This file contains all of the linked references below. It is a complete documentation set.

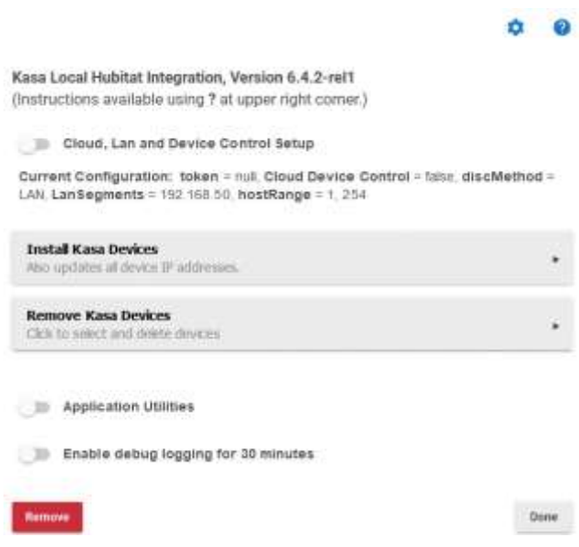
Kasa Integration Installation, Reference, and Troubleshooting

Other Reference Location Links	
Installation Instructions	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/install.pdf
Update Instructions	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/update.pdf
Application Description	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/appDesc.pdf
Device Capabilities	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/cmdsAttrs.pdf
Device Preferences	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/prefs.pdf
Troubleshooting Guide	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/trouble.pdf

Installation Instructions

Caution	For the HS300 6-outlet multi-plug, the Kasa names for ALL of the outlets must not exceed 96 characters (about 16 characters per outlet). This is due to Hubitat comms limitation of a single return packet from the device. This limitation does not exist if you choose a cloud implementation.
1	Install the device per the manufacturer's instructions using the Kasa Phone Application. After installing, verify the device works (simple on-off) using the Phone App.
2	(Optional) Using your router, assign static IP addresses for your devices.
3	Load the Application and Driver files a. HPM: Search by Keyword for **Kasa**", Package is "**Kasa Device Integration**". b. Manual: From GitHub site: https://github.com/DaveGut/HubitatActive/tree/master/KasaDevices c. Direct link using the Apps Code and Drivers Code edit page "Import" function using the links at the bottom of this page. During the Hubitat application running (below), you will be given a list of required drivers for your device(s). If you do not have the correct driver, the device will not be created.
4	In Hubita Apps, select "Add User App". Select "Kasa Integration".

Notes on running the Application:
a. Most users will not have to use functions other than Install Kasa Devices and Remove Kasa Devices. Exception is users with complex LAN topologies or (in rare cases) where a device is not LAN controllable. The LAN controllable device problem is handled in the troubleshooting section.
b. Below describes the intended default installation using LAN for all communications.

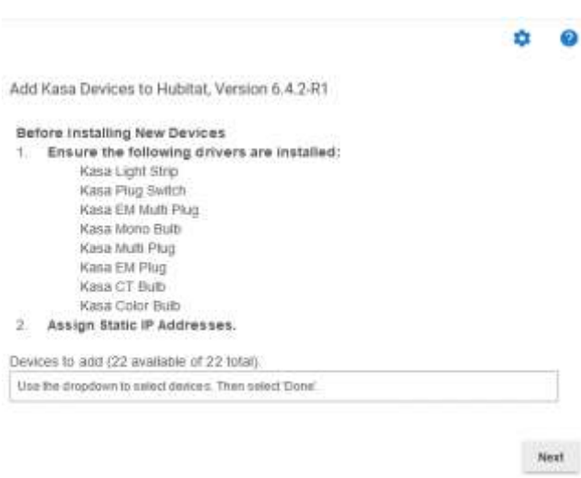


Kasa Local Hubitat Integration Page

1. Open a log window in your browser. There should be no error log events (color code red) during the installation. If you encounter and can not install, contact the developer.

2. Select "Install Kasa Devices".

3. After several minutes the next page will appear.



Add Kasa Devices Page

1. Verify that the exact drivers from the list are installed into Hubitat.
2. Select your device(s) from the drop down menu.
3. Select Next.

Issue: All devices not found. Corrective Attempt: Press Next and then try the "Install Kasa Devices" again.

Issue: Devices still do not show up. You may have a non-LAN device. Corrective Attempt:
a. Press "Next"
b. Select "Cloud, Lan, and Device Control Setup"
c. Select "Kasa Login and Token Update" and enter credentials. (More info on these pages at the Application Description link.)

5	Go to each device and assure you can properly control the device (simple on/off command). Issues on device control: See link to Troubleshooting.

File Location Links	
Kasa Integration App	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/Application/KasaIntegrationApp.groovy
Single Plug/Switch without EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/Plug-Switch.groovy
Single Plug with Energy Monitor (EM)	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/EM-Plug.groovy
Dimming Switch	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/DimmingSwitch.groovy
Multi Plug without EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/Multi-Plug.groovy
Multi Plug with EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/EM-Multi-Plug.groovy
Color Bulb	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/ColorBulb.groovy
Color Temperature Bulb	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/CTBulb.groovy
Mono Bulb	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/DeviceDrivers/WhiteBulb.groovy
Light Strip	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/DeviceDrivers/LightStrip.groovy

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Device Capabilities	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/cmdsAttrs.pdf
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App and Driver Update Instructions

Caution	The same major version for the App and Driver code is required to guarantee proper operation.
Note	If your integration is working acceptably, strongly consider NOT upgrading. If you are having problems, upgrade and try again before going to troubleshooting.

Update the Code

1	**Hubitat Package Manager:** Update the package through HPM when prompted.
2	**Manual Application update** a. Open the App Code. b. Copy the link on the definition line "importUrl" c. Select Import and paste the link into that line. Select **Import**. d. Save the changes. e. When complete, open the app and run reset the device database. This will cause the device to verify IP addresses and run the Updated method in each driver.
3	**Manual Driver update** a. Open the Driver Code. b. Select Import and paste the link into that line. Select **Import**. c. Save the changes. d. When complete, open the app and run reset the device database. This will cause the device to verify IP addresses and run the Updated method in each driver.

Run the Application

1	When code installation is complete, open the app and run reset the device database. This will cause the device to verify IP addresses and run the Updated method in each driver.

File Location Links	
Kasa Integration App	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/Application/KasaIntegrationApp.groovy
Single Plug/Switch without EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/Plug-Switch.groovy
Single Plug with Energy Monitor (EM)	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/EM-Plug.groovy
Dimming Switch	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/DimmingSwitch.groovy
Multi Plug without EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/Multi-Plug.groovy
Multi Plug with EM	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/EM-Multi-Plug.groovy
Color Bulb	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/ColorBulb.groovy
Color Temperature Bulb	https://raw.githubusercontent.com/DaveGut/HubitatActive/master/KasaDevices/DeviceDrivers/CTBulb.groovy
Mono Bulb	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/DeviceDrivers/WhiteBulb.groovy
Light Strip	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/DeviceDrivers/LightStrip.groovy

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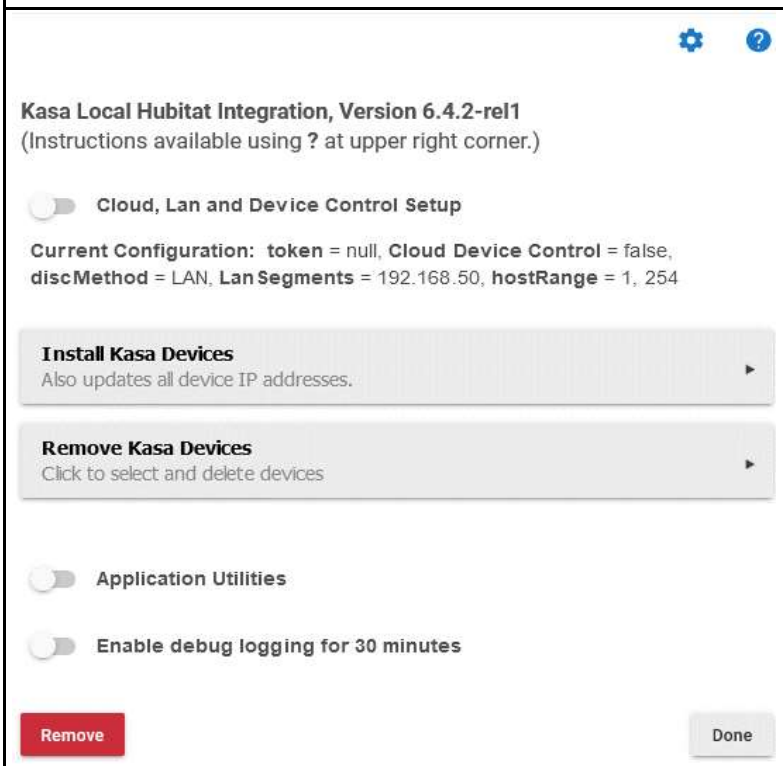
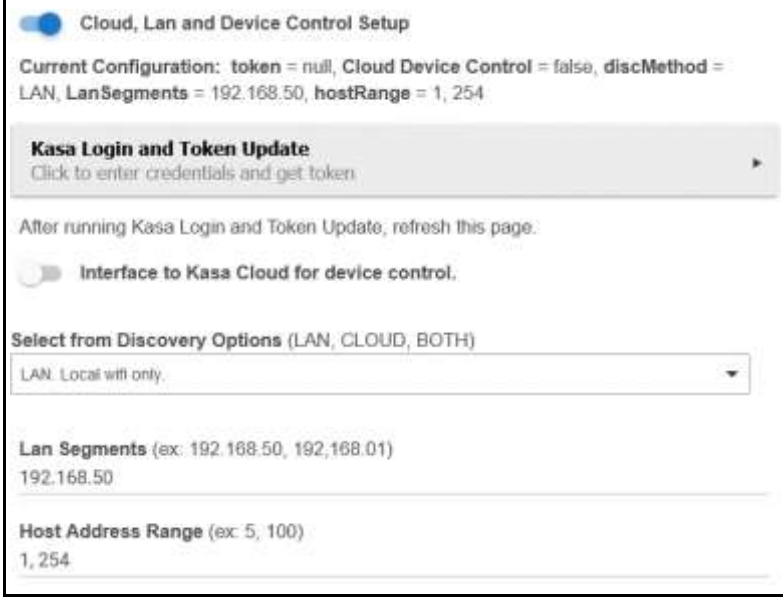
Application Description

Kasa Local Hubitat Integration



Description
This is the initial page when the application is started
⚙ Goes to the Application Details Page
? Application Documentation Link
Cloud, Lan, and Device Control Setup (discussed later)
Current Configuration. The current application configuration settings, as set by the above.
Install Kasa Devices. When selected will search for Kasa devices and provide a list of discovered devices for installation selection. The default Configuration will work if your Hubitat Hub and devices are on the same LAN segment. This is normal for unless you have explicitly set up segments.
Remove Kasa Devices. List of devices for removal.
Application Utilities. Some user utilities.
Remove. Removes the application and all installed devs.
Done. Done with Application.
Enable debug logging fo 30 minutes

Cloud, Lan, and Device Control Settings



Description
Kasa Login and Token Update. For LAN control, you will need to provide your Kasa App credentials. Note: Refresh browser when done to see token.
Interface to Kasa Cloud for device control. This option requires that you have created a Kasa Token (see Kasa Login and Token Update).
Select from Discovery Options: Allows to select LAN, CLOUD, or BOTH discovery Options a. LAN. Takes several minutes. Can miss devices. B. CLOUD. Requires credentials. Fast.
LAN Segments: For complex topologies, the segments that will be searched during LAN discovery.
Host Address Range: Shortens search range from the entire segment to a select subset.

Application Utilities

Description
List All Kasa Device with IP Address.
List All Kasa Device by Name
IP Comms Test Tool. Tests a single device comms: a. A ping test of 3 pings b. A system status command to the device. Reports ping results and status command Pass/Fail.
Reset the Device Database. Zeroizes the device database. It then rediscovers the devices using the discover method defined above.

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Device Capabilities	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/cmdsAttrs.pdf
Device Preferences	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/prefs.pdf
Troubleshooting Guide	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/trouble.pdf

Device Capabilities

Hubitat Defined Capabilities

The below capabilities are implemented in accordance with the Hubitat Device Capabilities definitions.

Capability	Commands / Attributes	Devices / Notes
Actuator	none	All devices
Change Level	**cmds**: Start Level Change, Stop Level Change	Dimming Switch, All bulbs, Light Strip
Color Control	**cmds:** Set Color, Set Hue, Set Saturation **attrs:** RGB, color, colorName, hue, saturation	Color Bulb
Color Mode	**attrs:** colorMode	Color Bulb
Color Temperature	**cmds:** Set Color Temperature **attrs:** colorName, colorTemperature	Color Bulb, CT Bulb
Energy Meter	**attrs:** energy	EM Plug, EM Multiplug, all Bulbs
Level Preset	**cmds:** Preset Level **attrs:** levelPreset	Dimming Switch
Light	**cmds:** On, Off **attrs:** switch	All bulbs, Light Strip
Light Effects	**cmds:** Set Effect, Set Next Effect, Set Previous Effect **attrs:** effectName, lightEffects	Light Strip
Power Meter	**attrs:** power	EM Plug, EM Multiplug, all Bulbs
Refresh	**cmds:** Refresh	All devices
Switch	**cmds:** On, Off **attrs:** switch	All devices
Switch Level	**cmds:** Set Level **attrs:** level	Dimming Switch, All bulbs, Light Strip

Custom Capabilities		
The below capabilities are custom capabilities unique to this integration		
Capability	**Commands / Attributes**	**Notes**
Bulb Presets	**cmds:** Bulb Preset Create, Bulb Preset Delete, Bulb Preset Set	Color Bulbs, Light Strips / Create bulb presets with name based on current settings. Command preset by Name. Coordinate presets with other color bulbs. Execute through rule machine or other means. Presets are stored in state bulbPresets.
Circadian Mode	**cmds:** Set Circadian / circadianState	Color and CT Bulbs / Sets device-internal circadian mode.
Connection	**attrs:** connection	All devices / LAN or CLOUD connection controlled via preferences.
Energy Statistics	**attrs:** currMonthTotal, currMonthAvg, lastMonthTotal, lastMonthAvg	EM Plug, EM Multiplug, all Bulbs
LED Control	**cmds:** Led On, Led Off **attrs:** led	Plugs, Multiplugs / Sets the faceplate LED for the device on/off. Results will vary.
Light Effect Preset	**cmds:** Effect Create, Effect Delete, Effect Set	Light Strips / Create strip presets with name based on current settings. Command preset by Name. Coordinate presets with other light strips. Execute through rule machine or other means. Presets are stored in state effectPresets.
Quick Polling	**cmds**: Set Poll Interval	All devices / Allows poll interval control from rule machine. Function allows syncing HE with manual switch use. Reports corrent through state pollInterval.

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Device Preferences	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/prefs.pdf
Troubleshooting Guide	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/trouble.pdf

Device Preferences

Note: Not all preference are applicable for your individual devices. All available preference are in the preferences section of the Device's Edit page.

Common Preferences to all devices	
30 minutes of debug logging	Used for troubleshooting only. Provides detailed logging of normal events.
Enable Information Logging	Will log whenever a device attribute changes. Also logs when device settings are updated.
Kasa Cloud Binding	A. When false (white), your device is in Local Control Only and can not be controlled through the Kasa Cloud. The Kasa Phone App can control if the phone is on your local wifi. B. When true, the device is in kasa default control and can be controlled from the Kasa Cloud. The Kasa Phone App can control the device world-wide. To transition from False to True, Kasa Credentials and a Token must first be set up in the Hubitat Kasa Integration App.
Use Kasa Cloud for Device Control	Appears in preferences section only when Kasa Cloud Binding is true. When false, all device control is LOCAL LAN only and the attribute connection = "LAN" To be true (and to go from false to true), the "Interface to Kasa Cloud for device control" must be selected in the App. When selected, all device control is through the Kasa Cloud and connection = "CLOUD"
Reboot device	Used for troubleshooting only. Use sparingly. Reboots the Kasa device.
Energy Monitor Devices	
Enable Enery Monitor	Enables the Energy Monitor function.
Bulbs and Light Strips.	
Default Transition Time (seconds)	Used for a smooth transition from one state to another.
Sync Bulb Preset Data	**Color Bulbs and Light Strips Only**. I have created an ability to define and name bulb color / color temperature presets that can then be shared with other color bulbs. You can then set the color by name. This function will overwrite the bulb preset data in other bulbs of the same device with the data stored for this device.
Sync Effect Preset Data	**Light Strip Only**. I have create the capability to define light strip effects. You can then set these in the bulb by the effect name. This function will overwrite the light Effect preset data in other light stripss with the data stored for this light strip.

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Troubleshooting Guide	https://github.com/DaveGut/HubitatActive/blob/master/KasaDevices/Docs/trouble.pdf

Troubleshooting

Installation Issues

1	Devices not on add devices list. A. Use the Kasa Phone app and verify the device is operational (on/off cycle). If OK, continue. B. Verify your network configuration is a single segment and does not have security lockouts. If it does, modify the "Cloud, Lan and Device Control Setup" as appropriate. C. Press "Next" and try rerunning installation. If not successful, continue D. Press "Next" and open "Cloud, Lan, and Device Control Setup" 1) Go to "Kasa Login and Token Update" and enter username and password 2) Select done. Then refresh this page and make sure the token is on the page. 3) Run "Install Kasa Devices".
2	A selected device does not install. A. Make sure the appropriate Drivers (as listed on the Add Devices Page) are installed into Hubitat. B. Retry the installation.

Operations Issue

1	Try the command again. Although comms are good, this is a wifi or web interface and errors sometimes occur. If the error is repetitive, continue.
2	Open the Kasa Phone App and verify the device is operational via on/off cycle. If OK, continue.
3	Open the Hubitat Kasa Integration application and reset the device database (which will check the IP address and update as required.
4	Using the device IP, run the Application Utility "IP Comms Test Tool". A. Ping test should show a Success of 100%. Otherwise, there may be issues with your Network configuration (device location, faulty device in the Hubitat - device chain). B. If Ping is 100%, the Device Command Test should be PASS. If not, the possibilities are: 1) The device is faulty (try running the device through the Kasa Integration App). 2) The device is on the list that TP-Link has protected from LAN control. In that case, you must: a) App: obtain a Kasa Token and set "Interface to Kasa Clloud for device control" to true. b) Device: Bind the device to the Kasa Cloud and set "Use Kasa Cloud for device control" to true.
5	Collect error data. A. Go to the devices previous logs and look for errors and warnings. B. Copy these and provide those lines along with your Device Type/Model and a description of what is happening. C. Using a Private Message, provide the above to @davegut.

Network Simplification

Some networks have communications issues due to the complexities of the Network. If normal troubleshooting fails, the idea is to simplify your network for the device that is failing,

1	Insure the Hubitat Hub is on the same segment as the problematic device.
2	Remove any range extenders or gateway-external switches (in the devices are faulty).
3	Direct wire the hub to the gateway (if possible). In case the wifi dongle is problematic.