

Hikvision IP Camera Driver Installation and Usage Guide



Version: 20240806
Date: Friday, August 09, 2024
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Overview

Hikvision, who is a popular surveillance manufacturer, produce a range of products for both residential and commercial applications. As one of our top requested drivers we felt that we needed to create the ultimate Hikvision driver for Control4.

This driver pushes the integration of Hikvision by offering integration to NVR/DVRs, IP Cameras and Doorstation Intercoms which allows integrators to push the boundaries of security and home automation. This means that surveillance is no longer just for security but can also be used to trigger motion-based programming like lighting.

Features

- NVR / DVR
 - Remote control simulation / Hikvision onscreen control over IP for I series NVR and K series DVR (via customised firmware)
- IP Cameras
 - Supports PTZ & Non PTZ Cameras (through NVRs or direct)
 - View live camera stream on Control4 interface
 - PTZ control (Up, Down, Left, Right, Preset, Zoom)
 - Control4 Push Notification Snapshot Support (push notification photos to mobile phones)
 - Live Events
 - Auto-sensing and re-connection of alert stream loss
 - Connect to cameras that are behind a Hikvision NVR
 - Auto import of events including
 - VMD (video motion detection)
 - Tamper Detection
 - Disk Full
 - Disk Error
 - Line Motion
 - Field Motion
 - Video Mismatch
 - Region Entrance
 - Region Exiting
 - Unattended Baggage
 - Attended Baggage
 - Licence Plate Detection (for supported cameras)
 - Ability to bind events to contact drivers in Control4 (eg motion sensor driver)
 - Licence Plate Number Variable (for supported cameras)
 - Programming commands
 - Day Night Mode
 - Goto Preset
 - Auto Flip

- Back to origin
- One touch patrol
- Reboot camera
- Auto Setup of Camera
- You can set camera resolution configuration for best performance for Control4 via a single button press from Composer
- You can set the current position as either a preset or home from Composer

Change Log

Version 20240806 - 06-AUG-2024

- Support for Chowmain Licencing
- Improved Troubleshooting
- Performance Improvements

Version #20240614 - 14-JUN-2024

- [Feature] Added documentation to configure pre-answer video for the KD8003(B) model
- [Feature] Added support for the DS-KV6113-WPE1(C) model
- [Feature] Added support for the DS-KD8003Y-IME2 model
- [Bug] Fixed issue with the KV6113 driver not triggering the door relay
- [Compatibility] Improved handling of relay feedback for the DS-KD8003-IME1(B) model

Version #20240424 - 24-APR-2024

- [Compatibility] Added *Current Snapshot(URL)* to Push Notifications agent for original PTZ and nonPTZ drivers. This replaces **Current Snapshot* which no longer works as of OS 3.4.2

Version #20240410 - 10-APR-2024

- [Bug] Fix Compatibility with some controllers

Version #20240408 - 08-APR-2024

- [Performance] Reduce HTTP Connections required by Driver for operation (All)
- [Performance] Further reduction of CPU spikes (All)
- [Compatibility] Future Compatibility Updates (All)
- [Performance] Other Miscellaneous Bug and performance improvements (All)

Version #20240320 - 20-MAR-2024

- Added Display Related Diagnostics and Extended Diagnostics Actions (All Advanced Drivers)
- Fixed Alarm input event handling for KV8x13 driver

Version #20231220 - 20-DEC-2023

- Optimised error reporting to improve false reporting of errors

Version #20231219 - 19-DEC-2023

- Modified alertStream connection settings to improve connection reliability

- Improved handling of connection timeouts to avoid queuing of requests when a device is offline
- Improved credential handling in the Advanced NVR driver for special characters
- Fixed the programming Actions for Acusense strobe light and audio alarm triggering on the Advanced camera drivers

Version #20231031 - 31-OCT-2023

- Added Advanced versions of the camera and NVR drivers

Version #20230503 - 03-MAY-2023

- Added ANPR_DIRECTION Variable to the nonPTZ driver

Version #20230502 - 02-MAY-2023

- Improved processing of API calls
- Improved error handling for invalid data

Version #20230427 - 27-APR-2023

- Improved handling of data when binding a camera driver to an NVR driver
- Improved creation of bindings (no duplicate bindings) --See documentation for changes
- added alertStream.disconnect() to Enable Alert Processing property
- added Build Bindings property to stop driver from probing device if it doesn't support the standard endpoints
- added alertStream.heartbeatcheck() to check every 5 minutes that we're receiving a heartbeat and to reconnect if we're not

Version #20230213 - 13-FEB-2023

- Updated documentation outlining that Hikvision will no longer provide support for downgrading the NVR/DVR firmware to the modified version

Version #20230206 - 02-FEB-2023

- Some minor code refactoring
- Updated programming documentation for the door stations around programmatically trigger door station relays

Version #20221214 - 14-DEC-2022

- Added ability to trigger Strobe Light and Audio Alarm in supported Acusense cameras

Version #20221021 - 4-NOV-2022

- added a DEBUG.ERROR catch for the NVR driver to handle alertStream.process() that receives data that isn't a table

Version #20221020 - 20-OCT-2022

- Fixed regression in *button pressed* handling for the kv8113 driver

Version #20220914 - 15-SEPT-2022

- added timer to clear ANPR_LICENCEPLATE Variable after 6 sec
- updated FAQ for 8x13 driver to include info for 6113

Version #20220912 - 12-SEPT-2022

- Improved Documentation
- Fixed issue causing the Server IP in the door station code to be set to 0.0.0.0
- Small bug fixes
- Added Lock binding to Door Station drivers

Version #20220810 - 10-AUG-2022

- Fix for execute command debug call failure

Version #20220803 - 03-AUG-2022

- Improve Diagnostics and Troubleshooting

Version #20220715 - 15-JUL-2022

- Initial release for DS-KD8003-IME1 door station driver
- Initial release for DS-KV8x13-IME1 door station driver which supports KV8213-IME1 and KV8413-IME1 devices
- added fix for Programming Action PUSH_BUTTON_PRESS on the KV8113
- Added Programming Action to trigger the 2 door relays on the KV8113
- Fixed issue with driver setting SIP Server Address to 0.0.0.0 in certain edge cases

Version #20220324 - 24-MAR-2022

- Added 'Device Test' button to Actions tab for quicker troubleshooting
- Fixed authentication failing in certain edge cases on first install
- Added VoiceTalkInteractiveEvent handling to door station

Version #20220307 - 07-MAR-2022

- Initial release for DS-KV8113-WME1(B) door station driver
- Improvements to the code that handles alerts from the nonPTZ cameras to better handle rebranded hardware
- Fixed driver renaming issue on reboot
- Fixed preferred stream being reset on reboot
- Fixed issue with linedetection not being triggered in certain edge cases
- Fixed issue where bindings were not built if alerts were already coming in to the driver

Version #20211021 - 21-OCT-2021

- Fixed issue with PTZ snapshot failing

Version #20211004 - 04-OCT-2021

- Added programming for strobe light and audio alarm triggering
- Improved handling of ANPR detection to more reliably set the ANPR_LICENSEPLATE variable with the detected licence plate
- Added property to manually set snapshot URL in cases where the auto detection fails

Version #20210319 - 19-MAR-2021

- Added Licence plate detection to nonPTZ driver. Including licence plate variable for integrators to program against
- Improved collection of available Basic and Smart Events for creating bindings
- Added NVR driver based on satellite proxy

Version #20210202 - 02-FEB-2021

- Added additional checks to handle authentication issues

Version #20210121 - 21-JAN-2021

- Increased **Properties Preferred Stream** to 10

Version #20210119 - 19-JAN-2021

- Updated to new Driver Central licensing
- Improved handling of triggers from NVRs and DVRs

Version #20200621 - 27-JUL-2020

- Improved handling of devices with non-standard HTTP Ports

Version #20200620 - 03-JUL-2020

- Added Property Alternate URL to modify the snapshot and mjpeg urls for devices that don't handle the extra commands in the URLs

Version #20200616 - 16-JUN-2020

- Added the ability to read newer camera triggers for creation of bindings for event triggers

Version #20200522 - 22-MAY-2020

- Added Enable Alert Processing option in Properties tab to reduce controller load on systems with a large number of cameras
- Added better handling of complex passwords

Version #20200423 – 23-04-2020

- Fixed issue with PTZ Properties

Version #20200422 – 22-04-2020

- Added ability to access cameras connected to an NVR
- Improved handling of complex passwords
- Improved creation of bindings for event triggers

Version #20200320 – 20-03-2020

- Added field to the Properties tab to reverse the pan and tilt commands
- Updated FAQ

Version #20191230 – 30-DEC-2019

- Fixed bug introduced when creating bindings

Version #20191223 – 23-DEC-2019

- Fixed bug with stream URL creation
- Minor changes to documentation
- Update to handling of binding creation

Version #20191216 – 16-DEC-2019

- Initial Release

Standalone Camera(s) on a network switch

Drivers

chowmain_hikvision_PTZ.c4z or chowmain_hikvision-nonPTZ.c4z

When to use

If you have one or more PTZ or nonPTZ drivers that you want to access in Control4 and program against Basic and Smart Events

Driver Install Steps

It is important to add the details in the following order;

1. Advanced Properties > Properties

- | | |
|----------------------------------|--|
| a. Is Camera Connected To an NVR | No |
| b. Preferred Stream | 1 MainStream2 SubStream |
| c. Preferred Snapshot URL | Change this value to 1 or 2 if the snapshot test fails |
| d. PTZ Movement Duration | You can adjust this later as required (<i>not available in nonPTZ driver</i>) |
| e. Reverse PTZ Controls | Flips the direction of the pan and tilt (<i>not available in nonPTZ driver</i>) |
| f. Enable Alert Processing | Set this to On if you plan on programming against camera events |
| g. Alternate URL | Modify the snapshot url for devices that don't handle the extra commands in the URLs (legacy devices only) |
| h. Auto Rename Driver | Allows or denies the driver the ability to rename itself to the name set in the device, on reboot |

2. Properties > Camera Properties

- | | |
|--------------|-------------------------|
| a. HTTP Port | Change as required |
| b. RTSP Port | Change as required |
| c. Required | This must be ticked |
| d. Username | Username for the CAMERA |

e. Password Password for the CAMERA

f. Type Basic

g. Hostname / IP Address IP address of the camera

3. Refresh Navigators

4. Check Connections section. If the bindings haven't been created, use the **Actions** tab's **Rebuild Bindings** button

5. Make the appropriate Bindings in the Connections tab using a **CONTACT_SENSOR** driver

I or K Series DVR/NVR

Driver

chowmain_hikvision_nvr.c4z

When to use

- When you want to connect the HDMI port on the DVR/NVR directly to a TV and navigate the NVR interface with a Control4 remote

Notes

This driver requires **special firmware** to make the DVR/NVR's remote control functions available to our driver.

Please contact Hikvision support or visit <https://us.hikvision.com/en/control4-smart-home-solution>

DVR/NVR OSD Configuration

It is important that you install the firmware before completing this step

Via the OSD go to the System > General menu:

- untick **Enable Wizard**
- untick **Enable Password**

DVR/NVR WebUI Configuration

It is important that you install the firmware before completing this step

1. Configuration > System > Security > Authentication > RTSP Authentication = **digest/basic**
2. Configuration > System > Security > Authentication > WEB Authentication = **digest/basic**
3. Configuration > System > Security > Security Service > Enable ISAPI = Ticked
4. Configuration > Network > Advanced Settings > Other > Enable Virtual Host = Ticked (Only required on the NVR)
5. Configuration > System > Camera Management > Make a note of the port used under Connect
Port will either be 80 or 650xx. You will need to hover the mouse over the link to see the URL
6. Configuration > Network > Access Platform > Enable Stream Encryption = Unticked

This is enabled if you use Hikconnect

...

Driver Install Steps

1. In Composer search for **Hikvision**
2. Add **Hikvision NVR** to the project
3. Update **IP Address** of the DVR/NVR
4. Update **HTTP Port** of the DVR/NVR
5. Update **RTSP Port** of the DVR/NVR
6. Update **Username** of the DVR/NVR
7. Update **Password** of the DVR/NVR
8. Update **Authentication Type** of the DVR/NVR

Driver Information

IP Address	172.16.16.138
HTTP Port	80
HTTPS Port	443
RTSP Port	554
Preferred Stream	2 - Sub Stream
Username	admin
Password	*****
Authentication Type	DIGEST

9. Set the Configurable Buttons as required

Configurable Buttons

CC	F1
INPUT - TV-VIDEO	Prev
PREV - RECALL	None
INFO	EDIT
DVR	None
GUIDE	None
BLUE BUTTON	None
RED BUTTON	None
GREEN BUTTON	None
YELLOW	None

- 10.Refresh Navigators

I or K Series DVR/NVR with Cameras

Please note: Hikvision will no longer provide support for downgrading to the older fw version that the special firmware uses (as per their decision to remove support for NVR/DVR OSD control). The FAQ has more information

Driver

`chowmain_hikvision_nvr.c4z` and,

`chowmain_hikvision_PTZ.c4z` and/or `chowmain_hikvision-nonPTZ.c4z`

When to use

- When you have an I or K series device and want to connect the HDMI port on the DVR/NVR directly to a TV and navigate the NVR interface with a Control4 remote
- You also want to have access to individual streams of one or more cameras physically connected behind the DVR/NVR
- You want to program against Basic or Smart Events from one or more cameras physically connected behind the DVR/NVR

This driver requires special firmware to make the DVR/NVR's remote control functions available to our driver. Please contact Hikvision support

Driver Install Steps

1. Follow the install steps for the **I or K Series DVR/NVR** first
2. Now follow the install steps for **Camera(s) physically connected to a DVR/NVR**

Camera(s) physically connected to a DVR/NVR

Driver

chowmain_hikvision_nvr.c4z and,

chowmain_hikvision_PTZ.c4z and/or chowmain_hikvision-nonPTZ.c4z

When to use

If you have one or more PTZ or nonPTZ cameras connected to an NVR that you want to access in Control4 and program against Basic and Smart Events

The Hikvision NVR driver essentially becomes a master driver that not only improves the setup time when adding a large number of cameras, it also better handles events from the DVR/NVR when you have more than a few cameras connected.

Driver Install Steps

IMPORTANT: If you get a grey RTSP stream or the RTSP stream fails and the snapshot works - see the FAQ 'My video stream displays nothing or a grey stream with some artifacts'

1. Follow the install steps for the **I or K Series DVR/NVR** first
2. In Composer search for **Hikvision**
3. Add **Hikvision PTZ** or **Hikvision nonPTZ** to the project
4. Go to the **Connections** tab for the camera driver
5. Select the Hikvision NVR Control



6. bind it to the appropriate **Hikvision Output Device**

Hikvision Output Devices			
Device	Name	Location	Connections
 Network Video Recorder	Channel 1	DO NOT DELETE	
 Network Video Recorder	Channel 2	DO NOT DELETE	
 Network Video Recorder	Channel 3	DO NOT DELETE	
 Network Video Recorder	Channel 4	DO NOT DELETE	
 Network Video Recorder	Channel 5	DO NOT DELETE	
 Network Video Recorder	Channel 6	DO NOT DELETE	
 Network Video Recorder	Channel 7	DO NOT DELETE	
 Network Video Recorder	Channel 8	DO NOT DELETE	
 Network Video Recorder	Channel 9	DO NOT DELETE	
 Network Video Recorder	Channel 10	DO NOT DELETE	
 Network Video Recorder	Channel 11	DO NOT DELETE	
 Network Video Recorder	Channel 12	DO NOT DELETE	

7. Go to the **System Design** tab
8. Confirm that all the Properties are correctly completed and modify as required

9. Confirm that both the **Get Snapshot URL** and **Get H.264 URL** tests pass

Configuring Events

The camera driver will populate the bindings for each available Basic and Smart Event available, once the camera receives a trigger from the Hikvision NVR driver

Name	Type	Connection	Input/Output
Control Inputs			
 Hikvision NVR	Control	Hikvision	Input
Control Outputs			
 VMD	Control	CONTACT_SENSOR	Output
 diskerror	Control	CONTACT_SENSOR	Output
 linedetection	Control	CONTACT_SENSOR	Output
 fielddetection	Control	CONTACT_SENSOR	Output
 videomismatch	Control	CONTACT_SENSOR	Output
 facedetection	Control	CONTACT_SENSOR	Output
 ANPR	Control	CONTACT_SENSOR	Output
 FACE_RECOG	Control	CONTACT_SENSOR	Output

*Note If the bindings haven't been created, use the **Actions** tab's **Rebuild Bindings** button*

Fine Tuning

When the configuration has been successful, the driver will populate the Properties fields and rename the driver in the System

Use the **PTZ Movement Duration** scroll bar to adjust how long each PTZ button press should last. A smaller number is better suited to when your camera is always zoomed in. *(not available in nonPTZ driver)*

The **Preferred Stream** allows you to choose which stream you want to use for the snapshot and stream, the Main Stream, Sub Stream or 3rd Stream (if it is configured)

(PLEASE REFRESH NAVIGATOR FOR THIS SETTING TO TAKE EFFECT!)

Use **Reverse PTZ Controls** if you find that panning or tilting is the reverse of what is expected. *(not available in nonPTZ driver)*

The **Enable Alert Processing** option has been added as some projects can become overwhelmed with processing a large number of triggers when there is a high number of cameras added to a project.

General DVR/NVR Usage

Live view

In live view, the device will sequentially rotate through the cameras.

Pressing the Hikvision **PREV** button cycles through the grid view

Using the number buttons will set that particular camera full screen

For cameras that have PTZ functionality, you can use the Up/Down/Left/Right/Page Up/Page Down to control the camera

Playback view

Note: You can't access the camera listing on the left of the playback view with the remote

When in Live View, press the Play or OK button to enter Playback view.

Pressing the Play or OK button again will bring up a menu to select the camera, date and time

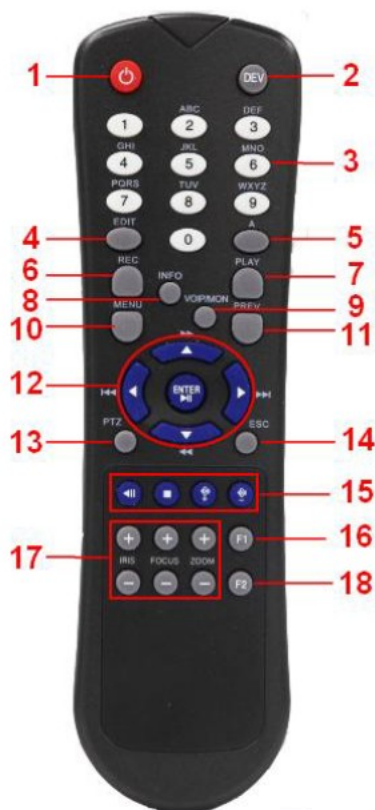
Use the Up/Down/Left/Right/OK to adjust and select the date and time

When you're watching a recording

- Use the **left** and **right** or the |< and >| buttons to skip forward 30 seconds
- Use the << and >> buttons to step a frame back or forward
- Use the **F1** assigned button to switch the direction of the playback

Control4 Remote with Hikvision DVR/NVR

We have made what we believe to be the most user friendly mapping of the Hikvision remote to Control4's remote. We also understand that there are always edge cases that require different mappings.



Hikvision Remote Button Number	Hikvision Remote Label	Control4 Remote Button Name
3	Number keys	Same
4	Edit	This can be assigned to any of the buttons in the Properties' Configurable Buttons
6	REC	This is assigned to the Record button
7	PLAY	By default this is assigned to the DVR button. This can be assigned to any of the buttons in the Properties' Configurable Buttons
10	MENU	This is assigned to the Menu button
11	PREV	This can be assigned to any of the buttons in the Properties' Configurable Buttons
12	UP/DOWN/LEFT/RIGHT	These are assigned to UP/DOWN/LEFT/RIGHT/OK

Hikvision Remote Button Number	Hikvision Remote Label	Control4 Remote Button Name
14	ESC	This is assigned to the Back button
16	F1	This can be assigned to any of the buttons in the Properties' Configurable Buttons

Please Note: In the driver's **Properties** tab, you can change what certain C4 remote buttons do under the **Configurable Buttons** heading:

Configurable Buttons	
CC	F1
INPUT - TV-VIDEO	Prev
PREV - RECALL	None
INFO	EDIT
DVR	None
GUIDE	None
BLUE BUTTON	None
RED BUTTON	None
GREEN BUTTON	None
YELLOW	None

Additional Control4 Remote Buttons

Channel Up/ Down	Switches to the previous or next channel in full screen mode
Page Up/ Down	Zoom in or zoom out on supported cameras

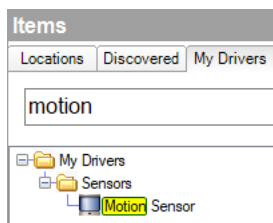
Actions

ACTIONS TAB

Re-build Bindings	If you find that you don't have any bindings for the alert triggers and are confident that the camera is configured correctly, pressing this button will recreate these bindings
Configure Camera resolution for Control4	You can use this option to set the stream you have selected in Preferred Stream on the Properties tab to a supported resolution that is optimal for
Set Current Position as a Preset	Set the current position of the camera as a preset with a label
Set Current Position as Home	Set the current position of the camera as the 'Home' preset
Restart Event Listener	Use this option to reinitialise the smart and basic alert streams should this stop working. This usually occurs if you have changed any of the connection or authentication settings on the Camera Properties tab
Print Configuration Data	Use this to output the settings of the driver into the Lua tab
Camera Reboot	Quick way to reboot the camera
Driver Update	Forces the driver to recheck all the data for the Properties tab and Connections bindings

Bindings on the Connections tab

1. Search for *Motion* in **My Drivers** and add it to your project



2. Give the sensor a name like *Driveway VMD*



3. Select **Connections**



4. Select your camera from the Tree on the left.
5. The Control Outputs should now be populated with all the available contact sensors
6. Make the binding between the Driveway contact sensor and the camera VMD

CONTACT_SENSOR Input Devices			
Device	Name	Location	Connections
Driveway VMD	Contact Sensor	Justin's Room	IP DOME->VMD

Configuring Push Notification Agent

1. On the Properties tab, choose the Preferred Stream number and press Set



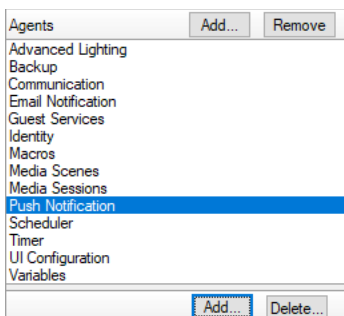
Preferred Stream 2

2. (optional) On the Actions tab, press the Configure Camera Resolution for Control4
3. Open Agents



Agents

4. Select Push Notification and press Add... below

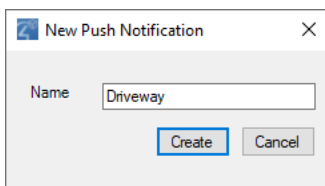


Agents Add... Remove

- Advanced Lighting
- Backup
- Communication
- Email Notification
- Guest Services
- Identity
- Macros
- Media Scenes
- Media Sessions
- Push Notification**
- Scheduler
- Timer
- UI Configuration
- Variables

Add... Delete...

5. Enter the name of the notification and press Create

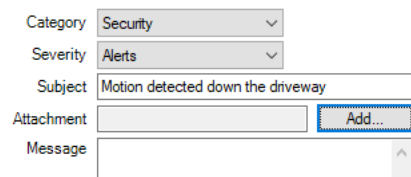


New Push Notification X

Name Driveway

Create Cancel

6. Add the Subject line and press Add... to select the snapshot



Category Security

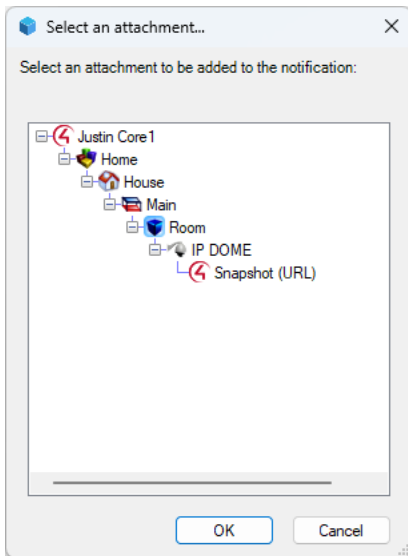
Severity Alerts

Subject Motion detected down the driveway

Attachment Add...

Message

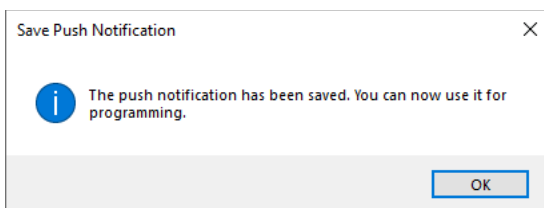
7. Expand the tree to your camera and select **Current Snapshot(URL)** (not *Current Snapshot* as this is deprecated and will not work as of OS 3.4.2)



8. Select Save



9. Press OK



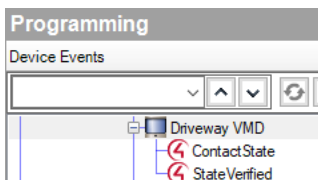
Send Push Notifications when a binding is triggered

Once you have successfully set up Bindings on the Connections tab you can tie that in with the Programming tab

1. Select Programming



2. Under Device Events select your Driveway VMD motion sensor



3. Select When the Driveway VMD senses motion

Motion Sensor Events

 ☒ When the Driveway VMD senses motion

 ☐ When the Driveway VMD stops sensing motion

4. Now, under Actions select Push Notification

Actions

Device Actions

 Push Notification

5. Select Driveway from the Push Notification

Push Notification Actions

 Send Push Notification "Driveway"

Commands Conditionals Loops

Push Notification Driveway

Category Security

Severity Alerts

Subject Motion detected down the driveway

6. Now drag the green arrow across to the Script Actions

Script

Script

 When the Justin's Room->Driveway VMD senses motion

Programming Controls

 Else  And  Or  Break  Stop  Delay 5

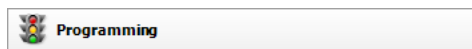
 Comment

Script Actions

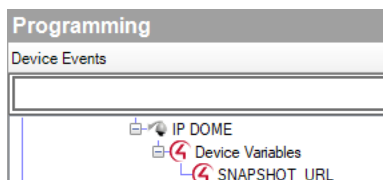
 Send Push Notification "Driveway"

Programming against Activated Alerts

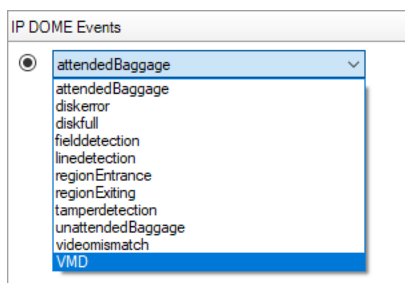
1. Once the Active Events Properties field has been populated, you are ready to program against the activated alerts



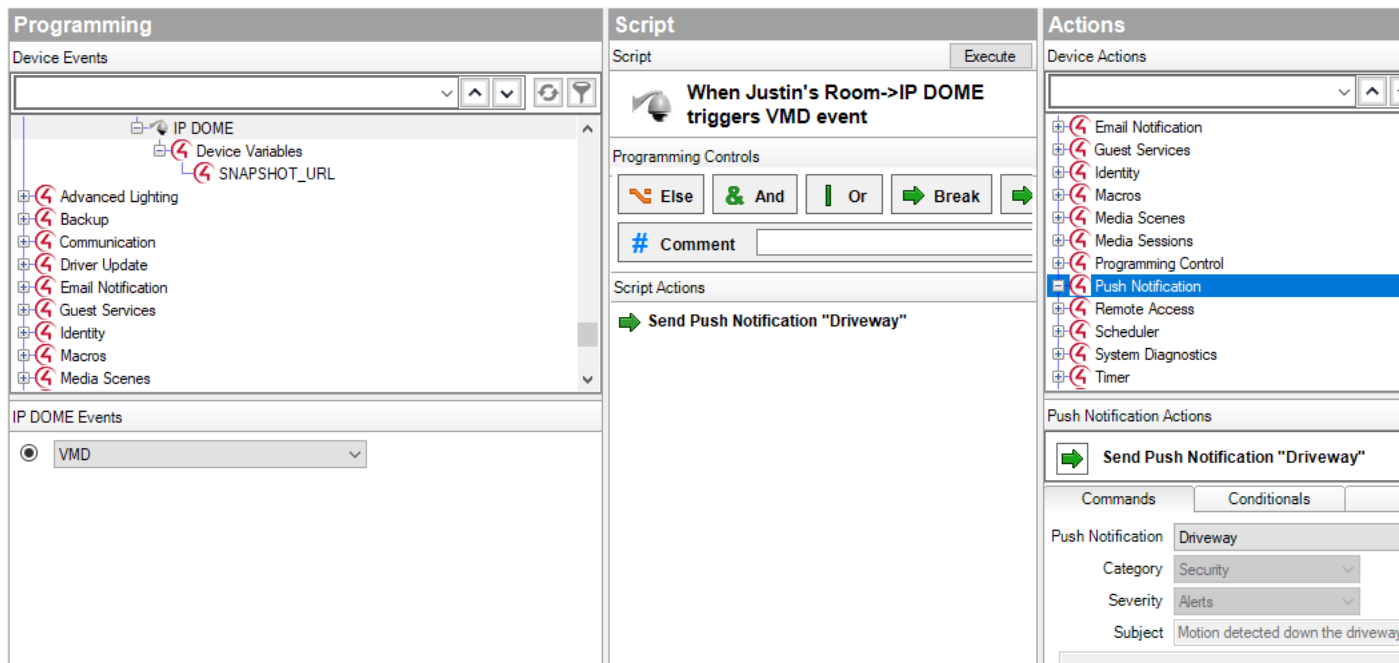
2. Select the camera from the Device Events window



3. Select the event from the drop down list;



4. The below screenshot utilises the Push Notification Agent Action to only send a snapshot when the camera triggers the specified event, rather than using "When SNAPSHOT_URL changes";



Strobe Light and Audio Alarm

It is possible to programmatically trigger the strobe light and the Audio Alarm, when configured in an Acusense camera that supports these features, via the following **Device Actions > Device Specific Commands**:

- Strobe_Light
- Sound_Alarm

The screenshot displays the Hikvision configuration interface, split into two main panels: **Programming** and **Script**.

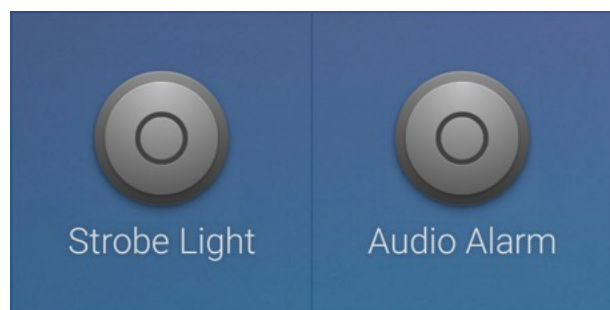
Programming Panel:

- Device Events:** A list of events including Camera 1 on Network Video Recorder, Network Video Recorder, IP DOME, Strobe Light, and Audio Alarm.
- Strobe Light Events:** A section with a radio button for 'Selected' and a dropdown menu currently set to 'Off'.

Script Panel:

- Script:** A title bar for the script configuration.
- When Room->Strobe Light is selected:** The trigger event for the script.
- Programming Controls:** A row of buttons for logical operations: Else, And, Or, Break, Stop, and Delay (set to 5 seconds).
- Script Actions:** A list of actions, with one action visible: 'Trigger the strobe light on Room->Camera 1 on Network Video Recorder'.

You can trigger these two commands for example, via an Experience Button



ANPR Programming

First and foremost, your camera must support ANPR for this to work.

1. Add a motion sensor driver to your project and make the binding to the ANPR on the Hikvision driver

Control & Audio Video Connections

Driveway Camera

Name	Type	Connection	Input/Output	Connected To
Control Inputs				
 Hikvision NVR	Control	Hikvision	Input	
Control Outputs				
 ANPR	Control	CONTACT_SENSOR	Output	License Plate Detected->Contact Sensor

CONTACT_SENSOR Input Devices

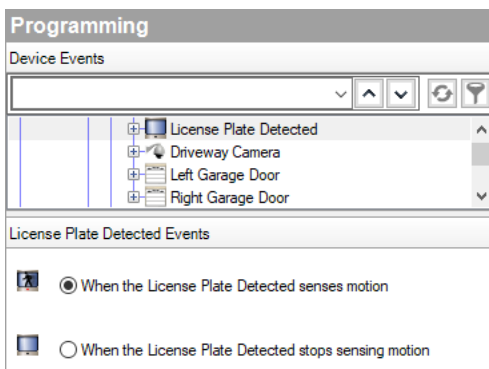
Filters: All Rooms All Connections

Device	Name	Location	Connections
 License Plate Detected	Contact Sensor	Work	Driveway Camera->ANPR

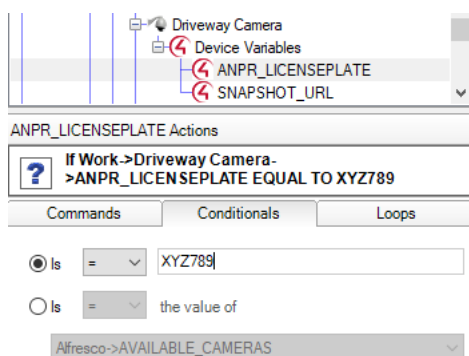
2. Select the Programming section



3. Select the motion sensor you just added to the project under Programming and click **When the senses motion** radio button



4. Now select what you'd like to program under Actions. In this example we'll use the ANPR_LICENSEPLATE variable **Conditionals** tab to determine which garage door to open



Script

Script


When the Work->License Plate Detected senses motion

Programming Controls

Else

& And

| Or

➡ Break

➡ Stop

➡ Delay 5 seconds

Comment

Script Actions


 If Work->Driveway Camera->ANPR_LICENSEPLATE EQUAL TO ABC123

➡ Open the Work->Left Garage Door


 If Work->Driveway Camera->ANPR_LICENSEPLATE EQUAL TO XYZ789

➡ Open the Work->Right Garage Door

To make sure you have the correct format of the license plate for the above programming, do the following:

1. Successfully trigger the ANPR alert with a car
2. Go to the **Agents** section
3. Select **Variables** on the left
4. Tick **Display System Variables**
5. Locate the variable (I usually sort by Device Name) ANPR_LICENSEPLATE for the camera. The **Value** must match exactly

System Variable Name	Device Name	Value	Type	Description	Last Upd
ANPR_LICENSEPLATE	Work->Driveway Camera	ABC123	String		4/10/202

IP Camera and NVR Driver FAQs

Push Notifications will no longer contain snapshots

Due to new security features in OS 3.4.2, the original camera PTZ and nonPTZ drivers will no longer be able to attach snapshot images to push notifications.

We have added a 2nd *Current Snapshot(URL)* to these drivers which will require you to change the selected snapshot in the Push Notification.

We recommend using the Advanced Camera driver (available in the same Hikvision package) as we are no longer maintaining the original PTZ, nonPTZ and NVR drivers.

Before submitting a support ticket

Original camera driver

Please make sure the **Actions** > **Device Test** button displays *passes* for all the applicable tests.

- **stream** - checks for a valid Video Encoding type (h264/h265) in the stream from the device
- **encryption** - checks if stream encryption has been enabled on the NVR
- **resolution** - Checks that a safe resolution is configured for the stream from the device

Advanced camera driver

Please press the **Actions** > **Display Diagnostics** button and confirm that all the tests pass in the Lua output window.

What site setups do our drivers support?

- One or more standalone cameras connected to shared network switch without an DVR/NVR
- One or more cameras physically connected to the rear of an DVR/NVR
- One or more cameras physically connected to the rear of an DVR/NVR including one or more cameras connected to a shared network switch that are added to the DVR/NVR

I received the message "Please enable Virtual Host via the NVR driver" message. What does this mean?

Your camera is behind an NVR and we need to configure the NVR to allow us to send commands directly to the camera.

The NVR driver has a property called **Enable Virtual Host** which will configure the NVR.

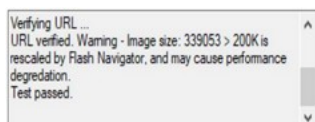
Otherwise, you will need to configure the NVR manually to enable the **Virtual Host** feature, usually located under one of the Networking tabs.

I have configured my camera correctly however, there are no bindings for my Events.

Please make sure you have updated the camera to the **latest firmware available**.

There is a known bug with some firmware that doesn't report the currently configured Basic or Smart events.

My Snapshot test passes however I get a notice that says *Image size: xxxxxx > 200K is rescaled by Flash Navigator, and may cause performance degradation. Test Passed.*



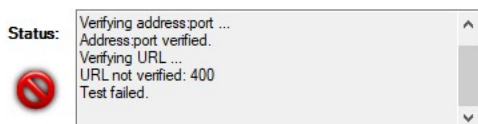
You need to reduce the snapshot image size. Some devices will only send a snapshot from the main stream so you will need to reduce this stream until it produces an image that is smaller in size than 200KB

The snapshot test fails with *URL not verified: The remote server returned an error: (500) Internal Server Error.*

Some devices only return the snapshot for the main stream. If the main stream resolution is over a certain size, the device fails. This is a limitation of the device and not Control4 or the driver.

To fix this, you need to lower the resolution of the main stream until the device sends the snapshot.

The snapshot and/or Mjpeg test fails with URL not verified: 400



The snapshot test fails with URL not verified: 403



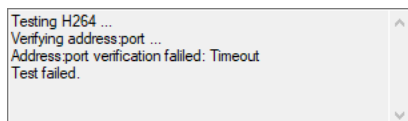
This is caused when the device doesn't return a jpg file using the URL in the test.

The driver normally handles this but some cases may fail.

Use the Property field **Preferred Snapshot URL** to manually set the URL. Try either 1 or 2 and run the test to find the correct URL

The H.264 Test fails with Address port verification failed: Timeout

This is likely due to the NVR/IPC being configured with a different RTSP Port to what the driver is using. Sometimes you'll get more information re the endpoint actively refused the connection on this port



```
Testing H264 ...
Verifying address:port ...
Address:port verification failed: Timeout
Test failed.
```

URL not verified: Your GStreamer installation is missing a plug-in

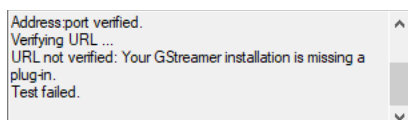
This is likely caused by one or both of the following:

1. The camera stream being set to H.265 in:

Configuration > Video/Audio > Video > Video Encoding

2. Protected Stream being enabled. You can only access the following using the NVR's OSD display with a monitor and mouse. (you can't use the web UI):

Configuration > Network > Access Platform > Enable Stream Encryption



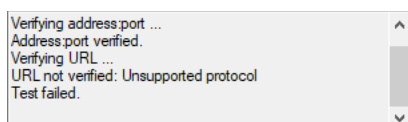
```
Address:port verified.
Verifying URL ...
URL not verified: Your GStreamer installation is missing a
plug-in.
Test failed.
```

URL not verified: Unsupported Protocol

Confirm that the stream (Main Stream, Sub-stream) is set to **H.264**

Confirm that Authentication in the driver is set to **BASIC**

Confirm that the NVR/Camera authentication is set to **basic/digest**



```
Verifying address:port ...
Address:port verified.
Verifying URL ...
URL not verified: Unsupported protocol
Test failed.
```

Upgraded firmware to 5.5.0 and driver not working as expected

Hikvision have included an option to enable/disable the way our driver communicates with the device. By default this is disabled and is explained further in the bulletin linked below;

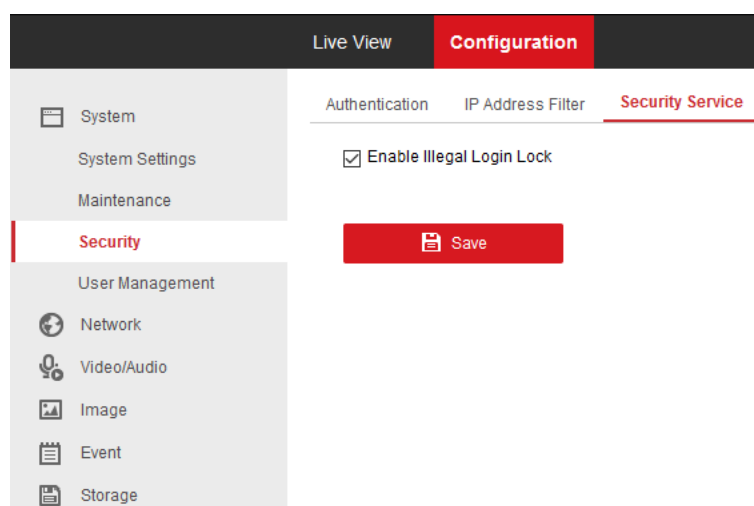
[Hikvision Third-Party Integration Bulletin](#)

I have received an Authorization Error Timeout Detected message in the logs. What do I do?

This is caused by having either the wrong username, password or authentication type (Basic or Digest) whilst **Enable Illegal Login Lock** is ticked.

You should be able to find this located under **Configuration > Security > Security Service**

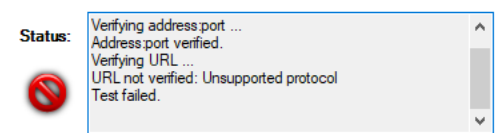
Temporarily unticking this box will allow you to fix any errors in the username, password or auth type.



We recommend re-ticking this option once you have the driver configured correctly.

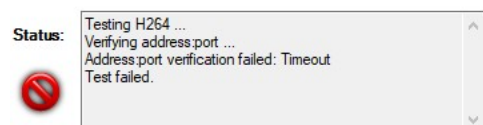
URL not verified: Unsupported protocol

Check that the stream you have selected is set to use codec h264 and not h265 in the device.



Port

You likely have the incorrect rtsp port set in the driver. By default it will be set in the device as 554. If you have changed this, then you need to update the driver to match



I cannot see the video stream even though the test passes

In some cases, the tests will pass even though the Control4 UI cannot handle the stream. This is usually due to video resolution.

Control4 advises the following:

1. 1280x720 is the maximum supported resolution for T4 & T3 touch screens, iOS & Android apps and the On Screen Display (OSD)
2. Frame rate and iFrame intervals will vary based on location and content. If the content is consistently changing, a low iframe interval is recommended as the iframe is updated more often. On Screen Display doesn't support a high frame rate. It is important to understand that Frame Rate is dependent on both the Control4 system configuration and what the cameras are monitoring. Because of this, exact guidelines are difficult to provide. However, a base line configuration as shown below may provide a good starting point.

Stream Type	Third Stream
Video Type	Video Stream
Resolution	1280x720P
Bitrate Type	Variable
Video Quality	Medium
Frame Rate	30 fps
Maximum Bitrate	1024 Kbps
Video Encoding	H.264
Profile	Main Profile
I Frame Interval	50
SVC	OFF
Smoothing	<input type="range" value="50"/> [Clear↔Smooth]

You can confirm the details of the video stream using VLC

1. Copy the url from the Camera Test > Get H.264 URL
2. Open VLC
3. Click Media > Open Network Stream...
4. Under the Network tab, paste the url in and click Play
5. Enter credentials as required
6. When the stream is playing in VLC, click Tools > View Codec Information

My video stream displays nothing or a grey stream with some artifacts (shadows or pink/green/black/white artifacts)

You can confirm if this is the case in Composer by double clicking on the Hikvision driver and selecting H264 from the **Image View** dropdown and you have something similar to the following (*note that if our driver fails to get the stream there would be a black window with the C4 logo in it*):



An example of an encrypted stream:

The video stream is encrypted as you likely have Hikconnect or equivalent enabled in the device. You can untick this feature using one of the following:

- 1) Auto update the setting using the driver
 - 1) Under the **Actions** tab in the driver, press the **Turn OFF Stream Encryption** button
 - 2) Under the **Actions** tab in the driver, press the **Device Test** button
 - 3) Select the Lua tab and look at the Lua Output to confirm that everything passes
 - 2) On an NVR
 - 1) Using the OSD via an external monitor and mouse (You can't use the webui to change this setting), navigate to Menu > Configuration > Network > Advanced > Platform Access and untick *Enable Stream Encryption*
 - 2) If the stream is still encrypted, you will have to untick **Stream Encryption** in the webui, under Configuration > System > Security > Security Service.
 - 3) On a standalone camera
 - 1) Open the webui for the camera and navigate to Menu > Configuration > Network > Advanced > Platform Access and make sure that 'Enable Stream Encryption' is not ticked.
- Note that the option may be located in a different menu depending on the firmware*

Whilst you can run Hikconnect (without the stream encryption) and our driver simultaneously, this is a reduction in security, you need to discuss this with your client.

I can access the video stream via the app whilst on the network but not remotely

1) You must have a 4Sight account

2) Check the driver Properties tab, in the the Address section, make sure that **Publically Accessible** is unticked.

Where can I source the modified firmware

All firmware is available on Hikvision's Control4 Smart Home Solution's page:

- US: <https://us.hikvision.com/en/control4-smart-home-solution>
- AU: <https://www.hikvision.com/au-en/solutions/Solutions-by-Technology-Partners/control4/>

Licensing

Marketplace

To Purchase drivers

Chowmain Drivers are only available to authorized dealers. Integrators can sign up to a Chowmain account via the [Chowmain Website](#). Authorization of dealers can take up to 48 hours; however, you can trial the drivers without an account.

1. Navigate to the login page of Chowmain website: [Chowmain - Login](#)
2. Sign in using credentials provided after sign up request approval
3. Ensure you are logged into the website using website's header: registration and sign up buttons are replaced with cart icon and user icon



4. Navigate to the drivers page: [Chowmain - Drivers](#)
5. Alternatively, you can use the global search input in the header to find the driver



6. Search for and locate the driver you are interested. Click *Add To Cart*



7. Once you have added all drivers to your cart, navigate to the shopping cart: [Chowmain - Cart](#)
8. Click *Checkout & Pay*. Follow the directions



9. Purchase confirmation will be sent to your email, all orders can be viewed in the [Chowmain - Orders](#)
10. Once the payment is processed, the driver will be available in your account: [Chowmain - My Drivers](#)

Create Chowmain Project and obtain Project Code

Note:

- Showroom Projects contain all drivers of its Control System
- Paid licenses cannot be assigned to Showroom Projects
- Only 1 Project is required per home
- If the Project has already been created, do not create a second one
- If controller already has a Project code created by another installer, please contact the original installer for access. If the original installer is unavailable, contact [Chowmain - Support](#)

- If the controller has been replaced and the license needs to be transferred to a new controller you can do so yourself via the website

1. Ensure you are signed into the [Chowmain Website](#)

2. Navigate to [Dashboard => Projects](#)



3. Click *Create Project*:



4. Complete the details for the Project (*Project Name, Customer Name, Control System*)

5. Upon completion, take note of the **Project Code**. This is required to link the Control System to the newly created project

To Assign purchased drivers to Project

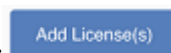
NOTE: Driver must already be purchased and a Project Code must be created as per above 'Create Chowmain Project and obtain Project Code' section

1. Navigate to [Chowmain Software - Projects](#). Click the *Project Name* you wish to assign the driver to

Project Name	Project Code	Licensed	Showroom	Platform ↑
100	XXXXXX	0	✓	
101	XXXXXX	0	✗	

Rows per page: 15 1-2 of 2 < >

2. Click the *Add License(s)*:



3. Select Drivers you wish to assign to the project, and click *Add Selected Drivers*:

×

Add Drivers to Project

Project #XXXXXX:
Project Name Example

☒ 1 available

☒ 1 available

☐ 1 available

☐ 1 available

☐ 1 available

Add Selected Drivers

4. Alternatively you can add in drivers via the [Chowmain - Drivers](#)

5. The driver will be added to the project with the license status *Licensed*

	Driver Name	Version	License	Health	Autoupdate	Logging Approved	Log Level
☐ ▾			licensed	-	false	-	-
☐ ▾			licensed	-	false	-	-

Control4

To Download and install Chowmain drivers:

NOTE: Licensed Chowmain drivers come with a complimentary 90-day trial period. To license the driver, installation of the Chowmain Project Agent is required. The Project Agent is also required for automatic driver updates. Throughout the 90-day trial period, Chowmain Drivers operate without any limitations. After this period, the driver will be disabled unless properly licensed.

All Chowmain Licensed drivers require a minimum of OS 3.1.3 to operate correctly unless specified.

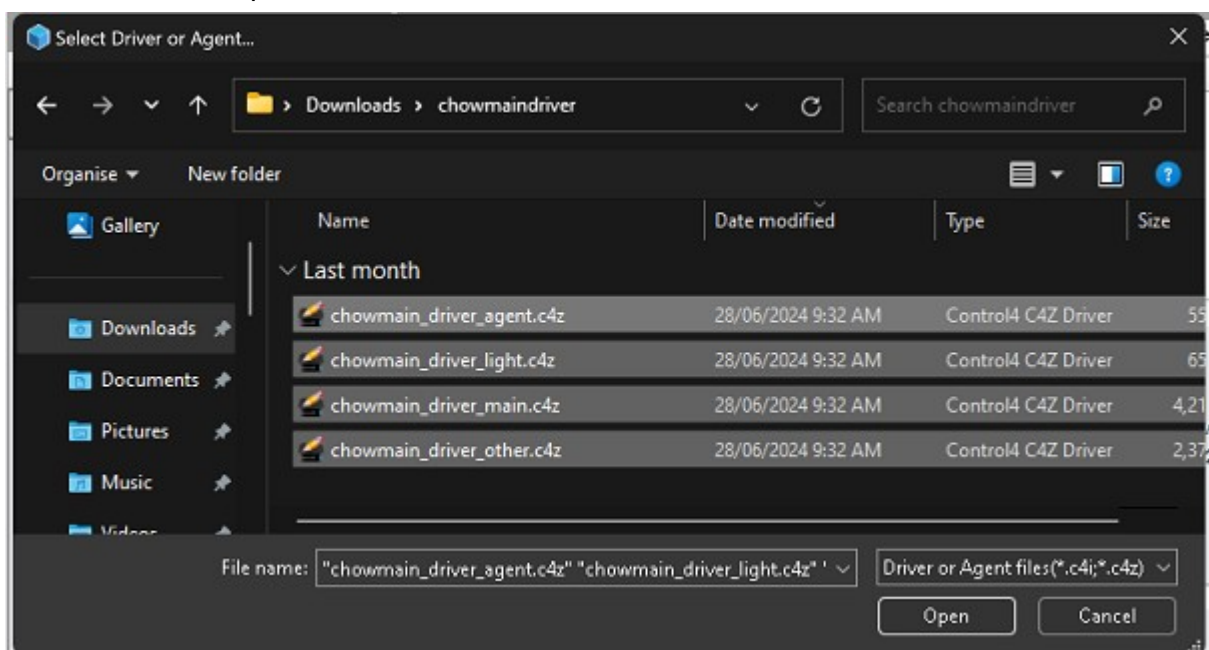
1. Visit: <https://chowmain.software>
2. Search and locate your driver, and click into the details by clicking the picture or heading.
3. Select Download. And extract the contents of the downloaded Zip file to a temporary directory



4. **Please note: For many drivers, it is no longer recommended to copy the contents of most modern drivers directly to your Control4/drivers directory.** The recommended method of updating drivers or installing drivers is in Composer Pro, navigate to the Driver=>Add Or Update Driver Or Agent menu item.



5. Locate the temporary directory containing your C4Z files. You can select and install/update all drivers simultaneously by selecting one and using Ctrl+A. Alternatively, click the top driver+shift+click the bottom. Click the open button. You will be alerted when drivers are installed



6. Install drivers as per normal. Please note, some drivers may be agents, and you must use the Agents tab in Control4 to install the driver. Composer Express does not support Agents, and Composer pro is recommended for all installers.

Install Chowmain Agent

Installation of the Chowmain Agent is required to licence drivers

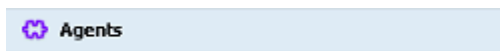
1. Download Chowmain Project Agent From the [Chowmain Project Agent Page](#)
2. Open Project In Composer Pro. Composer Express does not Support Agents and cannot be used
3. Navigate to the *Driver=>Add Or Update Driver Or Agent* menu item



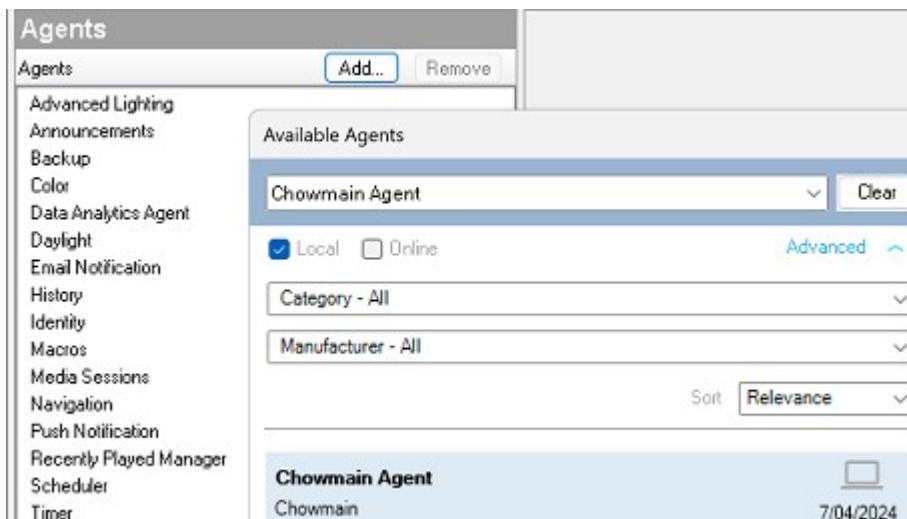
4. Add the *agent_chowmain.c4z* file



5. Navigate to the Agents View in Composer Pro



6. If *Chowmain Agent* is not already added to project, select the *Add* button in Agents and add the *Chowmain Agent* to Project

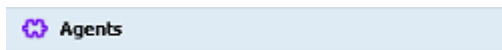


7. *Chowmain Agent* should be listed in the project.



Link Project Code to Control4 Project

1. Ensure *Chowmain Agent* is installed on primary Control4 Controller. If not, follow the previous information
2. Navigate to the Agents View in Composer Pro



3. Select *Chowmain Agent* in the project



4. Enter the Project Code into the Project Code Property. You would have previously set this up on the *Chowmain* website as outlined in the Website portion of this document. If you have not set up a project you can do so via the [Chowmainsoft - Projects](#) webpage.



5. The status property will provide feedback on driver licencing status



6. **Please note:** If project code has been used previously on another controller you can revoke the licence for use again.

LICENCING FAQ

What are the Requirements for Chowmain licencing?

- Driver trials do not require Agent to be installed.
- To activate licenced drivers, *Chowmain Project Agent* must be installed.
- Composer Pro 3.1.3 or later is required to install and configure *Chowmain Project Agent*
- Internet is required during the licence registration process.
- If Internet is lost then the licence will persist the last state.
- If the *Chowmain Project Agent* is removed then licencing will be invalidated. Do not remove the *Chowmain Project Agent* once installed.

How do I know if the deployed driver is using Chowmain Licencing?

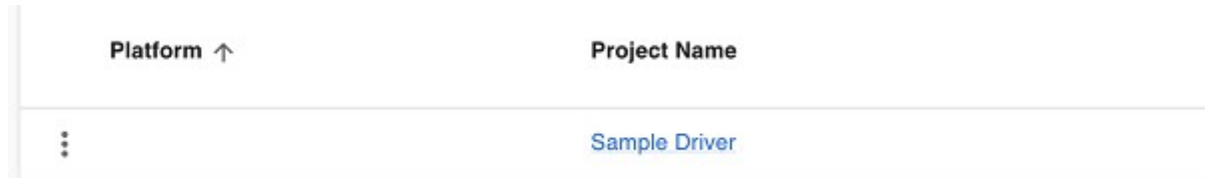
- There are multiple ways:

1. Chowmain licensed drivers have CM: in their cloud status property

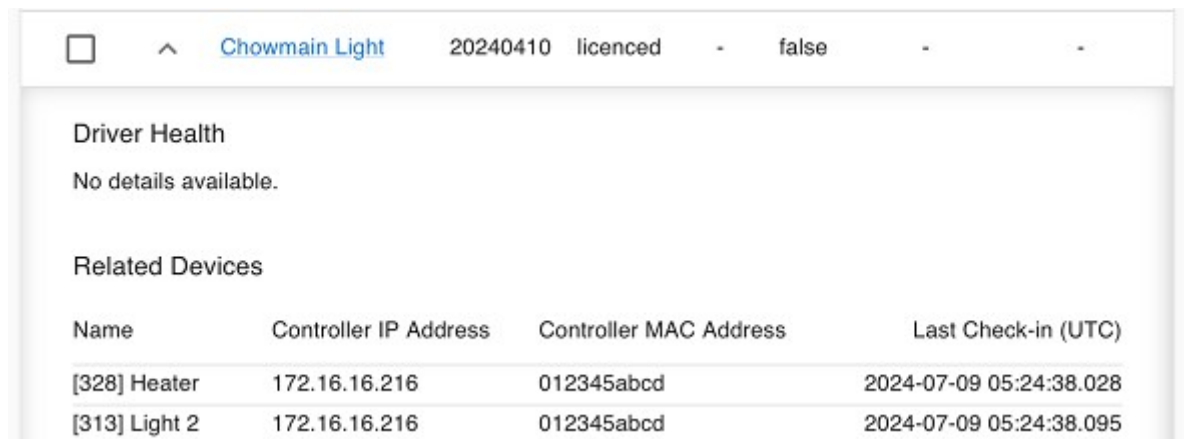


2. If the *Project Code* has been correctly entered in Chowmain Project Agent and the project is registered, you can find the list of Chowmain-licensed drivers deployed on your controller using the Chowmain website.

1. Navigate to [Chowmainsoft Website - Projects](#)
2. Select your Project Code



3. Known Chowmain Drivers will be listed, and if you select the driver, it will list which drivers in the project are known to be CM Licenced. Please note, this list may not update immediately



How does the trial period work?

All Chowmain drivers are free to use for 90 days. When the trial expires the driver will cease to function until you purchase a licence and apply it to the project.

What benefits does Chowmain Project Agent provide?

Chowmain Project Agent provides a number of benefits for projects

- Required for activation of driver licences. Enables the linking of Control4 Projects to Chowmain Project Codes.
- Required for Auto Updates of Chowmain Licenced drivers
- Provides local access to all Diagnostics for all known licenced Chowmain drivers on Control4 system in 1-click
- Bulk Enable and Disable of Automatic Updates of drivers
- Display local licencing information for all known driver
- Update All Drivers in 1 click to latest versions available for that driver

Where do I buy a Licence from?

- Chowmain Control4 Drivers are only available to Control4 installers. Installers can sign up to a Chowmain account using: <https://chowmain.software/signup>. If you are a home owner you should contact your automation installer for support, purchase and installation of drivers
- This driver is developed by Chowmainsoft and can be purchased from the [Chowmain Software Website](#).
- All licences are site licences. This means the one licence can be used to unlock as many instances of the same driver in the same project.

Can I upgrade old versions of drivers from other marketplaces to Chowmain?

- This process is mostly automated.
 1. Install Chowmain Project Agent, and assign a Project Agent as required
 2. Ensure all drivers are up to date, and replace obsolete drivers with updated builds.
 3. Wait 10 mins.