7. User Interface

The SMHUB web interface is the primary way to configure and manage the system. It provides access to dashboards, built-in applications, and detailed system settings.

7.1 Dashboard

The **Dashboard** is the starting page of the interface and shows an overview of the hub:

- **System Information**
  - Device model, firmware version, uptime.
  - CPU load, memory usage, and storage status.
- **Network Status**
  - Ethernet/Wi-Fi interfaces with IP addresses.
  - VPN (WireGuard) status.
- **Radio Status**
  - Zigbee, Thread, Z-Wave (if installed), Bluetooth.
  - Service LED indicators and Ambilight effects.
- **Service Overview**
  - Running state of **Zigbee2MQTT, Matterbridge, Node-RED, Mosquitto MQTT broker**.
  - Quick buttons to start/stop services.

7.2 Zigbee2MQTT

- Direct integration with the **Zigbee2MQTT frontend**.
- Allows pairing, removing, and managing Zigbee devices.
- Displays a network map, device states, and logs.
- Zigbee devices are automatically published to the local **Mosquitto MQTT broker**.

7.3 Matterbridge

- Provides direct access to the **Matterbridge frontend**.

- Manages bridging between Zigbee/Thread devices and Matter ecosystems (Google Home, Apple Home, Alexa, SmartThings).
- Allows configuration of bridge modes and Matter controllers.

7.4 Node-RED

- Opens the **Node-RED frontend**, a visual automation editor.
- Users can create and deploy flows combining Zigbee2MQTT, Matterbridge, MQTT, HTTP APIs, or custom integrations.
- Pre-installed flows include templates for MQTT and device automation.

7.5 Apps

The **Apps** section acts as a package manager for SMHUB applications.

- **App Management**
  - Install, uninstall, or update applications.
  - Configure settings per application.
  - Start/stop applications with one click.
- **Preinstalled Apps**
  - Zigbee2MQTT
  - Matterbridge
  - Node-RED
  - Mosquitto MQTT broker
- **Additional Apps**
  - Future apps (e.g., Z-Wave JS, custom services) can be added here.
  - Apps can be distributed as packages and installed via this page.

7.6 Settings

The **Settings** section contains all configuration options for SMHUB. It is divided into modules, each with tabs for **configuration, telemetry, and debug** where available.

System

- Hostname, time zone, system info.
- User management (accounts, passwords).
- Updates (firmware & app updates).
- Backup & restore.
- Factory reset.

Network

- Ethernet (DHCP/static).
- Wi-Fi (2.4/5 GHz, AP/Client mode).
- VPN (WireGuard).
- DDNS configuration (DuckDNS, others).
- USB-over-network.

Radios

- Zigbee: coordinator settings, pairing mode, diagnostics.
- Thread: OTBR management, Matterbridge integration.
- Z-Wave (if module installed): inclusion/exclusion, network management.
- Bluetooth: enable/disable, scanning, BLE integrations.
- 4G/LTE (in development): SIM/APN settings, LTE telemetry, GPS data.

Audio & Buzzer

- Volume control (3.5 mm output).
- Enable/disable system notification sounds.
- Buzzer toggle and test alerts.

LEDs

- Service LED control.
- Ambilight modes (status, animations, user-defined patterns).

IR

- IR transmitter: configure/send commands.
- IR receiver: learn remote commands and store them.

Storage

- SD card and eMMC info.
- Format, mount/unmount.
- Telemetry: usage stats.

Security

- User authentication settings.
- SSH toggle.
- VPN certificates and DDNS keys.
- Firewall and remote access rules.

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