

How to achieve best frame rate for remote access.

Note: The remote streaming quality is dependant on the amount of upload bandwidth at the streaming site. In this example the max quoted upload capacity is 2MB or 2048k or 2480000bps.

If we divide the figure 2048k [2MB] by 18 cameras, we get a figure for equally distributing the bandwidth between the 18 cameras to ensure they are streaming within the maximum streaming capacity. In this case: $2048 / 18 = 113.7k$ (113777kbps). You can adjust these settings to get better picture from selected cameras over others by increasing / decreasing settings for relevant cameras.

(problem: users seldom get max upload bandwidth from their ISP, try a speed test for ultimate efficiency)

(2nd problem: a user wants to see high res video at local location but needs a lower bit-rate stream for remote access, in this case, a dual stream camera is best, like the BiKal Elite range of cameras. This camera can provide one stream for high resolution, and a second stream at lower resolution specifically for remote broadcasting at a lower bit rate) This is where 'Attach Video' is used. [contact me for a demo]

You can also try the MPEG4 settings on the Linksys cameras which will be better as it uses less bandwidth than MJPEG , you will need to enable Multicast RTP/RTSP on the camera settings page then use the Generic RTP/RTSP cameras setting in EyeSoft. You will have to apply port forwarding on the router for this also. (see Linksys manual)

Solution:

- 1) Firstly, adjust the cameras resolution to preferred local viewing. This is where the first stream comes from so all the other equipment has to deal with this first.
- 2) Choose 640x480 resolution, this provides best video for local viewing & recording but puts a strain on outgoing bandwidth. If remote video quality is of equal importance, choose the 320x240 resolution or if 2 machines are used then set 320x240 on streaming machine.
- 3) For fixed rate, there is a chart in the manual that shows what bit rate you will get dependant on the settings you choose. As the Linksys cameras do not have dual stream, you may need to compromise on the bitrate but it can be higher than the remote broadcast bit rate (we will change that in eyesoft)

If using MPEG4, you can choose constant bit rate and choose the rate that best suits you. E.g. 113k for each camera

- 4) Frame Rate is obviously important, suggested frame rates are 4, 8 and 12 although the higher the frame rate, the lower the resolution should be on video to compensate

NEXT.....

- A) In EyeSoft, go to the cameras settings
- B) If you have 2 different video streams coming from the camera, you can add the 2nd stream in attach video, otherwise you only need to attach the primary video stream.
- C) Then go to compression tab and select the 'Broadcast' secondary tab.
- D) Uncheck same as storage
- E) Uncheck audio if audio is not required at remote site
- F) For video stream, ensure checkbox is ticked
- G) Ensure CBR (constant bit rate) is selected
- H) Change bit rate to 113777bps [113k] (or whatever you want to stream at)
- I) Key Frame Interval most likely will not help much, do not increase although you can experiment with 1500 milliseconds
- J) You can also change the 'Decoder Profile' to Simple. This works in some cases but is best if the video being streamed is at 320x240 resolution or under.
- K) If you had attached a secondary low res stream, you would check the 'prefer secondary stream'
- L) Click Apply.

Of course these figures are theoretical, you may need to play with the settings to find optimal settings between your cameras and the upload speed of your connection.