

STUDENT INSTRUCTIONS FOR ONLINE EXAMINATION [DRAFT]

Quick word:

- You may find the online test procedure troublesome and intrusive. The main reason for these measures is to **protect the integrity of the assessment process**.
- Stringent assessment gives students and future employers of the students confidence of the qualification conferred by NUS.
- As we are new to this mode of assessment, we seek your cooperation and understanding.

Preparation (before exam day):

1) Room & Desk

- Ensure you can take the test in isolation for the entire duration.
- Your family members should be informed not to come into the room and to try to keep the noise level low to minimize disruptions.
- You are NOT allowed to move away from the computer during the exam.
- Ensure everything you need is easily reachable (on your desk) - (**student card**, notes, scratch paper, pen/pencil, water bottle, tea/coffee cup).
- No electronic equipment except for your computer and phone used for zoom are allowed on your table. (**calculators are ALLOWED**).

II

2) Phone

- Install Zoom on your handphone.
- Log into Zoom with your NUSNET ID (see below link for help).
<https://wiki.nus.edu.sg/pages/viewpage.action?spaceKey=THES&title=Proctoring+with+Zoom>
- Keep your speakers on with audible volume. You will hear announcements through your phone.
- During the exam session, your invigilator will mute/unmute your microphone as required.
- Ensure that your phone is plugged in to the charger. Also please disable the auto-lock/sleep feature of your phone to ensure that you will be always connected to zoom.

- f) Use a phone stand or some apparatus to place your phone in **landscape orientation** such that the front camera video can capture the side of your face, both hands with the table, and your screen.

Following is an accepted phone video setup.



3) Desktop/Laptop

- a) For the exam you will only need a **web browser (for accessing the Luminus)** and **VLC software (for screen recording)**, PDF viewer for browsing course notes, and Zoom.
- b) **You may connect to Zoom on your Desktop/Laptop as well.** You will join the same meeting, however, **do not connect your voice or video input over laptop/desktop!** This is only for you to contact the invigilator through Zoom chat without touching your phone.
- c) You can refer to your course notes, but you are **NOT allowed to browse the Internet** or search Google.
- d) Please use only a single monitor (this can be a secondary monitor with your laptop screen switched off). You can **use only two devices (1 phone for zoom video, and 1 laptop/desktop/iPad/Tablet with screen recording on).**
- e) You may use an external keyboard/mouse with your laptop, but make sure they are clearly visible in the video recorded by your phone.
- f) **Install VLC player.** Downloadable from <https://www.videolan.org/vlc/index.html> (Supports Windows, Mac and Linux).
- g) Try out and familiarize yourself with screen recording using VLC. You should be using H264 encoding with 12 frames per second and 64kbps constant bitrate. (Instructions for Mac, Windows and Linux below in Appendix 1)

NOTE: You may choose to do screen recording with VLC alternatives

(eg. **OBS studio** (<https://obsproject.com/>), or **QuickTime** (<https://support.apple.com/downloads/quicktime>)) if you prefer. However, you must transcode/compress the video to a small and manageable size (<150MB) before uploading. **You MUST try recording the screen before the final exam and let us know if there are any issues.**

Assessment Procedure (on the exam day):

- 1) Start Zoom on your phone at least 15 minutes before the test. 30 minutes is probably safer. The **Zoom link will be provided in Luminus -> Conferencing** and also via announcement. Position your handphone correctly in Landscape mode. But please do not lock the orientation of your phone. We will lock the zoom session at the starting time and latecomers will not be allowed to take the exam. (**Rename your Zoom alias to your full name**)
- 2) On your computer, close all other programs except for a web browser navigated to Luminus. You must make sure to quit all background applications such as Skype, Telegram etc.
- 3) Start VLC player and start screen recording. **Not recording your screen and being unable to submit the recorded video will invalidate your final exam.**
- 4) Invigilator will announce you to show your student id card and your face to the phone camera for verification and attendance marking.
- 5) Invigilator will announce you to download the **exam paper** from Luminus. This will be located **under the folder named "Final Exam"**.
- 6) During the exam, make sure to check whether your Zoom call is active and connected. If you notice that you have been disconnected, please reconnect immediately.
- 7) To ask questions during the exam session, you may contact your invigilator **via Zoom private chat on your computer (DO NOT use Phone). And DO NOT send to "Everyone."**
- 8) You **must NOT leave the exam before the full session is over**. If you manage to finish the exam before that, please wait at your seat until your invigilator announces you to stop the session.

- 9) **Submission Instructions:** You can write your answer on normal paper and then scan to create PDF file. You are free to use any software that you are aware of as long as the scan quality is good enough. We recommend using **CamScanner or Microsoft Lens or Google Drive**.

Instructions for Microsoft Lens can be found here:

<https://wiki.nus.edu.sg/display/THES/Using+Microsoft+Office+Lens+to+upload+to+LumiNUS+on+Android> (for Android users)

<https://wiki.nus.edu.sg/display/THES/Using+Microsoft+Office+Lens+to+upload+to+LumiNUS+on+iOS> (for iOS users)

Instructions for scanning using Google Drive can be found here:

<https://support.google.com/drive/answer/3145835?co=GENIE.Platform%3DAndroid&hl=en>

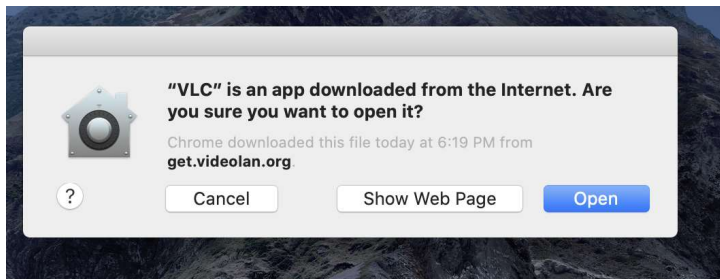
You must **create separate .pdf file for answers of each question (answers of sub-questions like part (a) and (b) of the same question must be inside the same file)** and then **upload them in the corresponding LumiNUS folders**. There will be separate submission folder for each question. (The exact location of the submission folder will be communicated to you one or two days before the exam, once we will create them.) Before uploading **must rename your file as <Metric No.>_T<Tutorial Group No.>_Q<Question No.>.pdf** (for example, **A324516H_T01_Q3.pdf**). You must upload your files **within 15 mins of end of the exam**.

- 10) Once all students will be done with their submissions, then only you will be allowed to leave your zoom session.
- 11) Once the session is over, **stop the screen recording and upload it to Luminus (LumiNUS-->Files-->Final Exam-->Recording)**. There will be a special folder to upload the video. (Again the name and location of the submission folder will be communicated to you later.) You must **make sure to upload the video within one hour after the exam**. Also, you must **keep the video with you for three weeks** ready to resubmit upon request from the university.

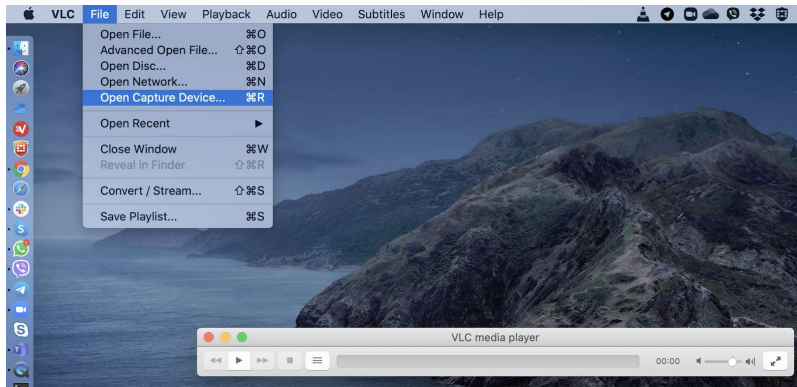
Appendix 1: VLC Screen Recording

A. Mac

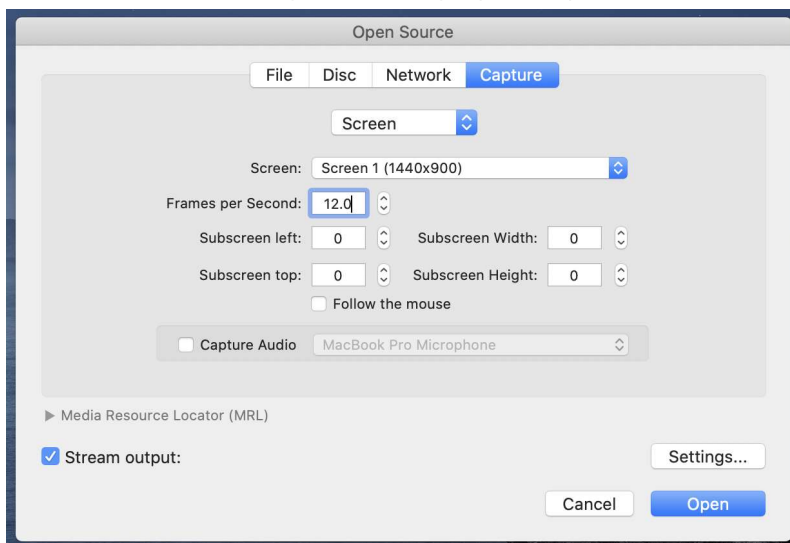
Step1: Open VLC media player



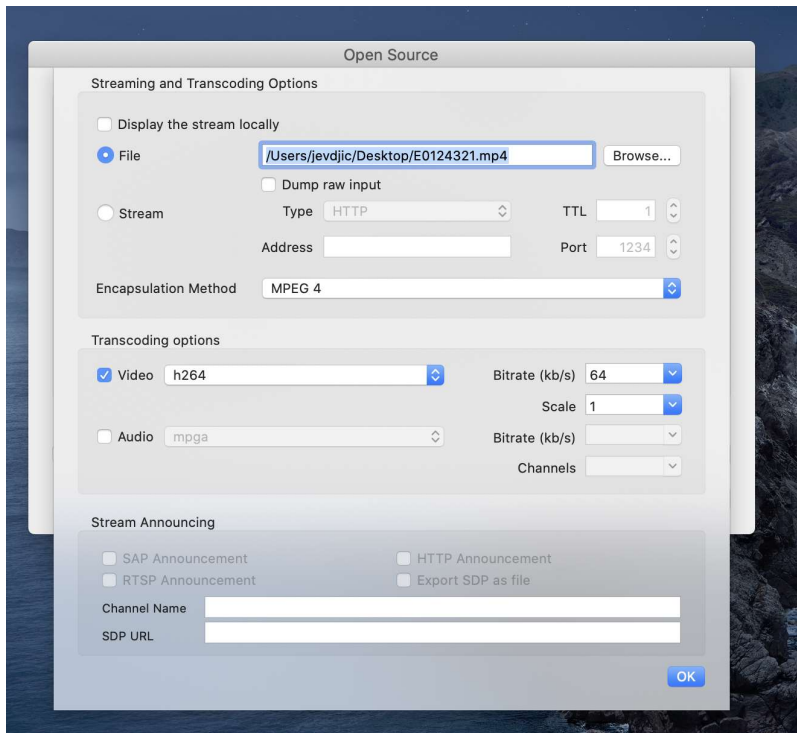
Step2: File -> Open capture device



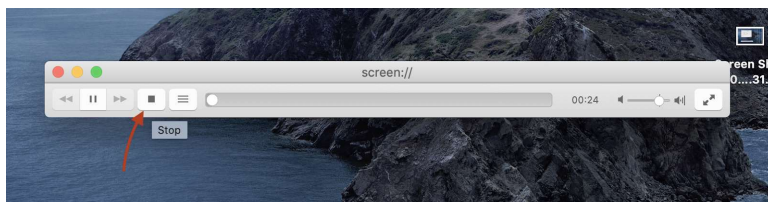
Step3: Set 12fps and go to Settings (Step 4)



Step 4: Name the video with your NUSNET number and save in your preferred location. Set the Transcoding options as shown below. Once done click OK to go back to the screen shown in Step 3. Then click Open. This will start your screen recording.

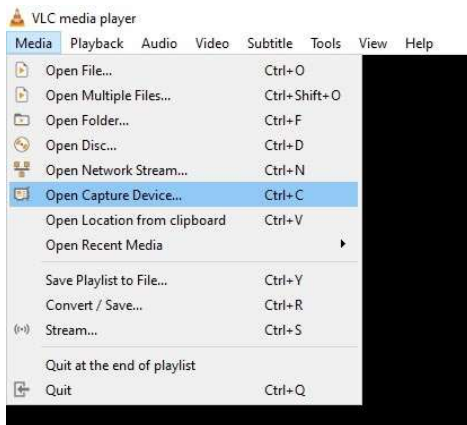


Step 5: After the session to finish recording, click the 'stop' icon on the VLC control panel as shown below.

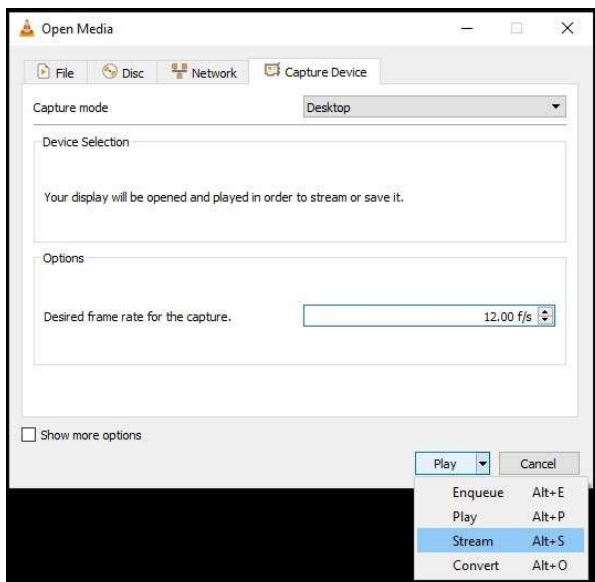


B. Windows

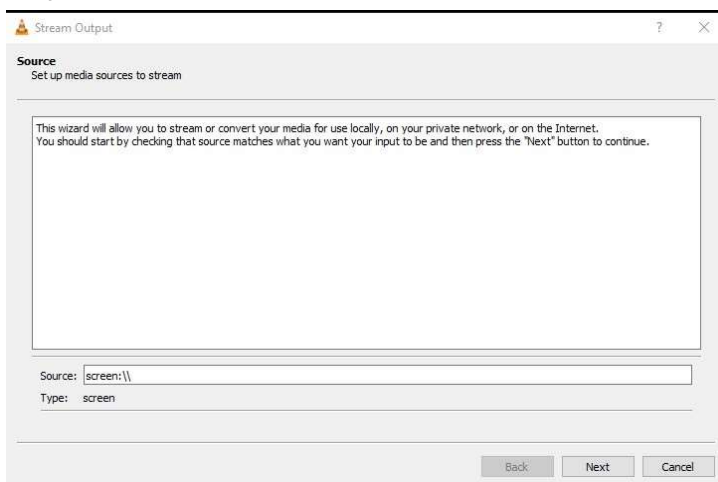
Step 1: Open Capture Device



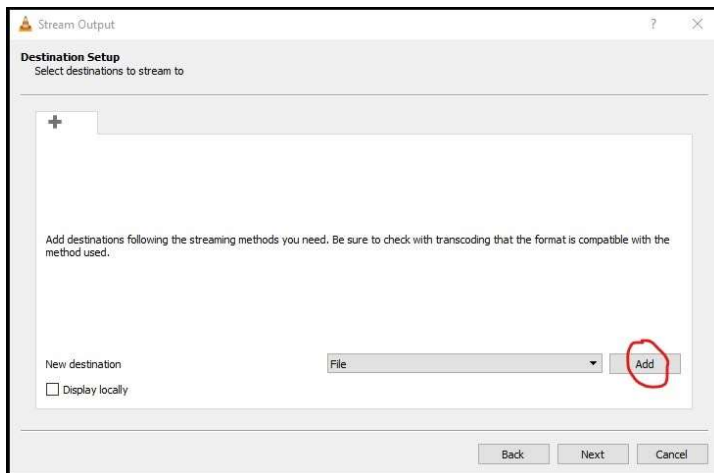
Step 2: Set capture mode to “Desktop” and frame rate 12fps. Click Stream.



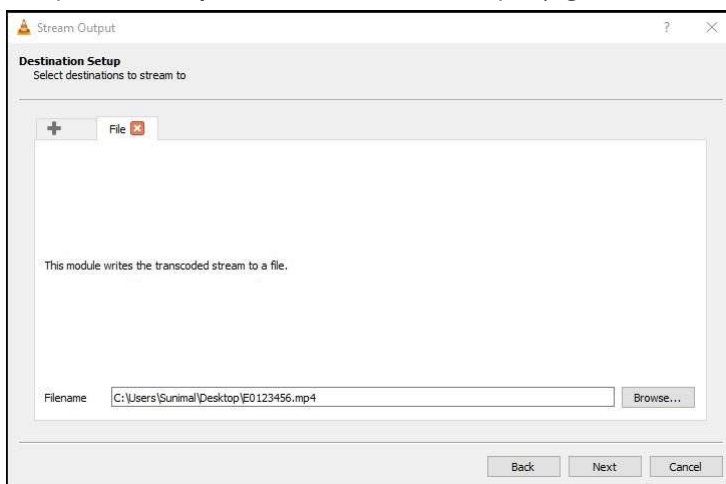
Step3:Click Next



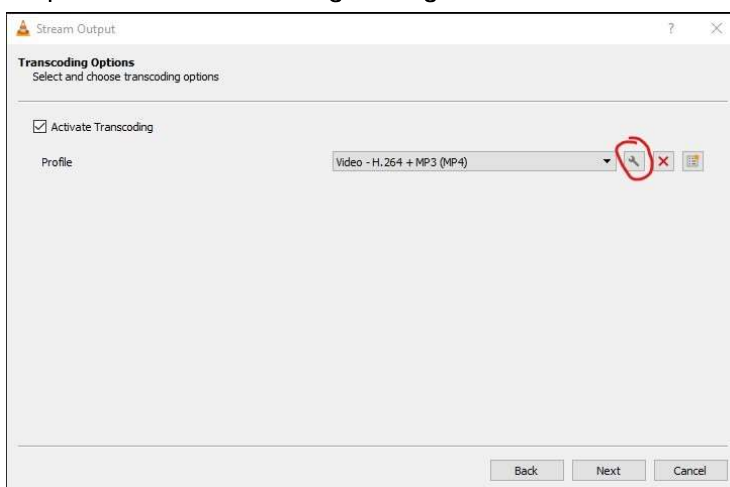
Step 4: Click Add



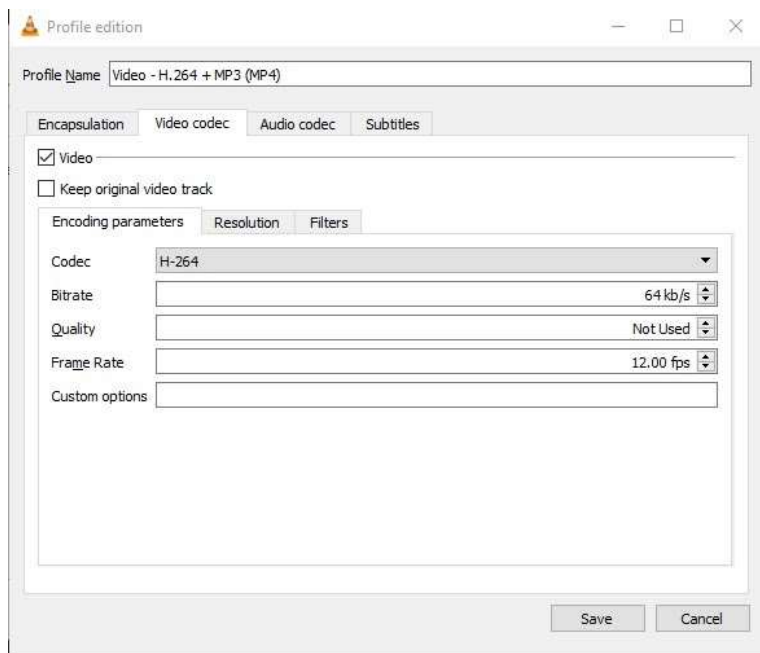
Step 5: Name your file <NUSNET>.mp4 (eg. E123456.mp4) and select a location to save.



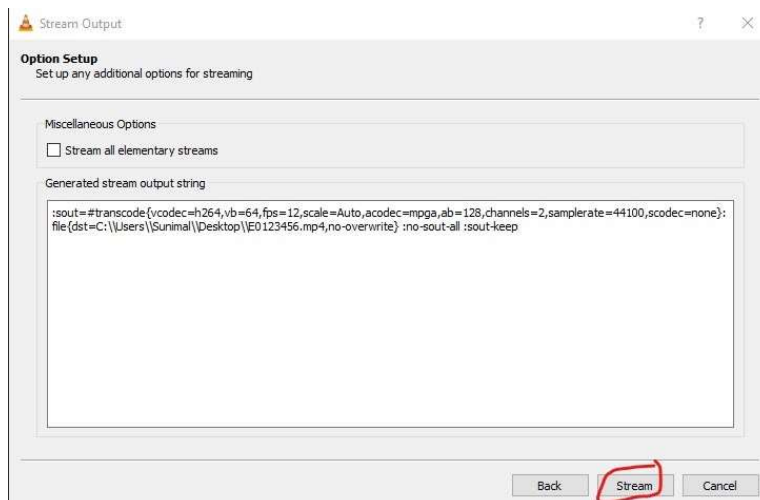
Step 5: Go to Transcoding settings.



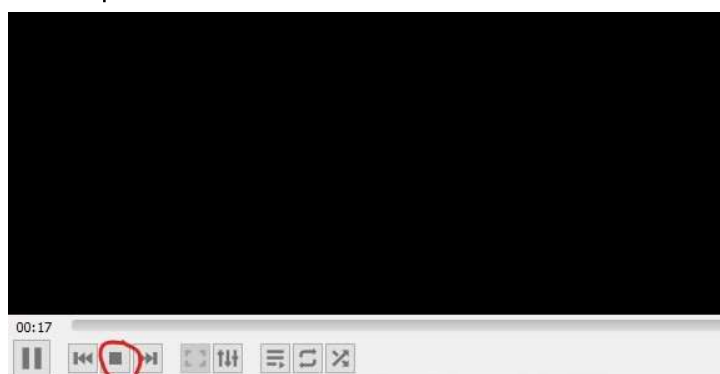
Step 6: Set Codec to H-264, bitrate 64kb/s and frame rate 12fps. Click Save to return to screen in Step 5. Then click Next.



Step 7: Click “Stream to start recording”

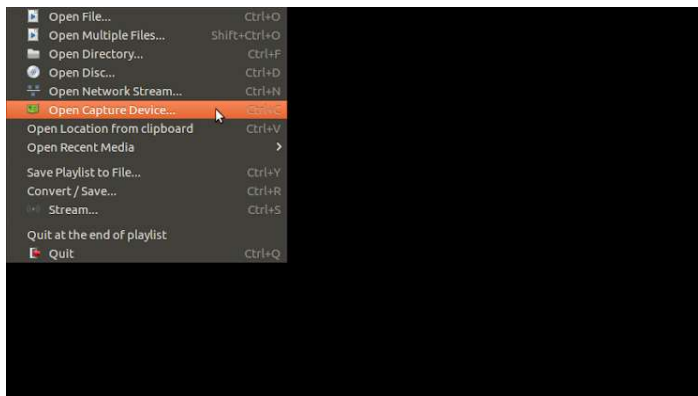


Step 8: At the end of the session, to finish recording, click on the “Stop” button on the VLC control panel.

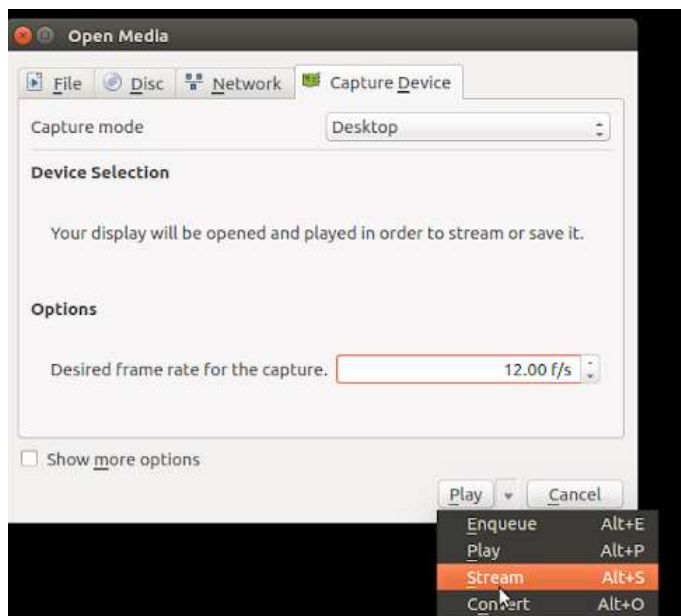


C. Linux

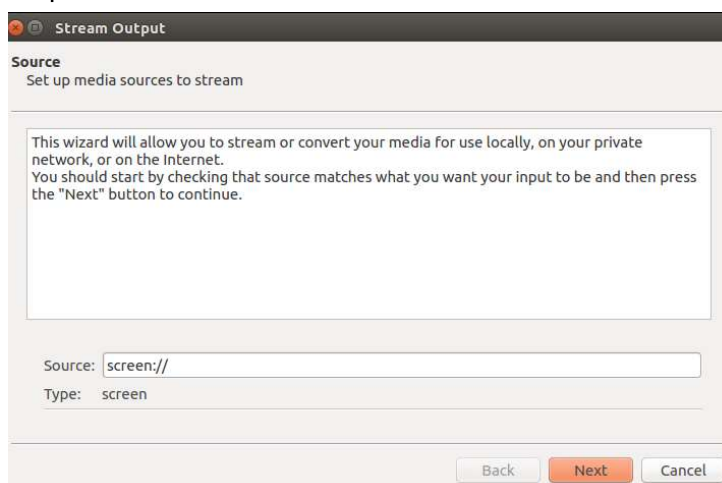
Step 1: Open Capture Device



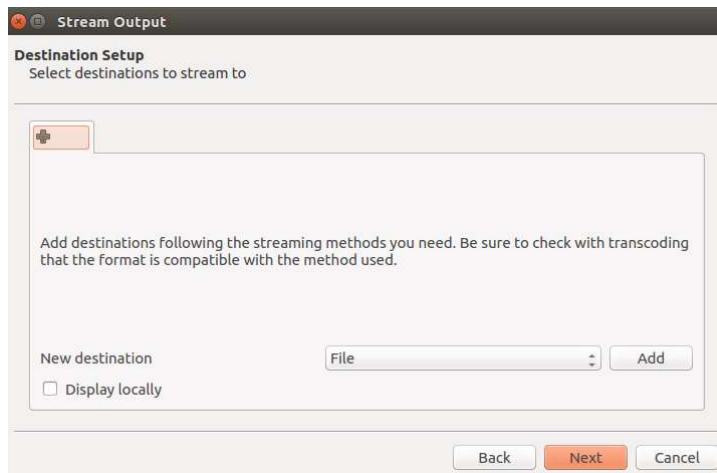
Step 2: Set capture mode to “Desktop” and frame rate 12fps. Click Stream.



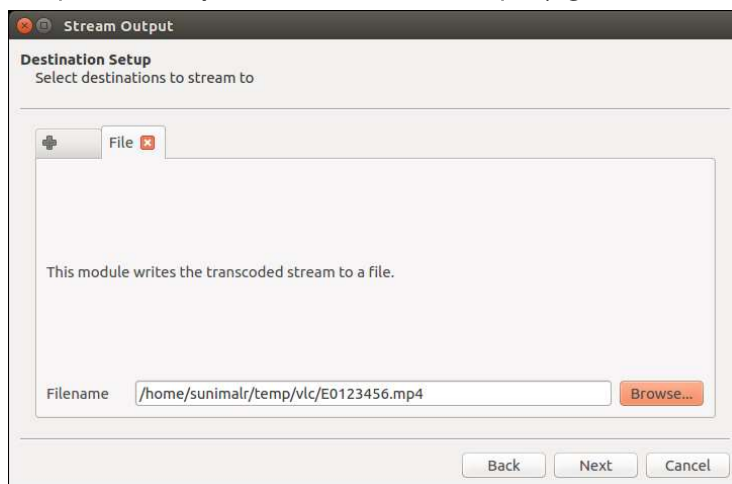
Step3:Click Next



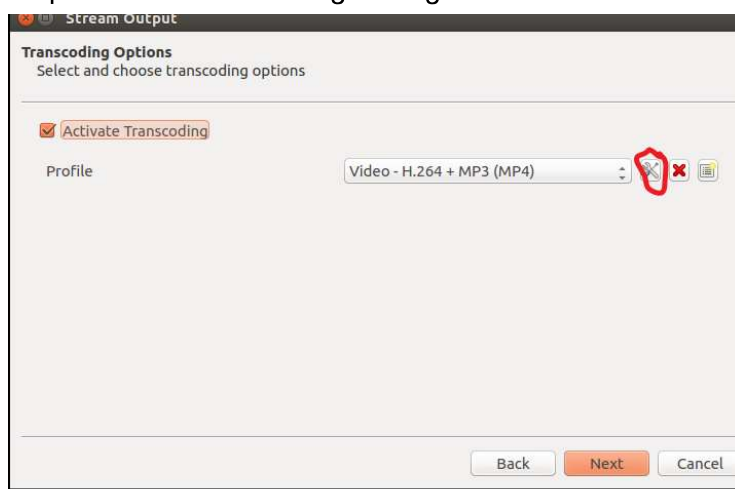
Step 4: Click Add



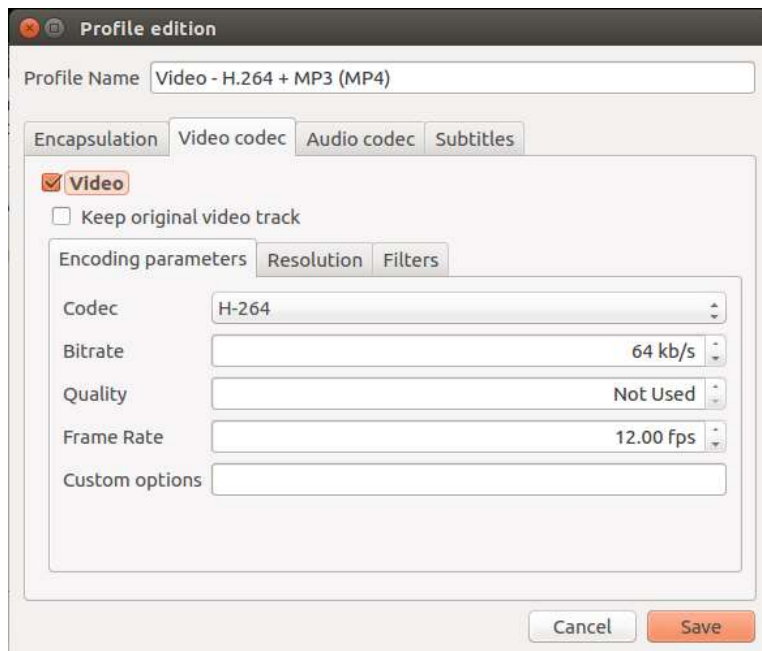
Step 5: Name your file <NUSNET>.mp4 (eg. E123456.mp4) and select a location to save.



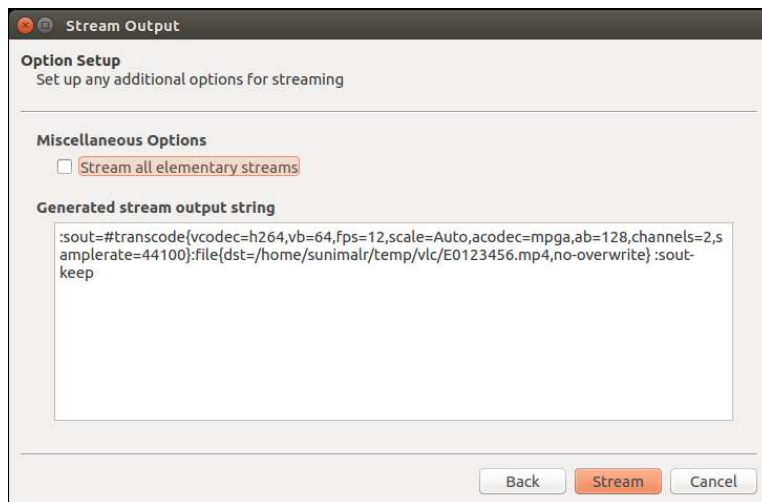
Step 6: Go to Transcoding settings.



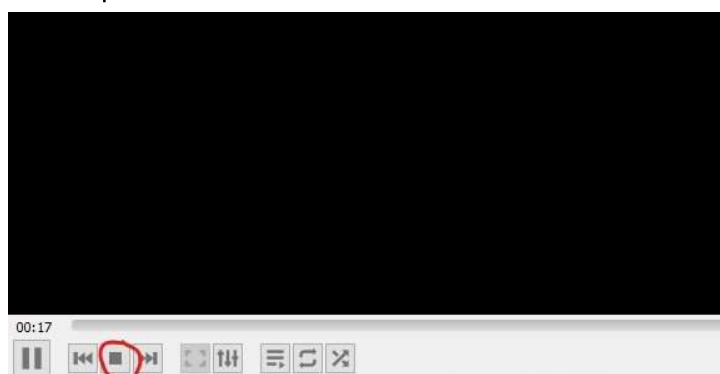
Step 7: Set Codec to H-264, bitrate 64kb/s and frame rate 12fps. Click Save to return to screen in Step 5. Then click Next.



Step 8: Click “Stream to start recording”



Step 9: At the end of the session, to finish recording, click on the “Stop” button on the VLC control panel.



D. Command Line

VLC has a command line interface for all three operating systems. If you would like to use that, here is the command with recommended settings.

```
vlc  
--sout='#transcode{vcodec=h264,vb=64,scale=Auto,acodec=none,scodec=none}:file{dst=output_filename.mp4,mux=mp4}' --screen-fps=12 screen://
```