

Eagle Eye Application Note - AN059

Using Eagle Eye QL Stream for Enhanced Local Video Viewing Solutions

2023-10-04 Revision 1.0

Target Audience

This Application Note is intended for administrator users of the Eagle Eye Cloud VMS who desire to create a viewing station or enable local video streaming for cameras that are on the local network. Knowledge of the network where the Eagle Eye Bridge/CMVR device is installed is required, and network integrity should be considered an important factor before deployment.

Introduction

The Eagle Eye Cloud VMS has many options for Local Video Viewing. Eagle Eye QL Stream allows Bridge/CMVR devices to provide a secure, low-latency, full-resolution video stream from the locally attached cameras, which enables high-quality local video viewing with PCs, iOS, macOS devices, Display Stations (like the Eagle Eye Networks DS200), Video Walls, third-party VMS solutions, and more.

Background

IP Cameras typically use RTSP (Real Time Streaming Protocol) for local access to video streaming, by providing a unique, camera-specific URL. That URL can be accessed via browser or third-party viewing software to directly view a camera's video output. The Eagle Eye Networks Bridge/CMVR can similarly provide direct access to cameras on the local network, for low-latency, high-resolution streaming that bypasses transport to the cloud.

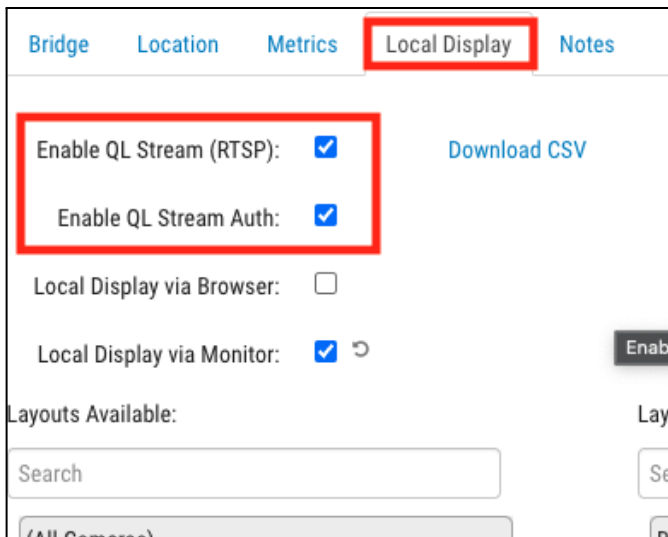
Eagle Eye QL Stream (RTSP) refers to the full-resolution video stream available for cameras attached to the Bridge/CMVR devices on the local network (both on the WAN and CamLAN Network Interfaces). The stream can be enabled or disabled by admin users remotely to manage the security of the video feeds. In addition, the streams can be enabled with authentication to ensure that only authorized users can access the video feeds. The stream resolution and frame rate are determined by

the Full Resolution Video Stream settings of the relevant camera set up by the user in the Eagle Eye Cloud VMS.

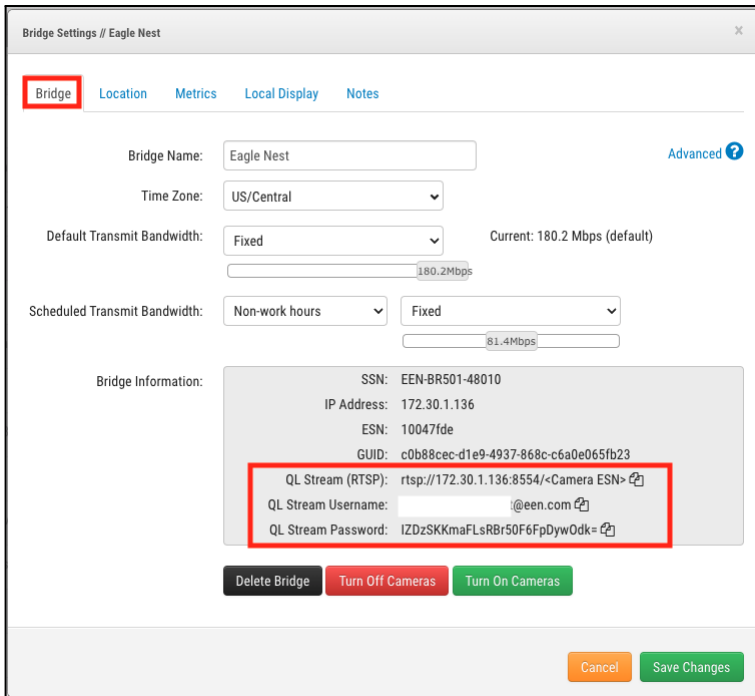
Enabling the Feature and Recommendations

To enable QL Stream, you must be logged in as an Admin-Level User from the End User Account, or a user with permissions to modify Bridge Settings, and access to the local cameras that are attached to the Bridge/CMVR where the feature will be enabled. The Bridge or CMVR must be up to date (version 3.15.3 or above). Please contact Support for assistance with this if you do not see these options in your Bridge Settings. Reseller-level users are not embedded in the settings for this feature on the Bridge, and therefore are not able to enable or disable the feature. However, if the feature is already enabled, and there are no Authorization settings applied, a reseller user can use the available RTSP Stream URL for integrations.

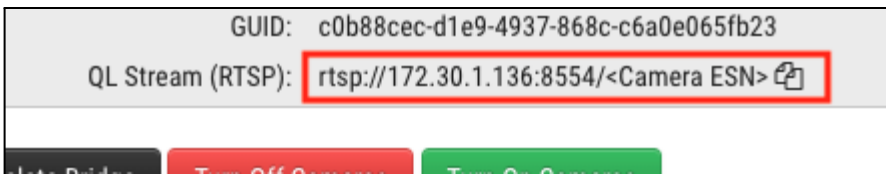
Under Bridge Settings > Local Display, you will see the toggle box for the feature.



By default, the application when enabled will require Stream Authorization. This means that there will be a Username and Password required for the stream to be viewed, which helps secure the stream from unauthorized access via the local network. If the QL Stream Auth setting is disabled, anyone in the local network with knowledge of the QL Stream URL, and the Camera ESNs on the local network, will be able to request and view live streams of the cameras from the Bridge.



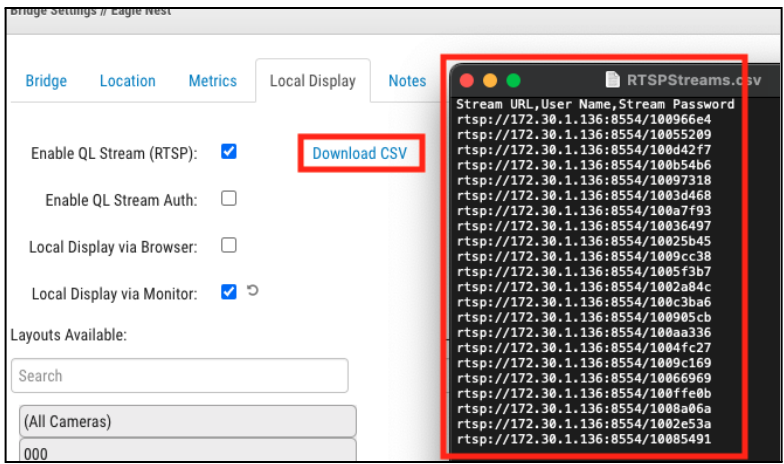
With QL Stream Auth enabled, there will be an QL Stream URL / Username of the currently logged-in user / QL Stream Password (unique to this feature; it is not the user's password).



Without QL Stream Auth, there will be only a URL for the QL Stream. There is a "copy" icon next to each of these credentials to make copying and pasting easier for integrations.

The QL Stream URL is determined by and contains the Bridge/CMVR WAN network interface IP address, and UDP port number 8554.

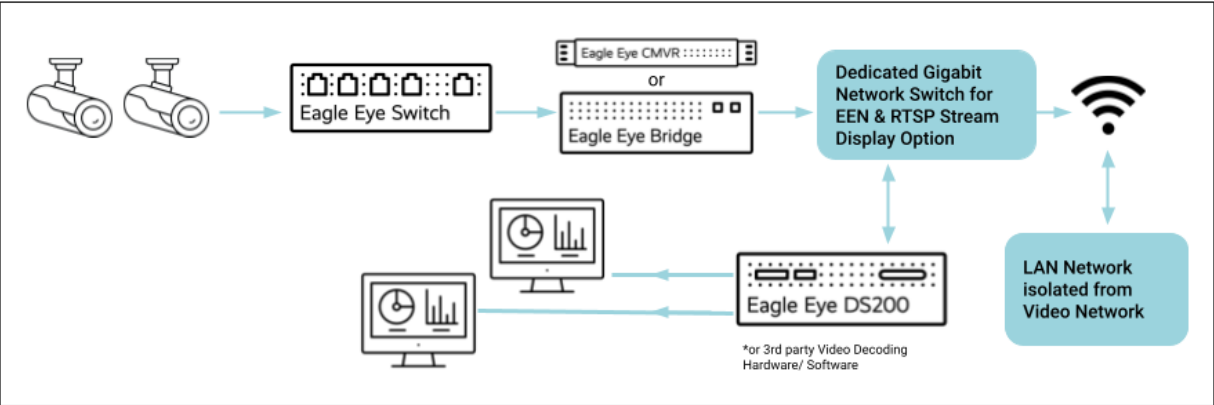
The only missing piece to the URL is the ESN of the camera that will be requested. There is an option in the Local Display menu settings to download a CSV file that includes all the available Camera ESNs, as well as their URLs.



The camera ESNs can also be found in the camera settings menu, in the Information column.



Because these Live Streams generate a lot of bandwidth (as does any video stream on a network) careful consideration should be taken if the intended use includes many cameras streaming to a single network location. As a best practice, you should create a closed network for an application that requires more than a handful of video feeds. Below is the recommended Network Topology for any QL Stream usage that exceeds a handful of cameras.



It is possible to set up the entire Video network behind the Bridge/CMVR CamLan port, which removes the video devices from access by any device that is in front of the Bridge/CMVR WAN network

interface. This will also remove the ability for any device to receive an active internet connection, so if your application relies on this it should be considered before deploying.

The QL Stream URL is determined by and contains the Bridge/CMVR WAN network interface IP address by default, however, if all network devices are connected behind the CamLAN network interface, you can change the IP address to the CamLAN IP address in the QL Stream URL (most devices CamLAN's use 10.143.0.1 by default). So for example, `rtsp://10.143.0.1:8554/<Camera ESN>` will request the same stream from the Bridge/CMVR as `rtsp://192.168.0.1:8554/<Camera ESN>`, but will only work and stream within the CamLAN network.

Integration Capabilities and Advanced Usage

Because of the use of a standards-based protocol like RTSP, Eagle Eye Bridges/CMVRs are able to serve camera streams to practically anything that can decode RTSP.

Eagle Eye Networks is using this feature to power its updated iOS/macOS application, which has the capability to display local video in-app in the Layouts view, at full resolution and framerate based on camera settings. (Link to [AN061](#))

This feature can also help with integration with the [Eagle Eye Networks DS200](#). Typically, with our DS200, you will want to use the Cloud Synchronization feature to load a User's layouts as display options. However, there are many cases where a bridge will have cameras on both of its network connections (WAN and CamLAN). In these cases, the Synchronization feature cannot access all cameras, because the camera feed that we sync with needs to be on the same network as the DS200 (which will only exist in one of these network locations). With the Bridge providing the RTSP streams, a DS200 can be on either of the bridge's NIC ports and receive camera streams from the second network. Unfortunately, at the time of this App Note, you cannot use both the Cloud Sync feature and manual enrollment of cameras. However, manually adding cameras using Eagle Eye QL Stream is much simpler than manually adding a camera's native RTSP stream, as the URL is universal and easily accessible through the Eagle Eye Cloud VMS.

There are numerous third-party services that can utilize QL Stream for applications like Video Wall Monitoring such as Useful), simple spot monitoring for a reception desk or drive up window (such as VLC Media Player), or even supplying a simplified stream connection to Smart Home systems (such as Control 4). Cloud Replication is a manner of utilizing dual Video Surveillance technologies to have both Local and Cloud VMS options. Utilizing QL Stream for Cloud Replication greatly simplifies this use case.

Troubleshooting Local Viewing Issues with RTSP Streaming

- **Network Connection:** In order to deliver the RTSP stream from the Bridge/CMVR to another location, both devices must be able to communicate with each other on the network. A simple

way to verify that the devices are able to communicate would be to ping the Bridge/CMVR's IP address from the device you want to connect with. If the devices do not ping successfully, the network topology will need to be investigated.

- **Streaming Issues:** Restart the services by first unchecking the "Enable QL Stream (RTSP)" box in the bridge settings through the Web app, saving and exiting. Then restart the RTSP service by going back into settings and re-checking the box for "Enable QL Stream (RTSP)."
- **Account Access:** As a reminder, only End User account holders are authorized to view Streams, and Reseller Users are not allowed to enable or disable the feature. If you are a Reseller, and you want to help enable this feature and integrate it for your customer, there will need to be a user created in the account that has access to Bridge Settings.
- **Audio:** At the time of launch, audio is not supported however, there will be updates to support audio very soon. Please check with your local sales representative to determine if QL Stream is capable of carrying audio from the camera to third-party devices.