HCA Tech Note 501

Cloud Partner Services – General information

By establishing the HCA Cloud, it becomes possible for HCA to partner with other companies and integrate their products into your HCA design. Unlike older products, like UPB or Insteon, these new products are all about communicating with the "Internet of Things" as it is sometimes called.

For example, the Ring Doorbell provides a way, in additional to all that it does as a doorbell with a video system, that can notify other systems of actions. So not only do you get notified when someone is at the door through the Ring mobile application, HCA is also notified and you can carry out actions that you create using the HCA tools.

For each service or product that HCA partners with there will be a method by which you can authorize HCA to work with their product. The exact steps are different with each system.

Note: if you have used Amazon Alexa you have already seen this authorization process in action when you added the HCA Skill to your Amazon account though the Alexa app.

Once this connection is made and authorized then the HCA Server is notified when something happens and, depending upon the service, information about what happens is passed along. How you handle the event is up to you but in general a program you designate is started and it provided with whatever information came from the partner service.

Note: For each partner service, there is a specific technical note on the procedure to follow. This is only general information.

Inbound Notification Manager

This tool manages connections to external services that notifies HCA when some event. For example, a person is seen by the Ring Doorbell or the NEST thermostat reports a change in the ambient temperature. In both cases the device – the doorbell or the thermostat – initially contacts the manufacture's cloud service when that event happens and that in turn notifies HCA.

For these types of devices to work with HCA you must be using client-server mode as the server must receive the notification. You must also have a cloud account to complete the linking process.

Choosing a handler for a service in your HCA design

As described above, the first step to connecting to a partner's service is to authorize HCA to receive notifications. The next step is configuration on the HCA side. For each partner service you are using, you must select a program to execute when the service reports an event.

In the HCA Cloud ribbon category, press the "Inbound Connection Manager" button.

Cloud Inbound Notifications Manager

The Inbound Notifications Manager shows the services HCA is authorized to receive notifications from. In this way, when a notification is received, an event handler program starts supplied with the event details and you can process it in any way you choose.

Listed below are all the services that HCA can use and the event handler program for each if one exists.

There are two steps to configuring this. Typically, these services require that you authorize HCA to receive events. In the Cloud ribbon category use the "My Services" button to perform that authorization. In this manager dialog, select the service you want to create an event handler program and press the "Assign" button.

Service name	Handler Program	
Ring Service		
Nest Service		
HCA Developer Service		

Assign Notification Handler

Ring Doorbell

This service responds to the message when a Ring Doorbell reports an event.

Instructions for connecting your Ring devices and Ring account to your HCA Server is available on the HCA Support web site in the Ring service note. You should review this before going further.

The parameters to the handler program are:

1. Service name

2. Collected parameters in JSON format

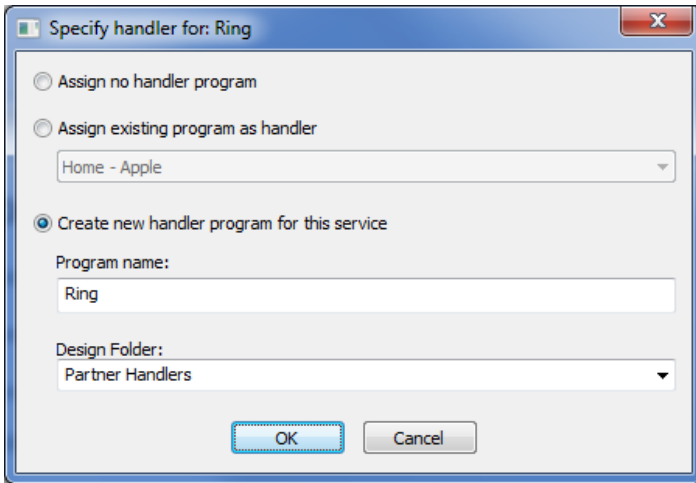The JSON contains these items which are extracted into variables:

1. Event: A string containing either "new-ding" or "new-motion"

2. Description: A string containing the name of the doorbell that made the report

Close

This dialog shows all the HCA partner services available and describes what the service provides. To choose a handler for that service, select it and press the *Assign Notification Handler* button.
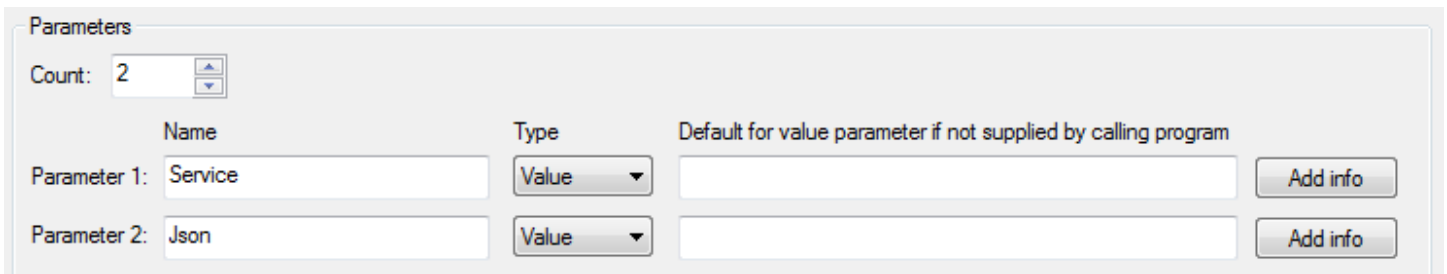
In this dialog, select an existing program to execute, have HCA build a handler program for you, or remove any handler from this service.

Handler programs must have the "This program supports parameters" option enabled. The parameters must be defined like this:
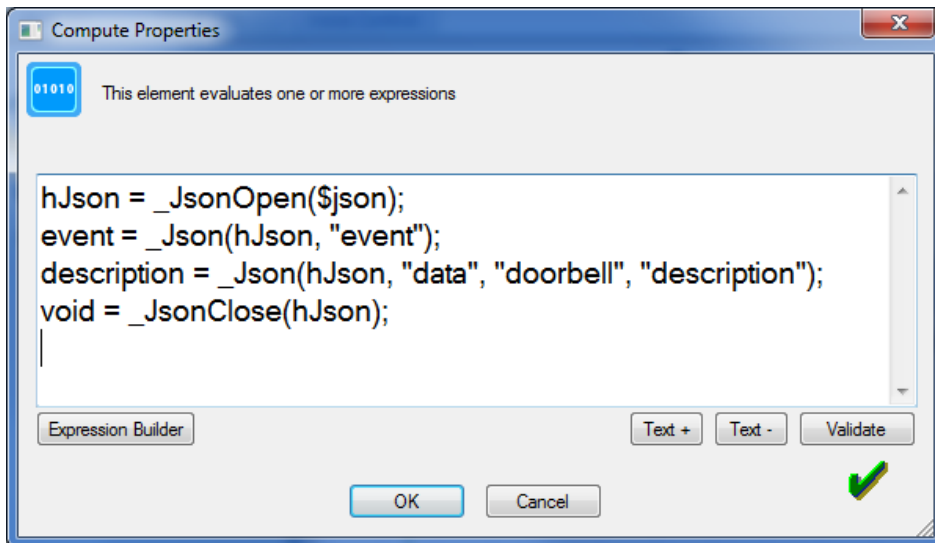

There must be two value parameters whose name and whatever you want them to be. The first parameter receives the service name and the second parameter is the JSON passed by the service. It is up to the program to decode it using the JSON functions available in the Visual Programmer Compute element.

If you selected the option to create a new program, HCA has built that JSON decoding for you based upon what it knows that the service sends in the JSON.

For example, for the Ring service a compute element is added that decodes the JSON to extract out the event and the description (name) of the doorbell.
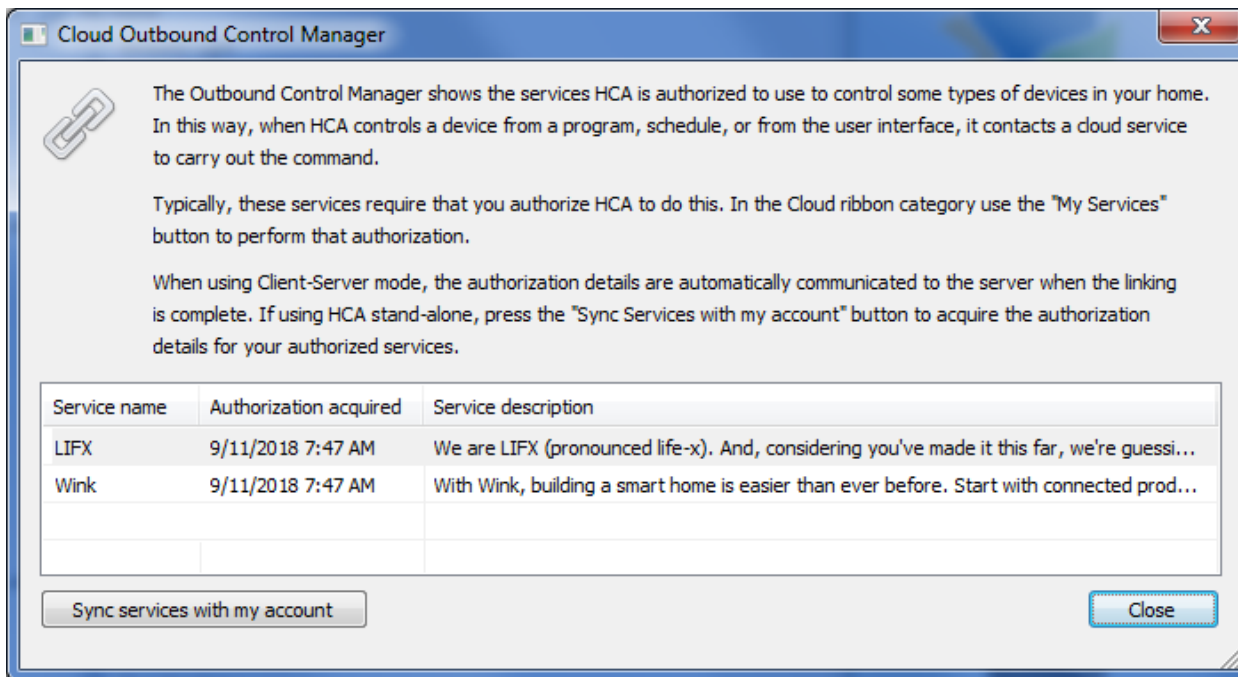
You would then add to the body of the program additional elements to perform whatever actions you want in handling the event.

Outbound Control Manager

This tool manages connections used by HCA to control devices using the manufacturer's cloud service.

As with devices that notify HCA, a linking process is also required for HCA to control them. Refer to the technical note for the device type for instructions.

As the dialog says, once that linking is complete, the HCA Service is notified automatically with the credentials needed for control. If, however you are using HCA in stand-alone mode, then you must explicitly sync the HCA automatically with your cloud account using the "Sync services with my account" button.

##end##