Configuring ECOMs Using NetEdit3

In This Chapter...

NOTE: *Please reference the BRX MPU system user manual (BX-USER-M) Appendix E for an updated guide to using the NetEdit utility. This manual can be downloaded at **www.automationdirect.com**. For the latest version and information on NetEdit, please visit **www.hosteng.com**, under the Utilities and FAQs sections.*

NetEdit3 Software

NetEdit3 is a software utility which can be used to set network identifiers (Module ID or IP Address), perform diagnostic and troubleshooting tasks and upgrade the firmware in the ECOM module if necessary. The H0/H2/H4 -ECOM100 requires NetEdit 3.5 or later.

Installing NetEdit3

You can install NetEdit3 on Windows98/ME/2000/XPt or Windows NT4t. NetEdit3 is available online at www.automationdirect.com. After loading the software the following window will appear.

Click on Install NetEdit3. A series of windows will step you through the installation process.
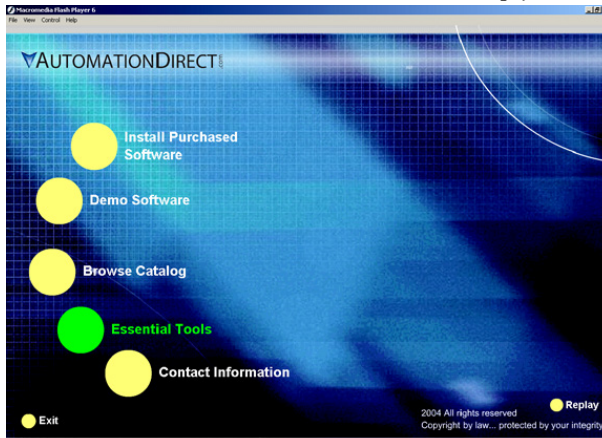
Click on the Essential Tools button. The following window will be displayed.


Fill in the necessary information as the installation wizard prompts through the install. In the Setup Type window, select Typical setup. This setup type is recommended for most users. The installation process places NetEdit3 in the C:\HAPTools directory (default).

Launching NetEdit3

There are three methods to launch NetEdit3. The three methods are:

- using the Windows Start menu Programs>AutomationDirect Tools> NetEdit3 as shown below

- launching DirectSoft (if installed), from the programming window, select PLC>Tools>NetEdit3

- launching DirectSoft (if installed), then select Utilities>NetEdit3
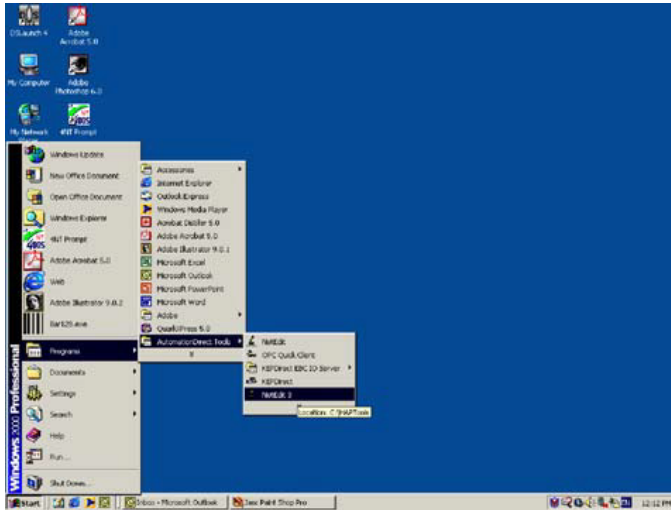

The NetEdit3 Screen

Starting NetEdit3 brings up the screen below. All NetEdit3 functions are accessed from this screen.
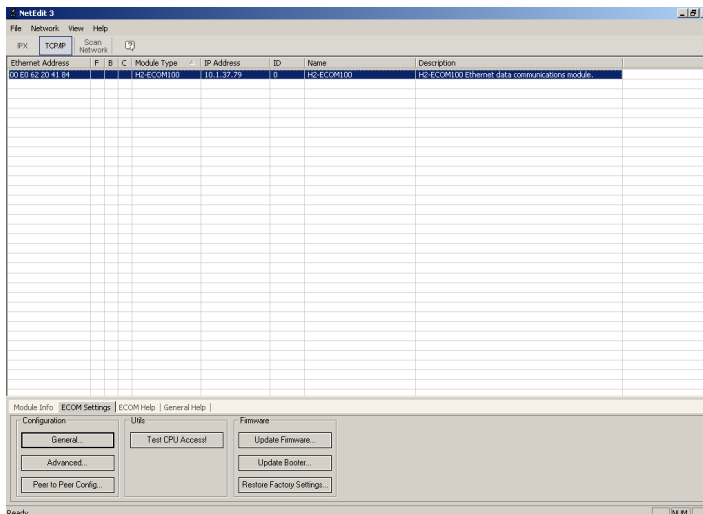
Adding Network Protocol Support to the NetEdit3 PC

You may have already set up your PC with selected networking protocols for Ethernet communications. If not, you will need to select the protocols now for communication with the Ethernet modules. We strongly recommend that you include the IPX protocol. For Windows 2000, go from My Computer on your Windows desktop to Control Panel. Double click on Network and Dial- up Connections, then double click on the desired Network Device to see the installed Protocols. If IPX is not listed among the protocols already loaded, add it now by clicking on the Install button. For Windows XP, go from Start>Settings>Control Panel. The steps are the same as Windows 2000 from this point.

Add the TCP/IP protocol if it is necessary for your application. The TCP/IP selection will give you support for the UDP/IP protocol. Also, add the IPX protocol if it is not already active.
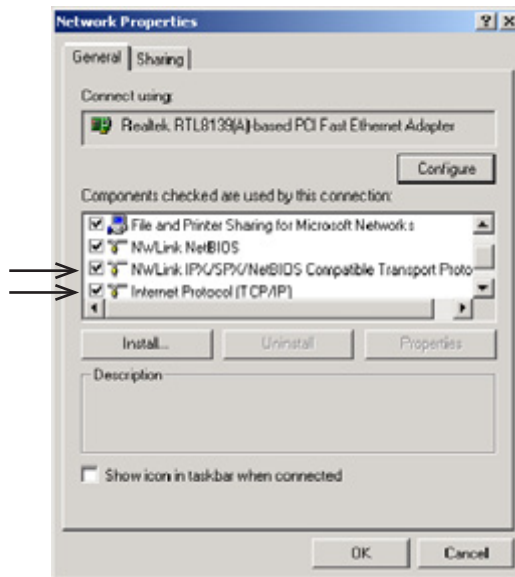
NOTE: We strongly recommend you load IPX protocol on your PC for the connection from your PC to the ethernet modules. Use UDP/IP in your application, if required, but also add IPX to your list of active protocols. Having IPX loaded on your PC gives you a backup for troubleshooting communication problems.

Using NetEdit3

This section steps through the features and uses of NetEdit3. We will describe the individual segments of the NetEdit3 screen and the function of each.

NOTE: *Your PC-based Control software may be capable of configuring the EBC module. If so, please refer to the appropriate documentation for that software product to determine the best method to configure the EBC. Depending on which software you are using, it may not be necessary to use NetEdit3.*

3

Ethernet Communication Protocol

In the upper left corner of the NetEdit3 screen, you will find buttons labeled IPX and TCP/IP. The ECOM module understands these protocols. Both protocols are permanently resident in the firmware of the module.

When you click on one of these buttons, you are selecting the protocol you want your PC to use to communicate with the ECOM module. You are not telling the module which protocol to use, because it is using both protocols all the time. IPX is a Novell standard in widespread use, and UDP/IP is a popular protocol supported by the TCP/IP suite of protocols in your PC.

The figure to the right shows the Protocol selection buttons in the upper left corner of the NetEdit3 screen. The choice you make here tells your PC which protocol to send to the ECOM to link NetEdit3 to the module.

Some PC-based control software products may support only one of these protocols. Read the documentation for your software to be sure the protocol you select is supported.

3
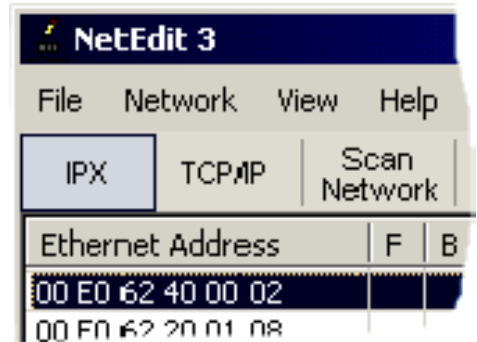
Ethernet Address

The upper left section of the NetEdit3 screen displays the Ethernet Address of the modules currently on the network.

If modules are added or removed from the network, click on the Scan Network button to update the list. Notice that the MAC Address is the factory-assigned address that is on the permanent label on the module.

Select a specific module here by clicking on the MAC Address or by using the arrow keys. The selected module is highlighted.
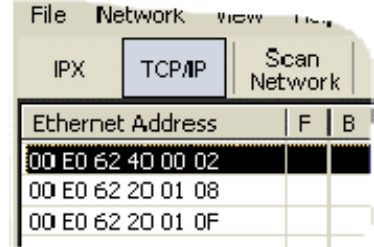
NOTE: *The Module window may list the MAC Addresses of devices not covered by this manual.*
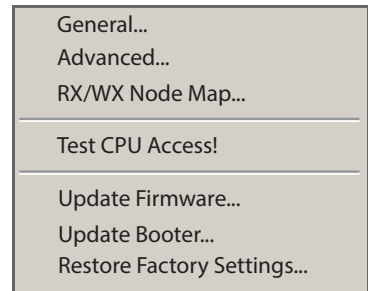
Module Type, IP Address and ID

Module Type	IP Address ▽	ID	Name	Description
H2-ECOM100	10.1.37.79	0	D2-260 PLC System	Machine Control

The upper mid section of the NetEdit3 screen displays the Module Type, IP Address, module ID, Name and Description of the modules currently on the network.

A new ECOM will have an IP Address of 0.0.0.0, a Module ID of 0 (zero), and no Module Name or Description. To assign or change a module an IP address, ID, name or description refer to the EBC Settings>General Information description later in this section.

Right clicking on an ECOM module listed on the NetEdit3 screen will display the window to the right. This is an alternative to using the Module Info or ECOM settings tabs (shown below) to access the module's configuration settings. The settings are discussed later in this section.

General...
Advanced...
RX/WX Node Map...

Test CPU Access!

Update Firmware...
Update Booter...
Restore Factory Settings...

Module Info> General Information

When the Module Info tab is selected, the General Info box lists the selected module's Firmware Revision, Booter Revision, DIP Switch Setting, PWB Revision, PLD Revision and CPU Revision.
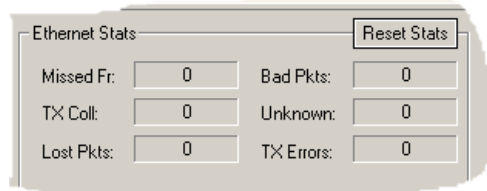
This box is in the lower left section of the NetEdit3 screen.
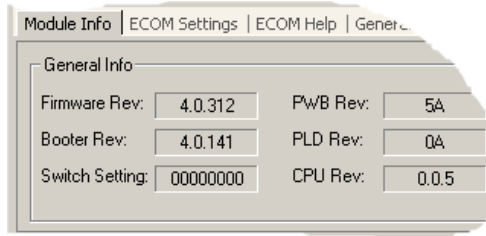
Module Info> Ethernet Stats

When the Module Info tab is selected, the Ethernet Stats box displays statistics related to the selected module's communication errors. Click on the Reset Stats button to reset all categories to 0 (zero).
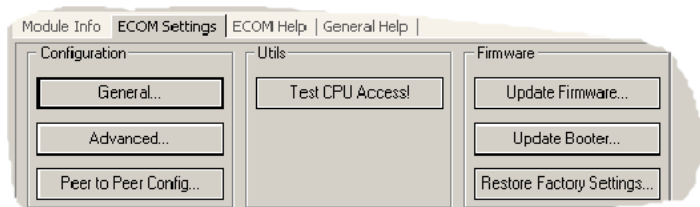
This box is in the lower middle section of the NetEdit3 screen.
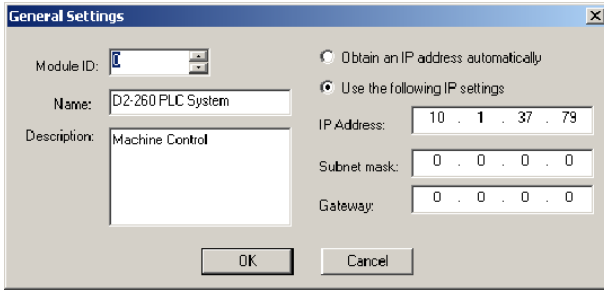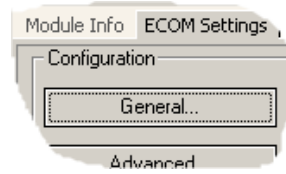

ECOM Settings

When the ECOM Settings tab is selected, the selected module's Configuration, Utilities and Firmware tools can be accessed.

This box is in the lower middle section of the NetEdit3 screen

3

ECOM Settings> Configuration> General

Clicking the General button in the ECOM Settings>Configuration box brings up the General Settings window below.

The General Settings box allows you to assign a **Module ID**. Module IDs must be unique for each ECOM, but they do not have to be in sequence. The module's DIP switches must be set to zero to allow NetEdit3 to set a Module ID. Do not use address zero for communications.

The **Name** field and Description field are optional.

To set an **IP Address**, highlight the number in each of the four boxes, and overwrite the number. Use the twelve-digit number assigned to the ECOM module by your network administrator. If you change the IP Address, do not use the number "255" in any field. Doing so will cause communication problems. The OK button sends all the entries to the module's flash memory.

The following table summarizes NetEdit3's Network Identifiers and their uses:

	How to Set	Format	Communication	Restrictions/Notes
Module ID	DIP Switch	Number 1–63	PLC to PLC or PC to PLC	Disables Module ID in NetEdit3
	NetEdit3	Number 1–90		DIP switch must be set to "0"
	NetEdit3	Number 1–999,999,999	PC to PLC only	>90 (Not for PLC to PLC)
Name	NetEdit3	32 Alphanumeric Characters		HMI software may have restrictions
IP Address	NetEdit3	4 Three-digit Numbers, xxx.xxx.xxx.xxx (See page 2-4)	PC to PLC; (PLC to PLC - Client/Server using TCP/IP or Modbus TCP protocol)	See you network administrator for IP address; (refer to pages 3-10 to 3-11, chapters 5 & 6)
Ethernet (MAC) Address	Set at Factory	12 Hex digits	PC to PLC only	Factory assigned, for IPX

ECOM Settings> Configuration> Advanced

Clicking the Advanced button in the ECOM Settings>Configuration box brings up the ECOM Advanced Settings window below.
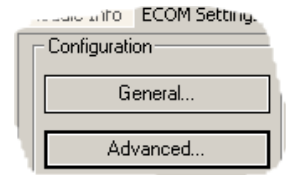
RX/WX - Settings box in this window provides a place to make changes that affect PLC-to-PLC communications.

ACK Timeout - sets the time limit for receiving the acknowledge (ACK) response to an RX or WX instruction. The ECOM sends a message across the LAN. The acknowledge response comes back directly from the ECOM module receiving the transmission. This timeout is the maximum for transmission and acknowledgement from ECOM to ECOM across the LAN. It is not dependent on the PLC scan time.

Resp. Timeout - sets the maximum time for the receiving PLC CPU to respond to the ECOM that initiated the communication. The instruction has travelled from the initiating PLC CPU to the initiating ECOM, across the Ethernet LAN to the receiving ECOM, then to the receiving PLC CPU, and back again to the initiating ECOM. Multiple PLC scans may be required to execute an RX/WX instruction so the Resp. Timeout should allow for multiple scans. Also, communication errors may result in retries which require more time. Your response timeout setting must accommodate retries as well.

The **WX/RX Retries** field shows the number of times the ECOM will retry transmissions to the network.

The **K- Sequence Retries** field shows the number of times the backplane transmission between ECOM and CPU is to be retried.

The OK button loads the communication settings in the ECOM module's flash memory.

3
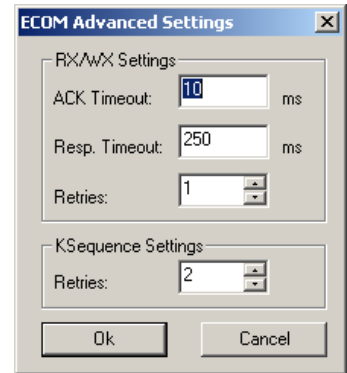
ECOM Settings> Configuration> Peer to Peer

This function allows you to configure the client H0/H2/H4 -ECOM(100) module to use an IP protocol packet to perform the RX/WX instruction, as opposed to a broadcast packet to locate the slave ECOM or MODBUS TCP server.

Chosing Peer to Peer: The following are reasons or conditions of when to configure the H0/H2/H4 -ECOM(100) for peer to peer communications with a TCP/IP server device:

• To eliminate network broadcast traffic when the ECOM(100) is a client executing RX/WX network instructions.

• When an ECOM(100) is an "ECOM protocol client" and needs to access other server ECOMs through a router.

• When an ECOM100 needs to serve as MODBUS TCP client

Clicking the Peer to Peer Config button in the ECOM Settings>Configuration box brings up the Peer to Peer Configuration window shown below. Any previous peer to peer configurations will be listed in the table.


The RX and WX ladder logic instructions used by the PLC allow you specify a Node (Device) Number as the slave identifer in the range of 1- 87. The Peer to Peer Configuration information is stored in the ECOM(100) module's flash memory. This basically associates a Device Number (that is used by the RX/WX instructions) with a server's IP address.
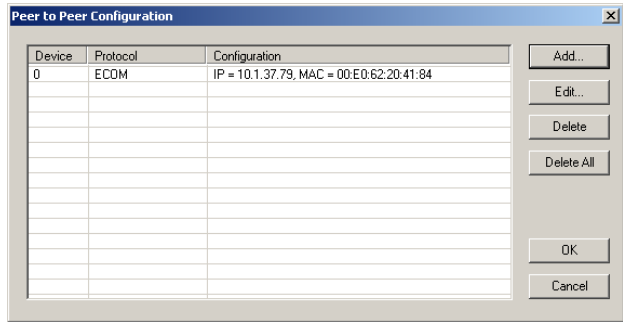

Clicking on the Add button in the Peer to Peer Configuration window will display the Add Device Address window shown to the right. Enter the necessary server's network information (i.e. Device Number, server's IP address and protocol). You can manually enter the information or you can click on the Find Hx-ECOM button to display all local ECOMs currently on the network. MODBUS TCP device's network information will have to be entered manually. Refer to page 6- 6 for information on Port and Unit ID Numbers. Clicking the OK button adds the Device Configuration to the main peer to peer configuration screen. Be certain not to duplicate Device Numbers.
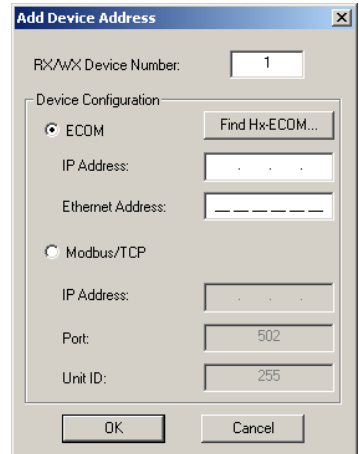
Clicking on the Find Hx-ECOM button in the Add Device Address window will display the Select ECOM window shown to the right. Highlight the server ECOM that you intend to communicate with peer to peer via the client ECOM(100) module. Then click the OK button. This will add the ECOM's Device Configuration information to the previous Add Device Address window.
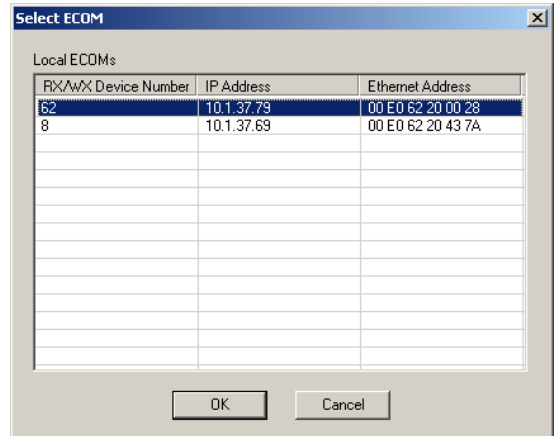
Once the module's network information is in the Add Device Address window (previous page), click the OK button to add the information to the main Peer to Peer Configuration window. Repeat the steps to add other ECOMs to the configuration. Clicking the OK button on the main screen window writes the module(s) network information to the ECOM(100)'s flash memory.
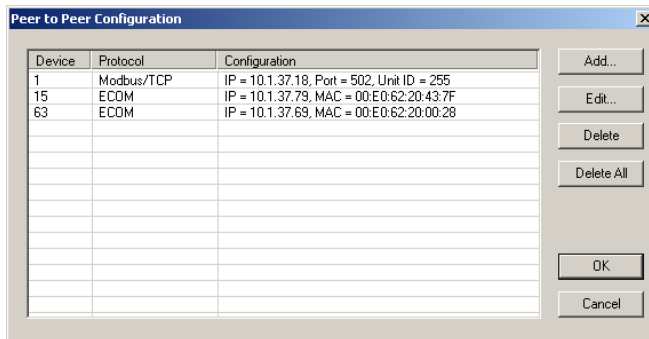
ECOM Settings> Utils>Test CPU Access

Clicking the Test CPU Access button in the ECOM Settings>Utilities box brings up the window shown below.

ECOM Help | General Help |

Utils

Test CPU Access!

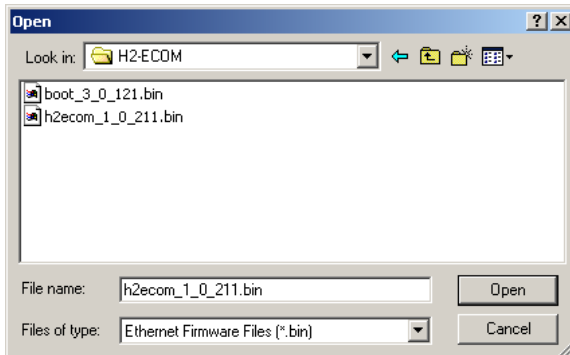**Success!**

Scanned for CPU and found a DL-260

OK
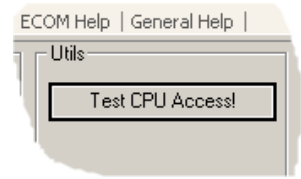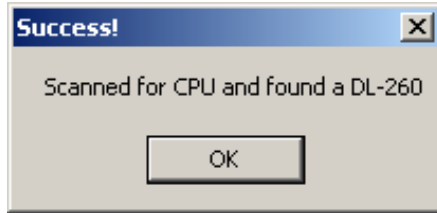
The ECOM has two distinct "sides", the network side, which contains the network configuration settings, and the backplane side, which the ECOM uses to communicate with the PLC CPU. It is possible that only one side could be operating correctly, while the other side is not. The Test CPU Access function will test the connection from your PC to the ECOM module through the network side, across the backplane to the PLC CPU and back to your PC.

ECOM Settings> Firmware

The functions in the Firmware box are used to update the selected module's Firmware and Booter versions. The Restore Factory Settings buttons resets the selected module's IP address, ID, Name and Description to factory defaults. Refer the sections on the next page to determine if updates are necessary.

Firmware

Update Firmware...

Update Booter...

Restore Factory Settings...
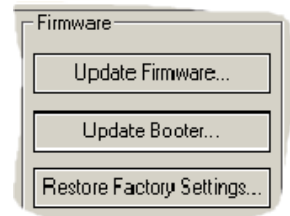
Clicking on the either of the Update buttons opens the appropriate ECOM folder within the Images folder, which is created during the install of NetEdit3. The Images folder is located in the same folder as NetEdit3.exe. Each module folder contains the module's firmware and boot loader files. The next section discusses keeping the firmware files up to date.

Open

Look in: H2-ECOM

boot_3_0_121.bin
h2ecom_1_0_211.bin

File name: h2ecom_1_0_211.bin   Open

Files of type: Ethernet Firmware Files (*.bin)   Cancel

FileMenu> Live Update

The Live Update will retrieve the latest firmware and boot loader files from the Host Engineering web site and place them in the NetEdit3 Images folder that was created during the install of NetEdit3. The feature requires that you have a functional Internet connection (dial- up or broadband). If the Images folder does not exist on your PC, it will be created as part of the retrieval process.

When you click the Go! button on the Live Update window, NetEdit3 will compare the version information of the files on the Host Engineering web site against the files you have locally on your PC, and it will download any newer files. Once this process is complete, NetEdit3 will rescan the devices on your network and refresh the "F" and "B" columns next to the listed devices.
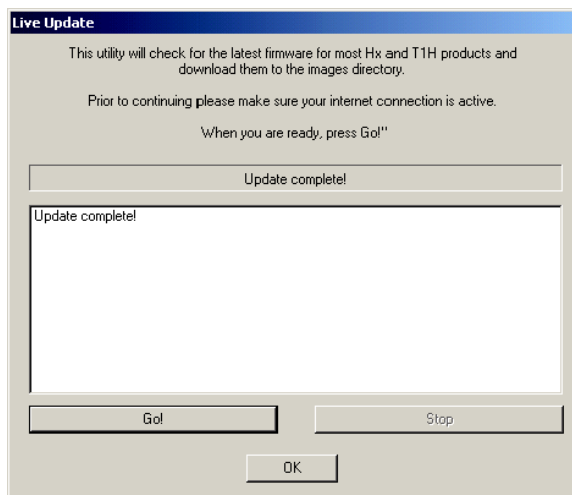
F / B / C Columns

The F, B, and C columns are provided to signify potential issues with devices on the network.

The "F" column will display an asterisk beside any device whose firmware is older than its firmware file in your Images folder.

The "B" column will display an asterisk beside any device whose boot loader is older than its boot loader file in your Images folder.

The "C" column will display an asterisk beside any device that has a configuration conflict with another device on the network. Duplicate module IDs (that are non- zero) and duplicate IP Addresses (that are not 255.255.255.255) will report as conflicts.