Eagle Eye Application Note – AN046

Proactively Monitor Bridge/CMVR Health Status Through the Eagle Eye Cloud VMS

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Target Audience

This Application Note is intended for Eagle Eye Cloud VMS Resellers and account administrators to help proactively identify potential issues with Bridges/CMVRs that could affect the reliability of the hardware and recorded video. Problematic circumstances are often associated with the quality of the installation and the associated temperature of the device.

Introduction

Bridges and CMVRs are vital to the Eagle Eye Cloud VMS. All video is delivered to the Bridge/CMVR from each camera before being uploaded to the cloud. Therefore, it is imperative that any Bridge/CMVR issues are addressed before they become real problems. The Bridge/CMVR health status display makes it easy to see when a Bridge/CMVR has a potential issue that can become a problem and might lead to an offline system.

Background

The best way to ensure optimal Bridge/CMVR health is to properly install and set up the Bridges and cameras in your environment. A few best practices to note are below and a more comprehensive review can be found by reviewing our Application Note at
https://www.een.com/docs/app-notes/an039/.

- Mount Bridges/CMVR in a cool location. Bridges require proper airflow to keep temperatures in an acceptable range. Avoid installing Bridges in confined areas (inside a cabinet, in areas with no air conditioning, or in close proximity to other electronic devices). Extended periods of overheating can lead to hardware failure.
- Avoid overloading Bridges/CMVR. Each device has an associated datasheet (https://www.een.com/docs/data-sheets/) that dictates the maximum number of cameras and analytics it can support. Exceeding these numbers can lead to an overloaded CPU and failure.
- Be aware of bandwidth limitations. If there is limited bandwidth available, use the bandwidth tools (https://www.een.com/docs/app-notes/an038/) in the Eagle Eye Cloud VMS to determine what video transmit schedule, resolutions, motion sensitivity, etc. should be used.

Actively responding to Bridge/CMVR health display warnings provides a number of benefits, including:

- Proactively identify devices that are becoming problematic or are likely to go offline and take action before this occurs.
- Less downtime for cameras while waiting for a replacement Bridge due to potential hardware failure.
- Lower costs associated with replacing Bridges that have become defective.
- Lower likelihood of video purging, resulting in lost historical video.

Functionality

Bridges and CMVRs are in constant contact with the cloud, so information is always immediately available. So when the Bridge detects that something is wrong, or at least heading in that direction, it can immediately send this information to the Eagle Eye Cloud VMS to display a warning to anyone accessing the Dashboard.

When a Bridge/CMVR detects an issue, the device icon will show as yellow or red, depending on the severity of the issue (as opposed to the normal green, meaning everything is in good shape).

Insert images of yellow and red icons here with a brief description

The specific issue that has been detected can be seen in two ways:

1. Hover over the icon in the Dashboard and a text box will appear describing the issue.
2. Open the Bridge Settings for the device; the icon and description of the issue is displayed there. More detailed explanations are included within the VMS in-app help files and are further outlined below.

Hover Text	**Bridge/CMVR Settings**

Bridge/CMVR Health Status Icons

Bridge/CMVR status icons are shown on the Dashboard and Settings pages and are there to provide a visual indicator of the status of the device. Examples scenarios that may result in the status of the device changing are as follows (See the Application section below for more details):

- Internet Offline – The VMS has lost contact with the Bridge/CMVR.

- CPU Overloaded – Something (camera load, resolutions, analytics, etc.) is causing the CPU to become overloaded.

- Unable to Transmit All Video to Cloud – Some video is being deleted on your Bridge before it is able to be uploaded to the cloud.

- High Temperature – The Bridge is approaching a temperature that might cause damage to the device.

- High Bandwidth Usage – The Bridge/CMVR is using an abnormally high amount of bandwidth to transmit video.

 A white icon on the Dashboard and Settings pages indicate that the Bridge/CMVR has lost communication. This is indicated by the "Internet Offline" status. The health of the device cannot be determined while it is offline.

 A green icon on the Dashboard and Settings pages indicate that everything is functioning properly.

 A yellow icon on the Dashboard and Settings pages indicate that an issue has been

detected, but it is not yet in a state that demands immediate attention. You should work to resolve these before they become major problems.

A red icon on the Dashboard and Settings pages indicate that the Bridge or CMVR has detected issues that warrant immediate attention. Not doing so could lead to the loss of video or outright hardware failure.

Application

The table below describes what each Bridge health display status warning means and the appropriate steps to take to resolve them.

Message	Meaning	Steps to Take
CPU Overloaded	Something is causing the CPU of the Bridge to overload. This can cause damage to your Bridge if prolonged overloading occurs. Connecting too many cameras to a Bridge, having too many cameras running high resolutions, running too many analytics, etc. can cause this issue.	Check resolutions for cameras on the Bridge to see if there are any that can be lowered. There might be too many analytics enabled or too many cameras connected to the Bridge.
Unable to Transmit all Video to Cloud	Video is being deleted on your Bridge before it is able to be uploaded. This is also called Purging. Generally, this is because there was not enough bandwidth available to upload all full resolution video before the device ran out of internal storage. While this is not directly relevant to the hardware health, it does mean that you are losing video and will have gaps in your historical data, which could have very bad repercussions if an incident occurs and needs to be investigated.	Check the available bandwidth on the network. Consider changing the Default and/or Scheduled Transmit Bandwidth settings in Bridge Settings. If available bandwidth is a concern, consider reducing Full Video Resolution/Quality in Camera Settings for cameras attached to the Bridge. If there are false positives causing full video to be unnecessarily recorded, consider adjusting motion sensitivity settings in Camera Settings.
High Temperature	The Bridge is approaching a temperature that might cause damage to the device. This is a serious issue that needs to be addressed quickly.	Check the physical location of the Bridge to ensure proper airflow. See if there is something obvious and easy to fix. This could include books or paper stacked on top of the Bridge, whether the Bridge was moved into a cabinet or area with no airflow, if other electronics

		were positioned close by, etc.
High Bandwidth Usage	The Bridge/CMVR is using an abnormally high amount of bandwidth to transmit video. This is not necessarily a problem, but it can indicate that there is a lot of unnecessary video being recorded due to false positives for motion or analytic detections. Also, if bandwidth is a concern, this can eventually lead to video being purged.	Check to make sure that the full resolution video being uploaded corresponds to actual events occurring. If there are false positives causing events to be recorded, consider adjusting the Motion Sensitivity settings in Camera Settings. If bandwidth is not a concern, this warning can be ignored.

Useful Links

The documents linked below can be useful in resolving and even preventing Bridge/CMVR health display warnings.

- Bridge Install Best Practices app note (AN039) can be found here.
- Bandwidth app note (AN004) can be found here.
- Bridge datasheets are on the EEN.com website and can be found here.