

AS220 Audio Interface

Version 1.0

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1 Introduction

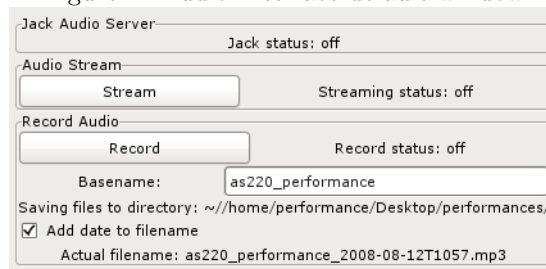
The AS220 Audio Interface is a stream-lined method of controlling AS220's streaming machine located in the performance space. Its intention is to make a single-click interface for enabling/disabling the audio stream to as220.org as well as recording of performances. This document is an attempt to explain how to use the audio interface.

Starting the audio interface can be accomplished by locating the icon on the performance machine's desktop entitled "AS220 Audio Interface" which is

Figure 1: Audio Interface desktop icon



Figure 2: Audio Interface default window



shown in figure 1. Double clicking on that icon will open a window that has the normal controls for the audio interface. This window is shown in figure 2.

1.1 Explanation of Audio Interface Window

The audio interface is a program that controls three other programs. These programs are the Jack Audio Connection Kit (JACK), Darkice an audio stream, and Ecasound an audio recorder. JACK is a program whose purpose is to facilitate the between other audio programs. Darkice is a program that sends audio data to a shoutcast/icecase audio server (Internet radio). Ecasound is a tool that allows for recording audio to a myriad for formats as well as conversion between formats.

The relationship of these three programs to the audio interface can be seen in figure 3. As you'll note semi-transparent colored boxes cover portions of the audio interface display. The red box covers the JACK server portion of the controls. The blue box overlaps with the streaming controls. Finally, the green box covers the recording portion of the audio interface.

For both the streaming and recording interface there exists both the control for that service as well as feedback on whether or not that service is functioning. This division in the control is shown in figure 4. The button on the left can be depressed by the user which signals that particular function to engage or

Figure 3: Audio Interface major sections

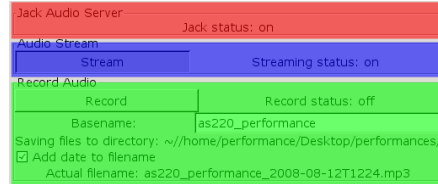
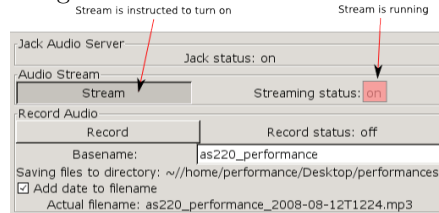


Figure 4: Audio Interface controls



disengage streaming or recording. The button pushed in or pressed signals to the audio interface that the service would like to be turned on. The status indicator on the right indicates whether or not the system could turn on that service. You'll notice after pressing the button that it takes a few moments for either recording or streaming to enable. This delay is the amount of time it took for their respective programs (ecasound/darkice) to start¹.

An astute observer might also notice that Jack does not have a button to enable or disable its execution. Jack will enable whenever streaming and/or recording is enabled and terminate after they've been turned off.

2 Streaming

Enabling the stream (seen in figure 5) to as220.org will open a communication channel from the audio-interface to as220.org sending out an mp3 compressed version of the audio that can be listened to any computer connected to the Internet at <http://www.as220.org/as220.m3u>. The fact that the stream is running will also be indicated by an image shown in figure 6 on the front page of as220.org.

¹Not entirely correct. The delay to start Darkice/Ecasound is also based on how long it takes the audio interface to notice that the button was pressed

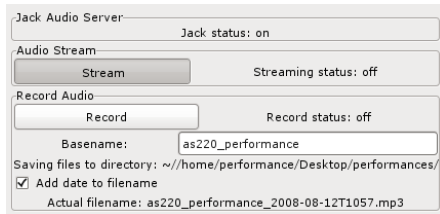


Figure 5: Audio Interface enable stream

Figure 6: AS220 Homepage stream indicator

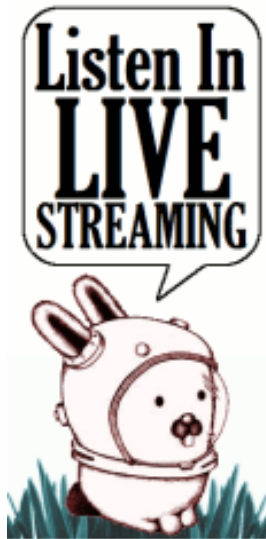


Figure 7: Audio Interface enable record

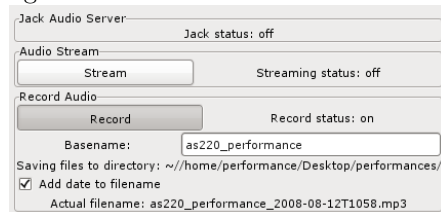
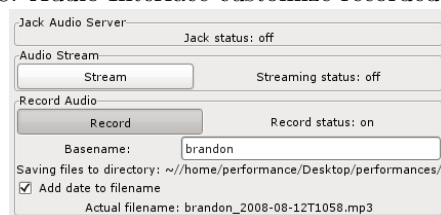


Figure 8: Audio Interface customize recorded filename



3 Recording

Upon pressing the record button (see figure 7) will start two audio recordings of the performance. One version will be saved in an mp3 format, the other version will be saved in uncompressed wav format. Both versions will be stored on the desktop in the “performances” folder. By default the output file is named as220_performance followed by the date and time in ISO8601 format. So for instance if the current date is March 1, 2008 and the time is 2:21pm then the output filename will be “as220_performance_2008-03-01T1421.mp3”. Note that the hour of the time in the file is converted to military time.

The purpose of using ISO8601 timestamps in the filename is multi-part. First, it makes it easy to quickly figure out which recording corresponds to what performance. Second, it prevents clobbering of one recording over another recording. Like I recorded last night’s show but failed to rename its file then began recording another show over the existing one. Third, ISO8601 formatted timestamps have the pleasant feature that when sorted alphabetically they automatically line up in their chronological order.

However, with all that in mind some users of the audio interface might want to change the default filename from as220_performance to something like “brandon”. To do that we change the text in the field named basename which will immediately update the “Actual filename” field with the filename that will be stored upon recording. This change is shown in figure 8. Please be sure to change the basename prior to pressing the record button as it is not possible to actively or retroactively adjust the recorded filename while a recording is in progress.

If the user desires they can also disable the automatic date/time append to the end of the time by un-checking the box that reads “Add date to filename”.

4 Conclusion

This concludes our discussion regarding the usage of the audio interface. If you have further questions, remarks, bugs, or complaints then send an email to <mailto:brandon@as220.org> or find me in person.

The AS220 Audio Interface is Freedom Software² and can be found on the web at AS220’s GIT web interface³. Feel free to hack on the software but if you break it, you get to keep both pieces.

²Free Software is explained here <http://www.fsf.org/about/what-is-free-software>

³<http://www.as220.org/git/gitweb/?p=audio-interface.git;a=summary>