

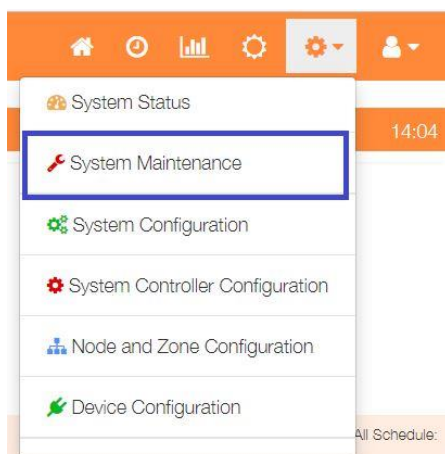
## MaxAir Technical – Task Scheduling

MaxAir requires a number of background tasks to be actioned periodically, a task scheduler, running as a system service, is provided to achieve this functionality. The task scheduler executes once every second, this determines the maximum repetition rate. The list of tasks to be executed is dynamic, so that tasks can be added or deleted from the schedule as required. The tasks will typically be script files and can be, for example, coded as 'Shell', or 'Python' or 'PHP' scripts.

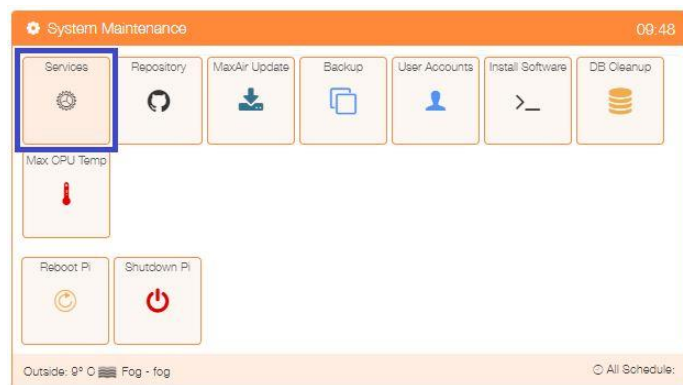
MaxAir has eight pre-installed tasks:

1. The 'controller' Task – main engine for the system, controlling the target heating system, it executes once every 60 seconds.
2. The 'db\_cleanup' Task – deletes aged database records, it executes daily at 2AM.
3. The 'check\_gw' Task – manages the System Gateway hardware to send and receive messages, it executes once every 60 seconds.
4. The 'system\_c' Task – reads the CPU temperature from the systems control board, it executes once every 300 seconds.
5. The 'weather\_update' Task – collects weather data from the 'openwather' API, it executes once every 1800 seconds.
6. The 'reboot\_wifi' Task – checks the status of the wifi connection and attempts to restart if required, it executes once every 120 seconds.
7. The 'sw\_install' Task – checks for software install requests, it executes every 10 seconds.
8. The 'gpio\_ds18b20' Task – optional to read GPIO connected temperature sensors.








### Checking TheTask Scheduler is Running



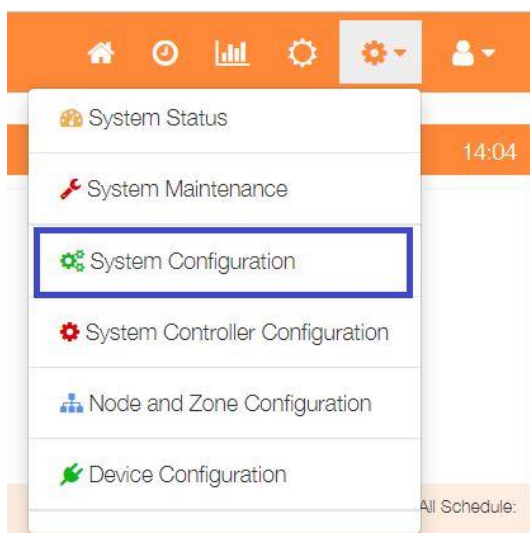
To display a list of the currently installed Services and their status, select 'System Maintenance' from the Settings dropdown list, then click the 'Services' button.



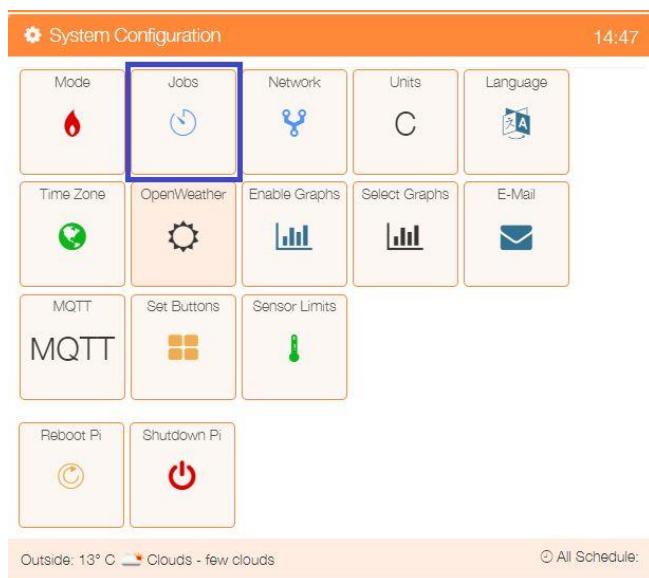
The PiHome JOBS service is shown to be Active. Close the menu.

Services		
Apache	Active: active (running) since Wed 2021-03-31 10:17:16 BST; 4h 35min ago	
MySQL	Active: active (running) since Wed 2021-03-31 10:17:20 BST; 4h 35min ago	
MariaDB	Active: active (running) since Wed 2021-03-31 10:17:20 BST; 4h 35min ago	
PiHome MQTT	Error: Unit pihome.mqtt.service could not be found.	
PiHome JOBS	Active: active (running) since Wed 2021-03-31 10:17:21 BST; 4h 35min ago	
Amazon Echo	Error: Unit pihome_amazon_echo.service could not be found.	
Homebridge	Error: Unit homebridge.service could not be found.	

Close



To show the list of active tasks, select 'System Configuration' from the Settings dropdown list, then click the 'Jobs' button.



The 8 pre-installed tasks are shown, with the exception of the 'gpio\_ds18b20' task, they will be enabled by default and will not be writing their output to a log file. The log to file option for any job can be activated by checking the tickbox. The execution frequency can be edited and tasks delete if chosen. If changes have been made, they will not be actioned until the 'Apply' button is clicked.

Schedule Jobs					
Configure Jobs to run every set interval and enable creation of a Log file if required.					
Job Name	Script Name	Enabled	Log Job	Run Every	
controller	/var/www/cron/controller.js	<input checked="" type="checkbox"/>	<input type="checkbox"/>	60	
db_cleanup	/var/www/cron/db_cleanup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	02:00	
check_gw	/var/www/cron/check_gw	<input checked="" type="checkbox"/>	<input type="checkbox"/>	60	
system_c	/var/www/cron/system_c	<input checked="" type="checkbox"/>	<input type="checkbox"/>	300	
weather_update	/var/www/cron/weather_u	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1800	
reboot_wifi	/var/www/cron/reboot_wif	<input checked="" type="checkbox"/>	<input type="checkbox"/>	120	
gpio_ds18b20	/var/www/cron/gpio_ds18	<input type="checkbox"/>	<input type="checkbox"/>	60	
sw_install	/var/www/cron/sw_install	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	
				<input type="button" value="Add Job"/>	<input type="button" value="Apply"/> <input type="button" value="Close"/>

New tasks can be added to the scheduler by clicking on the 'Add Job' button

Add New Scheduled Job

Add New Job Name, Script Name, Log On/Off and run Interval.

☒ Enabled

**Job Name** Descriptive name for the Scheduled Job.

**Script Name** Full Path Name for the executable Job Script.

**Run Every** Run the Jobs Script Every x Seconds.

☐ Log Job

Check to enable the task.

Enter a name for the task.

Enter the full path name of the task script file.

Enter how often to run, see note below

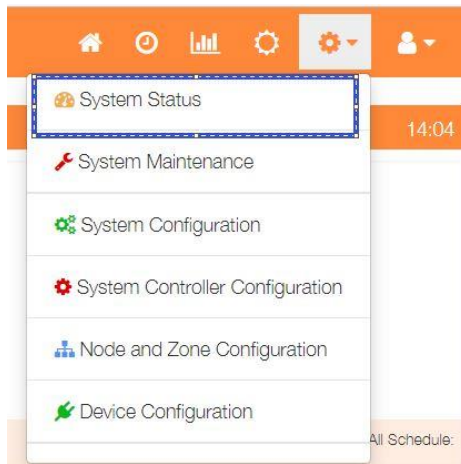
Check if a log file is to be written.

Click on 'Save' to update the task scheduler.

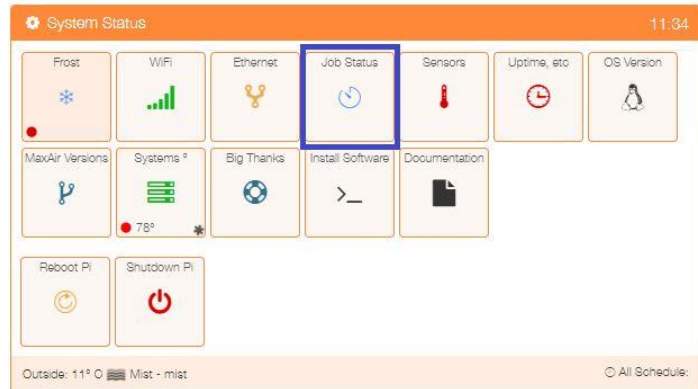
Note: log files will be written to directory /var/www/cron/logs/

Note: If a numeric value 'x' is entered, then the task will execute every x seconds. If a time value is entered eg '02:00', then the task will execute once a day at the set time, in the case of this example at 2AM.

## View Last Job Output



select 'System Status' from the Settings dropdown list, then click the 'Job Status' button.



### Job Last Status Logs

**Job Name** Select Job to display last Status Report.

controller

```
<pre>[36m
  _ _ _
 | V |      ^  ^
 | \ / |    _ _ _ _ _
 | M | / _ \ \ / \ \ / \ \
 | | | | | | > < / _ _ \ \
 | | | | | | \ \ / \ \ / \ \
[0m
[45m SMART THERMOSTAT [0m
[31m
*****
* System Controller Script Version 0.01 Build Date 19/10/2020 *
* Update on 21/02/2021 *
* Have Fun - PiHome.eu *
*****
[0m
[36m2021-03-31 09:33:05[0m - Controller Script Started
[36m2021-03-31 09:33:05[0m - Operating in Boiler Mode
[36m2021-03-31 09:33:05[0m - Day of the Week: [41m3[0m
-----
[36m2021-03-31 09:33:07[0m - Hysteresis time: 2021-03-31 09:33:53
[36m2021-03-31 09:33:08[0m - Zone: Sensor Reading [41m19.20[0m
[36m2021-03-31 09:33:08[0m - Zone: Weather Factor [41m0.5[0m
[36m2021-03-31 09:33:08[0m - Zone: DeadBand [41m0.5[0m
```

Select the task of interest from the dropdown list of installed tasks to display the results of the last execution in the display window. Click on the 'Close' button when finished.

Close