

Optimising your system to show AVs over Zoom

With the Covid restrictions looking to be in place for some time, showing AV sequences to groups and clubs will be via the Internet for the foreseeable future. Zoom has become the platform of choice, but has to be optimised for AVs to play back smoothly.

If you've already tried doing this, the chances are that using it 'out of the box' will not have given your audience a positive experience. You of course won't know this, as on your computer the sequence will play perfectly well – at the viewer's end though it may look very choppy and jerky.

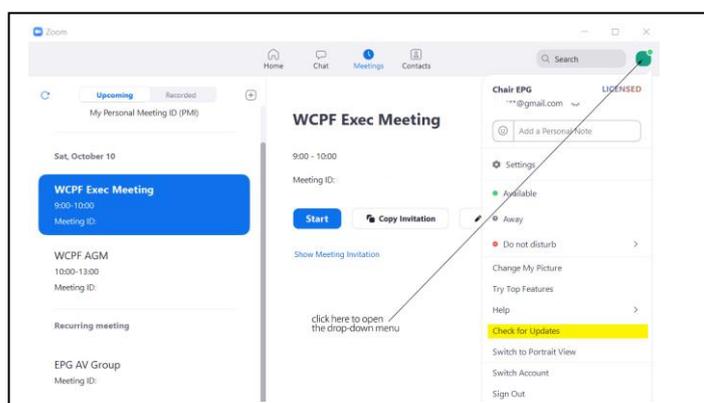
To correct this, there is a series of steps to go through, each of which will make a small improvement, with the overall result being a much smoother show for the viewers to watch.

Step 1 – check your upload speed. Domestic routers are configured so that the download speed is prioritised, as the vast majority of use is to stream TV and music, browse websites and watch videos. Typically, your download speed will be three times faster than your upload speed. For showing AVs though, the upload speed is critical, and should be in the region of 8Mbps or above. You can check this on <https://www.speedtest.net/>. When I first tested mine, I was getting an upload speed of less than 1Mbps, so I phoned my ISP to see if it could be improved, and they sent me a new router that now gives me 9.6Mbps.

Step 2 – connect your computer to the router by an Ethernet cable. This will remove any speed lag in your home wifi, and gives you the best chance of maintaining a steady upload speed. It's best to buy a 'fast' cable, and a Cat 5e is a good compromise between speed and cost. Some laptops don't have an Ethernet port, so would have to be connected via a USB adaptor. Amazon sells both cables and adaptors.

Step 3 – update your video drivers. Its easy to assume that your system is always being kept up to date, but in practice some updates can get missed. An excellent way to keep on top of this is to install Glary Utilities from <https://www.glarysoft.com/>. Amongst other things, this will check for updated drivers, including the video drivers for your graphics card. I was getting mediocre performance on Zoom before ensuring that my drivers were completely up to date.

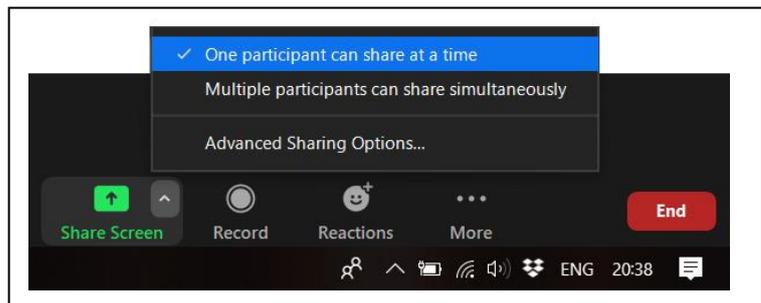
Step 4 – Make sure you are using the latest version of the Zoom software. An easy way to check this is to click your ID icon in the top right corner of the Zoom app. Select the 'check for updates' option and it will check for a newer version, and let you update if there is one available.



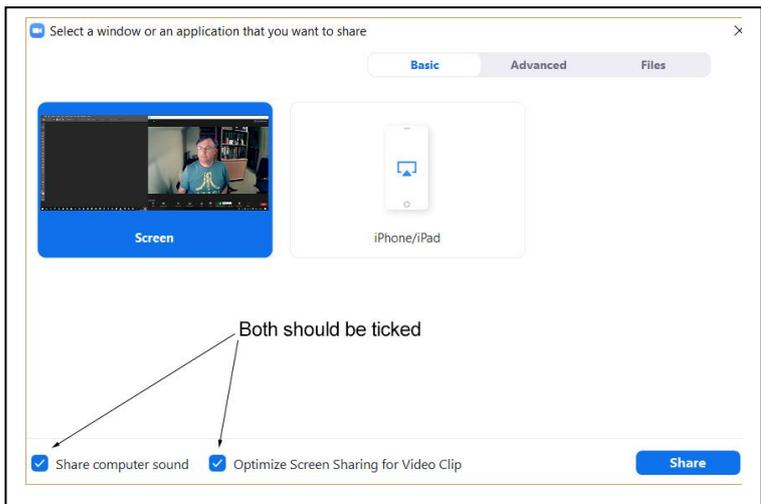
Step 5 – Long dissolves and slow pans and zooms are particularly prone to stuttering over Zoom, so it is worth re-editing the AV sequences that you intend to show and decreasing the dissolve times to around two seconds or so. These can then be saved as ‘Zoom-friendly’ versions. Time consuming, but worthwhile doing.

Step 6 – If you have a high-resolution screen, change the resolution down to 1920 x 1080. This limits the amount of data that Zoom has to upload, and in all likelihood the viewer would see a small video with a black border anyway if you started from a hi-res screen.

Step 7 – When using Zoom, make sure (especially if you’re not the host) that the Screen Share option is set to only one person sharing at a time. If the multiple people checkbox is ticked then the ‘Optimise Screen Sharing for Video Clip’ option will be greyed out.



Step 8 – After you press the ‘Share Screen’ button, make sure you tick the checkbox “Optimise Screen Sharing for Video Clip”. This will also automatically tick the “Share Computer Sound” checkbox, which will ensure that the audio part of your AV will stream from the file rather than being picked up by your microphone. Optimising for video increases the frame rate from a default of about 5fps to anything up to 30fps. The actual frame rate will depend on your upload speed, and Zoom automatically adjusts this to the optimum rate. The dissolves and pans/zoom will now be a lot smoother. The downside is that the video resolution will be reduced to 720p, but as a compromise it’s much better to have a smooth show than a choppy one, so it’s an acceptable trade-off. If you show still images rather than an AV though, **don’t** tick the “Optimise Screen Sharing for Video Clip” as the images won’t be as sharp.



Step 9 – When screen sharing, always share your desktop first and not files inside a folder. Starting from the desktop will ensure that all menu buttons and links will function normally. If you start by sharing a folder there is a danger that the viewer won’t see the AV at all, especially if it’s launched from a menu button. It will play fine on your system, so you’ll only find out when someone tells you they can’t see anything!

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Step 10 – Ensure that everyone is muted. If not, someone will invariably say something and their voice will take priority over the audio stream.

Step 11 – get everyone to switch off their video cameras. This is a small step by itself, but will help by squeezing as much as possible from their own download bandwidth.

Step 12 – If you are running the meeting, hand over the hosting to someone else. If you are presenting at someone else’s Zoom meeting, ask them to enable general screen sharing (to one person at a time as per Point 7) instead of making you co-host. The reason being that if someone enters the waiting room while you are showing an AV you will get a pop-up notification as host/co-host, and this might freeze your AV until the person is admitted.

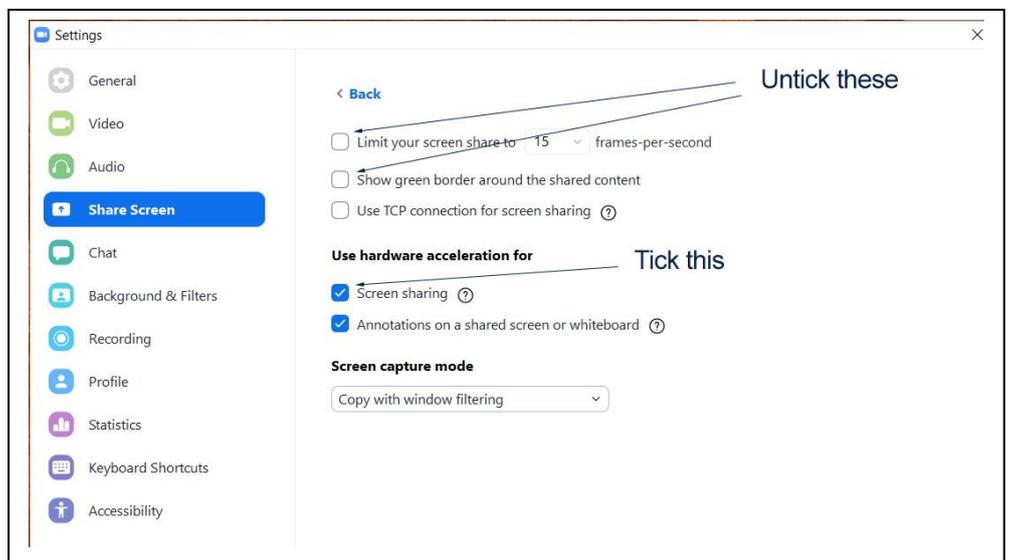
Still having problems?

If you’ve done all of the above and viewers are still telling you that your AV is stuttering, check that nothing else is eating into your precious bandwidth. If someone is making a video call on WhatsApp or Facetime for instance, this will cause a huge dent in your resources. Likewise if someone is watching Netflix, YouTube, Amazon or any streaming TV service it will cause problems. On-line gaming will also steal resources so ban everyone else from wifi!

One last thing to look at is that you’ve not inadvertently throttled your frame-rate in the Zoom settings. To check this, open the Zoom video settings (click the small chevron next to the Stop/Start Video button in the bottom left corner).

Select the Share Screen option, and click the Advanced button. In the pop-up window, make sure that there **isn’t** a tick in the “Limit your screen share to X frames per second”.

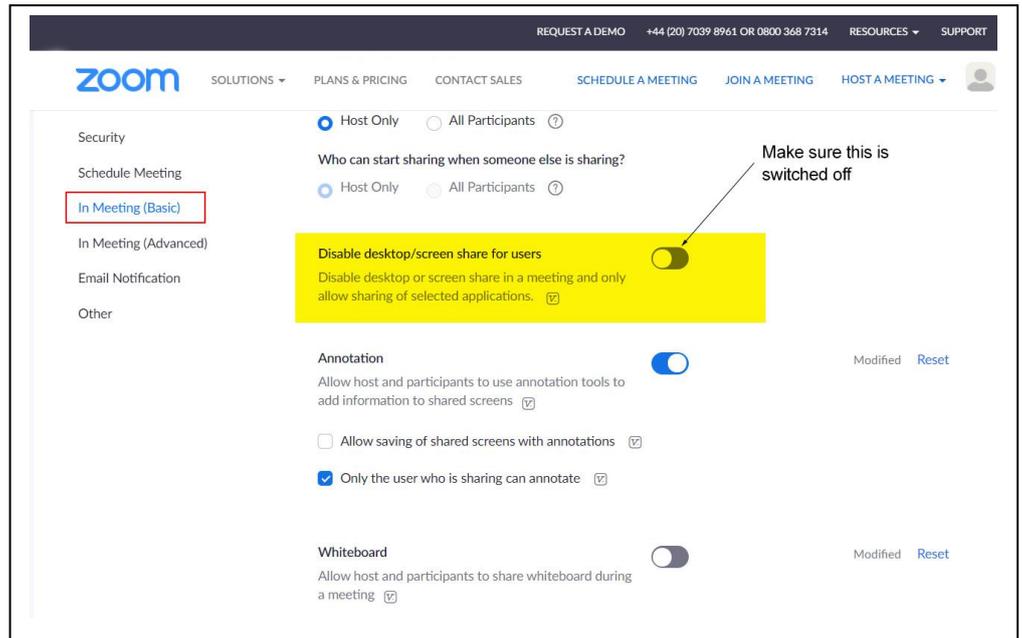
Also make sure that there is a tick in the “Use hardware acceleration for screen sharing” checkbox. It’s also a good idea to untick the “Show green border around the shared content” as this will simply put an unwanted green frame around your sequence.



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Share Screen button greyed out?

This caught me out recently. To enable a menu to function, the screen share has to start from your desktop (see Point 9 above). However, you might find that you are unable to do this as the Share button is greyed out. If so, the host has disabled Zoom from sharing your desktop. This is an option on the Zoom website, and is a toggle switch on/off.



The host might not even realise that this has been done, but it will severely limit the functionality of presenting your AV shows. If the host isn't confident about switching this option off, the workaround is to start an AV sequence outside of Zoom, pause it, then tab back to Zoom and share the running sequence. This will have to be done for each one so is very fiddly.

You'll find that you are able to share a running menu or a folder screen this way – **BUT**, the AV shows will run behind the menu/folder so the audience won't see them (even though they will look fine on your machine).

Ian Bateman 13th October 2020