ROUTING, BUSSES & GROUPS

MIX/SUMMING BUSSES & AUXILIARIES

We can also make a sub mix, or auxiliary channel by creating an audio track and routing multiple tracks to its input. This can then act as a group, and gives us control over volume, panning, solo and mute functions.

When we use an audio track for this, we should set our monitoring to IN. This will ensure that we always listen to the track regardless of if the track is armed or not. In auto mode, we must 'record enable' the track to hear it's input.

BUSSES

This may be slightly confusing, but it's important to understand that a bus is often used in the wrong context. It isn't actually a destination for audio, it's actually the transport of how the signal gets there.

A good way of thinking of a mix bus is to think of it as a cable, or a flow of signal. This signal can be sent to wherever you want, by selecting a routing option in Ableton, or in hardware by using a patch cable. For example: we could send a backing vocal track down a mix bus to a new auxiliary track. We may also be sending other backing vocals to this same new auxiliary track, which some people may refer to as a mix bus or group.

GROUPS

A more simple way of creating a mix bus is by grouping tracks. This is easily done by selecting multiple tracks, then selecting 'group' from the drop-down menu.

These tracks will now be grouped together, and create a main group track, which has the function of folding all of the individual tracks away. This can be useful for making changes in volume to whole groups of sounds such as drums, without ruining the balance between these separate sounds.

Also notice that in the output routing of the individual tracks the output has now changed to GROUP, and from the group it is then

passed on to the master output. This is ideal for keeping your session organized.

We can use groups and mix busses to process signals to glue them together as a whole, as well as control all of the tracks parameters at once. This also aids us later on in the latter phase of the mix-down, so that we are dealing with fewer stems. It's quite common to be dealing with 5 or 6 groups as opposed to 40+ individual tracks towards the final stages of a mix.

Here are some common sub-mixes that would be blended together in the final stage of your mix-down:

- BASS
- DRUM BUS
- MAIN VOCALS
- BACKING VOCALS
- LEAD SYNTHS
- PADS & ATMOSPHERICS
- FX
- LOW-END
- TOPLINE

Anyone who has remixed a track, or is familiar with STEM files will recognize that this is usually the stage that producers will bounce their parts down for remixers. These main elements or sub-mixes are commonly known as stems.

SEND & RETURNS

Finally we have Send & Return Tracks. We can use the send knobs on each track to effectively send a duplicated version of the signal down a pre-routed bus to the relevant return track.

From the return track we can then apply any FX processing we may wish to add. From here, we can also feed this return into another return track or back into itself to create a feedback loop. Be aware of excessive feedback raising the volume and damaging your ears and speakers, this can be prevented with a limiter.

We also have the option to have a pre, or a post-fade send. Usually we will have this set up as a post-fade send, which means that the signal is sent to the return track after the fader. This ensures that the return channels volume stays relative to the track volume, which is perfect when mixing things like reverb, as it ensures we don't mess up our dry/wet balance when we adjust the volume of our track.

If we wish to have more control over the return level, then we can set it to pre-fader, which now means that it will work independently of the track fader. This means that even if the track fader were set to –Inf dBFS, we would still get the full volume through the return track.

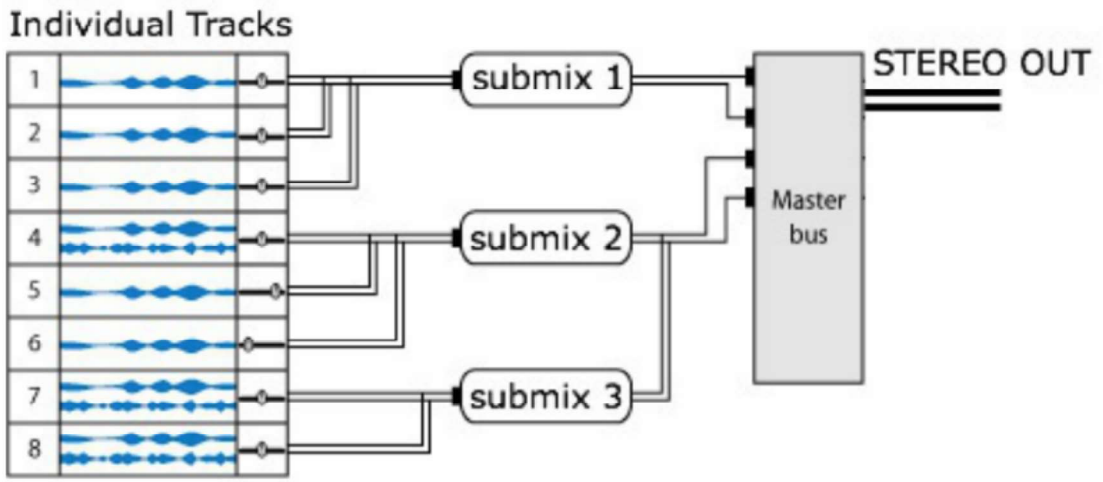
STEREO OUTPUT

The stereo output, also known as the master out or 2 bus, is where all of the tracks will be summed and bounced down, to create our final stereo audio file for playback. This channel can be treated exactly the same as any other channel with FX applied to it.

Remember that the aim of mixing is to take a number of separate tracks and blend them together to a single stereo file for playback. A large part of this is how we mix and distribute these signals, which is why it is so important to understand the different routing capabilities.

Due to the fact that there is no physical cabling within a DAW, it can be hard to get our head around. But if we can grasp the concept of how a patch bay works and why it is needed, then we can also understand exactly how a DAW sends signals to different plugins and routings within the software.

Once we grasp this concept we will have complete control in the studio, allowing us to spread our wings and become more creative in the mixing techniques that we use.



A signal flow diagram of individual tracks, sub-mixes & the stereo output

ROUTING, BUSSES & GROUPS SUMMARY & KEY POINTS

- Signal flow is how the sounds are routed through our mixing desk or DAW to our speakers
- Signal flow involves the use of groups, busses, sends, returns, inputs and outputs
- Monitor modes let us monitor the input of a track in different ways
- IN - constant monitoring
- AUTO - Only when the record/arm is enabled
- OFF - no input monitoring
- We can use inserts for effects, the signal will then go to the next device in the chain
- Send/returns allow us to send a portion of the signal to a return track, which can then be blended back in with the original audio
- Pan-pots can be used to adjust the location of a signal between the left and right channels
- There are different coloured meters in Ableton that show us the peak and RMS values of a signal
- We can use the output section of a track to send its audio to anywhere within a DAW or to an external soundcard
- Busses can be thought of as routes, which allow us to tap off the audio at any given point.
- Groups are a useful way of keeping sets of tracks together and applying effects and level/panning changes to all of them at once
- Devices on return tracks should be set to 100% wet
- We can set send/return track to pre or post-fader

FINAL SUMMARY

In this first eBook in our 'zero to hero' mix series, we have covered the fundamentals of sound and waves. This ensures that the groundwork is laid down to build on with subsequent techniques and concepts explained in later books.

We have also covered the different issues with setting up a studio space. Including an in-depth look at different monitors and how we should set them up correctly whilst keeping any acoustic interferences or issues, such as standing waves to a minimum.

We have also looked at how we can listen critically and analyse a track in fine detail. This is useful for when we are looking at reference tracks, or deciding which approach to take when mixing someone else's track.

We have also covered psychoacoustics, and how we can use them to our advantage when mixing, as well as how they can be a problem when we are monitoring our tracks. (Such as Fletcher Munson curves.)

We have built a mix-preparation checklist that we can work through to ensure that our track is at a stage where it is ready to be mixed down. We have also taken a look at how to implement gain staging throughout a mix, to ensure that we are not running hot signals into any devices, as well as ensuring that there is no clipping above 0dBfs on the master.

Finally we have looked at all of the functions within the Ableton live mixer, as well as how we can route signals around Live for different tasks.

This first book seems like it's a lot of disparate information to take in, however it's important for forming the fundamental knowledge of sound, which we can build on in later books. Understanding these concepts at this stage will vastly improve the quality of our mix-downs.

The main points to take away from this book are:
Make sure that our composition is finalized before entering the mix-down stage.

Ensure to carry out all of our mix preparation correctly, although it may be boring and tempting to cut corners, good preparation and