HumanizerHost

User manual · version 0.8.0

HumanizerHost is a free VST3 instrument for macOS and Windows (built for Cubase and Dorico) that hosts your sample libraries and makes them breathe. Instead of flat, static MIDI, every long note gets a musical dynamics curve — a swell, a messa di voce, a fade — written automatically as MIDI CC or pitch bend, exactly fitted to the note's length. And with several instruments loaded, each one receives its **own rendition** of the performance: a section of players, not one player copied.

How it works

HumanizerHost delays the incoming MIDI by an **analysis window** (default 5 s, adjustable). That delay is what lets it see the future: when a note arrives, the plugin already knows how long it will last. Notes longer than the **long-note threshold** get an expression curve stretched over their full duration; shorter notes pass through untouched. The delay is real and audible by design, and identical on the timeline and when exporting — what you hear is what renders.

By default the humanizer runs in **Playback only** mode: it engages during host playback and export, while live input with the transport stopped passes straight through with no delay — so auditioning your instruments feels instant.

The Notes page — 8 curve lanes

Each of the eight lanes writes one target — any MIDI CC (CC1 Mod Wheel, CC11 Expression, …) or **Pitch bend**, as full-resolution 14-bit wheel curves — and has its own:

- **Curve** — a breakpoint editor (drag points, double-click to add, bend segments) defining the shape applied to every long note. The endpoints are exact: every note starts and ends precisely on your curve.
- **Presets** — eight factory shapes (Swell & settle, Messa di voce, Crescendo, Diminuendo, Attack & sustain, Fade at end, Sforzando, Flat) plus your own: save the current curve under a name, rename or delete it. User presets are stored app-wide and available in every project.
- **Mode** — *Replace* overwrites any CC you play; *Scale* multiplies your played CC by the curve, so your own expression still shapes the result. (The pitch wheel is bipolar, so bend curves always replace.)
- **Min / Max** — the output range the curve is mapped into. For pitch bend, the editor's vertical middle is the wheel's centre: 0 = max down, 64 = centre, 127 = max up.

- **Glide** — instead of jumping, the output ramps into each new curve and back out of it (0–500 ms). Glide is legato-aware: on overlapping notes it pre-glides to the next note's starting level *before* the attack, so your library's legato transitions trigger at the right dynamics.
- **Variation** — per-note random jitter of the curve's interior points (timing and value, symmetric around each point), so two identical notes never render the same curve twice. Seeded per note: exports reproduce the performance you approved.

Two global settings complete the page: the **window/delay**, the **long-note threshold**, and **Ensemble timing** (± 0–100 ms) — each rack slot plays every note slightly early or late, like the players of a section, with note durations preserved and keyswitches untouched.

The Phrase page — phrase-level dynamics

Optionally, whole phrases get a dynamic arc before the per-note curves: the dynamics CC follows the melodic contour — rising above the phrase's first note pushes the CC up (default +70% per octave), dipping below pulls it down — and the phrase fades away to silence on its final note. Phrases are detected automatically from note spacing (configurable gap and silence thresholds).

- **Keyswitch threshold**: notes below this pitch (default C0) still play but are invisible to the whole humanizer — no curves, no phrase detection, not shown in the Monitor.
- **Variation per instrument**: each rack slot leans into the contour a little differently; slot 1 always plays the exact contour.
- **Vibrato depth / rate CC**: two follower controllers mirror everything sent on the dynamics CC, each scaled by its own percentage (0–200%) — so the vibrato breathes with the phrase. A follower combines with a curve lane on the same CC instead of fighting it: in *Scale* mode the note curve multiplies the follower, in *Replace* mode the curve owns the note.

The Instrument page — a 16-slot rack

Sixteen slots are layered and summed (the strips scroll), each with:

- an **instrument** (any VST3 — Synchron Player, Kontakt, BBC SO, SWAM, …),
- an optional **insert FX** (e.g. Vienna MIR Pro for placement/reverb),
- a **slot volume**, into a shared **master volume**.

Every slot receives its **own rendition** of the humanized MIDI — same settings, different seeds (curve variation, ensemble timing, phrase variation). Slot 1 is the reference: exact timing, exact contour. Everything stays seeded per note, so replaying or exporting gives the same renditions every time.

Multi-core rendering (on by default) spreads the occupied slots across your CPU cores on a worker pool shared by every HumanizerHost instance in the session — a rack full of heavy instruments no longer saturates one core, even in large templates with many plugin instances. Turn it off with the *Multi-core* toggle if a hosted plugin misbehaves. The workers run only on the machine's performance cores and, on macOS, inside the audio workgroup of the device your DAW is streaming on, so the system schedules them together with the audio thread — that is what keeps a sixteen-instrument tutti from dropping out.

Render meters tell you where the time goes: each slot strip shows its peak render time per block (instrument first, then *fx* for the insert), and the line under the master volume shows the rack's peak against the block's real-time budget, plus the workers and the device workgroup they joined. A slot in orange uses more than half the budget on its own; red means it alone exceeds it — that is the plugin to lighten (a smaller MIR Pro venue, a lower quality setting, or moving it to another HumanizerHost instance).

Plugin editors open in floating windows. When loading, type keywords to filter the plugin list by name, maker or format — Enter or double-click loads. Scanning runs safely out-of-process via **Manage plugins…**.

The Monitor page — see what it plays

A live, scrolling before/after view: one track per monitored controller (lane targets, the phrase CC and its vibrato followers, pitch bend included), the humanized output as a solid curve, your original values dashed, aligned on the same timeline. A mini piano-roll strip shows the note stream. Pick which slot's rendition to watch with the **Slot** selector, set the view window (1–30 s) and **Freeze** the display to examine a phrase. Monitoring is free: it never touches the audio path while the tab is closed.

Good to know

- Everything — hosted plugins, their full state, curves, settings — is saved with the DAW session, and audio export (freeze/render) is fully supported.
- One curve owns a controller at a time: on overlaps, the most recent long note wins.
- Set the threshold ~10 % below the shortest note you want humanized — quantized notes in a DAW end slightly early.
- The green **Enabled** / red **Disabled** button (top right) bypasses the humanizer in every instance of the session at once, for A/B comparison — instruments and inserts keep running. Always on at launch.
- Variation only moves the curve's *interior* points — give a lane's curve at least one point between its endpoints if you want per-note (and per-slot) variation on it.