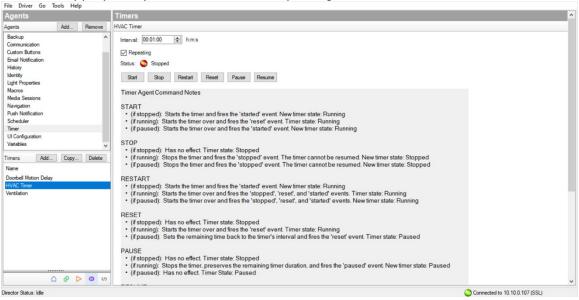
## **Programming Tips and Tricks**

## HVAC USAGE NOTIFICATION PROGRAMMING

In the example below, we're tracking how many minutes our HVAC system runs each day (for both heating and cooling), and getting a notification each night, letting us know how long it's run for. This same programming concept could easily be adapted to show how long a TV has been on, or a door opened, or you could track pool pump run times, etc. – anything that doesn't already have a native timer built into the driver... you get the idea...

1. Create an appropriately named one-minute repeating timer, HVAC Timer.



2. Create a corresponding number variable, HVAC Minutes.

File Driver Go Tools Hel Agents Variables Display System Variables Add ... Delete Add Agents Backup Communication Custom Buttons Email Notification Variable Name Last Updated Value Туре Description CP-DiagnosticsIgnoredDevices er Pro Diagnostics New Variable HVAC Minutes Night Mode use is in Night Mode, Fa History Name: HVAC Mimutes Identity Light Propertie cription: Counts HVAC "Active" Minutes Macros Media Sessions Navigation Push Notification Scheduler Type: Number Timer UI Configuratio Variab Cancel OK 00000 Ocnnected to 10.10.0.107 (SSL) Director Status: Idle

- 3. In the Programming tab, under the Thermostat Variables, program: [When HVAC State Changed]
  - -> If State is **Stage 1 Cool** (and/or **Stage 1 Heat** if you want to see Heating minutes) -> Start **HVAC Timer**

-> If State is **Off** -> Stop **HVAC Timer** 

Programming	Script		Actions
Device Events	Script	Execute	Device Actions
· · · · · ·	₩ When the HVAC state changes on Living Room->Thermostat		
	Programming Controls		Avayation     Avayation
Card Access Z2R1( System Remote Con Roku Apps	If the HVAC state on Living Room->Thermostat is Stage 1 Cool OR If the HVAC state on Living Room->Thermostat is Stage     Start Timer 'HVAC Timer'     If the HVAC state on Living Room->Thermostat is Off     Stop Timer 'HVAC Timer'	1 Heat	G Update Manager G Variables C Z-Wave C > Timer Actions
O Temperature Changed			Stop Timer 'HVAC Timer'
O Heat Setpoint Changed			Commands Conditionals Loops
O Cool Setpoint Changed			
Single Setpoint Changed			Select Timer: HVAC Timer ~
HVAC Mode Changed     Fan Mode Changed			O Start Timer 'HVAC Timer'
Hold Mode Changed			Stop Timer 'HVAC Timer'
HVAC State Changed			O Restart Timer 'HVAC Timer'
O Fan State Changed			O Reset Timer 'HVAC Timer'
Vacation Mode Changed			O Pause Timer 'HVAC Timer'
O Humidity Changed			O Resume Timer 'HVAC Timer'
<>			O Change 'HVAC Timer' Interval
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Director Status: Idle			Connected to 10.10.0.107 (SSL)

 In the Programming tab, under the HVAC Timer, program: [When HVAC Timer expires]
 -> Variables > HVAC Minutes = Variables > HVAC Minutes +1

File Driver Go Tools Help			
Programming	Script	Actions	
Device Events	Script Execute	Device Actions	
Media Sessions	When Timer 'HVAC Timer' expires	Push Notification	
	Programming Controls		
Timer Events		HVAC Minutes Actions	
Select Timer: HVAC Timer ~		Variables.>HVAC Minutes = Variables. >HVAC Minutes + 1	
When Timer 'HVAC Timer' expires     When Timer 'HVAC Timer' has been s		Commands Conditionals Loops	
O When Timer 'HVAC Timer' has been a		O Set to Value	
When Timer 'HVAC Timer' has been r When Timer 'HVAC Timer' has been r When Timer 'HVAC Timer' has been r		Set to Random Value Between min 0 *	
Status: Stopped		• · · 1 ÷	
Nate: See the Timer Asset as a far >		O Set to Value of Back Yard->AUDIO_VOLUME_DEVICE	
Director Status: Idle		Connected to 10.10.0.107 (SSL)	

5. Set up a Push Notification being sure to include the following variable {Variables::HVAC Minutes}. You can add other variables too for additional information, as in the example below. (The variables can be found by clicking on Add Variable in the bottom-left corner of the Push Notification agent screen, then navigating to variables and/or a specific device in the drop-down).

6. Set up a scheduled event once a day to send the notification and reset the variable back to zero.

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7. Optionally, you could program a **Custom Button** or **Experience button** to send the notification as well. (Just be sure to set the variable back to zero once a day, or as appropriate).

Programming S	Script	Actions
Device Events So	Script Execute	Device Actions
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		< >

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