FULL PRODUCT REFERENCE

Complete User Guide

A full customer guide covering source mixes, groove profiles, arrangement, editing, private models, drum shaping, effects, routing, setup and soundbanks.

IUS DX-1 documentation. Version 0.5.2.17.

Public-facing user guidance. No source code, protected formulas, model internals, or research algorithms are disclosed.

How to use this guide Read the first two chapters before using IUS DX-1 for the first time. Use the page-by-page reference when you need a specific control, and use the troubleshooting chapter when a button is locked, a soundbank is missing, or audio is not heard.

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1. Product orientation

IUS DX-1 is a drum-generation, groove-analysis, soundbank, arrangement, and performance tool delivered as a standalone application and VST3 plug-in. It is designed for users who want to listen to an idea, generate source material, shape timing and drum parts, arrange clips on a timeline, and route the result through effects without needing to understand the protected research or source code behind the system.

Protected-content boundary This guide intentionally excludes source code, mathematical formulas, model architecture, training details, proprietary heuristics, and research implementation. It explains what the software does, where each user-facing control is, and how to operate the product safely and professionally.

WHAT IUS DX-1 IS FOR

- Creating five complete drum source mixes quickly, each with a different musical character.
- Capturing a live rhythm idea through MIDI or percussive audio and converting it into usable groove material.
- Building longer full-track drum arrangements from a musical brief.
- Editing MIDI events, shaping timing, adjusting drum-part energy, applying FX, and routing signals.
- Using factory, imported, verified, or hybrid soundbanks while retaining synthetic fallback when needed.

WHAT IUS DX-1 IS NOT

- It is not a tutorial about protected algorithms, formula design, research methods, or code internals.
- It is not a replacement for DAW export, bounce, or mastering workflows. In plug-in use, final delivery normally happens through the host DAW.
- It does not guarantee that optional private-model routes are installed on every system. Lab status indicators show what is available in the current installation.

CORE CONCEPTS

CONCEPT	MEANING FOR THE USER	WHY IT MATTERS
Source Mixes	The five generated Mix A to Mix E loops. Each mix is a complete full-kit drum idea, not a single drum part.	They are reusable building blocks for previewing, editing, arranging, and full-track generation.

CONCEPT	MEANING FOR THE USER	WHY IT MATTERS
Brain Profile	A captured and analyzed timing and groove profile from live input.	It lets the software create loops or full tracks that follow the feel of the captured performance.
Full Track	A longer structured drum arrangement built from a brief and source material.	Use it when you need more than a loop, such as an intro-to-outro drum performance.
Master Arrangement	The timeline in ARRANGE where clips become the song-level drum structure.	It separates reusable source cards from the actual song timeline.
Hybrid Engine	Sample playback when available, with synthetic fallback when needed.	It prevents a missing or incomplete soundbank from stopping all playback.
Soundbank	An installed, verified drum kit or sample library.	It changes the audible character of playback and rendered audio.
Stage Gating	Buttons unlock only when their prerequisite data exists.	It protects users from invalid operations, such as analyzing before capture or building from a missing source.

THE APPLICATION MAP

TAB	PRIMARY JOB
HOME	Generate, preview, regenerate, and send the five source mixes. This is the fastest place to make usable drum material.
ENGINE	Capture live MIDI or percussive audio, analyze the timing profile, then convert the analysis into source loops or a full track.
GENERATE	Build a longer arrangement from a musical brief: purpose, duration, genre, feel, energy, loudness, structure, source, fills, crashes, drops, and transitions.

TAB	PRIMARY JOB
PLAY	Monitor live playback and performance state for the generated mixes and arranged material.
LAB	Manage the open private model catalog, online model downloads, local model imports, verification, smoke tests, select and arm state, soundbanks, and runtime status.
ARRANGE	Build a DAW-style master timeline by dragging source loops, resizing clips, rendering selected material, and sending the result onward.
EDIT	Edit generated MIDI notes at lane level with select, draw, erase, velocity, quantize, copy, paste, delete, apply, and send controls.
GROOVE	Apply timing, pocket, swing, humanize, density, velocity, and groove lock settings to a selected mix, every mix, or a timing target.
DRUMS	Shape kick, snare, hats, toms, cymbals, and percussion with live part modifiers and analyzer views.
FX	Apply and manage effect modules across Mix A to Mix E: chorus, delay, reverb, chaos, reverse delay, reverse reverb, and bus processing.
ROUTING	Control signal flow, send amounts, on and off state, and pre and post behavior for each mix and route target.
SETUP	Open audio and MIDI setup in standalone mode, view host-managed state in plug-in mode, reset devices, and manage soundbank library actions.

APPLICATION PALETTE

The user interface uses a minimal private-build palette: pure black, near-black panels, grey outlines, soft white typography, and restrained dark-red accents. This document uses the same visual system for headings, section bands, table headers, and warning callouts.

APP COLOR NAME	HEX CODE	TYPICAL UI USE
Black	#000000	Main background and cover fields
Near black	#030303	Raised background and core panels
Control black	#070707	Control interiors
Panel grey-black	#111111	Cards and table headers
Line grey	#333333	Subtle dividers and outlines
Deep red	#3A080B	Low-intensity red emphasis
Red accent	#6F1016	Active emphasis, selected items, key warnings
Soft white	#F2F2F2	High-contrast text on dark fields
Grey text	#B8B8B8	Secondary dark-theme text

2. First session workflow

This chapter walks through the fastest reliable way to reach sound, generate material, and build an arrangement. The same logic applies in standalone mode and inside a DAW, but device setup differs.

BEFORE PRESSING GENERATE

1. Open the standalone app or insert the VST3 plug-in on a DAW track.
2. Confirm audio output. In standalone mode, use SETUP > Open Device Panel. In a DAW, use the host audio preferences and track routing.
3. Choose a sound engine: Synthetic for immediate internal playback, Samples for a loaded soundbank, or Hybrid when you want sample playback with fallback protection.

4. Set the musical frame: BPM or Host Sync, Root, Scale, Style, Humanize, Density, and Swing.
5. Confirm Master Out is raised and at least one mix strip can play.

FIVE-MINUTE GENERATION PATH

STEP	ACTION	EXPECTED RESULT
1	Go to HOME and press GENERATE SOURCE MIXES.	Five source cards, Mix A to Mix E, are created.
2	Click Preview or PLAY SELECTED on a mix.	The chosen mix plays so you can audition it.
3	Use Regen on any weak mix.	Only that source mix is replaced while the others remain available.
4	Press Send on the best mix or SEND SELECTED TO ARRANGE.	The selected idea is placed into the arrangement workflow.
5	Open GENERATE, choose purpose, duration, genre, feel, and source.	The full-track brief is ready.
6	Press GENERATE FULL TRACK, then PLAY PREVIEW.	A longer generated drum arrangement is available for review.
7	Open ARRANGE, EDIT, GROOVE, DRUMS, FX, and ROUTING as needed.	The idea becomes a refined performance and mix-ready structure.

Best first result Start with Synthetic or Hybrid, keep Host Sync off in standalone mode unless you are inside a DAW, and use the Balanced or IUS Logic style for the first pass. Once you hear reliable playback, move toward more complex styles, groove profile analysis, imported banks, and routing.

THE RECOMMENDED FULL WORKFLOW

PHASE	WHERE	GOAL
Generate	HOME	Create five complete source mixes.
Listen	HOME or PLAY	Audition, compare, and keep the strongest material.
Analyze	ENGINE	Capture your own timing feel if you want IUS DX-1 to follow a live idea.
Build	GENERATE	Turn a brief and source material into a longer track.
Arrange	ARRANGE	Place, move, trim, split, loop, render, or send clips.
Edit	EDIT	Correct notes, accents, spacing, and velocity.
Humanize	GROOVE	Apply timing pocket, swing, density, and groove lock.
Shape	DRUMS	Personalize kick, snare, hats, toms, cymbals, and percussion.
Process	FX and ROUTING	Add movement, ambience, reverse effects, bus tone, and signal-flow control.
Deliver	DAW or standalone output path	Bounce, record, or route according to the installed release and host workflow.

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3. Page by page reference

The following pages explain each tab in the order shown in the application. The control names match the public labels in the interface wherever possible.

HOME : MAIN LIVE 5-LOOP BROWSER

HOME is the main browser for generated drum material. It is where most users create and audition the five source mixes before sending a mix into the arrangement or deeper editing pages.

CONTROL	USE
GENERATE SOURCE MIXES	Creates five new root-aware full-kit source mixes.
PLAY SELECTED	Plays the currently selected mix.
STOP	Stops playback.
PANIC	Stops stuck notes or urgent playback problems.
LISTEN	Starts Brain listening when on ENGINE; otherwise controls track recording and monitoring behavior for armed generated mixes.
LOOP	Toggles loop playback for repeat auditioning.
OVERDUB	Enables layered performance capture behavior where available.
Preview	Auditions one source card.
Send	Sends one source card to the arrangement workflow.
Regen	Regenerates one source card without replacing every source mix.
PREVIEW SELECTED	Auditions the selected card.
SEND SELECTED TO ARRANGE	Places the selected source in ARRANGE.
REGENERATE SELECTED	Replaces only the selected source.

MIX	CHARACTER	TYPICAL USE
Mix A	Balanced full-kit mix	Use it when you need the cleanest starting point for a song section.
Mix B	Sparse ghost full-kit mix	Use it for lighter sections, intros, breakdowns, or pocket-based movement.
Mix C	Syncopated full-kit mix	Use it when the groove needs controlled off-grid or syncopated energy.
Mix D	Rolling root full-kit mix	Use it when the beat should move steadily around the root and section pulse.
Mix E	Chaos fill full-kit mix	Use it for transitions, pickups, fills, tension, or higher-risk variation.

> Important mix concept Mix A to Mix E are five complete drum mixes. They are not kick, snare, hat, tom, and percussion stems. Use DRUMS when you want to shape individual drum-part behavior inside a mix.

ENGINE : CAPTURE AND ANALYZE

ENGINE is the IUS Rhythm Intelligence Engine workflow. It listens to a live idea, stores the captured events, analyzes the feel, then creates loops or a track from the resulting profile. The app only presents later actions when earlier stages have valid data.

BUTTON	UNLOCKED WHEN	RESULT
START LISTENING	The Brain is idle.	Begins live capture from routed MIDI or percussive audio.
STOP CAPTURE	Listening is active.	Stops capture and displays review information.
ANALYZE GROOVE	Captured data exists.	

BUTTON	UNLOCKED WHEN	RESULT
		Builds a public groove profile: tempo feel, downbeat confidence, timing feel, density, swing, and stability indicators.
CLEAR CAPTURE	Capture or analysis data exists.	Clears the groove capture workflow and returns to a clean state.
GENERATE 5 LOOPS FROM ANALYSIS	A valid groove profile exists.	Creates five source loops that follow the analyzed feel.
CREATE TRACK FROM GROOVE	A valid profile and and or generated material exists.	Builds a longer track from the captured feel.

BRAIN STAGE	USER MEANING
IDLE	Ready to capture.
LISTENING	Input is being recorded.
CAPTURED	Raw capture exists and can be analyzed.
ANALYZING PULSE and DOWNBEAT and GROOVE	The app is evaluating the captured feel.
GROOVE PROFILE READY	Analysis is ready to drive loop or track generation.
CONVERTING TO 5 LOOPS	Analysis is becoming source mixes.
CONVERTED TO 5 LOOPS	profile-generated source loops are ready.
BUILDING FULL TRACK	A longer structure is being created.
FULL TRACK READY	The generated track can be previewed or sent onward.

BRAIN STAGE	USER MEANING
FAILED	The workflow could not complete. Use the visible status message and Troubleshooting chapter.

> Capture quality matters The groove capture workflow is strongest when the input is rhythmically clear, routed correctly, and long enough to establish feel. Very quiet audio, ambiguous timing, or missing host routing can produce weak analysis or no capture.

GENERATE : FULL TRACK BUILDER

GENERATE turns a brief into a longer drum structure. The page follows a recipe-to-source-to-generate-to-preview-to-send workflow, so the next sensible action is always the most important control.

CONTROL AND FIELD	CHOICES OR USE
Purpose	Full song, Intro, Verse, Chorus, Drop, Breakdown, Loop pack, Transition, Background groove.
Duration	Common values include 0:30, 1:00, 1:30, 2:00, 3:00, 4:00. Editable custom values are accepted within the release limit.
Genre	House, Techno, Afro House, Garage, Trap, Drill, Hip-Hop, Pop, R&B, Breakbeat, DnB, Rock, Generic.
Feel	Natural, Tight, Loose, Human, Mechanical, Swung, Aggressive, Laid back.
Energy	Low, Medium, High, Build-up, Drop-focused, Dynamic.
Loudness	Soft, Medium, Loud, Club, Punchy.
Structure	Auto, Intro-Groove-Break-Build-Drop-Outro, Minimal loop, Club arrangement, Verse Chorus, Custom.

CONTROL AND FIELD	CHOICES OR USE
Source	Generate new Mix A to Mix E first, use current Mix A to Mix E, use selected mix, use IUS Rhythm Intelligence Engine analysis, or use internal seed.
Fill and Crash and Build and Drop and Breakdown amount	Low, Medium, High, Max.
Transition	Clean, Tom Run, Snare Roll, Crash Resolve, Glitch Stutter, Drop Stop.

BUTTON	USE
GENERATE SOURCE MIXES	Creates or refreshes the source material required for a full-track build.
GENERATE FULL TRACK	Builds the structured track from the current brief and source.
PLAY PREVIEW	Auditions the generated full track.
SEND TO ARRANGE	Places the generated track into the arrangement timeline workflow.
SEND TO TRACK	Sends the result into the live and performance track workflow.
REGENERATE	Runs the build again with the same or updated brief.

When IUS Rhythm Intelligence Engine is the source A valid groove profile is required before the full-track builder can use groove profile analysis as the source. Capture first, stop capture, analyze, confirm profile ready, then return to GENERATE.

PLAY : LIVE PERFORMANCE MONITOR

PLAY is used to monitor live performance state and generated mix output. It complements HOME by focusing less on source browsing and more on what is currently playing, armed, recorded, routed, or monitored.

AREA	WHAT TO CHECK
Transport	Playback, stop, panic, loop, and listening and record state.
Mix strips	Mute, solo, enable and arm, loop, meter, gain, pan, and quick effect controls.
Meters	Confirm whether signal is leaving the mix and master output.
Right monitor strip	Drive, Comp, Room, Hat Filter, and Master Out for global finishing and monitoring.

> Arm and enable behavior A mix that is not enabled or armed may not sound or record. If a generated mix is visible but silent, check its strip before changing the soundbank or routing.

LAB : MODELS AND SOUNDBANKS

LAB contains two public areas: Private Models and Soundbanks. It shows installed capabilities, optional runtime and fallback status, import tools, approved download catalog actions, and verification tools. It should be used before depending on a new kit or optional private route in production work.

SOUNDBANK WORKFLOW	PURPOSE
Current Engine	Choose Synthetic, Samples, or Hybrid and view the active bank, kit, and status.
Factory Bank	Use the bundled IUS Factory Core Drums bank for immediate internal playback.

SOUNDBANK WORKFLOW	PURPOSE
Download Approved Banks	Install approved official and verified catalog entries when available.
Import Local Bank	Import folders, ZIPs, SFZ, DrumGizmo-style sources, .iusbank files, and supported audio formats.
Review + Verify	Confirm installed banks, mapping, missing files, warnings, checksum failures, and local registry status.
Advanced	Rebuild registry, open local library folders, refresh status, and troubleshoot local content.

LAB BUTTON	USE
Private Models	Switches to runtime and model status view.
Soundbanks	Switches to soundbank management view.
Rebuild Registry	Re-scans the local library registry.
Open Library	Opens the soundbank library folder.
Import Soundbank and Import File	Starts local import and mapping review.
Verify Installed Banks	Checks installed banks before use.
Download + Install	Downloads and installs an approved bank entry when the catalog entry is available.
Install All Verified CC0	Installs verified CC0 catalog entries where available.
Install Commercial-Use	Installs entries cleared for commercial-use policy where available.

LAB BUTTON	USE
Open Official Source	Opens the official public source for the selected bank.
Cancel Download and Retry Download	Manages failed or in-progress download actions.

> Licensing behavior The bundled factory bank is intended for immediate use. Official downloads and imported content should be verified before release work. Do not assume that a third-party bank is royalty-free, commercial-safe, or redistributable unless its source and license clearly say so.

ARRANGE : DAW MASTER TIMELINE

ARRANGE separates the reusable source pool from the master song timeline. Source cards are reusable ideas. Timeline clips are the song arrangement. MIDI maps remain visible while audio render cache state catches up, so a pending hybrid render should not appear as an empty idea.

BUTTON AND TOOL	USE
PLAY PAUSE	Starts or pauses arrangement playback.
STOP	Stops timeline playback.
|< START	Returns to the beginning.
LOOP	Loops the selected region or arrangement playback where supported.
DELETE CLIP	Deletes the selected timeline clip.
SEND TO TRACK	Sends the arrangement selection to the track and performance workflow.
RENDER SELECTED	Creates and refreshes audio render cache for selected material.

BUTTON AND TOOL	USE
RENDER DIRTY	Renders material that has changed since the last render.
CLEAR RENDER	Clears render cache for selected or relevant material.
SELECT and TRIM and SPLIT	Selects, resizes, or splits timeline clips.
SNAP 1 and 16	Snaps clip movement and resizing to the sixteenth-note grid.
VIEW AUTO	Shows the most useful representation based on MIDI and audio and render state.

GESTURE	RESULT
Drag a source card to a timeline row	Creates a clip in the master arrangement.
Double-click a source card	Sends it to the current playhead position.
Double-click an empty master lane	Creates a 4-beat clip at that beat.
Drag a clip body	Moves the clip.
Drag a clip edge	Trims or resizes the clip.
Right-click a timeline clip	Deletes the clip.
Click the grid	Moves and seeks the playhead.

MIDI versus audio visibility MIDI and pattern information can be visible immediately. Audio waveform visibility depends on a real render cache and an available soundbank path. Use Render Selected when audio visualization is required.

EDIT : MIDI DRUM EDITOR

EDIT provides direct note-level editing for generated drum material. It is opened by clicking the EDIT tab or double-clicking a Main mix card. The grid uses five drum lanes and a velocity lane for quick correction and personalization.

TOOL AND BUTTON	USE
SELECT	Select notes for movement, editing, copying, or deletion.
DRAW	Adds a note snapped to the selected grid.
ERASE	Deletes notes; right-click also deletes where supported.
VELOCITY	Edits the note velocity lane.
QUANTIZE	Tightens selected notes to the grid.
COPY and PASTE	Copies and pastes selected note material.
DELETE	Deletes selected notes.
APPLY TO SOURCE	Commits edits back to the source pattern.
SEND TO ARRANGE	Places the edited groove into ARRANGE.

SHORTCUT	ACTION
D	Draw tool.
E	Erase tool.
A	Select tool.
V	Velocity tool.

SHORTCUT	ACTION
Ctrl or Cmd + C	Copy.
Ctrl or Cmd + V	Paste.
Delete	Remove selected note.
Q	Quantize.

GROOVE : TIMING AND POCKET

GROOVE is where generated material becomes tighter, looser, more human, more mechanical, more swung, or more stable. It works on the selected mix, a specific Mix A to Mix E, or all mixes depending on the target setting.

CONTROL	USE
APPLY SELECTED MIX	Applies the current timing map to the selected mix.
APPLY ALL MIXES	Applies timing settings to every generated mix.
REGENERATE TIMING	Creates a fresh timing map from the selected settings.
RESET TIMING	Returns timing behavior to a neutral baseline.
GROOVE LOCK	Prevents timing apply and regenerate and reset operations when locked.
Target	Selected Mix, Mix A, Mix B, Mix C, Mix D, Mix E, or All Mixes.
Pocket boxes	Center, Ahead, Behind, Push Pull, Laid-back Snare, Rushed Hats for global or part-specific feel.
Grid division	1 and 8, 1 and 16, or 1 and 32.

CONTROL	USE
Timing controls	BPM, Humanize, Density, Swing, Min Gap, Velocity Random.

> Groove Lock When Groove Lock is active, the page intentionally blocks apply, regenerate, and reset actions. Turn the lock off before changing timing maps.

DRUMS : DRUM PARTS LIVE PERFORMANCE CONTROL

DRUMS shapes the internal behavior of the drum parts while retaining the underlying generated pattern. Use it for musical personalization: stronger kick anchor, more ghost snare, denser hats, tom movement, cymbal transitions, or percussion texture.

PART GROUP	CONTROLS
Kick	Intensity, Density, Space, Punch, Pocket, Sync.
Snare	Intensity, Ghost, Backbeat, Flam, Rim Clap, Fills.
Hats	Intensity, Density, Open Hat, Roll, Space, Push Pull.
Toms	Intensity, Fills, Direction, Density, Space, Impact.
Cymbals	Crash, Ride, Bell, Accent, Transition, Choke.
Percussion	Intensity, Density, Texture, Accent, Space, Variation.

CONTROL	USE
Live Preview	Auditions the part-shaping changes live.
A and B	Compares current modifiers with an alternate state.
FREEZE	Keeps the modifier layer in the current session.

CONTROL	USE
RESET ALL	Returns part modifiers to 0%.
Target	Current Arrangement, currently playing clip, selected mix, Mix A to Mix E, all generated mixes, or all arrangement clips.
Monitor View	Scope, Waveform, Hybrid, Part Energy, MIDI Overlay, or Spectrum.
Monitor Source	Drum bus post-FX, master output, selected target, or MIDI overlay.

FX : SOUND DESIGN GRAPH

FX displays a grid of Mix A to Mix E against effect modules. Click one card to edit that exact cell in the inspector. The selected cell receives the strongest red emphasis so that scope and target remain clear.

MODULE	PUBLIC BEHAVIOR
Chorus	Chorus, flanger, phaser, micro-width, or auto-pan style motion.
Delay	Clean, tape, ping-pong, slap, dub, or ducked delay behavior.
Reverb	Room, plate, hall, gated, drum room, or shimmer space.
Chaos	Stutter, beat repeat, roll, tape stop, filter sweep, lo-fi, or bitcrush style movement.
Reverse Delay	Reverse delay, reverse ping-pong, reverse tape, or reverse throw.
Reverse Reverb	Reverse room, reverse plate, reverse hall, swell, or impact wash.
Bus	Clean bus, punch glue, tape glue, parallel smash, wide bus, or dirty bus finishing.

INSPECTOR AREA	USE
Target	Choose whether changes apply to the selected cell, a mix, all mixes, or the same slot across mixes where supported.
Type	Chooses the module style for the selected effect.
Bypass	Temporarily disables the selected effect.
Dry and Wet	Balances unprocessed and processed signal.
Param 1-4	Controls the public macro parameters for the selected effect type.
Reset	Returns the selected module to a safe baseline.
Copy To All Mixes	Copies the selected effect setting to matching slots across mixes.
A and B	Compares two effect states.

ROUTING : SIGNAL FLOW

ROUTING controls where each mix sends signal and whether those sends are enabled, pre and post, or attenuated. It is a signal-flow page rather than an effect-design page; use FX to change effect type and macro values.

ROUTING ELEMENT	USE
Rows	Mix A to Mix E.
Targets	The route targets available to the current build.
Cell state	on and off, send percentage, and pre and post status.
Click	Selects or focuses a route cell.

ROUTING ELEMENT	USE
Double-click or Alt-click	Toggles route on and off.
Shift-click	Selects a range from the last route selection.
Ctrl or Cmd-click	Adds or removes a route from the multi-selection.
Clear Sends and presets	Applies safe defaults or preset route states where available.

SETUP : AUDIO AND MIDI

SETUP handles audio and MIDI setup in standalone mode and shows host-managed behavior when IUS DX-1 runs inside a DAW. It also exposes soundbank actions that are useful when diagnosing playback.

MODE	HOW SETUP WORKS
Standalone	Open Device Panel shows the audio and MIDI device dialog. Choose audio output, input, sample rate, buffer size, MIDI input, and MIDI output as required.
Plug-in and DAW	The host owns the device, sample rate, buffer size, input routing, output routing, and sync transport. Use the DAW preferences and track routing.

CONTROL	USE
Open Device Panel	Opens audio and MIDI device configuration in standalone mode.
Refresh	Refreshes device and setup status.
Reset Device	Returns standalone audio setup to a safe system default where available.
Host Sync	Follows DAW tempo and transport when used as a plug-in.

CONTROL	USE
Root Lock	Keeps selected root behavior stable while generating.
Limiter	Protects the output from sudden peaks.
MIDI Out	Enables MIDI output behavior where supported by the host and build.
Import Soundbank and Verify Installed Banks and Open Library	Manages soundbank setup from the setup page. Private models are managed from LAB.

4. Soundbanks and private models

IUS DX-1 can run with its synthetic sound engine, verified sample soundbanks, Hybrid mode, and user-selected private models. Hybrid mode attempts sample playback when available and falls back to synthetic playback when needed. Private models are managed in LAB and can come from the included catalog, an online source, a Hugging Face style snapshot, or a local folder imported by the user.

> Trial and full feature parity The 24-hour Trial Demo exposes the same user-facing model, soundbank, Lab, Arrange, Generate, Export, and runtime features as the full build while the trial is active. The trial difference is the 24-hour evaluation limit.

FACTORY BANK

The package includes IUS Factory Core Drums as the bundled core bank. It is intended as the immediate built-in kit for new users and for reliable first-launch playback. Verify installed banks before commercial delivery or release work when the build exposes verification controls.

SOUNDBANK CATALOG

The soundbank catalog is designed around clear source and license status. Public-domain or CC0-style banks are the cleanest choices for broad commercial use. CC-BY

entries can require attribution, and unknown or non-commercial sources should not be treated as release-safe without review.

CATALOG PRINCIPLE	USER ACTION
Official or verified source	Prefer the Open Official Source and Verify controls before release work.
Clear license	Check whether attribution, redistribution limits, or commercial restrictions apply.
Checksum or integrity warning	Do not depend on the bank until the issue is resolved.
Missing samples	Use mapping review and replacement tools, or remove the bank from release use.
Local-only import	Imported material stays local and should be managed according to the user’s own license rights.

PRIVATE MODEL MANAGER

The LAB Private Models page is the customer-facing place to browse online models, add an online model, import a local model folder, download model files, verify files, run a smoke test, select a model, and arm or disarm it for generation. IUS DX-1 does not decide which compatible model you are allowed to use. It reports source, size, adapter, runtime, hardware, license notes, installation state, verification state, and error messages so you can make the decision.

STEP	CONTROL	RESULT
1	Select model	Highlights a catalog, online, or local model and shows details in the selected model panel.
2	Download / Install	Downloads or imports the model files and shows live progress, file size and current state.
3	Verify	Checks the manifest, files, checksum or available integrity data.

STEP	CONTROL	RESULT
4	Smoke Test	Confirms that the expected adapter or runtime can see the installed model.
5	ARM MODEL	Routes generation through the selected model when the technical requirements are satisfied.
6	Copy Diagnostics	Copies model ID, status, runtime, path, and last error for support or troubleshooting.

ONLINE AND LOCAL MODELS

The catalog can list Magenta-style symbolic models, local model packages, Hugging Face style snapshots, Python sidecar models, audio-to-MIDI models, and other user-added entries. Large external models can require additional downloads, Python packages, GPU/CPU resources, or a separate adapter. Those notes are informational; they are shown so the user understands what is needed before running the model.

STATUS	MEANING
Available online	The model is listed and can be downloaded or added by the user.
Not installed	The model is visible but its files are not installed locally.
Installed	The model files are present in the local model folder.
Verify required	Run Verify before relying on the model.
Smoke test required	The files exist, but the runtime or adapter still needs a basic test.
Ready	The model has the required files and runtime path available.
Armed	Generation is explicitly routed to the selected model.
Error	

STATUS	MEANING
	The status panel names the missing file, adapter, runtime dependency, or other technical reason.

IMPORT REVIEW

When importing a local bank or model folder, IUS DX-1 presents an import or verification workflow. Review the source, file path, manifest, mapping, dependency notes, and verification result before relying on the imported material for release work.

> External content responsibility Users are responsible for reviewing the source, license, terms, model card, sample permissions, and hardware requirements of third-party soundbanks and models. Do not extract, resell, repackage, or redistribute internal samples, runtime packs, model files, or private assets unless the relevant license permits it.

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5. Production workflows

STANDALONE WORKFLOW

1. Open SETUP and choose the audio output device. Choose MIDI input if playing or capturing a controller.
2. Select Synthetic or Hybrid while testing first playback. Move to Samples after confirming the bank is installed and verified.
3. Generate source mixes on HOME and use the mix strips to confirm metering, pan, gain, mute and solo, loop, and enable state.
4. Use ARRANGE for song structure and EDIT for detailed MIDI corrections.
5. Use FX and ROUTING for tone, space, movement, and signal-flow control.
6. Record, route, or render according to the capabilities exposed by your installed release.

DAW PLUG-IN WORKFLOW

1. Insert the VST3 plug-in on an instrument or MIDI-capable track in your DAW.
2. Route MIDI and and or audio into the track if you want Brain capture or live triggering.
3. Enable Host Sync when IUS DX-1 should follow the DAW tempo and transport.
4. Generate, preview, and arrange inside the plug-in, then bounce or export through the DAW’s normal workflow.
5. Use DAW automation and host routing for final mixing where the release supports it.

BRAIN-TO-TRACK WORKFLOW

1. Open ENGINE and press START LISTENING.
2. Play or route a clear rhythm idea into IUS DX-1.
3. Press STOP CAPTURE.
4. Press ANALYZE GROOVE and wait for GROOVE PROFILE READY.
5. Press GENERATE 5 LOOPS FROM ANALYSIS or CREATE TRACK FROM GROOVE.
6. Preview the result, send the best material to ARRANGE or GENERATE, then shape it using GROOVE, DRUMS, FX, and ROUTING.

ARRANGE-TO-PERFORMANCE WORKFLOW

1. Drag source cards from the pool into the master timeline.
2. Move, trim, split, and delete timeline clips until the structure works.
3. Use Render Selected or Render Dirty when audio visualization or cached playback is required.
4. Send the arrangement to the track and performance workflow when it is ready for live monitoring or further production.
5. Use the DAW or standalone output path to record, bounce, or continue production.

Release-specific export behavior Some builds expose render cache and recording workflows without a one-click public WAV export button. In plug-in use, the DAW bounce and export path is the safest final delivery method unless the purchased release documents a dedicated export command.

6. Troubleshooting

Most IUS DX-1 issues come from setup state, missing prerequisites, muted and disabled mixes, host routing, unavailable soundbanks, or stage-gated controls. Use the tables below before reinstalling or changing advanced settings.

SYMPTOM	ACTION
No audio is heard	Confirm the standalone audio device or DAW track output, make sure at least one mix is enabled, check mute and solo state, raise Master Out and track gain, generate material first, and confirm the sound engine has either samples or synthetic fallback available.
A button is disabled or locked	IUS DX-1 uses stage gating. Capture controls, analysis controls, full-track generation, and Brain conversion buttons unlock only after the required previous step exists.
ENGINE captures nothing	Start Listening, send MIDI or percussive audio into the app or plug-in, confirm input routing, stop capture, then analyze. In a DAW, the plug-in receives only what the host routes to that track.
GENERATE says it needs source material	Generate source mixes first, use current Mix A to Mix E, use a selected mix, or complete a valid groove profile analysis before choosing IUS Rhythm Intelligence Engine as the source.
ARRANGE clip looks empty or pending	Auto view should keep the MIDI and pattern map visible. Audio waveform visibility depends on soundbank availability and render cache state. Use Render Selected or Render Dirty when audio is required.

SYMPTOM	ACTION
Soundbank import fails	Use supported files or folders, verify license and source, review the mapping screen, replace missing samples, then install. A bank that cannot be verified should not be used for release work.
Private model will not arm or run	Open LAB, select the model, complete Download / Install, run Verify and Smoke Test, then ARM MODEL. If the status says a runtime, adapter, dependency or file is missing, install that technical requirement and refresh the model state.
DAW sync feels wrong	Enable Host Sync for tempo-following behavior, start the DAW transport, confirm the project tempo, and check whether the plug-in is placed on a track that receives MIDI and audio as intended.
Playback clips or distorts	Lower track gain, FX wet level, Drive, Bus intensity, or Master Out. Keep the Limiter enabled for protection, but do not use it as the only gain-control step.
Keyboard shortcuts do not work	Click the editor background or the grid first. Text fields, combo boxes, or the host can capture keyboard focus.

FAST DIAGNOSTIC ORDER

1. Look for visible status text on the current page. IUS DX-1 normally explains why a workflow is blocked.
2. Check whether you are in standalone mode or plug-in mode. Device and sync responsibilities differ.
3. Confirm a mix is generated, enabled and armed, not muted by solo state, and has gain above silence.
4. Check Master Out, Limiter, and right monitor strip controls.
5. Switch temporarily to Synthetic engine. If Synthetic plays, the audio path works and the issue is likely soundbank-related.
6. Verify installed banks and rebuild the registry if sample playback is expected.
7. For groove capture workflows, capture first, stop capture, analyze, then generate. Do not skip stage order.

8. For ARRANGE audio views, render selected or dirty clips and confirm a usable bank is available.
9. In a DAW, check track input, monitoring, plug-in output, host tempo, and transport state.

SAFE RESET SEQUENCE

1. Press STOP, then PANIC if playback or notes are stuck.
2. Turn off solo buttons or confirm the intended solo state.
3. Set Master Out and track gains to moderate values.
4. Return FX Dry and Wet and bus processing to conservative levels.
5. In standalone mode, use SETUP > Reset Device if the audio device has become invalid.
6. Rebuild or verify soundbank registry only if playback depends on imported or sample-based banks.
7. Save your DAW project before removing and reinserting the plug-in.

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7. Public reference appendices

GLOBAL CONTROLS

CONTROL	PURPOSE
BPM	Sets internal tempo when Host Sync is not controlling the plug-in.
Host Sync	Follows DAW tempo and transport.
Root and Scale	Sets the musical root and scale framework for root-aware generation.
Style	Chooses the public generation character.

CONTROL	PURPOSE
Humanize	Adds timing variation within the public control range.
Density	Controls event activity and rhythmic occupancy.
Swing	Controls swing feel.
Min Gap	Prevents events from becoming too crowded.
Velocity Random	Adds controlled variation to note velocity.
Master Gain and Master Out	Controls final output level.
Limiter	Protects output from peaks.
MIDI Out	Enables MIDI output behavior where host and build support it.

STYLE REFERENCE

STYLE ROUTE	PUBLIC DESCRIPTION
IUS Logic	Signature TAP route that balances rhythm profile, musical context, human feel, and controlled variation.
Balanced	Stable, clean, arrangement-ready generation for general use.
Sparse Ghost	Pocket-oriented output with lighter movement and softer notes.
Broken Sync	Controlled syncopation and off-grid movement.
House Drive	Steady dance-pulse material with forward movement.
Chaos Fill	Transition and fill-focused output for riskier moments.

STYLE ROUTE	PUBLIC DESCRIPTION
Private model routes	User-selected private models can drive supported workflows after they are installed, verified, smoke-tested and armed. The guide describes the user workflow only, not the model internals.

BUILD AND PACKAGE NOTES FOR TECHNICAL INSTALLERS

Most purchasers should use the supplied installer or binary package. If your distribution includes the source and developer package, build instructions may include CMake and JUCE setup, VST3 and standalone targets, and copying private lab soundbank resources into the build output. Only technical installers should use source-build instructions.

> Validation note Public documentation should always be checked against the final release build that customers receive. Optional features, export behavior, model routes, online downloads, external runtimes, and host integration can vary by build, operating system, model source, and DAW.

USER SAFETY AND PROFESSIONAL-USE REMINDERS

- Keep project backups before major regeneration or arrangement changes.
- Verify imported content licensing before releasing music commercially.
- Use moderate monitoring levels when trying new soundbanks or FX chains.
- Do not rely on a private model until LAB confirms it is installed, verified, smoke-tested, selected and armed.
- Use PANIC when playback or notes become stuck, then inspect routing and host state.

FINAL GLOSSARY

TERM	PUBLIC MEANING
Source card	A reusable generated mix card in the source pool.

TERM	PUBLIC MEANING
Clip	A placed item on the ARRANGE master timeline.
Dirty render	A clip or region that changed after its last render cache.
Hybrid pending	A state where MIDI and pattern data exists but audio waveform render cache is not yet available.
Profile ready	The groove profile analysis is complete enough to drive generation.
Fallback	A safe alternative engine or route used when an optional asset or technical runtime requirement is missing.
Registry	The local index of installed soundbanks and related metadata.

Customer handover checklist

Before publishing this guide with a commercial installer, confirm the checklist below against the exact binary build customers receive.

- The visible version number in the app matches the document version.
- The final tab names match HOME, ENGINE, GENERATE, PLAY, LAB, ARRANGE, EDIT, GROOVE, DRUMS, FX, ROUTING, and SETUP.
- The purchased build includes the same export, render, model, and soundbank features described to customers.
- The bundled factory bank and any download catalog entries have release-safe license records.
- The support team has a current list of known host-specific issues and verified DAWs.
- Screenshots, if added later, must not show protected source code, internal research notes, or private model implementation details.