# Getting Started with HCA

### From install to full function in eight steps (updated 19-Dc-16)

Everyone has seen those advertisements by many different companies that show people turning off their lights, unlocking doors, turning off the kitchen sink faucet (really, you left it on?). And they supposedly work well once you have all the hardware installed, you pay to have the service configured for you, and then you can remotely do those things.

But is that all you want to do? Turn things on or off? Wouldn't you rather build the solution you want? Using HCA you can easily turn things on and off remotely but much better is that HCA gives you the tools to create solutions that take into account the time of day, weather conditions, who is at home, whether it is light or dark, inputs from sensors and keypads, and your knowledge of how devices in your home should work together to perform tasks.

HCA isn't simply a remote control program. What HCA gives you is a toolbox that you use to **program your home**. And like any good set of tools it can take a bit to understand how they work best. This getting started guide will take you from the beginning all the way to having Amazon Alexa control devices in your home using simple voice commands. Along the way there will be references to other documents, web sites, and videos that may provide extra info.

This process may seem long but the journey is worthwhile as it gives you a solid base for expansion in the future.

**If you have not already purchased HCA and you are looking to test drive this software, you can download a free 30-day trial of HCA Plus from the HCA support website at www.HCATech.com.**

**Note**: HCA Standard users can stop at step 2 in this guide. The remaining steps are for HCA Plus users as they deal with aspects of client/server function that is only available in HCA Plus.

## Getting Ready – HCA Install

Installing HCA is the same as installing most Windows programs - just run setup.exe. After install you will see that in the Start menu – or in the program listing in later versions of Windows – two programs (except as noted above, HCA Standard doesn't contain the server application):
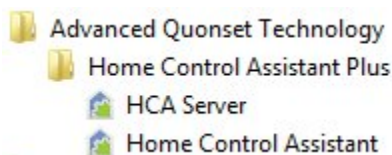
You want to begin with Home Control Assistant. This lets you run HCA in what is called "stand-alone" mode and using that you can create your design file. Later on you will start using the HCA Server.
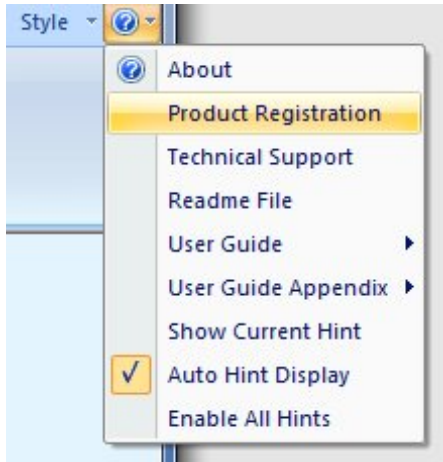
Once started the first thing to do, if you are <u>not</u> using the 30-day trial - is to register you copy of HCA. Open the Help menu – "?" icon at the right end of the ribbon - and select "Product Registration" from the menu.
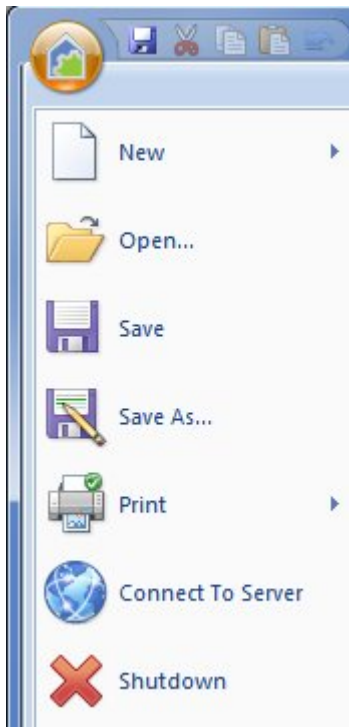
HCA needs to be working all the time, so unlike most Windows programs, using the close button (the red x in the upper right of the window) doesn't terminate HCA but minimizes it and puts and icon in the Windows notification area.
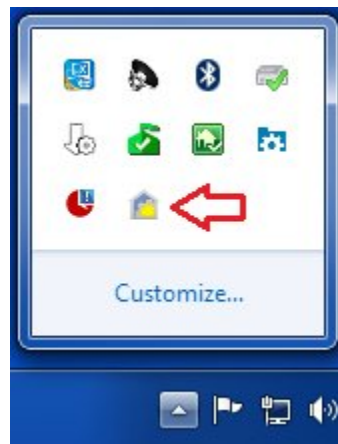
To terminate HCA, select from the application menu *Shutdown*.

This was implemented to prevent the unintended termination of the program which stops HCA from sending and receiving commands.

# Getting Ready – Automation interfaces

Before HCA can control anything you must first connect one or more interfaces to your computer. Some of these connect to serial ports, network ports, or USB ports. First, follow any instructions provided by the manufacturer of the interface. For example, the Insteon PowerLinc interface and some of the UPB

interfaces require installation of a device driver that creates a virtual serial port. Refer to any documentation that came with the interface.

**Note**: If you are working with X10 and you want to use the CM15, HCA requires a different device driver than the one supplied with the hardware. On the HCA Support web site in the documentation area is a technical notes section. In there are instructions for installation of the HCA driver for both Windows 10 and other Windows versions.

If you are connecting a serial interface but don't have a serial port – many recent PCs don't have them – there are 3rd party devices that make a serial port from a USB port. We can recommend the IO-Gear GUC232A USB to Serial Adapter as we have tested with it extensively.

Once you have the automation interfaces connected to the computer select the *Interfaces* category from the HCA ribbon and press the *Configure* button. The *Hardware* tab of HCA Properties opens.
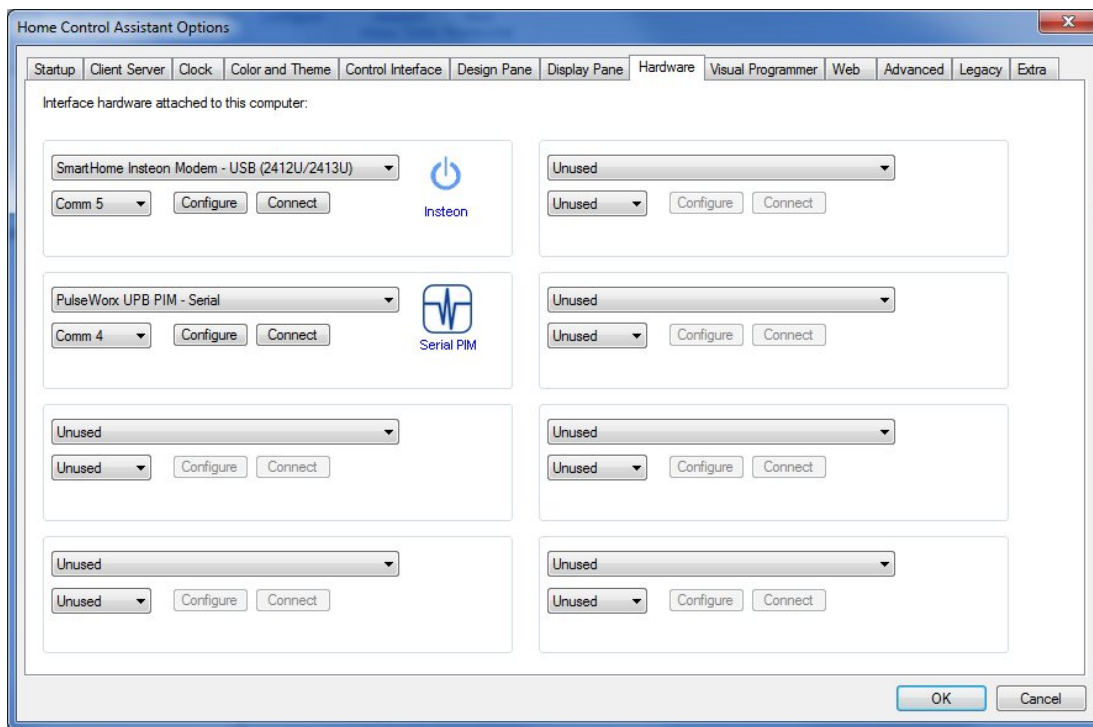


HCA can have up to eight interfaces connected simultaneously. Select the type of interface from the dropdown and the port it is connected to. Press the Connect *button* to test if HCA can communicate with the interface. A popup shows if the connection is successful or not.
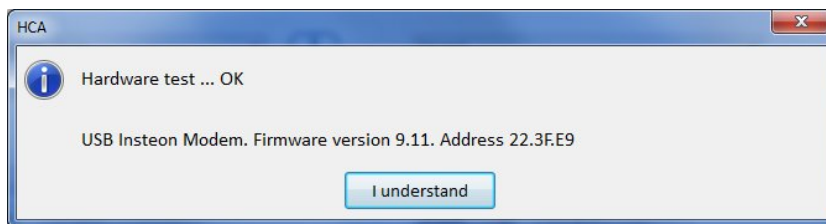
Some interfaces have options and the *Configure* button for the interface shows you those options. For example, the Smart Home Insteon PowerLinc model 2413 can send both Insteon and X10 and the configuration dialog lets you choose if you want to use both of those protocols with this interface.
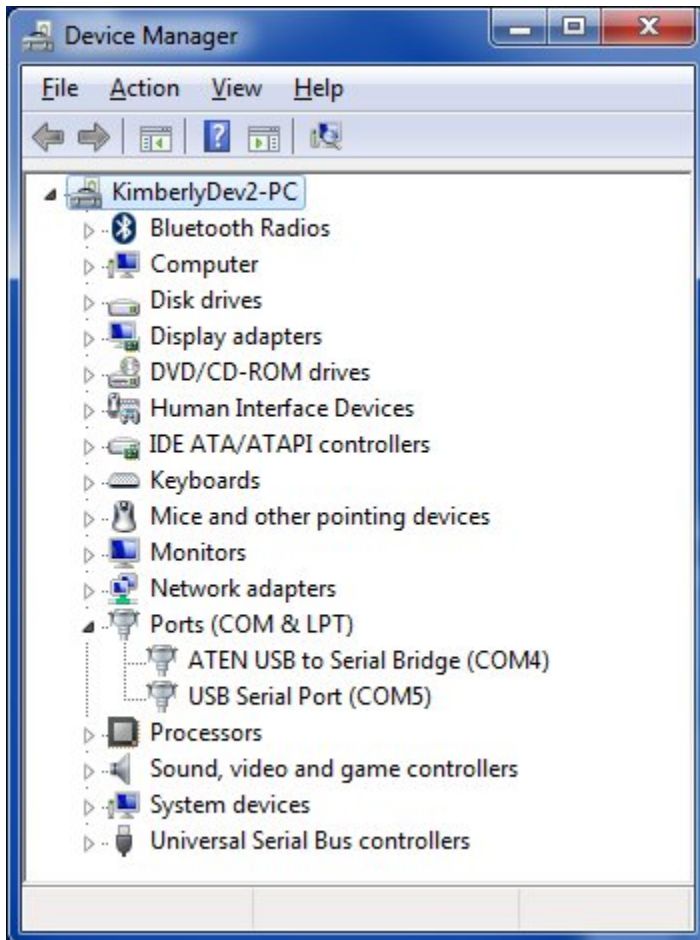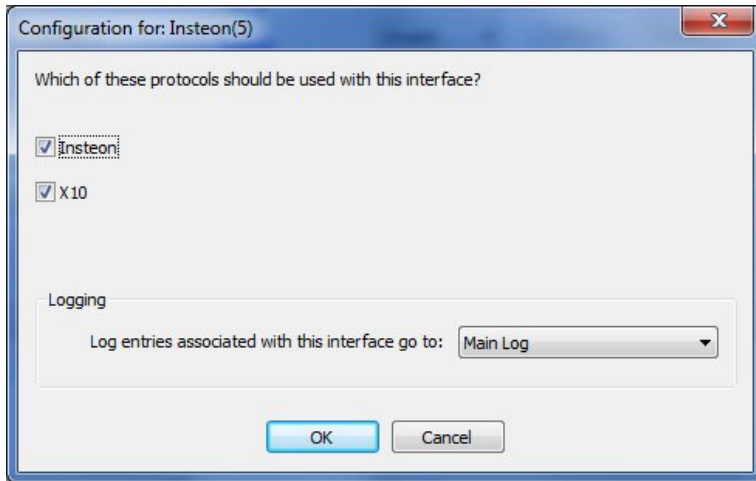


**Note:** In the image of the interface selection dialog above both interfaces have a serial port selected. If you open the Control Panel Device Manager applet you can see these ports.

The Smart Home Insteon Modem model 2413 has a USB port but when connected to the computer its device driver creates a virtual serial port. That port is what HCA must know to communicate with it. In the device manager it appears as "USB Serial Port"

The PulseWorx UPB PIM is a serial device and is connected to this computer using one of those USB to Serial Adapters mentioned above. In the device manager it appears as a "USB to Serial Bridge"

It's not always clear what serial port has been assigned when plugging in a USB device. The port number can be found using the Control Panel Device Manager.

# Step One – Identifying hardware and building a design

In this step we start from having just installed HCA on your computer. This assumes that you already have some automation hardware – Insteon, UPB, X10 – installed in your home.

The best way to begin working with HCA is by using the **HCA Designer**. When it first starts, you are offered a link to a video that shows how it works depending upon the automation protocol you have. We urge you to watch the video for the kind of automation devices installed in your home.

Start the designer from the *HCA Designer* button from the ribbon *Design* category.
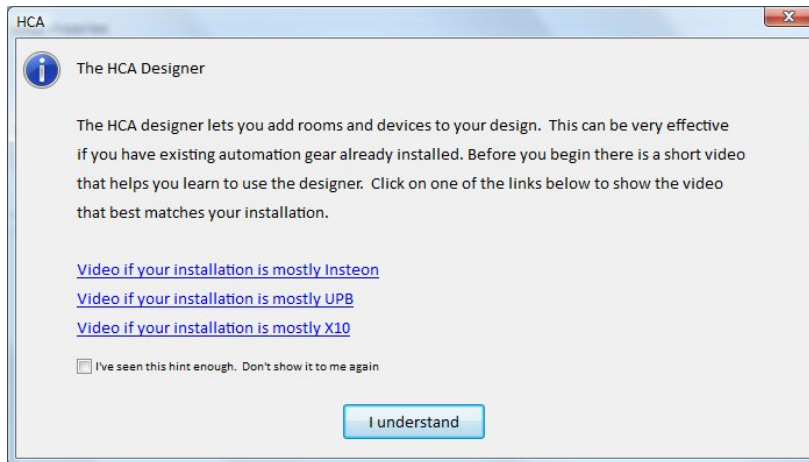


The first step in using the designer is to enter a name for your design, specify the location and select which automation protocols you are using.
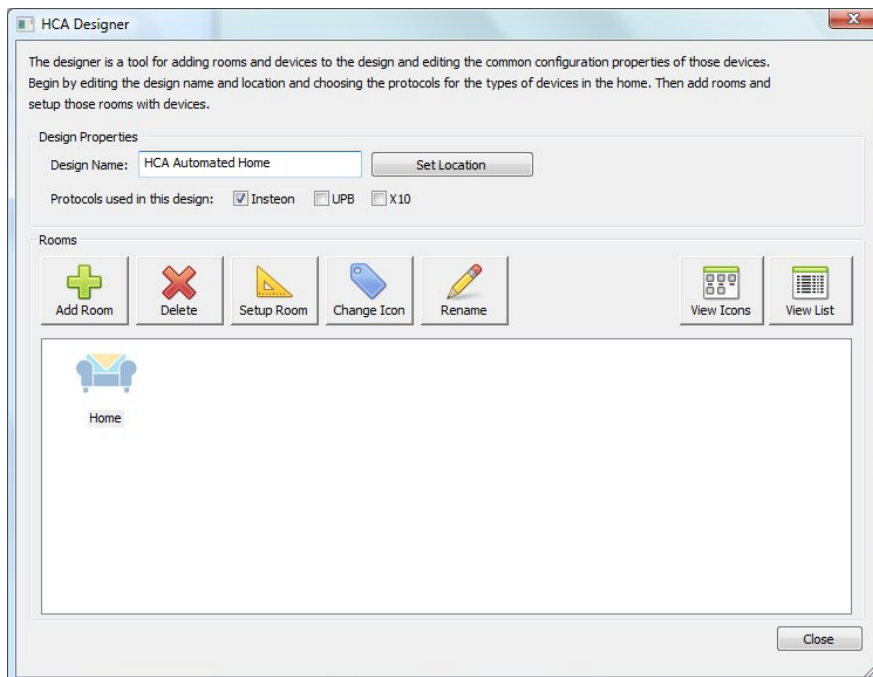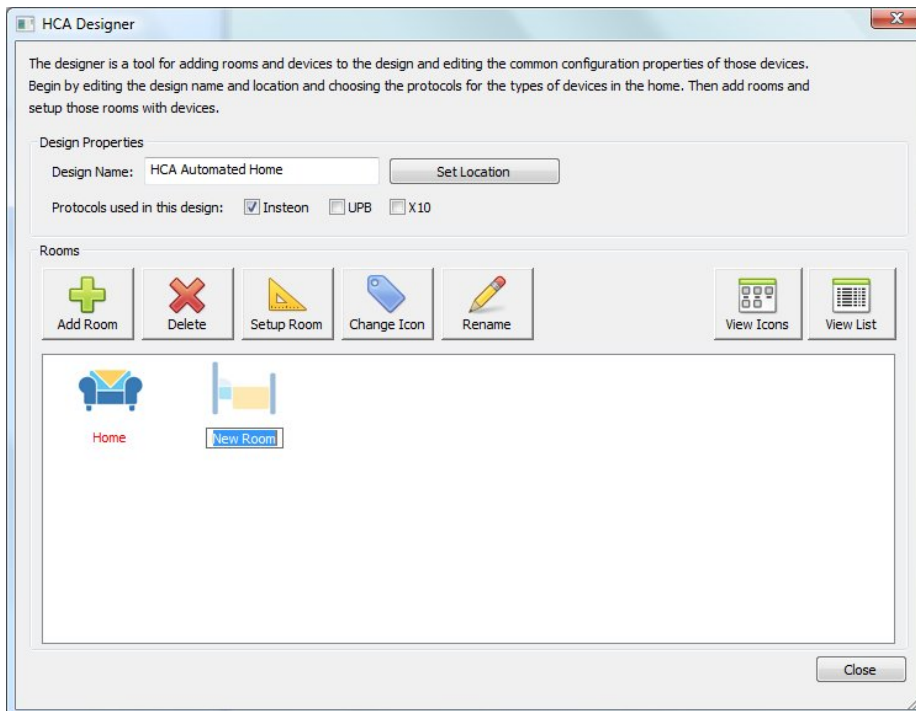
Type in a name for your design, tick the appropriate boxes for which automation protocols you are using, then select your location after you press the "Set Location" button.
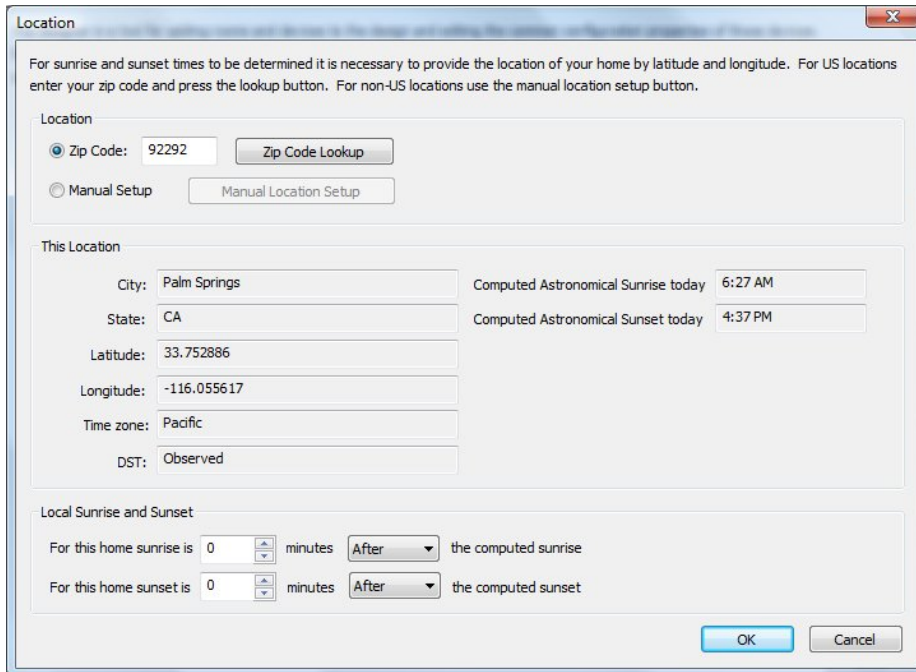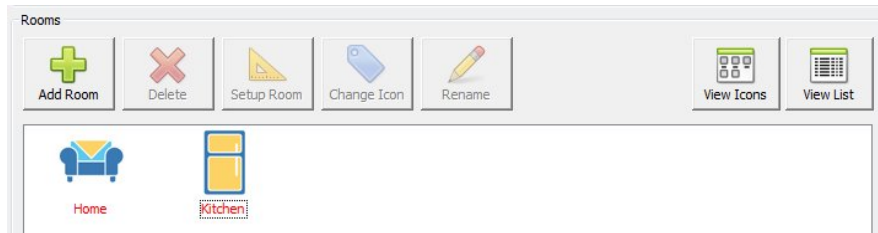


## Adding Rooms

Once the location is set, the next step is to add rooms. Each time the "Add Room" button is pressed a new room icon is added to the display:

Once the room icons appear, it is all set for you to type in the name you want for the room. When you complete entering the room name and have pressed the enter key, then HCA guesses an appropriate icon.



In this example, "Kitchen" was entered as the room name and an icon representing a refrigerator (Kitchens have refrigerators so that's the icon) was chosen.

If at any time you want to change the icon of a room, just select it and press the "Change Icon" button. To change the room name, select it and press the "Rename" button. And to delete the room, select it and press the "Delete" button.

**Tip**: You can also right-click on the room icon and the popup menu contains these actions as well.

The text below the icon gives the room name. The icon label displays in red if there are no devices yet added to the room.

The design also lets you show the rooms by icon or by a list. The buttons at the right control this. Some users like to see things by icons and others prefer a list. It's up to you.

The next step is to add devices to the room and how that happens depends upon the protocol of those devices, but they all start in the same way. Select the room icon and press the "Setup Room" button.

**Tip**: You can also double-click on the room icon to setup the room.
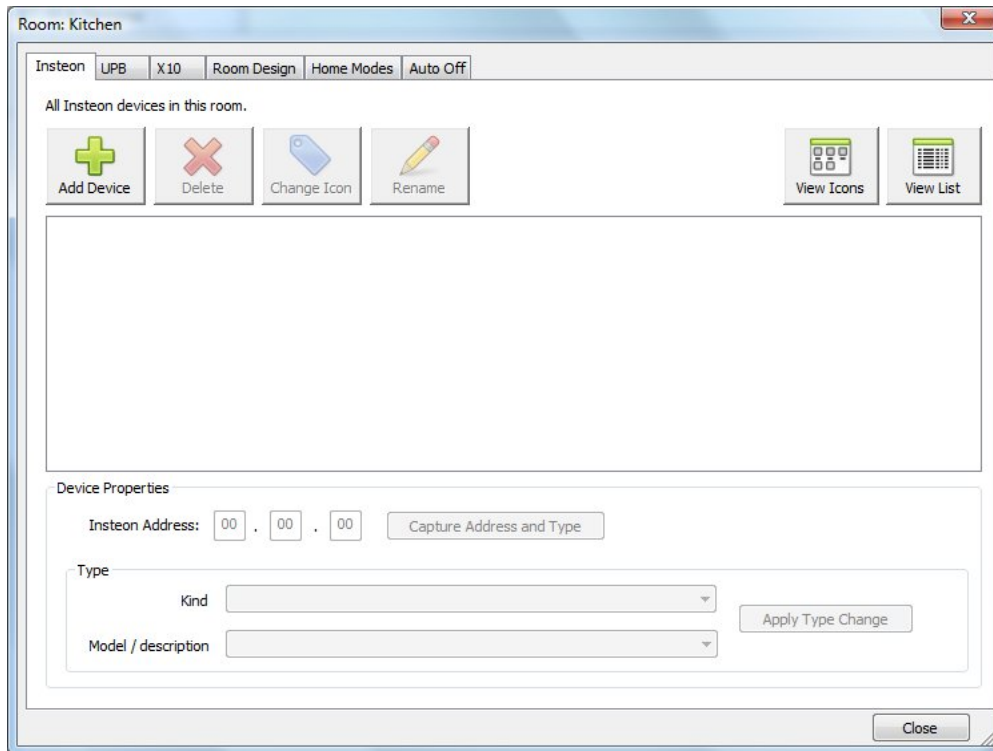
Note that at the top of this dialog there are six tabs. These are:

- Insteon: For adding an Insteon device

- UPB: For adding a UPB (Universal Powerline Bus) device

- X10: For adding an X10 device

- Room Design: How devices interact with the room they are in

- Home Modes: How devices act depending upon the mode the home is currently in

- Auto Off: If the device automatically goes off a specified number of minutes after it is turned on

Depending upon the checkboxes on the main Designer dialog, only tabs for the protocols you selected appear.

Once the room is open, to add a new device select the tab for the protocol of the new device and then press the "Add Device" button. It works in the same manner as adding a room. An icon for the room is added and you can enter the name for it. Once the name is entered, HCA guesses at the appropriate icon for it.
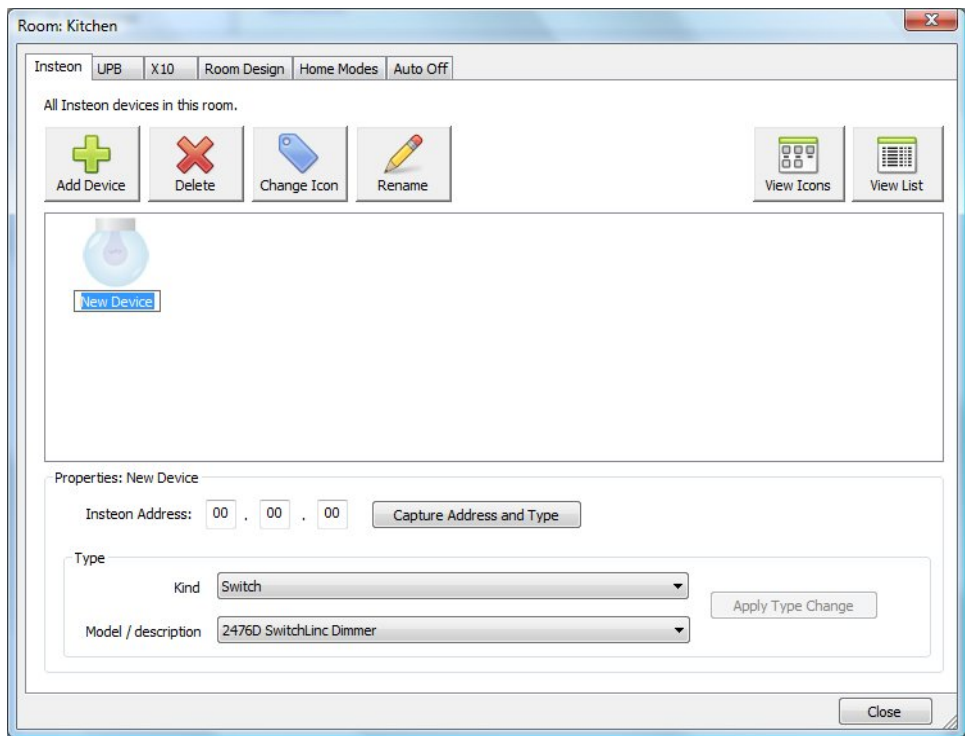
In this example, the device name was changed from "New Device" to "Ceiling Lights" and the icon changed to reflect that:
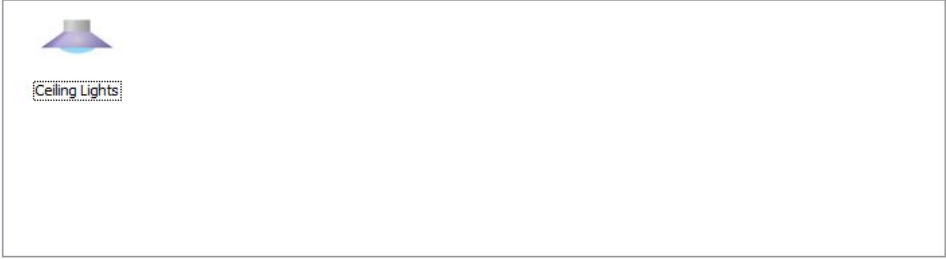


Similar to working with rooms, you can delete a device, change the icon for it, or rename it. All these actions are carried out by selecting the device and pressing the appropriate button. Again, as in working with rooms, a right click on the device gives you a popup menu of these actions.

## Adding an Insteon device

For Insteon devices the next step after adding the device is to capture the address and type for it.  Select the device and then press the "Capture Address and Type" button. This dialog opens.
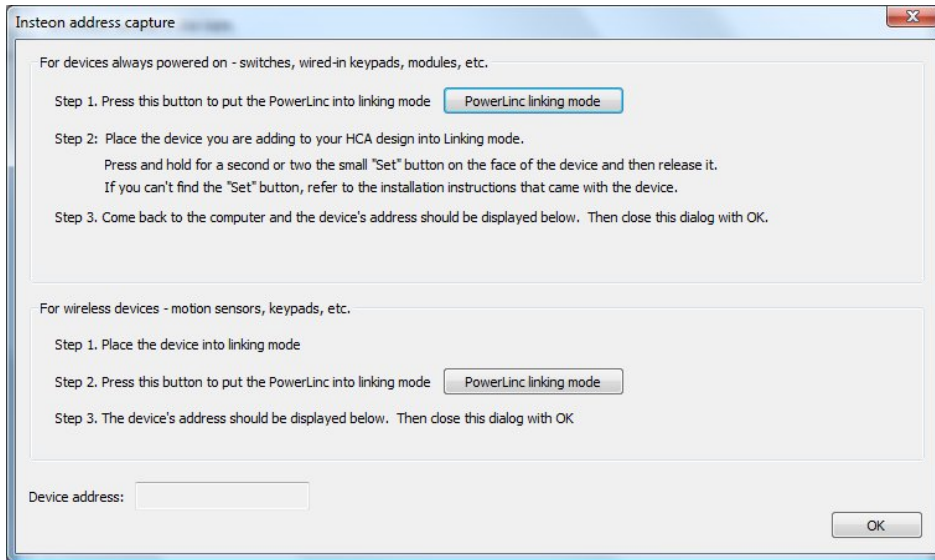


Follow the instructions in the dialog.  For devices like switches and modules that are always powered on, press the top button in the dialog to place the PowerLinc into linking mode and then at the device, press its "Set" button to complete the link. For wireless devices like the open/close sensor, wireless thermostats, etc. use the second section of the dialog. In this case you place the device into link mode first then press the dialog button to put the PowerLinc into link mode to complete the link.

When the link is complete the address of the device is shown at the bottom of the dialog.
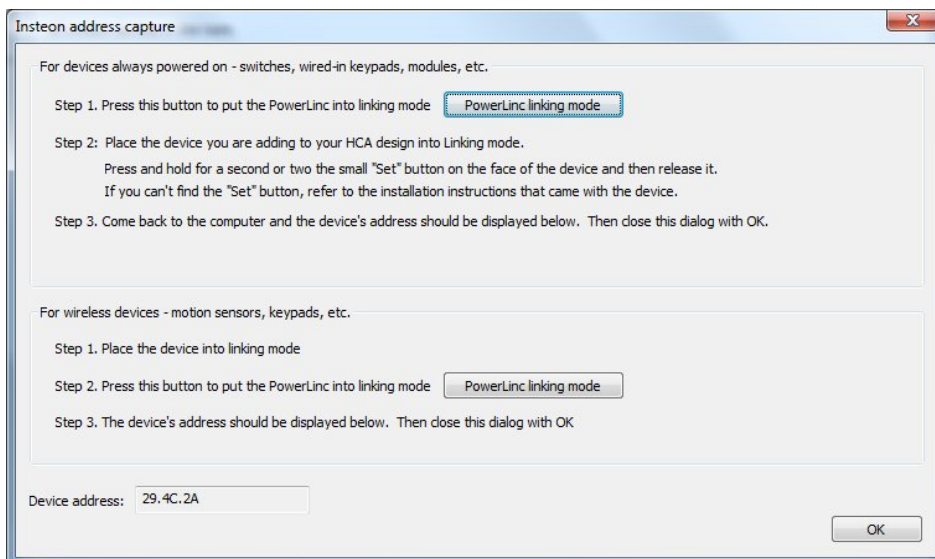


Close the dialog with OK and the address and model/description of the device shows in the room contents display.
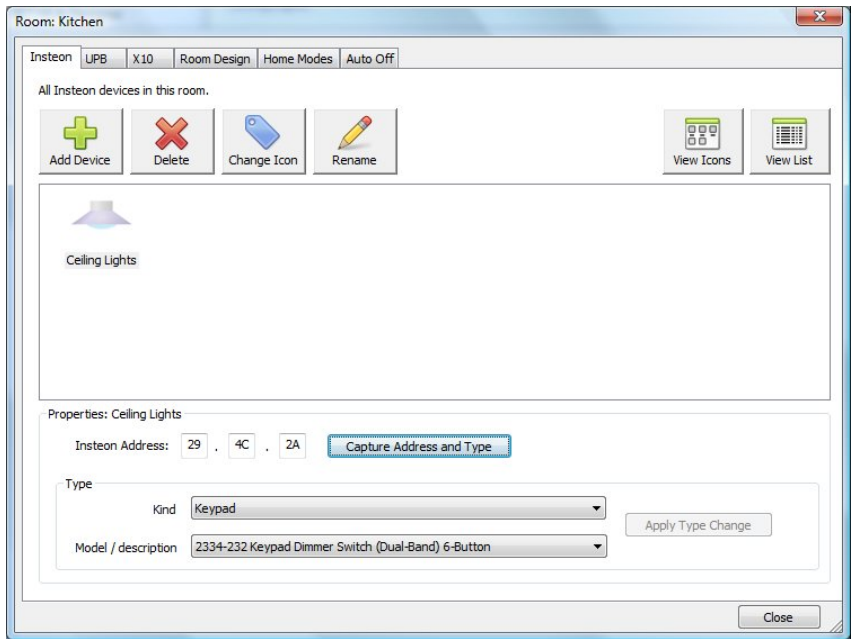
In general, there should be no reason to override the type determined unless the device is very old or a very new type, but if you need to, then select the new type with the "Kind" and "Model/description" dropdowns and then press the "Apply" button.

## Adding an X10 device

Adding an X10 device starts the same as adding an Insteon device: On the X10 tab, press the Add Device button, and enter the name of the device. Once added then select the type of the device and its X10 address in the lower part of the dialog.
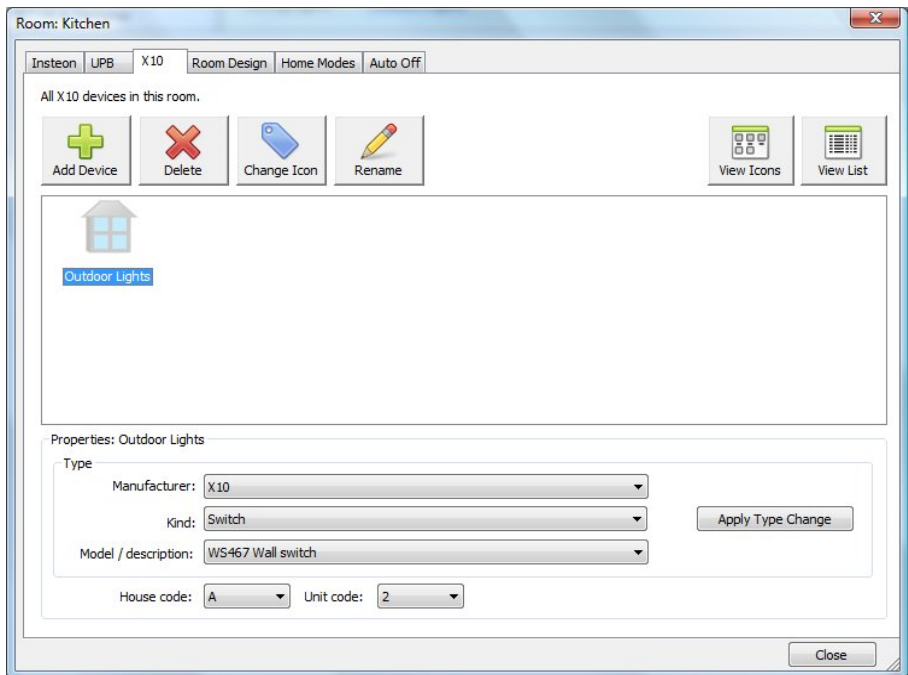
After selecting the Manufacturer, Kind, and Model, choose the X10 address and then press the "Apply Type Change" button to capture the information.

If at any time you want to change the type or address, just select the device, make the changes, and press the "Apply" button again.

## Adding UPB devices

Adding UPB devices to your design proceeds differently than X10 or Insteon as all the devices in the UPB network are added at one time. When the "Add Device" button is pressed on the UPB tab this popup explains:
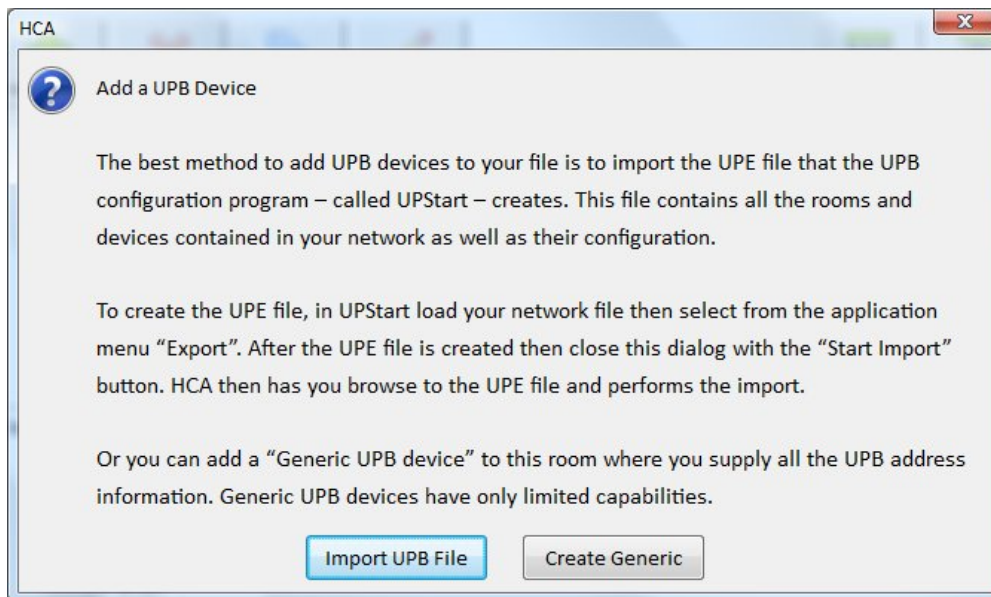


If you press the "Import UPB File" button a File-Open dialog lets you select the UPStart Export File (UPE) and then the devices in that file are added to you design. When complete a popup shows you what has been imported:
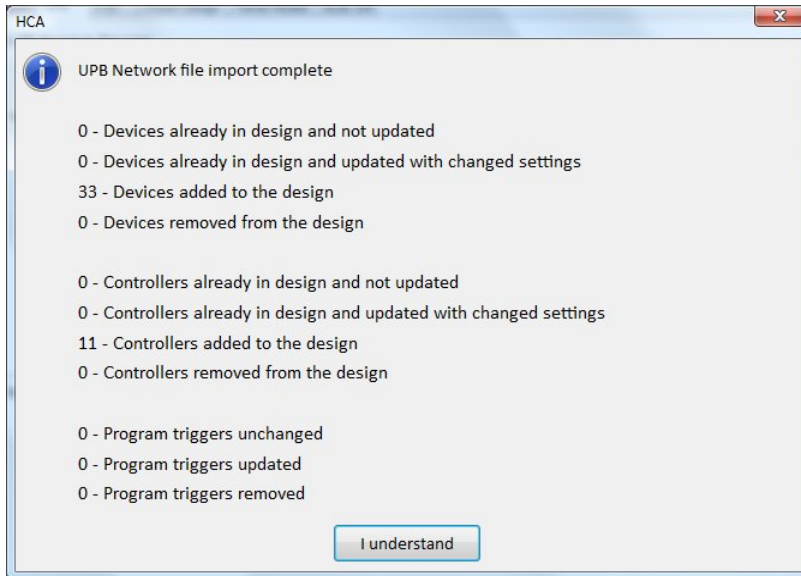
**Using UPStart**

UPB devices are configured by a separate program called UPStart and transferred to HCA using an export file which has a file type of UPE. Before creating the UPE file from UPStart, you should take a few minutes to configure how icons appear in HCA for rooms and devices.

When running UPStart with your UPB file loaded, in the "Gateway Export" ribbon category there is a button labeled "Room Icons". Press that to open the room icon selection tool. It shows each room in your UPB network and what icon is used for that room. You can change the icon selected by pressing the "Change" button on the line for the room. This opens the icon selection tool. The currently selected icon is shown in the upper left. Just select the icon you want and then close the icon selection tool with OK.
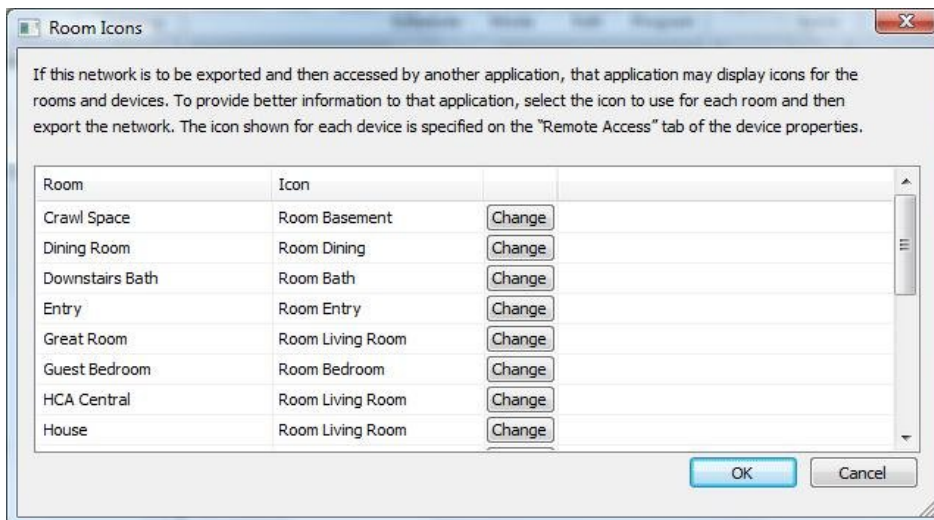
For device icons you need to open the properties of the device. In the properties for a device is a tab labeled "Remote Access". For simple devices like switches and one-channel modules there is only a single icon to select. The icon choice is displayed and can be changed in the same manner as room icons. From this tab you can also change the text that shows below the icon – the "label". Normally this is just the device name but you can change it if you want. In the icon selection tool, the icon label is shown at the top of the dialog for editing.

Additionally, if you don't want this device to be imported into HCA – maybe it is something you never want to work with in HCA - you can disable the "Show Icon" option by "un-ticking" the checkbox.
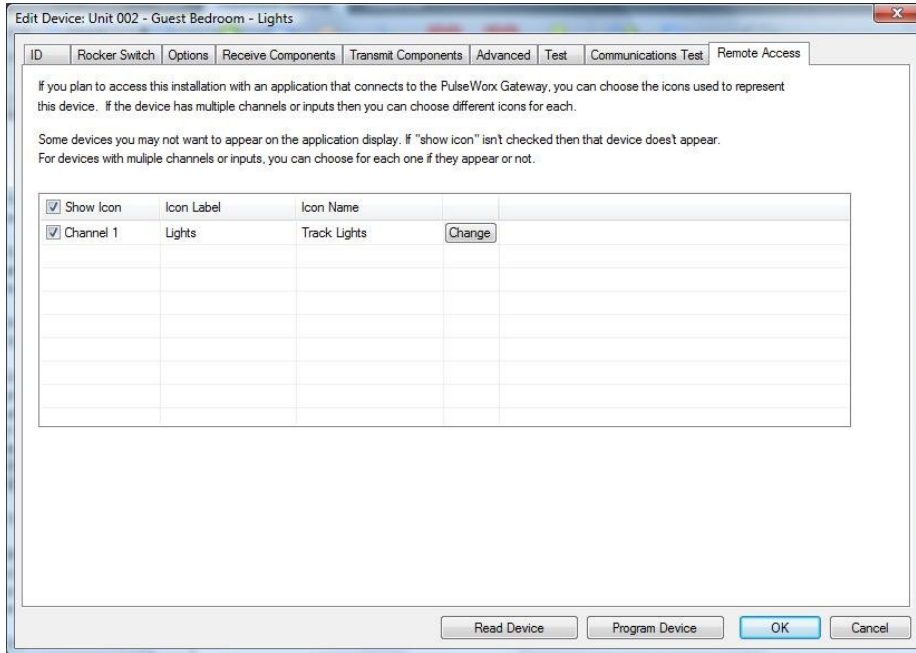


For a two channel device like the PulseWorx Output Control Module you can select an icon and icon label for each channel. If you are only using a single channel of the device, you can un-tick the unused channel so it doesn't appear in your HCA design.

For an Input module (ICM, TCM, DBM) you can name each input and those appear on the application display to show the state of the input. Again, you can choose to show 1 input, both inputs, or no inputs.



Also, make sure that any keypads in your design have engraving info specified that gives the name for each button. This text is exported into the UPE file and HCA uses it in popup keypads where you can virtually "push" keypad buttons. For this purpose, the button size and font choices don't matter.

Once you have all the devices configured in UPStart, to create the UPE file select from the UPStart application menu, "Export" and then "Export to file".

## Other configuration using the Designer

The designer also has other facilities for doing some quick configuration of how your devices operate and how they interact with the rooms that they are in and the mode the home is in, but that configuration can be done later.

Tip: The HCA User Guide chapter 3 *Your Home* goes into detail on this.

# Step Two – Testing basic control

In this step we build upon the design created in the previous step and do some basic testing to see how well control works. Some troubleshooting tips are presented that may help you understand potential problems.

Now that you have a basic design, it is best to pause a minute and make sure that HCA can control your devices. This sounds simple but, depending upon the technology you are using and the state of your home, may not be that simple. Insteon, UPB, and X10 all sends signals over your house wiring and that is subject to signal strength, noise, number of devices, and many other factors.

Before you can control anything you need to have the necessary interfaces attached to your computer so that signals can be sent to the devices. HCA can simultaneously control up to eight different interfaces. To open the configuration dialog, press the *Setup* button in the *Interfaces* ribbon category.
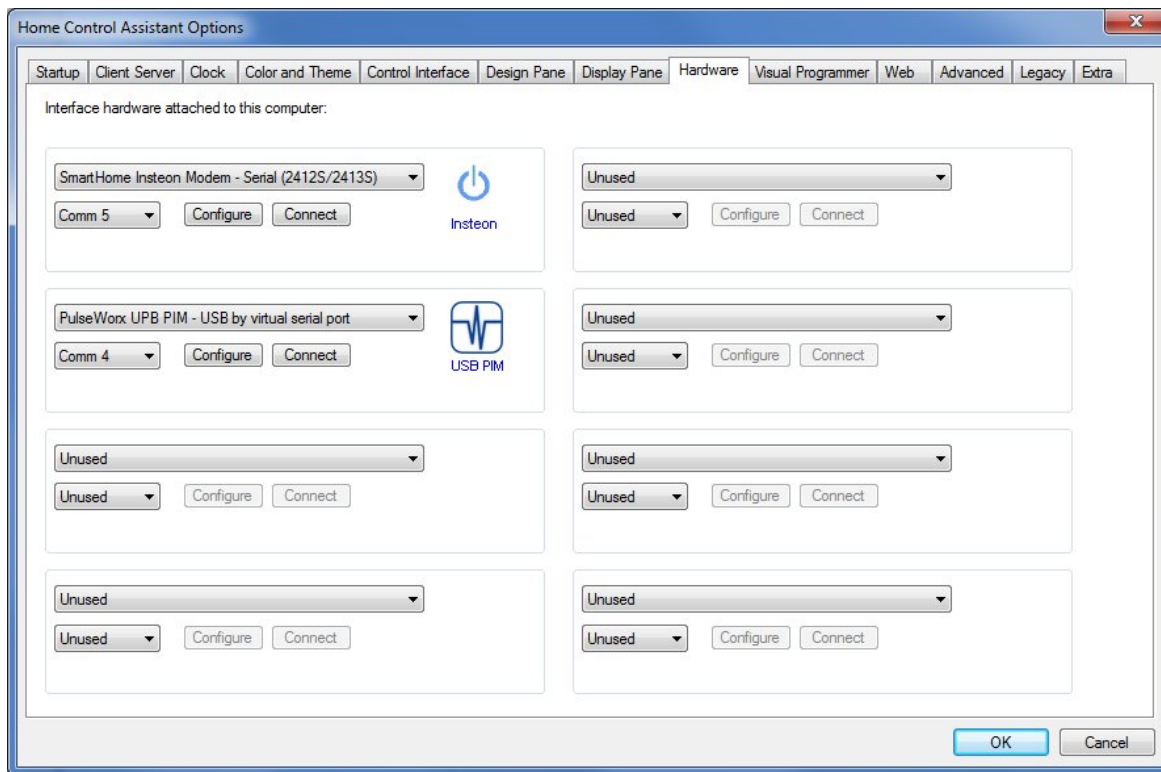
For each interface, select its type and the serial port it uses and then press the *Connect* button to attempt a connection.

Tip: Some devices support multiple protocols and you can tell HCA which ones to use for an interface. This can be done from the Configure dialog for each interface.

Tip: Even if a device has a USB connection to the computer it probably creates a virtual serial port and that port is how HCA communicates with it. The Insteon 2413 PowerLinc does this. If no serial port seems to be available, refer to the 2413 PowerLinc quick start guide where it shows how to install the needed device driver.

If you can control all your devices – right click on the device name in the left pane of the HCA application window, or on the icon for the device in the left pane, select ON, OFF, DIM – then that's great. The problem comes if you can't.

All signals on the power line are different from each other. You may have a keypad linked to a module and when you press a button on the keypad, the module responds every time. But when you try and control the module from HCA, it doesn't respond. In cases like these it is best to double check everything to eliminate the simplest things before looking for complex reasons. For Insteon, did you capture the address and type when you added the device to your design? For UPB are you importing a recent UPStart file? For X10, do you have the house and unit code in the HCA device matching that actual switch or module?

You should also check that the interface for controlling the device is connected to the computer, identified to HCA, and working correctly.  If you can't control any devices this is the first place to start.

On the HCA *Interfaces* ribbon category, press the *configure* button to open the interface setup panel. The connect button for each interface verifies that HCA can communicate with it. Also press the configure button to open the configuration for the interface. If the interfaces support multiple protocols, HCA needs to know what ones to use with that interface, so check that you have that configured correctly.

If HCA can communicate with the interface, and you believe that all your configuration for the devices is correct, but you still can't reliably control them, then unfortunately there could be a signaling problem in your home. Try controlling different devices on different house circuits. Try, if possible, moving devices from circuit to circuit. As was said above, just because a keypad can control a device doesn't mean that HCA can control it. The interface sends commands at different signal levels and it may be on a different branch circuit.

Don't forget to save your work in a HCA design file – file with type ".HCA". Use File-Save from the application menu.

## Intermission – Time to pause and consider

At this point you have the start of your automation solution and you can add to it by creating schedules and programs to respond to various events.

HCA running in stand-alone mode on one computer – what you now have if you followed the steps above - is the preferred operating mode if you don't need or want to use the client applications on tablets and phones or control devices using Alexa. If what you are trying to achieve is to have HCA running quietly in your home on a computer carrying out your automation solution, then you should continue to use HCA in stand-alone mode and you can skip the rest of this guide.

The next steps describe configuring HCA in client-server mode which is needed to allow the Android, iOS, and Windows applications to connect and control devices, start programs, work with on-screen keypads, etc. It is also needed for control using Alexa.

If you do continue with client-server mode, you can install HCA on as many computers as you personally own. On one of them you must complete the registration process.

## Step Three – Client-Server on one computer

Now that an automation design is completed and devices can be controlled, it is time to see what client-server can do for you.

Up until now you have been running HCA in what is called stand-alone mode. That is, you are running HCA.exe on a computer and that computer has the interface hardware attached.

And stand-alone is a perfectly ok way to use HCA except that it limits what you can do. For remote access from other computers, mobile clients, and Amazon Alexa to operate, you need to use HCA in client-server mode.

Every computer on a network has a unique address called an IP address. This is typically written as 4 numbers separate by dots. For example, 192.168.0.135. Every computer on your network has just such an address and you can find it out in many different ways. One of the easiest is to start a Windows command prompt (search for cmd.exe) and type IPCONFIG at the prompt.
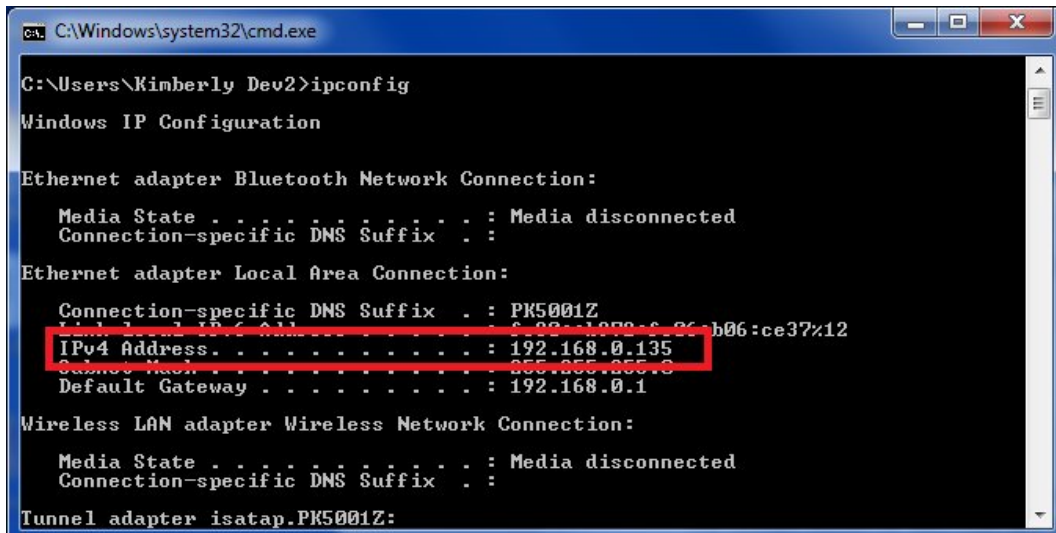


For this step you will need to know the IP address of the computer that you are running HCA on, so determine that using the method given above and write it down. In the above example it is 192.168.0.135.

The second piece of info you need to know is the port that the HCA server uses to send and receive messages. When a connection is made between computers it is necessary to know not only the IP address but also a port number. This number, chosen by either the application or determined by you, provides the second piece of addressing needed. By default, HCA communicates from client to server using port 2000.

Before trying to connect between two different computers, you should run the HCA server and HCA client on the same machine. This is a good test as it delays the impact of many possible network issues.

To do this, first shutdown HCA. Select from the application menu *Shutdown* – don't just click on the close box (X in the upper right corner of the application Window) as that just stores HCA in the Windows notification area.

Now start the HCA Server. It is installed along with HCA Plus – called HCAServer3.exe - and, depending upon your version of Windows, use the usual procedure to find and start it. The server is just another Windows program and has a very simple application window.
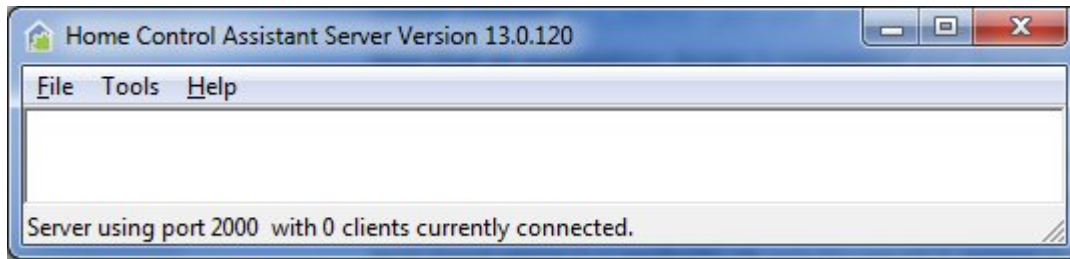
The first step is to open the design file you created in the previous steps. Simply select from the menu *File - Open*, browse to the HCA file, and open it.

NOTE: As soon as you open a file Windows may popup a message at this point giving a security warning as the HCA Server opens a port for communication and this is something that Windows security looks for. **It is expected and you must allow it to happen**. Also, for HCA to communicate with other computers both inside and outside your network you must allow HCA to communicate across your firewall. Most client issues are caused by a misconfigured firewall.

The HCA Server has all that is needed to "execute" your design. That means it will carry out all the events in your time based schedules, handle processing of any input signals that start programs, run those programs, do any periodic tasks that need to be done, and handle any requests from clients.

Next, on the computer running the HCA Server program, run HCA as well. You will notice that almost all the ribbon and application menu items are disabled. HCA has detected that the server is running and will only allow connection using the server.

Before you attempt a connection it is first necessary to configure it so it knows the IP address and port to use when communicating with the server. In the application menu click on the *HCA Options* button and select the client server tab.
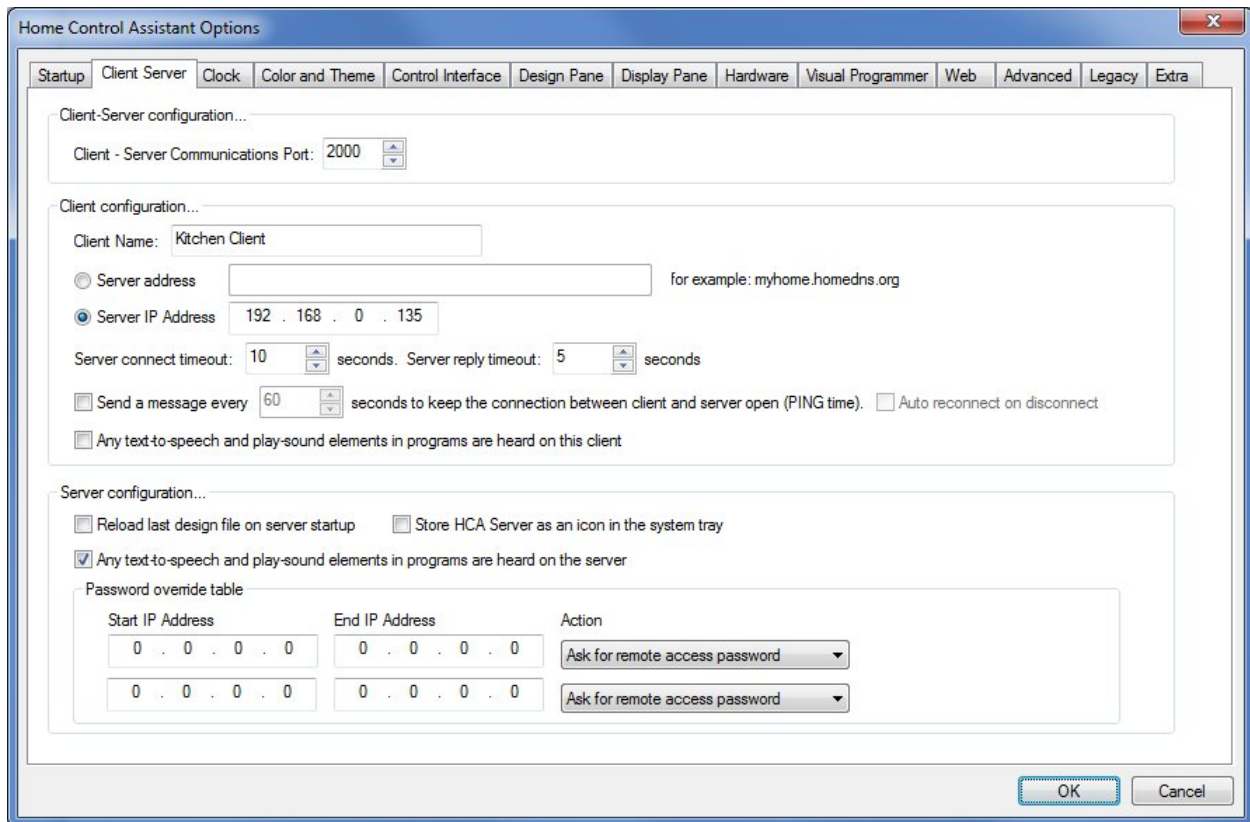
Make sure that the port number is the same as the server is using. The server application window shows the port it is using in its application window status line.
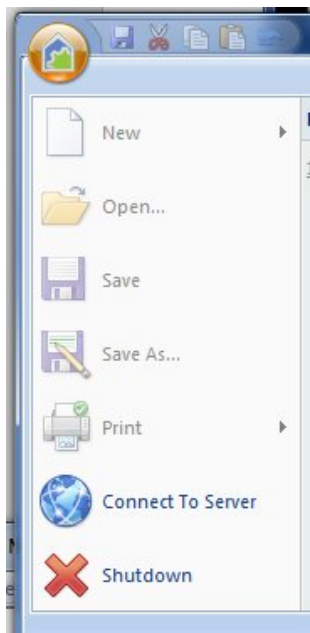


Enter in the IP address of the computer and port number if you need to change it. You can leave all the other options unchanged at this point. Close the dialog with OK. Attempt the connection by choosing *Connect to server* from the HCA application menu.

HCA then attempts the connection.
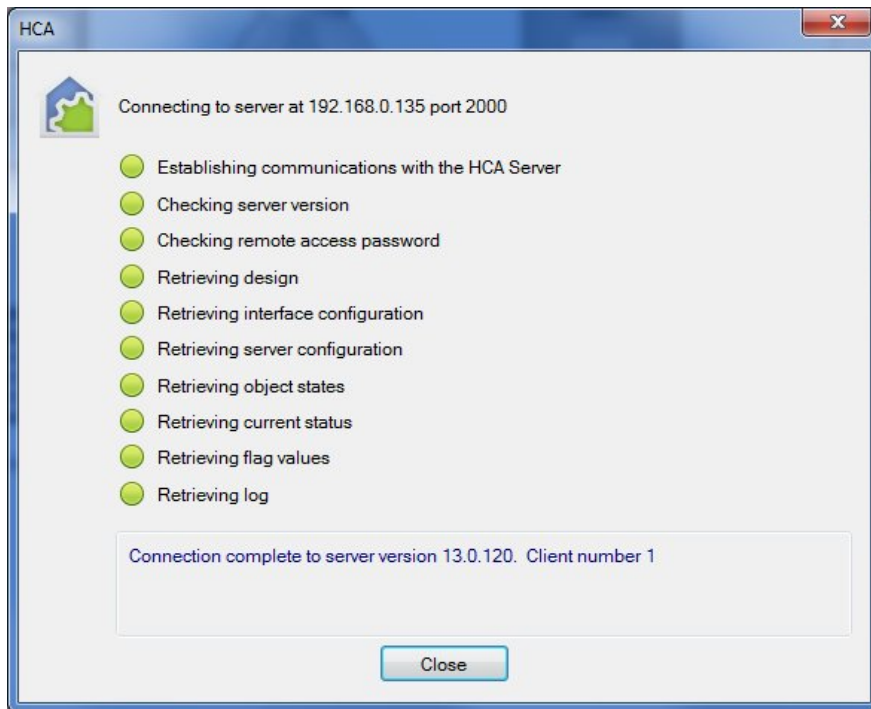
If it doesn't connect, then go back and check your work to make sure that you have configured the IP address and port correctly. If it still doesn't connect then you may have to configure your firewall – Windows Defender or other – and any Anti-Virus programs. Unfortunately, there aren't any clear rules about how to do that since there are so many different firewalls and anti-virus programs. Just know that many users are working with HCA client-server so whatever the problems are, they probably can be resolved by some configuration change on your computer.

Once HCA – running as a client – has connected to the server then you can do almost everything you can from HCA running stand-alone (actually, everything except make a new design file). You can add new devices, control existing devices, create and view programs, configure background tools like status-export, weather provider setup, etc.

You could also download and install the Windows client. This is a simplified control interface for an HCA design. It doesn't let you modify the design but only control it. You can find that download on the HCA support web site.

http://www.hcatech.com/index.php?sid=products&pid=clients

After installed, to get to the settings on the Windows client so you can enter the server IP address and port, click on the HCA icon at the left end of the title bar and select *Settings* from the popup dialog.


## Step Four – Client-Server inside the network firewall

The next step is to use a second computer on your internal network, install HCA or the Windows client, and make a connection to the server. This again tests to see if you have configured client-server appropriately and clients can connect from different computers. Since there are two different computers involved another set of network issues may arise. If you don't have such a computer, then

you obviously can't do this step. This step is not absolutely necessary but is a good check on your client-server network.

To get started, install HCA or the Windows client (see previous step) on another computer on your internal network. During the install don't worry about software registration as once you are registered on one computer you can install HCA on as many computers as you personally own.

After the install completes, configure client-server as in the previous step with the IP address of the computer that the server is running on and the port it is using for communication. Connect to the server as before. If all the configuration was made correctly, then it should connect fine. If it doesn't, then as described in the previous step, you need to look at firewalls and anti-virus programs. Since you are running on two different machines then your router and its configuration may be involved.

At this point you now hopefully have client-server working on your internet network and in the next steps the connection moves from inside the network to outside it.

## Step Five – Security

Before allowing access from outside your network into your home it is necessary first to assign a remote access password. During the connection from client to server, the HCA clients must be configured with the password so it can be checked by the server and access granted.

Select from the *Design* ribbon category the *Security* button.
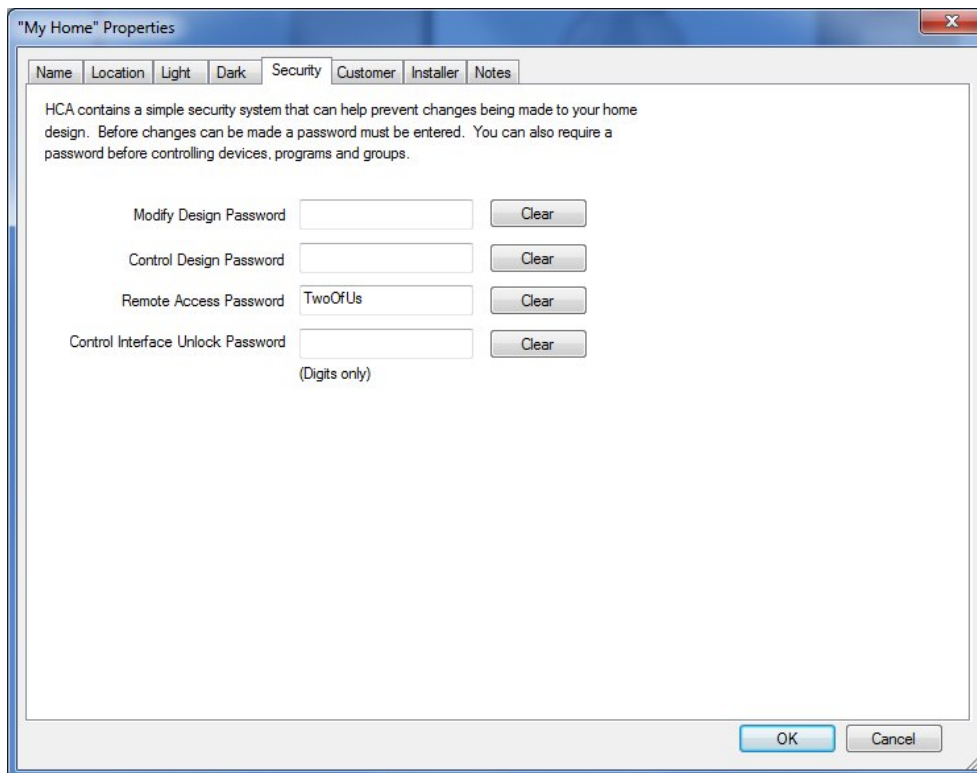
Enter a remote access password and close the dialog with OK **after you write it down someplace as it will no longer be displayed when you open the security dialog again**.

Tip: The other passwords are described in the User Guide Your Home chapter.

## Step Six – Dynamic DDNS

Once you move outside your network then issues of IP addresses become paramount. This section discusses Dynamic DNS (abbreviated as DDNS) and how HCA provides that service for you. If you already are using DDNS from another service, this section describes how HCA DDNS is still required if you want to use Amazon Alexa. This section also discusses how port forwarding must be configured in your network router – this could be an easy or difficult task – and offers some suggestions for where you can find additional help.

As described above every computer on your network has an IP address. Typically, they look like 192.168.x.y. "192.168" is typically the first part of all small home networks. Your connection to the outside internet, typically though a DSL or Cable modem, also has an internal IP address (typically 192.168.x.1) but it also has an external IP address and that IP address is assigned by your internet provider and it may change over time.

A changing address presents a problem. Let's assume that one day the external address is 100.100.100.99 so you configure the HCA client for that address but the next day it changes to 100.100.100.70 and then your connection configuration would be incorrect.

To solve this, most cable and DSL modems can connect to a dynamic DNS service and keep it informed what the current IP address is. The big player in this market is DynDNS.org. It costs a few dollars a year and provides a way that you can say "myhome.dyndns.org" any place where you need to enter an IP address and it changes that name into whatever the current IP address is.

The good news is that you don't need to use such a service – and pay for it – as HCA already has a Dynamic DNS service built-in.

Note: You may already be using a service like DynDNS.org, have a static IP address, or you may even run your own name server in your network. Regardless of this, HCA DDNS is a required component for Alexa support. If you want to configure Alexa support you will need to use the HCA DDNS service. You can use it for mobile client access or you can continue to use your existing methods. Both can co-exist without problems.

Access to the DDNS configuration dialog is from the *Interfaces* ribbon category *DDNS Configuration* button.

This opens the DDNS Configuration dialog
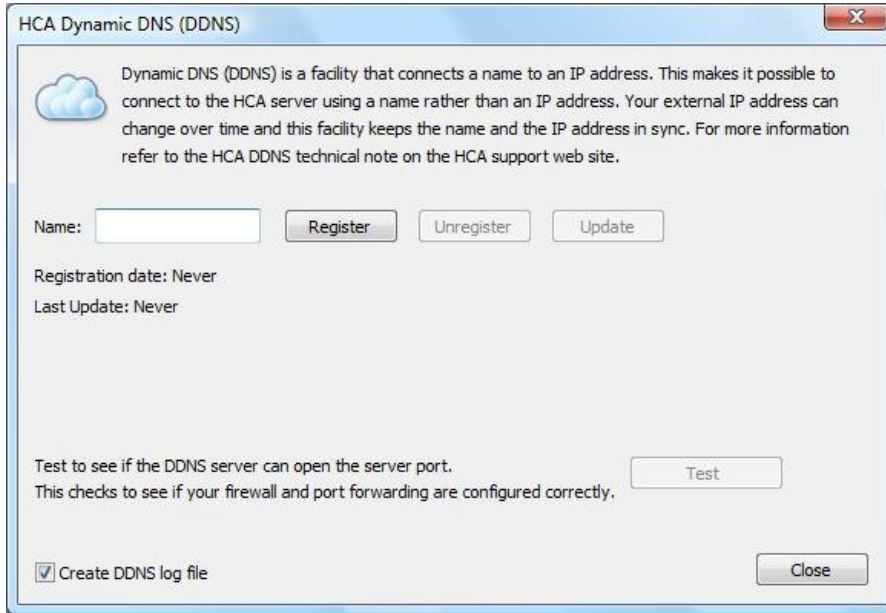


The first step is to enter a name that will uniquely identify your installation. The name you enter must be from 1 to 12 characters in length and contain only lowercase letters and numbers. No other characters can be used.
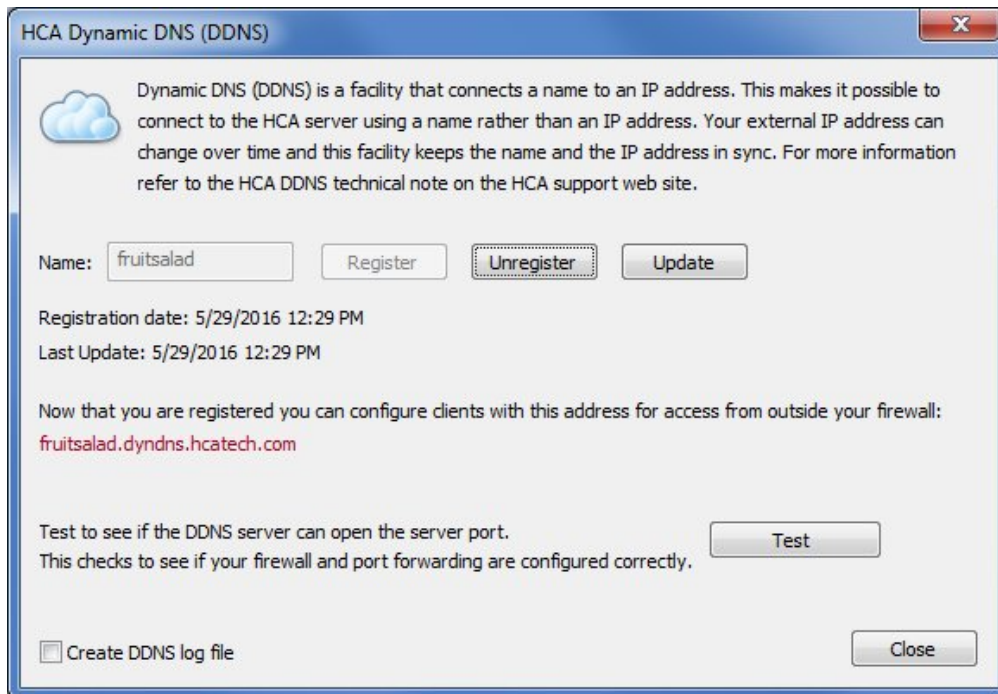
After entering the name, press the *Register* button. If the name you entered is not already in use, then a success message displays.
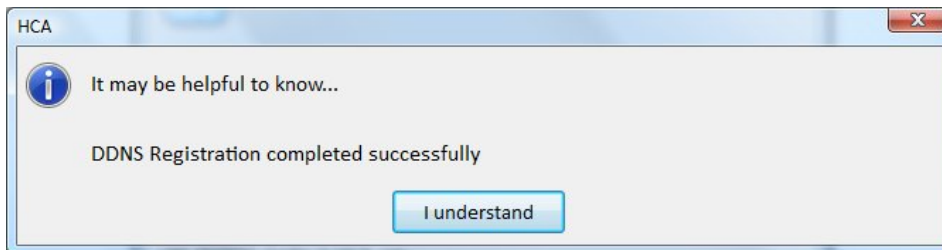


If the name is already being used by someone else, then an error message displays.
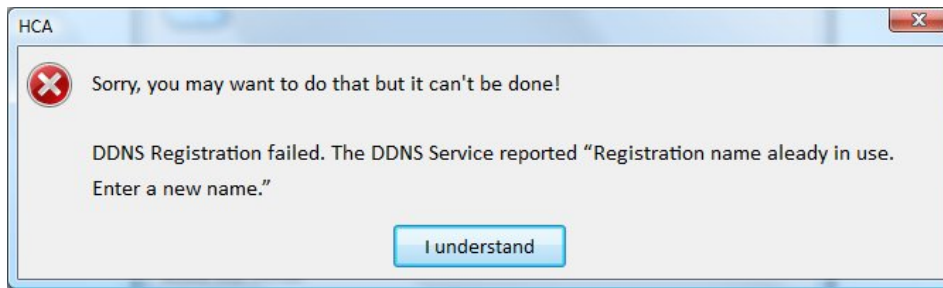
Once registration is completed the DDNS dialog updates to show additional information.



The key piece of information in this dialog that you will need soon is the text in red. Make note of it. Don't use the *Test* button yet as port forwarding must first be configured.

## Port Forwarding

When you connect from outside your network to the HCA server you use an IP address – actually you use a name that because of the DDNS service gets changed into an IP address - and a port number. But how do messages sent to that IP address (the external address of your router) get sent on to the computer that is running the HCA Server? That is exactly what port forwarding does. Messages arrive at the router and then the router must determine where to send that message. It does this by looking in a table that has one or more entries. An entry says "If the message is for <this> port then send the message to <that> computer".

Unfortunately, this is where the story gets a bit hazy. Each router has a different method of setting up that table and providing instructions for all routers is way beyond the scope of this technical note. But there is a really good reference online that has helped many people.

**Just remember what you are trying to do**: You are trying to configure port forwarding to take requests from port x (probably 2000 unless you changed it) and send them on to the computer running the HCA server (whose IP address you know).

Once you get port forwarding configured then go back to the HCA DDNS setup dialog and try the *Test* button. The *Test* button asks the DDNS service to attempt to connect to your HCA Server and reports if it is possible or not. If it reports success, then great! If it doesn't work then you should check that you have all the various pieces configured correctly – check port forwarding first - and if that looks ok, then you probably have either some setting in the router that isn't correctly enabled or you are back to our old enemies the firewall and anti-virus programs.

If it fails, these are areas to check:

- The HCA server port. Use the "Update" button in the DDNS setup dialog to make sure that the HCA DDNS service has the current port.
- The remote access password. Use the "Update" button to make sure that the service has the current password.
- Port forwarding has been correctly configured in your router to allow access though your firewall.
- Your firewall is configured to allow port access. Some routers have an overall enable / disable of WAN (the outside world) to LAN (internal network) access.

**Tip:** There is also a "DDNS Update" and "DDNS Test" menu choice in the Server "Tools" menu.

# Step Seven – Mobile applications using client-server outside the firewall

Now that DDNS is configured you can attempt connection from outside your firewall using a mobile application for Android, iOS, or from a Windows computer.

To perform this step, you will need either an Android phone or tablet, iPhone or iPad, or a Windows computer that you can connect to a network outside your internal network – one way would be to pair a wireless computer to a Hot-Spot created by your mobile phone so it is on the 3G/4G network.

The HCA client mobile applications can be downloaded from the mobile app stores – for iOS look in the Apple app store (aka iTunes), for Android look in the Google app store (aka Google Play) or the Amazon app store.  Search for "HCA" and/or "Home Control Assistant". Additional information is found on this page of the HCA support web site.
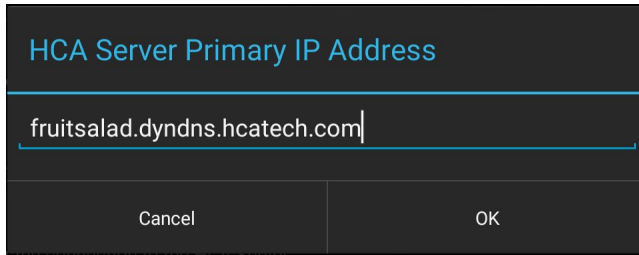
Once installed the application must be configured to connect to the server.
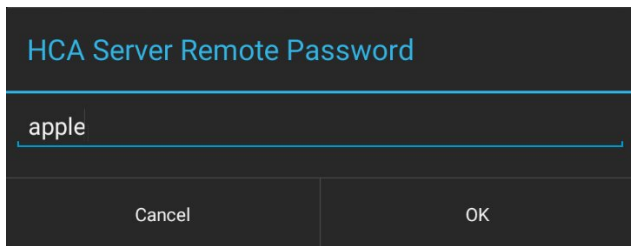
## Using an Android client

Once installed, the HCA Android client is started and then configured by opening the settings from within the application (tap on the wrench in the upper right) and go into the HCA Server settings. Set the

primary address to the name you used when you configured HCA DDNS in the previous step followed by "dyndns.hcatech.com". For example:

**HCA Server Primary IP Address**

fruitsalad.dyndns.hcatech.com

| Cancel | OK |

Configure the IP Port to the port that the server is using then close the settings.  You also need to enter the remote access password you assigned to your design back in step 5.

**HCA Server Remote Password**

apple

| Cancel | OK |

A connection is made by tapping the "Circle – Dot" icon on the upper right.

If it connects, then great! If not, and if the previous step *Test* button worked ok, then the problem is probably in the application settings. Double check those settings.


## Using an iPhone or iPad client

Once installed from the Apple App Store, the HCA client is configured from the Settings application. Set the primary address to the name you used when you configured HCA DDNS in the previous step followed by "dyndns.hcatech.com". For example:
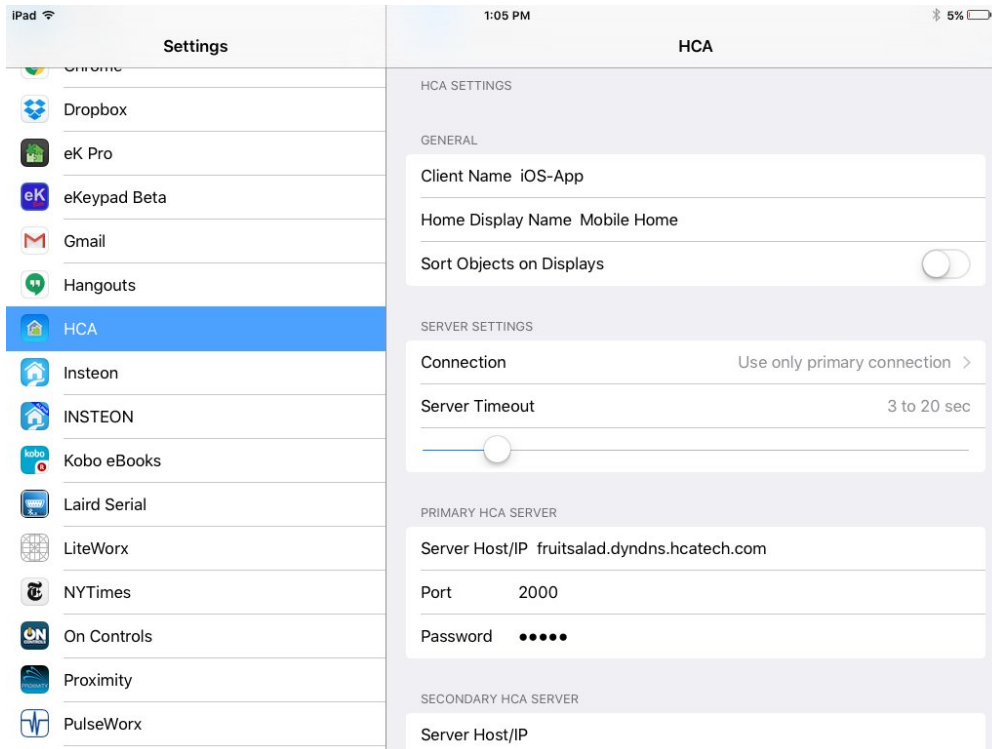
Configure the IP Port to the port that the server is using then close the settings. Connection is made once the HCA app is started.

If it connects, then great! If not, and if the previous step Test button worked ok, then the problem is probably in the application settings. Double check those settings.

TIP: You could also connect the mobile client to your internal network by making sure that it is wirelessly connected to your internal network and changing the IP address in the settings to the internal IP address of the computer the HCA Server is running on. The mobile clients have two connection settings so that it can connect to the internal network when you are at home and connect using the external DDNS name when on the road.

# Step Eight – Amazon Alexa

In this final step, the configuration for Amazon Alexa is made and voice control tested.

Alexa support begins with the *Amazon Alexa/Echo* button on the *Interfaces* ribbon category.

You want to expose your devices to Alexa so she knows what you want to control. How you refer to these when you speak to Alexa is important and you may want to use simpler names that you created your devices with. Also you may not want all of your devices to be available to Alexa - you may have some devices that shouldn't be controlled by voice.

Before going further, these are the things you can tell Alexa using "Kitchen light" as an example.

- Alexa, discover my devices
- Alexa, turn on kitchen light
- Alexa, turn off kitchen light
- Alexa, brighten kitchen light
- Alexa, dim kitchen light
- Alexa, set kitchen light to 50%
- Alexa, increase kitchen light by 20%
- Alexa, decrease kitchen light by 20%

In the case where you say "dim" or "brighten" without specifying a percent, the level is changed by 25%

There is also some thermostat related actions you can use if you have a thermostat in your design

- Alexa, set Great Room thermostat to 72 degrees
- Alexa, increase Great Room thermostat by 4 degrees
- Alexa, decrease Great Room thermostat by 8 degrees

While what you say isn't quite free-form, Alexa is smart in that you don't have to use these exact words. These also work:

- Alexa, Kitchen light ON
- Alexa, OFF Kitchen light

Alexa, unfortunately doesn't always match "Kitchen Light**s**" and "Kitchen Light" as the same thing when spoken so be careful with names like those.

In the Alexa setup dialog you can configure what HCA calls "Alexa names". These are the names that you use to refer to devices, programs, groups, and rooms when speaking to Alexa. The Alexa dialog is where those are specified.
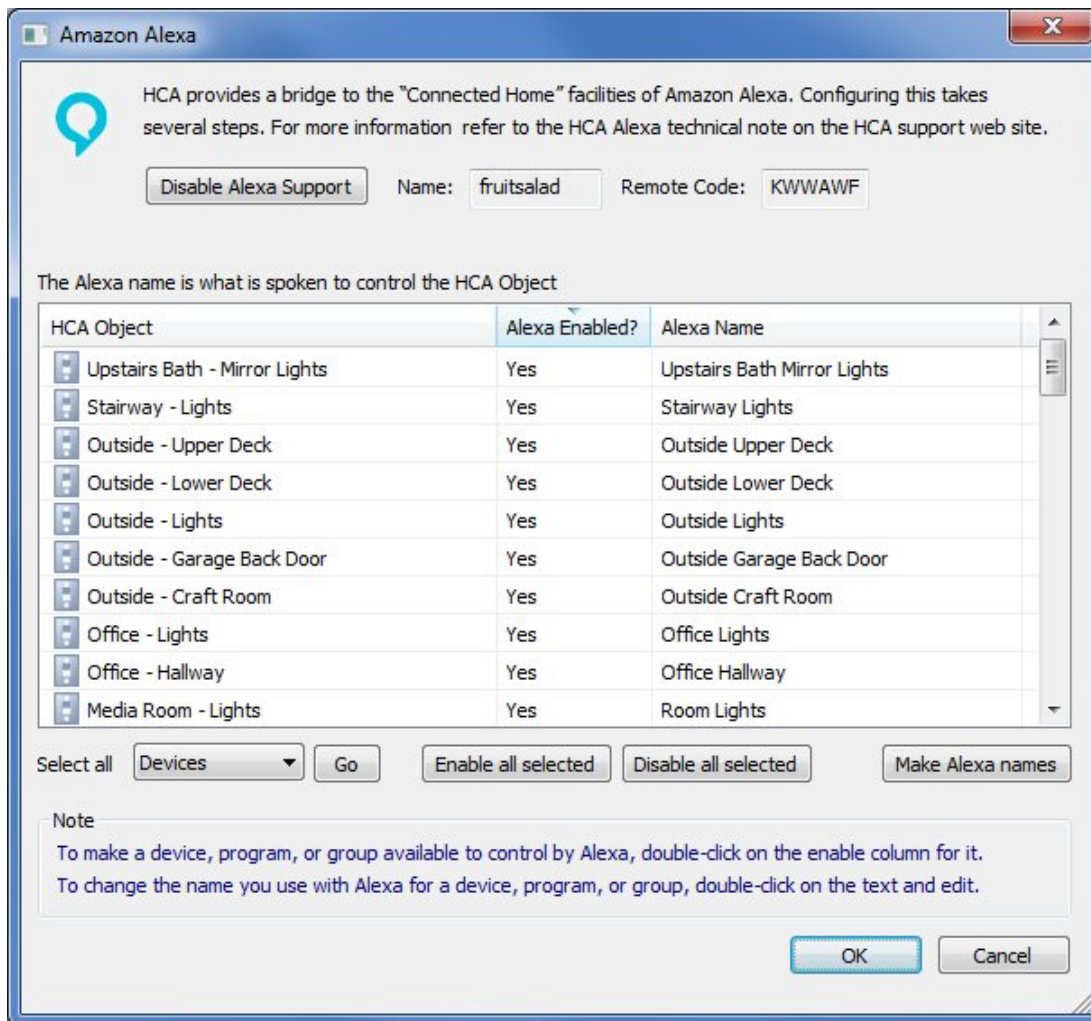
The first action to perform is to enable Alexa support by pressing the button at the top. Until Alexa support is enabled the button is labeled "Enable Alexa Support". Once enabled then the button label changes to what is shown above. When Alexa support is enabled a 6-character remote code displays. Make note of it.

Next, create an Alexa name for each device. You can use the "Make Alexa names" button in the dialog lower right to create names that are the same as the object name. This may be a good starting point. As it says in the blue text in the dialog, you can double click on the Alexa name and then edit it. You can also toggle - enable / disable - support for the device by double-clicking in the Enable column on the row for the device.

There are these limitations on Alexa names:

1. Names can contain only letters, numbers, and blanks.

2. Names shouldn't contain as a word – that is, embedded with blanks on both sides – that Alexa uses as key words. HCA will point out when you have use one. Some of them are: discover, turn, on, off, brighten, dim, set, percent, stop, cancel, to, the, pause. An example Alexa name that wouldn't work would be "Kitchen dim light" since it has "dim" in it.

The "Make Alexa names" operation creates the name from the room name and device name but modified it to meet the above criterion.

Choosing good Alexa names is important:  You want names that are easy to say and unique enough to not be confused with others.

If you want to make major changes to the enable/disable settings, you can multi-select a number of rows and then use the "Enable all selected" or "Disable all selected" buttons.  You can also use the select dropdown and the "go" button to select all objects of a type and then enable or disable them in one operation.

In addition to using this dialog you can also configure the Alexa name and enable/disable support for an individual device, program, group, or room by opening its properties and viewing/modifying the Alexa settings on the properties dialog *Name* tab.

**Some very important notes and Tips:**

If you make <u>any</u> changes to Alexa names or change support - enable/disable - you must again perform the Alexa discover operation. But don't start discovery until you close the Alexa setup dialog as any changes are not saved until then.

The Alexa discovery operation may not update the names of existing devices when you do rediscover.  If that happens, then in the Alexa app remove all, then rediscover. To do this scroll down to the bottom of the listed devices and you will see a link that says "Forget all devices and groups".

In the Alexa world they have the concept of "groups". You should ignore that as the group mechanism in HCA already does what it does and more.

HCA printing can print a list of Alexa names and what each name does. It might be a good idea to print out a list of the names you can speak until everyone in the family gets used to this new world. You can have the printout contain only a list of Alexa names. Select from the print menu "Printout Setup" to control what gets printed. Printing is available in the HCA application menu.

## Adding HCA support in the Alexa application

In the Alexa app select the "Smart Home" section and then follow the "Get More Smart Home Skills" to see the possible choices. Find HCA by searching for "Home Control Assistant" and tap the "Enable" button and the HCA "sign on" page opens.
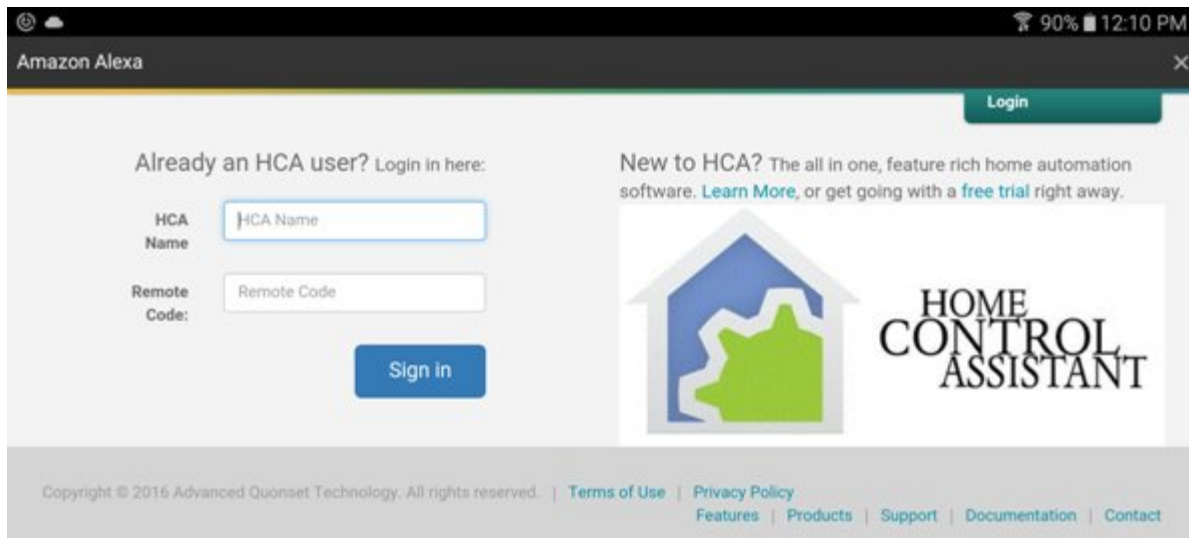
In "HCA Name" field enter the name you created in the DDNS configuration dialog. The "HCA name" and the "remote code" display in the Alexa Configuration dialog. Continuing from the example above, the HCA name entered would be *fruitsalad* and the Remote code is *KWWAWF*.

The HCA name and code are case insensitive so it doesn't matter if you enter it in the same case as HCA displays.

Press "Sign in" to continue and a new page displays.
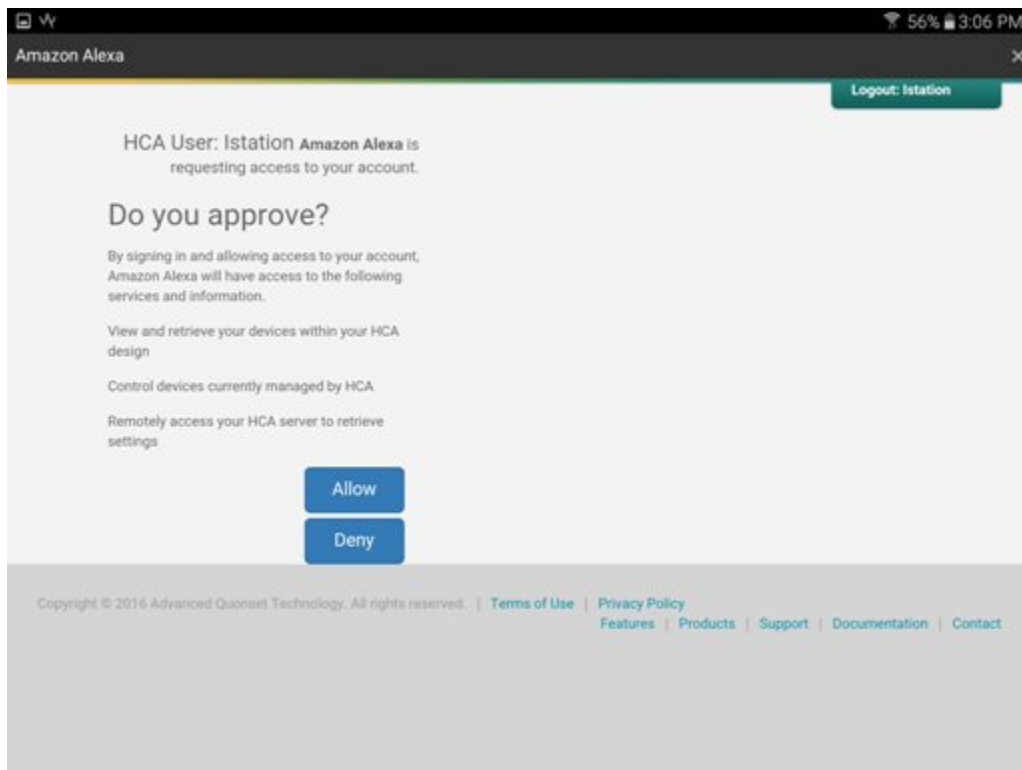


Press *Allow* to let HCA control your devices. Once done the "Success" page appears. Close it with the "x" in the upper right corner.
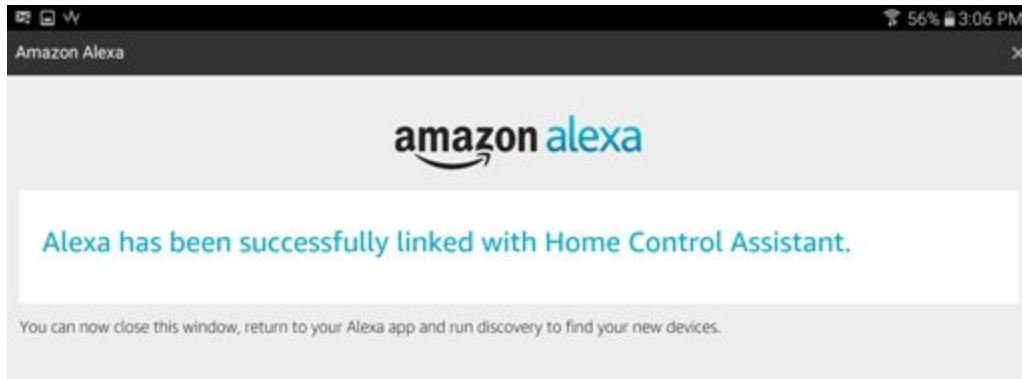
In the Alexa application, select "Settings" and then "Smart Home". In the "Your Smart Home Skills" section "Home Control Assistant" should now be listed. If you ever want to disable HCA support, there is an "Disable" option found there.



## Alexa discovery

To begin device discovery, tap the "Discover devices" in the Smart Home page "Devices" section. Once complete the discovered devices appear in a list as shown in the screen image below. Alternatively, you can ask Alexa to do this by saying "Alexa, discover my devices."
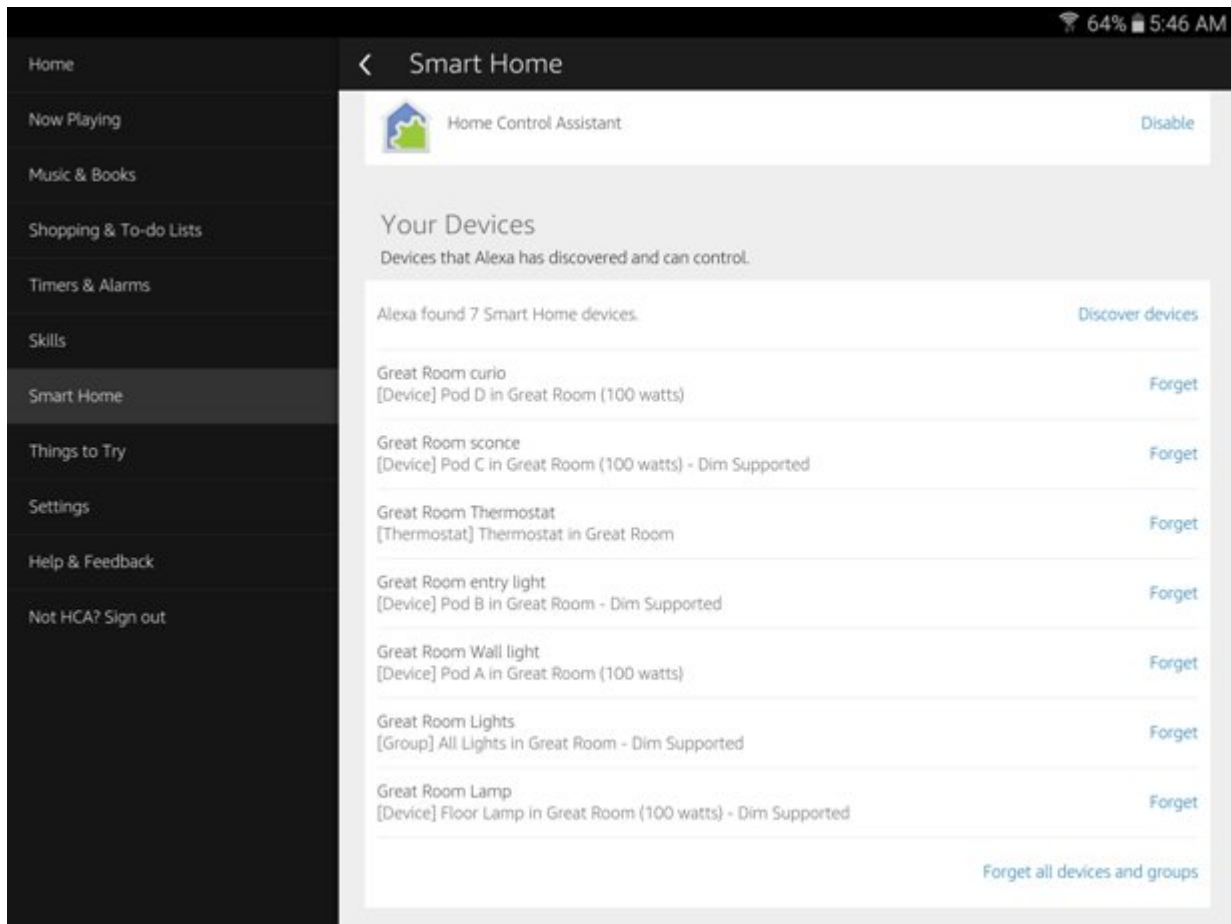
Once discovery completes Alexa announces the number of devices discovered.

And that's it! You should now be able to use Alexa to control your devices, programs, groups, and rooms with HCA.

## Getting it to work

Unfortunately, many times the "error reports" Alexa says really don't help much.  Many times it says "that command doesn't work on <device name>" regardless of what error HCA returns to Alexa.

Possible problems are:

1. Alexa can't connect to the server
2. When Alexa asks to control a device the server reports a security problem
3. When Alexa asks to control a device the server reports that there is no such device
4. When Alexa asks to control a device the server reports it can't carry out the operation

Again, all of these errors may result in Alexa saying the same thing.  So here is some help in figuring out what went wrong.

a) Make sure you are running the HCA Server and you opened your design file. Even we sometimes forget to open the .HCA file in the server.

b) Make sure that you have configured and tested the connection in the DDNS configuration dialog. Until the "Test" button shows a success, Alexa will not be able to access your server. You may have port forwarding incorrectly configured in your router and/or your firewall settings are wrong. Also check that the Alexa service has your current IP address and remote access password. Use the manual "Update" button in the DDNS dialog to make sure of this.

Once you have done these two things that should eliminate problem # 1 above. After this then you have to dig a bit more.

The first thing to check is that you don't have any of the other HCA security options enabled except for the necessary remote access password. These can be checked by selecting the "Design" ribbon category, and pressing the "Security" button in the "Home Configuration" panel. Make sure that only the remote access password is in effect and the others are not.

Next, make sure that you have all your interfaces connected and working. You can see this by opening "HCA Options" from the Server application window "Tools" menu and looking on the "Hardware" tab. Also try and control the device from a client (Windows, Android, iOS) and see if that works.

Next, if you have renamed any devices, have Alexa rediscover your devices to ensure she has the current names.

And perhaps the Alexa error is correct – for example trying to dim a non-dimmable device. It is unfortunate that many times Alexa gives only the one error statement rather than different replies to help show what the problem is.

## Step Next - To infinity and beyond

This quick setup really only begins to touch the surface of HCA. Up until now it has all been about controlling devices. But as was said in the introduction, HCA is about so much more than that. This section offers some pointers to other areas and resources you can use to get deeper into programming your home.

A good place to get additional information is the HCA User Guide. Yes, we know no one likes to read documentation but a lot of effort was put into it to be as readable as possible. The HCA User Guide is divided into two sections – a main guide and an appendix. In the main guide are chapters on HCA features that apply regardless of the automation gear you use. The appendix is all about the support for specific types of devices and has chapters on Insteon, UPB, wireless, etc.

http://www.hcatech.com/index.php?sid=documentation

Also on that same documentation page are technical notes that can help with more detail on specific features and uses of HCA.

Another good place is the HCA YouTube channel. It contains lots of videos and a complete "HCA 101" course that video by video takes you through almost all aspects of HCA.

The HCA YouTube channel is reached at http://youtube.hcatech.com

###End###