Eagle Eye Application Note - AN099

Device and Camera Status Definitions and Processing

2025-04-21 Revision 1.0

Target Audience

This Application Note is intended for resellers and end user administrators of the Eagle Eye Cloud VMS. It provides a high-level overview of the camera status definitions and flow, providing users a better understanding of VMS camera status and notifications.

Introduction

Users need to know if their cameras are online or offline. This Application Note covers the most common camera status values, how those values are determined, and how they are communicated to you.

This application note clearly defines the different status levels observed in the Eagle Eye Cloud VMS Dashboard. Once the status levels are clarified, the application note covers the process by which each status level is determined and communicated.

Status Definitions

When users access the Dashboard, they view a display similar to the ones shown in Figures 1 and 2.

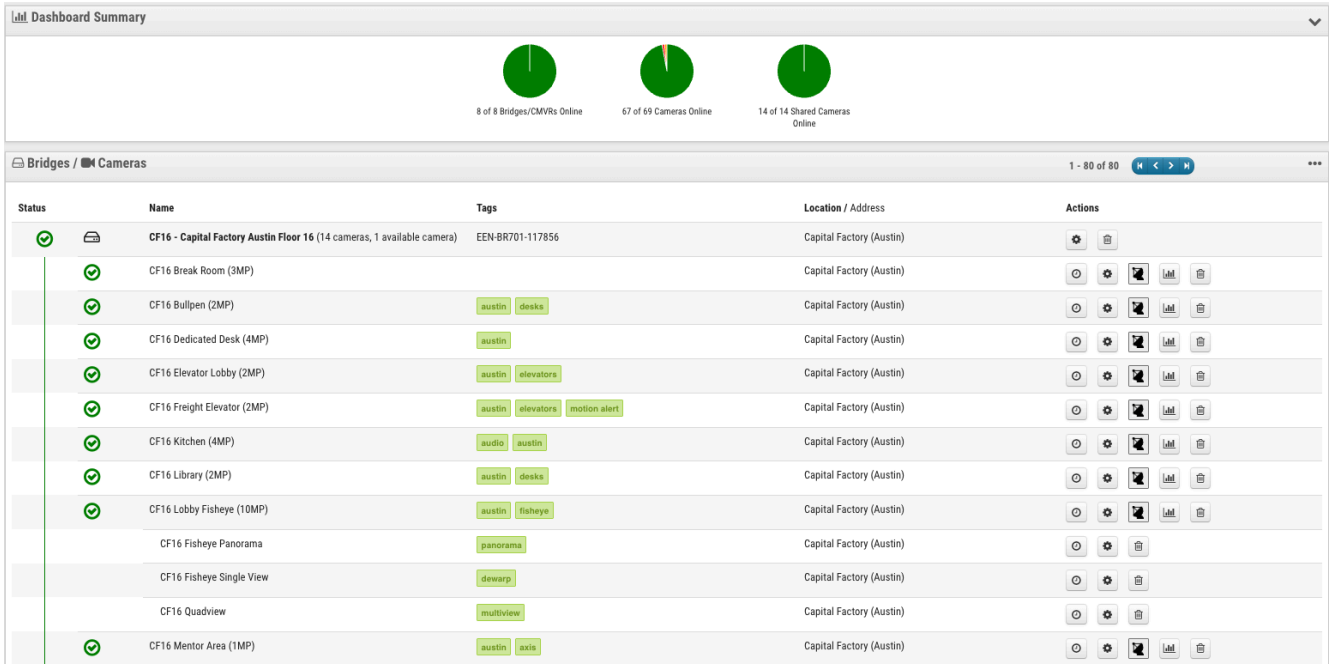


Figure 1: Dashboard - Classic Interface

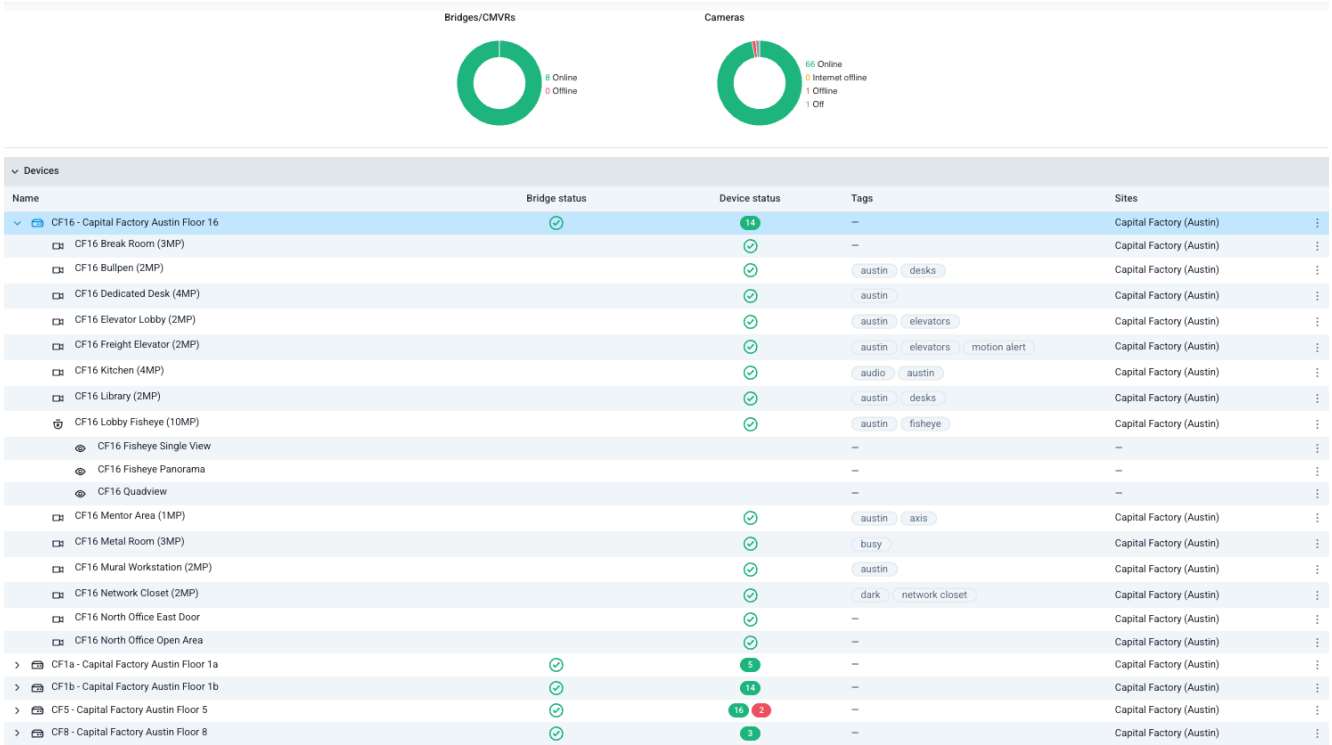


Figure 2: Dashboard - Enhanced Web Interface

The Device Status icons indicate the following status levels.

Device Status

– **ONLINE** - The camera is online. Everything is working as expected.

– **OFFLINE** - The camera is offline. The bridge is communicating with the Cloud VMS. However, the Bridge/CMVR cannot determine the status of the camera. This can be due to the camera being physically powered off, or there could be a physical or network issue between the camera and the Bridge/CMVR.

– **OFF** - The camera is turned off in Camera Settings. The camera is physically powered on, but is not transmitting video to the VMS due to it being turned off in Camera Settings. To resume video transmission, go to **Camera Settings** → **Camera** and check the box for **On**.

– **INTERNET OFFLINE** - The camera's internet is offline. The Bridge/CMVR that the camera is connected to is not communicating with the Cloud VMS. There are a variety of network issues that can cause this, such as the internet is down at that site or perhaps a firewall is misconfigured.

– **NEW** - The camera is ready to be connected to the VMS.

– **FAILING RESPONSE** - Communication with the camera is failing, possibly due to a login credentials issue.

Status Determination Process

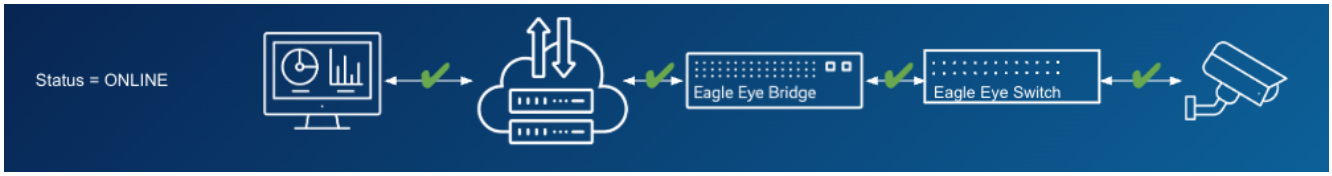
There are several key components involved in determining the status of a device or camera. This section describes the role of each component and its standard processing under normal conditions. The next section will cover unusual conditions and how they affect the determination of Status.

Components

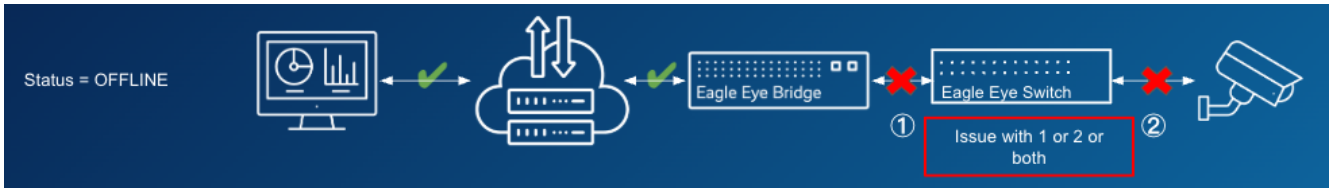
- User Interface (UI) - The UI communicates directly with the Cloud VMS processes to receive and display the status of devices and cameras. All status values are provided to the UI by Cloud VMS processes.
- Bridge/CMVR - The Bridge/CMVR units communicate with both the cameras and the Cloud VMS Processes to determine status values and post the appropriate values.
- Cloud VMS Processes - The Cloud VMS Processes synchronize status values and post them for consumption by the UI.

The process for determining the status value works as described below for each status:

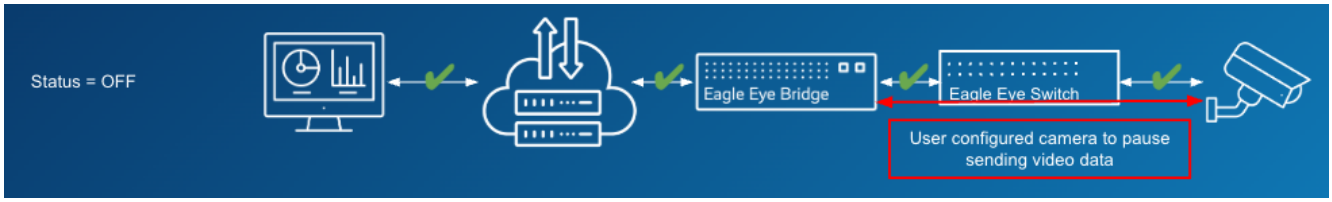
- **ONLINE** - This status value is for cameras and devices. A camera is determined to be online when it is responding to status checks from the Bridge/CMVR (or the cloud for Camera Direct cameras) and is providing media data as expected. Both the Bridge/CMVR and the Cloud VMS Processes confirm that the camera is sending the expected responses and data. For other device status values, the Cloud VMS Processes confirm that there is connectivity, and that the devices are responding with appropriate data loads.



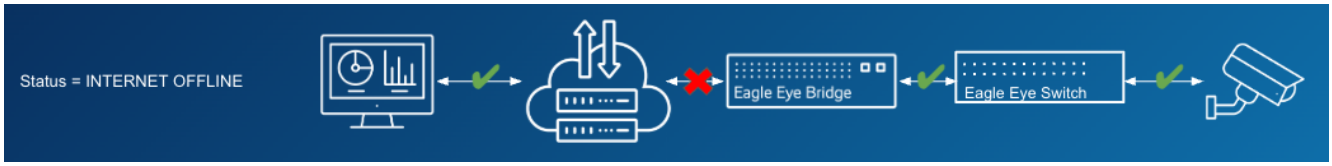
- **OFFLINE** - This status value is for cameras only. The Bridge/CMVR (or the Cloud for Camera Direct cameras) first confirms that it can connect to the camera. Further, the Bridge/CMVR inspects multiple levels of functionality within the appropriate protocol (e.g., RTSP, ONVIF) to determine if the expected data is flowing properly. If any level of data is not flowing properly, the camera is determined to be OFFLINE.



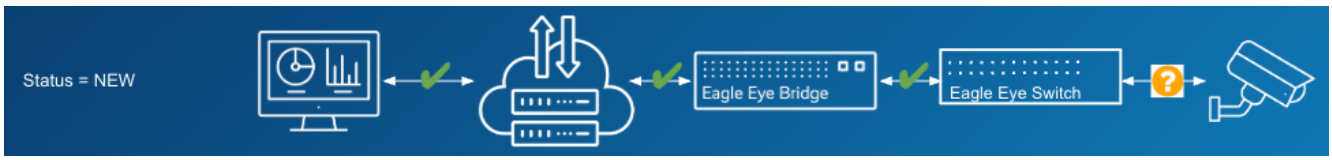
- **OFF** - This status value is for cameras only. The OFF status is user-initiated through the UI. The camera is turned off in the UI in the Camera Settings. The camera is still powered on. The camera is still reachable and communicating properly with the Bridge/CMVR. However, the camera has paused sending video at the end user's request.



- **INTERNET OFFLINE** - This status value is for cameras and devices. The Cloud VMS Processes report INTERNET OFFLINE when the Bridge/CMVR and the Cloud VMS Processes are not able to communicate. Additionally, if the Bridge/CMVR can communicate with the Cloud VMS Processes, but the media data flow between the two is not functioning properly (e.g., uploaded video cannot be stored on the Cloud VMS storage system), the Cloud VMS Processes will assign the status value INTERNET OFFLINE.



- **NEW** - This status value is for cameras only. When a Bridge/CMVR sees a camera on the network, but the camera has not yet been added to a Bridge/CMVR, the camera is assigned the NEW Status value. Once an administrator adds the camera to a Bridge/CMVR, the camera will be assigned the appropriate status value: ONLINE.



- **FAILING RESPONSE** - This status is for cameras only. This status value signifies that the camera credentials are incorrect or not stored properly in the system. Once the correct credentials are stored, it may take a few minutes for the bridge to communicate the updated password to the camera, and the status set to an appropriate value: ONLINE.

These status values are checked at regular intervals, within seconds of each previous check. However, for some status values, like OFFLINE, the checks and automated corrective action attempts could result in a delay of up to a few minutes before the status level is changed.

Factors Influencing Status Determination Timing

As mentioned above, status checks are performed at very short intervals. Most status values are determined and assigned within seconds. Some status values require slightly longer intervals to be assigned due to factors such as protocol timeouts and automated corrective action attempts.

Status values that are determined and assigned rapidly are:

- **ONLINE**
- **OFF**
- **NEW**
- **FAILING RESPONSE**

Status values that could require slightly longer intervals are:

- **OFFLINE** - If the connection between a Bridge/CMVR and a camera is completely unavailable, the OFFLINE Status level will be determined and assigned immediately. However, if the camera is reachable, determination of whether it should be assigned OFFLINE becomes dependent on the camera's responses to the appropriate protocol communication checks. Is the camera sending the appropriate data (e.g., video, audio, etc.)? Is the data flowing with the expected bit rate? Other appropriate values are checked, and the Bridge/CMVR makes the status value determination based on the results of the checks. Additionally, the Bridge/CMVR will attempt automated corrective actions for some of the protocols it checks. These actions can add a few seconds to tens of seconds to the Status value determination process.
- **INTERNET OFFLINE** - If the connection between a Bridge/CMVR and the Cloud VMS Processes is completely unavailable, the INTERNET OFFLINE Status level will be determined and assigned immediately. However, if the Bridge/CMVR and the Cloud VMS Processes can communicate, determination of whether a unit should be assigned INTERNET OFFLINE becomes dependent on the checks as to whether the camera's data can be successfully written to the Cloud VMS storage system. The status of these data writes is determined within seconds generally, but may be delayed by tens of seconds if automated corrective actions are attempted to alleviate any data storage issues.

So, camera and device status values are normally assigned and recorded within seconds. In cases where the OFFLINE or INTERNET OFFLINE status values require protocol timeouts or automated corrective action results, the Status values could take 2–4 minutes to be assigned and recorded.

Status Notification

The Eagle Eye Cloud VMS provides the ability to set camera status notification delivery intervals. By default, Status value notifications are set to be sent after 900 seconds (15 minutes). This value is set to limit over-notification due to temporary connectivity issues that could occur during a status check. If a status persists for the duration of the notification interval, then a notification will be sent. An additional notification will be sent, when the status value for the camera has changed.

The status notification delivery interval can be modified, but you should take into consideration the potential for an influx of notifications if you shorten the interval significantly. There are a variety of conditions that can cause connectivity or data flow interruptions. The Eagle Eye Cloud VMS is engineered to recover gracefully from any such interruption. So, keeping the notification interval at a reasonable frequency, like 900 seconds, increases the likelihood that a status value notification indicates a specific issue, versus a temporary interruption in normal communication.

When considering when to expect a status value notification, remember to include the time needed for the process for determining the status value in addition to the configured notification interval.

Conclusion

The Eagle Eye Cloud VMS provides a robust status value monitoring process. The Bridge/CMVR and the Cloud VMS Processes check multiple factors to determine the status value of cameras and devices. They will also attempt automated corrective actions to address any issues. When determining when you should expect status value notifications, consider the time to determine the Status value plus the status notification interval settings for your environment.