OpenWeatherMap Installation and Usage Guide

chowmain

smart home driver development

Contents

Overview

OpenWeather is a team of IT experts and data scientists that has been practising deep weather data science since 2014. For each point on the globe, OpenWeather provides current and forecasted weather data.

The Chowmain OpenWeatherMap agent brings all of this data into Control4 for use in the home automation system. This is useful for automating services within the home based upon the external environment.

Note This is built as a Control4 Agent and will only work on Control4 OS 3.1.3 and above.

Note This is not a replacement for a personal weather station. We recommend utilising Cumulus Weather Stations or WeatherHawk weather station drivers/hardware if you require accurate readings as these provide real time local weather information.

Features

- The agent utilises project's Location and Temperature scale automatically to ensure that the data you receive is specific to your project and is returned in imperial or metric
- Auto polls for weather information every 15 minutes
- Bindings for current temperature and current humidity allows you to connect to temperature display driver and other thermostat drivers
- Current Weather Conditions for:
    - Sunset (time)
    - Sunrise (time)
    - Temperature Minimum
    - Temperature Maximum
    - Wind Speed (miles/hour or meters/sec)
    - Wind Direction (degrees)
    - Temperature (degrees celcius / fahrenheit)
    - Pressure (hPa)
    - Humidity (percentage)
    - Dew Point (degrees celsius / fahrenheit)
    - Clouds (percentage)
    - Rain (mm)
    - Snow (mm)
- Forecasted Weather Conditions for (Today & Tomorrow):
    - Temperature Minimum (degrees celcius / fahrenheit)
    - Temperature Maximum (degrees celcius / fahrenheit)
    - Wind Speed (miles/hour or meters/sec)
    - Wind Direction (degrees)
    - Pressure (hPa)
    - Humidity (percentage)
    - Dew Point (degrees celsius / fahrenheit)
    - Clouds (percentage)
    - Precipitation
    - Rain (mm)
    - Snow (mm)

Usage Scenarios

- Humidifiers can be turned on automatically if it is going to be a dry day
- If it is going to be a hot and sunny day, close the shutters to shut the heat out
- If it is hotter indoors than it is outdoors and the wind direction is facing the motorised windows then open the windows
- If it's going to snow tomorrow, turn on the Heated Driveway System in advance
- If it is going to be a hot day turn on the AC
- If it is going to rain don't automatically water the garden
- Water the garden if it is extremely hot and if it hasn't watered the garden in X amount of days
- If it is going to be a cloudy day and the customer has solar then don't turn on the smart appliances until tomorrow
- Combine with our Advanced Announcements driver to read the weather forecast out in the morning

Disclaimer

This driver relies on a 3rd party online weather service (http://openweathermap.org) and as such Chowmain cannot guarantee the uptime or indefinite availability of these services. Chowmain will however to the best of its ability implement new API's if API's change. Do not utilise this driver for any safety systems or systems that cannot handle any form of down time from this driver. Internet downtime or weather service downtime can potentially cause failure to execute the irrigation system. If you utilise this driver for irrigation purposes you do so at your own risk.

Adding the driver to Composer

1. The driver you have downloaded will be in a zip file. Double click on this file to open it in your preferred zip program (WinZip, WinRar, etc.)
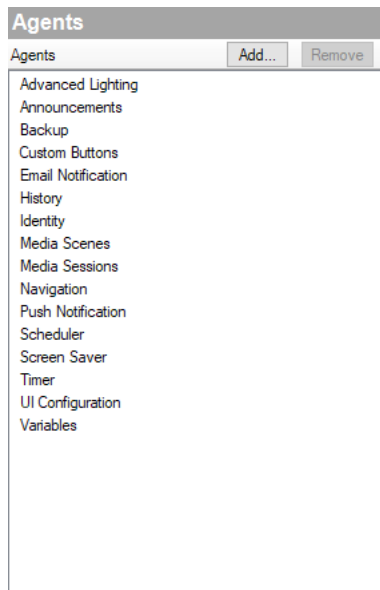

2. Extract the c4i file to the My Documents\Control4\Drivers directory. If you are using Windows 7 or 8 this will be extracted to the Libraries\Documents\Control4\Drivers directory.
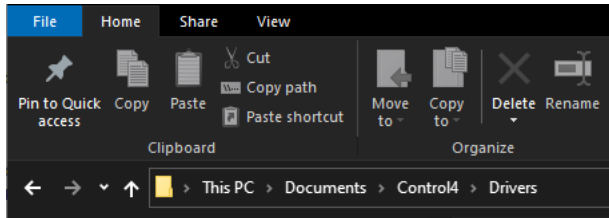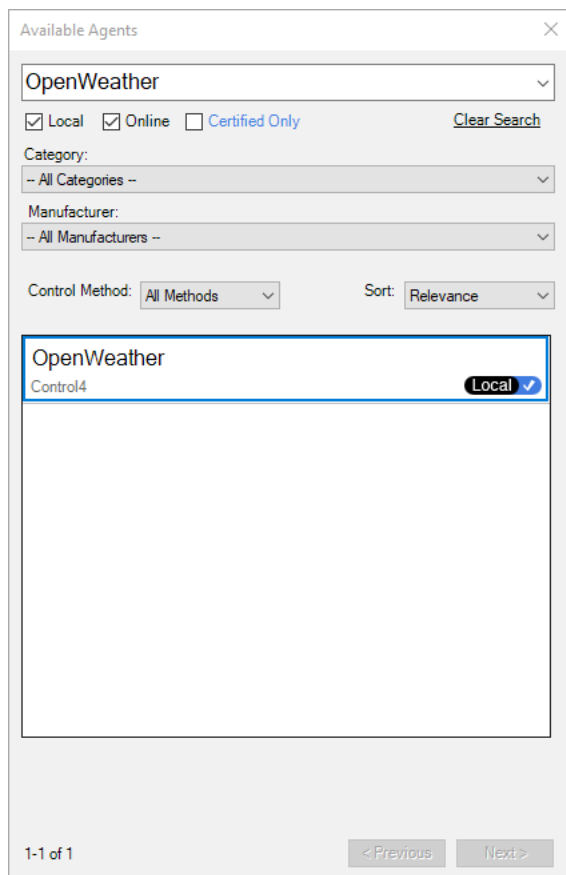

You are now ready to add and configure the driver via the Composer Pro software.

Adding the agent to your project

1. Launch the Composer Pro application and connect to your project

2. Select **Agents** view button

3. Select the **Add...** button

4. Search for **OpenWeather** and double click on the listed **OpenWeather** agent

5. Enter in your free OpenWeatherMaps API Key (if you do not have one, sign up at
    http://home.openweathermap.org/users/sign_in) and press **Set**

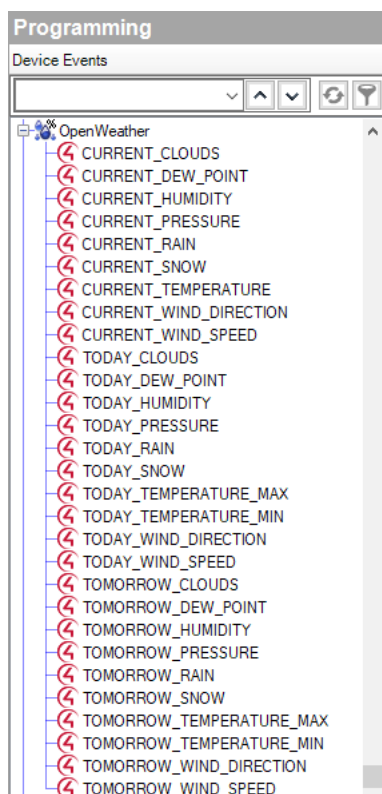| API Key	

The fields in the Properties tab will now populate and update every 15 minutes.

Now you're ready to program your system and devices against the agent's available variables.
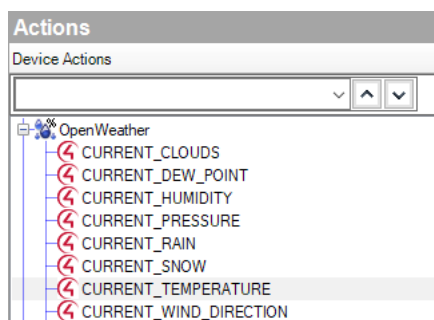
How to use Variables

For each of the examples below, start with these steps;

1. Select the **Programming** view

2. Under **Device Events** select and expand **Open Weather Map**

3. Select the appropriate variable, for example **TODAY_TEMPERATURE_MAX**

4. Under **Device Actions**, select and expand **OpenWeather**

5. Select the appropriate variable, for example **CURRENT_TEMPERATURE**

6. Now select the **Conditionals** tab and build your programming
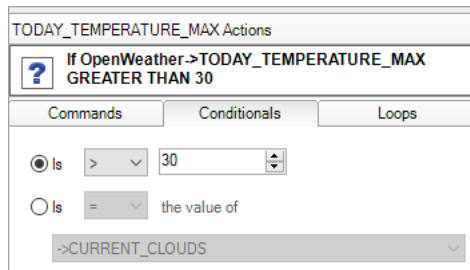
7. Drag the question mark into the script section

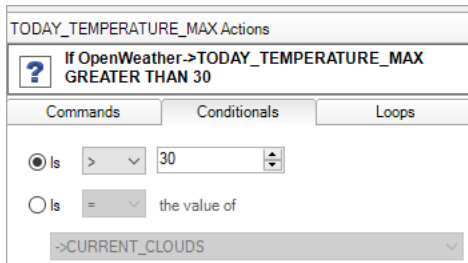8. Drag an action over the question mark (make sure it is over the icon)
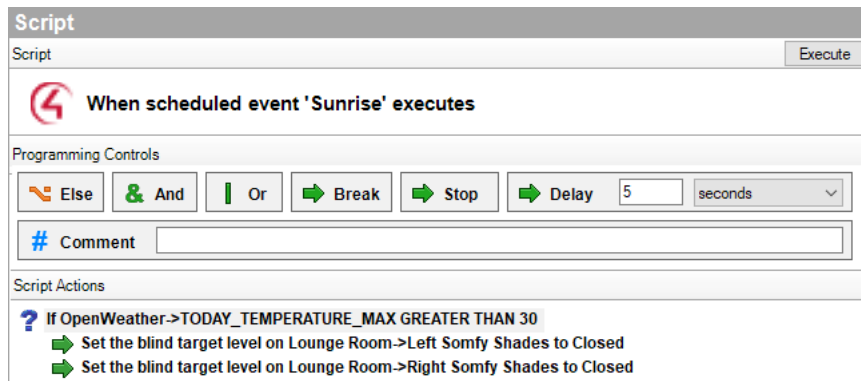
Congratulations! You have set up the conditional logic based upon weather information.
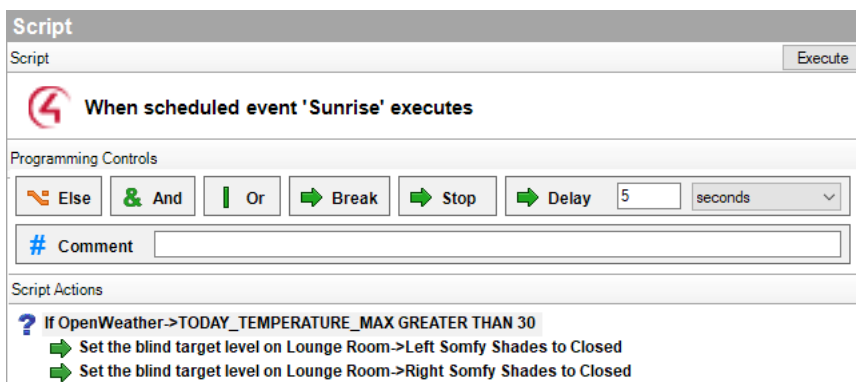
Usage Examples

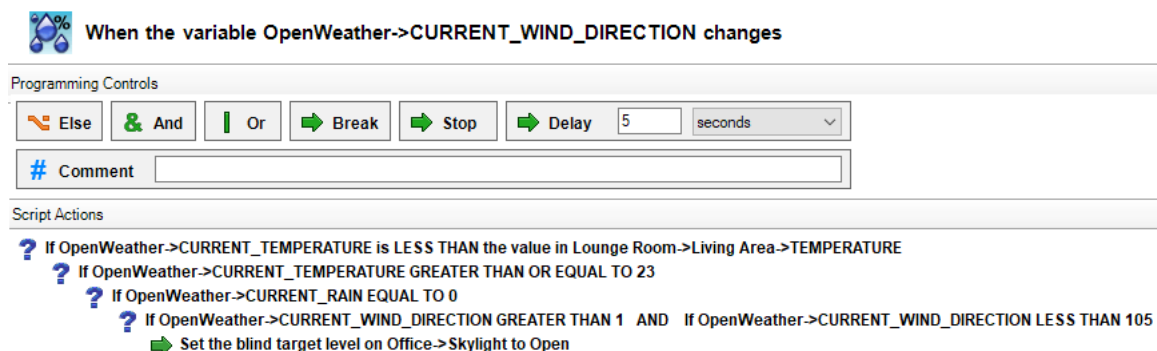## If it is going to be a hot and sunny day, close the shutters to shut the heat out

1. Under Device Actions, using the Conditionals tab Actions, build your programming

2. Drag the question mark into the script section

3. Drag an action over the question mark (make sure it is over the icon)

If it is hotter indoors than it is outdoors and the wind direction is facing the motorised windows then open the windows.

If it's going to snow tomorrow, turn on the Heated Driveway System in advance

When the variable OpenWeather->TOMORROW_SNOW changes

Programming Controls

| Else | And | Or | Break | Stop | Delay | 5 | seconds |

Comment

Script Actions

? If OpenWeather->TOMORROW_SNOW GREATER THAN 0
   Turn the Driveway->Driveway Heater on

If it is going to be a hot day turn on the AC

When the variable OpenWeather->CURRENT_TEMPERATURE changes

Programming Controls

| Else | And | Or | Break | Stop | Delay | 5 | seconds |

Comment

Script Actions

? If OpenWeather->CURRENT_TEMPERATURE GREATER THAN OR EQUAL TO 23
   Set the cool setpoint on Lounge Room->Living Area to 23C

Combine with our Advanced Announcements driver to read the weather forecast out in the morning.

Please see Advanced Announcements documentation for a detailed guide to building announcements and how to locate the PARAM(x,y) details

When scheduled event 'Weekday Morning' executes

Programming Controls

| Else | And | Or | Break | Stop | Delay | 5 | seconds |

Comment

Script Actions

Convert Good Morning Alan. Today's temperature is expected to reach PARAM{1374,1011} degrees. to speech

Licensing

- How does the trial period work?

  All Chowmain drivers are free to use for a set trial period. When the trial expires the driver will cease to function until you purchase a licence and apply it to the driverCentral project.

- Where do I buy a Licence from?

  This driver is developed by Chowmain software & Apps and is distributed by driverCentral, Inc
  https://www.drivercentral.io/chowmain-ltd
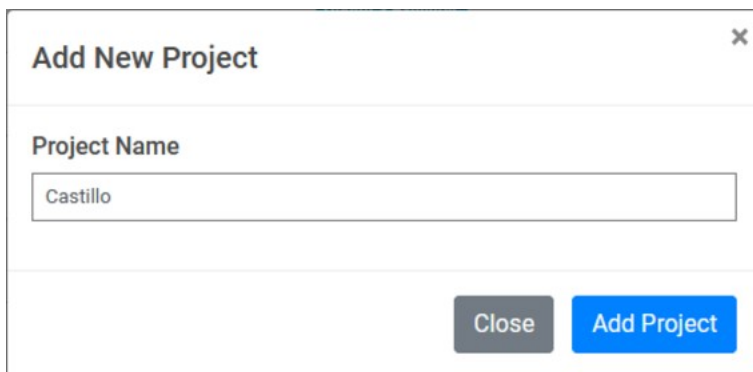
  To purchase a driver:

  1) On driverCentral, purchase a license and register it to your project

  1) If the driver is not already installed in your project, download it and install it

  1) If necessary, use the cloud driver's Action: "Check Drivers" to force the licence to download into the project

Creating a Project on Driver Central

1. Visit http://www.drivercentral.io

2. Log into your driver Central dealer account

3. Click **Portal**

4. Click **New Project**

5. Enter the project name

   Add New Project   ✕

   Project Name

   Castillo

   Close   Add Project

6. Click **Add Project**

7. Click on the project we just created

Project	Status	Created
🏠 Castillo	Unassigned Project	1999-12-31 23:59:56

8. Take note of the **Project Token** as this will be used later when we install the Cloud Driver

Castillo 🖊

Project Token:
ABCDEFG012

MAC:
000FFF123456

IP:
1.2.3.456

Connection Status:
Offline

Last Seen:

Actions:
➕ 🔗 🗑

There are no drivers attached to this project.

Close

9. Click **Close**

Purchasing a Driver Licence

1. Visit https://www.drivercentral.io/chowmain-ltd/ and find the product/driver you want to purchase a licence for

2. Click on **Add to Cart**

ADD TO CART

3. Now click the shopping cart icon (top right) and click **View cart**

BenQ universal projector
2 x $70.00

Hikvision
1 x $50.00

View cart
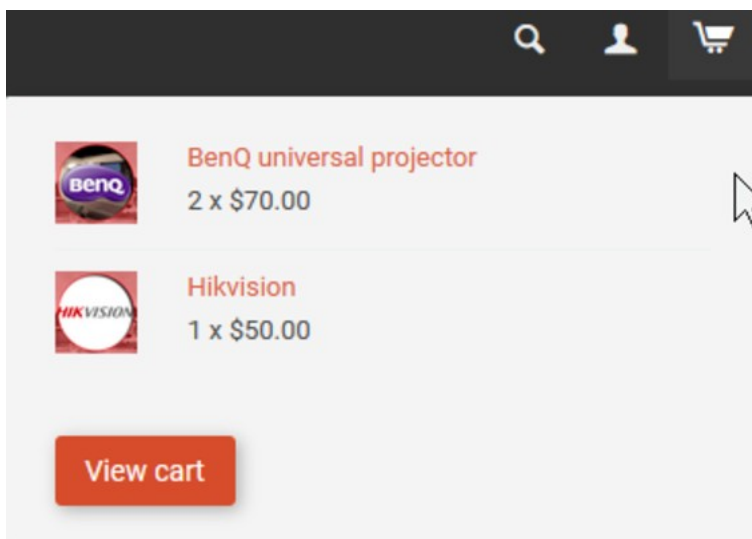
4. Confirm that your order is correct and click on **Proceed to checkout**

Proceed to checkout

5. Choose your payment option, provide the relevent details and click **Place order**

6. You will now be at a page where you can see your purchased licence

7. From here assign the licence to the project we created or if you did not follow that step create a new project

Install the driverCentral cloud driver

1. Visit http://www.drivercentral.io

2. Log into your driver Central dealer account

3. Click **Portal**

4. Click **Cloud Driver**
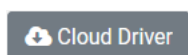
5. Copy the C4Z driver to My Documents\Control4\Drivers directory

6. Add the driver to your project

7. Click on the driver to view it's properties

Cloud Status	Please enter cloud project token below....
Project Information	(1) Total, (0) Licensed, (0) Trials, (1) Expired, (0) Updates.
Driver Version	1001
Project Token	
	Project token from driverCentral.io project portal
Driver Actions	
Debug Mode	Off

8. Type in the project token we took note of earlier

9. Click **Actions** tab

10. Click **Check Drivers**

Install Chowmain driver

1. Install the Chowmain driver

2. You will notice that the Activation Status reflects a Licence Activated state

3. Any driver that does not have a purchased licence will have a trial licence activated via the marketplace
   Note that there is no way to reactivate the trial so please use wisely

4. If you do not then press the Check Drivers action in the driverCentral Cloud driver again

Activation Status	Update Available!!! License Activated
Driver Version	1002
Driver Information	Navigate to connections tab and make serial binding
Automatic Updates	Off