

HCA Alexa support (Updated 11-May-2016)

These are the requirements for having Alexa interoperate with HCA:

- HCA 13 Build 110 or later is required.
- You must run the HCA Server. Alexa support is a cloud based service and it connects only to the HCA Server. Alexa support requires access to the HCA server from outside your firewall. To do that you must open the port used by the server in your home network by configuring your router. Also configure port forwarding of the server port to the computer running the HCA Server.

If you are using the HCA Web component and are currently accessing it from outside your firewall, you must already have set up your router to allow that port to be opened and port forwarding configured to the computer that the HCA Server is running on. The port for HCA server communication must be a different port number than the web component uses. If you are using the web component there will be two ports open in your firewall and port forwarded to the computer the server is running on.

- There must be a remote access password configured in your design. Enabling Alexa support requires that.
- You must configure HCA DDNS before Alexa support can be enabled. There is a technical note on DDNS configuration.

You may have already created a Dynamic DNS name using a service like DynDNS.org or you may even run your own name server in your network. Regardless of this, HCA DDNS is a required component of Alexa support.

NOTE: Amazon changes Alexa support all the time. The descriptions and screen images in this tech note were current when written. If things look different when you try to follow the directions, the basic ideas should still be the same and you should be able to sort it out.

Quick Alexa support overview

1. Give your design a remote access password if it doesn't already have one. Select from the HCA *Design* ribbon category, *Security* button.
2. Setup HCA for client-server if you are not already using it. There is a client-server video and user guide chapter to help.
3. Configure HCA DDNS. There is a DDNS technical note that describes the process.
4. Configure your network router and firewall to allow port access to the server port selected for the HCA Server and forward requests to that port to the computer running the HCA Server (port forwarding).
5. Use the "Test" button in the HCA DDNS configure dialog to make sure that all the above steps are correct and working. If the test fails make sure that you have configured your firewall and port forwarding correctly. The test operation is also available from the server application window menu "Tools – DDNS Port Test"
6. Enable Alexa support as described in this technical note.
7. Choose which rooms, devices, programs, and groups can be controlled by Alexa. Give them useful easily spoken names that are not easily confused among your devices.
8. Add the HCA "Skill" (what Amazon calls the piece that connects Alexa to HCA) to your Alexa account as a "Smart Home" choice. You will need the name and remote code shown in the "Amazon Alexa" dialog in HCA.
9. Have Alexa discover your HCA rooms, devices, programs, and groups.
10. Print a list of what can be controlled from Alexa using the "HCA Printout Setup" and "Print" buttons in the HCA Application menu.
11. Test Alexa support

Enabling and configuring Alexa support

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



You want to expose your devices, programs, groups, and rooms 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 not want to use the names you already have created. Also you may not want all of your devices, programs, groups, and rooms to be available to Alexa - you may have many devices and programs that aren't important or 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 the kitchen light
- Alexa, turn off the kitchen light
- Alexa, brighten the kitchen light
- Alexa, dim the kitchen light
- Alexa, set the kitchen light to 50%

There are also some thermostat related actions:

- 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:

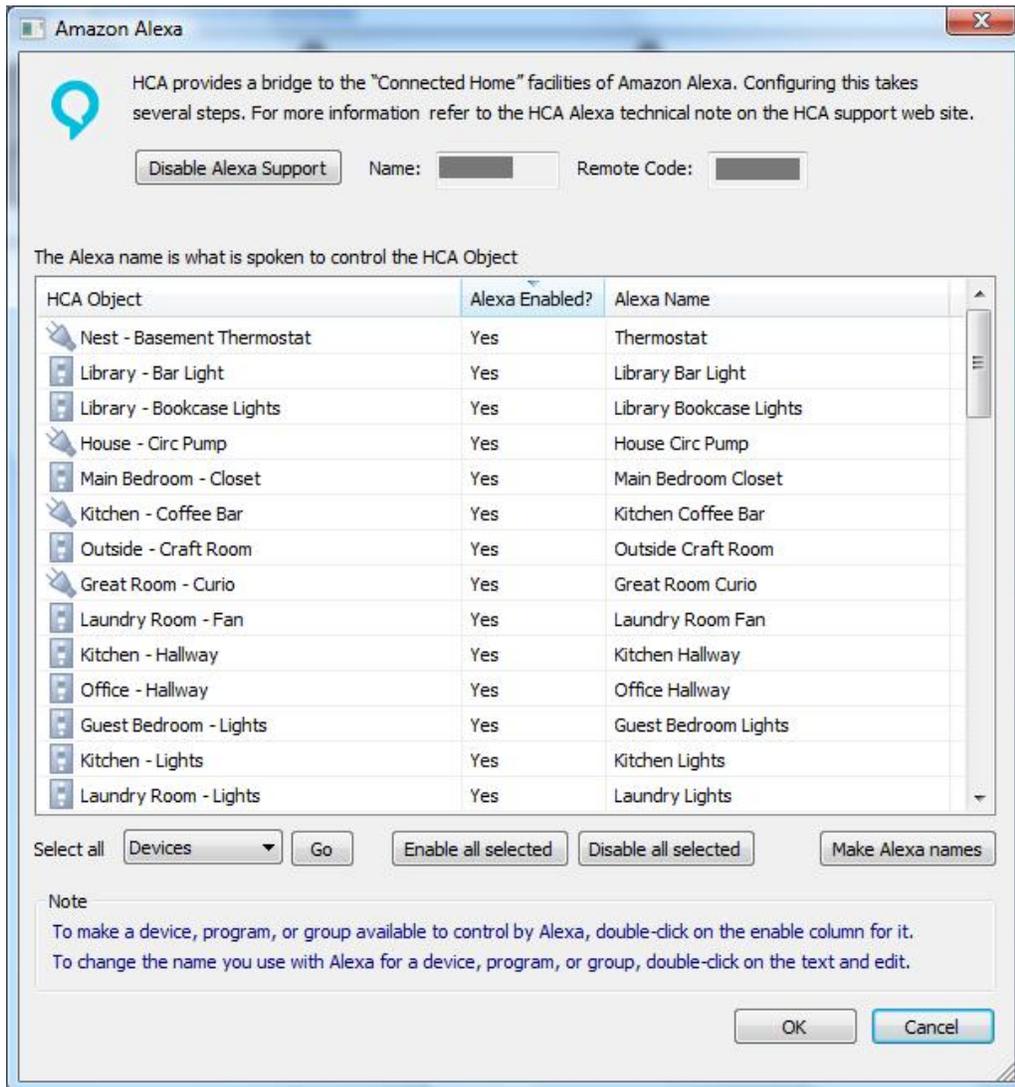
- Alexa, Kitchen light ON
- Alexa, OFF Kitchen light

Alexa, unfortunately doesn't always match "Kitchen Light_s" and "Kitchen Light" as the same thing when spoken.

It is important to know that when Alexa is linked with HCA you can "Turn on" and "Turn off" programs as well as HCA groups and devices. Turning ON a program starts it with an ON trigger. Turning OFF a

program starts it with an OFF trigger. If you control a room with Alexa then the devices in the room are controlled as you have configured them in the "room" options of the device.

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, program, group, and room. 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 object by double-clicking in the Enable column on the row for the object.

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, not embedded but 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.

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 Alex settings on the properties dialog *Name* tab.

Some very important notes and Tips:

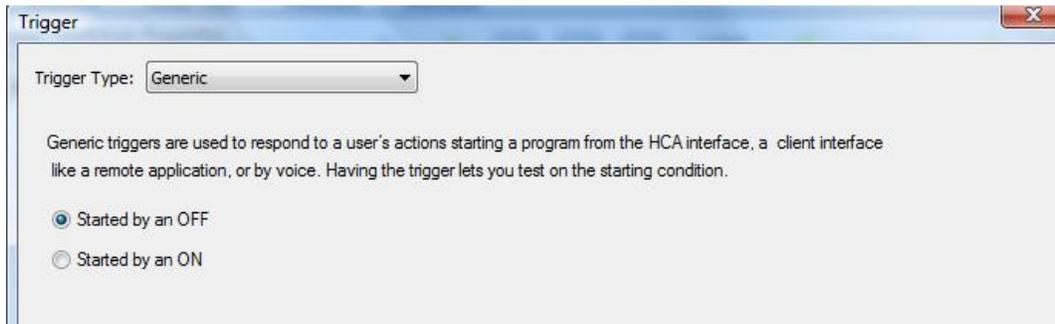
If you make any changes to Alexa names or change support - enable/disable - you must again perform the Alexa discover operation. But don't start discovery until you close the Alexa setup dialog as any changes are not saved until then.

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.

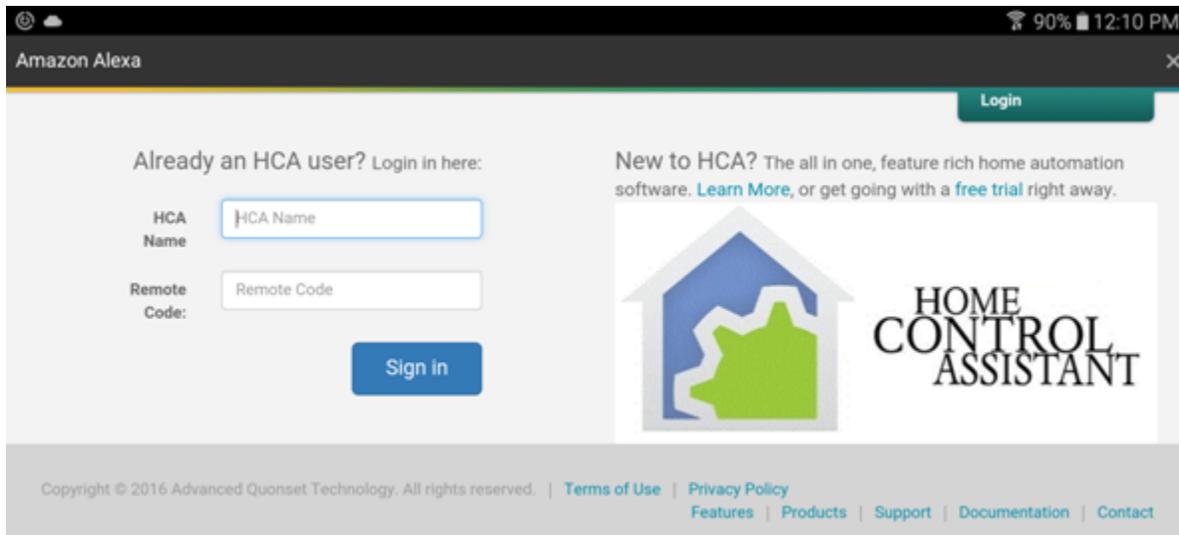
HCA printing can print a list of Alexa names and what the name does. It might be a good idea to print out a list of the names you can speak until everyone in the family gets used to this new world. You can have the printout contain only a list of Alexa names. Select from the print menu "Printout Setup"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

Currently Alexa can only control rooms, devices, programs, and groups. If you want to activate or deactivate a scene or change the home mode you must create a program to do that. Create the program, give it on or off triggers, and then it can be started with "Alexa, turn on x" and "Alexa, turn off x". In order to test on the "starting trigger" in a program – which you will want to do for this – there must be at least one ON and one OFF trigger. The best way to do this is to create generic ON and OFF triggers.



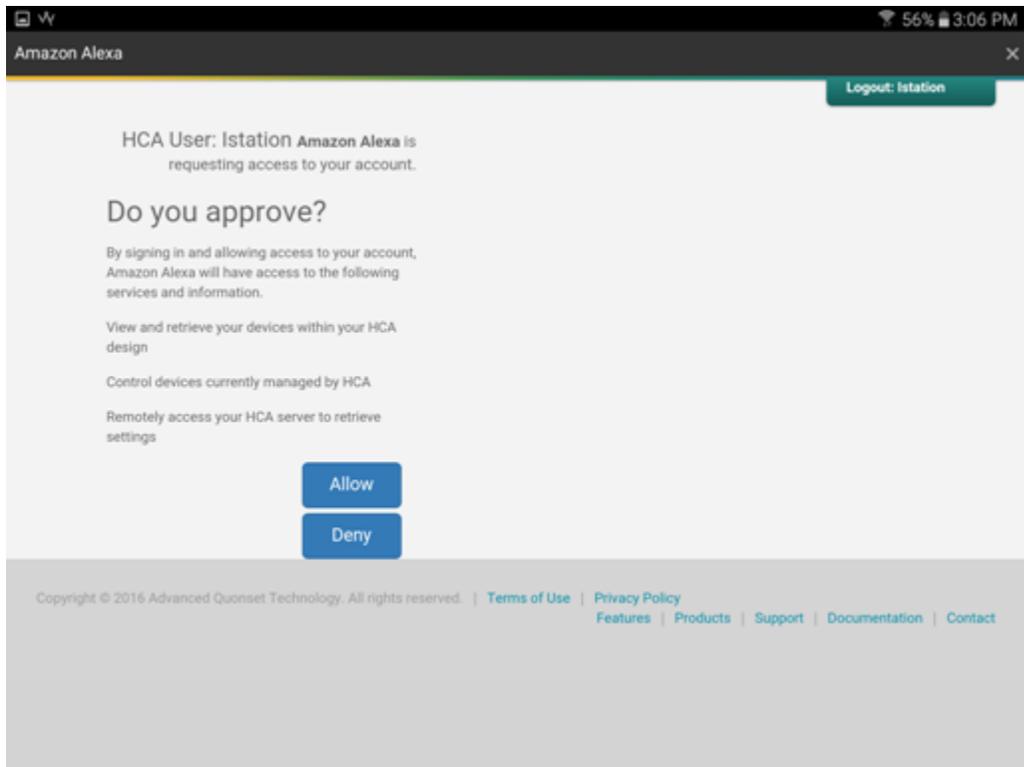
Adding HCA support in the Alexa application

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 and tap the "Enable" button and the HCA "sign on" page opens.

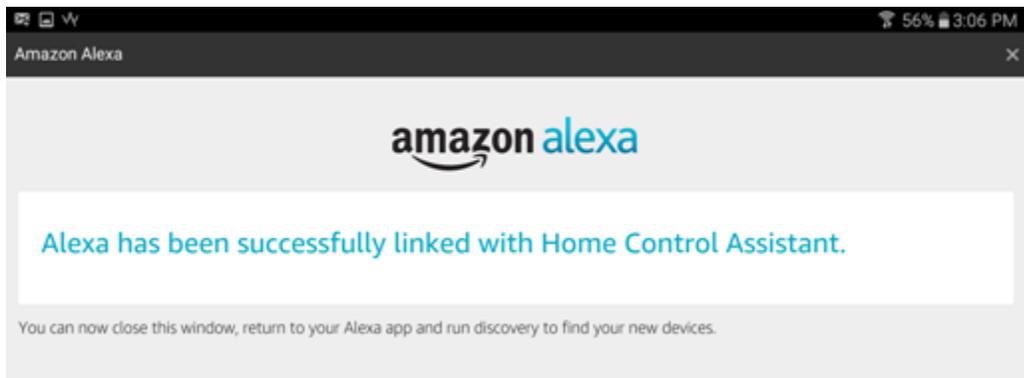


In "HCA Name" field enter the name you created in the DDNS configuration dialog. The "HCA name" and the "remote code" display in the Alexa Configuration dialog. The HCA name and code are case insensitive so it doesn't matter if you enter it in the same case as HCA displays.

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.

Your Smart Home Skills

Use to control cloud-connected devices on other services.

Get More Smart Home Skills >

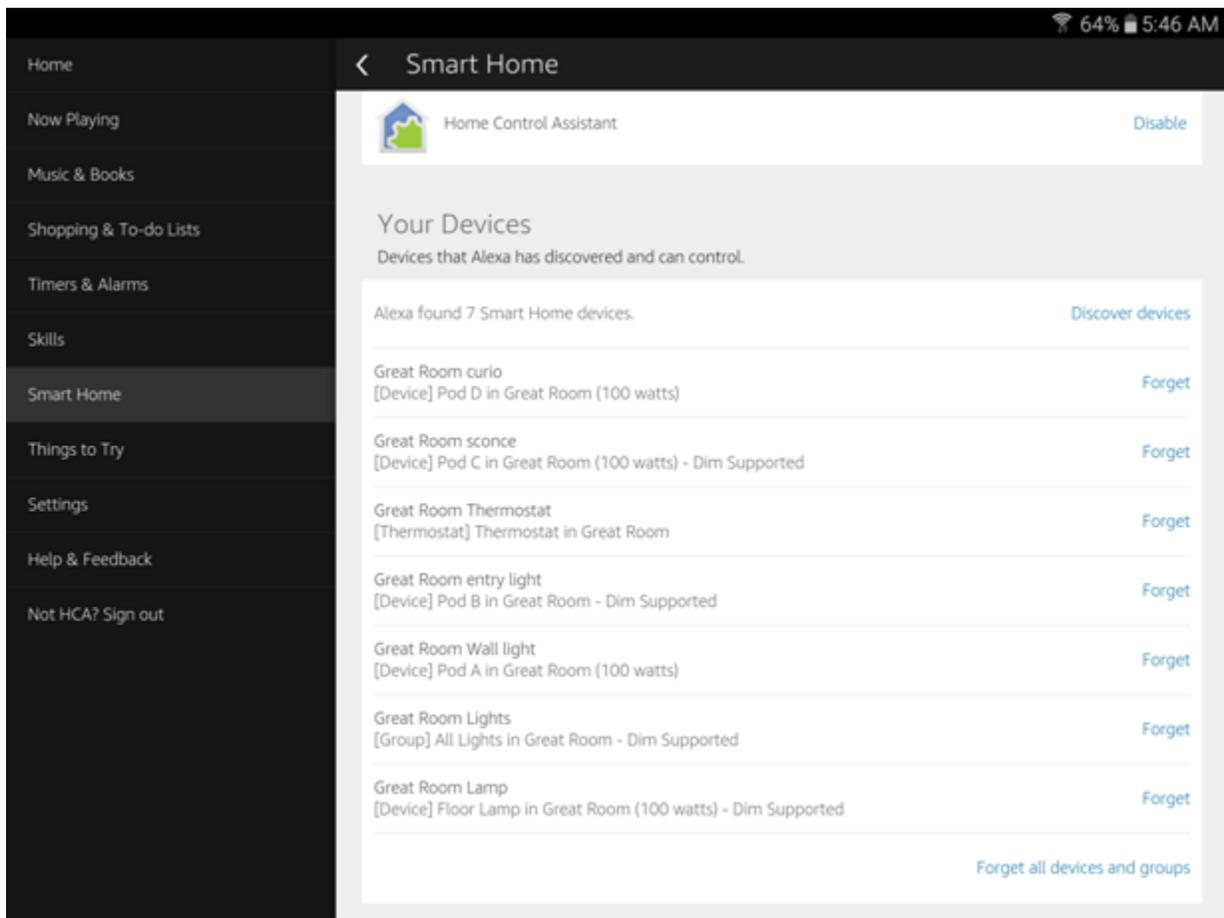


Home Control Assistant

Disable

Alexa discovery

To begin device discovery, tap the "Discover devices" in the Connected 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.

A Note on Thermostat support

Thermostat support is unfortunately not as useful as it could be. The problem is that many of the current thermostats in use don't allow the setpoints to be changed unless the set point for the current mode is being changed. That is, you can't change the heat setpoint unless in heat mode, the cool setpoint unless in cool mode and no setpoint changes possible if in Auto or Off mode. This is not a HCA limitation but a limitation of how the thermostats work for remote control. Some work this way, others are different. But the bottom line is that for many popular thermostats you can't always change a setpoint.

When you say to Alexa, "Set thermostat to 72 degrees" that changes the setpoint of the current mode – it changes the heat setpoint to 72 degrees if in heat mode or the cool setpoint to 72 degrees if in cool mode. If the thermostat is in Auto or Off mode then Alexa reports an error.

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 a file is loaded into the server. Even we forget to open the .HCA file in the server some times.
- 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 device to ensure it has the current names.

And perhaps the Alexa error is correct – for example trying to Dim and 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.

##end##