

# **Appendix C**

## **Using the H4 Series EBC with Think & Do**

---

In This Appendix

— Configuring the DL405 I/O Base with H4 Series EBC

## Configuring the DL405 I/O Base with H4 Series EBCs

Configuring the base is a necessary step in the setup of the H4 Series EBC module. The EBC must know the type and location of each input and output module installed in the base. Once identified, the configuration resides in non-volatile memory on-board the EBC until a change is made.

The H4 Series EBC is partially self-configuring. On powerup, the EBC reads the base to determine the specifications of installed modules. The information available allows the EBC to determine:

- whether the I/O modules are inputs or outputs
- whether the installed modules are standard I/O modules or a High Speed Counter module (other intelligent modules are not supported at this time)

If you **are not** using analog inputs or outputs the H4 Series EBC configures itself. For the following module types, the DL405 I/O system provides the necessary configuration information to the EBC, and the EBC automatically configures the base:

- digital inputs
- digital outputs
- High Speed Counter module

If you **are** using analog inputs or outputs you **must** configure the base manually using a software utility imbedded in Think & Do:

You are ready to configure your base if you have done **all** of the following:

- installed your H4 Series EBC module
- connected power wiring to the EBC terminal strip
- installed I/O modules and expansion bases as necessary for your application
- connected your PC and EBCs to a dedicated Ethernet network
- installed Think & Do (Version 4.4, or later) on your PC



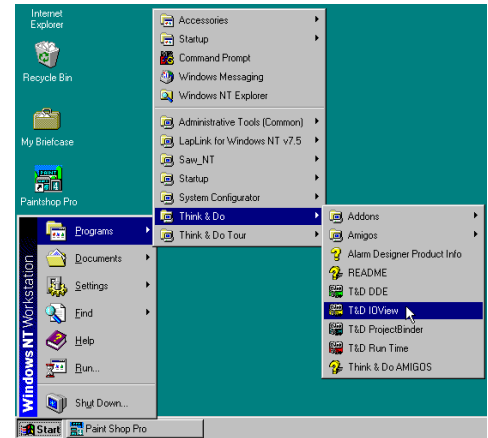
---

**NOTE:** The pages that follow explain how to use the Think & Do software utility for configuring the base. For additional information about using the Think & Do software product, please refer to the **Think & Do Software Learning Guide**.

---

**Starting I/O View**

I/O View is one of the tools provided by Think & Do software. It is directly accessible from the Start menu after installation. Select **Start**, then **Programs**, then **Think & Do**, then **T&D I/O View**, as shown to the right.



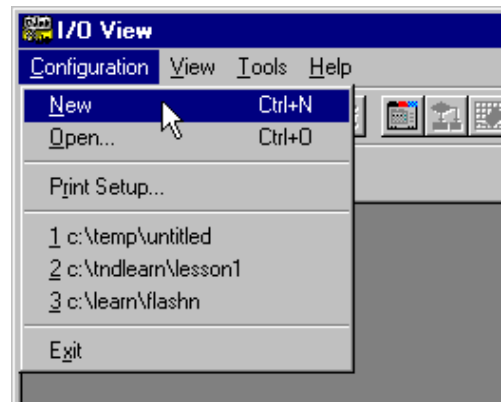
The I/O View window will appear as shown, with a blank I/O configuration screen. If you save this screen without renaming it, the default name will be "IOView1".

We use a new I/O View window to configure the I/O for an example system. The H4 Series EBC is connected to the PC which is running Think & Do software.



**Starting a New Screen in I/O View**

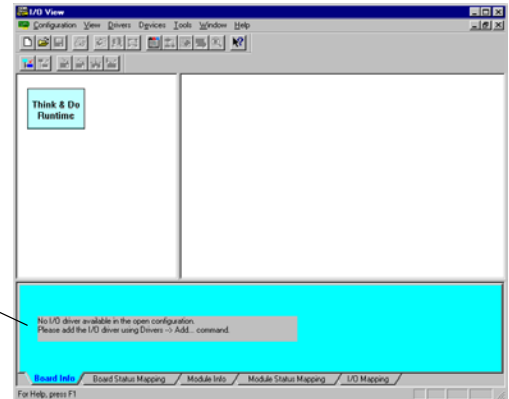
To start a new configuration, select the **Configuration** menu, then **New** as shown.



The next screen is divided into three regions separated by window splitter bars. You can re-size the regions by doing a click-and-drag on a splitter bar.

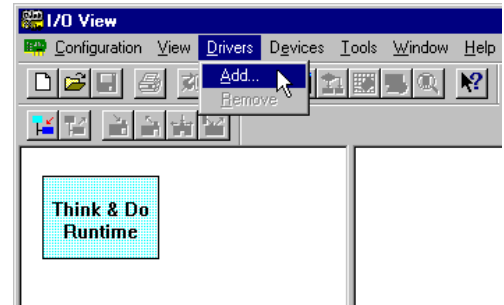
Each project maintains its own record of its I/O configuration.

The first time you open the I/O View window for a new project, it will prompt you to choose an I/O driver, as shown below.

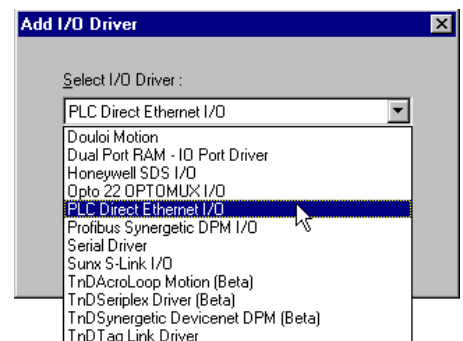


### Selecting a Driver

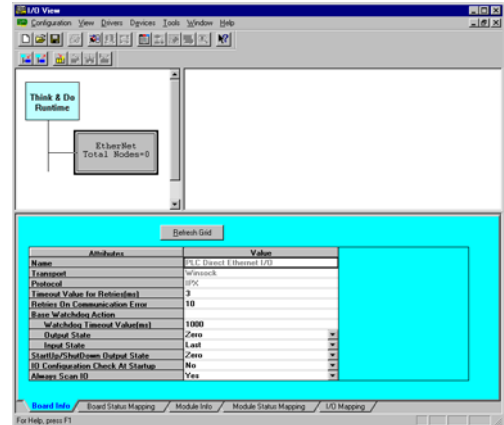
Use the **Drivers** menu and select **Add**, as shown, to access a list of I/O drivers.



Select the **PLC Direct Ethernet I/O** driver. Click OK.

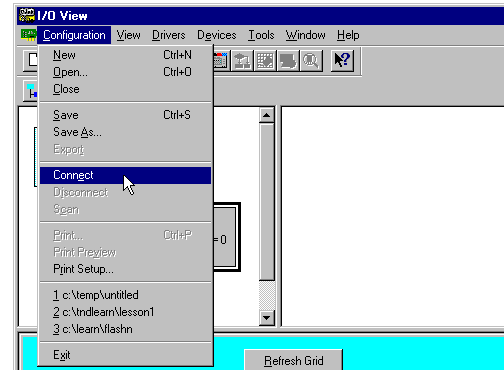


I/O View adds the driver, and attempts to activate the network adapter card. I/O view displays an image of the card as shown to the right.



**H4-EBC Base Configuration Screen**

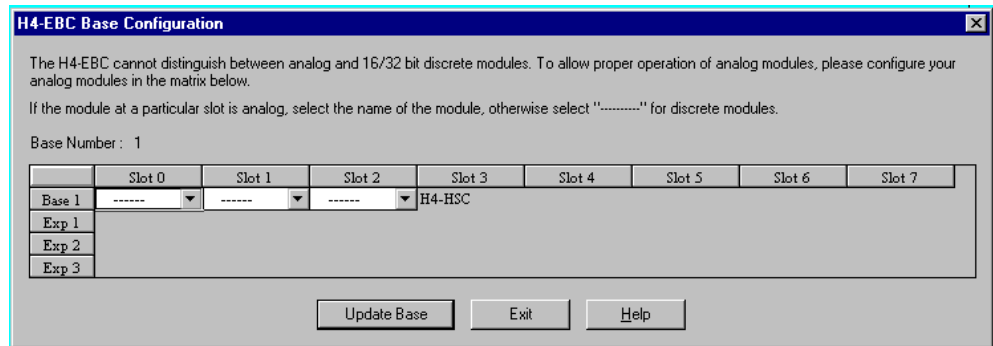
Select the **Configuration** pull-down menu from the I/O View menu bar as shown to the right. Then select **Connect** from the menu. This instructs Think & Do to make the connection to the I/O bases currently on the network.



The module must have a non-zero Module ID set on the DIP switch or an error message will be returned at this point. See page 2-4 “Setting the DIP Switch” for more information.

Think & Do makes a connection to the H4-EBC and automatically displays the **H4-EBC(-F) Base Configuration** screen. The screen will overlay the I/O View screen. Discrete and analog modules are both displayed *initially* as a dashed horizontal line “-----” in the block representing the module’s slot location.

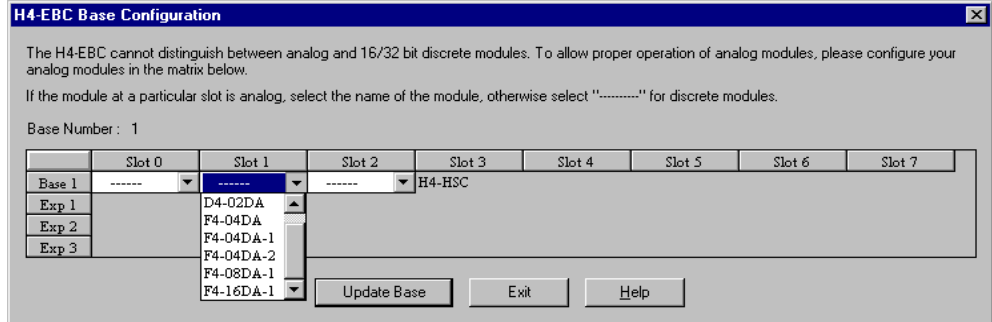
If you have digital inputs and outputs but no analog inputs or outputs, you do not need to do anything additional to configure the base. You may click on Exit or Update Base. Either will return you to the I/O View screen.



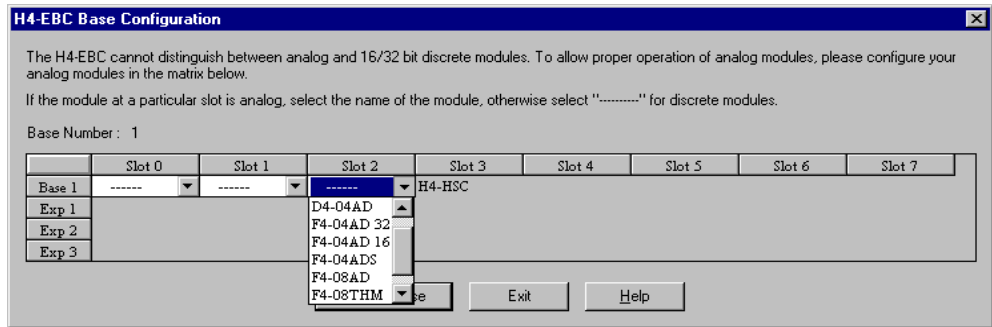
**Note: High Speed Counter module may be indicated as D4-HSC or H4-HSC. They are the same.**

**Identifying Analog Modules**

You must identify each analog input or output module by selecting the applicable part number on the Base Configuration screen. The part numbers of all available analog modules appear on the pull-down menu for the appropriate slot (the part number is printed on the face of each module). Click on the arrow beside the slot location to see the menu. The H4 Series EBC automatically distinguishes between input modules and output modules. In the Think & Do implementation of the Base Configuration utility, the pull-down menu for analog input modules lists only *analog input* modules. It does not list analog output modules.



The pull-down menu for analog output modules lists only *analog output* modules.



After selecting the appropriate part number for your analog input or output modules, click on Update. This will save the entries to the H4 Series EBC's non-volatile memory.

After clicking on Update, a graphical representation of the EBC, the base, and I/O modules appears. You have successfully configured the I/O base. The I/O View screen shows an eight-slot base even if you are using a smaller base. Expansion bases are also shown if connected.

