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Gain Staging in Logic Pro X

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6 steps to properly gain stage

And best practices

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What is Gain Staging?

01

Level management

Gain staging is the management of audio levels through a signal chain.

02

Signal-to-noise

It comes from the analogue days where it was essential to get a good signal-to-noise ratio whilst preventing clipping distortion. More info on that.

03

Plugins

It's less important when working in a DAW, but it's still very good practice especially if the plug-ins you use model the properties of analogue gear.



Activate Pre-Fader Metering

01

What is it?

Using pre-fader metering in Logic Pro X is essential to practice gain staging.

With pre-fader metering on, the levels indicated in Logic's mixer are pre-fader, meaning the levels are what they were before being adjusted by the fader.

02

Why use it?

If we remain in post-fader mode (default), we may be unaware of how hot those levels were before the fader adjusted them.

For example, if the level shows -10 dBFS, but our fader is at -10dB, that means the level before fader is at 0dBFS, which could be giving the plugins we use on that channel a very hard time.

03

How to use it

Here is an Apple tutorial on how to set up pre-fader metering

<https://support.apple.com/en-gb/guide/logicpro/lgcpe21609ef/mac>



Gain Staging Software Instruments

01

Synth volume dial

Like most things in audio, it's best to fix the issue at source. As early in the signal flow as possible.

When it comes to software instrument tracks, I advise using the volume control of the software instrument/synth itself to get the meter into the green zone.

02

Gain utility

Otherwise, you're free to use a gain utility at the top (beginning) of your plugin chain.



Gain Staging Audio Tracks

01

Region inspector

You can change the gain of an audio clip as it appears in the main window.

More info here:

<https://support.apple.com/en-gb/guide/logicpro/lgcpd8a8780c/mac>

02

Gain utility

Otherwise, you're free to use a gain utility at the top (beginning) of your plugin chain.



The Master Bus

01

Too quiet?

It's possible at this point that you're thinking the mix is a little too quiet.

If so, it's very likely you have some headroom on your master bus.

02

Increase gain

The solution is as simple as loading a Gain utility on the master bus (Stereo Out) and raising the volume of the mix from there.

You should be able to get it loud enough that you can hear it comfortably whilst preventing the channel from clipping.



Reaching the loudness potential

01

Balanced mix

At this point, your mix is well balanced and the level on the master bus is close enough to 0dBFS without clipping.

But it's yet to reach it's full loudness potential, right?

02

Loudness potential

At this point, you might be tempted to use some dynamics processing on the master bus to increase perceived loudness.

But before you grab your favourite compressor or limiter, I suggest that you bounce the mix out to 24 bit and do all of this in a separate mastering session.

03

Fresh ears

Give some time between the two sessions so that you can come back to the Mastering stage with fresh ears.



That's it!

The goal of this document is to help you go into the mix with a workflow that will allow you to mix comfortably whilst getting the most out of your plugins.

If you have any questions, head over to our [contact page](#) to get in touch.

To learn more about music production, head over to our [website](#).

Happy mixing!

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