Home Assistant: The local way to do home automation

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What is Home Assistant?

- Created in September and published November of 2013 by Paulus Schoutsen

- A python based web application that helps automate smart devices in your home

- One of its main focuses in on data privacy and keeping the smart home limited to just the home

- In July 2017, Hass.io was created
  - Hass.io is the managed version of Home Assistant initially built for single-board PCs like Raspberry PIs
  - Built to make deployment easier, added a supervisor service to help manage Home Assistant as a whole. This also allowed things like add-ons to be supported as well
- In December of 2017, a subscription service was created to allow easier integration with Voice assistants like Google Assistant or Alexa
  - To be clear, this is in **no way** necessary, just made to make integration easier by having you avoid things like port forwarding and setting up developer services

- In September of 2018, Nabu Casa, Inc. was formed and took over the subscription service
  - This is used purely to fund infrastructure costs and pay some full-time developers
- Starting to fund some new open-source hardware as well, like the SkyConnect stick or Home Assistant Blue reference hardware platform
 - Based of a modified ODROID N2+ machine

What can Home Assistant actually do?

- Controls devices that are discovered locally or through various services

- Most smart home manufacturers work with Home Assistant in one way or another through community integrations

- Can create dashboards, automations, and blueprints, which we will get into shortly

Types of hardware

- WiFi / IP devices (wifi switches, plugs, chromecasts/tvs, printers (2d or 3d), etc)
- Zigbee devices
  - 2.4GHz
  - Generally more open of a standard (IEEE 802.15.4)
- Z-Wave devices
  - 900MHz range
  - Has stricter specifications for devices to be certified
- Thread/Matter
  - New smart home protocol that has support of most major smart home device manufacturers
  - Matter is based on Thread, Thread is 6LoWPAN on top of 802.15.4 networks, meaning many Zigbee devices can technically be converted to Thread/Matter devices
- MQTT
  - Not really a physical protocol, but it is a lightweight publish-subscribe protocol that Home Assistant can use to facilitate communication between sensors and devices as well

Example Dashboard
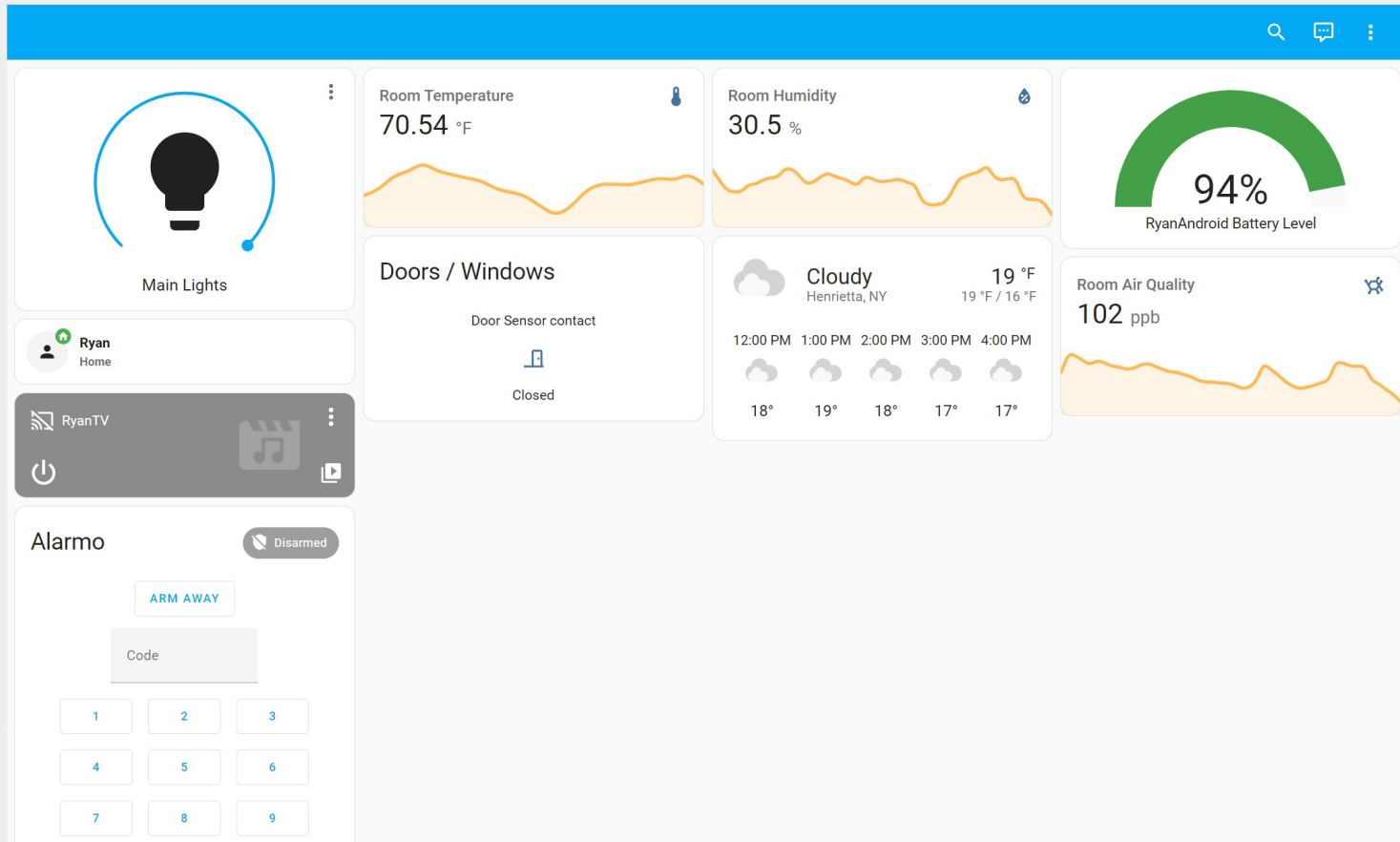
Automations

- One of the most powerful features of Home Assistant is the automations

- Since Home Assistant is constantly monitoring all of your devices, you can create almost any automation you can think of

- Some examples
  - Turning on your TV to a certain radio station as your alarm goes off
  - Turn lights on when you get back to your room when arriving home

Let's look at a few examples!

Scenes

- Sort of like automations, scenes are where you have a room set to a predefined state that you can turn on and off at will (or through an automation)

- Examples:

  - A preset for whenever you watch a movie that turns down your lights, turns off any smart speakers playing music, and turns your TV on