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HOWE™

HAL BWS HA-Bridge Setup Guide

Abstract

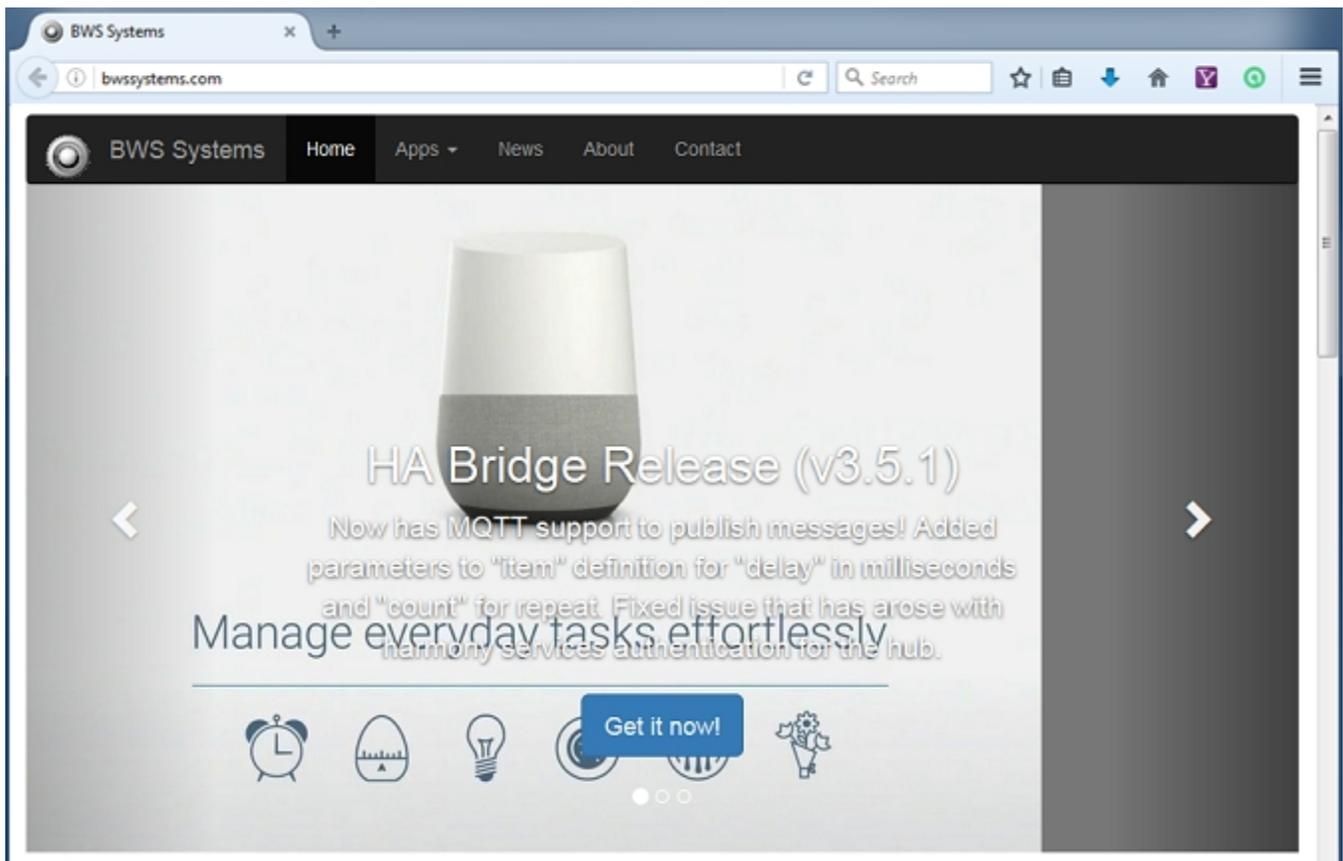
This document is intended to provide you with basic details in order to download, install and setup the BWS Systems' HA-Bridge to interface with the Amazon Echo/Dot.

Rev 00.0.8

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◆ **STEP 1: Downloading the latest HA Bridge Release from BWS Systems**

From any browser, go to <http://www.bwssystems.com/>



Click the “Get it now!” link to download the java jar file of the latest release.

Create a Directory under the HAL directory such as “HA Bridge” and move the jar file you downloaded to this folder. The jar file which was downloaded will typically have the version number as part of the file name. For example ha-bridge-2.0.7.jar. You can either create a copy or rename the jar file so that is called ha-bridge.jar. More on this in step 3.

◆ STEP 2: Download and Install JAVA

From any browser, go to <https://www.java.com/en/>



Click on the link “Free Java Download” which will take you to a page that will display the current version of Java for your browser..

Download Java for Windows

Recommended Version 8 Update 111 (filesize: 721 KB)

Release date October 18, 2016

**Agree and Start Free
Download**

By downloading Java you acknowledge that you have read and accepted the terms of the [end user license agreement](#)



When your Java installation completes, you **may need to restart your browser** (close all browser windows and re-open) to enable the Java installation.

Click the “[Agree and Start Free Download](#)” which will allow you to save the installer. This file name will be different based on your browser and OS. For Firefox the file was jxpiinstall.exe.

Once the install is complete, run this installer and click “[Install](#)”



Only proceed if you receive a successful install message.



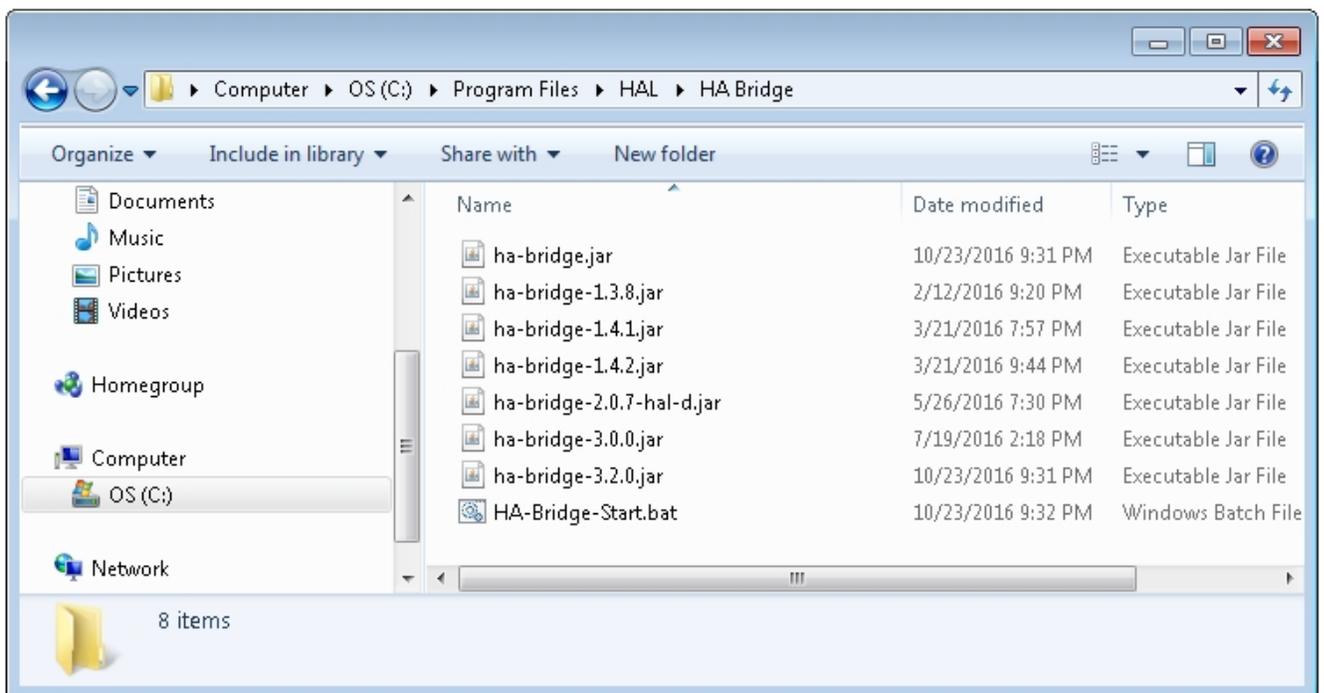
◆ **STEP 3: Create a batch file to start the Bridge and reference it in HAL's startup routine.**

So that you can automate the startup of the bridge software you will want to create a Windows batch file to execute java and load the bridge. Using Notepad add the following single line.

```
java -jar -Dserver.port=8081 ha-bridge.jar
```

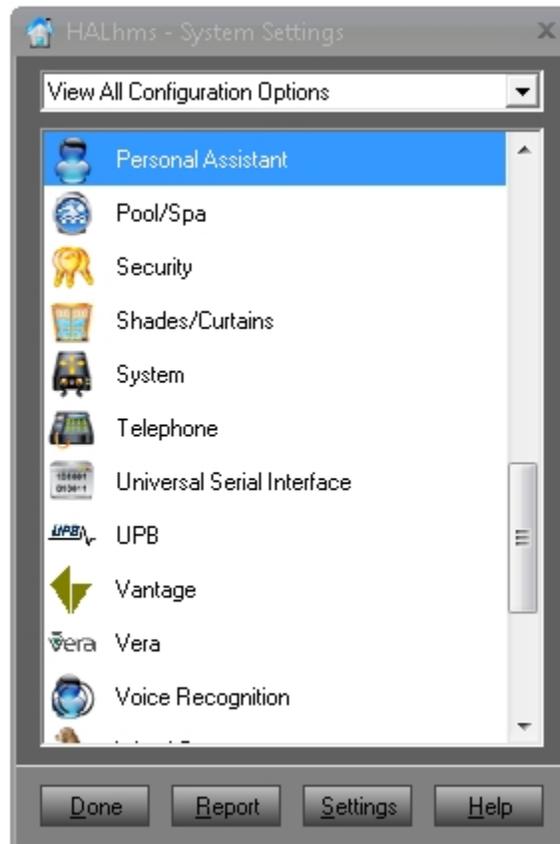
You can specify any port you like. In this example port 8081 is used. Also the jar file referenced does not have the version number. The reason for this is so that as you download newer versions of the jar file, you need only delete the old ha-bridge.jar and rename the downloaded version. This will allow you to keep the batch file the same. You will also be able to keep the older jar file in case you need to regress to an older version.

Next save your batch file in the directory that you created in step 1 and name it HA-Bridge-Start.bat.

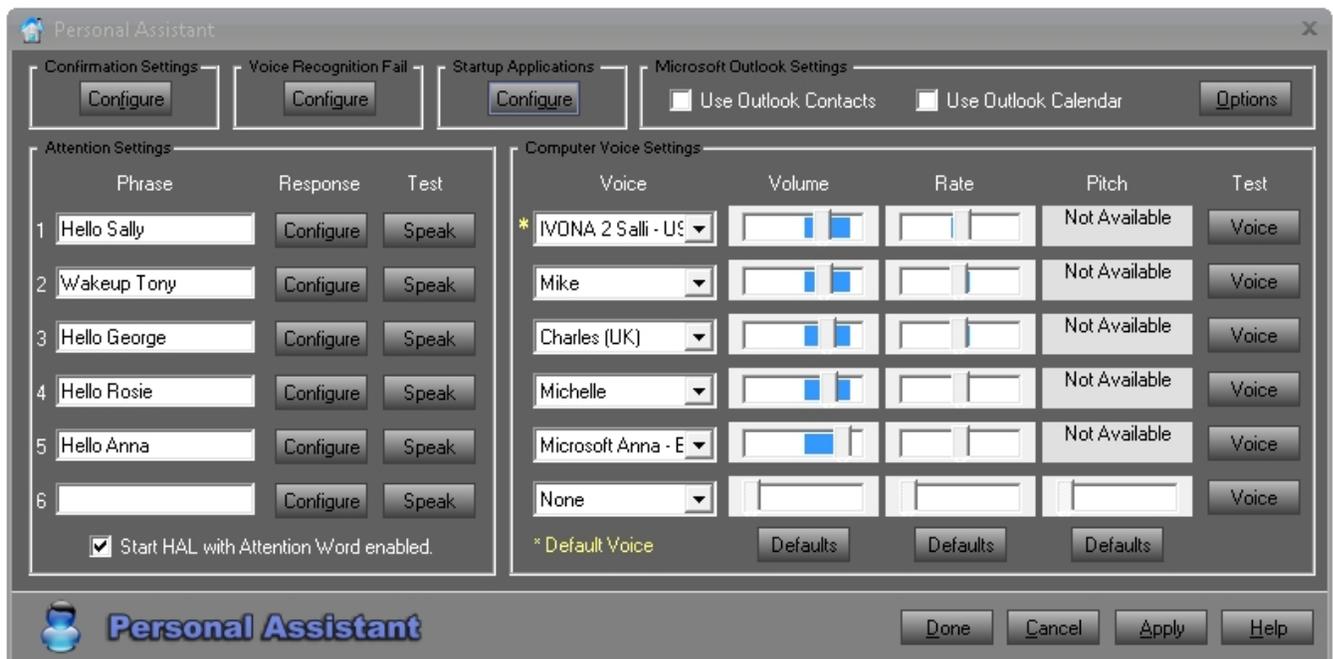


◆ **STEP 4: Reference batch file in HAL's startup routine.**

Open HAL's System Settings.



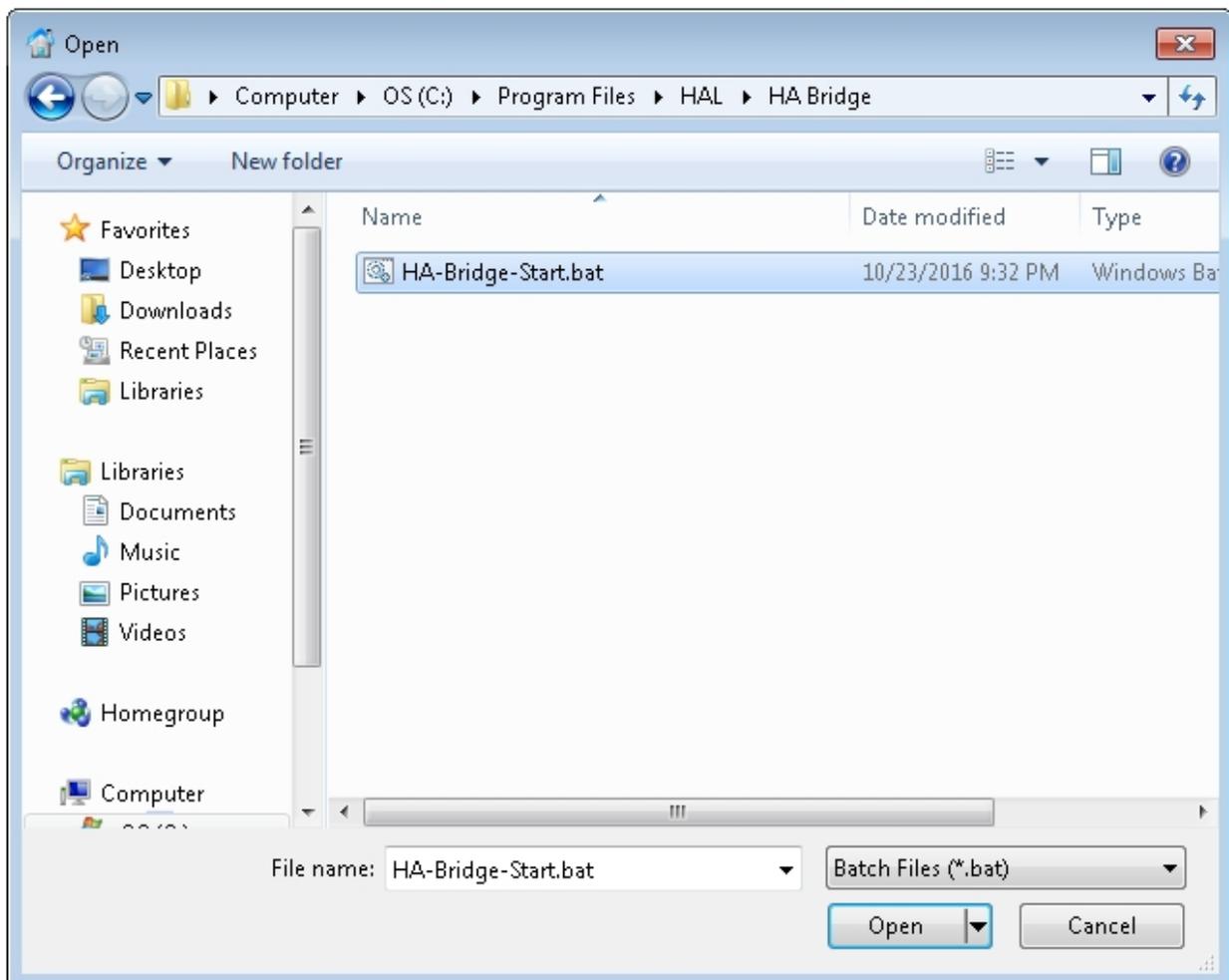
Open Personal Assistant.



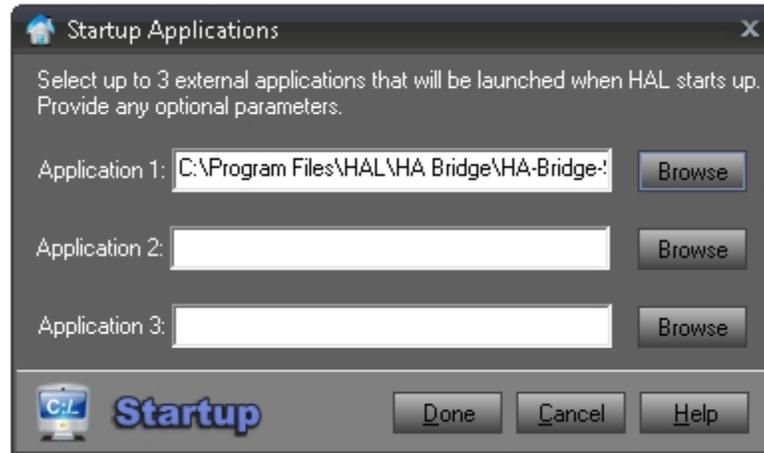
Under the section titled “Startup Applications” click on “Configure”. This will open a dialog which will allow you to configure up to 3 different items to startup after the HAL startup has completed. Beginning in HAL version 6.1.34 in addition to starting an application (exe), you are now able to also start batch files (bat) or shortcuts (lnk).



Click the “Browse” button and set your file filter to Batch Files. Browse to the directory where you saved your batch file and select this file as a startup.

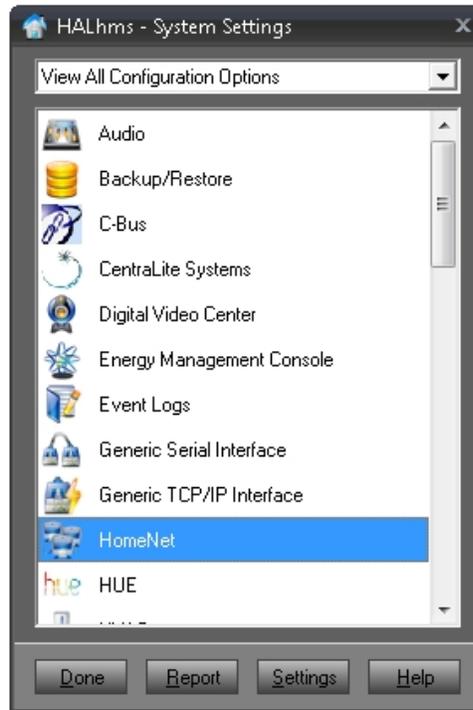


Your HAL startup should be similar to the example below. You can now click “Done” on this and the Personal Assistant dialog. Keep in mind you can always start the HA-Bridge manually without having to stop and start HAL.

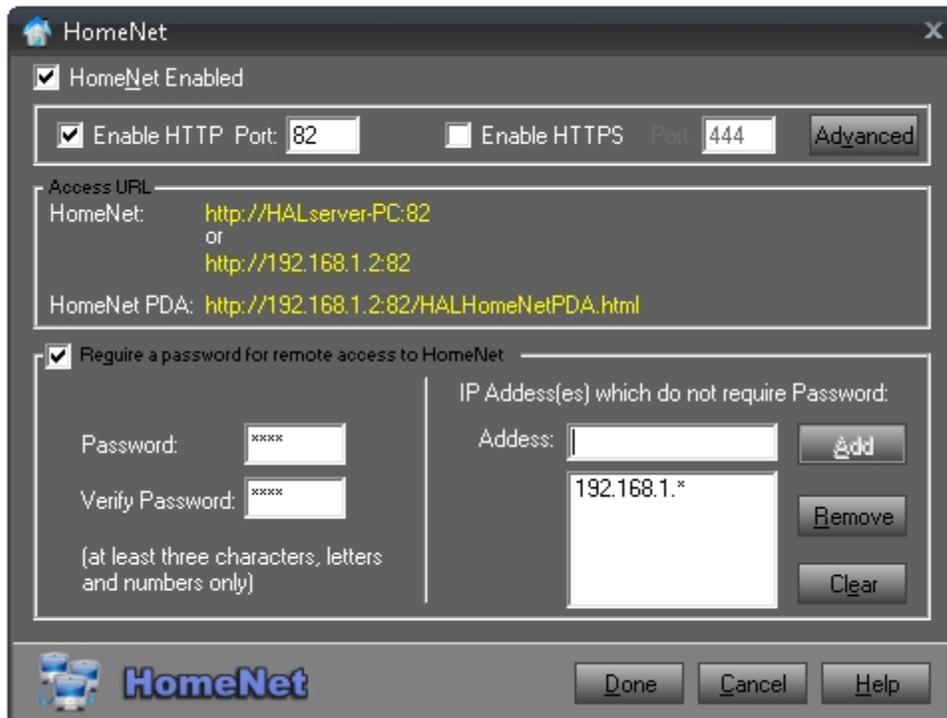


◆ **STEP 5: Configuring the HAL Web Services.**

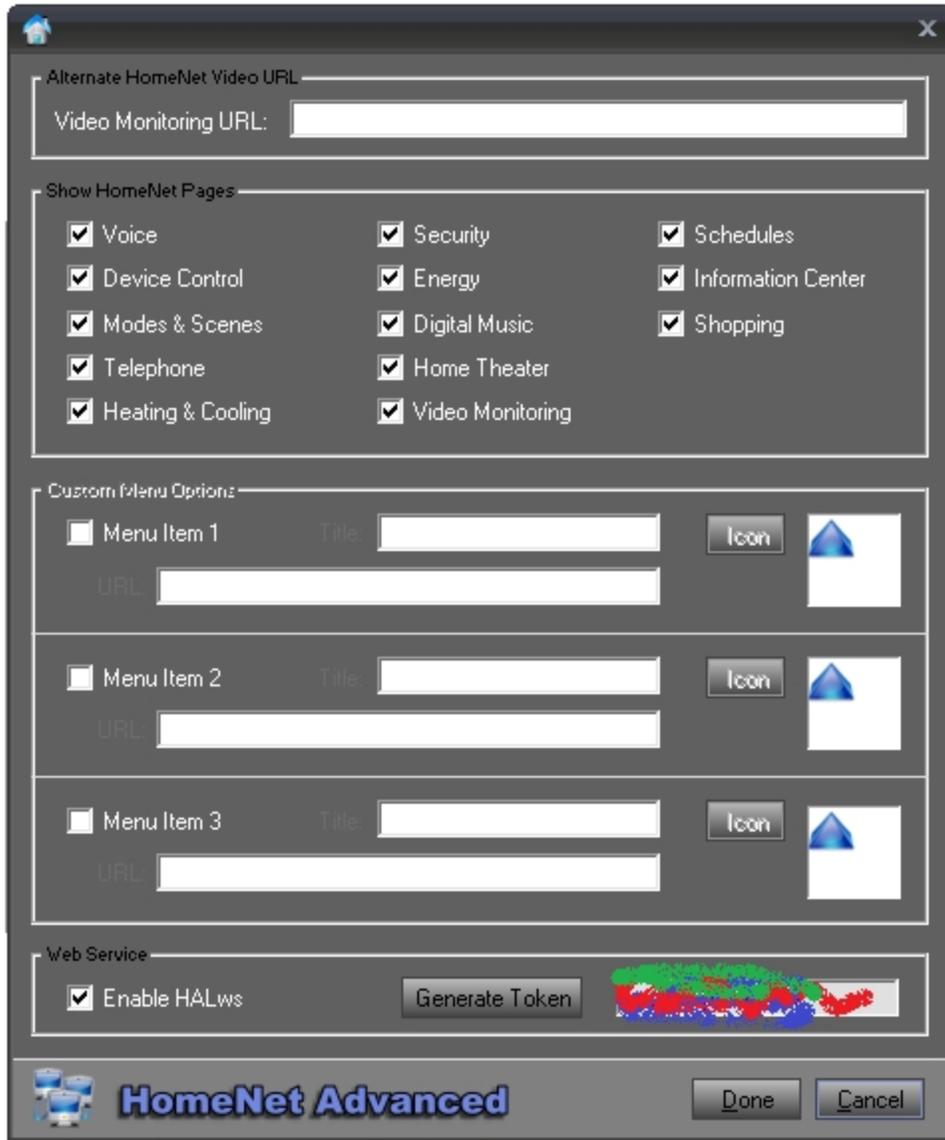
In order for HAL to communicate between the Bridge and the Echo we will use HALws (Web Services). You will need to have Internet enabled in HAL along with HomeNet. To setup HALws while still in System Setting, open the HomeNet configuration window.



From the HomeNet configuration window click on “Advanced”.

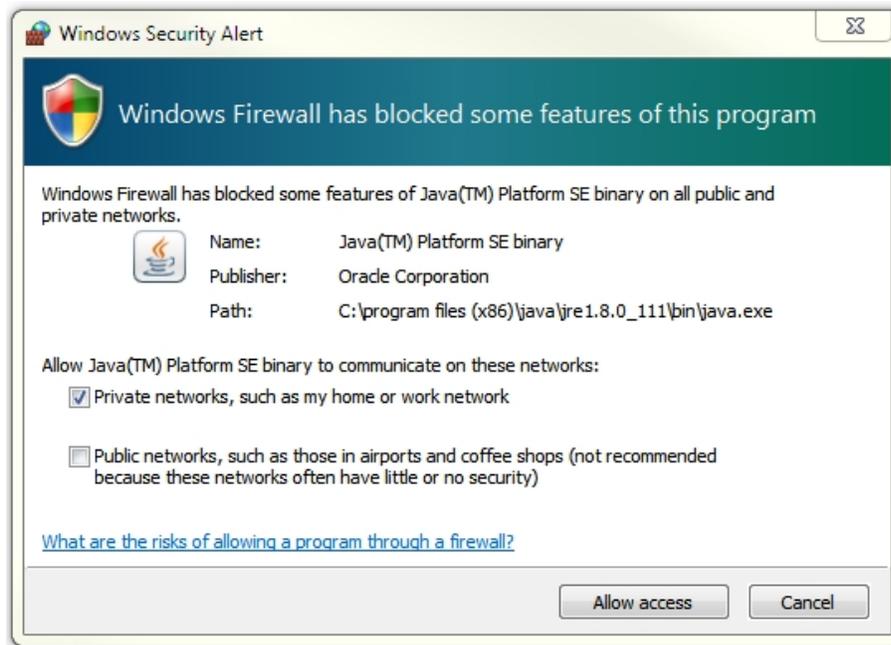


On the HomeNet Advanced configuration window, enable HALws and click on “Generate Token”. You will use this token in the HA-Bridge configuration to permit access to the HALws. The token in the example below is obscured on purpose...



◆ STEP 6: Starting the HA-Bridge.

Once the HA-Bridge.bat is executed you should see a cmd window open. If this is the first time you have run Java, you will see a Windows Security Alert dialog displayed. You will need to respond to this dialog by clicking “Allow Access”

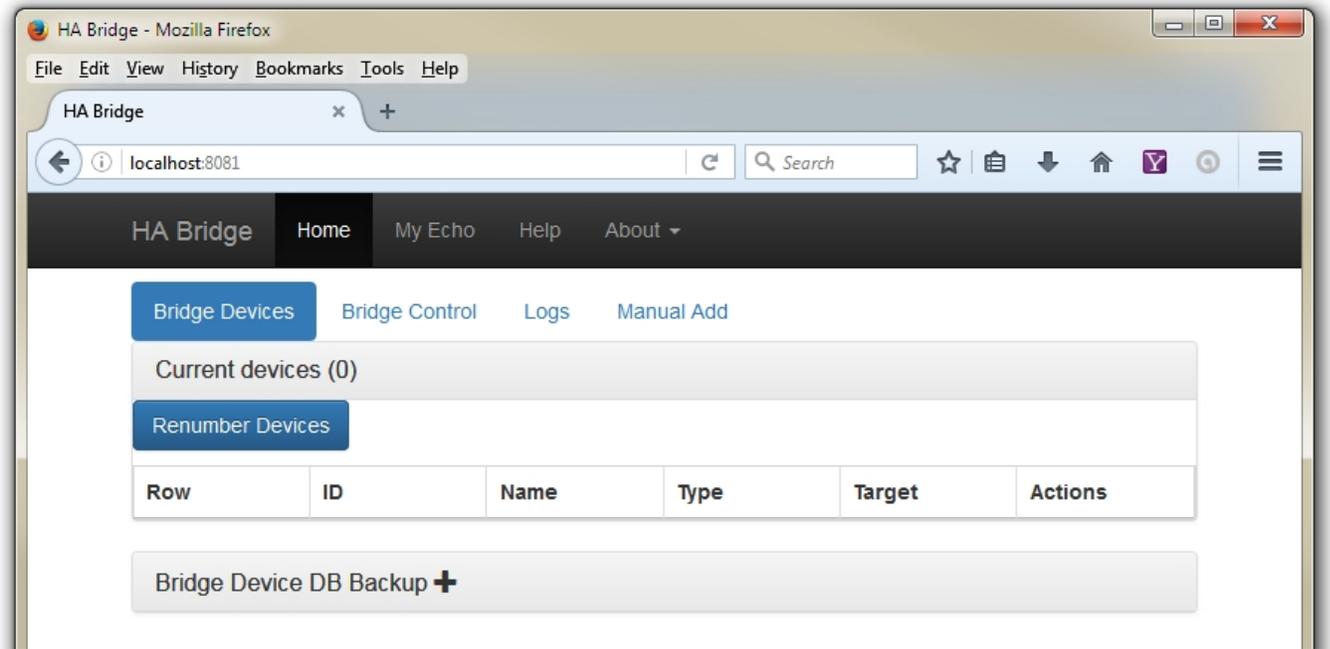


When the batch file is executed a cmd window should open that appears similar to the one shown below. If there is an issue, you will see it in this window. If the window closes instantly, make sure that Java is loaded. You can also add a Pause command as the last line to your batch file to view any message before the window closes. Remember to remove this after testing or it will be nuisance when everything is working well and you simply want to close the window.

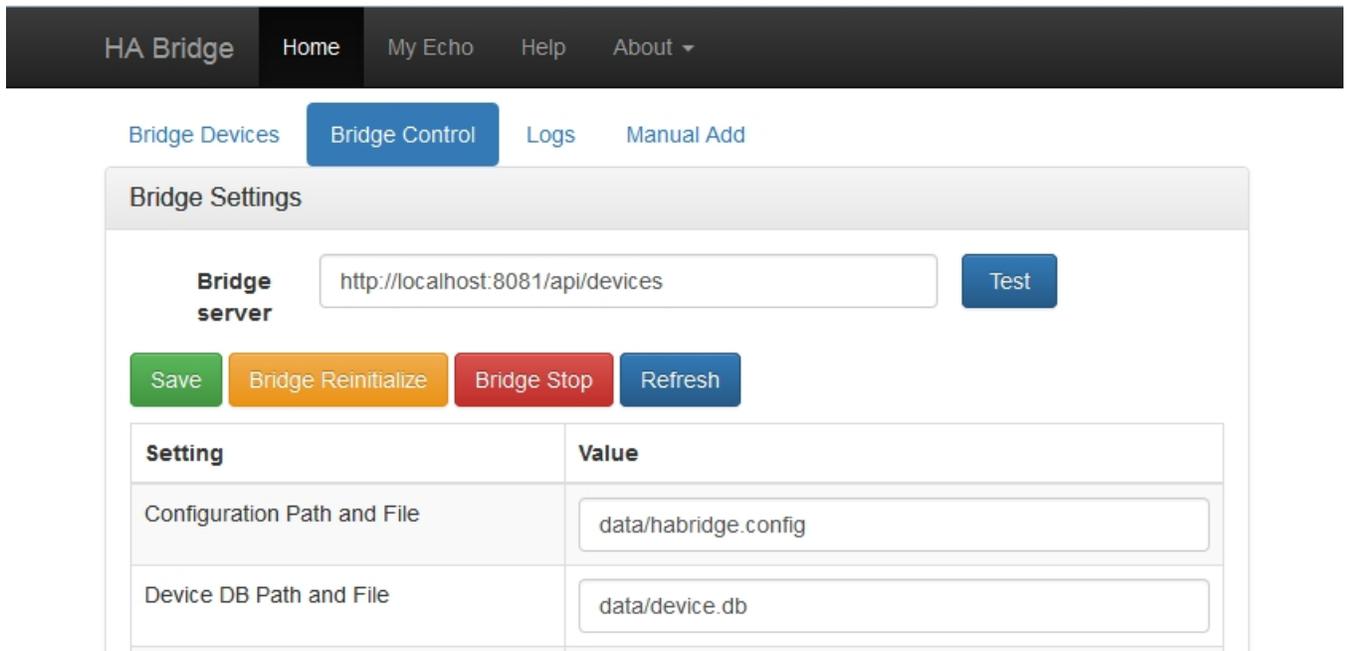
```
C:\Windows\system32\cmd.exe
C:\Program Files\HAL\HA Bridge>java -jar -Dserver.port=8081 ha-bridge.jar
2016-10-25 09:54:08.419 [main] INFO com.hwssystems.HABridge.HABridge - HA Brid
2016-10-25 09:54:08.431 [main] INFO com.hwssystems.HABridge.BridgeSettings - re
2016-10-25 09:54:08.523 [main] WARN com.hwssystems.HABridge.BridgeSettings - Th
any known IP's on this host.
2016-10-25 09:54:08.524 [main] INFO com.hwssystems.HABridge.HABridge - HA Bridg
2016-10-25 09:54:08.534 [main] INFO com.hwssystems.HABridge.SystemControl - Sys
2016-10-25 09:54:08.614 [main] INFO com.hwssystems.nest.controller.NestSession
2016-10-25 09:54:08.614:INFO::Thread-0: Logging initialized @451ms
2016-10-25 09:54:08.694 [Thread-0] INFO spark.webserver.JettySparkServer - == $
2016-10-25 09:54:08.696 [Thread-0] INFO spark.webserver.JettySparkServer - >> L
2016-10-25 09:54:08.699:INFO:oejs.Server:Thread-0: jetty-9.3.z-SNAPSHOT
2016-10-25 09:54:08.798:INFO:oejs.ServerConnector:Thread-0: Started ServerConnec
2016-10-25 09:54:08.799:INFO:oejs.Server:Thread-0: Started @636ms
2016-10-25 09:54:11.539 [main] INFO com.hwssystems.nest.controller.NestSession
2016-10-25 09:54:14.315 [main] INFO com.hwssystems.HABridge.deviceManagement.De
arted...
2016-10-25 09:54:14.323 [main] INFO com.hwssystems.HABridge.upnp.UpnpSettingsRe
2016-10-25 09:54:14.325 [main] INFO com.hwssystems.util.UDPDatagramSender - Ini
2016-10-25 09:54:14.326 [main] INFO com.hwssystems.util.UDPDatagramSender - UDP
2016-10-25 09:54:14.341 [main] INFO com.hwssystems.HABridge.hue.HueMulator - Hu
2016-10-25 09:54:14.348 [main] INFO com.hwssystems.HABridge.upnp.UpnpListener -
2016-10-25 09:54:14.395 [main] INFO com.hwssystems.HABridge.upnp.UpnpListener -
```

◆ **STEP 7: Opening the HA-Bridge user interface.**

To open the HA-Bridge user interface, open a browser on your HAL computer with the URL <http://localhost:8081/> or from another computer using the IP address of your HAL computer and the port number you specified in the batch file.



To configure the HA-Bridge, click on the “Bridge Control” menu item.



◆ **STEP 8: Configuring the HA-Bridge.**

Scroll down on the Bridge Control screen to the HAL section. You will need to enter the IP address and Port for you HAL HomeNet and click the “Add” button. Next enter the HAL Token you generated. You can copy and paste this from the HomeNet Advanced configuration window.

Scroll back to the top of this form and click the “Save” button. You will now have a new menu option “HAL Devices”. Be sure to select the type of dim control to be generated as “Percentage”.

Row	<input checked="" type="checkbox"/> Name	Cate...	HAL	On Button	Off Button	Actions
			Server			
16	<input checked="" type="checkbox"/> DINING ROOM LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
17	<input type="checkbox"/> DRIVEWAY DOOR LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
18	<input type="checkbox"/> DRIVEWAY LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
19	<input type="checkbox"/> FAMILYROOM FIREPLACE LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
20	<input type="checkbox"/> FAMILYROOM WINDOW LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
21	<input type="checkbox"/> FOYER HALWAY LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device
22	<input type="checkbox"/> FOYER LIGHTS	Light	HAL	▼	▼	Generate Bridge Device

◆ **STEP 9: Adding HAL Devices to HA-Bridge.**

Select a HAL device by clicking the checkbox by the device name. Next click on the Action button “Generate”.

Row	<input checked="" type="checkbox"/> Name	Cate...	HAL	On Button	Off Button	Actions
16	<input checked="" type="checkbox"/> DINING ROOM LIGHTS	Light	HAL Server	▼	▼	Generate Bridge Device

Now scroll to the bottom of the screen and you will see the commands that HALws will receive from the Echo when an On, Off or Dim action is required. These same commands can be executed directly from any browser. Again the tokens in the example below have been obscured. You'll also notice in the area designated by the red box that the dim percentage will be filled in based on the dim control type selected previously on the top of the page.

Already Configured HAL Devices +

Add Bridge Device for a HAL Device

Name

On URL

Dim URL

Off URL

[Add Bridge Device](#)

[Clear Device](#)

By clicking on the “Bridge Devices” menu option, you will see the device you have added. You can test it by clicking the On or Off buttons.

HA Bridge Home My Echo Help About ▼

Bridge Devices
Bridge Control
Logs
HAL Devices
Manual Add

Current devices (1)

Renumber Devices

Row	ID	Name	Type	Target	Actions
1	2	BACK SIDEWALK LIGHTS	switch	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete

When adding a Group, I modify the Group name to be prefaced with the word “All” so that it is less confusing to both Alexia and the user the particular Item and it’s function.

HA Bridge Home My Echo Help About ▾

Bridge Devices Bridge Control Logs HAL Devices Manual Add

Current devices (67)

Renumber Devices

Row	ID	Name	Type	Target	Actions
1	2140308849	ALL BACK PORCH LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
2	2140308848	ALL MASTER BEDROOM LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
3	2140308847	ALL MAIN FLOOR LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
4	2140308845	ALL INSIDE LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
5	2140308844	ALL FRONT LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
6	2140308843	ALL BASEMENT LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete
7	2140308842	ALL BACK LIGHTS	group	HAL Server	Test ON Test Dim Test OFF Edit/Copy Delete

When adding a Macro, keep in mind that when speaking to Alexa you will still need to say “Turn” Macro Name “On” for the command to be recognized and carried out.

Below is an example of a Macro I have called “Familyroom TV Off”. When I have the HA Bridge generate the Bridge Device I get the following:

Add Bridge Device for a HAL Device

Name: FAMILYROOM TV OFF Add Bridge Device

On URL: `http://192.168.1.2:82/MacroService!MacroCmd=Set!MacroName=FAMILYROOM%20TV%20OFF?Token=moxe1yq8vfplem57` Clear Device

Dim URL: `http://192.168.1.2:82/MacroService!MacroCmd=Set!MacroName=FAMILYROOM%20TV%20OFF?Token=moxe1yq8vfplem57`

Off URL: `http://192.168.1.2:82/MacroService!MacroCmd=Set!MacroName=FAMILYROOM%20TV%20OFF?Token=moxe1yq8vfplem57`

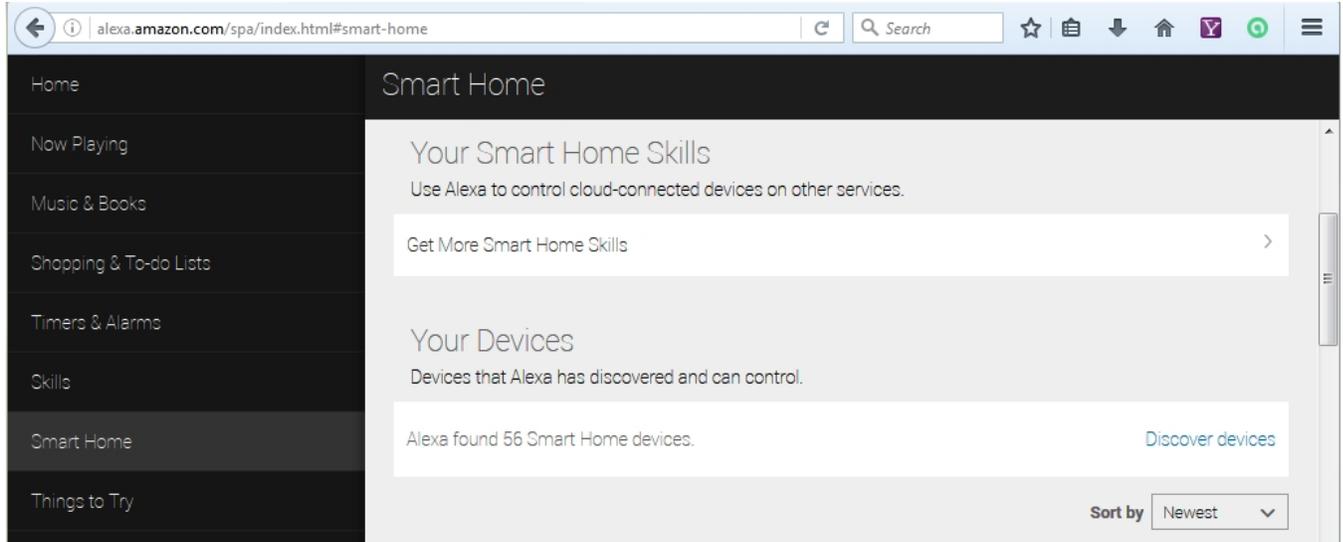
Since Alexa will be looking for an action verb at the end of the command spoken “Turn XYZ Off”, having a macro with the word on or off would be redundant “Turn XYZ OFF Off”. So I remove the word “OFF” from my Macro Name as shown below. I also have a macro called “FAMILYROOM TV ON” so I can edit the On URL to reference that On Macro. The result is an HA Bridge device entry that references two different Macros so that I can use Alexa to Turn the Familyroom TV On and Off.

Add Bridge Device for a HAL Device

Name	<input type="text" value="FAMILYROOM TV"/>	<input type="button" value="Add Bridge Device"/>
On URL	<input type="text" value="http://192.168.1.2:82
/MacroService!MacroCmd=Set!MacroName=FAMILYROOM%20TV%20ON?Token=moxe1yq8vfplem57"/>	<input type="button" value="Clear Device"/>
Dim URL	<input type="text" value="URL to dim device"/>	
Off URL	<input type="text" value="http://192.168.1.2:82
/MacroService!MacroCmd=Set!MacroName=FAMILYROOM%20TV%20OFF?Token=moxe1yq8vfplem57"/>	

◆ STEP 10: Configuring the Echo.

For Alexa to be aware of the devices which you have added in the HA-Bridge, say “Alexa, Discover Devices.” You can also perform the discovery process from your Alexa smartphone app or the Alexa.amazon.com page under Smart Home, by clicking “Discover Devices”. From the Smart Home area of the Alexa site you can also forget discovered devices.



Once discovery has successfully completed, you can now say “Alexa, turn on the Back Sidewalk Lights”. Unfortunately all she will respond with is “Ok” unlike HAL, which will say “I have turned on the Back Sidewalk Lights”.

Enjoy!