

# Home Assistant Integration Guide

## Getting connected

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You'll need:

- A **Cala water heater** powered on and connected to your WiFi (same network as Home Assistant). The Home Assistant-capable firmware is already deployed to every connected unit — no action needed on your part.
- **Home Assistant** running and reachable.
- An **MQTT broker** in Home Assistant. We'll install one below if you don't have it.

The process is:

1. Install an MQTT broker.
2. Install the Cala integration.
3. Get a pairing code from your Cala's screen.
4. Pair Home Assistant with your Cala.
5. (Optional) Map your solar and battery entities into Cala.

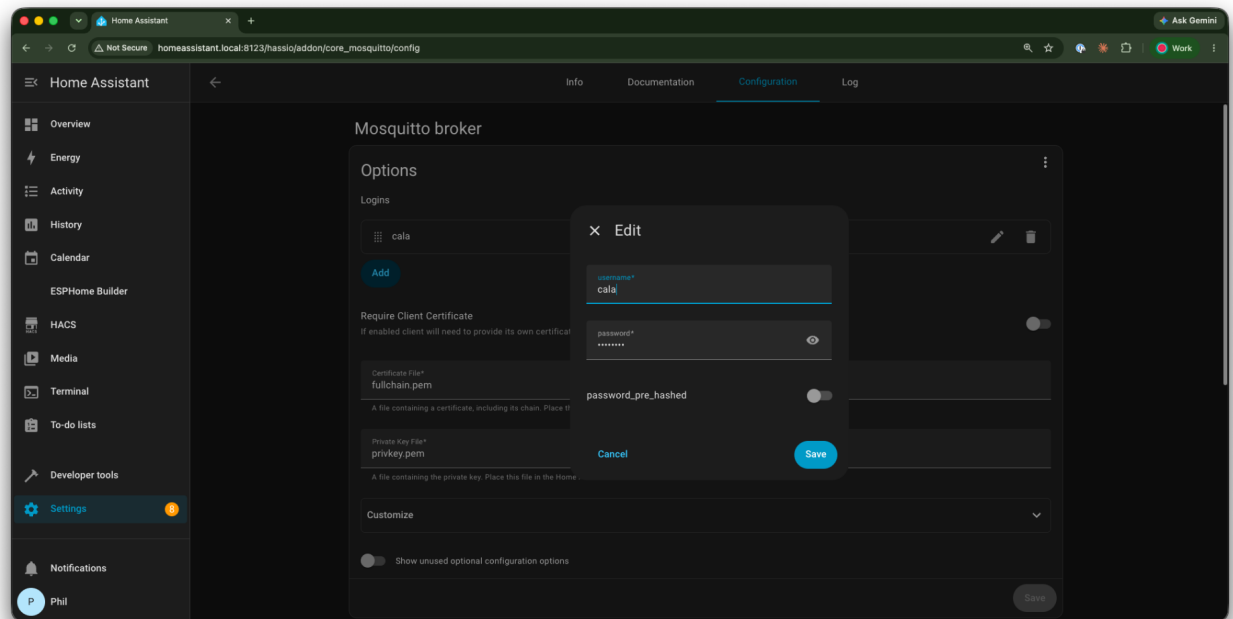
# Step 1

## Step 1 — Install an MQTT broker in Home Assistant

- **If you already have MQTT installed and working, skip to Step 2.**

You can jump straight to installing the Cala integration.

1. In Home Assistant, go to **Settings** → **Add-ons**.
2. Click **Add-on Store**, search for **Mosquitto broker**, and install it.
3. Open the **Configuration** tab of the Mosquitto add-on and create a login (username + password) for Cala. Note them down — you'll enter them during pairing.
4. Start Mosquitto and enable **Start on boot**.



Home Assistant Mosquitto broker configuration screen.

- **Using a different broker?**

If you're using a broker other than Mosquitto, use its credentials and confirm its hostname and port. The default port is 1883.

## Step 2

### Step 2 — Install the Cala integration

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You can install it through HACS (recommended) or manually.

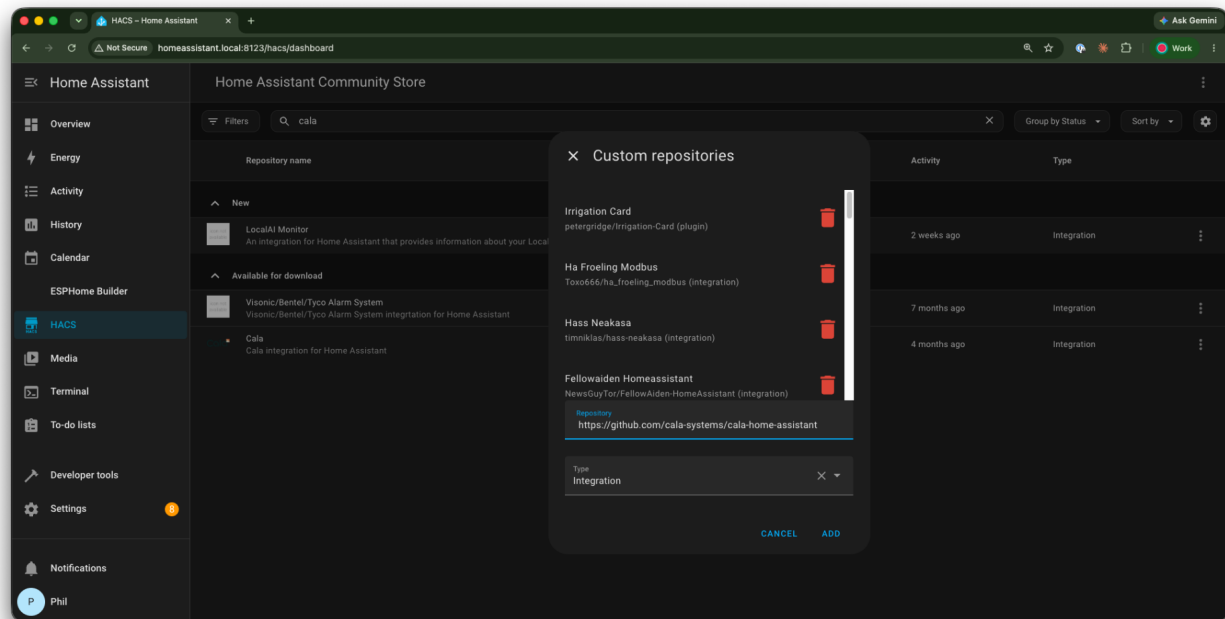
#### Via HACS (recommended)

1. If you don't have HACS installed yet, follow the HACS installation instructions.
2. In Home Assistant, open **HACS** → **Integrations** → ⋮ (top right) → **Custom repositories**.
3. Add the repository URL:

```
https://github.com/cala-systems/cala-home-assistant
```

Category: **Integration**.

4. Search for **Cala** in HACS and install it.
5. **Restart Home Assistant** (Settings → System → Restart).



*Adding the Cala repository to HACS as a Custom repository of type Integration.*

## Manually

If you can't use HACS, copy the files by hand.

```
# SSH into Home Assistant
ssh root@homeassistant.local
# or: ssh root@<HA_IP_ADDRESS>

# Create the custom_components folder if it doesn't exist
cd /config
mkdir -p custom_components
exit

# From your local machine, clone the repo and copy the integration
git clone https://github.com/cala-systems/cala-home-assistant.git
scp -r cala-home-assistant/custom_components/cala \
    root@homeassistant.local:/config/custom_components/
```

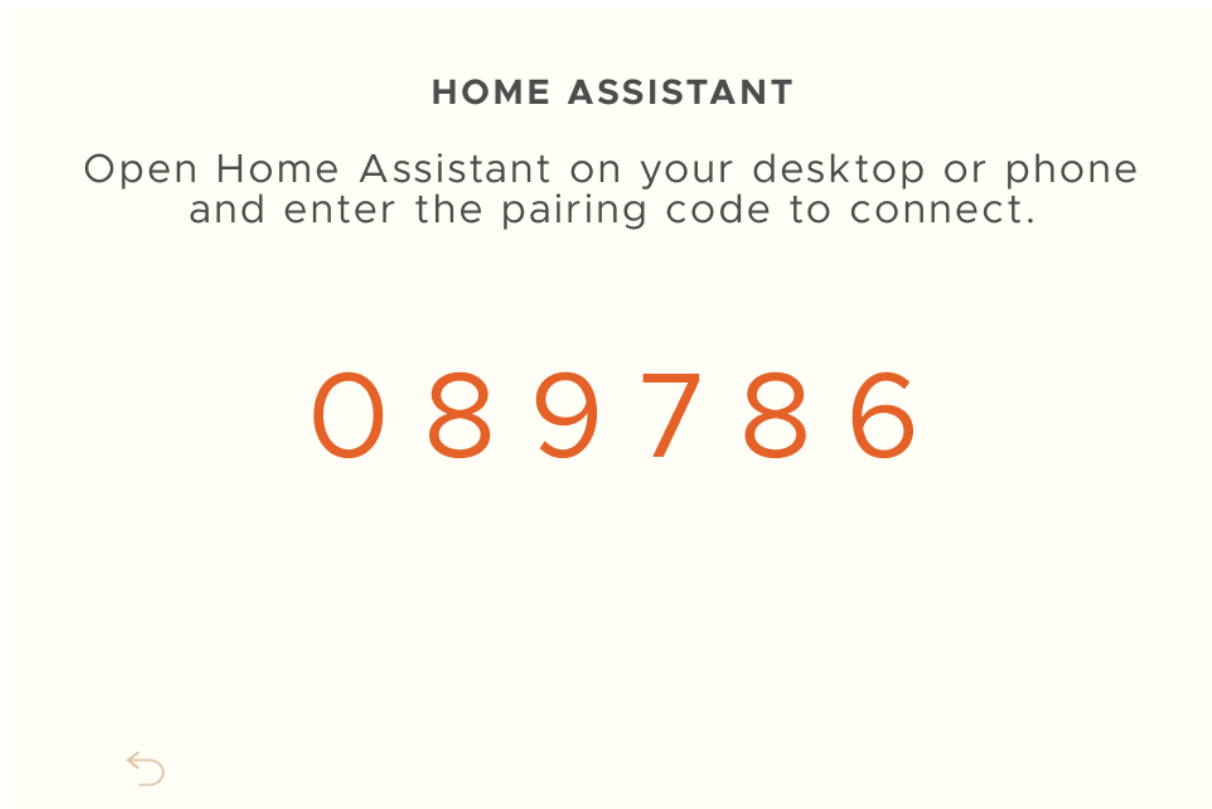
Then restart Home Assistant (Settings → System → Restart).

## Step 3

### Step 3 — Get the pairing code from your Cala

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1. On the Cala water heater, open **Settings**.
2. Tap **Advanced**.
3. Tap **Home Assistant**.
4. The screen shows a **6-digit pairing code**. Leave this screen open — the code is only valid while it's on screen.



*The Home Assistant pairing screen on your Cala shows a 6-digit code.*

- **The pairing code is short-lived**

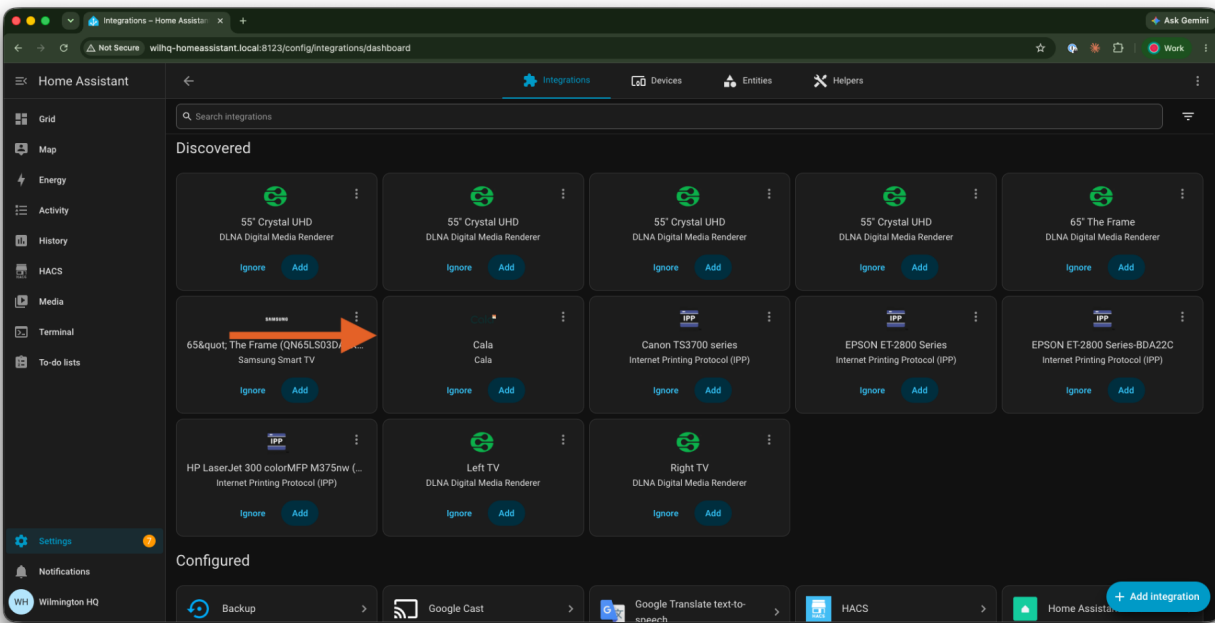
While your Cala is on this screen, it advertises itself on your local network so Home Assistant can find it, and runs a short-lived pairing service on port 80 that only accepts requests signed with your pairing code. As soon as pairing succeeds, both go away and the device switches to publishing over MQTT.

## Step 4

### Step 4 — Pair Home Assistant with your Cala

#### Add the integration

1. In Home Assistant, go to **Settings** → **Devices & Services**.
2. If Home Assistant already discovered your Cala, you'll see a **Cala** discovered card at the top — click **Configure**.

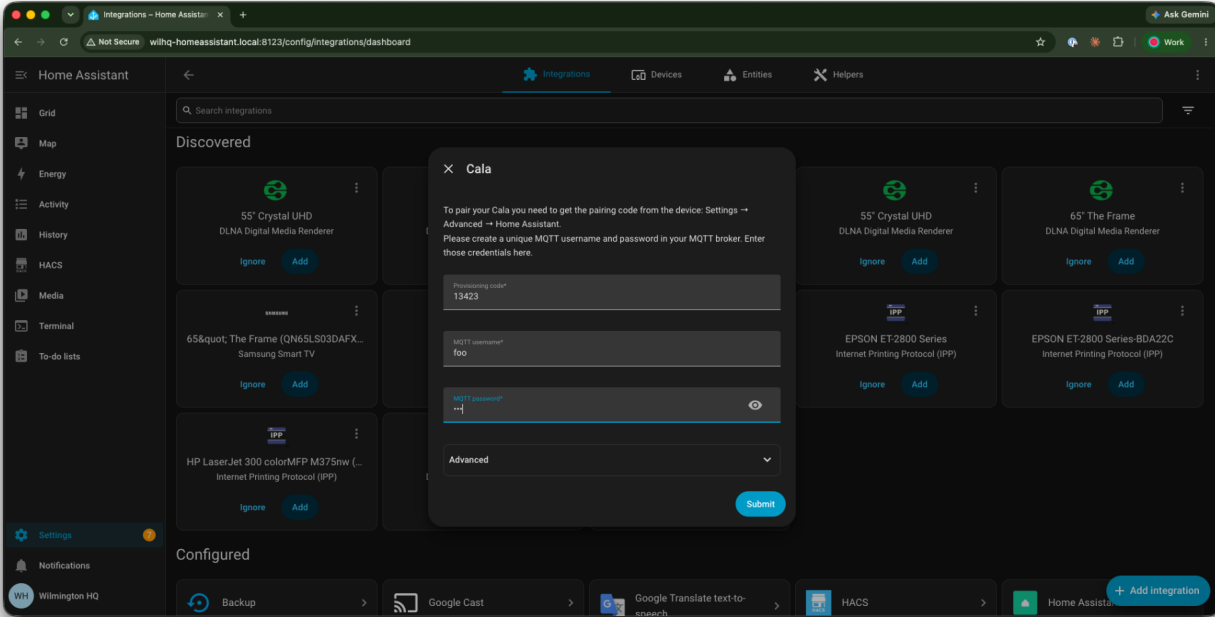


*Cala appears under Discovered integrations once it's on the Home Assistant pairing screen.*

#### Enter the pairing code and MQTT credentials

Home Assistant will show a **Provision** form. Fill in:

| Field             | Value                                             |
|-------------------|---------------------------------------------------|
| Provisioning code | The 6-digit code from your Cala's display.        |
| MQTT username     | The username you created for Mosquitto in Step 1. |
| MQTT password     | The password you created for Mosquitto in Step 1. |



*The Provision form in Home Assistant, ready for the 6-digit code and MQTT credentials.*

Behind the scenes, Home Assistant encrypts your MQTT credentials with a key derived from the pairing code and sends them to your Cala. The Cala confirms the code, stores the credentials, and connects to your broker.

## Confirm on the device

On the Cala's Home Assistant screen, the code will be replaced by connection status. You should see:

- A **checkmark** confirming pairing.
- The **MQTT broker** host you entered.
- The **MQTT username** you provided.
- **MQTT status: Connected.**

## HOME ASSISTANT

Your Cala is currently paired to Home Assistant  
You can choose to disable the connection if you no longer want to send data to Home Assistant.

Broker: homeassistant.local:8083

Username: cala

Status: Connected

DISCONNECT



*The Cala display after successful pairing: broker, username, and MQTT status all shown.*

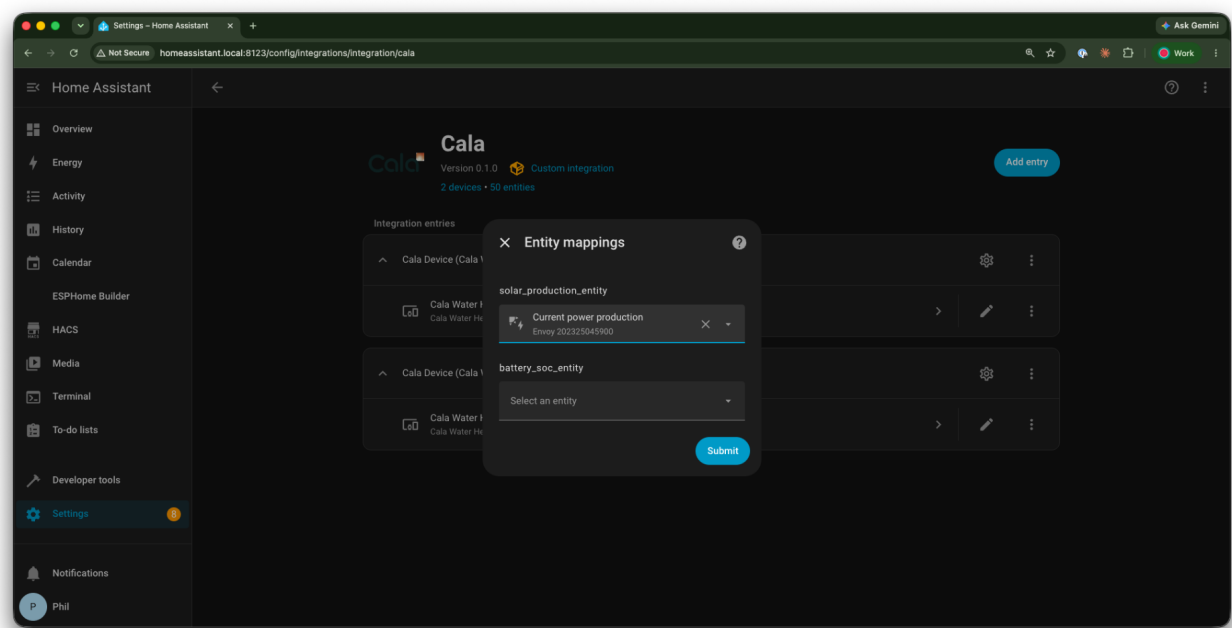
## Step 5 (optional)

### Step 5 — Map solar and battery entities into Cala

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If you have solar or a home battery, tell Cala about them and it can factor that data into its scheduling.

1. In **Settings** → **Devices & Services**, click the Cala integration.
2. Click **Configure**.
3. Choose **Entity mappings (solar, battery)**.
4. Pick the Home Assistant entities that report:
  - **Solar production** — an entity that reports current PV output in W or kW (e.g., `sensor.solar_production_now`).
  - **Battery state of charge** — an entity that reports the home battery SOC as a percentage 0-100 (e.g., `sensor.battery_soc`).



Entity mappings dialog: select the Home Assistant entities that report solar production and battery SOC.

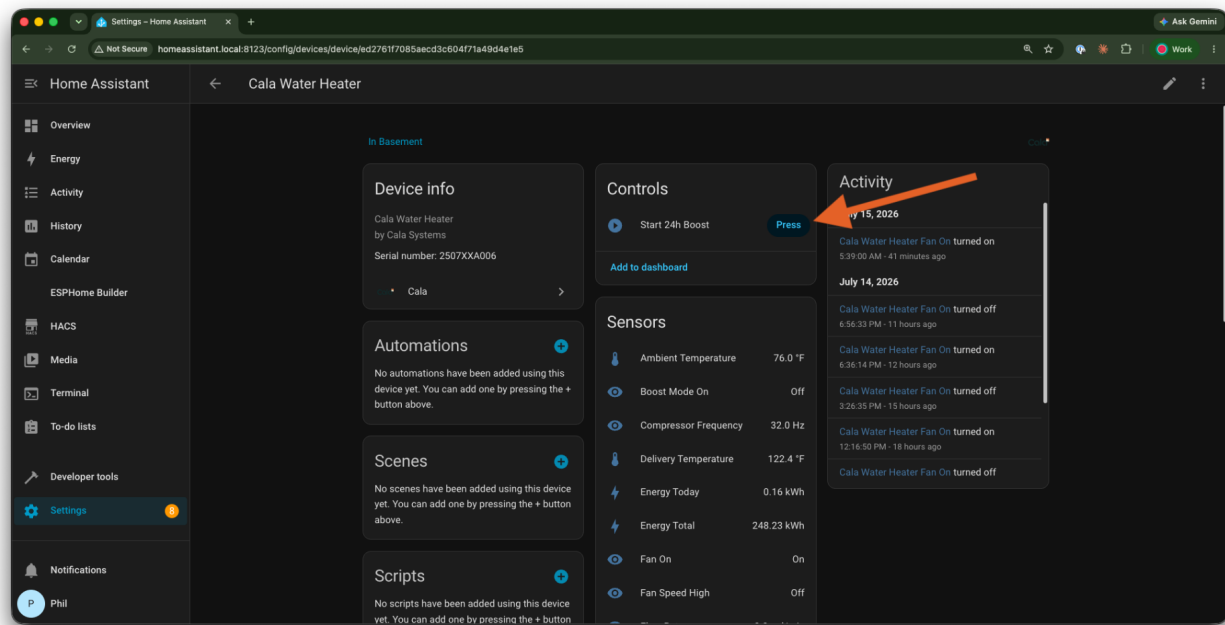
# Boost mode

## Using boost mode

Boost heats the tank on demand — for guests, a long shower, or a run of unexpectedly high hot-water use.

### From the device page

Open the Cala device page in Home Assistant. You'll see a **Start 24h Boost** button when boost is off, and a **Stop Boost** button while it's running.



*Trigger a 24-hour boost directly from the Controls card on the device page.*

### From automations

Use the `cala.start_boost` and `cala.stop_boost` services.

Start a 24-hour boost:

```
service: cala.start_boost
data:
  device_id: your_device_id # e.g. phil_wil_desk or 2507xxa006
  duration: 24
```

Stop boost:

```
service: cala.stop_boost
data:
  device_id: your_device_id
```

duration is optional and accepts 1 - 168 hours (defaults to 24).

The binary sensor `binary_sensor.<name>_boost_mode_on` reflects whether boost is currently on — use it as a trigger, a condition, or a dashboard indicator.

# Verify

## Verifying it's working

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After pairing:

- The Cala device page shows live sensor values.
- The Energy dashboard picks up Cala's power and cumulative kWh.
- Boost buttons and services respond and update the boost binary sensor.

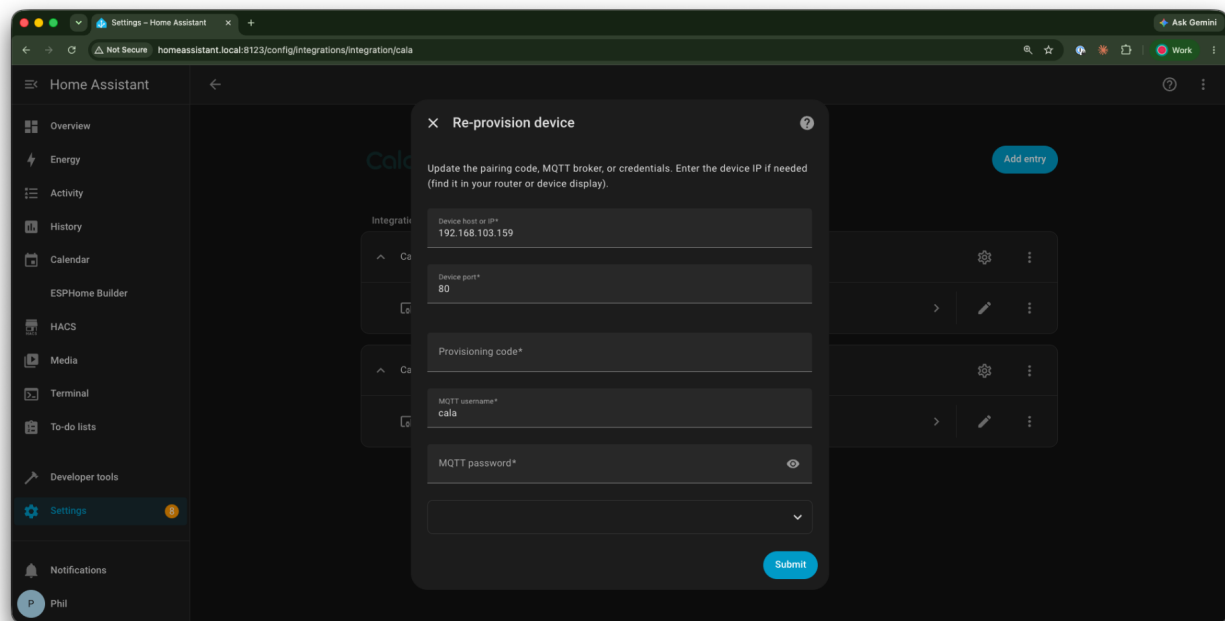
# Manage

## Managing the connection

### Re-provision.

If your MQTT username, password, or broker host changes:

1. **Settings** → **Devices & Services** → **Cala** → **Configure**.
2. Choose **Re-provision device (pairing code, broker, credentials)**.
3. Get a fresh pairing code from the device (Settings → Advanced → Home Assistant) and complete the form.



*Re-provision device settings screen in Home Assistant.*

### Disconnect from the device.

To break the connection from the device side (e.g., transferring ownership or you no longer want to publish to Home Assistant):

1. On the Cala, go to **Settings** → **Advanced** → **Home Assistant**.
2. Tap **Disconnect**.

The device forgets its MQTT credentials and stops publishing. To reconnect, repeat Step 3 and Step 4.

### **Fully remove the integration.**

1. In **Devices & Services**, click the Cala integration and choose **Delete**.
2. If installed manually, delete the `/config/custom_components/cala` folder.
3. Restart Home Assistant.

# Troubleshooting

## Troubleshooting

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- **Home Assistant doesn't discover my Cala.**

Confirm the Cala is on the **Home Assistant** setup screen and showing a pairing code, and that both Cala and Home Assistant are on the same subnet / WiFi (mDNS discovery doesn't cross most VLAN boundaries). Fall back to **Manual** setup and enter the Cala's IP address.

- **Where do I find logs?**

Home Assistant logs at **Settings** → **System** → **Logs** (filter by `cala`). MQTT traffic in the Mosquitto add-on's **Log** tab.