help file for the particular OPC server. A configured MOD I/O Explorer OPC Server is shown below.



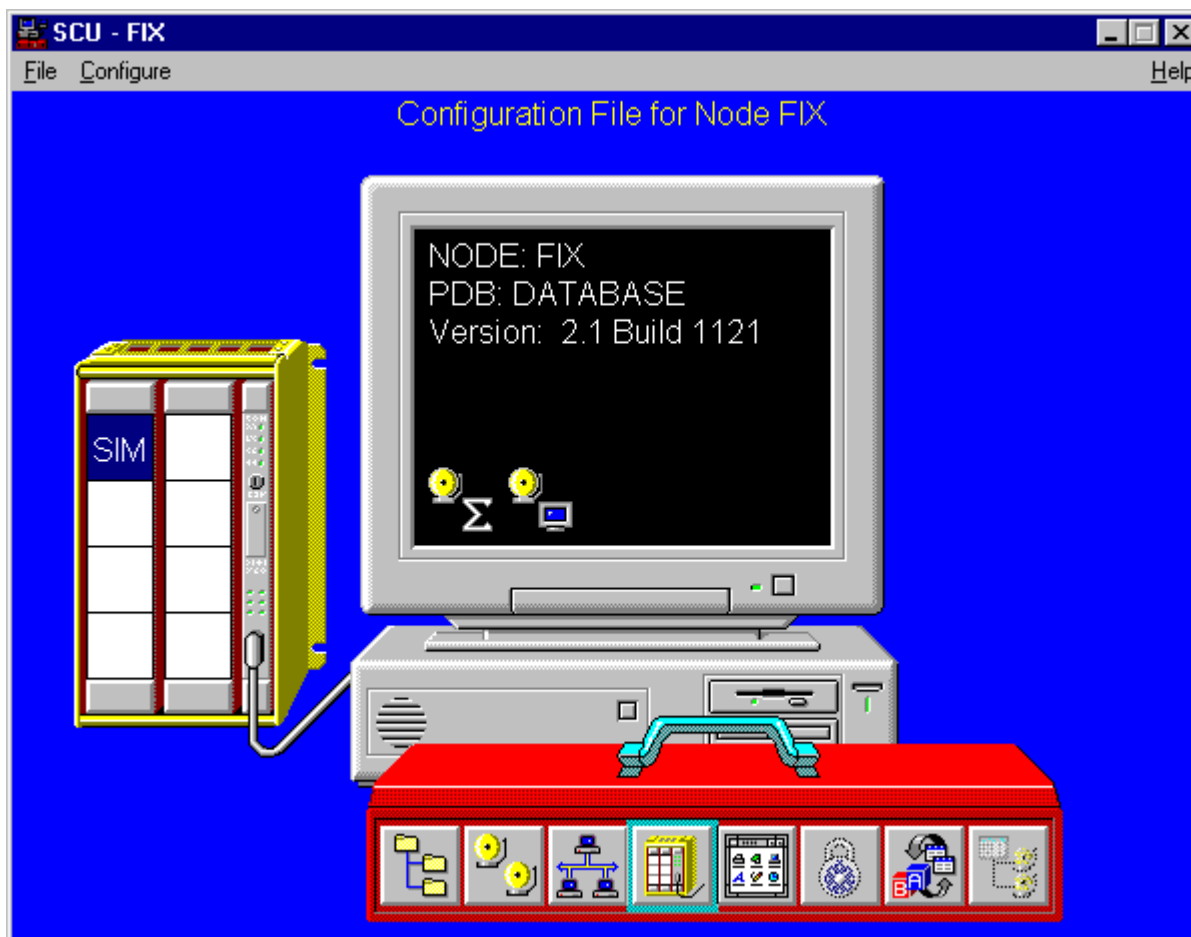
## Installing OPC Power Tool

OPC Power Tool is an Intellution driver that converts OPC to the proprietary driver format used by Intellution. Install the OPC Driver from the Intellution I/O Drivers and OPC Servers CD or from the Intellution website ([www.intellution.com](http://www.intellution.com)). Version 7.20 of the OPC driver was used in this example.



## Configuring the iFix System Configuration File

1. Start the SCU (System Configuration Utility) by clicking Start, Programs, iFIX, System Configuration. The SCII - FIX dialog box appears:





2. Click on the SCADA button in the red toolbox. The SCADA Configuration window will open.
3. Click on the I/O Driver Name button.
4. Select OPC - OLE for Process Control Client 7.20 and click OK.

**SCADA Configuration**

**SCADA Support**  
☒ Enable ☐ Disable

**Database Definition**  
 Database Name: DATABASE ?

**I/O Driver Definition**  
 I/O Driver Name: OPC - OLE for Process Control Client 7.20 ?

**Configured I/O Drivers**  
 SIM - Simulation Driver

Add  
 Configure...  
 Setup...  
 Delete

**Backup SCADA**  
 SCADA Name:

OK Cancel Help

5. Click Add, then Configure. The I/O Driver Server Connection dialog box appears.

## Configuring the OPC Power Tool

1. Select Use Local Server and click Connect.

**I/O Driver Server Connection**

☒ Use Local Server  
☐ Use Remote Server

Remote machine name or TCP/IP address:

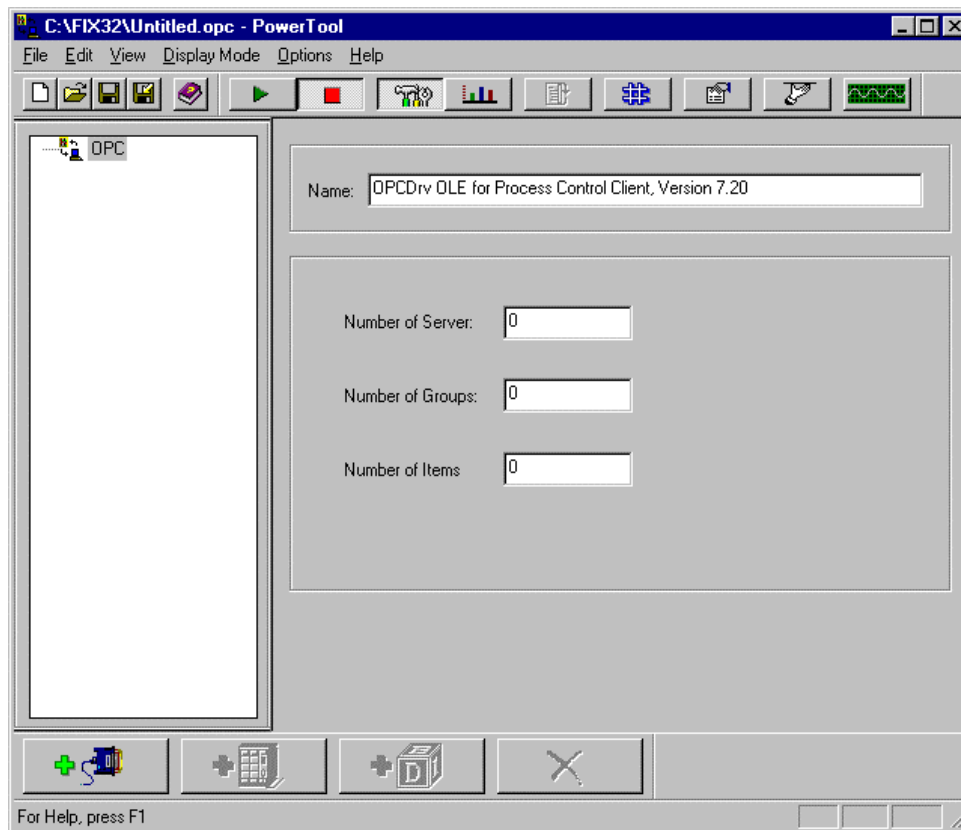
To run the User Interface, you must first connect to an I/O Driver OLE Automation Server.  
 If you want to connect to the server on this machine, select "Use Local Server".  
 If you want to connect to a server on another machine, select "Use Remote Server" and enter the machine name, or a TCP/IP address of the machine that has the server that you want to connect to.  
 You can use the tree browser to help select a remote machine name.

Network

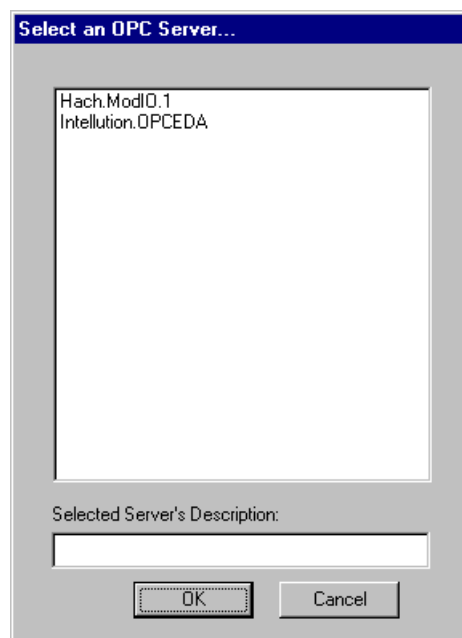
☒ Show this dialog on startup

Connect... Cancel

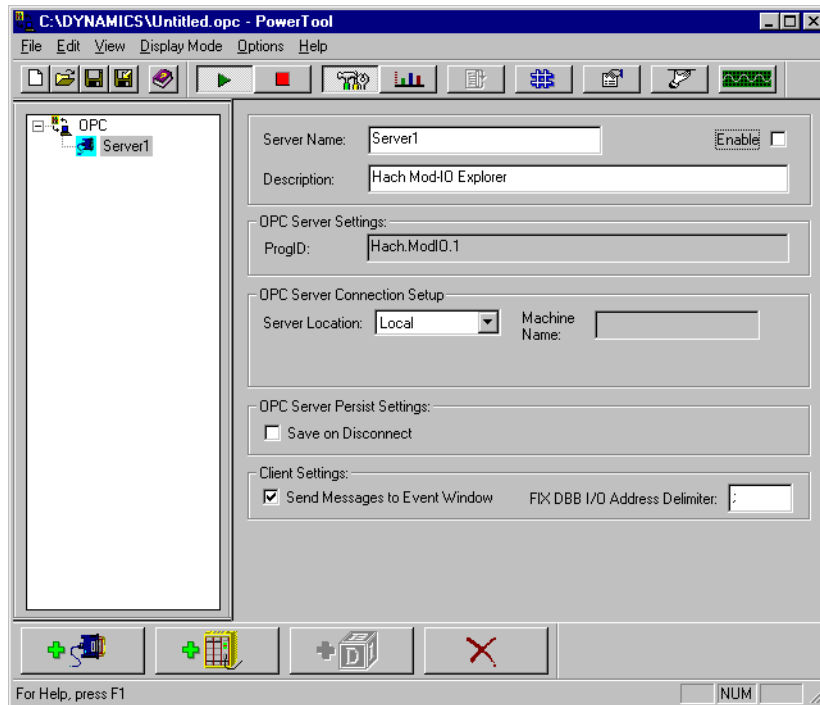
The following screen appears:



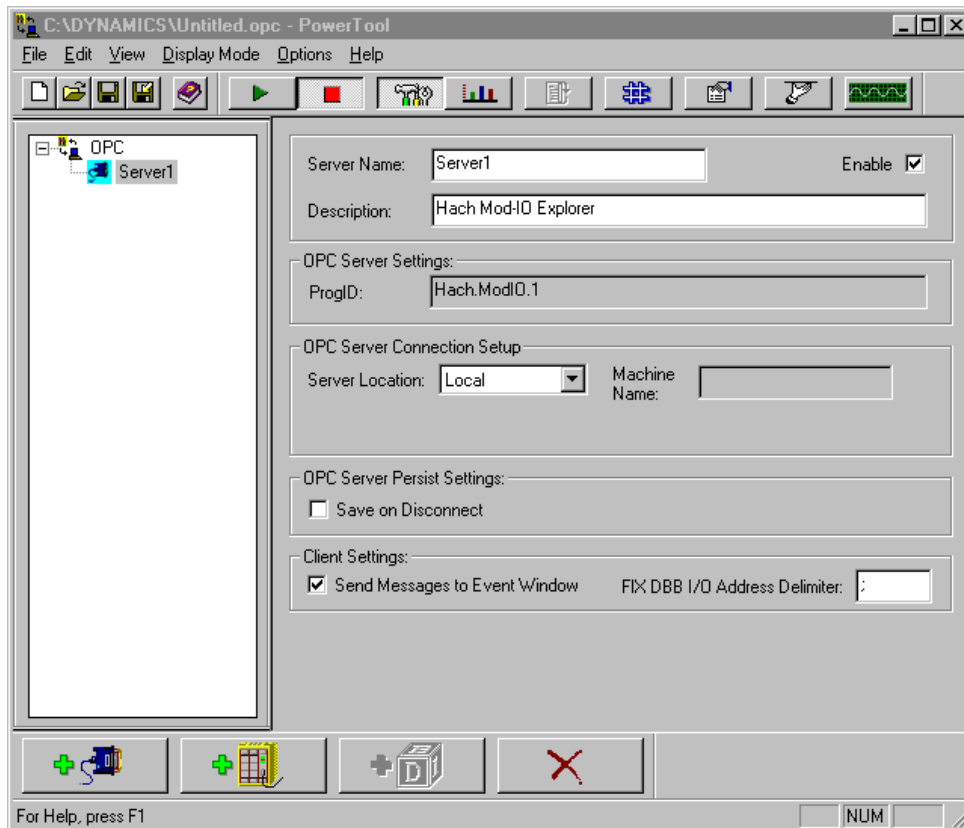
2. Click on the server button to add an OPC Server.
3. Select the desired OPC server (Hach.ModIO.1 in this example) and click OK.



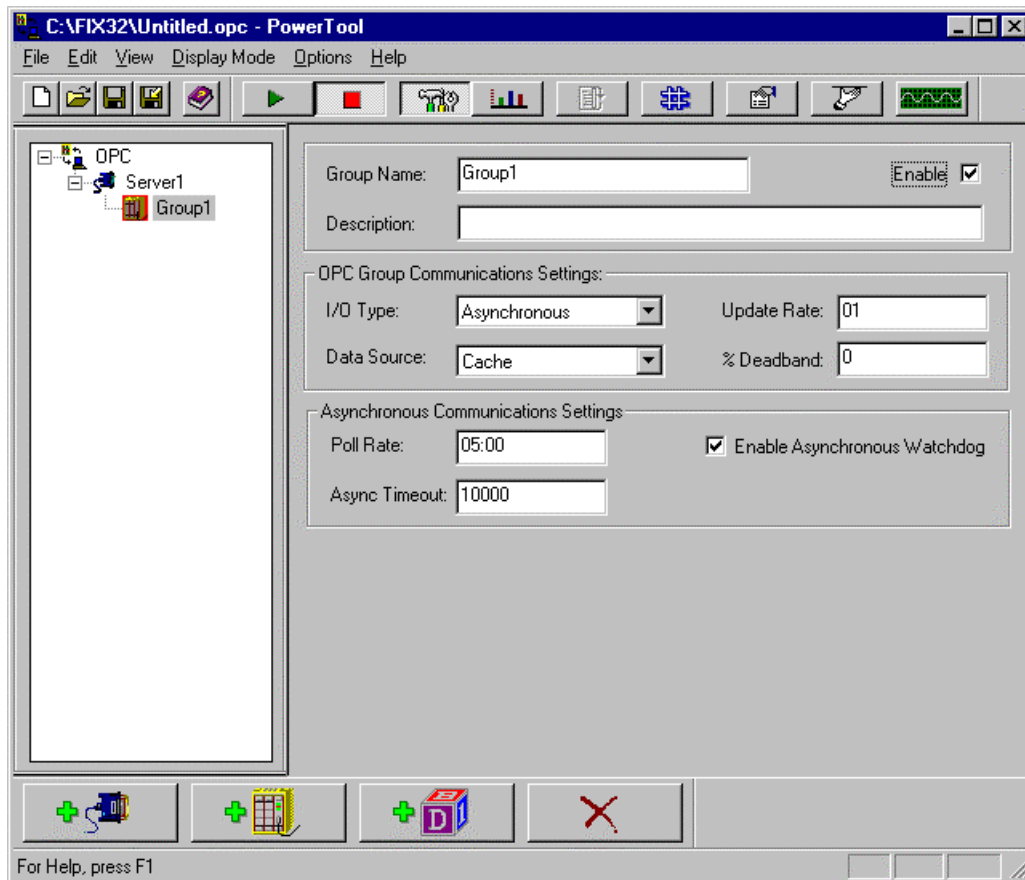
The following dialog box appears:



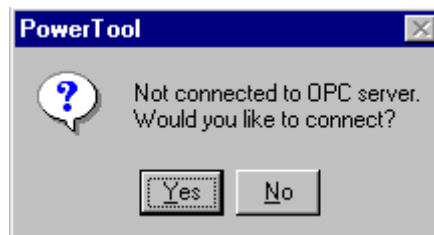
4. Click in the Enable check box. The following dialog box appears:



- Click the group button to add a group. Click the Enable check box.

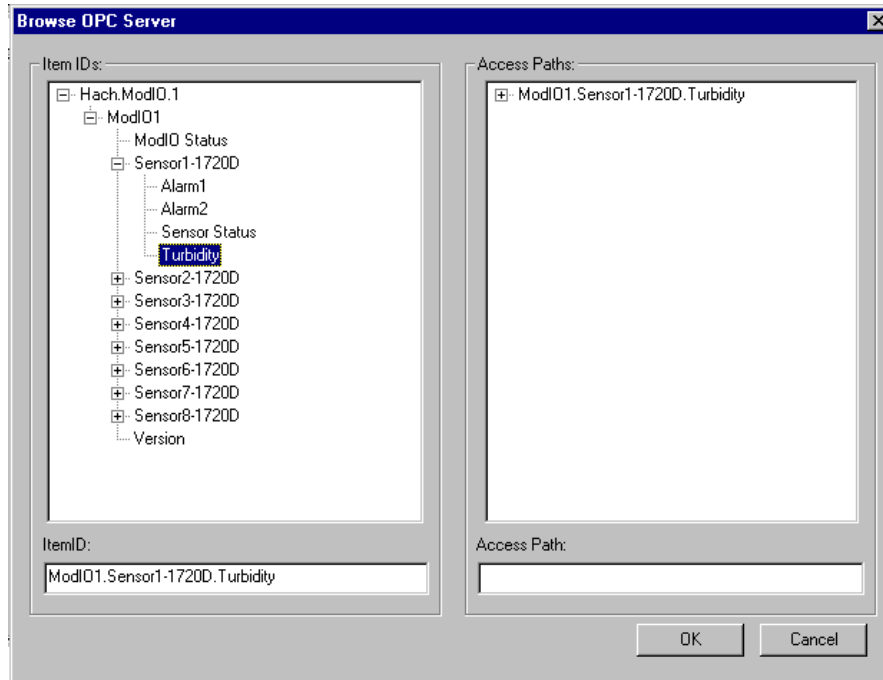


- Click the Add Item button (shown at left) to add an item. Click Browse Server...
- Click Yes if you get the following dialog.

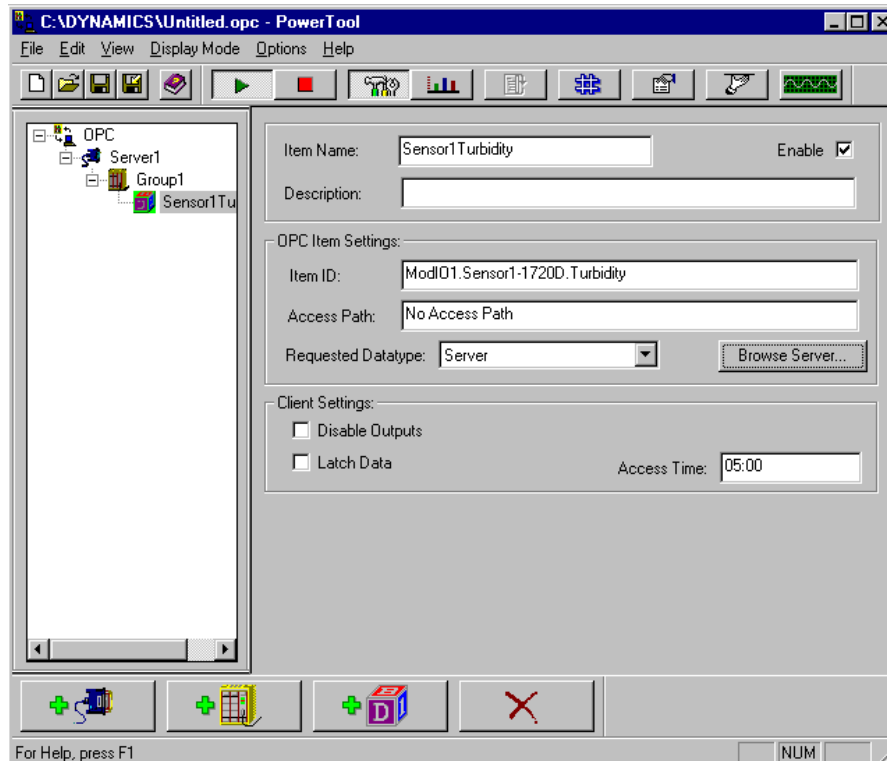


If the Browse OPC Server window does not appear, wait a moment (the server will start in the background), then click Browse Server again.

8. Double click each level in the tree until the desired tag is displayed (ModIO1.Sensor1-1720D.Turbidity in this example). Click OK.

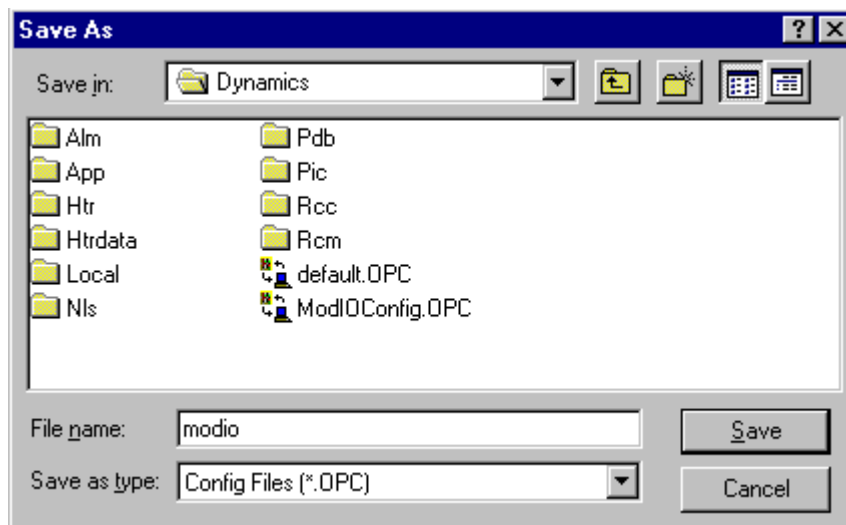


9. Enter a unique item name (Sensor1Turbidity in this example) and click the Enable check box.





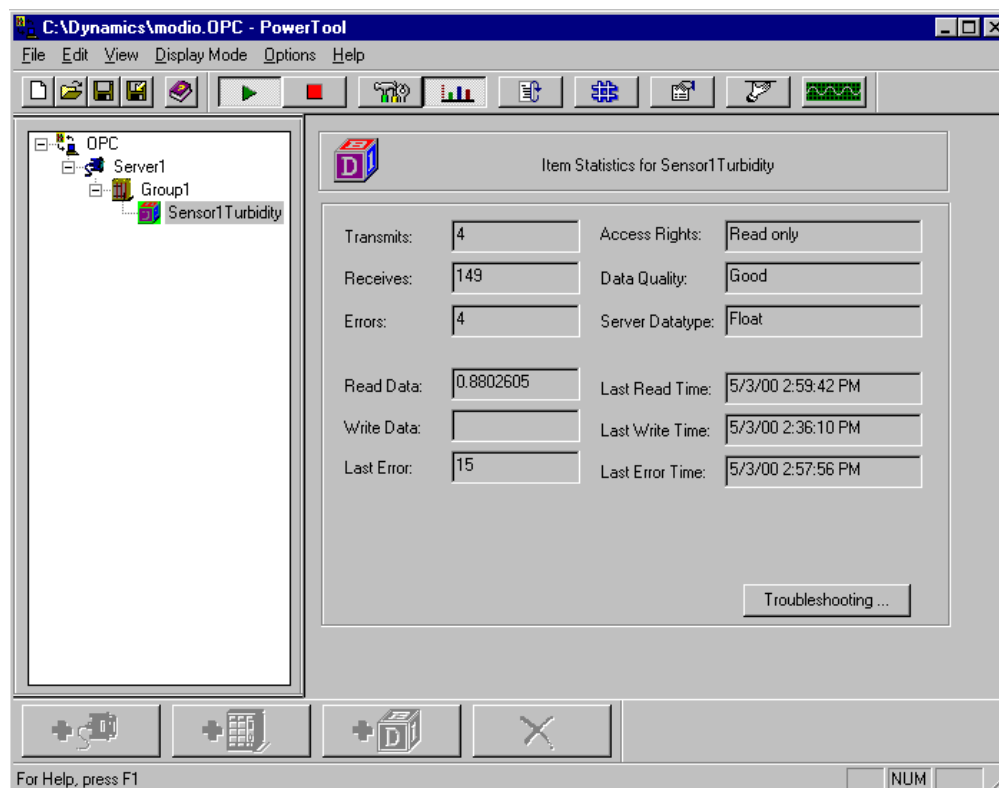
10. Continue adding items using the Add Items button. Make sure Enable is checked after browsing for each item.
11. Select File, Save and enter a configuration file name (modio for this example), then click Save.



12. Click the play button to start the OPC driver.



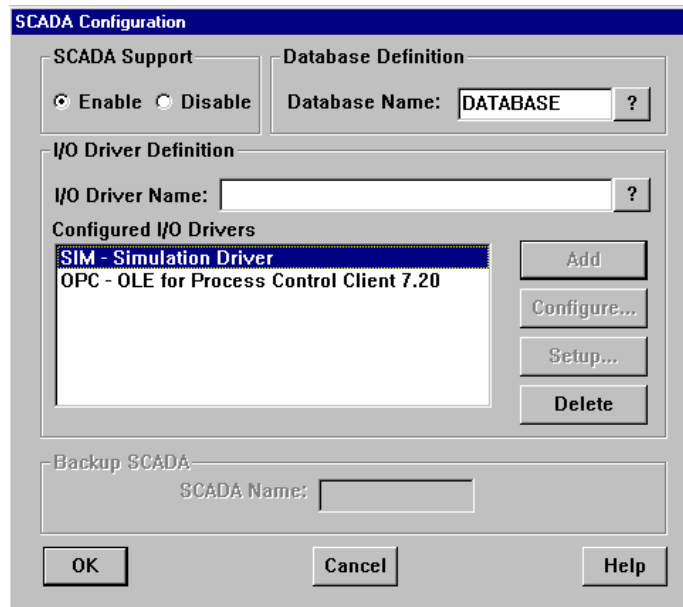
13. Click an item in the left-hand tree list (Sensor1Turbidity in this example) and click the statistics toolbar button. The current data value is displayed in the "Read Data" field (0.8802605 in this example).



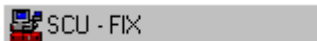
Click any other items, groups, or servers to view their statistics. The OPC Items can now be accessed via the standard Intellution database.

**14.** Select File, Exit from the Power Tool menu bar.

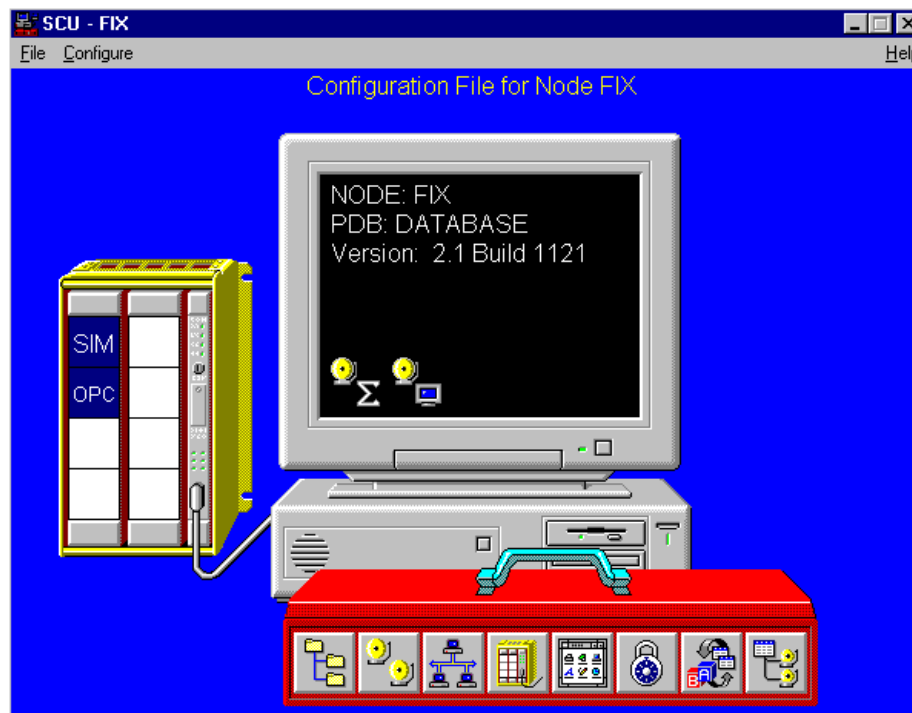
**15.** Click OK on the SCADA Configuration dialog to close the dialog.



If the SCU-FIX (System Configuration Utility) window is not visible, click on the SCU-FIX icon in the task bar (located at the bottom of the screen).

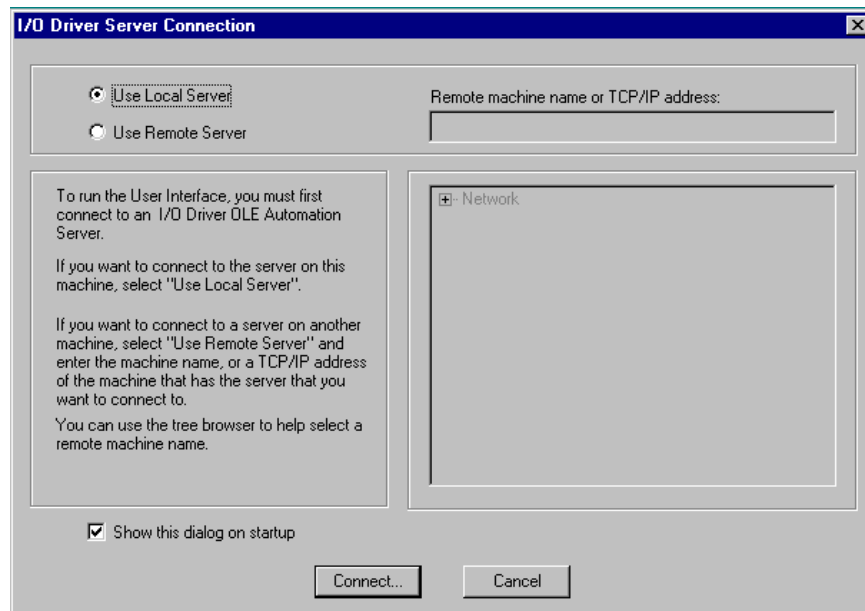


**16.** Select File, Save then File, Exit to close SCU-FIX.

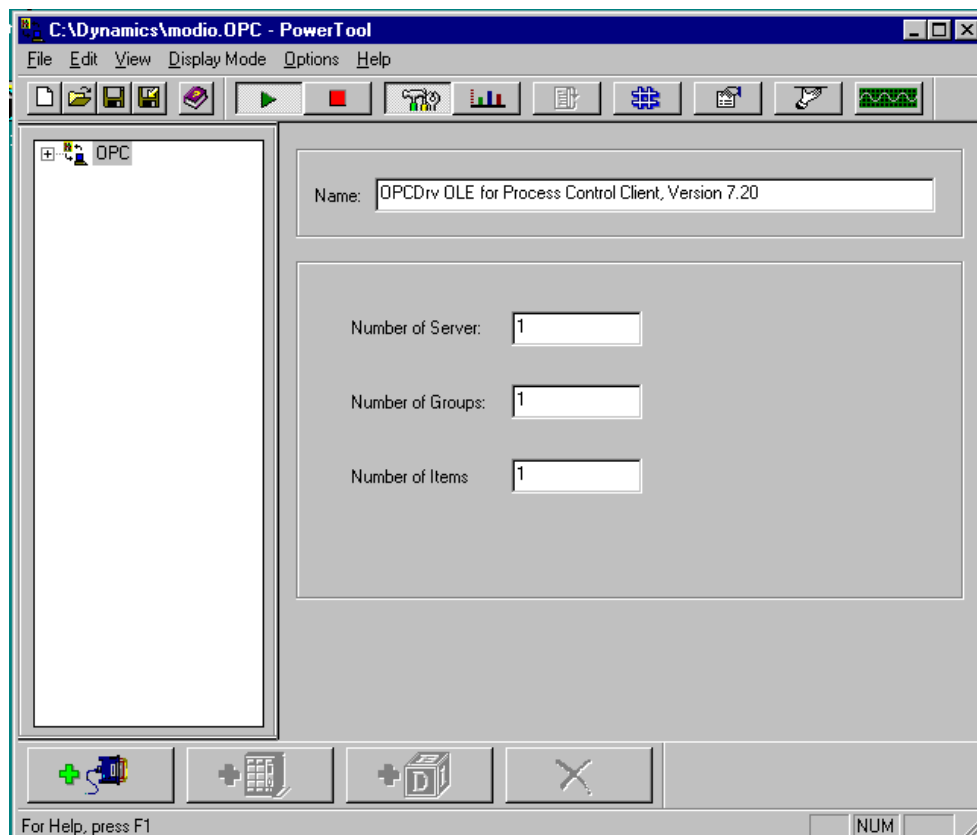


## Starting the OPC Power Tool

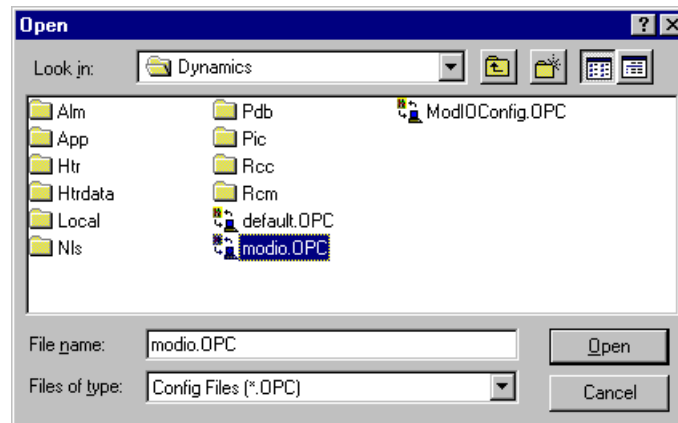
1. Start the OPC Power Tool by clicking on Start, Programs, iFIX, OPC Power Tool.
2. Click the Connect button.



The following screen appears:



- From the menu bar, select File, Open. The following dialog box appears:



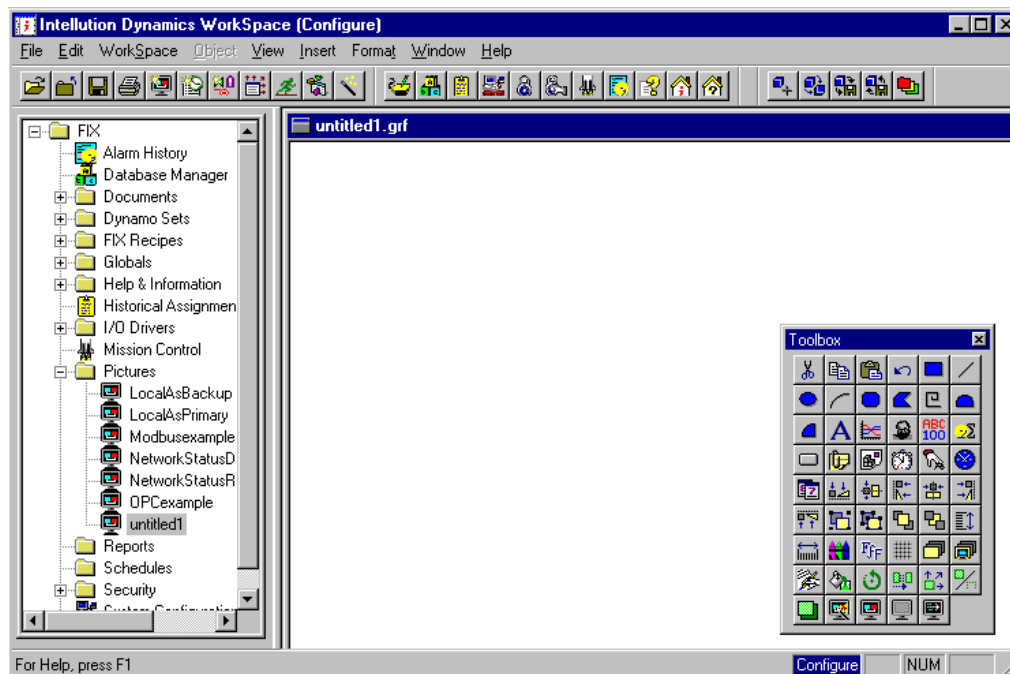
- Select the previously created file (modio.OPC in this example) and click Open.
- Click on the Start button.
- Minimize the Power Tool window.



The OPC Server icon (MOD I/O Explorer in this example) should be visible in the Task Bar at the bottom of the screen.

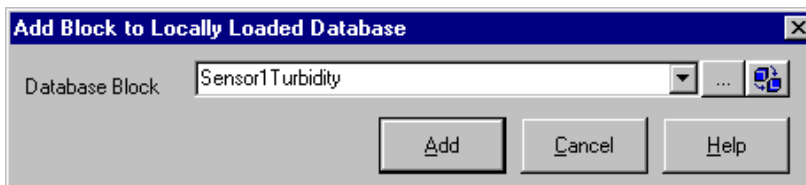
## Building the iFIX Database

- Click on Start, Programs, iFIX, Startup. The Intellution Dynamics WorkSpace window in the configuration mode will appear.

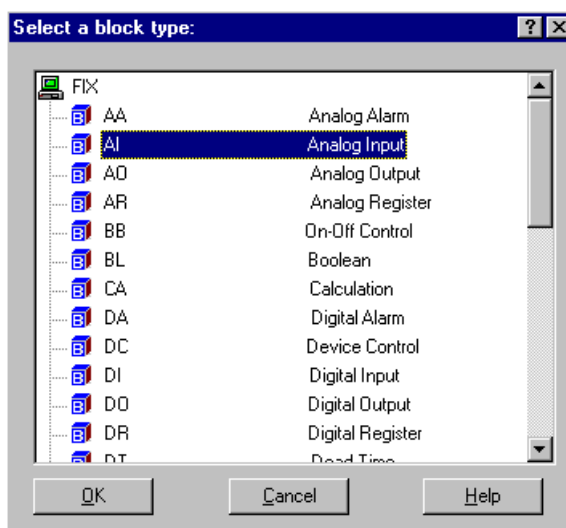




2. Click on the Add Database Block icon located in the window toolbar.
3. Enter a Database Block name, (Sensor1Turbidity for this example) as shown.



4. Click the Add button.
5. Select the Analog Input Block Type AI for analog input then click OK.



6. In the Analog Input dialog box, select the driver (OPC OLE for Process Control Client 7.20). Enter the I/O Address Server1;Group1;Sensor1Turbidity, then enter the units (NTU in this example).

- Click the Add button. Click Yes on the Place Block On/Off Scan dialog box.

**Analog Input - [SENSOR1TURBIDITY]\***

Basic | Alarms | Advanced

Tag Name :

Description :

Previous :   Next :   

Addressing

Driver :

I/O Address :  

Signal Conditioning :  Hardware Options :

Scan Settings

☐ Process by Exception

Scan Time :

Phase At :

Engineering Units

Low Limit :

High Limit :

Units :

**Place Block On/Off Scan?**

Do you want to place [SENSOR1TURBIDITY] ON scan?

☐ Do not prompt next time.

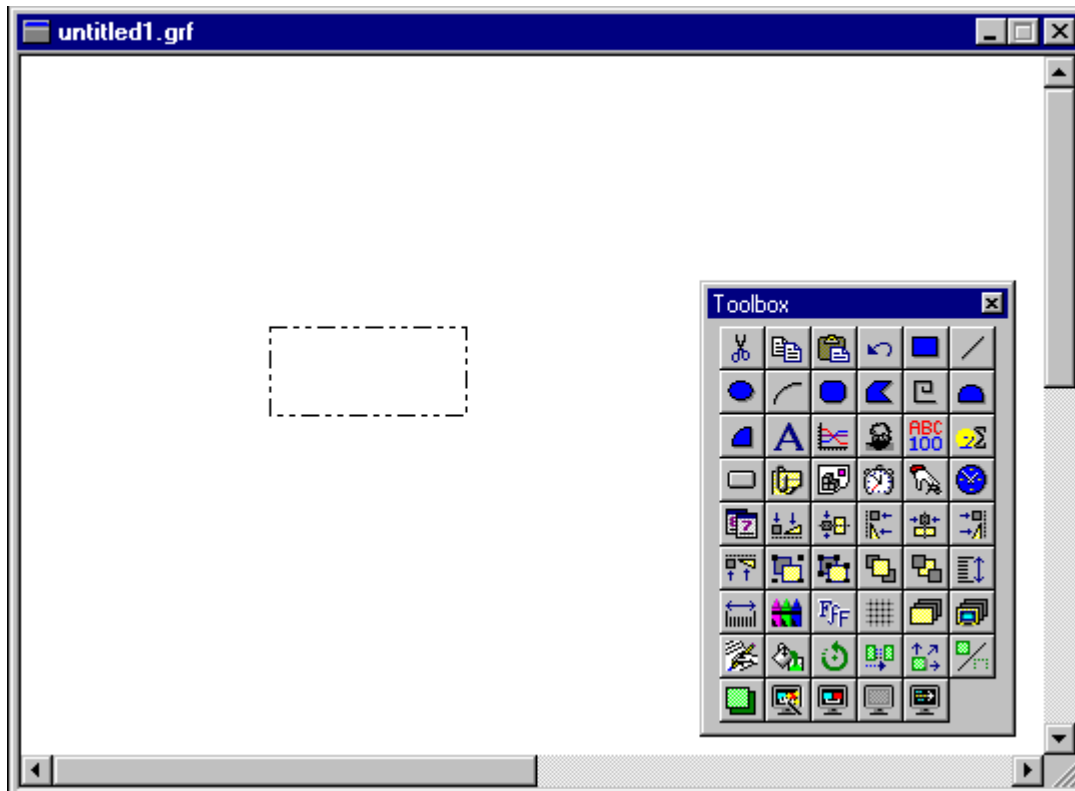
CAUTION: Choosing YES and "Do not prompt next time." may cause values to be written to your I/O device or PLC.

- Click on the Datalink button in the floating Toolbox.

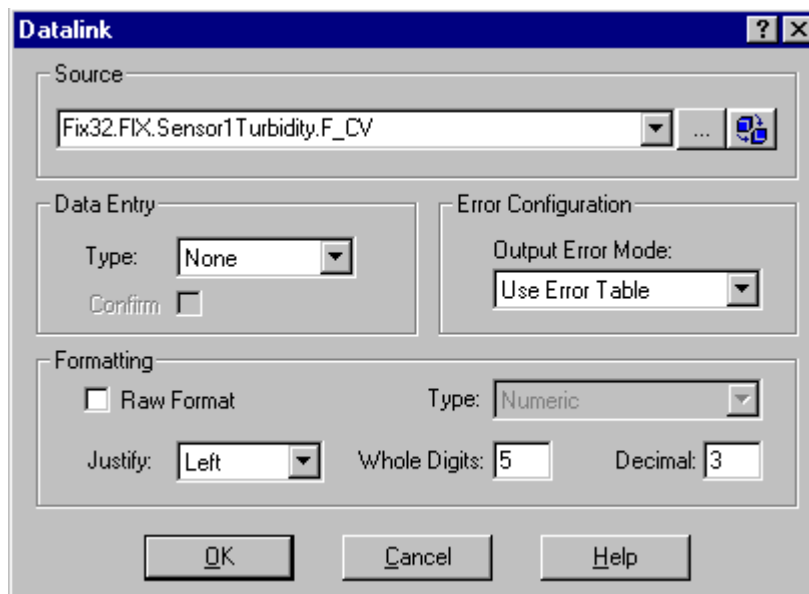


## Application Note 102

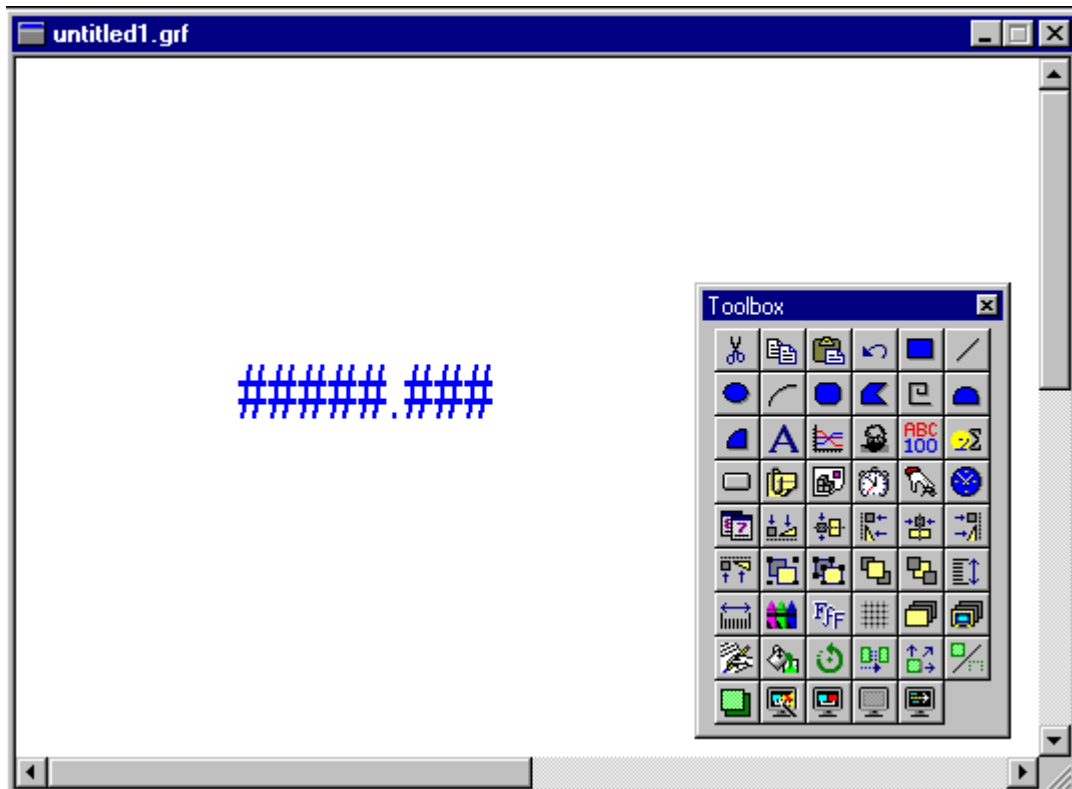
9. Hold the left mouse button down and draw a rectangle on the screen to define the data display area.



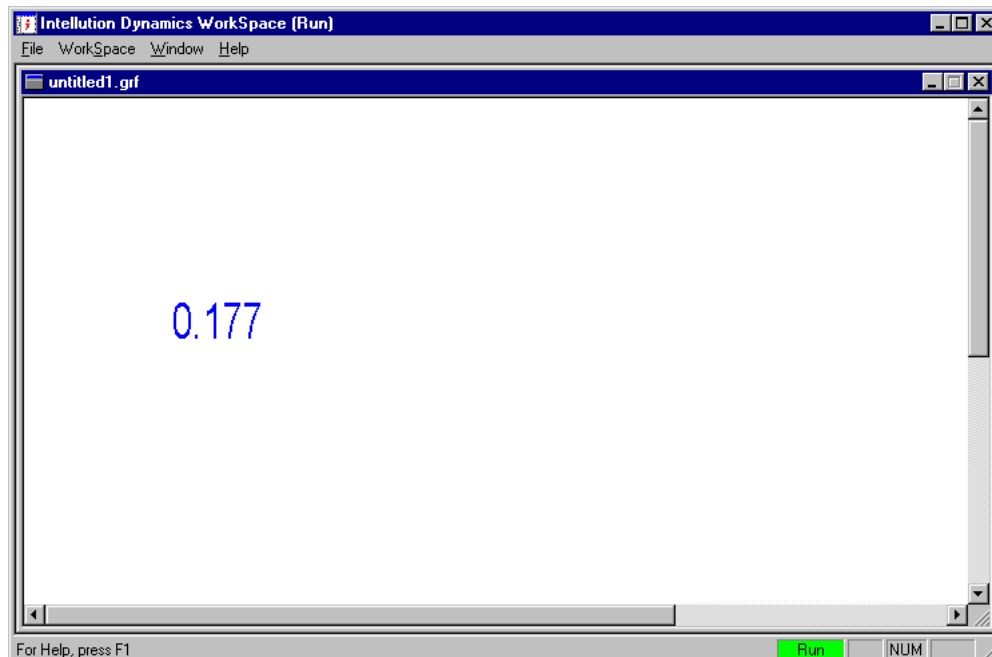
10. Select FIX32.FIX.Sensor1Turbidity.F\_CV in the Source box and set the Decimal units to 3. Click OK.



11. The data block, now configured as a datalink, is placed on the iFIX Dynamics Workspace (represented as #####.###).



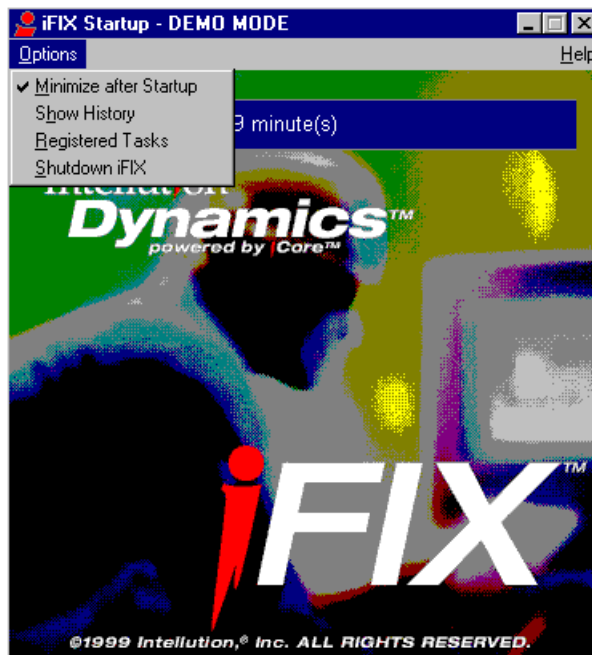
12. Press Ctrl+W to place the iFIX Dynamics Workspace in the Run mode. The real time value is displayed (0.177 in this example).



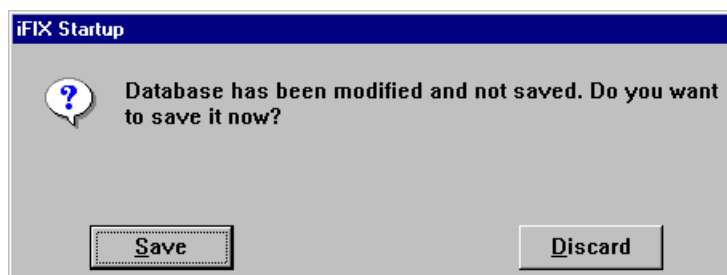
## Application Note 102

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13. Press Ctrl+W to switch back to configuration mode. Save the configuration by selecting File, Save As.
14. Close iFix from the iFIX Startup window. Click on Options, Shutdown iFiX.



If prompted, save the database by clicking Save.



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<http://www.aquatrend.com>



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