Introduction

The Pro-face GP I/O Server is an I/O Server for Wonderware InTouch software, connecting ethernet enabled Pro-face GP, GLC, ST and AGP Series panels through Ethernet IP (UDP) responding to data read / write requests from an InTouch application.

For detailed information about the use of I/O Servers refer to the WonderWare InTouch documentation.

To use the Pro-face GP I/O Server InTouch 7.11 or later is required, hardware and software environment are dictated by those required by the InTouch software version.

Installation

Installing to run the GP I/O Server as an application

1) Make sure “Factory Suite I/O Server Common Components” are installed on your system before installing the GP I/O Server. This also applies if you plan to run the GP I/O Server on a different (remote) PC than the PC that is running the InTouch application.
2) During installation of the common components you have to enter a Windows user account, this user account must be the same as that used in InTouch and the same as the account under which the GP I/O Server is installed, using different user accounts will prevent the I/O Server from communicating to the Pro-face panel(s)
3) Install GP I/O Server by running the file “Setup.exe” in the “GP IO Server\Installer\EN\SetupEXE” folder.
4) If you have not already done so install the InTouch software, make sure to use the same user account that was used to install “Factory Suite I/O Server Common Components” and that was used to install the Pro-face GP I/O Server.

Running the GP I/O Server as a Windows Service

1) Follow the installation procedure as described above.
2) After completing the installation start the GP I/O Server as an application (a shortcut is placed in the Windows Start Menu and optionally on the Desktop)
3) Click “General Section Setting” and select “Run as Service”. The next time Windows is started the GP I/O Server is automatically run as a Windows Service.

Changing the GP I/O Server from Windows Service to Application

Important: We strongly recommend that you back up the system registry before making any changes. Incorrect changes to the registry could result in permanent data loss or corrupted files. Editing the Windows registry is done at the users own risk.

To make the GP I/O Server run as application after configuration as Windows Service follow these steps:

1) Open the Services section in Control Panel / Administrative Tools

2) Locate the GP I/O Server entry and click “Stop” to shutdown the service.
3) Exit the Services window
4) In “Start”, “Run” type “regedit” and click ok to run the Windows Registry editor.
5) Locate and delete the following registry keys:
   - \HKEY_LOCAL_MACHINE \SOFTWARE\Wonderware \GPIOSvr_IOServer
   - \HKEY_LOCAL_MACHINE \SYSTEM\ControlSet001\Services\GPIOSvr_IOServer
   - \HKEY_LOCAL_MACHINE \SYSTEM\ControlSet002\Services\GPIOSvr_IOServer
6) After closing the registry editor reboot you PC to have the changes take effect, after rebooting the GP I/O Server can be run as an application, it will no longer automatically start as a service.

Uninstalling the GP I/O Server

Important: If you are running the GP I/O Server as a Windows Service follow the steps described under “Changing the GP I/O Server from Windows Service to Application” before continuing

To completely uninstall the GP I/O Server follow these steps:

1) Open Control Panel and open the “Add or Remove Programs” link
2) Locate and select the entry called “GPIOSvr”
3) Click Change/Remove and follow the onscreen instructions.
4) Reboot the PC to have the changes take effect.

Firewall Rules

The GP I/O Server is configured by default to use UDP port 8000 to communicate with Pro-face panels. The configuration utility allows you to change the port that is used on the PC and Pro-face panels.

In either case make sure the firewall used in your system allows incoming and outgoing communication on the selected UDP port. (the GP I/O Server uses 1 port)

Starting the GP I/O Server

To start the GP I/O Server double click the GP I/O Server icon on the computer desktop or select GPIOSvr from the Windows Start Menu.

If the GP I/O Server is configured to run as a Windows Service it will automatically start when Windows is started.

Configuring the GP I/O Server using a CSV file

Follow these steps to configure the GP I/O Server if you have a previously saved configuration file:

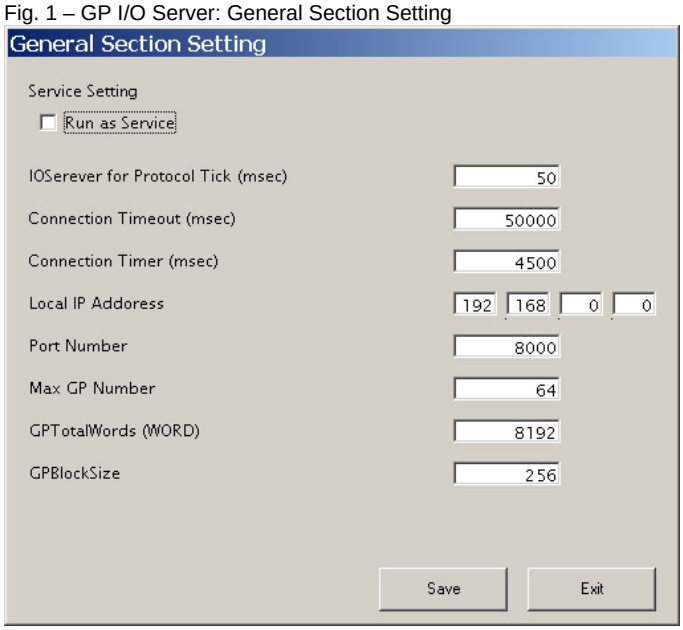
1) Ensure the GP I/O Server is running
2) In the “Setting” menu choose “Configure”
3) Select “Import” and browse to the folder in which the CSV configuration file was saved and click “Open” to load this configuration.
4) After the configuration file is imported successfully click “Reload” to apply the changes to your running GP I/O Server.

Configuring the GP I/O Server manually

Follow these steps to configure the GP I/O Server if this is the first time setup or if manual changes need to be made to the I/O Server setup:

1) Ensure the GP I/O Server is running
2) In the “Setting” menu choose “Configure”
3) Select “General Section Setting” to start configuration of the I/O Server PC

Fig. 1 – GP I/O Server: General Section Setting



Configuring the GP I/O Server manually (continued)

Service Setting:
(Default: Off)
See the Installation section of this manual for details.

I/O Server for Protocol Tick (msec)
(Default: 50)
This is the I/O Server internal Timer and should not be changed

Connection Timeout (msec)
(Default: 50000)
This is the I/O Server internal Connection Timeout and should not be changed

Connection Timer (msec)
(Default: 4500)
This is the I/O Server internal Connection Timer and should not be changed

Local IP Address
(Default: 192.168.0.0)
IP Address of the PC running the GP I/O Server

Port Number
(Default: 8000)
Port Number used on the PC running the I/O Server, this port should match the port used on the Pro-face panel, make sure to adjust the firewall settings to allow Incoming and Outgoing traffic (UDP) on the selected port. (also see Firewall Rules)

Max GP Number
(Default: 64)
Maximum number of connected Pro-face panels on the network (1-64)

GP Total Words (WORD)
(Default: 8192)
Maximum number of words to read from LS Memory (1-8192)

Important: For details on the content and restricted (system & special relay) areas of the Pro-face panel internal ("LS") memory refer to the Direct Access chapter of the Device/PLC Connection manual in GP-Pro PBIII or the Appendix of the Reference Manual in GP-Pro EX

GP Block Size
(Default: 256)
Number of words to be read from LS Memory in a single read block.
The Block Size must be between 1 and 466 and there can be no remainder if you divide the number entered in "GP Total Words" by that entered in "GP Block Size".

To have the new settings take effect follow these steps:

1) In the General Section Setting click "Save" and "Exit" to save the new configuration
2) In the GP I/O Server Utility click "Reload" to apply the new configuration

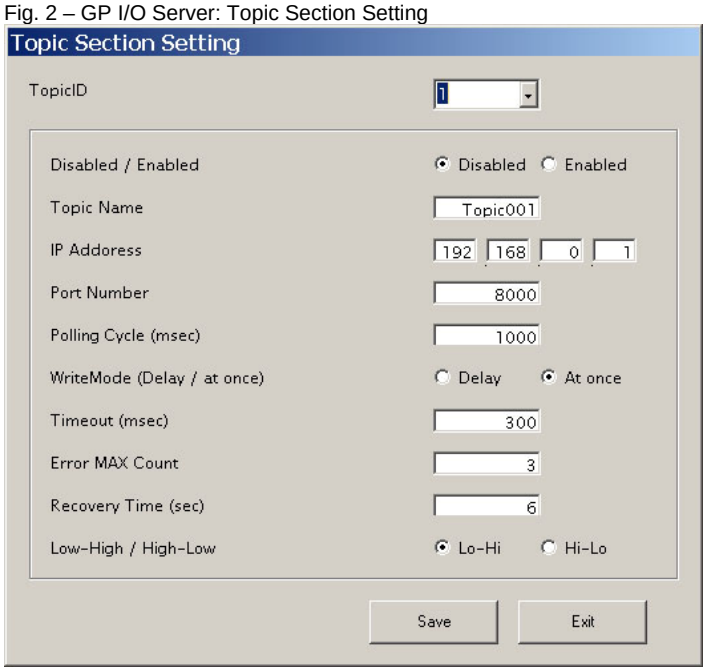
Configuring the GP I/O Server Topics for InTouch

For each Pro-face panel connected to the GP I/O Server an individual configuration entry or “Topic” has to be created.

Follow these steps to configure each Pro-face Panels for access by the GP I/O Server:

1) Ensure the GP I/O Server is running
2) In the “Setting” menu choose “Configure”
3) Select “Topic Section Setting” to start configuration of Topics

Fig. 2 – GP I/O Server: Topic Section Setting



Topic ID (1-128)
Use the Topic ID dropdown to select which topic (Pro-face Panel) the settings apply to.

Disabled / Enabled
(Default: Disabled)
Use the disabled setting to temporarily exclude a topic from data communication without loosing the configuration.

Topic Name
(Default: Topic001)
Enter a Topic name, this entry will be used in InTouch “Access Names” setup for communication

IP Address
(Default: 192.168.0.1)

Enter the IP Address of the Pro-face panel for the selected Topic ID.

For details on setting up the IP Address in the offline menu on a Pro-face panel refer to the Hardware manual for your panel. (Hardware manuals can be downloaded from: www.pro-face.com/otasuke)

Port Number

(Default: 8000)

Enter the port number of the Pro-face panel that this Topic refers to. For details on setting up the Port Number in the offline menu on a Pro-face panel refer to the Hardware manual for your panel. (Hardware manuals can be downloaded from: www.pro-face.com/otasuke)

Polling Cycle (msec)

(Default: 1000)

Set up the polling interval at which data is read from this Pro-face panel.

Write Mode (Delay / At Once)

(Default: At Once)

Delay:	Data written from InTouch will be stored locally (cached) until the next polling cycle. This lowers the response time but will give higher throughput speed. (Recommended for most applications)
At Once:	Data written from InTouch will be send to the Pro-face Panel immediately. This gives fast response times at lower throughput speed.

Timeout (msec)

(Default: 300)

Set up the timeout for this specific Pro-face panel communication

Error Max Count

(Default: 3)

After entered number of errors (timeouts) the I/O Server starts the recovery timer for this Topic allowing it to come back online.

Recovery Time (msec)

(Default: 6)

After the Max Error Count is exceeded the I/O Server will start the recovery timer allowing this topic to become available again.

Low-High / High-Low

(Default: Lo-Hi)

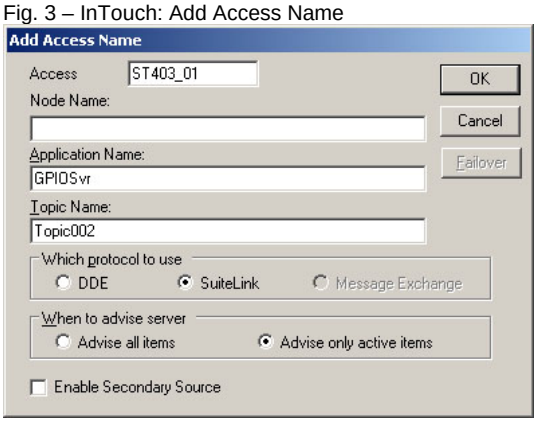
Determines how data is read from the LS Memory (high byte first or low byte first)

Configuring InTouch for use with the GP I/O Server

Follow these steps to setup InTouch to communicate with the GP I/O Server

1) Configure the InTouch WindowViewer. On the General settings tab of the WindowViewer Properties in the I/O Section set “Retry Initiates:” to 5 seconds.
2) Setup an Access Name entry for each connected Pro-face Panel:

Fig. 3 – InTouch: Add Access Name



Access
Enter a name that describes the Pro-face panel the Topic Name refers to

Node Name
If the InTouch application will run on a different PC than that on which the GP I/O Server is installed enter the network name of the PC on which the GP I/O Server is installed.

If the InTouch application and the GP I/O Server run on the same PC the Node Name can be left blank.

Application Name
Enter “GPIOSvr”

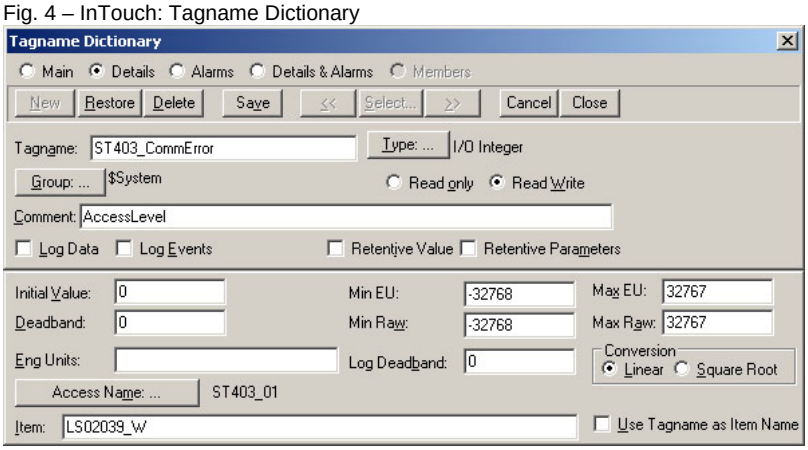
Topic Name
Enter the Topic name as configured in the “Topic Section Setting” in the GP I/O Server

Protocol
For details on the difference between DDE and SuiteLink protocols please refer to your InTouch documentation

Configuring InTouch for use with the GP I/O Server (continued)

3) Setup Tags in the InTouch "Tagname Dictionary"

Fig. 4 – InTouch: Tagname Dictionary



Tagname

Enter a descriptive Tagname to refer to be used in objects in InTouch

Type

Select the correct I/O type (for example "I/O Integer" for 16bit LS Memory Registers)

Access Name

Select the Access Name referring to the Pro-face Panel that this tag will interact with.

Item

Use the table below to determine the correct format of the "Item", the Item is the pointer to a specific address on the Pro-face panel selected in "Access Name"

Table 1 – GP I/O Server: Item Naming Convention

Type	Example	Notes	Data range
WORD	LS00008_W		0 to 65535
SHORT	LS00009_S		-32768 to 32767
DWORD	LS00010_D	Even address	0 to 2147483647
INT	LS00014_I	Even address	-2147483648 to 2147483647
message	LS00016_S_12	Add message length	ASCII string
Bit	LS00030_B_05	Add bit position	0/1
Status	Status	(fixed name)	0:normal, 1:2:error

Note that the register portion of the LS address ranges from LS0000 to LS8191 and that a leading 0 is required for the Item: LS1234 in GP-Pro is addressed as LS01234 in InTouch.

Status and Error Messages

Use the “Status” name (see table 1) to see the current link status of the selected topic

Use the WWLogger utility to view other status messages

Message	Type
Can't create Socket, WSAError=	Network error.
Can't bind Socket , WSAError=	Network error.
Can't set async mode to Socket , WSAError=	Network error.
There are no usable Winsock DLL.	Network error.
Winsock Version 2.0 required.	Network error.
Item name must start with LS. :_____	Item naming error.
Item name must contain at least LS + 5 digit + type. ex: LS00123_S :	Item naming error.
Item name contains not a digit character at 5 digit area. :	Item naming error.
Item name's format is not correct. _ between Address and Type can't be found. :	Item naming error.
Address must be greater than 0. :	Item naming error.
Address range over, max address =xxx. :	Item naming error.
Dword item's address must be even. :	Item naming error.
Integer item's address must be even. :	Item naming error.
Message or Bit Item must contain at least LS + 5 digit + _type + _SubInfo . example: LS00123_M_14 :	Item naming error.
Item name's format is not correct. _ between Type and SubInfo can't be found. :	Item naming error.
Message or Bit Item contains not a digit character at SubInfo area. :	Item naming error.
SubInfo message length must be greater than 0. :	Item naming error.
SubInfo message length must be smaller than 131(InTouch's limit). :	Item naming error.
Message can't exceed 256 words boundary. :	Item naming error.
SubInfo Bit Position must be greater than or equal to 0. :	Item naming error.
Bit Position can't exceed 16. :	Item naming error.
Type character does not match B,W,S,D,I,M. :	Item naming error.
Status item can't be written. Topic name:	Read only item.
Error on recvfrom(), code :	Network error.
Error on WinSock, code:	Network error.
Startup…	Information.
Exit …	Information.
Topic Name wrong, or no entry in GPIOSvr.ini. :	Topic naming or configuration error.