Audio Only Broadcast through Flash Media Live Encoder On Windows

This user guide will take you through the steps of setting up an audio-only broadcast on a Windows PC.

Other user-guides are available at https://community.ja.net/groups/nastasra-streaming-platform if, for example, you want to broadcast video, or if you are using a Mac.

Software Required:
- Flash Media Live Encoder (http://www.adobe.com/uk/products/flash-media-encoder.html)
- VB Audio Cables (http://vb-audio.pagesperso-orange.fr/Cable/index.htm)
- Music Playlist Software (e.g. iTunes, Windows Media Player, etc.)
- Stereo Mix (also known as "What-U-hear", only possible with compatible soundcards).

NOTE: This method will only work on computers that have a soundcard compatible with the "Stereo Mix" device. You can find this out by right-clicking the Speaker symbol in the system tray, and clicking "Recording Devices". Then right click the window and make sure the option "Show Disabled Devices" is ticked. At this point, if your card supports it, a device called "Stereo Mix" will appear. You can ignore it for now until we return to it later. If this device does not appear then your soundcard will not work with this method. It may be possible to update your soundcard drivers and this could enable it for certain cards.

If your card does not support this, you can investigate this method and learn how to set-up your broadcast, but you will not be able to hear your stream through your speakers/headphones while simultaneously streaming.

Setting up Streaming Wizard:
Go to your Streaming Wizard login page, either http://nasta.streamingwizard.com/ or http://sra.streamingwizard.com/. Then type your username and password to enter the site.

This page will allow you to alter certain aspects of the stream. Change the Stream name to something relevant but note this down, as it will be required later. You can alter the Height and Width as you like, but as this is an audio-only broadcast, setting the Height option to 30 will help. This is because it will remove the video box, while keeping the toolbar section, which will keep your website looking much neater.

"Automatic start" determines if the web-player will start as soon as a visitor enters the site. If it is set to "true" the player will begin immediately. If it is set as "false" then the viewer has to press play. "Full screen option" refers to a button on the player toolbar. If this is set to "true" this button will appear, and clicking it will cause the stream to expand to display over the whole available screen. If "false", then the button will not appear, and this function will not be available.

It is up to you to decide whether you would like to use the "Automatic start" and "Full screen option", though I would recommend having "Full screen option" set as false, as this is an audio only broadcast.

Once all your settings are entered, click "Create code using above details". If you want to change any/all of these settings later it is possible by clicking the "Live Manager" tab on the left of the page.

The screenshot below shows the new page you will be taken to, displaying the code that will need to be pasted into your website in order to share the stream. At the top of the page is important information required for the Flash Media Live Encoder (FMLE) in order to set the address for where it will send the stream. The 2 items you need to make note of are the FMS URL, and the Stream name, which was just selected in the previous page.

Use the following details in your encoder:

FMS URL: rtmp://195.195.131.195/test
Stream: webcast

Username: test
Password: ******** (This should be provided to you)

Player code to cut and paste into your website:

```
<embed  src='http://nasta.streamingwizard.com/player.swf'
 width='320'
 height='30'
 allowscriptaccess='always'
 allowfullscreen='true'

flashvars='streamer=rtmp://195.195.131.195:80/testLive&file=webcast.flv
&autostart=true'
/>
```

This should look like:
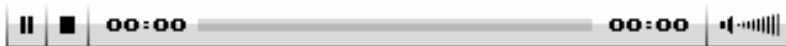
Code to play on iPhone/iPad's
http://195.195.131.195:1935/test/webcast/playlist.m3u8

If changes are required, which is possible by going to the "Live Manager" tab, this page could be altered. Make sure the code on your website is updated appropriately.

The bottom of this page displays a preview of your stream. This example is audio only, with the height set at 30, so this preview will not display any video. It is possible to hear your stream through this preview page when the set-up is complete in order to test it is all working as expected.

Installing VB Audio Cables:
In order to route the audio from our music playing applications to FMLE, we will need a set of virtual audio cables. This is a type of software that will allow us to send audio through them, out from one program, into another. There are many similar applications that will perform this job, and the one chosen for this guide is called VB-Audio Virtual Cable (http://vb-audio.pagesperso-orange.fr/Cable/). It is free, though a donation is possible if you wish, for which you will get more virtual cables enabled on your PC, but only the free one is required in this guide.

Download and install the program (follow the instructions on the site, running the setup program as administrator, and checking whether you need the 32-bit or 64-bit version). This may require a PC restart (it did not for me).

Setting Up Audio Devices:
The flow diagram at the end of this document may help you more easily visualise how the audio needs to be routed between applications.

Initially, make sure the sound output is set-up as you would like, in order for you to hear the audio playing. Go to your sound playback settings (by right-clicking the speaker icon in the system tray, shown above, and selecting "Playback devices"). Select whichever output you prefer. In this example, my headphones are connected to the "Speakers" output. Play audio if you would like to test.
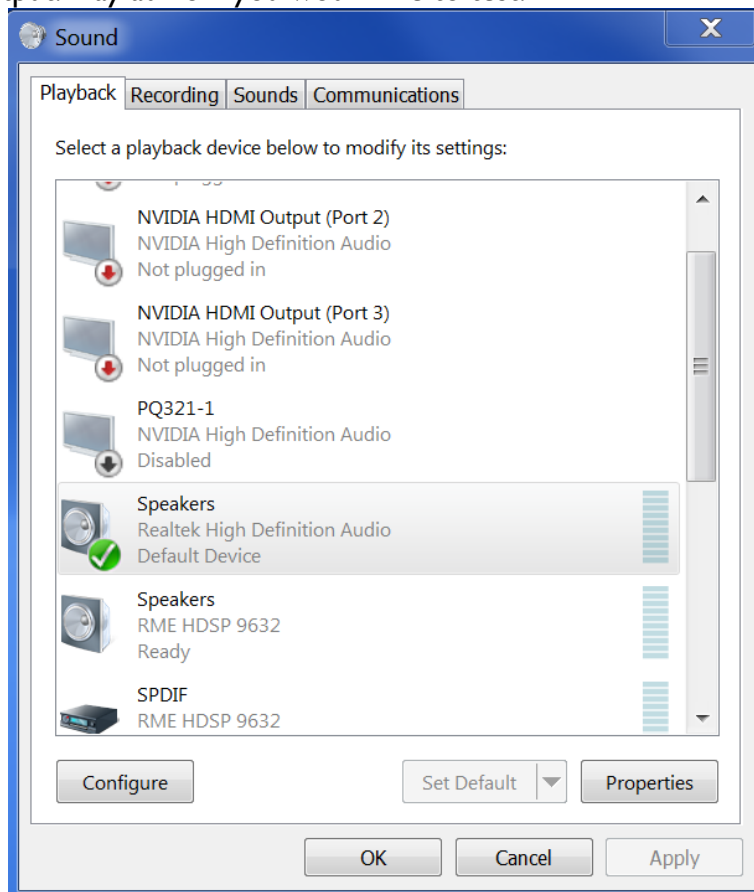

Next, click on the tab titled "Recording". If this menu is closed then you can access it by once again right-clicking the speaker icon in the system tray, but this time clicking "Recording devices".
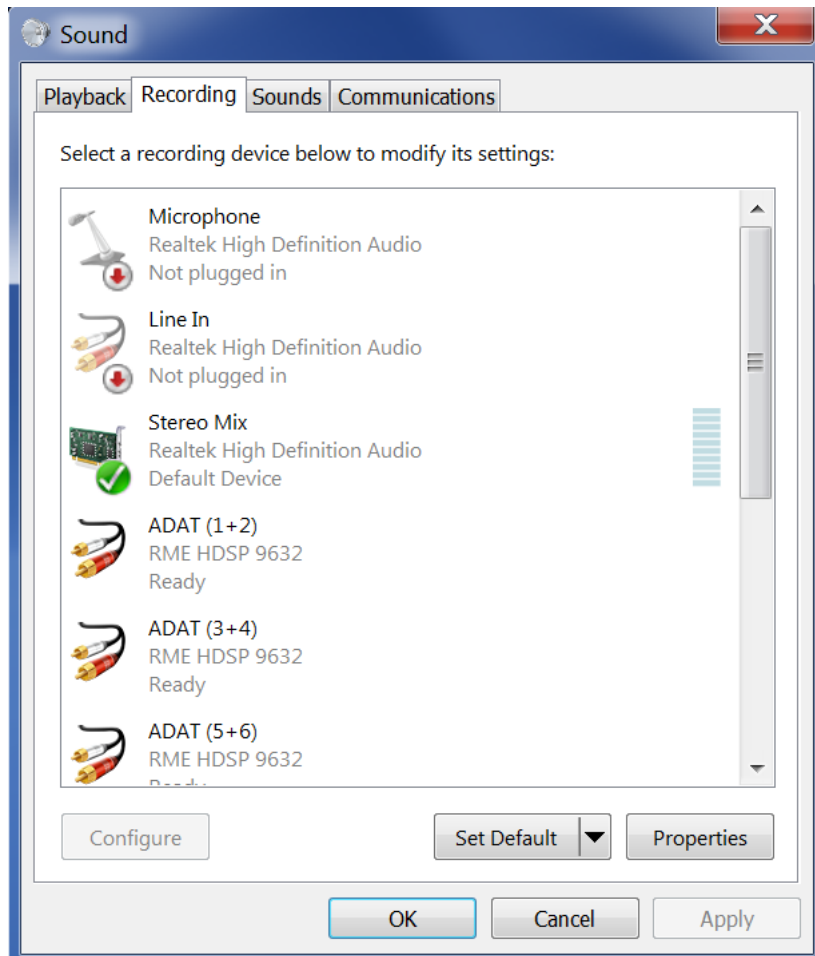
If you haven't already, find the "Stereo Mix" device, by showing all the disabled devices (this option is allowed by right-clicking in the menu and ticking the option in the drop-down menu that appears). Then select the "Stereo Mix" device and press the "Set Default" button. If your menu does not display a "Stereo Mix" device then your soundcard will not allow 2 separate audio outputs. The "Stereo Mix" is necessary as it is what allows the audio to travel to both the headphone output and to FMLE to broadcast at the same time. With reference to the flow diagram at the end of this document, the "Music In" box has 2 arrows from it, one to the "Stereo Mix" (and then on to the virtual audio cables and then finally the stream), and one to "Headphones Out". Without "Stereo Mix" only one of these arrows is possible.

Right-click "Stereo Mix" and click "Enable". Then, with the "Stereo Mix" still selected, click "Set Default" and then "Properties". In the properties menu you can alter various settings, including the name and icon, though it may be easier to leave these as default. Go to the "Listen" tab and tick the box "Listen to this device". Then, click the dropdown menu below, and choose the "CABLE Input (VB-Audio Cable)". This is the virtual audio cable software we installed earlier. Close this small window, returning to the Sound menu.

We now need to tell Windows to listen to the microphone you want to use so you can speak to your audience while also playing music. Keeping the Sound menu open, and still in the "Recording" tab, scroll through the list until you find the microphone you would like to use.
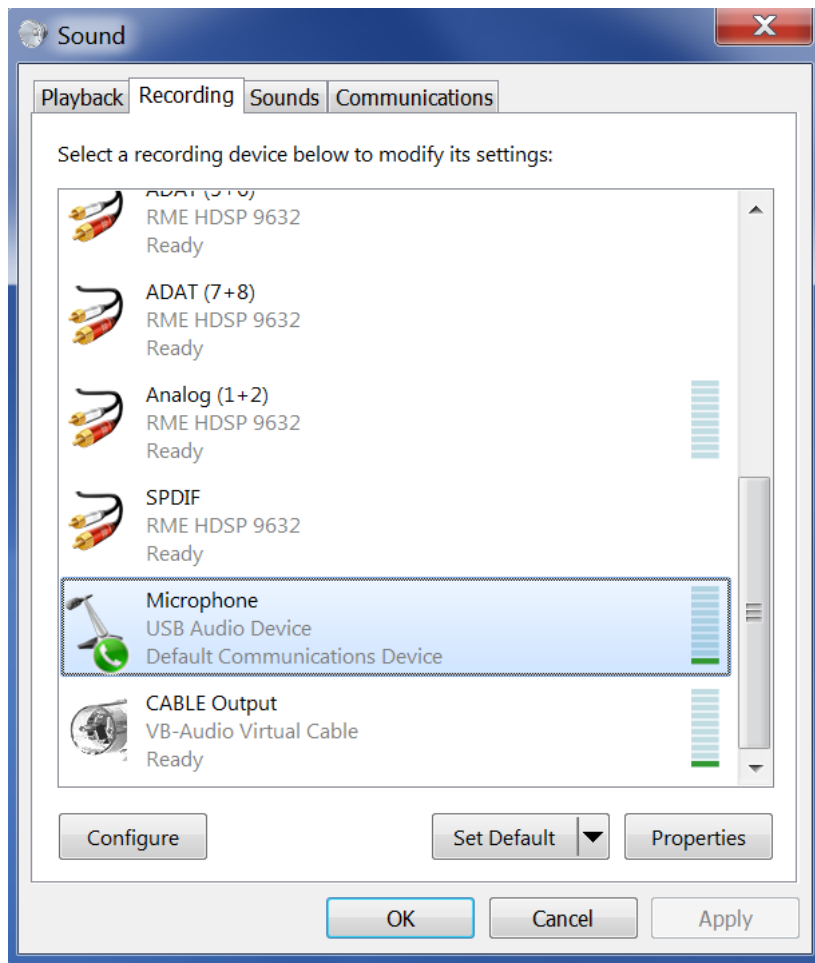
When you find it do not set it as default in the same way we set the "Stereo Mix", as this will remove the "Stereo Mix" as default, and you will have to set that up again. Instead, right-click the microphone and then choose the menu item "Set as Default Communication Device". You will see that a green circle with a phone inside has now appeared next to the icon to display that is has now been selected as a default device. If you scroll back to the "Stereo Mix" it will also still have a green circle symbol, with a tick, showing they are both set-up as default devices.

Select the microphone again, and click the "Properties" button. Similar to the "Stereo Mix", go to the "Listen" tab and make sure the "Playback through this device" menu says "CABLE Input (VB-Audio Virtual Cable)". The "Listen to this device" tickbox will be your method of turning the microphone on/off. If you want to speak to you audience, make sure the box is ticked. When you just want to play music or a pre-recorded show, un-tick this box. If you have a physical mixer available then it may be easier for your live shows to set this up to enable/disable sound from the microphone.

<u>FMLE:</u>
With that complete, all that remains is to tell FMLE where to input the sound from, and then where it needs to stream it to, as well as any encoding it needs to do in the middle. All the audio routing within the computer is now complete.

Open FMLE (I had issues at first, but right-clicking and running as admin solved that). As this is an audio-only broadcast, un-tick the video box, and ignore all the options on the left of the window that are now greyed out.

Focusing on the Audio settings now, set the Device as "CABLE Output (VB-Audio Virtual Cable)". This means that all sound sent to the virtual cable will be sent to FMLE for streaming. As the soundcard and microphone are both set-up to send to the cable, all the audio you will make will be sent to FMLE.

Go through the rest of the audio settings choosing the settings that best suit what you will need, however here is a quick suggestion:
- Format – most likely Mp3.
- Channels – most likely Stereo.
- Sample Rate – 44100Hz
- Bit Rate – 128Kbps
- Volume – slider full right, full volume.

This is merely a suggestion as a starting point for the stream, if you broadcast requires different settings, select them as necessary. Bit Rate is the most likely thing to change, as this will have the biggest impact on the quality of the stream, both in terms of audio output, as well as the bandwidth of the stream. If you notice a large amount of breaks/buffering is necessary, turning the Bit Rate down can help a lot.

Bit rate suggestions:
- 24 – 32kbps = good for talking
- 48 – 80kbps = decent for music
- 92 – 128kbps = CD quality, great for music
- 192 – 320kbps = better than CD quality.

Streaming settings
With the encoder now set, the only thing left is to tell FMLE the Streaming Wizard address. On the right hand side of FMLE is the streaming panel. "Stream to Flash Media Server" must be ticked. Then, enter the FMS URL in the box, and then below that enter the Stream name you selected earlier next to the "Stream" heading. You can choose to connect now by clicking connect, or you can press the green button at the bottom which says "Start". Connect will just let you know that the streaming settings are entered correctly, whereas start will begin the stream. Pressing start will automatically connect you if you are not already connected. To end the stream, click the red "Stop" button.

From the Output panel it is also possible to set up a location on your computer to record the broadcast to, allowing you to archive all your broadcasts.

NOTE: Now you should test the stream before publishing the broadcast. However, if you listen to the stream on the same computer that you are using to send the stream, you will end up with an audio loop, as the audio from the stream will be sent from your web browser back through FMLE and back into the stream. You can login to Streaming Wizard from a second device to reach the preview page to test the stream.

Flow Diagram:

```
   Mic IN              Music IN

                                  │
                                  ▼
                        Stereo Mix

                                  │
                                  ▼
                   VB Audio Cables

                                  │
                                  ▼
                        FMLE

                                  │
                                  ▼
                  Broadcast OUT          Headphones OUT
```