THOMAS MORE

Introduction To Home Assistant

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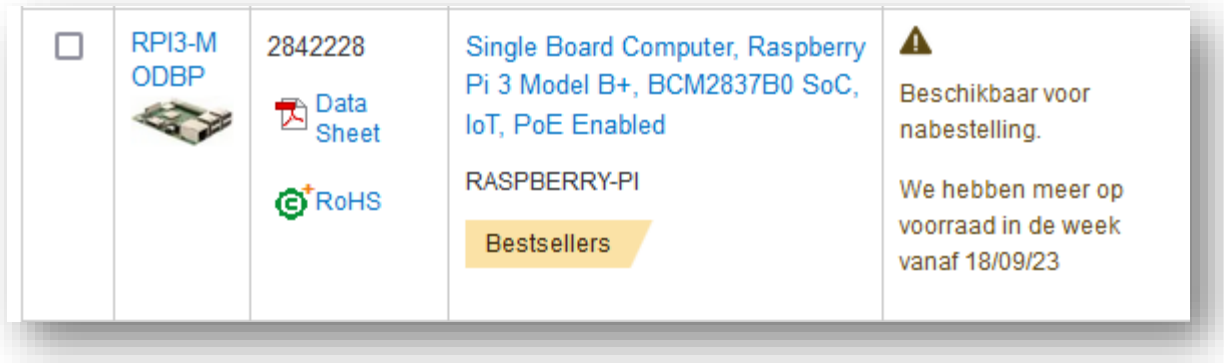
- Chosing a platform
- Installation
- First steps
- Add devices
- Visualisation
- Automation

- Thomas More programs related to IoT
  - Main focus on
    - Embedded systems
    - Home Automation – Smart Homes
      - » KNX
      - » Projects related to Smart Homes
        - Home Assistant
        - Openhab

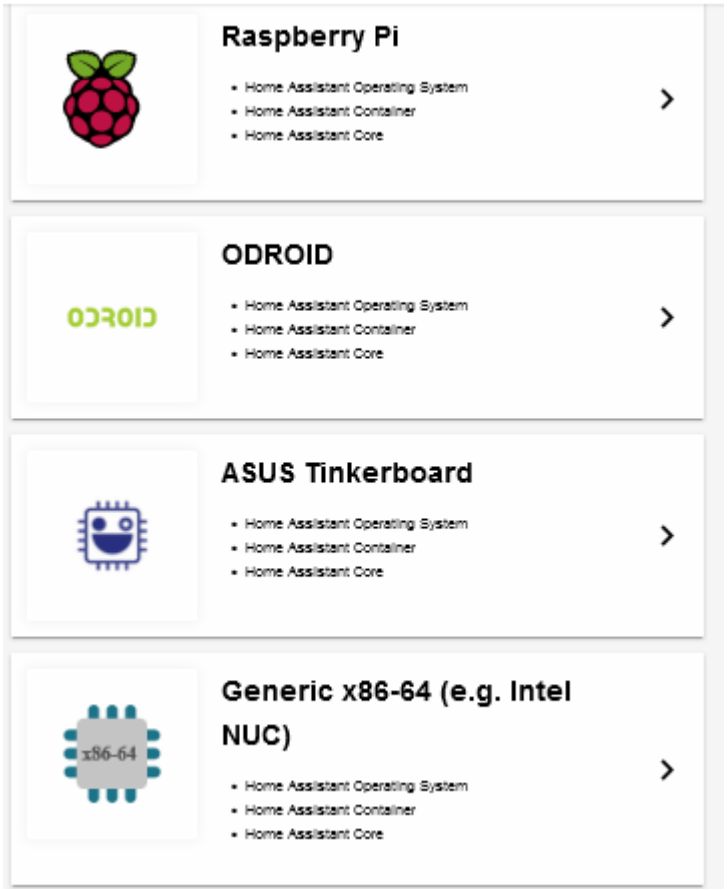
- Home Assistant
  - Well documented
  - A lot of tutorials and instruction videos (youtube)
  - Configuration
    - Yaml files configured
      - » Through UI
      - » With editor

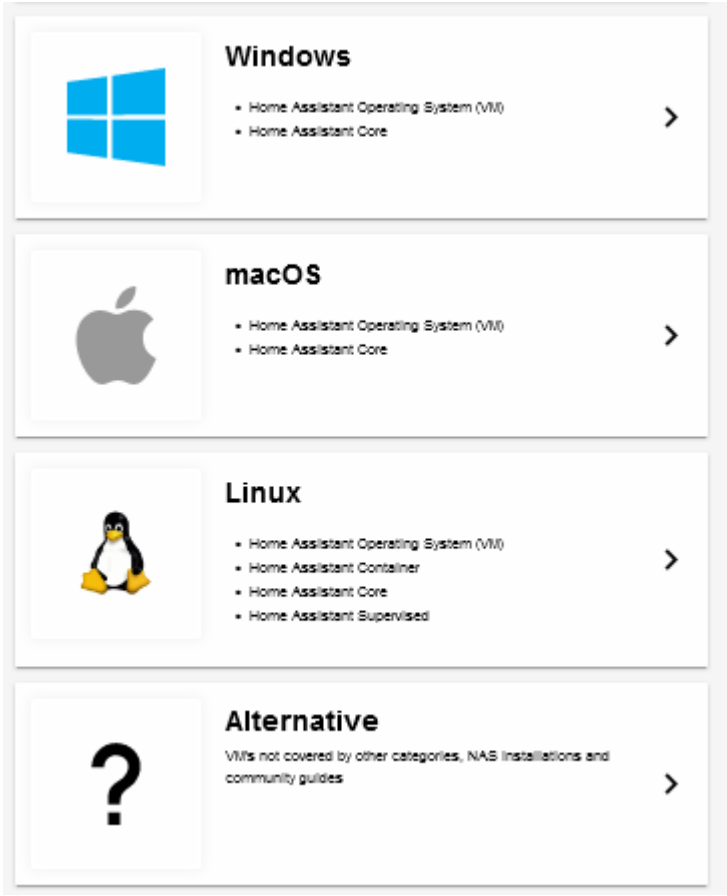
- @ University (and internet tutorials):
  - mainly Raspberry Pi
    - Advantages:
      - » Students are experienced with Rpi
      - » Easy setup by writing an image to the SD card
    - Disadvantage:
      - » Errors in config files (YAML) might cause trouble for startup
      - » Shortage in Rpi’s



Chosing a platform

- Other possibilities:





Installation Methods

	OS	Container	Core	Supervised
Automations	✅	✅	✅	✅
Dashboards	✅	✅	✅	✅
Integrations	✅	✅	✅	✅
Blueprints	✅	✅	✅	✅
Uses container	✅	✅	❌	✅
Supervisor	✅	❌	❌	✅
Add-ons	✅	❌	❌	✅
Backups	✅	✅[1]	✅[1]	✅
Managed OS	✅	❌	❌	❌

Operating System:
- Runs on Home Assistant OS
- All in

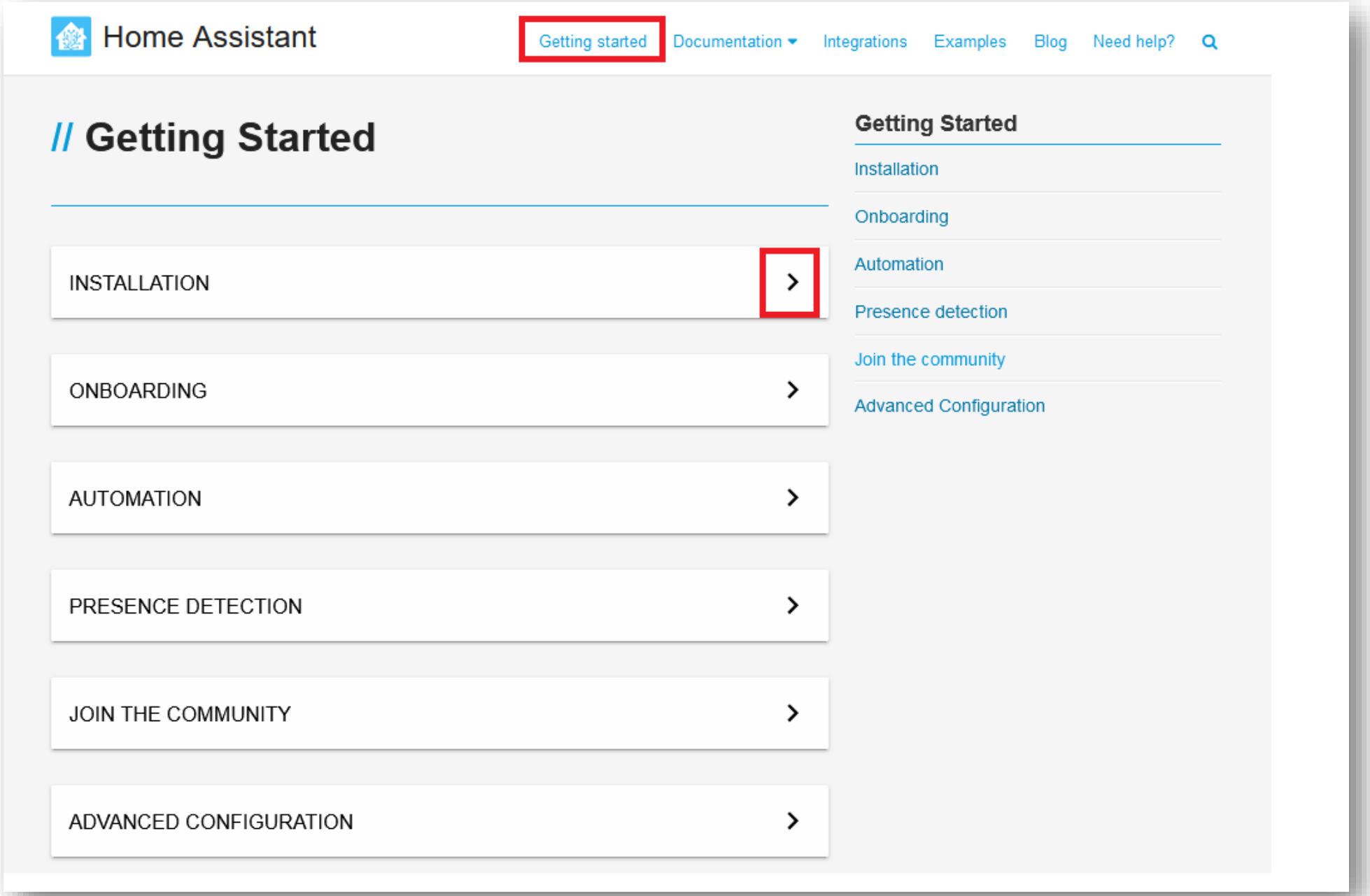
Container:
- Runs on containerization system
- Not all features provided

Core:
- Runs directly on Python
- Not all features provided

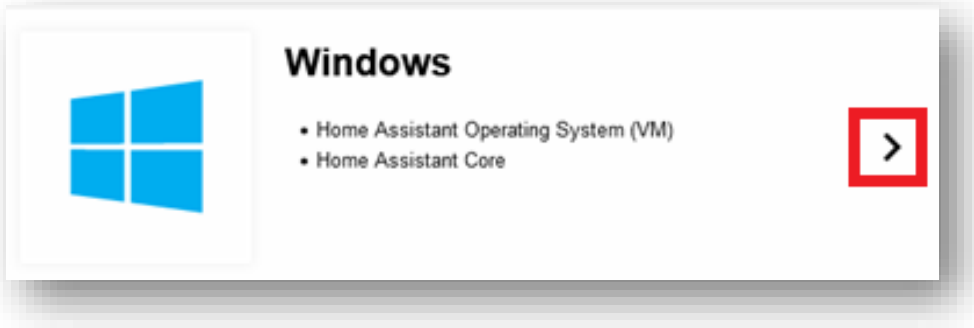
Supervised:
- Runs on regular Linux
- All features available

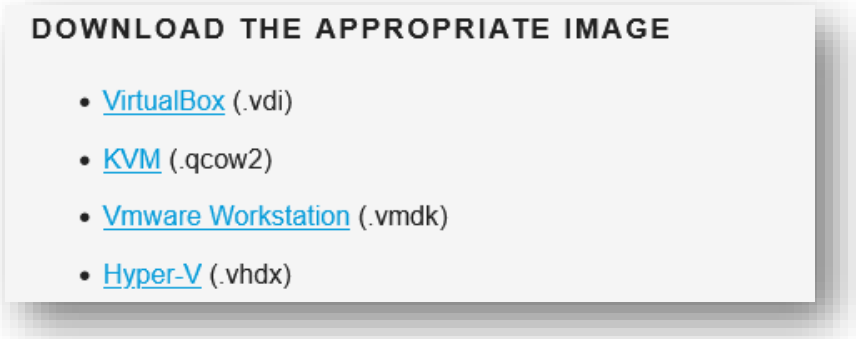
- Having Add-ons makes life easier (integrations of devices provided)

Installation



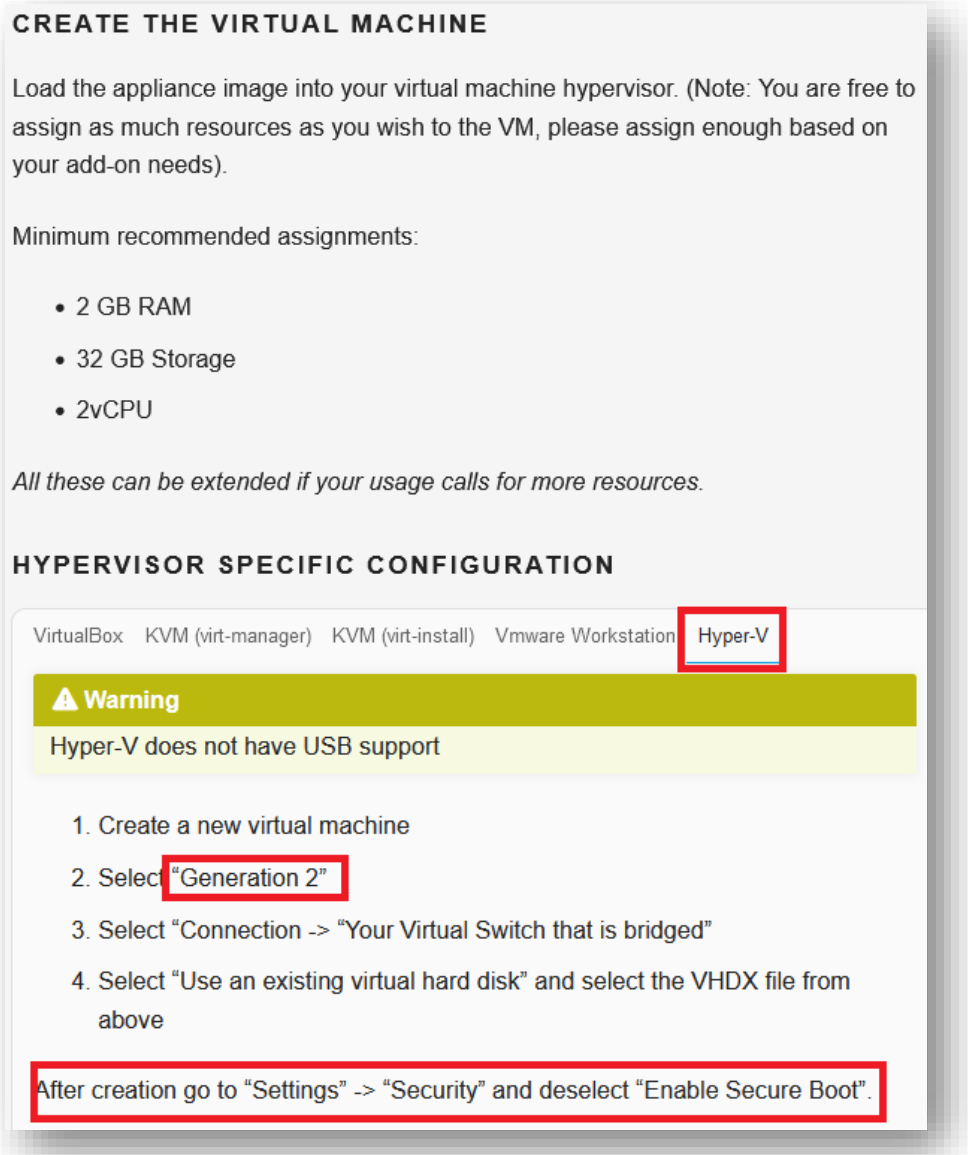
- Select your distribution and read (!!!) the installation procedure
  - Example: Windows Home Assistant OS for Hyper-V
    - Advantage of virtual machines
      - » One can provide a checkpoint before messing up the configuration





Installation

- Don’t forget to check the configuration of your hypervisor



CREATE THE VIRTUAL MACHINE

Load the appliance image into your virtual machine hypervisor. (Note: You are free to assign as much resources as you wish to the VM, please assign enough based on your add-on needs).

Minimum recommended assignments:

- 2 GB RAM
- 32 GB Storage
- 2vCPU

All these can be extended if your usage calls for more resources.

HYPERVISOR SPECIFIC CONFIGURATION

VirtualBox KVM (virt-manager) KVM (virt-install) Vmware Workstation Hyper-V

⚠ Warning

Hyper-V does not have USB support

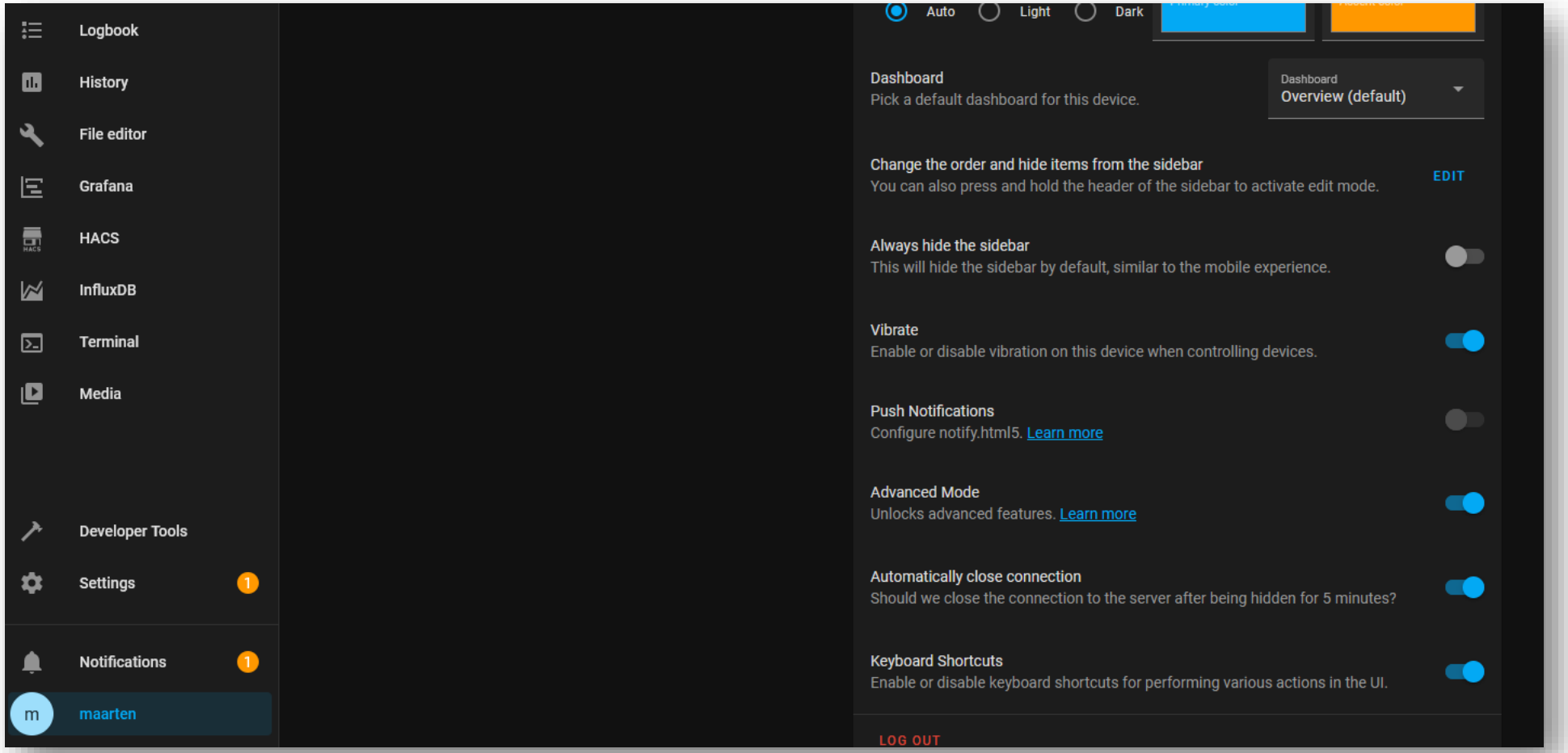
1. Create a new virtual machine
2. Select “Generation 2”
3. Select “Connection -> “Your Virtual Switch that is bridged”
4. Select “Use an existing virtual hard disk” and select the VHDX file from above

After creation go to “Settings” -> “Security” and deselect “Enable Secure Boot”.

- After setup:
  - Start the virtual machine
  - Browse to http://<ip of virtual machine>:8123
  - Follow initialisation instructions

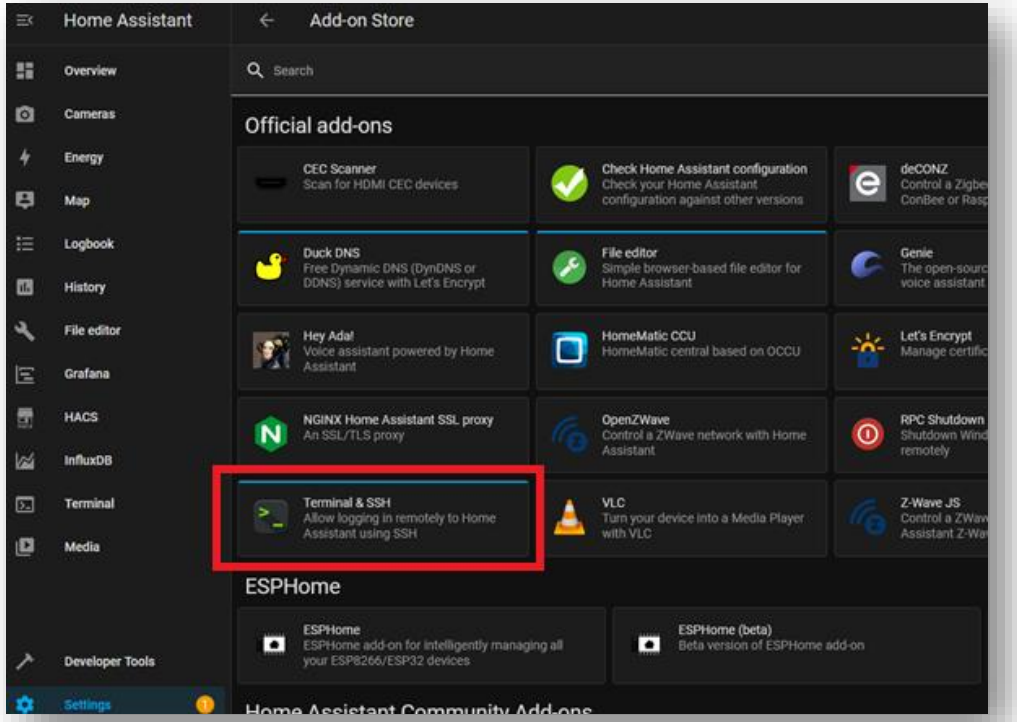
First steps to take

- Set Advanced mode (required to install ssh)

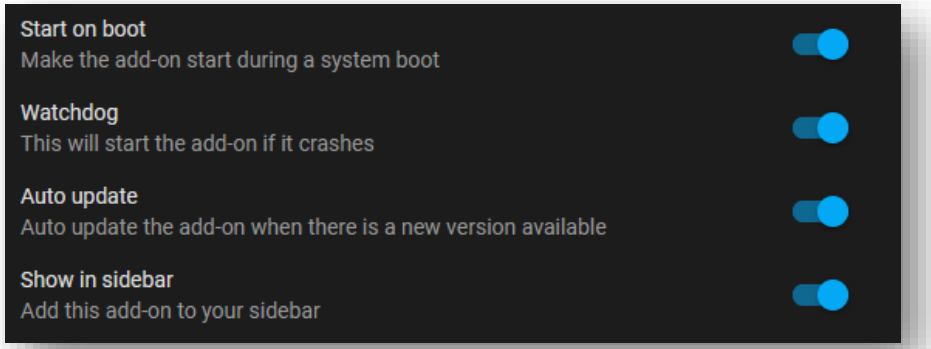


First steps to take

- Installation of Terminal / ssh
  - Select Settings → Add-Ons
    - Installed Add-Ons are shown (initially none)
    - Select Add-On Store (bottom right)



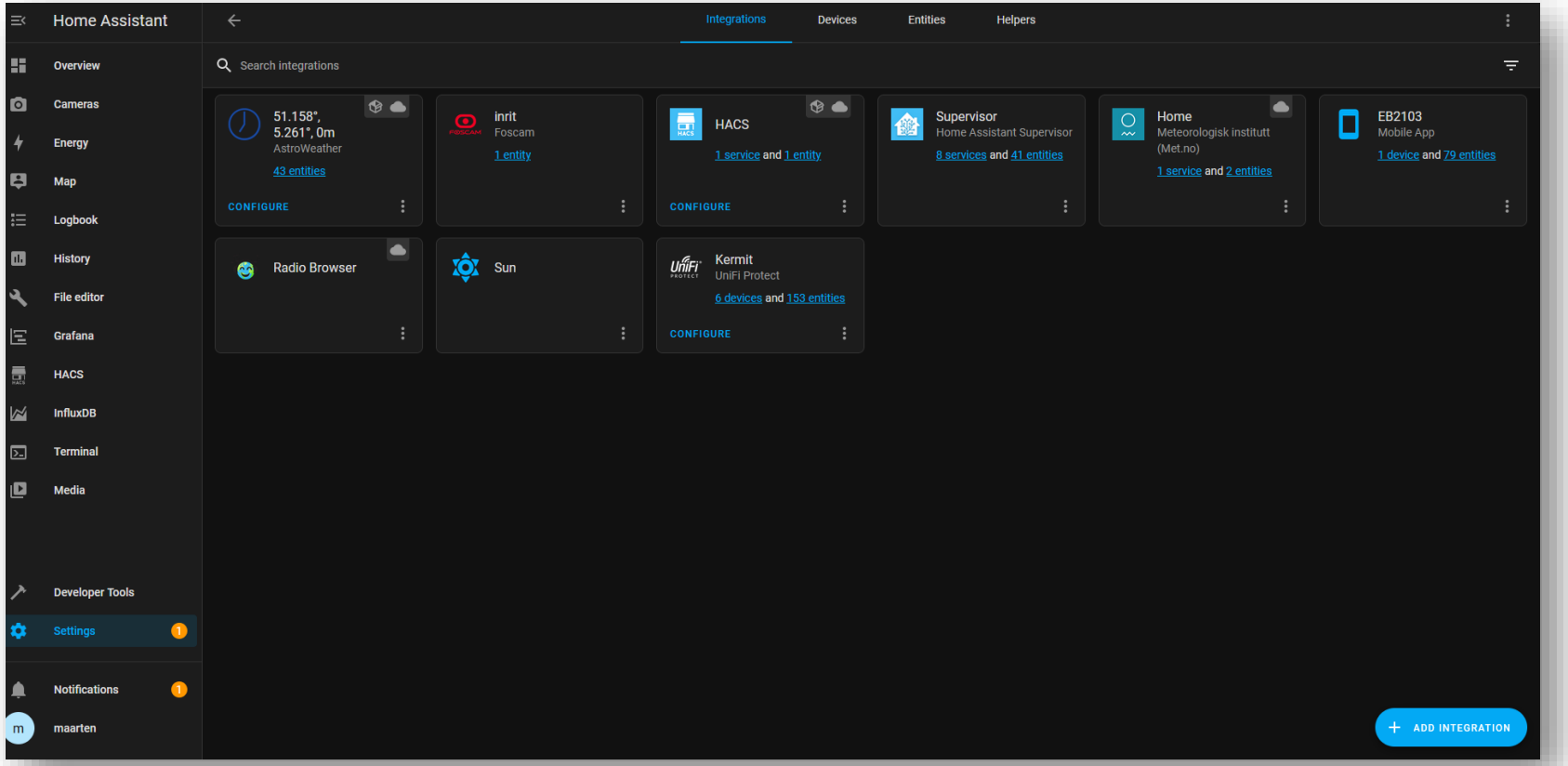
→ Install → set options



First steps to take

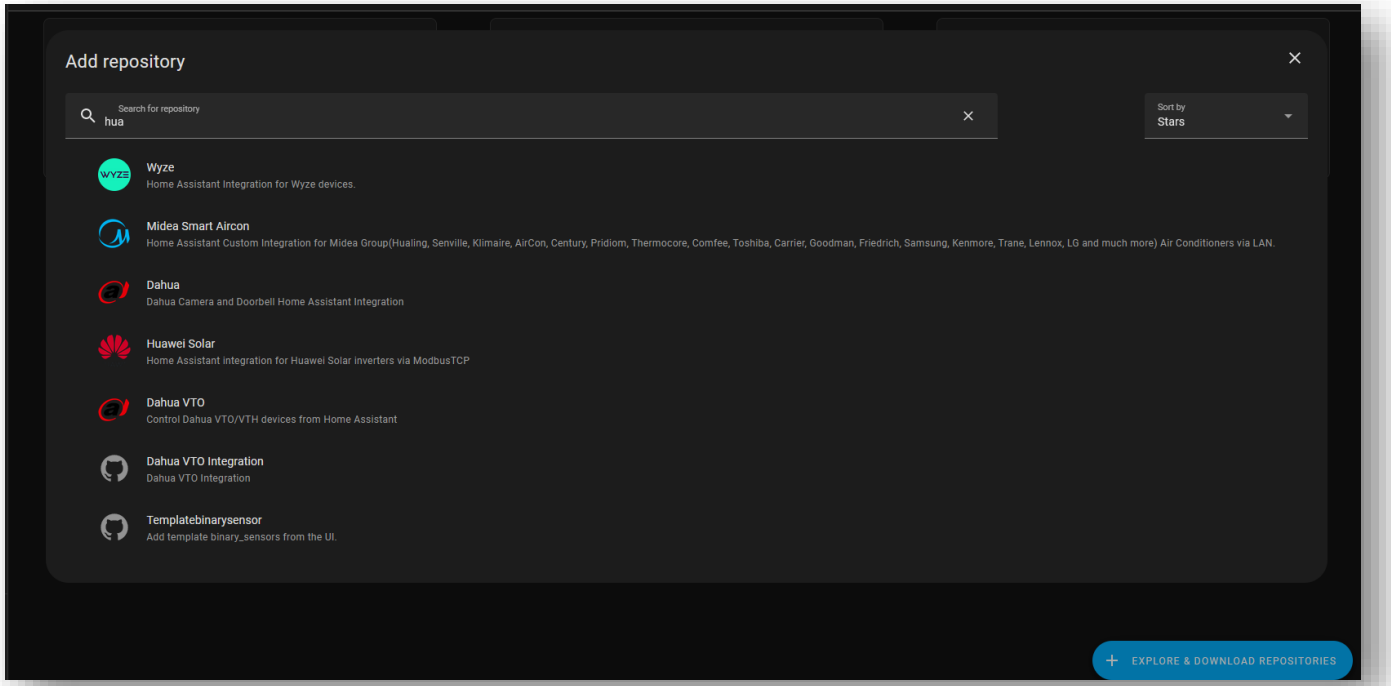
- Install HACS
  - Provides additional intergrations
  - Installation done with installed terminal
  - Instructions online documented
    - https://hacs.xyz/docs/setup/download
    - https://hacs.xyz/docs/configuration/basic

- Built-in intergrations:
  - Settings → Devices & Services → Add Integration



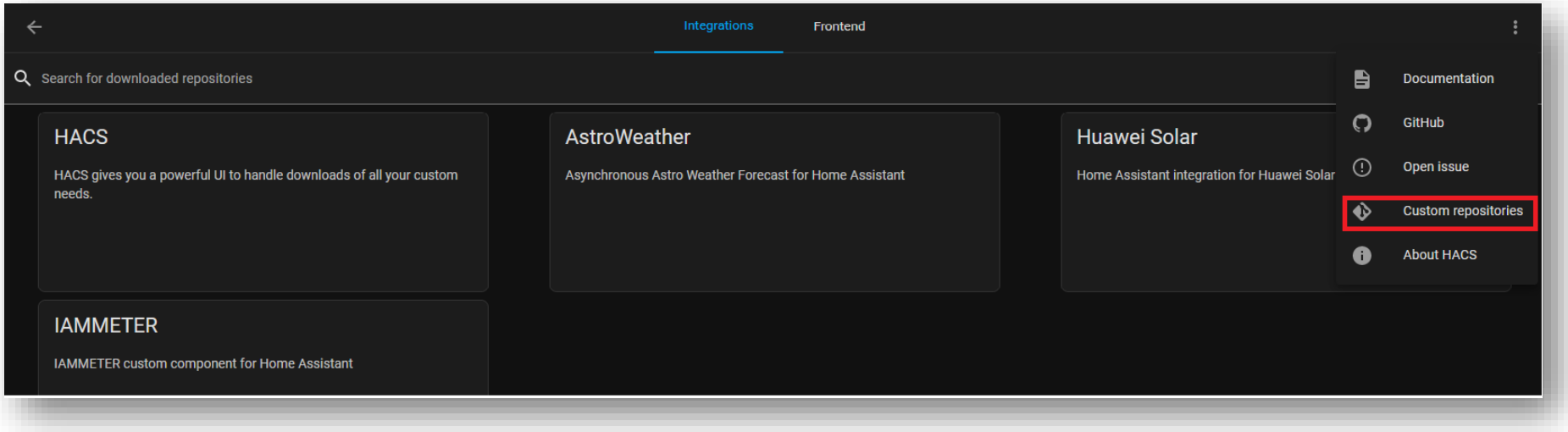
  - Devices shows devices related to the installed integrations
  - Entities shows properties/events related to installed integrations

- Additional integrations:
  - HACS → Integrations → Explore & Download Repositories



  - Select the integration
  - Download & restart Home Assistant (Developer Tools → restart)

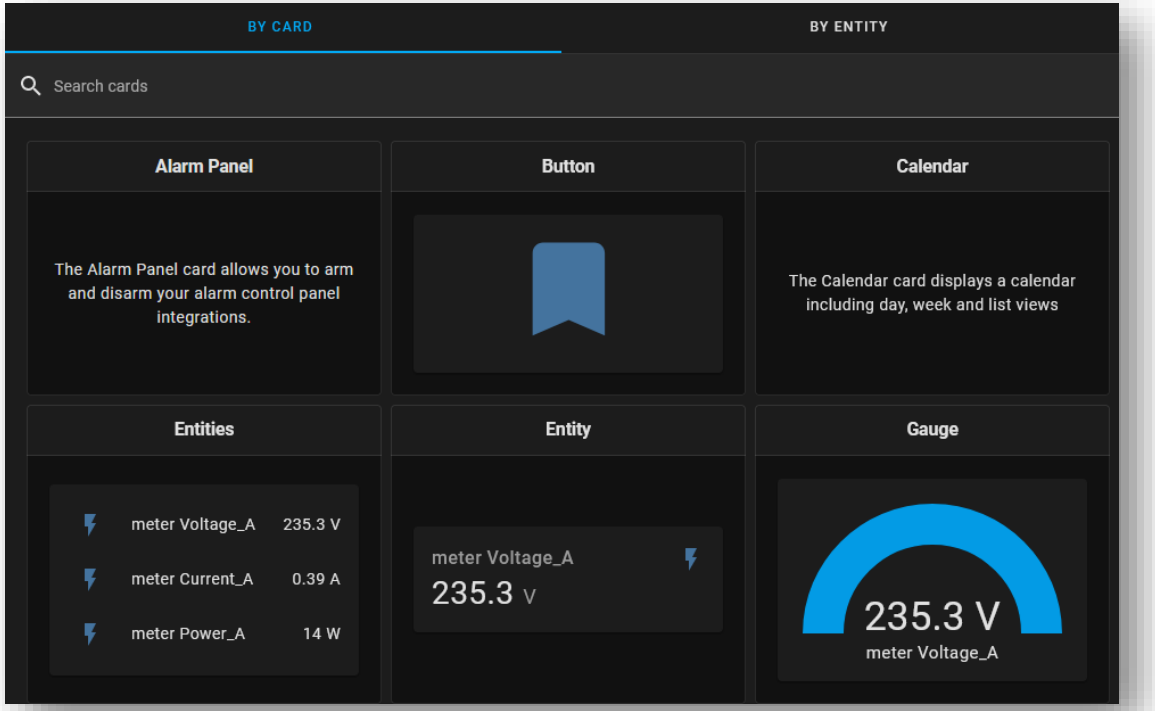
- Additional integrations:
  - Add other repositories to HACS
    - Select an option (eg integrations)



- Dashboards
  - One can add/customize them
    - Settings → Dashboards → Add Dashboard
  - One can customize them
    - Select dashboard
    - Select 3 dots at the upper right and select edit

visualisation

- Dashboards
  - A dashboard contains cards
    - When adding a card, one can chose
      - » A predefined card (BY CARD tab)
      - » An entity to visualize (BY ENTITY tab) afterwards a card will be proposed

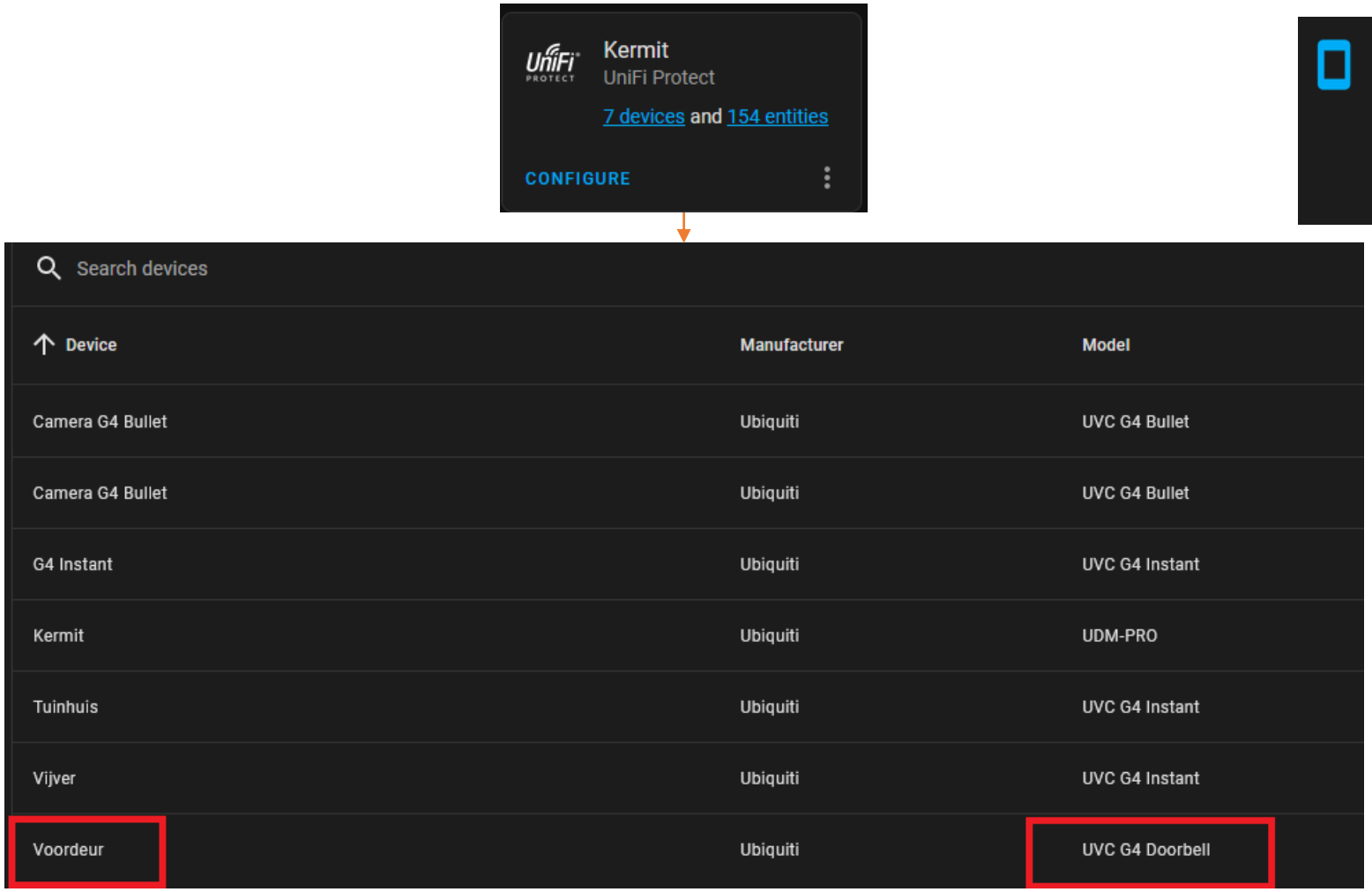


Automation

- Automation:
  - Settings → automation & Scenes → Create Automation
    - Select the trigger → When doorbell changes
    - Provide eventual conditions
    - Select the Action → Notifications: Send a notification via mobile_app_eb2103
  - Not: multiple triggers, multiple conditions and multiple actions are possible

Automation

- Automation:
  - Events trigger actions (eg doorbell → message on smartphone)



Final notes

- Always make a checkpoint when adding things or changing configurations
- Before restart, check the configuration (Developer Tools → Check Configuration)
- On the internet there are a lot of guidelines on how to integrate a certain device, however not every guidline is detailed enough or correct