

1. Introduction

Enterprise-Ready Smart Home Platform

SMHUB is a **Linux-based smart home hub** designed for reliability, scalability, and openness. It runs a lightweight **Linux OS layer** with **Node.js preinstalled**, making it capable of running **major open-source smart applications** such as:

- **Zigbee2MQTT (Z2M)** → enterprise-proven Zigbee integration with MQTT backbone.
- **Matterbridge** → bridging Zigbee and Thread devices into the Matter ecosystem (Google Home, Apple Home, Amazon Alexa).
- **Node-RED** → a flow-based automation tool for building powerful automations and integrations.

This software stack ensures SMHUB can be deployed in **enterprise projects, system integrator environments**, and **large-scale smart installations** while remaining flexible for continuous growth.

Modular and Scalable

Unlike fixed-function consumer hubs, SMHUB is **hardware- and software-extensible**:

- Additional radios (Z-Wave, 4G/LTE) can be added via modules or USB dongles.
- System apps can be extended with **Node.js libraries or Python scripts**.
- Storage options include onboard eMMC and expandable SD card storage.
- Remote management is possible through **SSH, VPN (WireGuard), and DDNS services**.

This makes SMHUB suitable for **smart buildings, multi-site enterprise deployments, and integrators who need a universal controller**.

For Home Users & DIY Enthusiasts

While SMHUB is enterprise-ready, it is also **accessible to enthusiasts**:

- **Preinstalled apps** → Zigbee2MQTT, Matterbridge, Node-RED work out of the box.
- **Web interface** → intuitive dashboard for system monitoring and configuration.

- **USB passthrough** → attach external dongles (Zigbee, Thread, Z-Wave, etc.) for custom setups.
- **Ambilight LEDs, IR transmitter/receiver, buzzer, and audio** for interactive smart home features.

Whether you're an integrator managing **hundreds of devices across buildings** or a DIY user running **Home Assistant in your living room**, SMHUB adapts to your use case.

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