Chapter 28
HCA Clients

As described in the Client-Server chapter, the HCA Server loads and executes your design. In that chapter it was also described how you can run HCA in client mode to access the server and have full read/write access your design.

This chapter describes applications that connect to the HCA Server and let you control your design but not make modifications to it. There are three clients available:

- HCA Window Client
- Application for Android mobile platforms – tablets and phones
- Application for iOS mobile platforms – iPhone and iPad

Using any of these applications and the HCA Server you can access your home from any location around the world as long as you have access to the internet.

However, ***before*** even considering installing and using these clients it is first necessary to install HCA, configure the HCA Server, and use HCA in client mode to test your work.

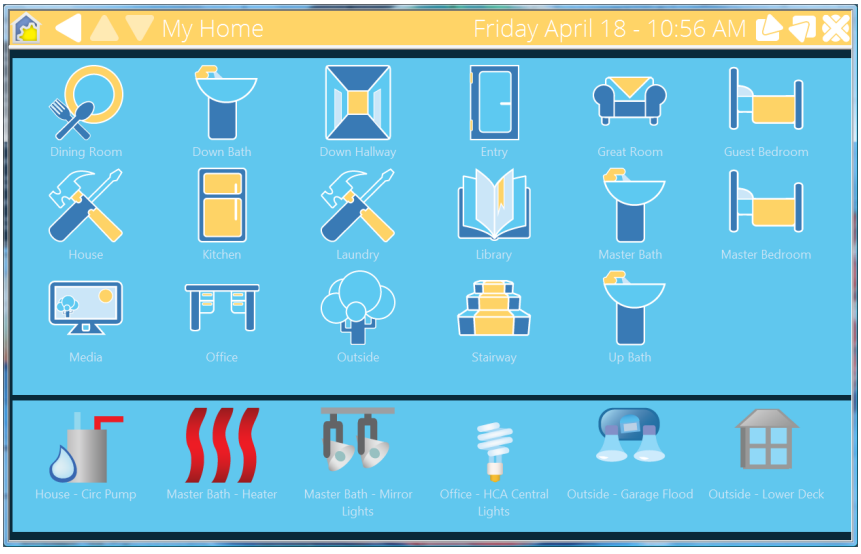
Also, each of these clients use the settings in the design that configures the Control Interface so working with that as well is also strongly suggested.

NOTE: Getting any HCA client to connect to the HCA server may not be simple. There are issues of network access, network security, firewalls, anti-virus programs, etc. All of these "security" mechanisms try and prevent exactly what you are trying to do. Since each network is different, technical support will only be of limited assistance.

HCA Client for Windows – Quick Tour

The HCA client is available as a separate install downloaded from the HCA Support web site. It can be installed on any Windows computer. No registration key is required.

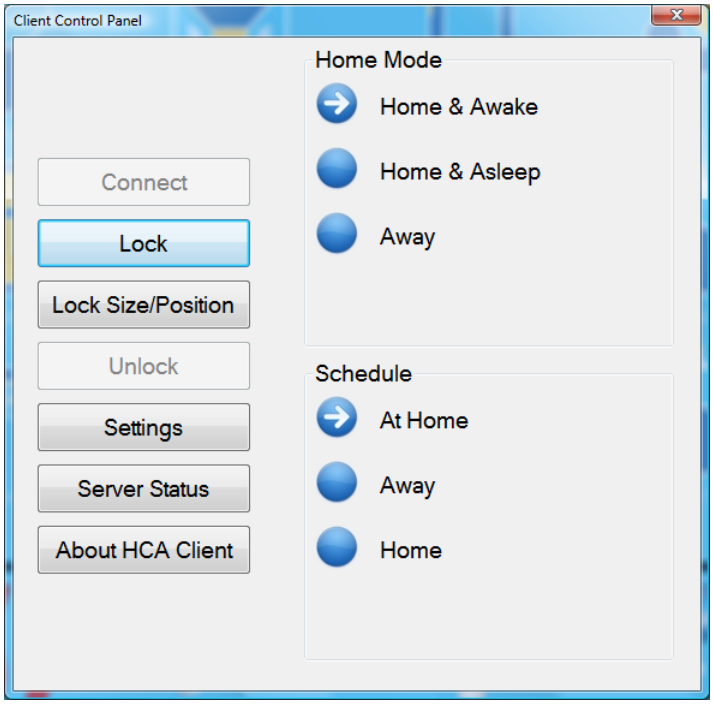
If you are familiar with the Control User Interface you will quickly recognize how similar *the Windows HCA Client* is to that interface.



Like the Control User Interface, the same short and long tab methods are used to control a device, program, or group. Also, like the Control User Interface, the status bar color reflects the Alert level – red, yellow, or green, and the HCA icon used at the left end of the status bar changes color to show the home mode.

Client Control Panel

To open the Client Control Panel, click on the HCA icon at the left edge of the status bar at the top of the window.



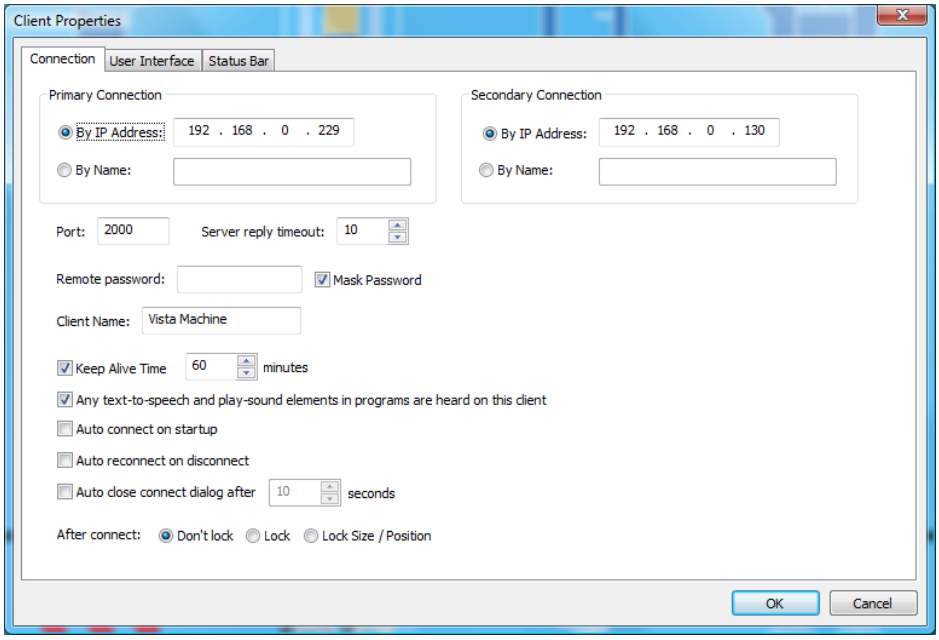
The control panel shows the home modes and schedules. They can be changed by tapping on the round button to the left of the mode or schedule name.

The *Lock*, *Lock Size/Position*, and *Unlock* buttons are used to prevent the movement and resizing of the client window. The *Lock* button prevents changing the window size and also removes the minimize, maximize, and close buttons from the status bar. *Lock Size/Position* also locks the window but retains the minimize button.

The *Server Status* button shows the current server status – time, versions, etc – and also a brief display of the current Alert Report.

Configuring the client

To configure the client, press the *Settings* button. A multi-tabbed dialog opens.

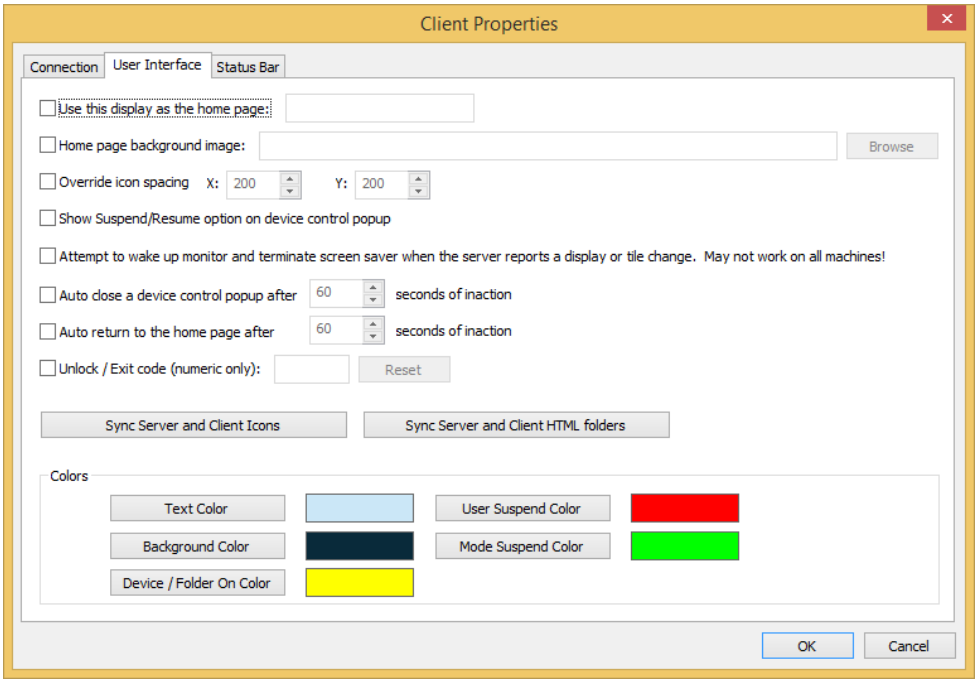


Connection tab

The connection tab lets you modify these settings:

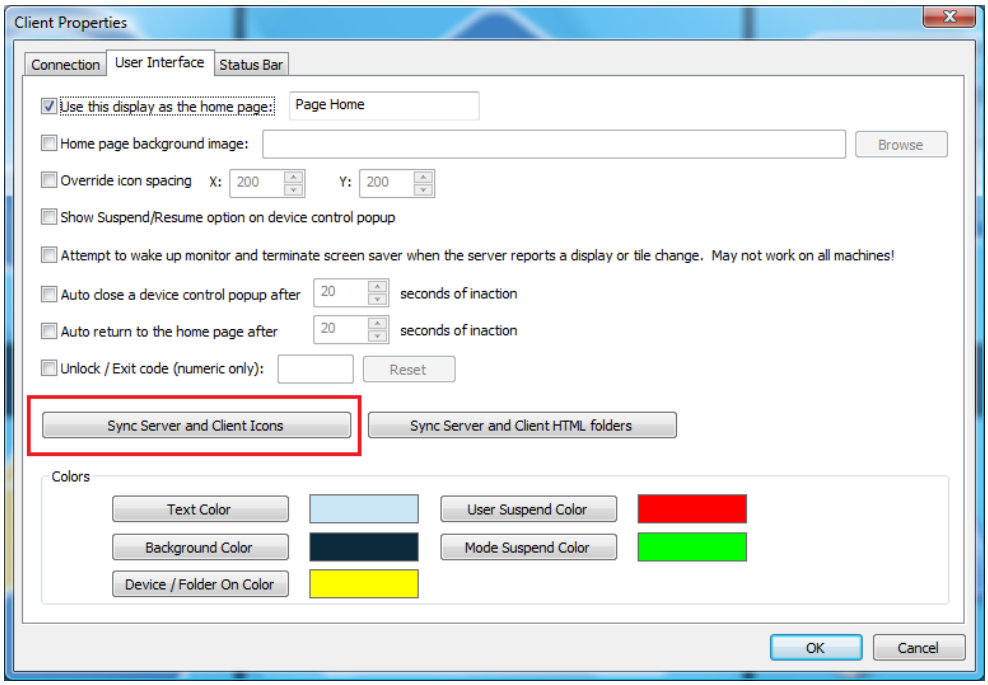
- Primary address, Secondary address, and Port. The address and port number of the server.
- The remote access password. If your design has a password you can enter it here or enter it when prompted on each connection.
- Client name. Each client should have a unique client name. This is used in the server "connected clients" display and also in programs that have elements that can effect only a selected client.
- Keep alive Time: How often a message is sent from the client to the server to ensure that the connection is open. If it isn't answered by the server then the client may try and reconnect.
- Auto connect at startup. When the client is started, if this option is enabled then the client immediately tries to connect to the server,
- Auto reconnect on disconnect. This option works with the "Keep Alive" setting. If enabled, then the client automatically tries to reconnect if it is found to be disconnected.
- Auto close connect dialog. When connecting a popup shows the connection process. If this option is enabled then this dialog is automatically closed when the connection completes.
- After connect lock option. After a successful connection the client window can be locked in the selected lock option.

User Interface tab



The options on this tab configure the user interface appearance and actions.

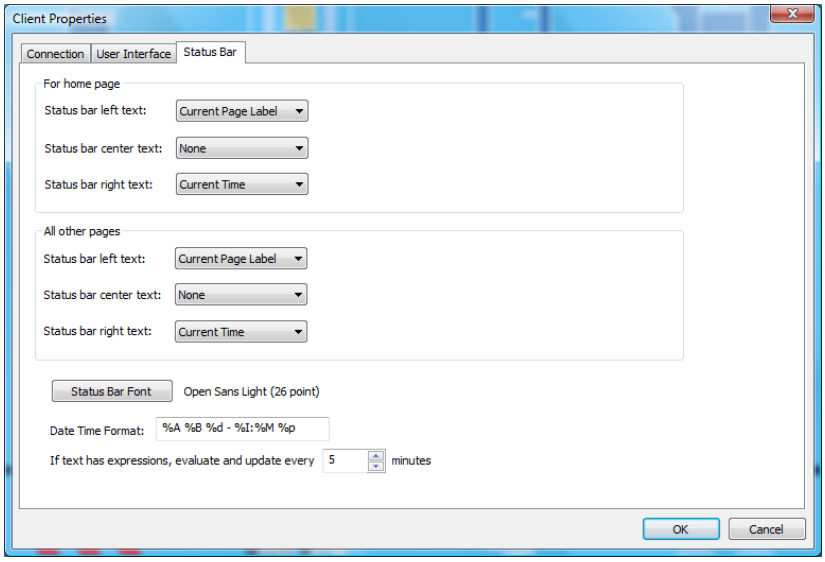
- Home page. The name of the display to use as the home page.
- Home page background. This option lets you choose a display background for the home page. This image can be unique to each client and overrides any display background for the HCA display named as the home page.
- Icon spacing. This option overrides the default icon spacing that is normally used by the theme selected for the display page.
- Show a Suspend/Resume button on the device control page so that you can suspend or resume a device, group, or program.
- Wake up monitor. As the text says when this option is enabled the monitor on the computer the client is running on will attempt to be “wake up”. Also, as it says this may not work on all monitors.
- Auto close times. These settings are used to automatically close the action popup – typically from a long tap on a device – and to return to the display home page after a selected number of seconds where you perform no action.
- Exit code. You can enter a code that must be entered to exit or unlock the client. This only is useful if you also lock the client so that the exit button isn’t seen on the status bar.
- The *Sync server and client icon* button: Any icons in the theme folders on the server machine that are not on the client machine or are newer than those on the client machine are copied from the server to the client. If you create your own icons all you need do is to remember to place your new or changed icons in the server computer theme folders and then on each client use the “Sync” button.
- The Sync server and client HTML folders: Described below.



- Colors. The various colors used for user interface elements.

Status Bar tab

The status bar tab is very similar to the Control User Interface setup in HCA. You can specify the text that displays in the left, middle, and center of the status bar.



In addition to choosing the data in the status bar sections you can also choose the status bar font and point size as well as the date format. The format pattern characters are the same as used in the _FormatTime function and is documented in the User Guide Expressions chapter.

HTML Folder Sync

When the Windows client encounters a dynamic HTML display – a HTML display where HCA generates a HTML file from a template file by replacing placeholders with actual data - the client requests the server to generate the HTML and send it to the client. The client stores the HTML file in a sub-folder in its "Temp" folder. The folder is named with the name of the display (possibly made into a legal filename). It then stores the HTML it receives from the server in a file named with the display name with an "html" file type.

For example, if the display was called "Current Status", the client creates this folder.

C:\users\kimberly\HCAClient\Temp\Current Status

And the HTML it received from the server would be stored in that folder in a file named "Current Status.html". The client then uses the Windows browser component to render the HTML in a window by passing to it the path to the HTML file.

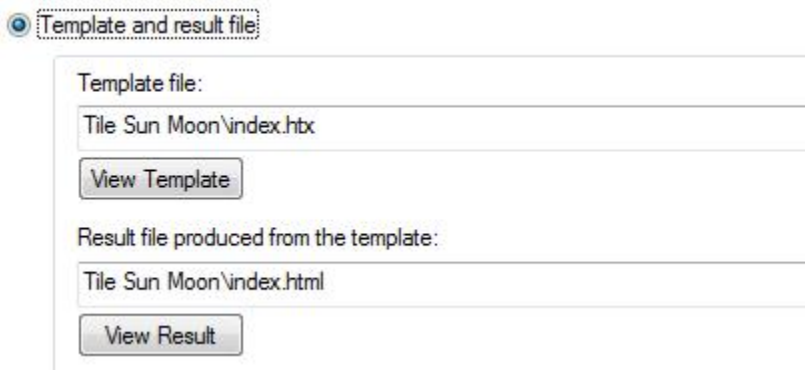
If the HTML file references any images or a style sheet, then those auxiliary files must be in the same folder as the HTML file or in sub-folders referenced by relative paths. For example, the HTML may reference an image as "apple.jpg" or "images\apple.jpg".

It is a good practice to configure the display to locate the HTML template file and result file in its own folder. In this way any images or style sheets specific to this HTML file will not conflict with the files for other HTML displays

In this HCA design configuring the display properties using relative paths makes this all work. For example, on the server computer is a folder named "Tile Sun Moon" that contains the template file, result file, and all the images files along with the style sheet. That folder is a sub-folder of the folder that contains the design .HCA file.

For example, if the HCA file was in c:\users\kimberly\HCA, then the folder that contains the HTML template and auxiliary files would in c:\users\kimberly\HCA\Tile Sun Moon

The HTML display is configured as:



It is best practice for each dynamic HTML display to have its own folder that contains the HTML template, result, and whatever auxiliary files it needs.

If you set things up as these guidelines specify then the client "HTML Folder Sync" operation moves to the client computer all the auxiliary files – style sheets, images file, etc. – that your HTML display uses.

HCA for Android – Quick Tour

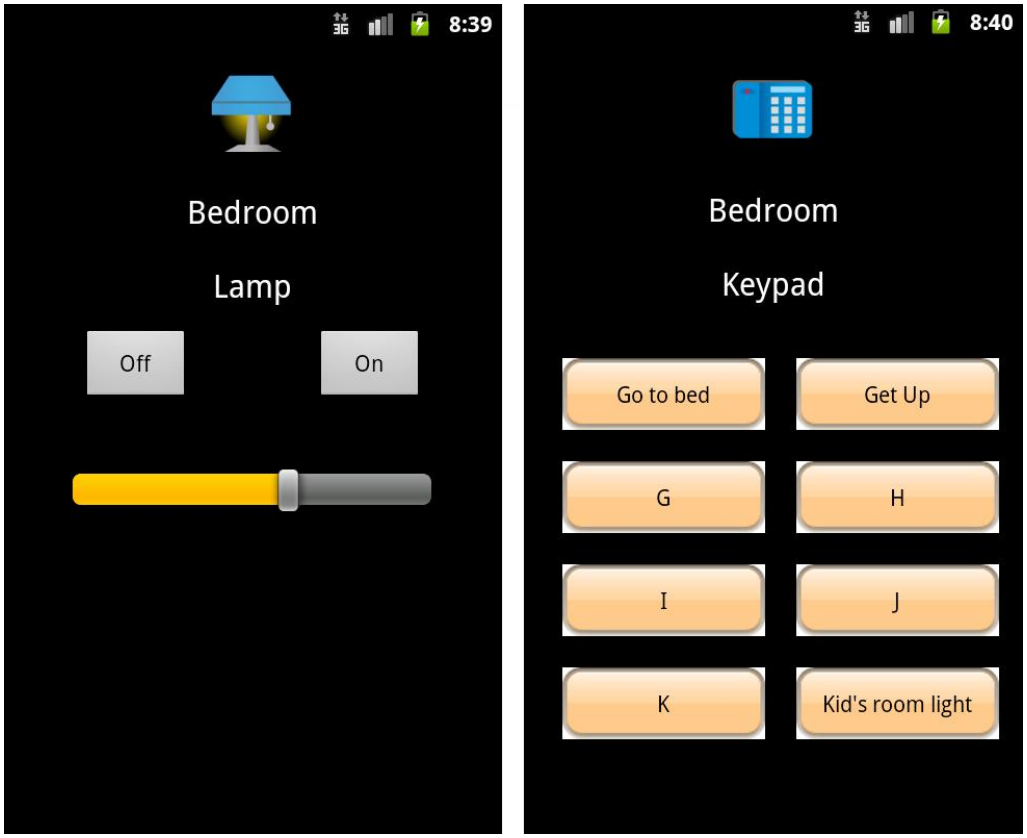
The Android HCA client is available for download from the Android market (aka “Google Play Store”).

If you tap on display icon, the page for that display appears – the image on the right above.

Depending on how the device’s properties are set, when you tap on a device icon it can toggle the device’s state or open a page for controlling the device.

There also are options for each device, group, or program that are set in your HCA design that say if an icon for it should appear on a display when shown in the Control UI. This same option is used by the Android client when showing the contents of a display.

Tap on an icon and a page for that kind of device, group, or program opens. The image shown below on the left is for a dimmable device and the display on the right is for an eight button keypad.



The “Glass Keypad” features in the Control Interface are also in the HCA Android client. The image on the right shows such a glass keypad.

To navigate back a page, the dedicated back button is used.

Android Settings

The first action to take after starting the application is to configure it for access to the HCA Server. Use the menu button at the top – looks like a wrench -to open the settings menu.

Choose HCA Server Settings and set the primary IP address to the address of the server computer. Also set the port number. The port number must, of course, match the port number that the server was configured for.

Hint: You can enter the address as a.b.c.d or something the resolves to an IP address like “myhome.homedns.org”.

The use for secondary IP address is explained in the next section.

Android Server Settings

- Server Settings - Remote Password
  This is the password configured in your home design in HCA – Properties on the security tab. You must enter it here before you connect. It remains part of the configuration so you need not enter it each time you connect.
- Server Settings – Server Reply Timeout
  Each transaction with the server timeouts after this many seconds if no reply is received. If a timeout occurs it is assumed that connection to the server is lost.

- Server Settings – Keep Alive Timeout
  Like the HCA Windows client, *HCA for Android* can periodically send a message to the server and get a response back. This may help to keep the connection open. This setting enables this.
- Server Settings – Keep Alive Timeout value
  This is the number of minutes between each "keep alive" message sent.

Connecting and Disconnecting

Once all the sever settings are configured, you can connect by pressing the *Connect* on the home page – looms like an arrow pointing at a dot. To disconnect, press the disconnect button – looks like an X.

The connection to the server lasts until you shutdown the phone, the connection is lost for some reason, or disconnected by using the *Disconnect* option from the menu, or you *Back* out of the application to the Android main home page. If you leave the HCA Android client by pressing and holding the Home button until the running applications popup appears and you select another application, the connection to the server is not closed.

As long as the connection to the server is open, the phone receives status updates from the HCA server and your devices change to show appropriate state.

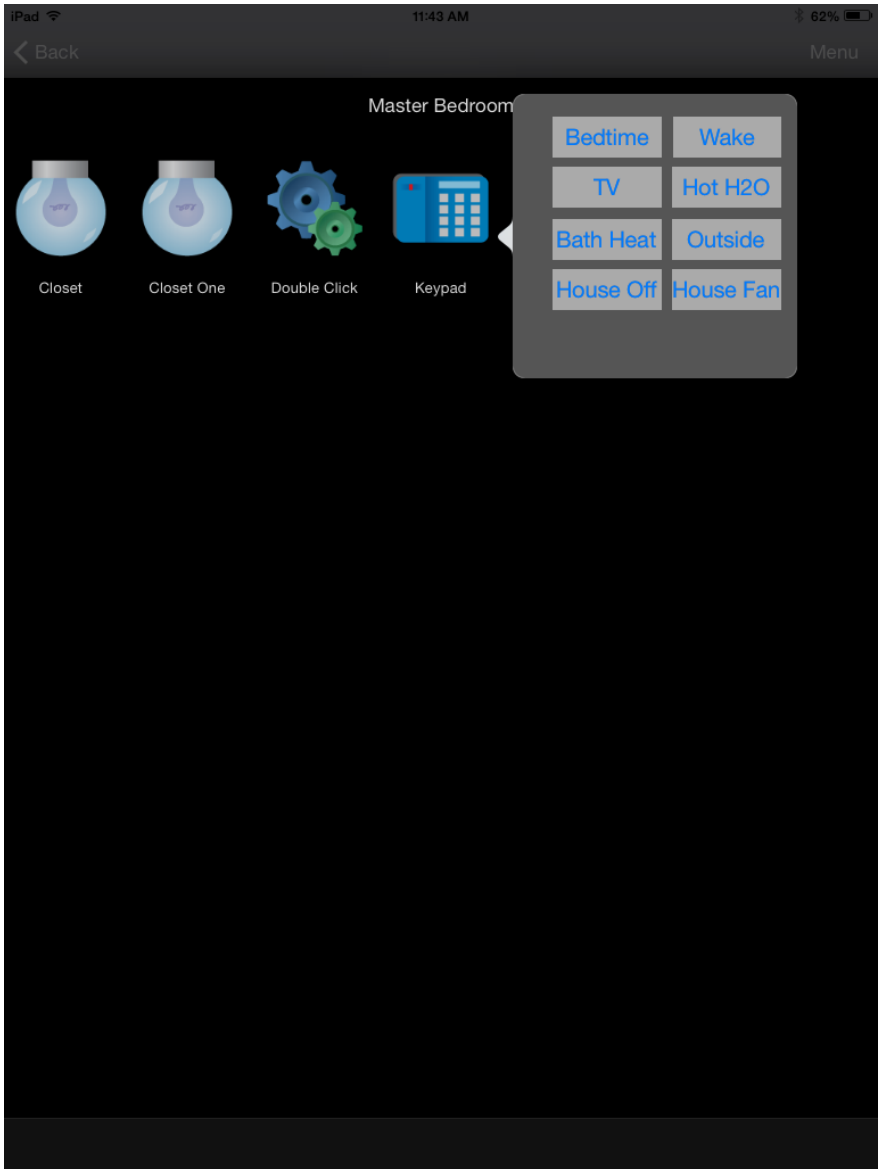
And that's really all there is. The various displayed pages follow the stock Android methods so if you rotate the phone to landscape mode then the displays change to use the space differently.

In addition to this description, there is also a brief Help file. Select the Help option from the menu popup.

HCA for iOS

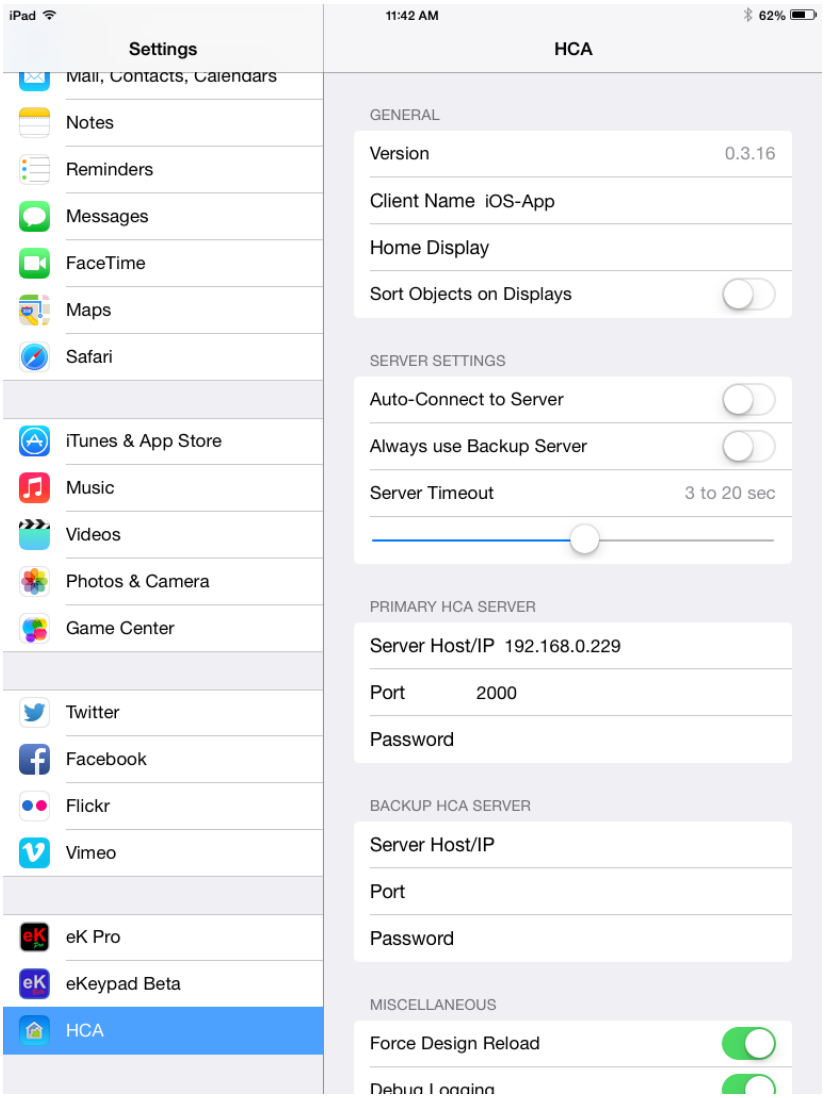
An iPad and iPhone client can e used with the HCA Server available from the Apple App Store (aka iTunes). This client operates very similarly to the Windows HCA client and the HCA Android client.

This example display, on an iPad mini, shows the familiar set of HCA icons. The same short and long taps on an icon like the other clients are implemented. To toggle the status of a device, a short tap toggles its state. Long taps are a bit different then the HCA Windows client and HCA Android client as the popup display doesn't appear until you release the tap.


iPad
11:43 AM
62%
Back
Menu
Master Bedroom
Bedtime
Wake
TV
Hot H2O
Bath Heat
Outside
House Off
House Fan
Closet
Closet One
Double Click
Keypad

Configuring the iOS application.

The iOS settings application allows access to the HCA application settings.



The settings are:

- Client name. Each client should be given a unique name.
- Connection information. Like the other HCA clients, the primary and secondary sever settings of the address and port of the server.
- Password. If a remote access password is assigned to the design loaded into the server then that password can be entered here and will be supplied to the sever upon connection.

Primary and Secondary IP Addresses

As part of the settings for each client, the IP address of the server is specified. The application settings have a place for a primary and a secondary IP address.

When you make a client connection, an attempt is made using the Primary IP address. If that fails, the secondary IP address is tried.

The reason for having two IP addresses is best explained by an example. Let's see how a user called Bob uses the primary and secondary IP addresses.

When Bob is at home he accesses his home server using wireless. The IP address of that machine is always 192.168.2.100. It never changes. So he makes that his primary IP address. At home with wireless on, the connection is made using this IP address.

But when Bob is not at home he wants to access his server using BobsHome.homeDNS.org. So he makes this his secondary IP address. Now when he is out of wireless range, the connection is made using the phone 3/4G connection. The DynDNS service converts "BobsHome.homeDNS.org" to an IP address and then connects to the server.

Why couldn't Bob just use "myhome.homeDNS.org" as the one any only IP address? Because of the way his internet access works that just doesn't work. The "BobsHome.homeDNS.org" resolves to the address of his DSL/Cable modem – as it should – and then the modem gets confused by a home-side reference to its own address. This may or may not be similar to your situation and we offer it only as an example.