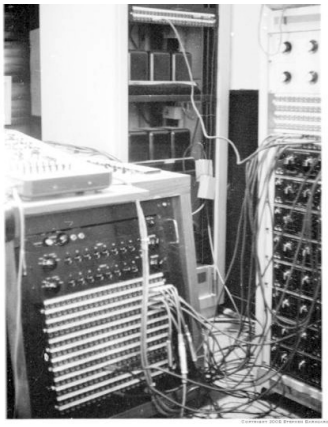
Lab 5: An Intro to Aux Inputs, Sends, & Returns

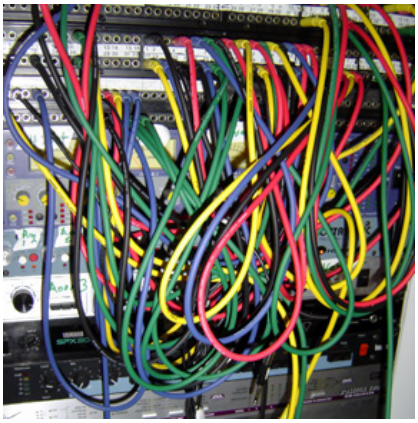
3 March 2015

(or: Get On the Bus!)

So far, our tracks have been assigned directly to our hardware outputs, with each track controlling its own level & eq. But as our sessions become more complex, it can help to use **submasters**, **sends** and **returns**. To do this, we need to use **bussing** -- a type of virtual wiring -- to connect tracks and insets.

Once upon a time, all audio equipment was connected together with special wires called **patch cords** that plugged into panels called **patch bays**. The patch bays were connected to all the equipment in a studio. You could connect any two pieces of gear from one location Here are some vintage pictures of how this worked:





It's much easier now, because all of this "patching" is done inside of the computer. But this sometimes makes it more confusing, since we can't see our virtual "patch cords".

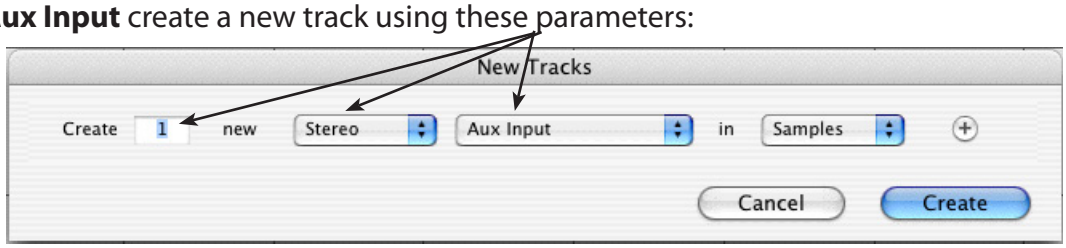
AUX Input tracks

Auxiliary Input tracks provide the same signal routing options as audio tracks, except that their inputs must come from an internal bus or hardware input. No audio clips can be dropped onto an **Aux Input**.
By **bussing** from **Audio Tracks** to an **Aux Input**, you can:

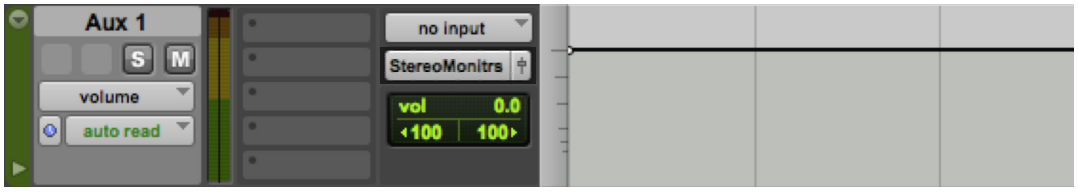
-Apply one or more plug-in to multiple Audio Tracks.
-Control the volume & panning of any group of tracks using a single fader.

- Copy the session called ***Oye Como Va*** from the server to a local drive
- Open the session. It has 11 music tracks (2 stereo, 9 mono). The tracks have been sorted into 4 color-coded groups by type of instrument. It will be easier to control all these tracks and apply plug-ins if we create **submasters** using Aux Input tracks. Let's start with the five drum tracks:

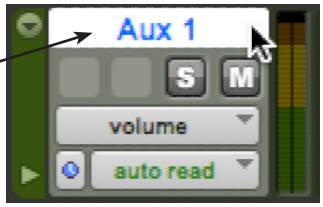
To create an **Aux Input** create a new track using these parameters:

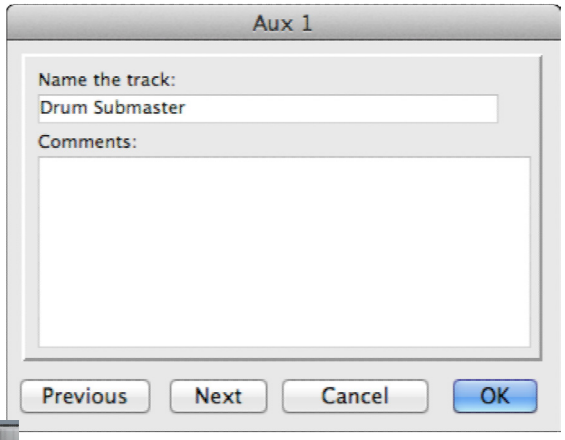


This is what the Aux Input will look like (note that it defaults to *Volume* -- there is no *waveform* selection):

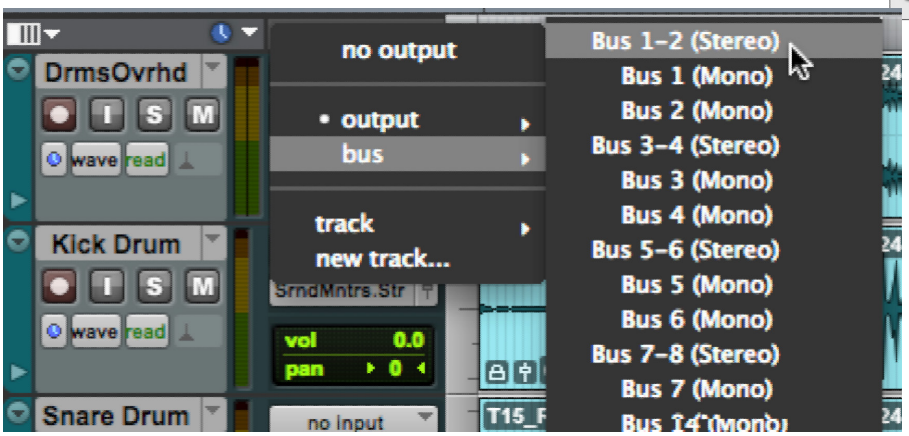


Rename the Aux Input by double-clicking on its name, and entering **Drum Submaster**.



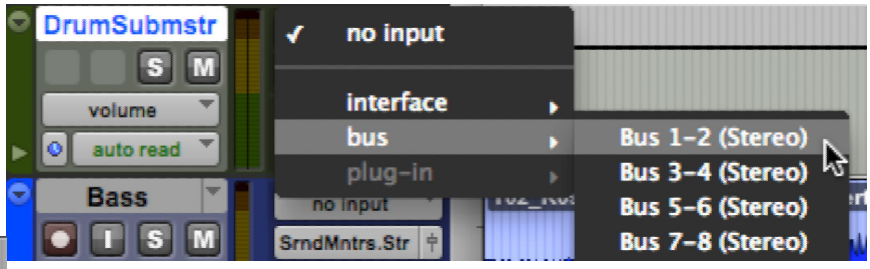


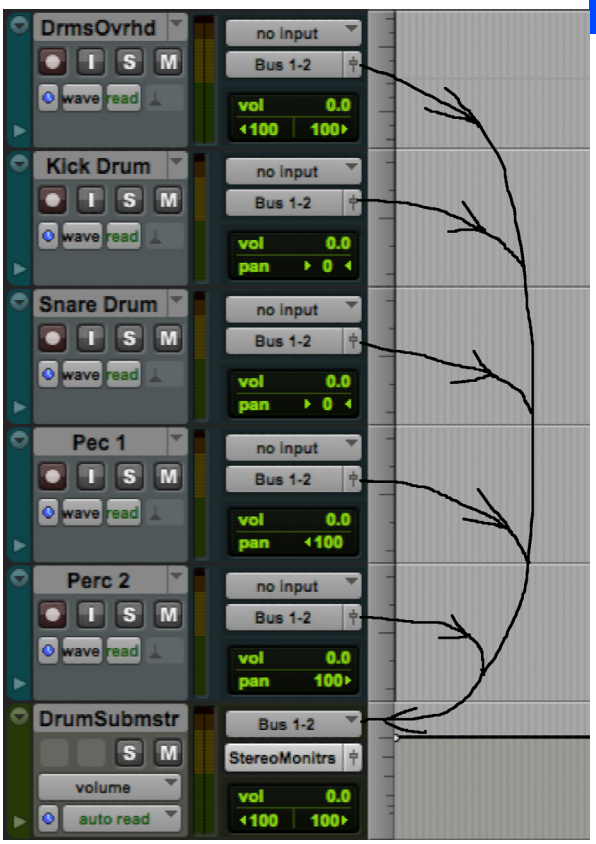
Now **Cmd-Click** on the **solo** button of the track. This will keep the submaster from muting when you solo other tracks.



To route audio from an Audio track to the new Aux Input, change the *output* path of the Audio Track from the default hardware output to a **Bus**. A Bus can be thought of as a virtual digital patch cable. SInce this is a stereo mix, select bus pair **Bus 1-2** for your output. Repeat for each of the other four drum tracks.

Now set the **input** of your submaster to **Bus 1-2**. It's now receiving the other end of your virtual digital patchcords.





These fancy computer-generated arrows show our signal path.

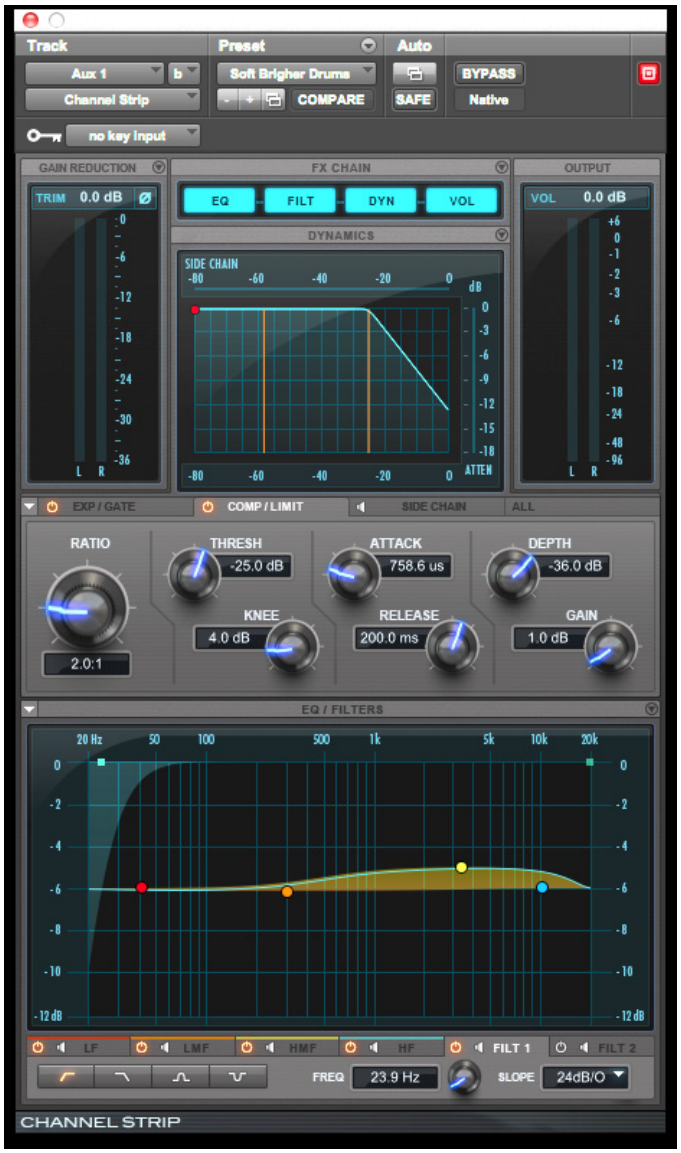
Multiple Audio Tracks can be **Bussed** into one Aux Input allowing you to apply a single plug-in to these tracks and control the volume and panning of the tracks simultaneously.

You'll notice that we're using stereo (paired) Aux Inputs as well as stereo Buses. This is highly recommended, even when using mono Audio Tracks, because panning automation is only available when a mono Audio Track is Bused to a stereo Aux Input.

Now repeat this bussing with the three vocal tracks. Create an **Aux Input**, assign the vocal tracks *outputs* to **Bus 3-4** (1 & 2 are already in use!), and the Aux *input* to **Bus 3-4**.

Now your track ins & track outs should look like the picture on the left.

Try putting a **Channel Strip** on both of the two submaster tracks. Use the presets (under the **Factory Default** button) to pick appropriate settings for EQ & compression. (You may need to turn down the **Gain** of the plug-ins, or make other adjustments. If it sounds right, it is right.)



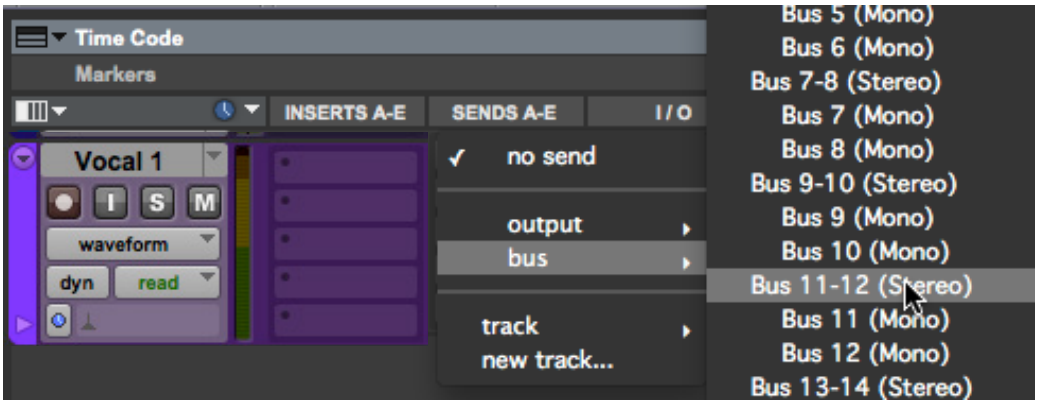
(This is the preset for *Soft Brighter Drums*.)

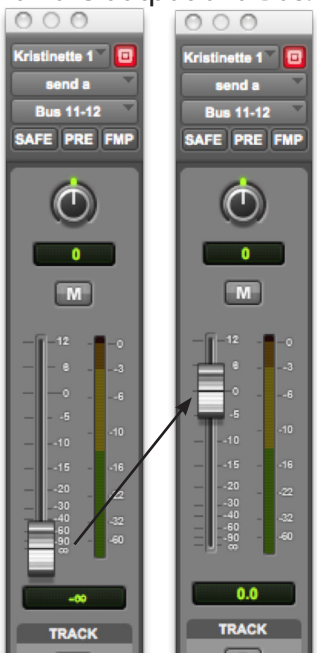
SENDS

Sends are a feature that allow you to *split* your audio to paths other than the main track output. Their level and panning can be automated. They can be assigned to hardware outputs or bus paths. You can also have multiple sends coming from a single Audio or Aux Track. They are commonly used for sub-mixes, and for sending audio to reverbs or other effects.

Our three vocalists' voices sound awfully naked. They could use some **reverb** to smooth them out. We'll put a **Send** on each vocal track, then make a new **Aux Input** track for our reverb

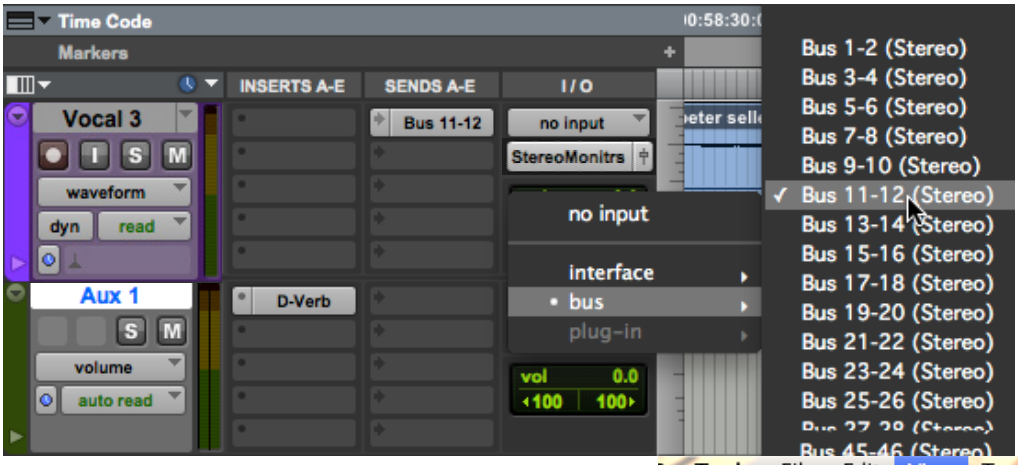
Click on the top button in the Sends column to choose a send. You can choose a hardware output or a Bus. In this example, we'll use **Bus 11 & 12** to route a mono signal to a stereo Aux Track.





From this, *to this.*

You'll notice that a fader will automatically appear for that Send.
You'll have to turn up the volume level of that Send in order for sound to reach its destination:

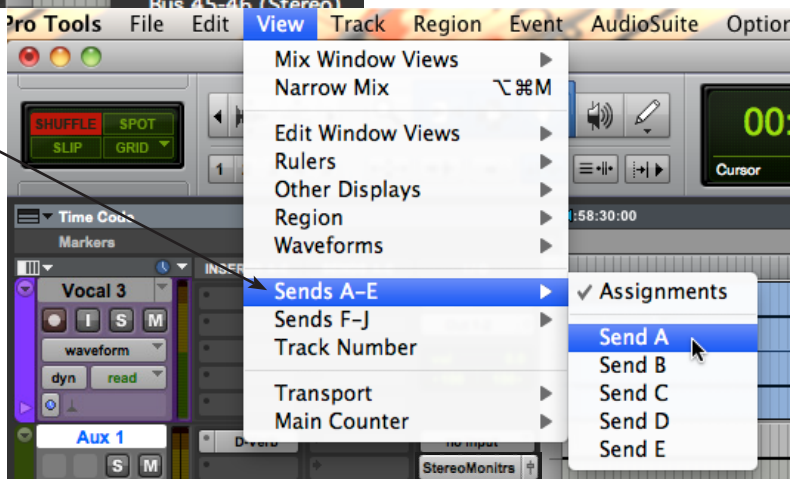


Now we can create an Aux Track, and put a reverb on it. Set its input to **Bus 11 & 12**.

To adjust the send volume more easily, you can go to the **View** Window, **Sends A-E**, and select **Send A**. This will display the Send's controls in the Pro Tools window

Before

After



Now when you play you should see (and hear) something like what's below.

- The Audio Tracks are playing normally.
- The Aux track is adding reverb.
- The amount of reverb is determined by the Send's volume control.

(Be sure your reverb is set all the way to **Wet** -- all effect.) This track setup gives you more control over the ratio of *direct* to *reverberated* sound. It also allows you to use one reverb for several tracks.

Adjust everything so that it sounds perfect.

Then save it to the server.