

## HCA 16.0

- Optional method to connect to the server from the HCA Cloud that does not require port forwarding.  
[www.homecontrolassistant.com/download/V16/V16\\_CloudConnectionNotes.pdf](http://www.homecontrolassistant.com/download/V16/V16_CloudConnectionNotes.pdf)
- Major changes to the program debugger to improve usability.  
[www.homecontrolassistant.com/download/V16/V16\\_Debugger.pdf](http://www.homecontrolassistant.com/download/V16/V16_Debugger.pdf)
- Major changes in automatically closing handles opened in programs. Provides for increased stability.  
[www.homecontrolassistant.com/download/V16/V16\\_ObjectHandles.pdf](http://www.homecontrolassistant.com/download/V16/V16_ObjectHandles.pdf)
- Email receiving capability added:  
[www.homecontrolassistant.com/download/V16/V16\\_EMailReading.pdf](http://www.homecontrolassistant.com/download/V16/V16_EMailReading.pdf)

Note: One use for this feature is to have HCA respond to IFTTT. See this tech note:  
[www.homecontrolassistant.com/download/V16/V16\\_WorkingWithIFTTT.pdf](http://www.homecontrolassistant.com/download/V16/V16_WorkingWithIFTTT.pdf)

- Feature added for programs to show diagnostic output during development:  
[www.homecontrolassistant.com/download/V16/V16\\_ProgramRuntimeNotes.pdf](http://www.homecontrolassistant.com/download/V16/V16_ProgramRuntimeNotes.pdf)
- Significant changes to how a program can be configured to act as if it were a device. This makes possible use of facilities in HCA that work with devices to operate with programs so designated.  
[www.homecontrolassistant.com/download/V16/V16\\_ProgramAsDevice.pdf](http://www.homecontrolassistant.com/download/V16/V16_ProgramAsDevice.pdf)
- New “Statistics” tab for a device to see “in-use durations” to better understand how to configure auto-off:  
[www.homecontrolassistant.com/download/V16/V16\\_DeviceStatistics.pdf](http://www.homecontrolassistant.com/download/V16/V16_DeviceStatistics.pdf)
- New display types added to the “Request-Input” VP element. This provides a way for programs to display “message boxes” rather than request input:  
[www.homecontrolassistant.com/download/V16/V16\\_ProgramMessageBoxes.pdf](http://www.homecontrolassistant.com/download/V16/V16_ProgramMessageBoxes.pdf)
- Major changes in support of client access to the server from machines with displays using a different scaling factor than was used when the design was created.  
[www.homecontrolassistant.com/download/V16/V16\\_DisplayScaling.pdf](http://www.homecontrolassistant.com/download/V16/V16_DisplayScaling.pdf)
- Integration with Samsung SmartThings. This allows for integration with HCA and previously unsupported device protocols.  
[www.homecontrolassistant.com/download/V16/V16\\_SmartThings.pdf](http://www.homecontrolassistant.com/download/V16/V16_SmartThings.pdf)

- Integration with the Hubitat hub. This allows for integration with HCA and previously unsupported device protocols.  
[www.homecontrolassistant.com/download/V16/V16\\_Hubitat.pdf](http://www.homecontrolassistant.com/download/V16/V16_Hubitat.pdf)
- Final implementation of the Backup Assistant introduced in a V15 point release.  
[www.homecontrolassistant.com/download/V16/V16\\_BackupAssistant.pdf](http://www.homecontrolassistant.com/download/V16/V16_BackupAssistant.pdf)
- Updated Android client:
  - Added all the new version 16 icons
  - Support for the new version 16 “draw text over icon” feature
  - Added soft “back” button in the app header
  - Improved color picker
  - Improved icon display on a tablet in landscape mode
  - Fixed HTML display problem
- Updated iOS client:
  - Support the latest iOS versions
  - Added all the new version 16 icons
  - Support for the new version 16 “draw text over icon” feature
- The Visual Programmer method to add a "Comment" - now called an "element note" - to a program element has been changed so the notes window now remains open on the screen while moving from element to element to view and modify element notes. Right-click on a programmer element and select *Element Notes* from the popup menu. This opens a window showing the notes for the currently selected element.
- The changes in version 15 for renaming of variables and the finding of usages in expressions and updating them to the new name has been expanded to renames of programs, groups, devices.
- Added several new features to the layout tool for [tiled displays](#). For more information press the *Help* button in the tiled display editor.
- Several changes for HCA acting as a client when connecting to a server:
  - When HCA-as-a-client reconnects to the server if the connection is lost, it no longer stalls for an unnecessary time if a connection can't be made.
  - When HCA running as a client starts, and if the startup option to automatically connect to the server at startup are enabled, and if that connection fails, it now retries the connect every minute or so. Previously the connection was not retried in this case.
  - New method used to minimize the number of server to client interactions when acquiring the design when connecting.

- Added two menu picks to the server application menu. One to start the Windows client and the other to start HCA.
- Added setup to the hardware dialog to have HCA disconnect and reconnect interfaces each day at a time chosen. This can still be done by `_InterfaceRestart` but this is more easily configured.
- Expanded the options for the `_IconChangeEx` expression function. Now has additional operations and arguments.

`_IconChangeEx("<object name>, op, arg1, arg2, arg3)`

New op = 4 - text is written over the icon.

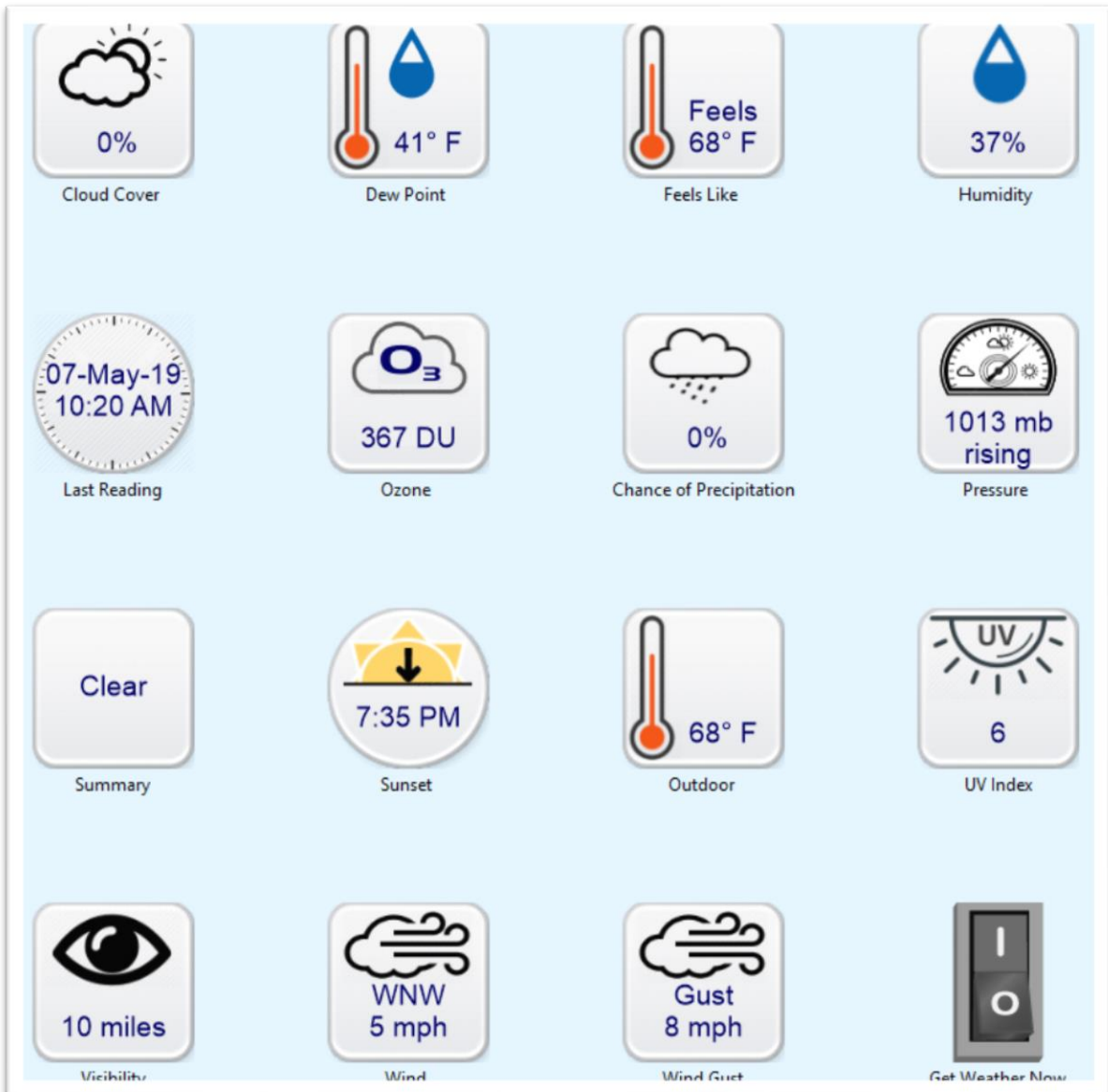
Arg1 = text limited to 48 characters

Arg2 = text size in points. Omitted it is 18

Arg3 = RGB Color. Use the `_RGB` function to compose the color

There are "blank" icons you can use to write on. They are in the 110x110, 110x110G, 54x54 and 54x54G themes.

Use of this facility makes possible a nice display. For example, the current weather data is written over the icons each time a program is executed.



- Because of the addition of the “blank” icons, each location in the UI where an icon is selected (object wizards and property dialogs, right-click popup “new-Icon” and “change-Icon”, and the Change-Icon programmer element), the selection dialog now has a dropdown to select the type of icons available for selection. This makes the increased number of icons to choose from more manageable.
- The tip that appears when hovering the mouse over a device icon has changed for devices that are awaiting an auto off. The time remaining is now shown in the popup tip in addition to the time when the auto off happens.

- Added a "Save for next time" checkbox in the popup password request when connecting HCA as a client to the HCA Server.
- The Image tile now has an *unchanging image* setting. Normally when the client displays a tile with an image it checks with the server to see if the image has changed. For image tiles marked this way that test isn't made. This can speed up the server-client interactions and display the page quicker.
- Programs now have up to 25 local variables. This is an increase from 16. A new tool has been added to the Program Begin-Here element properties dialog to check for local variables that are defined but not used.
- Changed how the expression builder handles optional arguments that you don't fill in data for. Now doesn't put those into the resulting function text.
- New expression functions – some added in version 15 point releases and now documented:
  - `_AlertCount` – Returns # of alerts of a specified type
  - `_AlertClear` – Clears a specified alert type
  - `_GetFolder` – Returns the folder portion of a 2-part name
  - `_GetObject` – Returns the object portion of a 2-part name
  - `_IconChangeEx` – New features as described in a section above
  - `_InterfaceName` – Returns name of the specified interface
  - `_InterfaceRestart` – Disconnects and reconnects all attached interfaces
  - `_InterfaceStatus` – Returns name of specified interface
  - `_MakeValidName` – Changes a string if necessary, to make a valid HCA Name.
  - `_ProgramNote` – Described in V16\_ProgramRuntimeNotes.pdf
  - `_StartProgram` – Performs essentially the same action as the StartProgram element.
- Several functions that were limited to 6 arguments now have that expanded to 9. This includes:  
`_Max`, `_Min`, `_Choose`, `_Json`, `_DarkSky`
- Removed expression functions that have been obsolete for some time. Any program that uses these must be changed.
  - `_SetProblemLevel`
  - `_DimLevel`
  - `_DimToLevel`
  - `_DailyMsg`
  - `_SiteMsgCount`
  - `_SiteMsg`
  - `_Debug`

- In HCA Options, Client-Server tab there is a new option that when enabled disconnects clients if nothing is received from them after a configured # of minutes. The idea behind this is that sometimes port scanners would make a connection and then not use it. When this option is enabled, any inactive connections are dropped after 'n' minutes. NOTE: If you keep a client connected to the server 24/7 make sure you enable the "send a message every # seconds to keep the connection open".
- There are a several auxiliary logs in HCA that are used to verify correct function of some HCA features you may use. Previously enabling these logs was done in different locations. Now the enables for all the auxiliary logs are centralized. Look on Tools – Aux Log Setup. In the first part of the dialog are the HCA feature enables – email send, email receive, HUE, NEST, PING, weather, and inbound service messages. The second section is for enabling of the logging for specific programmer elements – Camera, HTTP, Port I/O. These are enable/disable on a program by program basis. Previously this was on an element by element basis. The nice thing here, aside from it being all in one place, is that you can disable logging for HTTP elements without editing each program.

##end##