

Logitech media server to HQPlayer

Geoff Armstrong

24th November 2017

1 Introduction

Warning! This is a hack!

It's a solution for Windows only that allows output from Logitech Media Server (LMS) to be sent to HQPlayer from Signalyst

LMS supports a very wide range of media sources via plug-ins. My only interest is in the lossless music streaming services:

1. Qobuz
2. Tidal

If you want to try this at home you will need the following:

1. LMS version 7.9.xxx
2. A licensed version of HQPlayer Desktop for Windows
3. A licensed version of J River Media Center
4. Foobar 2000
5. My Powershell Script that allows J River Media Center (JRMCD) to send output of certain file types to HQPlayer for playback

In addition to the above you will need the necessary components within LMS and Foobar2000 to allow LMS to talk to Foobar2000 and JRiver Media Center.

For LMS you will need the UPnP/DLNA bridge plug-in, from Philippe44 and C-3PO from Marco Curti.

Obviously you will also need the necessary LMS plug-in for your Qobuz and/or Tidal streaming services and a valid subscription to those services.

For Foobar2000 you will need the UPnP component installed (foo_upnp).

2 Description

Before you decide to go any further you will probably want to understand a little more about how this works and why I described it as “a hack” in the description above.

My initial attempt at this involved sending the output from LMS to JRiver Media Center . My script would then take over and send the URL generated by LMS to HQPlayer. This worked!. It only worked for one track at a time though. This forced me to always play DJ and manually select the next track I wanted to play in my LMS control point app.

This is because JRMC isn’t playing anything once it’s handed over to HQPlayer. That URL generated by LMS can be thought of as a two way communication device between JRMC (in this case) and LMS. It enables the player (JRMC) and LMS to stay in sync. Track progress will be reflected in the LMS web-interface (or whichever app you use to control LMS) and the player. By using my script to hand that URL to HQPlayer that two way communication is broken. The result, when you look at LMS in the control app, is that LMS seems to just repeat that first track of an album or playlist from the beginning, and never moves to the subsequent track.

Fortunately help is at hand, because LMS is able to send its output to two players at the same time, and keep both of them in sync. So if we request LMS to send it’s output to both Foobar2000 *and* JRMC, it enables LMS to stay in sync with Foobar2000 and JRMC. Because we’ve actually passed the output to HQPlayer, it will also keep HQPlayer in sync.

To achieve this we need to send the output of Foobar2000 to the ASIO Output; “ASIO: JR River Media Center nn” (Where nn is the version number of J River).

JRMC’s output is set to “Null output” as we don’t actually want JRMC to output audio to any real audio device.

As convoluted as this is, it does work! There are a couple of caveats though.

2.1 Mind that Gap !

Unfortunately this is not gapless. In fact we have to turn off the options in UPnP/DLNA bridge and elsewhere, that attempt to provide gapless playback.

It can be close to gapless, depending on a number of factors which I’ll describe in more detail below. One of the main attractions to me for putting this together was the introduction of the Qobuz Sublime+ subscription. This is their top and most expensive subscription plan. It offers streaming at 96khz/24 bit and 192khz/24bit where files are available at those higher resolutions in their library. That and the recent addition of the full ECM library for streaming, was enough of a temptation for me to upgrade from Sublime to Sublime +, last week. If you are going to stream from Qobuz at these high resolutions though, you will probably need to turn on “Full Buffering” in the UPnP/DLNA bridge LMS plug-in. With the url for each stream being fully buffered by LMS you

will probably have to wait longer than the intended gap between tracks on an album for each subsequent track to load.

Of course in a live concert setting, such as a classical concert, the musicians take a pause between movements of a symphony to tune their instruments; etc. and for the audience to cough. Studio albums though, particularly concept albums, have supposedly been put together with the exact gap between tracks being artfully chosen by the producer. So it's a shame we can't fully respect the correct size of the gap.

For playlists which are a collection of tracks taken from a variety of albums, this is obviously less of a problem.

2.2 Minimum sample rate for auto track loading

This is a more troublesome problem and one that I've only managed to solve with some compromise. Having got LMS, Foobar2000 and HQPlayer all in sync, I then found the following problem:

- I would start playback in LMS from the first track of an album
- That track would play and LMS would stay in sync with all three players.
- When it came time for the next track to be loaded, sometimes it would work; but at other times Foobar2000 would get out of sync with the other two, and not send it's output to JRMC.

So when the above problem occurred, if we started playing from the first track of an album, that track would play, then the next track would also play through HQPlayer; but now Foobar and JRMC weren't playing along, so LMS lost sync. Once that happened no further tracks would be loaded. Until you played DJ and hit the "next track" button on your control point. That is obviously not what we desire here.

I realised that the times when it would work were when the original sample rate of the stream was at least 96khz. Depending on the speed of your network it may only work if the original sample rate is 192khz.

So this puts us in the ridiculous situation where for playback to progress as desired through an entire album automatically, we're better off with a slower network. If your network is very fast you may find even 192khz is not enough.

In a location with a slow satellite internet connection, playback would progress through an album of 44.1khz material automatically. That depended on how cloudy the sky was though. On a clear day, it would only progress through a 96khz album automatically. So it will take some trial and error if you want to try and get this working at home. If your network is so fast that even 192khz doesn't slow it down enough, then there's nothing I can do to help you. Perhaps you'll need to get out that dusty old modem!

Here at Sound Galleries I have a reasonably fast broadband connection. So I can only play through albums of 192khz streams.

Rather than restrict myself to 192khz streams though, there is more help at hand in the form of the C-3PO plug-in for LMS from Marco Curti. Thanks Marco!

With this we can up-sample all content from Qobuz and Tidal to the desired sample rate that will allow automatic progress through albums and playlists.

It's a bit of a compromise, because the idea of using HQPlayer is, of course, that we prefer HQPlayer's approach to up-sampling over any other. I'm a pragmatist though. If it works use it!

So you'll need to experiment to determine if you need to take it up to 96 or 192khz before sending to Foobar2000, JRMC and HQPlayer to create enough of a delay with full buffering to keep all three players in sync.

3 Configuring the software

After all that, if you still wish to give this a try, this section will describe the software configuration.

This solution was tested on Windows 10 using LMS 7.9.xxx with the latest MC23 64 bit version of JRMC, Foobar 1.3.11 with the foo-upnp plug-in version 0.99.49. HQPlayer Desktop version 3.18.

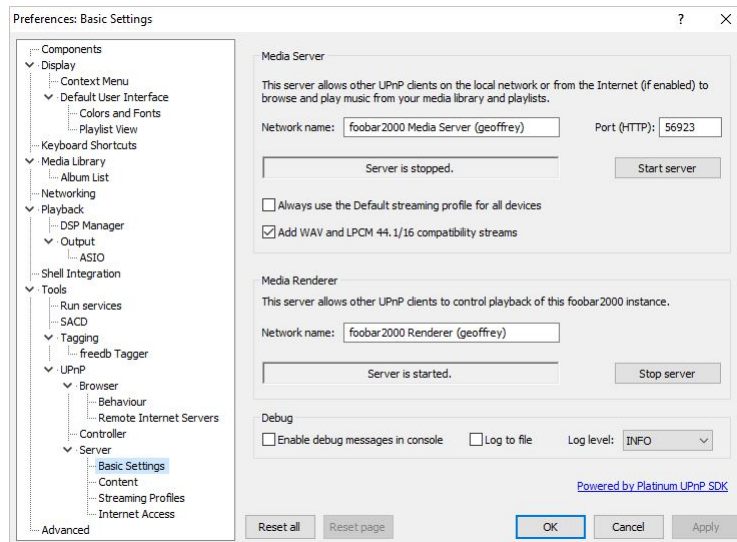
My Powershell script to send JRMC output to HQPlayer version 1.06. Please see the separate guide within the fill package available [here](#)

3.1 LMS

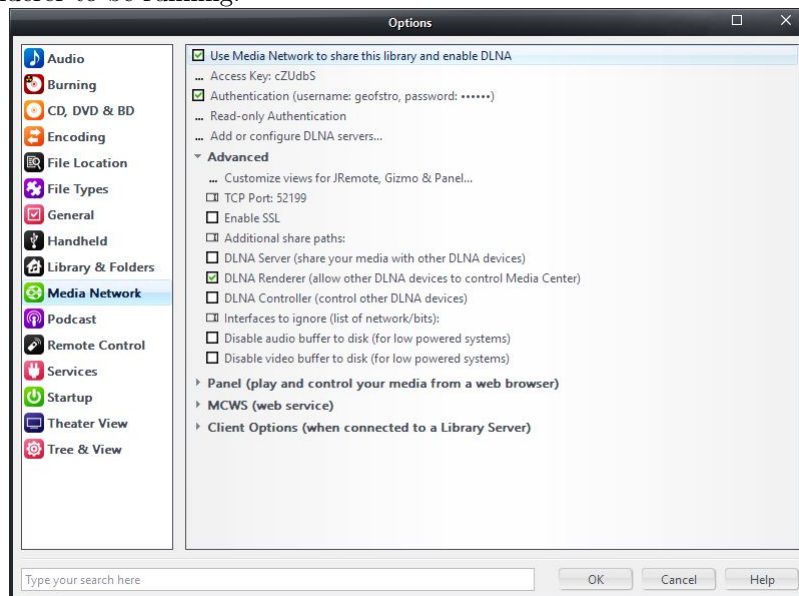
Using your web interface to LMS version 7.9, go to the plug-ins page and install the UPnP/DLNA bridge plug-in from the 3rd party plug-ins section. Restart LMS when prompted and activate this plug-in.

Launch Foobar2000 and JRMC on Windows if they are not already running.

Ensure the foo_upnp plug in is installed in Foobar2000 and that the renderer server is started. We don't need the upnp server to be running for our purposes.



Similarly within JRMC ensure DLNA is enabled. Again we only need the renderer to be running.



I'm assuming anyone who's reading this is familiar with how to carry out the above in Foobar2000 and JRMC.

Now back to the UPnP/DLNA bridge plug-in page in the LMS web interface, you should find both JRMC and Foobar2000 as listed players at the bottom left hand corner.

Before you change anything here you should make sure the UPnP/DLNA bridge is not running.

If necessary deselect the check box next to “Running” towards the top of the page and click on the apply button at the bottom right hand corner.

Changes have been saved.

Start the Bridge ☐ Running (squeeze2upnp-win.exe) [View User Guide](#) **It is HIGHLY recommended to stop the bridge before changing parameter**

Extra command line options

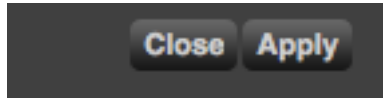
Additional debugging

Logging options ☐ Enable [View](#) Max size (MB) ☐ Erase at start [Clean](#)

Configuration file [View](#) ☒ Autosave [Generate](#) [Erase](#)

UPnP device scanning options ☐ Scan for UPnP devices every (s) during (s)

Network socket to use ☐ Use LMS' network interface



Now we can move from the [common parameters] section in the second half of the UPnP/DLNA bridge plug-in page to set specific parameters for JRMC.

[An EMPTY parameter value means that \[common parameters\] is used](#)

Apply pre-defined player profile ☐ Apply [Fetch](#) from <http://sourceforge.net/projects/lms-1>

Player information MAC address ☐ Delete

HTTP connection mode

Gapless options Min gap

Pause/Resume management Accept byte seek

Audio file buffers Max Size Pacing size

Audio codec parameters [Supported codecs](#) Max Sample Rate FLAC header
Uncompressed format Match byte order 24 bits PCM

Player discovery options Player is enabled but removed after UPnP failed scans

Player volume management [LMS volume changes](#) Feedback to LMS

Send LMS metadata to player Include cover art Send ICY metadata

List of players currently in configuration file - Note that more devices might have been discovered

<input checked="" type="checkbox"/> JRiver Media Center	bb:bb:3a:f1:2d:cd	uuid:a12f1b2f-7b74-4517-a5dc-4a0203cda5f4	soundgalspro
<input checked="" type="checkbox"/> foobar2000	cc:cc:01:13:6c:f9	uuid:18616bec-a75c-44c7-f699-58cf117ab8f7	foobar2000 Renderer (geoffrey) [SOUNDGALSPRO]

The name “JRiver Media Center” is set here. So if you don’t like the name it’s appearing as in the list, you can set it here under “Player Information”.

The other important settings are as follows:

1. HTTP connection mode:

Finally we need to place the check mark in that check box next to “Running” and click/tap on the “Apply Button” again.

Changes have been saved.

Start the Bridge	<input checked="" type="checkbox"/> Running (squeeze2upnp-win.exe) View User Guide It is HIGHLY recommended to stop the bridge before changing parameters
Extra command line options	<input type="text"/>
Additional debugging	<input type="text" value="None"/>
Logging options	<input type="checkbox"/> Enable View Max size (MB) <input type="text" value="-1"/> <input type="checkbox"/> Erase at start <input type="button" value="Clean"/>
Configuration file	<input type="text" value="C:\ProgramData\Squeezebox\prefs\upnpbridge.xml"/> <input type="button" value="View"/> <input checked="" type="checkbox"/> Autosave <input type="button" value="Generate"/> <input type="button" value="Erase"/>
UPnP device scanning options	<input type="text" value="Scan for UPnP devices every 30 (s) during 15 (s)"/>
Network socket to use	<input type="text" value="?"/> <input type="checkbox"/> Use LMS' network interface

As explained under section 2.2 you will probably have to use Marco Curti’s C-3PO plug-in to upsample Qobuz, Tidal and other lossless sources to at least 96khz to ensure automatic progress through an album or playlist.

As with UPnP/DLNA bridge you need to install C-3PO as a 3rd party plug-in, restart LMS when prompted and activate the plug in.

Then go to LMS settings, Advanced and select the plug-in general page from the drop down menu at the left.

The general page for C-3PO should look as follows:

STATUS WARNING

Squeezelite version is non R2, assuming is compliant. See players.
The SOX version in use does not handle DSD formats. See instructions here: www.audiogigale.eu.

GENERAL SETTINGS

Input formats
☒ AIFF ☒ Apple Lossless ☐ DFF ☐ DSF ☒ FLAC ☒ WAV

Default Enable C-3PO for new players ☒

HELPER APPLICATIONS

- SOX C:\PROGRA~2\SQUEEZ~1\server\Bin\MSWin32-x86-multi-thread\sox.exe

-- Version 140300 NOT dsd capable

-- Multithread ☐

-- Buffer size

Now click/tap on the “Player” tab in settings and select the “J River Media Center” player.

Choose “C-3PO” transcoding helper from the right most drop down menu.

SETTINGS
FILE TYPE TRANSCODING TABLE
RESULTING COMMANDS
LAST EXECUTED COMMAND

Enable C-3PO for this player.

i
☒

STATUS

i
WARNING
StdIn (es. Qobuz) enabled, will resample at the max allowed sample rate.

PLAYER CAPABILITIES

Max PCM sample rate

i
192000

Input formats

i
flc

TRANSCODER SETTINGS

Function / Input format

i

	AIFF	Apple Lossless	FLAC	WAV
Enable seek (cue sheet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Enable 'stdin' (i.e. Qobuz)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Convert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Resample	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Additional Effects	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Manual gain reduction (in dB)

i
0

Automatic headroom

i
☒

CONVERT

Output format

i
flac (not compressed)

In the “Resample” section the maximum sample rate you place a check box next to will be the sample rate that the source stream will be up-sampled too.

So if you don’t want/need to up-sample beyond 96000, for example, then leave the sample rates above that unchecked.

RESAMPLE

Output sample rates (PCM)

<input type="checkbox"/> 8000	<input type="checkbox"/> 16000	<input type="checkbox"/> 24000	<input type="checkbox"/> 32000	
<input checked="" type="checkbox"/> 44100	<input checked="" type="checkbox"/> 88200	<input checked="" type="checkbox"/> 176400	<input type="checkbox"/> 352800	<input type="checkbox"/> 705600
<input checked="" type="checkbox"/> 48000	<input checked="" type="checkbox"/> 96000	<input checked="" type="checkbox"/> 192000	<input type="checkbox"/> 384000	<input type="checkbox"/> 768000

Target sample rate is

Quality

Phase response

Aliasing above the pass-band

☐

Minimal band-width

ADDITIONAL EFFECTS

When

Loudness: gain (in dB)

Loudness: reference (in dB)

Left channel volume (%)

Right channel volume (%)

Flip channels

☐

Additional effects BEFORE resampling

Additional effects AFTER resampling

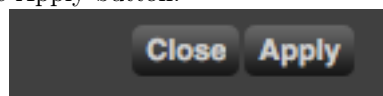
DITHERING

Output Bit-depth

Dithering

Repeat the above for the second player Foobar2000.

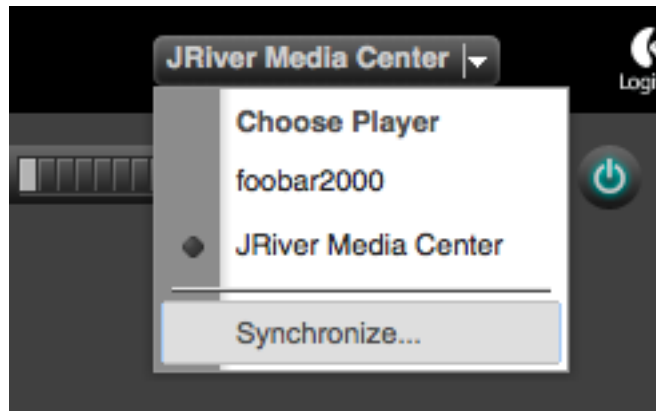
Once both players are correctly set up for up-sampling by C-3PO click/tap the Apply button.



The last thing we need to do is to make sure LMS sends its output to both JRMC and Foobar2000 and that both these players are kept in sync.

In the main Logitech Media Server web interface, select the drop down menu showing the currently selected player on the top right hand side.

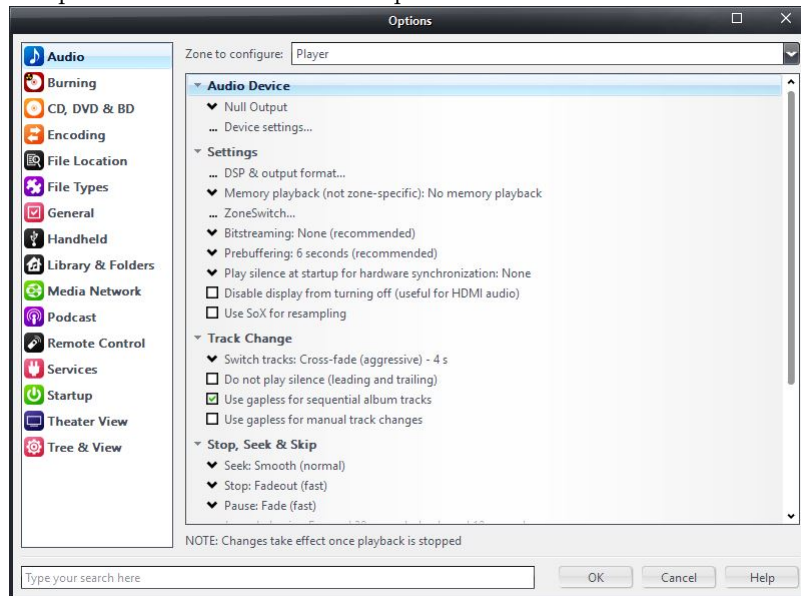
!IMPORTANT! the active player should be "J River Media Center" or whatever name you've given to JRMC in the UPnP/DLNA bridge plug-in.



With the Synchronise box open select the Radio button next to the name of the two player you wish to synchronise (J River Media Center, Foobar2000) and click/tap on the Synchronise button.

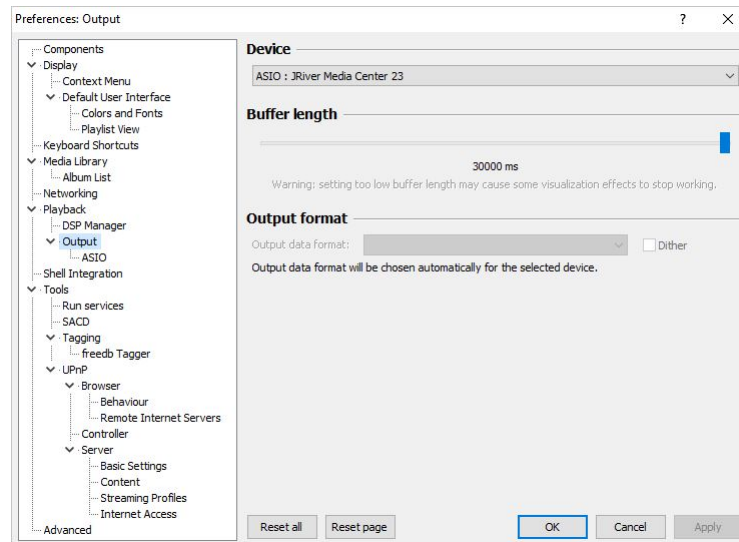
3.2 JRMC

Go to options -> Audio and set the parameters as shown:



3.3 Foobar2000

Go to File -> Preferences and set the Output as shown:



4 Set up my J River front end to HQPlayer

If you haven't already installed and set up my J River to HQPlayer front end in accordance with the supplied .pdf guide, do so now.

Launch HQPlayer and you should be good to go.

5 Conclusion

This is obviously not an ideal solution; but it does work for me as described. I hope with the help of this guide and the software described you'll also be able to get it up and running. The ideal solution for LMS, I believe is if we could find a way to send output from LMS directly to HQPlayer.