chowmain
software & apps

OpenWeatherMap Module

Installation and Usage Guide

Contents

Overview

The OpenWeatherMap service provides free (60 calls per minute) weather data and forecast. OpenWeatherMap collects data from weather stations and forecasts of meteorological services and research laboratories, combining long-term and short-term forecasts with real-time data from weather stations, processing them and immediately updates current weather and forecasts.

The Chowmain OpenWeatherMap module brings all of this data into URC for use in the home automation system. This is useful for automating services within the home based upon the external environment.

Note that this is not a replacement for a personal weather station. We recommend utilising a local weather station if you require accurate readings as this provides accurate real time local weather information.
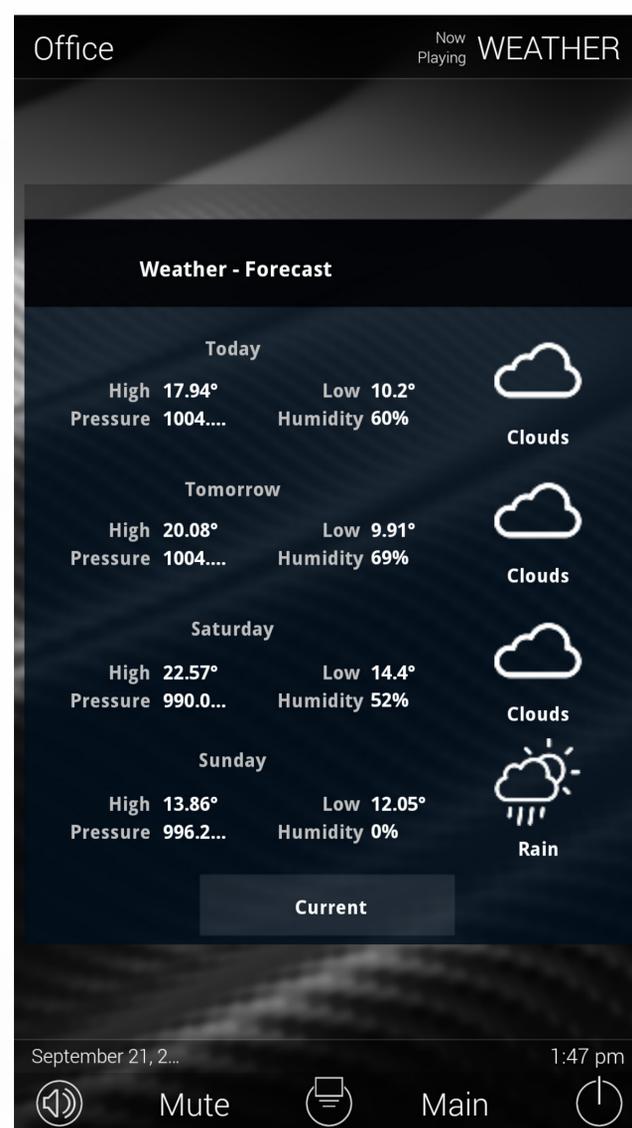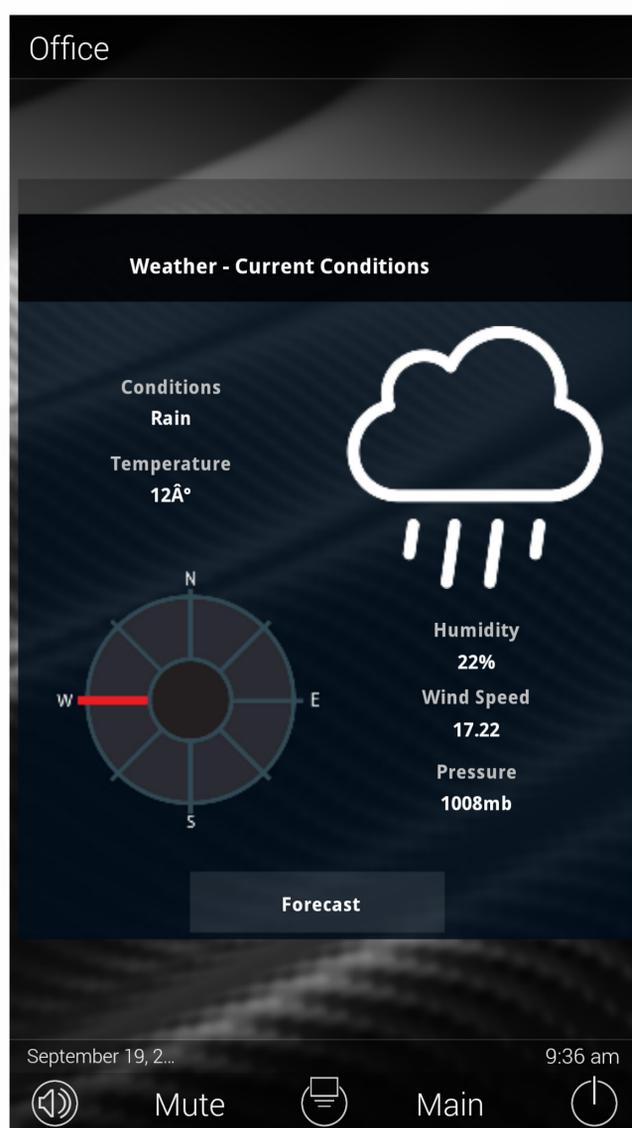
Installation

Import the TCM in to accelerator

The zip file that included this documentation has the TCM file you will need to import. Go to the file menu, select import TCM Files and load the provided file.
(for more information check http://www.urccontrolroom.com/tc/software/tools/tcm/start)

The first step is to download and extract the module from the zip file. It doesn't matter where you store the file but we advise keeping them together.
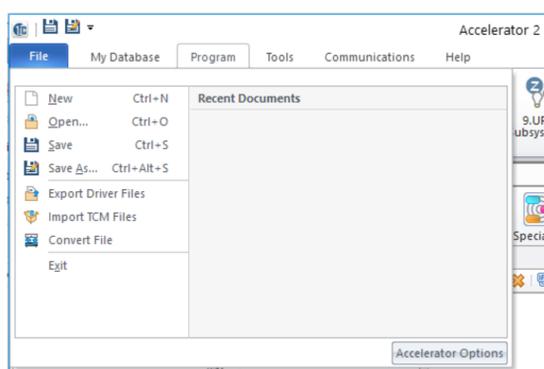
Click on the file menu and select

Import TCM Files.

find the OpenWeatherMap TCM file you have downloaded select it and click on open
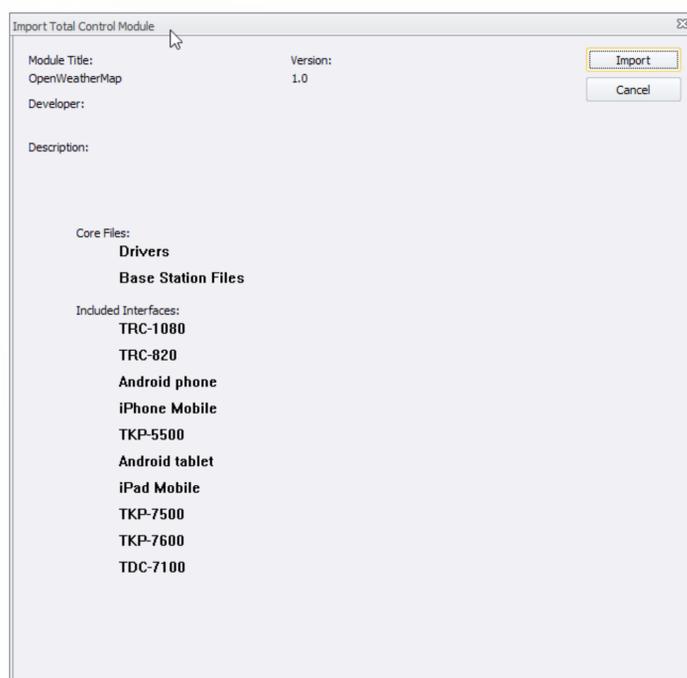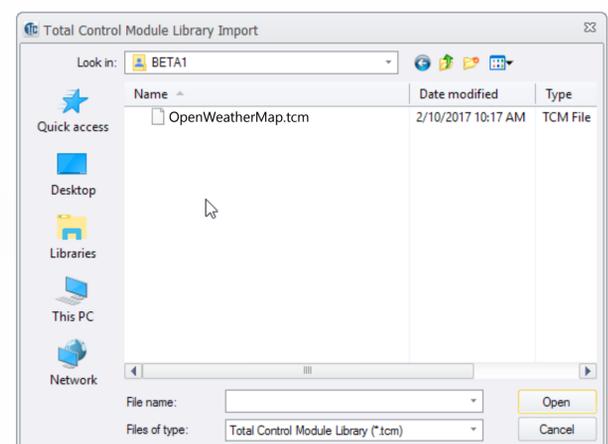
Finally, double check that the module details are correct and hit import.

Installation

Add the OpenWeatherMap module to Accelerator

This module is designed to work with all of your OpenWeatherMap devices using a single module so you will only need to add it to one room.

Go to Step 4. Add Other Devices and Add Selected Modules.

Step 1 - select the room for the module
Step 2 - Select My
Step 3 - Select Two-Way/Advanced Modules
Step 4 - Select AUX
Step 5 - Select CHO WMAIN
Step 6 - Select WEATHER

Installation

Add the network setting for the OpenWeatherMap module

The OpenWeatherMap module does not require an IP address or a port number to function. We suggest using an IP address that is on the 0.0.0.x range, for exmple 0.0.0.1.

If you have other similar addresses already, please make sure this one is unique.
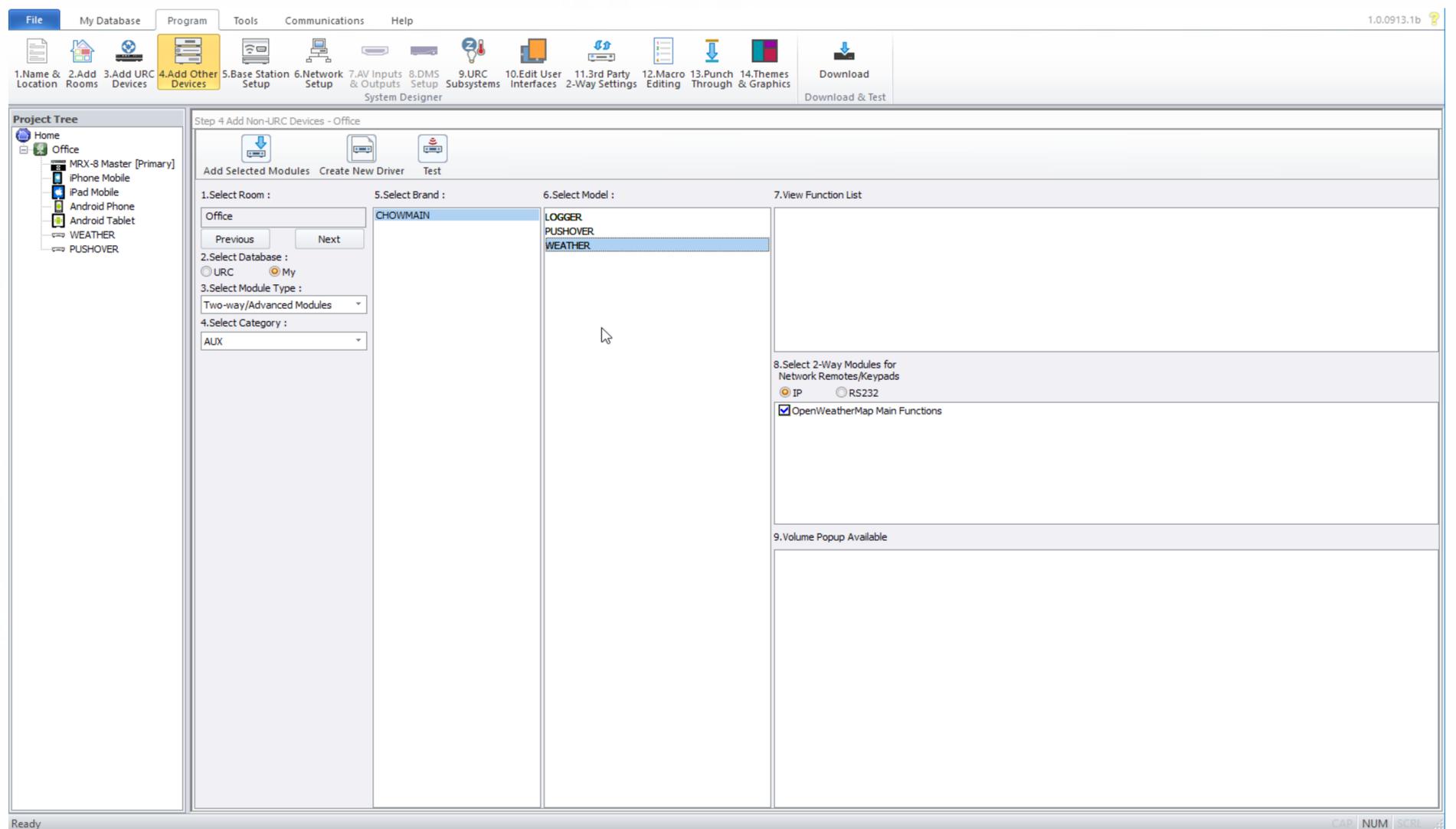
Installation

Add the licence code

The OpenWeatherMap module needs a licence to work. To add the licence go to Step 11 in Accelerator and select the Two Way Module Settings option. In the system parameter Information box enter your licence code.

You will now need to setup the accounts required to use this module and enter those details once you have them in this parameters field.
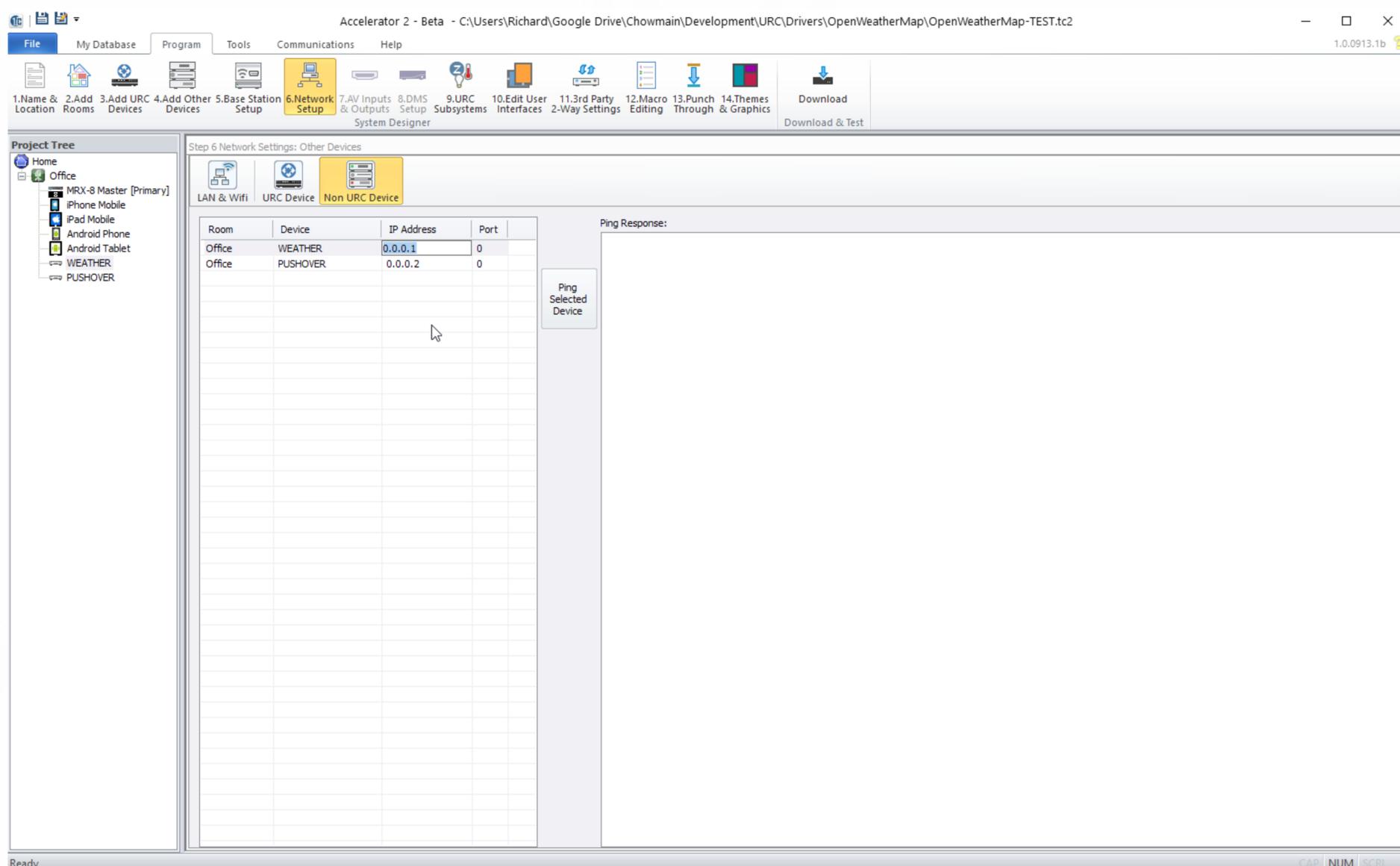
Obtaining a Licence

A licence can be obtained from driverCentral http://www.drivercentral.io. You will need to create an account to obtain a copy of the module.

The module will also work for our free showroom licence that you can apply for at http://www.chowmainsoft.com/urc-dealer-showroom.

The module will also start and automatic 7 day trial if you leave the licence field blank.

Obtain an OpenWeatherMap API Key

This module uses the OpenWeatherMap service. They offer a free key for low volume accounts. For this reason you will want to create an account for each client. It is possible to manage them all from a single account but you will be limited to 60 clients total so its not recommended.
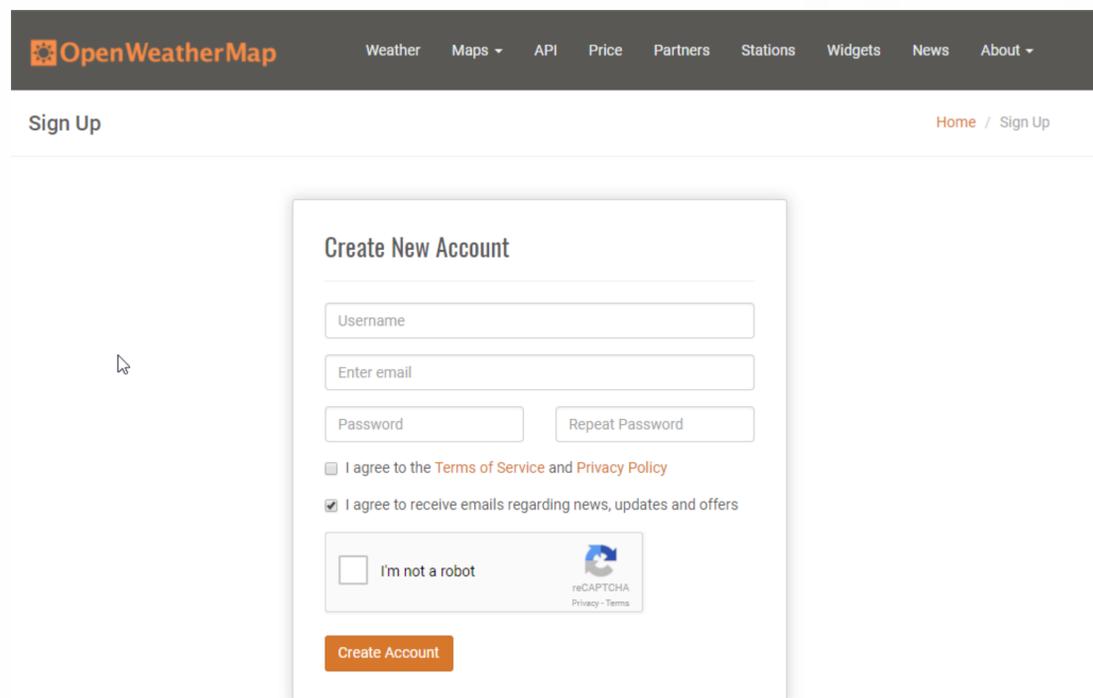
To sign up for a free account head to the OpenWeatherMap webiste at

https://openweathermap.org

and click on the sign up button at the top centre of the page.

Enter the log in detail for the new account in the sign up box.

Once you have completed the sign up process you will be able to access your profile. Go to the profile page (by clicking the name at the top where you originally hit the sign up button) and select the API keys menu.

You will see a page like the one on the right. The API key you need for the system parameters is listed in the Key section.

Choose Your Location

Their are three way to enter your location and depending on where you are located some may work better than others. The three choices are using the latitude and longitude for the location, using the postal code (zip, post code, postcode, etc) or using the city name.

LATITUDE AND LONGITUDE

The latitude and longitude option for specifying your location has the widest coverage. If you are not sure which option to select then this is probably the best bet. The format for entering the latitude followed by a comma and then the longitude

For example Melbourne, Australia would be entered as

    LATLONG=-37.8136,144.9631

The module will accept up to 4 decimal places in either the latitude or longitude.

POSTAL (ZIP) CODE

Using the ZIP parameter you can specify your postal code to be used as the location. If you are based in the US, simply use your zip code. If you are based outside the US you can add a country code by entering the postal code followed by a comma and then a country code.

For example for Melbourne, Australia you would enter

    ZIP=-3000,AU

You can use upper or lower case letters for the country code.

LOCATION (CITY NAME)

You can use the the city name and country for your location by entering the name of the city followed by a comma and then the country code.

For example for Melbourne, Australia you would enter

    LOCATION=-Melbourne,AU

You can use upper or lower case letters for the city and country code.

System Parameters

The OpenWeatherMap module requires a licence code, API key and location to work. It also accepts some additional parameters for more advanced configuration if you need it.
All system parameters are entered in the following format

KEY=VALUE

The following table details the system parameters that work with this module.

KEY	PARAMETER
LICENCE	Licence code to register the driver
KEY	The OpenWeatherMap key (detail below)
LATLONG	The latitude and longitude for the location
ZIP	The zip code for the location
LOCATION	The name of the location
UNITS	Metric or Imperial
DEBUG	Puts the module in to it's debug mode
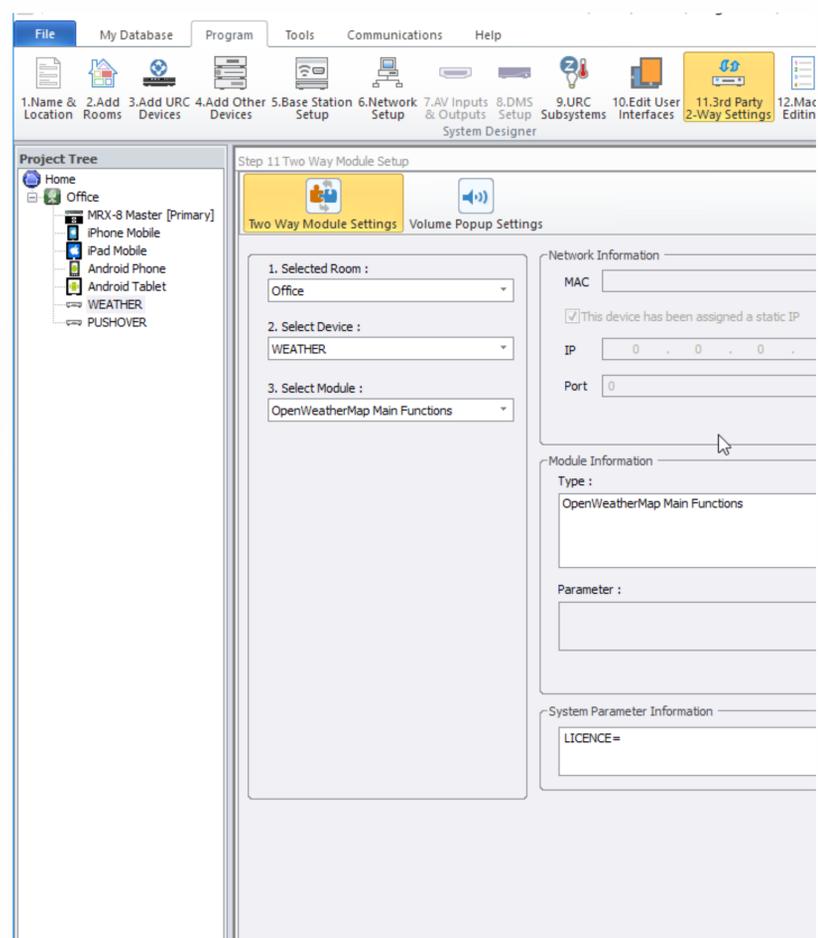
KEY parameter

The KEY parameter is required. The key itself can be obtained from OpenWeatherMap. Details of how to sign up for a key are in the section above.

LATLONG parameter

The LATLONG parameter can be used for entering a latitude and longitude. The latitude and longitude must be entered in decimal format (which is the default if you use a google search). The format for the LATLONG parameter is the latitude followed by a comma and then the longitude.

For example Harrison, NY would be
 LATLONG=-40.9700,73.7176

System Parameters

ZIP parameter

The ZIP parameter will accept a zip code with an optional country code. If you are in the US you can use your ZIP code directly. If you are outside the US you will need to add your country code for the postal code to work.

For example for Mount Eden, New Zealand you would enter

ZIP=-1024,NZ

You can use upper or lower case letters for the country code.

LOCATION (CITY NAME) parameter

You can use the the city name and country for your location by entering the name of the city followed by a comma and then the country code.

For example for Claddaghduff, Ireland you would enter

LOCATION=-Claddaghduff,IE

You can use upper or lower case letters for the city and country code.

UNITS parameter

The units parameter is optional and can be used for specifying imperial (Fahrenheit), metric (Celcius) or kelvin results for the temperature. The default, if omitted, is Imperial.

To set the temperature to return as Celcius you would enter

UNITS=metric

You can use upper or lower case letters for the value.

DEBUG parameter

If the DEBUG parameter is present and set to ON (DEBUG=ON) then detailed log files will be written to the base station. The log files can be fetched by connecting to the base station with FTP and looking in the /Common/Weather folder. This will cause additional load on the processor so it should be left off unless you are asked to turn it on.

OpenWeatherMap Events

The OpenWeatherMap module has several Device Events.

Each type of event will be detailed below with a description of the parameters it uses.

The types of events are Temperature, Weather, Pressure, Wind Speed, Wind Direction, Cloud Cover and Rain.

Decimals are ignored, so best to use whole numbers.
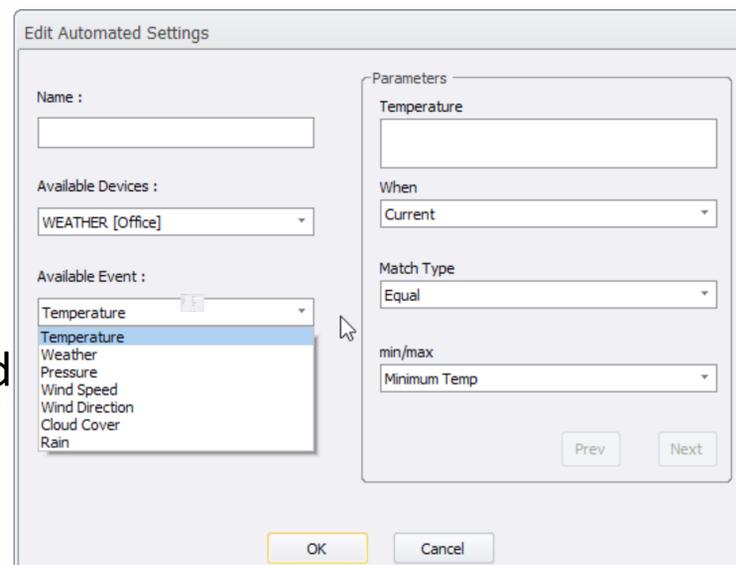
Temperature

The temperature event will trigger when the temperature specified matches based on the match type.

If the temperature is a forecast then you can choose to match the minimum or maximum.

If the When parameter is Current then the min/max field is ignored.
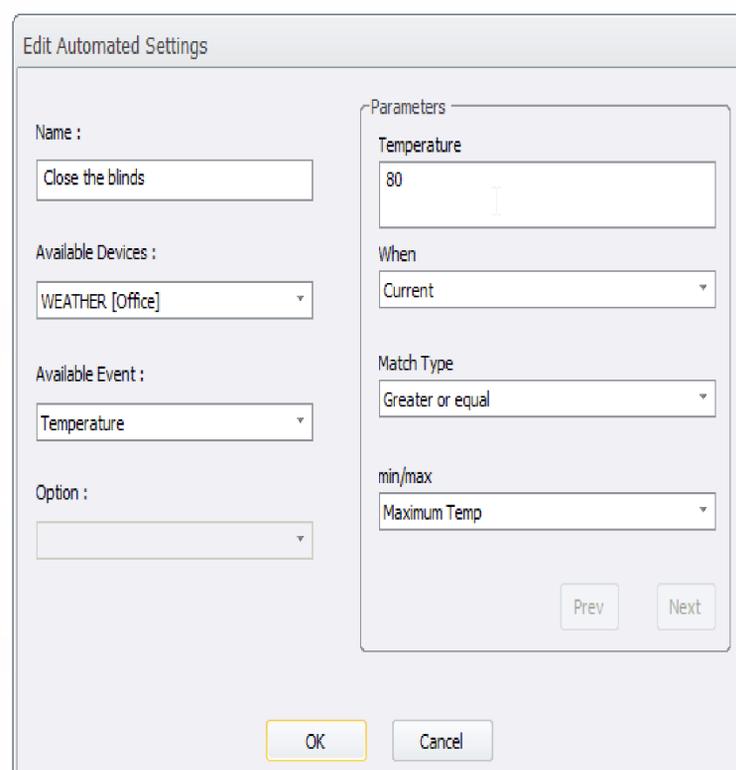
Parameter Details

PARAMETER	DESCRIPTION
TEMPERATURE	the temperature to match against (use a whole number)
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.
MIN/MAX	Match the minimum or maximum temp.

OpenWeatherMap Events

Weather

The Weather event will trigger when the current or forecast weather type matches.

The weather types are broad categories (like Rain or Atmosphere) that indicate the predominant weather type for the specified time period (When)

Parameter Details

PARAMETER	DESCRIPTION
WEATHER	the weather condition to match against
WHEN	Current or a forecast day

Pressure

The Pressure event will trigger when the current or forecast weather type matches.

The pressure event will trigger when the pressure specified matches based on the match type.

The period to check the pressure for is set in the When drop down box.

Parameter Details

PARAMETER	DESCRIPTION
PRESSURE	the pressure to match against (use a whole number)
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.

OpenWeatherMap Events

The Wind Speed event will trigger when the current or forecast weather type matches.

The Wind Speed event will trigger when the wind speed specified matches based on the match type.

The period to check the pressure for is set in the When drop down box.
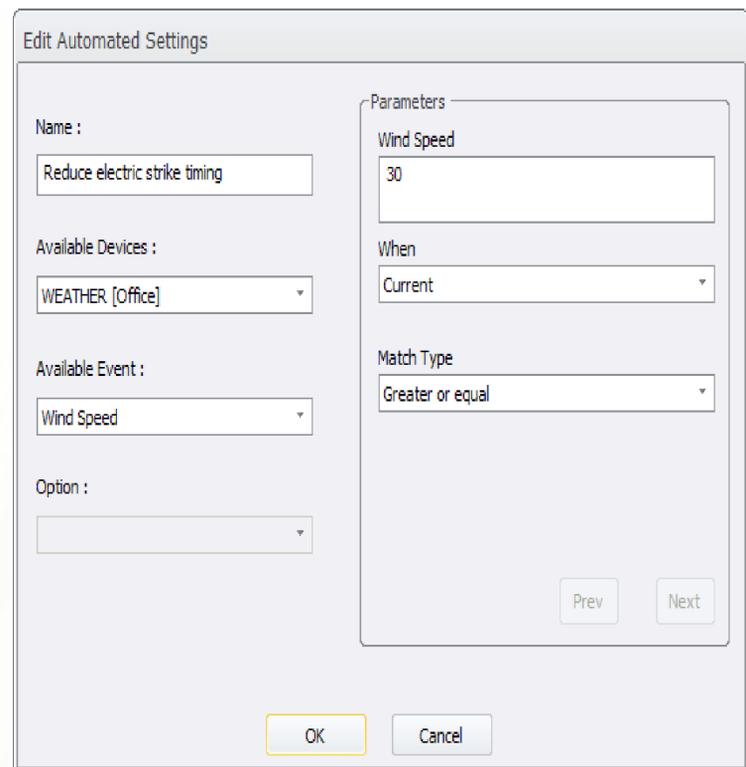
Parameter Details

PARAMETER	DESCRIPTION
WEATHER	the wind speed in knots to match against (use a whole number)
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.

Wind Direction

The Wind Direction event will trigger when the current or forecast weather type matches.

The Wind Direction event will trigger when the wind direction specified matches based on the match type.

The period to check the pressure for is set in the When drop down box.
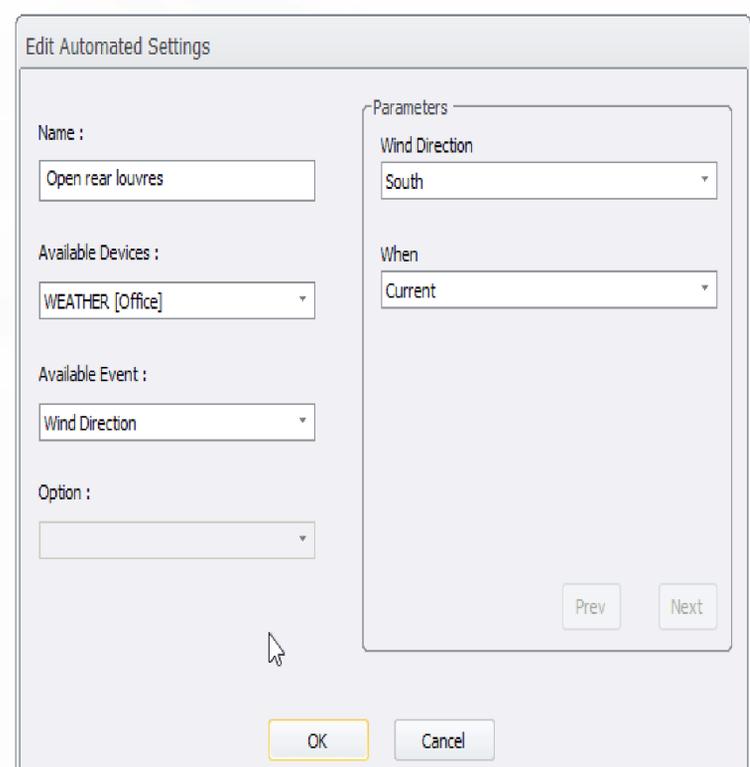
Parameter Details

PARAMETER	DESCRIPTION
PRESSURE	Choose the cardinal direction from the drop down.
WHEN	Current or a forecast day

OpenWeatherMap Events

Cloud Cover

The Cloud Cover event will trigger based off of the specified coverage percentage.

The Cloud Cover event will trigger when the cloud coverage percentage specified matches based on the match type.

The period to check the pressure for is set in the When drop down box.

Parameter Details

PARAMETER	DESCRIPTION
WEATHER	the cloud coverage in percentage to match against (use a whole number, no % sign)
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.

Rain

The Rain event will trigger when the amount of rain specified matches based on the match type.

The time period for this event is specified in the When drop down

The period to check the pressure for is set in the When drop down box.

Parameter Details

PARAMETER	DESCRIPTION
RAIN	The amount of rain as a decimal value.
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.

OpenWeatherMap Events

Snow

The Snow event will trigger when the amount of rain specified matches based on the match type.

The time period for this event is specified in the When drop down

The period to check the pressure for is set in the When drop down box.

Parameter Details

PARAMETER	DESCRIPTION
SNOW	The amount of snow as a decimal value.
WHEN	Current or a forecast day
MATCH TYPE	Equal, less than, less than or equal to, greater than, greater than or equal to.

OpenWeatherMap Two Way Commands

The OpenWeatherMap module has three Two Way Commands.

Each Two Way Command will be detailed below with a description of the parameters it requires and the results it sends back.
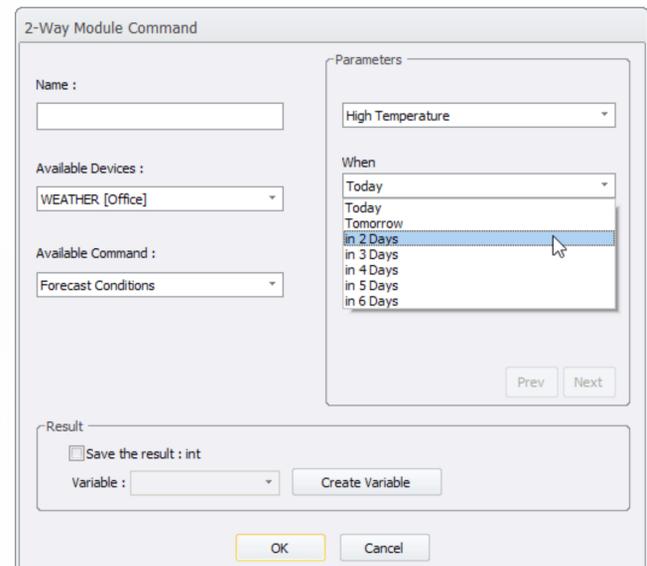
Current Conditions

The current conditions command can fetch the current temperature, humidity, wind speed, wind direction, pressure, rain or cloud cover.

The values returned in each case are whole numbers (integers). The results can be saved in an Integer variable for use in your macros.
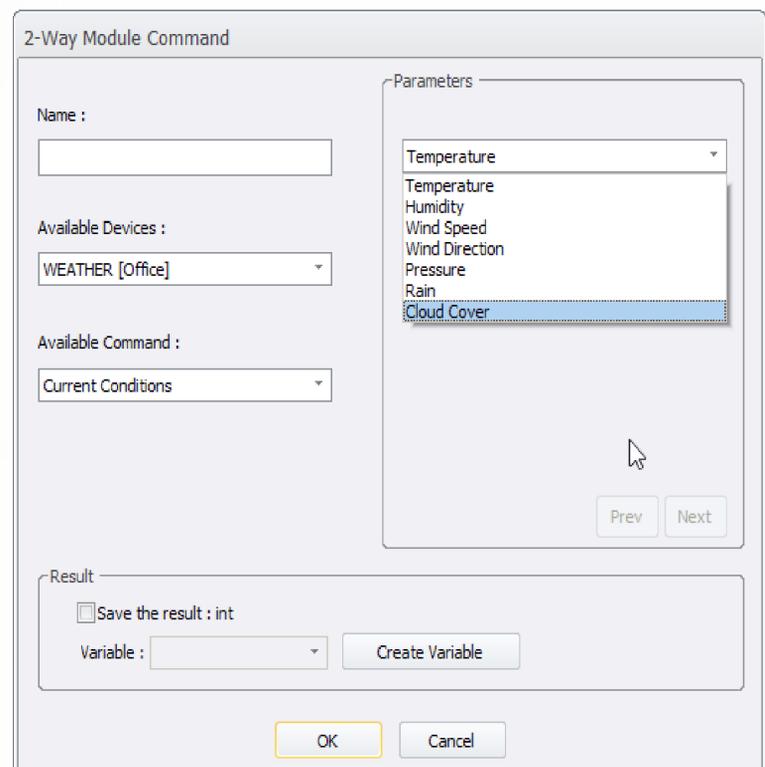
Parameter Details

PARAMETER	DESCRIPTION
CONDITION	The type of weather you want to fetch

Return Value

TYPE	DESCRIPTION
INTEGER	The value of the condition you specified as an integer.

OpenWeatherMap Two Way Commands

Forecast Conditions

The forecast conditions command can fetch the forecast high or low temperature, humidity, wind speed, wind direction, pressure, rain or cloud cover.

The values returned in each case are whole numbers (integers). The results can be saved in an Integer variable for use in your macros.
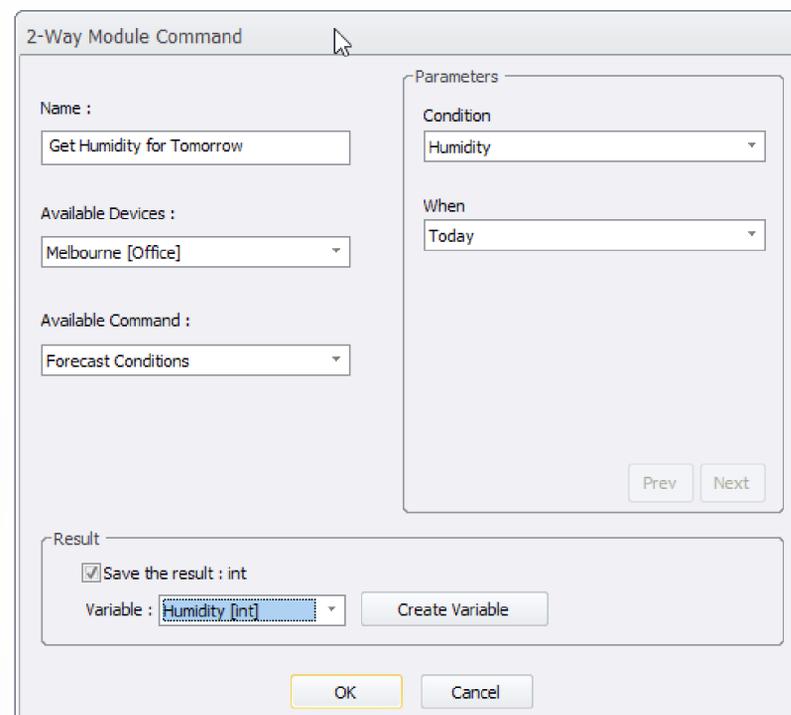
Parameter Details

PARAMETER	DESCRIPTION
CONDITION	The type of weather you want to fetch

Return Value

TYPE	DESCRIPTION
HIGH TEMPERATURE	High temperature for the specified period in F (Imperial) or C (metric)
LOW TEMPERATURE	Low temperature for the specified period in F (Imperial) or C (metric)
WIND SPEED	Maximum Wind Speed for the specified period
WIND DIRECTION	Predominant wind direction for specified period in degrees (see below)
HUMIDITY	Average humidity in percentage (as an integer, no % sign)
PRESSURE	Average barometric pressure in hPa
RAIN	Rain volume in mm over the last 3 hours
CLOUD COVER	Average cloud cover in percentage (as an integer, no % sign)

Wind Direction Value

The wind direction is returned in degrees. The degree is rounded to the nearest 45 so the possible values are 0, 45, 90, 135, 180, 225, 270 and 315. This mapping to cardinal directions is as follows.

0 = North, 45 = North East, 90 = East, 135 = South East, 180 = South, 225 = South West, 270 = West and 315 = North West.

OpenWeatherMap Two Way Commands

Forecast Weather

The forecast weather command can fetch the type of weather for the specified period.

The value returned is a string and matches the weather condition codes listed at

http://openweathermap.org/weather-conditions
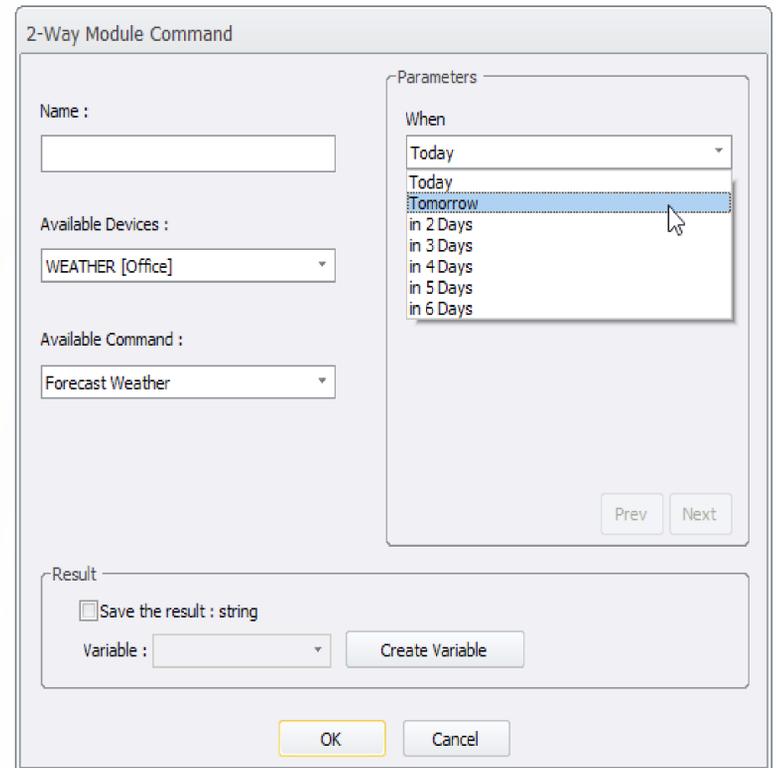
Parameter Details

PARAMETER	DESCRIPTION
WHEN	The period that you wish to get the weather type for

Return Value

TYPE	DESCRIPTION
CONDITION	The weather condition (eg. Thunderstorm, Drizzle, etc.)

Module History

Version 1.0
 - Inital release