

Troubleshooting Network Bandwidth

When setting up a surveillance system that is handling a large number of high-resolution cameras, you may encounter the error “**Not enough bandwidth**”. This document helps you to resolve that issue.

The Problem

Any bandwidth problem has two sources: network traffic generated, and network traffic capacity. With high-resolution cameras becoming commonplace and able to operate at high frame rates, the ability of a surveillance system has skyrocketed.

In addition, Luma’s NVRs do have a cap on incoming bandwidth:

- 4-channel: 25 Mbps
- 8-channel: 50 Mbps
- 16-channel: 100Mbps

This bandwidth gets consumed by **both the main stream and the substream at all times**, even if you are not watching one of the streams!

For example, a 4MP Luma camera on default settings generates a 6Mbps main stream and a 1Mbps substream. Connect eight of those to an 8-channel NVR, and the default settings already generate 56Mbps of network traffic, which is greater than the NVR can handle.

The Solution

To resolve network bandwidth issues, change the frame rate and bitrate of the camera before adding the camera to NVR. If you connect the camera to NVR first and then adjust the bitrate, remember to adjust the bitrate of event stream as well.

Changed values noted in red.

	4MP main stream		4MP substream		2MP main stream		2MP substream	
	Default	Best	Default	Best	Default	Best	Default	Best
Resolution	2688x1520	2688x1520	640x360	640x360	1920x1080	1920x1080	352x240	352x240
Frame rate	20	15	15	15	30	30	30	30
Bitrate	6144Kbps	4096Kbps	1024Kbps	1024Kbps	4096Kbps	3072Kbps	512Kbps	512Kbps