BLEVINS TONE CO.

NIGHTCAP

MASTERING SUITE · AUDIO UNIT · VST3 · NIGHTCAP PRO

User Manual



BLEVINS TONE CO. · VERSION 1.5

WELCOME

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WELCOME

What's new in version 1.5

Version 1.5 adds a lot to Nightcap Pro, the album app, and a few useful things to the plug-in. Your sessions, presets and album files open as before.

In the plug-in (and in every song in the app)

- **Everything off means untouched.** With every module switched off (and nothing changing the level or the channels), the audio comes out exactly as it went in, only delayed by Nightcap's latency. See *Mid/side bands, and everything off*.
- **A bit meter** in the Dither panel shows how many bits your master really uses. See *The bit meter*.
- **Mid/side bands in the multiband.** Each band can work on both channels, the middle only, or the sides only.

In Nightcap Pro

- **Faster Analyse, Balance and Export.** Several songs are worked on at once, songs that haven't changed aren't measured again, and Export reuses what Analyse and Balance already rendered. Nothing about the sound changes.
- **Hear AAC** (the AAC button, or A): hear the album as it sounds after streaming services encode it, and see its true peak after encoding.
- **Plug-ins inside Nightcap**, after any of its modules, as well as before and after it.
- **Export AAC files and DDP CD masters**, and have every file read back and checked against the master.
- **File › Open DDP to Check**: read a CD master back, check it and play it.
- **File › Collect Album and Audio**: copy the album and every file it uses into one folder, to move it to another Mac.
- **The editor:** a splice editor for every edit point, source/destination editing from another mix, click repair, Heal, the pencil, left/right channel editing, swap and mono, and Render edited song.
- **Playing carries on** when you leave the Edit tab (from the same moment of the song), and the album timeline's waveforms now draw themselves as soon as songs are added or an album is opened, and show your edits.

System requirements

Unchanged: macOS 11 or later, on Apple silicon or Intel. Nightcap Pro uses as many processor cores as your Mac has for Analyse, Balance and Export; an older two-core Mac works one song at a time, as before.

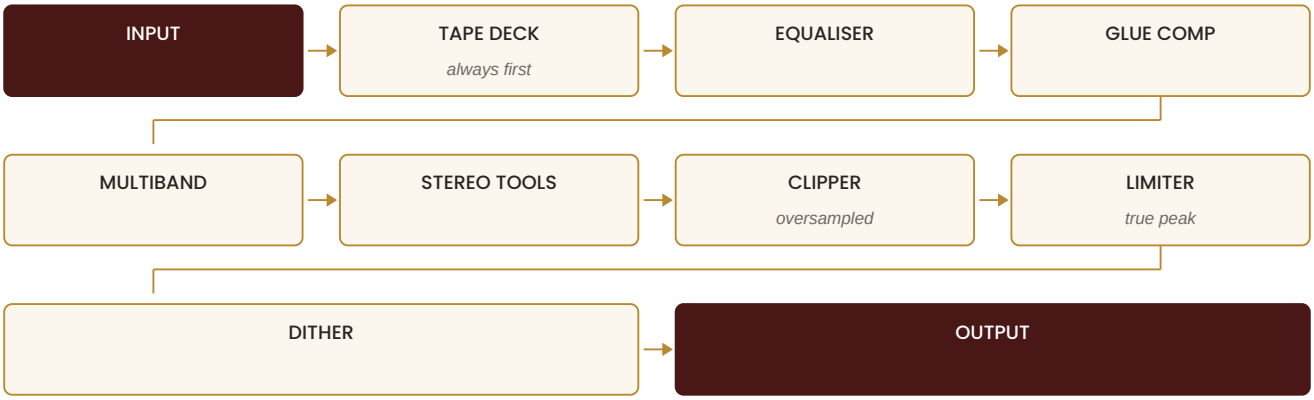
SECTION 1

Introduction

Nightcap is a complete mastering suite in one plug-in. It takes a finished mix and carries it all the way to a release-ready master: tape colour, tone, glue, multiband control, stereo image, peak control, loudness and dither, with the metering you need to check every step. It runs as an Audio Unit and a VST3 plug-in on macOS.

Audio flows through Nightcap in this order:

The four processing modules in the middle (Equaliser, Glue comp, Multiband and Stereo tools) can be put in any order.



Around the processing sits a full set of meters: loudness to the international broadcast standard, true peak, loudness range, a loudness history, a spectrum analyser with a reference-track overlay, a stereo image display, and a preview of what the major streaming services will do to your master.

New in version 1.4

- **Nightcap Pro:** a stand-alone Mac app for mastering a whole album, song by song, with a waveform editor and Bypass. Sold separately; it includes the plug-in. See *Nightcap Pro*.
- **Everything starts switched off.** A new Nightcap has every processing module off, so you switch on only what you need. Saved sessions and the factory presets sound exactly as before.

New in version 1.3

- **Quality switch** in the Dither panel: Normal (4x oversampling, exactly as before), HQ (8x) or Bounce (HQ only when you export). See *Quality: Normal, HQ and Bounce*.
- Existing sessions open in Normal and sound exactly as they did.

New in version 1.2

- Expand any section to fill the window, so every control is large and easy to read on any screen.
- A Multiband mode for the limiter: 16 bands share the limiting according to a Priority curve you draw.
- Hear what's removed (only what the limiter or clipper takes out), reference playback in time with your session, and Match target, which listens to your music to set the limiter for you.

SECTION 2

Installing Nightcap

Nightcap comes as a standard Mac installer. It installs three versions, so it works in almost any recording app, or with no recording app at all:

- **Audio Unit (AU)** for Logic Pro, GarageBand, MainStage and other AU hosts.
- **VST3** for most other recording apps that load VST3 plug-ins.
- **The Nightcap app**, a stand-alone Mac app in your Applications folder: master a whole album, song by song, and export the finished files.

What you need

- A Mac running macOS 11 or later (Apple silicon or Intel; it runs natively on both).
- A 64-bit AU or VST3 host.

Install

1	Quit your recording app.
2	Double-click the installer (.pkg) and follow the steps. Click **Customize** if you only want some of the plug-ins.
3	Open your recording app. If Nightcap doesn't appear, ask the app to rescan its plug-ins.
4	**Logic Pro:** on the Stereo Out channel strip (or any bus), click an Audio FX slot and choose **Audio Units › Blevins Audio › Nightcap**. **Other apps:** look in the VST3 list under **Blevins Tone Co.**

If something goes wrong

Problem	What to do
Nightcap doesn't appear in Logic	In Logic, open **Settings › Plug-in Manager**, find Nightcap, and click **Reset & Rescan Selection**.
Nightcap doesn't appear in another app	Make sure the app is scanning **/Library/Audio/Plug-Ins/VST3**, then rescan its plug-ins.

PLUG-IN LOCATIONS

The installer puts the Audio Unit in /Library/Audio/Plug-Ins/Components and the VST3 in /Library/Audio/Plug-Ins/VST3. To uninstall, delete Nightcap.component and Nightcap.vst3 from those two folders, and drag Nightcap.app from Applications to the Trash.

SECTION 2 · CONTINUED

Trial and activation

Nightcap runs as a full, free **14-day trial** on each computer: every feature works. When the trial ends, Nightcap goes quiet until you activate it with your licence from your Blevins Tone Co. purchase.

Start a trial or activate

- Open Nightcap in your recording app. The first time, the activation panel covers the window. Click **Activate online**.
- Your browser opens your Blevins Tone Co. account (blevins-audio.moonbase.sh). Sign in, or create an account with your email. If you have bought Nightcap, your licence activates; if not, your 14-day trial starts. Go back to your recording app: Nightcap unlocks within a few seconds. There is no serial number to type.
- During the trial, a small **Trial** pill in the bottom-right corner of the window shows the days left. Click **Unlock** on it to open the activation panel at any time, or the × to hide it until the window is next opened.

Your licence and your computers

- Each licence works on up to **3 computers**. Once activated, Nightcap keeps working without an internet connection; it checks in with the licence server now and then when you are online.
- To move it to another computer, sign in to your account, remove the old computer from your licence, then activate Nightcap on the new one.
- Bought a bundle? Each plug-in in it has its own licence in your account; activate each one the same way.
- Studio computer never online? Email info@blevinsguitarcompany.com and we will help you activate it offline.

Installing and updating

- One Blevins Tone Co. installer covers every plug-in. On the Installation Type page, click **Customize** to choose which plug-ins, and which formats, to install. Anything you install but haven't bought simply runs as a trial.
- To update, download the latest installer from your account and run it again. Your licence, settings and presets stay as they are.

NIGHTCAP PRO

Nightcap Pro, the album app, is a separate purchase with its own licence. It includes the Nightcap plug-in, so a Nightcap Pro purchase activates both. A licence for the Nightcap plug-in alone does not unlock the app.

SECTION 3

The window at a glance



Nightcap opens with every section in view.

The window is laid out in the order the audio travels. The Tape deck runs across the top, the four processing modules sit in the middle, and the Clipper, Limiter, Dither and Output finish the chain along the bottom. The meters fill the right-hand column.

Expanding a section

Every section has an Expand button: four small arrows pointing outwards, next to its power switch. Click it and that section fills the whole window, redrawn at the larger size so text and controls stay sharp.



The Equaliser expanded. Its graph gets the extra room.

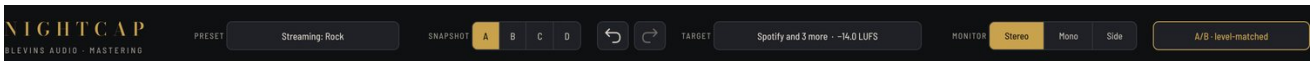
- While a section is expanded, the arrows point inwards. Click them, click ← **Overview**, or press **Esc** to go back.
- The row of tabs along the top jumps straight to any other section.
- A strip of key meters (integrated, short-term and momentary loudness, true peak, range, PLR and your target) stays along the bottom, so you never lose sight of the numbers.
- Sections with graphs (Equaliser, Multiband, Loudness history and Spectrum) lay themselves out again to use the space. The others simply grow.

Working the controls

- **Knobs:** drag up and down. The value is shown underneath. Double-click to return to the default.
- **Numbers you can drag** (the limiter's Target and Ceiling, the multiband crossovers and others): drag up or down. Hold Shift for fine adjustment, and double-click to reset.
- **Power buttons** switch a section in or out with a short crossfade, so it never clicks.
- **Hover** over any control for a short description of what it does.
- **Window size:** drag the bottom-right corner. Nightcap keeps its proportions from 55% to 150% of full size.

SECTION 4

The top bar



Control	What it does
Preset	Ten factory starting points. Each one sets the whole chain. Your loudness target and Quality setting are left as they are.
Snapshot A B C D	Four complete settings held at once. Click a letter to switch. Changes you make are kept in the snapshot you are on, so you can build two or more versions of a master and flip between them instantly.
Undo / Redo	Steps back and forward through your changes.
Target	The loudness you are aiming for, in integrated LUFS. Choose a streaming service or broadcast from the menu. The meters, the loudness history and the limiter's Match button all use it.
Monitor	Listen in Stereo, in Mono, or to the Side signal only (what's different between left and right).
A/B · level-matched	Switches to your unprocessed mix, automatically turned down to the same loudness as the master. This takes away the “louder sounds better” effect, so you can judge the processing itself.

MONITORING ONLY

Monitor, A/B, the platform Listen buttons, Hear what's removed (Δ) and Hear ref change only what you hear. If any of them is on, the Output panel shows a reminder. Switch them off before you export, or they will be in your bounce.

SECTION 5

Tape deck



The Tape deck is always first in the chain. It models a half-inch two-track mastering machine: the record and playback equalisation, the way magnetic tape saturates and compresses, the low-frequency “head bump”, the gentle loss of top end, the transport's wow and flutter, and the tape's noise.

The two VU meters read 0 VU at −18 dBFS (RMS), the usual studio alignment. Below them, **Level vs 3% point** tells you how close you are to the level where the tape reaches 3% distortion, the classic definition of tape's maximum level. Around −6 dB is warm and clean. Around 0 dB is obviously saturated.

TIP

For subtle glue, start with the Classic tape at 15 ips, calibration +6, and set Input so the Level vs 3% point reads around −8 dB. Switch the Tape deck's power off and on to hear what it's adding.

Control	Settings	What it does
Speed	3¾, 7½, 15, 30 ips	Slower speeds give a bigger low-end bump, a softer top, more hiss and more wow. 30 ips is the cleanest and most extended.
Tape	Vintage, Classic, Hot, Euro, Cassette	The tape formulation. Vintage is a low-output tape of the 1960s that saturates early. Classic is the standard mastering stock of the 1970s and 80s. Hot is a high-output tape with the most headroom. Euro is a smooth-topped European studio tape. Cassette is a chrome cassette (its speed is fixed at 1⅞ ips).
Calibration	+3, +6, +9	How hard 0 VU hits the tape. +9 saturates sooner than +3.
Playback EQ	NAB, IEC	The equalisation standard. NAB records the deep bass a little lower, for cleaner lows. IEC gives slightly more weight.
Output	Auto gain or Manual; −12 to +12 dB	Auto gain keeps the level coming out of the tape close to the level going in, so you hear the colour, not a level change. In Manual, the Output knob sets the level.
Input	−12 to +12 dB	Drives the tape harder or softer.
Bias	Under 100% to over 100%	Under-bias is brighter and saturates earlier. Over-bias is darker and cleaner.

Control	Settings	What it does
Head bump	0 to 100%	The low-frequency bump of the playback head.
Wow	0 to 100%	Slow and fast pitch movement from the transport.
Hiss	0 to 100%	Tape noise. At 100% it's as loud as the chosen tape and speed would really be.
Mix	0 to 100%	Blends the dry signal with the tape, with the timing matched so they never comb-filter.

SECTION 6

The processing modules

The middle row holds four modules. Each has a power button, an Expand button, and a readout of the level going in and coming out (300 ms average), which helps you keep levels matched as you work.

Changing the order

Drag a module by the six-dot handle at its top-left and drop it where you want it. Nightcap fades out, swaps the order and fades back in over a few milliseconds, so it never clicks. The order is saved with your session and can be automated.

Equaliser



A six-band mastering EQ: a low shelf, four bells and a high shelf, plus a high-pass and a low-pass filter (both 12 dB per octave).

Drag a point on the curve to set its frequency and gain, or select a band with the buttons and use the knobs. Scroll over the graph to change the selected band's Q, and double-click a point to reset its gain.

Each band can work on the whole stereo signal, on the **Mid** (what's common to both sides) or on the **Side** (the difference). For example, cut low end from the sides only, or add air to the sides without touching the vocal.

The bells are modelled on analog filters, so they keep their true shape all the way up to the top of the audio band.

Control	Range	Notes
Bands	Low shelf, 1–4, High shelf	Frequency 20 Hz–20 kHz, gain ±12 dB, Q 0.2–6 (slope for the shelves)
Stereo / Mid / Side	per band	Which part of the stereo signal the band works on
High-pass	Off, or up to 300 Hz	Drag the small square at the bottom-left of the graph to the right
Low-pass	4 kHz to 21 kHz, or off	Drag the small square at the bottom-right of the graph to the left
Linear phase	on / off	Removes the EQ's phase shift. The plug-in's delay is the same either way, so you can switch freely.

Glue comp



A gentle bus compressor for holding a mix together. It uses a soft knee and stereo-linked detection, so the image never shifts.

- **SC HPF** stops the low end from driving the compressor, which avoids pumping on bass-heavy mixes.
- **Mix** blends in the uncompressed signal for parallel compression.
- The bar at the bottom shows the gain reduction. One to two dB is typical for mastering.

Control	Settings
Thresh	−40 to 0 dB
Ratio	1.5:1, 2:1, 4:1, 10:1
Attack	0.1, 0.3, 1, 3, 10, 30 ms
Release	0.1, 0.3, 0.6, 1.2 s, or Auto (program-dependent)
SC HPF	Off, or 20 Hz to 300 Hz
Mix	0 to 100%
Makeup	−6 to +12 dB

Multiband



Four bands of dynamics, divided by three adjustable crossovers that add back together perfectly. Click a band's column to select it; the knobs below set that band.

- **Comp** compresses the whole band.
- **Dyn EQ** places a bell over the band that dips only while the band is too loud: ideal for harsh cymbals, a boomy note or an edgy vocal.
- **Solo** lets you hear just that band. **Bypass** leaves it untouched.
- Each column's meter shows the band's gain reduction.

Control	Range
Crossovers	Low/lo-mid 40–500 Hz, lo-mid/hi-mid 200 Hz–3 kHz, hi-mid/high 1.5–12 kHz
Threshold	−40 to 0 dB (per band)
Ratio	1:1 to 8:1
Attack	0.5 to 100 ms
Release	20 to 1000 ms
Gain	±12 dB

Stereo tools



Width in three bands, a bass-mono filter and a balance control.

- **Width** (low, mid, high): 0% is mono, 100% is unchanged, up to 200% for extra width.
- **Low / Mid** and **Mid / High** set where the three bands meet.
- **Mono below** folds everything under the chosen frequency to mono, which keeps the low end solid on club systems and vinyl.
- **Balance** shifts the image left or right.

KEEP AN EYE ON MONO

Widening above about 120% can make a mix lose energy in mono. Check with the Monitor Mono button and the correlation meters before you commit.

SECTION 6 · CONTINUED

Mid/side bands, and everything off



Each multiband band has a **St / M / S** switch next to Comp and Dyn EQ. It decides what the band listens to and works on:

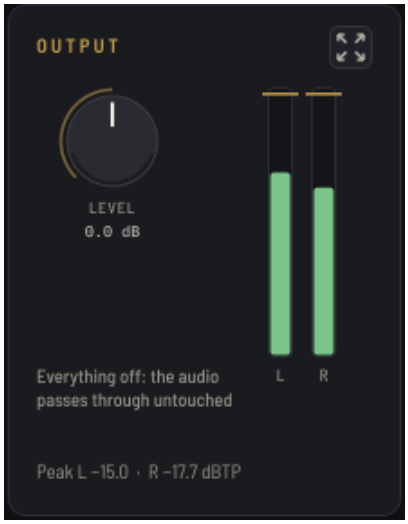
- **St** (stereo, as before): both channels.
- **M** (mid): only what's in the middle: usually the vocal, the kick, the bass and the snare.
- **S** (side): only what's different between left and right: the width, the reverb, wide guitars and cymbals.

The other part of the band passes through untouched. Dyn EQ works the same way: a mid band's bell dips only the middle. The band's column shows **M** or **S** after its mode.

Ideas

- Harsh cymbals spread wide: a Side band on the top band, Dyn EQ, so the highs dip only when they get loud.
- A boomy kick and bass: a Mid band on the low band holds the centre without touching wide low-end ambience.
- A mix that's too wide in the low mids: a Side band there, a few dB down with Gain.

Everything off: untouched



With every module switched off, Input trim, Output level and Dither at zero and nothing swapped or inverted, Nightcap passes the audio through **exactly**: the output is the input, sample for sample, only delayed by Nightcap's latency (so it stays in time with everything else). The Output panel says so.

Switching a module on or off crossfades in 20 ms, so it never clicks. Older versions still ran the oversampling filters with everything off, which changed the top end very slightly; sessions that had everything off now pass the audio untouched.

In Nightcap Pro, a plug-in switched on *inside* Nightcap counts as processing, so it's heard.

SECTION 7

Clipper



The clipper shaves the very tips off peaks before they reach the limiter, so the limiter has less to do and sounds cleaner. It runs oversampled (4x, or 8x in HQ) to keep the shaving free of aliasing.

The clipper is level-matched: turning up Drive shaves more of each peak without making the master louder. The graph shows the shape, and the bar shows how much is being clipped.

Control	Range	What it does
Drive	0 to 12 dB	How far peaks are pushed into the clipper
Knee	Hard to Soft	Hard clips flat. Soft rounds into the clip, which sounds smoother.
Δ	on / off	Hear only what the clipper removes (monitoring only)

HOW MUCH?

With Δ on you should hear only the faint click of transients. If you can hear the music's melody or vocal in it, back the Drive off.

SECTION 8

Limiter

The limiter sets the final loudness of your master and guarantees its peaks never go above the Ceiling. It watches the true peak (the level between the samples, which is what a converter or a streaming encoder will actually produce), not just the sample peaks.



The limiter in Single mode.

Target, Ceiling and Gain

Control	Range	What it does
Target	−30 to −5 LUFS	The integrated loudness you're aiming for. Drag the number, or click the small arrow button beside it to choose a service or broadcast. This is the same target as in the top bar.
Ceiling	−3.0 to 0.0 dBTP	The highest true peak allowed. −1.0 dBTP is a safe choice for streaming. Use −0.3 for CD.
Gain	0 to 24 dB	How hard the master is pushed into the limiter. More gain means louder, and more limiting.
Single / Multiband		One limiter for the whole signal, or 16 bands that share the work (see the next section).

Control	Range	What it does
Δ	on / off	Hear only what the limiter and clipper remove (monitoring only)

Match target

Match listens to your music and sets the limiter for you:

1. Start playback at the loudest part of the song.
2. Click **Match target**. The button lights up and counts down while Nightcap listens for five seconds.
3. Nightcap sets the Gain, then listens again to check. It usually lands within a tenth of a dB in about ten seconds.
4. The button shows **Matched** with a tick and the loudness it reached. Click it during listening to stop. One Undo reverses the whole match.

To get louder, Match raises the limiter Gain. To get quieter, it lowers the Gain first, and only turns down the Output level if the master is still too loud with Gain at zero. If nothing is playing, it says **Press play first** and changes nothing.

LOUDER IS A TRADE

Reaching a louder target always means more limiting, and more limiting changes the sound: transients get softer and the mix gets denser. Use the level-matched A/B and the Δ button to decide whether the extra loudness is worth it. Most streaming services turn loud masters down anyway, so there is little to gain beyond their target.

Single mode

Control	Range	What it does
Release	5 to 1000 ms	How quickly the limiter lets go
Auto	on / off	Program-dependent release: fast on short peaks, slower on sustained limiting. Recommended.
Lookahead	0.5 to 5 ms	How far ahead the limiter looks. Longer is smoother on transients.
Style	Transparent, Punchy, Warm, Loud	Transparent is clean. Punchy recovers faster. Warm rounds the very top first. Loud is the fastest and densest.

The graph along the bottom shows the last few seconds of gain reduction from the limiter, the clipper, the glue comp and the multiband.

SECTION 9

Limiter: Multiband mode

In Multiband mode the limiter splits the music into 16 bands. When the master needs to come down, the bands share the work according to a **Priority** curve you set. Bands with high priority are protected; bands with low priority give up level first. On dense, loud material this keeps one element (usually the bass) from making the whole mix duck. The true-peak limiter still runs afterwards, so the Ceiling is always respected.



The limiter in Multiband mode, expanded to fill the window.

The graph

- The **gold line is Gain:** a gentle tone shaping applied before the limiter, ±12 dB. Lifting a region makes it louder and pushes it harder into the limiter.
- The **blue line is Priority,** ±12. Raise it to protect a region. Lower it to let that region take more of the limiting.
- Choose which line you're editing with the **Gain | Priority** switch in the corner, then drag any of the six handles up or down. Hold Shift for fine moves. Double-click a handle to reset it.
- The red bars hanging from the top show how much each of the 16 bands is being turned down, live.

Control	What it does
Separation	Low, Medium or High: how sharply the bands are divided. Low overlaps them more and sounds smoother. High keeps them apart, so each band acts more independently.
Link	Moves all six handles together, keeping their shape.
Bass	Bass priority: protects the bands below 250 Hz and slows their release, against pumping.
Release ×	Scales the automatic release, from ×0.1 (fast) to ×10 (slow). Each band never lets go faster than its own frequency allows, which keeps the low end free of distortion.

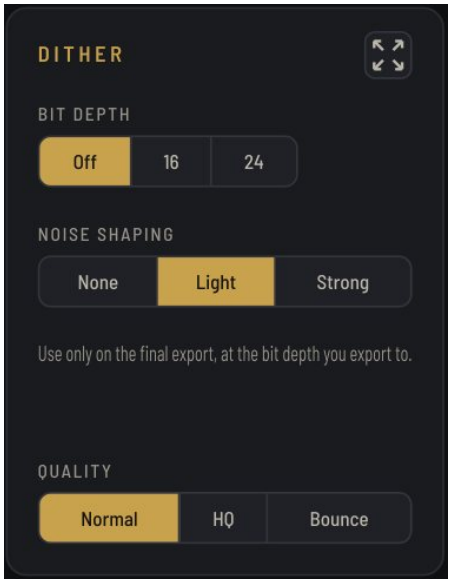
Getting started

1	Set the limiter up in Single mode first and get close to your target.
2	Switch to Multiband. With flat lines it behaves almost exactly like Single mode.
3	If the kick and bass make the whole mix duck, raise the Priority on the left (or turn on Bass).
4	If the cymbals or vocal sound squashed, raise the Priority in that region and lower it where the mix can spare level.
5	Compare with the level-matched A/B, and use Δ to hear what is being taken out.

SECTION 10

Dither, Quality and Output

Dither



Dither adds a tiny amount of carefully shaped noise when the master is reduced to a lower bit depth, so quiet passages and fades stay smooth instead of turning grainy.

Control	Settings
Bit depth	Off, 16, 24
Noise shaping	None, Light, Strong

Turn dither on only for the final export, and only at the bit depth you are exporting to (16 for CD). Strong shaping moves the noise to where the ear is least sensitive. Never dither twice.

The **Quality** buttons at the bottom of this panel are described next.

Output



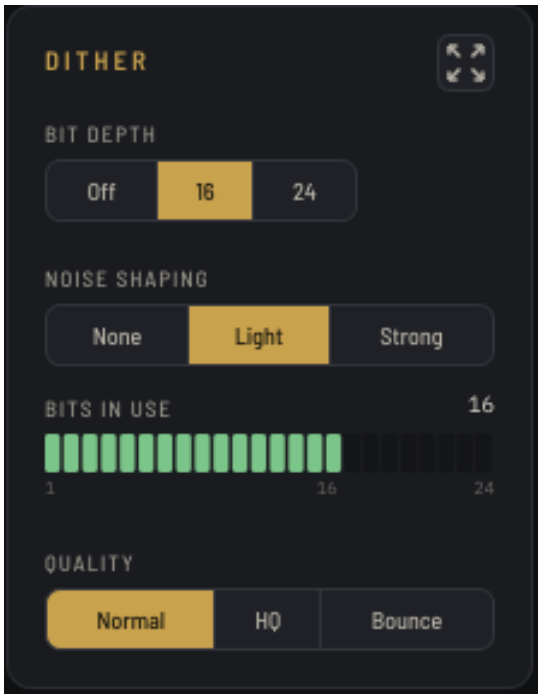
Level (−12 to +12 dB) is the final gain, after the limiter and before dither.

The meters show the true peak of each channel, with the ceiling marked in gold. They turn red if a peak goes over it.

> KEEP LEVEL AT 0 DB
> Turning Level up after the limiter takes the peaks above your Ceiling. Use the limiter's Gain to get louder.

SECTION 10 · CONTINUED

The bit meter



Under the dither settings, **Bits in use** shows the master as it leaves Nightcap, as 24-bit words: one cell per bit, the most significant on the left. A lit cell is a bit that changed in the last second. The number on the right says how many bits are in use.

What to look for

- **Exporting 16-bit with Dither on 16:** 16 cells lit, the rest dark. That's exactly right: the dither has done its job.
- **Dither off:** it shows **more than 24**: Nightcap works in floating point, with more detail than 24 bits. Fine for a 32-bit float export, or when the host does its own dithering.
- **Fewer bits than you expect** (say 12 for a 16-bit export): something after Nightcap, or before it, is truncating. Check the host's export settings.
- **Nothing lit:** silence (or the transport is stopped).

The help text that used to sit here is now on the Bit depth buttons: point at them to read it. As before, use dither only on the final export, at the bit depth you export to.

SECTION 11

Quality: Normal, HQ and Bounce

The Tape deck, Clipper and Limiter are the parts of Nightcap that create new harmonics. They run oversampled, at a higher internal sample rate, so those harmonics don't fold back into the audio band as harsh, unrelated tones (aliasing). The **Quality** buttons in the Dither panel choose how far.

Setting	What it does	When to use it
Normal	4x oversampling, exactly as in version 1.2	Working on the master; lowest CPU
HQ	8x oversampling: aliasing drops from about −42 dB to below −60 dB, for a cleaner top end	Final checks and exports; more CPU
Bounce	Normal while you play; HQ automatically when you bounce or export	Best of both: light while you work, HQ in the final file

- HQ adds about 13 samples of latency at 48 kHz (well under a millisecond). Your host compensates automatically.
- In Bounce, Nightcap reports the HQ latency all the time, so playback and bounces line up exactly.
- Quality is a setting for the whole session: presets, snapshots and Undo leave it alone.

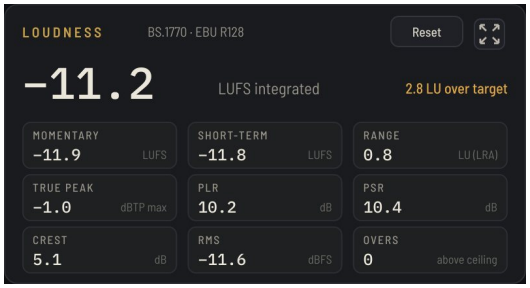
WHICH ONE SHOULD I USE?

Leave Nightcap on Bounce. You work at the lighter Normal setting, and every export is made at HQ without you having to remember. The setting is saved with your session.

SECTION 12

Metering

Loudness



Loudness measured to the international broadcast standard (ITU-R BS.1770 and EBU R128). The big number is the integrated loudness of everything played since the last Reset, with the distance from your target beside it.

Click **Reset** before playing the song from the top to measure it cleanly.

Reading	What it means
Momentary	Loudness over the last 0.4 seconds
Short-term	Loudness over the last 3 seconds
Range	Loudness range (LU): how much the loudness varies over the song. Pop masters are often 4–7 LU; classical much more.
True peak	The highest true peak since the last reset
PLR	Peak-to-loudness ratio: true peak minus integrated loudness. Lower numbers mean a more limited, denser master.
PSR	Peak-to-short-term-loudness ratio: the same idea, moment to moment
Crest	Peak-to-RMS ratio of the output
RMS	Average level of the output
Overs	The number of times the true peak went over the ceiling

Loudness history



The short-term loudness over the last 90 seconds, with your target as a dashed line. It shows at a glance whether the chorus is jumping out or the verses are sinking.

Spectrum

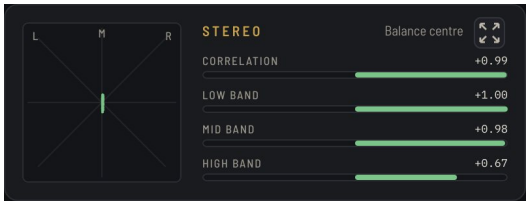


A real-time spectrum of the master, tilted so that a well-balanced mix reads roughly flat. **L+R** shows the whole signal. **M/S** adds the side signal as a grey line.

- **Guide** shades a rough tonal-balance range for a style (Pop, Rock, Hip hop / EDM or Acoustic). It's a guide for your ears, not a rule.
- **Load reference:** pick a song you like the sound of. Its average spectrum is drawn as a dashed line, at your master's loudness, for comparison.
- **Hear ref** plays the reference instead of your master, in time with your session and matched to your master's loudness. Click it again to come back.
- **×** removes the reference.

Nightcap remembers the reference file with your session and reloads it next time, as long as the file hasn't moved. Up to the first 15 minutes of a reference can be played.

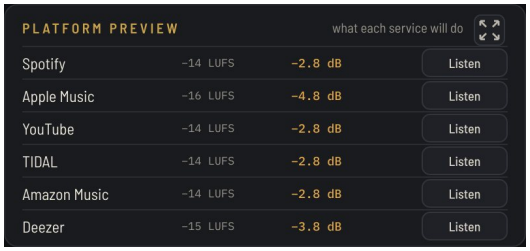
Stereo image



The scope on the left draws the stereo image: a vertical line is mono, a wide cloud is wide stereo, and a lean to one side shows imbalance.

The correlation bars run from −1 to +1, for the whole signal and for the low, mid and high bands. Near +1 is mono-safe. Values near zero or below mean that part of the mix will lose level or thin out in mono. Watch the low band in particular.

Platform preview



Streaming services play every song at their own loudness level. This panel lists six major services, the loudness each one aims for, and how much it would turn your master up or down.

Click **Listen** to hear your master at the level that service would play it. Services that turn quiet songs up stop before the peaks would pass −1 dBTP, and the numbers take that into account.

If a service would turn your master down by several dB, the extra loudness is buying you nothing on that service, only more limiting.

SECTION 13

A mastering workflow

Every master is different, but this order works well as a starting point.

1	**Set the target.** Choose your delivery target in the top bar: −14 LUFS suits most streaming services.
2	**Load a reference.** Pick a released song in a similar style and load it in the Spectrum panel.
3	**Start from a preset.** Choose the closest factory preset, or leave everything off and switch on only the modules you need.
4	**Colour.** Set the Tape deck to taste, watching the Level vs 3% point.
5	**Balance.** Use the Equaliser for broad tonal moves, and the Spectrum guide and reference to check the balance.
6	**Control.** Add one or two dB of Glue comp, and use the Multiband (often in Dyn EQ mode) only where a problem needs it.
7	**Image.** Use Stereo tools gently, checking Mono and the correlation meters.
8	**Loudness.** Set a little Clipper drive, then play the loudest section and click Match target.
9	**Compare.** Use the level-matched A/B, Hear ref and the snapshots. Use Δ to make sure the clipper and limiter are not taking too much.
10	**Measure.** Reset the loudness meter and play the whole song. Check the integrated loudness, true peak, PLR and Overs.
11	**Export.** Switch off any monitoring buttons, set Dither to the export bit depth, make sure Quality is on HQ or Bounce, and bounce.

SECTION 14

Presets

The factory presets are starting points. Each one sets the whole chain and switches on the modules it uses. Your loudness target and Quality setting stay as you set them.

Preset	Character
Default: all off	Every processing module switched off: how a new Nightcap starts.
Init: tape only	Just the Tape deck switched on. Everything else off.
Streaming: Rock	Gentle EQ shaping, glue, bass-mono and a little width on top, with light clipping and limiting.
Streaming: Pop	Hot tape, an open top end, a dynamic EQ dip in the upper mids, and punchy limiting.
Loud: Hip hop and EDM	Firm low end, multiband control of the bass, mono below 150 Hz, harder clipping and loud limiting.
Gentle: Acoustic and jazz	Euro tape at 30 ips, a soft 1.5:1 glue and light limiting, for natural dynamics.
Vintage warmth: 7.5 ips	Vintage tape at 7½ ips with a touch of wow and hiss, softened top, warm limiting.
Lo-fi cassette	Cassette tape with wow and hiss, narrowed lows and rolled-off highs.
Vinyl prep	High-pass at 25 Hz, mono below 150 Hz and a −1.5 dBTP ceiling, for a cutting engineer.
CD: loud	A loud master for CD with a −0.3 dBTP ceiling and 16-bit dither with strong noise shaping.
Club	Fast tape, multiband control of the low end, very wide bass-mono and punchy limiting.

SECTION 15

Your own presets

Click the **Preset** box at the top of Nightcap and choose **Save Preset…** to keep the whole chain under a name. Your presets are listed under **Your presets** in the same menu, in the Nightcap plug-in in every music app *and* in the Nightcap app: they share one library. Save a chain while you work in Logic, and it's waiting in the app.

- **Rename Preset…** and **Delete Preset** work on the preset you loaded last. Deleted presets go to the Trash.
- **Copy Settings** and **Paste Settings** move a chain through the Mac's clipboard without saving a preset: copy in Logic, paste onto a song in the app.
- Like the factory presets, loading one leaves the loudness target and Quality as they are.
- **Show Presets in Finder** opens the folder: *Library › Audio › Presets › Blevins Tone Co. › Nightcap* in your home folder. Copy preset files there to share them with another Mac.

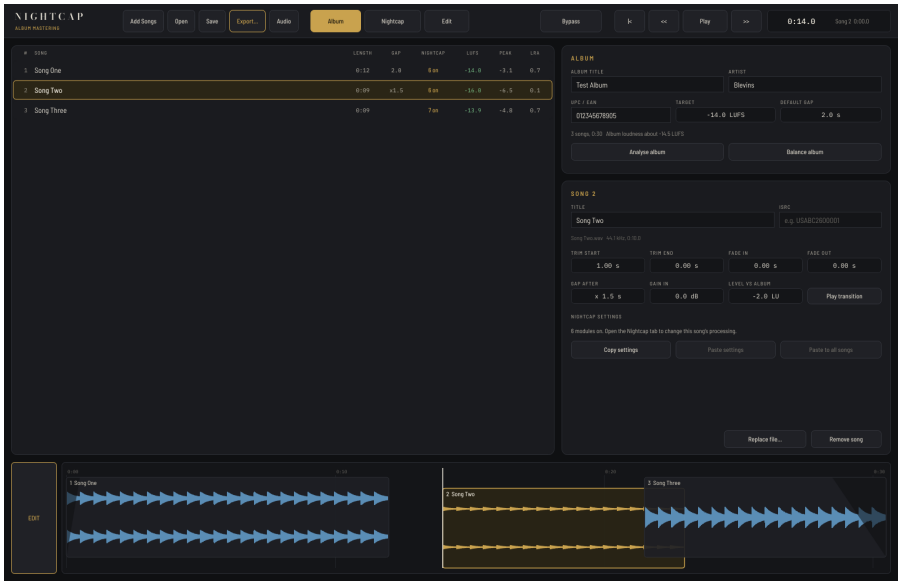
A HANDY WAY TO WORK

Try a mastering chain on your mix bus in Logic, save it as a preset, then bounce the mix with Nightcap switched off. Drop the bounce into the Nightcap app and choose your preset: you're back where you left off.

SECTION 16

Nightcap Pro: the album app

The Nightcap app masters a whole album. Every song has its own Nightcap, with its own settings, and plays with the gaps, crossfades and fades between songs, so you hear the album exactly as it will be released. When it sounds right, Nightcap measures every song, evens out the loudness and writes the finished files. Open it from your Applications folder.



The Album view: songs on the left, the album and the selected song on the right, the timeline along the bottom.

The window

- **Top bar:** Add Songs, Open, Save, Export and Audio (your audio interface or speakers), the **Album**, **Nightcap** and **Edit** tabs, **Bypass**, and the transport. The clock shows the album time and, beside it, the time within the current song.
- **Bypass** (or press **B**) plays the mixes as they are, at their own level: no Nightcap, no Gain in and no Balance. Edits, trims, gaps and song fades still apply, so the album plays in order. Switching is instant and stays in time.
- **Song list:** the running order, with each song's length, the gap after it (× marks a crossfade), how many Nightcap modules it has switched on (Off means none), and its measured loudness (LUFS), true peak and loudness range (LRA). Drag a song up or down to move it.
- **Album panel:** the album title, artist, UPC/EAN barcode, loudness target, the gap new songs get, and the Analyse album and Balance album buttons.
- **Song panel:** everything about the selected song (see below).
- **Timeline:** the whole album drawn to scale, with fades and crossfades. Click anywhere to play from there. The **EDIT** button beside it opens the waveform editor (see *Editing a song*).
- Numbers in the panels work like Nightcap's: drag up or down, or double-click and type.

SECTION 17

Mastering an album

1	**Add the songs.** Click **Add Songs**, or drag your mixes into the window. WAV, AIFF, FLAC, MP3, M4A and most other audio files work. Drag them into the running order. Every new song starts with all of Nightcap's modules switched off.
2	**Set up the album.** Fill in the title and artist, and the UPC/EAN if you have one. Set the loudness target (−14 LUFS suits most streaming services).
3	**Master the first song.** Select a song and click the **Nightcap** tab. Switch on the modules you want and set them, or start from a factory preset. These settings belong to this song only.
4	**Share a sound when you want to.** Click **Copy settings** in the song panel, select another song and click **Paste settings** (or **Paste to all songs**). Then adjust each song as it needs. Nothing is ever copied unless you click.
5	**Shape the running order.** Trim the starts and ends, set fades, and set each song's gap. Click **Play transition** to hear the end of a song into the next one. Use the editor for anything finer (see *Editing a song*).
6	**Balance.** Give quieter songs (a ballad, an interlude) a negative **Level vs album**, then click **Balance album**.
7	**Check and export.** Play the album through, check the numbers in the song list, save the album, then click **Export**.



The Nightcap tab: the full Nightcap for the selected song, with the album timeline below.

Dither in the album app

Nightcap's own Dither setting is switched off for every song in the album app. Dither belongs at the very end, once, so the app adds it when it writes the files: choose it in the Export window.

Analyse and Balance

Analyse album plays every song through its Nightcap, faster than real time, and measures its loudness, true peak and loudness range. **Balance album** does the same, then moves each song so it lands on the album target plus its **Level vs album**, and measures again. It moves the limiter's Gain when the limiter is on, or plain level after the chain when it's off. Your own settings stay as you set them; run Balance again after changing a song.

SECTION 17 · CONTINUED

Faster Analyse and Balance; Hear AAC

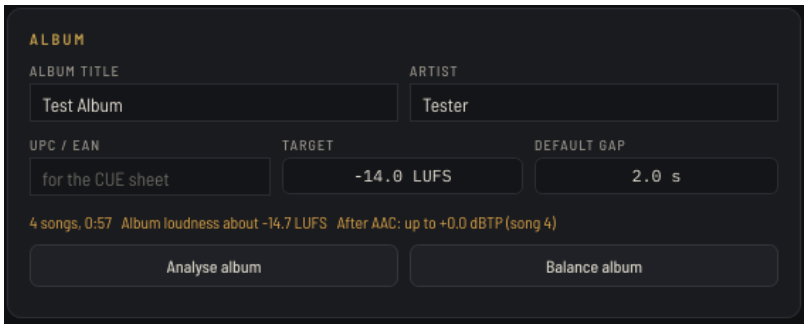
How Analyse, Balance and Export save time

- **Several songs at once.** Nightcap Pro plays as many songs through their chains at the same time as your Mac has processor cores (leaving one free for everything else), as memory allows. An older two-core Mac does one at a time, as before. The results are the same either way.
- **Only what changed is measured.** Each song's readings are saved in the album file with a fingerprint of everything that shapes its sound: the mix, its edits, trims and fades, Gain in, its Nightcap settings and its plug-ins. Analyse album measures only songs whose fingerprint has changed. If nothing has, it says so. Hold **Option** and click Analyse album to measure every song anyway.
- **Balance doesn't measure twice.** If the readings are up to date, Balance goes straight to moving the songs, then measures only the songs it moved.
- **Export reuses the work.** Every song Analyse or Balance plays is kept, finished, in a temporary folder. Export uses those instead of rendering again (if the song hasn't changed since, and at the same sample rate), so an export straight after Balance is mostly just writing files. The folder is emptied when you quit; it takes about a quarter of a gigabyte for every ten minutes of album at 48 kHz.

Hear AAC

Streaming services encode your master, and encoding changes it a little: the very top end, and the peaks, which can rise above your limiter's ceiling. Click **AAC** in the top bar (or press **A**) to hear the album as it sounds after AAC encoding at 256 kbps, the format Apple Music delivers, made with the encoder built into macOS.

- The first time, Nightcap Pro encodes every song (with a progress bar). After that, switching is instant and stays in time, like Bypass: click AAC again to hear your master.
- Each song is encoded and decoded on its own and lined up with your master to the sample, so you can switch back and forth on any note.
- Change a song and AAC listening switches itself off, because that song's encoding is out of date. Click AAC again to encode the songs that changed. It's also off in the Edit tab, which plays the untrimmed song.



The Album panel after Hear AAC: the highest true peak after encoding, and which song it's in.

The Album panel shows the **highest true peak after AAC**. Above 0 dBTP, the decoded audio clips on playback. If it's close to or above zero, lower that song's limiter Ceiling (to -1.0 dBTP or lower) and listen again.

SECTION 18

The song panel

Control	What it does
Title, ISRC	The song's name and its ISRC recording code. Both go into the exported files and the CUE sheet.
Trim start, Trim end	Cuts silence or count-ins from the start and noise from the end of the song.
Fade in, Fade out	Fades applied after Nightcap's processing, so the limiter never pumps against a fade.
Gap after	Silence after the song, in seconds. Set it below zero for a crossfade into the next song: −1.5 overlaps the two songs by 1.5 seconds (shown as ×1.5 in the list).
Gain in	Level into this song's Nightcap, before any processing, for a mix that comes in hotter or quieter than the rest.
Level vs album	How loud this song should sit against the album target: −2 LU makes it 2 LU quieter. Used by Balance album.
Play transition	Plays the last six seconds of this song into the next one.
Copy settings	Copies this song's Nightcap settings.
Paste settings	Replaces this song's Nightcap settings with the copied ones.
Paste to all songs	Gives every song the copied settings. It asks first, because it replaces each song's own.
Replace file…	Swaps in a new mix of the song and keeps everything you've set for it.
Remove song	Takes the song out of the album.

Every song has its own settings

- The Nightcap tab always shows the selected song's own Nightcap. Changing it changes only that song.
- A song you add starts with every module switched off, never as a copy of another song.
- To give songs the same starting point, use **Copy settings** and **Paste settings**. After pasting, each song's settings are its own again, so you can fine-tune them one by one.
- Albums made with an earlier version open with the same sound: songs that used the old shared album settings get their own copy of them.

SECTION 19

Editing a song

The Edit view is a waveform editor for the selected song: cut, paste, fades, gain, a gain line and markers, down to single samples. Your mix files are never changed. Each song keeps a list of its edits, every edit can be undone, and the whole history is saved in the album file, so it's all still there when you open the album again.

Edits happen before Nightcap: the processing works on the edited song. The song fades in the Album view still happen after Nightcap, as before.



The Edit view: the tools along the top, the whole song in a strip, the waveform with a selection, markers and the gain line, and the album timeline below.

Opening the editor

- Click **EDIT** beside the timeline (in the Album or Nightcap view), click the **Edit** tab, press **E**, or double-click a song in the timeline.
- Click another song in the timeline below to edit that one instead.
- Click **DONE** (or press **E**) to go back to the Album view.
- While the editor is open, Nightcap plays just this song, from the very start of the mix. Parts the album trims off are shaded, and the album's song fades are drawn as thin lines.

SECTION 20

Selecting and moving around

Moving around

- The strip above the waveform shows the whole song. Its box is what the big view shows: click or drag in the strip to move there.
- Scroll (or swipe on a trackpad) to move along the song. Hold **Cmd** while scrolling, or pinch, to zoom where the mouse is. Hold **Option** while scrolling to make the waveform taller.
- **Whole song** (Shift-Z) shows everything, **Zoom to selection** (Z) fills the view with the selection, and **+** and **-** zoom in and out. Zoom in far enough and you see the single samples as dots. The editor always opens on the whole song, and edits never change your view.
- **The magnifier:** hold **Control+Option** (as in Logic) and the pointer becomes a magnifying glass. Drag across an area to zoom into it, or click to zoom out. Or pick the **Zoom** tool: click to zoom in, Option-click to zoom out, drag to zoom to an area.
- The bar along the bottom shows the cursor, the selection (in time and samples) and the selection's peak, true peak and RMS. With nothing selected, it measures the whole song.

Selecting

- Click to put the cursor down. Drag to select.
- **Shift-click** moves the nearer end of the selection there. Drag either edge of a selection to change it.
- **Double-click** selects between the markers either side (or the whole song). **Cmd-A** selects the whole song, and **Esc** clears the selection.
- **Snap: zero** moves selection edges to the nearest zero crossing, so cuts start and end cleanly. **Snap: markers** catches markers, edit points and the song's ends as you get near them. Switch either off for complete freedom.

Edit points and crossfades

Every place where two pieces of audio now meet is an edit point, marked with a small triangle above the waveform. Each one gets a short crossfade so it can't click: 5 ms to start with. Change it with **Crossfade** in the toolbar (0 makes butt splices). It applies to every edit point in the song.

SECTION 21

The editing tools

Tool	What it does	Key
Cut / Copy	Take the selection (Cut also removes it). What you copy can be pasted into any song at the same sample rate.	Cmd-X / Cmd-C
Paste	Inserts at the cursor, or in place of the selection.	Cmd-V
Paste over	Writes over the audio from the cursor on, keeping the song's length.	Shift-Cmd-V
Delete	Removes the selection and closes the gap.	Delete
Silence	Makes the selection silent, keeping the song's length.	
Crop	Keeps only the selection.	Cmd-T
Insert silence	Adds silence at the cursor.	
Duplicate	Plays the selection twice: a copy goes in right after it.	Cmd-D
Fade in / Fade out	Fades the selection, with the **Curve** chosen next to them: Linear, Equal power, Log (quick at first), Exp (slow at first) or S-curve. Hover over the button to see the fade before you apply it. Afterwards, drag the fade's handles or its curve (see below).	F / Shift-F
Gain...	Raises or lowers the selection (or the whole song) by the amount you set.	G
Normalise...	Sets the selection's (or song's) highest peak to a level, as a sample peak (dBFS) or true peak (dBTP).	
Invert	Flips the polarity of the selection.	
Remove DC	Takes out any DC offset in the selection.	

Changing a fade

- Every fade you apply is drawn over the waveform with a small square handle at each end. Point at a handle (the pointer becomes a hand) and drag it left or right to make the fade longer or shorter.
- Point at the middle of the fade's curve (the pointer shows up and down arrows) and drag up to bow it outwards (it rises sooner) or down to bow it inwards (it rises later).
- Each drag is one step you can undo.

SECTION 22

Gain line, markers and listening

The gain line

Click **Gain line** to draw volume changes on the song, before Nightcap: tame one loud snare hit, lift a quiet intro, or dip a harsh word. The line runs from +6 dB at the top to −30 dB at the bottom, with 0 dB a quarter of the way down.

- Click the line to add a point. A new point sits on the line, so adding it doesn't change the sound until you drag it.
- Drag a point to move it. Hold **Shift** to move it in time only.
- Double-click a point (or Option-click it) to remove it.
- Points belong to their audio: delete something earlier in the song and the points move with the music. Click **Select** to go back to selecting.

Markers

+ Marker (or **M**) puts a marker at the cursor. Drag a marker's flag to move it, and double-click the flag to rename or delete it. Markers move with their audio, and double-clicking between two markers selects everything between them.

Listening

- **Space** plays from the cursor, and stops.
- **Play selection** (Return) plays the selection and stops at its end. **Loop** (L) plays it round and round.
- **Pre-roll** (P) plays from 2 seconds before the selection (or cursor) to 1 second after it: the quickest way to check an edit in context.
- **Bypass** (B) plays the edited song without Nightcap, at the mix's own level.

Undo and the history

- **Undo** (Cmd-Z) and **Redo** (Shift-Cmd-Z) step through your edits. Each song has its own history.
- **History** lists every edit to the song, starting with the Original. Pick any one to go straight back (or forward) to it.
- Saving the album saves the whole history. Open the album tomorrow and you can still undo yesterday's edits.
- Each song keeps its last 400 versions, and the Original is always kept.

Good to know

- Making an edit while the song plays may drop the sound for a moment while Nightcap picks up the new version.
- Editing a song clears its loudness readings. Run **Analyse album** (or **Balance album**) again afterwards.
- Edit points are positions in the mix. If you **Replace file…** with a new mix, its edits apply to the new mix at the same times, so use a new mix that lines up with the old one.
- Audio copied from one song can be pasted into another, as long as both mixes are at the same sample rate.

SECTION 22A

The splice editor

Every cut, paste or delete makes an **edit point**: a join between two pieces of audio, marked with a small triangle above the waveform. The splice editor shows one join close up and lets you perfect it. Click a triangle, click **Splice...** (the edit point nearest the cursor), or choose **Edit › Splice Editor**.



The splice editor: the audio going out (top) and coming in (middle) drawn past the join, and the result (bottom).

Control	What it does
Crossfade	How long this join's crossfade is, in ms (0 is a straight cut). Each join can have its own; the others keep the song's Crossfade.
Equal power / Equal gain	The crossfade's curve. Equal power for two different pieces of audio (keeps the level up through the join); equal gain for the same audio on both sides or very similar takes. Nightcap picks one for you until you choose.
Drag the white line	Moves the edit point earlier or later. Both sides stay where they are in time and the song keeps its length: the outgoing side just plays a little more (or less) before the incoming side takes over.
Drag the top or middle audio	Slides that side's audio earlier or later without moving the edit point: for lining up a beat or a breath across the join.
Previous / Next	The neighbouring edit points.
Zoom in / Zoom out	How much you see: from a few milliseconds to a few seconds.
Play	Plays from 2 seconds before the join to 1.5 seconds after (Return or the space bar).
Done	Back to the waveform (Escape). Every change is one step you can undo, and is saved with the song's edit history.

SECTION 22B

Source/destination editing

Sometimes the best fix is a section from another mix: a vocal-up version, a different take, the mix before the last change. Click **Source mix...** in the editor: a strip opens above the song for the other file. Mark a section of it and put it in the song in one step, level-matched and crossfaded. This is what mastering editors call a 4-point edit.



The editor with the source strip open. The source's selection (top) and the song's (below) are the same moment.

1	**Choose the other file.** Click **Choose...** in the source strip. It has to be at the song's sample rate.
2	**Select the part of the song to replace**, in the song's waveform as usual.
3	**Click Line up.** Nightcap finds the same moment in the other file and selects it there (or drag in the source strip to select any part of it yourself).
4	**Click Replace selection.** The source's section takes the place of the song's. Or click **Insert at cursor** to add it without replacing anything.

- **Match level** (on to start with) sets the inserted audio to the loudness of what it replaces, so a vocal-up mix doesn't jump out.
- Both joins get the song's crossfade; open either one in the splice editor to fine-tune it.
- The other file isn't changed or copied: the edit points to it, like a paste. **File › Collect Album and Audio** copies it along with everything else if you move the album.

SECTION 22C

Repair, the pencil and channels

The editor's third row has the repair tools and the channel controls. Repairs change the audio itself, so the repaired stretch is written to a new file and takes the place of that stretch in the edits: **your mix is never changed**, and every repair can be undone like any other edit.

Tool	What it does	Key
Repair clicks	Finds clicks in the selection and repairs each one from the audio around it. Select the area with the clicks first (up to a minute at a time). The info bar says how many it repaired. It leaves drum hits and other real attacks alone.	
Heal	Fills the selection from the audio either side: for a dropout, a single click, a bump or a lip smack. Select it closely (half a second or less).	H
Pencil	Redraws samples by hand. Zoom in until you can see single samples, then draw over a click or spike. It draws on the channel (L or R) you draw on.	D
L + R / L / R	What Gain, Normalise, Invert, Silence, Remove DC, Repair clicks and Heal work on: both channels, or one side only.	
Swap / Mono...	On the selection (or the whole song): swap left and right, fold to mono, or put one side on both. "Back to normal" undoes it. Anything already done to one side moves with that side when you swap.	
Render edited song...	Writes the edited song (before Nightcap) to a new 24-bit WAV at the mix's sample rate. Your mix and your edits stay as they are.	

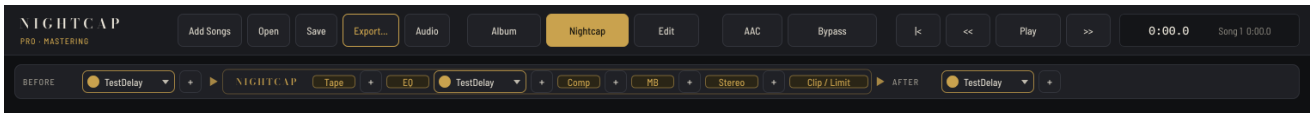
Where repaired audio is kept

In your Library: *Application Support › Blevins Tone Co. › Nightcap Pro › Edit Audio*. The album file remembers where. To move an album to another Mac, use **File › Collect Album and Audio**: it copies the repaired audio too.

SECTION 23

Plug-ins before, inside and after Nightcap

In Nightcap Pro, each song can run your own Audio Unit and VST3 plug-ins before Nightcap, after it, and **inside** it, after any of its five modules. The strip across the top of the Nightcap tab shows the song's whole signal path, left to right.



Before Nightcap, then Nightcap's own modules in the order they're set to (with a + after each), then After Nightcap.

Adding plug-ins

1	**Find your plug-ins (once).** Click any **+** and choose **Scan for plug-ins...** (or **View › Plug-in Manager**). In the window that opens, click **Options** and scan for Audio Units and VST3s. The list is remembered.
2	**Add one.** Click the **+** where you want it: before Nightcap, after one of its modules, or after Nightcap. Its own window opens, ready to set.
3	**Add more** the same way. Plug-ins in the same place run left to right.

Working with them

- **Click a plug-in's name** to open its window again. **The dot** switches it on or off (switched off, it's skipped and the timing doesn't move). **The arrow** has Replace, Move to (any place on the path) and Remove.
- **Drag a plug-in** to anywhere else on the path.
- **Inside Nightcap,** a plug-in sits after a module and goes with it if you change the module order. Its delay is added to Nightcap's, so the level-matched A/B, Hear what's removed and the reference stay in time.
- Each song has its own plug-ins. **Copy settings** and **Paste settings** on the Album page copy all of them, wherever they are, along with Nightcap's settings.
- Plug-ins and their settings are saved in the album file and used when you export. **Bypass** skips them too.
- If an album uses a plug-in that isn't on this Mac, the app tells you, plays the song without it and keeps its settings for when it's installed.

SECTION 24

Exporting and saving an album

Click **Export...** and choose:

Choice	Options
Format	**WAV** or **AIFF**; **AAC** (.m4a, 256 kbps, one file per song, from the full-resolution master, no dither); or **DDP**, a CD master for the factory (see *CD masters (DDP)*).
Files	One file per song, one continuous file with a CUE sheet, or both (WAV and AIFF).
Bit depth	16-bit, 24-bit or 32-bit float (WAV only). DDP is always 16-bit.
Sample rate	The album's own rate (the first song's), or 44.1, 48 or 96 kHz. Other rates are converted. DDP is always 44.1 kHz.
Dither	Light or strong noise shaping, added once to the finished album for 16 and 24-bit files.
Check	**Read every file back and compare it with the master** (on to start with): once the files are written, each is read back and compared with the master it was made from. The finished message says they match (apart from the dither), or the export stops with what was wrong. DDP masters are always checked.
Folder	Where the files go.

Songs Analyse or Balance already rendered aren't rendered again (see *Faster Analyse and Balance*); the rest are rendered several at once.

What you get

- Song files are numbered in album order (01 Song title.wav). Each runs to the start of the next song, so a gap stays with the song before it and the files play back seamlessly in order.
- WAV and AIFF files carry the song title, artist, album title and track number, and the ISRC when you've entered one.
- The CUE sheet lists every track with its title, ISRC and start time, the gaps as pre-gaps, and the UPC/EAN as the catalogue number.

Album files

Save writes a .nightcapalbum file: the running order, every edit, every song's Nightcap settings and plug-ins, and the loudness readings. It remembers where your mixes are relative to the album file, so keep it in the same folder as the mixes (or near them). Double-click an album file in Finder to open it. If Nightcap can't find a mix, it lists the missing songs: select each one and click **Replace file...**.

File › Collect Album and Audio... copies the album and every audio file it uses (the mixes, audio pasted or taken from other files, and repaired audio) into one new folder, and carries on with that copy. Use it to move an album to another Mac or to archive it.

Keys and menus

- **Space** plays and stops. ← and → go to the previous and next song. **B** switches Bypass on and off, **A** switches Hear AAC. **E** opens and closes the editor; in the editor, **H** heals and **D** picks the pencil.
- The **File** menu has New Album, Open, Save, Save As, Add Songs, Export, Collect Album and Audio, Open DDP to Check and Audio Settings. The **Edit** menu has every editing command. The **Play** menu has the transport, Play Transition into Next Song, Bypass, Hear AAC, and the Album, Nightcap and Edit views.

Activation

Nightcap Pro has its own licence (it's a separate purchase that includes the plug-in). Until it's activated, the app is silent and a **Not activated** button appears in the top bar: click it to start a trial or activate.

SECTION 24A

CD masters (DDP)

A **DDP image** is what CD factories make discs from: the audio, plus the track starts, gaps, codes and CD-Text, with checksums so the factory knows nothing was damaged on the way. Choose **DDP (CD master)** in Export: Nightcap writes a folder named after the album with "DDP" on the end. Send the whole folder (zipped, or on a drive).

What goes on the disc

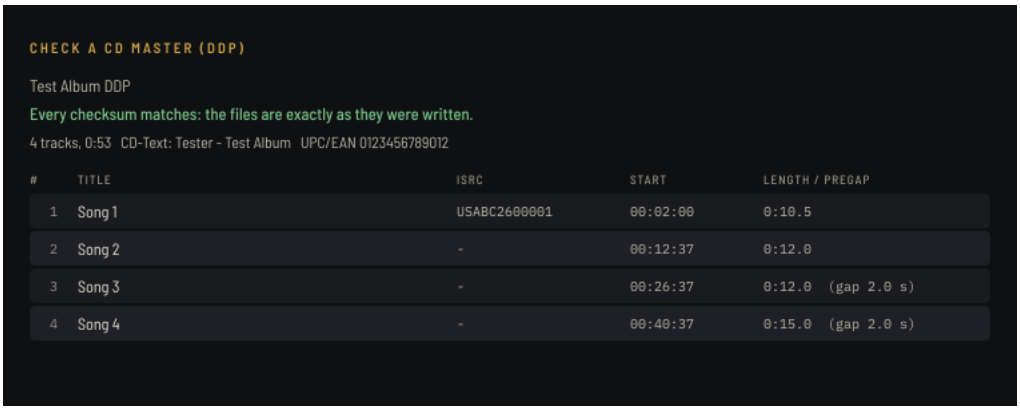
- **One track per song**, starting where the song starts (to the nearest CD frame, 1/75 of a second: never later than the song, so no attack is cut). A gap before a song is its pregap, so CD players count it in.
- **The audio:** 16-bit, 44.1 kHz, dithered once with the shaping you choose. The 2-second pause before track 1 that every CD has is added for you.
- **Codes:** each song's ISRC, and the album's UPC/EAN (a 12-digit UPC becomes the 13-digit EAN CDs use).
- **CD-Text:** the album title and artist, and every song's title.

Before it writes, Nightcap checks

99 tracks at most; 79 minutes 57 seconds at most; every song at least 4 seconds long; ISRCs in the right form (12 characters, like USABC2600001); the UPC/EAN's check digit; and text a CD can hold (accented letters are fine; other characters are replaced and you're told). If something would stop a factory accepting the disc, the export stops and says what to fix.

Checking a DDP

Every DDP is read back and checked when it's written. To check one later, or one from elsewhere, choose **File › Open DDP to Check...** and pick its folder: it checks every checksum, lists the tracks with their start times, lengths, gaps, ISRCs and CD-Text, and plays it. Click a track to play from its start.



Open DDP to Check: the checksums, the tracks and their codes.

Before a paid run, send one test album to the factory you plan to use. Most check a DDP for free.

SECTION 25

Latency, automation and sessions

Latency

Nightcap delays audio by about 105 ms (5,094 samples at 48 kHz) in Normal. That covers the linear-phase equaliser, the multiband limiter, the look-ahead and the oversampling. HQ and Bounce add about 13 samples more. The delay doesn't change as you switch sections on and off, and your host compensates for it automatically. Nightcap is designed for the end of the chain. Don't monitor live recording through it.

Automation

Every control can be automated, including the module order and the limiter mode. A few controls that don't appear on the panel are available to automation and in your host's generic controls view: Input Trim (±12 dB), Input Polarity, Input L/R Swap and Input Mid/Side Balance.

Sessions

Your host saves everything with the session: all settings, the four snapshots, the Quality setting and the reference file's location. Your own presets live in Nightcap's Preset menu (see *Presets*), shared with the Nightcap app.

SECTION 26

Tips and troubleshooting

Problem	What to do
The master is louder but sounds worse	Use the level-matched A/B. Lower the limiter Gain, add a little Clipper drive instead, or try Multiband mode with Priority on the parts that suffer.
The limiter pumps on the bass	Switch to Multiband and raise the Priority on the left, or turn on Bass. In Single mode, use a slower release or the Warm style.
My bounce sounds different from playback	A monitoring button (Monitor, A/B, Listen, Δ or Hear ref) was left on. The Output panel shows a reminder when one is on.
Match target says “Press play first”	Match needs music playing. Start playback at a loud section, then click it.
Match target says “Gain at maximum”	The limiter is at 24 dB of gain and still below the target. The target is too loud for this mix: lower it, or add level earlier in the chain.
Hear ref is greyed out	Nightcap is still preparing the reference. It takes a moment after loading.
The Overs count isn't zero	A peak went over the ceiling, usually from turning up the Output Level after the limiter. Keep Level at 0 dB.
Nightcap uses a lot of CPU	Multiband mode, linear-phase EQ and HQ cost the most. Use Bounce instead of HQ, switch the heavy sections off while you're working on other things, or raise your host's buffer size.

SECTION 27

Specifications

Item	Value
Formats	Audio Unit (AU) and VST3 effect, and Nightcap Pro (sold separately); universal binary (Apple silicon and Intel)
Album app	Any number of songs, each with its own Nightcap settings and plug-ins (before, inside and after Nightcap); trims, fades, gaps and crossfades; album loudness balance; Hear AAC with true peak after encoding; export to WAV or AIFF (16, 24 or 32-bit float, 44.1–96 kHz) per song and/or continuous with a CUE sheet, AAC (256 kbps) and DDP 2.0 CD masters (PQ, ISRC, UPC/EAN, CD-Text), with every file checked; non-destructive waveform editing with a splice editor, source/destination editing, click repair, heal, pencil, per-channel editing, five fade curves, gain line, markers and a saved undo history
Channels	Stereo (mono also supported)
Sample rates	44.1 kHz to 192 kHz
Processing	64-bit floating point. Tape, clipper and limiter oversampled: 4x (Normal) or 8x (HQ, or Bounce when exporting). With everything switched off, the audio passes through untouched.
Latency	About 105 ms, fixed (about 13 samples more in HQ and Bounce), reported to the host for automatic compensation. In Nightcap Pro, plug-ins inside Nightcap add their own.
Tape deck	4 speeds plus cassette, 5 formulations, 3 calibrations, NAB/IEC playback EQ
Equaliser	6 bands with Stereo/Mid/Side per band, high-pass and low-pass, minimum- or linear-phase
Glue comp	Ratios 1.5–10:1, attack 0.1–30 ms, release 0.1–1.2 s or Auto, sidechain high-pass, mix
Multiband	4 bands, 3 crossovers, Comp or Dynamic EQ per band, each on stereo, mid or side
Stereo tools	3-band width 0–200%, mono below up to 300 Hz, balance
Limiter	True-peak, ceiling −3 to 0 dBTP, gain 0–24 dB; Single mode with 4 styles; Multiband mode with 16 bands and 6 handles
Dither	16 or 24 bit, TPDF, with light or strong noise shaping; bit meter
Metering	BS.1770 / EBU R128 loudness (momentary, short-term, integrated, range), true peak, PLR, PSR, crest, RMS, overs, 90-second history, spectrum with reference, stereo scope and correlation, platform preview, bits in use
Requirements	macOS 11 or later; a 64-bit AU or VST3 host. Nightcap Pro uses every processor core your Mac has for Analyse, Balance and Export (one at a time on a two-core Mac).

SECTION 28

Legal

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