



Generic TCP Command Driver

Installation and Usage Guide

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Overview

Control4 allows for you to easily integrate infra red based audio/visual devices but it does not give you the ability to integrate TCP/IP based devices easily.

This is where the Chowmain generic tcp command driver comes in. With customisable actions you can now easily fire off TCP, HTTP or Wake on Lan commands to any device or service contactable from your network. This driver also allows you to control Control4 via inbound HTTP commands.

Usage Scenarios

- Firing a command to start-up or shutdown a NAS drive
- Firing a command to trigger an IP Camera to start recording
- Making a quick TCP/IP based AV driver.
- Using push notification services such as pnotify.com to give you dynamic feedback about your home.
- Posting Control4 data (such as usage, temperature, lux levels, power usage, etc) to a database server.
- Controlling Control4 from 3rd party systems (via inbound HTTP get commands) such as IP cameras trigger Control4 on motion, line crossing, tamper, etc or even Siri!

Features

- Everything is programmed from the actions tab
- HTTP events
 - Allows you to create an infinite amount of inbound HTTP events to control Control4.
- HTTP commands
 - Supports URL encoded usernames, passwords and ports eg <http://192.168.1.131:32400/library>
 - Support for HTTP GET and HTTP POST commands (allows for control using iOS, Siri and 3rd party devices such as cameras).
- Ascii based TCP commands
 - Definable IP Address, Port and Command
 - Command can contain special character delimiters such as carriage returns or line feeds (eg \r\n).
- Ascii based UDP commands
 - Definable IP Address, Port and Command
 - Command can contain special character delimiters such as carriage returns or line feeds (eg \r\n).
- Wake On LAN command
 - Can be used to wake up a sleeping or powered off device that supports wake on lan (eg computers or NAS drives).
- Can be used to quickly integrate devices not normally integrated within Control4's driver wizard by adding tcp commands to their events page.
- Can insert variables into a URL or the command. This means you can now integrate dynamic messages.

Important Notice

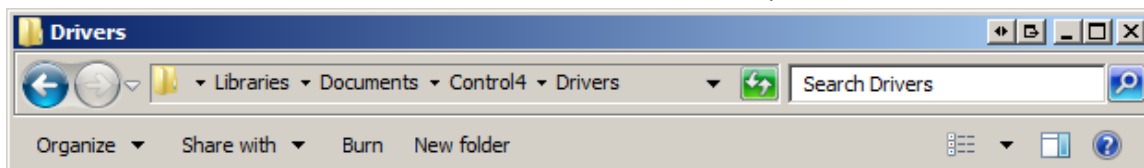
This driver has been developed for Control4 OS version 2.6.0. It will not work with earlier versions of OS

Driver Installation

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.

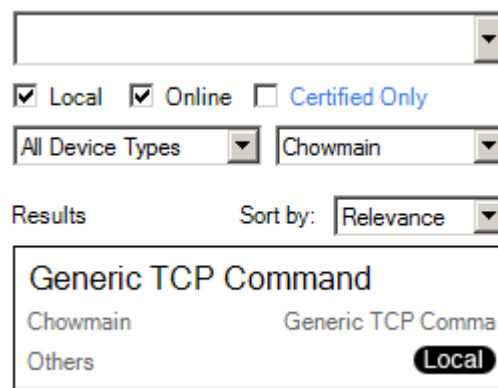


3. You are now ready to add and configure the driver via the Composer Pro software.

Adding the driver to your project

IMPORTANT – Before undertaking the installation of the driver please follow the licencing steps outlined at the end of this document.

1. Launch the Composer Pro application and connect to your project
2. In the '**System Design**' page select the '**Search**' tab on the right hand side.
3. Select '**Chowmain**' as the manufacturer.



Search results interface showing filters and results:

- Search bar (empty)
- Filters: ☒ Local, ☒ Online, ☐ Certified Only
- Device Types: All Device Types (dropdown), Chowmain (dropdown)
- Results: Generic TCP Command
- Sort by: Relevance (dropdown)
- Results list:

Chowmain	Generic TCP Comma
Others	Local

4. Double click on the '**Generic TCP Command**' driver to add it to your projectProgramming tcp commands to fire

Controlling Control4 from 3rd party devices

This functionality allows you to control Control4 using HTTP GET commands from 3rd party devices

1. In the '**System Design**' tab and select the '**Generic TCP Command**' driver
2. Take note of the Webserver Address as this is the base URL we need later on.

Webserver Address	http://192.168.0.250:49904/
--------------------------	-----------------------------

3. To create events type in endpoints for each event in the Add incoming command box.

Add incoming command	
-----------------------------	--

For example

motionDetected

houseOff

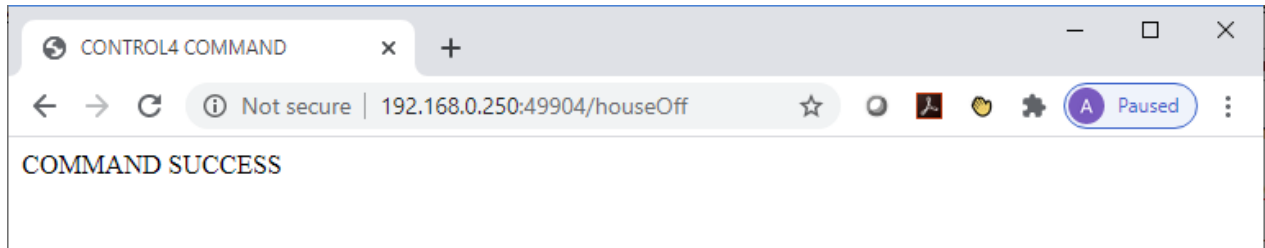
4. If you want to delete any events you can do so from the '**Remove incoming command**' drop down.

Remove incoming command	<div>houseOff</div> <div>heatingOn</div> <div>heatingOff</div> <div>garageOpen</div> <div>garageClose</div>
Debug Mode	

5. Click on the '**Programming**' tab and select the '**Generic TCP Command**' driver in the events side (left)
6. Select the event in the drop down box you want to program

Generic TCP Command Events	
<input checked="" type="radio"/>	<div>Command Sent</div> <div>Command Sent</div> <div>garageClose</div> <div>garageOpen</div> <div>heatingOff</div> <div>heatingOn</div> <div>houseOff</div>

7. Add desired programming to the event.
8. Test out the URL in your web browser to verify it fires the programming. The address is a combination of the base URL and the endpoints we created. The driver will reply with COMMAND SUCCESS if it receives the command and has fired the event.



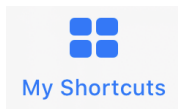
Controlling Control4 from iPhone Shortcuts or Siri


This section details how to setup your iPhone shortcuts or Siri on your iPhone to fire the events we created in the previous section (labelled Controlling Control4 from 3rd party devices). It assumes you have completed that section with all desired functionality before attempting this section.

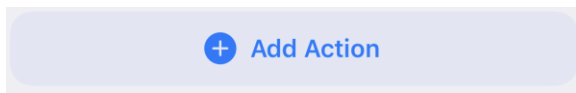
1. The shortcuts app is pre-installed on all iPhones. If you have deleted the Shortcuts app please reinstall the app from [App Store](#).



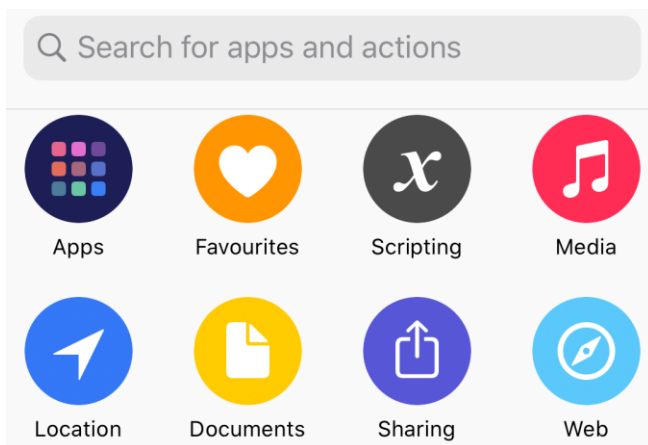
2. Once installed please launch the App.
3. Click on the My Shortcuts Icon



4. Click on the  symbol on the top right
5. It will now prompt you to create a new shortcut.
6. Click on Add Action



7. Click on Web



8. Select 'Get Contents of URL' under 'Web Requests'

Web Requests



Get Contents of URL



9. Type in the URL we created in the section labelled '**Controlling Control4 from 3rd party devices**' and press Next

NETWORK
 ×

Get contents of <http://192.168.0.250:49904/houseOff>

Show More >

10. Type in the shortcut name. Note this name is used to tell siri to run the shortcut.

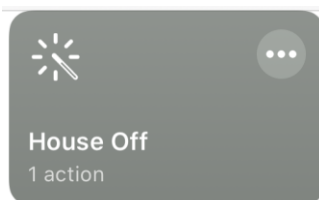


House Off



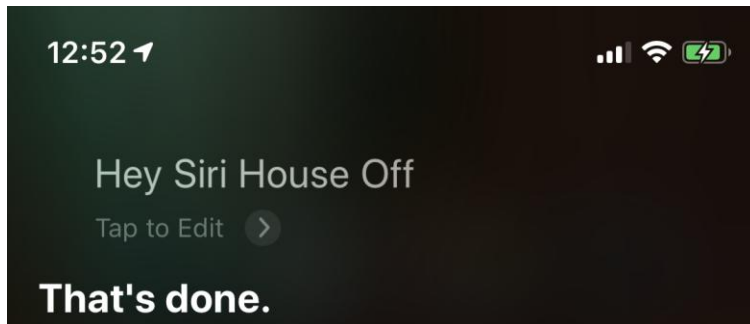
Just say "Hey Siri, House Off" to run this shortcut.

11. Test out your shortcut under My Shortcuts

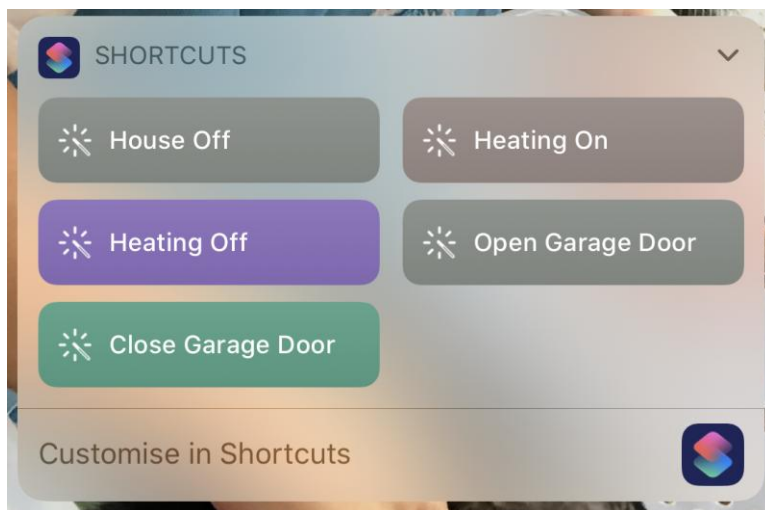


12. Once confirmed close the app

13. Test by execute the shortcut using Siri (Hey Siri House Off)



14. Alternatively you can use execute the shortcut using the Shortcuts widget on your iPhone.

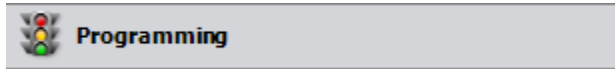


15. Congratulations you have setup Shortcuts to control Control4

Programming tcp commands to fire

Please note that this will only send ascii based TCP messages

16. Click on the '**Programming**' tab.



17. Under Device Events select the event on which you want to trigger the command on.
18. On the Device Actions side select the Generic TCP Command driver.
19. Click on the radio button labelled Device Specific Command.
20. Select 'Send Generic TCP command' from the drop down box
21. Enter in the IP Address, Port and Command you wish to send.

ASCII

For ASCII please select ASCII in the Encoding dropdown box.

Note special characters can be inputted as well

eg \r\n is carriage return and line feed

HEX

For Hex please select HEX in the Encoding dropdown box.

HEX should be formatted as 00 11 22 33 or 0x00 0x11 0x22 0x33

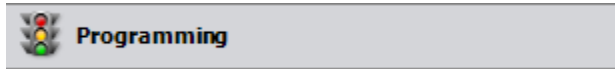
IP Address	192.168.1.2
Port	1
Command	
Encoding	<div> <div>ASCII</div> <div>ASCII</div> <div>HEX</div> </div>

22. Drag and drop the Green arrow into your script section
23. Congratulations you have setup a TCP command to fire upon that event.

Programming udp commands to fire

Please note that this will only send ascii based UDP messages

1. Click on the '**Programming**' tab.



2. Under Device Events select the event on which you want to trigger the command on.
3. On the Device Actions side select the Generic TCP Command driver.
4. Click on the radio button labelled Device Specific Command.
5. Select 'Send Generic UDP command' from the drop down box
6. Enter in the IP Address, Port and Command you wish to send.

ASCII

For ASCII please select ASCII in the Encoding dropdown box.

Note special characters can be inputted as well

eg \r\n is carriage return and line feed

HEX

For Hex please select HEX in the Encoding dropdown box.

HEX should be formatted as 00 11 22 33 or 0x00 0x11 0x22 0x33

IP Address	192.168.1.2
Port	1
Command	
Encoding	<div> <div>ASCII</div> <div>ASCII</div> <div>HEX</div> </div>

7. Drag and drop the Green arrow into your script section
8. Congratulations you have setup a UDP command to fire upon that event.

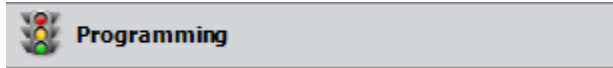
Special Characters

You can find below a list of C-like escape sequences you can use in the TCP Command field. Note how it is delimited with backslashes and only available in ASCII encoding.


\a	bell
\b	back space
\f	form feed
\n	newline
\r	carriage return
\t	horizontal tab
\v	vertical tab
\\	backslash
\"	double quote
\'	single quote
\[left square bracket
\]	right square bracket

Programming HTTP GET commands to fire

1. Click on the 'Programming' tab.



2. Under Device Events select the event on which you want to trigger the command on.
3. On the Device Actions side select the Generic TCP Command driver.
4. Click on the radio button labelled Device Specific Command.
5. Select 'Send HTTP GET command' from the drop down box

 **Device Specific Command**

Send HTTP GET 

Enter in the URL of the command. Note that HTTP Auth usernames and passwords are allowed along with port numbers in the following format <http://user:pass@ip:port/command>.

If you want to add in variables please do so in the format of PARAM{x,y}. See the section labelled how to use variables for more details.

eg <http://root:password@192.168.1.2:23/poff>

eg <http://192.168.1.2:23/poff>


eg <http://root:password@192.168.1.2/poff>

Web Address 

6. Drag and drop the Green arrow into your script section



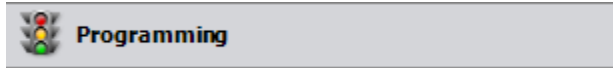
When Outdoor / Other Areas->Ness M1 has been armed to Home

 Send HTTP get command: <http://192.168.1.2:1/POFF>


7. Congratulations you have setup a HTTP command to fire upon that event.

Programming HTTP POST commands to fire

1. Click on the 'Programming' tab.



2. Under Device Events select the event on which you want to trigger the command on.
3. On the Device Actions side select the Generic TCP Command driver.
4. Click on the radio button labelled Device Specific Command.
5. Select 'Send HTTP POST command' from the drop down box

 **Device Specific Command**

Send HTTP POST 

Enter in the URL of the command. Note that HTTP Auth usernames and passwords are allowed along with port numbers in the following format <http://user:pass@ip:port/command>.

If you want to add in variables please do so in the format of PARAM{x,y}. See the section labelled how to use variables for more details.

eg <http://root:password@192.168.1.2:23/poff>

eg <http://192.168.1.2:23/poff>

eg <http://root:password@192.168.1.2/poff>

Web Address  <http://192.168.1.2:1/PO>

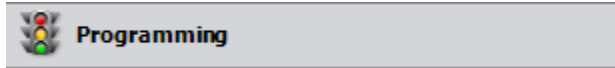
6. Enter in the data you want to post into the Post Data field format should be name=value with & signs to separate multiple data fields eg name1=value1&name2=value2 etc.

Post Data  title=testing title&detail=te

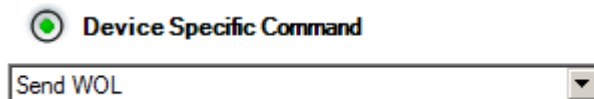
7. Drag and drop the green arrow into your script.
8. Congratulations you have setup a HTTP command to fire upon that event.

Programming Wake-on LAN commands to fire

1. Click on the '**Programming**' tab.



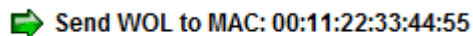
2. Under Device Events select the event on which you want to trigger the command on.
3. On the Device Actions side select the Generic TCP Command driver.
4. Click on the radio button labelled Device Specific Command.
5. Select 'Send WOL command' from the drop down box



6. Enter in the MAC Address for the device you want to send the wake on lan request to.



7. Drag and drop the green arrow into your script.

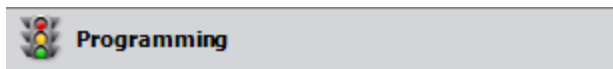


8. Congratulations you have setup a wake on lan command to fire upon that event.

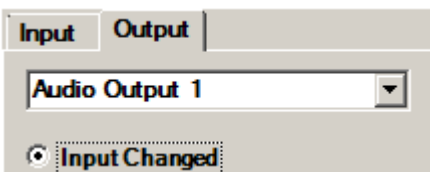
Making quick IP drivers in Control4

This method uses the Chowmain Generic TCP Command driver in conjunction with the driver wizard to quickly make a TCP based driver for any AV based device.

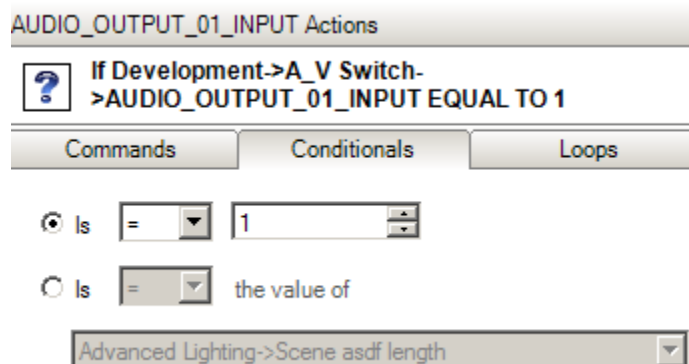
1. Create a device in the driver wizard (can be IR or RS232 based it doesn't matter).
2. Add the driver to your system.
3. Make the AV connections for the device (do not make any IR or RS232 connection bindings).
4. Click on the '**Programming**' tab.



5. Under Device Events select the device you just created.
6. Select the Device Event you want to program for.



7. Under the Device Actions select any conditionals you want to add in addition to the event.



8. Drag and drop the green arrow into the script section

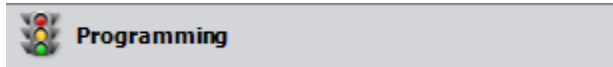


When input changes on Audio Output 1


? If Development->A_V Switch->AUDIO_OUTPUT_01_INPUT EQUAL TO 1
➡ Send generic TCP command: set:1\r\n to host 192.168.1.2 on port 50002

Using the HTTP POST command to fire a push notification

1. Visit <http://pnotify.com> and follow the setup steps.
2. In Composer click on the '**Programming**' tab.



3. Under Device Events select the event on which you want to trigger the notification on.
4. On the Device Actions side select the Generic TCP Command driver.
5. Click on the radio button labelled Device Specific Command.
6. Select 'Send HTTP POST command' from the drop down box

 **Device Specific Command**

Send HTTP POST

Enter in the URL of the pnotify service (<http://pnotify.com/submit/CODE>) . Note you will need to replace CODE with your unique code generated from the site.

Web Address

7. Enter in the title and detail fields you want to post into the Post Data field format should be title=title data&detail=detail data

Post Data

8. Drag and drop the green arrow into your script.
9. Congratulations you have setup a push notification using pnotify.com to fire upon that event.

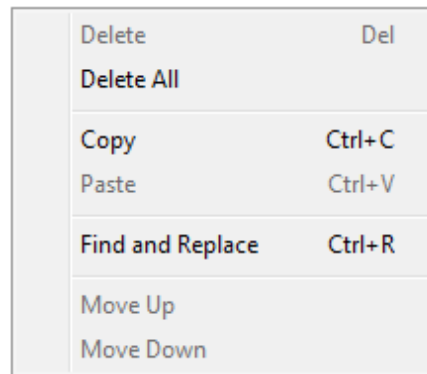
How to use variables

1. In the programming tab create an action with the variable you want to get.

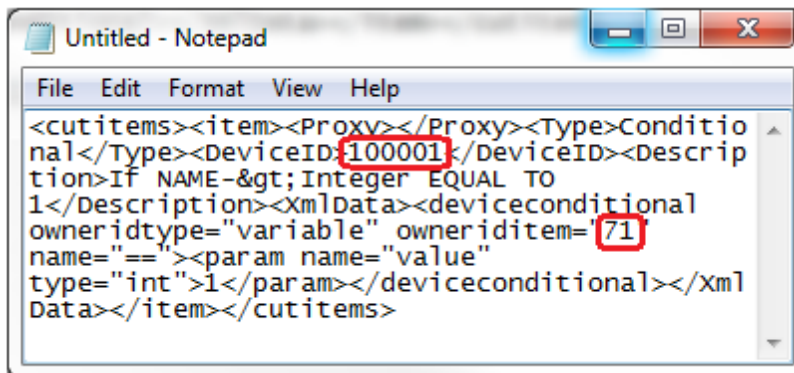


? If Variables->Integer EQUAL TO 1

2. Right click and click on Copy



3. Open a text editor (notepad is available on all versions of windows) and paste the copied content.



4. Take note of the DeviceID and the owneriditem numbers (the above example is 100001 and 71)
5. Follow the steps in the first section of the document logging an event. To use the parameter type in PARAM{x,y} where x is the DeviceID and Y is the owneriditem (variable id).

EG. "The current lighting level is PARAM{100001,71} percent."

Licencing

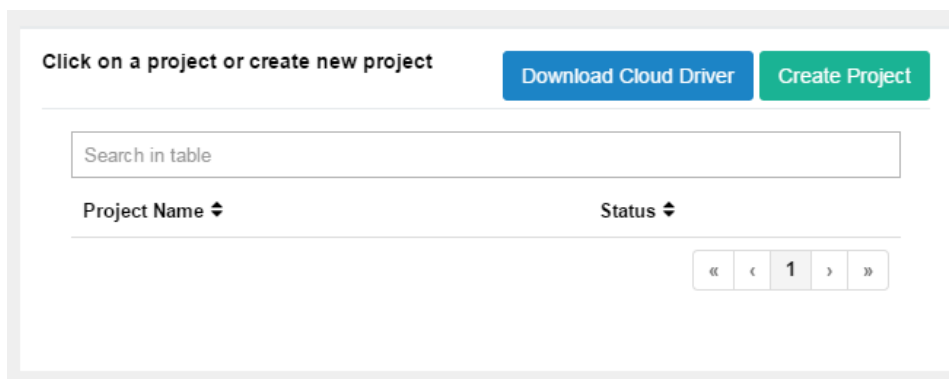
Chowmain drivers require a valid licence to use the driver. Drivers can be purchased from our distributor [driverCentral](#) however all Chowmain drivers come with a 7 day trial. We recommend that prior to purchasing a driver that you test the driver out to ensure that it will work with your hardware and will meet your requirements. The licencing procedure is broken down into 4 steps. A summary of the steps are below along however we have also provided detailed steps if the summary is not sufficient.

Summary

1. Create your project on the driverCentral.io website (This will generate a specific token which you will use in the next step)
2. Download, install and activate the driverCentral cloud driver in your project (Only once per project. Use the token generated in step 1)
3. (Optional) To try a driver, simply download it and install it in your project
4. To purchase a driver:
 - a. On driverCentral, purchase a license and register it to your project
 - b. If the driver is not already installed in your project, download it and install it
 - c. If necessary, use the cloud driver's Action: "Check Drivers" to force licence download to the project.

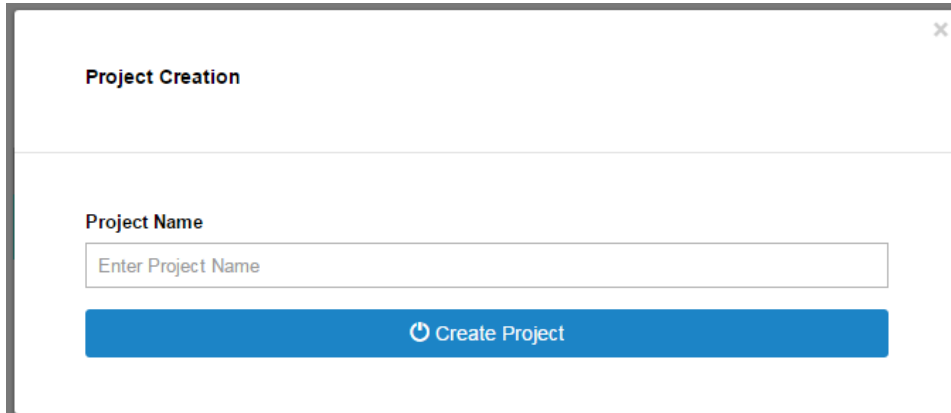
STEP 1 - Creating your project on driverCentral

1. Visit <http://www.drivercentral.io>
2. Log into your driver Central dealer account.
3. Visit the Project Portal
4. Click on Create Project



The screenshot shows the 'Project Portal' interface. At the top, there is a header with the text 'Click on a project or create new project' and two buttons: 'Download Cloud Driver' (blue) and 'Create Project' (green). Below the header is a search bar with the placeholder text 'Search in table'. Under the search bar, there are two columns: 'Project Name' and 'Status', both with a dropdown arrow. At the bottom right, there is a pagination control showing '« ‹ 1 › »', indicating that there is one page of results.

- It will prompt you for a project name. Type in a meaningful name for your customer's project



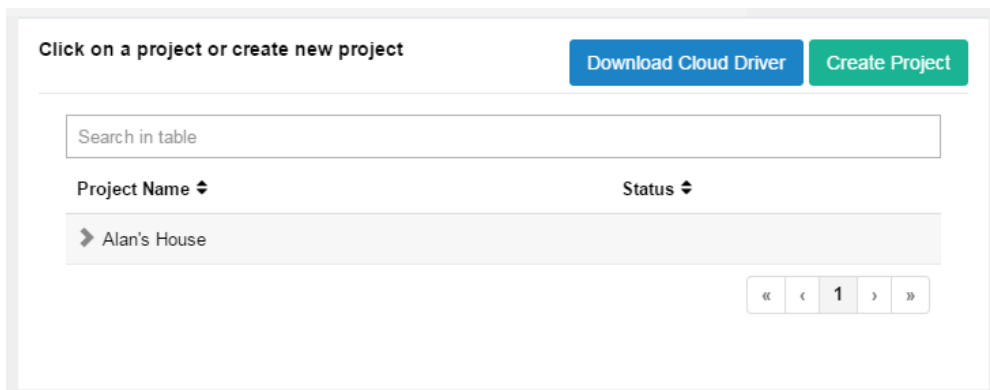
Project Creation

Project Name

Enter Project Name

Create Project

- Click on Create Project
- Click on the project we just created to expand the project



Click on a project or create new project

Download Cloud Driver Create Project

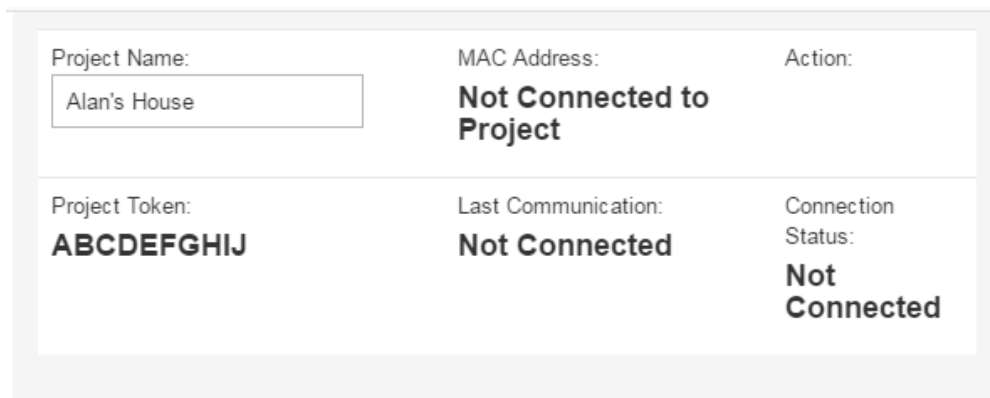
Search in table

Project Name Status

Alan's House

« < 1 > »

- Take note of the Project Token as this will be used in STEP 3 when we install the driverCentral cloud driver.



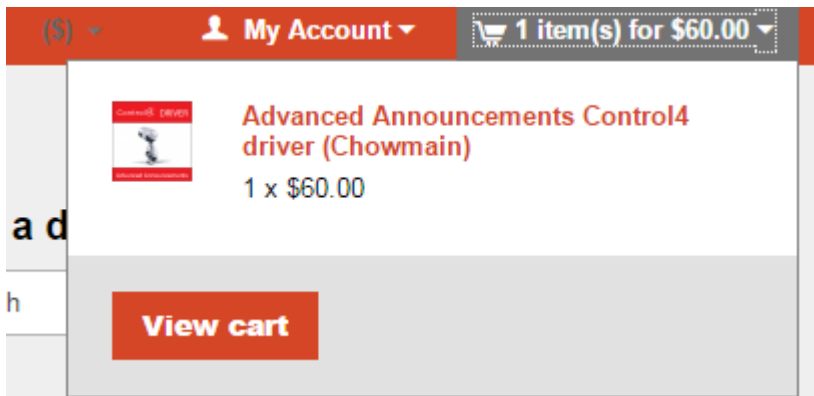
Project Name: Alan's House	MAC Address: Not Connected to Project	Action:
Project Token: ABCDEFGHIJ	Last Communication: Not Connected	Connection Status: Not Connected

STEP 2 –Purchase 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 the Add to Cart button



3. Click on the Shopping Cart icon in the top right corner and click on View cart




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



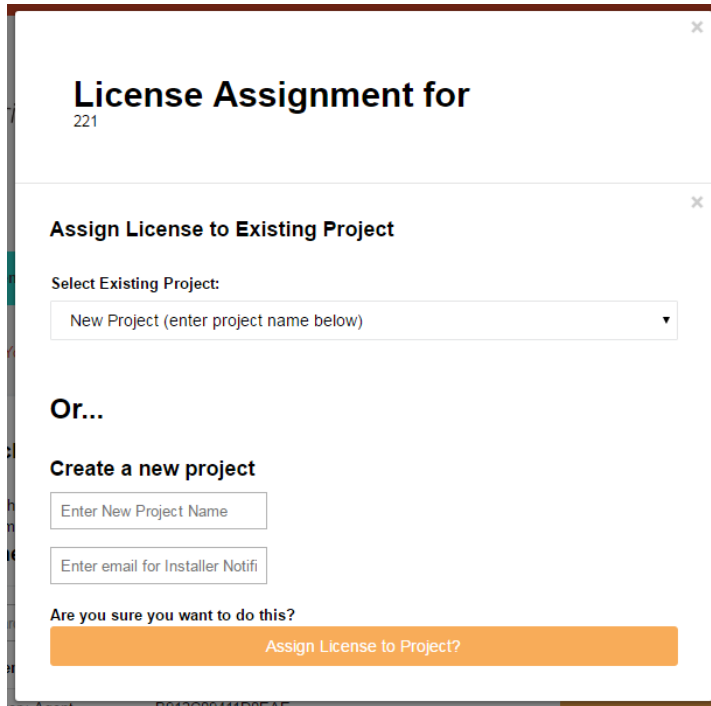
5. Follow the prompts and click on Submit my order



6. This will take you to PayPal for payment.
7. Pay via PayPal. It will automatically return to the marketplace when confirmed.
8. You will now be at a page where you can see your purchased licence.

License Name ↕	License Key ↕	Project Assigned ↕	Action ↕
			<button>Assign to Project</button>

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



License Assignment for
221

Assign License to Existing Project

Select Existing Project:
New Project (enter project name below) ▼

Or...

Create a new project

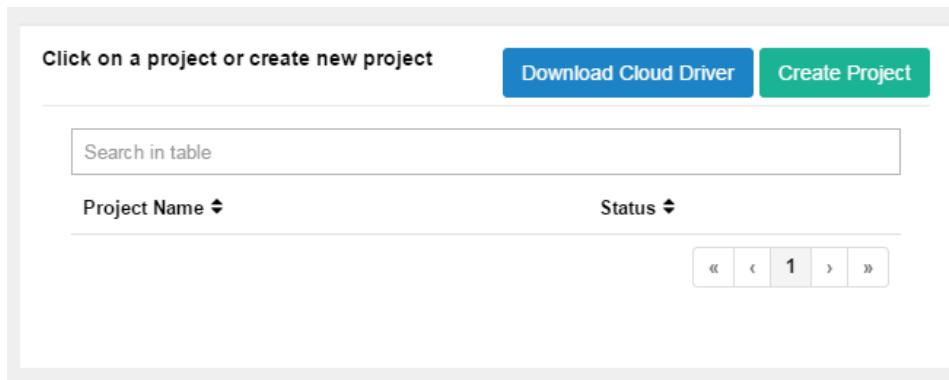
Enter New Project Name
Enter email for Installer Notifi

Are you sure you want to do this?
Assign License to Project?

STEP 3 – Install and activate the driverCentral cloud driver

NOTE: Only one instance of the driverCentral cloud driver installed per project. Do not install additional cloud drivers.

- Visit <http://www.drivercentral.io>
- Log into your driver Central dealer account.
- Visit the Project Portal
- Click on Download Cloud Driver



Click on a project or create new project

Download Cloud Driver Create Project

Search in table

Project Name ↕	Status ↕
« < 1 > »	

- Copy the C4Z driver to My Documents\Control4\Drivers directory.
- Add the driver to your project.

- 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	<input type="text"/>
	Project token from driverCentral.io project portal
Driver Actions	<input type="button" value="v"/>
Debug Mode	Off <input type="button" value="v"/>

- Type in the project token we took note of in STEP 1.
- Click on the Actions tab
- Click on Check Drivers

STEP 4 – Install Chowmain driver

- Install the Chowmain driver
- You will notice that the Activation Status reflects a Licence Activated state.
- 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.
- 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 <input type="button" value="v"/>