Overview

> DISCLAIMER: This software is neither affiliated with nor endorsed by either Control4 or TP-Link.

The TP-Link Outlet driver provides local, cloud-free control of TP-Link Kasa and Tapo smart plugs and power strips directly from Control4.

It works with Kasa devices on original firmware, with Kasa devices TP-Link has updated since late 2024, and with Tapo plugs and newer Kasa plugs. The driver works out how the device connects, so the same driver keeps working when TP-Link updates the device's firmware.

Each output is exposed as a standard Control4 **relay binding**, along with per-output events, variables, and real-time power (wattage) readings for programming.

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System Requirements

- Control4 OS 3.3+
- A TP-Link Kasa or Tapo smart plug or power strip on a network the controller can reach
- For Tapo devices and for Kasa devices updated since late 2024, the credentials of the TP-Link (Kasa or Tapo) account the device is set up with. Kasa devices on original firmware need none.
- Devices on newer firmware work with **Third-Party Compatibility** on or off in the Tapo or Kasa app. With it off they need Control4 OS 3.4.1 or later

Features

- **Local control** of each outlet with no TP-Link cloud dependency after setup
- **Newer firmware**: works with the encrypted protocol TP-Link firmware has used since late 2024
- **Tapo and newer Kasa plugs and power strips**, found automatically, with each outlet as its own output
- **Original Kasa firmware**: works with no credentials, and keeps working after TP-Link updates the device (add your account credentials)
- Standard Control4 **relay bindings** for every output
- **Events**: `Output N Turned On` / `Output N Turned Off`, `Connected`, `Disconnected`
- **Variables** per output (`Output N Name`, `Output N State`, `Output N Power`, `Output N In Use`, and `Voltage`) for use in programming
- **Real-time energy monitoring** per outlet with configurable poll rate
- **Programming commands**: Turn Output On / Turn Output Off / Toggle Output
- **Keypad buttons**: On, Off and Toggle button links for each output, with LEDs that follow it
- **In Use / Idle events** for each output, from its power, two levels and a hold time you set, on devices with energy monitoring
- Reconnects automatically when the device restarts or drops the connection

- **Follows the device**: when it stops answering, the driver detects its protocol again, so it keeps working when a firmware update, a rollback or a reset changes how the device connects. When it gets a new address on the controller's network, the driver finds it by its MAC address and updates `IP Address` (OS 4.0 and later)

Compatibility

Verified hardware:

Device	Type	Outputs	Energy Metering	Shows As
HS300	Power strip	6	Yes (per outlet)	`Connected (KLAP)`
EP25	Smart plug	1	Yes	`Connected (SMART)`
KP115	Smart plug	1	Yes	`Connected (Legacy)`
HS110	Smart plug	1	Yes	`Connected (Legacy)`
EP40A	Outdoor plug	2	No	`Connected (Legacy)`

Other Kasa and Tapo plugs and power strips are expected to work:

- Kasa plugs and power strips, on original or newer firmware
- Newer Kasa plugs and Tapo plugs, which need the TP-Link account credentials
- Tapo power strips and newer Kasa multi-outlet plugs, with each outlet as its own output

Single-outlet devices appear as output 1.

If you have a model that works and is not listed, or one that does not work, please contact us at driver-support@finitelabs.com.

Installer Setup

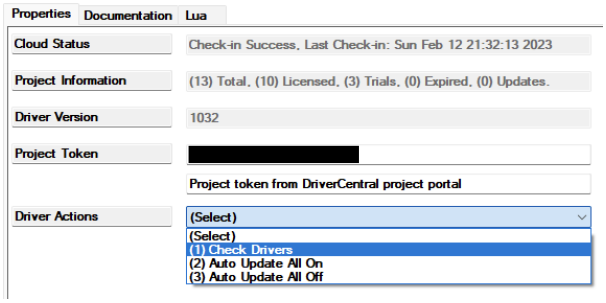
DriverCentral Cloud Setup

> If you already have the DriverCentral Cloud driver installed in your project you can continue to Driver Installation.

This driver relies on the DriverCentral Cloud driver to manage licensing and automatic updates. If you are new to using DriverCentral you can refer to their Cloud Driver documentation for setting it up.

Driver Installation

1. Download the latest `control4-tplink.zip` from DriverCentral.
2. Extract and install the `tplink_outlet.c4z` driver.
3. Use the "Search" tab to find the "TP-Link Outlet" driver and add it to your project (one instance per physical device).
4. Select the newly added driver in the "System Design" tab. You will notice that the `Cloud Status` reflects the license state. If you have purchased a license it will show `License Activated`, otherwise `Trial Running` and remaining trial duration.
5. You can refresh license status by selecting the "DriverCentral Cloud" driver in the "System Design" tab and performing the "Check Drivers" action.



6. Configure the TP-Link Settings with the device IP address and TP-Link account credentials.
7. After a few moments the `Driver Status` will display `Connected`. If the driver fails to connect, set the `Log Mode` property to `Print` and run action `Reconnect` from the actions tab. Then check the Lua output window for more information.

Driver Setup

Driver Properties

Cloud Settings

Cloud Status (read-only)

Displays the DriverCentral cloud license status.

Automatic Updates [Off | *On*]

Turns automatic driver updates from DriverCentral on or off. Changing it on any TP-Link Outlet or TP-Link Light driver changes it on all of them.

Driver Settings

Driver Status (read-only)

Displays the current status of the driver:

- `Connected (SMART)`, `Connected (KLAP)`, `Connected (TPAP)` or `Connected (Legacy)`: the driver is connected and the device is answering. The word in parentheses is the protocol it found (see Protocol).
- `Connecting (KLAP)...`, `Connecting (TPAP)...` or `Connecting (Legacy)...`: the driver is connecting to the device.
- `Disconnected: <reason>`: the device can't be reached or refused the connection. See Troubleshooting for the common reasons.
- `Looking for the device on the network...`: the device stopped answering at its address and the driver is looking for it by its MAC address
- `Set the ... property`: required configuration is missing

Without an active DriverCentral license, Driver Status reads `No active license`. See Troubleshooting.

Driver Version (read-only)

Displays the current version of the driver.

Log Level [0 - Fatal | 1 - Error | 2 - Warning | *3 - Info* | 4 - Debug]

Sets the logging level. Default is `3 - Info`. While a Support Code has Composer's Lua tab open, it also offers `5 - Trace` and `6 - Ultra`.

Log Mode [*Off* | Print | Log | Print and Log]

Sets the logging mode. Default is `Off`. It goes back to `Off` after 3 hours.

Support Code

Leave it blank unless Finite Labs support gives you a code: for an hour, it opens Composer's Lua tab to this driver and adds `5 - Trace` and `6 - Ultra` to Log Level.

Cloud Monitoring [Disabled | *Enabled*]

When Enabled, the driver sends Finite Labs a short report once an hour, and a report of each error it hits, at most 10 a minute. We use them to find and fix problems in the driver. Set it to Disabled to send nothing.

A report holds the controller's MAC address and OS version, the driver's name, version, device ID and DriverCentral license status, how much memory the driver uses, and the sizes of its largest internal tables. An error report also holds the error message and where in the driver it happened. Before a message is sent, anything in it that looks like a password, token, key, network address or email address is removed.

TP-Link Settings

IP Address

Sets the IP address of the plug or power strip.

> **Note:** Give the device a DHCP reservation or a static IP address so its address does not change.

If the device does get a new address on the controller's network, the driver finds it by its MAC address and updates this property (OS 4.0 and later). Entering an address by hand points the driver at whichever device answers there.

Protocol [*Auto* | KLAP | TPAP | Legacy]

Selects the local protocol. `Auto` (default) works it out: with the TP-Link credentials set it tries `KLAP` first, then `TPAP` when the device refuses `KLAP`, then the original protocol; without them it uses the original one. `KLAP` is the protocol of Tapo devices and of Kasa firmware since late 2024. `TPAP` is the protocol the same devices use when Third-Party Compatibility is off in the Tapo or Kasa app. `Legacy` is the protocol of Kasa devices on original firmware. Choose one only to skip the detection.

`Driver Status` shows what was found: `Connected (SMART)` for Tapo plugs and newer Kasa plugs, `Connected (KLAP)` for older Kasa devices on newer firmware, `Connected (TPAP)` for a device with Third-Party Compatibility off, and `Connected (Legacy)` for Kasa devices on original firmware.

TP-Link Username

Sets the email address of the TP-Link (Kasa or Tapo) account the device is set up with. **Case sensitive**, enter it exactly as registered. Required for Tapo devices and for Kasa devices updated since late 2024; may be left blank for Kasa devices on original firmware.

TP-Link Password

Sets the password of the TP-Link account the device is set up with. Required for Tapo devices and for Kasa devices updated since late 2024; may be left blank for Kasa devices on original firmware.

> Use the account the device was set up with in the Kasa or Tapo app. The driver uses it only to connect to the device on your network and never contacts TP-Link's cloud. Set it on a Kasa device on original firmware too: when TP-Link updates the device, the driver keeps working.

Poll Rate (Seconds) [2 - 300, default: *10*]

Sets how often the driver reads the outputs' states. Default is `10`.

Energy Poll Rate (Seconds) [0 - 300, default: *5*]

Sets how often the driver reads each output's power. `0` turns energy polling off. Default is `5`.

> On a power strip the driver reads each outlet's power separately. Set a longer interval if you don't use power readings in programming, or `0` to turn them off.

Device Information

Model / Device Name / MAC Address / Firmware / WiFi RSSI (read-only)

Displays what the device reports after connecting. A very low RSSI (below about -75) often explains slow or flaky responses.

Voltage (read-only)

Displays the line voltage the energy meter reports, when supported.

Outputs

Output N Name / State / Power (read-only)

Displays each output's name (as set in the Kasa or Tapo app), whether it is On or Off, and its last power reading. These properties are hidden until the device connects; only the outputs the device actually reports are shown.

Output N In Use Above (W) / Output N Idle Below (W) [0 - 4000, default: *0*]

Shown once the output has reported its power. Sets the power levels for the output's `In Use` and `Idle` events. The output is in use once its power rises above `In Use Above`, and idle once it falls below `Idle Below`. Between the two it stays as it was, so a reading that wobbles around one level doesn't fire over and over. With one level at 0 the other is used both ways; with both at 0 (the default) the events are off.

Output N Hold (s) [0 - 3600, default: *0*]

Shown once the output has reported its power. Sets how long, in seconds, the output's power must stay past a level before `In Use` or `Idle` fires. A reading back between the levels starts the wait again. The power is read at the `Energy Poll Rate`, so the event comes with the first reading after the hold has passed. At 0 (the default) the first reading past a level fires it.

Driver Actions

Refresh Now

Reads the output states and power readings from the device now.

Reconnect

Drops the connection to the device and connects again, working out its protocol again when Protocol is `Auto`.

Diagnostics Snapshot

Prints a report in the Lua output, and sends it to Finite Labs only while Cloud Monitoring is Enabled.

Connections

Output N Relay (provider, dynamic)

Each output the device reports is exposed as a Control4 **relay** control binding (`Output 1 Relay`, `Output 2 Relay`, ...). Bindings are created dynamically after the driver connects, so only the outputs that exist on the device appear in Composer Connections. Bind any relay-consuming device or use the outputs directly from programming. A relay driver bound to an output can turn it on or off, toggle it, or pulse it.

Output N Light (provider, dynamic)

Each output is also exposed as a **light** control binding (`Output 1 Light`, `Output 2 Light`, ...). Bind an instance of the **TP-Link Light** driver here to present the output as a Control4 light: the light driver runs in proxy mode and mirrors the output's on/off state, so a lamp plugged into a smart outlet appears and behaves as a real light in Navigator, scenes, and programming. Add a TP-Link Light driver, connect its **TP-Link Outlet** binding to the output's Light binding here, and leave the light driver's IP Address blank. See the TP-Link Light documentation for the full walkthrough.

Output N On / Off / Toggle Button Link (provider, dynamic)

Each output also has keypad **button links** (`Output 1 On Button Link`, `Output 1 Off Button Link`, `Output 1 Toggle Button Link`, ...). Bind a keypad button to one to switch the output from that button. The button's LED follows the output: On and Toggle are lit while it is on, Off while it is off.

Programming

Events:

Event	Description
Output N Turned On	Fires when an output turns on, whether from Control4, the Kasa or Tapo app, or the physical button
Output N Turned Off	Fires when an output turns off, whether from Control4, the Kasa or Tapo app, or the physical button
Output N In Use	Fires when an output's power rises above its `In Use Above` level and stays there for its `Hold`
Output N Idle	Fires when an output's power falls below its `Idle Below` level and stays there for its `Hold`
Connected	Fires when the driver connects to the device
Disconnected	Fires when the driver loses its connection to the device

A power reading the output already has when the driver starts or reconnects, or when a level changes, fires neither `Output N In Use` nor `Output N Idle`.

Conditionals:

Conditional	Description
TP-Link device connection status	Tests whether the device is `Connected` or `Disconnected`

Commands:

Command	Parameters	Description
Turn Output On	Output (1 - 6, default 1)	Turns the output on
Turn Output Off	Output (1 - 6, default 1)	Turns the output off
Toggle Output	Output (1 - 6, default 1)	Toggles the output

Variables (per output N):

Variable	Type	Description
`Output N Name`	STRING	Output name as set in the Kasa or Tapo app
`Output N State`	BOOL	Current relay state
`Output N Power`	NUMBER	Current power draw in watts (energy models)
`Output N In Use`	BOOL	Whether the output is in use, while its levels are set
`Voltage`	NUMBER	Line voltage (energy models)

Variables are created when the device connects, so only the outputs the device reports get variables.

Troubleshooting

`Driver Status` reads `No active license`: The driver has had no active DriverCentral license for five minutes, so it has stopped controlling the device, and its outputs keep the state they showed. Check its `Cloud Status`, and refresh the license with the **DriverCentral Cloud** driver's **Check Drivers** action. The driver checks every 10 seconds and starts again once a license is active.

`Disconnected: ... handshake1 auth mismatch ...`: The device is set up with a different TP-Link account (or the password is wrong). Enter the credentials for the account that owns the device in the Kasa or Tapo app, exactly as registered (the email is case sensitive). In `Auto`, the driver also tries the original protocol, which some Kasa firmware still answers, so this shows only when that fails too.

`Disconnected: ... the TP-Link account password was refused ...`: The device has Third-Party Compatibility off and refused the password. Enter the password of the TP-Link account the device is set up with in the Tapo or Kasa app. The driver does not try again until `TP-Link Username` or `TP-Link Password` changes, because every refused password counts toward the device locking itself.

`Disconnected: ... the device is locked for ... minutes after failed logins`: Too many wrong passwords were tried, by this driver or another app. The driver waits out the time shown, then tries once more.

`Disconnected: ... TPAP needs Control4 OS 3.4.1 or later ...`: The device has Third-Party Compatibility off, and this controller's OS is too old for the login that needs. Update the controller, or turn **Third-Party Compatibility** on in the Tapo app (under **Me**, then **Tapo Lab**) or the Kasa app (under **Settings**).

`Disconnected: ... asks for a login this driver does not support yet ...`: Turn **Third-Party Compatibility** on in the Tapo or Kasa app.

`Disconnected: ... device refused the handshake (HTTP 403) ...`: The device is refusing connections from other apps, and did not offer the login it uses with Third-Party Compatibility off. Work through these in order:

1. Make sure **Third-Party Compatibility** is on in the Tapo app (under **Me**, then **Tapo Lab**) or the Kasa app (under **Settings**). Firmware updates are known to turn it off.
2. If it is already on, turn it off and back on. A device added after the setting was turned on, or one that was just updated, may keep refusing connections until the setting is toggled, even though the app shows it on.
3. Run the `Reconnect` action. The driver also retries on every poll, so the status clears on its own once the device accepts the connection.
4. If it still fails, unplug the device for a few seconds, then run `Reconnect` again.

`Driver Status` stuck at `Connecting (KLAP)...`, `Connecting (TPAP)...` or `Connecting (Legacy)...`, or timeouts: Verify the IP address, that the device is on a network reachable from the controller, and that no firewall or network rule stops the controller reaching the device.

A newer Kasa plug or Tapo plug won't connect on any protocol: Some newer Kasa plugs and Tapo plugs on early firmware use a connection method this driver does not support (on the EP25 v2.6, firmware 1.0.2 and older). Update the device's firmware in the Kasa or Tapo app, then run the `Reconnect` action. These devices always need the TP-Link account credentials.

`Disconnected: device rejected get_sysinfo over KLAP`: The device accepted the connection but answered none of the driver's requests. File a support request with the device model and firmware version.

`Disconnected: a different device is at ...; looking for this one`: another TP-Link device now answers at this device's address, usually after DHCP gave the address to it. The driver controls nothing there and looks for its own device on the network. If you replaced the device, enter its address in `IP Address` to use the new one.

Output states lag behind the Kasa or Tapo app: State changes made outside Control4 are picked up on the next poll; lower `Poll Rate (Seconds)` if you need changes made in the app to show sooner.

Developer Information



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Support

If you have any questions or issues integrating this driver with Control4 or your TP-Link device, you can contact us at driver-support@finitelabs.com or call/text us at +1 (949) 371-5805.

Changelog

v20261110 - 2026-11-10

Added

- Added the TP-Link Outlet and TP-Link Light drivers to DriverCentral.