

# Eagle Eye Application Note - AN065

## View Live Video with Apple TV and Eagle Eye QL Stream

2025-01-23 Revision 3.0

### Target Audience

This Application Note is intended for Eagle Eye Cloud VMS users and administrators who wish to use an Apple TV device that is on the same network as their Eagle Eye Bridge or CMVR to stream their local cameras in a Live Display.

### Introduction

The NX-V Eagle Eye Viewer application for Apple TV converts any monitor or TV screen into a local spot monitor instantly. Leveraging local video viewing with Eagle Eye QL Stream, the app quickly locates all available Eagle Eye Cloud VMS connected cameras on your local network and gets you up and running in minutes.

The application was developed by an Eagle Eye Networks API partner and is owned and operated by INCA X. INCA X utilized the open source [Eagle Eye Networks Video API Platform](#) to develop this integration, and it is a perfect example of the potential to utilize our Video API Product to create custom Video Solutions from the Eagle Eye Cloud VMS.

The NX-V Eagle Eye Viewer app is available from the Apple tvOS [App Store](#). To use the application, a user from the account must have access to the desired cameras they wish to display and should have access to create or utilize layouts from the installed Eagle Eye Cloud VMS. This enables the user to display the layouts on their Apple TV device.

To enable the QL Stream features of the Bridge/CMVR, a user with access to Bridge Settings should first enable QL Stream (RTSP) in Bridge Settings for Local Display. If the user already has Bridge Settings permissions, the applications will enable the setting in the Bridge on login. Read [AN059: Using Eagle Eye QL Stream for Enhanced Local Video Viewing Solutions](#) for more information.

A list of features enabled by this application is below. Simply launch the NX-V Eagle Eye Viewer app, sign in with your Eagle Eye Networks user credentials (first time only – the app will remember your credentials), select your layout, and get started.

- Select from your existing layouts
- Quickly view a single camera full-screen from the layout screen
- Switch layouts directly from the Layouts menu option
- View Layouts with up to 16 cameras (4x4) displayed
- Expand the grid view with the selected camera displayed larger than the other cameras displayed in the grid is available if the layout settings can accommodate (explained below)
- Switch from including camera name labels to "live monitor" mode, displaying the camera streams only
- Auto rotate camera display order to minimize screen burnout

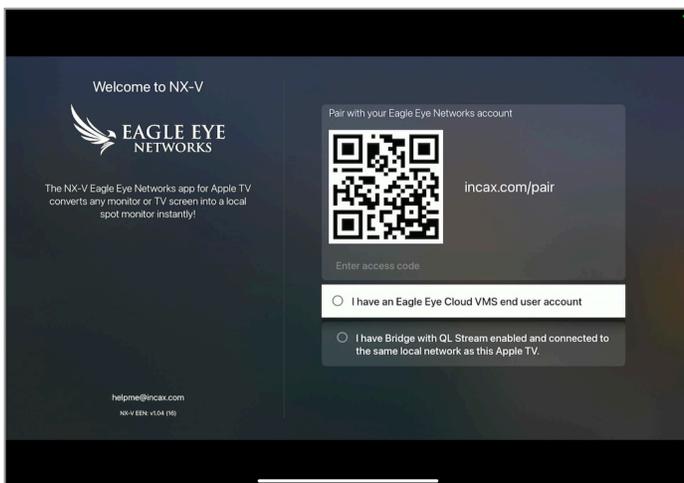
Recommended Hardware: 3rd Generation Apple TV 4k Ethernet.

## Logging In

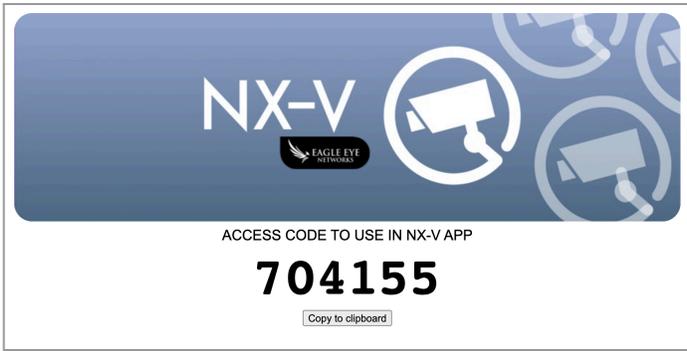
Download the application to your device, and make sure the IP address of the device is within the same network/subnet as the local Bridge/CMVR. We recommend only using an Ethernet enabled Apple TV, as performance utilizing WiFi for multiple high resolution IP cameras will lead to instability, and we cannot guarantee functionality.

### Apple TV Flow:

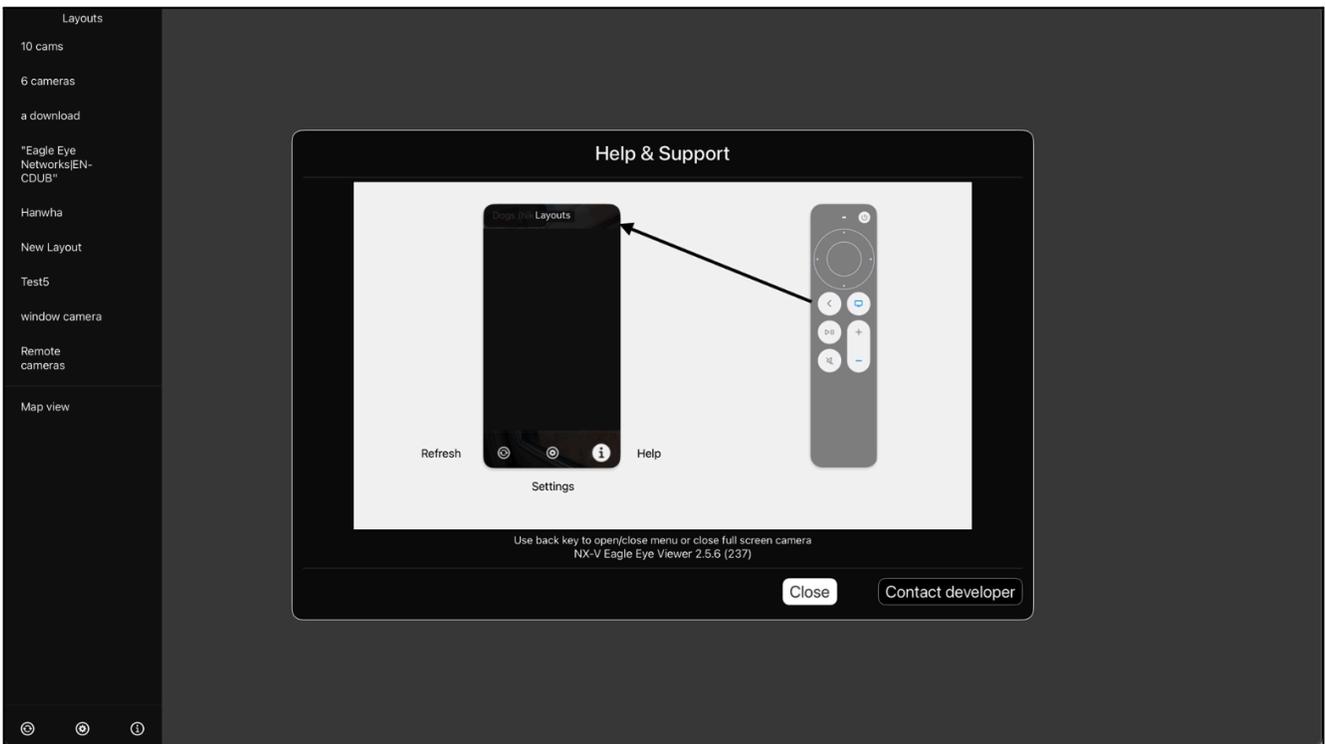
The application will generate a QR code the user can scan with their mobile device. This will open a mobile browser window to the Eagle Eye Networks Cloud VMS login page on the device. If you cannot use a mobile device, simply go to <https://incax.com/pair> from anywhere.



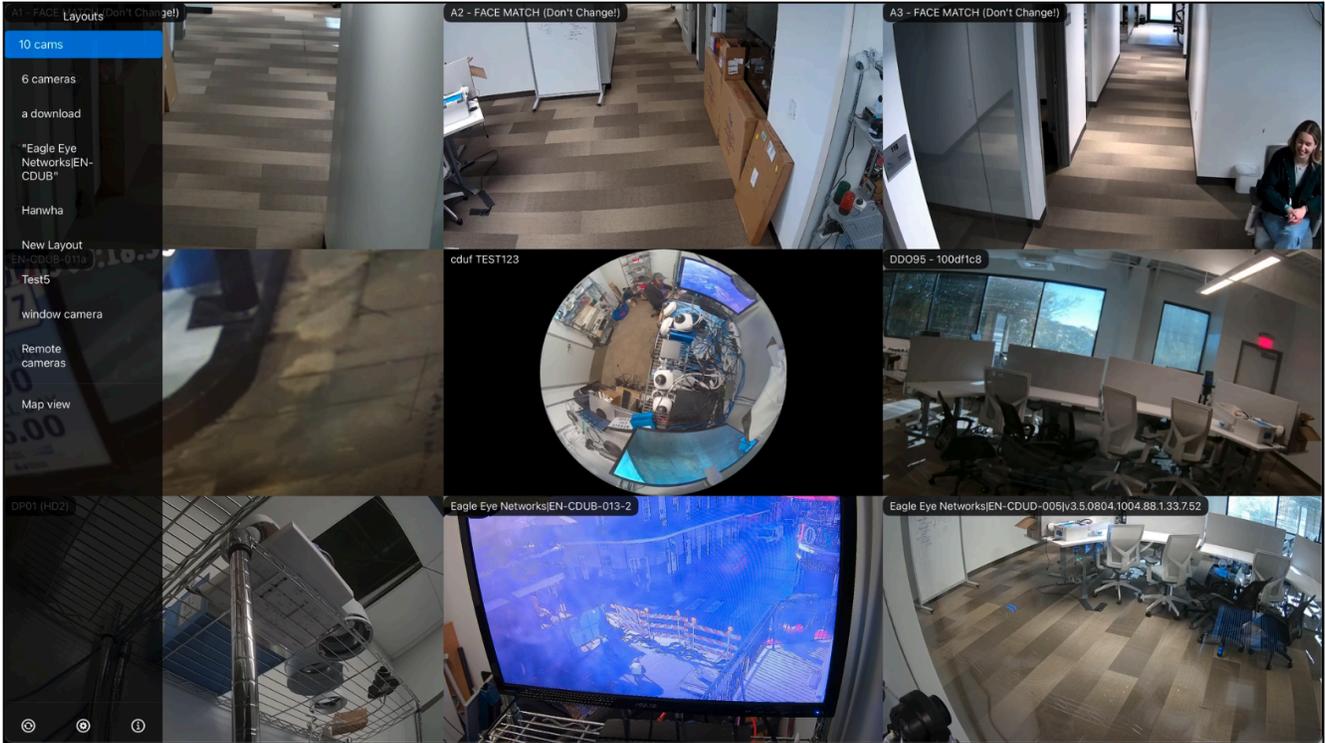
Once your user credentials are added (needs to be a user on the account containing the needed cameras, with QL Stream enabled in the bridge), you will get an access code to enter into the application.



You will get confirmation that everything worked, and the application will load a Help & Support popup (first time only) that can be closed by pressing the center button on the Apple TV remote.



When the Help & Support popup is closed, press left on the remote's clickpad to select a layout for display.



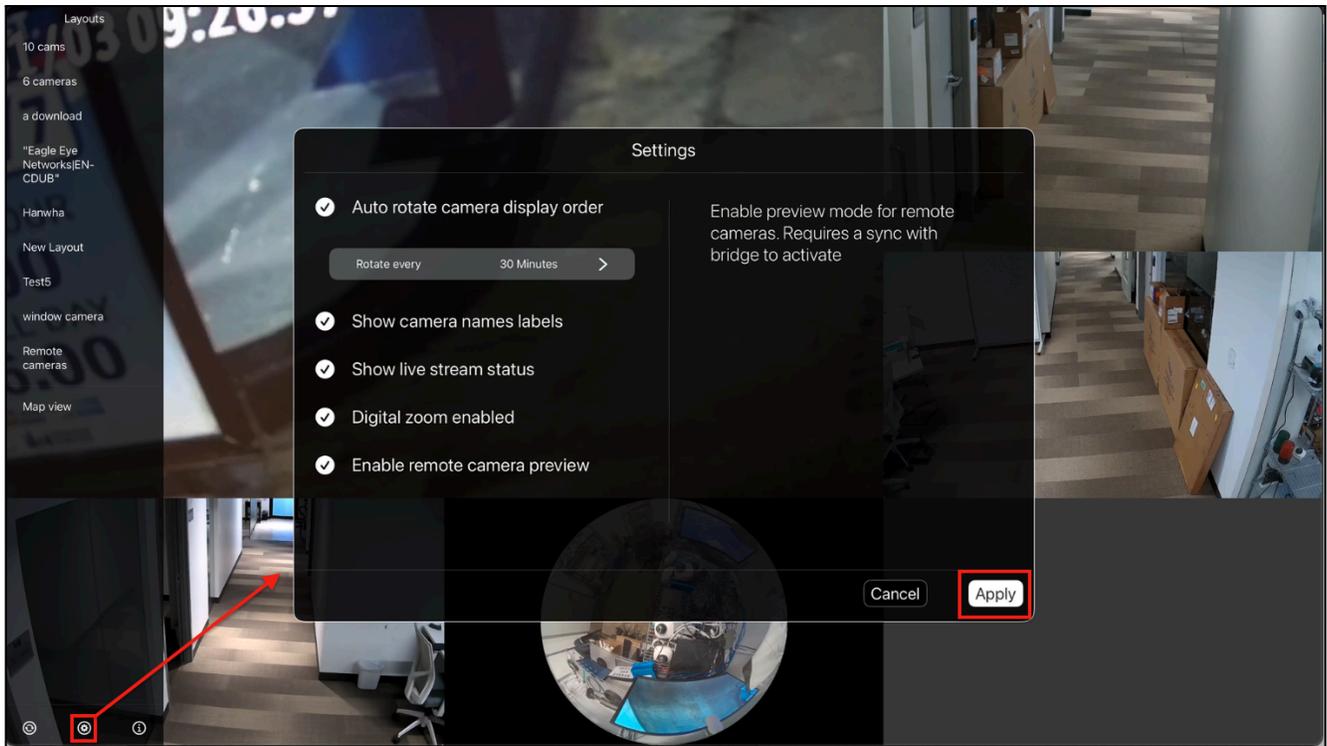
If all expected cameras are not returned, or some have indicators that they are not local cameras (the “eyeball” icon on the camera screen in the top right), you may need to refresh the connection to the cloud by clicking the “refresh cameras” icon on the bottom left of the left hand menu: 

## Navigating The User Interface

Navigating the Apple TV interface is done completely with the Apple TV remote, and it should be easy to understand the process within a few minutes of navigating through the menu. There are also on-screen descriptions for navigating the interface.

**Settings Options:**

From the bottom of the left-side menu, click the gear icon to bring up the app settings. When finished choosing options, make sure to select the Apply button, or select Cancel to close the menu.



**Auto rotate camera display order:** Rotates the cameras on display to minimize screen burn-in on low motion cameras. The “Rotate every” option, when enabled, lets you select how often the cameras rotate.

**Note:** This setting is not a form of “Layout Rotation.” It enables cameras in the layout to rotate counterclockwise, if only one layout is left on screen long term, to minimize screen burn-in).

**Show camera names labels:** Enables/disables camera names (with the exception of the remote camera icon).

**Show live stream status:** Shows text for stream status if connection is not established.

**Digital zoom enabled:** Allows for settings to zoom and rotate a camera from the layout.

**Enable remote camera preview:** Enables remote cameras. Remote cameras are cameras that are available to the user, but not currently in the same location as the Apple TV requesting video through the NX-V Eagle Eye Viewer application. This could be a camera layout from another location, or a camera from another location in the current local video layout.

Eagle Eye Networks also sells a line of cameras called **Eagle Eye Camera Direct**, which do not require a Bridge or CMVR to connect to the cloud. Eagle Eye Camera Direct cameras may be on the same network as the Apple TV, but because they do not have a bridge, they are considered Remote Cameras. Remote Cameras are limited to displaying video in low resolution with low frame rate from the Cloud. This video feed is what you typically see in the browser application while looking at layouts remotely, referred to as the Cloud Preview stream. The Cloud Preview stream has inherent latency due to the internet traversal, and will not be as close to live as cameras on the local network.

In your layout, remote cameras are indicated by an eyeball icon at the top right of the image, letting you know it is not a local camera.



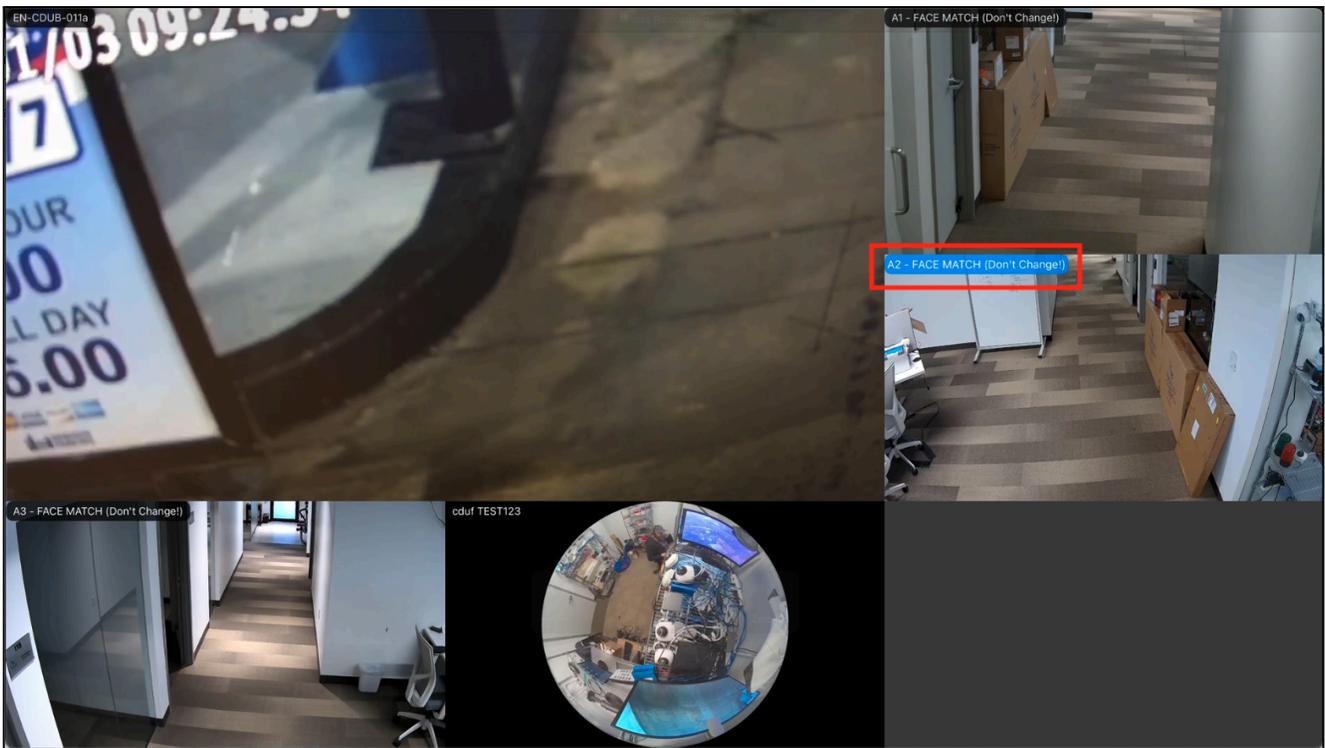
Enabling remote cameras also creates a special layout option from the layout menu, with cameras that are not on the local bridge network.

Remote cameras can show their full video stream resolution when they are selected and have their view enlarged. This view will make a call to the device and request the High Quality stream. When this stream is requested to the remote Bridge, CMVR, or Camera Direct, the view is recorded, so it is important to not leave a remote camera on full screen display to limit bandwidth and unnecessary recording. We do not guarantee support for long-term connections to remote devices.

Remote Camera layouts are also subject to the capabilities of the internet and the internet service provider, so we cannot guarantee that remote cameras on display will be free from issues with long-term streaming.

### Select a camera to go to full screen, and options:

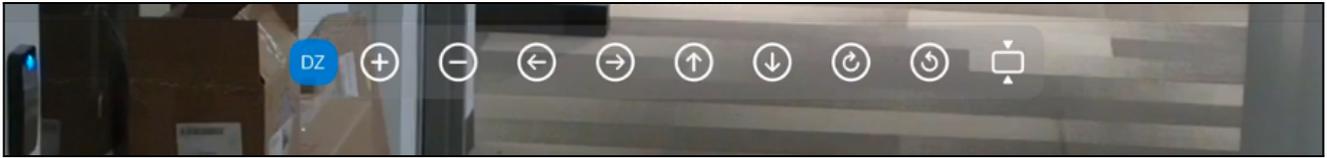
From a layout view, use the center click wheel on the remote to highlight a camera, then the center button to select and open the camera in full screen. To close the full screen, click the back button.



### Zoom:

If digital zoom is enabled, you have the option to zoom and rotate the camera image. This can be used to highlight an important area of interest from the camera and save it to the layout.

**Zoom icons:** Use the plus and minus icons to zoom in and out. The arrows move the zoomed field of view, and the rotate icon spins the camera. The pinch window option resets the zoom to default.

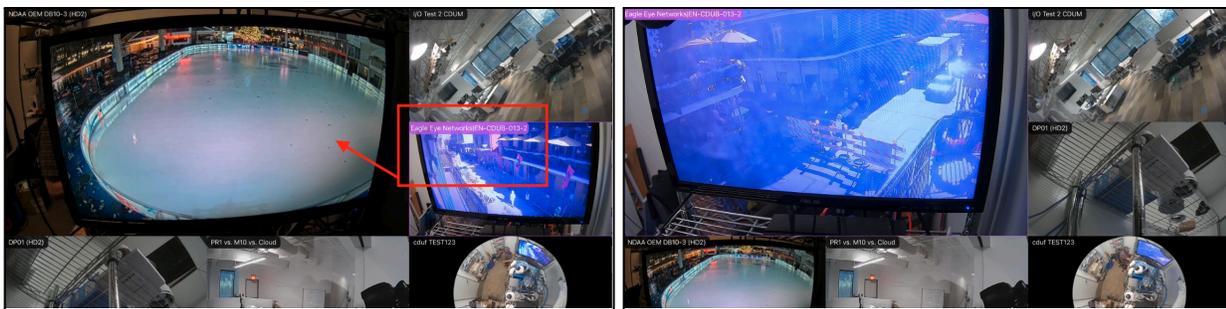


When zoom has been applied to a camera, a binoculars icon appears in the top right of the camera to indicate that the view is not the original camera view from Eagle Eye Cloud VMS.



### Moving cameras in the layout, without changing Layout from Eagle Eye Cloud VMS:

If you would like to reposition a camera tile in the layout, long press the center button while highlighting the camera. The camera border turns purple. While continuing to hold down the center button, click up/down/left/right on the clicker wheel to move the camera to another tile, press the center button, and click it again to close the highlight.



## Layout Formatting and Performance Expectations

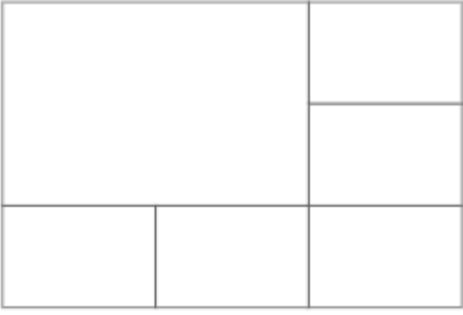
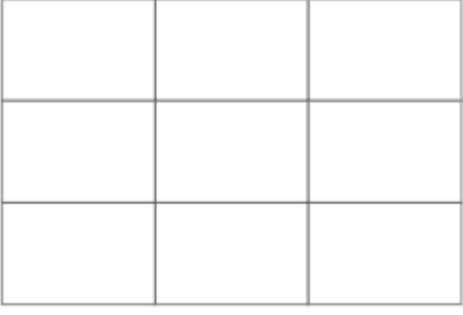
### Layout capabilities and limitations:

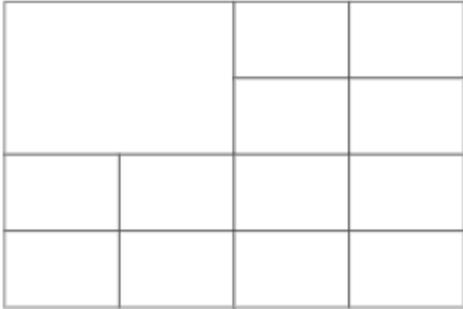
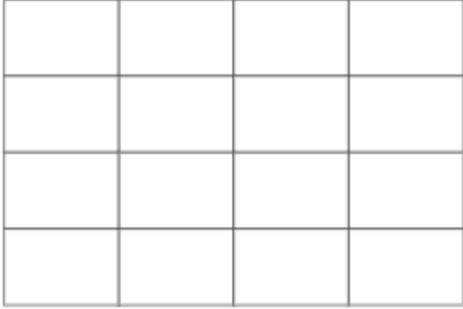
The application supports up to 16 cameras in a 4x4 grid. For total supported camera megapixels on display, see the descriptions below. The application tries to accommodate the cameras that are selected in the user-created layouts in the Cloud VMS and adapts the total cameras to a display grid that best displays the cameras, utilizing as much screen as possible. Based on the total megapixel (MP) count of some layouts from the Cloud VMS, the application may drop camera streams to keep performance in line with the specifications. For example, if the layout has 20 camera streams, only the first 16 will be displayed in a 4x4 grid, or, if the total MP of cameras exceeds support, the layout may drop the higher MP cameras and only display what is acceptable. The cameras appear in the order specified in the Cloud VMS, with the exception of 5-across and 6-across layouts, because the application has a maximum of 4 across, so cameras 5 and 6 from a layout of this format will drop down and left to the next row.

### Layout formats:

Cameras display from top left to bottom right in order with layout settings in the Cloud VMS; however, the amount of cameras in the layout determines the display grid format, which may appear different than expected (or if the system performance measurements cannot allow some cameras to display). You can use the Edit Layout options to change the location of cameras or disable cameras that are not needed to display.

**Note:** We recommend creating layouts in the Cloud VMS for the user (and if possible, create a user for the sole purpose of using this viewing application), that follow the format and performance requirements that best enable the application to be used as a security display.

Total Cameras in Layout	Display Grid
<p><b>1 Camera</b>, or Full Screen view</p>	<p>Full Screen, or Full Window</p>
<p><b>2–4 Cameras</b> will display in a 2×2 grid. Camera Rotation is counterclockwise.</p>	
<p><b>5–6 Cameras</b> will display in 3× Expanded Grid mode, top left camera is enlarged. Camera Rotation is counterclockwise.</p>	
<p><b>7–9 Cameras</b> will display in a 3×3 grid. Camera Rotation is counterclockwise.</p>	

<p><b>10–13 Cameras</b> will display in 4× Expanded Grid mode, top left camera is enlarged. Camera Rotation is counterclockwise.</p>	
<p><b>14–16 Cameras</b> will display in a 4×4 grid. Camera Rotation is counterclockwise.</p>	

## Appendix

**Recommended Hardware:**

3rd Generation Apple TV 4k Ethernet

**Performance Expectation:**

All system performance was tested using a 3rd Generation Apple TV 4k Ethernet, with 64GB memory. For previous-generation Apple TV devices, performance may vary. Recommendations based on an average 25 FPS and H.264 (main) profile. The Apple TV device does not support multiple monitors.

Layout on display, maximum supported resolutions are as follows:

Resolution	2×2	3×3	4×4	MAX
720p	✓	✓	✓	16
1080p	✓	✓	✓	16
3MP	✓	✓	-	11
4MP	✓	✓	-	9
8MP	✓	-	-	4

Use this calculator <https://incax.com/xdownload/mcv-calc.html> to help verify support for your layout.

**Developer Support:**

In the bottom left-side menu, there is an “i” icon that reopens the Help & Support popup. If you need support from the application developer, select the “Contact Developer” option, and select “Create support ticket.” This will send the support team a log file of the application, and they will reach back out to you via email for assistance.