

Honeywell

VISTA-ICM
Internet Connection Module

Installation and Setup Guide

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Introduction

Congratulations on your purchase of a Honeywell Internet Connection Module (VISTA-ICM). The VISTA-ICM is the heart of a state of the art control system that uses Internet Protocol (IP) and standard Ethernet hardware to integrate control of consumer electronic equipment with computer networking.

This guide explains the setup and installation process for a Vista VISTA-ICM, but the general process applies to any VISTA-ICM, and any network device based on In2 Networks Connect and Control technology.

This guide assumes that the installer is familiar with IP networking concepts. See the *In2 Networking Primer* for a review of IP networking concepts and terminology.

There are three steps required to setup a home control network (assuming nothing is already installed).

1. Set up the network.
2. Install the VISTA-ICMs.
3. Configure the VISTA-ICMs.

NOTE: A hardware device connected to an Ethernet network is called a **node**. Node is a general term for a VISTA-ICM, and sometimes a VISTA-ICM will be referred to as a node.

NOTE: The only way to access the VISTA-ICM from outside of your home network is by the use of a secure VPN software, or equivalent; you cannot gain access by just typing in the "Honeywell" URL.

Network Setup and Configuration

Setting up the Network Hardware

Network Setup Requirements

Before you begin connecting VISTA-ICMs to the network, you need at least the following:

- PC or other device capable of browsing the setup web pages

CAUTION: Only Internet Explorer, revision 5.0 or 6.0, is supported. Use of other browsers will give unpredictable results such as incorrect placement of objects or wrong colors.

- Router, or wireless router (when using a wireless PDA, wireless tablet or wireless notebook/laptop)
- VISTA-ICMs and devices to be controlled by the VISTA-ICMs
- Ethernet hub or switch (if you have more than four network devices).

The following illustration shows a network setup with a Honeywell Security system, a Honeywell thermostat, an IP camera and a computer.

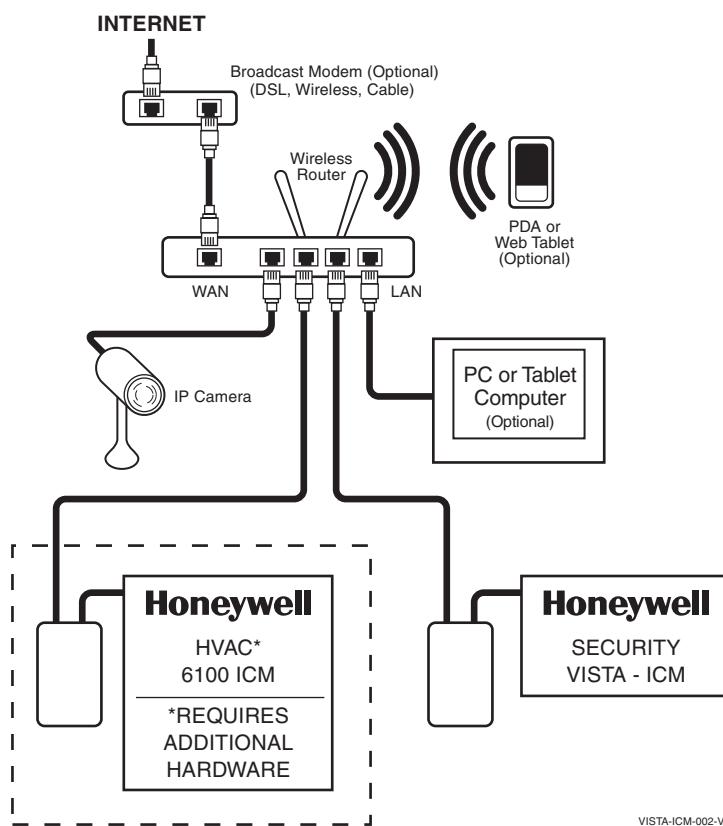


Figure 1 - Basic Network

Installing a Router or Wireless Access Point

A router is the easiest and least expensive way to setup a home network. If the home has a network or an Internet connection, it probably already has a router.

NOTE: If a router is already installed in the home and you are connecting the VISTA-ICM to the home network, skip this procedure and continue on to connecting a computer. The router must be installed and configured according to the installation instructions supplied by the router manufacturer.

Installing an Ethernet Hub or Switch

Connect an Ethernet hub or switch when there are more network devices than ports on the router. Connect the uplink port on the hub or switch to one of the Ethernet ports on the router.

The following general restrictions exist for all Ethernet hubs and switches:

- Each Ethernet device must be home-run from the device to the hub.
- Ethernet cables must be at least Category 5 cable (CAT5). CAT5e is preferred since a single CAT5e cable can support gigabit Ethernet.
- Ethernet does not support daisy chaining, however, it is possible to add another hub or switch in a remote location. No more than four hubs can be between any two Ethernet devices on a Local Area Network.

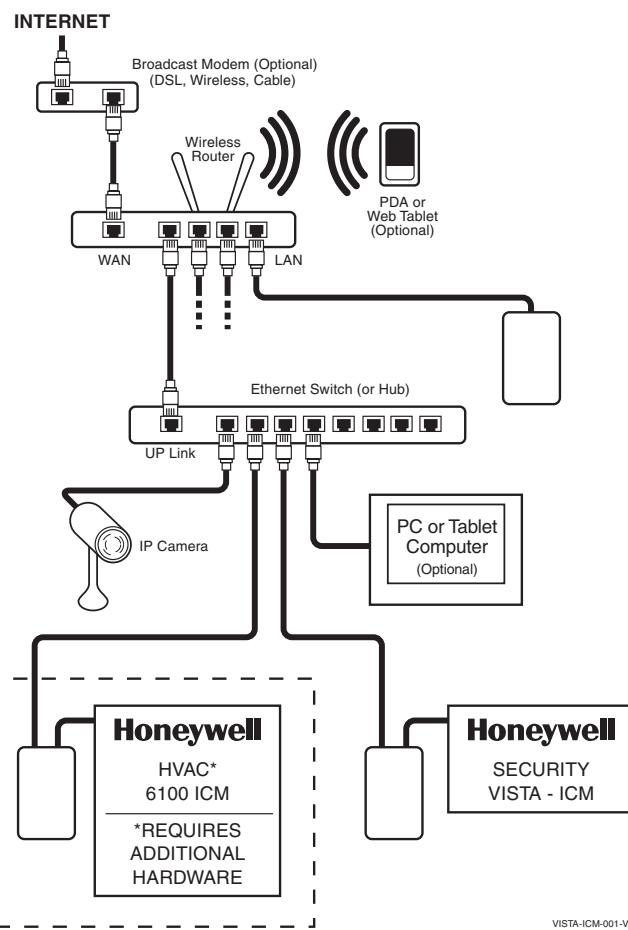


Figure 2 - Adding a switch for more Ethernet ports

Connecting a Computer

Verify the network installation by connecting a computer to the network. Plug the computer to one of the Ethernet ports on the router, or a hub or switch that is connected to the router. Verify that the computer can obtain an IP address and access the router.

Refer to the networking instructions provided by the computer manufacturer to connect the computer to the network. Each operating system will have a different sequence of steps to configure the network. The following general tasks must be performed regardless of the computer or operating system vendor:

1. Connect the Ethernet cable to the Ethernet jack on the computer. If the computer does not have an Ethernet jack, you will need to install a Network Interface Card (NIC) or an external USB network adapter. The link LED will light when the computer is linked to a hub with a good Ethernet cable.
2. Verify the network connection of the computer by visiting a web site on the Internet. Type <http://www.honeywell.com> in the address bar of the web browser to make sure the computer network settings are valid. If the home does not have an Internet connection, you can still setup the VISTA-ICMs, but you may need to verify the computer settings manually.

Installing the VISTA-ICM

Installing VISTA-ICM Hardware

NOTE: Momentary depression of the VISTA-ICM reset button soft-resets the VISTA-ICM; a 5-second hold sets factory defaults, including static IP address if used.

To connect a VISTA-ICM:

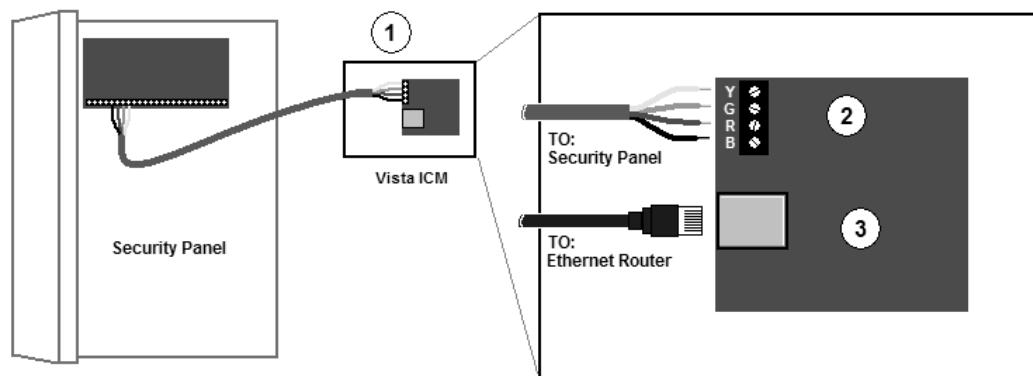


Figure 3 - VISTA-ICM Connections

1. Place the VISTA-ICM in a suitable clean, dry, ventilated indoor location, near the equipment to be controlled. The VISTA-ICM is not designed to be installed in an attic, crawl space, or an outdoor location.
2. Wire the VISTA-ICM to the Vista security panel using the keypad wiring guidelines provided in the security panel instructions. The Vista VISTA-ICM is powered by the Vista security panel, and requires 200mA from the Vista power supply.

NOTE: Supported security panels include any Vista control panel that supports addressable keypads using ECP. Connect the Ethernet port on the VISTA-ICM to the network hub or switch using a standard CAT5 cable.

NOTE: The VISTA-ICM does not support global features and must be assigned to a particular partition.

Configuring the VISTA-ICM

Connecting to the VISTA-ICM setup web pages

Once the network hardware is in place, you can initiate communication with the VISTA-ICM hardware. Use a PC or a tablet to connect to the VISTA-ICM web pages. To connect to the VISTA-ICM, take the following actions:

1. Make sure the Vista VISTA-ICM is powered on by checking to see that the Power LED is illuminated. Give the VISTA-ICM at least 60 seconds to boot up and obtain an IP address from the router.
2. Open the web browser on the computer, and in the Address bar enter:
http://honeywell/setup
3. This will open the VISTA-ICM setup start page. Configure the VISTA-ICM according to the instructions in the next section.

VISTA-ICM LEDs

The VISTA-ICM has three LEDs as follows:

- STATUS (located nearest the ECP connector) – Blinks when the device has activity.
- ETHERNET LINK (located in the middle) – Flickers when there is internet activity.
- POWER (located on the outside edge of the PCB) – Lit when power is applied to the VISTA-ICM.

VISTA-ICM Setup and Configuration

Basic VISTA-ICM Setup

VISTA-ICM setup is divided into two procedures:

- Select Devices
- Configure Devices

These procedures are accessed through the VISTA-ICM setup pages. The Navigation bar on the left of the page allows direct access to any step in the process. Keep in mind that changing the device setup will affect other settings and may require you to make changes to programming or groups.

CAUTION: Only Internet Explorer, revision 5.0 or higher is supported. Use of other browsers will give unpredictable results such as incorrect placement of objects or wrong colors.

The wizard steps through all the procedures in order. Start the wizard by clicking the Start Wizard button on the setup start page. The Setup Wizard page is displayed (figure 4).

CAUTION: Select devices before you perform any other setup task. When you select a new device, it will be necessary to complete the configuration process again.

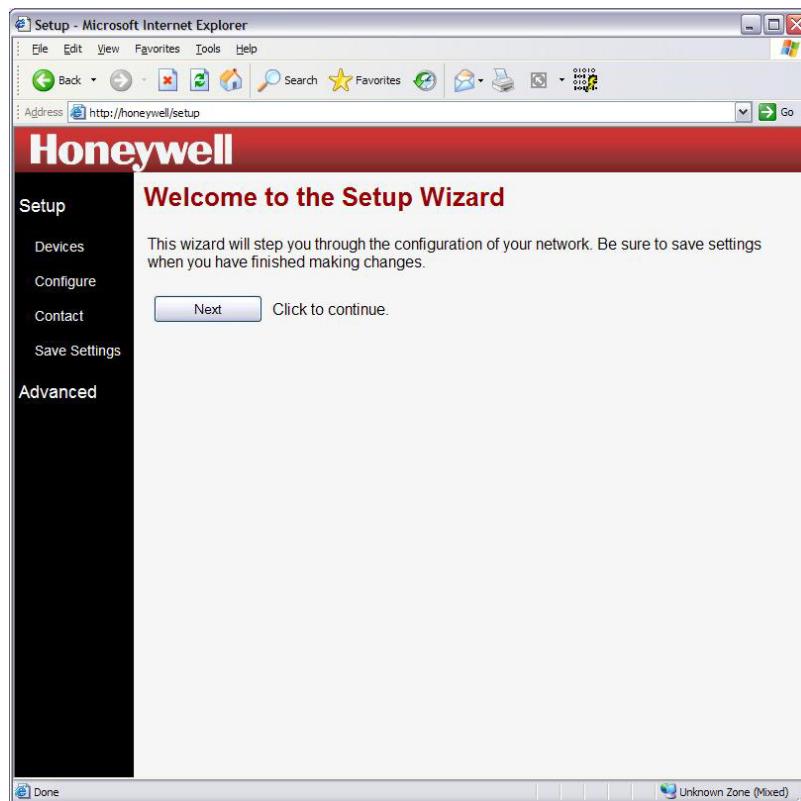


Figure 4 – Setup Wizard

NOTE: After the VISTA-ICM Setup is complete there is a link to exit setup and go directly to the load control pages. To load the control pages click the link "Exit Setup and Load Control Pages".

Select Devices

The Device Setup page allows you to configure what specific equipment is controlled by each VISTA-ICM in the network. Select the device controlled by each VISTA-ICM before configuring anything else in the system. The device selection process is performed using the following steps:

Click on Devices to bring up the Device Setup Node List page as shown in figure 5. This page contains a list of all the devices in the system. The checkbox on the left side of the page will contain a green checkmark for each device that has already been set up. Click on the name of the first device in the list that has not been configured.

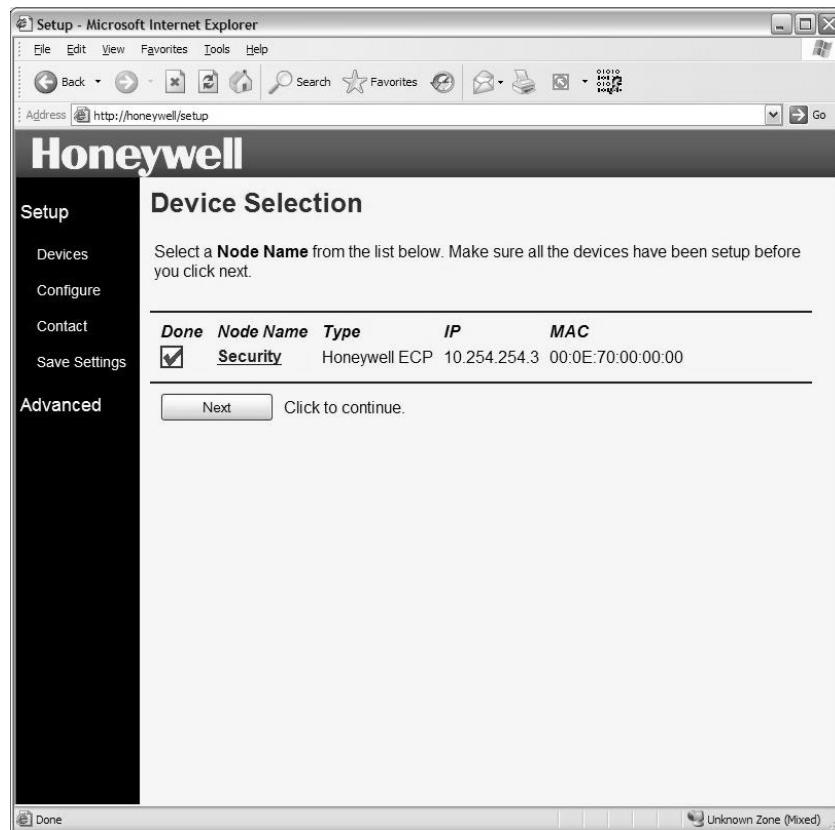


Figure 5 - Device Setup Node List

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Figure 6 shows a list of ports on the VISTA-ICM. For each port in the list, perform the following three steps:

1. In the column titled **Device** select the Name from the drop-down list that matches the make and model of the device attached to that port. In some cases the VISTA-ICM will auto-detect the connected device if it is powered on and connected. If the device has already been detected, the information in the list will already reflect the correct device.

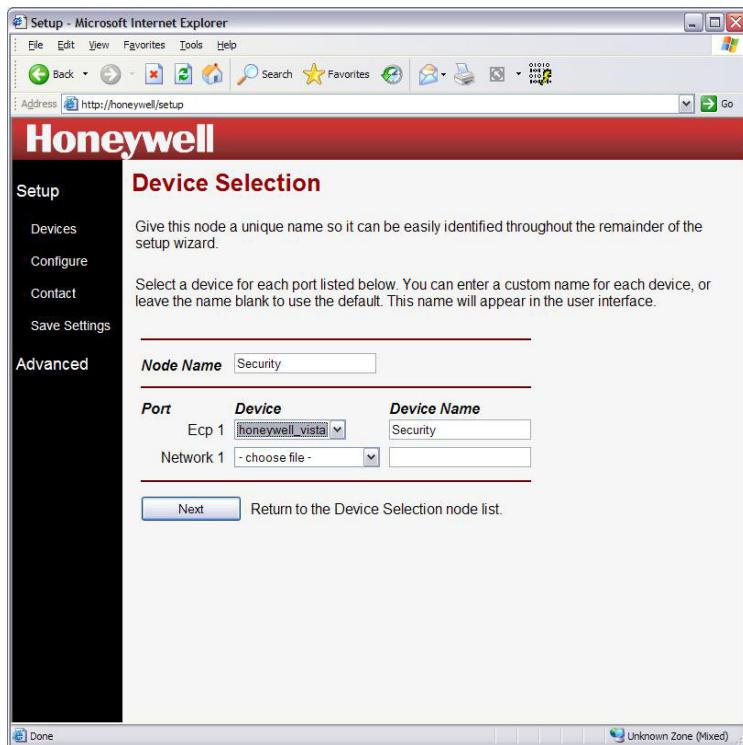


Figure 6 - Device Setup - Port Assignment

2. In the **Device Name** column, enter the name you will use to identify the device. If you leave the name blank, a default name will be used. It is best to use a descriptive name that includes the room name if you plan to have more than one device of the same type.
3. Click the **Next** button to submit the changes and return to the device selection page. This will reset any prior configuration information for this VISTA-ICM, and may require the device to be configured again.

When all the devices in the list have been assigned, click the **Next** button to proceed to device configuration.

Configure Devices

The Configuration Setup page allows you to access custom configuration options specific to the device or system controlled by the VISTA-ICM. Follow the configuration help screens for each device to change the configuration. Once configuration is complete, the changes must be saved to prevent data loss.

The configuration setup pages include help information specific to the tasks they perform.

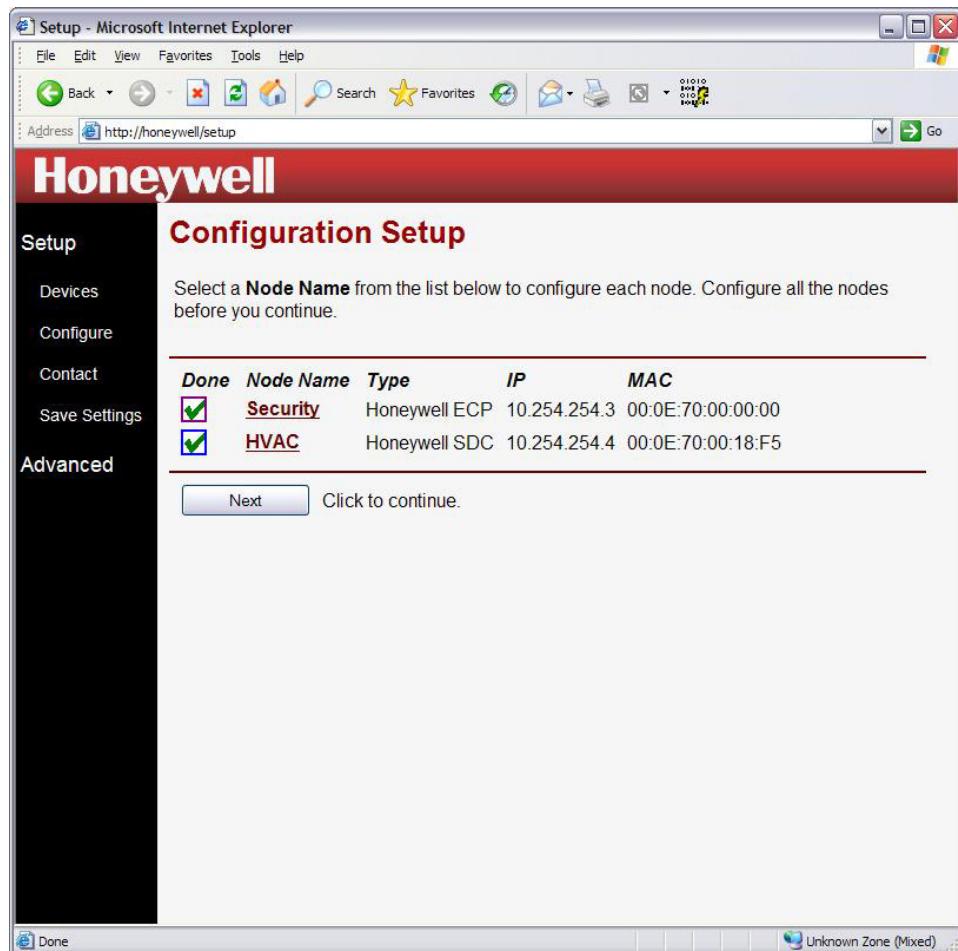


Figure 7 - Device Specific Configuration Page

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This example shows the configuration options for the Vista security interface. Enter text for the keypad function buttons, and select a device address that does not conflict with other keypads on the ECP bus. Click the **Next** button to complete the configuration process and move on to the next setup task.

NOTE: Only device addresses 16 through 23 may be used.

NOTE: Failure to press the **Done** button prior to performing **Save Settings** will cause the changes to be lost.

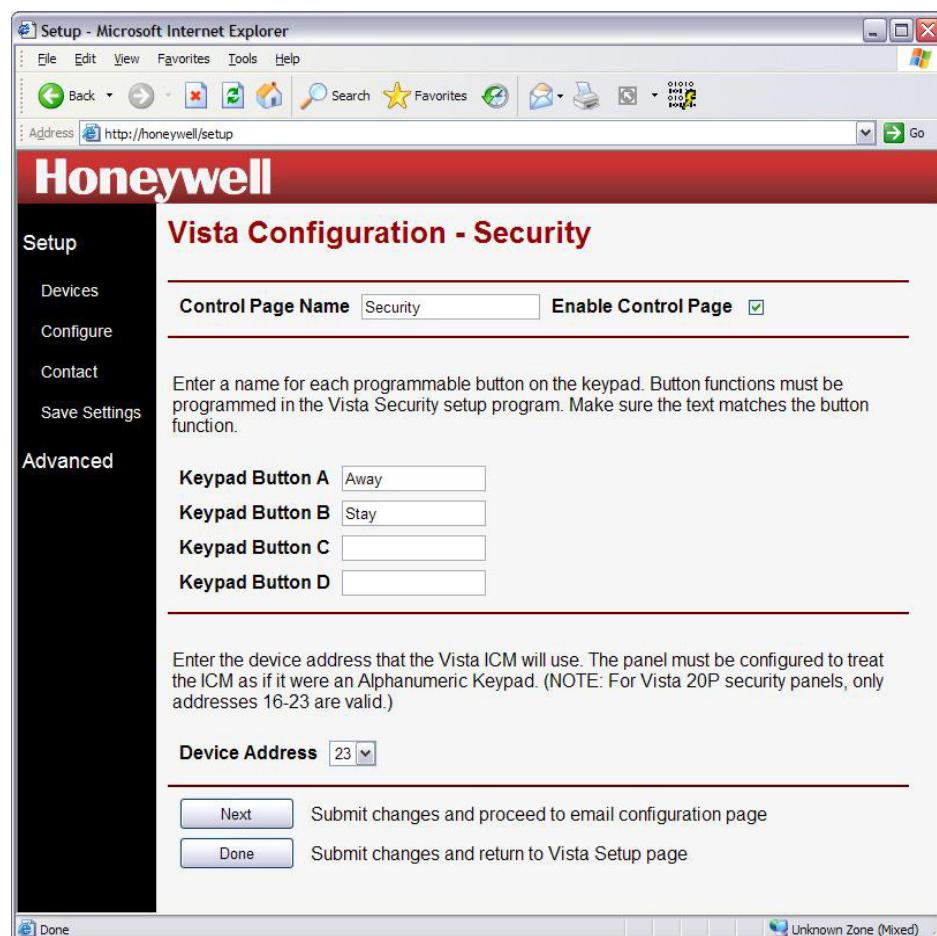


Figure 8 - Vista Configuration - Security Page

NOTE: The keypad address specified must be enabled in the Vista Security Panel.

This example shows the Vista Email Configuration – Security options for the Vista security interface. Select the Send email on event occurrences for which you wish to have email notification.

CAUTION: Email alerts are meant just as a convenience, not for primary notification of alarms.

Enter the Email address for which the alerts are to be sent. Click the **Next** button to complete the configuration process and move on to the next setup task.

NOTE: Failure to press the **Done** button prior to performing **Save Settings** will cause the changes to be lost.



Figure 9 - Vista Email Configuration - Security Page

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This example shows the Zone Configuration – Security options for the Vista security interface. Customize the Zone names to trigger actions on other devices in the network such as turning on lights when a door opens. Trigger events are enabled for each Zone that is assigned a custom name.

NOTE: Failure to press the **Done** button prior to performing **Save Settings** will cause the changes to be lost.

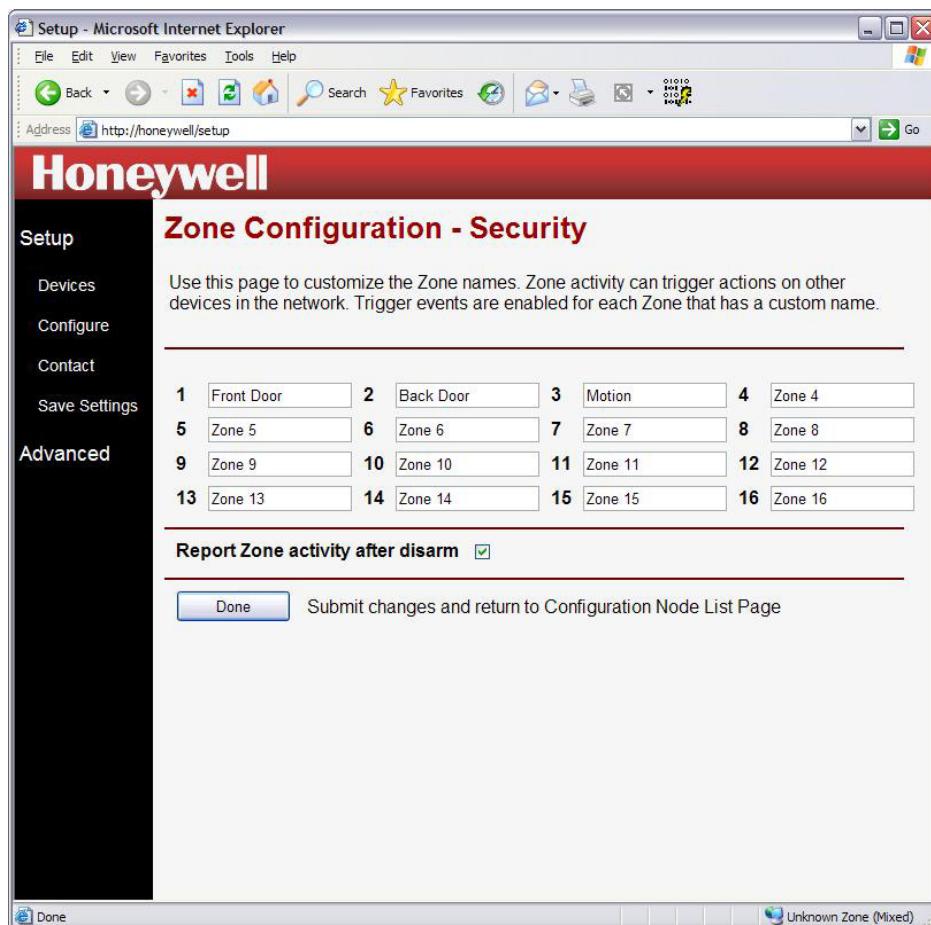


Figure 10 – Zone Configuration - Security Page

Contact Information

The Contact Information page allows you to record and save contact information for the dealer, installer or support organization for this system. Simply type in the appropriate data for each line of information you want to store.

The screenshot shows a Microsoft Internet Explorer window titled "Setup - Microsoft Internet Explorer". The address bar displays "http://honeywell/setup". The main content area has a red header bar with the word "Honeywell" in white. Below the header, the title "Contact Information" is displayed in red. A descriptive text states: "Enter the contact information for the dealer, installer or support organization for this system. This information can be viewed by the client after the system is installed." On the left side, there is a vertical navigation menu with the following options: "Setup", "Devices", "Configure", "Contact", "Save Settings", and "Advanced". The "Contact" option is currently selected. The right side of the page contains a form with the following fields:

- Name: Joe Installer
- Company: My Company
- Address Line 1 (empty)
- Address Line 2 (empty)
- City (empty)
- State (empty)
- Zip (empty)
- Country (empty)
- Phone (empty)
- Fax (empty)
- Email (empty)
- Notes (empty)
- Dealer Web Page (empty)

At the bottom of the form, there is a "Next" button and a link "Click to continue." The status bar at the bottom of the browser window shows "Unknown Zone (Mixed)".

Figure 11 – Contact Information Page

Save Settings

Once the setup is complete, you must save the changes to make sure everything works as configured after the VISTA-ICMs are restarted. The save process stores the settings in permanent memory.

Click the **Save** button to save your changes. This will cause all ICMs on the network to save changes, and will cause the system to be unresponsive for 10 to 15 seconds.

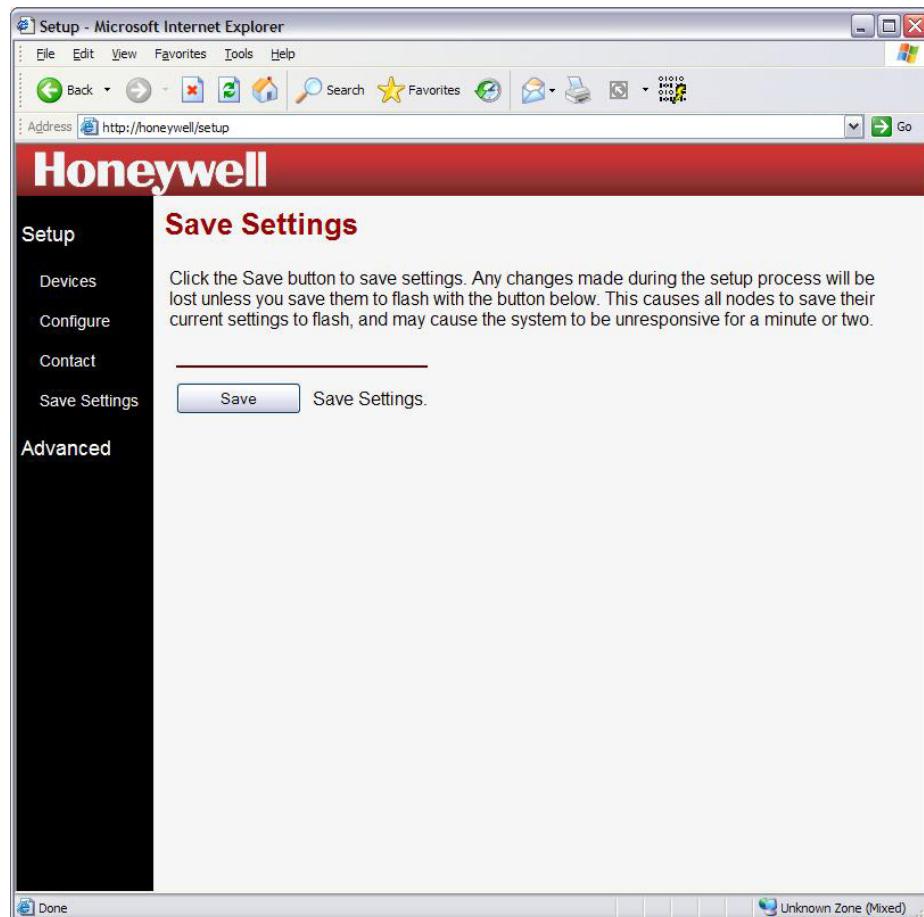


Figure 12 - Save Settings

CAUTION: If you do not save the setup, the changes you made will be lost when the ICMs lose power.

NOTE: After the ICM Setup is complete there is a link to exit setup and go directly to the control pages. To load the control pages click the link "Exit Setup and Load Control Pages".

Advanced Setup

Advanced Setup contains the following utilities:

- **Diagnostics** - Shows detailed information about the nodes, including MAC address, version, and configuration.
- **File System** - Allows you to load new files on to the node, and download files from the node.
- **Network** - Change network related settings - set a static IP address, enable proxy server or configure network time.
- **Upgrade** - Enables you to upgrade the node firmware to unlock new features and capabilities.
- **What's New** - Links to the Internet for the latest information, software applications, and news.

These utilities are accessed through the Advanced setup pages. The Navigation bar on the left of the page allows direct access to any utility.

CAUTION: The advanced setup pages contain information and utilities that affect system operation. Use care when changing advanced settings.

Diagnostics

The Diagnostics page shows the complete list of all devices that have been discovered on the network, including devices that are currently offline. The main diagnostic page lists a table of information about all the VISTA-ICMs on the network.

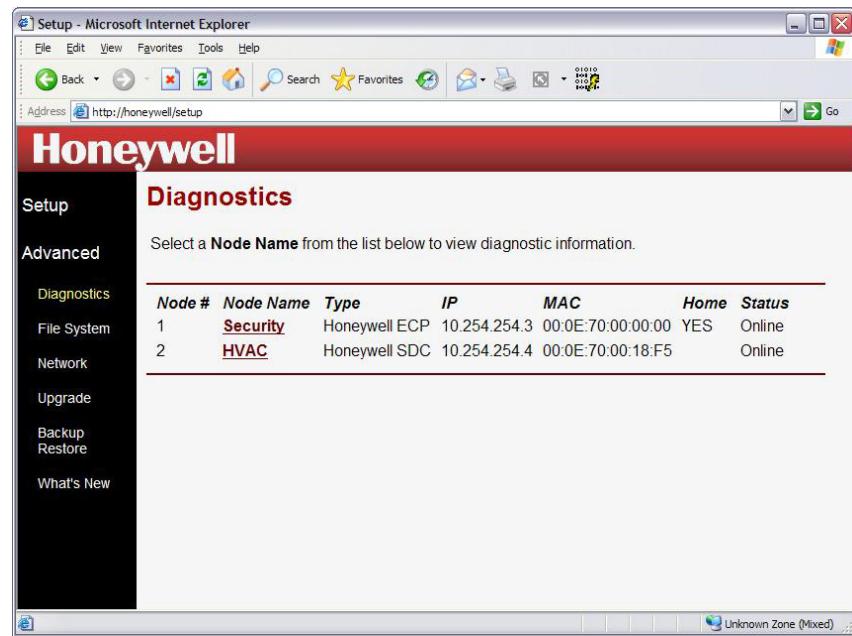


Figure 13 - Diagnostics Node List

The fields on the diagnostic node list page include:

- **Node #** - The node number or VISTA-ICM number, based on the order the VISTA-ICMs were installed on the network.
- **Node Name** – The name of each VISTA-ICM, based on the first device attached to the VISTA-ICM.
- **Type** – This indicates the node type and manufacturer.
- **IP** – The IP address assigned to the VISTA-ICM.
- **MAC** – The Media Access Control address assigned to this VISTA-ICM by the manufacturer.
- **Home**– This indicates if the VISTA-ICM is responding to “home” or “myhome” from a local web browser.
- **Status** – This shows whether the device is online or offline.

If the VISTA-ICM is online, click on the IP address link to get more diagnostic information about the VISTA-ICM.

The screenshot displays the 'Diagnostics - 10.0.0.46' page. On the left, a sidebar menu includes 'Setup', 'Advanced' (selected), 'Diagnostics' (selected), 'File System', 'Upgrade', and 'What's New'. The main content area has three sections:

- Time Online:** 0 Days 21 Hours 48 Minutes 27 Seconds
- Version/Date:** in2fusion Version image_1.1.42 -- Thu Apr 21 14:38:21 MDT 2005
- Style Version:** Honeywell image_1.1.42
- Devices Version:** Honeywell image_1.1.42

Buttons for configuration include:

- Restart**: Restart this node.
- Reset**: Reset node to factory defaults.
- Password**: Set System Password.
- Startup**: Set default startup options for this node.

Port List

Port Name	Device File	Make	Model	Name	Version
Network 1	rom_dlink.dvn	DLink	Camera	DLink	1.0
Serial 1	honeywell_hvac.dvs	Honeywell	Honeywell Family	Family	1.0
_LED	rom_LedSwitch.in2	in2nets	ledswitch	Unknown	1.0

Unit List

Unit #	Port	Name
1	Network 1	DLink Variables Commands
2	Serial 1	Family Variables Commands
3	Serial 1	Family Variables Commands
4	_LED	Unknown Variables Commands

Figure 14 - Diagnostic Details Page

The details page includes the following information:

- **Time Online** – This shows how long the VISTA-ICM has been running.
- **Version/Date** – This shows the build version of the firmware, devices and style installed on this VISTA-ICM, as well as the date it was built.
- **Restart** – This button will restart the VISTA-ICM, and will reload the last saved configuration.
- **Reset** – This button will erase all configuration information and restart the VISTA-ICM. If the VISTA-ICM is connected to a serial controlled device, and that device is powered on, the VISTA-ICM will attempt to auto-detect the connected device type.
- **Password** – You can set a setup password, or clear the password from this page.
- **Startup** – You can change the default start page and options from this menu.
- **Port List** – This lists all the ports on the VISTA-ICM, and the device selected for each port.
- **Unit List** – This lists all the units on the VISTA-ICM, from all ports on the VISTA-ICM. A device may have several units if it performs several functions. For example a combination DVD/VCR has two units, a DVD player and a VCR.

Each unit can have variables and commands. The Variables link shows all the variables for that unit, and the commands link lists all the commands for that unit. If the command exists, the link on the command will execute the command.

File System

The file system page allows you to access the files on any VISTA-ICM. The first page shows a list of the nodes on the network. Click the node to access the file system page.

The screenshot shows a web-based interface for managing a Honeywell VISTA-ICM system. The top navigation bar has the Honeywell logo. On the left, a vertical menu lists 'Setup', 'Advanced', 'Diagnostics', 'File System', 'Upgrade', and 'What's New'. The main content area is titled 'Filesystem' and contains a note: 'Select a node name from the list below to upload and/or download files.' Below this is another note: 'Note: This is an advanced page for diagnostics and setup. Use only as instructed in the users manual or by the technical support hotline.' A table lists three network nodes:

Address	MAC	Type	Name
10.0.0.46	00:0E:70:00:18:AE	Honeywell SDC	Family
10.0.0.43	00:0E:70:00:03:8B	Lutron	RadioRA
10.0.0.47	00:0E:70:00:12:4C	Honeywell SDC	Security

Figure 15 - File System Node List

The top section of the file system page allows you to load a file to the VISTA-ICM from a web server. You can load any file to the VISTA-ICM including graphic images, device files and web pages.

- Click the **Browse** button to locate a file on the local hard drive to upload.
- Click the **Upload** button to load the file to the VISTA-ICM. The file will show in the file list.

The bottom section of the page shows the files that are already present on the VISTA-ICM. The log file is a system file that contains the boot log. The log file can be sent to technical support as a troubleshooting aid. If you delete the log file, it will return the next time the VISTA-ICM is booted.

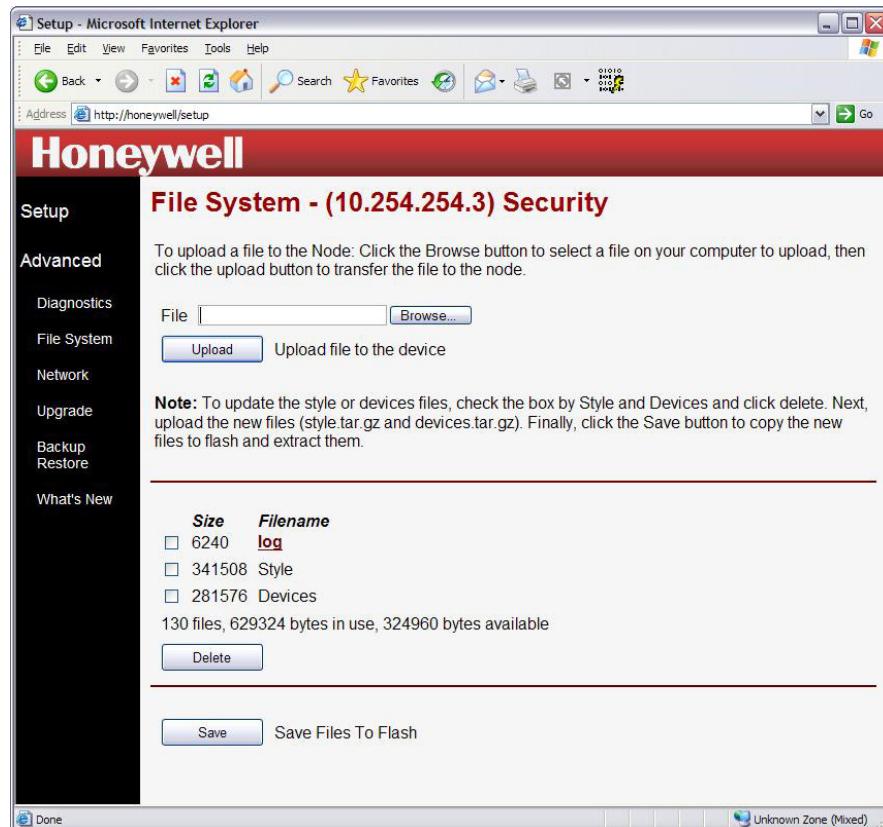


Figure 16 - File System File List

The Style and Devices entries show the total file space used by the style and devices directories. The style directory contains the graphics that make up the skin (or look and feel) of the web pages served by the VISTA-ICM. The devices directory contains the device specific drivers, web control pages and configuration pages.

You can delete the style and devices directories to make room to upload new style or device files. If you do not load new style or devices files, the old files will be restored when you save to flash or reboot the VISTA-ICM. To replace the directories, load a new file named "style.tar.gz" or "devices.tar.gz" and click the save button to expand them.

CAUTION: Click the **Save** button to save the files to permanent memory. The files in the file system are not saved as part of the basic setup save process.

Network Settings

The Network Settings page allows you to configure time settings for the network or configure network settings for a specific node. Click the **Configure System Time** link to access the NTP settings page (Figure 18) or the node link under the **Node Name** link to access the Node **Network Settings** page (Figure 19).

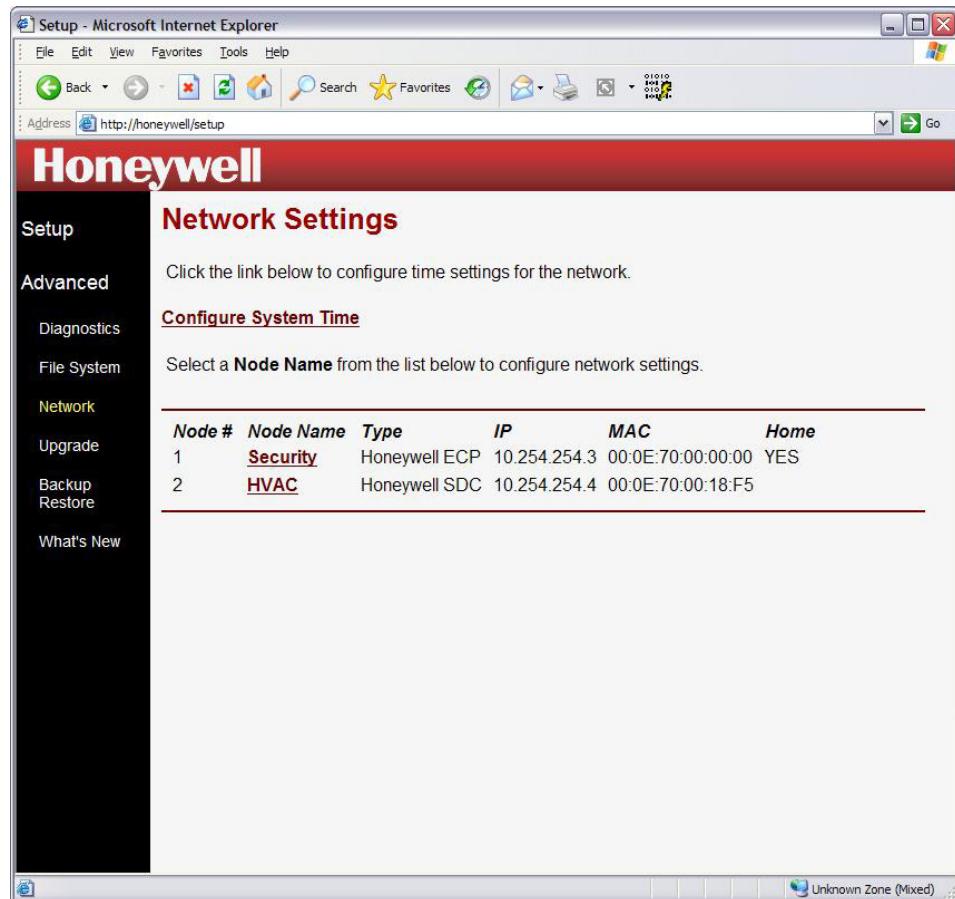


Figure 17 – Network Settings Page

The NTP settings page allows you to select the Time Zone for the NTP server.

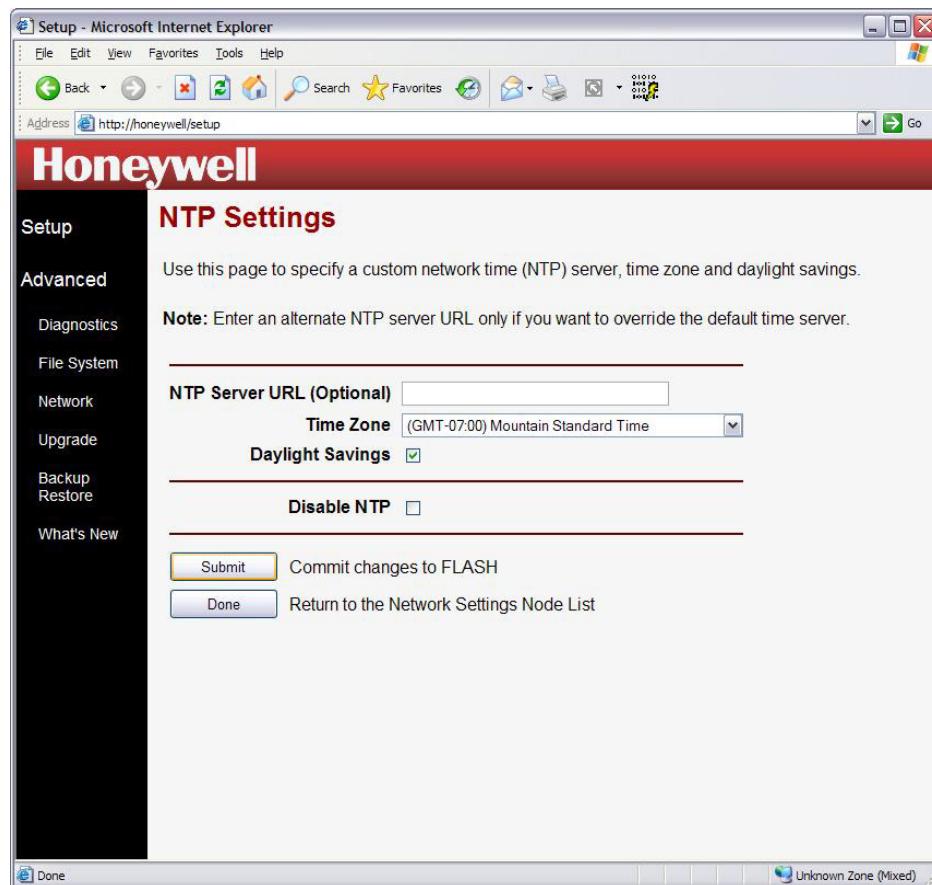


Figure 18 – NTP Settings Page

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The Node Network Settings page allows you to enter the network settings for the node.



Figure 19 – Network Settings page (typical)

Upgrade

The Upgrade page will allow you to select any node on the network, and upgrade the firmware. Firmware upgrades will be available periodically to enable new features and add functionality. Click the link marked “Latest Version Info” to find out if there is a new version of firmware available.

To upgrade a specific VISTA-ICM, select the node you want to upgrade from the list. Click the Auto Update button to retrieve the latest version of firmware from the server on the Internet. This requires the VISTA-ICM to be attached to the Internet. The update process can take several minutes depending on the network connection speed. The firmware image is typically larger than 1 megabyte.

NOTE: After a flash upgrade has been performed, you must reset the VISTA-ICM to the factory defaults and perform the setup procedure again.



Figure 20 – Upgrade

What's New

The **What's New** link redirects to a page on the internet that contains information about firmware updates, new products and new features. The new information is located on the Internet, so an Internet connection is required for this feature.

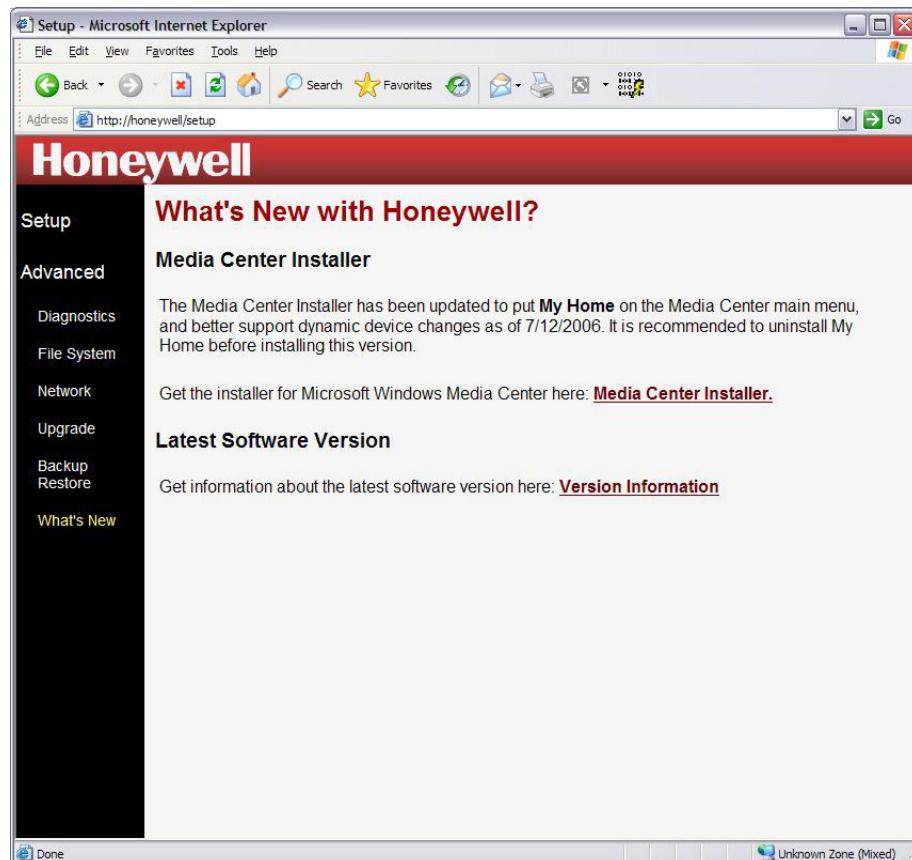


Figure 21 – What's New Page

Troubleshooting

Troubleshooting an Ethernet home control network can be easy if you can divide and conquer. See the following table to cut the problem in half.

Problem	Resolution
Cannot access VISTA-ICM web page	This is a network problem – see the Network Problems section to resolve.
Can access VISTA-ICM pages	This is a device problem – see the Device Problems section to resolve.

Network Problems

If you cannot access the web page on the VISTA-ICM, there may be a network problem. If you are having difficulty pinpointing the problem, just check the problems one by one in order from top to bottom in the table below. Use the following chart to break the problem down:

Problem	Resolution
No Link Light on PC	The link light is typically right next to the Ethernet (RJ-45) jack on the PC, tablet, and the VISTA-ICM. The link light should turn on when the PC is powered on and properly connected to an Ethernet hub, switch or router. If the link light is off, check the Ethernet cable
No Link Light on Hub	The link light on the hub (or router or switch) turns on when a PC or VISTA-ICM is connected and powered on. If the link light is off, check the Ethernet cable and power on the hub.
PC cannot get an IP address	Most PCs get an IP address from the router using DHCP. Check the PC documentation to make sure the PC is set to get an IP address from DHCP. On Windows PCs, open a command prompt and type “ ipconfig ” to view the IP address, or “ ipconfig /renew ” to get a new IP address.
PC cannot contact DHCP Server	The network router contains the DHCP server. Make sure the router or wireless router is installed properly. Check the router documentation to turn on the DHCP server in the router setup software.
Invalid IP address	An invalid IP address message normally only happens if a device is set to use a static IP. Make sure no devices have static IP address, and then reboot the offending device.
Tablet does not respond to touch	Tablet computer may need to be reset. Press and hold in the large 5-way button for 8 seconds to power off the tablet. Wait 5 seconds, then press the button in and release to restart the tablet.
VISTA-ICM LED functions	The VISTA-ICM LEDs perform the following functions from right to left: 1. Power LED is on when power is applied to the VISTA-ICM. 2. Link LED is on when the VISTA-ICM is linked to a hub (and flickers when data is transmitted). 3. Status LED flashes on and off once per second once the VISTA-ICM gets a valid IP address from the DHCP server.
Computer cannot access VISTA-ICM at http://honeywell	Try to access the VISTA-ICM from a tablet or another computer. The PC may have firewall software installed. Download the findnode utility from http://in2nets.com/findnode.exe . Open a command prompt (on a Windows PC) and run findnode to list the IP addresses of the nodes on the network. Access the node using an IP address reported by findnode .

Device Problems

If you can access the web pages on the VISTA-ICM but you are still having trouble, it may be a device problem. If you are having difficulty pinpointing the problem, just check the problems one by one in order from top to bottom in the table below. Use the following chart to break the problem down:

Problem	Resolution
Control page errors	If the control page does not load correctly, refresh the page (F5 on Microsoft Windows). In some cases after an upgrade you may need to clear the browser cache to reset the web pages to normal (Windows – Tools, Internet options).
Change button text	If the button text on the control pages is incorrect, go to http://honeywell/setup , then configuration to change the configuration of the buttons.
No feedback on control page	The basic web pages use a Java applet to display real-time feedback at the top of the control page. If this box is empty and does not change, the Java plug-in may not be installed on the PC. Go to http://www.java.com and download the Java virtual machine (this is a free plug-in). NOTE: After Java has been downloaded, the VISTA-ICM must be defaulted and reconfigured.
Interaction with Security	If the device works from the control page, but does not interact with security as desired, go to http://honeywell/setup , then configuration to change the configuration of the system triggers.
No device control	If the buttons on the control page do not affect the device, check the cable between the VISTA-ICM and the device. If the correct cable is attached, check the setup/configuration page to make sure the correct address information is entered. The Vista VISTA-ICM defaults to keypad address 23, and the Vista Security panel must be configured with a keypad at address 23. NOTE: Only device addresses 16 through 23 may be used.
No device feedback	If you can control the device but get no feedback, check the diagnostics page. Click on the port variable information at the bottom of the diagnostics page, and then look at the display variable to see if it is updating properly (you must refresh the variables by clicking on variable again). If the display variable updates, see the problem "no feedback on control page". If not, replace the cable.
No email	If the device does not send email alerts as desired, check the errors in the log to see if the node reported a problem. Go to http://honeywell/setup , then Advanced, Diagnostics and click the View Log button.

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