

## What is this document for?

When I started using [qjackctl](#) I couldn't understand the difference between the patchbay and the connections window. They both seemed to show the same information and the patchbay was not very useful. Now, thanks to various hints on the [linuxaudio mailing list](#), I think I understand how it should work and how useful it could really be. This document is my attempt to share that understanding with those in the same position as I was.

It is not an explanation of how to setup [jack](#), [qjackctl](#) or any other tools and assumes that you can already do that but I hope it will be useful to somebody nevertheless.

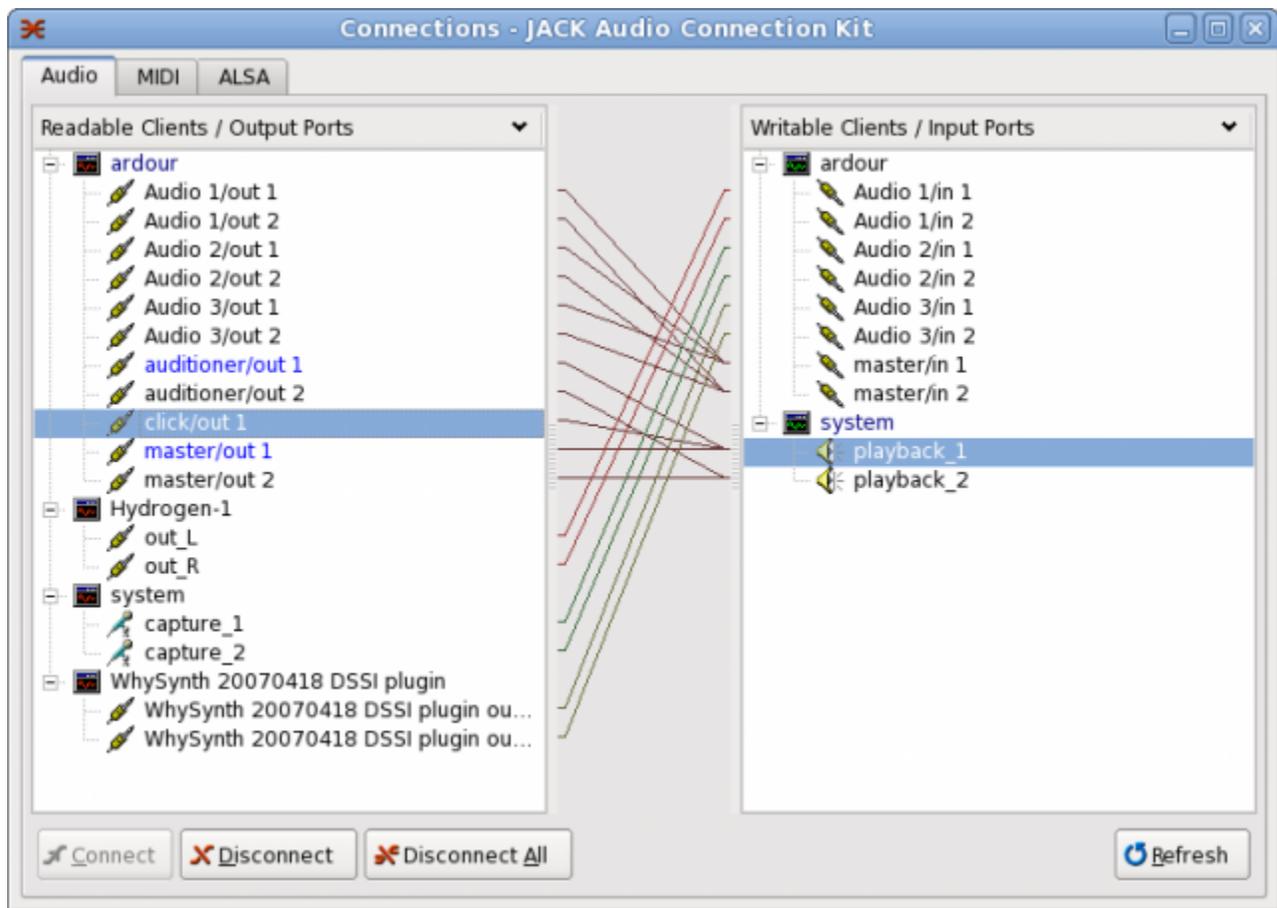
## What is the patchbay for?

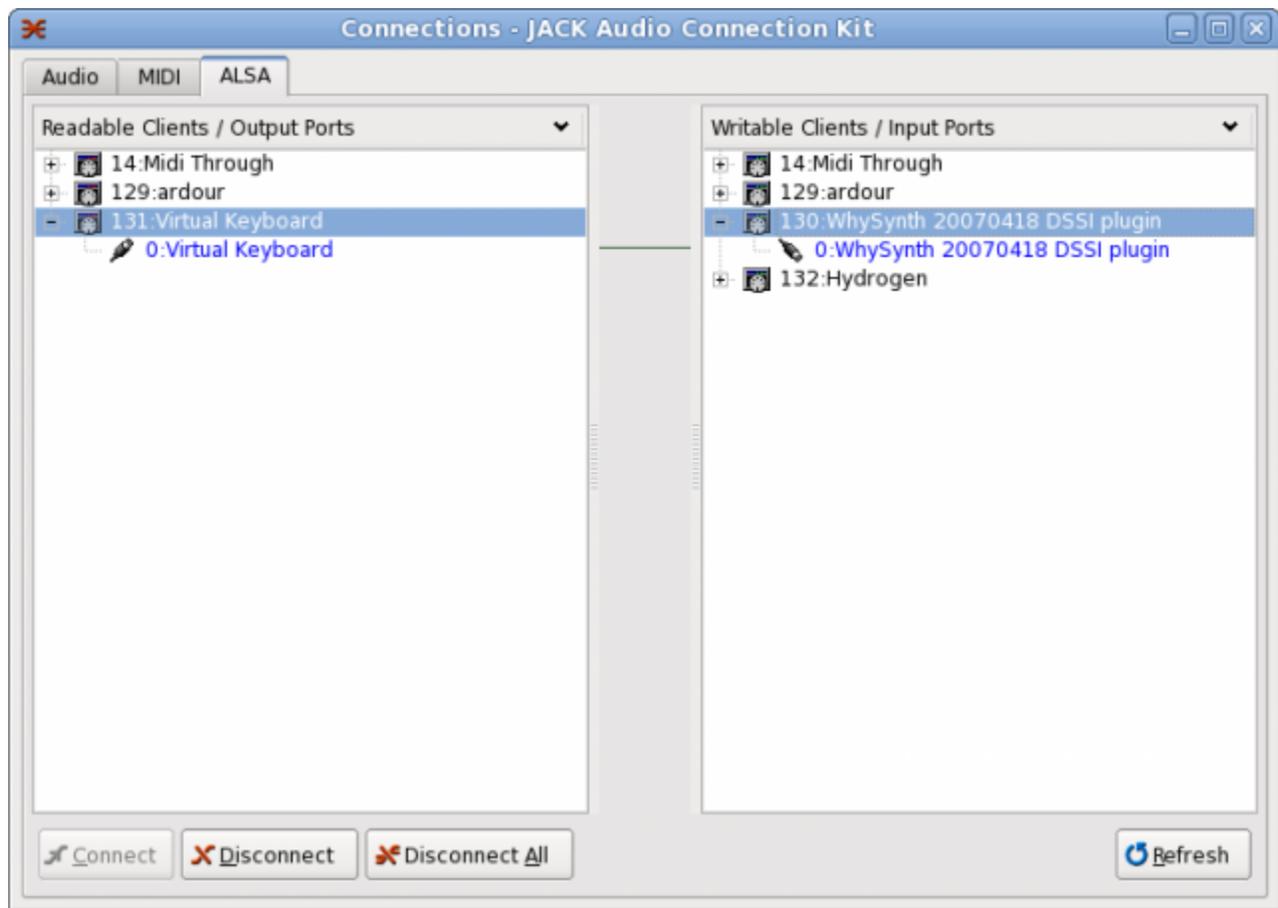
When it is setup correctly, the patchbay provides automatic connection setup for [jack](#)-aware applications, maintains connections persistently through application stops (or crashes) and restarts, and allows for easy switching between different setups (eg from one instrument setup to another between songs in a live performance).

## What shall we do today?

Since I am far too shy to stand up and perform live in front of an audience, I will attempt to describe how to use the patchbay to implement a simple studio rig which I can use to record drums, keyboard track and a single vocal.

I will use [ardour](#), [hydrogen](#) and [whysynth](#) as the tools to be connected. Since I am writing this away from my studio, I will use [vkeybd](#) to stand in for my real midi controller keyboard. The final [jack](#) connection setup which we are aiming for is shown in the images below.

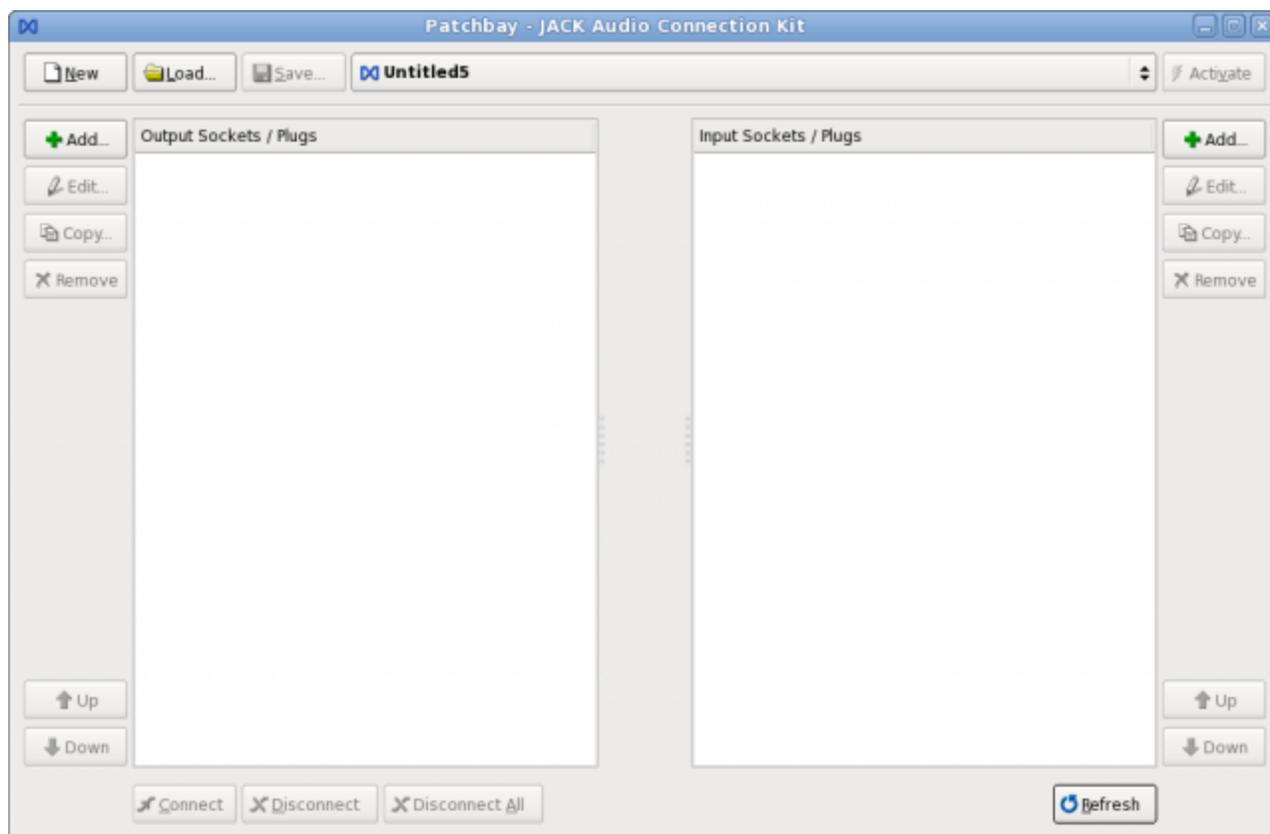




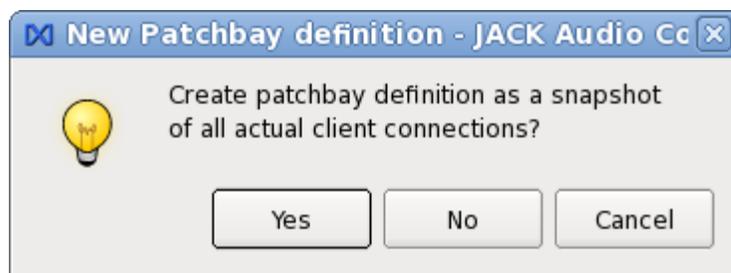
## How do we do it?

1. Start all your applications
  - [qjackctl](#) (and then start [jackd](#))
  - [ardour](#)
  - [hydrogen](#)
  - [whysynth](#)
  - [vkeybd](#)
2. Disconnect all audio in qjackctl Connections windows
3. Disconnect all midi in qjackctl Connections windows
4. Open the Patchbay





At this point, if this is your first set of patchbay connections, the system is ready for us to start adding plug definitions. However, when you have finished and wish to create another patchbay definition for the next song/overdub/band in your studio, you will need to click on the "New" button. This is where all my confusion and problems started because I assumed that you needed to start by clicking "New" so I will explain what not to do. When you see the dialog box which asks if you wish to take a snapshot:



do **NOT** click "Yes". This will give you one plug per application which will almost certainly not do what you want if you connect them. Either click "No" to get an empty patchbay, or "Cancel" to give up and do something else instead.

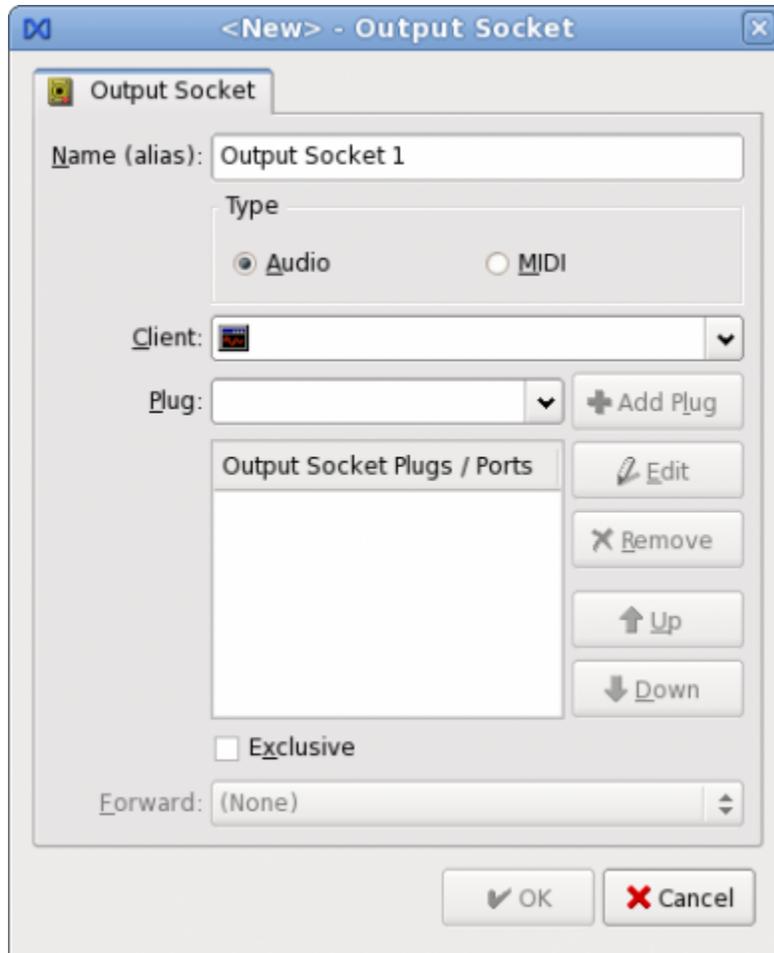
Assuming you didn't give up, you now have an empty patchbay, split into Input and Output sections. This is where we start the real, interesting part. It can be a bit tedious but we should only have to do this once so it is worth persevering and getting it right.

What I want for my setup is to have one socket for each end of each connection I want to be able to make. These sockets will be mostly stereo (ie with two plugs in qjackctl terminology) or mono ( ie one plug). There is no need to restrict yourself however and you could connect as many plugs to each

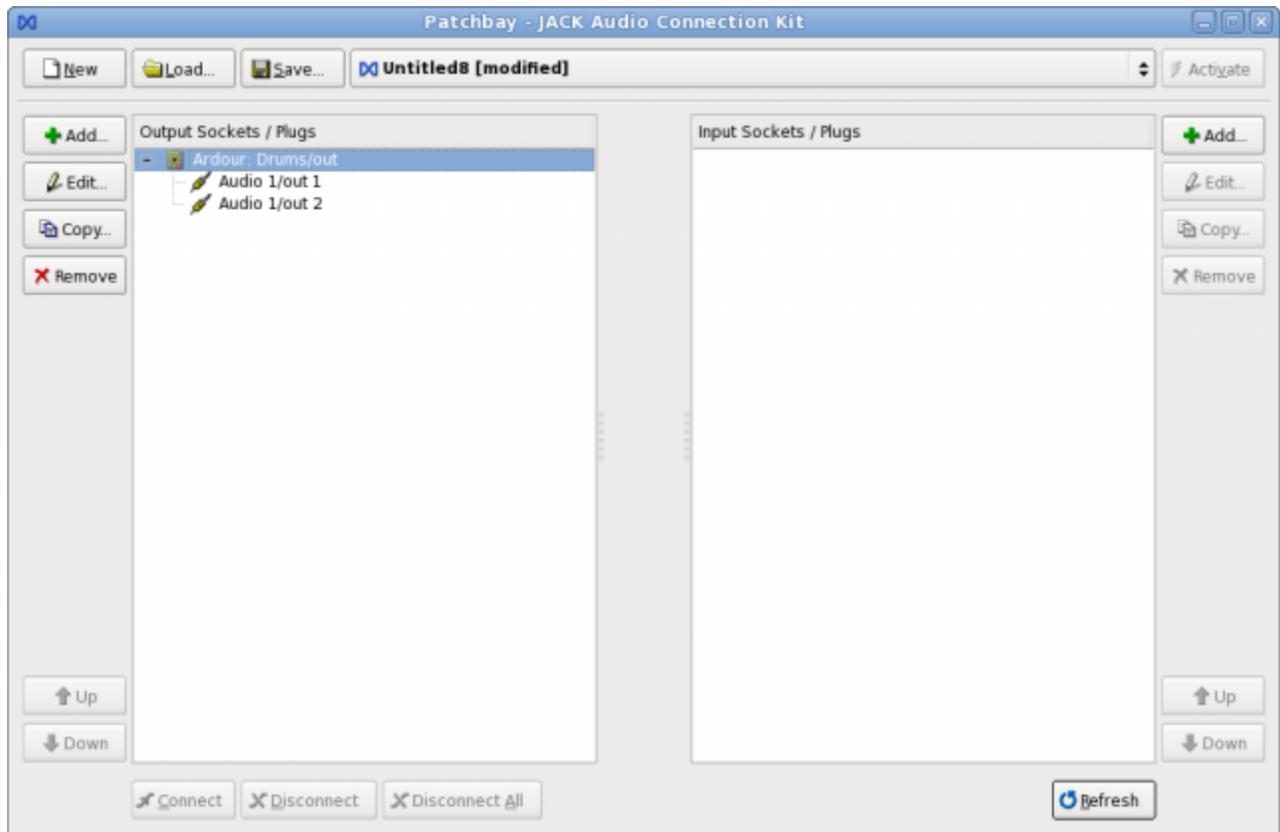
socket as you wish (caveat - I don't actually know if there is a limit or what it is but it's more than is likely to be needed in any manageable audio setup).

## What now?

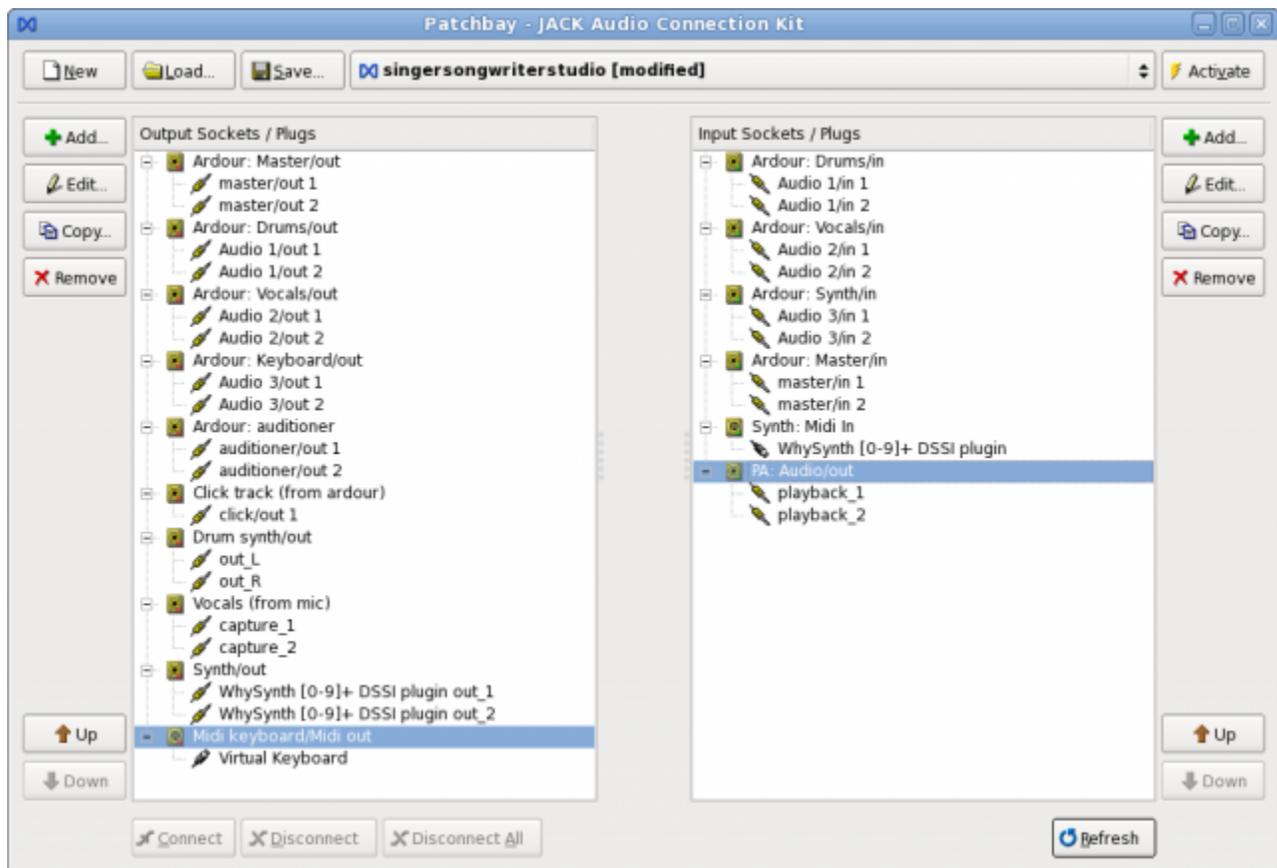
On each side of the patchbay window, you will see a button labelled "Add". Click one of them and you will see the window below. It is best to be methodical about this stage. I tend to add all output sockets and then all input sockets but you may prefer to setup all sockets for a single application and then move on to the next. Just do what works for you but try to be consistent.



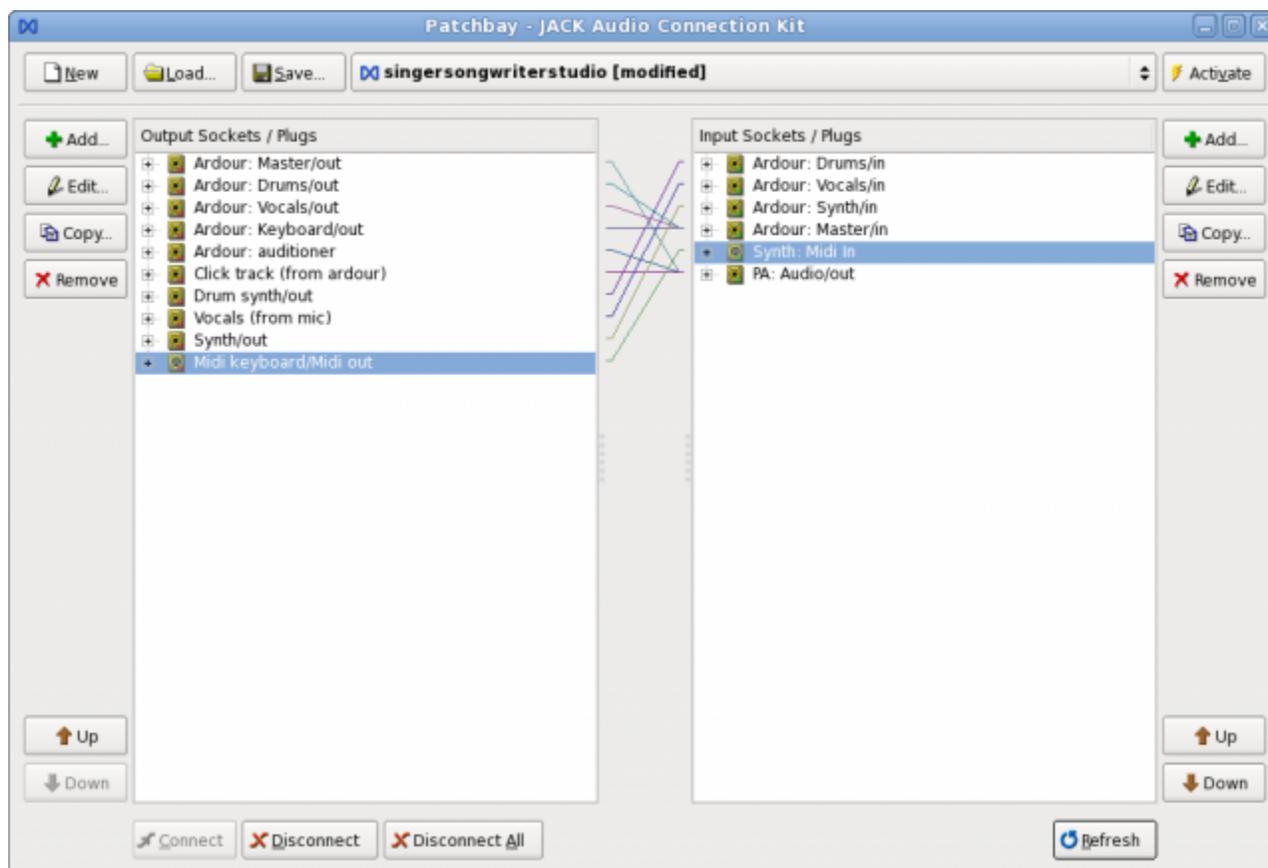
Now select Audio or Midi using the radio buttons, select your client from the drop down list, then select the plugs you want to add and click "Add Plug". Finally, give the socket a name that will mean something to you when you come to use the patchbay later on. If it's a general purpose patchbay, you might want to use something like "ardour: Audio 1/out" for example. If the patch bay is for a specific task however, as this one is, then you might want to give it a more user-friendly name eg "Ardour: Drum track/out". The name can be anything you want it to be. Use "exclusive" and/or "forward" on the socket if you wish. Finally, click "OK" and your patchbay should look like this:



Now repeat this process for each input and output socket you wish to create until you have something like this:



Now we can make the connections that we need. Simply select an input socket and an output socket and click the Connect button to connect them together. Repeat until all connections are made and your patchbay looks something like this:



Now, save the patchbay definition, give a memorable name, and click the activate button.

When you have done all this, go back to the qjackctl connections window and we should see all the applications connected as we have specified. To test the patchbay, click "Disconnect All" in the connections window and watch all the connections disappear and then automatically reappear.

## What does the patchbay NOT do?

The patchbay does **not** disconnect audio or midi connections. If you disconnect one, or all, sockets in the patchbay, all the audio and midi connections will still be there. The audio/midi connections will still automatically reappear if you disconnect them until you *save* the (now disconnected) patchbay and subsequently disconnect the audio/midi connection in the connection window.

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