

Playing Pre-recorded Video in Zoom Without Issues

We are running a Zoom Online Alpha and were finding that the Videos we were trying to play using 'share screen' in Zoom did not play well for the participants. The video was difficult to watch as the audio was breaking up and it was of poor quality and did not play cleanly. We tried using a lower quality video which did work a little better. After a bit more research we found the method below that works properly. The software required is all free to use!

Whether you are running a Zoom Alpha or trying to play videos via Zoom for a Church Meeting or smaller gathering then we hope the information will be of help.

In essence we are going to use a virtual webcam to send the video directly from KM Player through OBS (using VirtualCam) to Zoom, thereby avoiding the 'share screen' feature within Zoom altogether. It does not matter if the last sentence does not make sense to you – the guide below is written to help anyone get videos to play well in Zoom.

The guide is detailed – you may not need all the information – but it is there if you do!

We use a Windows 10 computer. We have not tried the method below on MacOS so cannot comment on whether it is possible using a Mac.

We would suggest it is best to set up one specific Windows 10 Computer to run the videos for Zoom. It does not have to be super high end – a reasonable specification Windows 10 computer is all that is needed. You need to have another computer set up as your 'monitor' of the video playing over Zoom. This will also allow you to have a 'face' in the meeting. There are too many settings to change each time you want to show a video to do it all from one computer! It will mean you are logged in as two separate screens within the Zoom meeting. For our Alpha the video playing login has a splash screen with the Alpha logo on it (displayed through OBS) when we are not showing a video.

For the audio we are going to use the Stereo Mix feature of the Windows 'Recording' menu to enable the speaker output to be put directly into zoom – and also enable 'original sound' within Zoom (advanced audio menu). Otherwise the audio sounds like it is underwater!

The audio/video synchronisation will need to be adjusted – see below.

Let us begin with what you need

We used a Windows 10 Computer to play the videos

We would recommend the computer is plugged in directly to the router using a high speed Ethernet Cable (Wifi creates a significant slowing of the network speed).

The following software needs to be installed. Download links are below.

If you want to use the exact installation files we used they are at the link below (Zoom Updates so frequently we suggest you use the direct download link below)

[Folder with Installation Files \(except Zoom\)](#)

[Open Broadcasting Software \(OBS\)](#) needs to be installed (free)

<https://obsproject.com/>

VirtualCam for OBS also needs installing (free)

<https://obsproject.com/forum/resources/obs-virtualcam.539/>

KM Player needs installing (also free - We block KM Player in the Firewall settings once installed so it does not have all the adverts)

<http://kmplayer.com/> (Go to the top right of this page and select English if it comes up in Korean)

We would not install KM Player from other sources – there may be malware attached.

(KM Player keeps the audio offset when you close it (see below), VLC Media Player (an alternative) defaults back to no offset so needs setting up each time).

Zoom Client for Meetings (free)

https://zoom.us/download#client_4meeting

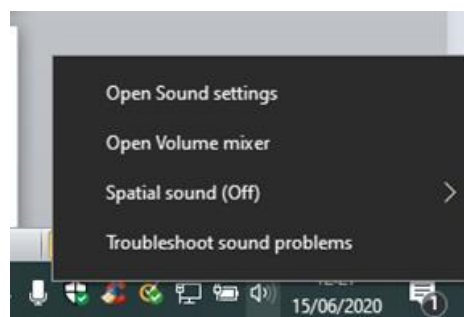
If you are using a laptop it is best to put it on some kind of cooling pad/elevate it to allow air circulation underneath – it gets rather hot as it will be working hard!

Let us get started

We will start with the audio settings.

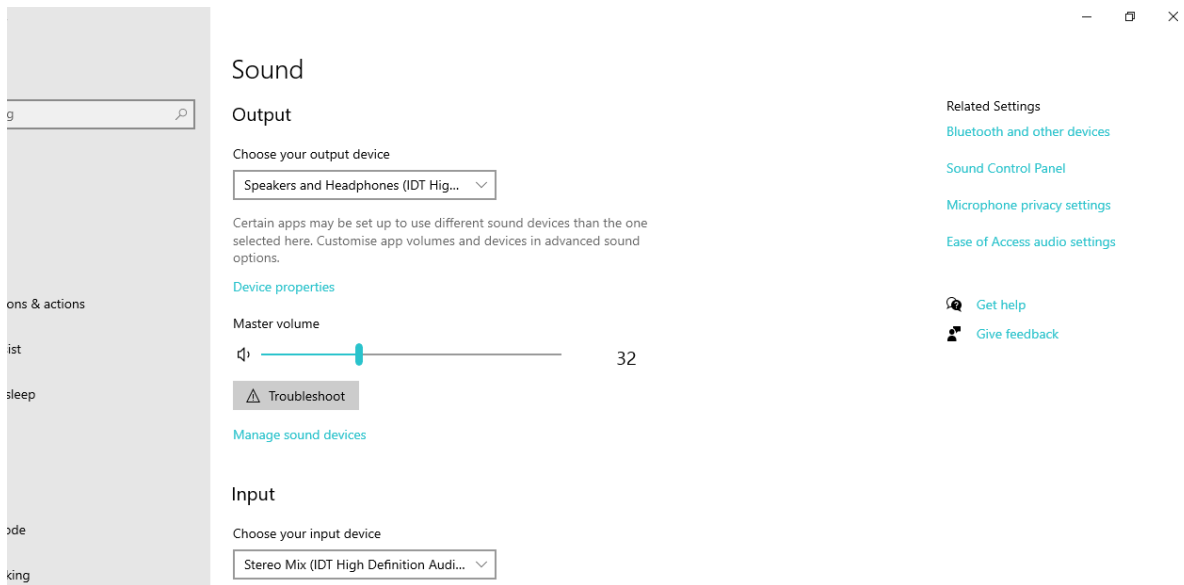
You need to have Stereo Mix as the default microphone in Windows – and disable other microphones.

For Windows 10 **Right** Click on the speaker icon on the taskbar at the bottom right:

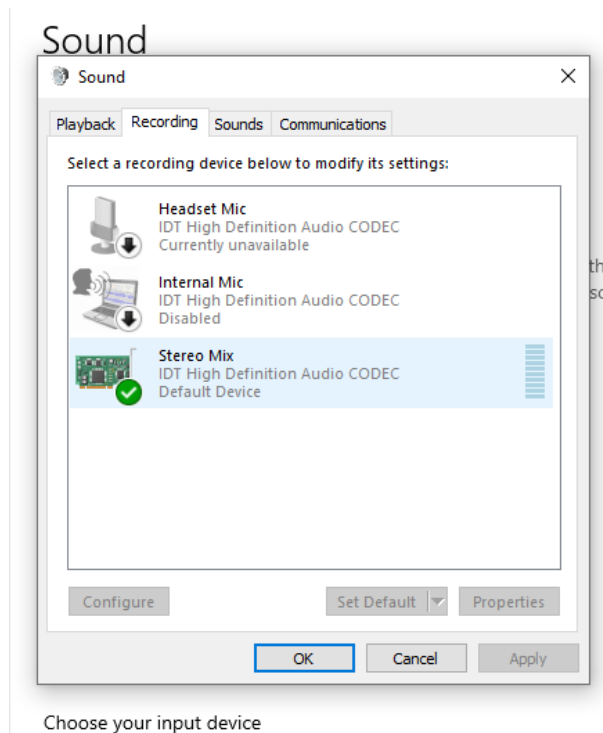


Choose 'Open Sound Settings'

Then on the right choose 'Sound Control Panel'



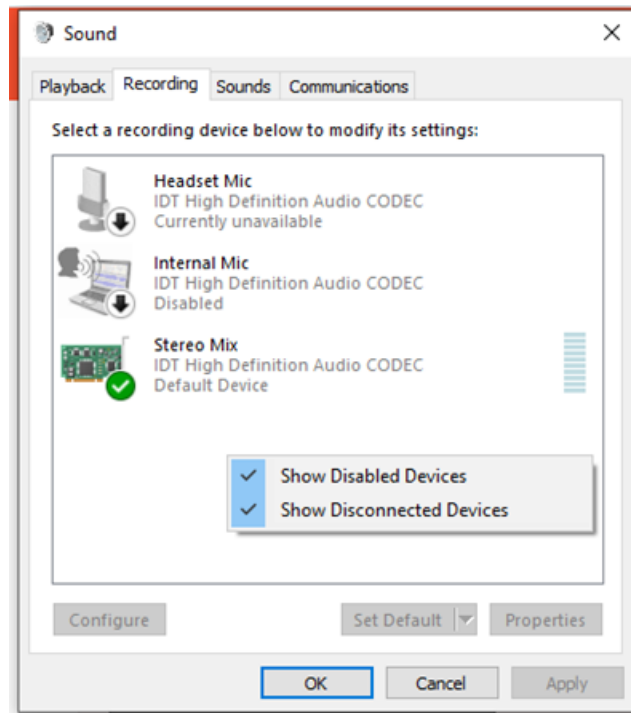
Navigate to the 'Recording' Tab as below



You want it to look like this (above) when we are finished.

Right Click on Stereo Mix and select 'Enable' . Disable any other microphones.

If Stereo Mix is not showing then right click on the box and check the 'Show Disabled Devices' Box as below



In order to get Stereo Mix to appear we needed to install the correct audio driver from the Manufacture website (driver section) for our computer – hopefully yours will be there or you just need to ‘show disabled devices’.

The Sound level in Windows that the video is played at will be the level it plays within Zoom. We set it to 60% which seems to work well.

Now on to the specific Programmes we will use

We would suggest opening them in the following order:

1. Zoom
2. OBS
3. KM Player (Open in Fullscreen – at the top right) then use ‘Alt and Tab’ to navigate to the other windows.

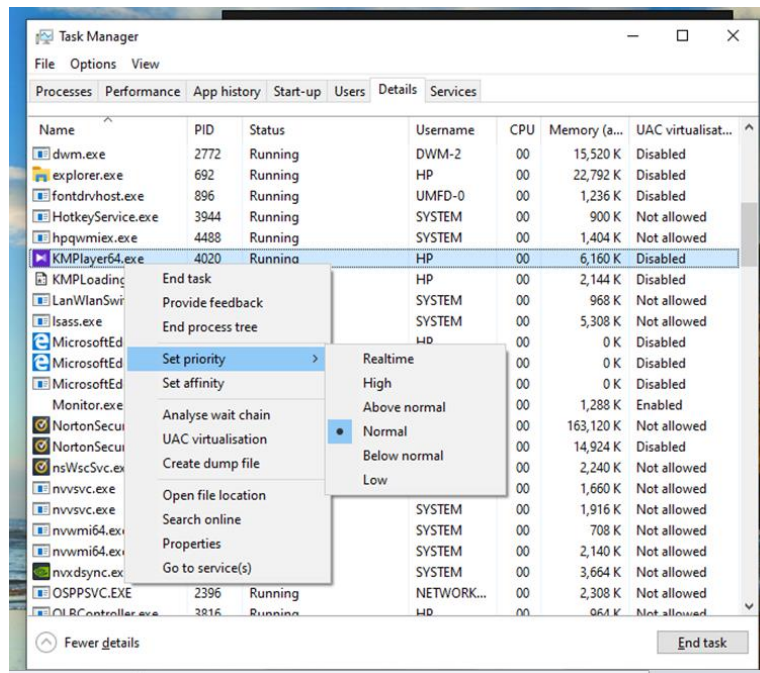
You now need to set all these as High Priority so the processor knows they are important – this enables the best playing of videos in Zoom.

Press CTRL, SHIFT and ESC keys together to open ‘Task Manager’

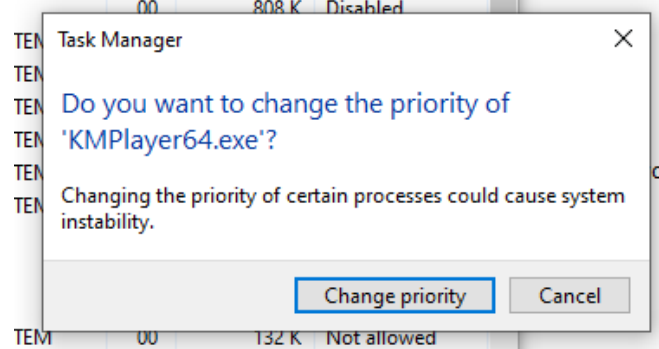
Navigate to the ‘Details Pane’

Then find the ‘.exe’ files for KMPlayer (just the one ‘KMPlayer.exe’), OBS and the two Zoom.exe

Right Click on them and choose ‘set priority’



Choose 'High' and 'Change Priority' in the warning box that comes up



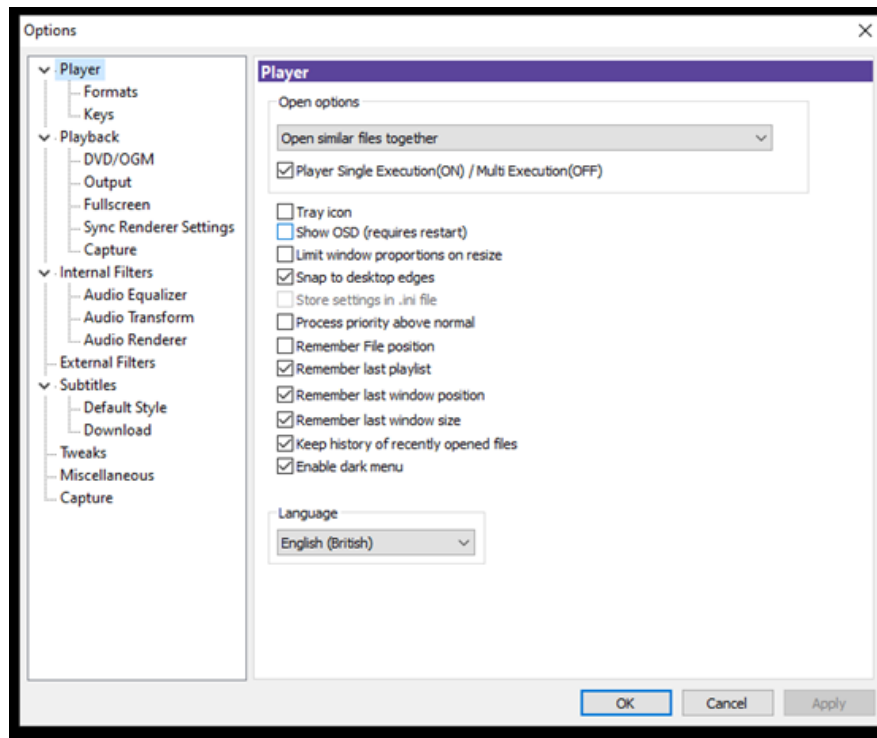
Do this for all 4 of the '.exe' files mentioned above – You need to do this each time Windows is started up as Windows does not remember the Priorities after a reboot.

KM Player

We chose to turn the On Screen Display off in KM Player (you only need to do this once)

This avoids the 'play', 'pause' and other words displaying on the screen in KM Player (and Zoom).

Right Click in KM Player – Choose 'Options' at the bottom, then deselect 'Show OSD' – you will need to restart KM Player to make the change.



Right Click and select 'Quick Open File' to open the video you want to play.

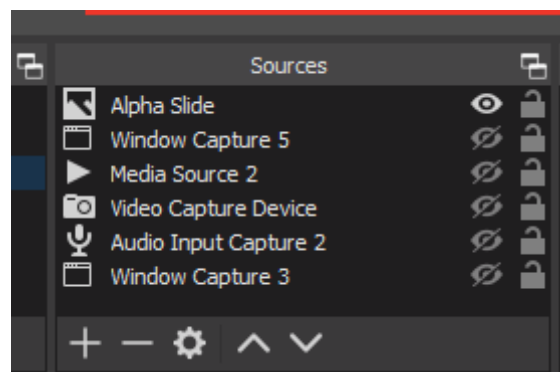
OBS

Now open OBS

Essentially we are doing two things in OBS – Getting the video from KM Player into OBS and then sending it out via the VirtualCam.

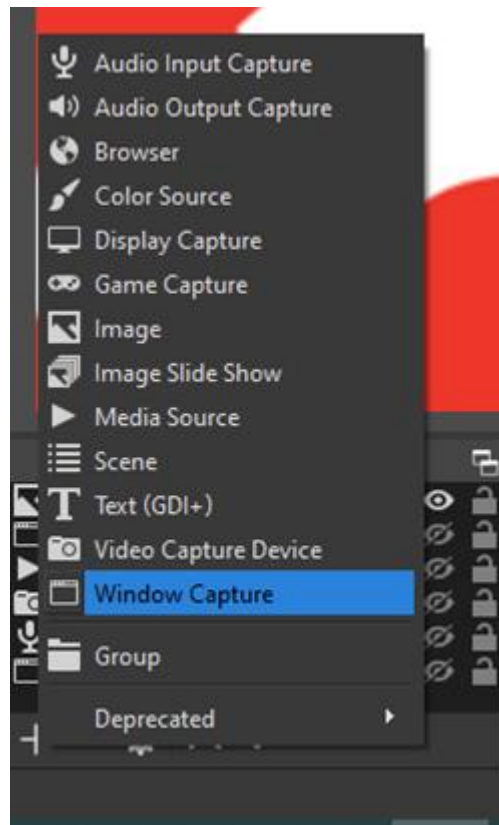
If you are doing a fresh install of OBS when you open it a configuration wizard will open. Select the auto configuration for 'recording' rather than streaming.

Once OBS is opened go to the bottom of the OBS Screen to the window 'sources' as below

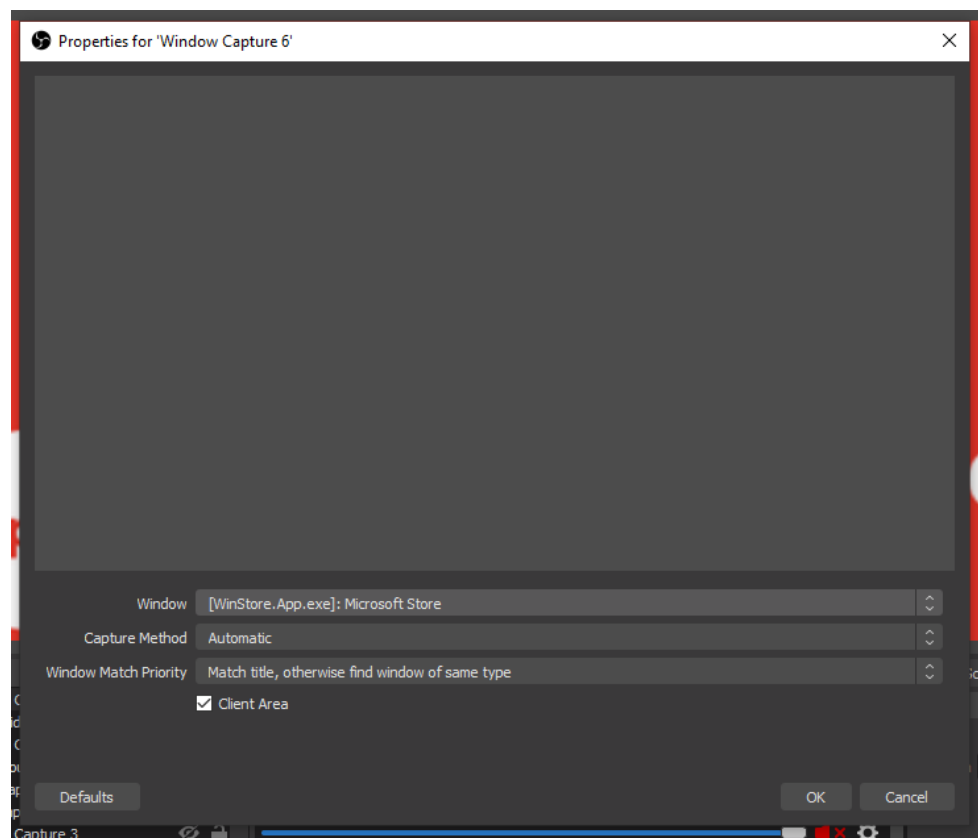


As you can see I have set up a few different ones – at the beginning you just need one.

Choose the plus button and select 'window capture'



It should open a new window as below:

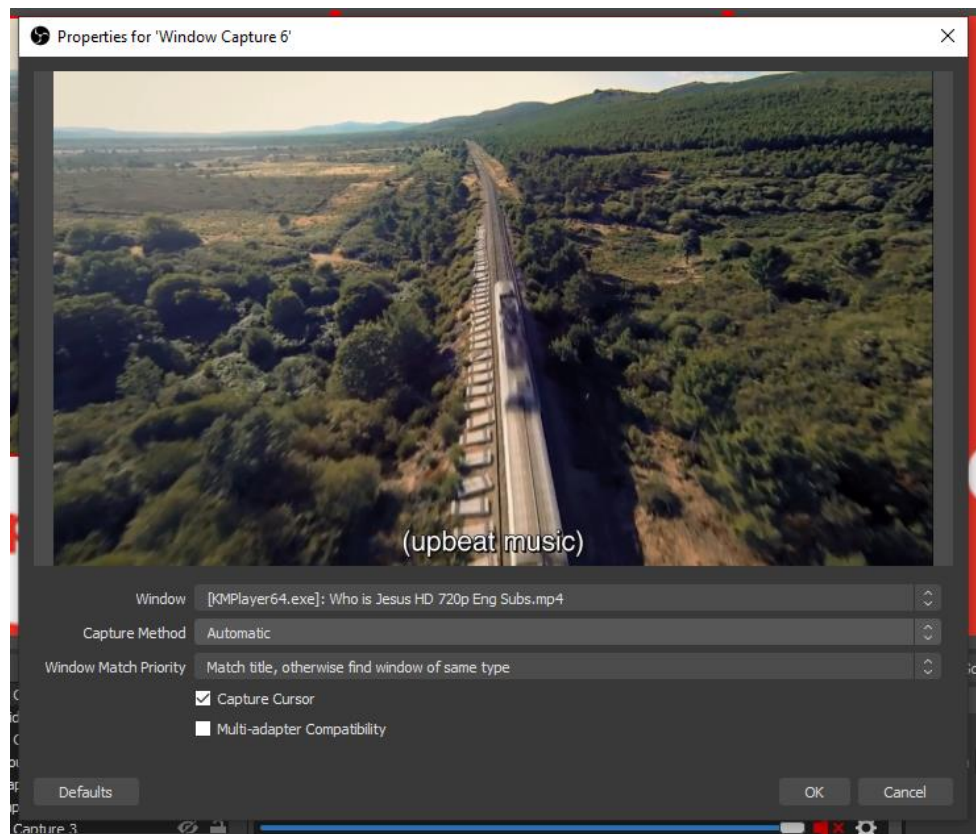


You will likely need to do this each time you setup

Click on the arrows to the right of the window tab and it should bring up a list of the windows that are open.

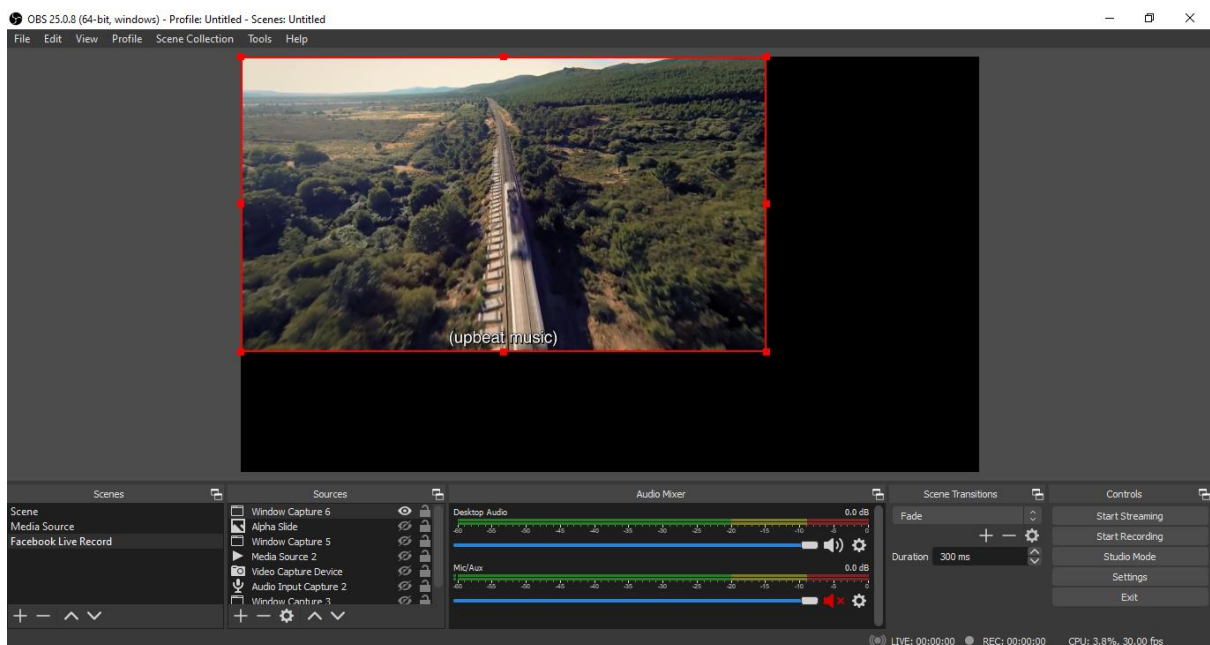
Select the KM Player Window (Note sometimes OBS does not detect KM Player as being open (even though it is). Simply close KM Player and open it again and open the video in it. Then come back to OBS and it should be there)

If the video does not show in the preview window you can change the 'capture method' – usually 'automatic' is fine though.

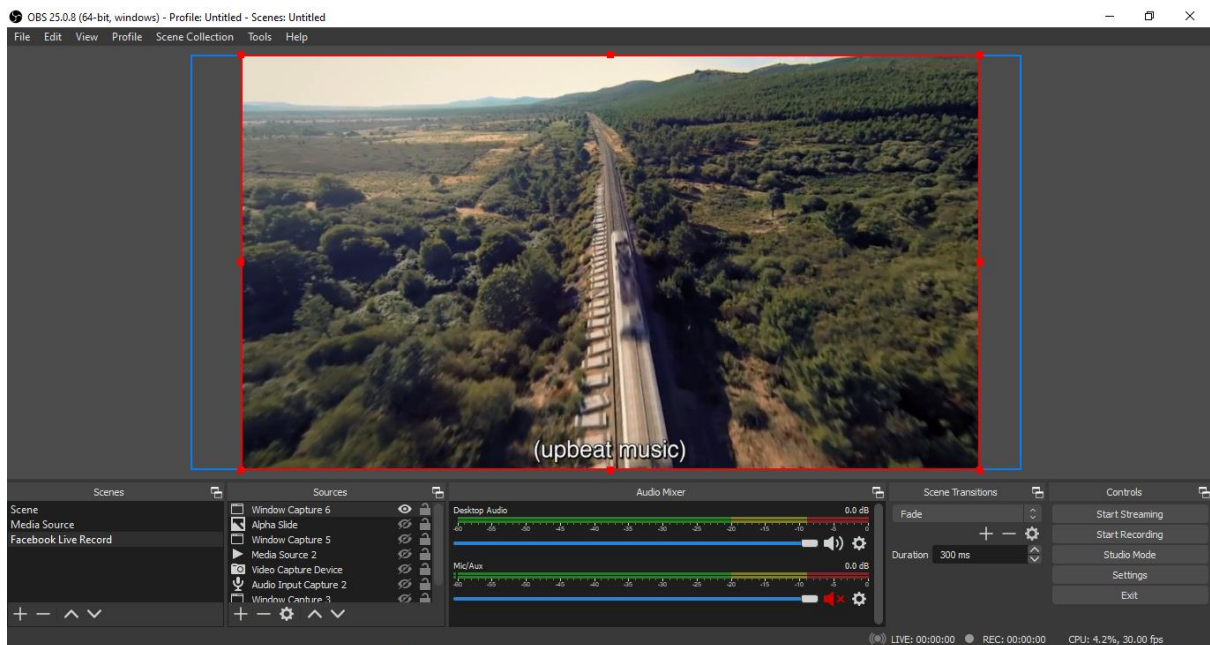


Click 'OK' in the bottom right of this window.

You may find that the KM Player window does not fill all of the black box as below:



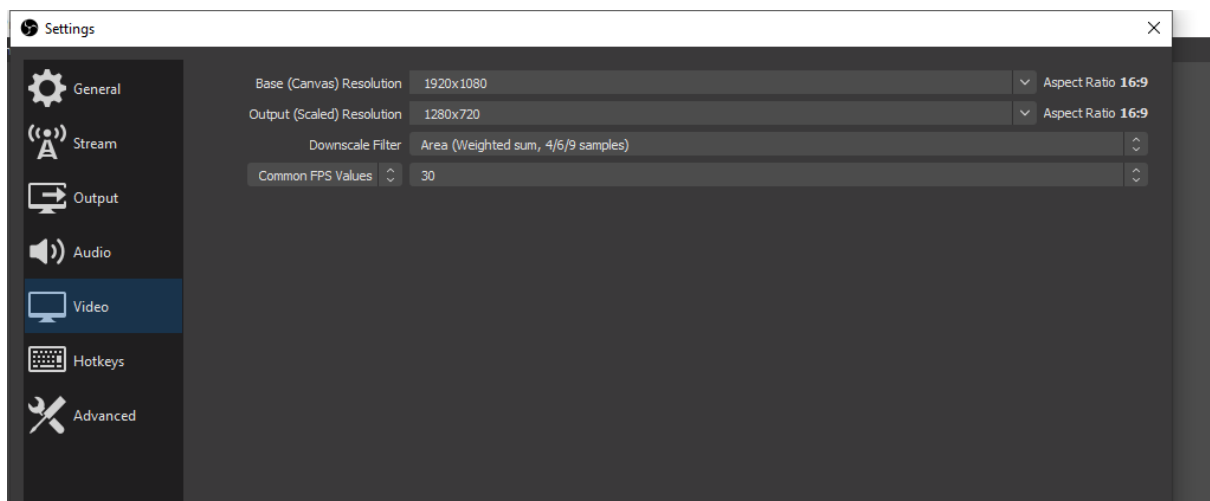
Simply drag the corner to fill the box:



Note – You MUST have KM Player in Fullscreen – and navigate away from KM Player using ALT and Tab to keep it fullscreen – otherwise OBS will do strange things with the window in OBS!

Now we need to select the Video Settings in OBS

Go to 'Settings' at the bottom right and select 'video'



It should come up with the window above – select video from the left panel

I would suggest using as high a resolution video as possible as the 'Base Resolution'

The Output resolution depends on your computer – if it is very fast choose 1920x1080 – if a bit slower choose 1280x720.

I found the 'Area' Downscale Filter provides the best video into Zoom

Choose 30 Frames Per Second as this works OK in Zoom.

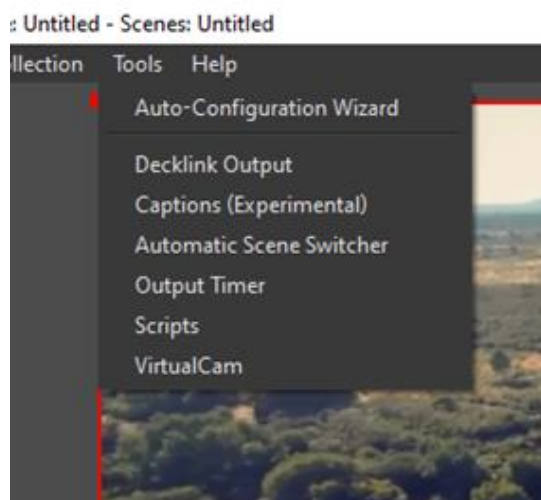
Now we need to turn VirtualCam on within OBS

This enables OBS to act as a Camera within Zoom and is the key for all this to work!

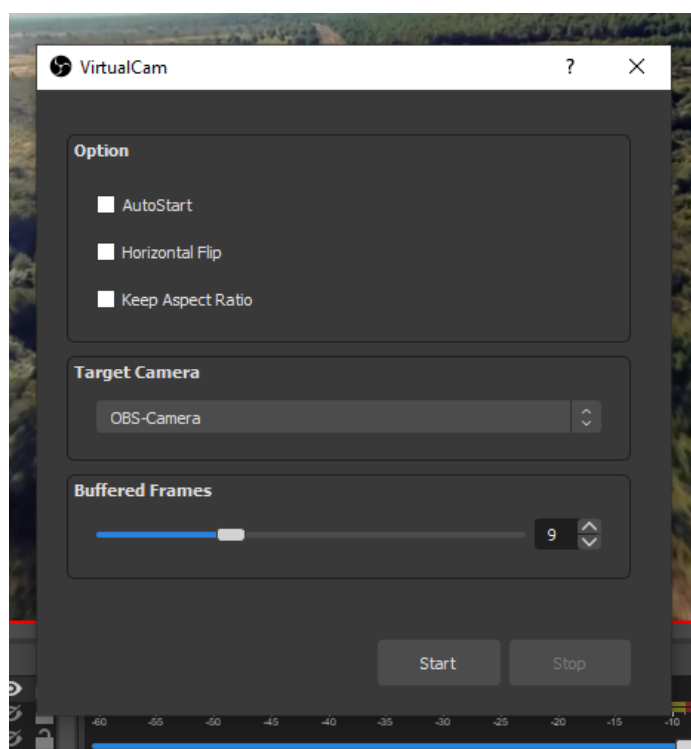
Go to the Tools Menu in OBS at the top and Select Virtual Cam

Note this needs to be installed as a separate add on to OBS so if it is missing see the instructions and link to install it above.

Note there is a warning that the horizontal flip causes it all to crash – it seemed to work for me but best avoided – you can mirror the video within Zoom if you need to.



It should open this pane:



It will likely have the buffered frames at 3 – Move it to 9 – it allows the computer to buffer some frames so it works better in Zoom.

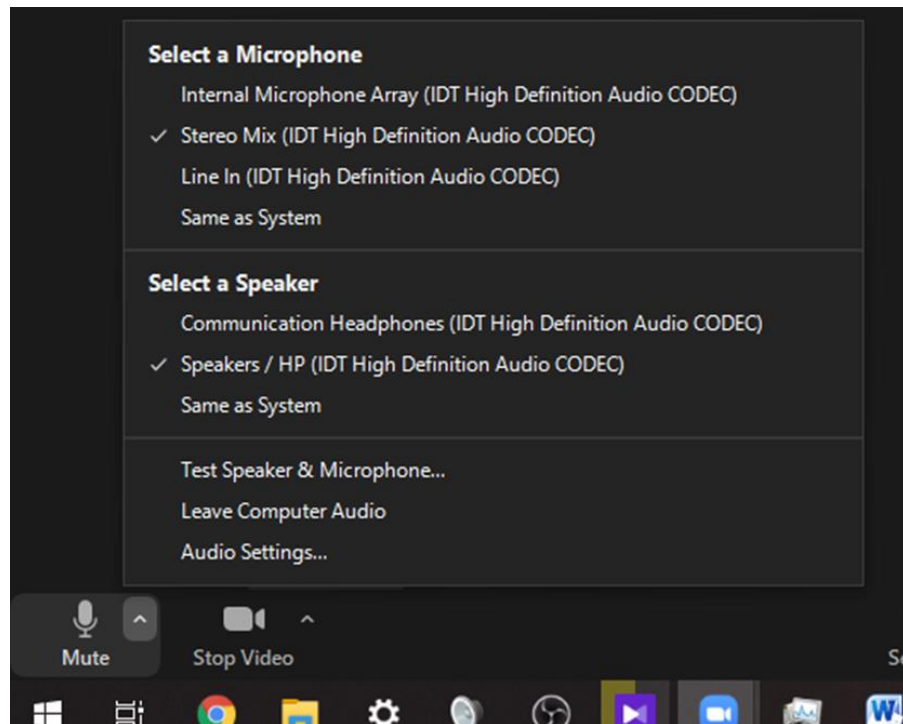
This is what creates part of the video delay when it gets to Zoom – and why you need to adjust the audio sync in KM Player – which we will do later.

Select 'Start' in the VirtualCam Pane

You can leave this running – even if the video is paused in KM Player.

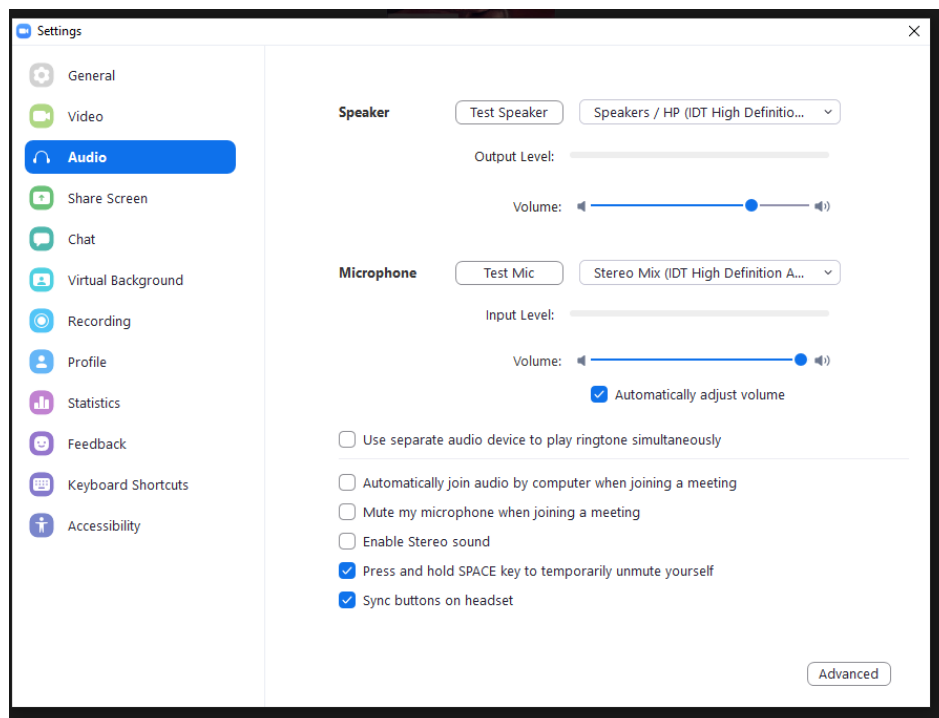
Zoom

Now login to Zoom and then navigate to the audio settings at the bottom left—I started a meeting in order to do this:



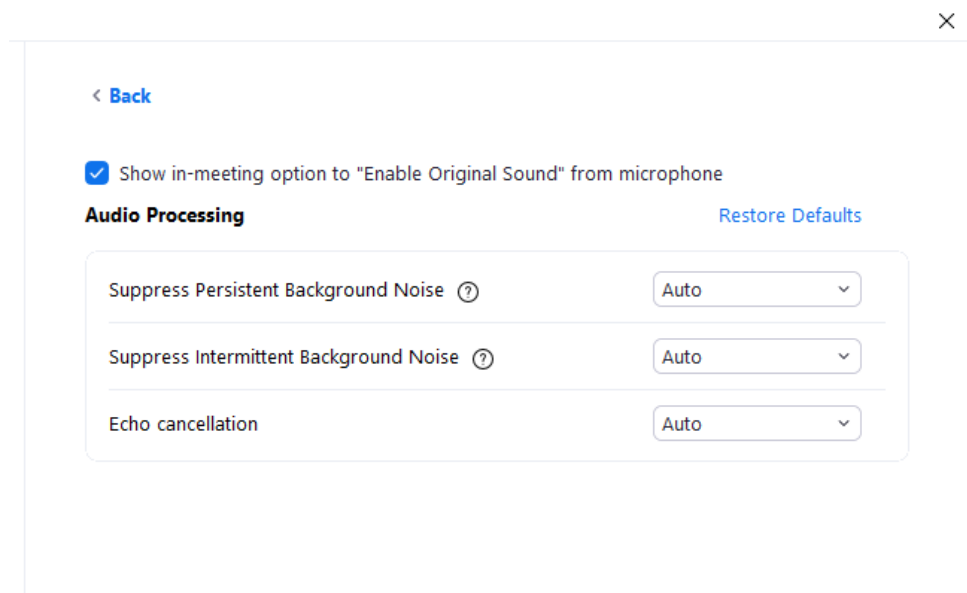
Ensure Stereo Mix is selected as above – if it is not an option you likely have not set up the sound settings in Windows correctly – see the guide above.

Then Select Audio Settings – at the bottom of the list:



You can select 'Enable Stereo sound' on this menu – it does improve the 'depth' of the audio but also takes up more bandwidth – which can result in the audio breaking up occasionally for some people – try it and see if it better for your meeting participants.

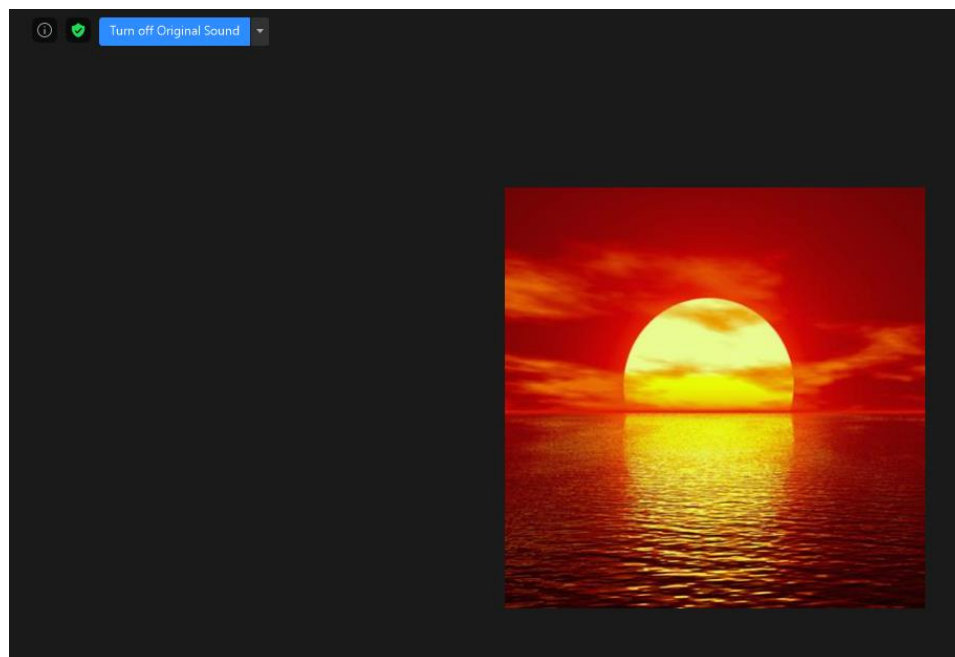
Choose the advanced menu at the bottom right of the pane (not immediately obvious):



Ensure the 'show in meeting option to 'enable original sound' from microphone' is selected.

Close the audio settings window.

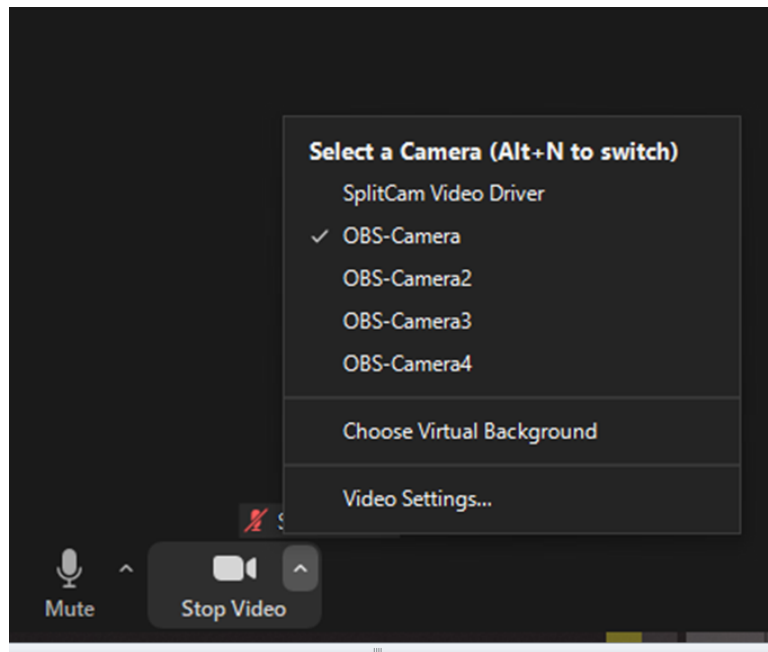
Now at the top left of the screen you will see the option to enable original sound. Click this



It should look as above – otherwise the automatic sound compression/filtering of Zoom makes the audio sound like it is underwater.

You will need to select this each time you login to Zoom (there is a checklist at the bottom of all the settings to check each time you setup)

Now to the Video settings in Zoom:



Ensure that the OBS-Camera is selected (I opted for 4 virtual cameras when I installed the plugin to OBS – you only need one – select ‘OBS-Camera’)

If OBS Camera is not showing as an option you likely need to start the VirtualCam in OBS – see above.

Now you can navigate to the KM Player (using Alt and Tab) – or the ‘Task View’ in Windows 10

Then play the video – spacebar or the panel at the bottom of KM Player.

This is the basic setup of playing the video through OBS from KM Player using VirtualCam into Zoom.

Checking it All Works

You will now need to login to Zoom using a second computer to see what it looks like!

We registered for a free Zoom account for this – a basic account is fine.

Login to the meeting.

You will notice that there is a significant issue with the audio/video being synchronised. We can fix this!

The Video Audio will not be synchronised correctly because of the frame buffering/video transit through OBS causing a delay.

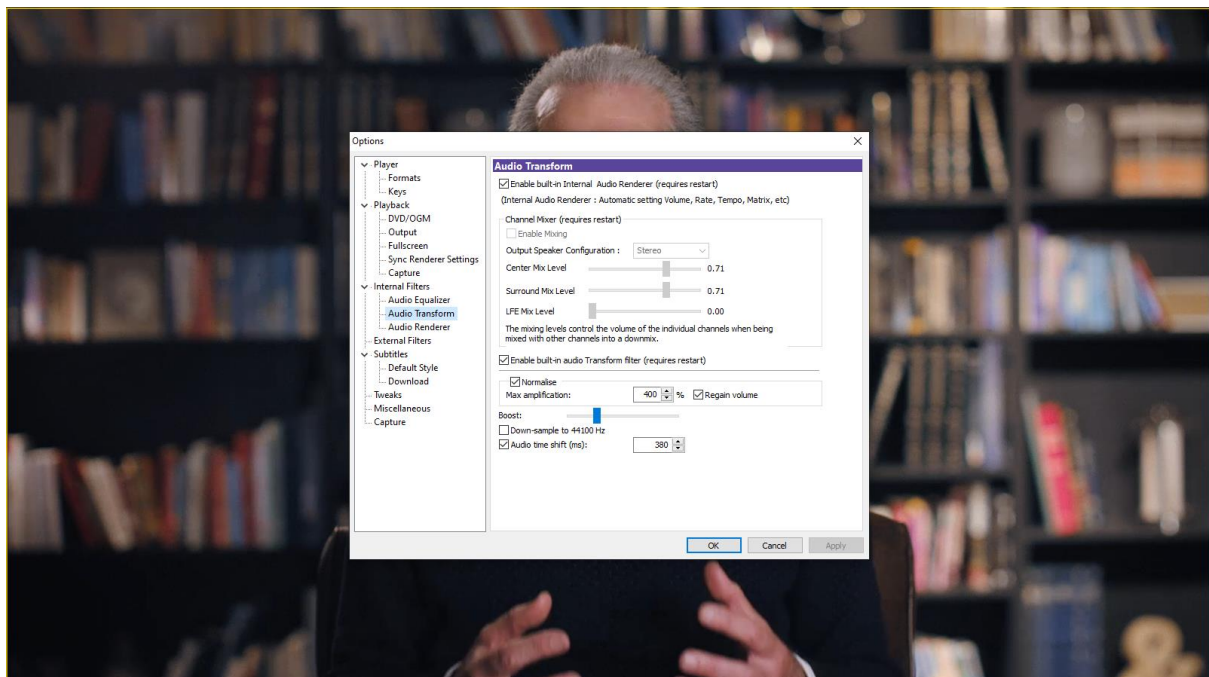
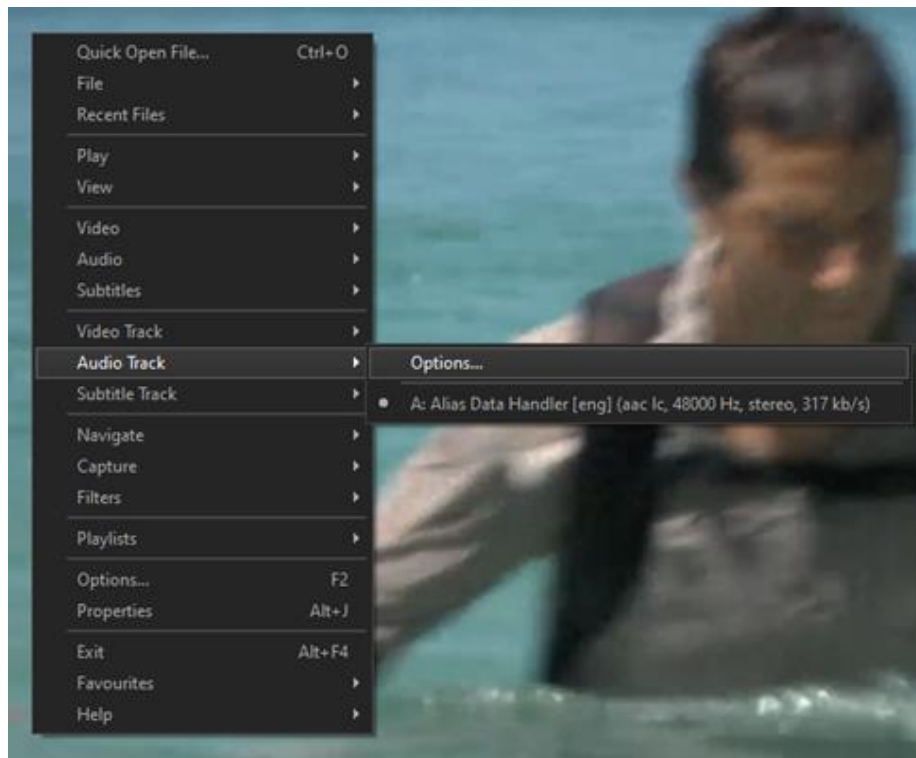
This can be easily corrected by delaying the sound in KM Player. However you will need to use Audio/Video Sync Videos (see below) to accurately work out the discrepancy this until you get it right. Trying to ‘eyeball’ it is very difficult!

I found across several Windows Laptops the audio was in the range +290-+380ms out. It depends on the number of buffered frames in VirtualCam within OBS (We use 9 frames – as explained above)

First let us look at how to adjust the audio in KM Player

In KM Player, with the video open and ready to play, Right Click and a menu should open

Select Audio Track – Options (as below)



It should open the box as above

Choose the Audio Time Shift at the bottom – Put in 300ms for now – we will get it spot on later!

You will need to work it out exactly using the Audio/Video Sync Video.

Important – You need to recall that the sound volume on the laptop is the sound volume that it will output ‘live’ into Zoom.

Put the sound at 60% for the first test – you can adjust it later if needed.

I put some headphones (or some external speakers that have an adjustable volume on them) into the headphone plug so that it is not blaring out of the computer speakers – so we can monitor the sound on a second computer without distraction.

Audio Synchronisation Videos

You will need to download one or more of the audio/video sync videos that are available and play this through KM Player. I found some easier to 'see' the audio error than others. Enjoy the bip/bop and beeping sounds!

There are some of them to download at the link on Google Drive here:

[Folder with Audio Synchronisation Videos to Download](#)

Do not try and play the video through YouTube into Zoom as that causes a different amount of delay and gets very confusing!

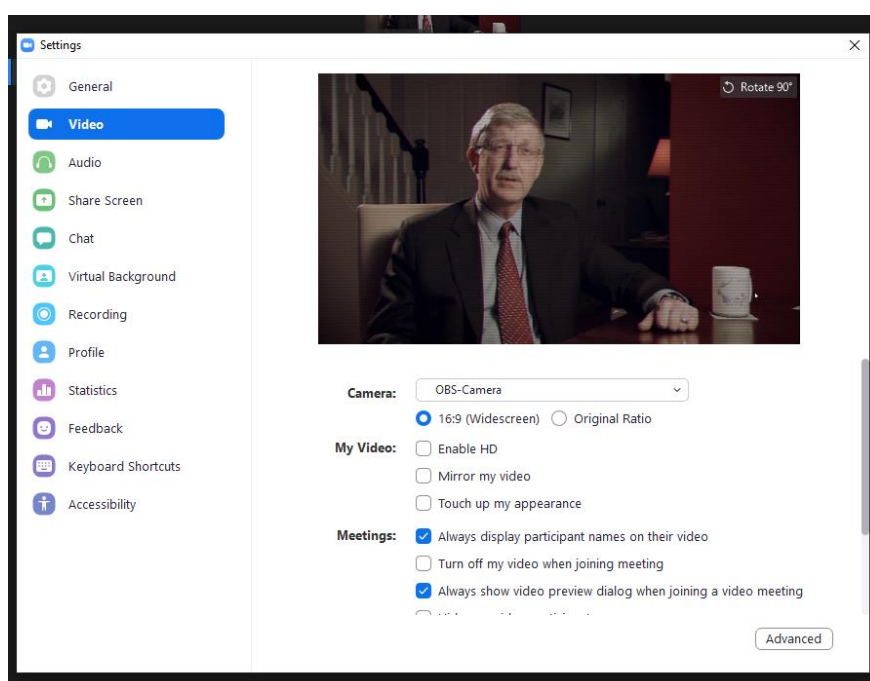
The video makes it much easier to see the delay. It is a bit of 'trial and error' to get it absolutely spot on.

Remember you are playing the video in KM Player through OBS into Zoom on one computer. You are checking the audio is correct on the second computer that you have logged in as a participant in the Zoom Meeting.

You need to adjust the delay in KM Player (as mentioned above) to get the audio and video to sync correctly. NOTE – KM Player will remember the Audio offset after it is closed so no need to re-enter the sync each time!

Thing not to do

I would suggest **NOT** selecting HD in the advanced Video Settings of Zoom:



If you select HD it renders the video somewhat more – in my opinion making it worse. It also takes more bandwidth which will compromise the video quality for many people.

I changed all of the advanced video options and it made no difference – so I would suggest just to keep them as they are – all the top boxes ticked and the bottom ones all on 'auto'.

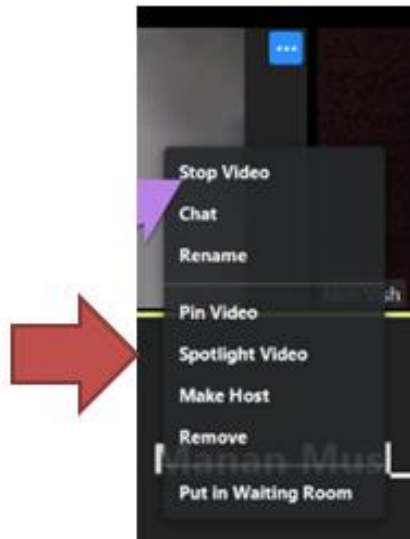
Remember to try out whether 'enable stereo sound' improves the audio for participants (as above)

Tips

Make sure you do not have a virtual background selected when playing the video!

When you have a live meeting (with more than 3 people attending) you will likely want to 'spotlight' the video within Zoom so that it is the main video everyone sees (see at the very end of this guide).

To Spotlight the Video click the blue box at the top right of the appropriate video window and select 'spotlight video' as below.



Remember to 'cancel spotlight' – at the top left of the window when the video finishes playing.

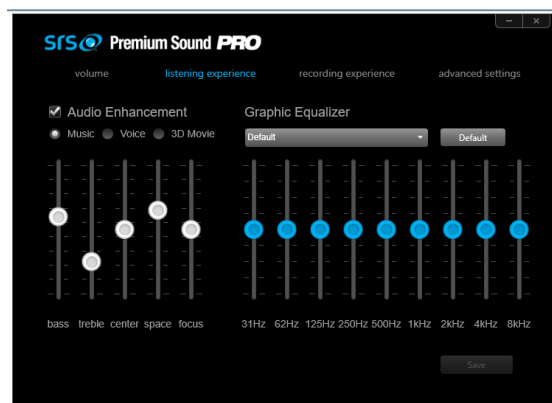
You will notice that the mouse cursor is visible wherever you leave it on the screen – for all in the Zoom Meeting.

So I would suggest moving the Cursor all the way to the right of the middle of the screen – making it invisible.

I hope this helps to get the Video Playing Correctly in Zoom.

Other Potential Issues:

We found that we had the following 'SRS Premium Sound Panel' installed which had automatically set itself to 'Audio Enhancement' as below – you may have something similar on your computer audio settings:



With music as the default setting.

Turning it off made the sound a lot clearer and the volume slightly higher...

Checklist

Here is a checklist to go through before you play a video via Zoom using the method we have described. You can print this page off to have it handy.

The checklist assumes that you have set everything up as above. It just has the things that need setting up 'on the night'!

| Programme | Task |
|-------------------------------|---|
| Opening Order | Zoom, then OBS, then KM Player |
| Priority | Press CTRL, SHIFT and ESC together. Set all the above '.exe' (four of them) to high priority |
| KM Player | Open the Video – make it fullscreen – navigate using Alt and Tab to keep it fullscreen |
| OBS | Ensure that the KM Player window is captured and that the video fills the whole window in OBS |
| OBS | Start the VirtualCam |
| Zoom | Ensure you have 'Stereo Mix' selected as the audio input and 'OBS Camera' as the Video input – and have the computer sound at 60% |
| Zoom | Click 'Enable Original Sound' in the top left of the Zoom Screen |
| Test | I would recommend doing a test before the meeting is live – just to make sure it all works properly – using the second computer logged into Zoom. |
| Sharing a Video 'live' | You will need to mute all the other participants in the Zoom Meeting, unmute the computer you are sharing the video on, spotlight the video (so that it is the screen everyone sees) and press play in KM Player (all within a few seconds!). |

To produce this guide we were using:

Zoom Version 5.0.4

OBS Version 23.2.1

KM Player 2019.06.13.02

Windows 10 Version 1909

[Installation Files Here](#) (Except Zoom)

Luke

Tech Team

Jubilee Church Teesside

June 2020



Website - www.jubileechurchteesside.com

Email - info@jct.church