HCA Tech Note 602

LIFX

This technical note provides instructions for adding a class to HCA for support of LIFX Wi-Fi enabled light bulbs and light strips.

Note: You must be using HCA 15 or later for LIFX support.

Once you have configured your lights with the LIFX app, added the LIFX class to HCA, then HCA can control the devices in the usual manner: On, Off, Dim, Get-Status.

But if you want to do more with these very capable lights, you will need become familiar with LIFX developer information.

https://api.developer.lifx.com/

The LIFX class provides programs that let you access all the "cool" features of LIFX lights, for example, colors and effects.

Getting Ready

Before working with HCA, make sure that you have already completed the procedure outlined in the instructions that came with the device using the LIFX app. You will need to create an account with LIFX for this all to work. Make sure you write down your username and password for this account.

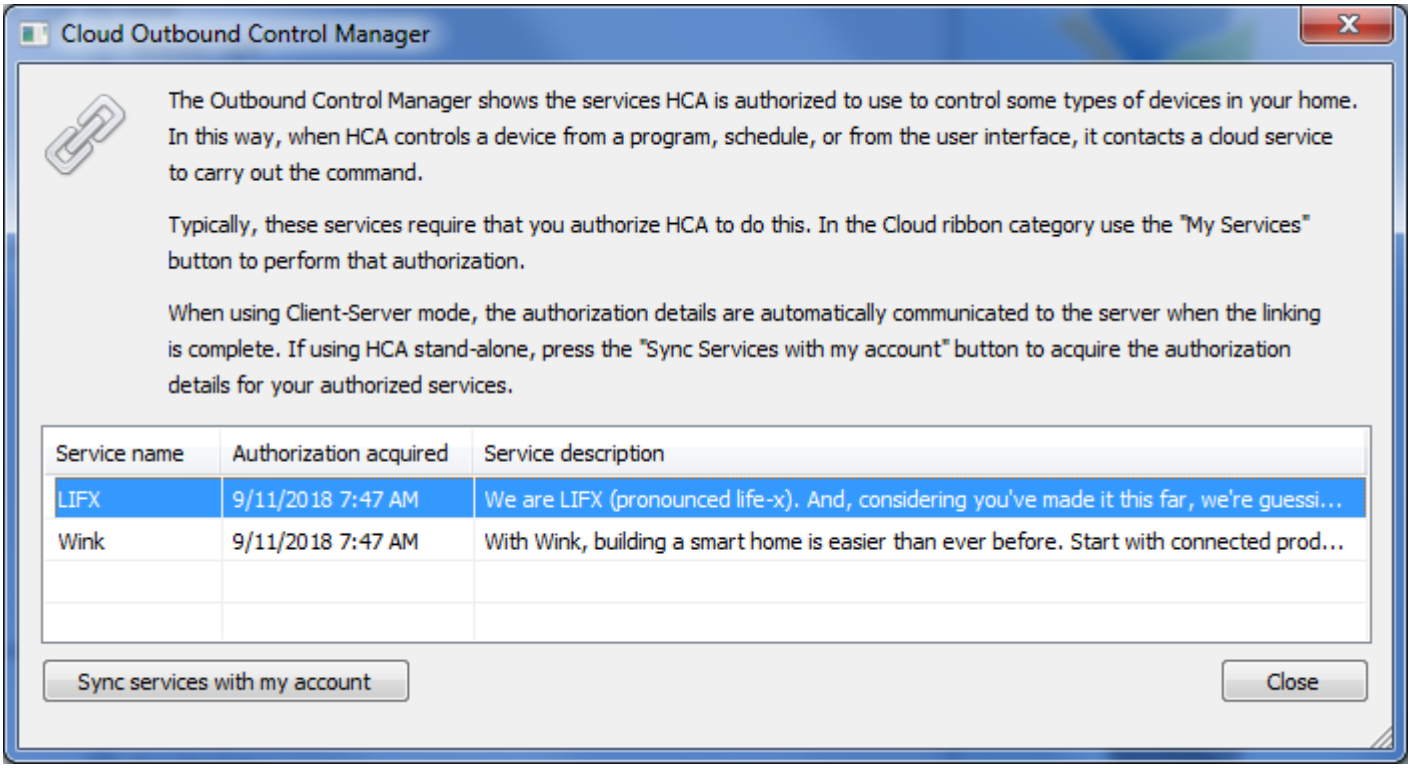
Step 1: LIFX Authorization

Go into your cloud account and authorize LIFX to work with HCA.

If you are running client-server then the authorization from LIFX will come directly into your design and you need do nothing else.

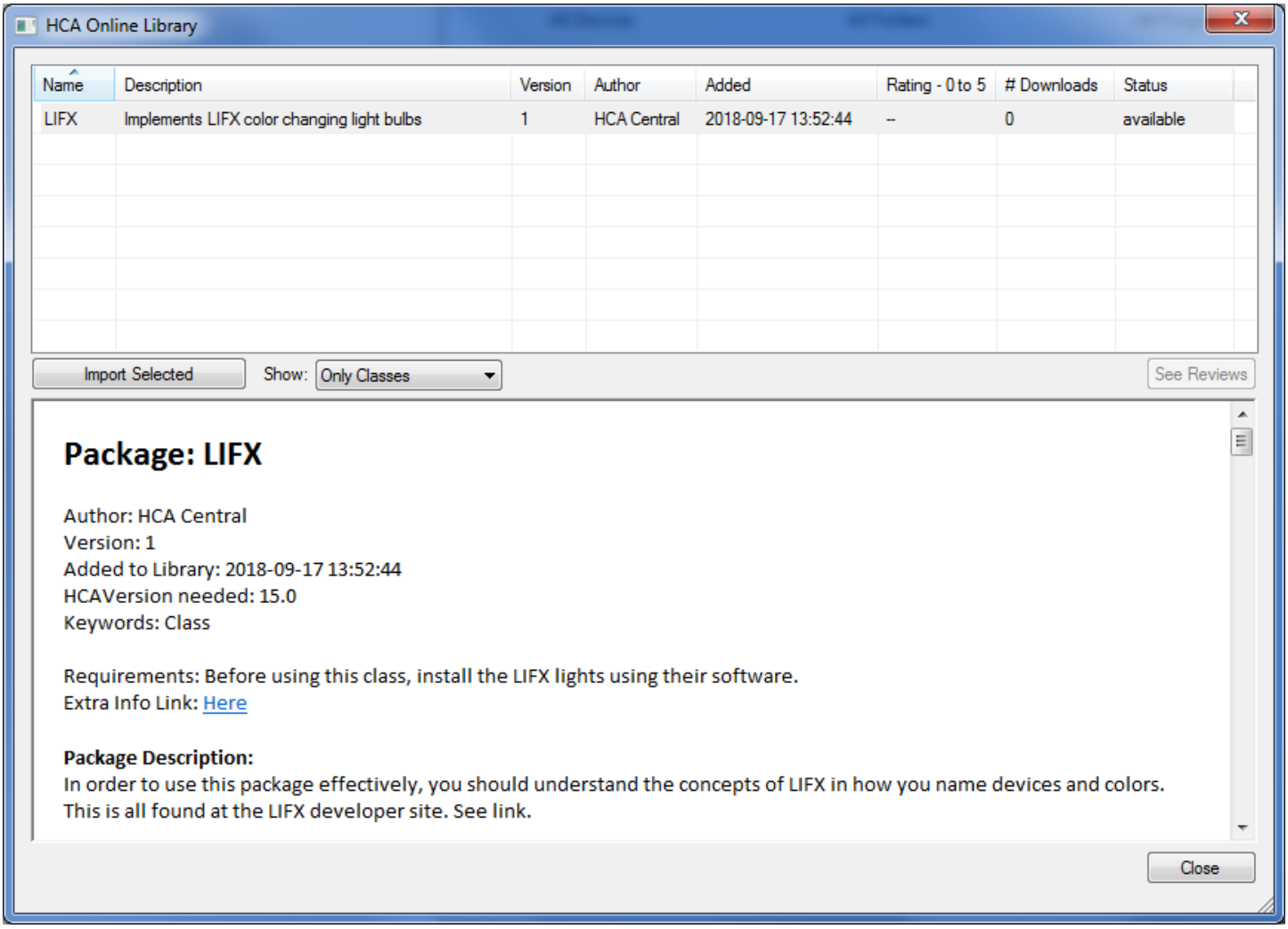
If you are not running client-server you should go to HCA-Cloud ribbon category and click on the “Outbound Control Manager” and click on the “Sync Services with my account” button.

Even if you are using C/S you can open this dialog to check that the authorization of LIFX into your cloud account propagated to your design.



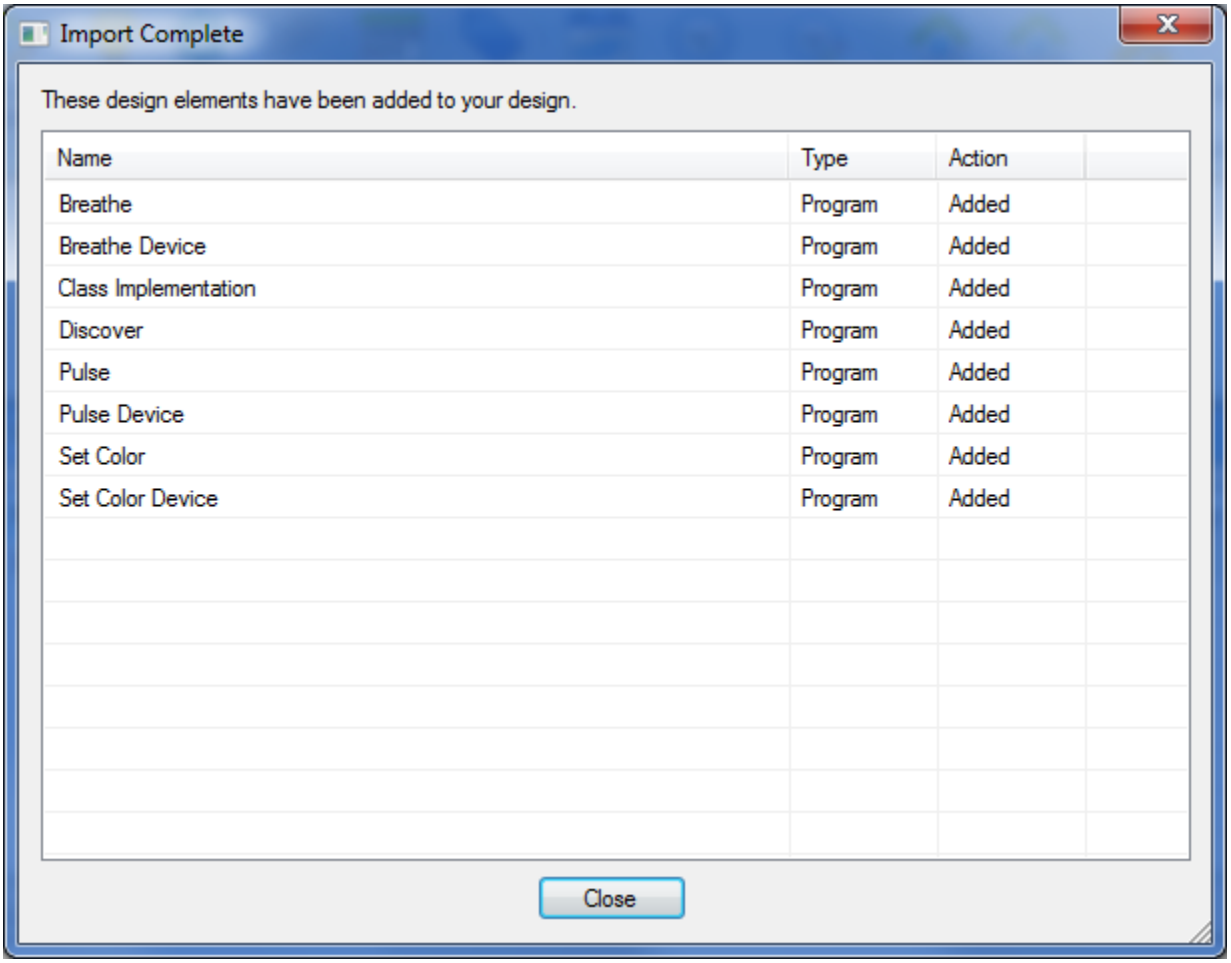
Step 2: Add the LIFX Class to your HCA design

In the Design ribbon category, press the Library Browse/Import button to access the online library. Then locate the LIFX class and import.

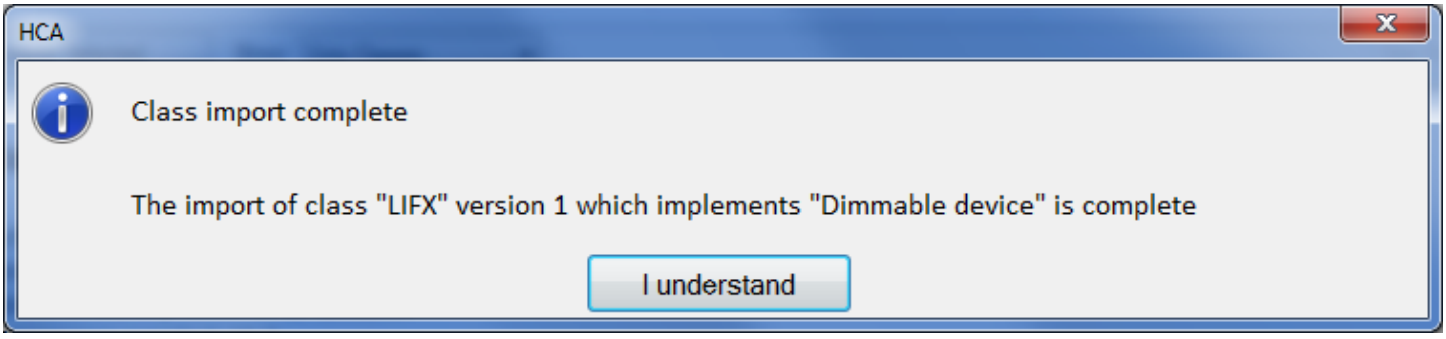


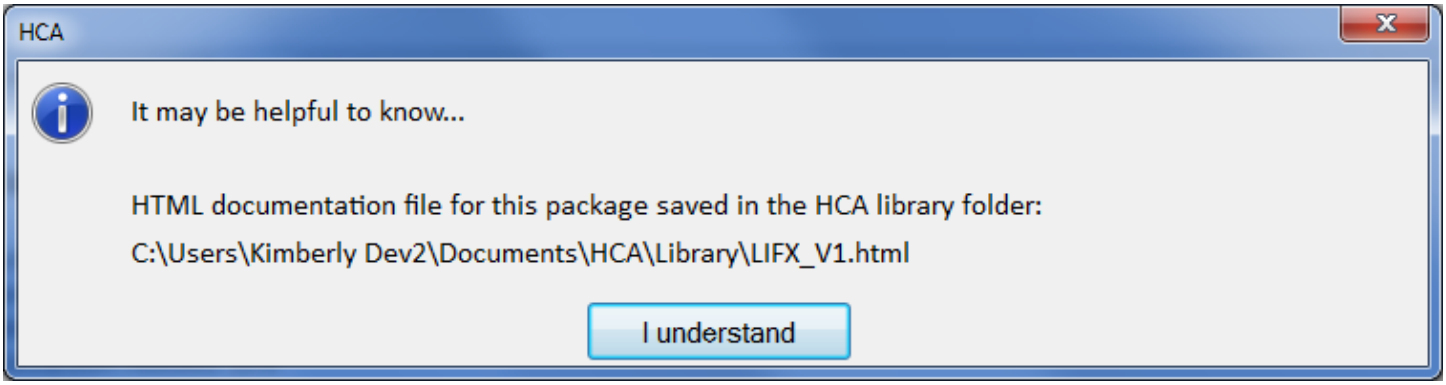
The lower section of the library browser shows the documentation for the class. All the programs that are part of the class are listed with instructions on their use.

Press the *Import Selected* button. The class programs are added to your design and added to the import report.



Two other popup messages follow. The first reports that the import is complete and the second tells you where the documentation for the class has been saved.





The class import adds eight programs to your design in the LIFX folder. The main one is called “Class implementation” and is what HCA uses to handle ON, OFF, DIM, Get-Status. Once this class is added you can then use all the control operations for LIFX devices from the UI, programs, schedules, etc.

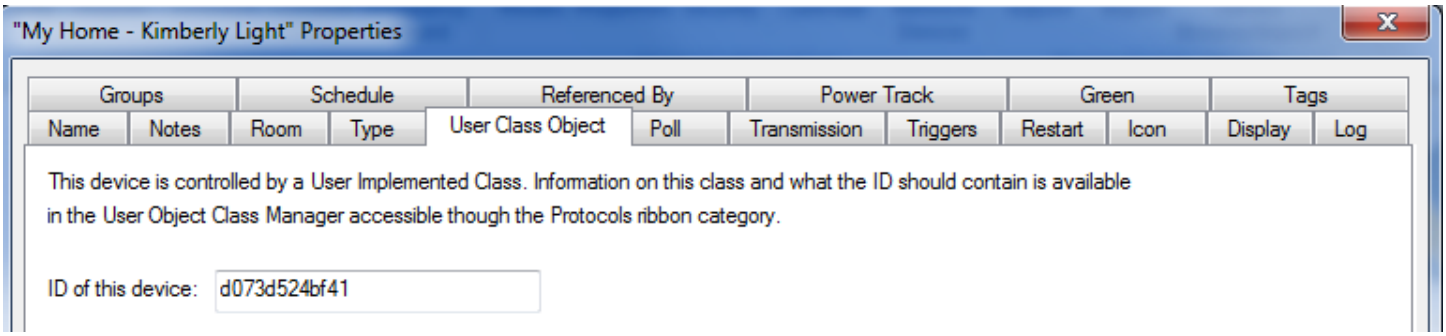
The other programs that import along with the class are for your use in your own programs. For example, the program “Pulse Device” can be used to “blink” a device.

Step 3: Device Discovery

In the LIFX folder is a program called “Discover”. When you run that it queries the LIFX server for a list of your devices and then creates HCA devices for them. It puts them in a folder named with the “location” from LIFX and the HCA device name from the LIFX “name”. This works from client-server or stand-alone.

The discovery process makes legal HCA names so if your LIFX location or device name contains no-go characters for HCA they are replaced by “_”.

Each LIFX device has an ID which is unchanging and unique. For the devices that the Discover program created, you can see that ID in the properties of the device on the “User Class Object” tab.



You can run discover multiple times and it will not duplicate devices. Also, you are free to rename or move the LIFX HCA devices and that will not break Discover as it is looking for the unique id to know if a device is already in your design.

Once you discover devices, then you should be able to right-click ON, OFF, Get-Status and do those ops from schedules and programs.

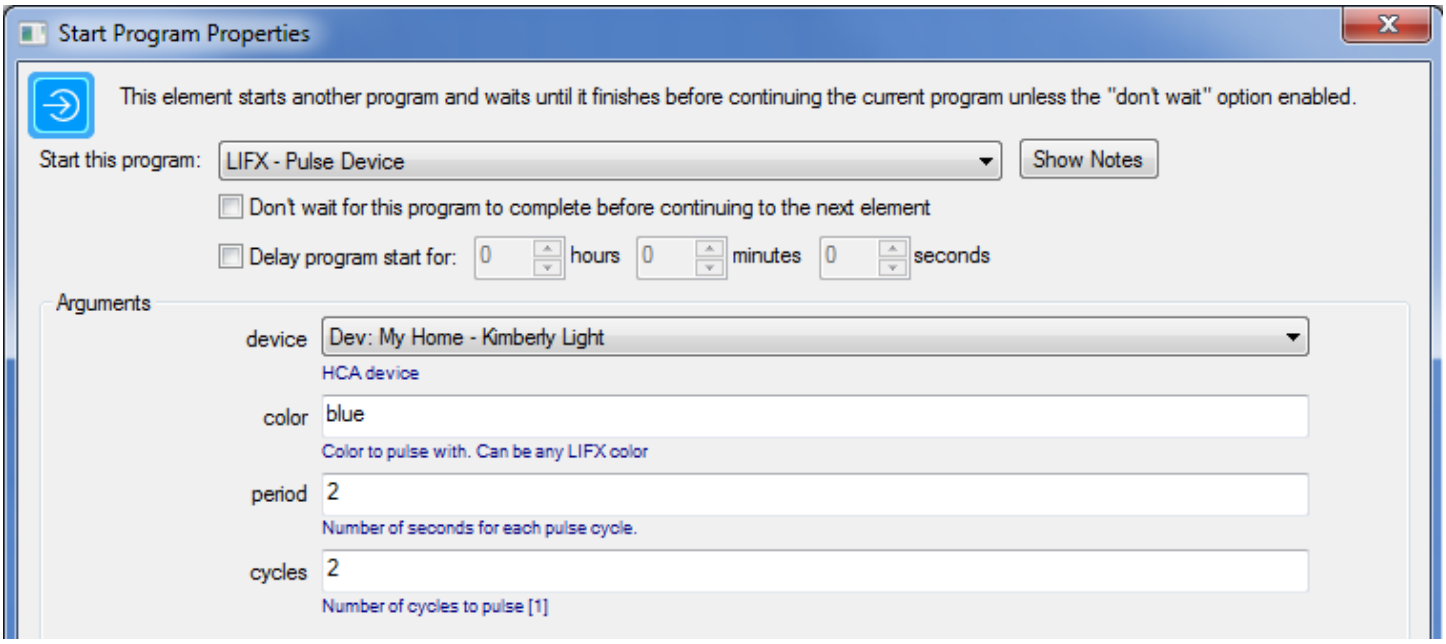
Step 4: Using LIFX effects

For more complex control, you can create programs to use LIFX effects with your devices by using the other programs that imported with the class.

If you look in the LIFX folder you will see the effects programs (Pulse, SetColor, Breathe) and there are two programs for each effect. For example, SetColor and SetColorDevice. SetColorDevice takes as its first parameter the device to operate on. The program changes that device into the id and passes that to SetColor to do the work.

The reason for these pairs of programs is LIFX has a way to group lights and knowing the group names you can, for example, control a whole group at once. To do that use Start-Program on SetColor (not SetColorDevice) and provide a group name or any of the other, what LIFX calls, selectors.

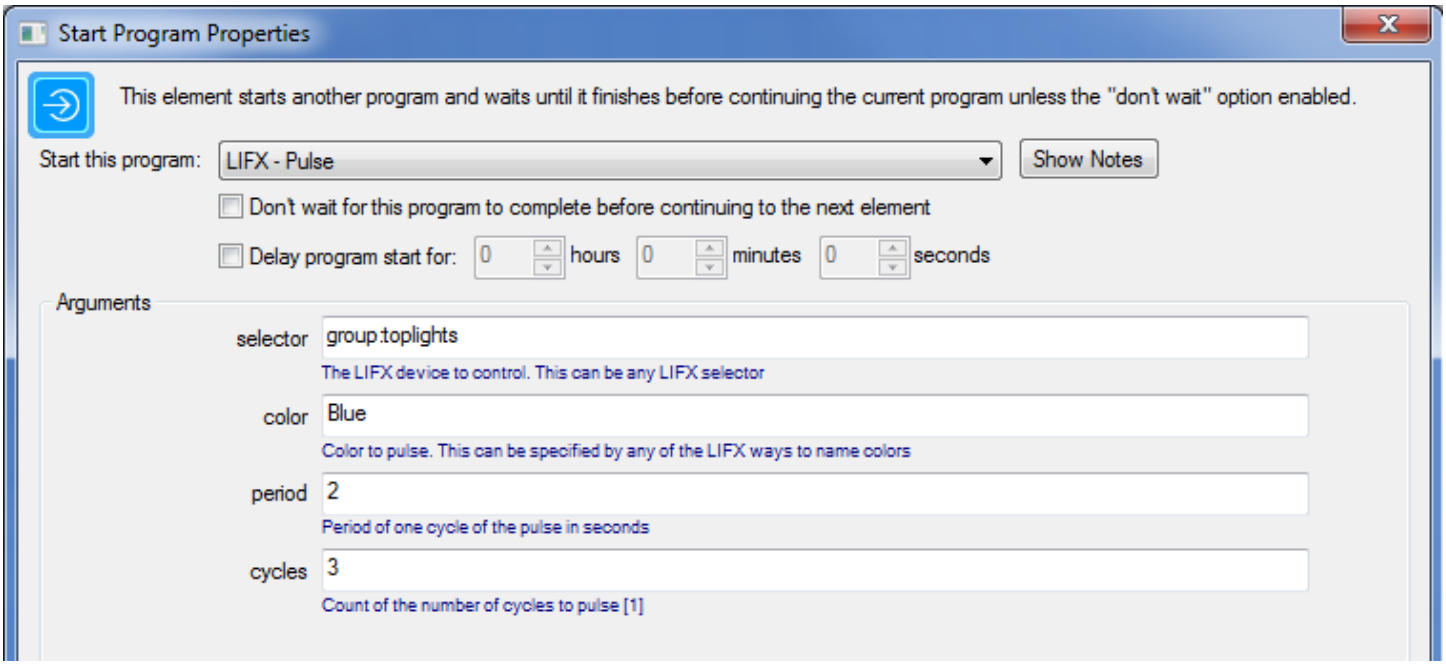
Here is an example of using the LIFX “Pulse” effect of a specific device.



In this example, the color is given as “blue”. But the color can be specified in many ways. LIFX colors are described here:

https://api.developer.lifx.com/docs/colors

Here is an example of using the Pulse effect on more than one device.



In this case the devices that are controlled are part of the *toplights* group. "Group" in this case is a LIFX selector and provides a way to name a specific device or group of devices. There are many ways to specify a selector in LIFX and they are described here:

https://api.developer.lifx.com/docs/selectors

##end##