HOME Assistant

A “no mothership” Option for home automation

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A Sense & Respond System

– OR –

Complex Event Processing

– OR –

HOME Automation

– OR –

HOME Assistant

Presentation Talking Points

- Why is this topic of interest ?
- Home Assistant – No Cloud Required - Architecture
  - Integrations with Existing Commercial products
  - Functional Expandability – Add-Ons
  - The Automation Engine – (the magic)
- The HA Dashboard
- Four Integration Examples
- IoT – Sensors & Controls for your home
  - Interconnection
  - Sensors you can build
- Installing & Running Home Assistant
- Demo

Why Is this of Interest …

Besides Home Automation … Home Assistant can help to monitor and manage ..

- remote systems
  - un-attended repeater sites
  - remote stations (Camp Greenough site)
  - un-attended vacation homes (during the winter)
- systems located in your home that you don’t routinely interact with
  - leak developing from hot water heater, washing machine
  - pipe freeze warnings

Sense & Respond

Sense

- temperature / humidity
- water present (leaks)
- motion
  - PIR sensors
  - Video surveillance
- presence detection
  - iPhone shows up on home WIFI
- air quality
  - gas stoves
- door / window position
- Current Flow
  - appliances on / off
  - energy management
- Rain
- Time of Day / Day of Week
- Sunset / Sunrise
- User Request
  - button press
  - Phone App Interaction

RESPOND

- turn on/off devices
  - lamps
  - air dampers
  - water valves
  - fans
  - relays
  - pumps
- trigger other automations
- Notify interested parties
  - sound an alarm
  - send a text message / email
- configure custom lighting scenes
- lock / unlock doors

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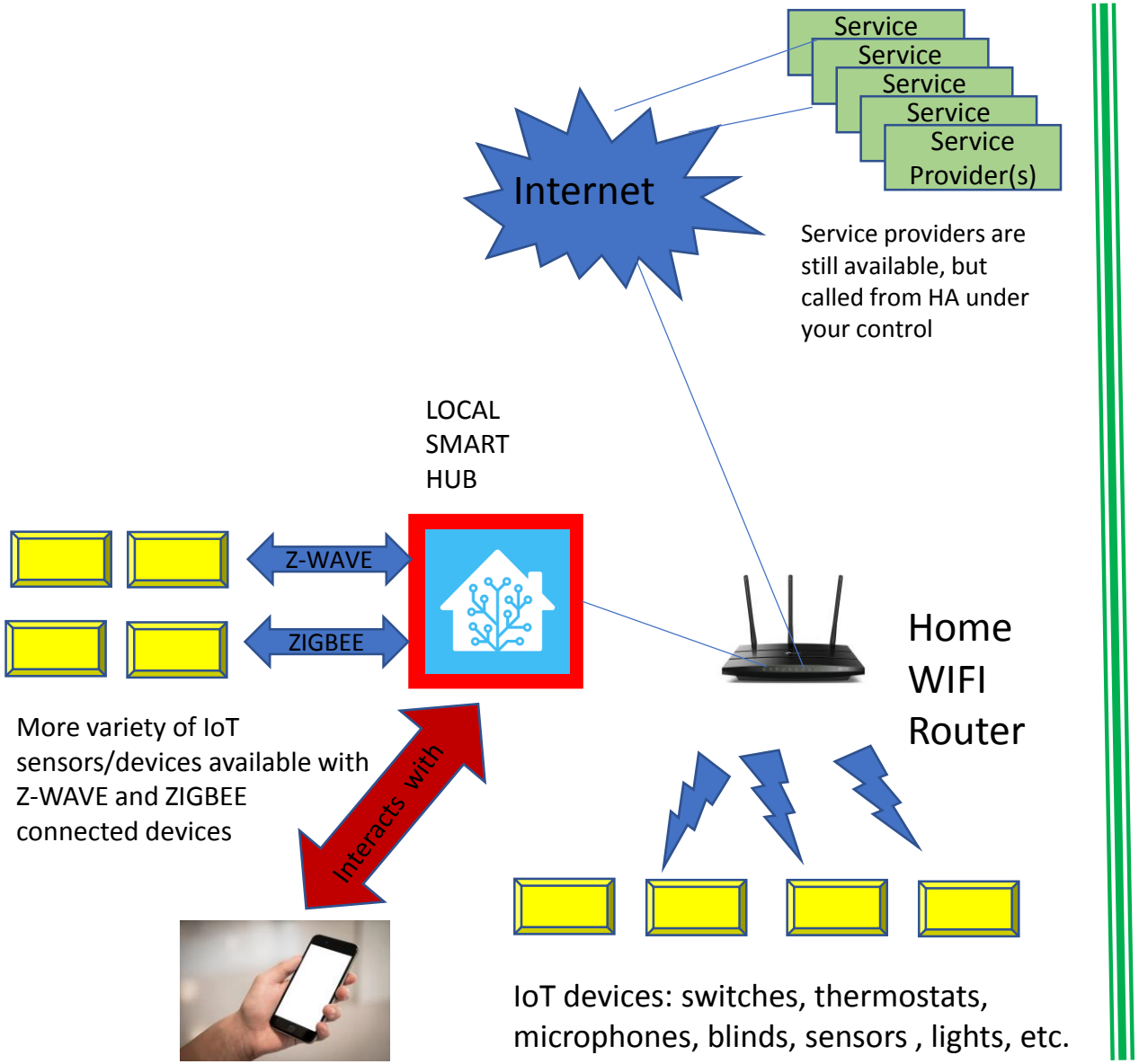
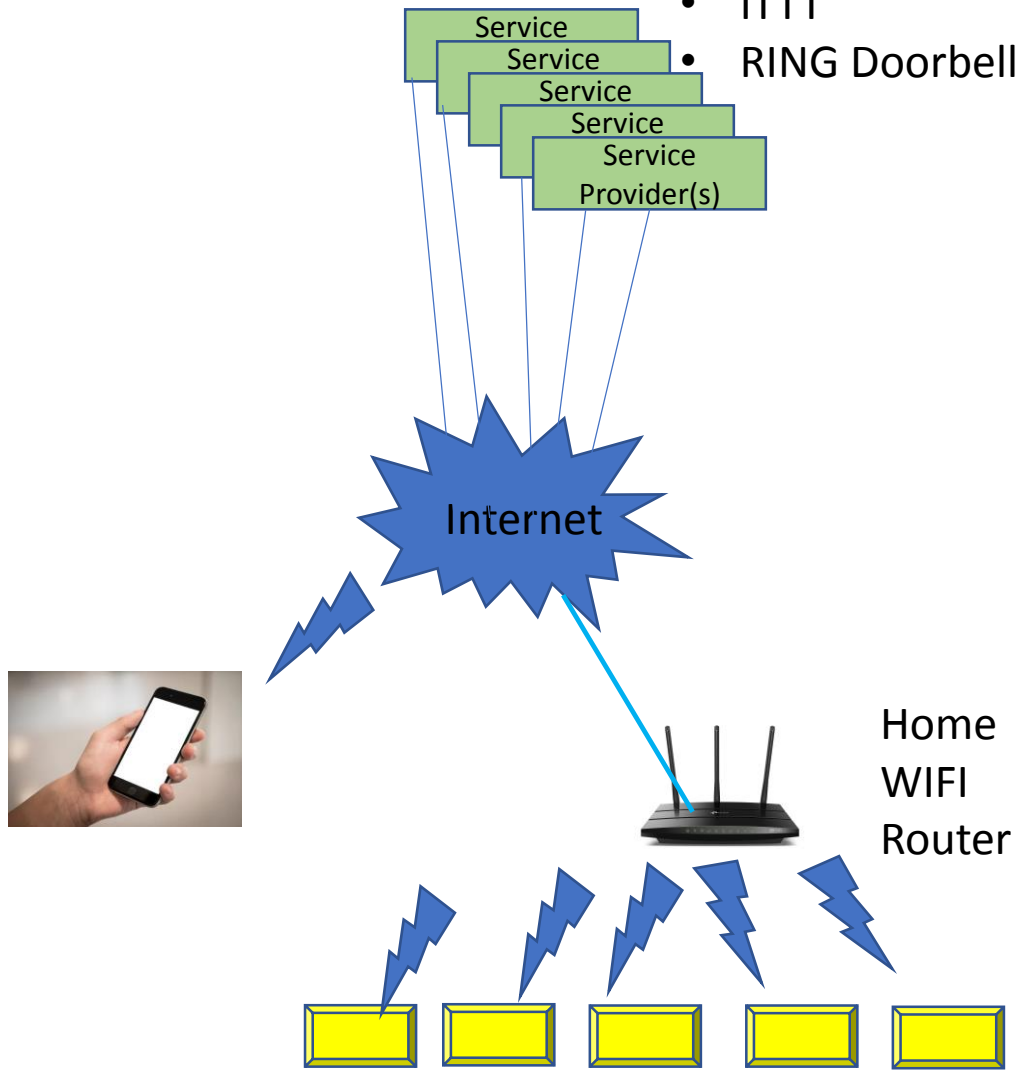
Two Architecture Approaches

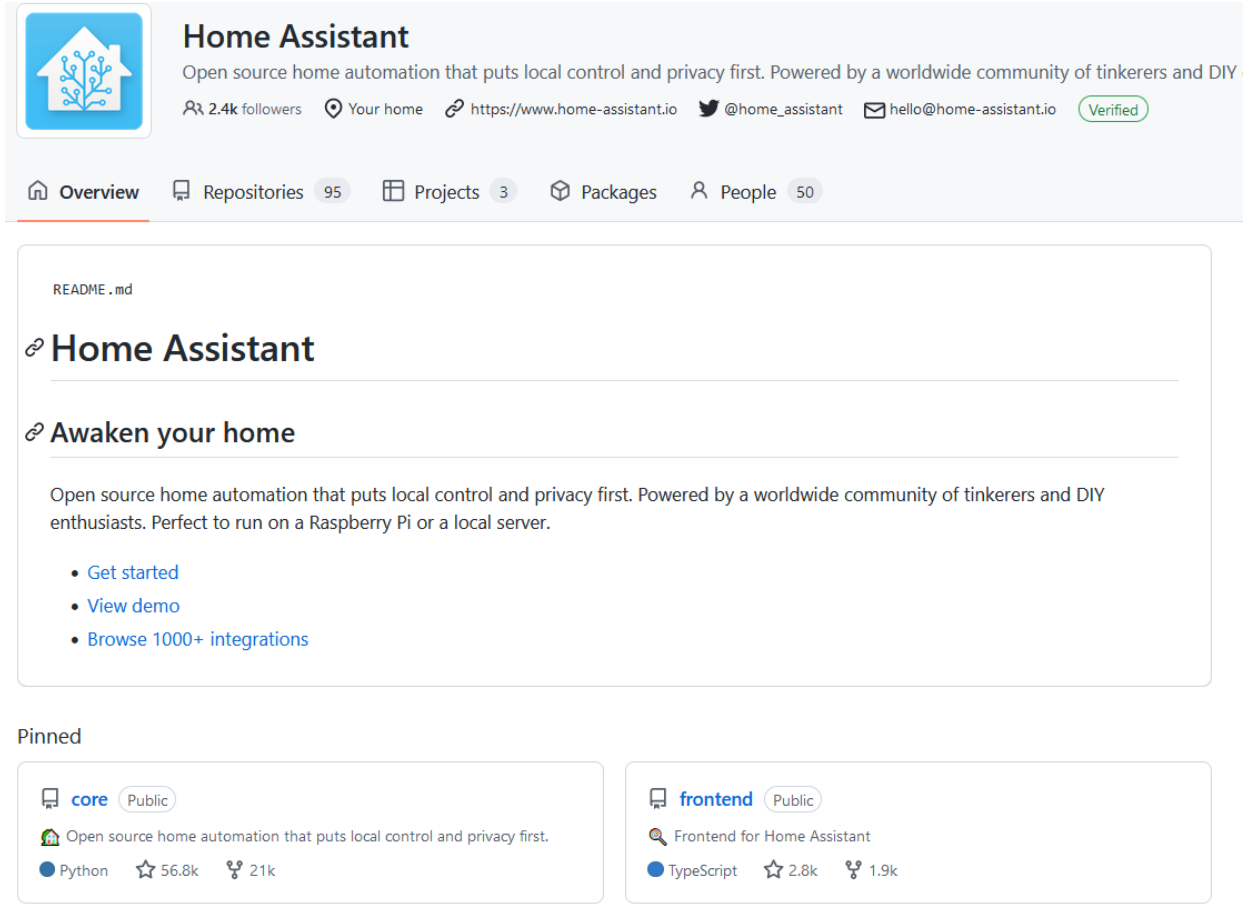
- NEST/GOOGLE
- AMAZON
- ITTT
- RING Doorbell





Home Assistant https://github.com/home-assistant

- Open Source project ..
- Currently 2nd largest Open source project on GitHub
- 13.5K Contributors
- International Project



Home Assistant Features

(https://www.home-assistant.io/)

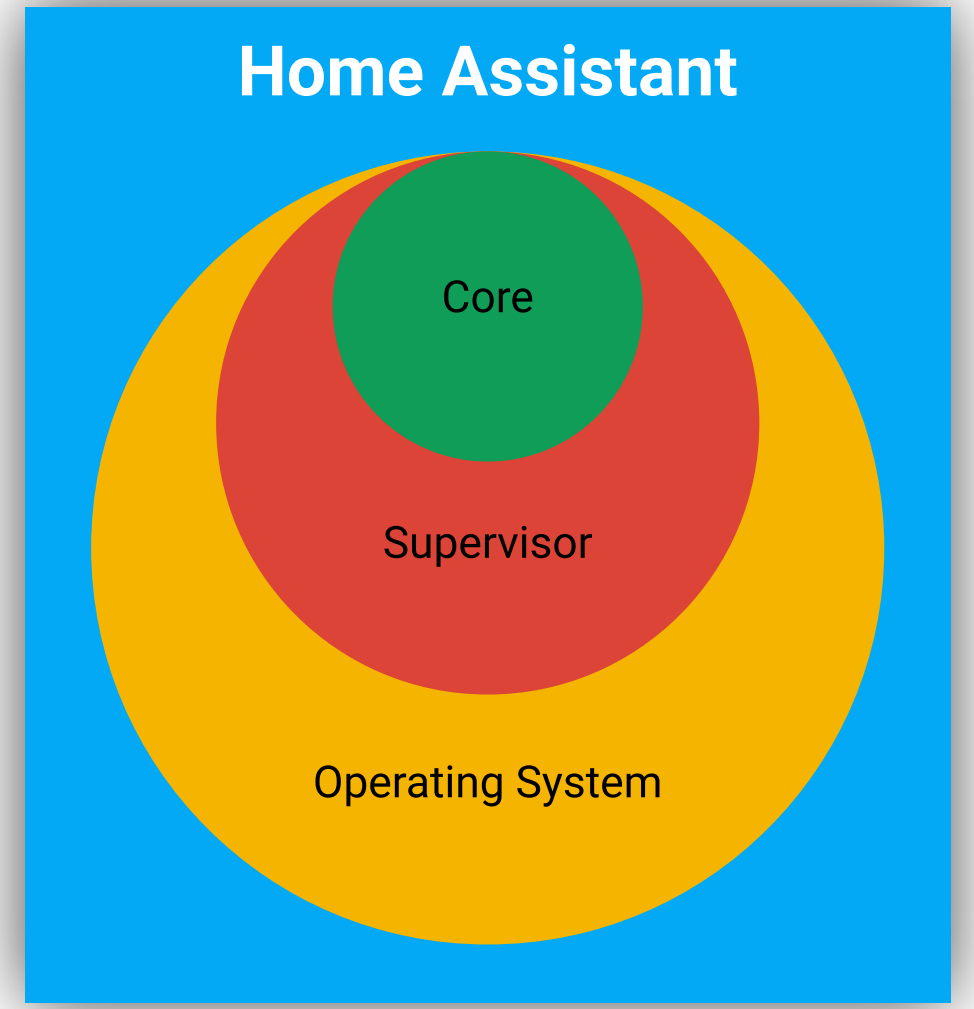
- Home Assistant integrates with over two thousand different devices and services.
- ADD-Ons: Home Assistant is not just limited to Home Assistant. Easily install other applications that will help you manage your home. For Example:
  - Run AdGuard, a DNS-based ad blocker
  - Run third party automation engines like NodeRed
  - Turn Home Assistant into a Spotify Connect target
- Companion Mobile APP
- Voice Interface
  - 2023 year of Voice Control for HA

- **Powerful Automations**: Once you have integrated all your devices at home, you can unleash Home Assistant's advanced automation engine to make your home work for you.
  - Turn on the light when the sun sets or when coming home
  - Alert you when you leave your garage door open.
  - Lock all your doors automatically at 11:30pm
- **LOCAL DATA & Control:** All your smart home data stays local Home Assistant communicates with your devices locally, and will fallback to pulling in data from the cloud if there is no other option. No data is stored in the cloud, and everything is processed locally.
- **Home Energy Management:** Home Assistant allows you to get on top of your energy use with its home energy management feature. Gain new insights, optimize your solar panel production, plan energy usage and save money.

Home Assistant Architecture

Home Assistant provides a platform for home control and home automation. Home Assistant is not just an application: it's an embedded system that provides an experience like other consumer off-the-shelf products: onboarding, configuration and updating is all done via an easy to use interface.

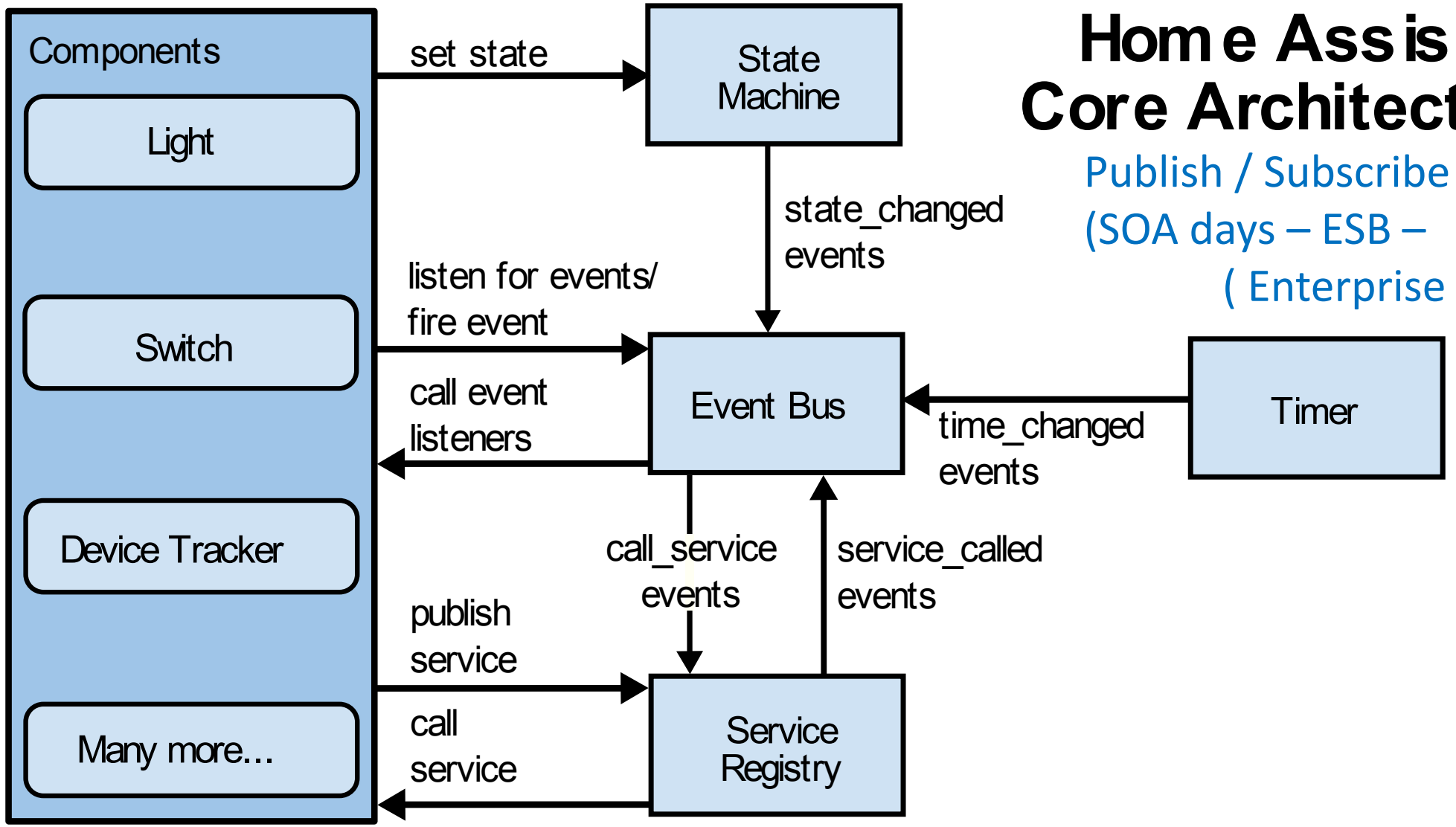
- The operating system provides the bare minimal Linux environment to run Supervisor and Core.
- The Supervisor manages the operating system.
- The Core interacts with the user, the supervisor and IoT devices & services.



https://developers.home-assistant.io/docs/architecture_index/

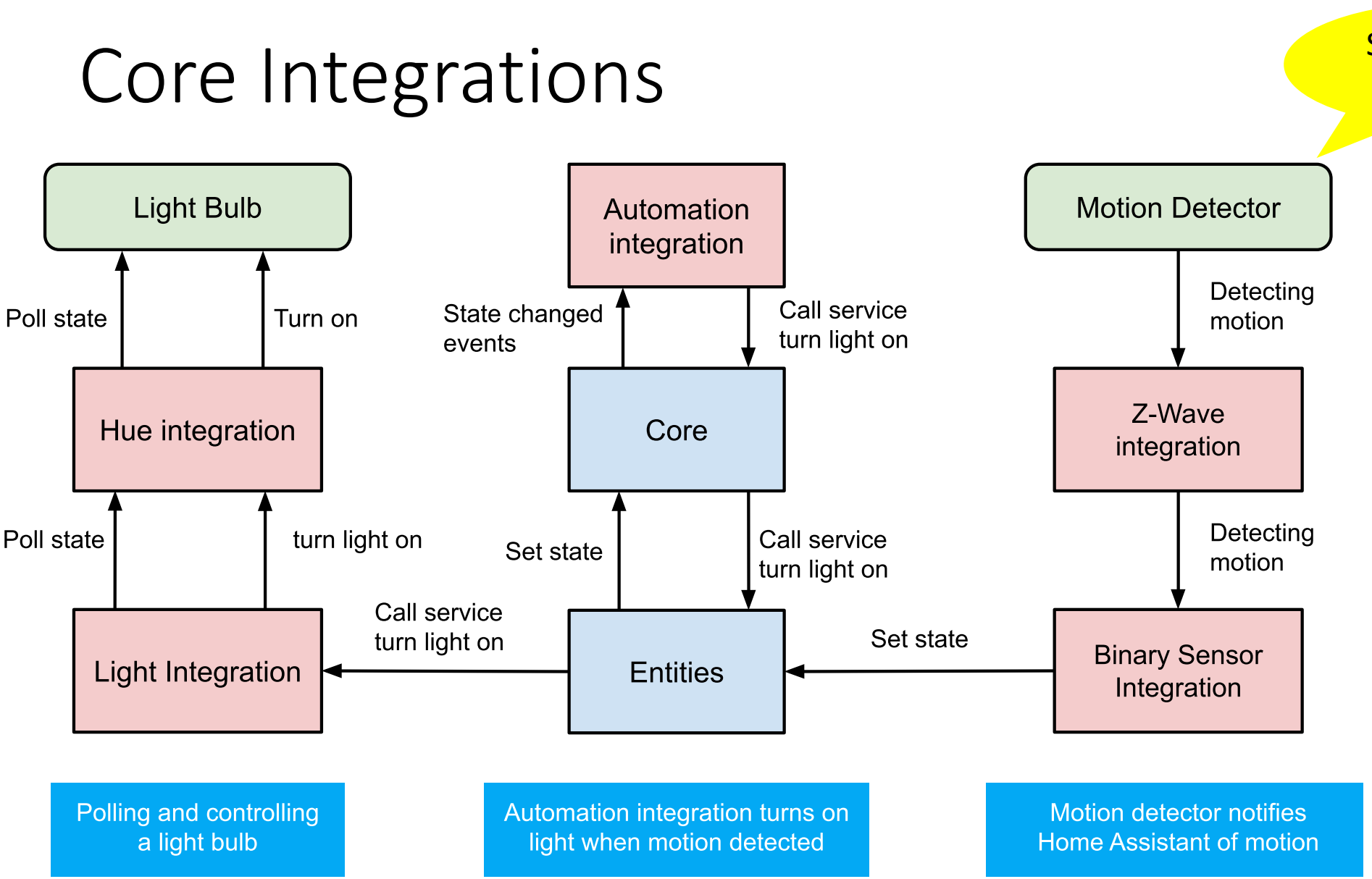
Home Assistant Core Architecture

Publish / Subscribe to an Event Bus
(SOA days – ESB –
(Enterprise Service Bus)



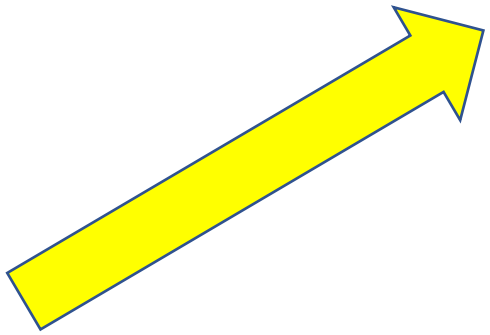
- **State Machine**: keeps track of the states of things and fires a state_changed event when a state has been changed.
- **Service Registry**: listens on the event bus for call_service events and allows other code to register services.
- **Timer**: sends a time_changed event every 1 second on the event bus.
- **Event Bus**: facilitates the firing and listening of events -- the beating heart of Home Assistant

Core Integrations

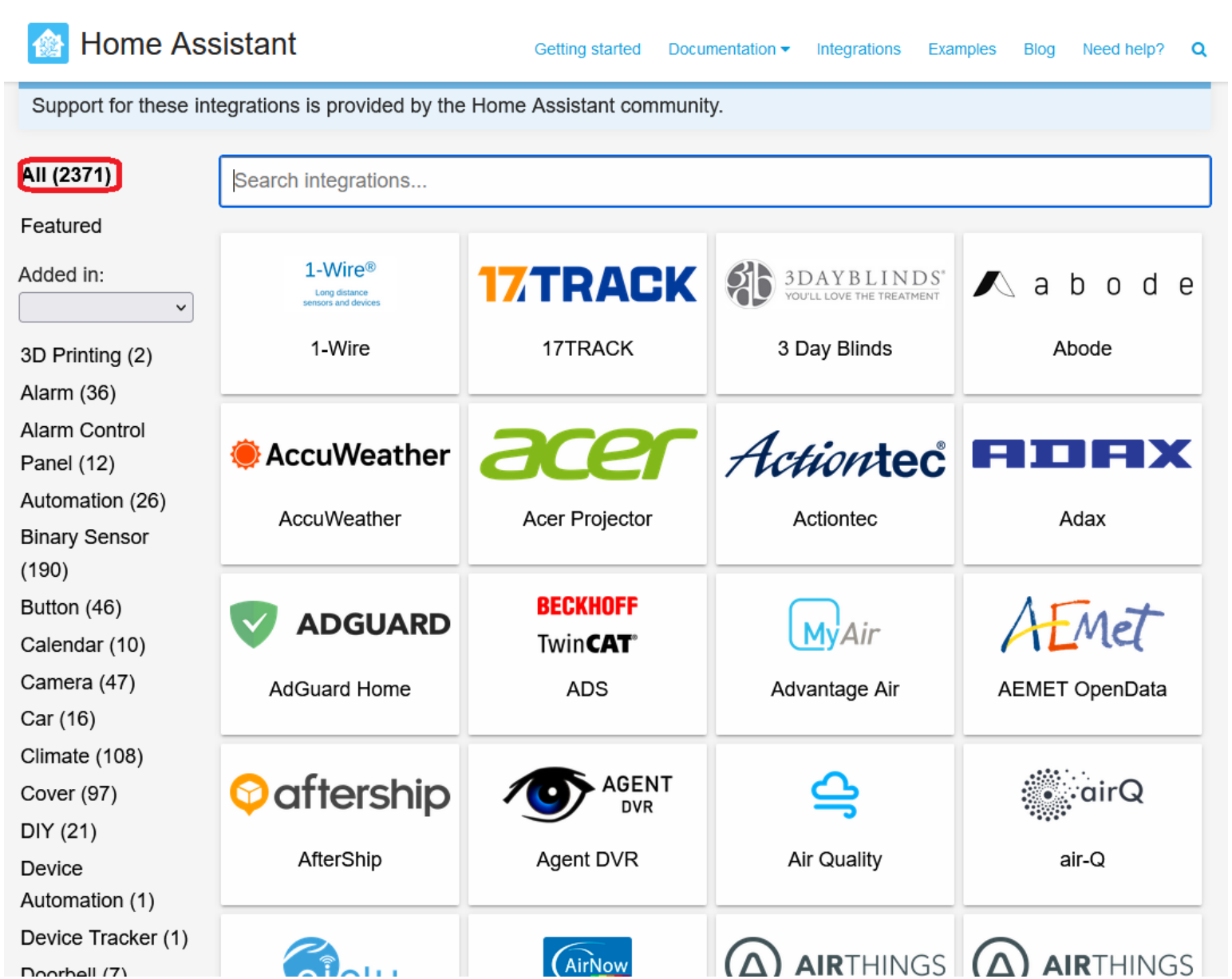


Home Assistant Core can be extended with **integrations**. Each integration is responsible for a specific domain within Home Assistant. Integrations can listen for or trigger events, offer services, and maintain states. Integrations are made up of a component (the base logic) and platforms (bits that integrate with other integrations).

Integrations

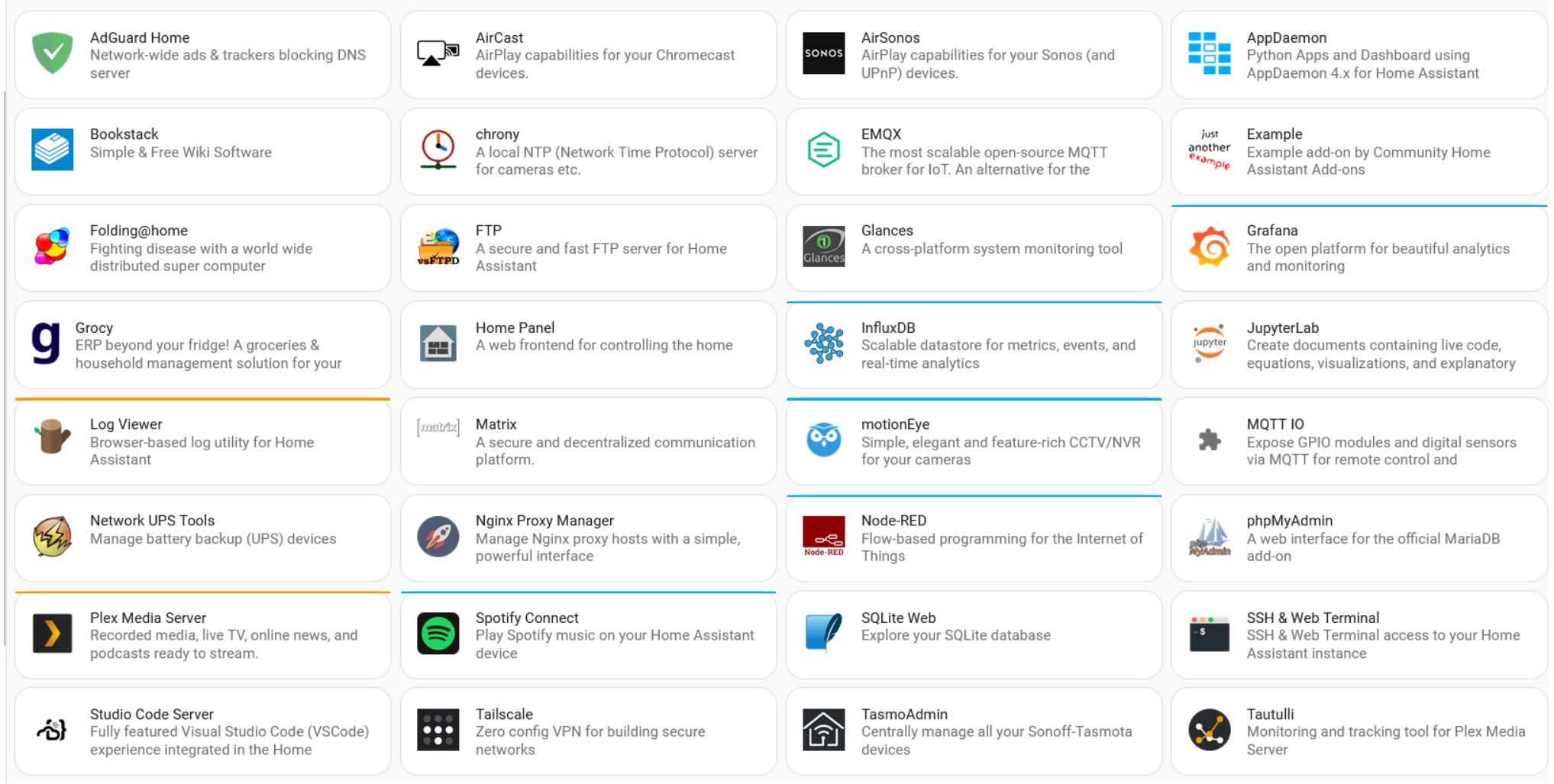


Currently over 2,371 Integrations with various commercial components

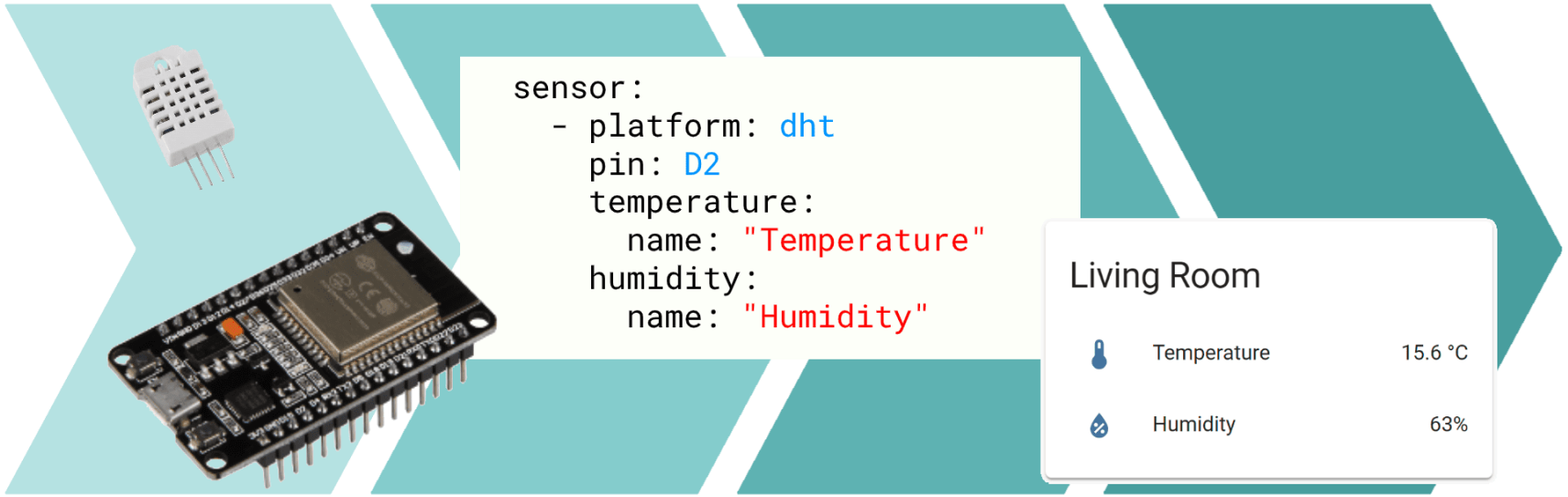


https://www.home-assistant.io/integrations/

Large Library of “ADD-ON”s – additional functionality -- that can be added as needed.



Favorite ADD ON #1: ESPHOME – DIY Sensors

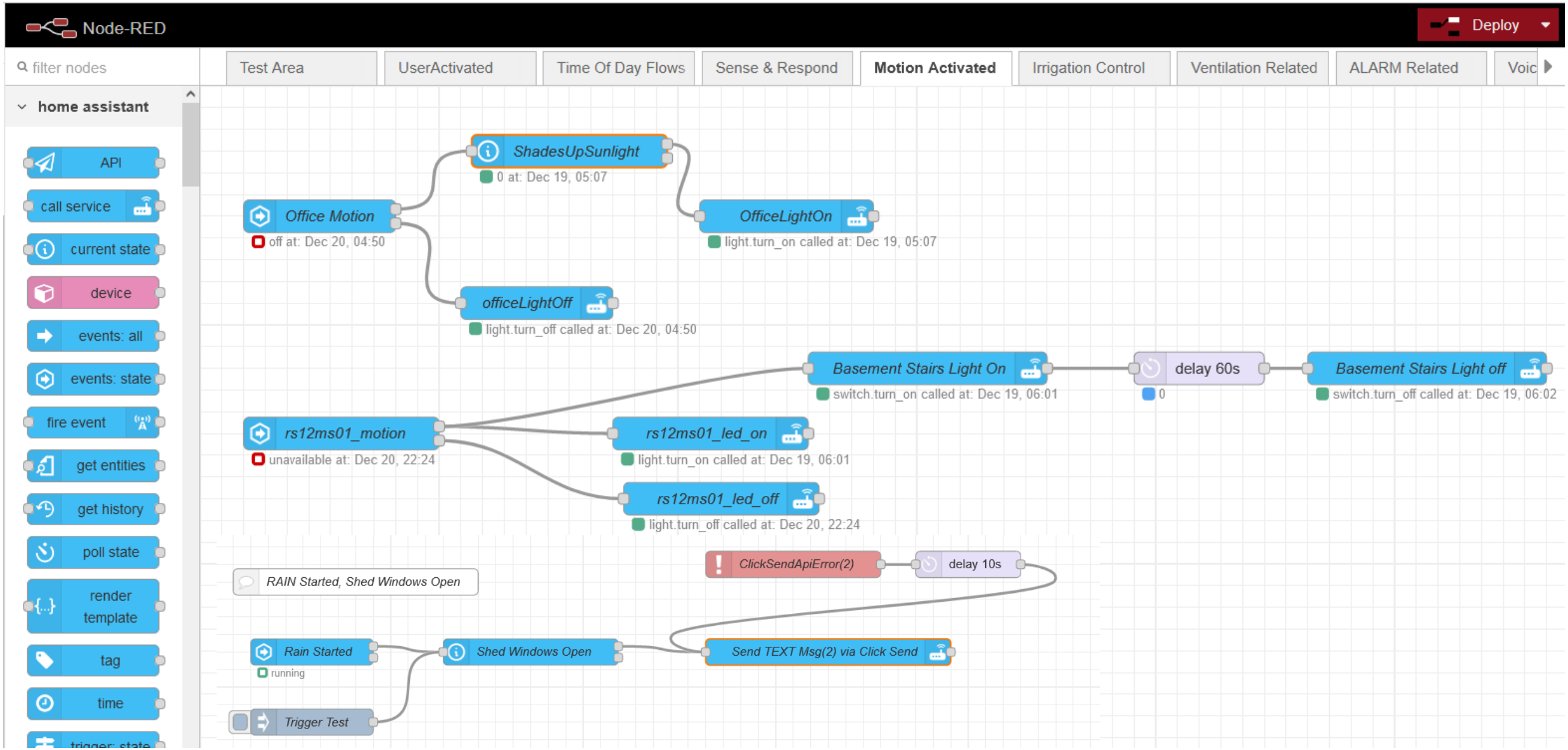



```
# tell esphome which board you are using
esphome:
  name: rs12ms01
  platform: ESP8266
  board: nodemcuv2
# provide wifi connection inf
wifi:
  ssid: "xxxxxxxxxxxxxxxxxxx"
  password: "xxxxxxxxxxxxxxx"
# Enable logging
logger:
# Enable Home Assistant API
api:
# enable "over the air updates"
ota:
# Setup Reboot Remotely switch entity
switch:
  - platform: restart
    name: "rs12ms01_restart"
# Now define the sensor
sensor:
  - platform: dht
    model: am2302
    pin: D1
    temperature:
      name: “Living Room Temperature"
    humidity:
      name: “Living Room Humidity"
    update_interval: 60s
#
```

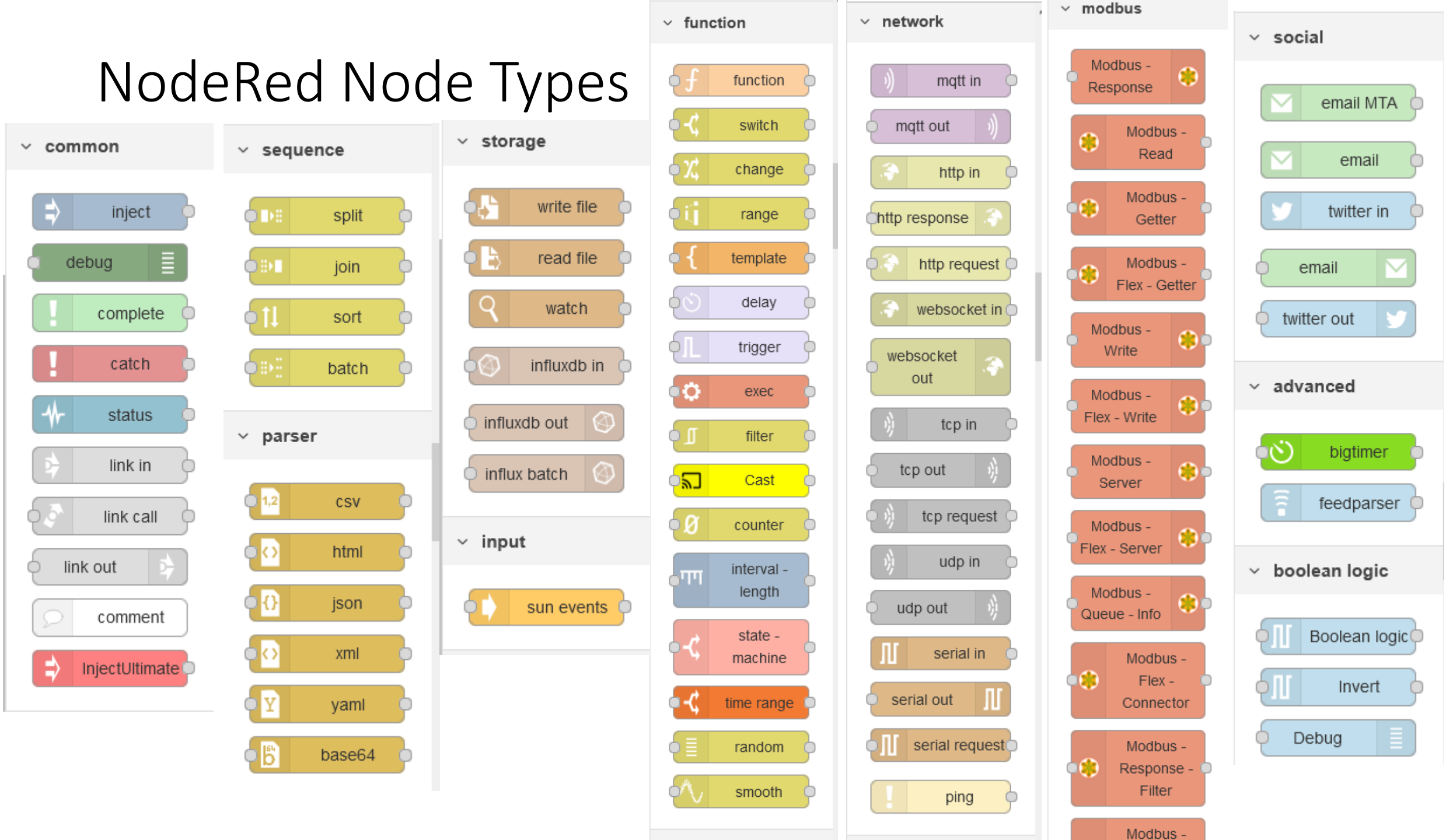
Automations bring your home “alive”

- Exterior lighting Control based on sunset / sunrise
- Holiday lightening Control
- Irrigation Control that takes into account weekly rainfall
- Open inlet air damper when Dryer is running
- Alert you to water flow and no-one is home
- Activate a “lighting scene” when your phone shows up on your home wifi after you have been away … and it’s after sundown
- Close blinds automatically at sundown
- Smart Home Security
- Activate Energy Recovery Ventilators when CO2 levels get above a threshold (air in house is getting “stuffy”)
- Lock all doors at 11:30pm
- Close the big garage door at 1:00am if it’s still open
- Alert you via a text msg to your phone if windows are open and it’s starting to rain
- Notify the church personnel if the air pump for the sprinkler system starts running too often .. Indicating a leak in the sprinkler piping
- Ham Radio Related
  - Remote station control
  - Hardware configuration control

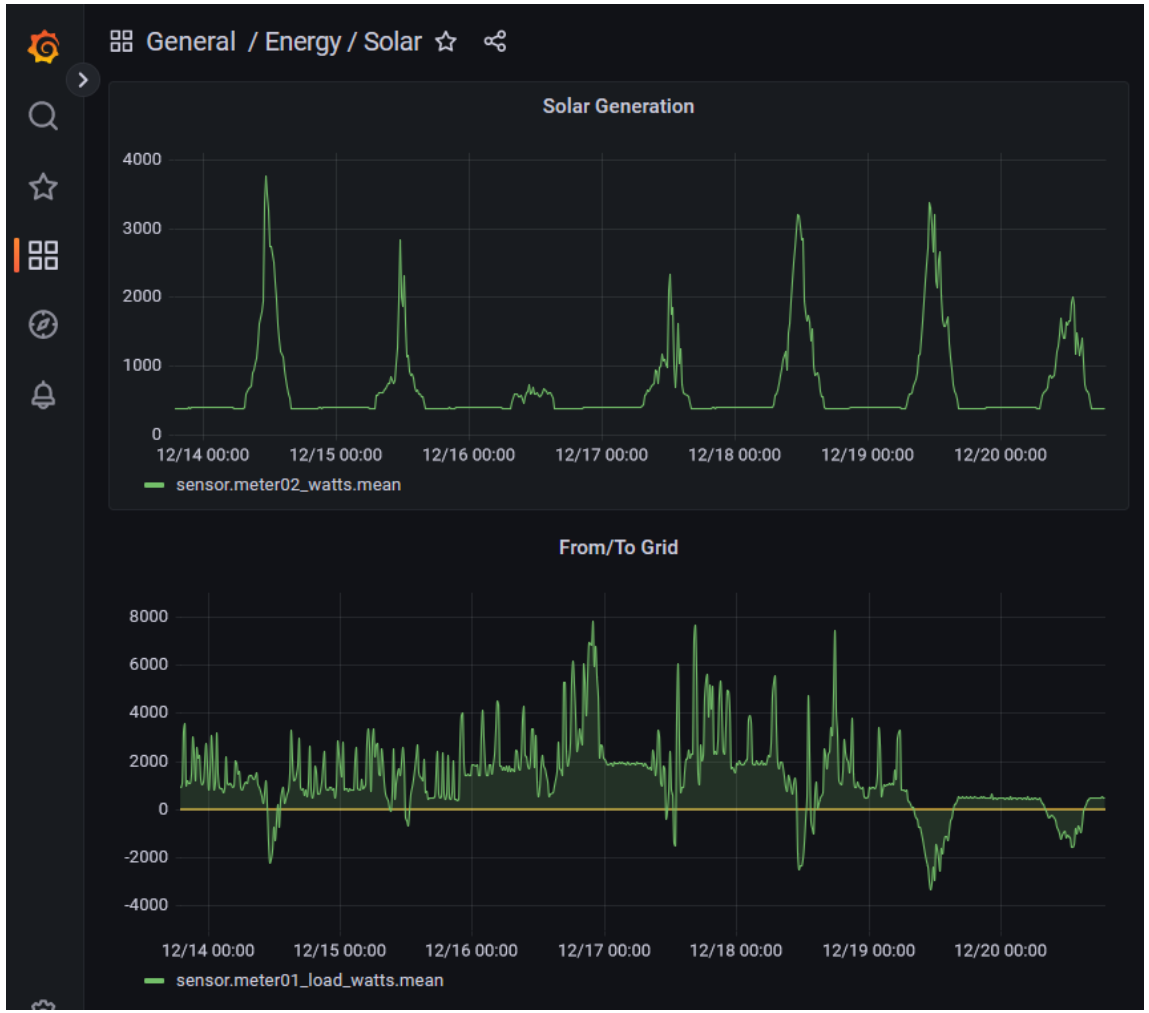
Favorite Add On #2: Node Red – Automation Engine

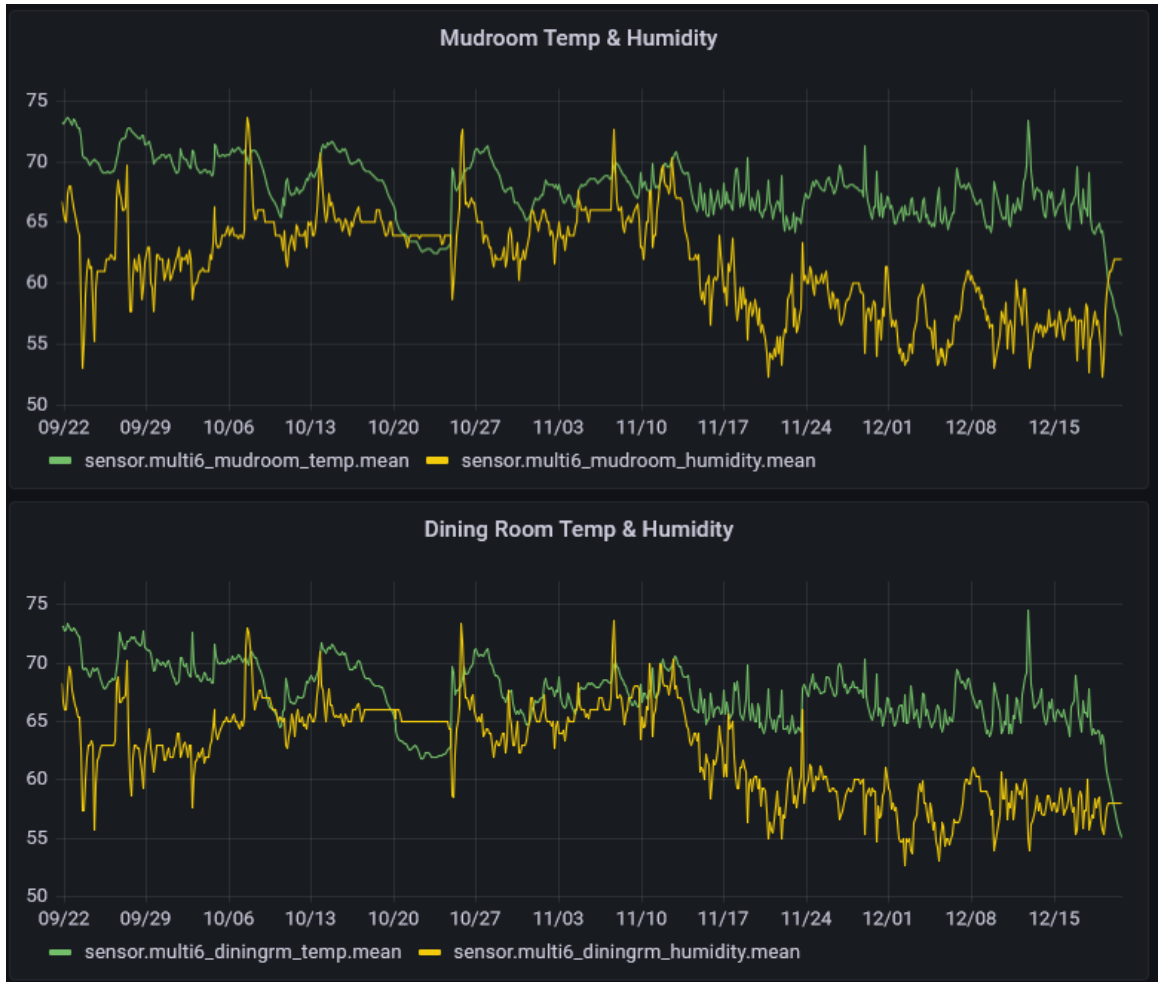


NodeRed Node Types



Favorite Add On #3: Grafana – Historical Graphing Of Data





Favorite ADD ON #4 (most recent): RHASSPY

https://www.home-assistant.io/integrations/rhasspy/

This is “Alexa” or “Google” without big brother listening in!

Rhasspy Voice Assistant

Rhasspy (ɹˈæspi) is an open source, fully offline set of voice assistant services for many human languages that works well with:

- Hermes protocol compatible services (Snips.AI)
- Home Assistant and Hass.io
- Node-RED
- Jeedom
- OpenHAB

You specify voice commands in a template language:

```
[LightState]
states = (on | off)
turn (<states>){state} [the] light
```

and Rhasspy will produce JSON events that can trigger action in home automation software, such as a Node-RED flow:

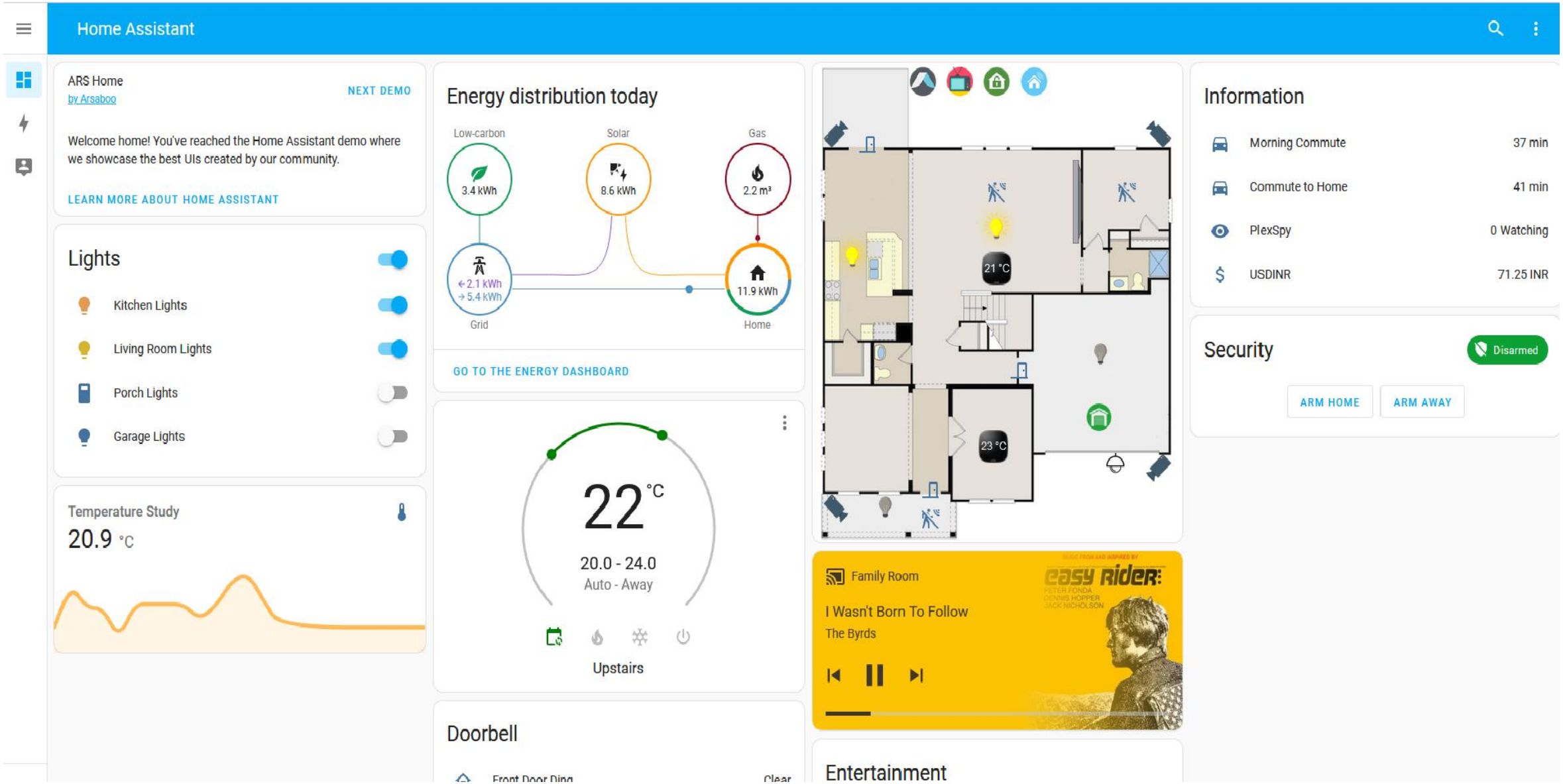
Home Assistant User Interface / Dashboards

https://www.home-assistant.io/dashboards/

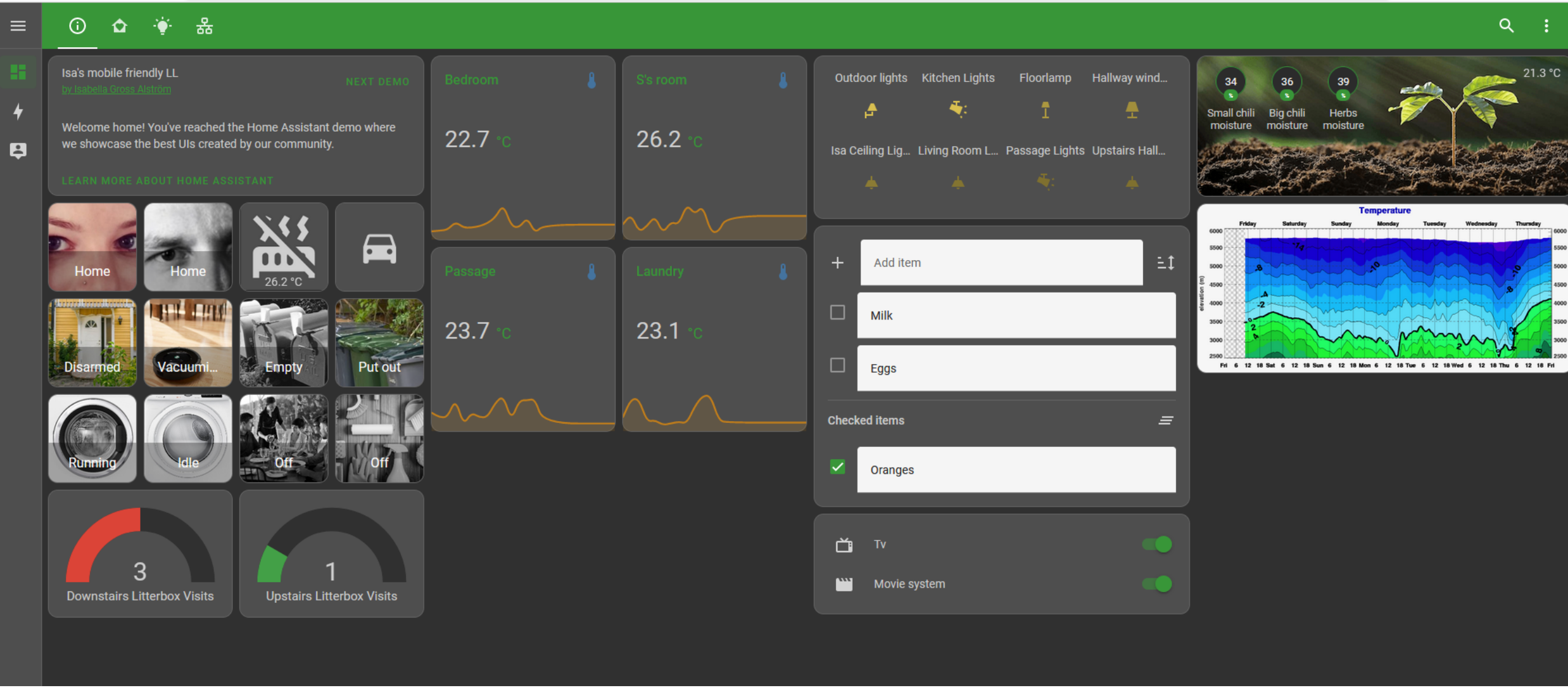
Home Assistant dashboards are a fast, customizable and powerful way for users to manage their home using their mobiles and desktops.

- 29 different cards to place and configure as you like.
- Dashboard Editor: Allows you to manage your dashboard by including a live preview when editing cards.
- Fast: Using a static configuration allows us to build up the dashboard once.
- Customizable:
    - Cards have a number of options which help to configure your data as required.
    - Themes (even at a per card basis).
    - Ability to override names and icons of entities.
    - Custom Cards from our amazing community are fully supported.
    - Extensive library of icons
- Based on Dwains “lovelace” dashboard technology
    - https://dwainscheeren.github.io/dwains-lovelace-dashboard/

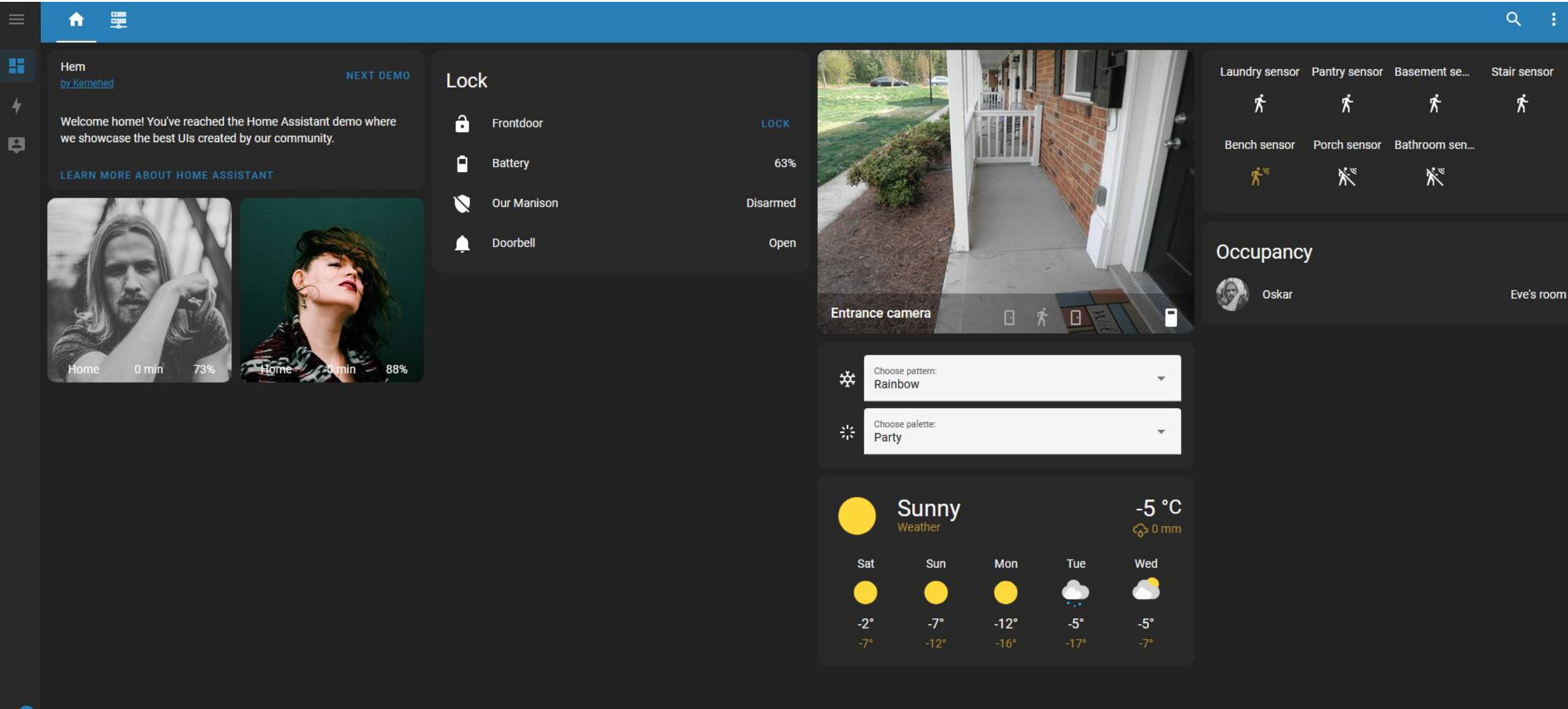
You Customize / Build Dashboard from a set of building blocks



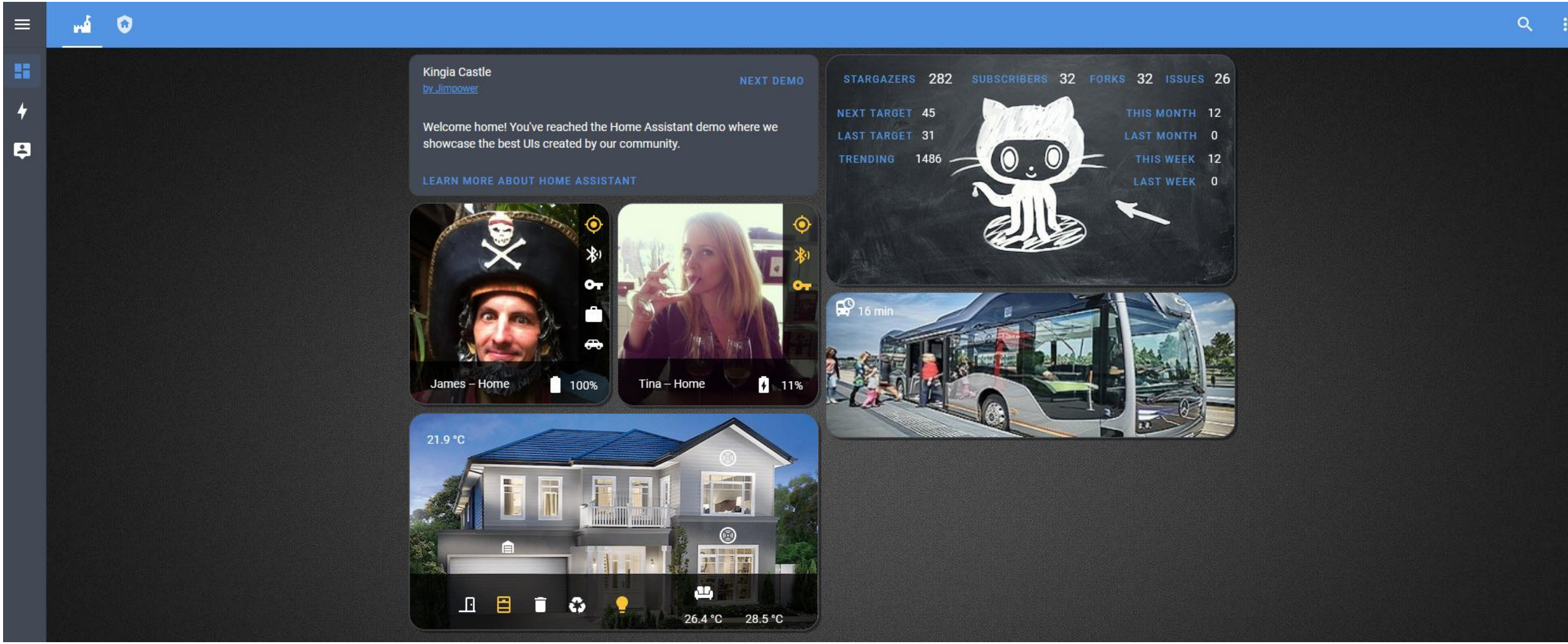
Dashboard Examples From➔ https://demo.home-assistant.io/#/lovelace/0



More Dashboard Examples



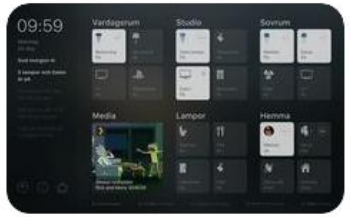
More Examples from demo site




4. YTD Dashboard
Select YTD Month
JUN
Revenue
108,942
Target Achievement 101%
Change from Last Year 0%
Gross Profit
32,322
Target Achievement 105%
Change from Last Year 9%
Operating Profit
19,226
Target Achievement 109%
Change from Last Year 17%
Net Profit
15,692
Target Achievement 112%
Change from Last Year 20%
Gross Profit Margin (%)
29.7%
Operating Profit Margin (%)
17.6%
Net Profit Margin (%)
14.4%
Income Statement
CFO DASHBOARD
Dynamic & Flexible dashboard template
Ready dashboard, just plug your data!
Net Operating Cash Flow
1,754
Net Financing Cash Flow
1,952
Net Investing Cash Flow
2,153
Cash at End of Month
100
Days Receivable Outstanding
93
Receivable Aging
Total Receivable 1,350
Overdue Receivable 605
% of Overdue Receivable 45%
Days Inventory Outstanding
64
Inventory Trend
Total Inventory 8,765
Days Payable Outstanding
102
Payable Aging
Total Payable 600
Current Ratio
1.9
Quick Ratio
1.3
Debt : Equity Ratio
48%
Balance Sheet
Fixed Assets 3,262
Current Assets 11,115
Other Assets 561
Total Assets 14,938
Current Liabilities 5,850
Long Term Liabilities 571
Equity 8,517
Total Liabilities & Equity 14,938


Living Room Temperature
22.9°C
Bedroom Ambient
Living Room Ambient
22.2°C
42%
Stove Times Turned on Today
2
Total Time Heating Per Week
1d 8h 39m
Total Time Heating Per Day
5h 57m
Raspberry Pi 4 CPU
6%
58.4°C
Raspberry Pi4 System Monitor
20.2GB
84.6GB
1297.5MB
2495.1MB
S21 Ultra
62%
87%
Daily energy consumption in USD
2.5 USD
0 USD
3.4 USD
Monthly energy consumption in USD
39.2 USD
51.9 USD
75.0 USD
Monthly energy consumption in kWH
3.5kWh
3.6kWh
6.4kWh
3.9kWh
14.4kWh
3kWh

Go to Pinterest and search on Home Assistant Dashboards for ideas



Example of an Integration – Firmata Support

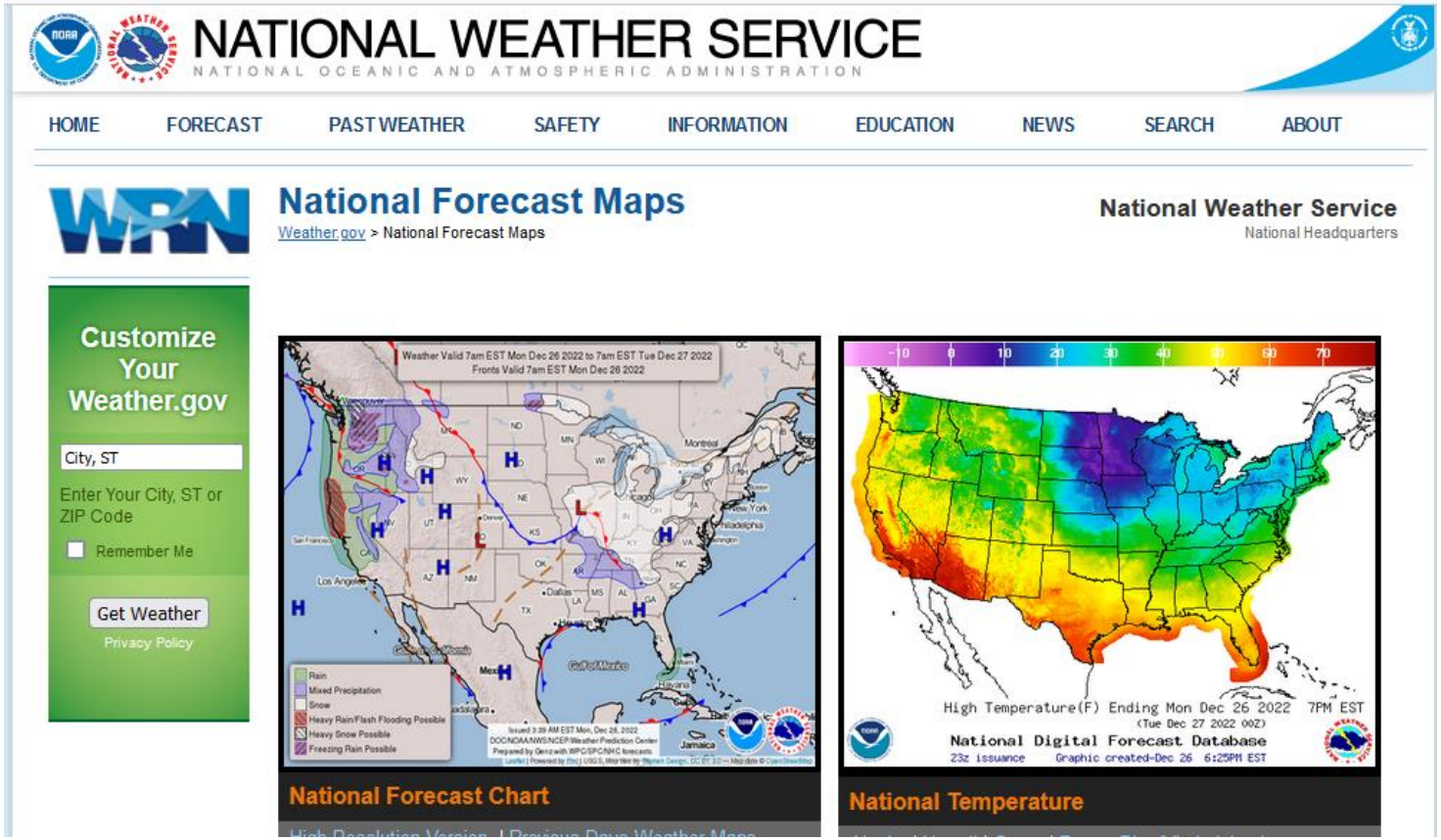
- https://www.home-assistant.io/integrations/firmata/

Firmata can be used to add analog and digital inputs and outputs to Home Assistant. This allows for buttons, switches, motion detectors, relay control, sensors, potentiometers, dimmers, etc. The component can currently connect to a Firmata board via serial or serial over USB.
The Firmata protocol is a standard protocol for microcontrollers. Most of these boards support digital and analog inputs and outputs. Arduino and Arduino-compatible microcontroller development boards are the most popular boards to use with Firmata.
There is currently support for the following device types within Home Assistant:

- Binary Sensor
- Light
- Sensor
- Switch

More Integrations – Weather

Ambient home weather stations



NWS API – to retrieve weather forecasts for your area

Integrations - More

// Dominos Pizza

The `dominos` integration allows you to order Dominos Pizza from within your Home Assistant scripts and automations.

At present, this integration only supports ordering within Canada and the US.

// Ukraine Alarm

The Ukraine Alarm integration uses the siren.pp.ua API - public wrapper for Ukraine Alarm web service to offer air-raid siren notifications. The integration will create 6 binary sensors for your selected region in Ukraine:

- Air
- Artillery
- Chemical
- Nuclear
- Urban Fights
- Unknown

Siren check interval is set to 10 seconds to avoid overloading the API and still be able to react fast enough.

IOT - Monitoring & Controlling Your Home

Commercial Sensor Types

- Water / Flood sensors
- Smoke/Fire / CO2 sensors
- Multi sensors (Temp, Humid, Motion, illumination levels, vibration, etc)
- Door / Window Sensors
- Energy management
  - (current / voltage sensors)
- Smart Thermostats
- Smart Window blinds / coverings
- Smart outlets
- Smart wall switches

Sensor Bus Interconnect

- Wired
  - I2C
  - CAN
  - SPI
  - UART
- Wireless
  - WiFi
  - Z-Wave
  - Zigbee

Z-Wave –https://en.wikipedia.org/wiki/Z-Wave
US Freq 908.4 and 916 Mhz

Z-Wave is a wireless communications protocol used primarily for residential and commercial building automation. It is a mesh network using low-energy radio waves to communicate from device to device,[2] allowing for wireless control of smart home devices, such as smart lights, security systems, thermostats, sensors, smart door locks, and garage door openers.[3][4] The Z-Wave brand and technology are owned by Silicon Labs. Over 300 companies involved in this technology are gathered within the Z-Wave Alliance.
Like other protocols and systems aimed at the residential, commercial, MDU and building markets, a Z-Wave system can be controlled from a smart phone, tablet, or computer, and locally through a smart speaker, wireless keyfob, or wall-mounted panel with a Z-Wave gateway or central control device serving as both the hub or controller.[3][5] Z-Wave provides the application layer interoperability between home control systems of different manufacturers that are a part of its alliance. There is a growing number of interoperable Z-Wave products; over 1,700 in 2017,[6] over 2,600 by 2019,[7] and over 4,000 by 2022.[8][9]

Zigbee - https://en.wikipedia.org/wiki/Zigbee
915 Mhz or 2.4Ghz

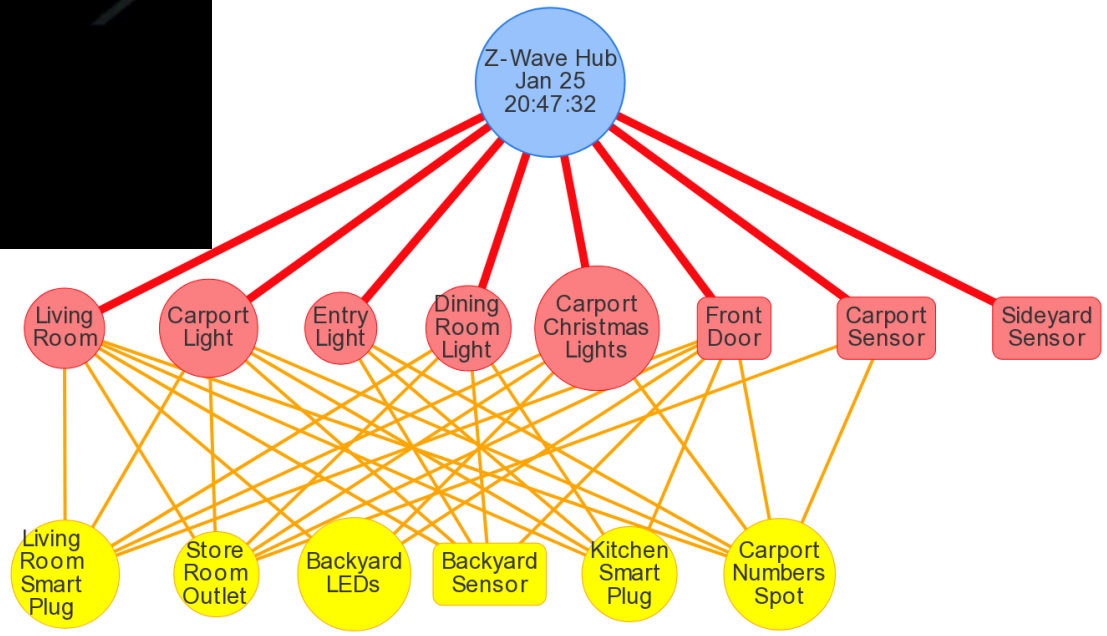
Zigbee is an IEEE 802.15.4-based specification for a suite of high-level communication protocols used to create personal area networks with small, low-power digital radios, such as for home automation, medical device data collection, and other low-power low-bandwidth needs, designed for small scale projects which need wireless connection. Hence, Zigbee is a low-power, low data rate, and close proximity (i.e., personal area) wireless ad hoc network.

The technology defined by the Zigbee specification is intended to be simpler and less expensive than other wireless personal area networks (WPANs), such as Bluetooth or more general wireless networking such as Wi-Fi. Applications include wireless light switches, home energy monitors, traffic management systems, and other consumer and industrial equipment that requires short-range low-rate wireless data transfer.

Its low power consumption limits transmission distances to 10–100 meters line-of-sight, depending on power output and environmental characteristics.[1] Zigbee devices can transmit data over long distances by passing data through a mesh network of intermediate devices to reach more distant ones. Zigbee is typically used in low data rate applications that require long battery life and secure networking. (Zigbee networks are secured by 128 bit symmetric encryption keys.) Zigbee has a defined rate of up to 250 kbit/s, best suited for intermittent data transmissions from a sensor or input device.

Zigbee was conceived in 1998, standardized in 2003, and revised in 2006. The name refers to the waggle dance of honey bees after their return to the beehive.[2]

Z-Wave Mesh Support / Zigbee Range Extender



Z-Wave / Zigbee Controller

SONOFF Zigbee 3.0 USB Dongle Plus Gateway, Universal Zigbee USB Gateway with Antenna for Home Assistant, Open HAB etc, Wireless Zigbee 3.0 USB Adapter(1 Pack)

Visit the SONOFF Store

4.5 out of 5 stars 1,242 ratings | 16 answered questions

Amazon's Choice for "zigbee dongle"

$31.86

FREE Returns

Coupon: Apply 5% coupon Terms

Get $60 off instantly: Pay $0.00 upon approval for the Amazon Rewards Visa Card.

Available at a lower price from other sellers that may not offer free Prime shipping.

Brand	SONOFF

Roll over image to zoom in

QuickStick Combo, HUSBZB-1, by Nortek, Cert ID: ZC10-15090013

Brand: Z-Wave Plus

4.5 out of 5 stars 88 ratings

$44.95

Get $60 off instantly: Pay $0.00 upon approval for the Amazon Rewards Visa Card.

- A USB stick that houses both a Z-Wave and Zigbee radio.
- Z-Wave Certification ID: ZC10-15090013
- Frequency Region: U.S./Canada/Mexico, Z-Wave Library Version: 6.51.06
- Device Categories: Controllers

› See more product details

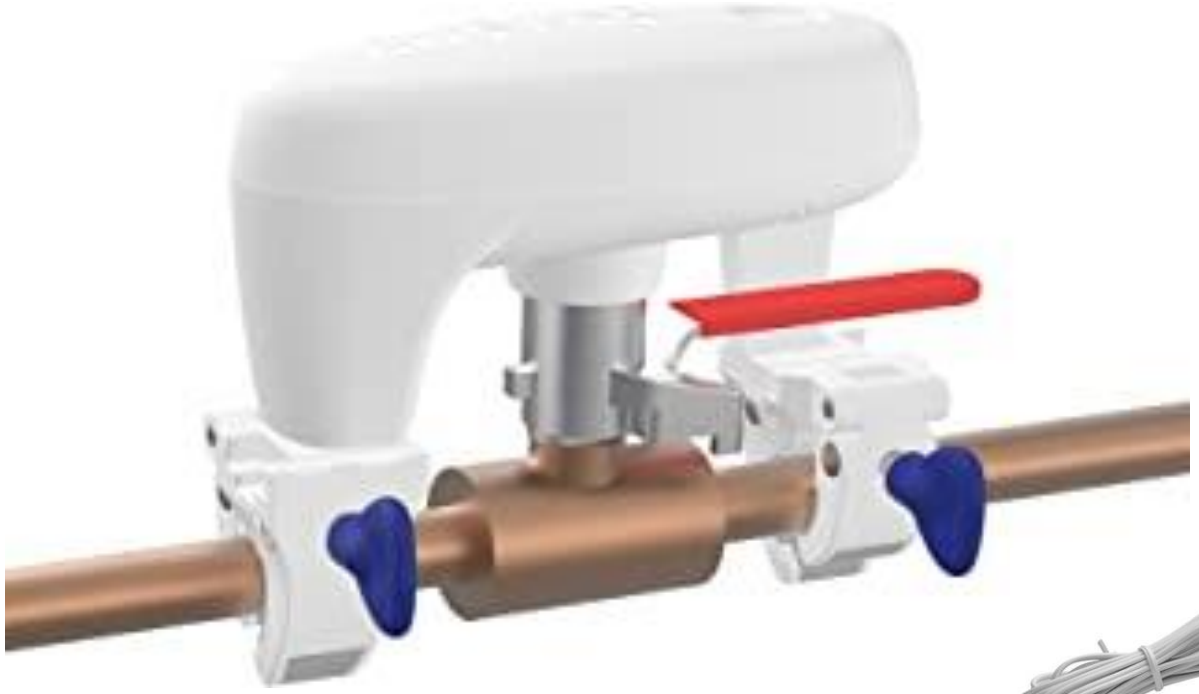
Customer ratings by feature

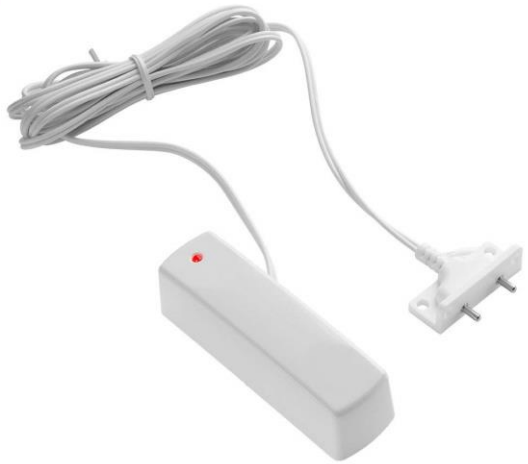
Easy to use	5.0
Easy to install	5.0

See all reviews

Home Automation Devices

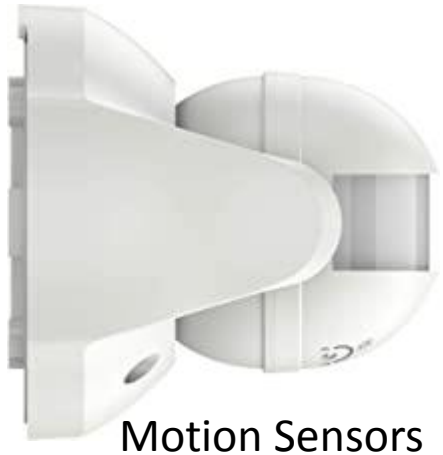
Home Automation Devices – 2





Home Automation - Devices

Door & Window Sensors

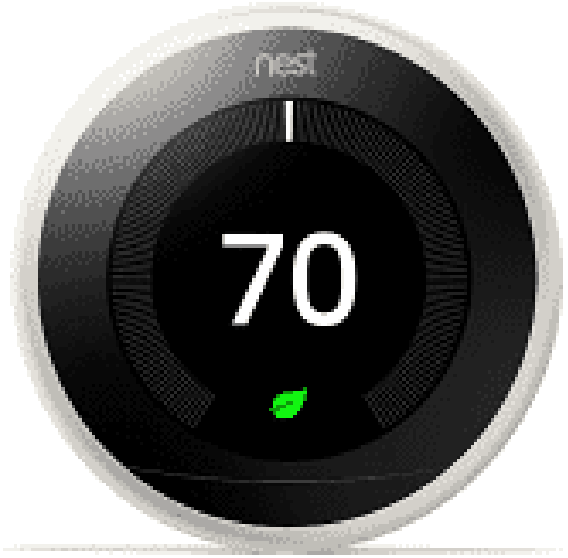


Motion Sensors

Home Automation -

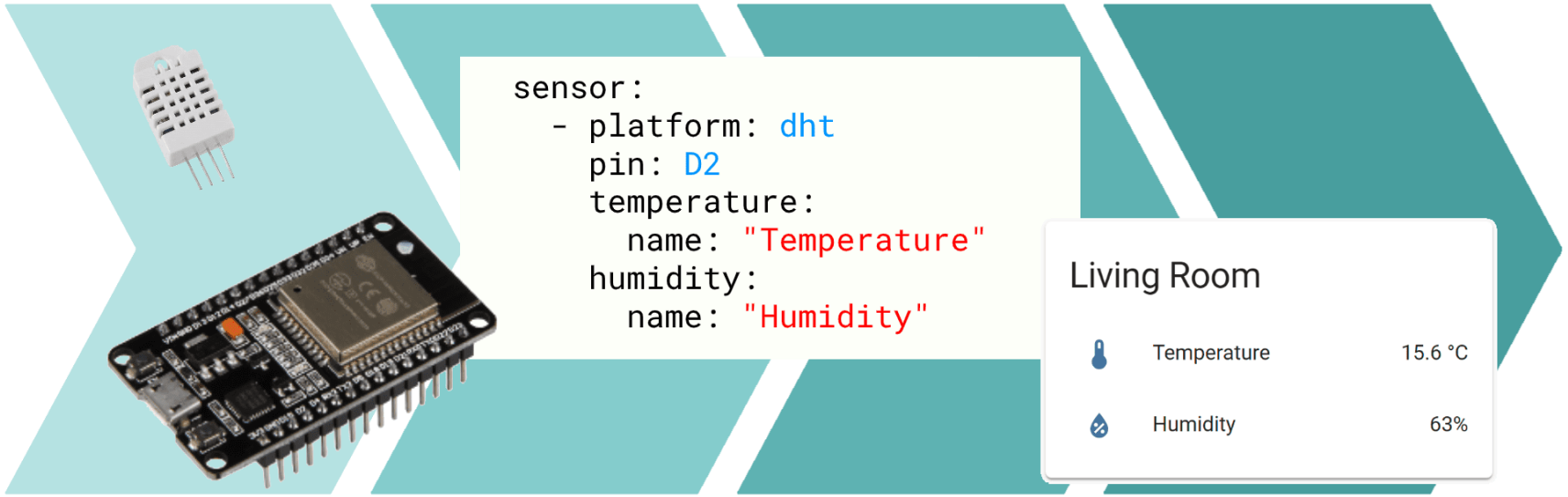
Integrations:

- Ring
- NEST



Z-Wave Enabled Thermostat

ESPHOME – DIY Sensors



Advantages:

- Much less expensive to build than commercial units
- Utilize the same “core sensor component” that are in the commercial units
- Once the initial firmware has been downloaded .. Supports OTA – (over the air updates)

```
# tell esphome which board you are using
esphome:
  name: rs12ms01
  platform: ESP8266
  board: nodemcuv2
# provide wifi connection inf
wifi:
  ssid: "xxxxxxxxxxxxxxxxxxx"
  password: "xxxxxxxxxxxxxxx"
# Enable logging
logger:
# Enable Home Assistant API
api:
# enable "over the air updates"
ota:
# Setup Reboot Remotely switch entity
switch:
  - platform: restart
    name: "rs12ms01_restart"
# Now define the sensor
sensor:
  - platform: dht
    model: am2302
    pin: D1
    temperature:
      name: “Living Room Temperature"
    humidity:
      name: “Living Room Humidity"
    update_interval: 60s
#
```

ESPHOME - Choose from 3 types of Nodes

ESP8266	ESP32	RP2040
ESP8266	ESP32	RP2040

6pcs ESP8266 NodeMCU LUA CH340 ESP-12E WiFi Internet Development Board 4M Flash Serial Wireless Module for Arduino IDE/Micropython New Version

★★★★½ 96

$20.99

prime FREE Delivery **Thu, Dec 22**

Arrives before Christmas

Sponsored

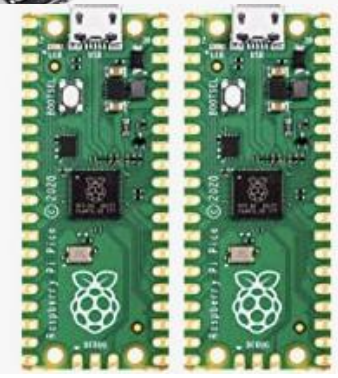
Teyleten Robot ESP32S ESP32 ESP-WROOM-32 Development Board 2.4GHz Dual-Core WiFi +Bluetooth 2 Function Microcontroller for Arduino (ESP32 30P, 3PCS)

★★★★½ 346

$17.88 ~~$19.88~~

prime FREE Delivery **Thu, Dec 22**

Arrives before Christmas



Raspberry Pi Pico RP2040 microcontroller - in US Stock, Ready to Ship (2 Pack)

★★★★½ 492

$14.99

FREE Delivery by **Fri, Dec 30** for Prime members

More Buying Choices

$13.29 (8 new offers)

Choose the sensor you need

ESPHome

Quick search

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Text Sensor Components
Climate Components
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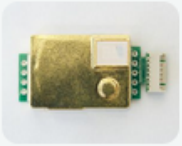
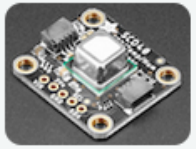
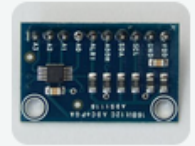
Lock Components

Air Quality

		
AirThings BLE Radon	CCS811 CO2 & Volatile organics	HM3301 Particulate
		
MH-Z19 CO2 & Temperature	PM1006 Sensor Particulate	PMSA003I Particulate
PMSX003	RadonEye INNOVATIVE NEW RADON SENSOR & DETECTOR	
PMSX003 Particulate	RadonEye BLE Radon	SDS011 Sensor Particulate
		
SEN5x Temperature & Humidity	SenseAir CO2	SCD30 CO2 & Temperature & Humidity
		
SCD4X		SGP4X

Analogue

		
ADC ESP internal	ADC128S102 8-channel ADC	ADS1115 4-channel ADC
		
CD74HC4067 16-channel analog multi-plexer	MCP3008 8-channel ADC	MCP3204/MCP3208 4-channel ADC
		
Resistance		

Bluetooth Low Energy (BLE)

		
AM43 Lux & Battery level	BLE Client Sensor	BLE RSSI
		

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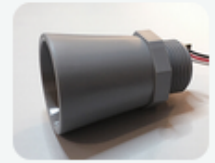
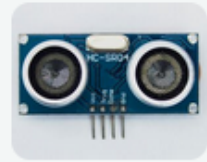
Digital Signals

Duty Cycle	Pulse Counter	Pulse Meter
Pulse Width		

Distance

		
HRXL MaxSonar WR Acoustic distance	TOF10120 IR optical distance	Ultrasonic Sensor Acoustic distance
		
VL53Lox IR optical distance		

Electricity

ADE7953		
ADE7953 Power	ATM90E32 Voltage & Current & Power	BL0939 Voltage & Current & Power & Energy
		
BL0940 Voltage & Current & Power	BL0942 Voltage & Current & Power	CS5460A Voltage & Current & Power
CSE7761	CSE7766	
CSE7761 Voltage & Current & Power	CSE7766 Voltage & Current & Power	CT Clamp AC current
	DSMR	HLW8012
Daly BMS	DSMR	HLW8012

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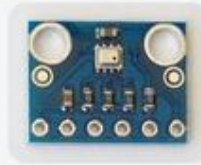
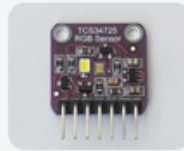
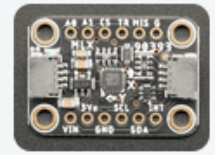
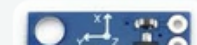
Environmental

		
AHT10 / AHT20 / AHT21 / DHT20 Temperature & Humidity	AirThings BLE Temperature & Humidity & Pressure	AM2320 Temperature & Humidity
		
BME280 Temperature & Humidity & Pressure	BME680 Temperature & Humidity & Pressure & Gas	BME680 via BSEC Temperature & Humidity & Pressure & Gas
		
BMP085 Temperature & Pressure	BMP280 Temperature & Pressure	BMP388 and BMP390 Temperature & Pressure
		
b-parasite	Dallas DS18B20	DHT

Light

		
AM43 Lux	APDS9960 Colour & Gesture	BH1750 Lux
		
LTR390 Lux & UV	MAX44009 Lux	TCS34725 Lux & RGB colour
		
TSL2561 Lux	TSL2591 Lux	

Magnetic

		
ESP32 Hall Sensor ESP internal	HMC5883L 3-Axis magnetometer	MLX90393 3-Axis magnetometer
		

Motion

		
APDS9960 Colour & Gesture	MPU6050 Accelerometer & Gyroscope	MPU6886 Accelerometer & Gyroscope
		
RuuviTag Temperature & Humidity & Accelerometer		

Thermocouple

		
MAX31855 K-Type	MAX31856 All types	MAX31865 Platinum RTD
		

Binary Sensor Components

		
Binary Sensor Core	GPIO	Home Assistant
		
Status	Analog Threshold	ESP32 BLE Presence
		
ESP32 Touch Pad	Hydreon Rain Sensor Binary Sensor	MPR121 Capacitive Touch Sensor
		
Nextion Binary Sensor	Template Binary Sensor	PN532
		
RC522	RDM6300	TTP229
		

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- Select Components

Output Components

Output Core	ESP8266 Software PWM	Slow PWM
GPIO Output	ESP32 DAC	ESP32 LEDC
AC Dimmer	PCA9685	TLC59208F
TLC5947	MY9231/MY9291	SM16716
SM2135	MCP4725	MCP4728
MCP47A1	DAC7678	BLE Binary Output

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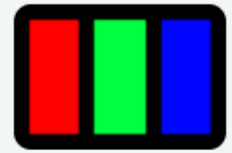
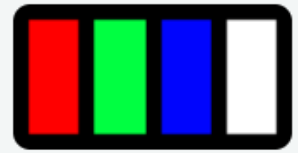
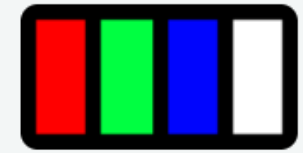
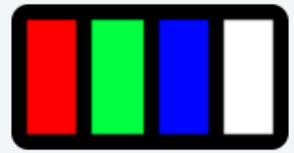
Light Components

		
Light Core	Binary Light	Status Led
		
Monochromatic Light	Cold+Warm White Light	Color Temperature Light
		
RGB Light	RGBW Light	RGBWW Light
		
RGBCT Light	FastLED Light	NeoPixelBus Light
		
Light Partition	Tuya Dimmer	Shelly Dimmer
		
Custom Light	H-bridge Light	Sonoff D1 Dimmer

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Display Components

Display Core	Addressable Light	LCD Display
MAX7219	MAX7219 Dot Matrix	TM1621
TM1637	TM1638	Nextion
PVVX MiThermometer	SSD1306	SSD1322
SSD1325	SSD1327	SSD1331
SSD1351	ST7735	ST7789V

So .. You ready to try it …

… What Hardware will it run on ?

Want HA but don’t want to “build from parts” ..

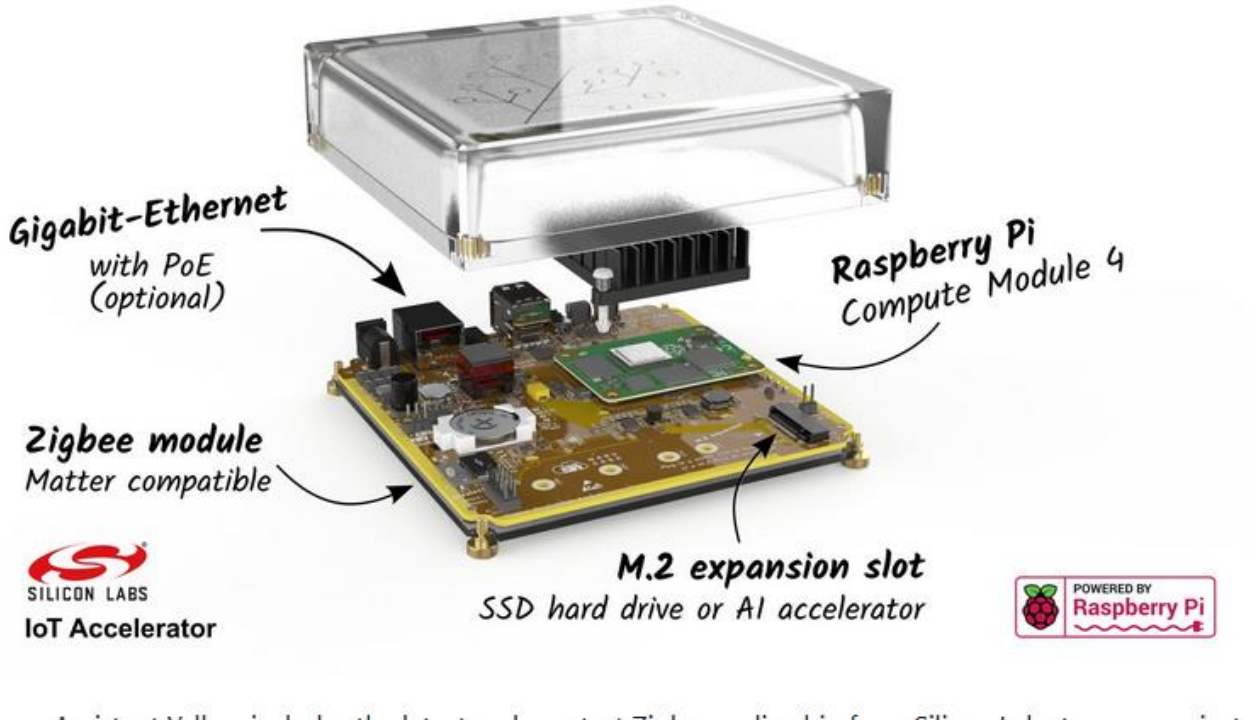
https://www.home-assistant.io/blue/

Also ….
Check out the Home Assistant YELLOW Project

Home Assistant Yellow grows with you.

A home is not static. As we grow as a person or expand our family, our homes evolve. What we buy today, should work tomorrow. With Home Assistant Yellow we have created a system that can be upgraded so it can keep up as you grow.

At the heart of Home Assistant Yellow is the Raspberry Pi Compute Module 4. This plugs into the Home Assistant Yellow board and provides the brains. You can upgrade to a more powerful version of the Compute Module 4 at any time.



https://www.crowdsupply.com/nabu-casa/home-assistant-yellow

Raspberry Pi

- Home Assistant Operating System
- Home Assistant Container
- Home Assistant Core

Raspberry SC15184 Pi 4 Model B 2019 Quad Core 64 Bit WiFi Bluetooth (2GB)

Brand: Raspberry

16,613 ratings | 178 answered questions

$135.00

prime

FREE Returns

With Amazon Business, you would have saved $85.43 in the last year. Create a free account and save up to 1% today.

Best price

Pay ~~$135.00~~ $91.96 after using available Amazon Rewards Visa Card Points.

May be available at a lower price from other sellers, potentially without free Prime shipping.

Size: 2GB

$119.37 prime | $135.00 prime | $174.90

ODROID

- Home Assistant Operating System
- Home Assistant Container
- Home Assistant Core

Amazon's Choice

ODROID N2 Single Board Computer (SBC) (4GB) with Power Supply

4.4 out of 5 stars 35

$136.95

Get it **Wed, Dec 28 - Fri, Dec 30**

FREE Shipping

Options: 2 sizes

WHAT Will HOMEASSISTANT RUN ON?

ASUS Tinkerboard

- Home Assistant Operating System
- Home Assistant Container
- Home Assistant Core

-Package Content-

Power Adapter

+

Micro USB Cable

+

Tinker Board S R2.0 Single Board Computer RK3288 SoC 1.8GHz Quad Core CPU, 600MHz Mali-T764 GPU, 2GB LPDDR3 & 16GB eMMC Motherboard

Brand: SmartFly info

5 ratings

$149.99

prime

FREE Returns

With Amazon Business, you would have saved $85.43 in the last year. Create a free account and save up to 11% today.

Best price

May be available at a lower price from other sellers, potentially without free Prime shipping.

Enhance your purchase

Payment plans

2 options from $25.00/mo (6 mo) with 0% APR

One-time payment $149.99

Generic x86-64 (e.g. Intel NUC)

- Home Assistant Operating System
- Home Assistant Container
- Home Assistant Core

ORDER PLACED November 28, 2022 | TOTAL $137.04 | SHIP TO Bruce P Semple

Delivered Dec 7, 2022

lenovo ThinkCentre M900 Tiny Desktop Micro Tower PC (Intel Core i5-6500T, 8 GB Ram, 256 GB SSD, USB 3.0, WiFi) Windows 10 Pro (Renewed)

Return eligible through Mar 3, 2023

Buy it again | View your item

Home Assistant Installation Options

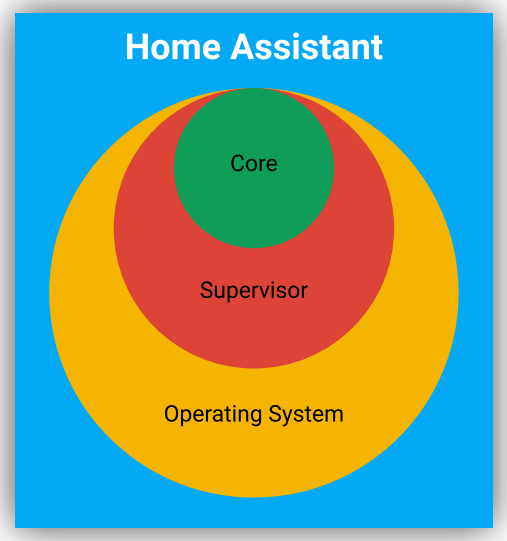
Home Assistant offers four different installation methods. We recommend using one of the following two methods:

- **Home Assistant Operating System**: Minimal Operating System optimized to power Home Assistant. It comes with Supervisor to manage Home Assistant Core and Add-ons. Recommended installation method.
  - HASIO
- **Home Assistant Container**: Standalone container-based installation of Home Assistant Core (e.g. Docker).

There are two alternative installation methods available for experienced users:

- **Home Assistant Supervised**: Manual installation of the Supervisor.
- **Home Assistant Core**: Manual installation using Python virtual environment.

- There is an installation link provided for each hardware type.
- The subsequent instructions will guide you through the installation steps for that particular type of hardware
- The instructions will provide the link to the installation image that contains both the OS and Home Assistant environment.



Installation – Raspberry Pi

- Mount the SD card on a Windows/Linux system
- Use Balena Etcher (https://www.balena.io/etcher/) to write the bootable image from the website to the SD Card
- Move the SD card to your Raspberry Pi
- Connect Ethernet Cable, & Power On Pi
- About 10-15 minutes later ..
  - Open a browser to http://{your Pi IP address}:8123
- Follow the on screen prompts to complete the setup.

Installation – Generic X86 – M900

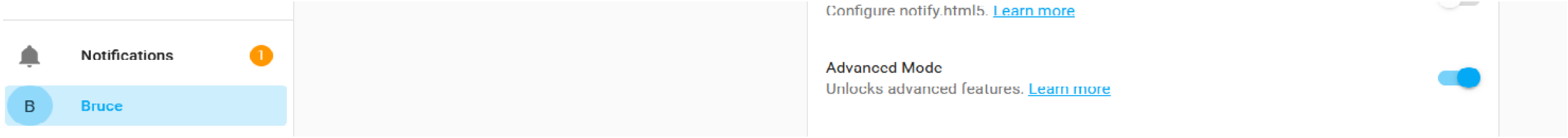
- Open up the M900 and removed the SATA drive
- Attach drive to SATA III USB adapter
- Connect the adapter to your Windows/Linux box
- Use Balena Etcher (https://www.balena.io/etcher/) to write the bootable image from the website SATA SSD drive
- Re-Install the drive in your M900
- Connect Ethernet Cable, & Power On Pi
- About 10-15 minutes later .. Open a browser to http://{your Pi IP address}:8123
- Follow the on screen prompts to complete the setup.

Installation – ODROID N2+

1. Follow the M900 steps to install the boot image to your SATA SDD drive
2. Follow these steps to Configure the ODRIOID N2+ boot order to boot from the USB attached SSD drive.
    1. https://jamesachambers.com/odroid-n2-petitboot-ssd-boot-guide/

Recommended Basic Customization after initial configuration steps

1. Enable “Advanced Mode” - left menu – click on your user/profile name



2. Install the “File Editor” Add on
    1. Left menu, Settings -> AddOns →bottom right – add on store – search for “File Editor”
    2. Follow screen prompts – there is nothing to configure
3. Always, Always … if you make any changes to the configuration .yaml file (using the File Editor above)
    1. left Menu – Developer Tools – YAML tab (top of screen) -- Check Configuration
4. Also consider installing the Terminal & SSH add on – this will give you access to the HA command line interface and enable remote SSH to the system.
5. Get off using an SD memory card and move to an SSD disk

Reference Links

- **Home Assistant** - https://www.home-assistant.io/
- **Home Assistant Community** - https://community.home-assistant.io/
- **ESPHome** - https://esphome.io/
- **ZWAVE** - https://www.z-wave.com/smart-guides

Demo Configuration

DEMONET (WiFi)

ESPHOME Sensor

ESPHOME Sensor

Brewster PD
Guest WiFi

DEMONET
Router

Ethernet connection

Ethernet connection

ZIGBEE Net

ZIGBEE Dongle

ODROID N2+ -
Running HA

USB Conference
Mic / Speaker
plugged into
ODROID

DEMO

- Add Zigbee devices to the network
- Dashboard Demo – create a basic card
- Create a NodeRed Automation Flow
- Demonstrate Rhasspy Voice
  - Add a voice command To invoke a Node Red Flow
  - Add a voice response .