About Zigbee Hub mode

4. About Zigbee Hub mode

> **It is highly recommended to use U series coordinators for this mode (SLZB-06xU / MRxU)**

4.1 What is Zigbee Hub in SLZB-OS?

The **Zigbee Hub** feature allows the SLZB device to run its Zigbee network **directly on the device** — without needing an external computer, Raspberry Pi, or NAS to host the Zigbee stack.
In Zigbee Hub mode, SLZB-OS launches an integrated Zigbee stack service that can connect directly to your smart home platform over MQTT.

This mode is ideal for:

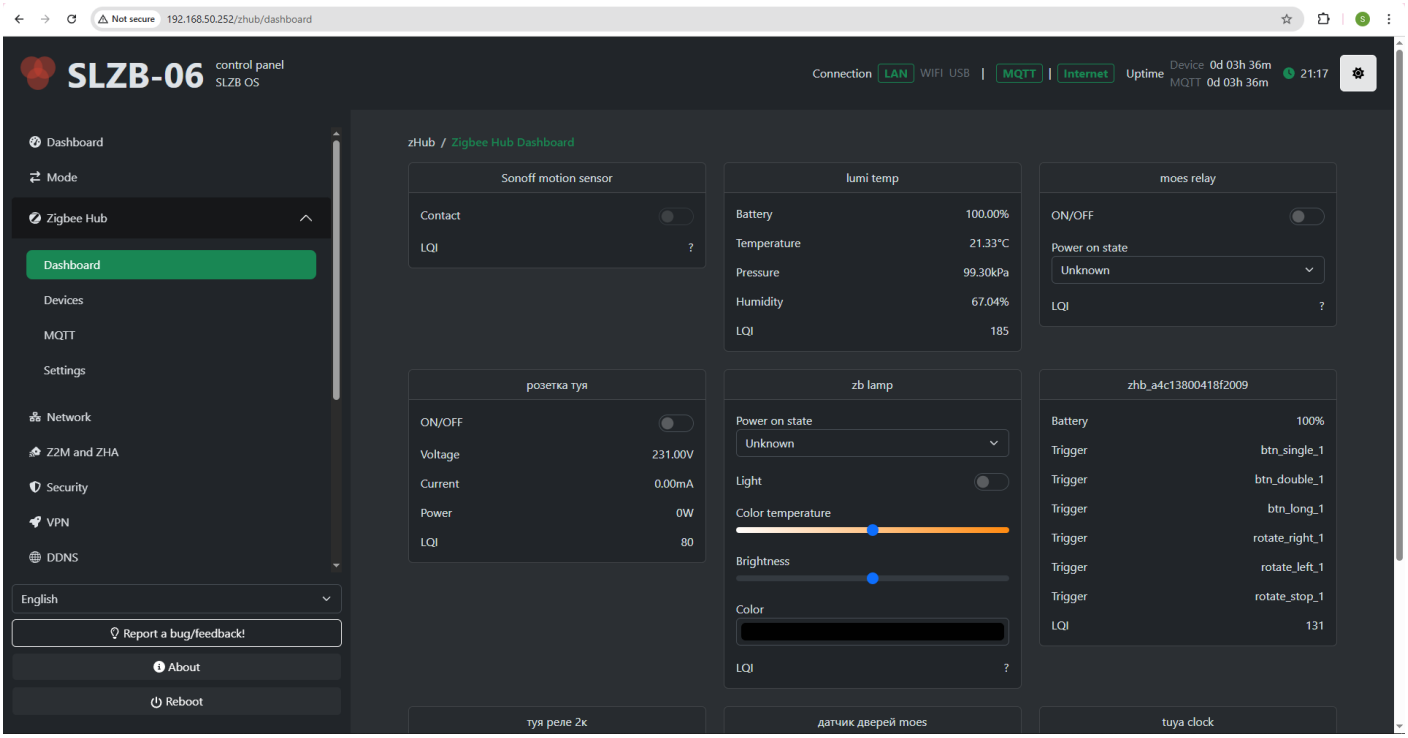
- **Self-contained setups** where the device acts as both the coordinator and the host.
- **Reducing complexity** by eliminating extra hardware.
- **PoE/Ethernet-based installations** for maximum stability.

When Zigbee Hub is active, a dedicated **Zigbee Hub** menu appears in the SLZB-OS interface, containing the following pages:

1. **Dashboard** – Live overview of Zigbee network status.
2. **Devices** – List and manage all paired Zigbee devices.
3. **MQTT** – Configure the MQTT broker connection.
4. **Settings** – Advanced Zigbee network and coordinator options.

4.2 Zigbee Hub ? Dashboard

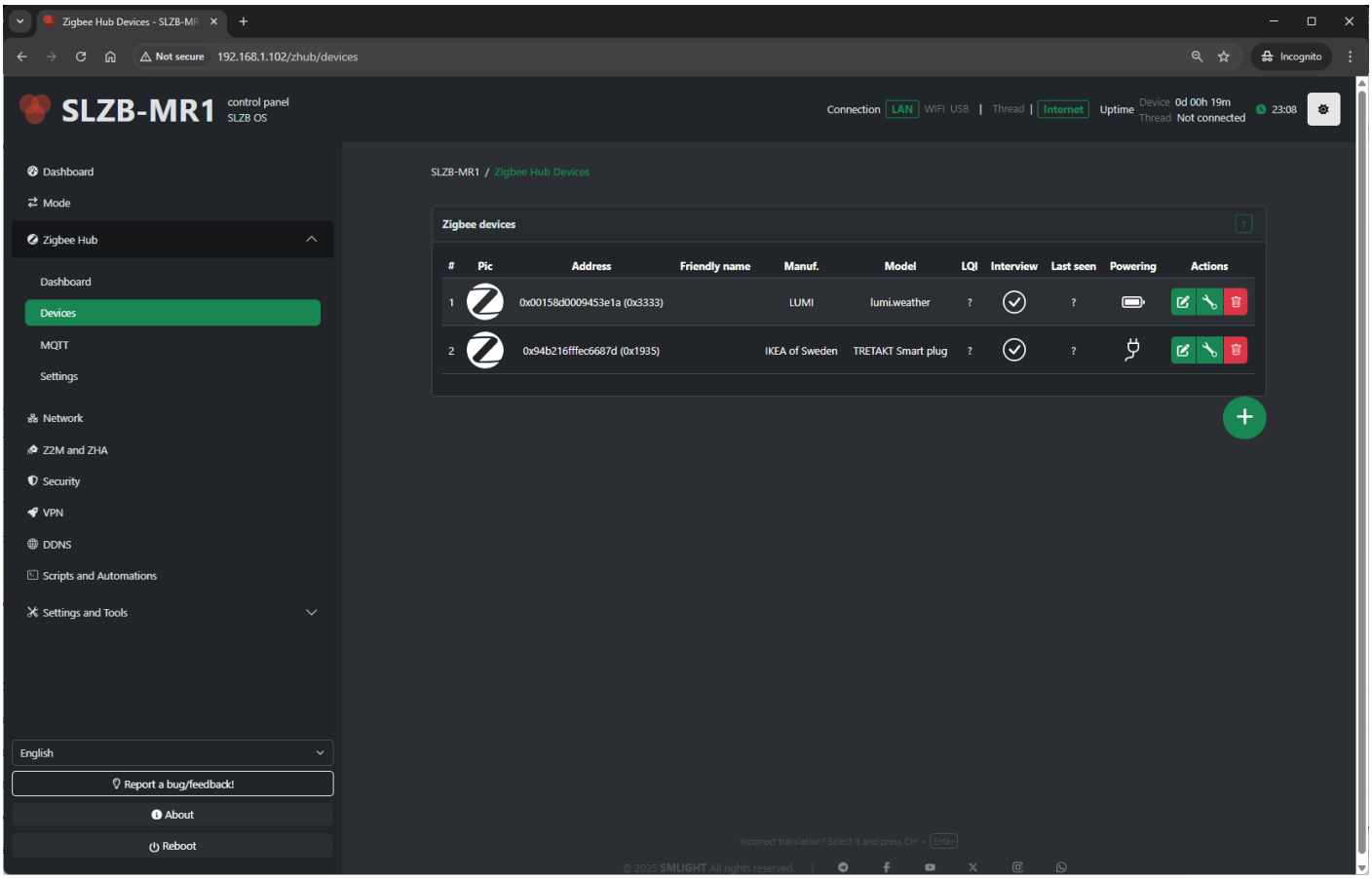
The **Dashboard** is the central monitoring page for your Zigbee network.



The dashboard contains cards of your ZigBee devices with the data they provide and controls. The dashboard is updated in real time via SSE.

4.3 Zigbee Hub ? Devices

The **Devices** page lists every Zigbee device paired to your coordinator.



Pairing control:

- **Permit Join** (+ button on the bottom right side of the device table) – Allow or deny new devices joining the network.

For each device, you'll see:

- **Name / Friendly Name** – Human-readable identifier.
- **IEEE Address** – Unique device ID.
- **Network Address** – Short Zigbee address assigned by the coordinator.
- **Last Seen** – Timestamp of the last communication.
- **Powering** – Device power source (AC/battery) or ? if the device does not provide information.
- **Link Quality (LQI)** – Signal strength indicator.
- **Actions:**
  - Rename device
  - Remove/unpair device
  - View device details (clusters, endpoints, bindings)
  - Bind/unbind devices (if supported)

Typical uses:

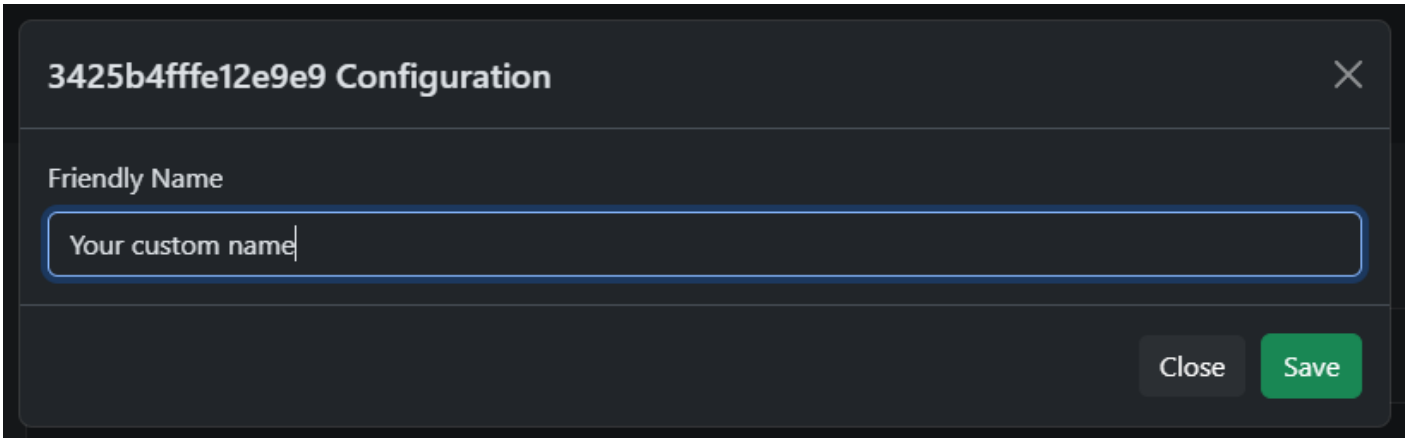
- Verify devices are online and responsive.
- Rename devices for easier identification in automations.

- Remove devices no longer in use.

Device config

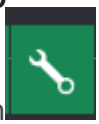
How to rename device

Select the pencil icon 

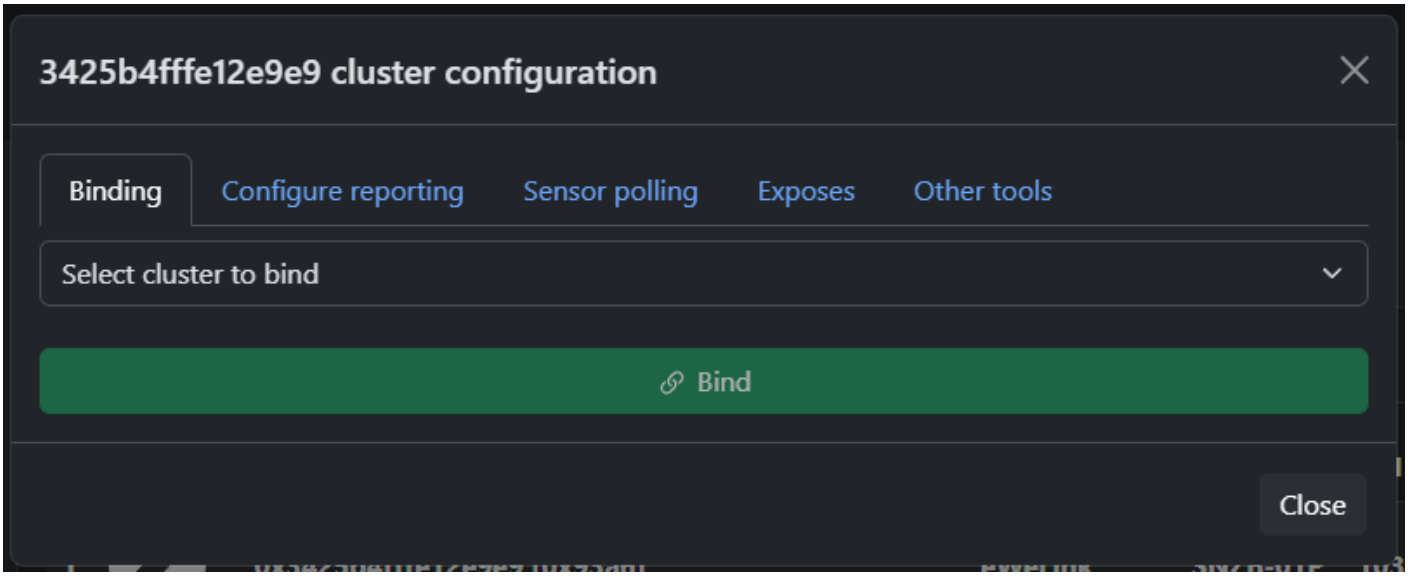


Enter new name and press "Save". Maximum length - 50 characters.

Device config

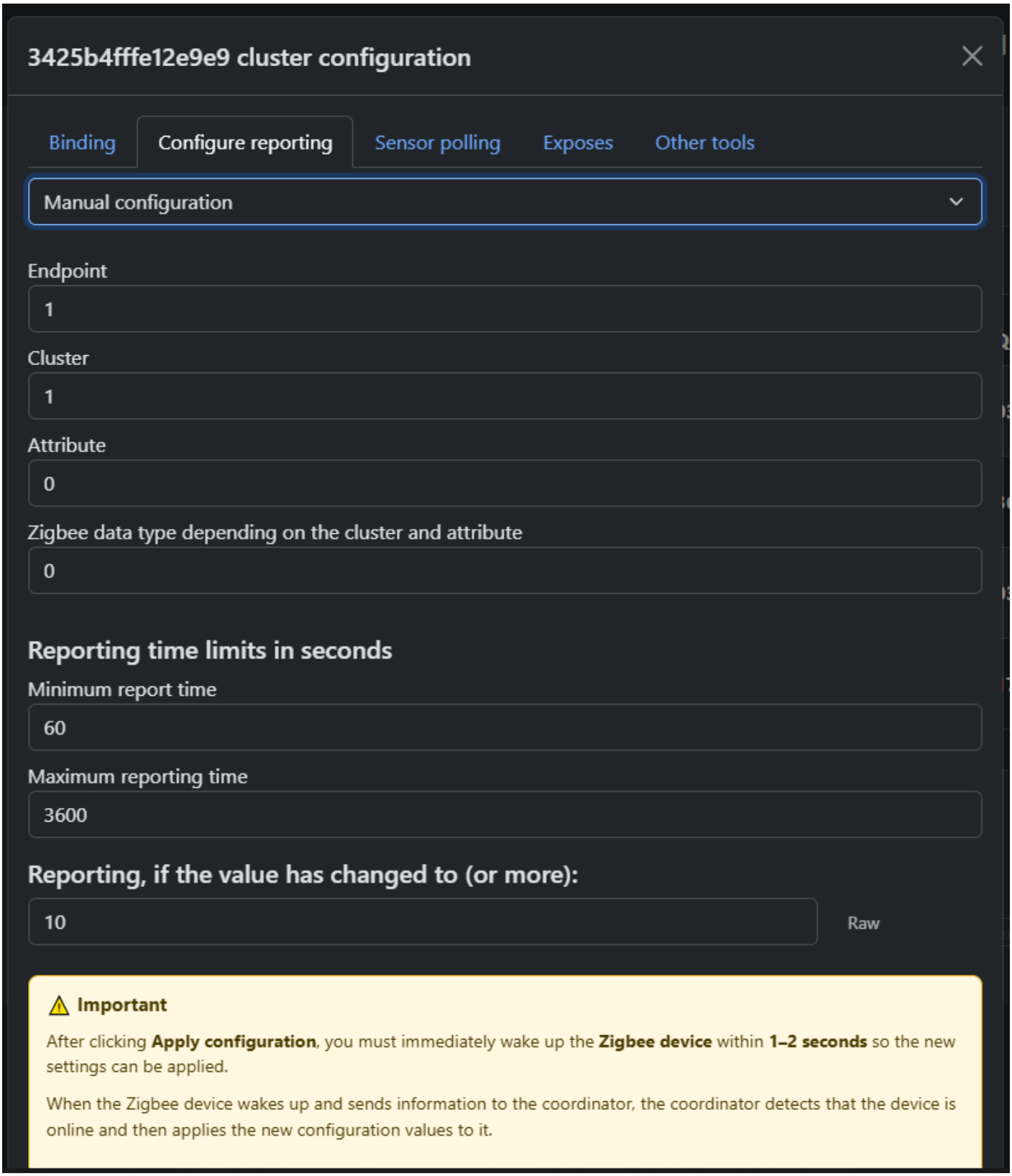
Click on the wrench 

Binding

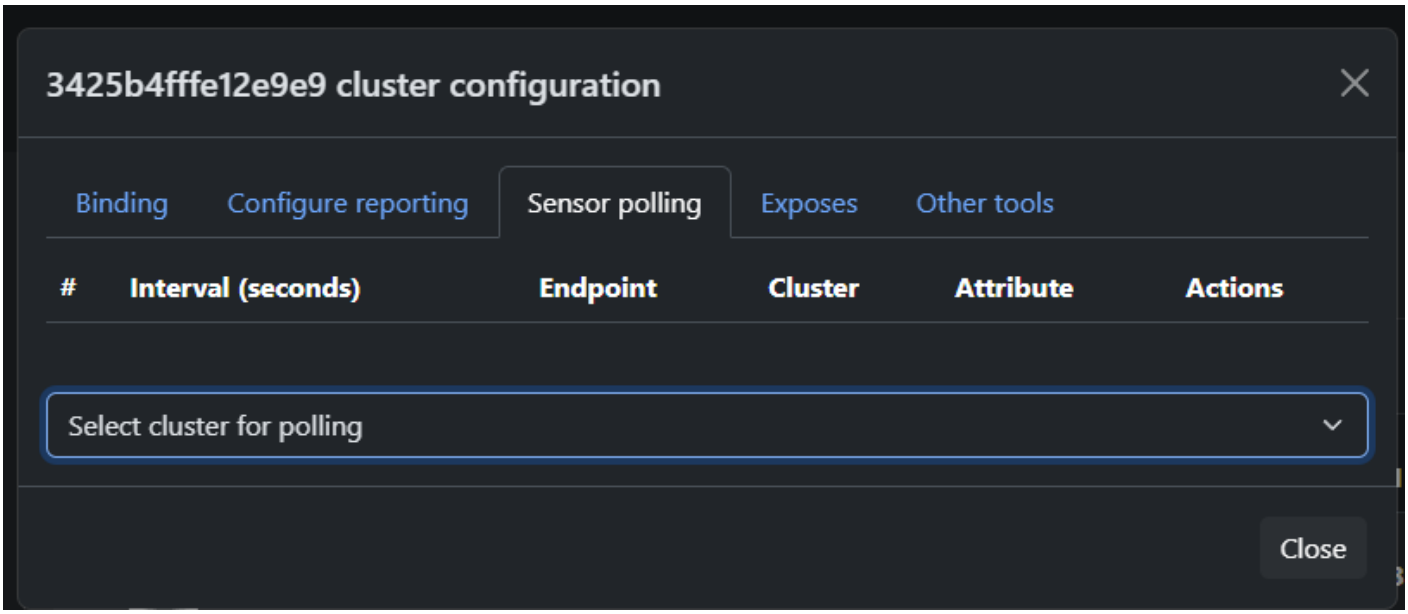


This menu sends the device a bind request **to the coordinator**, the device must be active to accept this. If it is a battery-powered device you need to wake it up.

Configure reporting



Polling



Allows you to configure polling of the selected attribute after a certain time interval

Exposes

3425b4fffe12e9e9 cluster configuration

Binding | Configure reporting | Sensor polling | Exposes | Other tools

Battery

MQTT status topic: `zhub/data/3425b4fffe12e9e9/1/0001/0021`
Values: `100`

HTTP GET sample: `http://192.168.50.252/api2?param=6&action=9&topic=zhub/data/3425b4fffe12e9e9/1/0001/0021`

Berry samples:

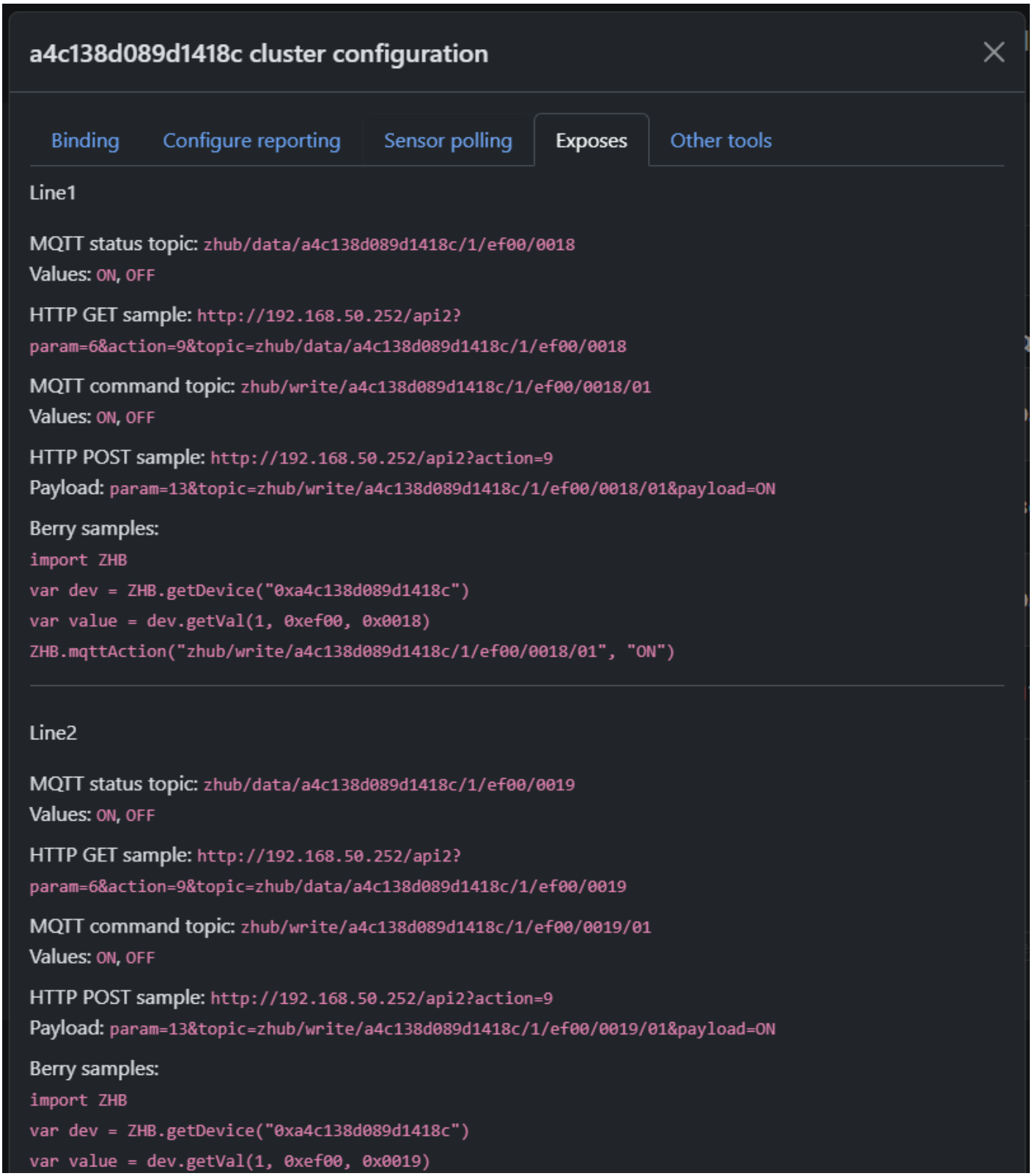
```
import ZHB
var dev = ZHB.getDevice("0x3425b4fffe12e9e9")
var value = dev.getVal(1, 0x0001, 0x0021)
```

Actions

MQTT topic: zhub/trigger/3425b4fffe12e9e9
Payload: `single`, `double`, `long`
Berry example:

```
import ZHB
ZHB.on_action(
def(action, device)
SLZB.log(action) # will log single, double, long
SLZB.log(device.getName()) # will log device name
end
)
```

Close

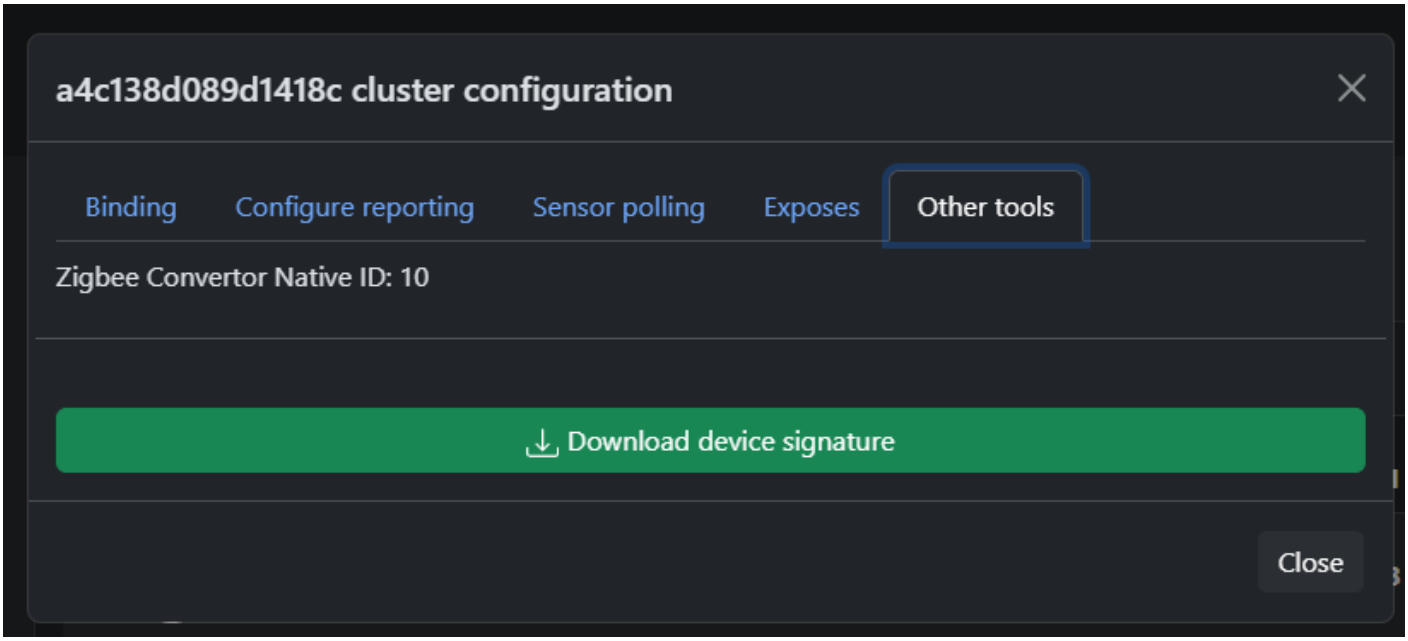


Provides information about **expected** data from the device and examples of using MQTT, HTTP, and Berry API to get or set device state.

> **IMPORTANT!**
> This section provides information about **EXPECTED** data from the device, based on information about the device clusters or converter (if it exists).
> This information may not match the actual behavior of the device if it uses non-standard

clusters!
If this is a Tuya DP device, then information will be displayed here only if a converter exists for the device!

Other tools



Here you can find the ZCN converter number (if used) and download device information

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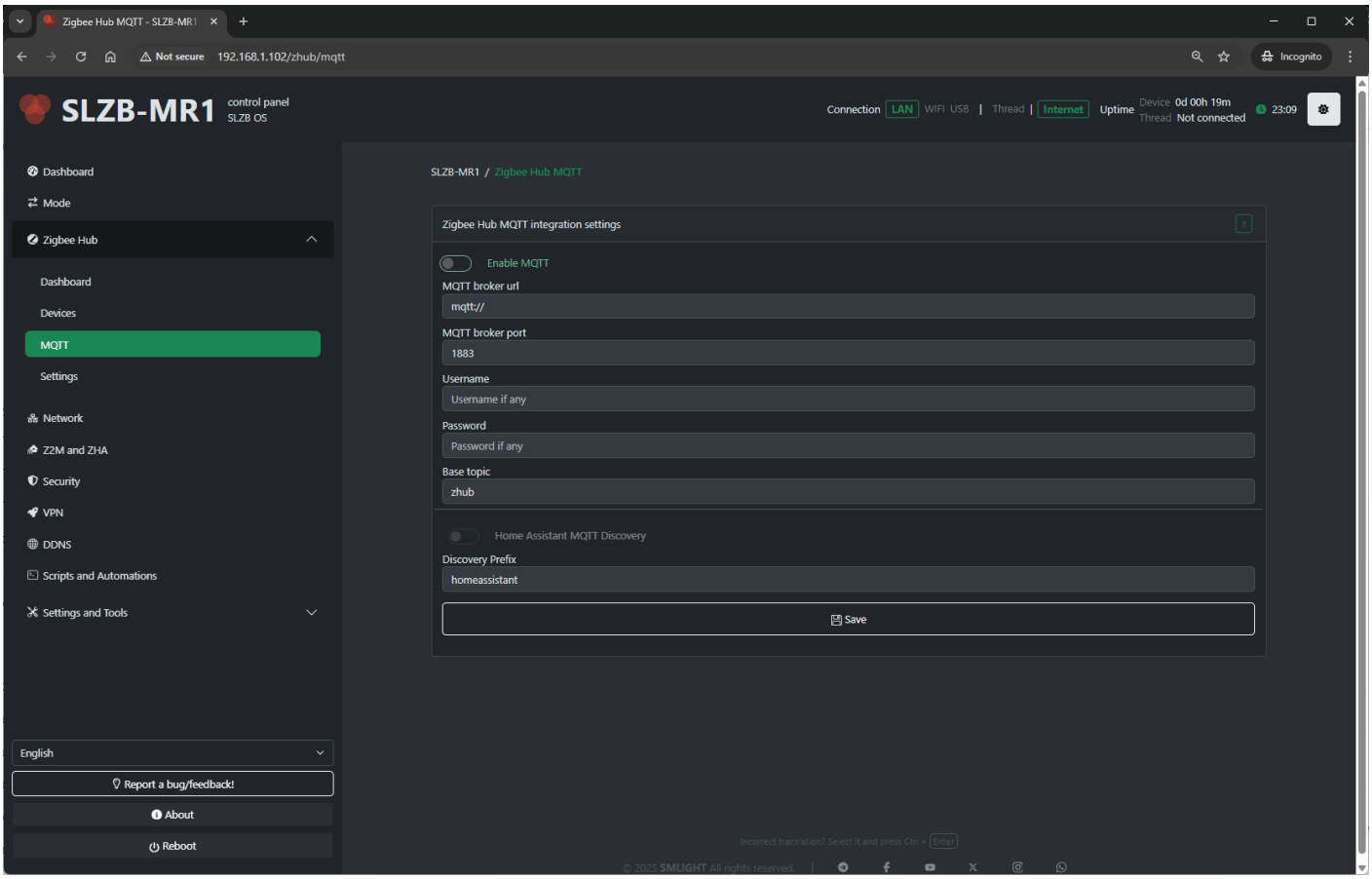
4.4 Zigbee Hub ? MQTT

This page configures the MQTT connection that Zigbee2MQTT (running on SLZB-OS) uses to communicate with your smart home platform.



Configuration fields include:

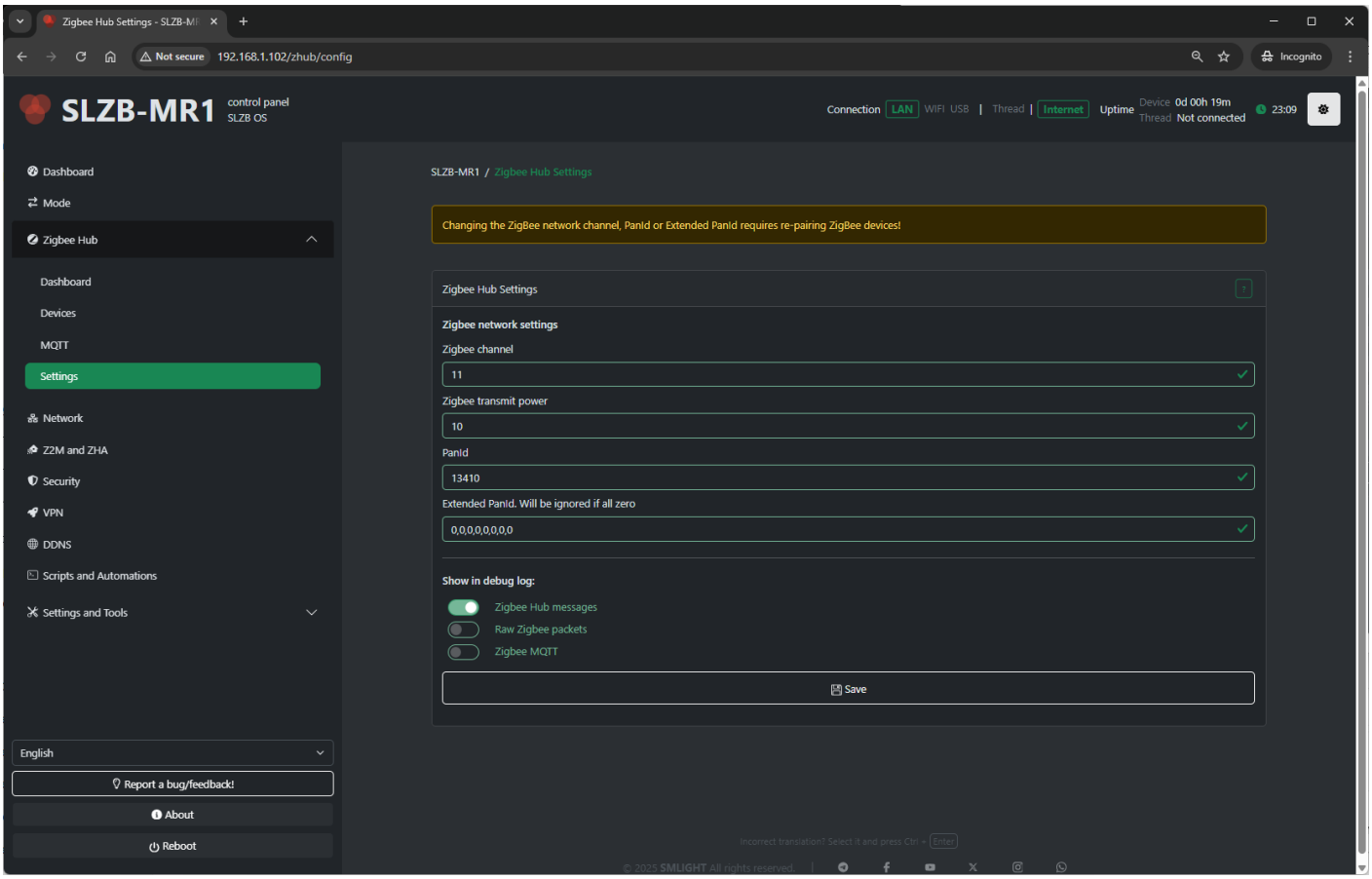
- **MQTT Server Address** – IP or hostname of your broker (e.g., `mqtt://192.168.1.100`).
- **Port** – Default 1883 for MQTT, 8883 for MQTT over TLS.
- **Username / Password** – Broker authentication (if required).
- **Base Topic** – Topic prefix for Zigbee messages (default: `zigbee2mqtt`).
- **Discovery Prefix** - Home assistant main topic name.

Tips:

- For Home Assistant with Mosquitto add-on, use the HA IP and port `1883`.
- Always use a unique base topic if you run multiple Zigbee networks.
- Save and restart Zigbee Hub after making MQTT changes.

4.5 Zigbee Hub ? Settings

The **Settings** page contains deeper configuration for the Zigbee coordinator and Zigbee2MQTT service.



Typical settings available:

- **Network Parameters**:
  - **PAN ID** – Zigbee network identifier.
  - **Channel** – RF channel (11–26; avoid Wi-Fi overlap if possible).
  - **Extended PAN ID** – Long network identifier.
- **Transmit Power** – Radio TX power in dBm (higher = longer range, more power draw).
- **Show in debug log -** Select which categories of Zigbee-related information are recorded in the Log & Debug page.
  - **Zigbee Hub messages** – Logs high-level events from the Zigbee Hub service (e.g., device joins, status updates).
  - **Raw Zigbee packets** – Logs low-level Zigbee frame data; useful for deep protocol debugging.
  - **Zigbee MQTT** – Logs MQTT messages related to Zigbee communication, including publishes and subscriptions.

Best practices:

- Change the Zigbee channel only on a fresh network (re-pair required after change).
- Keep `Permit Join` disabled most of the time for security.
- Adjust transmit power to match your coverage needs and regulatory limits.

4.6 Troubleshooting

Problems when starting a Zigbee network

> OS v3.0.9 update is breaking. If you updated OS to v3.0.9 and started getting this error then follow the instructions below

Network commissioning timed out - most likely network with the same panId or extendedPanId already exists nearby.
Network formation refused there is too much RF interference or network with the same panId or extendedPanId already exists.
If you got this error after updating Zigbee chip:
- turn off coordinator
- turn off ALL Zigbee routers that were connected to Zigbee Hub. **This is important, it will not work without this**
- turn on coordinator. Zigbee Hub should start now but zigbee devices will be unavailable
- remove all devices (click on the red trash can)
- download and run berry script below, this script will keep permit join enabled as long as it is running

```
#META {"start":0}
#Insert your code below
import ZHB

ZHB.waitForStart(0xFF)

while 1
  ZHB.permitJoin(254)
  SLZB.delay(255 * 1000)
end
```

- turn back on previously disabled zigbee devices
- repair all devices
- after devices repaired you can stop and delete script

Other cases:
- move the coordinator away from the wifi router
- make sure there is no other coordinator nearby with the same zigbee network settings

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