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monitor and manage industrial networks and real-world devices

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Industrial SNMP OPC Server Version 4.0 Connectivity Guide

For iFIX Proficy HMI/SCADA Version 4.0

The purpose of this white paper is to teach the user how to connect Industrial SNMP OPC Server to GE's Proficy HMI/SCADA iFIX system via OPC.

Note: It is assumed that you have configured your iSNMP OPC Server application with the iSNMP Editor and have already configured your network devices for monitoring. If you have not completed this action please do so before beginning the connection to iFIX. The help files provided with iSNMP OPC Server will guide you through the process of configuring network devices for SNMP monitoring.



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Table of Contents

| | |
|--|---|
| <i>Prerequisites</i> | 3 |
| <i>Section 1 - Configure OPC Power Tool</i> | 3 |
| <i>Section 2 – Configuring iFIX Database Manager</i> | 8 |

Prerequisites

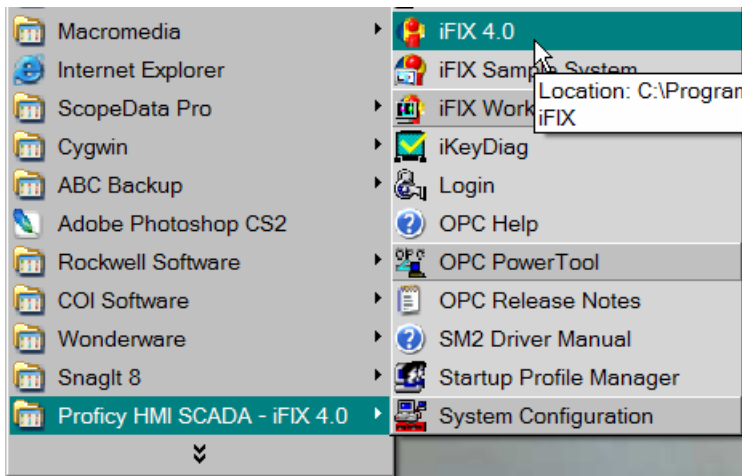
- Make sure you have iSNMP installed on the same machine or a network connected server.
- You have already discovered and defined your network devices within the iSNMP Editor.

Section 1 - Configure OPC Power Tool

1. Launch iFIX 4.0:

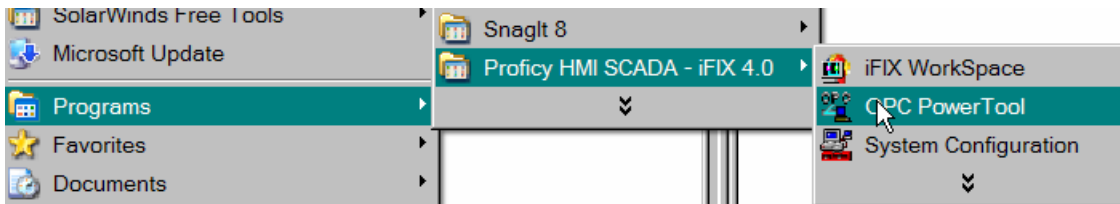
Go to: **Start>Programs>Proficy HMI SCADA – iFIX 4.0>iFIX 4.0.**

This will start all of the necessary services associated with iFIX 4.0 and then open the **Proficy iFIX Workspace**

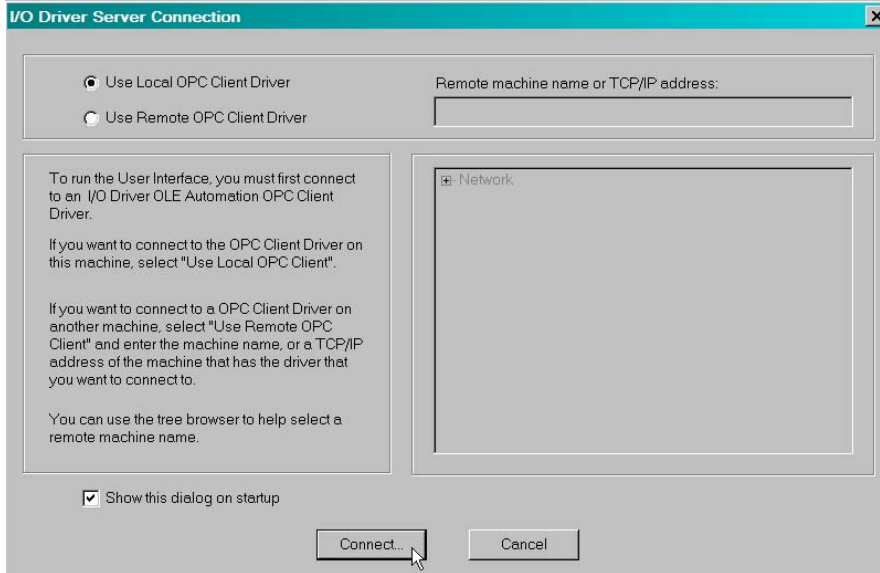


2. Open OPC Power Tool:

Open the OPC Power Tool to configure the items that you wish to monitor with iFIX.

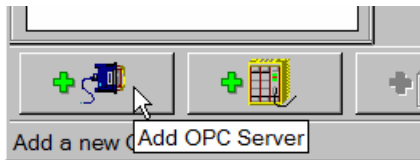


Once the **OPC Power Tool** dialog window is open, select **Use Local OPC Client Driver** and then select **Connect**.

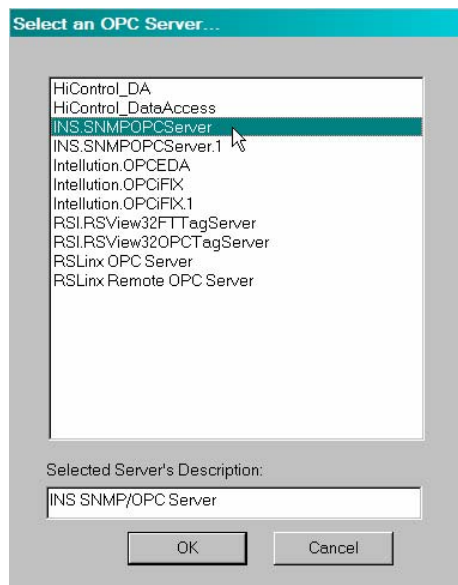


3. Add the OPC Server:

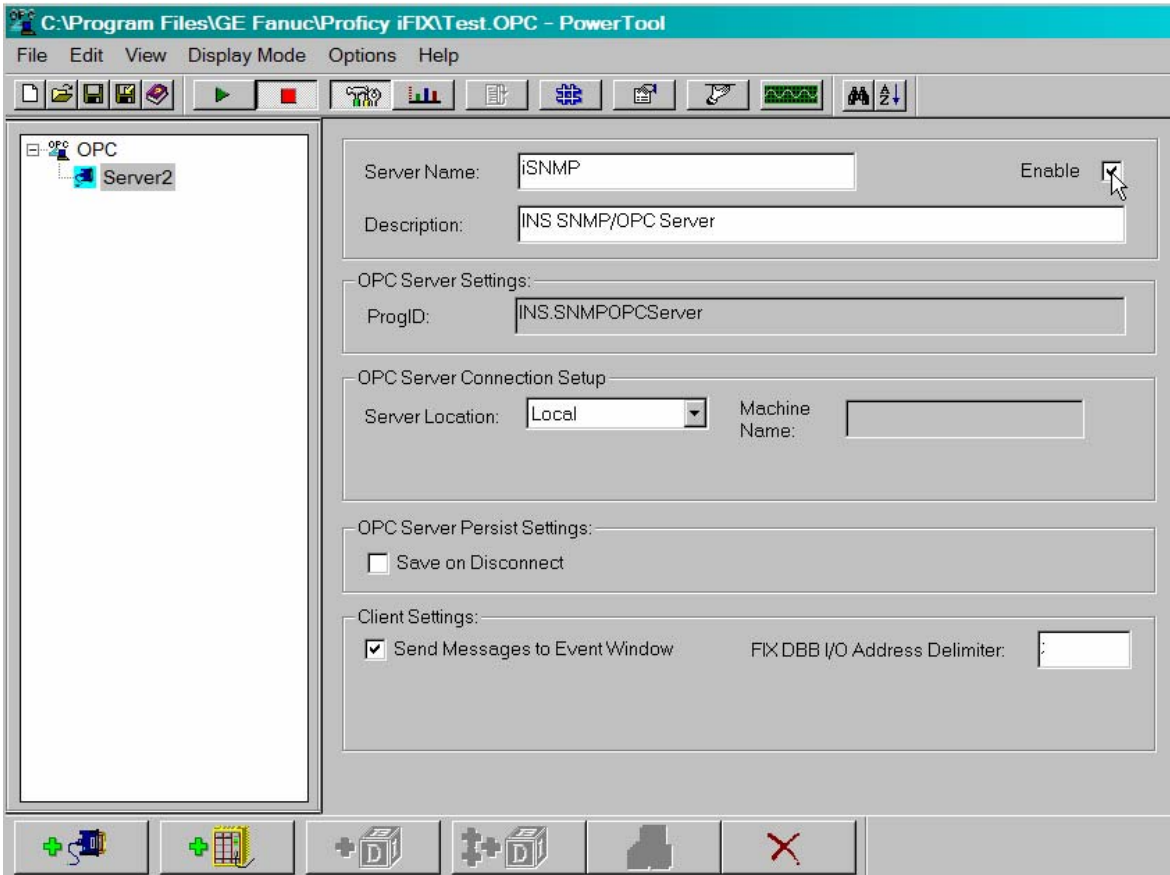
Now click on the **Add OPC Server** button, as seen below.



The **Select an OPC Server** dialog box will open. Select **INS.SNMPOPCServer** from the available list and select **OK**.

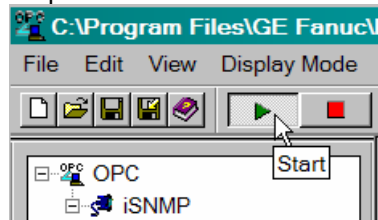


The **Server** Configuration Window is displayed allowing for setting the variables associated with OPC client interface. Notice that the new server has been added to the tree on the left pane. The default values are sufficient to allow for connectivity from iFIX to iSNMP. Be sure and check **Enable** and name the server **iSNMP** as seen below.



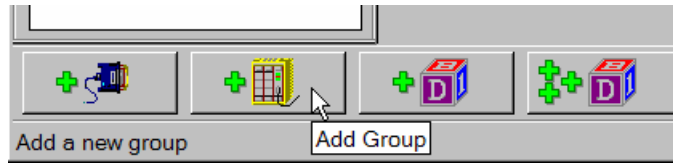
4. Start the Server:

In order for **iFIX** to poll data it is important to **Start** the server. Simply click the **Start** button.

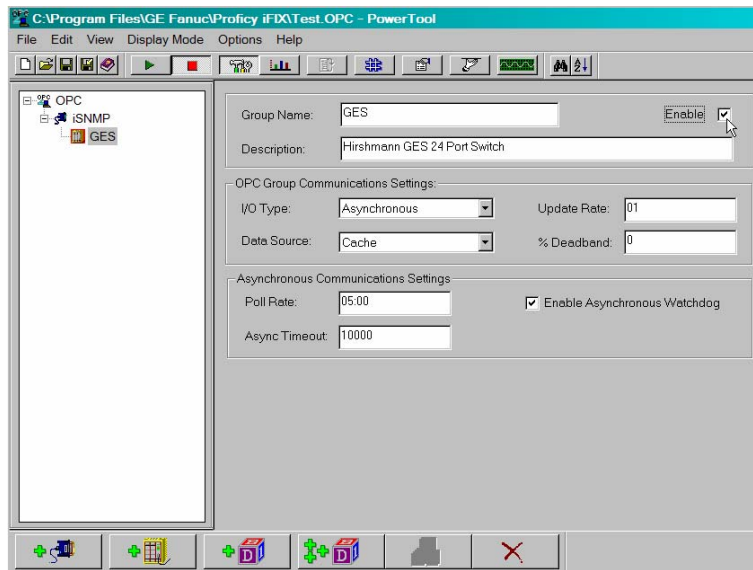


5. Add a Group:

You are now ready to add **Groups** and **Items**. Begin by adding a new **Group** by selecting the **Add Group** button.

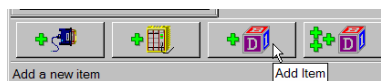


The **Group** Configuration Window is displayed allowing for setting the variables associated with the new **Group**. Notice that the new **Group** has been added to the tree on the left pane. The default values are sufficient to allow for connectivity from iFIX to iSNMP. You may wish to change the **Poll Rate** to coincide with other polling that may be taking place within your iFIX application. Be sure and check **Enable** and name the **Group** as desired. Naming the **Group** after the network device you will be monitoring is a good practice and will help with tag management and troubleshooting. In this example we are monitoring a Hirschmann GES 24 Port Switch so we have named the group **GES**.

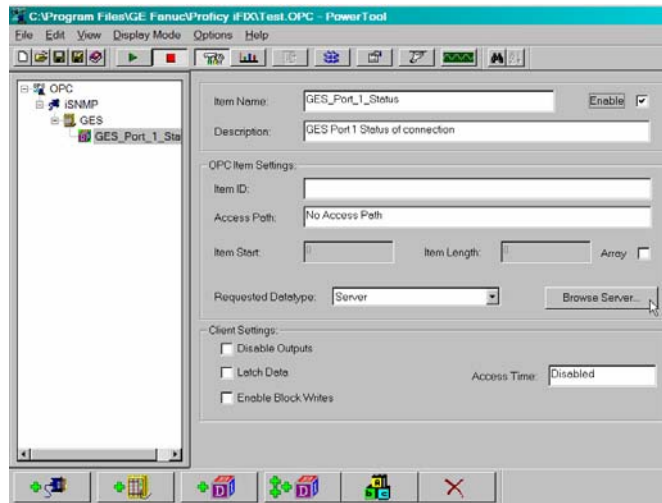


6. Add an Item :

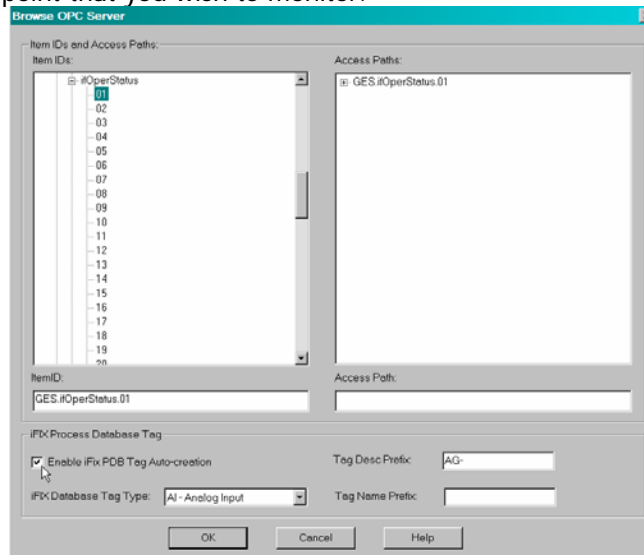
You are now ready to add **Items**. Begin by adding a new **Item** by selecting the **Add Item** button.



The **Item Configuration Window** is displayed allowing for setting the variables associated with the new **Item**. Notice that the new **Item** has been added to the tree on the left pane. Be sure and check **Enable** and name the **Item** as desired. Naming the **Item** after the network device SNMP Point you will be monitoring is a good practice and will help with tag management and troubleshooting. In this example we are monitoring the status of Port 1 on the Hirschmann GES 24 Port Switch so we have named the item **GES_Port_1_Status**.



Click the **Browse Server** button to find the **Item ID** and **Access Path** for the network device SNMP point that you will be monitoring. The **Browse Server** dialog window will appear. You should see all of the devices that you have previously configured with the **iSNMP Editor** in the tree on the left pane. Expand the devices and points by clicking the + icon until you locate the individual SNMP point that you wish to monitor.



In this example we are monitoring the status of Port 1 on the GES Switch so we have selected **ifOperStatus.01**. In order for **iFIX** to use this new **Item** it is important to check the **Enable iFIX PDB Tag Auto-creation** box. This will *automatically* build the **Tag Name** for **iFIX** and will eliminate duplicate work. No **Access Path** is required for **iSNMP Server**. You may also wish to

add **Tag Description** and **Tag Name Prefixes** as desired. The **iFIX Database Tag Type** must coincide with the **iSNMP** data type. You can check the **Data Type** by using the **iSNMP Editor**.

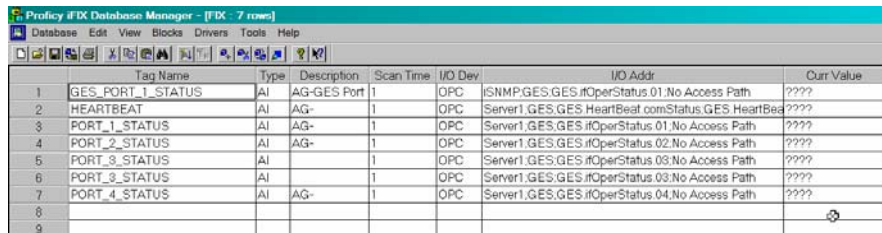
For a list of commonly monitored variables for a variety of network devices, please visit the following URL.

<http://www.coisoftware.com/support/?wtpaper=011>

Repeat these steps for all of the individual SNMP points that you wish to monitor. Upon completion **Save** your changes by selecting **File>Save** or by clicking the **Save** icon.

Section 2 – Configuring iFIX Database Manager

Return to the **Proficy iFIX Workspace** and expand the **Database** folder and double-click **Database Manager**. This will open the **Proficy iFIX Database Manager** in a New window. Check to ensure that the **OPC Power Tool** has *automatically* generated the **Tags** from the **Items** that you previously built.



| | Tag Name | Type | Description | Scan Time | I/O Dev | I/O Addr | Cur Value |
|---|-------------------|------|-------------|-----------|---------|---|-----------|
| 1 | GES_PORT_1_STATUS | AI | AG-GES Port | 1 | OPC | iSNMP.GES.GES.#OperStatus.01.No Access Path | ???? |
| 2 | HEARTBEAT | AI | AG- | 1 | OPC | Server1.GES.GES.HeartBeat.comStatus.GES.HeartBeat | ???? |
| 3 | PORT_1_STATUS | AI | AG- | 1 | OPC | Server1.GES.GES.#OperStatus.01.No Access Path | ???? |
| 4 | PORT_2_STATUS | AI | AG- | 1 | OPC | Server1.GES.GES.#OperStatus.02.No Access Path | ???? |
| 5 | PORT_3_STATUS | AI | | 1 | OPC | Server1.GES.GES.#OperStatus.03.No Access Path | ???? |
| 6 | PORT_3_STATUS | AI | | 1 | OPC | Server1.GES.GES.#OperStatus.03.No Access Path | ???? |
| 7 | PORT_4_STATUS | AI | AG- | 1 | OPC | Server1.GES.GES.#OperStatus.04.No Access Path | ???? |
| 8 | | | | | | | |
| 9 | | | | | | | |

- I **Save** this **Database** locally on your hard drive by selecting **Database>Save** or by using the **Save** icon.

Your **Tags** are now ready to use in **Proficy iFIX Workspace**.