Automating your life with Home Assistant and Open Source

Mike Nelson
Technology Evangelist
Pure Storage

```
Write-Output "Loading profile..."
Start-Sleep -Seconds 1

# Presenter Information
$name = "Mike Nelson"
$title = "Technology Evangelist @ Pure Storage"
$hobbies = @("3D printing", ”gadgets”, "maker
stuff”, “off-trail ATV", "smoking BBQ")
$familyPhoto =”my_family.png"

Write-Output "Family Picture: [Displaying...]"
```

Microsoft® MVP Most Valuable Professional

Why Home Assistant?

- Vendor independence
- Multiple installation options
- Free software (hardware required)
- 4k+ integrations/blueprints/helpers
- Multiple protocols
- Community driven and supported
- Local and/or remote management

How will this help my life??

- Make tasks & routines easier
- Simplify what you do to accomplish X, & Y, & Z
- Explore new ways of automation
- Automations are way cool
- Creative and cool interfaces
- Tinkering

Walk first

- Plan the home
- Install
- Config the basics
- Focus on integrations & blueprints first
- Dashboards → Last

Selling it to the ~~Sp~~House

- It’s the future!
- It is critical for home/people/animal/thing automation & observability
- Think “resale value”
- Everything you need is on one device (kinda)
- Your friends will be jealous

Telemetry & online demo

https://analytics.home-assistant.io

https://demo.home-assistant.io

Hardware & Software

- Hardware solutions:
  - Raspberry Pi
  - Green (pre-configured)
  - Yellow (needs build/config)
  - VM, Docker, K8s
  - Old laptops, thin clients – anything with a compute pulse ☺

Integrations you maybe gotta have

- LLM Vision / OpenAI Conversation (+ extended), Gemini, Ollama, AILocal
- Wyoming protocol (voice assist)
- Presence simulation (way cool!)
- Adaptive Lighting (way cooler!!)
- Spook
- CalDav
- Zigbee / Z-wave / matter / threads (with dongles)

Add-Ons you maybe gotta have

- Frigate (not for me)
- Advanced SSH & Terminal
- Assist microphone
- OpenWakeWord / piper / etc
- Studio Code server
- NAS or cloud backup - easier now!
- Log viewer

1st Project.

Office busy light

Credit: Scott Hanselman 2012

Home Assistant

Joe Zimmerman · 50m ·

Now that my mailbox has Ethernet, what should I put in here? I was thinking a POE esp32 with a door sensor minimum. Looking for better ideas. — looking for ideas.

Home Control Panel
22 Oct 2022
16:36 10
Calendar
Chores
System
Alarm
Rainy
Bicester
16 °C
77 %
19:00 22:00 1:00 4:00 7:00
15° 14° 14° 14° 14°
19.2 °C
Indoor temp
Climate
Energy
Automations

Home Energy Usage

now/d +2m to now | 1m

Top 5 Devices Currently Running

Oven 1Min	Gas Furnace 1Min	Guest Bedroom 1Min	Office 1Min	Living Room 1Min
3.83 kW	380 W	269 W	231 W	176 W

Current Month Total Power Usage

940 kWh

Current Month Bill

$109.24

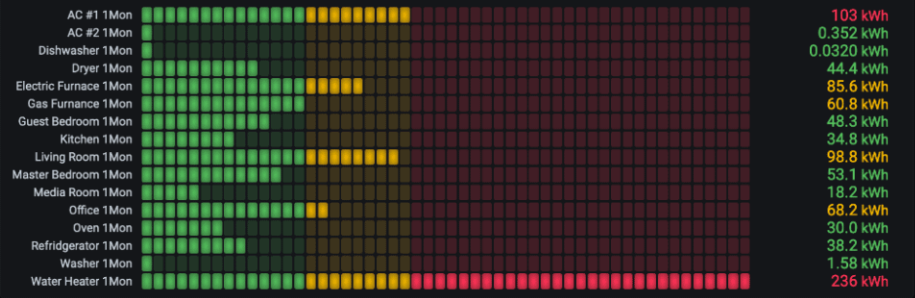
Current Day Power Total

11.1 kWh

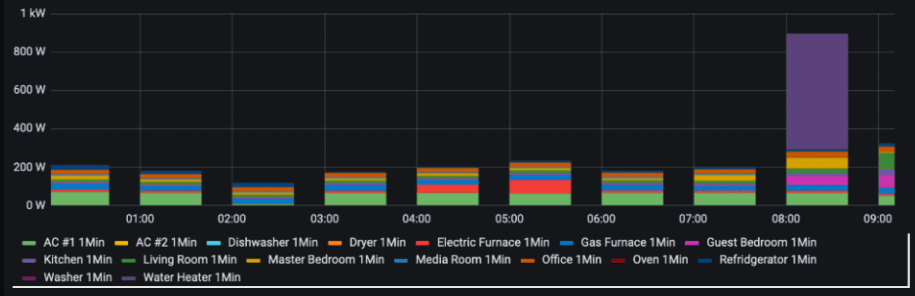
Current Day Power Cost

$1.07

Month Power Total



Hourly Power by Device



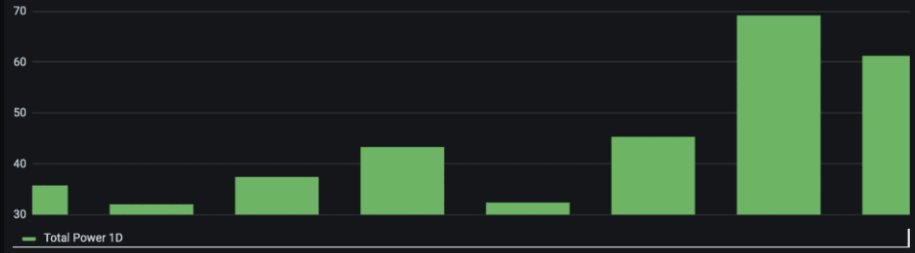
Top 5 Devices Last Week

Last 7 days

	total
Water Heater 1D	79 kWh
Electric Furnace 1D	37 kWh
AC #1 1D	34 kWh
Living Room 1D	32 kWh
Office 1D	21 kWh

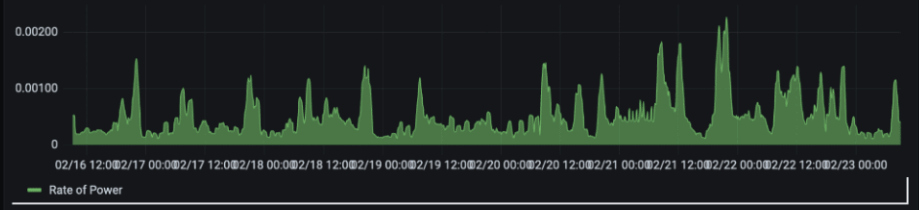
Last 7 days Power Usage

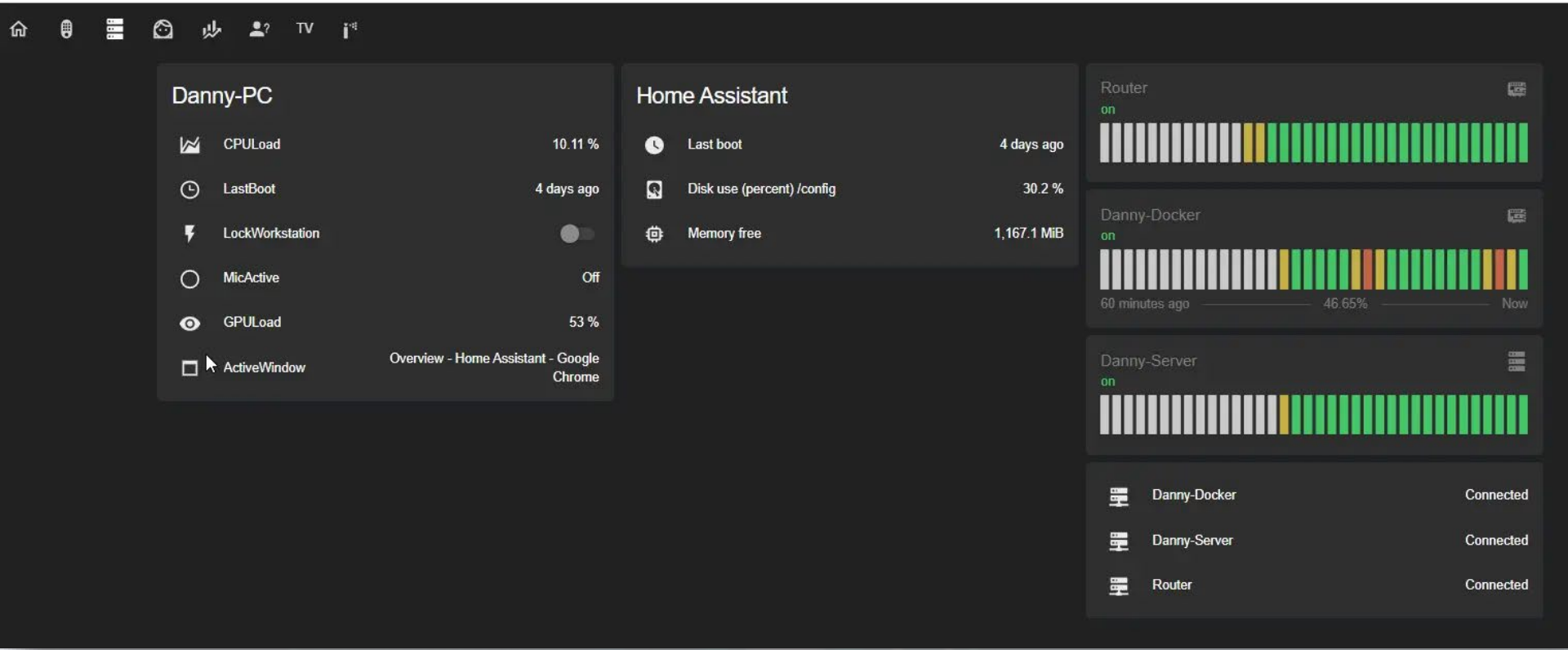
Last 7 days



Power Spikes This Week

Last 7 days

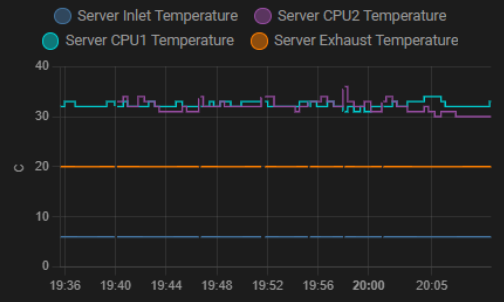



TV
Danny-PC
CPULoad
10.11 %
LastBoot
4 days ago
LockWorkstation
MicActive
Off
GPULoad
53 %
ActiveWindow
Overview - Home Assistant - Google Chrome
Home Assistant
Last boot
4 days ago
Disk use (percent) /config
30.2 %
Memory free
1,167.1 MiB
Router
on
Danny-Docker
on
60 minutes ago
46.65%
Now
Danny-Server
on
Danny-Docker
Connected
Danny-Server
Connected
Router
Connected

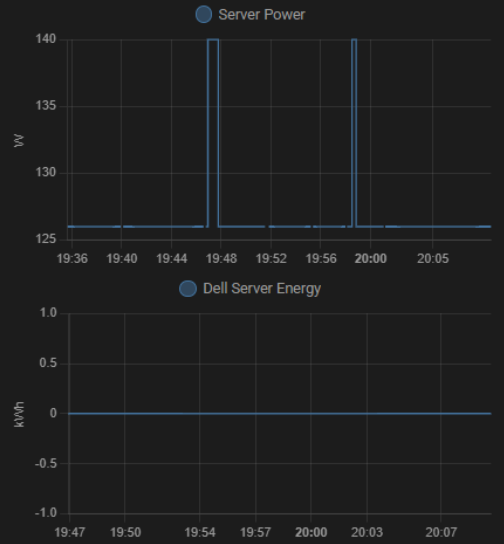
Dell Server

Server Power	126 W
Server Inlet Temperature	6.0 C
Server Exhaust Temperature	20.0 C
Server CPU1 Temperature	33.0 C
Server CPU2 Temperature	30.0 C
Server Fans Speed Avg	3,220 RPM

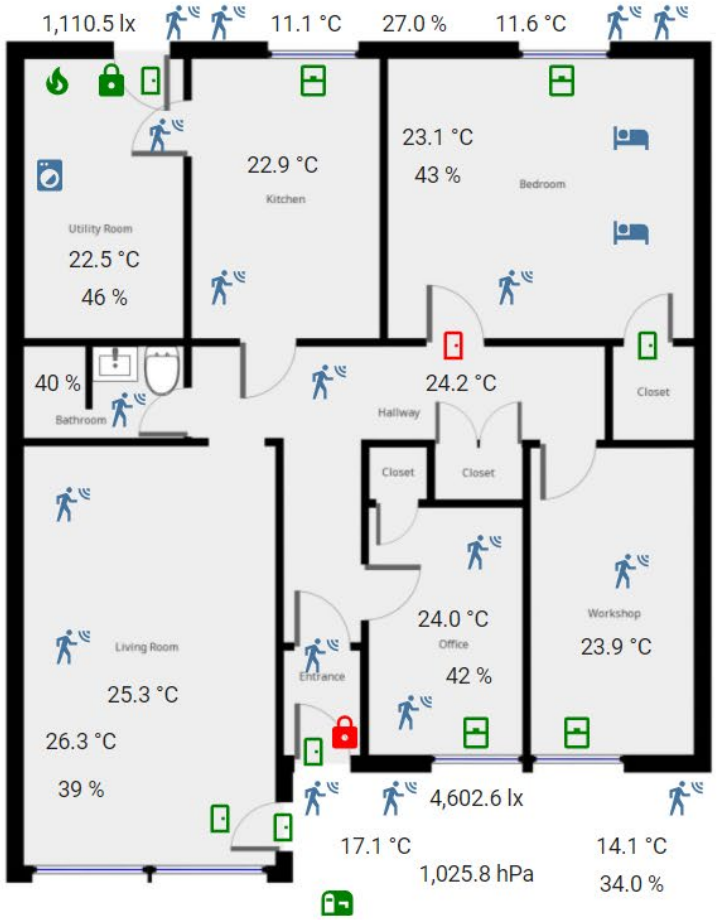
Thermals 24 Hours

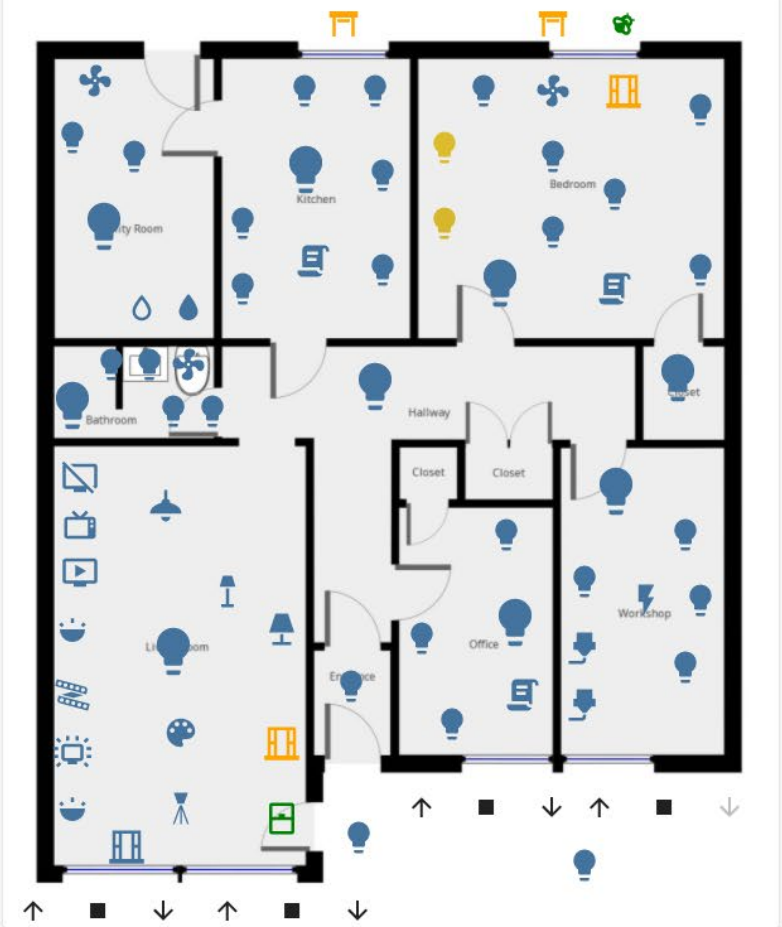


Power 24 Hours



TEST TEST2


1,110.5 lx
11.1 °C
27.0 %
11.6 °C
22.9 °C
Kitchen
23.1 °C
43 %
Bedroom
Utility Room
22.5 °C
46 %
40 %
Bathroom
24.2 °C
Hallway
Closet
Closet
Closet
Living Room
25.3 °C
26.3 °C
39 %
Entrance
24.0 °C
Office
42 %
Workshop
23.9 °C
4,602.6 lx
17.1 °C
1,025.8 hPa
14.1 °C
34.0 %


Kitchen
Bedroom
Bathroom
Hallway
Closet
Closet
Office
Workshop

Config files

```
automation:
  - alias: Turn on Entry Lights When Motion Detected
    trigger:
      - platform: state
        entity_id: binary_sensor.foyer_motion
        to: 'on'
    condition:
      - condition: state
        entity_id: sun.sun
        state: 'below_horizon'
    action:
      - service: light.turn_on
        target:
          entity_id: light.foyer
```

Config files

```
script:
  optimize_hvac:
    alias: Optimize HVAC
    sequence:
      - condition: state
        entity_id: group.family
        state: 'not_home'
      - service: climate.set_temperature
        target:
          entity_id: climate.thermostat
        data:
          temperature: 64
      - delay: "02:00:00"
      - condition: state
        entity_id: group.family
        state: 'home'
      - service: climate.set_temperature
        target:
          entity_id: climate.thermostat
        data:
          temperature: 72
```

Go get It!

Join the community!

Grab a Pi, or some old compute & try it out

Just don't go crazy on the integrations (like someone I know did, you know, a friend ☺)

mikenelson-io

mikenelson.bsky.social

Demos / Q&A

Thanks!

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