

Eagle Eye Application Note – AN004

EE VMS Bandwidth Management



2021-05-03 Revision 01.1

Feature Overview

The Eagle Eye VMS provides Intelligent bandwidth management that allows users to manage exactly how and when the VMS impacts their network. This allows the customer to mitigate over saturation of their network and to implement schedules for optimal usage of their bandwidth without interrupting operations.

Theory of Operation

Intelligent Bandwidth Management adjusts data transmission and optimizes bandwidth utilization for Internet connectivity.

1. Allows for devices to buffer video and transmit to the cloud according to Fixed Parameters or an allocated percentage of available bandwidth.
2. Users may implement Schedules of transmission with variable parameters for a Fixed amount of upload bandwidth or an allocated percentage of upload bandwidth.

Functionality

Various bandwidth transmission modes determine how video streaming is being sent to EE VMS.

A screenshot of the Eagle Eye VMS bandwidth management interface. It shows a "Default Transmit Bandwidth:" dropdown menu with "Fixed" selected and a "Current: 15.0 mb (scheduled)" status. Below it, a "Scheduled Transmit Bandwidth:" dropdown menu is open, showing options: "% Of Available" (highlighted in blue), "Fixed", and "Minimum BW Mode". A timeline slider is visible with markers for "06:00 PM" and "06:00 AM", and a "15.0mb" label. Below the interface, there is a list of two bullet points: "Percentage of available bandwidth utilization" and "Fixed amount of bandwidth utilization".

- Percentage of available bandwidth utilization
- Fixed amount of bandwidth utilization

- Minimum bandwidth utilization

<div> <div> Camera Retention Resolution Motion Analytics Audio Location </div> <div> <div>Preview Video</div> <div> Resolution: std (640x360) Quality: default </div> <div> Transmit Mode: always </div> <div> Aspect ratio: always <div> on demand </div> </div> <div>Full Video Recording</div> <div> Resolution: 1080P (HD2 1920x1080) Quality: med </div> <div> Transmit Mode: background Record When: event </div> </div> </div>	<div> <div> Days Security Camera Alerts Notifications Privacy </div> <div> Time Zone: US/Central </div> <div> Work days: Monday - Friday </div> <div> Work hours: 8:00am To 10:00pm </div> </div>
<ul style="list-style-type: none"> • Always upload to cloud • On-Demand upload when event trigger • Background upload according to schedule 	<ul style="list-style-type: none"> • Schedule work days as per requirement • Work hours upload to cloud

Application

Every installation has its unique bandwidth requirements and accessing the cloud can be a challenge if the available upload bandwidth is not considered from the start. To ensure optimal performance in each unique network environment, we provide the Bandwidth Manager.

Using the Intelligent Bandwidth Management, you can determine:

- Percentage of Available Network utilization
- Fixed Amount of Bandwidth utilization
- Schedule for Bandwidth utilization
- Maximum Bandwidth Utilization
- Minimum Bandwidth Mode for cellular applications and data plan management

Scenario 1

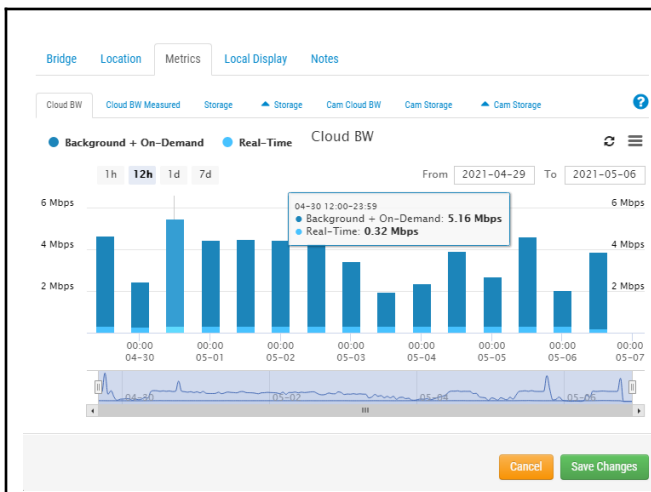
During business hours, bandwidth utilization is oftentimes stretched thin to accommodate everyone on-site. In this example using the Scheduling function, video streams can be uploaded to EE VMS after business hours, when sufficient bandwidth is available. This can minimize impact on the business operations during which time, the user's video is buffered on the device and then intelligently transmitted to the cloud per the Schedule Upload window.

Scenario 2

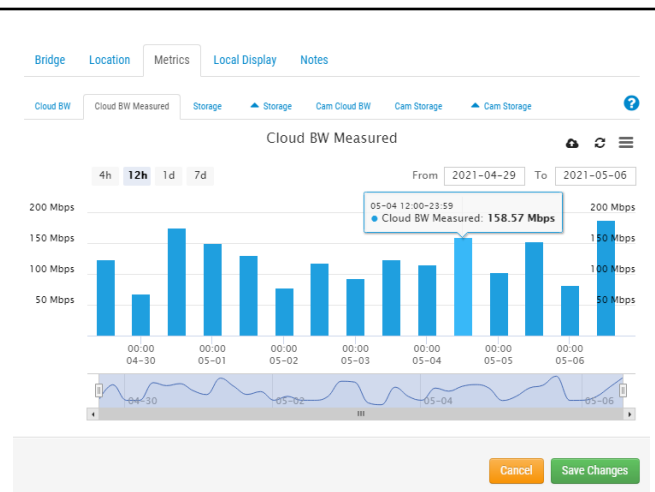
Due to the high cost of bandwidth subscription fee from telco providers, it can be a challenge to upload all cameras concurrently to Eagle Eye VMS. In this example, you can configure the system to upload to EE VMS using the **On-Demand** function. This allows uploading of video streams upon user request, with the remaining video streams buffering on the Bridge/CMVR.

Notes and Additional details

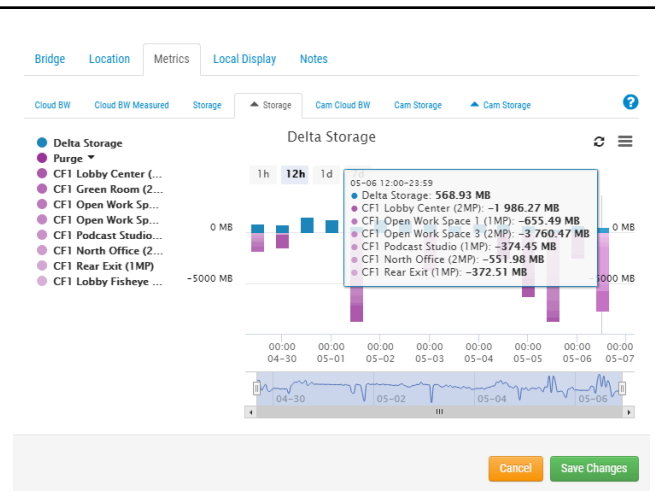
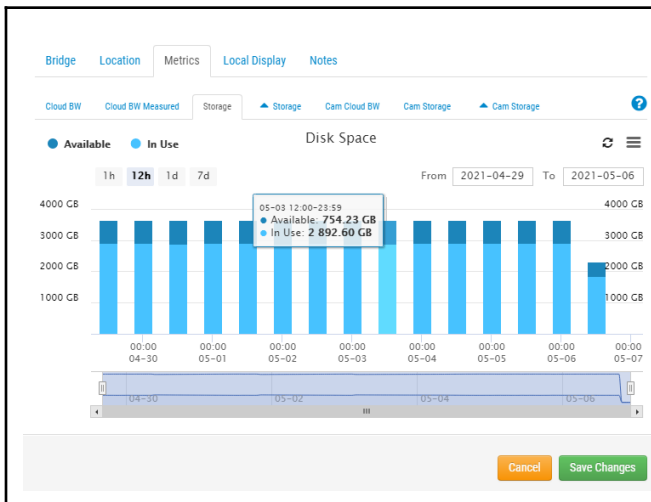
Using the available Metrics, it allows user to setup and tweak the system for better users' experience. Here is an example of 10 cameras utilization.



“Cloud BW” the synchronization of video to the cloud as well as the viewing of video that is not yet in the cloud. Real-Time is the preview video that is being transmitted directly to the cloud.



“Cloud BW Measured” the bandwidth as measured while sending data to the Eagle Eye Networks Cloud



<p>"Disk Space" available and in use, which is video temporarily buffered prior to synchronizing with the Eagle Eye Networks Cloud. If video does not get transmitted to the cloud before the Available space is filled, then the oldest day's video will be purged to make room for the current video.</p>	<p>"Delta Storage" difference between the video buffered locally and the space freed by synchronizing to the Eagle Eye Networks Cloud. Positive represents in use storage and negative represents successful synchronization to the cloud. Any video that is purged prior to the retention period will show negative in purple.</p>
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