Chapter 27
Design Import and Export and the Online Library

This chapter covers a topic much different than other chapters. Rather than discussing features in HCA that you can use in your own automation solution, this chapter covers a feature that will help you and others exchange parts of automation designs.

Using *Export* you select parts of your design to extract and create a new file with. Using *Import* you can add to your design a piece of a design created by someone else.

A source of many useful programs, icons sets, displays, and examples is the Online Library and that is also described in this chapter.

Design Import and Export Overview

Suppose your design contains a thermostat and you want to have an icon on a display show the thermostat picture and below it the current temperature. This isn't too hard. You need to have in your design a thermostat device and a program that triggers on current temperature reports. Also, that program needs to manage its own icon and use the change icon to select the thermostat icon and change the text below it to show the temperature using an embedded expression.

Not hard but it takes a bit of work. Suppose you want to share it with other HCA users. This is what Export is for.

The export process is not quite as simple as it would be for exporting some data from a spreadsheet or database program. This is because so many things in HCA are connected. For example, a schedule could reference a program and that program references another program, and those programs reference some devices, etc. To export the schedule requires assembling a list of all the items referenced by the schedule, any things they reference, etc. This is what the Export wizard does.

Importing, on the other hand, is not very complex as it gets added to your design.

Export Wizard

The export wizard is a simple multi step wizard. To start the wizard, press the *Export* button in the ribbon *Design* category. The first step of the wizard begins the process.

Each time your export, the set of programs and options selected are saved and you can choose the settings from a past export from the dropdown. If you use "New Export" a new set of export parameters are captured.

In this first step you decide if you are creating an export just for yourself or as a submission to the HCA Online library to share with others.

Library submissions

When preparing a submission for the library be aware that the export should, if possible, be all about programs and global variables used by the programs. It is possible to also include in the package devices, groups, keypads, non-device displays (HTML, tiled) but you should carefully consider any non-program elements.

The goal is to use the advanced features of HCA programs – parameters, local variables, tags – to create programs that can be imported into other designs and then "just work".

The most important point when preparing a submission to the library is to completely fill out the "Notes" tab for each program and to provide "help text" for each program parameter and global variable. Refer to the user guide programs chapter.

The items you should fill out are:

- Name – a name to identify this package. This is important that it be description but not too long. If a subsequent version of the package is made for the library the package name can't change so give it some careful thought.

- Short description – one-line description of the package function.

- Long description – more complete description if needed.

- Requirements – any specific requirements (hardware, software, etc) that the user would need to use this.

- Keywords – not used at this time but as the library gets larger this will help in searching.

- HCA Version required – if the package uses features only available in the named or later version to operate correctly.

- Web link – for more complex packages there may be additional documentation or to hardware references.

Export for the library creates two files: One with type HCE (or HCLASS) and another with type JSON. The JSON file contains package info plus info about each program in the package. All that is produced automatically from what is provided from the program "notes" tabs, the parameter help text and default values, and the global variable help text.

When you tick the "for library" checkbox during the export, the export UI only allows for selection of:

- Programs
- HCA keypads
- IR Keypads
- HTML Displays
- Tiled Displays containing no icon or power graph tiles

If any object selected for export references a device or group, those will "tag along" in the export.

Variables "tag along" in the export if explicitly referenced in a program element. Text based variable usage (Compute or Compute-Test or when enclosed in %'s in text strings in elements) are not examined for variable references. This shouldn't matter as HCA creates variables as needed when those expressions are executed. If variables require explicit initialization it is best if the programs in the package handle it themselves, include an initialization program, and tell user to use it, or instructions on how to use the variable inventory to set the appropriate values.

When preparing a package for library submission, the package name, author, and "Short description" must be filled in. Short description limited to 200 characters.

The "keywords" are just that – each word is taken as a key. These may be used in the future for searching. Separate each word with a blank. Some suggested keywords are:

- Utility (general stuff)
- Text (for text processing functions)
- Design (things that work with a design)
- Insteon
- UPB
- X10

- Hue
- Example
- <specific room name if applicable to a room type> e.g. Garage, Bedroom, Bath
- Weather
- Icon
- HTML

User classes are also placed in the library and the requirements for them are a bit different. Refer to the Technical note on User Classes for more information.

What gets exported

The next step of the wizard is where the action is: you select what you want to export:
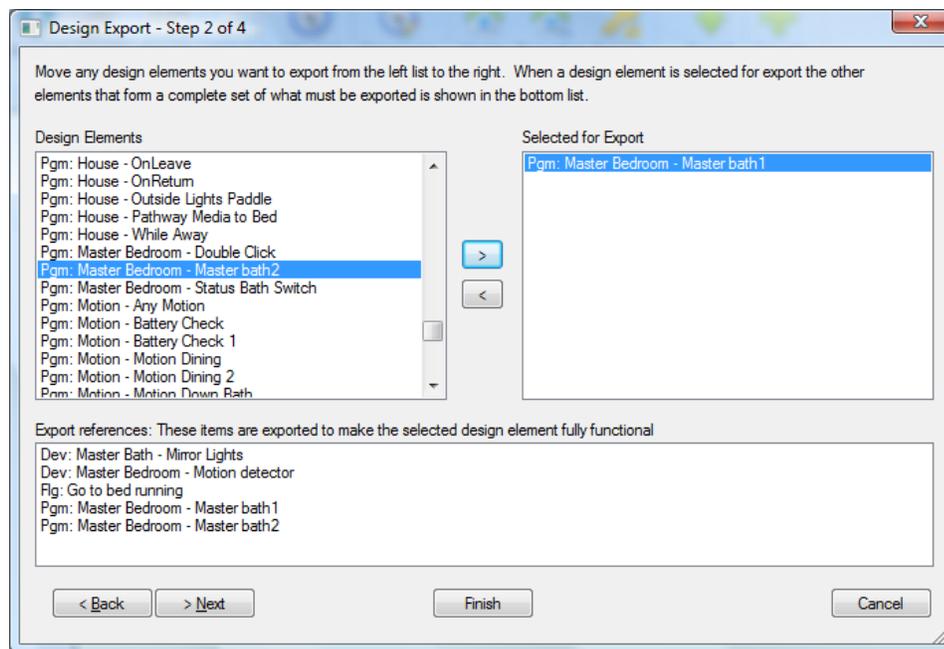

In the top left list are all objects in your design that can be exported. Move the ones that you want to export to the left-hand list using the → button.

In the lower list are all the referenced objects that "tag along" to also be exported. In this example, the one program to be exported *Master Bath1* references two devices and one variable, and two other programs, all of which will be exported to make it all work.

As described above, doing an export of one object – a program for example – also "tags along" lots of other pieces of your design. Sometimes that's ok and sometimes it can result in an unwieldy mess. Too many objects being exported renders it practically useless for someone to important.

In the next wizard step you have control over what is exported.
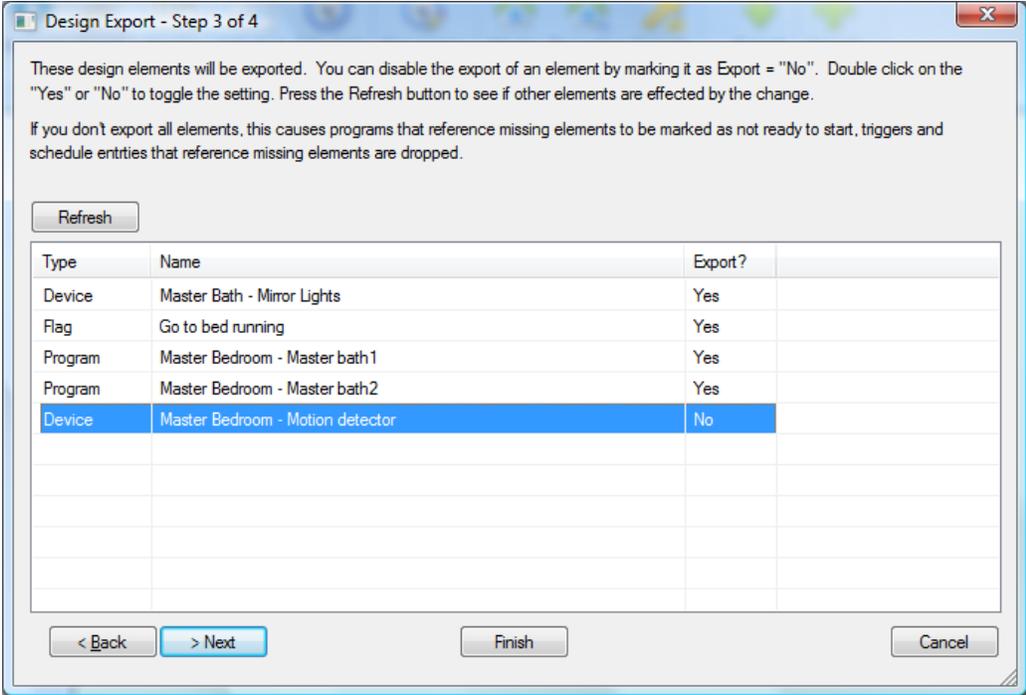
When this step first appears, everything that the wizard has marked for export is listed. As the dialog says, you can double click on a row in the list to toggle the export from Yes to No and from No to Yes.

Sometimes when you disable one item from being exported then the entire list of what to export changes. For example, suppose you wanted to export program A. Program A references programs B and C. Program C references practically every device in your design. Even though program A uses program C, if you don't export program C then all those devices it references are also not exported.

After you make changes to the export list, the Update button reexamines what to export. In the above example after you disable export of program C then all the rows for the devices that are referenced by program C disappear.

But what happens when you take things away from export that are needed? The simple answer is that what is imported is not 100% operational. In the above example, program A had a *Start-Program* element fro program C. When program C not exported the *Start-Program* element in program A is not correctly configured and so program A is marked "Not ready to start". It is up to whoever imports the file to "fix things up". But that is often ok since the major work or concept of the export is preserved.

In the final step of the wizard you select the filename to save the export to. HCA Export files have a file type HCE.
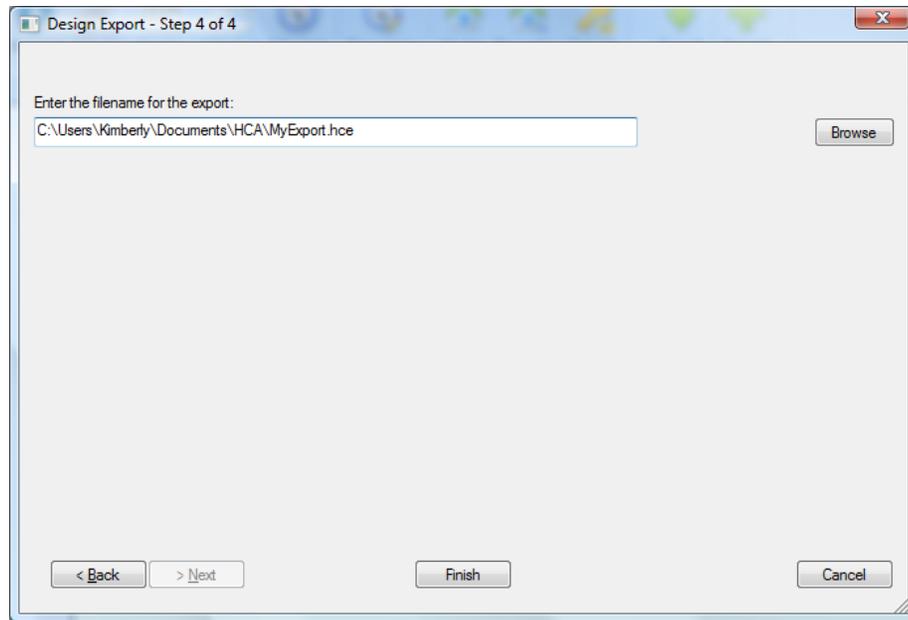
Importing from a File

Importing is much simpler than exporting. To import design elements into your design, press the *Import* button in the ribbon *Design* category. Then browse to the file you want. When the import is complete this popup displays what was imported.
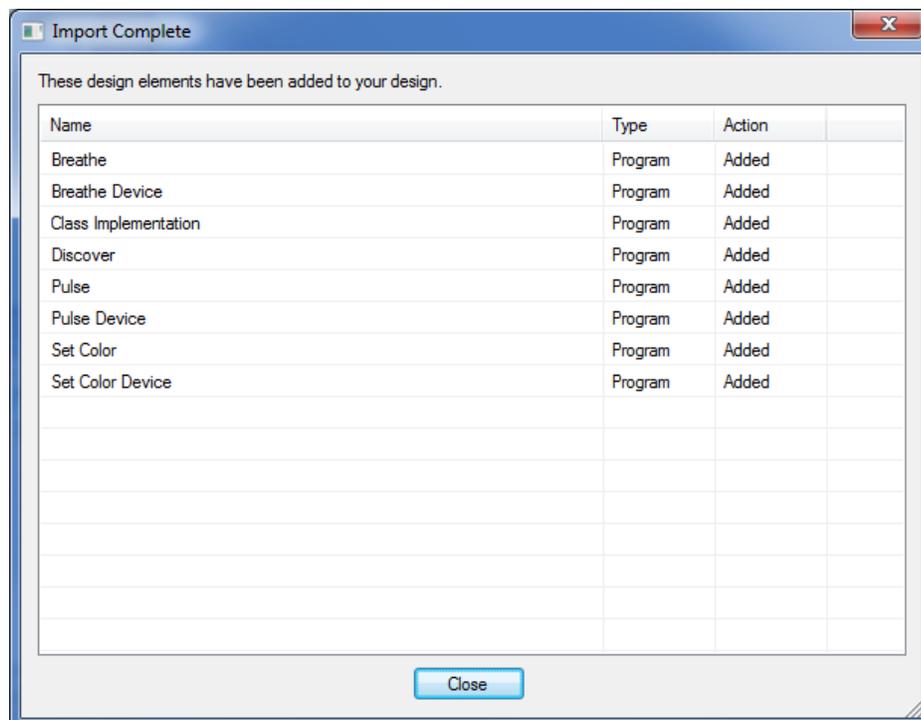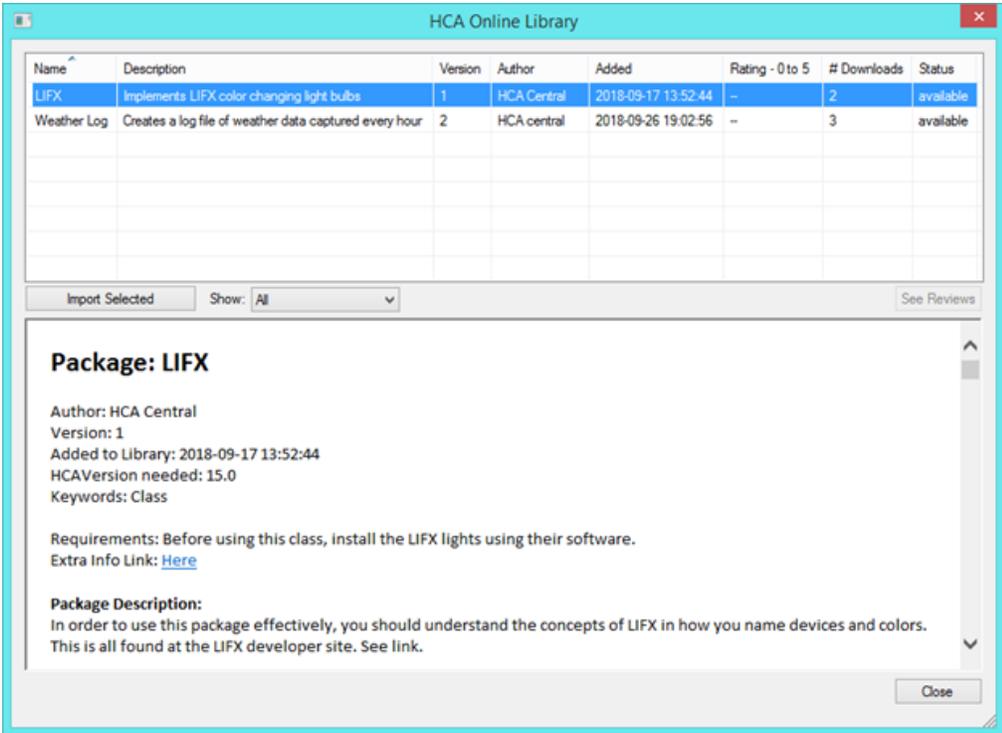

The items go into the same folders that were used when the export was created.

Importing from the Online Library

Each library entry is called a "package". That package may contain multiple related objects. For example, a set of programs that are designed to operate together.

To access the library, from the *Tools* ribbon category, press the *Library Browse/Import* button.

In the top section of the dialog are listed, one per row, the contents of the library. When you select a row in the list, information about what the package contains and notes on its use show in the lower section.

To see a filtered list of the library, change the *Show* dropdown to list only utility packages, icon packages, or class implementations.

To import a package, select the package desired and press the *Import Selected* button.

The objects in the package are placed into the folder/room designated by the package creator. That folder/room is created if it doesn't exist. If a display of the same name exists, and so can't be used as a folder for the import, then a folder named "Import" is created and used. After the import you are free to rename the folder and/or the items in it.

Each imported object saves the package name, import date and time, and library version it came from, and can be seen on the "Name" tab of the object properties dialog.

The documentation that shows in the library browser is also saved and a popup shows that path. This can be kept for reference.
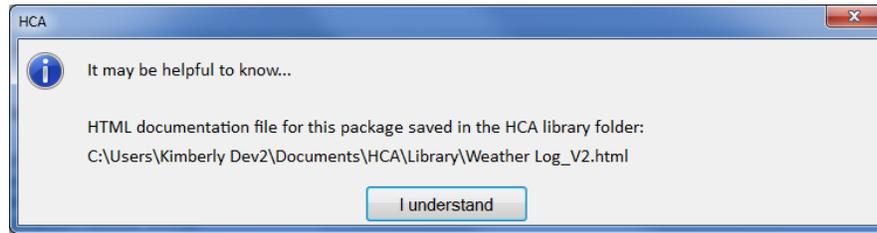
Updating a previously imported package

If a new version of the package is made available in the library and you request it to be imported, HCA searches for objects in the package that have been previously imported. This is done using the "package name". If any exist, then you will be prompted with the package name and the old and new version numbers, and then can either continue or abandon the import. If the import is continued, then all programs, displays, and keypads in the import replace the existing ones and any new items in the package are added. Any previously imported objects could have been moved or renamed but will be found by the package name saved in its properties.

In the case of a package update, any existing devices, groups, variables – matched by name – are not updated.