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### Introduction

The ABCIP Driver is one of Wonderware's Compact Panel based products that provides connectivity to compatible devices such as Allen-Bradley ControlLogix, FlexLogix, CompactLogix, and MicroLogix PLCs.

This *Tech Note* explains a basic step-by-step procedure on setting up the Compact Panel ABCIP Driver to communicate to a MicroLogix 1100 PLC through an ethernet connection. For more configuration options refer to the InTouch® Compact Edition ABCIP Configuration Guide.

**Note:** This *Tech Note* assumes you have created a Compact Panel InTouch application. You should also be familiar with the basic setup, configuration and publishing of a Compact Panel InTouch application. See Compact Edition Tech Notes **516** and **517** for information regarding InTouch Compact Panel Edition.

## Create an Access Name

- 1. Click Special/Access Names from the WindowMaker menu.
- 2. Click Add.
- 3. Type an Access Name. This name is used in the ABCIP driver configuration.
- 4. Type an **Application Name**. For purposes of Compact Panel IO Driver configuration, this name is arbitrary, and does not point to an actual application.
- 5. Type a **Topic Name**. For purposes of Compact Panel IO Driver configuration, this name is arbitrary and does not point to an actual topic.

Modify Acces	s Name	
Access	MicroPLC	ОК
Node Name	c	
		Cancel
<u>Application</u>	Name:	Failover
ThisCanBe	Anything	[
<u>T</u> opic Name	e:	
JustAPlace	Holder	
Which pro	otocol to use	
🔘 DDE	SuiteLink	Message Exchange
When to a	advise server	
🔘 Advi	se all items 🛛 💿 A	Advise only active items
🔲 Enable S	Secondary Source	

FIGURE 1: ACCESS NAME DEFINITION

6. Click OK then Close.

## **ABCIP** Configuration

- 1. Click Special/InTouch Compact Edition application/IO Driver Configuration from the WindowMaker menu.
- 2. Select **ABCIP** from the list of available drivers.
- 3. Choose the Access Name defined above in the Access Name Mapping section. In the following example, MicroPLC is selected.
- 4. Select ABCIP from the Mapping I/O Driver drop-down list.
- 5. For a direct ethernet connection to a MicroLogix PLC, type the PLC Family (either **4** or **1100** for a MicroLogix PLC), then the IP Address in the **Station Address** dialog box using the following format:

<PLC Family>: <IP Address>

This example shows the Station Address for a MicroLogix 1100 PLC at IP address 10.2.68.134.

Note: See the InTouch Compact Edition ABCIP Configuration Guide for a list of valid PLC families and configurations.

Driver Configuration	
Driver Specific Configuration	Serial Encansulation
ABCIP	Direct TCP/IP UDP/IP
ABTCP FANUC	COM: Stop Bits:
MITSU	9600 Vine Vine
MODBU	Data Bits:
OMETH SIETH	8
SRTP	
	Other Details
	There are no details.
	Advanced
Access Name Mapping	Mapping Details
OPC	Mapping I/O Driver:
	Station Address:
4	* 1100:10.2.68.134
	OK Cancel

FIGURE 2: DRIVER CONFIGURATION

# Create an IO Tag

- 1. Click Special/Tagname Dictionary from the WindowMaker menu.
- 2. Click New.
- 3. Click Type then select I/O Integer

- 4. Type a Tagname.
- 5. Click Access Name, then select the Access Name that has been assigned to the IO Driver above.

In this example, **MicroPLC** is selected.

6. Proivde an item name that exists in the MicroLogix PLC. The item name in this example is an Integer tag named n7:0.

Tagname Dictionary						
🔿 Main 💿 Details 💿 Alarms 💿 Details & Alarms 💿 Members						
New Restore Delete Save << Select >> Cancel Close						
Tagname: testItem						
<u>G</u> roup: \$System						
Comment: AccessLevel						
Log Data Log Events Retentive Value Retentive Parameters						
Initial Value: 0	Min EU:	0	Max EU:	65535		
Deadband: 0	Min Raw:	0	Max Raw:	65535		
Eng Units:	Log Deadband:	0	Conversi	on r 💿 Square Root		
Access Name: MicroPLC						
Item: n7:0			🔲 Use Ta	agname as Item Name		

FIGURE 3: TAGNAME CONFIGURATION

7. Click Save then Close.

Note: For a list of supported MicroLogix item names, see the InTouch® Compact Edition ABCIP Configuration Guide.

## Create an InTouch Window

- 1. Create a new window in WindowMaker.
- 2. Place a pound sign ( # ) on the window and double-click the pound sign.
- 3. Select an Analog Value Display.
- 4. Type the Tagname defined above in the **Expression** dialog box.



### FIGURE 4: VALUE DISPLAY

- 5. Select **OK** then save the window.
- 6. Close WindowMaker.

Publish the Application

- 1. Click **Special/InTouch Compact Edition application/Validate/Publish** from the WindowMaker menu. The application should validate without errors.
- 2. Click Publish. When Publish is complete click Download.
- 3. Connect to the Compact Panel, then send the InTouch application to the Compact Panel. When this is complete, run the application.

## Troubleshooting

You can use the following ABCIP built-in items to help troubleshoot issues between the ABCIP IO Driver and the PLC:

- 1. **\$Sys\$ReadStatus** This tag contains an error code for a failed read operation from the PLC.
- 2. **\$Sys\$WriteStatus** This tag contains an error code for a failed write operation from the PLC.

These items can be configured as **IO Integer** tags in your InTouch application. The tags can then be displayed in a window and will contain an error code.

The following table lists error codes descriptions and possible causes:

Code	Description	Possible Cause
0	ОК	Communication without problems
3	Invalid command	Invalid data type for item name
6	Invalid IRQ	Internal error
7	Invalid block size	Internal error when generating the protocol block sizes
8	Invalid write command	The PLC does not recognize the tag that the application is trying to write to
9	Out of memory	There is not enough memory for the I/O Server
10	Fail to allocate memory	HMI ran out of memory
11	Invalid read command	The PLC did not recognize the tag that the application is trying to read from
12	Rx buffer empty	Internal error
13	Rx buffer full	Internal error
15	Time out waiting to start a message	Response was not received from the device
16	Time out waiting for a message to finish	Started receiving a response but the communication was suspended
17	Time out between rx char	Response was not received from the device
18	Time out between tx char	Started receiving a response but communication was suspended
19	No carrier detected	Started receiving a response but communication was suspended
22	Invalid data type	Invalid data type for item name
23	Error in send_RR_data function	The driver is not getting the logical connection to the PLC
32	Time out waiting for a tx message to finish	Started receiving a response but the communication was suspended
33	Invalid driver configuration file	Internal error

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34	Invalid or unsupported item name	Item name specified is either invalid or unsupported
35	Driver API not initialized	Internal error
36	Invalid or unsupported item name	Item name specified is either invalid or unsupported
37	Invalid or unsupported item name	Item name specified is either invalid or unsupported
38	Invalid station	Station specified for this driver is invalid
39	Invalid block size	Internal error when generating the protocol block sizes
1004	Time out	IP Address may be wrong or the SLOT configuration in STATION field may be incorrect
1005	Time out	IP Address may be wrong or the SLOT configuration in STATION field may be incorrect
-15	Time out start message	Disconnected cables. PLC is turned off, in stop mode, or in error mode. Wrong station number.
-17	Time out between rx char	PLC in stop mode or in error mode. Wrong station number.

For more troubleshooting information refer to the InTouch® Compact Edition ABCIP Configuration Guide.

#### G. Alldredge

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