

# Home Assistant configuration

Well... this is a long story. We will start from some basic tricks and tips that make the configuration management easier and then we will proceed with some more advanced settings.

Home Assistant use [YAML syntax](#) for its configuration files and the most important file is the configuration.yaml file that is located in /home/homeassistant/.homeassistant/

You can access all the configuration files [via samba](#) from a Windows or Linux machine, or you can edit them using a text editor like nano with the [command line interface \(CLI\)](#). In this case make sure to switch to Home Assistant user to avoid permission issues.

× **Restart** Home Assistant via webui or [via CLI](#) to apply the modification that you have done in the configuration.yaml.

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ nano
/home/homeassistant/.homeassistant/configuration.yaml
```

**configuration.yaml** Change the file name according to your needs.

## Home position in the map (d-diot image v.1.2)

The Home position in the map in the Home Assistant version present in the image v.1.2 is different from the previous one. You can set your position directly in Home Assistant Web UI under Configuration → General, but if you prefer also in the configuration.yaml commenting out and changing the following lines:

[/home/homeassistant/.homeassistant/configuration.yaml](#)

```
# Basic information
#homeassistant:
#  latitude: 32.87336
#  longitude: 117.22743
#  elevation: 430
#  unit_system: metric
#  time_zone: America/Los_Angeles
#  name: Home
```

More details [here](#).

## Configuration splitting

As stated above the configuration.yaml is the most important configuration file of Home Assistant, but to keep it simple to read is a good idea to [split your configuration](#).

By default, but it may vary with the Home Assistant version, some parts of the configuration are already split. You should see something like that in the default configuration.yaml file:

```
group: !include groups.yaml
automation: !include automations.yaml
script: !include scripts.yaml
```

Edit them and add the following lines:

[/home/homeassistant/.homeassistant/configuration.yaml](#)

```
sensor: !include sensors.yaml
binary_sensor: !include binary_sensors.yaml
switch: !include switches.yaml
input_select: !include input_select.yaml
shell_command: !include shell_command.yaml
```

Please note that in the default configuration.yaml you should already have a “sensor” entry that should appear like that:

```
# Sensors
sensor:
  # Weather prediction
  - platform: yr
```

Simply delete this lines, we will cover this aspect [later](#). For the d-diot image 1.2 this line is not present.

Create the new configuration files:

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/sensors.yaml
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/binary_sensors.yaml
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/switches.yaml
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/input_select.yaml
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/shell_command.yaml
```

In the d-diot images above v.1.2 the customize.yaml file is present by default and included in the configuration.yaml under Basic information section.

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ touch
/home/homeassistant/.homeassistant/customize.yaml
```

## Panel iFrame

This configuration will add an entry for lirc\_web and shellinabox in the right column of Home Assistant webui. The lirc\_web and shellinabox web interfaces will be integrated in Home Assistant. Edit the file configuration.yaml and add the following lines:

</home/homeassistant/.homeassistant/configuration.yaml>

```
panel_iframe:
  lircweb:
    title: 'Ir remotes'
    url: 'http://d-diot.local:3000'
    icon: mdi:radiobox-marked
  shellinabox:
    title: 'Shell'
    url: 'https://d-diot.local:4200'
    icon: mdi:powershell
```

For d-diot image v.1.1 and above, with ESPHome installed, add the following lines:

</home/homeassistant/.homeassistant/configuration.yaml>

```
panel_iframe:
  lircweb:
    title: 'Ir remotes'
    url: 'http://d-diot.local:3000'
    icon: mdi:radiobox-marked
  shellinabox:
    title: 'Shell'
    url: 'https://d-diot.local:4200'
    icon: mdi:powershell
  esphome:
    title: 'ESPHome'
    url: 'http://d-diot.local:6052'
    icon: mdi:chip
```

Substitute the d-diot.local part of the URL with your Raspberry Pi IP address if your network does not support avahi / zeroconf. See [this](#) if you have SSL encryption enabled.

## Mosquitto MQTT sever

Reference guides:

- <https://www.home-assistant.io/components/mqtt/>

- <https://www.home-assistant.io/docs/mqtt/broker#run-your-own>
- <https://www.home-assistant.io/docs/mqtt/discovery/>
- [https://www.home-assistant.io/docs/mqtt/birth\\_will/](https://www.home-assistant.io/docs/mqtt/birth_will/)

Add the following lines to configuration.yaml:

[/home/homeassistant/.homeassistant/configuration.yaml](#)

```
# MQTT
mqtt:
  broker: localhost
  port: 1883
# username:
# password:
discovery: true
discovery_prefix: homeassistant
birth_message:
  topic: 'hass/status'
  payload: 'online'
will_message:
  topic: 'hass/status'
  payload: 'offline'
```

Insert your credentials and uncomment username and password if you have [enabled the authentication](#) in Mosquitto.

## LIRC

For the d-diot image v.1.2 install this packages first:

```
pi@raspberrypi:~ $ cd /home/pi/build
pi@d-diot:~/build $ sudo apt install ./liblircclient-
dev_0.10.1-5.2_armhf.deb ./liblirc-dev_0.10.1-5.2_armhf.deb
```

To enable the [LIRC component](#) add the following lines to configuration.yaml:

[/home/homeassistant/.homeassistant/configuration.yaml](#)

```
# LIRC
lirc:
```

Create the .lircrc file in /home/homeassistant:

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ touch /home/homeassistant/.lircrc
```

In the d-diot image v.1.2 the LIRC component is disabled because of this [issue](#). To [fix the problem](#) run the following commands and then enable lirc in configuration.yaml:

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ source /srv/homeassistant/bin/activate
(homeassistant) homeassistant@d-diot:/home/pi $ cd /home/homeassistant
(homeassistant) homeassistant@d-diot:~ $ pip3 install cython
(homeassistant) homeassistant@d-diot:~ $ git clone
https://github.com/tompreston/python-lirc.git
(homeassistant) homeassistant@d-diot:~ $ find python-lirc -name '*.pyx' -
exec cython {} \;
(homeassistant) homeassistant@d-diot:~ $ pip3 install python-lirc/
```

## MySensors

Reference guide

- <https://www.home-assistant.io/components/mysensors/>

Add the following lines to configuration.yaml

</home/homeassistant/.homeassistant/configuration.yaml>

```
# Mysensors
mysensors:
  gateways:
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-rfm69.json'
      tcp_port: 5003
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-nrf24.json'
      tcp_port: 5004
  optimistic: false
  persistence: true
  version: '2.3'
```

## RFLink

Reference guide

- <https://www.home-assistant.io/components/rflink/>

Add the following lines to configuration.yaml

</home/homeassistant/.homeassistant/configuration.yaml>

```
## RFLink
#rflink:
# port: /dev/serial0
# wait_for_ack: true
```

In the d-diot image the RFLink config section is commented out because you have to [install the RFLink firmware](#) to the ATmega2560 microcontroller first; once installed simply remove the comment symbol “#”.

## Themes

Home Assistant support different themes that can be changed directly in the webui. A [themes repository](#) has been created by the Home Assistant community.

Reference guide:

- <https://community.home-assistant.io/t/themes-yaml/98716>
- <https://www.home-assistant.io/components/frontend/#defining-themes>
- <https://community.home-assistant.io/c/projects/themes>

Create a dir 'themes' in /home/homeassistant/.homeassistant and download all themes:

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ mkdir
/home/homeassistant/.homeassistant/themes
homeassistant@d-diot:/home/pi $ cd /home/homeassistant/.homeassistant/themes
homeassistant@d-diot:~/homeassistant/themes $ git clone
https://github.com/maartenpaauw/home-assistant-community-themes.git
```

In the configuration.yaml add the following line:

[/home/homeassistant/.homeassistant/configuration.yaml](#)

```
# Webui Themes
frontend:
  themes: !include_dir_merge_named themes
```

## Raspberry sensors

Some parameters of your Raspberry Pi can be displayed in the Home Assistant webui; add the following lines to sensors.yaml.

[/home/homeassistant/.homeassistant/sensors.yaml](#)

```
# System monitor
```

```

- platform: systemmonitor
  resources:
    - type: disk_use_percent
      arg: /
    - type: disk_use
      arg: /
    - type: disk_free
      arg: /
    - type: memory_free
    - type: memory_use_percent
    - type: memory_use
    - type: swap_use_percent
    - type: swap_use
    - type: swap_free
#   - type: load_1m
#   - type: load_5m
#   - type: load_15m
    - type: network_in
      arg: eth0
    - type: network_out
      arg: eth0
    - type: network_in
      arg: wlan0
    - type: network_out
      arg: wlan0
#packets_in   Interface, e.g., eth0
#packets_out  Interface, e.g., eth0
    - type: ipv4_address
      arg: eth0
    - type: ipv4_address
      arg: wlan0
#ipv6_address  Interface, e.g., eth0
    - type: processor_use
#   - type: process
#     arg: octave-cli
    - type: last_boot

#CPU temp
- platform: command_line
  name: CPU Temperature
  command: "cat /sys/class/thermal/thermal_zone0/temp"
  # If errors occur, remove degree symbol below
  unit_of_measurement: "°C"
  value_template: '{{ value | multiply(0.001) | round(1) }}'

```

In the d-diot image this sensors are grouped in a view accessible clicking the Raspberry Pi icon in the Home Assistant webui

## Outside Weather (d-diot images v.1.0 and v.1.1 only)

Reference guide:

- <https://www.home-assistant.io/components/sensor.yr/>

Set the location latitude and longitude in configuration.yaml under the “homeassistant” directive and add the following lines to sensors.yaml

</home/homeassistant/.homeassistant/sensors.yaml>

```
# Outside conditions
- platform: yr
  name: Outside
# forecast: 24
  monitored_conditions:
    - temperature
    - symbol
    - precipitation
    - windSpeed
    - pressure
    - windDirection
    - humidity
    - fog
    - cloudiness
    - lowClouds
    - mediumClouds
    - highClouds
    - dewpointTemperature
```

## NMAP tracker

The nmap package has been installed in the [first step of the manual installation](#).

The reference guide to learn how this component works in Home Assistant is here:

- [https://www.home-assistant.io/components/device\\_tracker/](https://www.home-assistant.io/components/device_tracker/)

NMAP will work independently from your router but it uses the Raspberry Pi resources, so if you have for example a Netgear router, use the [specific component](#).

To configure the nmap component, add the following line to configuration.yaml in the “device\_tacker” section, that should be already present in the default configuration.yaml:

</home/homeassistant/.homeassistant/configuration.yaml>



```
#device_tracker:
#   # NMAP
#   - platform: nmap_tracker
#     hosts: 192.168.1.0/24
#     home_interval: 10
#     exclude:
#       - 192.168.1.20
```

In the web interface of Home Assistant you can associate a specific nmap device to a person.

× In the d-diot image the nmap platform is disabled because the configuration depends on the characteristic of the target network. Simply remove the comment symbol (#) from the configuration.yaml lines reported above and set your network parameters to enable this tracker.

## Bluetooth tracker

Reference guides:

- <https://www.home-assistant.io/docs/installation/hassbian/integrations/>
- [https://www.home-assistant.io/components/device\\_tracker/](https://www.home-assistant.io/components/device_tracker/)
- [https://www.home-assistant.io/components/device\\_tracker.bluetooth\\_tracker/](https://www.home-assistant.io/components/device_tracker.bluetooth_tracker/)
- <https://community.home-assistant.io/t/error-in-installing-the-bluetooth-device-tracker/914>

The required deb packages have been already installed in the [basic system setup](#), but only for d-diot images v.1.0 and v.1.1, here we need to install the python library. This step is not necessary for the d-diot image v.1.2

```
pi@d-diot:~ $ sudo pip install pybluez
```

Add the following lines to configuration.yaml in the “device\_tacker” section, under the [NMAP platform](#):

</home/homeassistant/.homeassistant/configuration.yaml>

```
#device_tracker:
#   # NMAP
#   - platform: nmap_tracker
#     hosts: 192.168.1.0/24
#     home_interval: 10
#     exclude:
#       - 192.168.1.20
#   # Bluetooth
#   - platform: bluetooth_tracker
```

In the web interface of Home Assistant you can associate a specific bluetooth device to a person.

× In the d-diot image the bluetooth platform is disabled because it slows down the Home Assistant restart. If you want to activate this functionality, simply remove the “#” symbol before “- platform: bluetooth\_tracker”.

# MariaDB

In the basic system setup we have installed a [MariaDB server](#). Now it's time to configure Home Assistant to use it.

As a first step we need to install the required python library in the virtual environment

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ source /srv/homeassistant/bin/activate
(homeassistant) homeassistant@d-diot:/home/pi $ pip3 install mysqlclient
(homeassistant) homeassistant@d-diot:/home/pi $ exit
```

Stop Home Assistant:

```
pi@d-diot:~ $ sudo systemctl stop home-assistant@homeassistant
```

Add the following lines under the "recorder" section that should be already present in the default configuration.yaml.

</home/homeassistant/.homeassistant/configuration.yaml>

```
recorder:
  purge_keep_days: 3
  purge_interval: 1
  db_url: !secret mariadb_connection_url
  include:
    entities:
      - sensor.processor_use
      - sensor.memory_use_percent
      - sensor.disk_use_percent
      - sensor.load_5m
      - sensor.cpu_temperature
```

In the file secrets.yaml add the following line

</home/homeassistant/.homeassistant/secrets.yaml>

```
mariadb_connection_url: mysql://homeassistant:d-
diot.com@localhost/homeassistant
```

Remove the default SQLAlchemy DB:

```
pi@d-diot:~ $ sudo -u homeassistant -H -s
homeassistant@d-diot:/home/pi $ rm /home/homeassistant/.homeassistant/home-
assistant_v2.db
homeassistant@d-diot:/home/pi $ exit
```

Restart home assistant and see what happens:

```
pi@d-diot:~ $ sudo systemctl start home-assistant@homeassistant
```

Now Home Assistant will use the MariaDB server to store the historical data.

You can use any MariaDB server instance, even a remote one, simply changing the database URL in the file secrets.yaml.

× Only the data of the entities under the “include” statement will be recorded, so you have to add your own entities manually. You can change easily this behaviour: see the Home Assistant docs to know more about the [recorder component](#).

## Oled display

Now we will see how to control the [oled display](#) with Home Assistant.

Add the following lines to shell\_command.yaml.

[/home/homeassistant/.homeassistant/shell\\_command.yaml](#)

```
start_oled: /home/homeassistant/oled/./oled.py &
stop_oled: mosquitto_pub -h localhost -t oled/set -m 'Turn off' &&
sleep 5 && killall oled.py &
```

Add the following lines to input\_select.yaml.

[/home/homeassistant/.homeassistant/input\\_select.yaml](#)

```
oled:
  name: Mode
  options:
    - Turn off
    - Wifi
    - Ethernet
    - Clock
    - Load
    - Disk usage
    - CPU Temp
    - RAM
  initial: Clock
  icon: mdi:fullscreen
```

Add the following lines to automations.yaml

[/home/homeassistant/.homeassistant/automations.yaml](#)

```
- id: '1551909333005'  
alias: Oled - Input to MQTT  
trigger:  
- entity_id: input_select.oled  
  platform: state  
condition: []  
action:  
- data_template:  
  payload: '{{ states(''input_select.oled'') }}'  
  retain: false  
  topic: oled/set  
  service: mqtt.publish  
- id: '1551910316293'  
alias: Oled - MQTT to Input  
trigger:  
- platform: mqtt  
  topic: oled/state  
condition: []  
action:  
- data_template:  
  entity_id: input_select.oled  
  option: '{{ trigger.payload }}'  
  service: input_select.select_option  
- id: '1552122444469'  
alias: Oled-Autostart  
trigger:  
- event: start  
  platform: homeassistant  
condition: []  
action:  
- service: shell_command.start_oled  
- id: '1552128743168'  
alias: Oled-Autostop  
trigger:  
- event: shutdown  
  platform: homeassistant  
condition: []  
action:  
- service: shell_command.stop_oled
```

Add the following lines to binary\_sensors.yaml.

[/home/homeassistant/.homeassistant/binary\\_sensors.yaml](/home/homeassistant/.homeassistant/binary_sensors.yaml)

```
#MQTT binary sensor  
- platform: mqtt  
  name: "OLED status"  
  state_topic: "oled/status"  
  payload_on: 1
```

```
payload_off: 0
qos: 0
device_class: light
```

Add the following lines to switches.yaml.

</home/homeassistant/.homeassistant/switches.yaml>

```
# Template switches
- platform: template
  switches:
    oled:
      friendly_name: "Status"
      value_template: "{{ is_state('binary_sensor.oled_status', 'on')
}}"
      turn_on:
        service: shell_command.start_oled
        data:
          entity_id: binary_sensor.oled_status
      turn_off:
        service: shell_command.stop_oled
        data:
          entity_id: binary_sensor.oled_status
```

Add the following lines to groups.yaml.

</home/homeassistant/.homeassistant/groups.yaml>

```
# Oled related automations
enable_oled:
  name: "Enable Oled"
  entities:
    - automation.oled_autostart
    - automation.oled_autostop
    - automation.oled_input_to_mqtt
    - automation.oled_mqtt_to_input
  all: true
```

## Duck DNS

The duck DNS component is necessary (in most cases) when you want to make your Home Assistant instance [accessible from the outside](#) respect to your local network.

Reference guide:

- <https://www.home-assistant.io/components/duckdns/>

Add the following line to configuration.yaml

</home/homeassistant/.homeassistant/configuration.yaml>

```
#duckdns:  
# domain: your_duckdns_subdomain_without_.duckdns.org  
# access_token: !secret duckdns_token
```

Add the following lines to secrets.yaml

</home/homeassistant/.homeassistant/secrets.yaml>

```
#duckdns_token: your_token_here
```

× In the d-diot image this components is disabled, if you need them simply remove the comment symbol (#) in configuration.yaml and secrets.yaml and set your own subdomain and token. See [this guide](#) to configure the remote access to your Home Assistant using Duck DNS and ssl encryption.

## SSL encryption

As for the [duck DNS](#) component, the SSL encryption is necessary when you want to make your Home Assistant [accessible from the outside](#) respect to your local network.

A valid ssl certificate is issued with [dehydrated](#), that is a lightweight bash script that uses [let's encrypt](#) with the DNS-01 challenge, supported by Duck DNS, to validate your domain name.

The advantages of this setup are:

- No need to open port 80 on your router to validate or renew your domain certificate.
- A full installation of let's encrypt is not required.
- The certificate issued by let's encrypt are recognized as valid by the most common browser.

Reference guide:

- [https://www.splitbrain.org/blog/2017-08/10-homeassistant\\_duckdns\\_letsencrypt](https://www.splitbrain.org/blog/2017-08/10-homeassistant_duckdns_letsencrypt)
- <https://indomus.it/guide/remotizzare-home-assistant-su-raspberry-pi-in-piena-sicurezza/>

Download and install dehydrated

```
pi@d-diot:~ $ sudo -u homeassistant -H -s  
homeassistant@d-diot:/home/pi $ cd /home/homeassistant  
homeassistant@d-diot:~ $ git clone  
https://github.com/lukas2511/dehydrated.git
```

Create a "config" file inside the dehydrated directory with the following lines:

```
homeassistant@d-diot:~ $ cd dehydrated  
homeassistant@d-diot:~/dehydrated $ nano config
```

[/home/homeassistant/.homeassistant/dehydrated/config](#)

```
# Which challenge should be used? Currently http-01 and dns-01 are supported
CHALLENGETYPE="dns-01"

# Script to execute the DNS challenge and run after cert generation
HOOK="{BASEDIR}/hook.sh"
```

Create the hook script file:

```
homeassistant@d-diot:~/dehydrated $ nano hook.sh
```

Add the following lines:

[/home/homeassistant/.homeassistant/dehydrated/hook.sh](#)

```
#!/usr/bin/env bash
set -e
set -u
set -o pipefail

domain="your_subdomain.duckdns.org"
token="your_token"

case "$1" in
    "deploy_challenge")
        curl
        "https://www.duckdns.org/update?domains=$domain&token=$token&txt=$4"
        echo
        ;;
    "clean_challenge")
        curl
        "https://www.duckdns.org/update?domains=$domain&token=$token&txt=removed&clear=true"
        echo
        ;;
    "deploy_cert")
        sudo systemctl restart home-assistant@homeassistant.service
        ;;
    "unchanged_cert")
        ;;
    "startup_hook")
        ;;
    "exit_hook")
        ;;
    *)
        echo Unknown hook "${1}"
```

```
        exit 0
    ;;
esac
```

Make the hook.sh script executable:

```
homeassistant@d-diot:~/dehydrated $ chmod 755 hook.sh
```

Create the file domains.txt:

```
homeassistant@d-diot:~/dehydrated $ nano domains.txt
```

Add the following lines

```
/home/homeassistant/.homeassistant/dehydrated/domains.txt
```

```
your_subdomain.duckdns.org
```

Add the following line to configuration.yaml:

```
/home/homeassistant/.homeassistant/configuration.yaml
```

```
# SSL encryption and DuckDNS access
#http:
#  base_url: your_subdomain.duckdns.org:8123
#  ssl_certificate:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/fullchain.pem
#  ssl_key:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/privkey.pem
```

× In the d-diot image the ssl encryption is disabled. Follow [this guide](#) to make your Home Assistant instance accessible through an internet connection, using Duck DNS and ssl encryption.

## Configuration files

### d-diot image v.1.0

```
/home/homeassistant/.homeassistant/configuration.yaml
```

```
homeassistant:
  # Name of the location where Home Assistant is running
  name: Home
```



```
# Location required to calculate the time the sun rises and sets
latitude: 46.0679
longitude: 11.1211
# Impacts weather/sunrise data (altitude above sea level in meters)
elevation: 0
# metric for Metric, imperial for Imperial
unit_system: metric
# Pick yours from here:
http://en.wikipedia.org/wiki/List\_of\_tz\_database\_time\_zones
time_zone: Europe/Rome
# Customization file
customize: !include customize.yaml

# Configure a default setup of Home Assistant (frontend, api, etc)
default_config:

# Show the introduction message on startup.
introduction:

# Discover some devices automatically
discovery:

# Text to speech
tts:
  - platform: google

group: !include groups.yaml
automation: !include automations.yaml
script: !include scripts.yaml

##### d-diot settings
#####

# Configuration split
sensor: !include sensors.yaml
binary_sensor: !include binary_sensors.yaml
switch: !include switches.yaml
input_select: !include input_select.yaml
shell_command: !include shell_command.yaml

# iFrame Panels
panel_iframe:
  lircweb:
    title: 'Ir remotes'
    url: 'http://d-diot.local:3000'
    icon: mdi:radiobox-marked
  shellinabox:
    title: 'Shell'
    url: 'https://d-diot.local:4200'
    icon: mdi:powershell
```

```
# Mosquitto MQTT
mqtt:
  broker: localhost
  port: 1883
# username:
# password:
  discovery: true
  discovery_prefix: homeassistant
  birth_message:
    topic: 'hass/status'
    payload: 'online'
  will_message:
    topic: 'hass/status'
    payload: 'offline'

# LIRC
lirc:

# Mysensors
mysensors:
  gateways:
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-rfm69.json'
      tcp_port: 5003
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-nrf24.json'
      tcp_port: 5004
  optimistic: false
  persistence: true
  version: '2.3'

# RFLink
#rflink:
# port: /dev/serial0
# wait_for_ack: true

# Frontend
frontend:
  themes: !include_dir_merge_named themes

# Device Tracker
#device_tracker:
  # NMAP
#   - platform: nmap_tracker
#   hosts: 192.168.1.0/24
#   home_interval: 10
#   exclude:
#     - 192.168.1.20
#   # Bluetooth
```

```
# - platform: bluetooth_tracker

# Recorder
recorder:
  purge_keep_days: 3
  purge_interval: 1
  db_url: !secret mariadb_connection_url
  include:
    entities:
      - sensor.processor_use
      - sensor.memory_use_percent
      - sensor.disk_use_percent
      - sensor.load_5m
      - sensor.cpu_temperature

# Duck DNS
#duckdns:
#  domain: your_duckdns_subdomain_without_.duckdns.org
#  access_token: !secret duckdns_token

# SSL encryption
#http:
#  base_url: your_subdomain.duckdns.org:8123
#  ssl_certificate:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/fullchain.pem
#  ssl_key:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/privkey.pem
```

[/home/homeassistant/.homeassistant/sensors.yaml](#)

```
# System monitor
- platform: systemmonitor
  resources:
    - type: disk_use_percent
      arg: /
    - type: disk_use
      arg: /
    - type: disk_free
      arg: /
    - type: memory_free
    - type: memory_use_percent
    - type: memory_use
    - type: swap_use_percent
    - type: swap_use
    - type: swap_free
#  - type: load_1m
```

```
- type: load_5m
# - type: load_15m
- type: network_in
  arg: eth0
- type: network_out
  arg: eth0
- type: network_in
  arg: wlan0
- type: network_out
  arg: wlan0
#packets_in Interface, e.g., eth0
#packets_out Interface, e.g., eth0
- type: ipv4_address
  arg: eth0
- type: ipv4_address
  arg: wlan0
#ipv6_address Interface, e.g., eth0
- type: processor_use
# - type: process
#   arg: octave-cli
- type: last_boot

#CPU temp
- platform: command_line
  name: CPU Temperature
  command: "cat /sys/class/thermal/thermal_zone0/temp"
  # If errors occur, remove degree symbol below
  unit_of_measurement: "°C"
  value_template: '{{ value | multiply(0.001) | round(1) }}'

# Outside conditions
- platform: yr
  name: Outside
# forecast: 24
  monitored_conditions:
    - temperature
    - symbol
    - precipitation
    - windSpeed
    - pressure
    - windDirection
    - humidity
    - fog
    - cloudiness
    - lowClouds
    - mediumClouds
    - highClouds
    - dewpointTemperature
```

[/home/homeassistant/.homeassistant/binary\\_sensors.yaml](#)

```
#MQTT binary sensor
- platform: mqtt
  name: "OLED status"
  state_topic: "oled/status"
  payload_on: 1
  payload_off: 0
  qos: 0
  device_class: light
```

[/home/homeassistant/.homeassistant/automations.yaml](#)

```
- id: '1551909333005'
  alias: Oled - Input to MQTT
  trigger:
  - entity_id: input_select.oled
    platform: state
  condition: []
  action:
  - data_template:
    payload: '{{ states(''input_select.oled'') }}'
    retain: false
    topic: oled/set
    service: mqtt.publish
- id: '1551910316293'
  alias: Oled - MQTT to Input
  trigger:
  - platform: mqtt
    topic: oled/state
  condition: []
  action:
  - data_template:
    entity_id: input_select.oled
    option: '{{ trigger.payload }}'
    service: input_select.select_option
- id: '1552122444469'
  alias: Oled-Autostart
  trigger:
  - event: start
    platform: homeassistant
  condition: []
  action:
  - service: shell_command.start_oled
- id: '1552128743168'
  alias: Oled-Autostop
  trigger:
```

```
- event: shutdown
  platform: homeassistant
  condition: []
  action:
  - service: shell_command.stop_oled
```

#### [/home/homeassistant/.homeassistant/groups.yaml](#)

```
# Oled related automations
enable_oled:
  name: "Enable Oled"
  entities:
  - automation.oled_autostart
  - automation.oled_autostop
  - automation.oled_input_to_mqtt
  - automation.oled_mqtt_to_input
  all: true
```

#### [/home/homeassistant/.homeassistant/input\\_select.yaml](#)

```
oled:
  name: Mode
  options:
  - Turn off
  - Wifi
  - Ethernet
  - Clock
  - Load
  - Disk usage
  - CPU Temp
  - RAM
  initial: Clock
  icon: mdi:fullscreen
```

#### [/home/homeassistant/.homeassistant/secrets.yaml](#)

```
# Use this file to store secrets like usernames and passwords.
# Learn more at https://home-assistant.io/docs/configuration/secrets/
some_password: welcome
mariadb_connection_url: mysql://homeassistant:d-
diot.com@localhost/homeassistant
#duckdns_token: your_token_here
```

/home/homeassistant/.homeassistant/shell\_command.yaml

```
start_oled: /home/homeassistant/oled/./oled.py &
stop_oled: mosquitto_pub -h localhost -t oled/set -m 'Turn off' &&
sleep 5 && killall oled.py &
```

/home/homeassistant/.homeassistant/switches.yaml

```
# Template switches
- platform: template
  switches:
    oled:
      friendly_name: "Status"
      value_template: "{{ is_state('binary_sensor.oled_status', 'on')
}}"
      turn_on:
        service: shell_command.start_oled
        data:
          entity_id: binary_sensor.oled_status
      turn_off:
        service: shell_command.stop_oled
        data:
          entity_id: binary_sensor.oled_status
```

## d-diot image v.1.1

/home/homeassistant/.homeassistant/configuration.yaml

```
homeassistant:
  # Name of the location where Home Assistant is running
  name: Home
  # Location required to calculate the time the sun rises and sets
  latitude: 45.8858
  longitude: 10.8412
  # Impacts weather/sunrise data (altitude above sea level in meters)
  elevation: 0
  # metric for Metric, imperial for Imperial
  unit_system: metric
  # Pick yours from here:
  http://en.wikipedia.org/wiki/List_of_tz_database_time_zones
  time_zone: Europe/Rome
  # Customization file
  customize: !include customize.yaml
```

```
# Configure a default setup of Home Assistant (frontend, api, etc)
default_config:

# Uncomment this if you are using SSL/TLS, running in Docker container,
etc.
# http:
#   base_url: example.duckdns.org:8123

# Discover some devices automatically
discovery:

##### d-diot customization
#####

# Sensors
#sensor:
#   # Weather prediction
#   - platform: yr

#####

# Text to speech
tts:
  - platform: google_translate

group: !include groups.yaml
automation: !include automations.yaml
script: !include scripts.yaml

##### d-diot config
#####

# Configuration split
sensor: !include sensors.yaml
binary_sensor: !include binary_sensors.yaml
switch: !include switches.yaml
input_select: !include input_select.yaml
shell_command: !include shell_command.yaml

# Panel iFrame
panel_iframe:
  lircweb:
    title: 'Ir remotes'
    url: 'http://d-diot.local:3000'
    icon: mdi:radiobox-marked
  shellinabox:
    title: 'Shell'
```



```
    url: 'https://d-diot.local:4200'
    icon: mdi:powershell
  esphome:
    title: 'ESPHome'
    url: 'http://d-diot.local:6052'
    icon: mdi:chip

# MQTT
mqtt:
  broker: localhost
  port: 1883
#  username:
#  password:
  discovery: true
  discovery_prefix: homeassistant
  birth_message:
    topic: 'hass/status'
    payload: 'online'
  will_message:
    topic: 'hass/status'
    payload: 'offline'

# LIRC
lirc:

# Mysensors
mysensors:
  gateways:
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-rfm69.json'
      tcp_port: 5003
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-nrf24.json'
      tcp_port: 5004
  optimistic: false
  persistence: true
  version: '2.3'

## RFLink
#rflink:
#  port: /dev/serial0
#  wait_for_ack: true

# Webui Themes
frontend:
  themes: !include_dir_merge_named themes

# Tracker
#device_tracker:
##    NMAP
#    - platform: nmap_tracker
```

```
# hosts: 192.168.1.0/24
# home_interval: 10
# exclude:
#   - 192.168.1.20
## Bluetooth
#   - platform: bluetooth_tracker

# Recorder
recorder:
  purge_keep_days: 3
  purge_interval: 1
  db_url: !secret mariadb_connection_url
  include:
    entities:
      - sensor.processor_use
      - sensor.memory_use_percent
      - sensor.disk_use_percent
      - sensor.load_5m
      - sensor.cpu_temperature

# DuckDNS
#duckdns:
#  domain: your_duckdns_subdomain_without_.duckdns.org
#  access_token: !secret duckdns_token

# SSL encryption with DuckDNS
#http:
#  base_url: your_subdomain.duckdns.org:8123
#  ssl_certificate:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/fullchain.pem
#  ssl_key:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/privkey.pem

##### End of d-diot config
#####
```

[/home/homeassistant/.homeassistant/sensors.yaml](#)

```
# System monitor
- platform: systemmonitor
  resources:
    - type: disk_use_percent
      arg: /
    - type: disk_use
      arg: /
```

```
- type: disk_free
  arg: /
- type: memory_free
- type: memory_use_percent
- type: memory_use
- type: swap_use_percent
- type: swap_use
- type: swap_free
# - type: load_1m
- type: load_5m
# - type: load_15m
- type: network_in
  arg: eth0
- type: network_out
  arg: eth0
- type: network_in
  arg: wlan0
- type: network_out
  arg: wlan0
#packets_in Interface, e.g., eth0
#packets_out Interface, e.g., eth0
- type: ipv4_address
  arg: eth0
- type: ipv4_address
  arg: wlan0
#ipv6_address Interface, e.g., eth0
- type: processor_use
# - type: process
#   arg: octave-cli
- type: last_boot

# CPU temp
- platform: command_line
  name: CPU Temperature
  command: "cat /sys/class/thermal/thermal_zone0/temp"
  # If errors occur, remove degree symbol below
  unit_of_measurement: "°C"
  value_template: '{{ value | multiply(0.001) | round(1) }}'

# Outside conditions
- platform: yr
  name: Outside
# forecast: 24
  monitored_conditions:
    - temperature
    - symbol
    - precipitation
    - windSpeed
    - pressure
    - windDirection
    - humidity
```

- fog
- cloudiness
- lowClouds
- mediumClouds
- highClouds
- dewpointTemperature

#### [/home/homeassistant/.homeassistant/binary\\_sensors.yaml](#)

```
# MQTT binary sensor
- platform: mqtt
  name: "OLED status"
  state_topic: "oled/status"
  payload_on: 1
  payload_off: 0
  qos: 0
  device_class: light
```

#### [/home/homeassistant/.homeassistant/automations.yaml](#)

```
- id: '1551909333005'
  alias: Oled - Input to MQTT
  trigger:
    - entity_id: input_select.oled
      platform: state
  condition: []
  action:
    - data_template:
        payload: '{{ states(''input_select.oled'') }}'
        retain: false
        topic: oled/set
        service: mqtt.publish
- id: '1551910316293'
  alias: Oled - MQTT to Input
  trigger:
    - platform: mqtt
      topic: oled/state
  condition: []
  action:
    - data_template:
        entity_id: input_select.oled
        option: '{{ trigger.payload }}'
        service: input_select.select_option
- id: '1552122444469'
  alias: Oled-Autostart
```

```
trigger:
- event: start
  platform: homeassistant
condition: []
action:
- service: shell_command.start_oled
- id: '1552128743168'
  alias: Oled-Autostop
  trigger:
- event: shutdown
  platform: homeassistant
condition: []
action:
- service: shell_command.stop_oled
```

[/home/homeassistant/.homeassistant/groups.yaml](#)

```
# Oled related automations
enable_oled:
  name: "Enable Oled"
  entities:
  - automation.oled_autostart
  - automation.oled_autostop
  - automation.oled_input_to_mqtt
  - automation.oled_mqtt_to_input
  all: true
```

[/home/homeassistant/.homeassistant/input\\_select.yaml](#)

```
oled:
  name: Mode
  options:
  - Turn off
  - Wifi
  - Ethernet
  - Clock
  - Load
  - Disk usage
  - CPU Temp
  - RAM
  initial: Clock
  icon: mdi:fullscreen
```

## [/home/homeassistant/.homeassistant/secrets.yaml](#)

```
# Use this file to store secrets like usernames and passwords.
# Learn more at https://home-assistant.io/docs/configuration/secrets/
some_password: welcome
mariadb_connection_url: mysql://homeassistant:d-
diot.com@localhost/homeassistant
#duckdns_token: your_token_here
```

## [/home/homeassistant/.homeassistant/shell\\_command.yaml](#)

```
start_oled: /home/homeassistant/oled/./oled.py &
stop_oled: mosquitto_pub -h localhost -t oled/set -m 'Turn off' &&
sleep 5 && killall oled.py &
```

## [/home/homeassistant/.homeassistant/switches.yaml](#)

```
# Template switches
- platform: template
  switches:
    oled:
      friendly_name: "Status"
      value_template: "{{ is_state('binary_sensor.oled_status', 'on')
}}"
      turn_on:
        service: shell_command.start_oled
        data:
          entity_id: binary_sensor.oled_status
      turn_off:
        service: shell_command.stop_oled
        data:
          entity_id: binary_sensor.oled_status
```

## d-diot image v.1.2

### [/home/homeassistant/.homeassistant/configuration.yaml](#)

```
# Configure a default setup of Home Assistant (frontend, api, etc)
default_config:

# Uncomment this if you are using SSL/TLS, running in Docker container,
etc.
```

```
# http:
#   base_url: example.duckdns.org:8123

# Text to speech
tts:
  - platform: google_translate

# Configuration split
group: !include groups.yaml
automation: !include automations.yaml
script: !include scripts.yaml

##### d-diot config
#####

# Basic information
#homeassistant:
#  latitude: 32.87336
#  longitude: 117.22743
#  elevation: 430
#  unit_system: metric
#  time_zone: America/Los_Angeles
#  name: Home

# Configuration split
sensor: !include sensors.yaml
binary_sensor: !include binary_sensors.yaml
switch: !include switches.yaml
input_select: !include input_select.yaml
shell_command: !include shell_command.yaml

# Panel Iframe
panel_iframe:
  lircweb:
    title: 'Ir remotes'
    url: 'http://d-diot.local:3000'
    icon: mdi:radiobox-marked
  shellinabox:
    title: 'Shell'
    url: 'https://d-diot.local:4200'
    icon: mdi:powershell
  esphome:
    title: 'ESPHome'
    url: 'http://d-diot.local:6052'
    icon: mdi:chip

# Mosquitto MQTT broker
mqtt:
  broker: localhost
  port: 1883
```

```
# username:
# password:
discovery: true
discovery_prefix: homeassistant
birth_message:
  topic: 'hass/status'
  payload: 'online'
will_message:
  topic: 'hass/status'
  payload: 'offline'

# LIRC
#lirc:

# Mysensors
mysensors:
  gateways:
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-rfm69.json'
      tcp_port: 5003
    - device: 'localhost'
      persistence_file: '/home/homeassistant/mysensors-nrf24.json'
      tcp_port: 5004
  optimistic: false
  persistence: true
  version: '2.3'

# RFLink
rflink:
  port: /dev/serial0
  wait_for_ack: true

# Webui Themes
frontend:
  themes: !include_dir_merge_named themes

# Tracker
#device_tracker:
# NMAP
# - platform: nmap_tracker
#   hosts: 192.168.1.0/24
#   home_interval: 10
#   exclude:
#     - 192.168.1.71
# Bluetooth
# - platform: bluetooth_tracker

# MySQL recorder
recorder:
  purge_keep_days: 3
```



```
purge_interval: 1
db_url: !secret mariadb_connection_url
include:
  entities:
    - sensor.processor_use
    - sensor.memory_use_percent
    - sensor.disk_use_percent
    - sensor.load_5m
    - sensor.cpu_temperature

#duckdns:
# domain: your_duckdns_subdomain_without_.duckdns.org
# access_token: !secret duckdns_token

# SSL encryption and DuckDNS access
#http:
# base_url: your_subdomain.duckdns.org:8123
# ssl_certificate:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/fullchain.pem
# ssl_key:
/home/homeassistant/dehydrated/certs/your_subdomain.duckdns.org/privkey.pem

# Enable logger to individuate the RFLink devices
#logger:
# default: error
# logs:
#   rflink: debug
#   homeassistant.components.rflink: debug
```

</home/homeassistant/.homeassistant/sensors.yaml>

```
# System monitor
- platform: systemmonitor
  resources:
    - type: disk_use_percent
      arg: /
    - type: disk_use
      arg: /
    - type: disk_free
      arg: /
    - type: memory_free
    - type: memory_use_percent
    - type: memory_use
    - type: swap_use_percent
    - type: swap_use
    - type: swap_free
```

```
# - type: load_1m
- type: load_5m
# - type: load_15m
- type: network_in
  arg: eth0
- type: network_out
  arg: eth0
- type: network_in
  arg: wlan0
- type: network_out
  arg: wlan0
#packets_in Interface, e.g., eth0
#packets_out Interface, e.g., eth0
- type: ipv4_address
  arg: eth0
- type: ipv4_address
  arg: wlan0
#ipv6_address Interface, e.g., eth0
- type: processor_use
# - type: process
#   arg: octave-cli
- type: last_boot

#CPU temp
- platform: command_line
  name: CPU Temperature
  command: "cat /sys/class/thermal/thermal_zone0/temp"
  # If errors occur, remove degree symbol below
  unit_of_measurement: "°C"
  value_template: '{{ value | multiply(0.001) | round(1) }}'
```

[/home/homeassistant/.homeassistant/binary\\_sensors.yaml](#)

```
# MQTT binary sensor
- platform: mqtt
  name: "OLED status"
  state_topic: "oled/status"
  payload_on: 1
  payload_off: 0
  qos: 0
  device_class: light
```

[/home/homeassistant/.homeassistant/automations.yaml](#)

```
- id: '1551909333005'
```

```
alias: Oled - Input to MQTT
trigger:
- entity_id: input_select.oled
  platform: state
condition: []
action:
- data_template:
  payload: '{{ states(''input_select.oled'') }}'
  retain: false
  topic: oled/set
  service: mqtt.publish
- id: '1551910316293'
  alias: Oled - MQTT to Input
  trigger:
  - platform: mqtt
    topic: oled/state
  condition: []
  action:
  - data_template:
    entity_id: input_select.oled
    option: '{{ trigger.payload }}'
    service: input_select.select_option
- id: '1552122444469'
  alias: Oled-Autostart
  trigger:
  - event: start
    platform: homeassistant
  condition: []
  action:
  - service: shell_command.start_oled
- id: '1552128743168'
  alias: Oled-Autostop
  trigger:
  - event: shutdown
    platform: homeassistant
  condition: []
  action:
  - service: shell_command.stop_oled
```

[/home/homeassistant/.homeassistant/groups.yaml](#)

```
# Oled related automations
enable_oled:
  name: "Enable Oled"
  entities:
  - automation.oled_autostart
  - automation.oled_autostop
  - automation.oled_input_to_mqtt
```

```
- automation.oled_mqtt_to_input
all: true
```

### [/home/homeassistant/.homeassistant/input\\_select.yaml](#)

```
oled:
  name: Mode
  options:
    - Turn off
    - Wifi
    - Ethernet
    - Clock
    - Load
    - Disk usage
    - CPU Temp
    - RAM
  initial: Clock
  icon: mdi:fullscreen
```

### [/home/homeassistant/.homeassistant/secrets.yaml](#)

```
# Use this file to store secrets like usernames and passwords.
# Learn more at https://home-assistant.io/docs/configuration/secrets/
some_password: welcome

##### d-diot config
#####

# MySQL database
mariadb_connection_url: mysql://homeassistant:d-
diot.com@localhost/homeassistant

# DuckDNS token
#duckdns_token: your_token_here
```

### [/home/homeassistant/.homeassistant/shell\\_command.yaml](#)

```
start_oled: /home/homeassistant/oled/./oled.py &
stop_oled: mosquitto_pub -h localhost -t oled/set -m 'Turn off' &&
sleep 5 && killall oled.py &
```

/home/homeassistant/.homeassistant/switches.yaml

```
# Template switches
- platform: template
  switches:
    oled:
      friendly_name: "Status"
      value_template: "{{ is_state('binary_sensor.oled_status', 'on')
      }}"
      turn_on:
        service: shell_command.start_oled
        data:
          entity_id: binary_sensor.oled_status
      turn_off:
        service: shell_command.stop_oled
        data:
          entity_id: binary_sensor.oled_status
```

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