



HCA Tech Note 108

Working with the HCA Server

If you are using the HCA Server as part of your automation solution you might want to consider dedicating a small computer to running the server 24/7. Not that the HCA server uses a lot of resources – it doesn't – but a program that is running 24/7 is different than most of the programs that you normally use and having HCA on its own computer removes it from being inadvertently powered off or otherwise "messed with".

There are several good options available for a tiny computer and one that we have worked with is the Quantum Byte: <http://azulletech.com/product/quantum-byte/>. The advantage of this machine is that it comes with Windows pre-installed, has a number of USB ports, has both wired and wireless network connections, and can run without an attached monitor or keyboard. Available at a cost of about \$150 (as of 4-Sep-16).

Each month we receive a number of questions about a supported "downloadable platform" for HCA as the user doesn't want to leave their computer powered on 24/7. Use of a small footprint machine, like the Quantum Byte, really can be thought of as just that "downloadable platform" given its size and cost.

Regardless of what computer you run HCA on, this technical note addresses two important points. First, what is the best way to configure Windows to start the HCA Server when the computer starts? Second, how to make sure that the HCA server keeps running regardless of problems?

One of the many reasons to answer these questions is that you want a method to have HCA started if the computer restarts after installation of a Windows update. This method will do that.

How to start the server when Windows starts

There are many ways to accomplish this but one of the best is to use the Windows Task Scheduler. The advantage of this over other methods is that it can delay starting the HCA Server until Windows is fully awake. On some computers the USB system or the network can take a bit longer to become available after Windows "starts" and this has to be considered when starting the HCA Server.

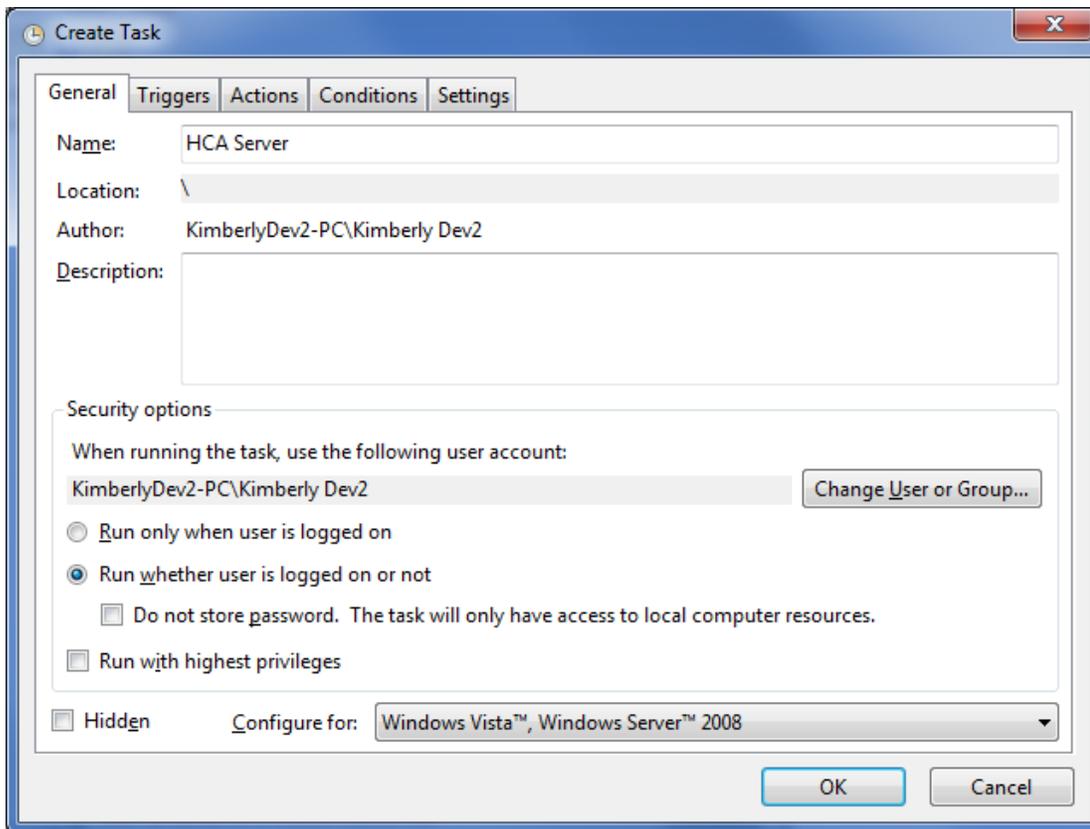
The Task Scheduler is in all versions of Windows and you can find it by searching for "Task Scheduler" on your computer. The screen images in this note are from Windows 7 and your version of the Task Scheduler may have slightly different options but, in general, the screen images and text show the important options to configure.



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Step 1 Create the task

After starting the task manager, click on “Create Task” in the list on the right and the new task dialog opens. Give the task a name,



How you choose the options for running when logged in or not depends upon how you have configured your Windows computer and may take some experimentation.

If the computer has no password – that is, when it starts up it doesn’t ask for a password - then you should choose the “Run only when the user is logged in” option. If there is a password then you should choose the “Run whether the user is logged in or not”.

The “Configure for” option at the bottom seems to have no effect on the HCA Server.



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Step 2: Specify when the task happens

On the Triggers tab you specify what causes the task to start. In this case we want to start it when Windows starts. Press the “New” button at the bottom. Begin the task “At startup” and “Delay the task” for “1 minute”. Some versions of the Task Scheduler offer other time delays. You want to use a time delay of a minute or two. Experimentation on how your computer works may be needed.

The screenshot shows the 'New Trigger' dialog box. The 'Begin the task' dropdown is set to 'At startup'. The 'Settings' section contains the text 'No additional settings required.' The 'Advanced settings' section includes several options: 'Delay task for' is checked and set to '1 minute'; 'Repeat task every' is set to '1 hour' for a duration of '1 day'; 'Stop all running tasks at end of repetition duration' is unchecked; 'Stop task if it runs longer than' is set to '3 days'; 'Activate' is set to 9/4/2016 at 4:09:00 AM, with 'Synchronize across time zones' unchecked; 'Expire' is set to 9/4/2017 at 4:09:00 AM, with 'Synchronize across time zones' unchecked; and 'Enabled' is checked. 'OK' and 'Cancel' buttons are located at the bottom right.

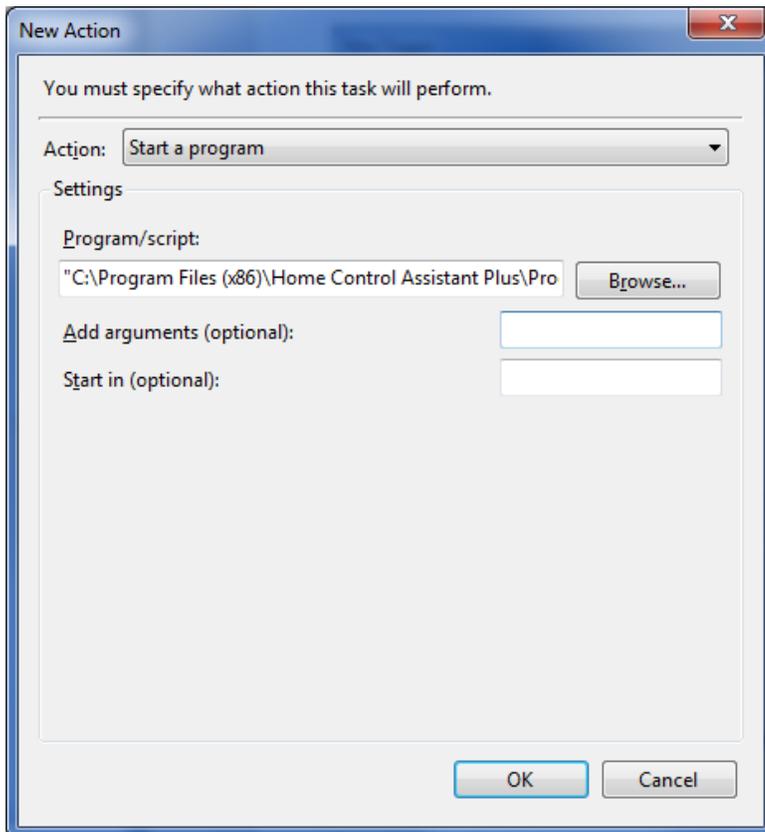
Make sure that the trigger is “Enabled” and the “Stop task” option is not enabled.



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Step 3: Specify what happens in the task

On the “Actions” tab create a new action.



Choose as the action “Start a program” and use the browse button to locate the HCA Server executable. This is found below “Program Files” (or “Program Files (x86)”). You can add the path to the .HCA file to load in the “Add Arguments” box. If the path contains blanks, put the path in quotes. Alternatively, you could instead enable the feature in HCA options on the client-server tab that directs the server to open at startup the design file last opened.

Step 4: Task conditions

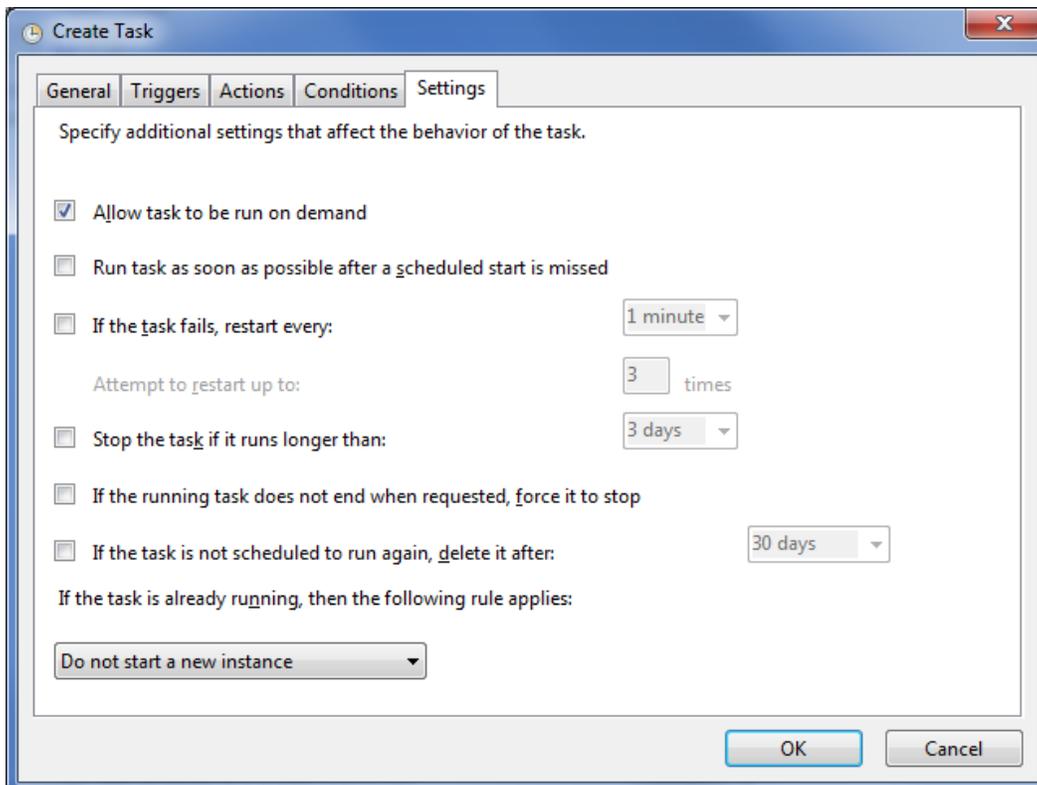
On the conditions page no specific options are needed but you should look and see which ones you may want to configure – for example, the ones related to battery power if you are using a laptop or other small computer with an internal battery.



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Step 5: Settings

The “Settings” page contains a number of options. The key setting is to clear the “Stop the task” option and the “Do not start a new instance” in the dropdown at the bottom.



Note: It may look like there is a method by using the Task Scheduler to restart HCA if it fails (crashes). This is not the case. There is a method to use for this but it isn't in the Task Scheduler and will be covered later in this note.

When you have gone through all the tabs, save the task with the “OK” button.

The Task Scheduler has a rather hard to use (at least to me) interface and it can be difficult to see how to modify settings in a task already created. First click on the “Task Scheduler (Local)” at the top of the display in the left pane. Then in the “Active Tasks” in the middle pane scroll down to find the task to be modified by looking for the name you gave it and double-click on it. This opens a view of the task but you will see that all the options, while visible, can't be edited. Click on “Properties” in the right pane to open it for editing. There may be a simpler way to do this but at least this works.



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How to make sure that the server is always running regardless of problems

Note: This section provides links to locations that we have found to be trusted as of 4-Sep-16. As with all things on the internet that could change. Always be careful when downloading software from the internet.

Once you have the HCA Server starting when Windows starts the next thing to consider is what happens if the server fails. While the developers have taken great care and performed lots of testing to make sure that this doesn't happen, the bad news is all programs sometimes fail.

The good news is that there is a very simple method to restart a failed program. At this link you can download a very small, simple, reliable, program that does this for you. While it may seem ancient – it doesn't even have an installer- we have tested on Windows 10 and it works great.

<http://w-shadow.com/blog/2009/03/04/restart-on-crash/>

The instructions on the page give all the details on how to use it - you add the HCA Server executable as a program to watch and it does just that. If the program fails or hangs, it is restarted.

In the description it discusses the use of the "Is it running" option. To clarify, if you enable this option then even if you exit the HCA server using "File – Exit" the crash restart program will start it again.

To use this program, download the zip file and extract the executable to some location and start it.

If you configure the HCA watch for "Isn't running" then it will start HCA if it isn't running and that means at Windows startup also. If you use this option, then instead of setting up the HCA Server to be started by the Task Scheduler at Windows startup as described above, you should configure the Task Scheduler to instead start this program which, in turn starts HCA.

Finally, while this restarts HCA if it fails, the Windows "Application has failed" popup still appears on the screen and is not dismissed by the restart. If you would prefer for that popup not to appear, there are several ways to handle this and type are described at this link:

<https://www.raymond.cc/blog/disable-program-has-stopped-working-error-dialog-in-windows-server-2008/>

Again, while this information appears to be dated, we used the registry change method in Windows 10 and it worked as expected.

##end##