

How to setup and use VLC Media Player for video streaming across a school site



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Background and Purpose

Many schools have requested that they would like to be able to stream high definition live video and audio footage from performances in the hall to projectors in multiple classrooms. This is to allow students that cannot attend the live performance due to capacity or other reasons to be able to see the performance via a digital video link across the school's network.

This guide provides a workable free (apart from hardware) solution for providing this functionality. Note that the streaming is limited to computers within the school only and there may be a limit to the number of concurrent connections possible depending on your school's networking infrastructure.

We have tested the solution with 16 clients and successfully delivered full-screen video and clear audio without stuttering and with only a six-second delay from the live event.

The clear instructions included here allows any public school in NSW to deliver video streaming across their school site without costly dedicated closed circuit solutions. **Please be aware however, that this guide has been provided as general advice and no support is available via the ICT service desk for these activities.**

Any feedback on how effective this solution has been for your school is most appreciated.

Thanks to Prepared by : **Andrew Hawkes**

Reviewed by : **Stuart Hasic**

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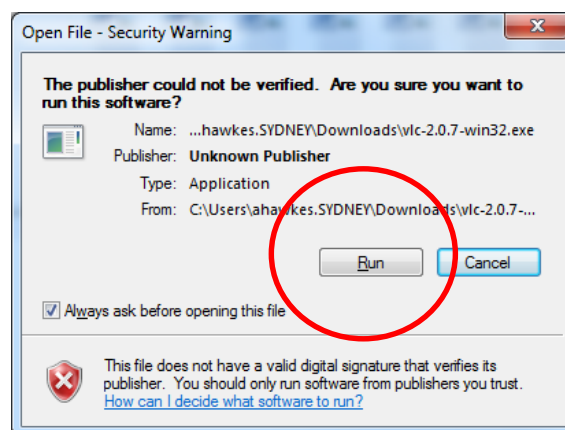
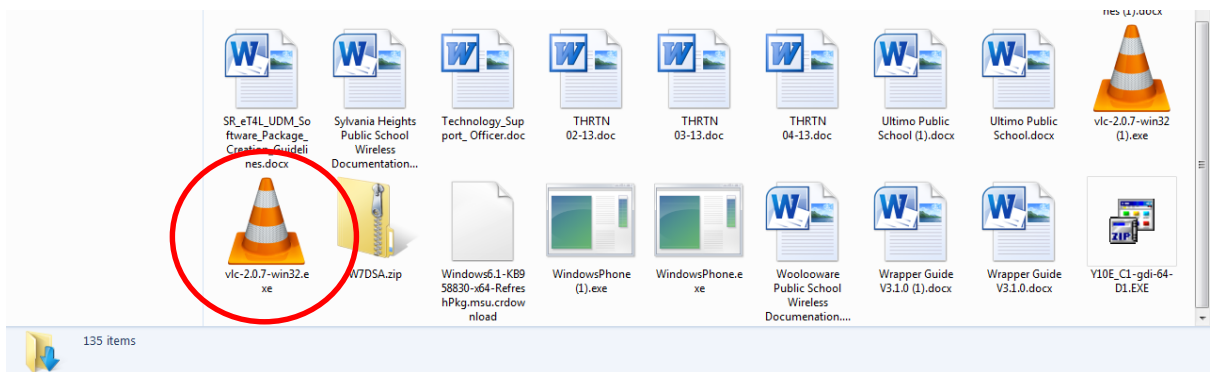
Prerequisites

Before we start with the instructions, it is recommended that you have the following prerequisites in place to achieve optimal results.

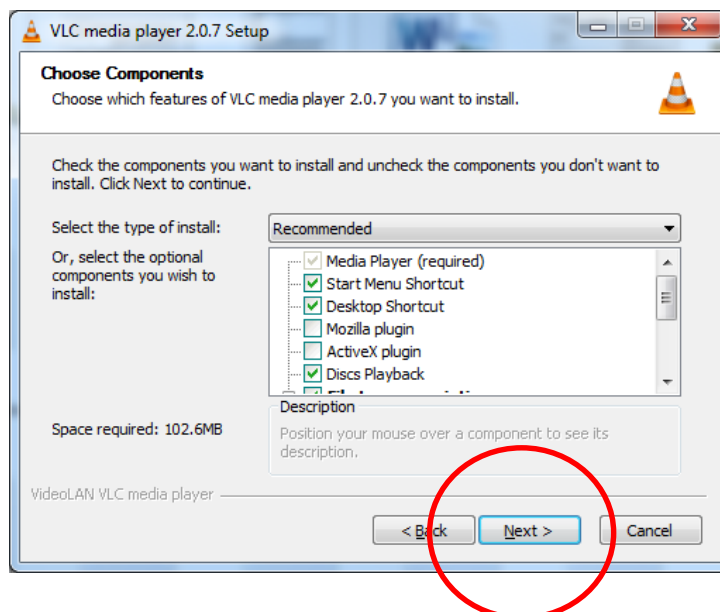
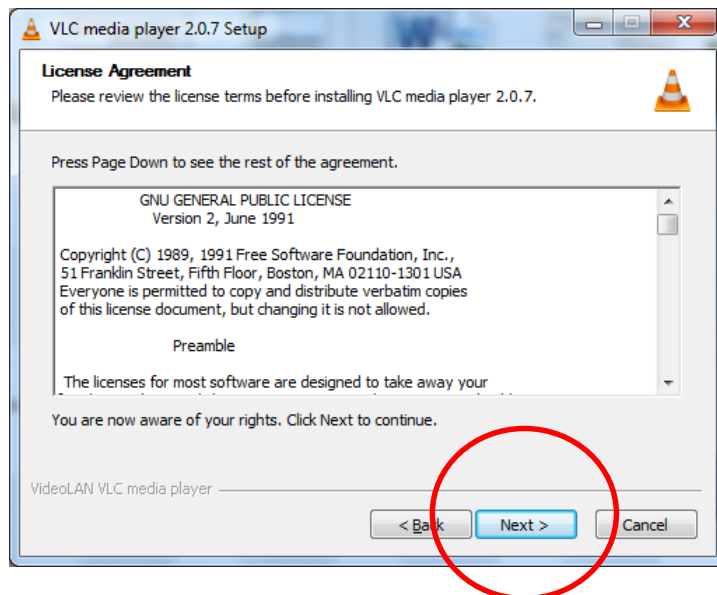
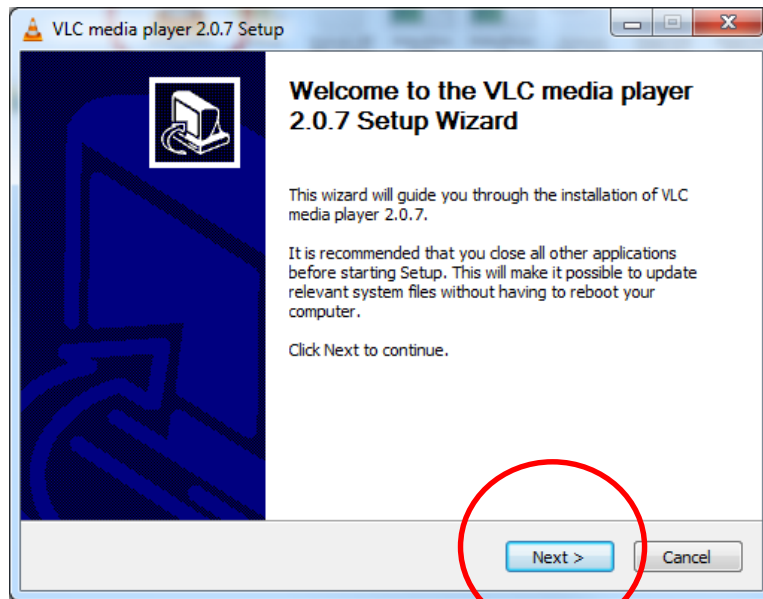
1. An **advanced** model T4L Desktop PC less than 2 years old. If the school does not have one currently, they are available through Procurement.
 - a. https://detwww.det.nsw.edu.au/it/equipment/hardware_stds/standard_pcs_school_s.htm - The reason for this is the PC that streams the video to the clients across the network needs to do some heavy work to capture the video, encode the video and stream it to the client via a web service. The higher quality the video you want, the more powerful your Streaming PC must be. An advanced model Lenovo or HP has a powerful Intel i5 CPU and 8GB of RAM which will be needed if you intend to stream high quality video. It also has a dedicated graphics card which can be used to render and edit your streams should you want to distribute them digitally.
2. A fixed HD webcam with minimum 720p capture.
 - a. <http://www.microsoft.com/hardware/en-au/p/lifecam-studio>
 - b. We believe this camera is well suited to the task of the camera equipment. It connects to the PC via USB, comes with a tripod mount so you can secure it, can record at 720p and is cost-effective.
3. A high quality USB microphone. You could achieve this using current microphone setups and mixing desk in your school providing a direct audio feed into the PC, however, a more generic option for recording sound is by simply having a separate microphone to pick up the audio in the venue being streamed. One recommended and easily sourced suitable microphone can be found here:
 - a. <http://www.jbhifi.com.au/pro-dj/samson/meteor-chrome-usb-microphone-sku-68811/>
4. A fixed data outlet with gigabit connection in the Hall or whatever venue is hosting the event to be streamed.
5. Minimum gigabit fibre backbone and preferably gigabit connection to each node for optimal network streaming.
 - a. As with all things utilising a network connection, the better your network, the more you can push through. Since we assume you will want to be streaming a high quality video, we can also expect the network will falter and stutter the video if it is not capable of handling the data.
 - b. If you are unsure of your network's capabilities, we recommend contacting your local ICT support team for network performance advice.
6. You must install **VLC Media Player** on both the Host PC and all PCs you want to receive the stream.

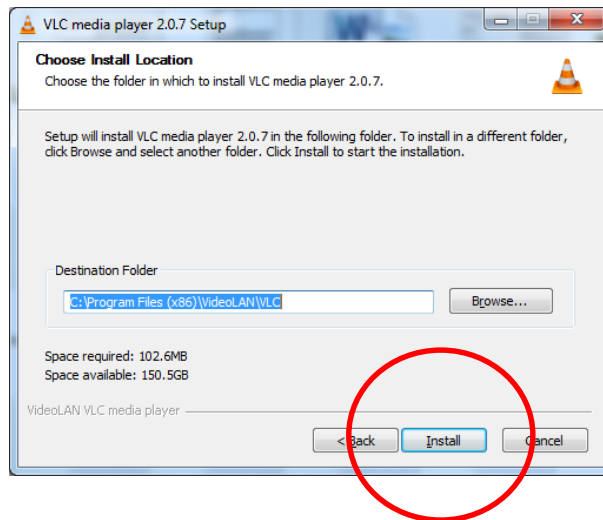
Installing VLC Media Player by downloading from the VLC website

1. Logon to the Advanced (streaming) PC as a user that is a Local Administrator or a Device Manager in eT4L Schools. In eT4L Schools, VLC Media Player can be deployed to selected computers via **UDM** after requesting it in the **DEC Software Catalogue**. In this case, you could skip to the next section on page 8.
2. Go to <http://tinyurl.com/vlc207x64> to start downloading the VLC 2.0.7 64-bit installer.
NOTE – These instructions **ONLY** work with 2.0.7 – if you download any other version, you are on your own.
3. Locate the installer in your “**Downloads**” folder (you should have the win64 version, rather than win32 shown below) and double click it, then click “Run”

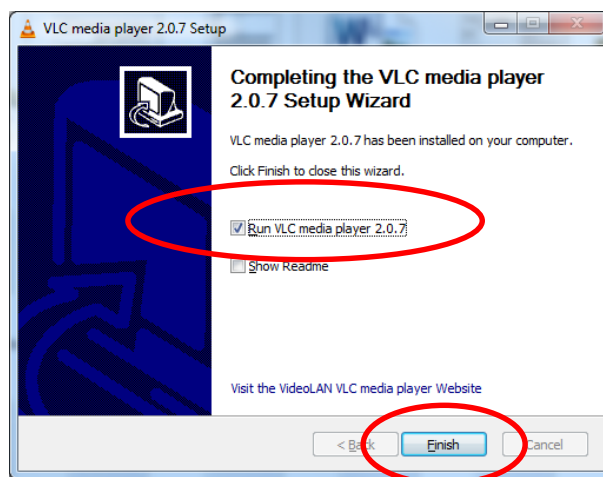
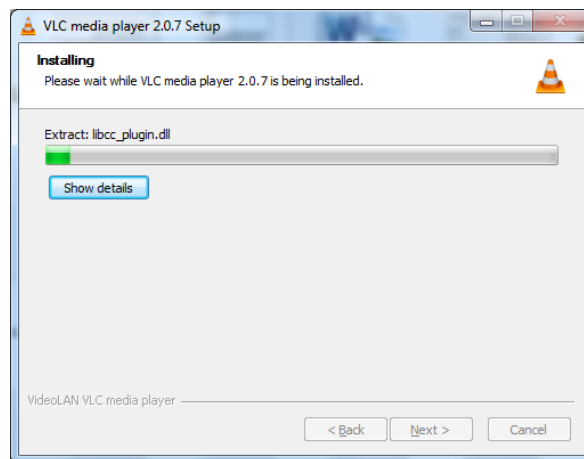


4. On the following screens Click Next, Next, Next, install





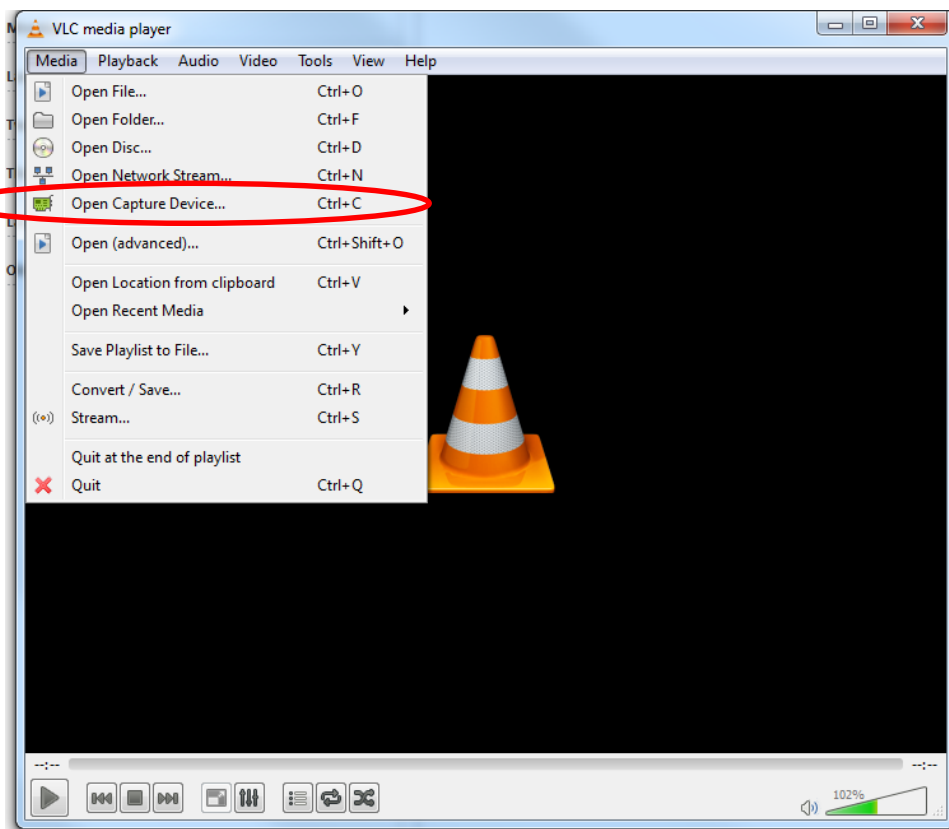
5. You will see the program installing followed by the installation completed screen. At this screen, make sure "Run VLC Media Player" is ticked and then click finish.



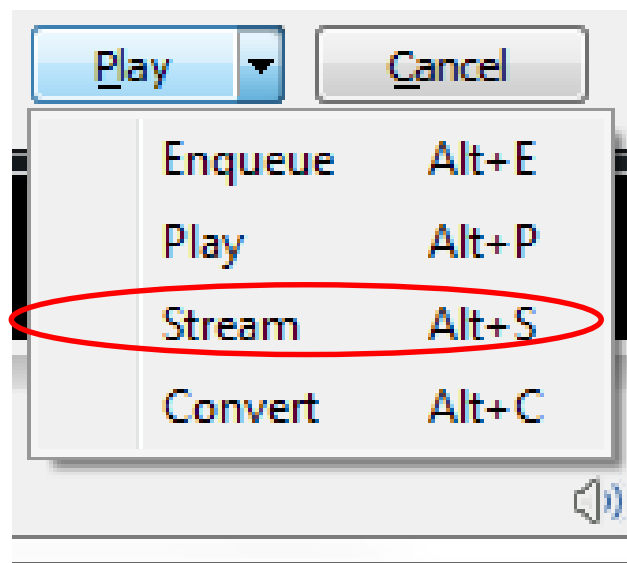
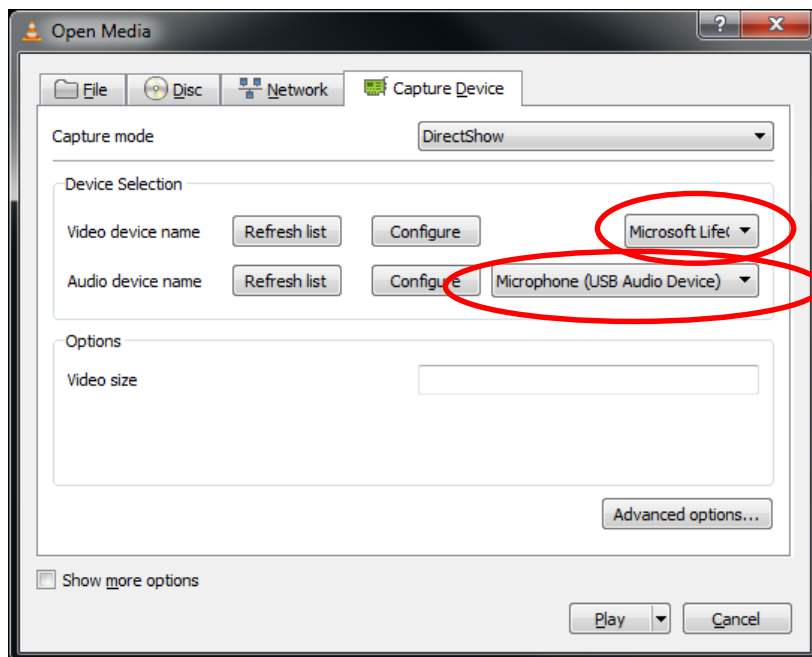
You have now finished installing VLC Media Player on your PC. The next part will cover configuring VLC for Network Streaming.

Configuring VLC Media Player for Network Streaming

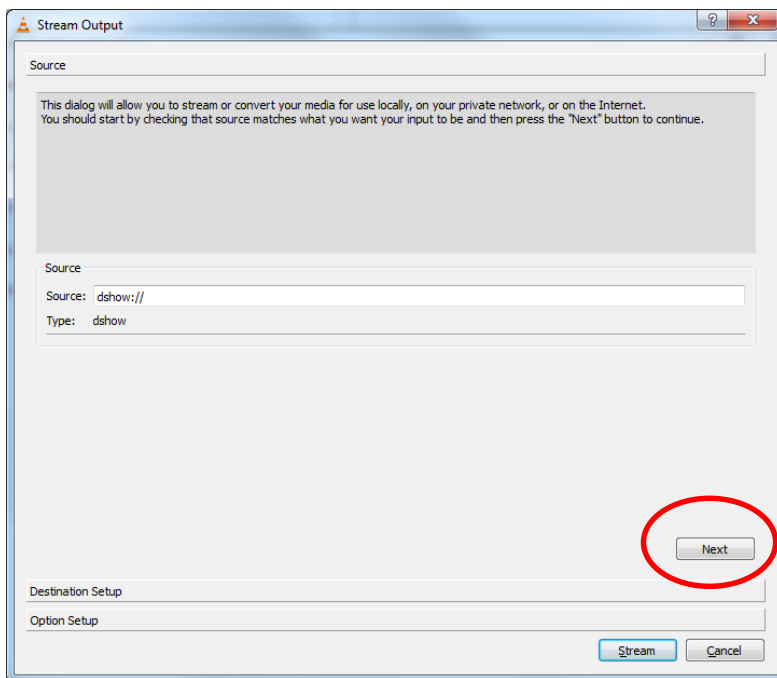
1. Take some time to familiarise yourself with the User Interface of VLC. Click on the menu buttons at the top and drag the mouse over each menu so you can get an idea of the layout. Also ensure you have connected and installed any necessary drivers for the Webcam and Microphone and verified that both are working on your desktop.
2. Open the **Media** menu
3. Click on the “Open Capture Device” option



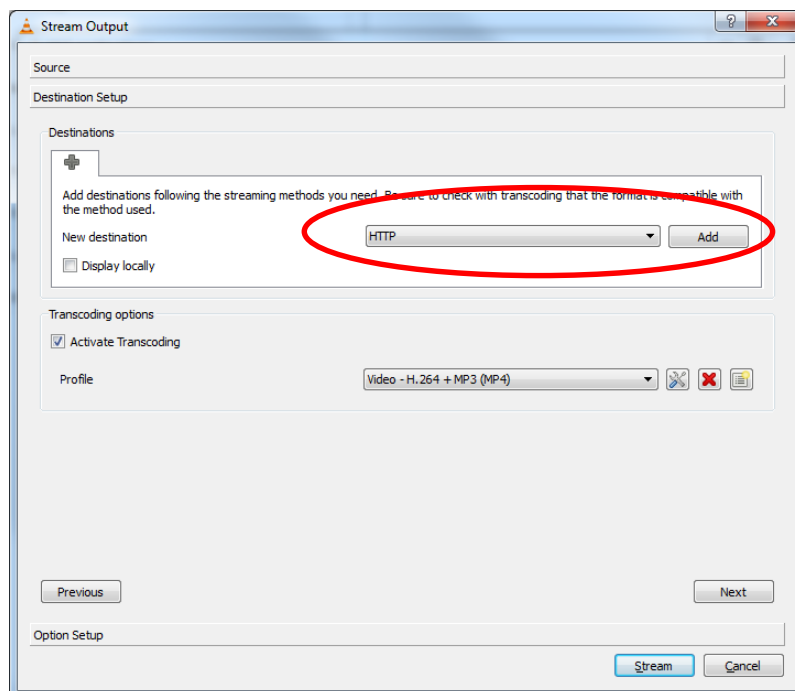
4. Make sure Video Device Name reads as LifeCam Studio, not Default and if you are using a USB connected microphone, you need to choose Microphone (USB Audio). Then on the **Play** button, select the down arrow and choose **Stream**.



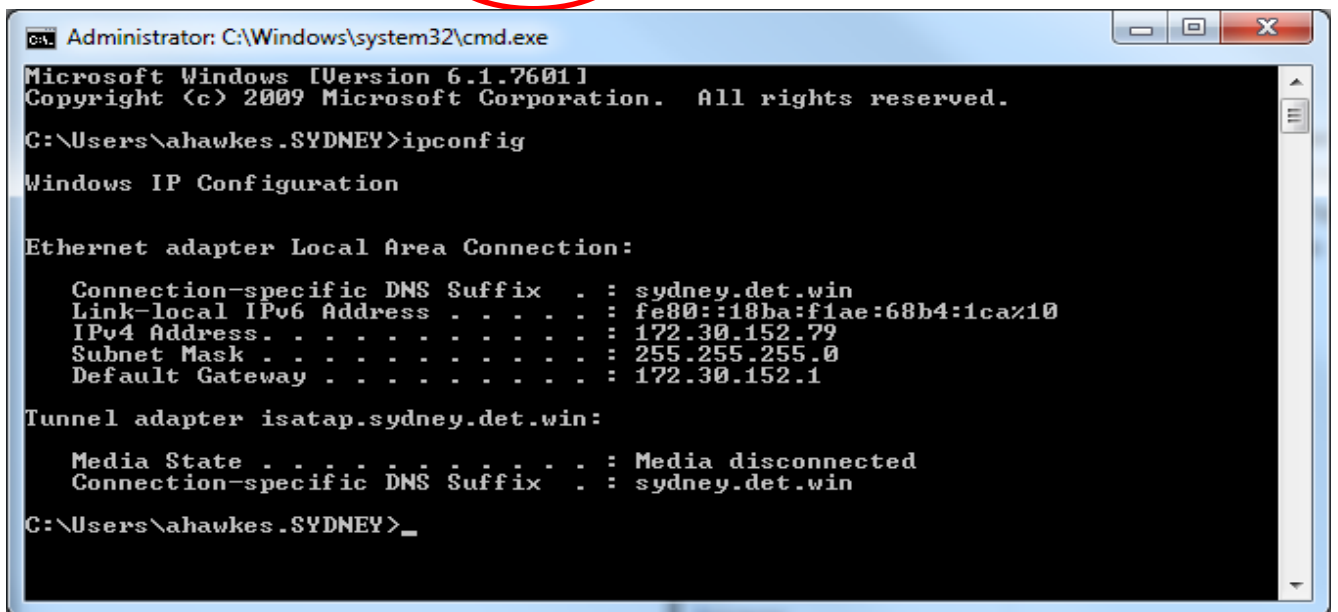
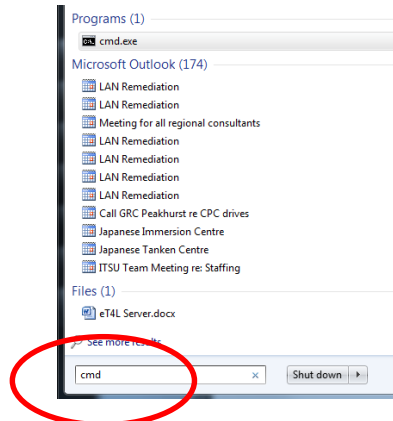
5. In the following screen, click the Next Button



6. In the Destination Setup portion of the screen, you need to change the Drop down to HTTP and then click the **Add** button next to that dropdown menu.

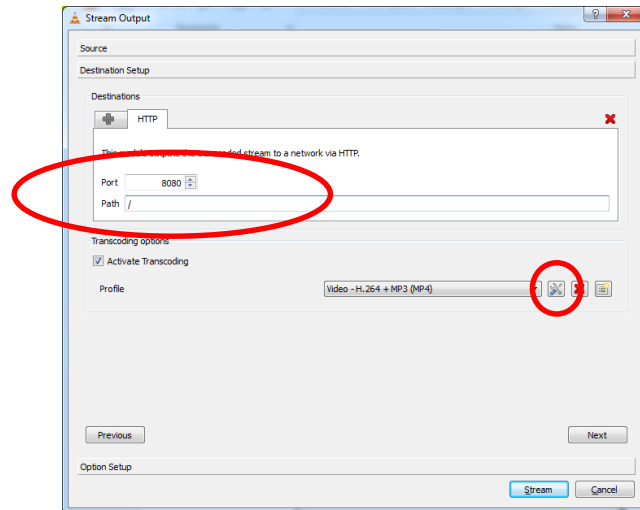


- You will then need to know the network path for the stream (which will be the IP address of the host or streaming PC). To find out your PC's IP Address, you need to go to the Start Menu in Windows, and in the Run bar type "**cmd**" then press Enter. In the black box that appears, type in **ipconfig** then press Enter. Your IP information will be presented for you. In the below example, the IP address for the host would be 172.30.152.79. For your school, the address is likely to be of the form 10.xx.xx.xx

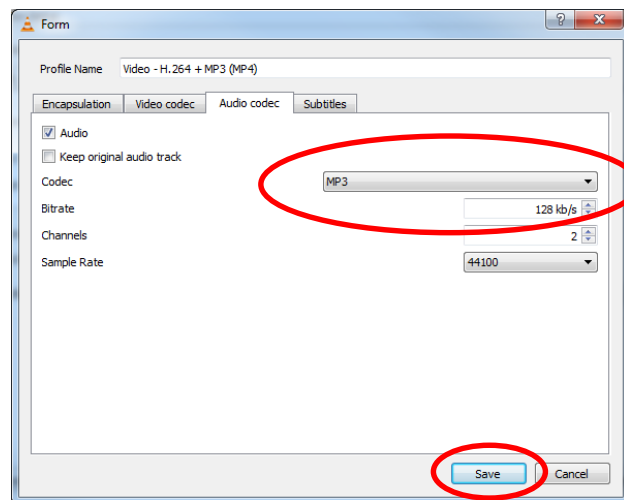


This address will be needed for the various VLC clients running in classrooms watching your video stream.

- Back in VLC you need to make sure that the Port Number reads "8080" and that Path reads as follows: "/" (which represents the IP address of **YOUR** PC). Basically, what you are telling VLC to do is to broadcast the video stream via VLC streaming service to be created at the IP address of the host PC. Steps to access the host PC's stream from a client PC follow later.



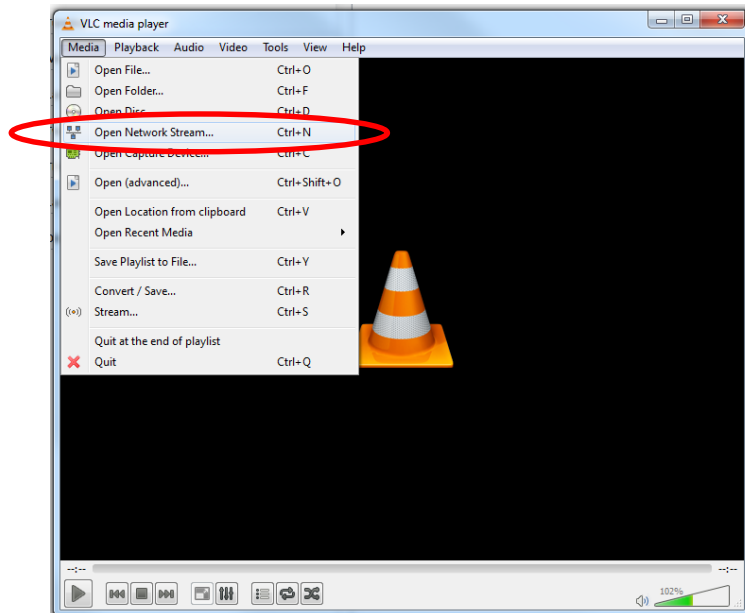
- Next, click the Tools button to the right of the Video – H.264 +MP3 (MP4) setting. Change the Codec option to MP3 then click Save.



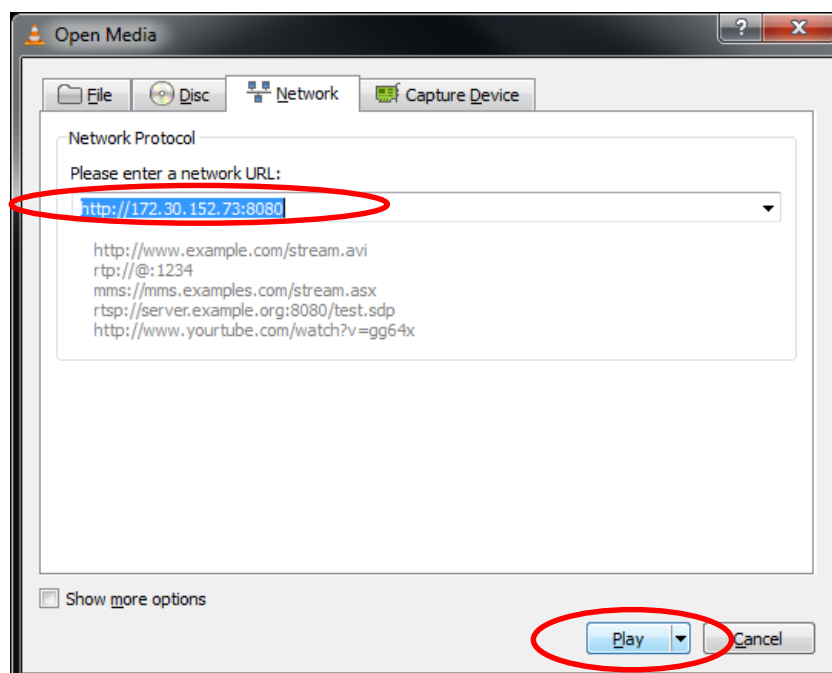
- Once you have done that, simply click the **Stream** button (as seen in step 8) and your network stream will begin. Please note, you will not see what you are broadcasting, so you will need to verify with your clients that you are broadcasting correctly before beginning the presentation/performance to be streamed.

Connecting clients to the VLC Media Player Network Stream

1. Install VLC Media Player on all PCs that you want to be able to view the Network Broadcast by following the installation steps provided earlier.
2. Once installed, run VLC
3. Go to **Media > Open network Stream**

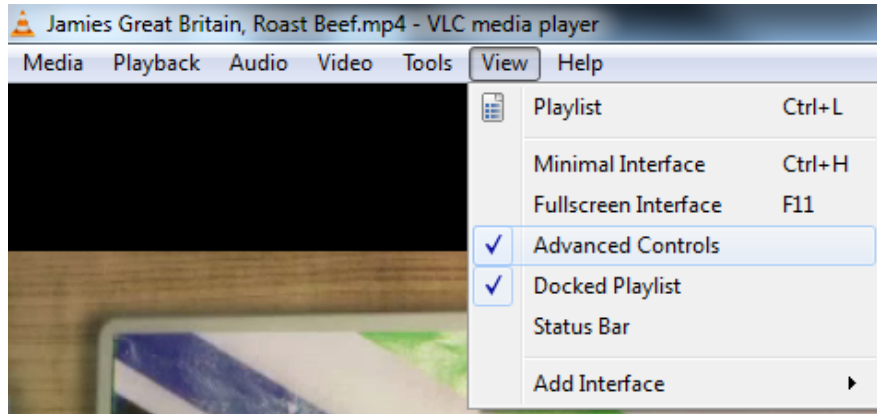


4. In the network URL, type in the address that **you** created earlier on the Host PC (in our example it was <http://172.30.152.79> followed by “:8080” (because that was the port number we set in the above example). So the full Network URL will read as: <http://172.30.152.79:8080> - Then click the Play button. You should see the network stream appear on your screen. (Please note it may take up to a minute for the stream to start).



Recording Network Streams

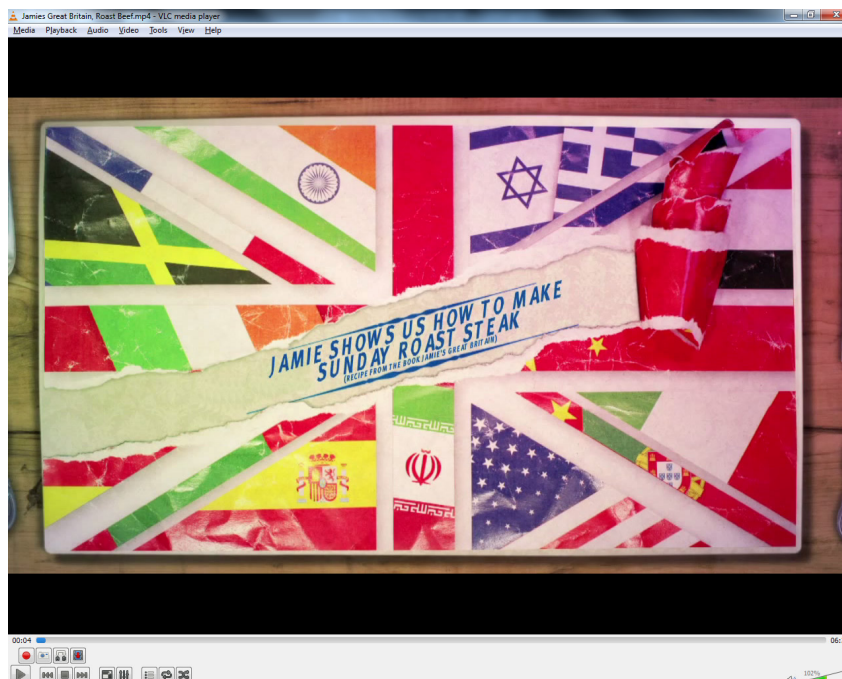
1. To record a Network Stream you are watching at a client PC using VLC Media Player, go to the **View** menu and select **Advanced Controls**



2. You will see down the bottom a red record button is now visible above the Play button.



3. Simply press this button to start recording and click it again to end. This will record whatever is being viewed in VLC. You can even record portions of video files as seen below. All recordings will be automatically saved in the My Videos folder in Windows.



4. These saved recordings can be viewed in any Media Player software on your PC. As seen below a segment of a video recorded in VLC is being run in Windows Media Player.

