Hubitat Installation Instructions	
Note	A pdf copy of these instructions are contained at the GitHub location: "https://github.com/DaveGut/Hubitat-TP-Link-Integration"
Upgrade	**UPGRADE From Previous Version**. Typically, the upgrade can be done using the Import function on the driver and app code pages.
	a. Replace the existing Application Code and Driver Code with the new code (from below).
	b. Run a "Save Preferences" on each device.
Initial Installation Instructions	
1	**Install the Kasa Devices**. Install the devices using the Manufacturer's instructions and the Kasa Application.
2	**Assign Static IP Address**: For each device, assign a Static IP address on your LAN. This precludes the IP from being changed and causing communications problems.
3	Install the application (link below) in accordance with the Hubitat Instructions at: "https://docs.hubitat.com/index.php?title=How_to_Install_Custom_Apps" or here.
	https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/Application/TP-LinkHubitatApplication.groovy
4	Install the device drivers (inks below) for your devices in accordance with the Hubitat Instructions at: "https://docs.hubitat.com/index.php?title=How_to_Install_Custom_Drivers"
HS100, HS103, HS105, HS200, HS210, KP100	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkPlug-Switch(Hubitat).groovy	
HS110	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkEM-Plug(Hubitat).groovy	
KP200, HS107, KP303, KP400	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkMulti-Plug(Hubitat).groovy	
HS300	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkEM-Multi-Plug(Hubitat).groovy	
HS220	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkDimmingSwitch(Hubitat).groovy	
KB100, LB100, LB110, KL110, LB200, KL50, KL60	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkWhiteBulb(Hubitat).groovy	
LB120, KL120	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkCTBulb(Hubitat).groovy	
KB130, LB130, KL130, LB230	
https://raw.githubusercontent.com/DaveGut/Hubitat-TP-Link-Integration/master/DeviceDrivers/TP-LinkColorBulb(Hubitat).groovy	
5	Run the application "Kasa Local Integration" and follow the associated instructions.
	Note: The app will take about 3 minutes to load. Because of the discovery method, it is HE resource intensive. The resources will fully recover after about 5 minutes; however, during that time, HE performance may be impacted.
	Note: The discovery method is rather arcane and during discover, you will see a lot of "**Error occurred with UDP message: SocketTimeoutException: Receive timed out**". This is normal and only occurs during the start-up of the application.

Known Issues	
a.	**Static IP Not Set.** Failure to set static ip addresses can cause the device to fail because it is unreachable. Device driver corrective action described in communications failure below.
b.	HS300 devices. A persistant communications failure is usually caused by the return message from the device exceeding the Hubitat limit. Corrective action: Shorten the name of the devices (the strip and each individual plug) to reduce the message size.
Automated Communications Error Processing	
The Driver and Application are designed to automatically correct two communications errors: a. A multi-plug I busy completing a command to another plug and the sent command is ignored. b. The device's static IP has changed due to a reboot of the user's router and the use not setting the Static IP for the device. The following has been implemented:	
a,	When the communications do not complete, a retry is completed and if successful, the device continues normally. This usually handles the multi-plug issue.
b.	The above is repeated a second time if it does not work.
c.	If the second try fails, the application will attempt to poll the device IP addresses to update a changed address.
	a. The program checks to see if a poll has been run within the last hour. If not,
13	b. The program polls for all devices and as the devices are encountered, child device IP addresses are automatically updated.
d.	A forth try is completed. If that fails, no more tries are completed.
e.	Subsequent command will NOT undergo automatic error processing.
f.	If a command is successful, then the error processing is reset.
If the atomatic does not fix the problem, the user will have to troubleshoot why the device is not present. Running the application and listing or installing the devices will update the device IP after the problem is resolved.	

Commands			
Commands	**Input**	**Devices**	**Note**
On/Off		All	
Refresh		All	
Set Level	Level (percent)	HS220, all Bulbs	
Start Level Change	up / down	Bulbs	Change level by 2% every 1/2 second.
Stop Level Change		Bulbs	Stops the Level Change.
Set Circadian		Color and Color Temp Bulbs	Starts bulb-internal Circadian Program which sets the Color Temperature to match natural daylight.
Set Color Temperature	Color Temp	Color and Color Temp Bulbs	ColorTemp Bulb Range: (2700 to 6500) Color Bulb Range: (2500 to 9000)
Set Color	hue, saturation, level (percent)	Color Bulbs	
Set Hue	hue (percent)	Color Bulbs	
Set Saturation	saturation (percent)	Color Bulbs	
Set Poll Freq	Interval in Seconds	Plugs/Switches	If Energy Monitor is enabled, this polls based on changes in Power. For all other cases, this polls for the SWITCH attribute.

Attributes		
Attribute	**Value**	**Note**
switch	on/off/OFFLINE	All devices. OFFLINE, if persistent, indicates a device or device IP problem that should be resolved.
level	percent	HS220 switch, Bulbs
circadian State	normal / circadian	Color and Color Temp Bulbs
colorTemperature	Range of command	Color and Color Temp Bulbs
color	hue, saturation, level	Color Bulbs
colorMode	CT / RGB	Color Bulbs
colorName		Color and Color Temp Bulbs. Color or color temperature name per Hubitat public driver.
power	Watts	Energy Monitor. Current power.
energy	Kilo-watt Hours	Energy Monitor. Energy used today.
currMonthTotal	Kilo-watt Hours	Energy Monitor. Total as of end of previous day.
currMonthAvg	Kilo-watt Hours	Energy Monitor. Total divided by days in month minus 1
LastMonthTotal	Kilo-watt Hours	Energy Monitor. Last month total hours.
LastMonthAvg	Kilo-watt Hours	Energy Monitor. Last month total/days. Will be low for incomplete months.

Preferences	
Device IP (Current =)	Manual Installation Only. Appears only during a manual installation.
Number of the plug (00, 01, 02, etc.)	Manual Installation Only. Multiplugs. The device number from 00 to 05.
Device Refresh Rate	The basic refresh interval for the device. Default is 30 minutes.
Default Transition time (seconds)	All Bulbs. Period of time for a bulb to fade on or off.
High Resolution Hue Scale	Color Bulbs. Used to define if a controlling application uses high resolution hue, vice the bulb low resolution.
Enable debug logging	Turns on a detailed level of logging. Default is false. Will run debug logginf for 30 seconds.
Enable description text logging	Turns on a description test logging. Default is true.
Enable energy monitoring features	Energy Monitor devices. Enable the collection of energy statistics for the device.