

APEX

Shape the final moment.



A clear guide to level, movement, stereo control and the details that shape your final sound.

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Find your way.

Start with a first pass. Explore each section when you need more control.

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01 / QUICK START

Your first session.

Get the level right first. Then shape how the limiter moves.

1. Choose a useful passage

Place APEX on the bus or track you want to control. Loop a loud, busy passage with kick, bass and bright transients. Leave enough room in your monitoring level to compare comfortably.

2. Start from a known state

Load Utility / Neutral Start. This gives you Adaptive, Open, Response 8, Recovery 4, Bias 0, True Peak on and 4x oversampling. Optimizer, Unity, Gain Match, Delta and Bypass are off.

3. Set the target and add drive

Keep Ceiling at -1 dB and Output at 0 dB for a first pass. Raise Input until the GR meter shows useful peak reduction; 1-3 dB is a modest listening starting point, not a required target.

4. Shape the movement

Try Balanced if you want longer recovery. Raise Recovery if the sound feels restless; lower it if the groove feels held down. Return to Input whenever the tonal balance or punch begins to suffer.

5. Compare at a similar level

Enable Gain Match and let it settle. Listen for kick impact, bass stability, vocal clarity and cymbal texture. Disable Gain Match when judging the actual delivery level; also leave Unity, Delta and Bypass off for a normal processed export.

A PRESET IS A STARTING POINT

The same preset can produce very different reduction on two mixes. Input level and the source material determine how hard APEX works.

02 / INTERFACE

Everything within reach.

Five vertical sections. A consistent path from input to output.



Section	What you control
Gain	Input drive, limiting Ceiling and Unity compensation.
Engine	Adaptive or Classic; Open, Balanced or Dense; Response, Recovery, Detector and Bias.
Stereo Link	How much the left and right limiting envelopes work together as level changes.
Monitoring	Short-term loudness, gain reduction and estimated true peak; Optimizer controls sit below the screen.
Output	L/R sample-peak meters, a GR meter and the final Output trim.

Top bar: press the logo for black/silver finishes; use the preset arrows, favorites star, A/B/C, Undo/Redo and menu. Bottom row: True Peak, Gain Match, Delta, Bypass and Oversampling.

03 / GAIN

Level, with intention.

Input changes how hard you limit. Ceiling sets the target. Output trims the result.

Control	Range and behavior
Input	-24 to +24 dB. Raises or lowers the signal before limiting. Default: 0 dB.
Ceiling	-24 to 0 dB. Sets the main limiting target and the True Peak guard target. Default: -1 dB.
Output	-24 to +12 dB. Trims after the main limiter and before the final True Peak guard. Default: 0 dB.
Unity	Compensates positive Input drive by applying an equal amount of attenuation after limiting. Default: off.

Choose drive by listening

More Input generally creates more limiting. As you increase it, notice whether drums lose their front edge or bass starts to modulate the rest of the mix. Reducing Input is often the most effective correction.

Understand the last gain stage

With True Peak on, positive Output can cause extra reduction in the final guard. With True Peak off, positive Output can raise the signal above Ceiling. Check the final monitored output after changing either control.

UNITY IS NOT AUTOMATIC LOUDNESS MATCHING

With Input at +6 dB, Unity applies -6 dB compensation. It does not measure perceived loudness, and negative Input does not make Unity boost the output. Unity takes priority when Gain Match is also on.

Choose the movement.

Two recovery approaches. Three ways to shape their timing.

Adaptive

Adaptive blends its main recovery with a slower memory of recent gain reduction. That memory can keep repeated peak events connected. Try it when you want to explore how a passage settles between hits.

Classic

Classic uses a simpler release envelope without Adaptive's program-memory blend. Compare it on the same passage at a similar output level; the preferable movement depends on the source.

Voicing	What changes
Open	The shortest recovery scaling of the three choices. A useful starting point when you want to inspect individual transient behavior.
Balanced	Extends the recovery time relative to Open. Try it when Open feels too active.
Dense	Extends recovery further. Try it when you want limiting to hold together for longer between events.

KEEP THE COMPARISON SIMPLE

Change Engine first, then Voicing, with Input and Ceiling held steady. Recheck the level with Gain Match so extra loudness does not decide the result for you.

Both engines share the visible APEX controls. These modes describe APEX's own processing; they do not switch to another product's circuit or parameter set.

05 / TIMING AND CHARACTER

Fine-tune the response.

Use the numbered controls as musical adjustments, not milliseconds.

Control	What to expect
Response 1-11; default 8	Higher values accelerate recovery and, in Adaptive, allow more movement away from the slow memory envelope. Lower values keep the behavior more restrained.
Recovery 1-9; default 4	Higher values lengthen recovery. Lower values let gain return sooner. Engine, Voicing, Response and Detector also affect the result.
Detector Fast / Slow	Slow lengthens recovery relative to Fast. Fast is the default. This switch is not a user-adjustable attack time.
Bias -8 to +8; default 0	Adds bounded nonlinear shaping around the limiter ceiling. Zero is neutral. Positive and negative settings bend the curve in opposite directions; both sides add character.

When the groove feels held down

Try a lower Recovery or a higher Response, one change at a time. Compare Fast and Slow. If transients are already being reduced too heavily, lower Input before trying to solve it with timing.

When the bass sounds rough

Reduce drive first. Then compare a longer Recovery, Slow Detector or a different Voicing. Return Bias to 0 while diagnosing the source of the change.

LISTEN ACROSS A WHOLE PHRASE

A setting that flatters one snare hit may feel wrong over the next bass note or vocal line. Include both busy and quieter sections in your comparison.

06 / STEREO LINK

Keep the image steady.

Let the channels work together by an amount that follows signal level.

With Link off, the main limiter treats the left and right channels independently. With Link on, it blends their required gain reduction toward a shared value based on the more demanding channel. The amount of linking changes with the detected level.

Control	Role
Threshold	-60 to 0 dB; default -18 dB. Sets the start of the level-dependent transition from Min toward Max. This is a linking threshold, not the main limiting ceiling.
Slope	0.10-4.00; default 1.00. Shapes the transition. Within the transition, higher values keep the amount closer to Min for longer; lower values move toward Max sooner.
Min / Max	0-100%; defaults 25% / 100%. Bound the amount of shared main-limiter action. Equal values make the amount fixed. If the controls are crossed, APEX uses the lower value as the lower bound.

A practical way to set it

Begin with Link on at defaults. Listen to centered vocals and off-center percussion. If the image shifts too much, try raising Min. If one side seems to pull the other down unnecessarily, compare a lower Min or Max at the same drive.

TWO DETAILS THAT MATTER

Link follows level, not a correlation measurement. Also, the final True Peak guard uses shared gain across channels when enabled, even if the main Link switch is off.

Fill in, carefully.

Bound the added gain. Listen to what happens between the peaks.

Optimizer enables two gain additions ahead of peak control: reduction-related Makeup and low-level RMS Lift. It is off by default. Turning it on can drive the limiter harder, so compare with the output level matched.

Control	Role
Makeup	0-6 dB; default 0.5 dB. Caps an automatic gain addition related to recent gain reduction. The knob is a maximum allowance, not a constant gain boost.
RMS Threshold	-60 to -6 dB; default -24 dB. Lift becomes eligible when the internal RMS envelope falls below this level. It is not a LUFS target.
Lift	0-6 dB; default 0 dB. Limits the extra gain available below RMS Threshold. At 0 dB, the RMS-lift part adds no gain.

Start with one mechanism

Enable Optimizer with Lift at 0 dB. Adjust Makeup in small amounts. Then, if quieter material needs more support, introduce a little Lift and adjust RMS Threshold until the action is useful.

Check the quiet sections

Lift can bring up ambience, breaths and existing noise as well as musical detail. APEX gates the lift request in near-silence; that is not a noise-removal process. Listen to intros, endings and spaces between phrases.

IF THE RESULT FEELS TOO DENSE

Reduce Makeup or Lift, or disable Optimizer to compare. Extra gain can create additional limiting even when the Input knob has not moved.

The final peak check.

Peak protection and oversampling do different jobs.

True Peak

True Peak enables a secondary output guard that observes a 4x reconstructed signal. It uses Ceiling as its target with an internal 0.35 dB reserve. Output trim feeds this guard, so raising Output can ask it to do more work. True Peak is on by default.

Oversampling

Choose 1x, 2x, 4x, 8x, 16x or 32x for the main engine. The default is 4x. Higher factors run the main processing at a higher internal sample rate and increase CPU demand. Compare the sound and available CPU instead of assuming the largest number is always the best choice.

Use	A sensible evaluation path
Working session	Begin at 4x. If the session struggles, compare 2x or 1x and leave enough CPU for playback.
Final render	Compare 8x, 16x or 32x on the finished material. Recheck peak level and sound at the chosen factor.
Changing quality	A brief fade and warm-up occur when changing factors. Choose a setting between takes or before rendering.

VERIFY THE DELIVERED FILE

The guard reduces reconstructed-peak risk, but it is not a promise for every signal or subsequent encoding. Check your exported file with a dedicated meter. Short-term LUFS alone does not describe a whole master.

The separate 4x guard detector and 4x peak meter do not follow the main Oversampling menu. Reported latency stays constant across its factors at a given sample rate.

09 / METERING AND MONITORING

Read it. Then listen.

Use the screen to understand the action, and your ears to decide whether it helps.

Display	Meaning
Short Term	A rolling three-second, K-weighted loudness reading in LUFS. This build has a short-term readout; it does not provide an integrated-program loudness result.
GR / GR History	Gain reduction in dB and a recent visual history of the action. The reading combines main-limiter and final-guard reduction; it is not the total input-to-output gain change.
True Peak	A 4x estimate of the final monitored signal's peak in dBTP. It remains available with the guard switched off.
L / R meters	Output sample peaks for the left and right channels. These are separate from the numeric true-peak estimate.

Gain Match

Compares input and processed signal energy, then attenuates the processed signal when it is louder. It settles over time and does not boost a quieter processed signal. Unity takes priority if both are enabled.

Delta

Auditions latency-aligned dry minus compensated wet. It helps reveal the difference, including level or character changes. Use it briefly and at a comfortable monitoring level; return it to off to hear the normal processed signal.

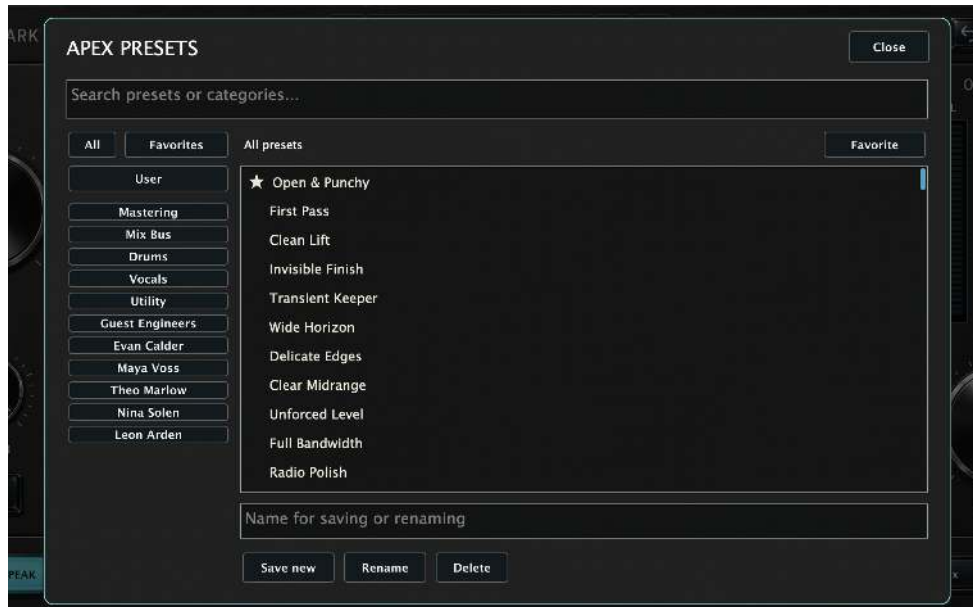
Bypass

Auditions the latency-aligned dry signal and takes priority over Delta. The output meters follow what you are currently monitoring, so a bypass or Delta reading is not a measurement of the ordinary processed output.

10 / PRESETS

A library that stays close.

Browse by purpose. Keep the useful starting points. Bring your own.



150 factory starting points: the original 80 mastering, 15 mix-bus and 5 utility recipes, plus 50 presets across five fictional guest collections. Each guest collection contains mastering, mix-bus, drum and vocal recipes.

Browse: choose a category or engineer on the left. Search matches full preset paths. Click a preset to audition; double-click or press Enter to load and close. The top-bar arrows traverse the factory bank. Use the star or Favorite button to mark a preset.

Save new: enter an unused name to save the current settings. Rename / Delete: select a user preset; Delete asks for confirmation. Factory recipes are protected. Load: choose an APEX XML preset from another folder; APEX imports a copy, applies it and selects it under User. Duplicate names receive a suffix.

The screenshot shows the approved browser before the Load button addition. Guest names are fictional collection labels. They do not credit real contributors.

Compare with confidence.

Keep alternatives close, and make deliberate decisions.

A/B/C comparison slots

Each slot holds an independent set of parameter values. When you leave a slot, its current settings are retained; selecting another recalls that slot. Prepare each slot deliberately by loading a preset or adjusting its controls. Switching slots clears Undo history.

Undo, Redo and precise edits

Undo and Redo restore parameter edits and factory preset changes. Loading a user preset also clears Undo history. Double-click a numeric value to type a value; hold Shift while dragging for fine adjustment. Double-click a knob to return it to its default.

Appearance and window size

Press the Shark Plugs logo to switch between black and silver finishes. Open the hamburger menu for 80%, 100%, 120% and 140% zoom, Manual and About / License. At 100%, the interface is approximately 1066 x 533 pixels.

Sessions and portable presets

The DAW session stores parameters, all three comparison slots, the selected finish and zoom. User XML presets store audio settings; they do not carry the finish or zoom. To share a user preset, copy its XML file from the preset folder and use Load in the receiving APEX instance.

MAC PRESET LOCATION

In Finder, choose Go to Folder and open:

~/Library/Shark Plugs/Apex/Presets

Back up this folder to keep your user XML files and favorites list.

12 / IN PRACTICE

Four useful first passes.

These are listening paths, not fixed loudness targets.

Mastering / Open & Punchy

Load Mastering / Transparent / Open & Punchy. Reduce or increase Input for the source. Check transient shape and bass stability; compare Balanced if recovery feels too active. Keep True Peak on and check the final export separately.

Mix bus / Gentle Glue

Load Mix Bus / Gentle Glue. Aim for light action first. Listen across a chorus transition: if the mix stops opening up, reduce Input or shorten Recovery. Revisit the ceiling and monitoring options before printing.

Drums / Transient Snap

Try Guest Engineers / Evan Calder / Drums / Transient Snap. Adjust Input until the drum bus feels controlled. Check cymbal texture and the first edge of the kick; back off drive if impact disappears.

Vocals / Lead Control

Try Guest Engineers / Maya Voss / Vocals / Lead Control. Set Input around the loudest phrase, then listen to breaths and endings. Keep Lift low or off if quieter details become too prominent. APEX does not replace dedicated de-essing.

MAKE A SECOND PASS AT LOWER VOLUME

Once the settings feel right, reduce your monitor level and compare again. Check that the vocal, groove and overall balance still make sense.

13 / TROUBLESHOOTING

When something feels wrong.

Start with the simplest cause. Change one thing at a time.

Symptom	What to check
Little or no reduction	Raise Input or lower Ceiling while watching GR. Check Bypass. Quiet material may not reach the current target.
Louder drive, little output lift	Check Unity and Gain Match. Both can attenuate the processed result. Heavy limiting can also absorb the extra drive.
Unexpected or thin audio	Turn Delta off. Confirm Bypass and the selected A/B/C slot, then compare with a known preset.
Rough bass or cymbals	Lower Input, return Bias to 0 and disable Optimizer. Compare Recovery, Detector and Voicing before adding more drive.
Unsteady stereo image	Check Link, Min and Max. Try a higher Min while monitoring centered sources.
CPU spikes or brief silence	Lower Oversampling if CPU is constrained. A short dip during an oversampling change is part of the transition.
Preset will not import	Load accepts complete APEX parameter XML files. Another plugin's preset or a DAW session file is a different format. Check access to the local preset folder.
Preset is missing	Clear search and select All or User. A category filter can hide user presets.
Blank loudness readout	Play signal for several seconds. Dashes indicate that the readout is below its displayed range or not yet populated.

If you need help, record the APEX build, DAW, operating system, sample rate, oversampling factor and steps that reproduce the issue. A short audio example and screenshot help separate sound behavior from display behavior.

14 / REFERENCE

The details, in one place.

Current APEX control ranges and document scope.

Parameter	Range / default
Input / Ceiling / Output	-24 to +24 / -24 to 0 / -24 to +12 dB Defaults: 0 / -1 / 0 dB
Response / Recovery / Bias	1-11 / 1-9 / -8 to +8 Defaults: 8 / 4 / 0
Link Threshold / Slope	-60 to 0 dB / 0.10-4.00 Defaults: -18 dB / 1.00
Min / Max Link	0-100% each; defaults: 25% / 100%
Makeup / RMS Threshold / Lift	0-6 dB / -60 to -6 dB / 0-6 dB Defaults: 0.5 dB / -24 dB / 0 dB
Engine / Voicing / Detector	Adaptive / Open / Fast by default
Oversampling	1x, 2x, 4x, 8x, 16x, 32x; default: 4x
Switch defaults	Link and True Peak on. Optimizer, Unity, Gain Match, Delta and Bypass off.

Build and document scope

Review edition 01, September 2026. Written for the APEX 0.2.1 source lineage with the 150-preset browser and Load update. Mono and stereo processing are implemented. The build targets include Mac AU/VST3 and Linux VST3; final release compatibility and installer requirements are pending validation.

APEX uses lookahead and reports its processing delay to the host. Linux checks recorded 204 samples at 48 kHz. These checks are not a substitute for Mac host testing or musical listening. Product audio refinements may require a documentation update before publication.