MaxAir – Home Assistant Integration

MaxAir can be configured to enable monitoring and control from Home Assistant via MQTT. This integration requires Home Assistant together with a Mosquitto Broker add-on running on the same or separate device. Please see the document 'Setup Guide MQTT Devices' for details of the basic MQTT setup. The MaxAir Gateway script /var/www/gateway.py together with the Python library paho-mqtt are used to send and receive MQTT data, the MaxAir service HA_integration.service is used to pass data between MaxAir and Home Assistant using MQTT as the transport mechanism.

MaxAir will require an account on the Mosquitto Brocker which it can access.

Functionalities

- MaxAir CPU Usage - sensor
- MaxAir CPU Load (1m, 5m and 15m) - sensors
- MaxAir CPU temperature - sensor
- MaxAir Memory Use - sensor
- MaxAir Swap Usage - sensor
- MaxAir Disk Use - sensor
- MaxAir Host Ip - sensor
- MaxAir Last Boot - sensor
- MaxAir Network throughput (up & down) - sensors
- MaxAir Wifi Strength - sensor
- MaxAir updates - sensor
- Boiler or HVAC Status - binary sensor
- Climate entity for each zone with the following attributes
    - Away Status (this is the same for all zones)
    - Zone Current Mode (this is the same for all zones)
    - Zone Current Temperature (for each zone)
    - Zone Target Temperature (for each zone)
    - Zone Current Status (for each zone)
    - Zone Boost (for each zone)
    - Zone Live Temperature (for each zone)
    - Zone sensor Last Seen time and date (for each zone)
    - Zone sensor battery percentage (for each zone using a MySensor sensor)
    - Zone sensor battery voltage (for each zone using a MySensor sensor)
- Temperature sensor for each stand-alone temperature sensor in MaxAir with the following attributes
    - Sensor Current Temperature (for each zone)
    - Sensor Last Seen time and date (for each zone)
    - Sensor battery percentage (for each zone using a MySensor sensor)
    - Sensor battery voltage (for each zone using a MySensor sensor)
- Humidity sensor for each stand-alone humidity sensor in MaxAir with the following attributes
    - Sensor Current Humidity (for each zone)
    - Sensor Last Seen time and date (for each zone)
    - Sensor battery percentage (for each zone using a MySensor sensor)
    - Sensor battery voltage (for each zone using a MySensor sensor)

Setup

Home Assistant

In Home Assistant follow the steps bellow to install the Mosquito MQTT add-on:

1. Navigate in your Home Assistant frontend to Supervisor -> Add-on Store.
2. Find the "Mosquitto broker" add-on and click it.
3. Click on the "INSTALL" button.
4. Navigate in your Home Assistant frontend to Supervisor -> Mosquitto broker.
5. Click on Configuration and edit the configuration file as needed. Below is an example of a basic configuration that supports both MQTT Nodes for MaxAir and the MaxAir Home Assistant integration.

```
logins:
  - username: airmax_HA
    password: password_1
  - username: airmax
    password: password_2
customize:
  active: false
  folder: mosquitto
certfile: fullchain.pem
keyfile: privkey.pem
require_certificate: false
anonymous: false
```

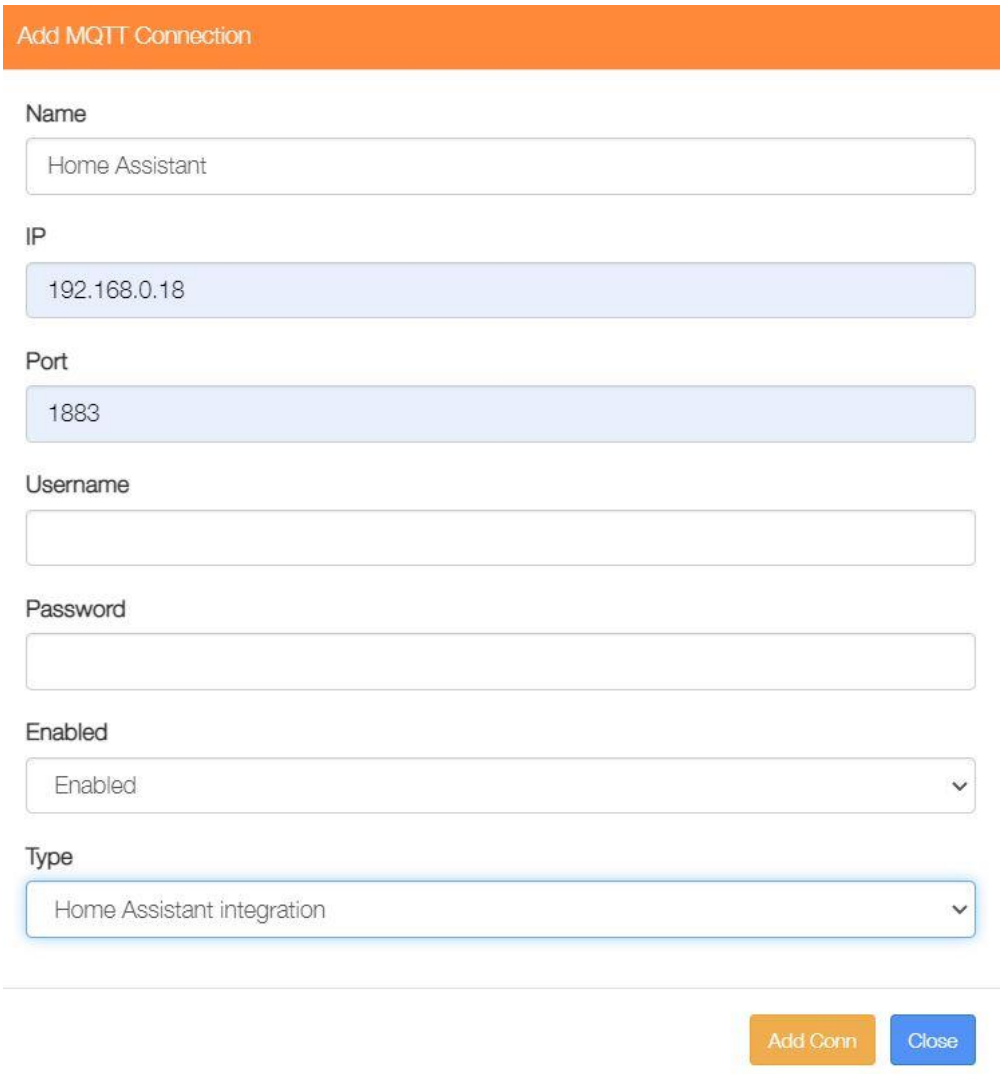
6. Start the add-on. Have some patience and wait a couple of minutes.
7. Check the add-on log output to see the result.
8. Navigate in your Home Assistant frontend to Configuration -> Integrations.
9. MQTT should appear as a discovered integration at the top of the page. Select it and check the box to enable MQTT discovery, and hit submit.

Configure MaxAir to Communicate Using MQTT

Create an MQTT Connection

From Settings/System Configuration/MQTT select ‘Add’

The example shows is using the Mosquitto Broker IP address of 192.168.0.18, with a default Port number of 1883, the Username and Password were as setup when configuring the broker, the connection is Enabled and the Type is selected as ‘Home Assistant integration’.

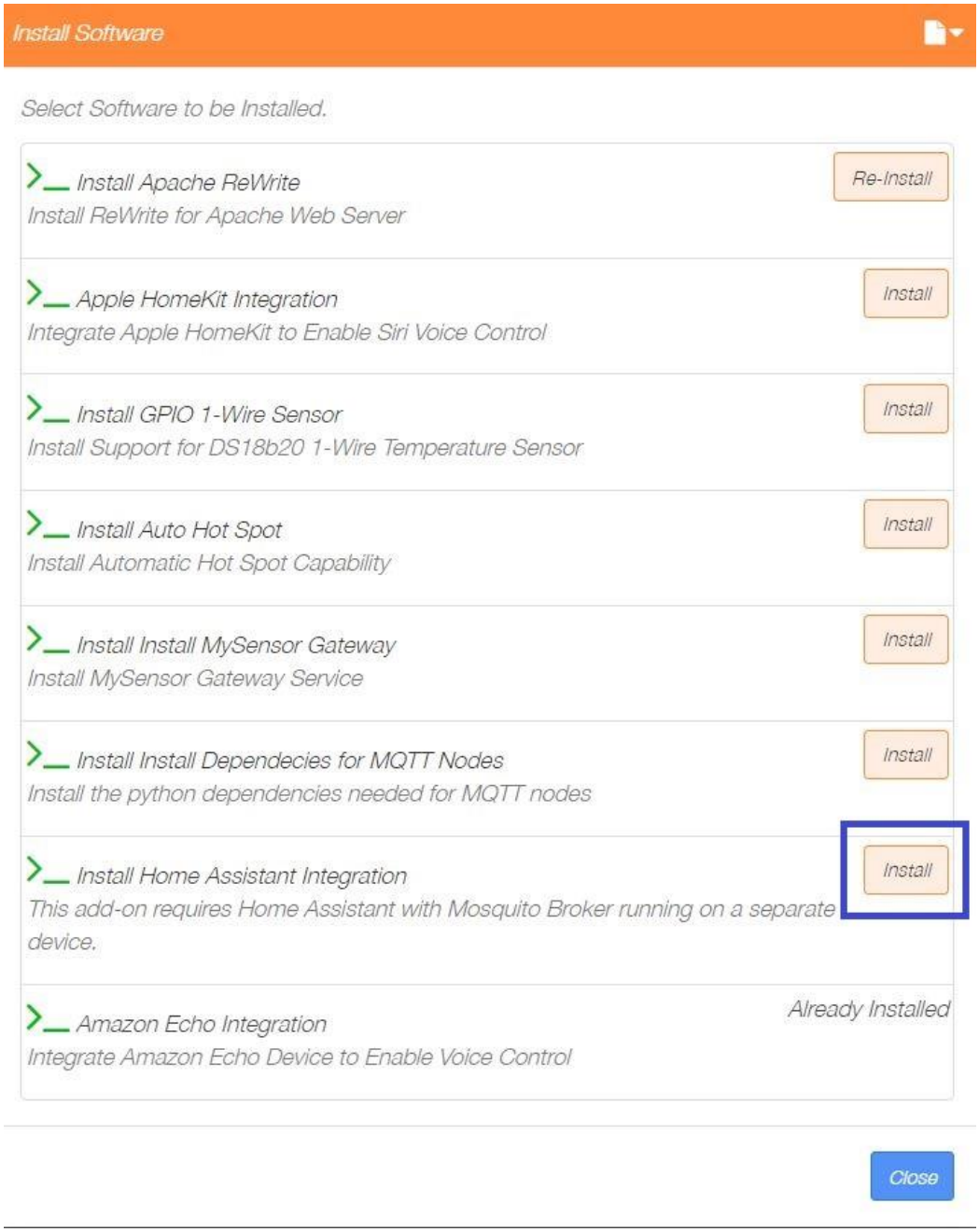


Install the MaxAir Home Assistant Integration Service

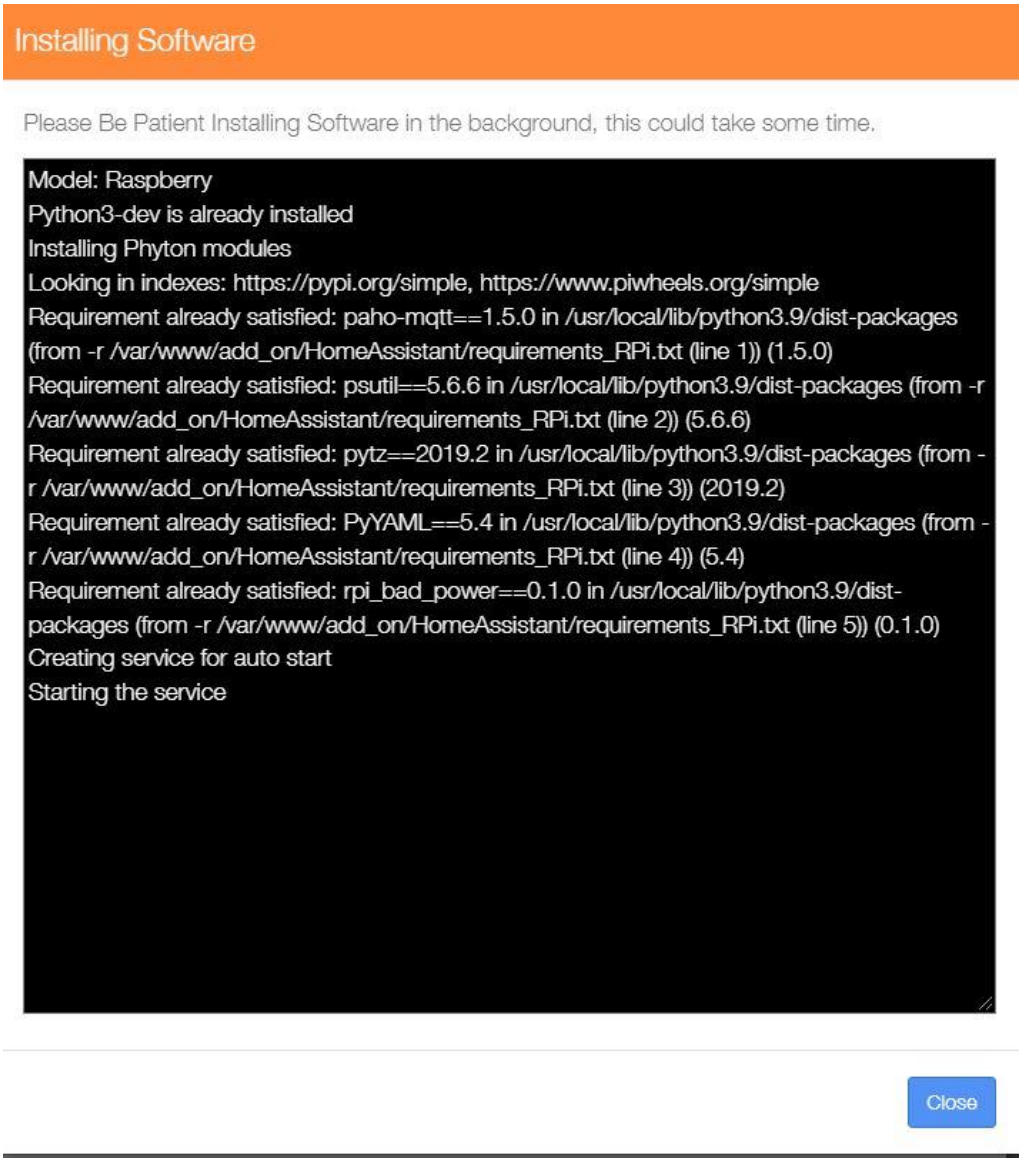
From Settings/System Maintenance/Install Software and select the ‘Install’ option for ‘Install Home Assistant Integration’.

This will install any required dependencies, install and start the service.

Please note that this integration will search for new zones and sensors only at start up. If new sensors or zones are added to the system reboot the system or restart the integration using 'systemctl restart HA_integration.service'.



The installation will start and run as a scheduled background task, please be patient, once complete the ‘Installing Software’ dialogue will be updated.

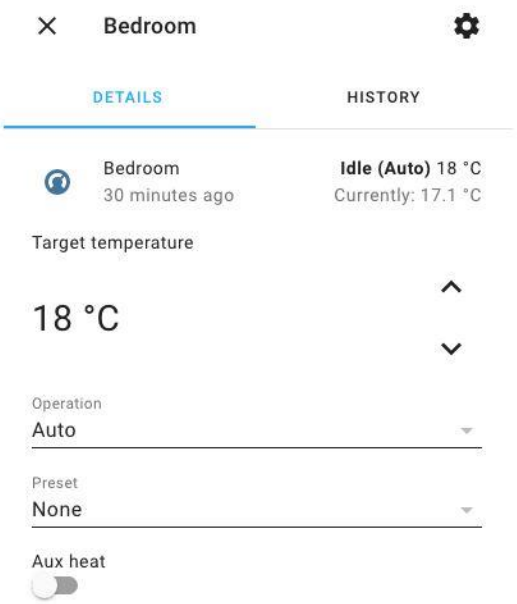


Usage

The Home Assistant entices will be automatically created via MQTT auto discovery.

climate.maxair_bedroom MaxAir Bedroom	auto	hvac_modes: auto, off, heat, dry, fan_only min_temp: 7 max_temp: 35 target_temp_step: 1 preset_modes: none, away current_temperature: 16.5 temperature: 15 hvac_action: idle preset_mode: none aux_heat: off last_seen: 2021-10-10 17:23:16 batt_level: 40.00 batt_voltage: 2.46 friendly_name: MaxAir Bedroom supported_features: 81
binary_sensor.maxair_boiler MaxAir Boiler	off	friendly_name: MaxAir Boiler device_class: heat
binary_sensor.maxair_under_voltage MaxAir Under Voltage	off	friendly_name: MaxAir Under Voltage icon: mdi:raspberry-pi device_class: problem
sensor.maxair_cpu_usage MaxAir Cpu Usage	37.9	unit_of_measurement: % friendly_name: MaxAir Cpu Usage icon: mdi:memory
sensor.maxair_disk_use MaxAir Disk Use	79.1	unit_of_measurement: % friendly_name: MaxAir Disk Use icon: mdi:micro-sd
sensor.maxair_host_architecture MaxAir Host Architecture	armv6l	friendly_name: MaxAir Host Architecture icon: mdi:chip
sensor.maxair_host_ip MaxAir Host Ip	192.168.1.2	friendly_name: MaxAir Host Ip icon: mdi:lan

The Climate entity allows to trigger the MaxAir Boost function (Aux Heat in Home Assistant) for each zone, adjust the Live Temperature for each zone (Temperature in Home Assistant), enable or disable the MaxAir Away status (Pre-set in Home Assistant) and change the MaxAir Mode (Operation in Home Assistant).



Unfortunately, the climate entity in Home Assistant supports only the following operations: off, auto, heat, cool, fan only and dry. When MaxAir is operating in boiler mode the Home Assistant operations are mapped as follow:

0 OFF -> off
1 Timer -> auto
2 CH -> heat
3 HW -> fan_only
4 Both -> dry

When MaxAir is operating in HVAC mode the Home Assistant operations are mapped as follow:

0 OFF -> off
1 Timer -> dry
2 Auto -> auto
3 Fan -> fan only
4 Heat -> heat
5 Cool -> cool