

arctone.studio

Manual

Layering plug-in host, presets and preset verification

Version 1.0

Arctone

Built 15 November 2026 from the same source as the in-app Help

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Chapter 1

Welcome to arctone.studio

arctone.studio is a layering plug-in host by Arctone. It loads several instruments and effects at once and stacks, splits and routes them, gives you 32 macro knobs with built-in LFOs, a patch library and a performance page. It runs as a standalone app or as a VST3 or Audio Unit plug-in inside your DAW.

This manual covers arctone.studio: the standalone app, the plug-in, and the tools that capture, import and check the presets of your plug-ins. Everything in it is also available inside the program: hover over anything and press **F1**, or open **Help** from the menu and search.

What arctone.studio is

arctone.studio is a *host*: a plug-in that hosts other plug-ins. A single arctone.studio patch can contain a piano layer, a pad layer split across the keyboard, a MIDI arpeggiator feeding a synth, reverb sends, and 32 macro knobs that move parameters on all of them at once.

- **Standalone app.** Opens its own window and talks to your audio interface and MIDI keyboard directly.
- **VST3 and Audio Unit plug-in.** Loads inside your DAW like any instrument. arctone.studio's own controls stay in its editor.

> NOTE The standalone app and the plug-in share the same engine and the same files. A patch saved in one opens in the other.

Key ideas

Six words carry most of arctone.studio. Learn these and the rest follows.

Word	Meaning
Layer	One track in the layer list. It has its own MIDI filter, plug-in chain, fader, pan and sends. See Layers and layer types (p. 61).
Slot	A place in a layer's chain that holds one plug-in: a MIDI effect, the instrument, or an insert effect. See The plug-in chain (p. 69).
Patch	Everything you hear: all layers, their plug-ins and settings, the macros. Saved as a `.aspatch` file. See Patches (p. 97).
Macro	One of 32 knobs that can drive any number of parameters. See Macros (p. 87).
Preset	A saved sound of one plug-in. arctone.studio keeps its own preset files (`.aspreset`) so any plug-in's presets can be browsed and loaded. See What a arctone.studio preset is (p. 156).
Worker	A helper process used for risky work such as scanning or loading a plug-in you don't trust yet. See Why work happens in worker processes (p. 210).

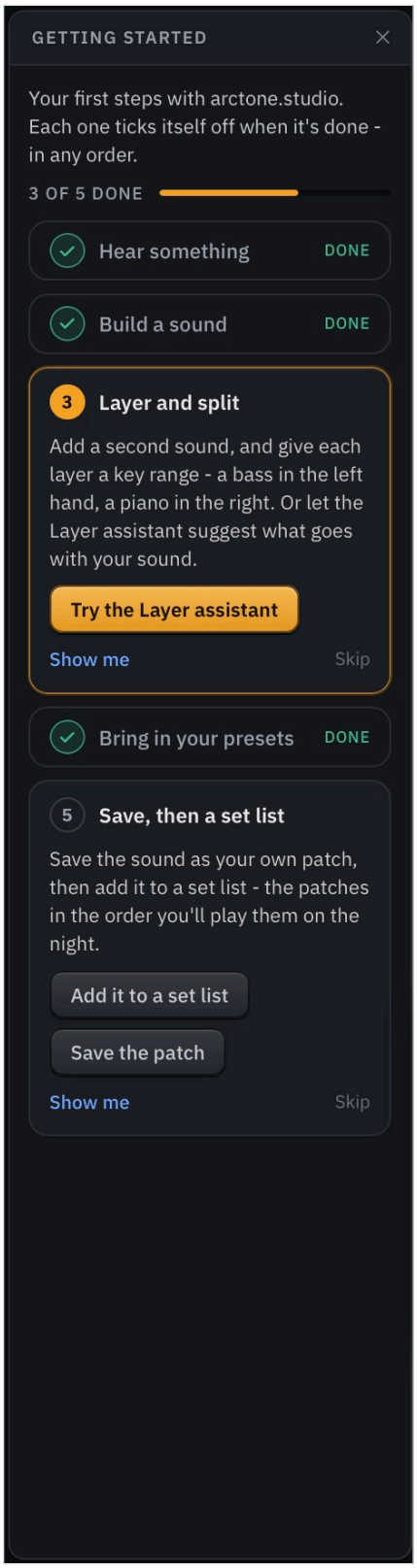
Quick start

1. Find your plug-ins. The first time the standalone app starts, it looks for your VST3, Audio Unit and VST2 plug-ins by itself (VST3 and VST2 on Windows): the **Welcome to arctone.studio** card shows how far it has got (**Finding your plug-ins in the background...**), and you can play the piano meanwhile. After the short tour - or **I know my way around** - it offers once to bring in their presets: **Start import** or **Later** (arctone.PresetImporter (p. 160)). To scan again later, choose **Settings > Plug-ins > Manage plug-ins...** (Settings is the first item of the ≡ main menu, the View bar's first button). The list is saved, so you only do this once; after that, each start quietly checks for plug-ins installed since. See Scanning for plug-ins (p. 122).
2. Click the patch's name in the top bar, or open the Browser's **Sounds** tab. Seven factory patches are written to `~/Documents/Arctone/arctone.studio/Library/Patches/Factory` the first time arctone.studio starts. Double-click one to load it. See The patch library (p. 100).
3. Play from a MIDI keyboard or the on-screen keyboard. In the standalone app the computer keyboard plays notes too. A new installation opens on the factory **Grand Piano** patch (when the piano is installed), so there is something to hear at once. See The on-screen keyboard (p. 55).
4. Drag a plug-in from the browser onto a layer, or click **+ Add Layer** under the layers to start a new one. See Loading plug-ins onto layers (p. 155).
5. Turn a macro knob in the Device Panel; click the routing button on a macro's card to choose what it moves. See Assigning: what a modulator moves (p. 88).
6. Press **Save** to keep your patch. See Saving a patch (p. 97).

> **TIP** Not sure what something does? Hover over it and press **F1**. See Context-sensitive help (F1) (p. 208).

> **TIP** The **Getting started** panel takes you through these first steps in the window itself, and ticks each one off as you do it. See Getting started (p. 10).

Getting started



The Getting started panel.

Getting started is a panel of first steps for someone new to arctone.studio: five cards, in a keyboard player's order. It works in the real window - each card's button does its step, and **Show me** points at the control to use. A step ticks itself off when it's done (a note arrives, a layer has your instrument on it), not when you click something; its card then folds to its title, marked **Done**. Do them in any order. The line at the top counts them: **3 of 5 done**.

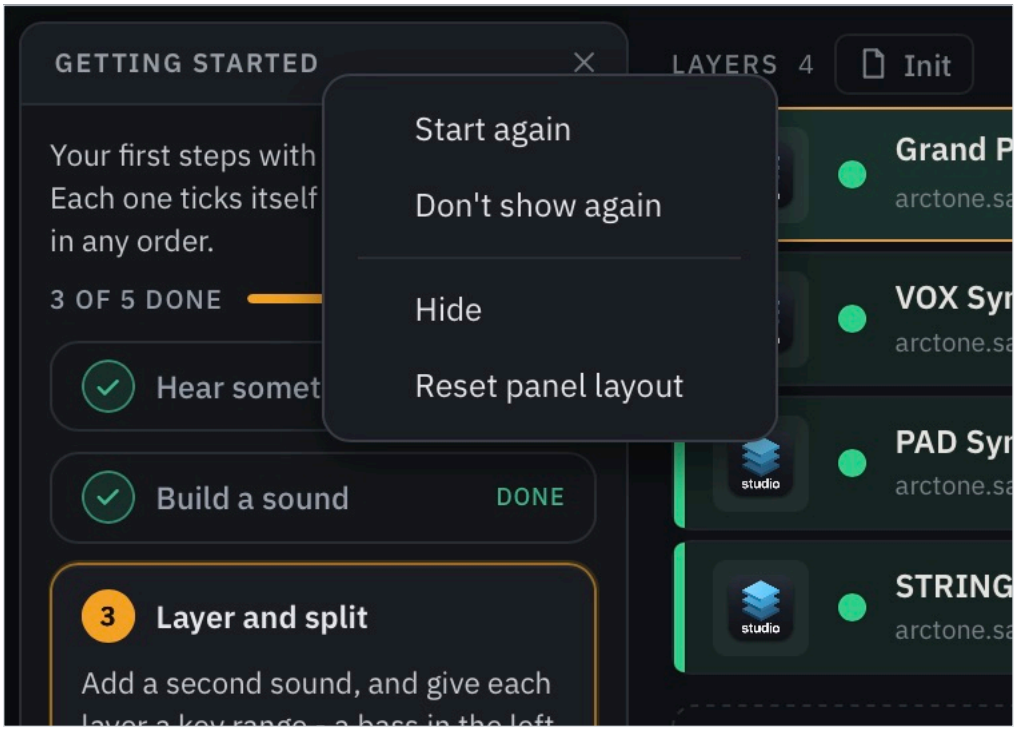
1. **Hear something.** Play a few notes: on your MIDI keyboard, on the on-screen keyboard (The on-screen keyboard (p. 55)) or, in the standalone app, on your computer's keys. A new installation - and the first start after Initialize - opens on the factory **Grand Piano** patch, so there is sound at once (The arctone.sampler (p. 116)); **Play the Grand Piano** loads it again if you've changed the patch (without the Grand Piano installed, **Play the Basic Synth** adds a layer with the built-in synth). If no MIDI keyboard is chosen yet, **Choose your MIDI keyboard** opens Audio / MIDI settings (Audio / MIDI settings (p. 44)).
2. **Build a sound.** Drag an instrument from the Browser's Instruments tab to the space under the layers: it becomes a new layer. **Open the instruments** shows them (as **F6** does). It ticks off when a layer plays an instrument of your own - not a built-in one. See Loading plug-ins onto layers (p. 155).
3. **Layer and split.** Add a second sound, and give each layer a key range - a bass in the left hand, a piano in the right (The key range editor (p. 67)). **Try the Layer assistant** suggests sounds that go with yours (Layer assistant (p. 64)). It ticks off with two instrument layers of yours, one of them not on every key.
4. **Bring in your presets** (optional). **Import presets** opens **arctone.PresetImporter**: it finds your plug-ins and counts their presets, then its **Import** button brings them into your Imported Presets library; find them in the Browser. See arctone.PresetImporter (p. 160).
5. **Save, then a set list. Save the patch** keeps it as your own (a factory patch is saved as your copy: Saving a patch (p. 97)); **Add it to a set list** puts it in one - the first time, it makes one (Set lists (p. 102)). It ticks off with a patch of your own in the library and a set list with a patch in it.

Show me puts a ring round the control in the window, with a note beside it; some steps show two in turn (the Browser's Instruments, then the space for a new layer), the second after **Got it** or a few seconds. **Got it**, a click anywhere or **Esc** ends it. **Skip** folds a step away as **Skipped**; click its title, then **Don't skip**, to bring it back. When every step is done or skipped, **You're set** says what to look at next - the Perform page with Panic and gig mode (The Perform page (p. 94)), the interface size and window layouts (Interface size (p. 42), Window layouts (p. 40)), and this manual and the key commands (Key Commands (p. 192)) - and **Close this panel** puts it away.

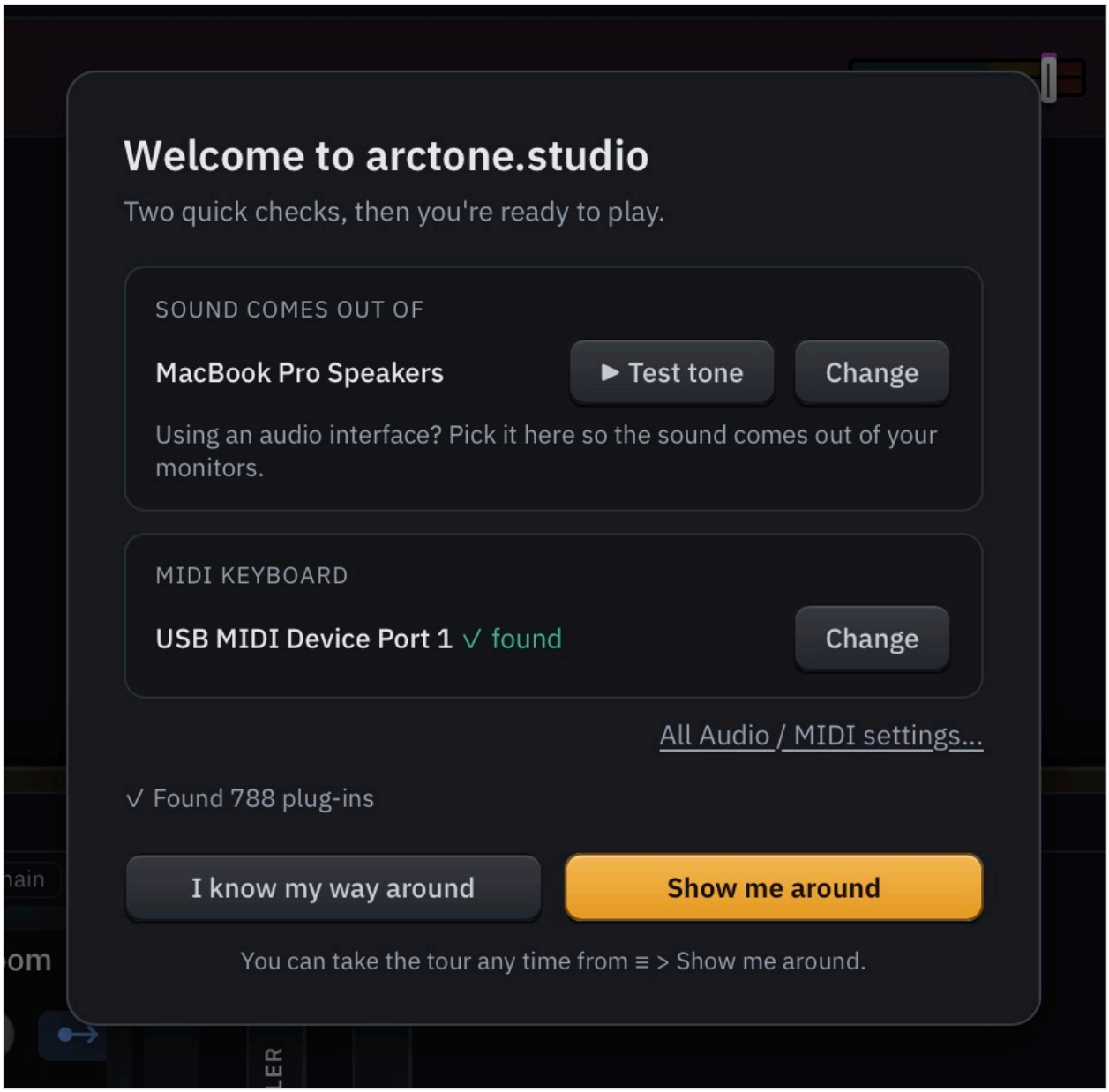
At the first start. A new installation - nothing scanned yet and no patch of your own - or one just initialized, at any level (Backup and Reset (p. 198)), opens a card in the middle of the window, once: **Welcome to arctone.studio**. In the standalone app it has two quick checks - **Sound comes out of**, with **Test tone** and **Change**, and **MIDI keyboard**, with **Change** - and **All Audio / MIDI settings...** under them. When no plug-ins have been scanned yet, the standalone app starts the scan by itself, once the License window is closed if it is open (Activating arctone.studio (p. 14)), and the card's last line shows how far it has got: **Finding your plug-ins in the background...**. Nothing is asked first; the window keeps working, so play the piano meanwhile. **Show me around** starts a tour of four steps, each a note beside the part of the window it is about - **Hear something**, **Build a sound**, **Layer and split**, **Save it** - and each goes on when you have done it. **I know my way around** skips the tour. Either way a last card, **Bring in your presets**, asks once: **Start import** opens arctone.PresetImporter (arctone.PresetImporter (p. 160)), **Later** leaves it to step 4 or the **Preset Importer** button. A tour left halfway is offered once more at the next start (**Pick up where you left off?**); after that, find it by typing **Show me around** in the search box (The command palette (p. 26)). In a DAW nothing scans by itself and nothing is asked: the panel opens (unless you've put it away), and the message under the bell says no plug-ins are scanned yet. With **Show at first start** off (Settings > Interface), neither happens.

Tips. As you finish a step, a message at the bottom of the window suggests the next one, with buttons for it - each once, and only while the panel shows. **Don't show tips** in one puts the panel away, and the tips stop.

Where it is. The panel sits at the top of the left side, above the set list and Quick Help (with the window layout unlocked, drag its header to the other side: Moving the bars and their buttons (p. 39)). ≡ **> Getting started...** (or the command palette: The command palette (p. 26)) opens it, and it comes back each time you start until you close it. A right-click on its title has **Start again** (the steps not done by then are to do again, and the welcome and the tips come back) and **Don't show again**, then **Hide** and **Reset panel layout**. Settings > Interface > Getting started has **Show at first start** (On, Off) and **Reset progress**, which does what **Start again** does and shows the panel (Interface (p. 180)). What it remembers - the steps done or skipped, the tips shown, whether you put it away - is kept with the interface settings, so Settings > Interface > Reset and Initialize forget it.

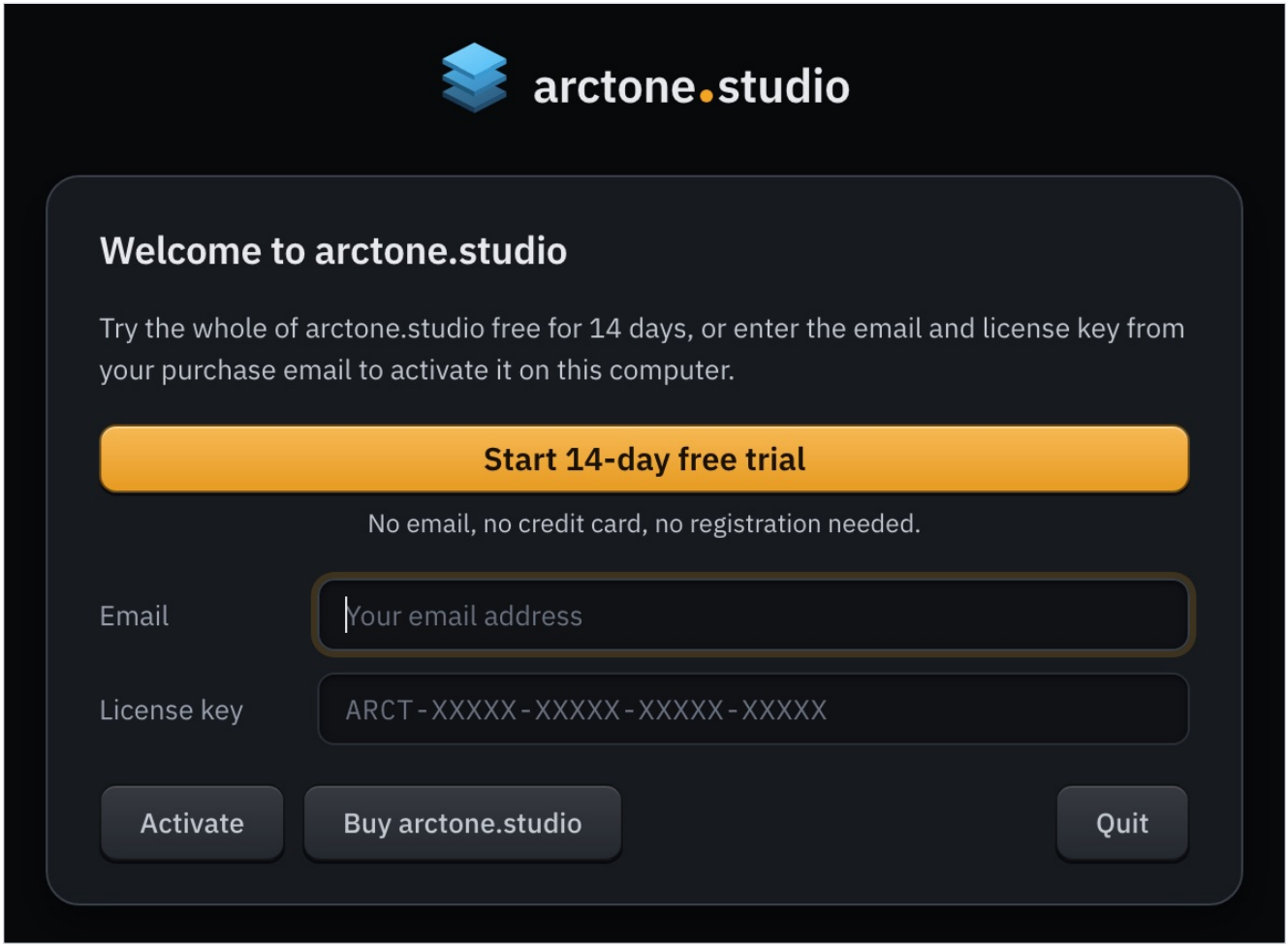


The panel title's right-click menu.



The Welcome card a new installation opens with.

Activating arctone.studio



The first start: Start 14-day free trial, or activate with the email and license key from your purchase email.

The first time arctone.studio opens, it asks how you'd like to start:

- **Start 14-day free trial**: the whole of arctone.studio, free, for 14 days. One click: no email, no credit card, no registration.
- **Activate**: enter the email you bought with and your license key (`ARCT–XXXXX–XXXXX–XXXXX–XXXXX`, from the email you got when you bought arctone.studio).
- **Buy arctone.studio**: opens arctone.studio's website.
- **Quit**: closes the app (only in the standalone app; in your DAW, close the plug-in's window).

Activating needs an internet connection once. After that arctone.studio works offline. The standalone app and the plug-in share one activation, so activating either is enough. Every couple of weeks arctone.studio quietly checks the license with the server; being offline never deactivates it.

The free trial. Start 14-day free trial gives you the complete app - every layer, device and modulator, the full library, nothing held back - for 14 days. Starting it needs an internet connection once; after that the trial runs offline, in the standalone app and in the plug-in alike. The trial belongs to this computer and each computer gets one: starting it again, on the same day or after reinstalling, gives the same trial with the same last day, never a new one. While it runs, the days left show under the logo (**Trial · 9 days left**) and in the ≡ menu's

Activate... window, where you can enter a license key at any time; a key bought during the trial takes over from it at once.

When the 14 days are up. The next time arctone.studio starts, it shows the activation screen again, without the trial button, and makes no sound - as it was before you started. Nothing of yours is touched: your patches, presets, set lists, themes, settings and scanned plug-in list all stay on your computer, and a DAW project that uses arctone.studio keeps its sound settings; they come back once it is activated. A trial that runs out while arctone.studio is open is not cut off: it keeps running until you quit (**Trial ended · runs until you quit**), for up to twelve hours. Setting the computer's clock back does not give more days: the trial then counts as ended.

arctone.studio needs to be activated. Until it is activated (or in a running trial), the app and the plug-in in your DAW show only this window and make no sound. A DAW project that uses arctone.studio keeps its sound settings; they come back once it is activated.

Who it's licensed to shows under the logo, right below the build number: **Licensed to** and your name (or the email you activated with, if your license has no name). A long name or email is cut short; point at it to see all of it. The license is also in the window title and in ≡ **> About**.

Moving to another computer. A license works on up to three computers. Open ≡ **> License...**, click **Deactivate this computer**, then activate on the new one. If the old computer is gone, open a support ticket at arctone.studio/support and we'll reset it.

System requirements

Mac

- macOS 11 (Big Sur) or later, with Safari 16.2 or newer. arctone.studio's window uses the Safari engine built into macOS, so it needs that Safari even if you browse with another. On an older one it says so when it starts: **Open Software Update** opens System Settings > General > Software Update (System Preferences > Software Update on macOS 11 and 12), where you install the latest Safari, then open arctone.studio again.
- Apple Silicon or Intel.
- The standalone app, and the VST3 and Audio Unit plug-ins for your DAW.

Windows

- Windows 10 (version 1809 or later) or 11, 64-bit.
- The Microsoft Edge WebView2 Runtime, which draws arctone.studio's window. It is part of Windows 11 and of an up-to-date Windows 10, and the installer adds it if it's missing (Microsoft's installer downloads it, so that needs an internet connection). Without it, the window says so when arctone.studio starts, with a link to download it: install it, then click **Check again**.
- The standalone app, and the VST3 plug-in for your DAW.

For the folders arctone.studio uses, see Where your files live (p. 16).

Installing and building

arctone.studio builds with CMake and Xcode (Xcode 14 or newer, CMake 3.22 or newer). JUCE 9.0.5 is downloaded automatically (to use a JUCE you already have, add `-DJUCE_DIR=/path/to/JUCE` to the first command). What it builds runs on macOS 11 (Big Sur) or later, with Safari 16.2 or newer: see System requirements (p. 15).

```
cmake -B build -G Xcode
cmake --build build --config Release
```

The build produces the standalone app, a VST3 and an Audio Unit:

- `build/ArctoneStudio_artefacts/Release/Standalone/arctone.studio.app`
- `build/ArctoneStudio_artefacts/Release/VST3/arctone.studio.vst3` (copy to `~/Library/Audio/Plug-Ins/VST3/`)
- `build/ArctoneStudio_artefacts/Release/AU/arctone.studio.component` (copy to `~/Library/Audio/Plug-Ins/Components/`)

> **NOTE** The app and the plug-ins are built with the macOS *hardened runtime*, so they can be signed and notarised. The entitlements that let them load other companies' plug-ins are explained in Why the hardened runtime needs extra permissions (p. 211).

Where your files live

Everything arctone.studio keeps is in your own user account. It reads other companies' plug-in and preset folders but never writes to them. **Settings > Library & Files** shows and opens most of these (see Library and Files (p. 191)). On a Mac, `~/Library` is hidden in Finder: press **Cmd+Shift+G** and paste the path. On Windows, paste a path with `%APPDATA%` into the File Explorer address bar.

Your work (back this up)

What	Mac	Windows
Patches: factory ones in `Factory/`, yours in `User/`	`~/Documents/Arctone/arctone.studio/Library/Patches/`	`Documents\Arctone\arctone.studio\Library\Patches\`
Deleted patches (to restore them)	`~/Documents/Arctone/arctone.studio/Archive/`	`Documents\Arctone\arctone.studio\Archive\`
Set lists	`~/Documents/Arctone/arctone.studio/Library/SetLists/`	`Documents\Arctone\arctone.studio\Library\SetLists\`
Macro layouts and CC maps (see Macro layouts and CC maps (p. 91))	`~/Documents/Arctone/arctone.studio/Library/Macro layouts/` and `Library/CC maps/`	`Documents\Arctone\arctone.studio\Library\Macro layouts\` and `Library\CC maps\`
Captured and imported plug-in presets	`~/Documents/Arctone/arctone.studio/Library/Presets/`	`Documents\Arctone\arctone.studio\Library\Presets\`

Presets brought in by arctone.PresetImporter (Settings > Presets can move them: arctone.PresetImporter (p. 160))	`~/Music/arctone.studio/Imported Presets/`	`Documents\arctone.studio\Imported Presets\`
Recordings: a folder for each take, its files beginning with the date and time (`2026-10-10 14-30-05 Mix.wav`, the stems, `2026-10-10 14-30-05 Performance.mid` - see Recording the mix (p. 205))	`~/Documents/Arctone/arctone.studio/Recordings/`	`Documents\Arctone\arctone.studio\Recordings\`
Backups made in Settings > Backup & Reset (see Backup and Reset (p. 198))	`~/Documents/Arctone/arctone.studio/Archive/Backups/`	`Documents\Arctone\arctone.studio\Archive\Backups\`
Pictures for patches and layers (see Pictures for the patch and the layers (p. 33))	`~/Documents/Arctone/arctone.studio/User Images/`	`Documents\Arctone\arctone.studio\User Images\`
Your themes, and pictures chosen for areas	`~/Documents/Arctone/arctone.studio/Themes/` (pictures in `Pictures/`)	`Documents\Arctone\arctone.studio\Themes\`

Settings and what arctone.studio knows

The folder is `~/Library/Application Support/Arctone/arctone.studio/` on a Mac and `%APPDATA%\Arctone\arctone.studio\` on Windows. In it:

File	What's in it
`ArctoneStudio.settings`	The main settings: the plug-in list (every plug-in found by a scan), the window layout and options. The plug-in and the standalone app share it.
`Appearance.json`	The look in use: the theme, colours you changed, pictures behind areas
`Browser.xml`	The Browser's favourites, hidden plug-ins and recently used ones
`Plugins.settings`, `Vst2Presets.settings`	Scan options (VST2 on or off, folders)
`ArctoneStudioHelp.settings`	The Help window's own settings
`ScanFailures.xml`	Plug-ins that failed to scan, skipped until they change or you choose **Rescan All**
`FactoryPrograms.xml`, `PresetVerify.xml`, `PresetsChanged.txt`	The preset index and what preset checks found
`Vst2PresetCache.json`	The VST2 presets found (NKS, .fxp, .fxb)
`PluginImages/`, `Previews/`	Plug-in pictures for the Browser, and audio previews of presets
`WebView2/` (Windows only)	The window's web view data

`Standalone.settings`	The standalone app's audio and MIDI devices and the session it had open
`Messages.json`	The messages under the bell, kept from one session to the next (Messages (p. 29))
`Recovery/`	The crash recovery files (see Plug-in protection and crash recovery (p. 195))
`arctone.studio Manual.pdf`	A copy of this manual, opened from Help

The same folder holds `Plug-Ins/` and `Sounds/` when you install arctone.studio's own plug-ins and sounds for your account only (below). Pending restores and resets wait in `arctone.studio pending.xml`, one folder up (`Arctone`, beside your license), until the next start (Backup and Reset (p. 198)).

Earlier versions kept these folders straight in Documents and Application Support (`~/Documents/arctone.studio`, `~/Library/Application Support/arctone.studio` and `~/Library/Application Support/ArctoneStudio.settings`; on Windows `Documents\arctone.studio`, `%APPDATA%\arctone.studio` and `%APPDATA%\ArctoneStudio\`). The first time a newer arctone.studio starts - the app or the plug-in in a DAW - it moves everything in them into the `Arctone` folders above, updates the paths your settings, set lists and patches hold, and removes an earlier folder once it's empty. If the new folder already had a file of the same name, the new one is kept and the earlier one stays where it was; `PresetLog.txt` lists what was moved and anything left behind.

Logs (for troubleshooting)

These are in the same folder: `ScanLog.txt` (the last plug-in scan), `StartupLog.txt`, `WebLog.txt` (the window), `PresetLog.txt` (presets), `ContinuousAudioLog.txt`, and `Crashed.txt`, `CaptureCrashed.txt` or `CaptureInProgress.txt` after a problem. Support may ask for them. They're safe to delete.

Your license, and the plug-ins and sounds that come with arctone.studio

What	Mac	Windows
Your activation (see Activating arctone.studio (p. 14))	`~/Library/Application Support/Arctone/arctone.license`	`%APPDATA%\Arctone\arctone.license`
OB-Xf and its licence (see Scanning for plug-ins (p. 122))	`/Library/Application Support/Arctone/arctone.studio/Plug-Ins/`	`C:\Program Files\Arctone\arctone.studio\Plug-Ins\`
OB-Xf's factory patches and themes	`/Library/Application Support/Surge Synth Team/OB-Xf/`	`C:\ProgramData\Surge Synth Team\OB-Xf\`
The Grand Piano's samples, its licence and where it came from (see The arctone.sampler (p. 116))	`/Library/Application Support/Arctone/arctone.studio/Sounds/Grand Piano K/`	`C:\Program Files\Arctone\arctone.studio\Sounds\Grand Piano K\`

These folders are arctone.studio's own, not your data (a copy installed for your account only sits in `~/Library/Application Support/Arctone/arctone.studio/`, or `%APPDATA%\Arctone\arctone.studio\`, beside the settings): backups don't carry them and **Initialize** leaves them alone, so the plug-ins and the piano stay installed whatever you reset.

The program itself

What	Mac	Windows
The app	`/Applications/arctone.studio.app`	`C:\Program Files\arctone.studio\`
The VST3 plug-in	`/Library/Audio/Plug-Ins/VST3/arctone.studio.vst3`	`C:\Program Files\Common Files\VST3\arctone.studio.vst3`
The Audio Unit (Mac only)	`/Library/Audio/Plug-Ins/Components/arctone.studio.component`	-
Kept by the system	`~/Library/Preferences/studio.arctone.plist` (window positions), `~/Library/Caches/studio.arctone/`	Settings > Apps lists arctone.studio (for uninstalling)

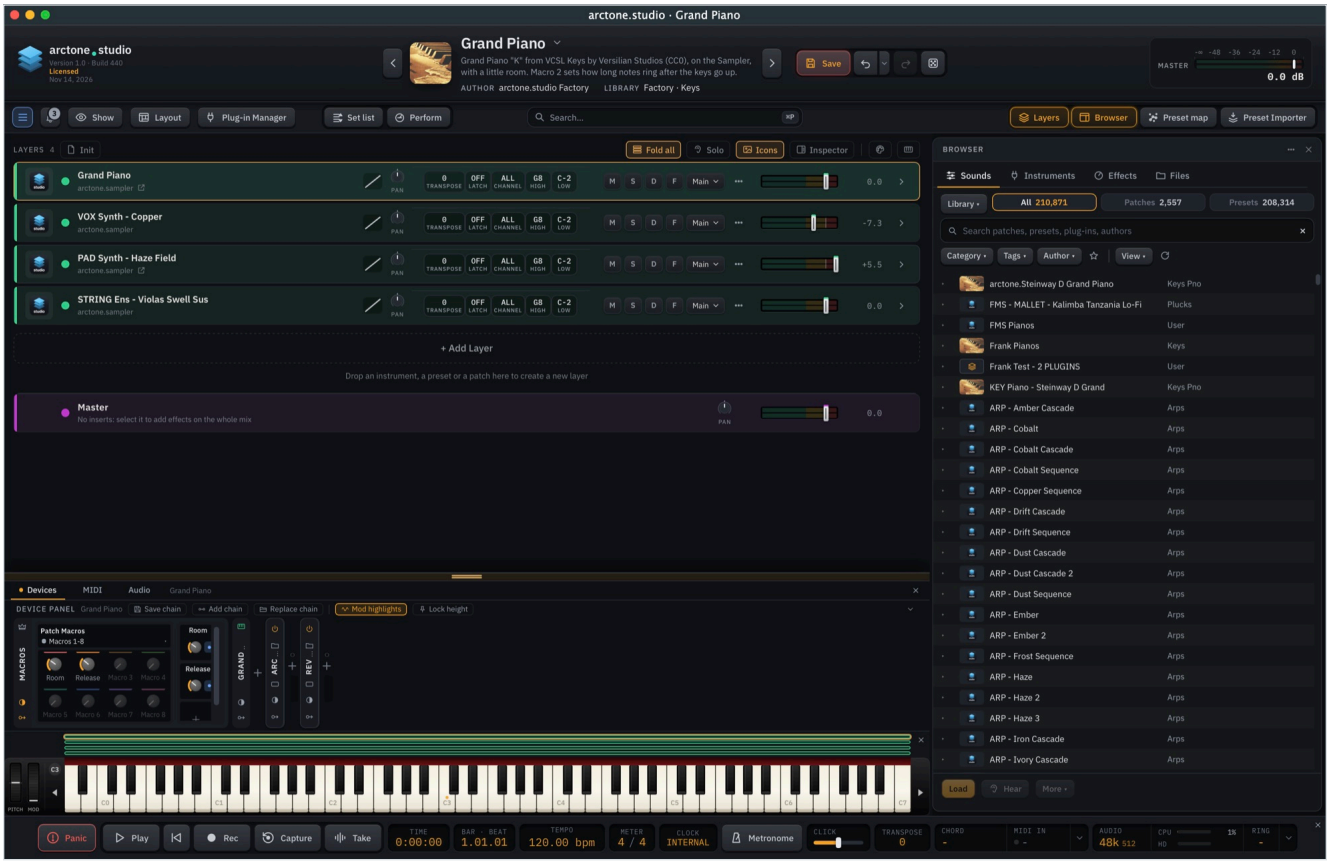
Backing up, moving to a new computer, starting fresh

- **Back up:** Settings > Backup & Reset > **Back up...** saves everything above (but your license) in one file. See Backup and Reset (p. 198). Copying the `Documents/Arctone/arctone.studio` folder and the settings folder by hand works too.
- **New computer:** install arctone.studio, restore your backup with **Restore from a backup...**, then activate (deactivate the old computer first: see Activating arctone.studio (p. 14)). Scan for plug-ins once, since the plug-ins on the new computer may be in other folders.
- **Safe to delete** (arctone.studio makes them again): the logs, `PluginImages/`, `Previews/`, `Vst2PresetCache.json` and `ScanFailures.xml`.
- **Starting fresh:** Settings > Backup & Reset > **Initialize arctone.studio...** puts back how a new install starts, at three levels, after saving a backup of everything. See Backup and Reset (p. 198).
- **Uninstalling** removes the program, not your work or settings: delete those two folders yourself if you want them gone.

Chapter 2

The main window

Window overview



The main window: the top bar, the View bar, the layers with the Device Panel and the on-screen keyboard under them, the Browser down the right side and the transport bar along the bottom.

From top to bottom, the arctone.studio main window reads: the patch, the window, the layers, their devices, what plays them, and time.

1. **Header** (the top bar) at the top - the logo, then the patch between its **Previous** and **Next** arrows: its picture, its name (click it to choose another patch: Choose a patch (p. 24)) with its menu on the ▾, its notes, author and library; then **Save**, **Undo** and **Redo** and the dice, and at the right the master meter and fader. See The header (p. 21).
2. **The View bar** under the header (unless you move it) - first the ≡ main menu (**Settings...** is its first item: The main menu (p. 54)), and the **bell** beside it (the messages: Messages (p. 29)); then **Show** (what the window shows), **Set list** and **Perform**; the **search box** in the middle; at the right, **Layers**, **Browser**, **Preset map** and **Preset Importer**. The search box, or **Cmd+P**, finds anything by name (The command palette (p. 26)). See The View bar (p. 37).

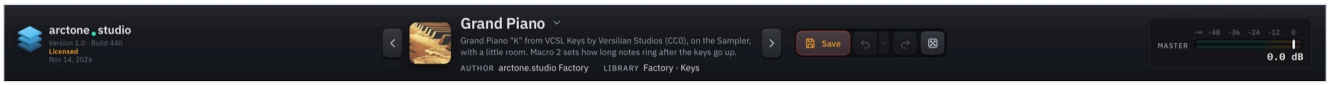
3. **The layers** in the middle: one row per layer, each with its key range ruler and its mixer, then **+ Add Layer**, and the **master track** last. See The layer track (p. 61).
4. **The Device Panel** under the layers: the selected layer's devices - its MIDI effects, its instrument, its effects - and its modulation, with the **MIDI** and **Audio** tabs beside **Devices** for its clip and its audio. Select a layer and the panel shows it. See The plug-in chain (p. 69).
5. **The on-screen keyboard** under the Device Panel, right on the transport bar - the layers, then their devices, then what plays them. The lines along its top are the layers' key ranges. See The on-screen keyboard (p. 55).
6. **The transport bar** along the bottom is time: **Panic** first (all notes off: Panic (p. 46)), then Play, Rec, **Capture** and **Take**, the clock, tempo, the metronome, transpose, **PLAYING** (the chord you play, MIDI in: PLAYING (chord, MIDI in) (p. 50)) and, at its end, **STATUS** (the audio settings, CPU, the disk, RING: STATUS (audio, CPU, HD, RING) (p. 48)); see The transport bar (p. 43).

The Browser opens down the right side: every plug-in, preset and patch, to drag onto the layers (The Browser (p. 128)). **The Set List** docks on the left and can be moved or floated (The Set List panel (p. 103)).

Each bar has what acts on one thing: the top bar the patch, the View bar the window, the transport bar playing and recording.

The **Layers** page shows all of this. The **Perform** page fills the screen with a performance view instead - the patch, its picture and notes, the set list's songs and the macros, large. See The Perform page (p. 94).

The header



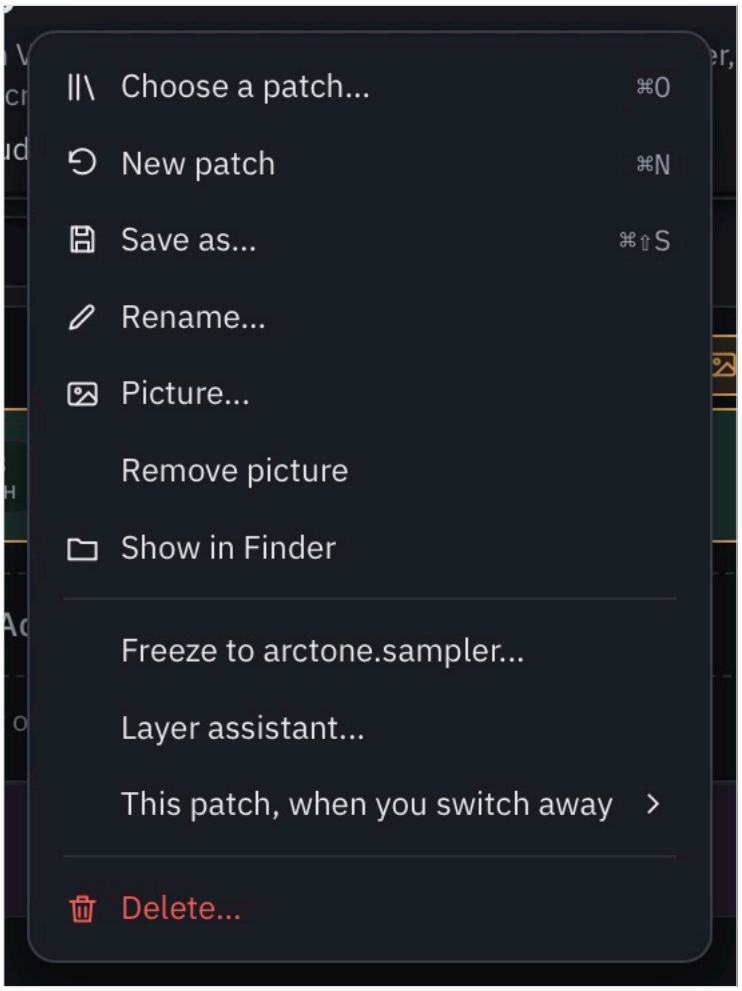
The top bar: the logo and build, Previous and Next around the patch's picture, name and notes, then Save, Undo, Redo and the dice, and the master at the right.

- **The logo.** Under it: the **version** and the **build number**, **who it's licensed to** (**Licensed to** and your name; point at a long one to see all of it), and the **day it was built** (also in ≡ **> About arctone.studio**). See Activating arctone.studio (p. 14). The build number goes up with every new build, so you can tell which one you have.
- **Patch name, author and library.** Click the name - or press **Cmd+O** (Ctrl+O on Windows) - to choose another patch: a list of your patches opens under it, with a search box, the set list, your favourites and the patches you loaded lately. See Choose a patch (p. 24). Drop a patch from the Browser on the name to load that one. The name, author and library are saved into the patch (**Save As** changes them).
- **Previous / Next patch** (the arrows either side of the name). Step through the library in order, or through the chosen set list. See The patch library (p. 100) and Loading patches from the set list (p. 109).
- **The patch's menu** - the ▾ after its name: **Choose a patch...**, **New patch**, **Save as...**, **Rename...**, **Picture...** and **Remove picture**, **Show in Finder** (File Explorer on Windows; a patch not saved yet has no file to show), **Freeze to arctone.sampler...** (Freeze to arctone.sampler (p. 98)), **Layer assistant...** (Layer assistant (p. 64)), **This patch when you switch away** (Choosing per patch (p. 112)) and, in red, **Delete...**. A right-click on the top bar's empty background opens the same menu. New asks to save a patch with changes that aren't saved; Delete asks first. See New (p. 53), Save (p. 53) and Rename and Delete (p. 53).
- **Save**, in amber (right-click: Save As), then **Undo** and **Redo**, each naming in its tip the step it would take back or do again. See Save (p. 53) and Undo and redo (p. 84). The small ▾ beside Undo (or a right-click on Undo) lists every step, to go back - or forward - several at once: see The undo history (p. 85).

- **The dice**, after Redo: it adds three layers from the library that go with the first one. Undo takes them away again.
- **Notes**, under the name. Free text stored with the patch.
- **Picture**, left of the name. Click it - or its corner button, shown when the pointer is over it - to choose another from your pictures; a right-click has **Choose a picture...**, **Remove the picture** and **Open the Perform page**. See Pictures for the patch and the layers (p. 33). It is stored inside the patch.
- **The main menu (≡) and the bell** are not in the top bar: they are the first two buttons of the View bar (The main menu (p. 54), Messages (p. 29)). **Init** (a new patch) is the first button above the layer list (New (p. 53)).
- **STATUS** (the audio settings, CPU, the disk and RING) and **PLAYING** (the chord you play and MIDI in) start at the end of the transport bar; each one's menu can move it up here, beside the master. See STATUS (audio, CPU, HD, RING) (p. 48) and PLAYING (chord, MIDI in) (p. 50).
- **Master meter and fader.** The final output level of the whole patch.

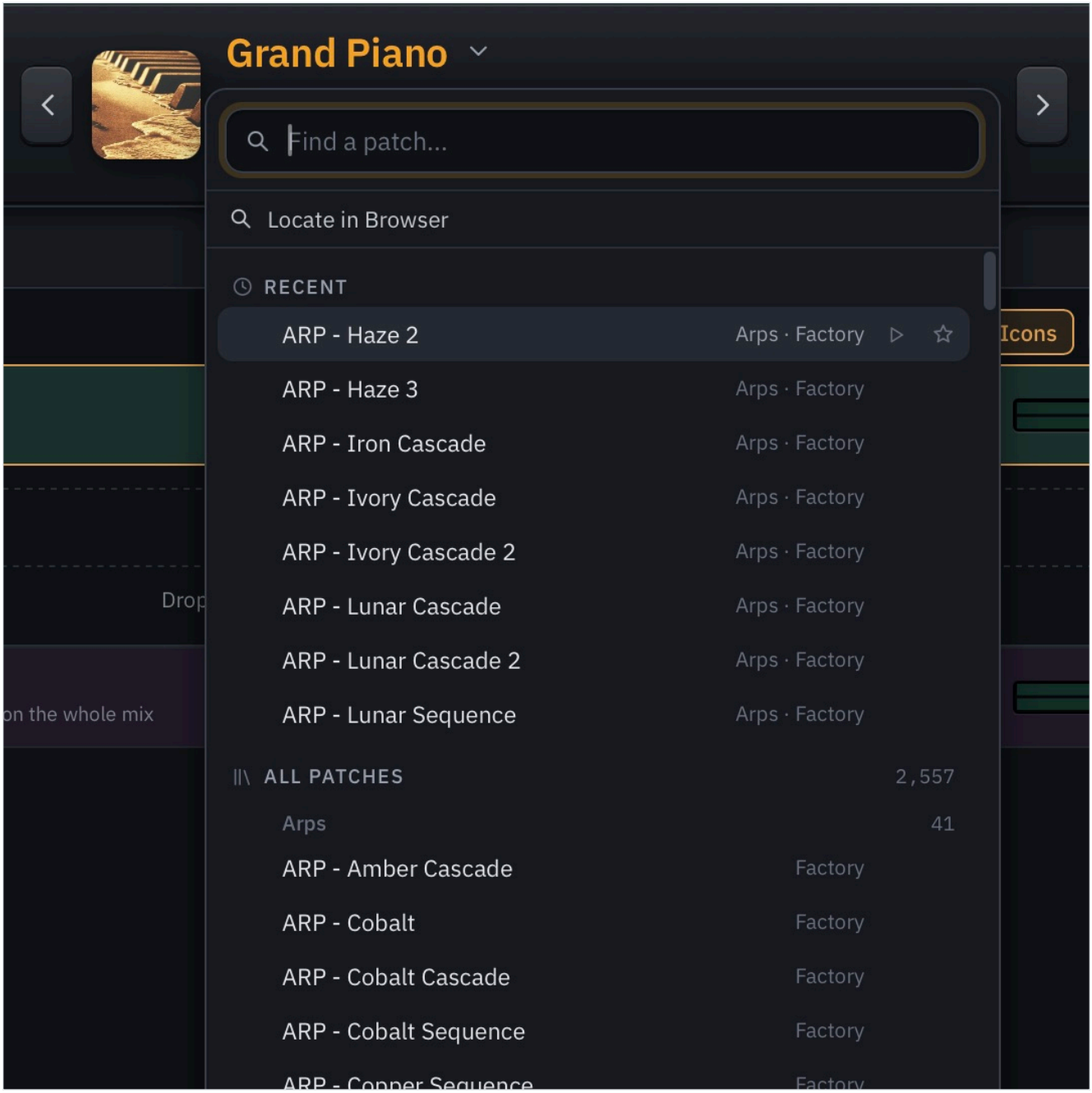
Everything to do with the patch is here: the toolbar's Save, Undo and Redo moved up beside the name, and New, Rename and Delete into the patch's menu. The bar under it, the View bar, is about the window (The View bar (p. 37)). To add a layer, use **+ Add Layer** under the layers (Adding, removing and arranging layers (p. 76)).

A narrower window. The top bar never wraps or overlaps: as the window gets narrower the notes box gets narrower and then goes (the notes are on the Perform page too), then STATUS, when it is up here, drops its name and its lesser parts (RING, HD, the buffer size), Save its word and • **unsaved** keeps to its dot, then the picture goes, then the logo's words (the ≡ and the bell stay). This is the same in the plug-in's window in a DAW, at its smallest size and at every interface size (Interface size (p. 42)). The patch's name, author and library keep their room while all that makes way (a very long name is cut short with "..."); on a wide window a long name has more room.



The patch's menu, opened from the small arrow beside its name.

Choose a patch



The patch picker, opened from the patch name: a search box, Locate in Browser, the recent patches, then every patch by category.

Click the patch's name in the top bar - or press **Cmd+O** (**Ctrl+O** on Windows), or choose **Choose a patch...** in the patch's menu - and a list of your patches opens under the name, with a search box at its top, ready to type in, and **Locate in Browser** under it (the patch playing, shown in the Browser's Sounds tab). Type a few letters and the list narrows at once; press **Return** and that patch is loaded. The ▾ beside the name still has the patch's menu (The header (p. 21)).

With nothing typed it lists, in turn:

- **Set list**: the set list chosen in the Set List panel, its patches in their order, numbered as they are there (The Set List panel (p. 103)). With **Library (all patches)** chosen there, this part isn't shown.
- **Favourites**: the patches you have starred, A to Z.
- **Recent**: the last 8 patches you loaded, newest first - however you loaded them: here, in the Browser, from the set list or with Previous / Next. The one playing isn't among them: it is ticked wherever it is.
- **All patches**: every patch in your library, by category (A to Z in each) when your patches have categories.

A patch can be in more than one of these - a favourite in the set list, say - but only once in each.

Typing lists the patches that match in one list, best first, the way the command palette finds things (The command palette (p. 26)): capitals don't matter, the words can come in any order, and every word must match the patch's name, its author, its category, its library or its tags. A name with a word that starts with what you typed comes first; letters in order count too ("chst" finds **Chord Stabs**). The letters that matched are in amber, and a favourite, or a patch you loaded lately, comes a little higher.

Each row has the patch's name, its category and library (or its author) in small letters, a ▶ and a ☆. The patch playing is ticked, with • **edited** after it when it has changes that aren't saved. Point at a row for its tags and notes.

- **Return**, or a click, loads the patch that is lit and closes the list. If the patch playing has changes that aren't saved, arctone.studio asks first, as the Browser does (The Sounds tab (p. 133)). Choosing the patch that is playing does nothing - but when it has changes, arctone.studio offers to load it again as it was saved.
- **Shift+Return**, or the ▶ on the row (shown on the row that is lit), plays a short preview of the patch without loading it; again stops it. The first time, a spinner shows while the preview is made. See Hear a patch before loading it (p. 100).
- The ☆ makes the patch a favourite; click the ★ to take it out.

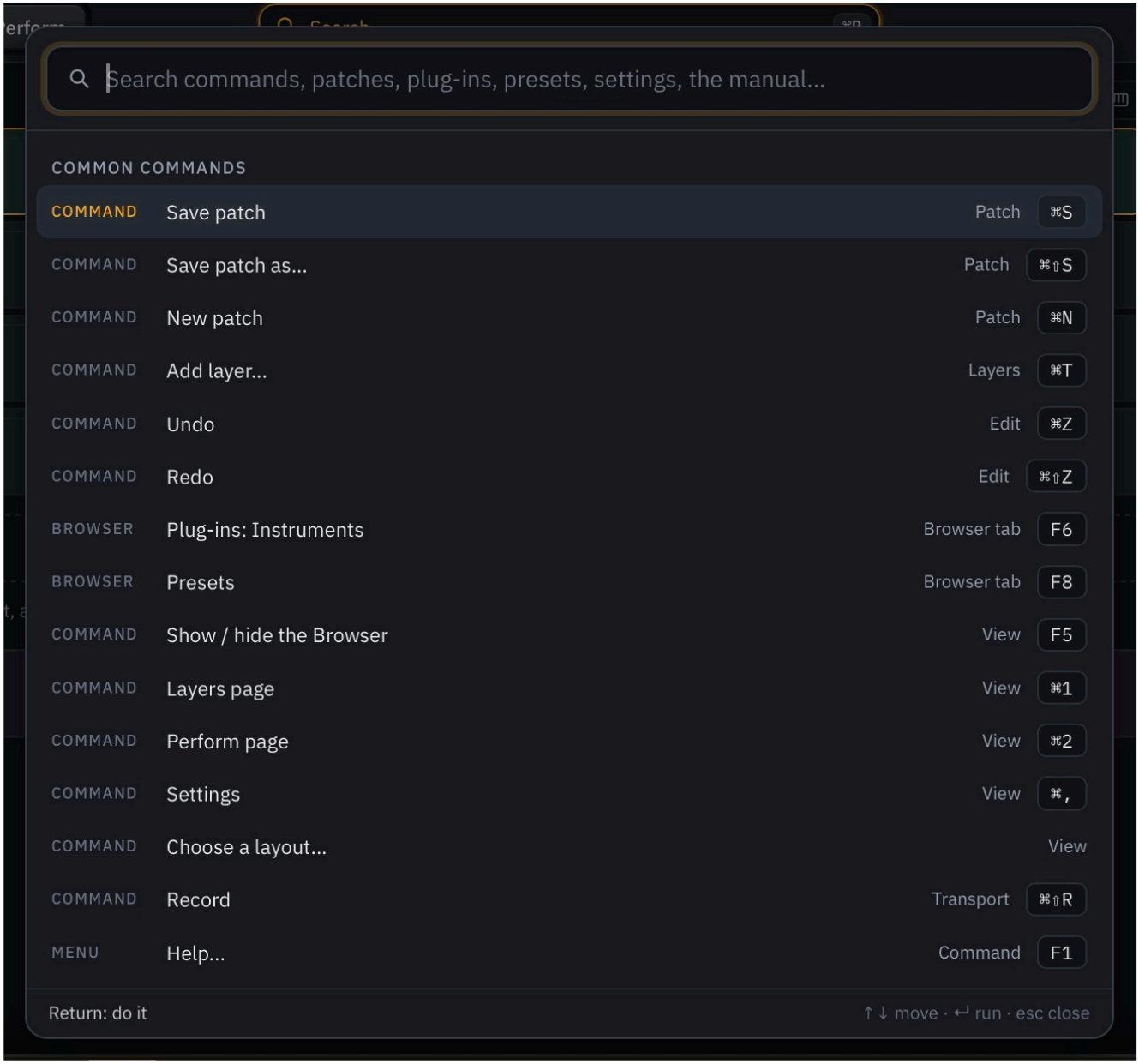
Keys. Up and **Down** move through the list, **Page Up** and **Page Down** by a screenful. **Tab** goes from the search box to the list and back; in the list, **Home** and **End** go to the first and the last patch, **Space** plays or stops the preview, and typing goes on in the search box - so do pasting (**Cmd+V**) and deleting (**Cmd+Backspace**, **Delete**). **Esc** stops a preview that is playing, and otherwise closes the list - so do Cmd+O again, a click outside it and a click on the name. While it is open, the other key commands leave the layers behind it alone: from the list only **Save** (Cmd+S), **Save as** and **Panic** (Cmd+Shift+Backspace: Panic (p. 46)) still work.

At its foot: how many patches you have (how many match, while you type), **Show in the Browser** - your patches in the Browser's Sounds tab, with the tag filter (The Sounds tab (p. 133)) - and the keys. While a preview plays, the line of keys says which patch you are hearing.

A large library shows the first 300 patches of All patches - and of what matches, while you type - and the first 100 favourites, each with a line under them that says how many more there are: type a few letters to narrow it down. However many favourites you have, Recent and All patches are still there under them. With no patches yet the list says so - save the patch you are playing and it is there.

Choose a patch... is a key command, so you can give it other keys in Settings > Key Commands (Key Commands (p. 192)); like the command palette's, it works while you are typing in a box too. In the Browser's own window it opens the list in the main window, which comes to the front (The Browser in its own window (p. 129)). What you loaded lately is kept with the interface settings, so Recent is still there the next time arctone.studio starts; **Settings > Interface > Reset** forgets it.

The command palette



The command palette, opened from the search box in the View bar or with Cmd+P, before anything is typed.

Cmd+P (**Ctrl+P** on Windows), a click on the **search box** in the middle of the View bar, opens one search box for everything, near the top of the window. Type a few letters and the list under it narrows at once. It finds:

- **Commands**: every key command, by its name or its group ("transpose", "layers"), with its key. See Key Commands (p. 192).
- **Menu**: actions from around the window, the patch's menu (the ▾ on its name) and the View bar's Layout menu - **Rescan patch library**, **Panel layout: Browser on the left**, **Show in Finder**.
- **Patch**: the patches in your library. It loads the patch, asking first if the one playing has changes that aren't saved. (For patches alone - with your set list, favourites and recent patches - **Cmd+O** opens the patch picker: Choose a patch (p. 24).)

- **Set list**: your set lists. It chooses the set list and shows the Set List panel.
- **Plug-in**: every plug-in the Browser shows. **Return** loads it on the selected layer (on a new layer if that one can't take it, as a double-click in the Browser does); **Shift+Return** loads it on a new layer. The row says so.
- **Preset**: your plug-ins' presets, loaded with their plug-in the same way - Return on the selected layer, Shift+Return on a new one.
- **Layer**: the patch's layers. It selects the layer, on the Layers page.
- **Layout**: Default and your window layouts. It lays the window out like that. See Window layouts (p. 40).
- **Settings**: each page of Settings, and each setting on it by its name. It opens Settings at that row and lights it for a moment.
- **Manual**: every topic of this manual, by its title and its keywords. It opens the help window there.
- **Browser**: the Browser's tabs - Sounds, Instruments, Effects and Files.

Each row says what it is, its name, and in small letters where it lives (its group, its menu, a plug-in's maker and format, the page of Settings) and its key, if it has one. The line at the foot says what Return does with the row that is lit.

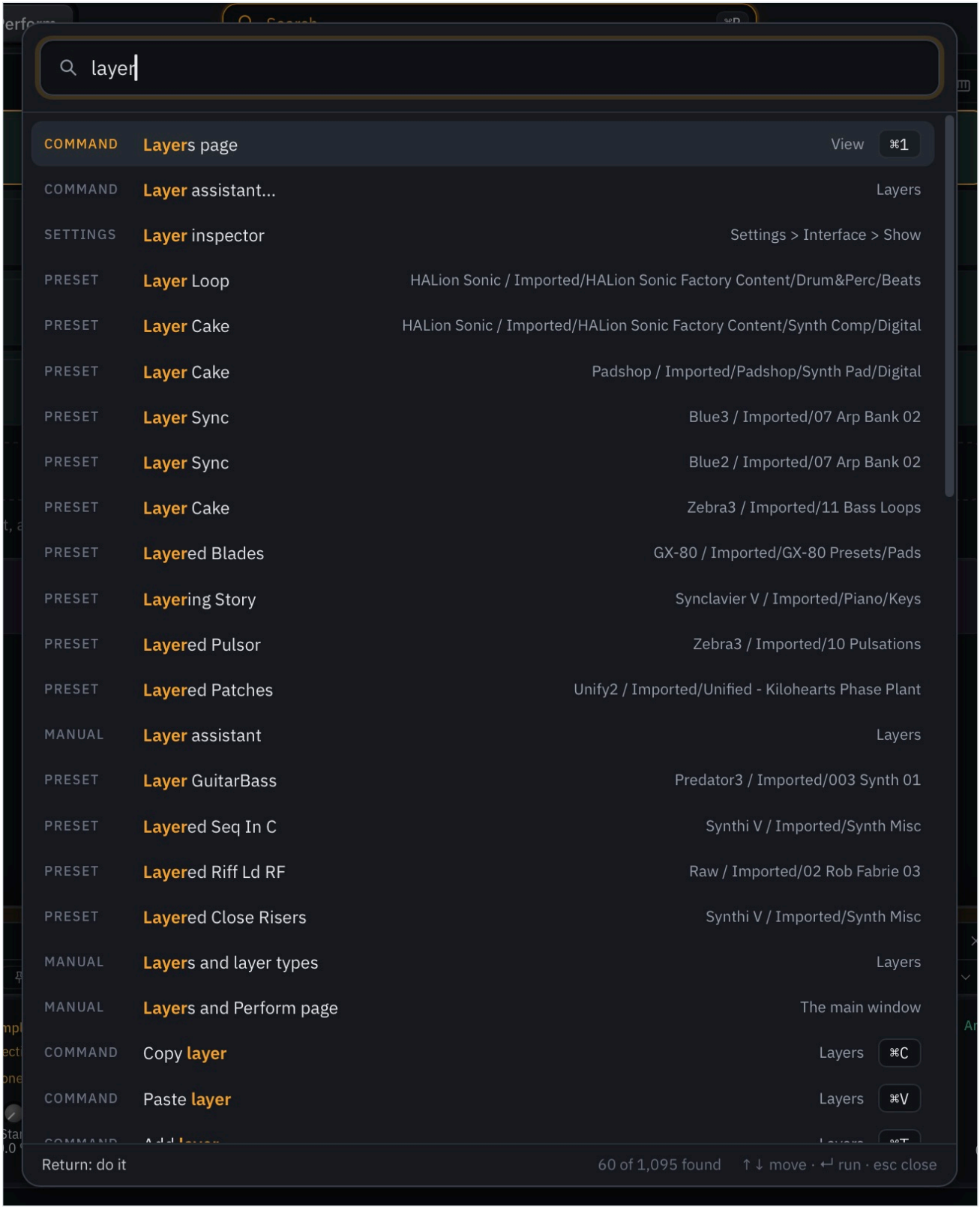
How it finds things. Capitals don't matter, and the words can come in any order: "patch save" finds **Save patch**. Every word must match. A name with a word that starts with what you typed comes first, then a name that has it anywhere, then an item where it is only in what it belongs to (a preset's plug-in, a topic's keywords). Letters in order count too, for less: "svas" finds **Save patch as...**. What you ran lately rises in the list.

Keys. Up and **Down** move through the list (**Page Up** and **Page Down** by more), **Return** runs what is lit, **Esc** closes it - so does Cmd+P again, or a click outside. A click on a row runs it too.

The search box in the View bar. In the middle of the View bar, between **Perform** and **Layers**, is what looks like a search box: a magnifier, **Search...** and, at its right, the palette's key as you have it - **⌘P** on a Mac, **Ctrl+P** on Windows; give the palette another key in Settings > Key Commands and the box shows that one, take its key away and it shows none. Click it and the palette opens, its own search box right over it; the box is lit while the palette is open. It is a button: **Tab** to it and **Return** or **Space** opens the palette too (there Space doesn't play or stop). Like the bar's other buttons it can be dragged elsewhere along the bar once the window layout is unlocked (Moving the bars and their buttons (p. 39)). In a narrower window it is the magnifier alone, before the buttons lose their words, and so it is on a View bar down a side of the window. If the bar still hasn't room (STATUS and PLAYING in it too, say), the box goes rather than put the bar onto a second row; Cmd+P and the ≡ menu still open the palette.

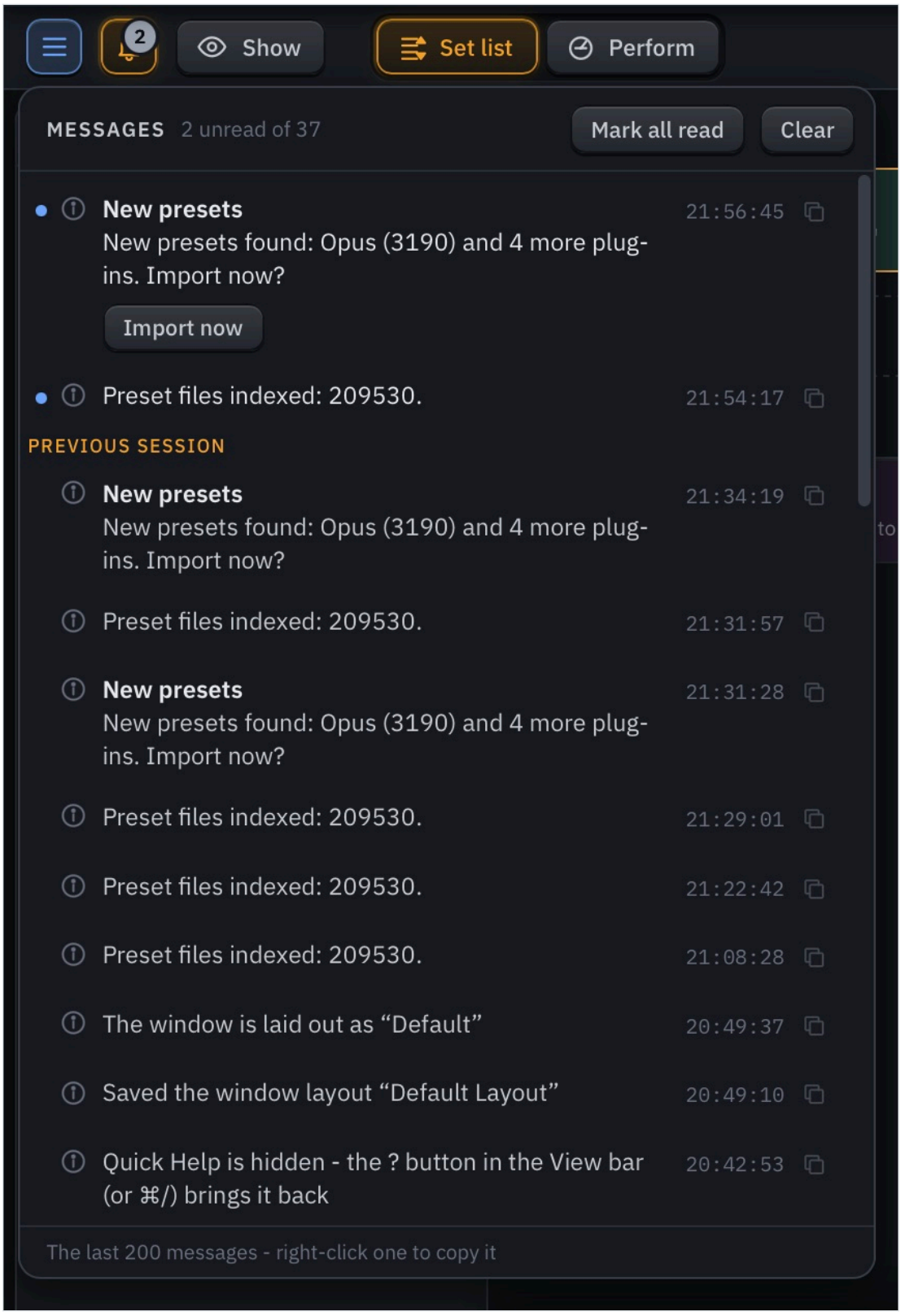
With nothing typed, it lists what you ran last (up to 20, newest first), then the common commands: Save, Save As, New patch, Add layer, Undo, Redo, the Browser's instruments and presets, showing or hiding the Browser, the Layers and Perform pages, Settings, the window layouts, Record and Help. What you ran is kept with the interface settings, so it is still there the next time arctone.studio starts; **Settings > Interface > Reset** forgets it.

Cmd+P is a key command, so you can give it other keys in Settings > Key Commands (Key Commands (p. 192)). It works while you are typing in a box too (the Browser's search, say) - a key with Cmd or Ctrl, or a function key, does; a plain key you give it (a letter, */*) types itself in a box, and opens the palette only outside one (in the standalone app, as any plain key). In the Browser's own window it opens the palette in the main window, which comes to the front (The Browser in its own window (p. 129)).



The same with "layer" typed: commands, patches, plug-ins, presets, settings and manual topics that match.

Messages



Messages, opened from the bell: this session's messages, then the previous session's, with Mark all read and Clear.

A short message ("Saved Warm Pad", "Exported Chord Stabs.mid") goes by itself after a few seconds, and the status line says what is happening only until the next thing happens. So that you don't miss one, the main window keeps everything it says: the **bell**, the second button of the View bar, beside the ≡, has every message - this session's, and the last one's under them.

The bell shows how many messages you haven't read yet - in **red** when one of them is an error, in amber when one is a warning. While something is in progress (a plug-in scan, presets being read) it glows, slowly. Point at it for how many, and what is in progress.

Click the bell (or use the key command **Messages...**) for the list, under it:

- **In progress**, at the top while something runs: what the status line says now, with its progress.
- **The messages**, newest first, each with its **time** and its kind: an error has a red mark (and a faint red background), a warning an amber one, the rest a grey one. A blue dot marks one you haven't read. A long message shows its first three lines: click it for all of it - that marks it read too.
- **Copy**: the copy button at the end of a message, or a right-click on it > **Copy**, puts it on the clipboard - its time, its kind and its words, to paste into a note or an email. **Copy all messages** copies the whole list.
- **Mark all read** takes the count off the bell; **Clear** empties the list, earlier sessions' messages too (what is in progress stays). A right-click on a message marks it read or unread; a right-click on the bell has Messages..., Mark all read, Copy all messages and Clear.
- A message with something to do next has a button for it: **Import now** on **New presets**, **Scan log** on **Scan complete**.
- A message box that had a **Show** button (**Recording saved**) keeps it: show the file later from the list.

Click outside the list, click the bell again, or press **Esc**, to close it.

What it keeps:

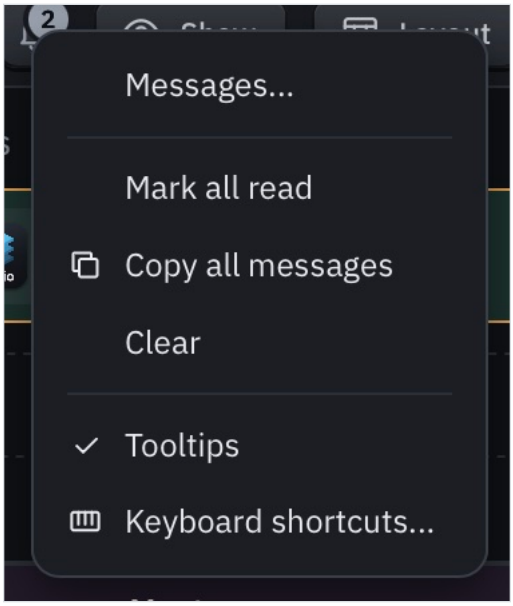
- every short message the main window shows: "Saved ...", "Undid: ...", "Exported ...", a MIDI clip put on a layer;
- every message box: arctone.studio's own (**Missing plug-ins**, **Couldn't load patch**, **Recording saved**) and the ones that say something didn't work (**Save failed**, a rename refused);
- the status line: the plug-in scan, VST2 presets found, presets imported or analysed, the previews, a file exported. A task is one message that follows it - **Scanning 12 / 300** becomes **Scan complete. 412 plug-in(s)...** when it is done, **Analysing 3 of 57** becomes **Analysing 4 of 57** - not one for each step; a task that comes to nothing (the status line cleared) leaves none. What a task came to stays: two files exported one after the other are two messages. The status line as it was when the window opened is there too, already read;
- the problems said in passing: a MIDI file in the Files tab that couldn't play (also while the Browser is in its own window), a MIDI clip that couldn't go on its layer.

Errors are the messages arctone.studio shows with a warning icon (in the classic interface; **Couldn't load plug-in**, say), anything that failed - an action that didn't work, "Couldn't ..." - and a MIDI file that couldn't play. **Warnings** are things to look at: safe mode, **Missing plug-ins** (their settings are kept), a scan in which plug-ins failed, a key that can't be a key command. The rest is information. The same message twice in a row is one message, counted: **×2**. And one thing said two ways at once - on the status line and in a message box, say, or a short message and a box with the same words - is one message: the graver kind, with the box's title.

The list keeps the last 200 messages, from one session to the next: the last session's come back under a **Previous session** line, already read (they are kept in `Messages.json` in arctone.studio's own folder: Where your files live (p. 16)). It is the main window's: what the Browser's own window says stays there (but for the

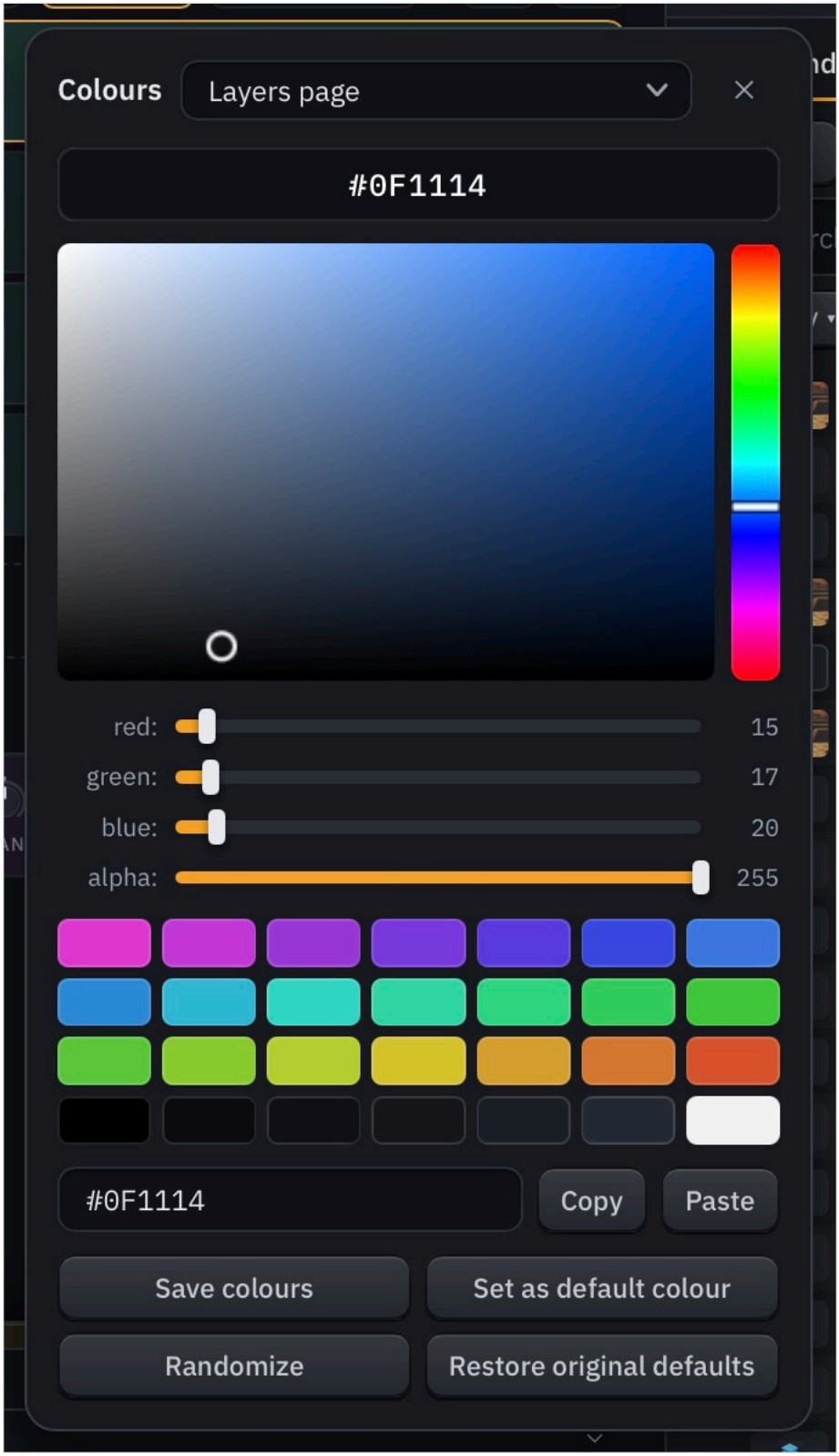
MIDI files that couldn't play).

Messages... is a key command with no key until you give it one in Settings > Key Commands (Key Commands (p. 192)); the command palette finds it too (The command palette (p. 26)).



The bell's right-click menu.

Colours of the window



The colour picker, here for the Layers page.

Any part of the window can have its own background colour, changed right there:

- **Right-click** the background of an area - a page, the patch header, the View bar or transport bar, the side panels, the macros or keyboard, a layer track - and choose **... colour...**. Controls with a menu of their own (a picture, a plug-in) keep it.
- Or click the palette button above the layer list (**Layers page colour**), or type **Colours** in the search box (The command palette (p. 26)): the picker opens for the page you are on (the Layers and Perform pages each have their own background).

The picker floats over the window (drag it by its title; click outside it, or press Esc, to close it). The list at its top switches to another area. Then:

- The **code** over the colour (such as `#142033`) shows the colour as you change it.
- Drag in the **square** (saturation across, brightness up and down) and the **hue strip** beside it, or use the **red, green, blue** and **alpha** sliders (alpha below 255 lets what is behind show through).
- Click one of the **ready-made colours**: three rows of bright ones and a row of the dark ones backgrounds want.
- Type a code in the box (`#rrggbb`, or `#rrggbbaa` with alpha), or use **Copy** and **Paste**.
- **Save colours** keeps all the colours as a theme of your own (asks for a name the first time). See Saving and sharing themes (p. 188).
- **Set as default colour** remembers this colour as your own for that area: it appears first among the ready-made colours, outlined, to go back to at any time.
- **Randomize** picks a colour at random, as light or as dark as the one there is (a dark background stays dark enough to read on).
- **Restore original defaults** puts the area back to the theme's own colour.

Everything changes as you drag, and stays: the colours are part of the look in use (see Colours and the colour picker (p. 186)). Settings > Theme has the same picker, for every colour of the theme.

Each track its own colour. Right-click a layer track and choose **This track's colour...** (or the track's ≡ menu > **Track background colour...**): only that track changes, and its colour is saved with the patch. **All layer tracks colour...** changes the colour every track shares (the theme's). For a track with its own colour, **Use the shared track colour** takes it back to the shared one.

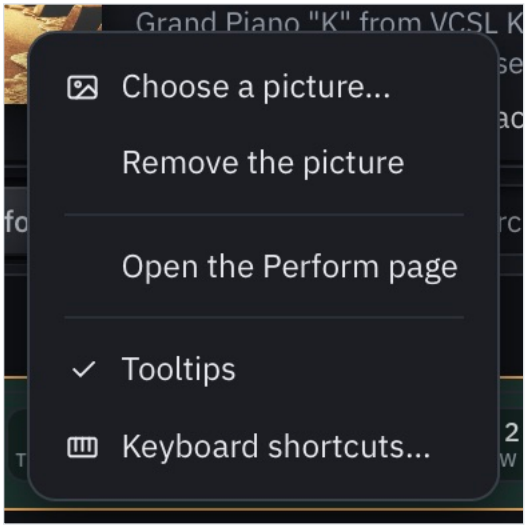
Pictures for the patch and the layers

The patch has a picture (in the header, and large on the Perform page), and so can each layer (the small square next to its badge). Both are chosen from the same grid: your **User Images** folder, `~/Documents/Arctone/arctone.studio/User Images/`.

- **The patch's picture:** point at the header's picture and click the small button in its corner, or right-click the picture and choose **Choose a picture...**. On the Perform page, click the big picture.
- **A layer's picture:** click the small square next to the layer's badge (an empty frame until it has a picture), or use **Picture...** in the layer's menu. See A layer's picture (p. 72).

Click a picture in the grid to use it. **No picture** takes it away; **Add pictures...** copies pictures of yours (JPEG, PNG or GIF) into the folder; **Show folder** opens the folder, and pictures you put there appear in the grid as well. arctone.studio comes with ten nature photographs, put in the folder the first time it starts; delete any you don't want (deleting the whole folder brings them all back at the next start).

The picture is kept **inside the patch** (a layer's as a small square), so the patch shows it on any computer, even without the picture in the folder.

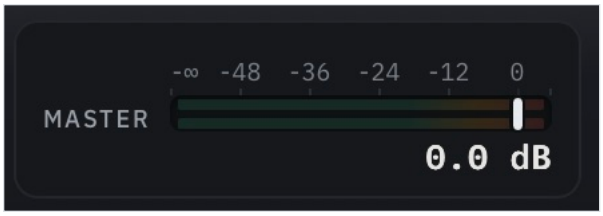


The picture's right-click menu.

The master meter and loudness

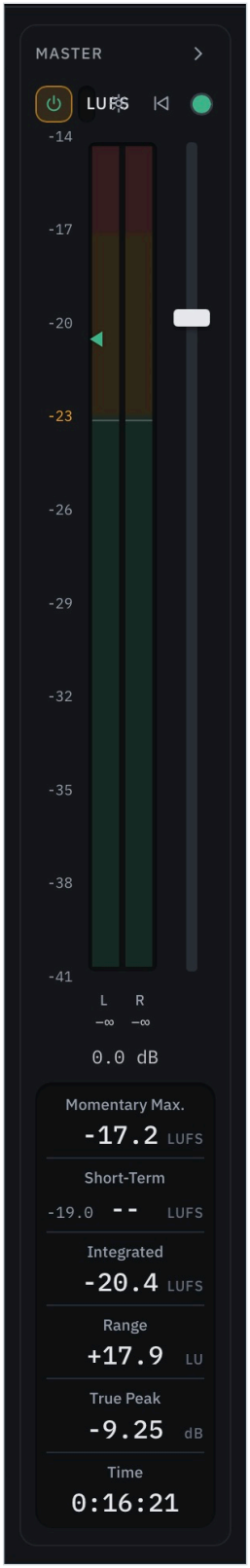
The **MASTER** block at the right end of the header shows the stereo out's level (dBFS) and holds the master fader. In the header it is a row: the two meters and the fader side-on, the dB scale along their top - from **-∞** at its left edge up in 12 dB steps, with a tick at +6.

Double-click the meter, the MASTER title or the dB figure to open it out down the whole right side of the window; double-click again (or click the arrow at its top) to put it back. The fader changes the volume when you drag it (or scroll over it); **double-click** it, or **Option-click** (Alt-click on Windows), for 0 dB. **Drag its left edge** to make the column wider or narrower (up to half the window); double-click the edge for the standard width. Drag the edge **all the way to the right** and the column goes off the edge of the window, the master back in the header: a thin bar with a grip stays at the right edge, and dragging it out (or clicking it) brings the column back. arctone.studio remembers both: whether it is opened out, and how wide. Opened out it is a **loudness meter**, like Cubase's: see The loudness meter (p. 35).



The master meter and fader, at the right of the top bar.

The loudness meter



The master opened out: the loudness meter with its scale, the fader, and the loudness figures under it.

With the master opened out down the right side (The master meter and loudness (p. 34)), it measures the **loudness** of the stereo out as ITU-R BS.1770 and EBU R128 describe it, and shows it as Cubase's loudness meter does.

The buttons across the top:

- **Power** - loudness metering on or off. Off, the bars are a plain peak meter in dBFS and nothing is measured (no CPU spent on it); the figures stay as they were, dimmed.
- **LUFS** - click to switch to **LU**: every figure and the scale then read how far from your **target** you are (+2.0 LU is 2 LU louder than the target). Click again for LUFS.
- **Settings** (the gear): the **target** - -14 LUFS (streaming: Spotify, YouTube, Tidal, Amazon), -16 (Apple Music), -18, -23 (EBU R128, broadcast) or -24 (ATSC A/85, US TV); the **scale** - **EBU +9** (from 18 LU under the target to 9 over it, as Cubase shows it: -41 to -14 around -23), **EBU +18** (36 under to 18 over) or **Wide** (-60 to 0 LUFS); the units; **Reset when the clock starts**; and **Meter colour...**.
- **Reset** (|◀◀) - everything since the reset starts again: Integrated, the highest values, Range, True Peak and Time. Do it before you play a song through.
- **The colour button** (the small circle) - the meter's colour, in the colour picker. The bars are that colour up to the target, amber up to 6 LU over it, and red above.

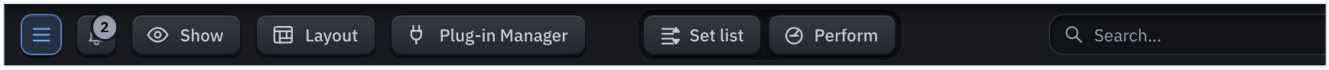
The meter: the **L** and **R** bars show each channel's loudness over the last 400 ms, with a line at the highest point of the last two seconds and a faint line across at the target (its figure on the scale is coloured). The small ◀ beside them marks the **Integrated** loudness. (One channel of a sound that sits in the middle reads 3 LU below the stereo figures.) Under the bars: each channel's **sample peak** in dBFS, red at 0.

The figures, since the last reset:

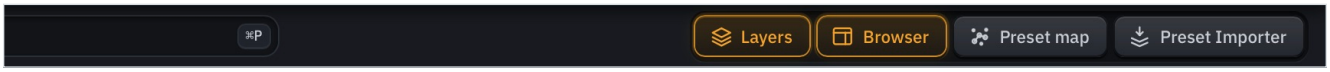
Momentary Max.	The loudest 400 ms.
Short-Term	The last 3 seconds; on its left, in small, the loudest 3 seconds.
Integrated	Everything, with the quiet parts left out as EBU R128 says - the figure streaming services and broadcasters go by.
Range	The **loudness range** (LRA, EBU Tech 3342): how much the loudness varies, from its quieter to its louder passages (the 10th to the 95th percentile of the Short-term loudness, gated). A few LU for compressed pop, 10 LU or more for something with quiet and loud parts.
True Peak	The highest peak, **between the samples too** (4 times oversampled, as BS.1770 says), in dB. It can be higher than the sample peaks; red above -1 dB, the ceiling most streaming services ask for.
Time	How long it has measured.

The measurement runs all the time (while it is on), so Integrated keeps counting while the window is closed. Previews count too - presets, and the audio and MIDI files the Files tab plays: they go to the same output. The meter's settings and its power are remembered.

The View bar



The View bar, left half: the main menu, the bell, Show, Layout and Plug-in Manager (those two are switched on in Show), Set list and Perform, then the search box.



The View bar, right half: Layers, Browser, Preset map and Preset Importer.

The **View bar** is about the window - how it looks, not the patch or the music. It runs along the top of the window, under the header; with the window layout unlocked you can **move it to any side** and **put its buttons in any order**: see Moving the bars and their buttons (p. 39). From left to right:

Button	What it does
≡ and the **bell**	The main menu (The main menu (p. 54)) and the messages (Messages (p. 29)).
Show	A menu, **Show on screen**, with a switch for each part of the window: Browser, Device panel, On-screen keyboard, Transport bar, Set list, Layer inspector, the Preset Importer, Layout and Plug-in Manager buttons, and Quick Help - each with its key, where it has one. A click flips the switch and the menu stays open; the pin beside one puts a button for it on the bar. To start with the bar has Browser, Set list and Preset Importer.
Set list, **Perform** and **Layers**	**Set list** shows or hides the Set List panel (Set List (p. 45)). **Perform** and **Layers** are the two pages, the one you are on lit: **Perform** next to **Set list**, **Layers** at the right, before **Browser**. See Layers and Perform page (p. 52).
Layout	Window layouts: the window's whole arrangement under a name - Default (the standard one) and your own - to switch to, or the window as it is saved as one; and the interface size (**Size**, - and +: Interface size (p. 42)). A button of its own, right after **Show**, when **Show > Layout button** is on. See Window layouts (p. 40).
Plug-in Manager	Opens the Plug-in Manager: scanning, hiding and archiving plug-ins, and the ones that failed. After **Layout**, when **Show > Plug-in Manager button** is on. See The Plug-in Manager (p. 124).
Search...	In the middle of the bar: the command palette, to find any command, patch, plug-in, preset, setting or topic of this manual by name. It shows the palette's key (**⌘P**; Ctrl+P on Windows) and is lit while the palette is open. See The command palette (p. 26).

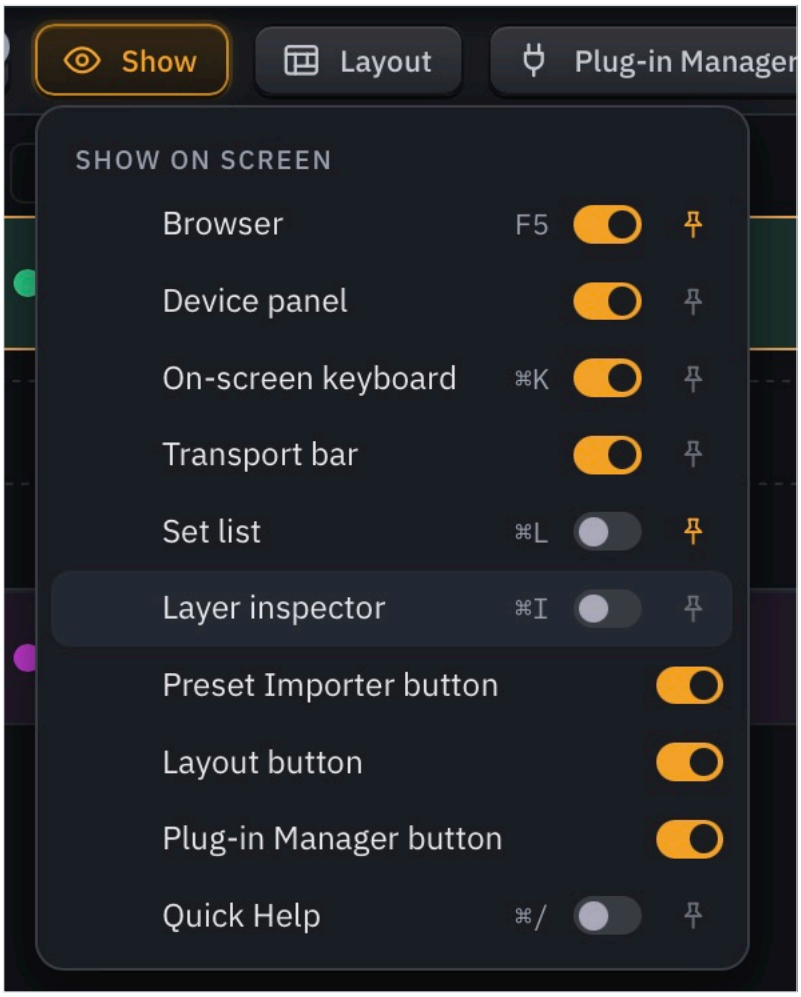
Browser, **Preset map** and **Preset Importer**	**Browser** shows or hides the Browser (The Browser (p. 128)). **Preset map** opens the map of every preset by its sound (The preset map (p. 149)). **Preset Importer**, after it, opens arctone.PresetImporter, which brings the presets arctone.studio can't read by itself - Kontakt's, Opus', Falcon's... - into your library; it is lit while the importer runs (arctone.PresetImporter (p. 160)).

What the toolbar had besides is where it belongs now: **Save**, **Undo** and **Redo** in the top bar beside the patch's name, and **New patch**, **Save as...**, **Rename...** and **Delete...** in the patch's menu, the ▾ after its name (The header (p. 21)); the colours on a right-click of each area (Colours of the window (p. 32)); PLAYING and STATUS at the end of the transport bar (STATUS (audio, CPU, HD, RING) (p. 48), PLAYING (chord, MIDI in) (p. 50)). Their key commands do what they did (Key Commands (p. 192)).

There are no **Presets**, **Library** or **Plug-ins** buttons: your patches, your plug-ins' presets, your plug-ins and your recordings are all in the Browser, which the **Browser** button shows (see Presets (p. 53), Library (p. 55) and Plug-ins (p. 54)). **Audio / MIDI settings** are in **Settings** and in STATUS's menu (Audio / MIDI settings (p. 44)); the **Plug-in Manager** has a button of its own, switched on in **Show**.

Related buttons sit together in a recessed tray: **Set list** and **Perform** in one, **Layers**, **Browser**, **Preset map** and **Preset Importer** in another. The search box has none: it is a recessed box itself, in the bar's own colour. The transport bar has one tray, for Play, back to the start, Rec, Capture and Take. Drag a button out of its group and it gets a tray of its own. A button that is **on** - a panel showing, the page you are on, the metronome - is lit from behind: amber, or its own colour (Play green, Rec red, the metronome blue). The readouts (the time, the tempo, STATUS and PLAYING) are small recessed displays with amber figures. **PLAYING** (the chord you play, MIDI in: PLAYING (chord, MIDI in) (p. 50)) and **STATUS** (the audio settings, CPU, the disk, RING: STATUS (audio, CPU, HD, RING) (p. 48)) are at the end of the transport bar to start with; either one's menu can move it to the top bar or into the View bar, where it sits in the middle beside the search box, a space either side.

The View bar stays on the Perform page too: its switch is the way back to Layers. Settings and Help are in the main menu, opened with the ≡ at the start of the View bar: see The main menu (p. 54). The classic interface has a toolbar of its own, with its own buttons and its own arrangement (The web interface and the classic interface (p. 166)).



The Show menu: a switch for each part of the window, with its key.

Moving the bars and their buttons

Unlock the window first. The window's layout is locked to start with, so that nothing moves by accident on stage: the buttons, the bars and the panels stay where they are, and the grips of dots are not shown. Turn off **Settings > Interface > Show > Lock the window layout** to move things; turn it on again when the window is as you want it.

Move a button. Press on any button or readout (time, position, signature, clock) and drag it to another place along its bar. A line shows where it will go; let go to drop it. The tempo box has a small grip of dots on its left edge for this, because dragging the box itself changes the tempo. A button that has been dragged is not pressed when you let go, and a click that wobbles a pixel or two is still a click. STATUS and PLAYING can also go from one bar to the other, or up into the top bar (STATUS (audio, CPU, HD, RING) (p. 48)).

Move a bar. Drag the **dots** at the start of the View bar or the transport bar toward another edge of the window and let go: it docks on the nearest edge - the top (under the header), the bottom, the left or the right. On the left or right its buttons stand in one column, without their words (the search box is its magnifier alone). Two bars on one side stack.

Settings > Interface > Bars has the same: **View bar position**, **Transport bar position**, and a button that puts both bars back as they were, STATUS and PLAYING too.

A narrower window. Along the top or bottom a bar makes room before it would wrap onto a second row. In the View bar the search box narrows, then is its magnifier alone, then the buttons lose their words (Layers, Perform and Layout), then the search box goes (Cmd+P still opens the palette) - so the box is never what puts the bar onto a second row, even with STATUS and PLAYING in it. In the transport bar the buttons' words go first (Play, Rec, Capture and Metronome), then PLAYING keeps to the chord, then TIME and CLOCK go. If that isn't enough, the bar wraps onto a second row with everything in it rather than run off the edge (the search box is the magnifier alone if that saves a row). On a side a bar stays one column, so it never spills over the set list or the Browser: in a shorter window the buttons in its trays go two to a row, then PLAYING keeps to the chord and TIME and CLOCK go; if that isn't enough, it keeps everything and scrolls (scroll over it).

The positions and the orders are remembered, and kept in a window layout with the rest of the window (Window layouts (p. 40)); an order saved before there was a search box gets it right after the first space. The classic interface's toolbar keeps its own (it is moved the same way, and a right-click on an empty part of it has the sides and **Put the buttons back in their usual order**). See The View bar (p. 37) and Interface (p. 180).

Window layouts



The Layout menu: the layouts, the interface size, and Save as new layout.

A **window layout** is everything placed and showing in the window, kept under a name:

- which panels show and on which side - the set list, the Browser, Quick Help, the layer inspector - how wide they are, and whether a side is pushed off the edge (Getting started keeps its place and width in a layout, but whether it shows is its own: it comes and goes as you use it);
- the View bar and the transport bar: their sides, the order of their buttons, whether the transport bar shows, and where STATUS and PLAYING are;
- the macro knobs and the on-screen keyboard: the keyboard's lowest and highest key, its pitch and mod wheels shown or hidden, and the layers' key ranges along its top (what the mod wheel does, the velocity and the computer keys are the keyboard's own choices, not the layout's);
- the master opened out and its width, where the master and the Recording group are among the layers, the recording tracks shown or hidden and the group open or folded;
- the page shown: Layers or Perform;
- gig mode, on or off (Gig mode (p. 95)): a "Stage" layout brings the locked Perform page with it;

- the Browser in its own window, and where that window is;
- in the standalone app, the window's size and place on the screen (and whether it covers the whole desktop);
- the interface size (Interface size (p. 42)): how big everything in the window is.

Not the colours or the theme, the knob style, the patch, or any other setting: a layout is where things are, and how big they are. A "Stage" layout at 150% makes everything bigger on the way to the gig; your editing layout at 100% puts it back. A layout you saved before arctone.studio kept the interface size with it has none: applying it leaves the size as it is (save over it to keep one).

The Layout button in the View bar, right after **Show** (switch it on with **Show > Layout button** if it isn't there), opens the list:

- **Default**, always first: the standard arrangement, as a new install has it - the View bar under the top bar, the transport bar along the bottom with PLAYING and STATUS at its end, the set list on the left, the Browser on the right, at 100%. It can't be saved over, renamed or deleted. Choosing it puts the window back to that arrangement and size; the window's own size and place on the screen stay as they are.
- **Your own layouts**, by name: click one and the window is laid out as it was when you saved it, at the size it was then. The one in use has a tick, and **(changed)** after it when you have moved something since (or changed the size).
- **Size**, with **-** and **+** either side of the size in use: a step smaller or larger, the menu staying open while you try them; click the percentage for 100%. With the keyboard, Left and Right do the same and Return is 100%. See Interface size (p. 42).
- **Save as new layout...** asks for a name and keeps the window as it is under it. A name you have used already (capitals or not) asks before replacing that layout; **Default** can't be a name.
- **Save over “*name*”**, **Rename “*name*”...** and **Delete “*name*”**, when the layout in use is one of yours. Delete asks first unless **Settings > Interface > Ask before deleting a layer or plug-in** is off (it covers layouts too); the window stays as it is, and Default is the layout in use from then on.

The colours are on a right-click of each area (Colours of the window (p. 32)), and the same list of layouts is in Settings (below).

The button's tip names the layout in use ("Layout: Gig"). Default can't change: to keep a changed Default, save it as a new layout. The key commands **Choose a layout...** (the button's list) and **Save the layout as...** have no key until you give them one (Key Commands (p. 192)).

Settings > Interface > Window layouts lists the same layouts, Default first: **Apply** on each, and on your own **Save over**, **Rename...** and **Delete**; **Save the current arrangement as a new layout...** is at the foot. **Save over** there asks before it replaces a layout, unless it's the one in use and nothing has moved since. A layout applied there with the Perform page shows it when Settings closes.

When arctone.studio is new, and after **Initialize** (Settings > Backup & Reset, at any level), Default is the layout in use and the window has the standard arrangement: Initialize clears your own layouts. They are kept in the settings file, so a backup has them and a restore brings them back (Backup and Reset (p. 198)). **Settings > Interface > Reset** puts the window back to Default too, and keeps your layouts.

In a DAW the DAW places and sizes the plug-in's window, so a layout leaves the window where it is; everything else applies. The plug-in and the standalone app share their layouts. A setup shared with someone else (**Share your setup...**) has your layouts without the windows' places on your screen: on their computer a layout leaves the windows where they are.

If you had arranged the window before there were layouts, it stays as you left it, with Default marked as changed: **Save as new layout...** keeps it.

Before the new toolbars. The first time this version starts, the window is laid out as the new Default: the View bar under the top bar, Save, Undo and Redo in the top bar. If you had arranged the window your own way, your arrangement isn't lost: it is kept as a layout called **Before the new toolbars** (unless you have one by that name), to go back to from the Layout button - the toolbar where you had it (along the bottom, unless you had moved it) with its buttons in your order, STATUS and PLAYING where SYSTEM was. Your own layouts keep the bars as they had them too (a layout that didn't move them has them as they were then: the toolbar along the bottom, SYSTEM in it). Buttons that have gone from the bars (Save, Undo, Rename and the others) are left out of the saved orders, and new ones (the page switch, Capture) are put in where they go. It happens once. The classic interface's toolbar is left as it was.

Interface size

The **interface size** makes everything in arctone.studio's windows bigger or smaller at once - text, buttons, knobs, meters, the keyboard, menus - the way a web browser zooms a page. The window keeps its size on the screen and the page is laid out again in it: at 125% the same window holds a little less, everything a quarter bigger; at 75% more fits. Pictures, meters and keyboards are drawn again at the new size, so they stay sharp. It is on top of the computer's own scaling (Retina, or Windows' display scaling): use it to read the window from the back of a stage, or to fit more on a small laptop screen.

The sizes are **75%, 80%, 90%, 100%, 110%, 125%, 150%, 175% and 200%**. Set it:

- in **Settings > Interface > Interface size** (Interface (p. 180));
- in the View bar's **Layout** menu: **Size**, with **-** and **+** a step at a time and the percentage in between (click it for 100%) - the menu stays open while you try (Window layouts (p. 40));
- with the keys: **Larger interface** Cmd+= (also Cmd+Shift+=, or Cmd and the keypad's +), **Smaller interface** Cmd+-, **Actual size (100%)** Cmd+Option+0 - on Windows Ctrl+=, Ctrl+- and Ctrl+Alt+0 (not Ctrl+Shift+0: Windows keeps that one for switching keyboard languages). They work while you are typing in a box too (on Windows, there Ctrl+Alt+0 is AltGr+0 and types what it types), in the Browser's own window, and with the MIDI or audio editor open; you can give them other keys (Key Commands (p. 192)), and the command palette finds them by name (The command palette (p. 26)). In Help the keys above work too, always these ones (keys you give the commands yourself work in the main window and the Browser's own window).

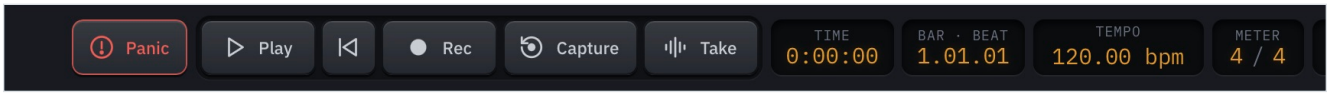
The size shows for a moment in the middle of the window as it changes ("Size 125%"). It applies at once, to every window drawn as a page: the main window, the Browser's own window (The Browser in its own window (p. 129)), Help (which gets wider with it, so it holds the same). The standalone app and the plug-in share it. In a DAW only arctone.studio's own window is zoomed, never the DAW.

The window's least size grows with the size: the page needs at least 1000 x 660 at 100%, so 1250 x 825 at 125%. A window smaller than that grows to it when you choose the size (and no further); one that is bigger keeps its size. A window that grows past the edge of the screen is moved back onto it. When even the screen can't hold that much - 200% on a laptop, say - the window is kept to what fits and arctone.studio says so once: choose a smaller size if parts of the page don't fit. (In a DAW, room is left for the DAW's own frame round the window, and the DAW decides where the window goes.)

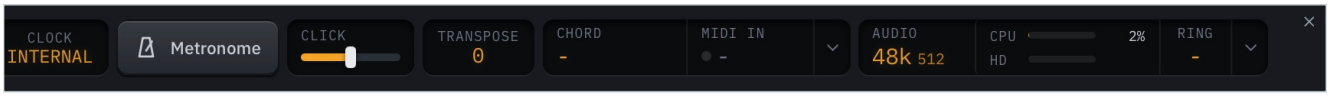
The size is part of a window layout: a layout saved now keeps it and brings it back, and Default is 100% (Window layouts (p. 40)). **Settings > Interface > Reset** sets 100% too. Before this version, Interface size (75% to 150%, the standalone app only) made the web window itself bigger on the screen without enlarging what is in it; the same setting now zooms everything in the window, so a size chosen then may look bigger than it did - choose again to taste. (A size between the steps reads as the nearest one.)

The classic interface (The web interface and the classic interface (p. 166)) is sized from the same setting, in the standalone app only (JUCE scales its whole window there), up to the largest size at which its window still fits on the screen; in a DAW it stays as it is, and Help still follows the size. On Windows, Ctrl and the mouse wheel (or a pinch on a touchpad) don't zoom the window: use the keys or the Layout menu.

The transport bar



The transport bar, left half: Panic, Play, back to the start, Rec, Capture and Take, then TIME, BAR - BEAT, TEMPO, METER and CLOCK.



The transport bar, right half: Metronome and CLICK, TRANSPOSE, then PLAYING (CHORD, MIDI IN) and STATUS (AUDIO, CPU and HD, RING).

Everything to do with time - playing and recording - has a bar of its own, along the bottom of the window to start with:

Control	What it does
Play / **Stop**	Starts and stops arctone.studio's own clock (it reads Stop while the clock runs); the layers' MIDI clips play with it (MIDI clips on layers (p. 78)). Turning the metronome on starts it too. In a DAW the DAW's transport runs it. See Play, Rewind, time and tempo (p. 47).
Back to start	Back to bar 1.
Rec	Records the mix (and stems, if they are on) and the MIDI. See Record (p. 45).
Capture	Makes a take of what you just played, without having pressed Rec. See Capture (p. 46).
Take	Shows or hides the Take strip under the Device Panel: the last take's audio and MIDI - what Capture or Rec made - with **Play**, **Edit audio**, **Audio**, **MIDI** and **Folder**. See Capture (p. 46).
TIME, **BAR · BEAT**, **TEMPO**, **METER**, **CLOCK**	The readouts, each with its name at the top. Drag the tempo or double-click it to type; drag either number of the time signature (METER). See Play, Rewind, time and tempo (p. 47) and Time signature (METER) (p. 47).
Metronome and **CLICK**	The metronome on or off, and its level. See Metronome (p. 51).

TRANSPOSE	The global transpose: every note shifted, in semitones. Drag it, double-click for 0, right-click for octaves. See Transpose (p. 170).
PLAYING	The chord you play and the MIDI coming in. Click it for the MIDI inputs. See PLAYING (chord, MIDI in) (p. 50).
STATUS	The audio settings, the CPU and disk load, and RING, at the end of the bar. See STATUS (audio, CPU, HD, RING) (p. 48).

It is arranged like the View bar (see Moving the bars and their buttons (p. 39)): with the window layout unlocked, drag the **dots** at its start to another edge of the window - bottom, top, left or right - and drag its controls along it to change their order (an order saved before there was a Panic button gets it first). The View bar and the transport bar can sit on the same side (they stack) or on different ones. Along the **bottom or top** of the window its controls sit in the **middle**, with the dots still at the left end; on the left or right they run down the side. In a narrower window its buttons lose their words, then PLAYING keeps to the chord and TIME and CLOCK go, before it wraps; down a side of a shorter window Play, back to the start, Rec and Capture go two to a row first. Show or hide it with **Show > Transport bar** in the View bar, the small **x** at its top right corner, or **Settings > Interface > Show > Transport bar**; its position is under **Settings > Interface > Bars**. All of it is remembered.

Plug-in scan status

Plug-in scan status - type it in the search box (The command palette (p. 26)) - shows the result of the last plug-in scan, lists the plug-ins that **failed or are blocked**, and has **Open Scan Log**. Scanning again is in the Plug-in Manager: **Scan for new plug-ins** and **Rescan all** (The Plug-in Manager (p. 124)). The scan's progress and its result are in the messages too, under the bell (Messages (p. 29)), where **Scan complete** has a **Scan log** button. A patch that uses a plug-in that isn't installed shows the **Missing plug-ins** notice when it opens; it still opens, and their settings are kept and saved back unchanged. See Missing plug-ins (p. 83). (This used to be the Status button in the toolbar; the classic window still has it.)

Audio / MIDI settings

Audio / MIDI settings... (standalone app only) - in STATUS's and PLAYING's menus at the end of the transport bar, or a click on **AUDIO** in STATUS - opens the audio and MIDI device settings: which audio interface and outputs to use, the sample rate and buffer size, and which MIDI inputs are active. In the standalone app all MIDI inputs, including ones plugged in later, are opened automatically. The same settings are on the Audio & MIDI page of the Settings window. See Audio & MIDI (p. 168). (This used to be a toolbar button; the classic window still has it.)

Keyboard

Show > On-screen keyboard (**Cmd+K**; Ctrl+K on Windows), or the small **x** at the keyboard's top right corner, shows or hides the on-screen keyboard, under the Device Panel, right above the transport bar. Hidden, the Device Panel sits on the transport bar. The lowest and highest key can be changed in Settings > Interface. See The on-screen keyboard (p. 55).

Macros

The macro knobs are in the Device Panel, at its left: **Patch Macros**, eight to a page, with their modulators beside them (The plug-in chain (p. 69)). The Perform page shows them large (The Perform page (p. 94)). See Macros (p. 87).

Browser

Browser in the View bar (**F5**, or **Show > Browser**) shows or hides the Browser. **Right-click** the button for the panel layout menu: the Browser and the set list on the left or the right. See The Browser (p. 128).

Plug-in list

In the classic window: shows or hides just the plug-in list panel, leaving the tree. See The plug-in list (p. 155). (The main window's Browser has no separate list.)

Set List

Set list in the View bar (**Cmd+L**, Ctrl+L on Windows, or **Show > Set list**) shows or hides the **Set List panel** on the left of the main window. See Set lists (p. 102).

RING

In STATUS (STATUS (audio, CPU, HD, RING) (p. 48)), **RING** shows how many old patches are still sounding after a switch (a dash when there are none). It lights up while patches ring out or fade. See Continuous audio (p. 111).

CPU

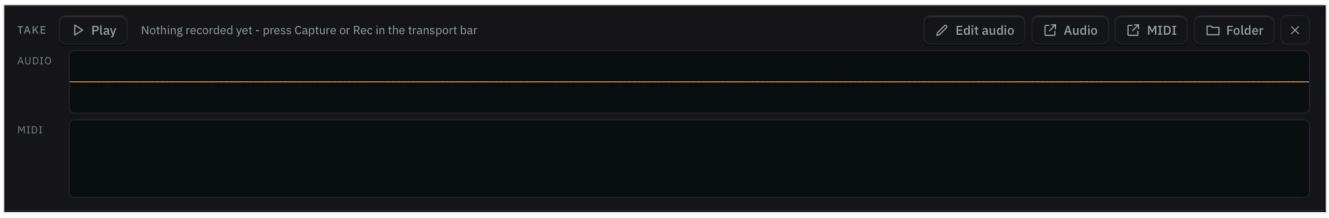
The **CPU** meter in STATUS (STATUS (audio, CPU, HD, RING) (p. 48)) shows how much of the audio time the engine uses, with the figure beside it. Each layer also shows its own CPU use in its first row, so you can see which layer is expensive - and, for plug-ins in helper processes, what their helpers spend and the blocks they missed (Plug-in protection and crash recovery (p. 195)). See The folded line: name, key range, mixer (p. 62). arctone.studio has no plug-in delay compensation between layers.

Record

Starts and stops recording the mix to a 24-bit WAV file, and optionally a stem per layer and the MIDI performance. Each take goes in a folder of its own in `~/Documents/Arctone/arctone.studio/Recordings/`, and every file it writes begins with the date and time you pressed Rec. See Recording the mix (p. 205).

Capture

Capture, after Rec in the transport bar, makes a take of what you just played - without having pressed Rec: arctone.studio always keeps the last minutes of the mix and the MIDI. The take is saved in Recordings and shown on the recording tracks, ready to play back or drag out. It does what **Capture** on the audio recording track does, and the key command **Capture what was just played** (Cmd+Shift+C, Ctrl+Shift+C on Windows). **Settings > Recording > Capture keeps the last** says how far back. **Take**, the button after Capture, shows or hides the Take strip under the Device Panel: the last take's audio and MIDI, with **Play**, **Edit audio** (The audio editor (p. 83)), **Audio** and **MIDI** (the files), and **Folder**; before anything is recorded it says so. See The recording tracks (p. 81).



The Take strip, opened with Take: the last take's audio and MIDI, with Play, Edit audio, Audio, MIDI and Folder.

Panic

Panic, the first button of the transport bar and outlined red, is all notes off, everywhere: every note held in every layer and every plug-in is ended, in every patch still ringing out, the layers' MIDI clips let go and stay quiet until the clock starts again (MIDI clips on layers (p. 78)), a MIDI file playing from the Files tab stops (The Files tab (p. 142)), and the note-offs go out on the layers' MIDI out too, so a hardware synth stops with the rest. Nothing else changes: the patch, the knobs, the clock and a recording carry on as they were - play on.

Press it when a note hangs: a controller unplugged mid-chord, a plug-in that missed a note-off, a sustain pedal that stuck. The button flashes for a moment, and the messages under the bell get the line **All notes off** (Messages (p. 29)). The key command **All notes off (panic)** is **Cmd+Shift+Backspace** (Ctrl+Shift+Backspace on Windows; change it in Settings > Key Commands: Key Commands (p. 192)) and flashes the button too; it works while you're typing in a box as well, so a search field with the focus never keeps you from it. In gig mode the Perform page has a large **PANIC** button of its own, always in view (Gig mode (p. 95)). A footswitch or a pad can do it as well - **Settings > Audio & MIDI > Remote control > All notes off**, with Learn (Audio & MIDI (p. 168)) - and so can OSC, with `/arctone/panic` (OSC control (p. 183)).

Like the other controls of the transport bar it can be dragged along the bar, and goes with the bar to any side of the window (Moving the bars and their buttons (p. 39)); an order saved before there was a Panic button gets it first. Hide the transport bar and the key command still works.

Play, Rewind, time and tempo

These are in the transport bar (see The transport bar (p. 43)). In the standalone app arctone.studio has its own transport: **Play** starts and stops the internal clock (the button reads **Stop** while it runs), **Rewind** goes back to the start. The readouts, each with its name at the top, show **TIME** (since the clock started), **BAR · BEAT** (bar, beat and sixteenth - the beats are the time signature's, so in 7/8 they are eighth notes), **TEMPO**, **METER** (the time signature: Time signature (METER) (p. 47)) and **CLOCK** (where the tempo comes from). Inside a DAW the transport follows the host and these controls are read-only. The internal tempo and clock source are also in Settings > Transport. See Transport and Metronome (p. 189).

Time signature (METER)

The **METER** box in the transport bar is the time signature: how many beats a bar has (the upper number) and which note a beat is (the lower number - 4 a quarter note, 8 an eighth). The metronome and the **BAR · BEAT** readout follow it.

- **Change a number:** press on it and drag **up or down**, or **scroll** over it. Hold **Shift** to go slower. The upper number goes from **1 to 99**; the lower one is a note value: **1, 2, 4, 8, 16, 32 or 64**.
- **Right-click** the box for the common ones: 2/4, 3/4, 4/4, 5/4, 7/4, 5/8, 6/8, 7/8, 9/8 and 12/8.
- Changed while the clock runs, the new time signature takes over from the start of the bar you are in, and the bars go on counting from there.
- It is **saved with the patch**, like the tempo. A patch saved before there was a time signature to set opens in 4/4.
- Inside a DAW the time signature is the DAW's: the box shows it, dimmed, and you change it in the DAW.



METER's right-click menu.

STATUS (audio, CPU, HD, RING)

At the end of the transport bar, after PLAYING, **STATUS** - like the display in Logic Pro's control bar - shows how things stand:

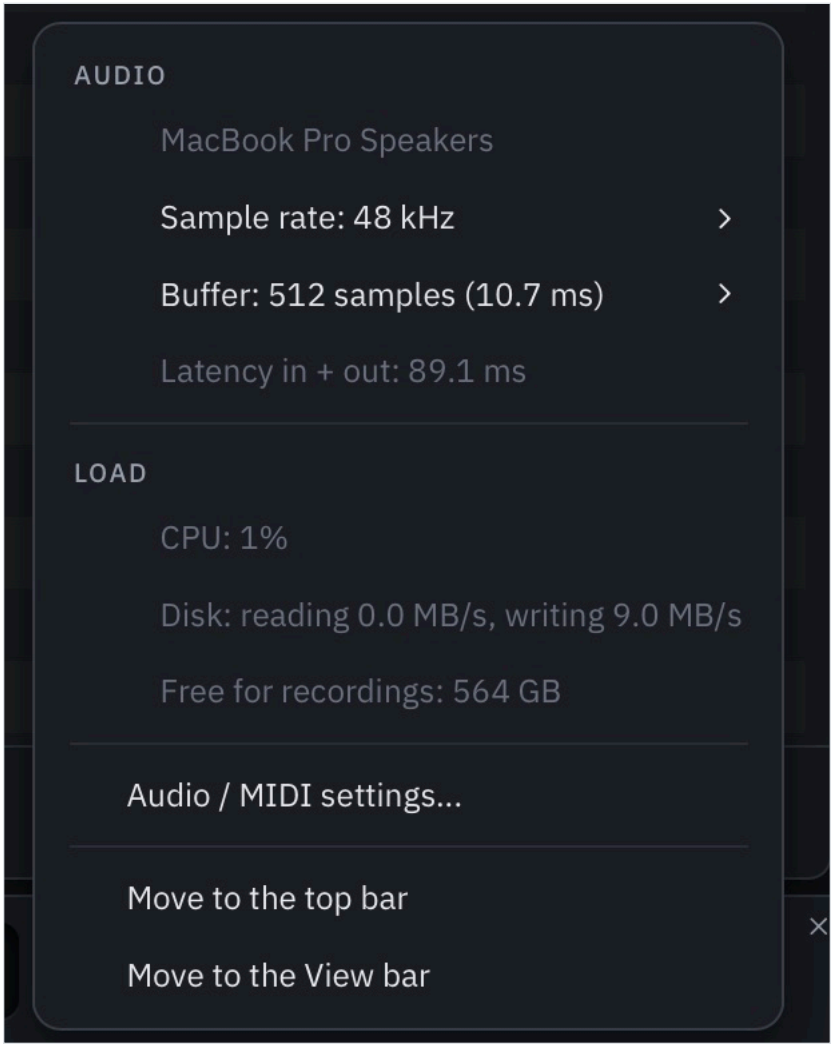
- **AUDIO** - the sample rate (**48k** is 48 kHz) and the buffer size in samples. A smaller buffer means less delay between playing and hearing, a bigger one less risk of clicks and dropouts.
- **CPU** - how much of the time the audio has is used, with the figure beside the meter (CPU (p. 45)). **HD** - how hard arctone.studio and the plug-ins in it are reading and writing the disk: a sampler streaming its samples, the recorder, the Files tab's player. It fills on a log scale, from 100 KB/s to 200 MB/s; point at it for the figures. Either turns red near the top.
- **RING** - how many old patches are still sounding after a switch (continuous audio); a dash when none are (RING (p. 45)).

Click RING, or the arrow at its end, for its menu. (A click on **AUDIO** opens Audio / MIDI settings in the standalone app; a click on **CPU** or **HD** opens **Running now**: every layer with what it has loaded and its share of the CPU - click a row to select that layer - and a **Plug-in protection...** button.) The menu has:

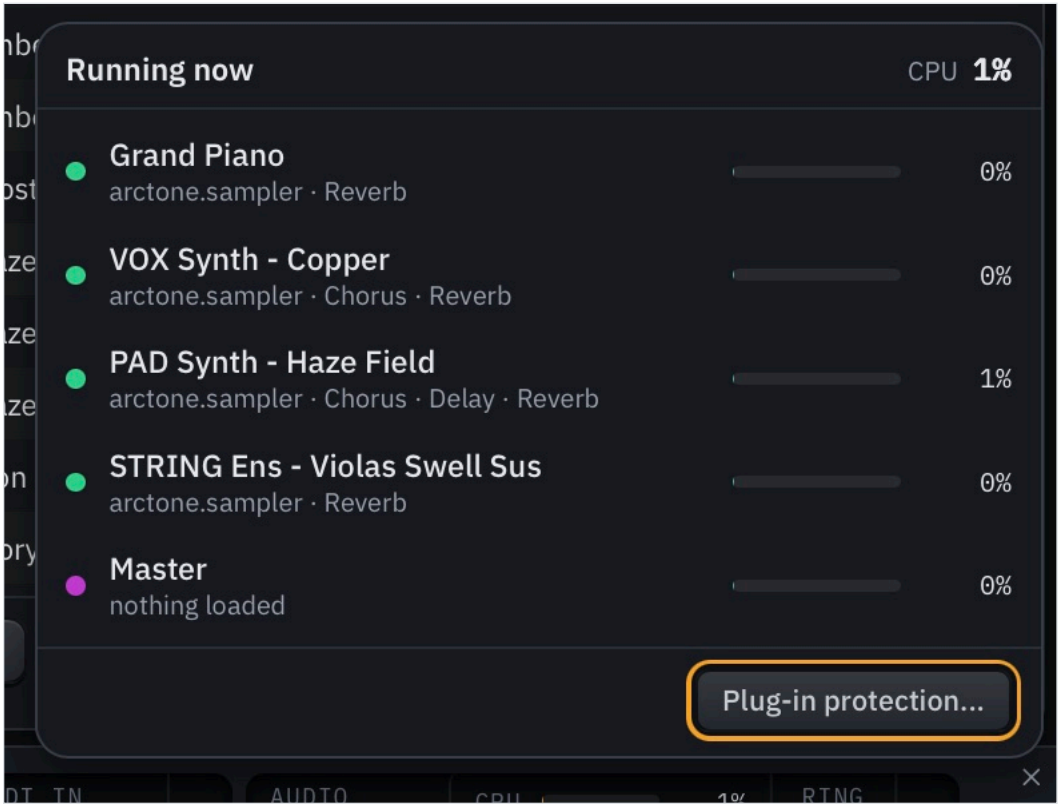
- **Audio:** the output device, **Sample rate** and **Buffer** (each with the choices your audio interface offers, the buffer with its delay in milliseconds), and the latency in and out. Changing them here is the same as in Settings > Audio & MIDI (Audio & MIDI (p. 168)).
- **Load:** CPU, the disk's reading and writing, and the space free on the disk your recordings go to - and, with plug-ins in helper processes (Settings > Audio & MIDI > Plug-in protection), how many helpers run, their share of the audio time and the blocks they missed (Plug-in protection and crash recovery (p. 195)); the CPU row's tooltip has the same.
- **Audio / MIDI settings...** opens the full page.

Inside a DAW the sample rate and buffer are the DAW's (shown, not changed here) and HD is the whole DAW's disk use. In a narrow window it keeps to AUDIO and CPU (The header (p. 21)).

Move it: its menu ends with **Move to the top bar** / **Move to the View bar** / **Move to the transport bar** - the two places it isn't in. With the window layout unlocked it can also be dragged from one bar to another, and along a bar like the bar's other controls (Moving the bars and their buttons (p. 39)). Where it is is part of a window layout (Window layouts (p. 40)). (It was the system half of the one SYSTEM display before; PLAYING is the other half.)



STATUS's menu, from RING or the arrow at its end.



Running now, from a click on CPU: each layer, what it has loaded and its share of the CPU.

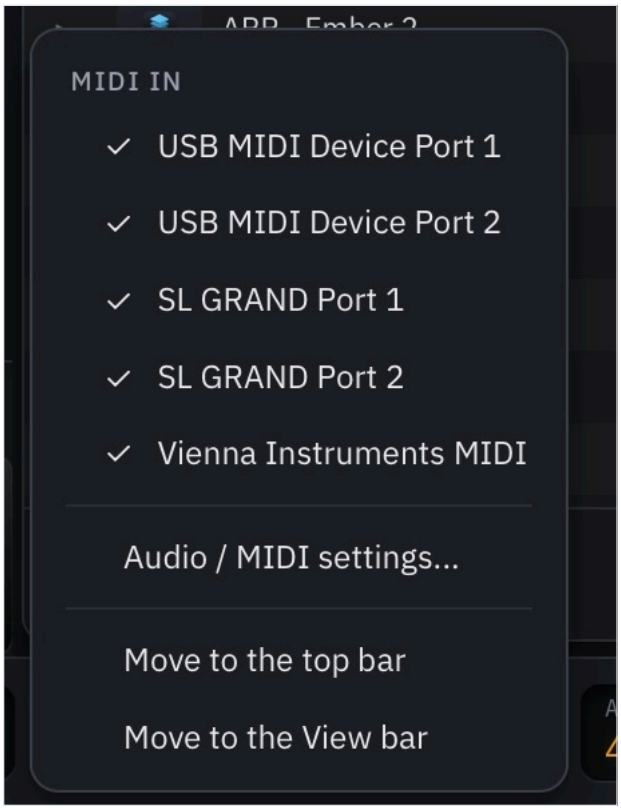
PLAYING (chord, MIDI in)

Near the end of the transport bar, after TRANSPOSE and before STATUS, **PLAYING** shows what you play:

- **CHORD** - the chord you are holding, named: **Cmaj**, **Am7**, **G7/B** (a G7 with B in the bass), **Dsus4**, **F#m7b5**... It names triads, sevenths, sixths, suspended chords, 9ths, 11ths and 13ths, and sevenths and ninths played without the fifth. Two notes a fifth apart are a power chord (**C5**). One note, or notes that make no chord, show **-**. Point at it to see the notes you are holding.
- **MIDI IN** - the last note that came in (from a MIDI input or the on-screen keyboard) and its velocity; the light flashes with every MIDI message. **No In** means no MIDI input is switched on (standalone).

Click it for your MIDI inputs - click one to switch it on or off - and **Audio / MIDI settings...**. Inside a DAW the MIDI comes from the DAW.

Move it as STATUS moves (STATUS (audio, CPU, HD, RING) (p. 48)), from its menu: into the View bar, or up into the top bar. A narrow window keeps it to the chord, in the top bar and in the transport bar.



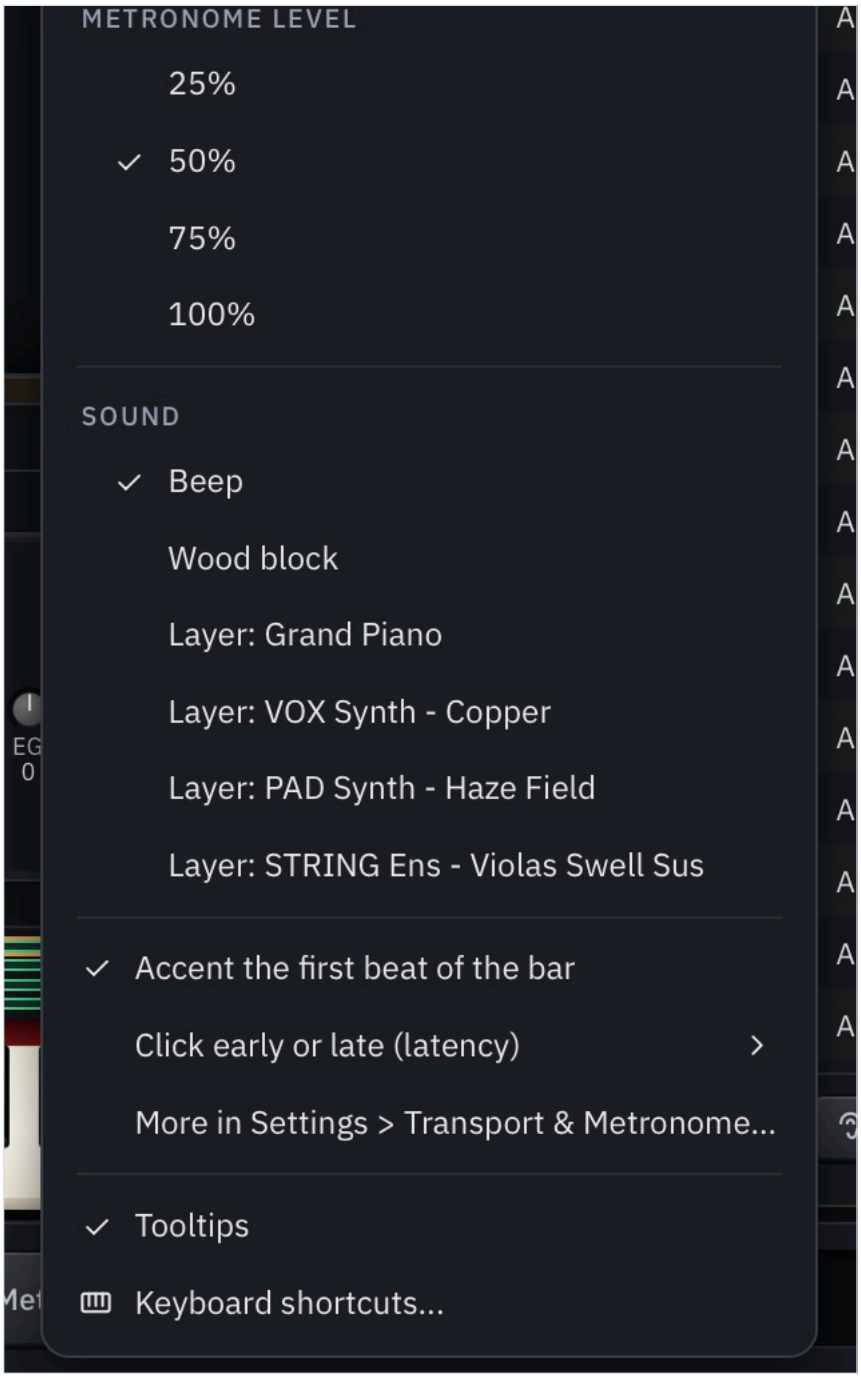
PLAYING's menu: the MIDI inputs.

Metronome

A click that follows the host tempo (or the internal tempo in standalone), in the transport bar (see The transport bar (p. 43)). It follows the **time signature** too (Time signature (METER) (p. 47)): it clicks on every beat - the note the lower number says - and the **first beat of each bar** is higher and louder. In 4/4 that is four quarter notes with the first accented; in **7/8**, groups of **seven eighth notes**; in 6/8, groups of six eighths. Click to turn it on or off; the **CLICK** slider beside it sets its level. **Right-click** the button for its options, all kept with the patch (and in Settings > Transport & Metronome: Transport and Metronome (p. 189)):

- **Metronome level:** 25%, 50%, 75% or 100%, as the CLICK slider sets it.
- **Sound:** the **Beep**, a **Wood block**, or **a layer**: any instrument layer of the patch plays the click - a drum kit, a rimshot, anything. It gets a high wood block (note 76) on the first beat of the bar and a low wood block (77) on the others, the standard drum-map notes, straight into its instrument (the layer's key range and filter don't apply). Its level follows CLICK.
- **Accent the first beat of the bar:** off, every beat is the same.
- **Click early or late:** a few milliseconds early (negative) makes up for the time your audio interface and plug-ins take, so the click lands with what you hear; late, for the other way round.
- **More in Settings > Transport & Metronome...** opens that page.

It clicks while the clock runs: in standalone, turning it on starts arctone.studio's own clock if it is stopped (the **Play** button stops it again); in a DAW it clicks while the DAW plays. The metronome is kept with the patch, so a patch saved with it on turns it on when loaded. See Transport and Metronome (p. 189).



The Metronome button's right-click menu.

Layers and Perform page

Layers and **Perform**, in the View bar, switch between the two pages, the page you are on lit (**Perform** sits next to **Set list**): the **Layers** page (all the tracks and their controls) and the **Perform** page (patch name, notes, picture, the set list's songs and the macros, large, filling the screen - for playing live; the classic interface calls it the Play page). The keys are **Cmd+1** and **Cmd+2** (Ctrl on Windows); **Open the Perform page** on a right-click of the patch's picture in the top bar opens Perform too. See The Perform page (p. 94) - and, for the stage, Gig mode (p. 95).

Presets

Your patches, and your plug-ins' presets to search, hear and load, are in the Browser's **Sounds** tab (effects' presets in its **Effects** tab): click the **Browser** button in the View bar and then **Sounds**, press **F8**, or click **Show in the Browser** at the foot of the patch picker (click the patch's name in the header: Choose a patch (p. 24)). See The Sounds tab (p. 133). (The toolbar used to have a Presets button for this; it has gone, since the Browser button does the same. The classic window still has it, for its Presets page.)

Save

Saves the current patch: **Save** in the top bar, in amber, beside the patch's name (or Cmd+S, Ctrl+S on Windows). **Right-click** it for Save As, which is also in the patch's menu, the ▾ after its name. (The classic interface has Save in its toolbar.) The dialog asks for a name, author, category, tags and a comment. A factory patch is saved as your own copy, and a set list playing it plays the copy from then on. See Saving a patch (p. 97).

When you change the patch - anything in the layers window (layers, mixer, MIDI settings, plug-in slots, macros), or a control you turn in a plug-in's own window - the Save button pulses faintly in red until you save it. Loading a patch or starting a new one stops it. (Automation, presets and a plug-in's own modulation don't count.) Turn the pulse off under **Settings > Interface > Save button pulses when the patch has changed**.

New

Starts an empty patch: **Init**, the first button above the layer list (**Init patch** on a right-click of the Layers page: The Layers menu (p. 75)), **New patch** in the patch's menu (the ▾ after its name in the top bar), or Cmd+N (Ctrl+N on Windows). If the patch playing has changes that aren't saved (the **Save** button pulses), it asks first: **Save** keeps them (a patch never saved asks for its name, as Save As), **Don't save** lets them go, **Cancel** leaves everything as it is. A patch as it was saved goes straight to Init - it is still in your library. See New patch (p. 99).

Rename and Delete

Rename... and **Delete...** in the patch's menu (the ▾ after its name in the top bar) work on the patch that is playing. In the Browser's Sounds tab, right-click any patch for **Rename...** and **Delete...** too.

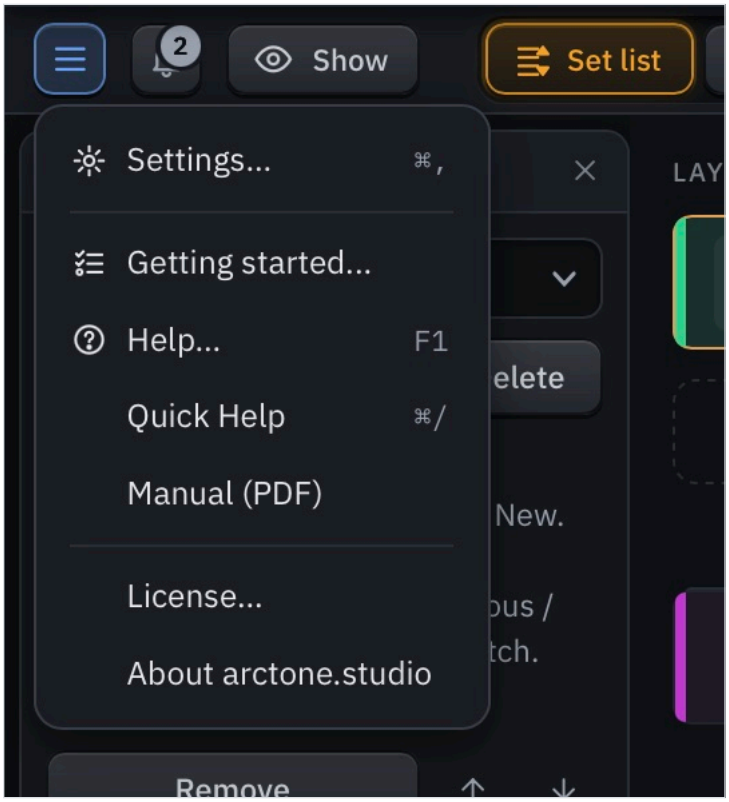
- **Rename** asks for the new name and changes it everywhere: the patch's name and its file's name (in the same folder). A set list that plays it plays it under its new name. A patch that hasn't been saved yet only gets its name changed (it is saved under it when you save).
- **Delete** asks first - it tells you which set lists play the patch - and then **doesn't delete it**: it moves the patch into the **Archive** folder, `Documents/Arctone/arctone.studio/Archive`, in the same folders it was in under the library (a patch from User > Keys goes to Archive > User > Keys). It leaves the library and the Browser; set lists that played it show it as missing. The patch playing keeps playing (now not saved anywhere) until you load another.
- **Getting one back:** in the Browser's **Files** tab, open **arctone.studio > Archive**, right-click the patch and choose **Put back in the library**: it goes back where it was. (Double-click it there to load it without putting it back.) Nothing in the Archive is ever deleted by arctone.studio; clear it out yourself in the Finder if you want

to.

Plug-ins

Your plug-ins are in the Browser's **Instruments** and **Effects** tabs: click the **Browser** button and then the tab, or press **F6** (instruments) or **F7** (effects). To scan for plug-ins and manage the list, open the **Plug-in Manager**: its button in the View bar (**Show > Plug-in Manager button**), **Plug-in Manager...** in the ⋯ of the Browser's title bar, or **Settings > Plug-ins > Manage plug-ins...**. See The Instruments tab (p. 130), Scanning for plug-ins (p. 122) and The Plug-in Manager (p. 124). (The toolbar used to have a Plug-ins button for this; it has gone, since the Browser button does the same. The classic window still has it.)

The main menu



The main menu, from the first button of the View bar.

Open it with the ≡, the first button of the View bar, with the messages' **bell** beside it. It holds **Settings...** (**Cmd+,**, Ctrl+, on Windows; see The Settings window (p. 167)), **Getting started...**, **Help...** (F1), **Quick Help** (ticked while its panel shows: Quick Help (p. 57)), the **Manual (PDF)**, **License...** and **About arctone.studio**.

Everything else has a home nearer to what it acts on, and the search box in the View bar, or **Cmd+P**, still finds it by name (The command palette (p. 26)):

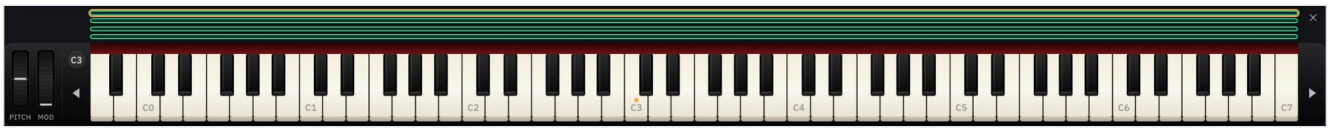
Looking for	It's here

Choose a patch, **Freeze to arctone.sampler**, **Layer assistant**, what this patch does when you switch away	The patch's menu: the ▾ beside its name, or right-click the name. Also when you right-click the playing patch in the Browser.
Undo, **Redo**, **Undo history**	The top bar, after Save (the history on Undo's ▾).
Continuous audio	**Settings > Continuous Audio**
Open the library folder, **Rescan patch library**	**Settings > Library & Files**
Scan and manage plug-ins, plug-ins that **failed**	The **Plug-in Manager**, with its Blocklist tab: the **Plug-in Manager** button in the View bar, the ⋯ in the Browser's title bar, or **Settings > Plug-ins > Manage plug-ins...**
Preset Importer	The **Preset Importer** button in the View bar, after **Preset map**
Record stems, **recordings folder**	**Settings > Recording**
Metronome level	**Settings > Transport & Metronome**
Panel layout	Turn off **Lock the window layout** in **Settings > Interface**, then drag a panel's title bar; the same page resets the layout
Colours	Right-click an area and choose its colour, or the palette button above the layer list. Themes are in **Settings > Theme**
Gig mode	**Settings > Interface**, or the lock on the Perform page
Audio / MIDI settings	**Settings > Audio & MIDI**, or STATUS's menu at the end of the transport bar
Plug-in scan status, **Show me around**	Type the name in the search box
Keyboard shortcuts	**Settings > Key Commands**

Library

Your recordings and preset files are in the Browser's **Files** tab: click the **Browser** button in the View bar and then **Files**, or press **F9**. See The Files tab (p. 142). Your patches are in its **Sounds** tab (The Sounds tab (p. 133)). (The toolbar used to have a Library button for this; it has gone, since the Browser button does the same. The classic window still has it, for its patch library page: The patch library (p. 100).)

The on-screen keyboard



The on-screen keyboard, with the pitch and mod wheels at its left. The lines along its top are the layers' key ranges.

The on-screen keyboard plays the current patch. It sits under the Device Panel, right above the transport bar (**Show > On-screen keyboard** shows or hides it, and so does the small **x** at its top right corner: Keyboard (p. 44)). Click keys with the mouse: lower on a key plays louder (or set a fixed velocity, below). Keys you hold, and notes arriving from MIDI, sink and turn red, so you can see what is sounding from across the room. The lowest and highest key it shows are set in Settings > Interface (see Interface (p. 180)). Any layer whose MIDI filter accepts a note will sound; see The MIDI line: what reaches the plug-ins (p. 65).

In the standalone app the computer keyboard plays notes as well: **A S D F G H J K L** are the white keys from C, **W E T Y U O P** the black ones. The label at the left of the keyboard (such as **C3**) shows which C the **A** key plays, and a small dot marks that key. The ◀ ▶ arrows at the sides, or **Z** and **X**, move it down or up an octave.

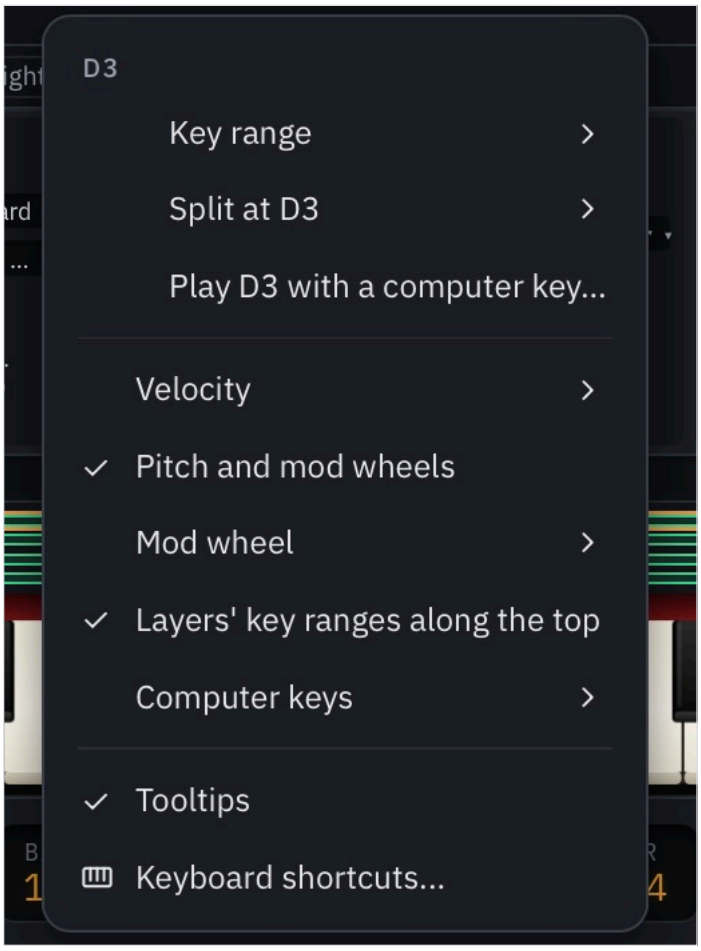
Wheels. Left of the keys are a **pitch wheel** and a **mod wheel**. Drag them up or down. The pitch wheel springs back to the middle when you let go. The mod wheel stays where you leave it; double-click it to put it back to zero. Right-click a wheel to choose what the mod wheel does: send a MIDI controller (CC 1 Modulation by default, or Breath, Expression, Brightness and so on, or any CC number) or turn one of the macros directly (see Macros (p. 87)). **Hide the wheels** (or right-click a key and untick **Pitch and mod wheels**) gives the space back to the keys. Whether the wheels show is part of a window layout (Window layouts (p. 40)).

Layers' key ranges. A line in each layer's colour along the top of the keyboard shows which keys that layer plays, the selected layer's ringed; click or double-click a line to open that layer's key range and velocity, or drag a line's end or the line itself to change its range there. Double-clicking the keys opens it for the selected layer. Untick **Layers' key ranges along the top** in the keyboard's menu to hide them (a window layout keeps whether they show).

Right-click a key for:

- **Key range** - for any layer: make this key its lowest or highest key, let it play only this key, or give it the whole keyboard. The ruler on the layer's row follows (see The folded line: name, key range, mixer (p. 62); for a proper piano to set the range on, click the ruler: The key range editor (p. 67)).
- **Split at** this key - one layer plays everything below it, another plays from it up.
- **Velocity** - by where you click on the key, with a soft, linear or hard curve, or a fixed velocity (40, 64, 80, 100, 127 or any value). The computer keys always play the fixed velocity.
- **Play ... with a computer key** (standalone) - press any letter or symbol key next and it plays that note from then on. **Computer keys > Assign one** lets you click the note first; Esc cancels. **Show them on the keys** writes each computer key on the note it plays; **Back to A S D F...** forgets your changes.

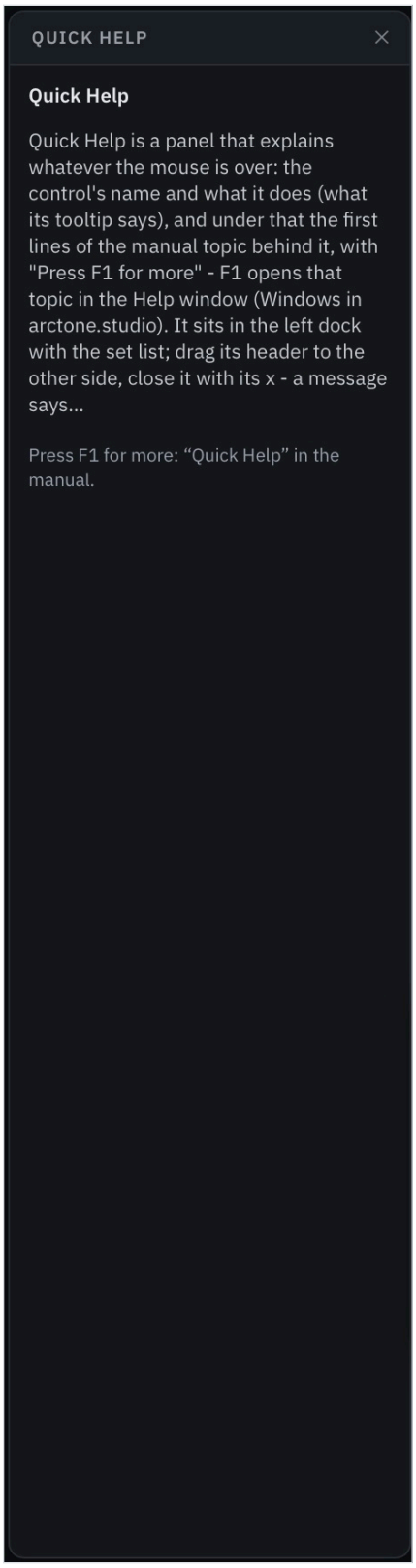
These choices are kept with arctone.studio's settings, not in the patch.



A key's right-click menu.

Quick Help

Quick Help is a panel that explains whatever the mouse is over: the control's name and what it does (what its tooltip says), and under that the first lines of the manual topic behind it, with "Press F1 for more" - F1 opens that topic in the Help window (Windows in arctone.studio (p. 59)). It sits in the left dock with the set list (with the window layout unlocked, drag its header to the other side); close it with its x - a message says how to bring it back - and show or hide it with ≡ **> Quick Help**, **Cmd+/** (Ctrl+/ on Windows; Settings > Key Commands), the **Show** menu in the View bar, where its pin puts a button on the bar, or Settings > Interface > Show. Tooltips themselves are separate (Settings > Interface > Tooltips).



The Quick Help panel.

Windows in arctone.studio

arctone.studio uses several windows. These are the names the manual and the Help system use:

Window	What it is
arctone.studio main window	The window with the layers, the Browser and the bars.
Settings	Opened with ≡ **> Settings...** (**Cmd+,**): it takes the place of the layers in the main window, its pages down the left side, until you close it with the **x** at the right of its header. See The Settings window (p. 167).
Help window	"arctone.studio Help", opened with ≡ **> Help...** or **F1**. See Context-sensitive help (F1) (p. 208).
Plug-in Manager	Scan and manage plug-ins. See The Plug-in Manager (p. 124).
Plug-in editor windows	The hosted plug-ins' own windows. See Plug-in editor windows (p. 155).
Floating panels	The plug-in tree and list when pulled out of the main window. See Docking and floating panels (p. 155).

The windows drawn as pages - the main window, the Browser's own window, and Help - are all shown at the interface size (Interface size (p. 42)).

Only one arctone.studio app runs at a time: opening it again brings the one that is running to the front.

When arctone.studio starts, the main window comes first, already showing the patch you played last; its instruments load just after ("Loading ..." in the layers area, "loading instruments" next to the patch name). Nothing sounds until they are in. If you quit before that, the patch is still the one kept for next time.

If arctone.studio is slow to start, the file **StartupLog.txt** in its app-data folder (macOS: ~/Library/Application Support/Arctone/arctone.studio) shows how long each step of the last start took: opening the audio device, each plug-in of the last patch, the window. Please include it when you report a slow start.

Full screen and the title bar

Every arctone.studio window can cover the whole desktop and go back to its previous size.

- **arctone.studio main window.** It draws its own title bar, its buttons where your system has them: minimise and close at the upper left on a Mac, the upper right on Windows. A full-screen button sits next to them. Click it, or double-click the title bar.
- **All other windows** use the macOS title bar. Two small buttons sit at the upper right of the bar: **full screen**, and a **close (x)** at the very edge. Double-clicking the bar does the same as full screen.
- The **x** does exactly what the window's red button does: the Settings, Help and Plug-in Manager windows, floating panels and plug-in editor windows close. Small message and question boxes have their own OK / Cancel and don't get one.
- A window that covers the whole desktop has no title bar, so its buttons move into the **upper-right corner** instead: one to leave full screen and an **x** to close it. The Settings window has its **x** at the right end of its own header.
- Press **Esc** or click the button again to return the window to where it was.

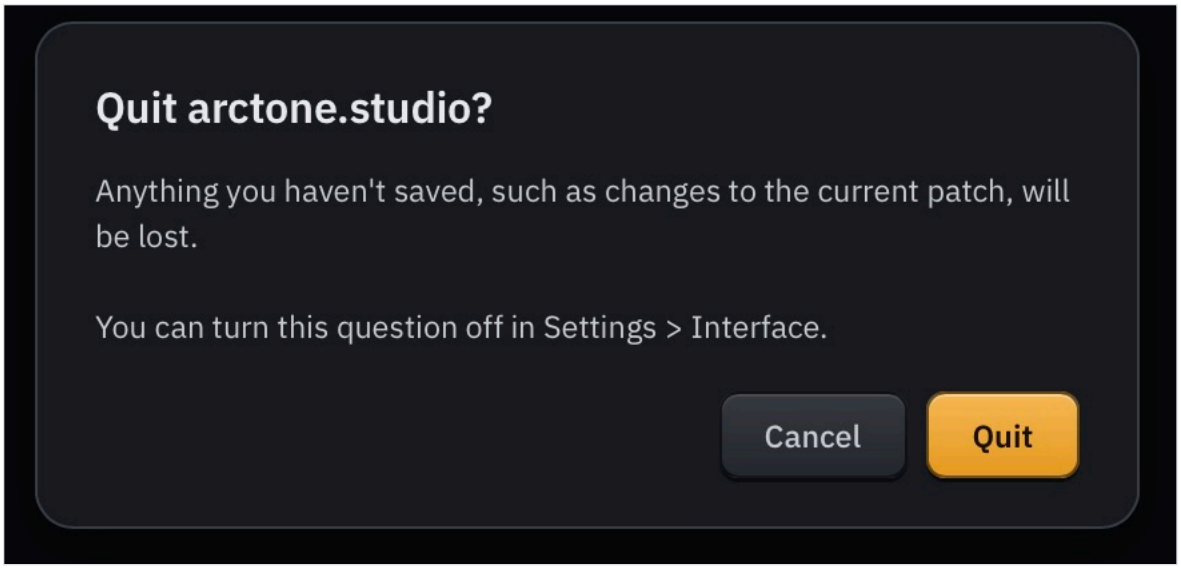
> **NOTE** The green macOS button still does the system's own full screen. The arctone.studio button covers the desktop instead, so plug-in windows keep working normally. A plug-in editor that cannot be resized keeps its own size and is centred on the screen.

> **TIP** If the title bar additions ever cause trouble, start the app with the environment variable `ARCTONESTUDIO_NO_TITLEBAR_BUTTON=1` to switch them off.

Quitting

Closing the main window or pressing **Cmd+Q** asks **Quit arctone.studio?** first, with **Quit** and **Cancel**, so a stray click or key can't end a performance. Anything not saved, such as changes to the current patch, is lost when you quit.

Turn the question off (or on again) under **Settings > Interface > Ask before quitting**. It is on by default.



The question asked before quitting.

Chapter 3

Layers

Layers and layer types

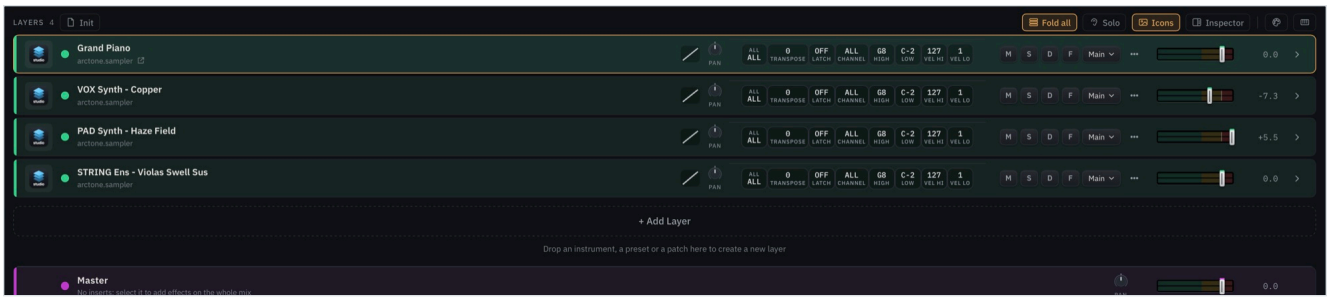
A patch is a stack of **layers**. Each layer is a track with its own MIDI filter, plug-in chain, fader and pan. There are five kinds:

Type	What it does
Instrument	MIDI filter, then MIDI effects, then one instrument, then inserts, then the fader. This is what most people mean by "a layer".
MIDI	Runs a MIDI effect chain whose output feeds the instrument layers. Use it for an arpeggiator that drives several instruments at once.
Audio	Processes the audio input through insert effects.
Aux	A send/return bus. Each layer has four post-fader sends, one for each aux layer in order.
Master	The final bus, with its own inserts. Its track starts at the bottom of the list and can be dragged anywhere in it; wherever it is shown, the whole mix goes through it last.

An instrument layer chooses where its MIDI comes from: the input plus the MIDI layers, the input only, or the MIDI layers only. See The layer inspector (p. 73).

The Layers page has a title bar like the side panels' (**LAYERS**, and how many the patch has): **+** adds a layer, the inspector button shows or hides the inspector, and ⋯ (or a right-click on the title bar) has **Fold all layers** and **Unfold all layers** (The layer track (p. 61)). The right-click has **Layers page colour...** too, as a right-click anywhere else on the page has (Colours of the window (p. 32)).

The layer track



The layer list with the Browser hidden: the header (Init, Fold all, Solo, Icons, Inspector, the page colour and the keyboard shortcuts), a row for each layer, + Add Layer, and the Master row.

Each layer is a **row** in the list, the same shape for every layer, so the stack reads down the page: which keys each layer plays, how its notes reach it, and how loud it is. From left to right, a row has its colour, its on / off dot, its name, its MIDI settings (its key range among them) and its mixer - see The folded line: name, key

range, mixer (p. 62). The on-screen keyboard's coloured lines show every layer's range together (The on-screen keyboard (p. 55)).

Above the first layer is the list's header: **LAYERS** and how many there are, **Init** (a new, empty patch: New (p. 53)), then at the right **Fold all** (lit while every row is folded), **Solo** (solo on the selected layer: The Layers menu (p. 75)), **Icons** (the layers' pictures at the left of their rows), **Inspector** (The layer inspector (p. 73)), the palette button for the page's colour (Colours of the window (p. 32)) and a button for the keyboard shortcuts (Key Commands (p. 192)).

Under the last layer is **+ Add Layer** (Adding, removing and arranging layers (p. 76)), and under that the **master track**: the whole mix goes through it (The master track (p. 80)).

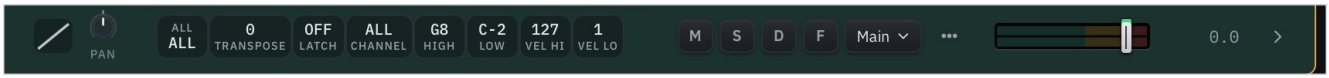
- **Click** a row to select it: it is raised, with the accent edge, and the Device Panel under the layers shows its devices (The plug-in chain (p. 69)). The arrow keys move the selection; **M** and **S** mute and solo the selected layer.
- **Shift-click** or **Cmd-click** rows to pick several, or drag a box across them from the empty space beside the rows; **Delete** (or Backspace) removes the picked layers, asking first unless Settings say not to.
- **Right-click** a row for its menu (Adding, removing and arranging layers (p. 76)).
- The arrow at the right end (▸) unfolds the row for its **key range ruler** (The folded line: name, key range, mixer (p. 62)) and its **MIDI filters** - which kinds of message reach the layer (The MIDI line: what reaches the plug-ins (p. 65)); ▾ folds it again. **Enter** does the same for the selected row.
- **Drop** an instrument or a preset from the Browser on a row to load it onto that layer; drop a MIDI file on it for its clip (MIDI clips on layers (p. 78)). Dropped on the space below the rows, they make a new layer.

View > **Row density** makes the rows compact (44 px instead of 56 px).

The folded line: name, key range, mixer



A layer's folded line, left half: its picture, the on / off dot, its name and plug-in, the velocity curve and PAN.



A layer's folded line, right half: TRANSPOSE, LATCH, CHANNEL, HIGH, LOW and the velocity limits, then M, S, D and F, where its sound goes, the ... menu, the fader with its meter, and the arrow that unfolds it.

From left to right:

- **Picture** (with **Icons** on): the instrument's picture, or one you chose for the layer (A layer's picture (p. 72)).
- **Colour.** The layer's colour runs down the row's left edge. It is also the colour of the band on its ruler, of its line over the on-screen keyboard and of its fader. Change it in the layer's menu > **Colour**.
- **On / off** (the dot). Off, the layer isn't processed at all; its plug-ins stay loaded, so it comes back at once. To unload them as well, use **D** (Disabling a layer (p. 69)).
- **Name** and, under it, what plays it: the instrument and its format (on a MIDI layer, its MIDI effects), and ↗ to open the instrument's own window. **Double-click** the name or that line to open the instrument; **Option-double-click** the name to rename it. Drag the name to move the layer, or off the window to delete it (Adding, removing and arranging layers (p. 76)). A MIDI clip or an audio file the layer plays shows after it as a chip: click it for the MIDI or Audio tab (MIDI clips on layers (p. 78)).

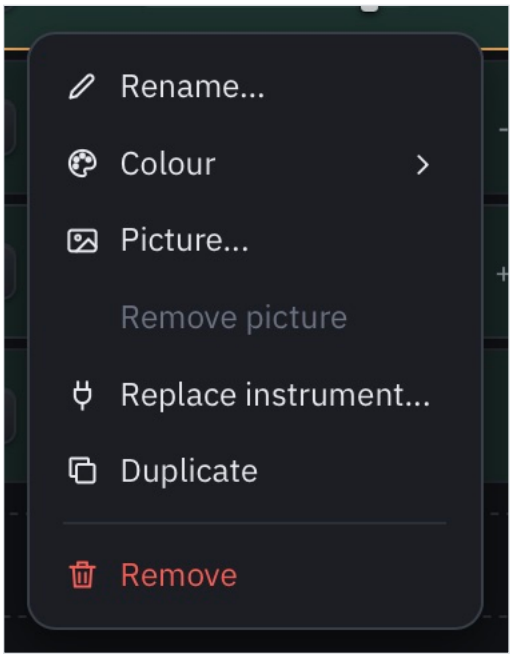
- **Velocity curve**, **Pan**, and the MIDI settings as cells - **TRANSPOSE**, **LATCH**, **CHANNEL**, **HIGH** and **LOW** (the key range in note names; a click on either opens the key range editor: The key range editor (p. 67)), **VEL HI** and **VEL LO** - each dragged up or down to change it, double-click for its default (The MIDI line: what reaches the plug-ins (p. 65)).
- **M**, **S**, **D** and **F** - mute, solo, disable (Disabling a layer (p. 69)) and Freeze to arctone.sampler (Freeze to arctone.sampler (p. 98)) - with where the layer's sound goes (**Main**, or a pair of outputs) and its ⋯ menu. They are always in sight on every row, lit while they're on. In a narrower window - with the Browser open, say - the row keeps HIGH and LOW and puts the other MIDI cells away; unfold the row, or hide the Browser, to see them all.
- **The fader** on the layer's meter, and its level in dB: drag either, double-click for 0 dB (The mixer: pan, volume, M and S (p. 68)).
- **Arrow.** Unfolds the row for its key range ruler and its MIDI filters (The layer track (p. 61)).

The key range ruler, in the unfolded row (instrument and MIDI layers). A keyboard of all 128 notes, white keys and black (on a short ruler, each octave's two groups of black keys as one mark), across the row, and under it a strip with a tick at every C (and the Cs' names, when there's room) and the layer's **range**: a band in the layer's colour, its lowest and highest note written on it (**C3 – C6**, or one note for a range of one key; beside it, when the band is narrow). The range's two ends are marked on the keys too, in the layer's colour, and the keys outside it are greyed. Only notes inside the range reach the layer; with the layer's MIDI off, the band is hatched and paler. Every layer's ruler has the same keys in the same place, so splits, overlaps and gaps show down the page.

- Drag an **edge** of the band to move that end of the range, or the **band** itself to move the whole of it. Press outside the band and drag, and the nearer end comes along.
- **Double-click** for the whole keyboard.
- **Click** for the **key range editor**: a proper piano with a large handle at each end of the range, the other layers' ranges under it, Low and High boxes that take note names, **Learn**, quick ranges, **Split with...** and the velocity zone. See The key range editor (p. 67). From the keyboard, Tab to the ruler and press Enter.

Each drag is one step for Undo. The HIGH and LOW cells, the editor and the lines over the on-screen keyboard (The on-screen keyboard (p. 55)) all follow as you drag.

View > Key ranges > **Shared map** swaps the rulers for one key map above the layers, every layer's range a band on the same keyboard; **Per-row** (the default) brings the rulers back.



A layer's ... menu.

Layer assistant

Pick a layer and let the **layer assistant** (the patch's menu, or + Add Layer > Layer assistant...) suggest what to put with it. To start from a sound in the Browser, right-click an instrument preset in the Sounds tab > **Layer assistant with this preset...**: it loads the preset on the selected layer (or a new one), then the assistant listens to it. It listens to the layer - a copy of the patch is rendered with only that layer sounding, playing a chord in its range - and from what it hears (bright or dark, plucky or sustained, slow or fast, wide or narrow) suggests the complementary layers: a **sub bass** under a lead (the main layer is high-passed at 80 Hz so the sub owns the lows), a **pad** behind plucks or a lead, **air** an octave up, high-passed so it only adds shine, an **attack** for a pad, **sustain** under plucks. Each comes with its key range, its level relative to the main layer, and a filter that keeps it out of the others' way, so the stack doesn't get muddy.

For each suggestion choose a preset - the closest sounds among the presets measured for sound search (Search by sound (p. 148)), from any plug-in - or the built-in Basic Synth set up for the part (what you get before any presets are measured). Untick the ones you don't want, then **Add the layers**: they appear under the main layer, named for their parts and coloured, ready to adjust like any other layer.

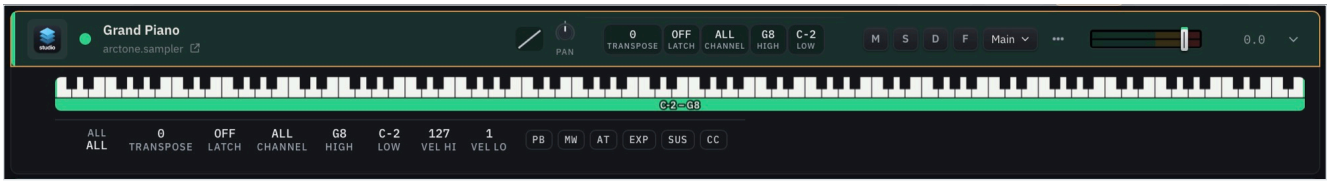
Polyphony expander

A monophonic plug-in - a mono synth, an instrument with one voice - plays chords with the **polyphony expander**: right-click the instrument slot > **Polyphony expander** > 2 to 8 voices. arctone.studio makes that many copies of the plug-in with the same settings and gives each one note at a time: a new note goes to a free copy (in turn), its release follows it, and controllers, pitch bend and the pedal go to all of them. When every copy is busy the one whose note is oldest takes the new note. The slot shows **x4** (say) while it is on.

The copies follow the original's parameters block by block, so turning a knob in the plug-in's window, or a macro, moves them all. Settings that aren't parameters (a preset chosen inside the plug-in's own browser, a

sample loaded) don't travel on their own: choose **Copy the settings to the copies now** in the same menu. The copies are saved with the patch and made again when it loads (each is a full instance of the plug-in: eight copies of a heavy synth take eight times the memory and CPU).

The MIDI line: what reaches the plug-ins



A layer unfolded: its key range on a keyboard, the MIDI settings, and which controllers reach it (PB, MW, AT, EXP, SUS, CC).

Unfold an instrument or MIDI layer - the arrow at the end of its row (The layer track (p. 61)) - and two lines open under it: the **key range** on a keyboard of its own (The folded line: name, key range, mixer (p. 62)), and the **MIDI line**: the settings that decide *which notes reach the plug-ins* and how they are shaped. A new layer takes every note in its key range, at any velocity, on any channel, with every controller.

The MIDI line has a cell for each setting - the MIDI source, **TRANSPOSE**, **LATCH**, **CHANNEL**, **HIGH** and **LOW**, **VEL HI** and **VEL LO** - and then the message filters: **PB**, **MW**, **AT**, **EXP**, **SUS** and **CC**. The folded row shows the same cells where the window has room for them, and the layer inspector has them all as sliders and menus, with **MPE** and **MIDI out** (The layer inspector (p. 73)).

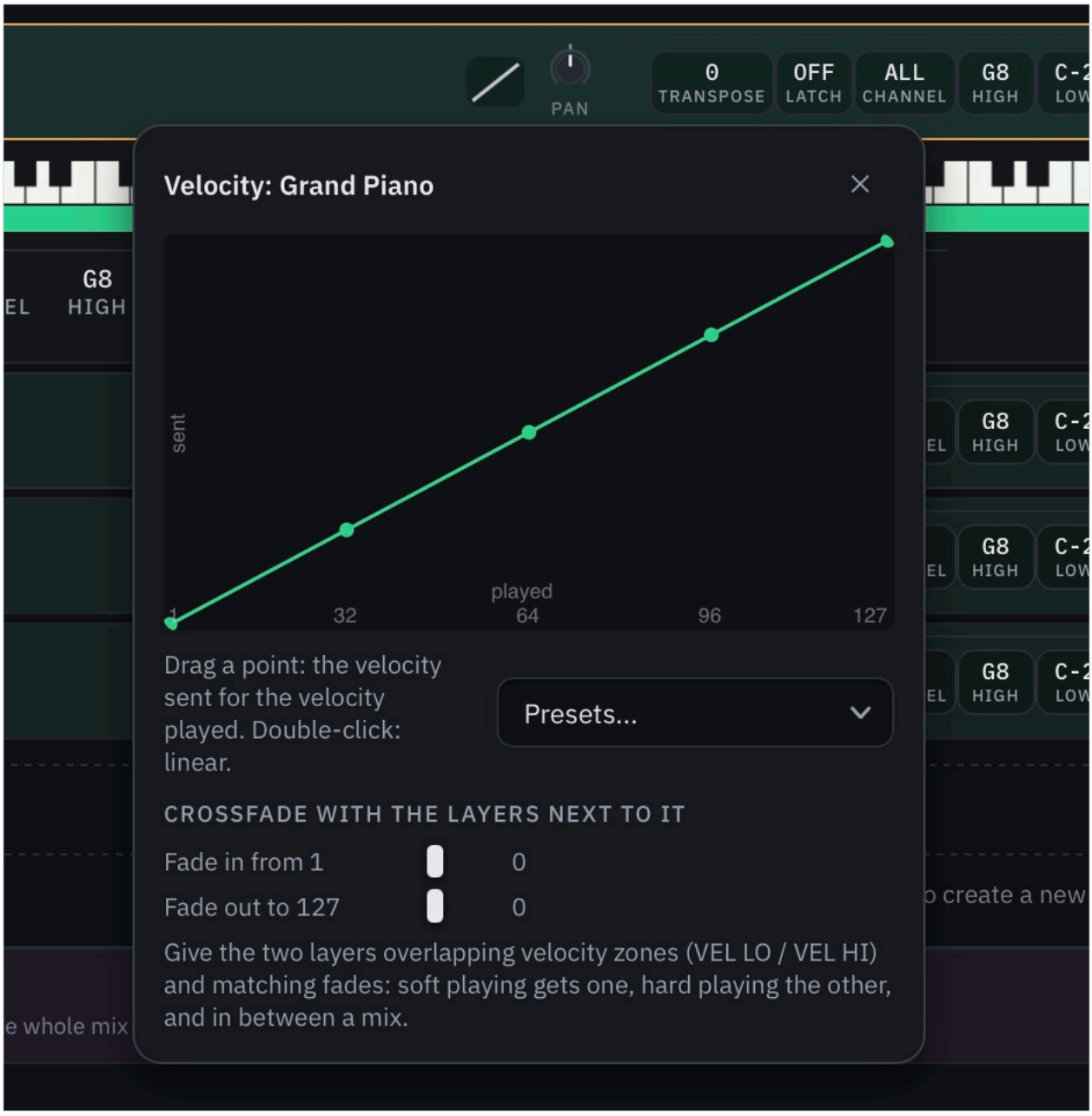
The cells are **drag-to-edit** - drag up or down, scroll, or Tab to one and use the arrow keys; double-click for its default. Then the velocity curve, on the folded row, and the message filters:

- **MIDI source and transpose.** Where the notes come from, and how many semitones to shift them.
- **Latch.** OFF, MONO or POLY: notes keep sounding after you let go of the keys - a pad or a drone held hands-free, with no pedal. **MONO** holds one note: a new key replaces it, the same key again lets it go. **POLY** holds any number: each key toggles its note on and off. All notes off (Cmd+Shift+Backspace, or the panic button) clears it, and so does switching the latch off. The arpeggiator and the step sequencer have a latch of their own that holds the keys they play from (Built-in MIDI effects (p. 115)).
- **Channel.** Omni (ALL), or one MIDI channel (1 to 16).
- **HIGH and LOW.** The key range, as notes: the same range as the ruler (The folded line: name, key range, mixer (p. 62)) and the key range editor (The key range editor (p. 67)). Use it to split a keyboard between layers.
- **VEL HI and VEL LO.** The velocity range: only notes played inside it pass (the key range editor has it as a slider too). Use it to switch layers with how hard you play - or to blend them, with a **crossfade** (below).
- **Velocity curve.** The small graph: drag up for louder, down for softer; double-click for linear; **click** it for the **curve editor**. The editor shows the curve as five points - the velocity sent for a played velocity of 1, 32, 64, 96 and 127 - which you drag to any shape; **Presets** has Linear, Soft and Softer (easier to play loud), Hard and Harder, Compressed (every note between 40 and 110), Expanded, S-curve and Fixed (every note the same). Under it are the crossfades.
- **Velocity crossfade.** In the curve editor (or the inspector: Vel fade in / out): **Fade in** is how many velocities above the zone's lowest the layer takes to come up to full, **Fade out** how many below its highest it takes to go. Give two layers overlapping velocity zones - a soft pad up to 80 fading out from 60, a bright lead from 60 fading in to 80, say - and soft playing gets the pad, hard playing the lead, and in between a mix of the two, instead of a switch. The fades scale the velocity the plug-in gets, so they work with any plug-in; the

shaded parts of the graph show them.

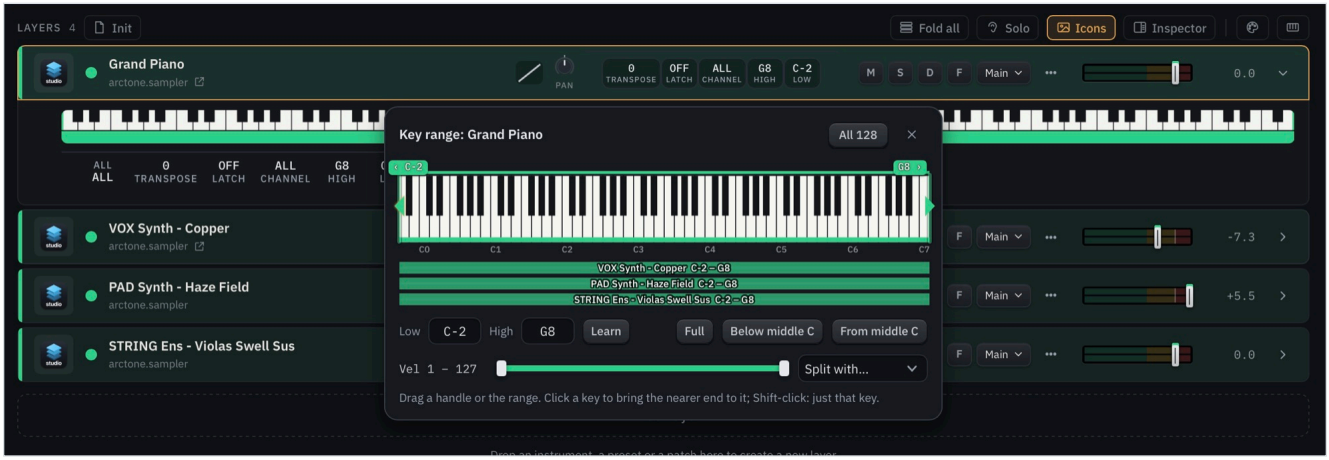
- **PB / MW / AT / EXP / SUS / CC.** Pitch bend, mod wheel, aftertouch, expression, sustain and the other controllers: plain while they pass to the layer, struck through with a red dot when they are filtered out. Click one (or Tab to it and press Space) to switch it.

> **TIP** To make a split, give one layer the low half of the key range and another the high half. To layer two sounds, give them the same range.



The velocity curve's editor, from a click on the curve.

The key range editor



The key range editor: this layer's range on the keyboard, the other layers' ranges under it, Low and High with Learn, the quick ranges, the velocity range and Split with.

Click a layer's **HIGH** or **LOW** cell, or its key range ruler in the unfolded row (or Tab to the ruler and press Enter), and the **key range editor** opens under it (above it, or beside it, when there's no room below, so the ruler stays in sight): a piano of 88 keys (A-1 to C7, as arctone.studio names the notes: middle C is C3) drawn as a piano is - white keys and black - with a strip in the layer's colour under the keys in its range, the keys outside it dimmed, the keys sounding now in red, and a large **handle** at each end, labelled with its note. When the range goes past the keys shown - a new layer's C-2 to G8, say - that handle waits at the end of the piano as an arrow, its label pointing on (‹ **C-2**, **G8** ›); drag it in, or press **All 128**, which shows every MIDI note, C-2 to G8. Keys sounding now light up red on it, as they do on the on-screen keyboard, so you can play and see where the notes land - from a MIDI keyboard, the computer's keys or the on-screen keyboard, which you can click without closing the editor.

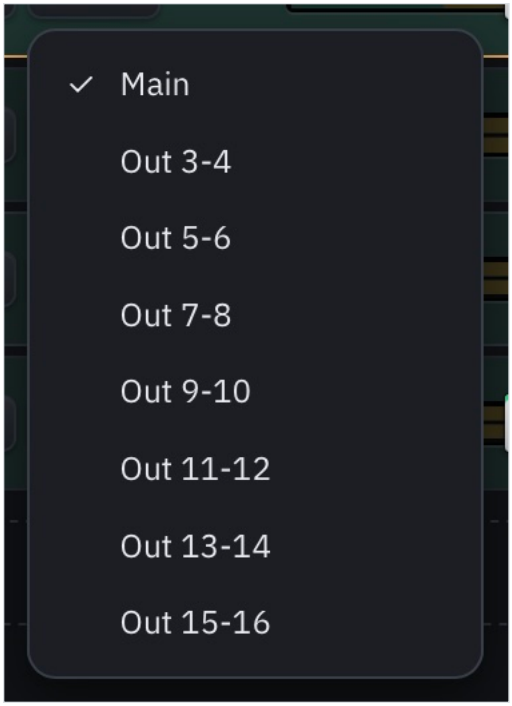
- **Drag a handle** to move that end of the range, or **drag the range** itself to move the whole of it. **Click a key** outside the range and the nearer end comes to it; **Shift-click** a key and the range is just that key. A focused handle takes the arrow keys: a semitone, or an octave with Shift.
- **The other layers' ranges** are drawn under the piano, one bar per layer in its colour, on the same keys - so you can see where the layers overlap and where there are gaps. Six show at a time; with more, scroll the list.
- **Low** and **High** take a note name (**C3**, **F#2**, **Bb1**, **c-1**) or a note number; Enter, or leaving the box, applies it. The arrow keys nudge a semitone, Shift an octave. The lowest key can't go above the highest, nor the highest below the lowest.
- **Learn.** Press it and play: the lowest and the highest key you play from then on become the range, as you play. **Done** (or Esc) ends it.
- **Full**, **Below middle C** (up to B2) and **From middle C** (C3 up) set the range at once.
- **Split with...** picks another layer; then click the first key that's to be the other layer's: this layer plays below it (from its lowest key, if that's lower), the other from it up (to its highest, if that's higher). Esc cancels.
- **Vel** is the layer's velocity zone, the same as the VEL LO and VEL HI cells: drag either end of the slider.

Every change shows at once - on the track's ruler and cells, on the on-screen keyboard's lines, and in what you hear - and each drag is one step for Undo. Esc, a click elsewhere (not on the on-screen keyboard), or the window changing size closes the editor; it stays open while the layers are redrawn.

The mixer: pan, volume, M and S

At the right end of every track's line, in the same place on each, so the faders line up down the page:

- **Pan.** The knob's faint ring is its whole sweep, with a tick at the top for the centre; the arc runs out from the centre to where it is. Drag up or down (Shift: finer) or scroll; double-click to centre. Its tip says where it is: **Pan C**, **Pan L 32**, **Pan R 15**.
- **Volume and meter.** The level meter is the volume fader. It has two bars, left over right, with three zones: green below -12 dB, yellow from -12 to 0 dB, red above 0 dB. The zones are always there, dim, and light up as far as the level. A small tick on each bar shows where that channel peaked lately: it stays for a second and a half, then falls back. A faint line marks 0 dB. The light cap on the meter is the volume, on the meter's own scale: at 0 dB it sits where the red begins; the line on the cap is in the layer's colour. **Drag anywhere on the meter** and the cap moves from where it is. A click on its own changes nothing, so the level can't jump on stage. Hold **Shift** (or **Alt**) for fine steps. You can also scroll, or Tab to it and use the arrow keys (0.5 dB; with Shift, 0.1 dB), **Page Up / Page Down** (6 dB), **Home** (silence) and **End** (+6 dB). Double-click for 0 dB. While it moves, the value shows above it. Its tip says it too ("Volume -3.2 dB").
- **Peak readout.** The highest peak lately, in dB (red when it goes over 0 dB), or "-" for silence. In a narrow window the readout makes way first; the fader gets shorter but stays (what goes next: The folded line: name, key range, mixer (p. 62)).
- **M / S.** Mute and Solo, lit while on. A MIDI layer has M only, an aux layer no S, and the master neither (their place is kept, so the others line up). **Disable** has moved: it is at the end of the chain's line, and in the layer's menu (Disabling a layer (p. 69)).
- **Sends.** Four post-fader sends, one per aux layer in order. They are in the inspector: The layer inspector (p. 73).
- **Output.** *Main mix*, or Out 2 to 8 (the DAW must enable the extra outputs), also in the inspector.



Where a layer's sound goes: the menu on its output button.

Disabling a layer

Unfold the layer (The layer track (p. 61)) and click **Disable** at the end of its chain's line - or choose **Disable layer (unload its plug-ins)** in the layer's menu - and the layer is **disabled**: its plug-ins are **unloaded**, so they use no CPU and no memory, and the layer is silent. Click **Disabled · click to load** after its name, **Enable** at the end of its chain's line or **Disabled - click to enable** at its start (or **Enable layer** in the menu) and they are **loaded back, set exactly as they were**.

- A disabled layer is dimmed, with a dashed outline, its plug-ins hollow, and **Disabled · click to load** after its name, folded or not. Its plug-ins can't be opened, moved or replaced, and you can't drop a plug-in on it, until you enable it. Its name, colour, key range, mixer and the rest still work.
- What each plug-in was set to is kept while it is unloaded, and saved with the patch. A patch saved with a layer disabled opens with that layer disabled, and its plug-ins are **not loaded** - so the patch opens faster and uses less memory.
- Enabling takes as long as loading those plug-ins (a big sampler can take a few seconds). A plug-in that is no longer installed can't be loaded back: you get the **Missing plug-ins** notice, and its settings stay in the patch.
- **Disable or power off?** The power button (The folded line: name, key range, mixer (p. 62)) only stops the layer being processed: its plug-ins stay loaded, so it is back instantly. Disable frees the CPU and memory as well, at the cost of loading time when you enable it. Use Disable for a layer you keep in a patch but rarely play, or to try the patch without a heavy plug-in.

The plug-in chain



The Device Panel, left half: the patch macros and their modulators, then the selected layer's devices - here the arctone.sampler opened out.



The Device Panel, right half: the rest of the arctone.sampler and the start of the Reverb.

A layer's chain lives in the **Device Panel**, the panel under the layers: select a layer and the panel shows its devices side by side, in signal order - its **MIDI effects**, its **instrument**, its **effects** - each drawn as a device card with its controls. The master's inserts show there when the master track is selected. The panel's **MIDI** and **Audio** tabs hold the layer's clip and audio file (MIDI clips on layers (p. 78)).

- **Add:** drop a plug-in from the Browser on the panel, or use **+** in the chain.
- **Reorder:** drag a card to another place in the chain.
- **Open a plug-in's own window** from its card, or double-click the layer's name (The folded line: name, key range, mixer (p. 62)). Plug-in windows stay above arctone.studio's window and never above another app.
- **Modulation:** each device can have its own modulators, and the patch's macros and modulators are in **Patch Macros** at the panel's left. See Understanding modulation (p. 86).

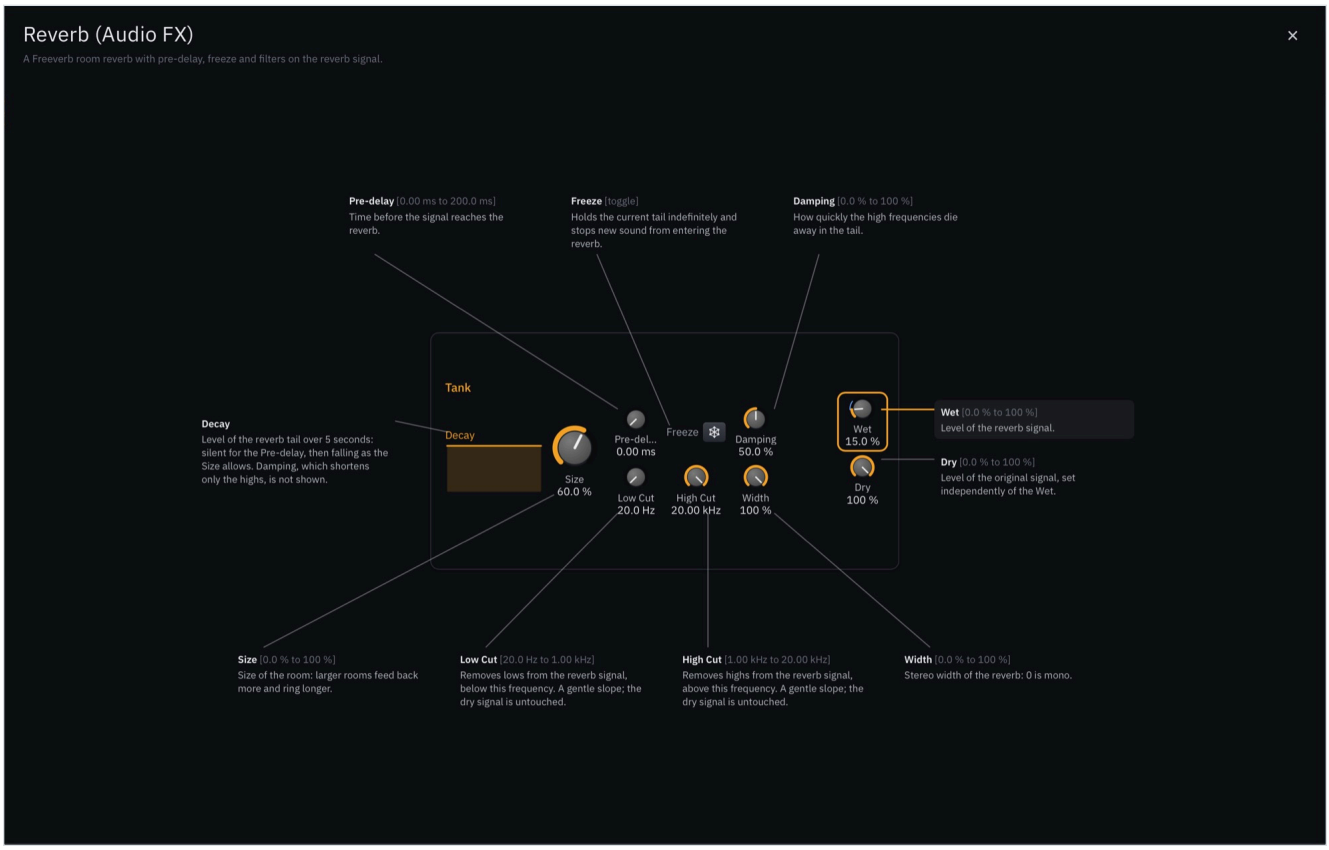
Drag the panel's top edge to make it taller or shorter. **Disable** a layer to unload its whole chain (Disabling a layer (p. 69)).

Help for a device, in place

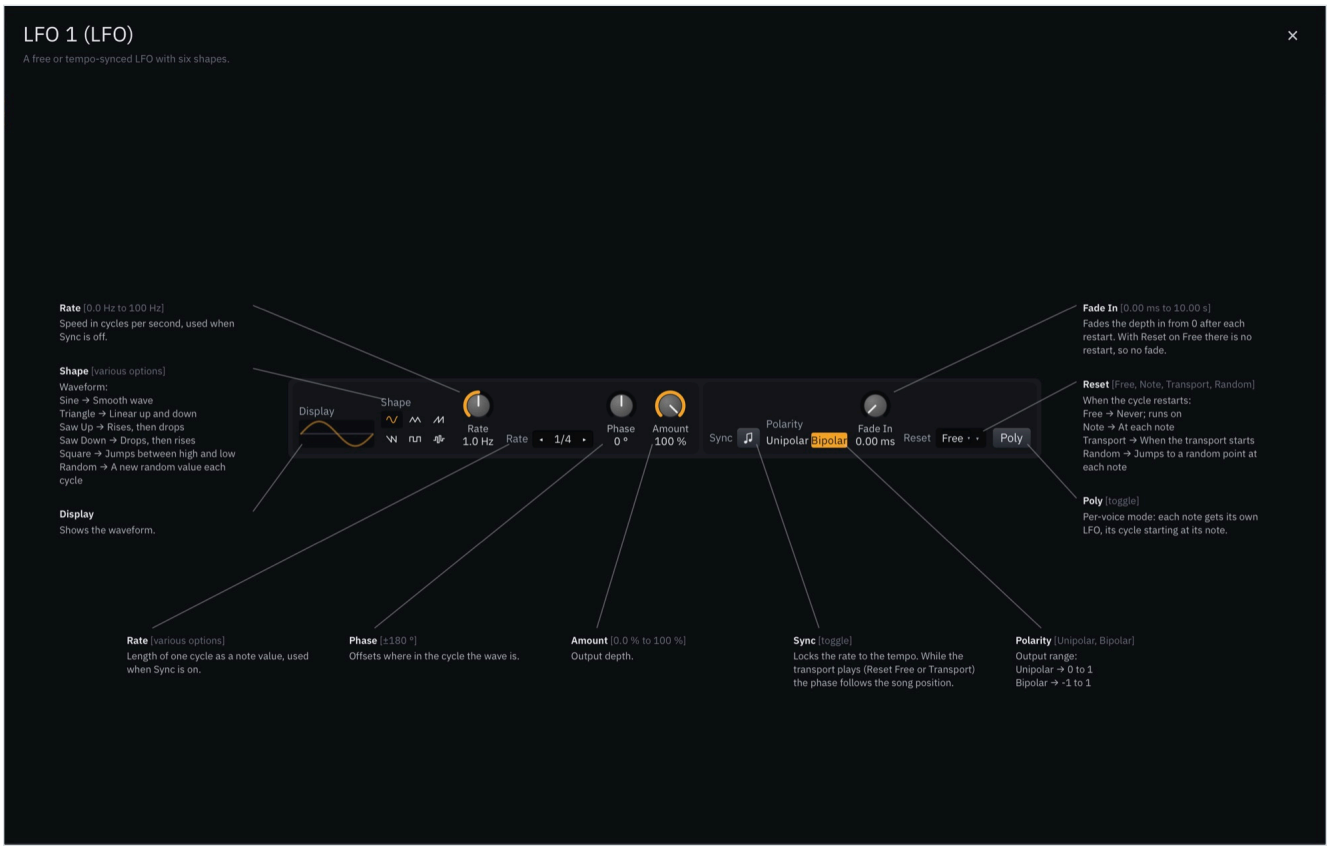
Every device and every modulator in the Device Panel can explain itself. **Right-click a device's strip** (the upright bar with its name) or a modulator's card and choose **Show Item Help** - or point at the device and press **F1**. The device is drawn large in the middle of the window, with a note for each of its controls round it: the control's name, its range, and what it does, joined to the control by a line. The title says what the device is, with a line about it underneath.

- **The controls are live.** Turn a knob or flip a switch in the help and it changes in the panel and in the sound, so you can read what a control does and try it in the same place.
- **Point at a note** and its control lights up; point at a control and its note does.
- **Esc**, or the **×** at the top right, closes it.

It is there for arctone.studio's own devices and for every modulator. Another maker's plug-in has no notes of ours: its own window and manual explain it.



Show Item Help for the Reverb. Its Wet knob has just been turned here, in the help; pointing at a note lights its control.

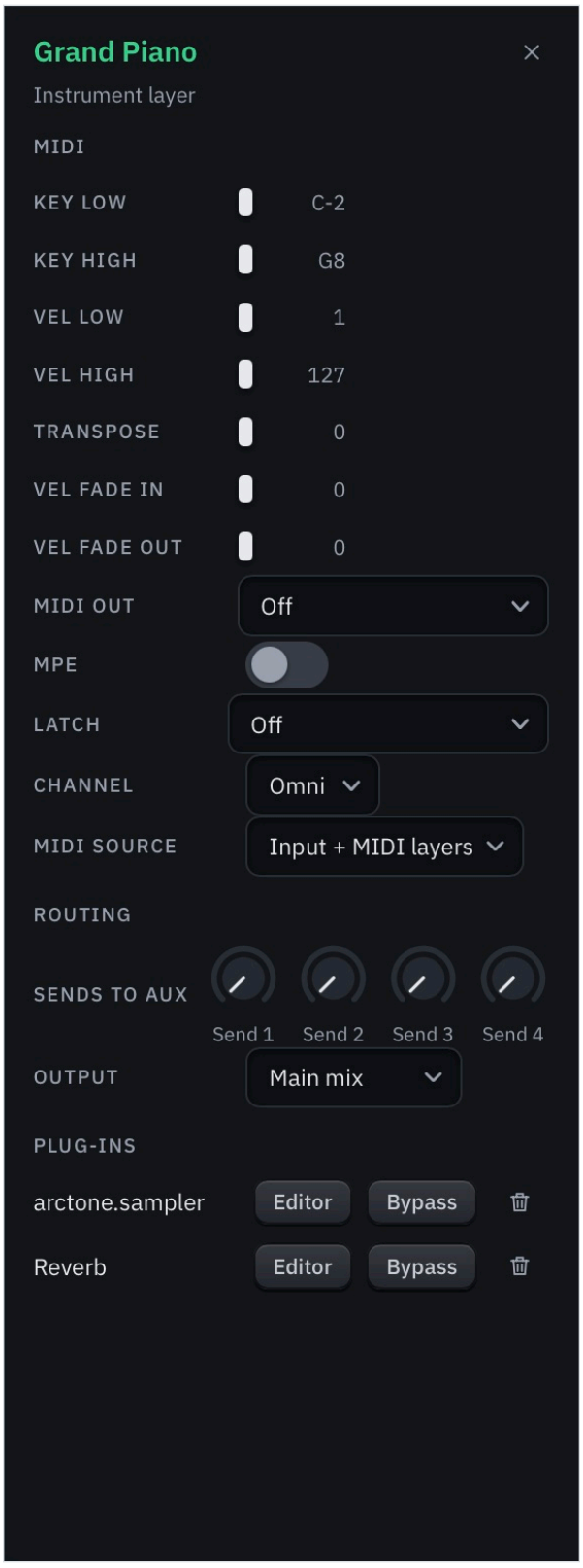


Show Item Help for a modulator: the LFO.

A layer's picture

Each layer can have a picture, shown as a small square next to its badge, to tell layers apart at a glance. Click the square (an empty frame until the layer has one), or choose **Picture...** in the layer's menu, and click a picture in the grid. **Remove picture** in the menu, or **No picture** in the grid, takes it away. The pictures are those in your User Images folder; see Pictures for the patch and the layers (p. 33). The picture is saved with the patch, and a duplicated layer keeps it.

The layer inspector



The layer inspector: MIDI, routing and the layer's plug-ins.

The inspector shows one layer's routing in detail. Select a layer and press **Inspector** above the layer list (**Cmd+I**, Ctrl+I on Windows; also **Show > Layer inspector**, or Settings > Interface). It opens down the right of the layers, with the layer's name and kind at its top and three parts: **MIDI**, **Routing** and **Plug-ins**.

- **Key low**, **Key high**, **Vel low**, **Vel high**, **Transpose**, **Vel fade in** and **Vel fade out:** the same settings as the row's cells (The MIDI line: what reaches the plug-ins (p. 65)), each a slider.
- **Channel.** Omni or Ch 1 to 16.
- **MIDI from.** Input and MIDI layers, Input only, or MIDI layers only.
- **MPE** (instrument layers). On for an MPE controller (Osmose, Seaboard, Linnstrument, Erae...) with an MPE-capable instrument: every channel reaches the instrument whatever the layer's channel setting, each note's own pitch bend, pressure and slide (CC 74) pass whatever the MIDI filter says, and the instrument is told the zone (an MPE configuration message - channel 1 the manager, 15 member channels - sent when MPE goes on and whenever a plug-in is loaded into the layer). Transpose, latch, velocity curves and the global transpose all work per note, so they work with MPE. The on-screen keyboard isn't an MPE controller. Polyphonic aftertouch works without any of this: it is passed when AT is on in the filter.
- **MIDI out.** Off, On (on the channel as played), or On on channel 1 to 16: what this layer's instrument gets - after the layer's MIDI filter, transpose, latch and MIDI effects - also goes out. In the app it goes to the **MIDI output** device chosen in Settings > Audio & MIDI (a hardware synth, or a virtual port such as the IAC Driver into a DAW); in a DAW it is the plug-in's MIDI output, which the DAW can record or route (Logic and Live list arctone.studio as a MIDI-producing instrument). A MIDI layer's MIDI out is what it feeds the instrument layers. So an arpeggiator or the step sequencer can drive a hardware synth, or be recorded as notes in the DAW; a layer with no instrument of its own and MIDI out on is a MIDI channel to the outside. Notes still sounding when you switch patches send their note-offs from the old patch, so nothing hangs on the hardware - and so do the layer's own when you switch it off, disable or remove it, switch its MIDI out off, or bypass arctone.studio in a DAW: every note it sent, as its MIDI effects made it (a chord's added notes, an arpeggio's), is ended.
- **Latch.** Off, mono or poly: The MIDI line: what reaches the plug-ins (p. 65).
- **Sends to aux.** One knob per aux layer, named after the aux layer.
- **Output.** Main mix, or Out 2 to 8.
- **Plug-ins.** Each plug-in of the layer, with **Editor** (its own window), **Bypass** and a bin that removes it.
- **MIDI effects** and **MIDI filter** sections for the layer.

Loading presets at the start

Each time arctone.studio starts it reads your preset files again. With a very large library that can take a few minutes, and the plug-ins' preset lists fill in as it finishes. Meanwhile the **Plug-ins** tab shows **Loading presets**, with how many it has read and a bar. You can keep playing and working.

Saved effects chains

Chains in the Device Panel's title row saves the selected layer's effects, in order and with their settings, or opens a saved chain. **Add saved chain** puts it after the effects already there; **Replace chain with** takes their place. Yours are listed first, then **Factory**, the ones that came with arctone.studio. A chain's plug-ins have to be installed: any that aren't are left out, and a message says so. They're kept in Documents > Arctone > arctone.studio > Library > Chains (**Show the chains folder**).

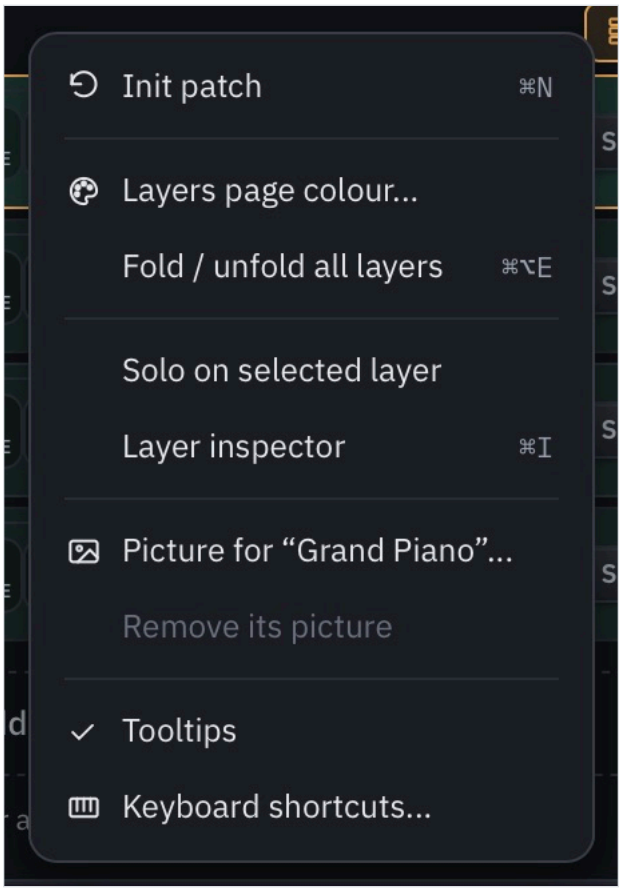
A clip from what you just played

On a layer with no MIDI clip, the **MIDI** tab beside **Devices** offers **Capture what you played**, **Choose a MIDI file...** and **New empty clip**. Capture lights up once you've played notes within the time **Settings > Recording** keeps, and is greyed out before that. It makes those notes this layer's clip, starting a second before your first note. Everything you played in that time goes in, whichever layer heard it, and the take is kept in Recordings too.

The Layers menu

A right-click on the list's header, or on the page's dark space, opens the page's menu:

- **Init patch:** clears every layer and starts a new, empty patch. Changes not saved yet ask to be saved first. **Cmd+N** does the same.
- **Layers page colour...** and **Fold / unfold all layers**.
- **Solo on selected layer:** only the selected layer plays, and moving to another layer solos that one instead. The other layers dim, the selected layer's **S** lights, and **Solo** in the list's header, lit while it is on, turns it off. While it's on, clicking a layer's **S** moves the solo to that layer, and any **S** you had pressed yourself waits unlit until you turn it off. It doesn't change the patch or add undo steps, and your layers' own **S** buttons are left as they were. With a MIDI layer, an aux or the master selected, everything plays. It's off each time arctone.studio starts.
- **Layer inspector:** opens down the right of the layers and the Device Panel, which narrow for it; its **×** closes it.
- **Picture for “*patch*”...** and **Remove its picture:** the patch's picture (Pictures for the patch and the layers (p. 33)).
- **Tooltips** (ticked while they show) and **Keyboard shortcuts...**



The Layers menu, from a right-click on the page.

Adding, removing and arranging layers

Click **+ Add Layer**, under the last layer. A menu asks which kind:

- **Instrument layer**
- **MIDI layer (feeds instrument layers)**
- **Audio input layer**
- **Aux (send/return) layer**

Under them are **Layer assistant...** (Layer assistant (p. 64)) and your **Saved layers** (below).

The new layer comes unfolded, so you can choose its instrument and effects at once (The layer track (p. 61)).

You can also drop a plug-in on the empty area below the layers and arctone.studio makes a new layer for it - or a MIDI file, which the new layer plays with the clock (MIDI clips on layers (p. 78)). The layer's ⋯ button, or a **right-click** anywhere on its row, has **Rename...**, **Colour** (five named colours, **Custom colour...** and **Automatic (by position)**), **Picture...** and **Remove picture** (A layer's picture (p. 72)), **Replace instrument...** (the Browser opens to choose it), **Duplicate** and, in red, **Remove**. The rest are key commands, which the search box finds by name too (The command palette (p. 26), Key Commands (p. 192)):

- **Copy layer** and **Paste layer ... below**: a copy of the layer with all its plug-ins and what they are set to, pasted under the layer you right-click - in this patch or another one you load.
- **Paste plug-in**: a plug-in you copied from a slot (right-click a slot > Copy): an instrument becomes the

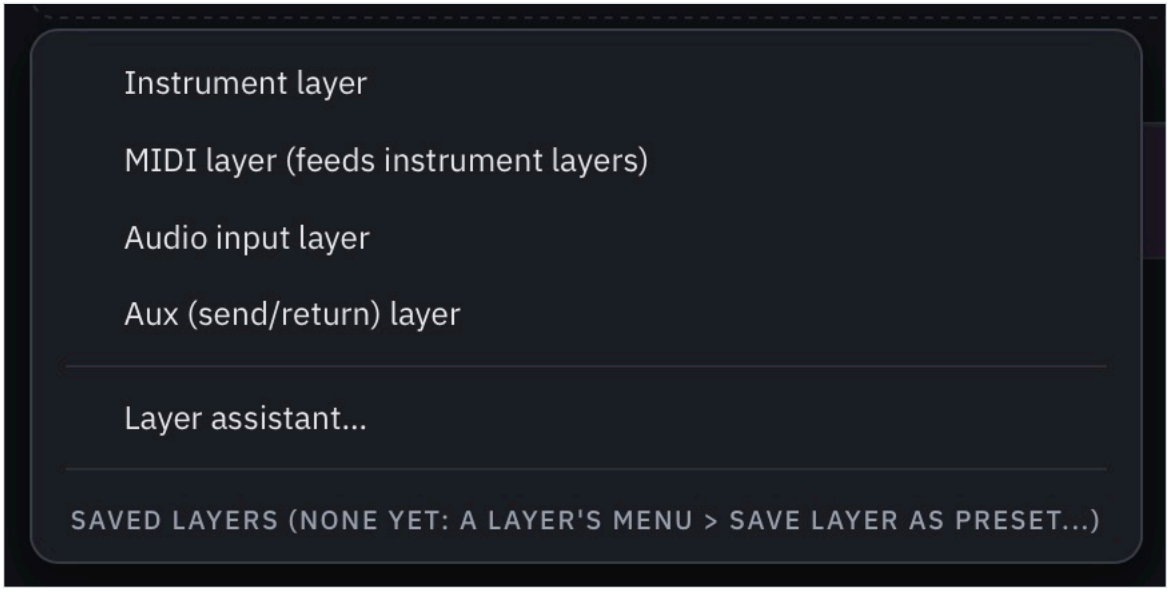
layer's instrument, an effect goes after its effects.

- **Duplicate** (one copy, right after it; or drag the layer's row onto **+ Add Layer** for a copy at the bottom of the list), **Duplicate several** (3, 7 or 15 copies at once - for a stack of detuned layers), and **Save instrument preset...** (what the layer's instrument is set to, as a preset: Saving a preset by dragging (p. 157)).
- **Paste over this layer (replace)** puts the copied layer in this one's place (Cmd/Ctrl+Shift+V on the selected layer), and **Replace from saved layer** puts a saved layer there; both ask first unless Settings > Interface > Ask before deleting is off.
- **Colour** > **Reset all layers' colours to defaults** puts every layer back to its kind's colour and clears the tracks' own backgrounds.
- **Rename...**, **Colour**, **Picture...**, **Fold / Unfold**, **Show in inspector**, **Disable layer / Enable layer** (Disabling a layer (p. 69)), **Move up**, **Move down**, **Fold all layers**, **Unfold all layers** and **Delete layer** (The layer track (p. 61)).

A layer's name follows its sound. When an instrument goes onto a layer, the layer takes the name of the preset it plays: the preset you loaded with it, or else the plug-in's own current preset (its program), or the plug-in's name when that preset has no real name ("Default", "Init", "Program 1"). Loading another preset onto the instrument renames it again - dropping a preset on the layer, or choosing one for its instrument, renames it even when you typed its name (the preset is your latest choice). To keep the names you type, turn off **Settings > Presets > A preset loaded onto a layer renames it**: then once you **Rename** a layer, the name is yours and stays. A plug-in put on the layer without a preset leaves a typed name either way; rename the layer to nothing to let it follow the sound again.

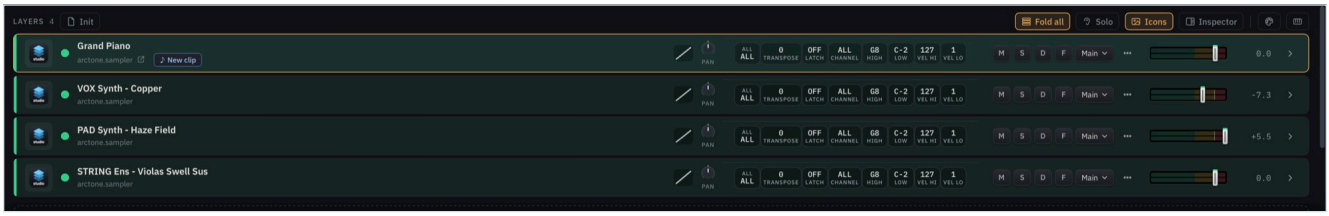
Most of these have keys too (Copy layer is Cmd+C, Paste layer Cmd+V, Duplicate Cmd+D, Delete Cmd+Backspace): see Key Commands (p. 192).

Saved layers. A layer you'll want again - a piano with its EQ and reverb, a bass with its splits - can be kept as a file: **Save layer as preset...** in the layer's menu asks for a name and writes it, with its plug-ins and everything they're set to, to `Documents/Arctone/arctone.studio/Library/Layers/<name>.aslayer`. To use one, **+ Add Layer > Saved layers** lists them (it goes in below the selected layer), or double-click it in the Browser's Files tab under **Saved layers** (The Files tab (p. 142)), where you can also rename or delete it. Saving the patch keeps a copy of the layer in the patch, as always; the saved layer is a starting point, not a link. To change the order by dragging, take the layer anywhere on its track - its grip (the dots at the left), its badge (I1, M2...), its name or any empty part (not a knob, slider, button or plug-in) - and drag it up or down; a line shows where it will land. The master and the Recording group can be dragged among the layers too (The master track (p. 80)). To delete a layer, drag it the same way off the window (in the classic interface, out of the list); arctone.studio asks first, unless **Settings > Interface > Ask before deleting a layer or plug-in** is off.



+ Add Layer: the kinds of layer, the Layer assistant and the saved layers.

MIDI clips on layers



A layer with a MIDI clip: the clip's name shows beside the layer's name.

A **MIDI file** dropped on a layer becomes that layer's **MIDI clip**: the layer's instrument plays its notes whenever the clock runs - **Play** in the transport bar in the app (The transport bar (p. 43)), the DAW's transport in a DAW. The clip's notes are placed in beats from bar 1, so they follow the tempo. The clip is saved inside the patch, file and all, so the patch needs no MIDI file on disk.

Putting one on a layer.

- Drag a MIDI file (`.mid`, `.midi`) from the desktop or a Finder window, or out of the Browser's Files tab (The Files tab (p. 142)), onto an **instrument layer**: it becomes the layer's clip, or replaces the one it had. As the file comes over the layer a label says what will happen (""“Serum” plays “Song” here", "Replace “Verse” with “Song”"); from the desktop the file's name isn't known until it lands.
- Drop it **below the layers** (on the drop zone, or the empty part of the rack), or on a MIDI, audio or aux layer: a **new instrument layer**, named after the file, plays it, and is selected.
- In the Files tab, right-click a MIDI file > **Put on a layer** > one of the instrument layers, or **A new layer**.
- Several files at once: the first goes on the layer, each other on a new layer of its own. Audio and MIDI dropped together on a layer: the audio goes into its arctone.sampler first (The arctone.sampler (p. 116)), and the clip then plays on it.
- **What plays it:** the layer's own instrument, whatever it is. A layer with no instrument, or an arctone.sampler with no samples, gets the built-in arctone.sampler with the **Grand Piano**. The first time, the piano takes a few seconds to load ("Loading the Grand Piano..." on the layer, or under the drop zone for a new layer); you

can go on working meanwhile. If the piano isn't installed, the **Basic Synth**'s Soft keys plays the clip, and a message says why. An instrument that is missing on this computer stays: the layer is silent until it is found (Missing plug-ins (p. 83)).

- It doesn't go on a disabled layer (enable it first: Disabling a layer (p. 69)), and nothing goes on a layer in safe mode, where no instrument can be loaded. A file over 1 MB is refused: a clip is kept inside the patch. Loading another patch while the piano loads leaves the clip out, and a message says so; a second file dropped on the same layer meanwhile takes the first one's place.

The clip's row. Under the layer's plug-in chain: the MIDI symbol, **on / off**, the clip's name, how long it is ("4 bars · 312 notes"), its notes as a small piano roll with a line where the clock is in it (the shaded end is the rest of its last bar), **Loop**, **Play** (the app's clock: a DAW's transport plays it there), the file's tempo when it isn't the clock's (click it to use it), and **×**, which removes the clip. Double-click the notes to start or stop the clock. A folded layer (The layer track (p. 61)) hides the row; "♪ *Song*" after its name says it has one. **Right-click** the row for:

- **Play the clock** / **Stop the clock**;
- **Clip on**, and **Loop to whole bars**;
- **Use the file's tempo** (*n* bpm) - the clock goes from 20 to 300 bpm, so a faster file sets 300;
- **Replace with a MIDI file...**, **Show the original** (the file it was made from, if it is still there), **Save the MIDI as a file...** (the clip's own copy, as it came) and **Remove the clip**.

Key commands for the selected layer's clip - **MIDI clip on / off**, **MIDI clip loop on / off** and **Remove the MIDI clip** - start with no keys: give them some in Settings > Key Commands (Key Commands (p. 192)).

With the clock. The clip starts at bar 1: back to the start (Home) and Play plays it from the top. With **Loop** on (as a new clip starts) it goes round and round, its length rounded up to whole bars of the time signature - 3½ bars in 4/4 loop every 4 bars, the last half bar silent; with Loop off it plays once. Switching Loop while the clock runs finds the clip's place again: off after its end, it is over; on again after it has played once, it comes in where the clock is. Stop lets every note go, and so do moving the clock, a DAW's cycle jumping back, the clip switched off, replaced or removed, and the layer switched off, disabled or removed. A note already sounding where the clock jumps in isn't played from its middle: the clip comes in at its next note. **Panic** (all notes off) lets go too, and the clips stay quiet until the clock starts again. Two things to know: turning the metronome on starts the app's clock, and so the clips; and in Show mode a **Next song** marker goes back to bar 1, so the next patch's clips start from the top (Show mode (p. 105)).

In a DAW the clips follow the DAW's transport and tempo from its bar 1: a pre-roll before bar 1 plays nothing, a cycle is followed as it jumps back (its loop points themselves aren't read), and an offline bounce plays them. Bypassing arctone.studio in the DAW ends the notes the clips were playing on a layer's MIDI out; when the bypass ends, the clips come in at their next notes.

Where the clip's notes go:

	The clip's notes?
The layer's MIDI effects and arpeggiator, its instrument, the polyphony expander	Yes
The layer's transpose and the global transpose	Yes
The layer's key range, velocity zones and curve, latch, MIDI channel filter and **MIDI on**	No: those shape what you play. Turn the layer's MIDI off (the keyboard button) to hear only the clip.

The MIDI channel	The layer's (channel 1 when it takes every channel; channel 2 on an MPE layer)
MIDI out (to a device, or the DAW)	Only when the layer's MIDI out is on (The layer inspector (p. 73))
Capture, Rec's MIDI (the take's MIDI file), macro learn, the remote's notes	Never: they hear only what comes in
Rec, stems and Capture's audio	Yes: it is the layer's sound
Freeze to arctone.sampler, the layer assistant	No: the clips are silent while they play the patch (Freeze to arctone.sampler (p. 98))

A key you play that the clip plays too, on the same channel, is one note between you, and the sustain pedal holds the clip's notes as well as yours.

Saving and undo. The clip goes with its layer: saved in the patch and in a saved layer, copied, pasted and duplicated with it, and kept in a DAW's project. Putting a clip on, replacing or removing it, and switching it or its Loop on or off can be undone (Undo and redo (p. 84)); a piano loaded for it is part of the same step, and what you change while it loads stays a step of its own.

Takes. A take's audio plays back with the clock too (The recording tracks (p. 81)): after recording a clip playing, switch the take's audio off (its play button) or you hear the clip twice. A take is placed in seconds and a clip in beats, so after a change of tempo they drift apart.

The classic interface takes MIDI files dropped on a layer or below the layers in the same way (a message says what went wrong, or what plays instead of the piano), and shows the clip at the end of the layer's summary ("· MIDI: *Song*"); it has no clip row, and records no undo.

The master track



The Master row, under the layers: the whole mix goes through it.

The master track starts at the bottom of the list, under the layers. Its line has a layer's shape (The folded line: name, key range, mixer (p. 62)): its inserts are written where a layer's key range ruler is (its own power button turns them on and off), then a pan knob and the volume fader on its level meter, as a layer has (The mixer: pan, volume, M and S (p. 68)) - but no M or S. Unfold it for its inserts as a chain (The plug-in chain (p. 69)). Whatever you put here processes the whole mix.

Moving it. Drag the master by its grip (the dots at the left), its badge (**MA**) or its name, up or down: to the top, between any two layers, after the last layer, or back to the bottom. A line shows where it will land. Only its place on screen changes: it is still the master, and the whole mix goes through it last wherever it is. Its menu (its ⋯ button, or a right-click on the track) has **Move to the top** and **Move to the bottom**, then Rename, Track background colour and Show in inspector. Dragged off the window it stays where it was: the master can't be deleted. The **Recording** group moves the same way, by its title bar (The recording tracks (p. 81)); when the two are in the same place, the one you drop goes where the line shows, above or below the other.

Where the master and the Recording group are is part of the interface, not the patch: arctone.studio remembers it, and it is the same for every patch. Put after a number of layers, they come after that many in any

patch (after the last layer in a patch with fewer); put after the last layer, they stay after the last however many there are. When you change the layers in the window - drag one, **Move up** or **Move down**, **Duplicate**, **Paste**, add a saved layer, delete one - they keep their neighbours: a layer you drag past the master goes to the side the line shows and the others stay on theirs, and a new layer just under one that is above the master (a duplicate, a pasted or saved layer) is above it too. **Undo** puts them back where they were. **Settings > Interface > Reset** puts them back at the bottom. They move in the main window only: the classic interface keeps the master at the bottom.

The recording tracks

On the current Layers page, takes appear in the Take strip (the transport bar's **Take** button), and the Recording group described here isn't shown.

Under the master track, to start with, is the **Recording** group, with two tracks in it: **Audio recording** and **MIDI recording**. Click the group's name to fold it away to one line (which still shows the last take's length, and a red dot while recording) or open it again; arctone.studio remembers which. Shift-click folds or opens every layer with it. **Drag** the name (the group's title bar) up or down to move the group, as you move the master (The master track (p. 80)): to the top, between any two layers, after the last layer or back to the bottom. Right-click the name, or either track, for **Move to the top** and **Move to the bottom**. When you press **Rec** in the transport bar (Record (p. 45)), they draw the take as it's recorded: the mix's waveform, and every note you play as a bar at its pitch (louder notes brighter). A red dot by the name means it's recording; the time recorded and the number of notes are next to it.

Play it back. Back to the start (the rewind button, or Home) and Play (or Space): the last take plays from the start of the clock, heard at once - however long the clock had been running when you pressed Rec or Capture. The **play** button on each track switches its part on or off: the **audio** track plays the recorded mix (on to start with), the **MIDI** track plays the notes you played back through the layers, as if you were playing them again (off to start with, so you don't hear both). A line on the tracks shows where playback is. Nothing plays back while recording.

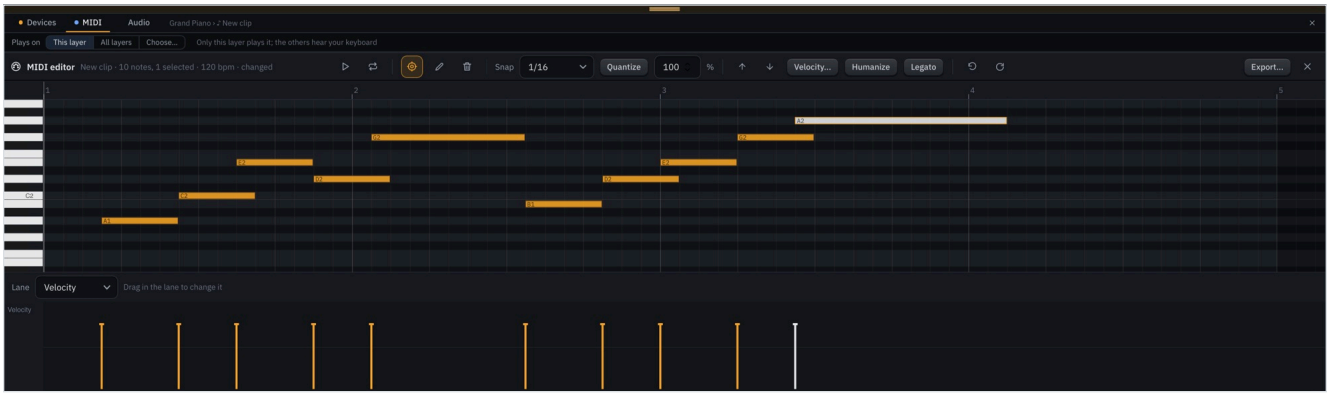
Capture: recording after the fact. arctone.studio always keeps what you played lately - the mix and the MIDI - even when Rec isn't pressed. Played something you wish you'd recorded? Click **Capture** in the transport bar or on the audio recording track (or press Cmd+Shift+C, Ctrl+Shift+C on Windows): it becomes a take, from a second before the first note or sound, saved in Recordings in a folder named with the date and time you pressed Capture and the patch (`2026-10-10 14-30-05 Captured Lead`), as `2026-10-10 14-30-05 Mix.wav` and `2026-10-10 14-30-05 Performance.mid`, shown on the tracks and ready to play back or drag out. **Settings > Recording > Capture keeps the last** sets how far back: 1, 2 (to start with), 5 or 10 minutes, or MIDI only. Audio uses memory - about 23 MB a minute at 48 kHz; the MIDI is tiny (the last 65,536 messages). Capture keeps the mix, not stems.

Edit it. Double-click the MIDI recording track for the MIDI editor (The MIDI editor (p. 82)), the audio recording track for the audio editor (The audio editor (p. 83)).

When you stop, the take stays on show until the next one. **Drag a track out** onto the desktop, a Finder window or a DAW's arrange window to take its file: the audio track gives the take's mix (`2026-10-10 14-30-05 Mix.wav`), the MIDI track its MIDI (`2026-10-10 14-30-05 Performance.mid`: the notes, sustain pedal and controllers you played, at the tempo you recorded at). The date and time at the front keep each take's files apart, and in the order they were played, wherever they go. While a take is recording its files aren't

finished yet, so dragging waits until you stop. Right-click a track for **Show in Finder**, **Copy path**, the recordings in the Browser's Files tab (The Files tab (p. 142)), and **Hide the recording tracks** (bring them back in Settings > Interface > Show).

The MIDI editor



The MIDI editor in the MIDI tab: which layers play the clip, the tools, Snap and Quantize, the piano roll, and the Velocity lane.

Double-click the MIDI recording track (or right-click it > **Edit the MIDI...**) to edit the last take's notes. It opens over the window, as a piano roll: time across (bars and beats at the take's tempo, bar numbers along the top), pitch up the side, with a keyboard - click a key to hear it through your layers.

- **Select** (1): click a note to select it (Shift or Cmd adds or removes one), drag it to move it in time and pitch (Shift: time only), drag its right end to make it longer or shorter, **Alt-drag** to copy it. Drag on empty space to select with a box. Double-click empty space to add a note; double-click a note to delete it.
- **Draw** (2): click to add a note, drag to set its length. **Erase** (3): click or drag over notes.
- **Snap**: Off, 1/4, 1/8, 1/16, 1/32 or triplets - moving, stretching and adding follow it.
- **Quantize** (Q): the selected notes (all, if none are) onto the snap grid; **strength** below 100% moves them part of the way, to tighten a performance without making it stiff.
- **Transpose**: the arrows (Up / Down a semitone, with Shift an octave). Left and Right nudge notes by the snap.
- **Velocity...**: a number sets it (1-127), +10 or -10 adds, 80% scales. **Humanize** adds a little random timing (±10 ms) and velocity (±8). **Legato** makes each selected note last until the next one starts.
- **Lanes** underneath: **Velocity** (drag up or down over notes; with notes selected, only those change), **Sustain pedal**, **Mod wheel** and **Pitch bend** (draw a curve; what you draw replaces what was there).
- Cmd+A selects all, Cmd+C copies, Cmd+V pastes at the cursor (click the ruler to move it), Cmd+D duplicates after itself, Delete deletes, Cmd+Z / Shift+Cmd+Z undo and redo (Ctrl on Windows). Cmd+scroll zooms in time, Alt+scroll makes the rows taller or shorter, scroll moves up and down, Shift+scroll moves along; F fits the take, + and - zoom.
- **Play** (Space) plays the take from the start through your layers, as edited (the recorded audio is muted while the editor plays, so you hear the edit); a red line shows where it is. Every change is heard at once.
- **Save** (Cmd+S) writes the take's MIDI file (`2026-10-10 14-30-05 Performance.mid`); the first time, the take as played is kept next to it as `2026-10-10 14-30-05 Performance (original).mid`. **Export...** saves a copy anywhere - named as the take's MIDI file, on the desktop, to start with, so the copy keeps its date and time and never goes over the take itself. Closing with changes not saved asks first - **Don't save**

puts the take back as it was.

Missing plug-ins

If a patch uses a plug-in that is not installed, the patch still opens. The slot is marked as missing, its settings are kept, and they are saved back unchanged, so nothing is lost when you open the patch on another machine. The **Status** button lists what is missing. See Plug-in scan status (p. 44).

The audio editor

Double-click the **audio recording track** (or right-click it > Edit the audio...), click **Edit** in the Files tab's player strip with an audio file selected (or right-click the file > **Edit...**; from the Browser's own window, the editor opens in the main window), click **Edit audio** in the Take strip, or choose **Edit sample...** in a zone's menu in the arctone.sampler's window, and the audio opens in the **audio editor** as a waveform. Drag to select a range, double-click to select everything; the wheel zooms, Shift and the wheel scroll; **Space** plays the selection (or everything) through the output.

The buttons work on the selection (or everything, when nothing is selected): **Crop** keeps only the selection; **Delete** takes it out; **Silence**; **Fade in** and **Fade out**; **Gain...** (dB); **Normalise** (the loudest sample to -0.3 dB); **Reverse**; **Trim** (the silence below -60 dB cut off both ends); **DC** (any DC offset removed). **Undo** and **redo** go back as many steps as you like (Cmd/Ctrl+Z, Shift+Cmd/Ctrl+Z).

Save writes the file as a WAV - the first time, the original is kept next to it as "*name* (original)"; a take's mix (`2026-10-10 14-30-05 Mix.wav`) is saved in place, its original kept as `2026-10-10 14-30-05 Mix (original).wav`, and the recording track shows the edit. **Export...** writes a copy as a WAV anywhere (a take's is named as the take's mix to start with, on the desktop, so it keeps its date and time). **To arctone.sampler** puts the audio on a layer's arctone.sampler as a zone (a take is saved first as a sample in Documents > Arctone > arctone.studio > Library > Samples > Takes, with the take's date and time: `2026-10-10 14-30-05 Take.wav`), or on a new layer. See The arctone.sampler (p. 116) and The recording tracks (p. 81).

Slice finds where the notes and hits start (onsets, from how fast the spectrum changes) and marks each one; **Sensitivity** finds more or fewer. Click the waveform to add a marker, drag one to move it, right-click one to take it out; **Clear** takes them all out. **Slices to arctone.sampler** makes each slice a one-shot zone on the file itself - nothing new is written - on a layer's arctone.sampler (or a new layer), a key each from C1 (the file is saved first if it was edited). See The arctone.sampler (p. 116).



The audio editor with a take's mix.

Undo and redo

Every change you make to the patch in the layers window can be taken back: adding, removing, duplicating, moving, renaming, colouring, disabling a layer; loading, removing, moving and bypassing plug-ins; the mixer (volume, pan, mute, solo, sends, output); the MIDI settings (key and velocity ranges, transpose, channel, filters, latch, MPE); the polyphony expander; the macros' names, assignments and ranges; samples added to the arctone.sampler; a layer's MIDI clip (put on, replaced, removed, switched on or off, its Loop - MIDI clips on layers (p. 78)); the patch's picture.

Undo and **Redo** are buttons in the top bar, after Save (**Undo history...** on Undo's ▾), each naming the step ("Undo Remove layer "Bass""). The keys are **Cmd+Z** and **Shift+Cmd+Z** on a Mac, **Ctrl+Z** and **Ctrl+Y** (or Ctrl+Shift+Z) on Windows - and your own in Settings > Key Commands. After each, a short message says what was undone or redone. To go back several steps at once, open the list on the ▾ beside Undo: The undo history (p. 85).

A fader or knob drag is one step, as are changes to the same control within a second. Undoing never interrupts the audio: the plug-ins that stayed keep sounding as they are, and a plug-in you removed comes back with its settings as they were. The tempo, the metronome, the macro knobs' positions and the transport are performance, not edits - they stay where you put them. Each patch keeps its own history while arctone.studio runs (up to 200 steps); saving a patch keeps it, a new patch starts afresh. The audio editor and the MIDI editor have undo of their own while they are open. In a DAW, the DAW usually takes Cmd/Ctrl+Z before arctone.studio sees it: use the buttons or the menu there.

The undo history

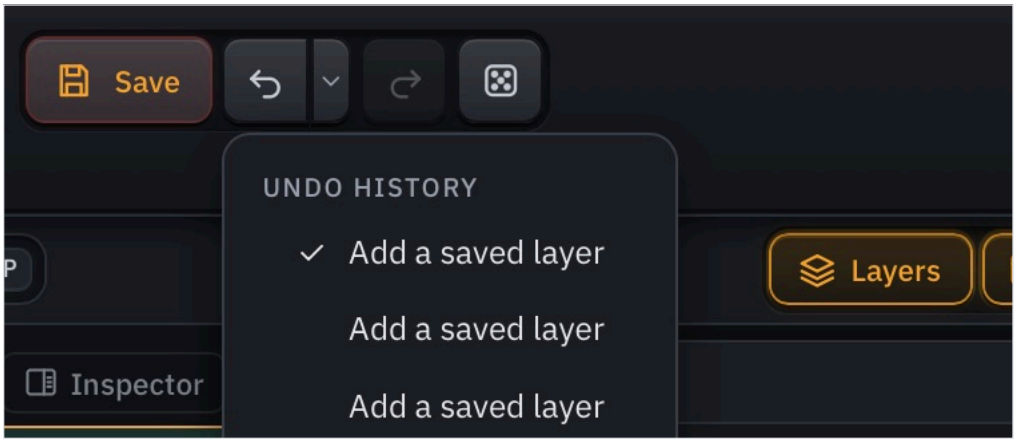
The small ▾ beside **Undo** in the top bar (or a right-click on Undo) opens the patch's undo history: every step you can undo or redo, by name, so you can go back - or forward again - several steps at once.

- **The steps done** come first, the newest at the top. The newest is ticked: the patch is just after it. Under the oldest, **Original** is the patch before the first step (**As far back as it goes** once the oldest steps have been let go: a patch keeps the last 200).
- Then a line, and **the steps undone**, fainter, the next to redo first.
- **Click a step** to take the patch to just after it. A step done is **Undo to here**: the steps above it are taken back. A step undone is **Redo to here**: it is done again, with the steps before it. Point at a step and its tip says which, and how many. **Original** undoes everything.
- **SAVED** beside a step marks where the patch was last saved: go back to it and the patch is as its file has it. A patch that has never been saved has no mark, nor has one whose saved place has gone (undone past, then changed).

Going to a step is the same as pressing Undo or Redo that many times, one step after another, so each step comes back just as Undo would bring it: the plug-ins that stayed keep sounding, the ones that went come back with their settings. A short message says how many steps were undone or redone. If a step can't be put back, it stops there and says which.

The list also opens from the key command **Undo history...**, which has no key until you give it one in Settings > Key Commands (Key Commands (p. 192)). With the keyboard, **Up** and **Down** move through the list, **Return** goes to the step and **Esc** closes it. The command palette finds it too (The command palette (p. 26)).

It is the history of the patch that is playing: each patch keeps its own while arctone.studio runs (Undo and redo (p. 84)).



The undo history, from the arrow beside Undo.

Chapter 4

Modulation

Understanding modulation

Modulation means letting one thing move another by itself, instead of setting every knob by hand. A modulator (an LFO, an envelope, a macro) is connected to a knob by a **routing**, and the knob then moves with it - by the amount the routing says, on top of where the knob is set. In arctone.studio modulation lives at every level of a sound, from the set list at the top down to a single knob, and the higher up it sits, the further it reaches.

1. The set list. Your songs in order, each one a patch (Set lists (p. 102)). Moving to the next song loads its whole sound at once. The set list doesn't modulate anything itself: it decides which patch - and so which macros and modulators - is live.

2. The patch and its 32 macros. A **macro** is a knob that isn't fixed to any one device: you decide what it moves. This is the big one:

- **One knob, many knobs.** One macro - call it Brightness - can open the filter on the pad layer and lift the EQ on the bass layer at the same time, each by its own amount. On stage you turn one thing and the whole sound changes together.
- **Your controller and your DAW only need 32 things.** Each macro can learn a hardware knob (a MIDI CC, or aftertouch), and each is one of the 32 automation lanes your DAW sees, named after it. That is simpler than reaching into thousands of plug-in parameters.
- **The same knobs on the Perform page** in every song, so your hands always know where things are - only what they do changes from patch to patch (The Perform page (p. 94)).
- **Patch modulators** - an LFO or an envelope in **Patch Macros**, the column at the Device Panel's left - do the same for the whole patch by themselves, a slow LFO swelling every layer's filter in time, say.

3. The layers. Each layer is one sound: an instrument, its effects, and its own mixer - Volume, Pan and the sends. These can be modulated too: a macro can fade the pad in while the bass stays where it is. A **layer modulator** moves knobs inside that layer only, so the movement of one sound stays apart from the others.

4. The Device Panel - a layer's devices. The panel along the bottom shows the selected layer's chain: its MIDI effects, its instrument, its effects. Each device can have its own modulators - an envelope that opens an EQ every time a key is played, an LFO on a delay's time. Switched **Per-Voice**, a modulator gives every note its own copy, so the notes of a chord move each in their own way. This is the fine detail; the macros above are the broad strokes.

5. The knob. Any knob can be moved by several sources at once, and they add up. The ring around a knob shows what modulation is doing to it right now. A right-click on the knob lists everything reaching it - each routing's amount, how it responds, its slew - and lets you cut, copy, paste or delete them, set the knob back to its default, add an automation lane for it, or map it to a controller.

In short: macros are performance control - a few big knobs that reach far; patch modulators move the whole patch; layer modulators move one sound; device modulators give detail, down to each note. The higher up, the more they reach; the lower down, the more precise they are.

Chapter 5

Macros and the Perform page

Macros

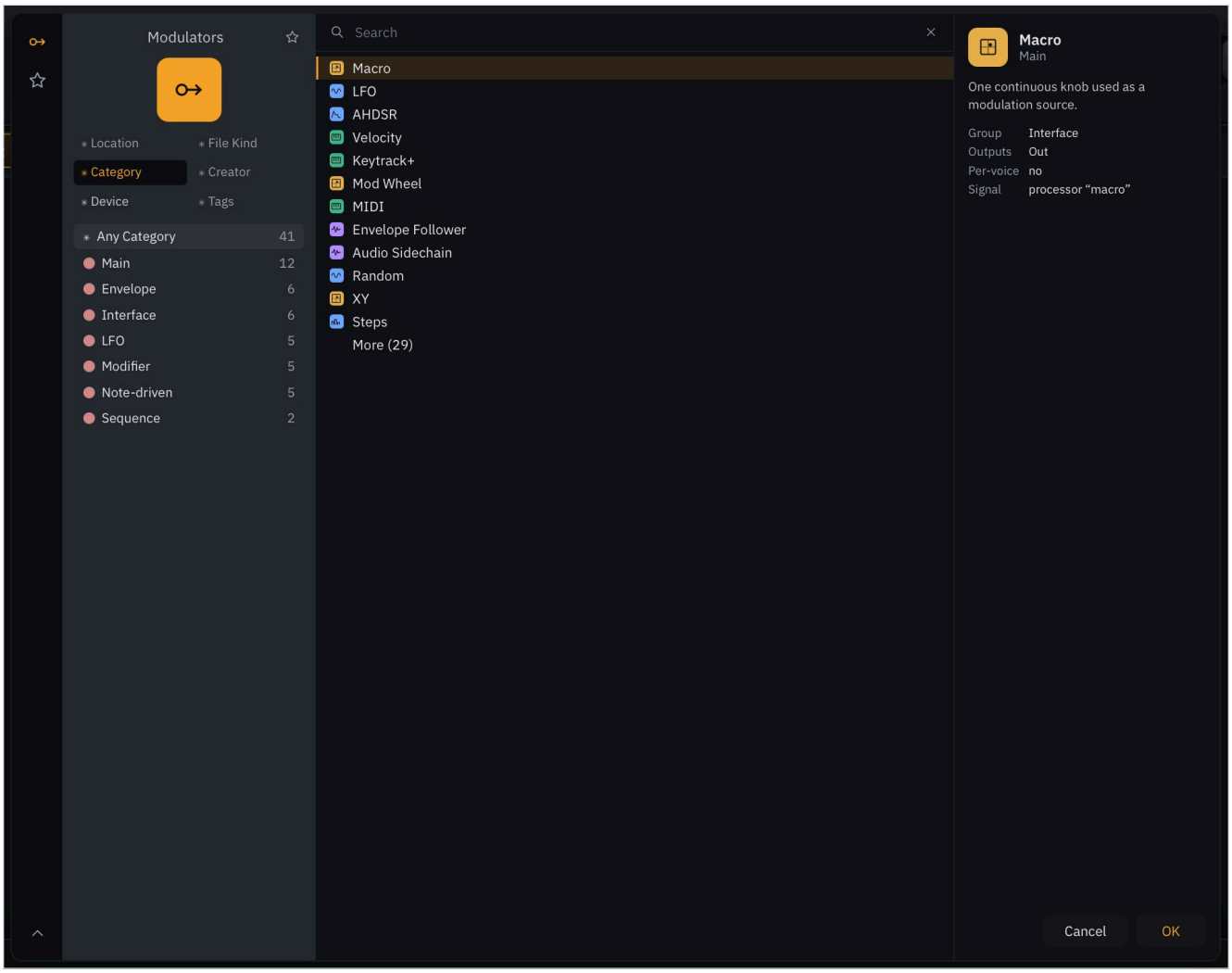
A patch has **32 macros**: knobs that belong to no device, which you point at whatever they should move. They are in the Device Panel, at its left end, in **Patch Macros** - eight knobs to a page. The line under the title says which page is showing (**Macros 1-8**); click it for the others (**9-16**, **17-24**, **25-32**; the number beside each is how many of its macros are in use). A macro in use is bright, with its name; a spare one is dim, "Macro 3". Drag a knob to turn it, double-click to set it back. All 32 are on the Perform page too, large (The Perform page (p. 94)).

Beside the page is the patch's **modulator column**: one card for each macro in use - its knob and its routing button - and one for every other modulator the patch has, an LFO or an envelope that moves things by itself. The **+** under the last card adds one: it opens the list of the 41 modulators (The modulator types (p. 92)), with a search box and their categories; double-click one, or select it and press **OK**. Choosing **Macro** takes the first spare macro. A spare macro's knob has **Turn it to use this macro** on right-click, which does the same for that number.

The two small buttons at the foot of the **PATCH MACROS** strip show or hide the knob page and the modulator column. The layer's strip, next to it, and every device have the same two: a layer and a device can have modulators of their own, which move things for that layer or that device only (Understanding modulation (p. 86)). A layer's knob page is its **Mixer** - Volume, Pan and the sends - so those can be modulated like any knob.

In a DAW the 32 macros are the plug-in's automation parameters, each named after its macro: rename one and its lane follows (a VST3 host renames it at once; an AU host, and a few others, when the plug-in is loaded again). Automation already written keeps working whatever the name - the host knows the macro by its number.

The knobs on the Perform page can be drawn in several styles - arc, dot, fill, ring, vintage, fader, bar - chosen in Settings > Interface > **Knob style**. See Interface (p. 180). A knob can be worked from the keyboard too: Tab to it, then the arrows. See Keyboard access and screen readers (p. 184).



The + in a modulator column: the 41 modulators, by category, with a search box.

Assigning: what a modulator moves

Every modulator's card has a **routing button** - the small arrow at its side (a modulator with several outputs, an XY's X and Y, has one for each).

1. **Click the routing button.** Every knob the modulator can move turns blue (green for a per-voice modulator), and each shows an amount, 0.0 % to start with, where its name was: the devices' knobs, the layer's Mixer page, the macros, the other modulators' own settings.
2. **Drag any of them** to set how far the modulator moves it: up for more, down for the other way. The sound follows at once. Set as many as you like.
3. **Click the routing button again**, or press **Esc**, to finish.

The amount is added on top of where the knob is set; the knob itself stays where you left it. A **right-click on the routing button** lists what that modulator moves, each with its amount.

A plug-in that isn't arctone.studio's own is drawn as a card with its remote controls, or with every parameter in a list with a search box: those are assigned the same way.

Mod highlights, in the panel's title row, lights what the selected modulator moves and draws a line to it; a small marker at the panel's edge says when more of its targets are out of view to that side.



Routing an LFO: its routing button is lit, every knob is blue and shows an amount to drag.

A modulator, opened

Click a modulator's card and it opens in place of the column, with its settings: for an LFO its shape, rate, phase, amount, sync to the tempo, polarity (Unipolar or Bipolar), fade-in and when it starts again. The small arrow at its top right corner folds it back to a card; the routing button beside that is the same one the card has. **Double-click the name** to rename it. A modulator with more settings than fit has a small arrow by its name that shows the rest. Its settings are knobs like any others: another modulator can move them.

Right-click a card (or use the menu button before an opened modulator's name):

- **Cut**, **Copy**, **Paste**, **Duplicate**, **Delete**.
- **Active** switches it off and on without losing what it is routed to.
- **Per-Voice** (the **Poly** button of an opened LFO or envelope is the same switch) gives every note its own copy of the modulator, so the notes of a chord each move in their own way; its ring and routing colour turn green.
- **Show Item Help** draws the modulator large, with a note on every setting (Help for a device, in place (p. 70)).

A macro's card has more:

- **Learn CC** - move a controller on your keyboard and the macro follows it from then on.
- **Assign aftertouch** - the macro follows channel aftertouch, how hard you press the keys after they're down; the instruments still get the pressure.
- **Clear CC**.
- **Move to** - give it another of the 32 numbers. If a macro is there already the two swap, names and routings with them. A DAW's automation stays with the number, not with the macro.
- **Turn its LFO into a Patch LFO** - only on a macro from an older patch that still has its built-in LFO switched on: the LFO becomes a modulator of its own in the column, routed to the macro.



An LFO opened beside Patch Macros.

A modulated knob

A knob that something modulates wears a **ring** showing the range it is moved over. The knob's own position is its base: modulation moves around it and never moves the knob itself.

Right-click any knob in the Device Panel:

- **Add Automation Lane** makes a macro for this knob, named after it and routed to it over its whole range, set so the sound stays as it was. The macro is one of the 32 lanes your DAW can automate.
- **Set To Default**.
- **Map to Controller or Key...** does the same as Add Automation Lane and then waits for you to move a controller: the macro learns it.
- **Mappings** lists the controllers that reach this knob through a macro, each with **Learn again** and **Clear**.
- **Modulation Routings**: **Cut**, **Copy**, **Paste** and **Delete** work on everything that modulates this knob at once - copy a knob's modulation and paste it on another. Under them, one line for each modulator reaching the knob, with its amount; each opens the routing's own menu (Transfer, slew and scale (p. 91)).



A right-click on a modulated knob: the Cutoff, moved by LFO 1.

Editing a macro

A macro is a modulator like the others: what it moves, and how far, is set with its routing button (Assigning: what a modulator moves (p. 88)), and each routing can be shaped (Transfer, slew and scale (p. 91)). A minus amount moves the target the other way.

Transfer, slew and scale

Every routing - one modulator moving one knob - has a menu of its own: right-click the knob and choose the routing's line, or right-click the modulator's routing button and choose the target.

- **Transfer** - how the modulator's signal is shaped on its way to the knob: **Linear** (as it is), **Positives** (only the part above zero), **Negatives** (only the part below), **Absolute** (the part below zero turned upward), **Toward Zero**, **Exponential** (holds back, then rushes) and **Logarithmic** (the reverse).
- **Slew** - smooths the movement: Off, or a time from 5 to 250 ms.
- **Scale by** - another modulator whose output scales this routing's amount, so a macro can set how deep an LFO goes without a second routing. **None** turns it off.
- **Active** - the routing off and on.
- **Remove**.

A routing in a patch made before the Device Panel may carry a response curve drawn by hand. It keeps playing as it was; the menu shows it as Linear.

Drawn shapes are modulators now: **Curves** is an LFO whose cycle you draw, **Segments** an envelope of as many points as you like. Their **Curve Editor**: double-click to add a point or take one out, drag a point to move it, **Alt/Option-drag** a line to bend it, **Alt/Option-double-click** to straighten it.

Copying, pasting and moving

- **A modulator: Copy** and **Paste** in its card's menu carry its type, name and settings to another place - the patch's column, a layer's, a device's. **Duplicate** makes a second one beside it. What it is routed to is not copied.
- **A knob's modulation: Copy** and **Paste** under **Modulation Routings** in a knob's menu carry every routing reaching one knob to another (A modulated knob (p. 90)).
- **A macro to another number: Move to** in its card's menu; two macros swap (A modulator, opened (p. 89)).
- **All 32 macros at once: Copy all macros** and **Paste all macros** (Macro layouts and CC maps (p. 91)).

Macro layouts and CC maps

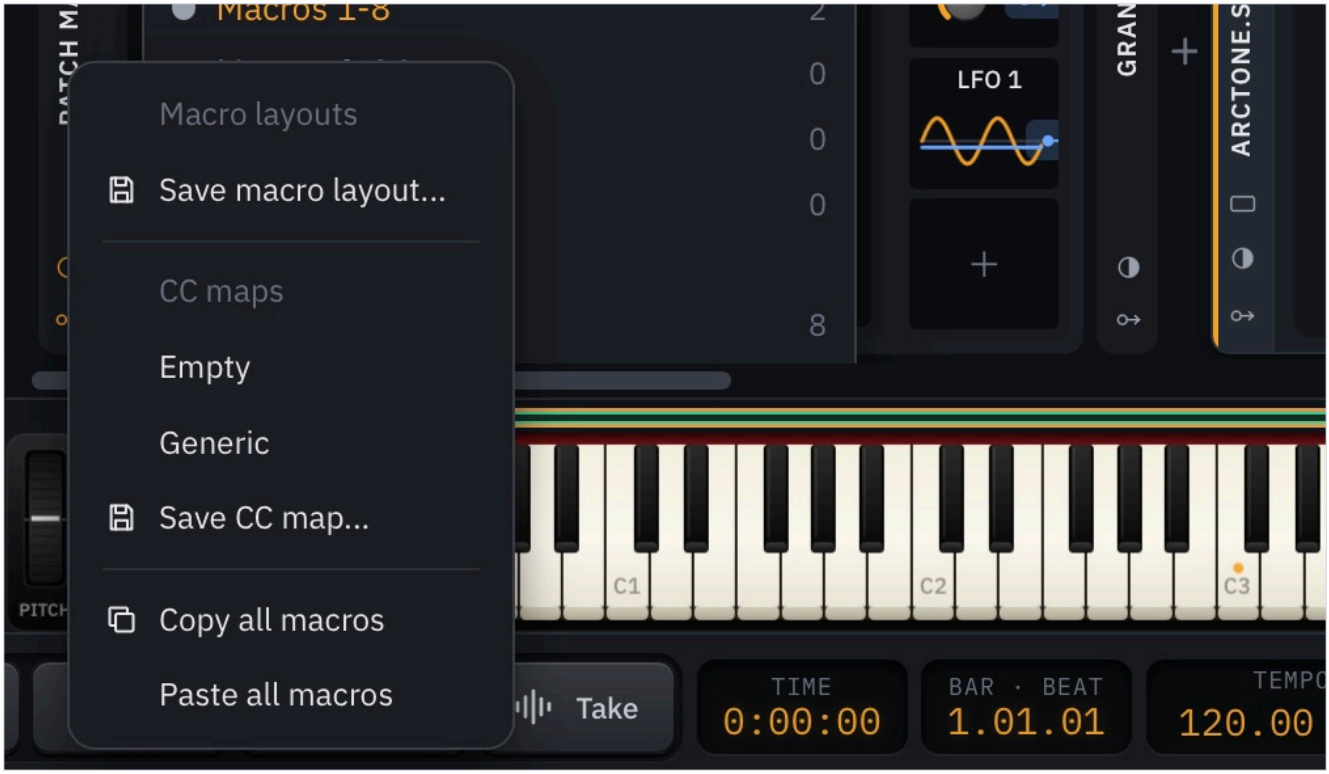
Right-click the PATCH MACROS strip at the panel's left edge to save and load the macros apart from any patch:

- **Macro layouts** - the saved ones are listed; click one to load it. **Save macro layout...** saves the 32 macros: their names, what they move and their controllers. Build the control set you like once, then load it into the next patch you make. Targets are looked for by their place in the patch (the layer's name, the device's position, the parameter); a layout loaded into a patch with a different shape keeps what it finds and tells

you what it didn't - it never leaves a target pointing at nothing.

- **CC maps** - only which MIDI CC (or aftertouch) moves each of the 32 macros. One map per controller: load one at home and another at the gig, and every patch follows. Two come with arctone.studio: **Generic** (CC 1, 2, 4 and 67 on macros 1-4, so patches and libraries made for Unify and Omnisphere work without changes) and **Empty**. **Save CC map...** saves yours.
- **Copy all macros / Paste all macros** - the same as a macro layout, through the clipboard, with no file.

Layouts and maps are files in your library folder, under `Macro layouts` and `CC maps` (Where your files live (p. 16)); loading one is a single undo step.



A right-click on the PATCH MACROS strip: macro layouts and CC maps.

The modulator types

The **+** in a modulator column lists these 41, by category. The twelve used most are in **Main**; **More** shows the rest. A few put out more than one signal: each output has its own routing button.

Interface - moved by hand.

- **Macro** - one knob. On the patch it is one of the 32 macros (Macros (p. 87)).
- **Macro-4** - four knobs, each a source.
- **Button**, **Buttons** - one or two on/off switches.
- **XY** - a pad; its X and Y positions are two sources.
- **Vector-4**, **Vector-8** - four or eight sources from one position on a pad.
- **Select-4** - one fader that crossfades across four sources.
- **Mod Wheel** - follows the mod wheel (CC 1).

LFO

- **LFO** - shape, phase, polarity, a free rate or sync to the tempo, fade-in, and when it starts again: Free, Note, Transport or Random.
- **Beat LFO**, **Classic LFO** - tempo-synced LFOs.
- **Random** - a tempo-synced random signal, stepped or smoothed.
- **Curves** - a cycle you draw (Transfer, slew and scale (p. 91)).
- **Vibrato** - an LFO whose depth can follow the mod wheel or pressure.
- **Wavetable LFO** - an LFO that morphs through a wavetable.

Envelope - run by the notes.

- **AD**, **ADSR**, **AHDSR** - two, four and five stages.
- **AHD on Release** - starts when the key goes up.
- **Ramp** - a rise or a fall, once or looping.
- **Segments** - an envelope you draw.
- **Note Sidechain** - an ADSR run by notes.

Note-driven

- **Velocity** - how hard each note was played, with a curve.
- **Keytrack+**, **Relative Keytracking** - where on the keyboard a note is: through a curve, or from a root note you choose.
- **Expressions** - velocity, release velocity, timbre and pressure, as four sources.
- **MIDI** - one kind of message as a source: a CC, pressure or pitch bend. Its card has **Learn CC**.
- **Note Counter** - rises with every new note.
- **Channel-16** - sixteen sources, one for each MIDI channel notes arrive on.
- **Pitch-12** - twelve sources, one for each note name.

Audio-driven

- **Envelope Follower** - follows the level of the audio going into its device.
- **Audio Sidechain** - follows the level of another signal in the patch.

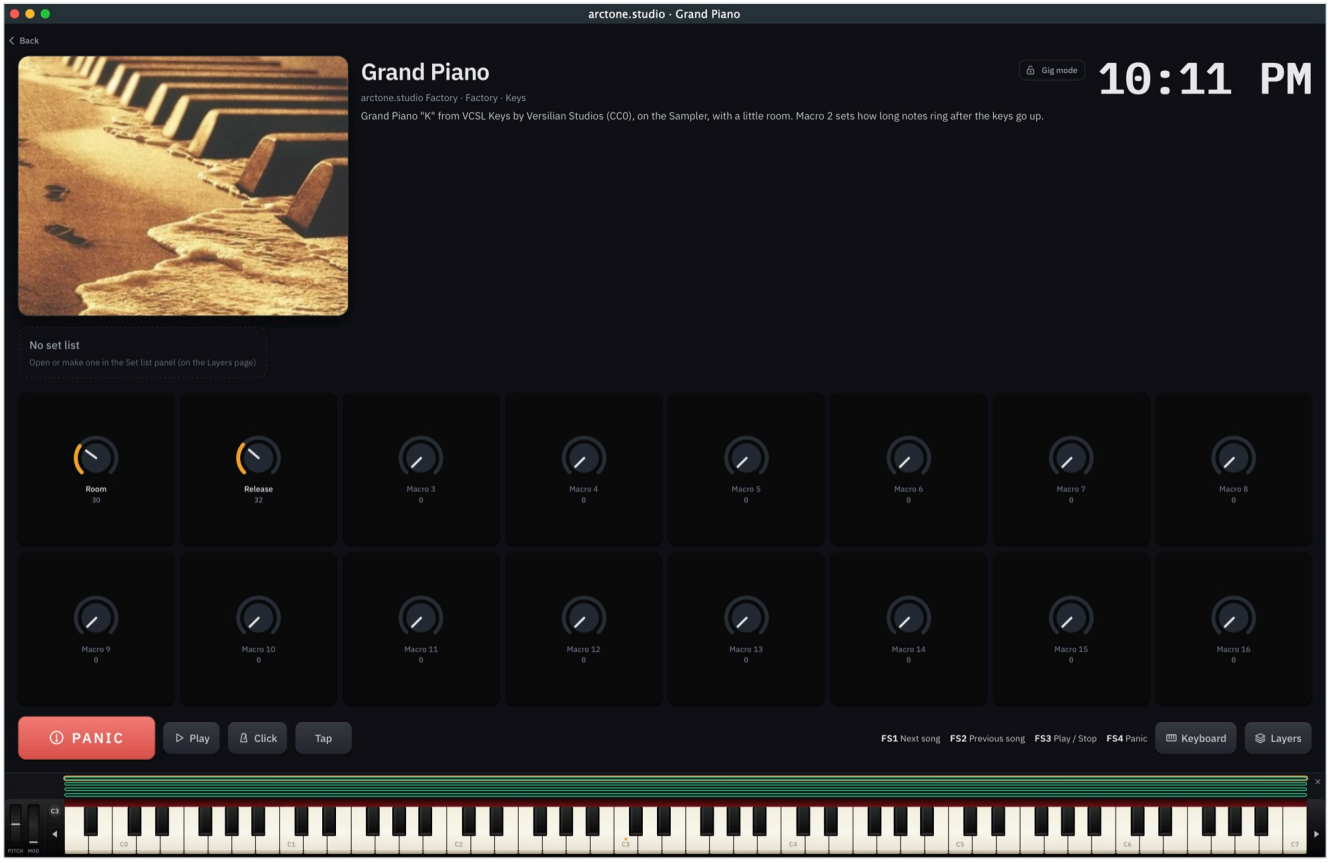
Sequence

- **Steps** - a step sequencer, free or synced to the tempo.
- **ParSeq-8** - eight steps, each step a source of its own.
- **4-Stage** - a looping envelope of four stages, each with a time and a level.

Modifier - these work on other modulators: route a modulator to one of their inputs, then route the modifier on.

- **Math** - two values combined: add, multiply and so on.
- **Mix** - a crossfade between two values.
- **Polynom** - bends a signal.
- **Quantize** - turns a smooth signal into steps.
- **Sample and Hold** - takes the signal's value at each tick of a clock and holds it.

The Perform page



The Perform page: the patch, its picture and notes, the set list, the macros, and Panic, Play, Click and Tap.

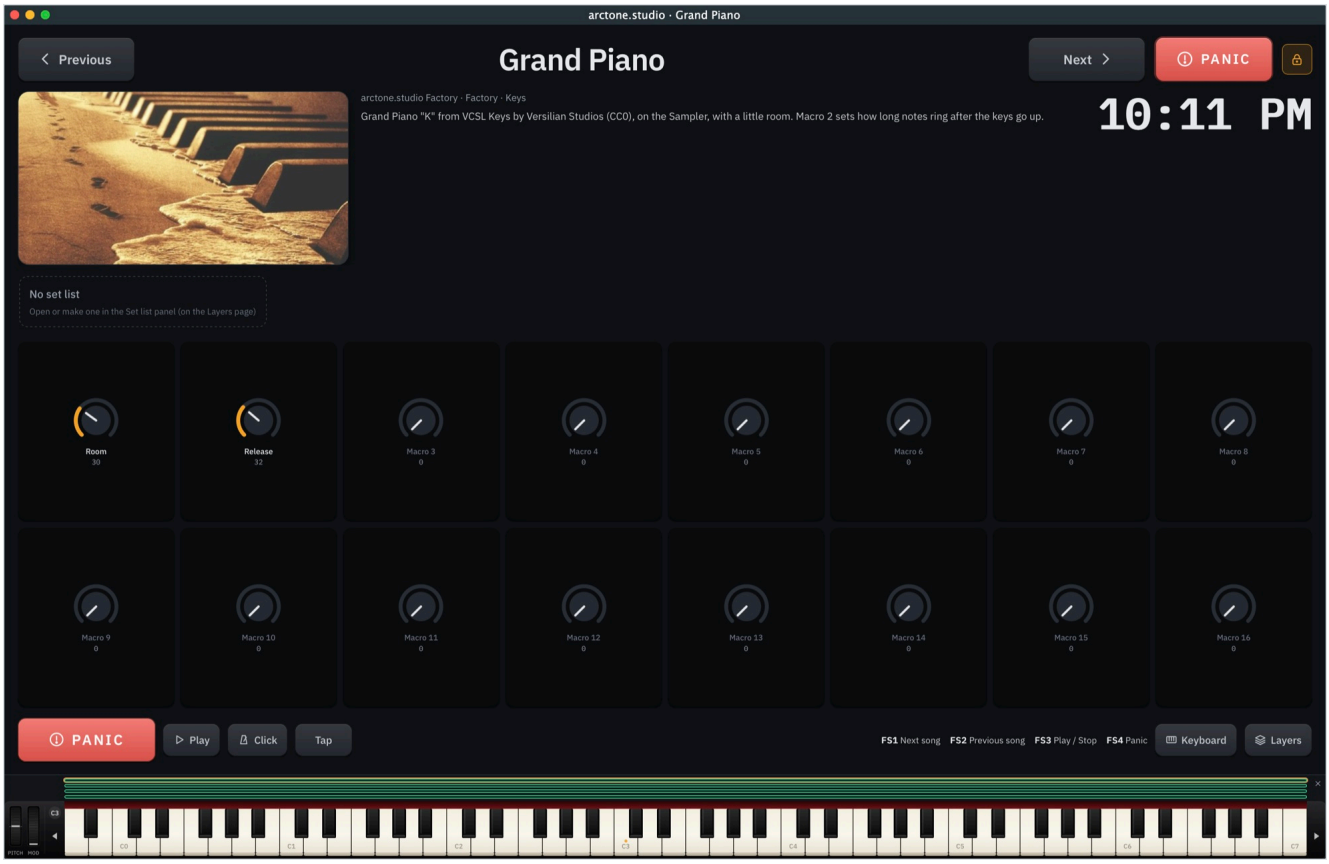
The **Perform** page is the performance view: the patch's name, your notes, an optional picture (right-click to set one; it is stored inside the patch) and the macros as big knobs, each with its name, its value and its controller. Right-click a knob for **Learn CC (move a controller)**, **Assign aftertouch**, **Clear CC** and **Rename...** (or double-click its name); what a macro moves is set in the Device Panel (Assigning: what a modulator moves (p. 88)). Use it on stage, where you want big controls and no layer clutter. ‹ **Back** at its top left, or **Layers** in its bottom bar, returns to the Layers page (**Esc** is Panic here); in gig mode ‹ **Back** is hidden. Switch pages with **Perform** and **Layers** in the View bar, **Cmd+2** and **Cmd+1** (Ctrl on Windows), or **Open the Perform page** on a right-click of the patch's picture in the top bar. See Layers and Perform page (p. 52).

It fills the screen. In the standalone app the window grows over the whole desktop, and the page is all there is: the header, the View bar, the transport bar and the Browser are put away until you go back; the Set List panel stays at the side if it was showing. Its bottom bar has what you need instead - **PANIC**, **Play**, **Click** (the metronome), **Tap** (tap tempo), the footswitch legend, **Keyboard** (shows or hides the on-screen keyboard, **Cmd+K**) and **Layers** (back to the Layers page, **Cmd+1**). See Perform with a set list (p. 107).

The set list's songs as tiles. With a set list chosen, its songs sit as large tiles above the knobs - number, name, category, key and tempo, a tick on the one playing; a tap loads one (made for a touch screen, and it works in gig mode too: stepping through the set is playing). With the tiles up the page shows **16** macros, two rows; without a set list, all **32**. See Loading patches from the set list (p. 109).

On stage, lock it: the **lock** beside the patch's name turns on **gig mode** (Gig mode (p. 95)).

Gig mode



The Perform page in Gig mode: Previous and Next, Panic at the top, and the lock that leaves Gig mode.

Gig mode locks the Perform page for the stage. Turn it on with the **lock** button in the page's top right, beside the patch's name; with ≡ **> Gig mode**; with the key command **Gig mode on / off** (no key until you give it one: Key Commands (p. 192)); or in **Settings > Interface > Gig mode**. The same turns it off - in gig mode the lock sits at the end of the bar across the top of the page. Turned on from the menu or the key command, the Perform page shows. While it is on:

- **A bar of large controls across the top of the page. Previous** patch and **Next** patch - the set list's, or the library's when no set list is active (Loading patches from the set list (p. 109)) - with the patch's name, large, between them; and a large red **PANIC** button, all notes off everywhere (Panic (p. 46)), always in view. The lock at its end turns gig mode off.
- **The page's own edits are off.** Clicking the picture no longer chooses one, and its menu doesn't open; the macro knobs still turn (they're for playing) but their right-click menus - learn a controller, rename - are off; no right-click menu opens anywhere on the page; and files dropped on it do nothing.
- **A CPU warning.** When the CPU load (CPU (p. 45)) stays over **80%** for two seconds, an amber banner across the page says so - "CPU 87% - close to the limit" - and turns red over **95%**, with what helps: a bigger audio buffer (click STATUS, or Settings > Audio & MIDI: Audio & MIDI (p. 168)) and **Freeze to arctone.sampler** for a heavy patch (Freeze to arctone.sampler (p. 98)); patches ringing out after a switch cost too (Limits and costs (p. 113)). It goes once the load has been under the line for five seconds. The

figure is the load smoothed over half a second, and once red the banner stays red until the load has been under 92% for a second, so it reads steadily rather than flickering with every block.

The knobs come first: the bar and the warning take their room from the picture and notes above the knobs, and in a short window (a laptop with the panels open) the picture goes, the notes keep a few lines and the warning keeps to its words (its advice is in its tooltip), so a row of knobs is always in view and the rest scroll.

The rest of arctone.studio isn't locked: the Layers page, the Browser, the set list, Settings and the key commands work as they always do. Gig mode guards the Perform page, where a stray click on stage would do the most harm.

Gig mode also stops the work arctone.studio does in the background: a plug-in scan, the preset map's rendering and preset analysis. A message says what it stopped - "Stopped for gig mode: plug-in scan (312 of 434 plug-ins done)" - and nothing is asked, so turning it on never holds you up. Nothing starts again by itself, during the gig or after it: once gig mode is off, the Browser shows a line with what was stopped and a **Resume** button, there even after a quit and a restart days later. **Resume** starts it again (a scan carries on from where it stopped); the **x** dismisses the line. Nothing heavy starts while gig mode is on, either - not even the scan a new installation would run at start-up. While you play, a session counts as going on for half an hour after the last MIDI note, so a break between sets doesn't let the map's rendering start; opening the Browser or the map ends that wait.

Gig mode is part of a **window layout** (Window layouts (p. 40)): save a layout - "Stage", say - with it on and the Perform page showing, and the Layout button (or the key command **Choose a layout...**) brings the whole arrangement back in one go; **Default** has it off. It is kept in the settings (`gigMode`), so arctone.studio starts as it was left.

Chapter 6

Patches and the library

Patches

A **patch** is everything you hear: every layer, its plug-ins and their saved state, the mixer, the MIDI filters, the macros and their assignments. It is saved as a `.aspatch` file (XML) in your library folder. Because a patch stores each plug-in's state, it needs those plug-ins installed. Missing ones are kept and saved back unchanged. See Missing plug-ins (p. 83).

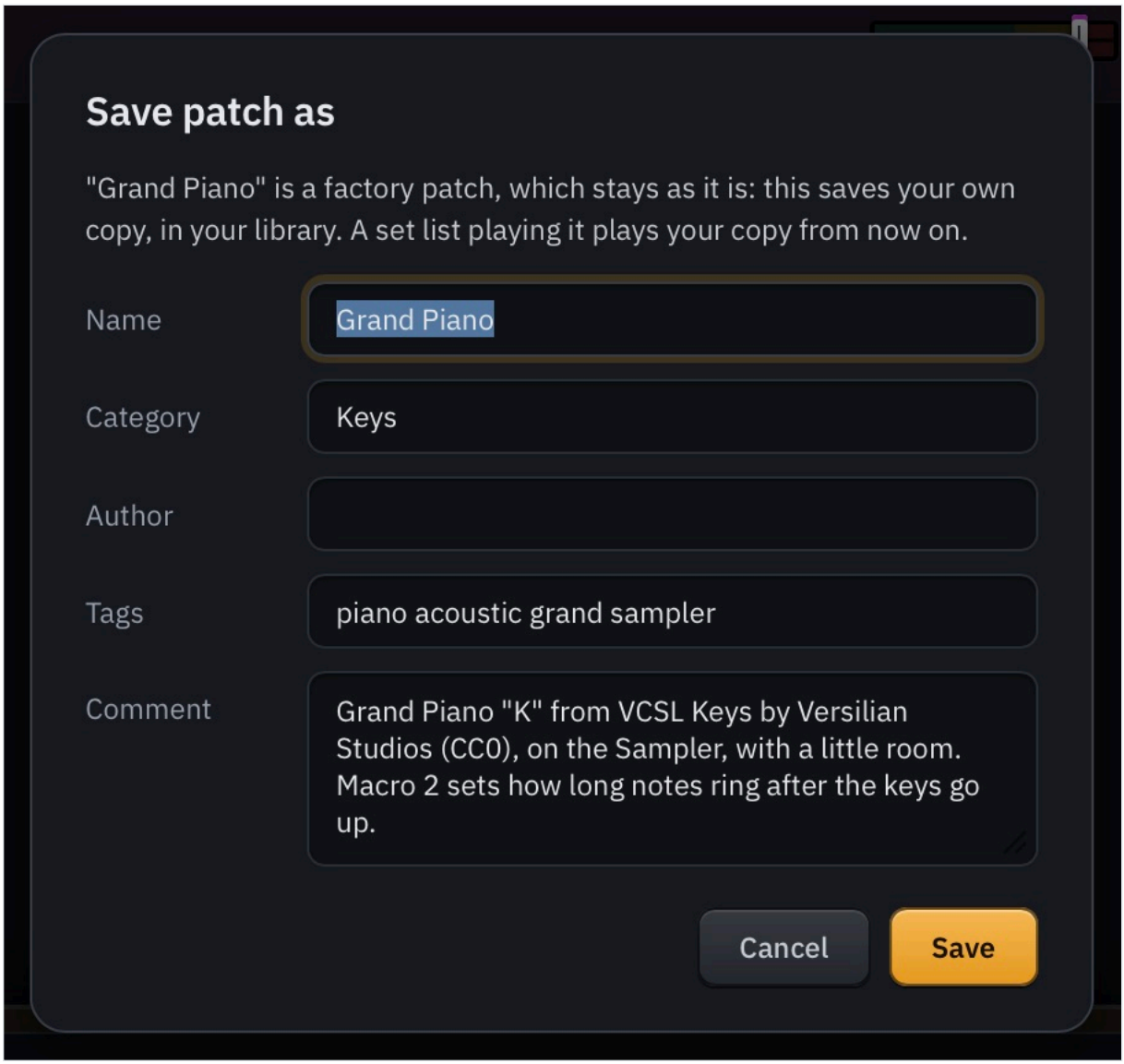
Saving a patch

Press **Save**. The first time (or with **Save As**, on right-click) a dialog asks for:

- **Name**
- **Author**
- **Category** (for example "arctone.studio Factory" or "User")
- **Tags** (comma separated; they are searched in the library)
- **Comment**

If a patch with that name already exists in the category, arctone.studio asks before replacing it.

Factory patches stay as they are. Saving one (with your changes, a picture, anything) makes **your own copy** in your library (`Library/Patches/User/`); the dialog says so. If you were playing it from the chosen **set list**, the set list's entry now plays your copy, so it comes back with your changes and pictures the next time you step to it; a message says which set list. The same goes for Save As under another name. The factory original is still in the library, marked Factory.



Save patch as: the name, category, author, tags and comment.

Freeze to arctone.sampler

Freeze to arctone.sampler (in the patch's menu, or a key command) plays every note of the patch and records it - every layer, its effects, the sends and the master, exactly as it sounds - into samples for the built-in arctone.sampler, and makes an instrument of them: the patch as a multisampled instrument that needs none of its plug-ins and almost no CPU. A set list of frozen patches runs on a light laptop, on stage, without the original plug-ins or their licences, and keeps working if a plug-in breaks after an update.

- **From / To / Every:** the notes sampled - the range, and how far apart. Every semitone is the most faithful and takes the longest; every 3 semitones is a good default, the arctone.sampler shifts the nearest sample for the notes between.
- **Velocity layers:** 1 to 4. Each layer samples the notes at a louder velocity, so a sound that changes with how hard you play keeps that. Each sample plays back as loud as the patch played that note at that velocity - the response is in the sample, and its zone makes up the arctone.sampler's own - and softer

notes in between still follow your playing.

- **RR:** 1 to 4 takes of each note and layer, which the arctone.sampler plays in turn, so repeated notes don't sound copied. Plug-ins with free-running LFOs or noise give different takes by themselves; for the rest each take after the first is bent a few cents and started 1 to 15 ms later. The files are named `..._rr2.wav` and on.
- **Hold each note** for so many seconds; then the key goes up and the tail is recorded until it is silent, or until **wait for the tail up to** so many seconds.
- **Render at real-time speed:** normally the rendering runs as fast as the computer can. Plug-ins that stream samples from disk need real time to fetch them.
- **Result:** a new patch in the library's **Frozen** category (the one you have open is unchanged), or a layer added to this patch. Added to this patch, the original layers are **muted** in the same step - both at once would comb-filter - so unmuting them compares the two, and one undo takes back both the new layer and the mutes. Muted, their plug-ins still use CPU and memory: when the freeze is done it offers to **unload** them - they become disabled layers (Disabling a layer (p. 69)), their settings kept, **Enable** loads them back. Nothing is unloaded unless you say so.

Under **Advanced**:

- **Loop sustaining notes:** much smaller files, and notes sustain as long as you hold them. The recorded reverb and delay tail is replaced by the arctone.sampler's own release, set to about the longest tail heard. Only notes that still sustain at the end of the hold (within 30 dB of their loudest) are looped, and only where a clean loop is found - both ends on a rising zero crossing, the audio after them matching, the seam crossfaded; a note with no clean loop (slow movement, noise) stays a one-shot, with its tail. Off by default: the recorded tail is one of the best things about a freeze.
- **Capture release:** with looping, each looping note's recorded tail is kept as a release sample (`..._rel.wav`), played when the key goes up, while the loop fades out under it - the patch's real reverb and delay tail back again, with notes that sustain as long as you hold them.
- **Keep the original layers playing:** for a layer added to this patch - the frozen arctone.sampler stacked under the live plug-ins instead of replacing them.

Under the options, how many notes it will record and roughly how long that takes; while it freezes, the progress says how long is left.

The layers' MIDI clips are silent while it plays the patch, and the frozen layer has none (MIDI clips on layers (p. 78)). The samples go to Documents > Arctone > arctone.studio > Samples > Frozen > *the patch's name*, a WAV per note and layer; the root note is in each file's name and metadata, so the files work in any sampler. A progress dialog shows while it freezes; **Cancel** stops it and removes what it made. The frozen layer's arctone.sampler can be opened and edited like any other. See The arctone.sampler (p. 116).

New patch

New starts an empty patch, "Init": one layer, **Instrument 1**, with **OB-Xf** on it - the synth that comes with arctone.studio (Scanning for plug-ins (p. 122)). If OB-Xf isn't installed, or the plug-in scan hasn't found it, the layer gets the built-in **Basic Synth** instead, so a new patch always makes a sound. If the current patch has changes that aren't saved, it asks whether to save them first.

The patch library

In the main window your patches are in the Browser's Sounds tab: The Sounds tab (p. 133). A click on the patch's name in the top bar (or **Cmd+O**) lists them under it, with a search box, your set list, favourites and recent patches: Choose a patch (p. 24). In the classic window, the library page lists every `.aspatch` in your library folders.

- **Search** looks across name, category, tags and comment.
- **Library** and **Category** menus filter the list; **Favourites** shows only starred patches (click the star column to mark one).
- Click a column heading to sort.
- **Load** opens the selected patch (or double-click it).
- **Append layers** adds that patch's layers to the current patch (macros are not copied).
- ◀ **Add to set list** adds the selected patches to the chosen set list. You can also drag them onto the Set List panel. See Adding patches (p. 108).
- **Rescan** re-reads the folders; **Open folder** shows them in Finder.
- The header's **Previous / Next** buttons step through the list.

Hear a patch before loading it

You can hear a patch without loading it - and without the patch that is playing going anywhere. In the Browser's Sounds tab, point at a patch and click the ▶ on its row (or on its card in the gallery); in the Set List panel, each entry has one too, and so does each row of the patch picker under the patch's name (**Shift+Return** there: Choose a patch (p. 24)). arctone.studio plays a short preview of it over the output, on top of whatever you are playing: a C major chord held, a short run up, a low note, and a second for the tail - four and a half seconds through the whole patch, every layer, its effects and the master. **Hear it** in the patch's right-click menu does the same.

How it is made. The first time, the patch is built on the side as a copy of its own - the way a set list's next patch is got ready ahead of time (Getting the next patches ready (p. 113)) - and rendered on a thread of its own, faster than real time. A small spinner on the ▶ shows it is being made; a patch with many plug-ins takes a few seconds, most of it loading them. The copy never touches your layers or the patch playing: its latch and MIDI out are off, nothing it does is recorded or goes to the clock, its macros stay at the patch's own values, and it is let go as soon as the render is done. The sound is turned down if it would clip, as the preset previews are, and kept as a WAV in the Previews folder (`Previews/patch-*.wav` in the app-data folder, Where your files live (p. 16)), keyed by the patch file, its size and its date: the next click plays at once - a tick on the ▶ says the preview is there, the next time you start arctone.studio too - and a patch saved again is rendered again.

Playing and stopping. While it plays the ▶ is lit (▪ under the mouse stops it). In the Sounds tab **Space** plays or stops the selected patch (a selected plug-in preset plays again), and **Esc** stops. One preview plays at a time: a patch's, a plug-in preset's or a file's from the Files tab stops the others, and loading a patch stops the preview. With **Preview presets and patches when clicked** on in Settings > Presets (it is, to start with) a plain click on a patch plays it too - as a click on a plug-in preset does - so you can go through the library by ear; a double-click still loads it, and a click that adds to the selection (Shift, Cmd/Ctrl) or picks patches to tag (the pencil) doesn't play. The newest request is the one that counts: a click on another patch while one renders cancels that render and starts this one, and a preview of another kind started meanwhile - a plug-in preset's, a

file's - is the one heard (the patch's render finishes into the cache, unheard). A render you didn't mean is stopped by **Esc** or a click on its spinner (▪ under the mouse): it is cancelled, and nothing plays.

A set list ahead of time. Right-click an entry in the Set List panel, or open the panel's options menu (the dots in its title bar), for **Render previews for this set list**: every patch's preview is rendered in the background, in the set list's order (the ones there already are kept), and the status line counts them. Then each ▶ plays at once - the quickest way to audition the night's sounds. A click on a patch while the set list renders plays that one as soon as it is done, and the rest go on after it.

No sound? A patch whose plug-ins aren't installed gives a short silent preview and says so on the status line - "No sound from Lead: its plug-ins aren't installed (Diva)" - and in the ▶'s tooltip. A patch with some of its plug-ins missing plays without them, with a note that says which. A patch with no instrument layer (effects on the audio input, say) is silent too.

Settings > Presets shows how many patch previews are kept and their size, with **Clear patch previews** (the ticks on the rows go with them); **Clear preview cache** there clears them along with the plug-in presets' previews. See Presets (p. 175) and, for the plug-in presets' own previews, Preset previews (p. 158).

Factory patches

Seven starter patches are written to `Library/Patches/Factory` the first time arctone.studio runs. They use only arctone.studio's own built-in devices, so they work on every machine.

Chapter 7

Set lists

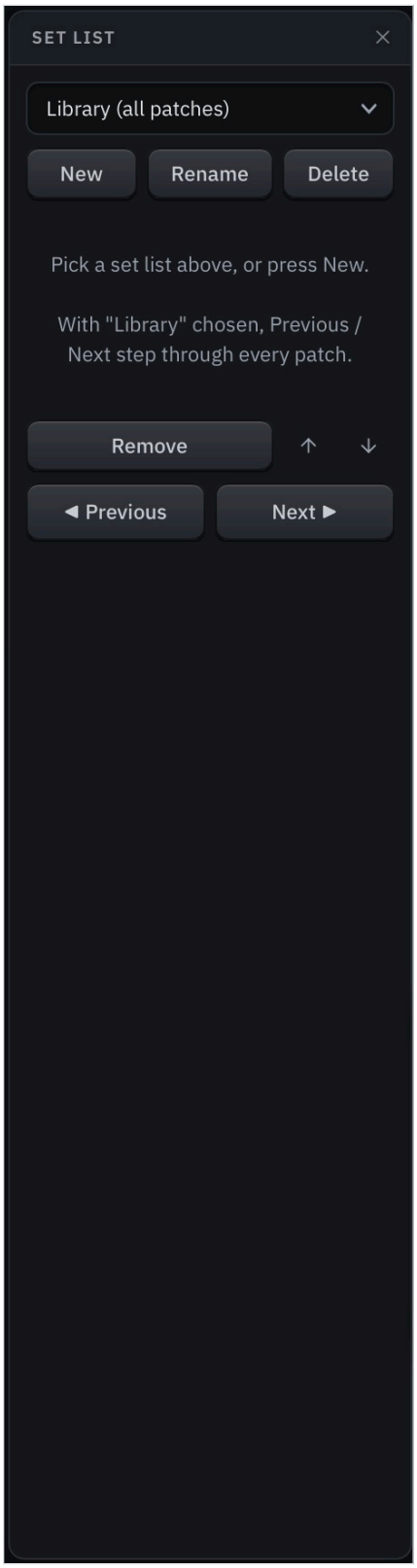
Set lists

A **set list** is a named, ordered list of patches: the songs of a gig, the scenes of a session, or the sounds of a project. Instead of hunting through the library, you load them one after another with a click, or with the Previous and Next buttons, in exactly the order you chose.

- Set lists live in the **Set List panel**, docked on the left of the main window. See The Set List panel (p. 103).
- A set list only *points to* patches; deleting a set list never deletes a patch.
- Each set list is a small file in `~/Documents/Arctone/arctone.studio/Library/SetLists/`, so it is easy to back up or copy to another machine. See Where set lists are saved (p. 110).
- While a set list is chosen, the header's **Previous / Next** buttons step through *it* instead of the whole library. See Loading patches from the set list (p. 109).

> **TIP** The set list is the natural list of "what is coming next", so it is also what arctone.studio uses to decide which patches to get ready ahead of time.

The Set List panel

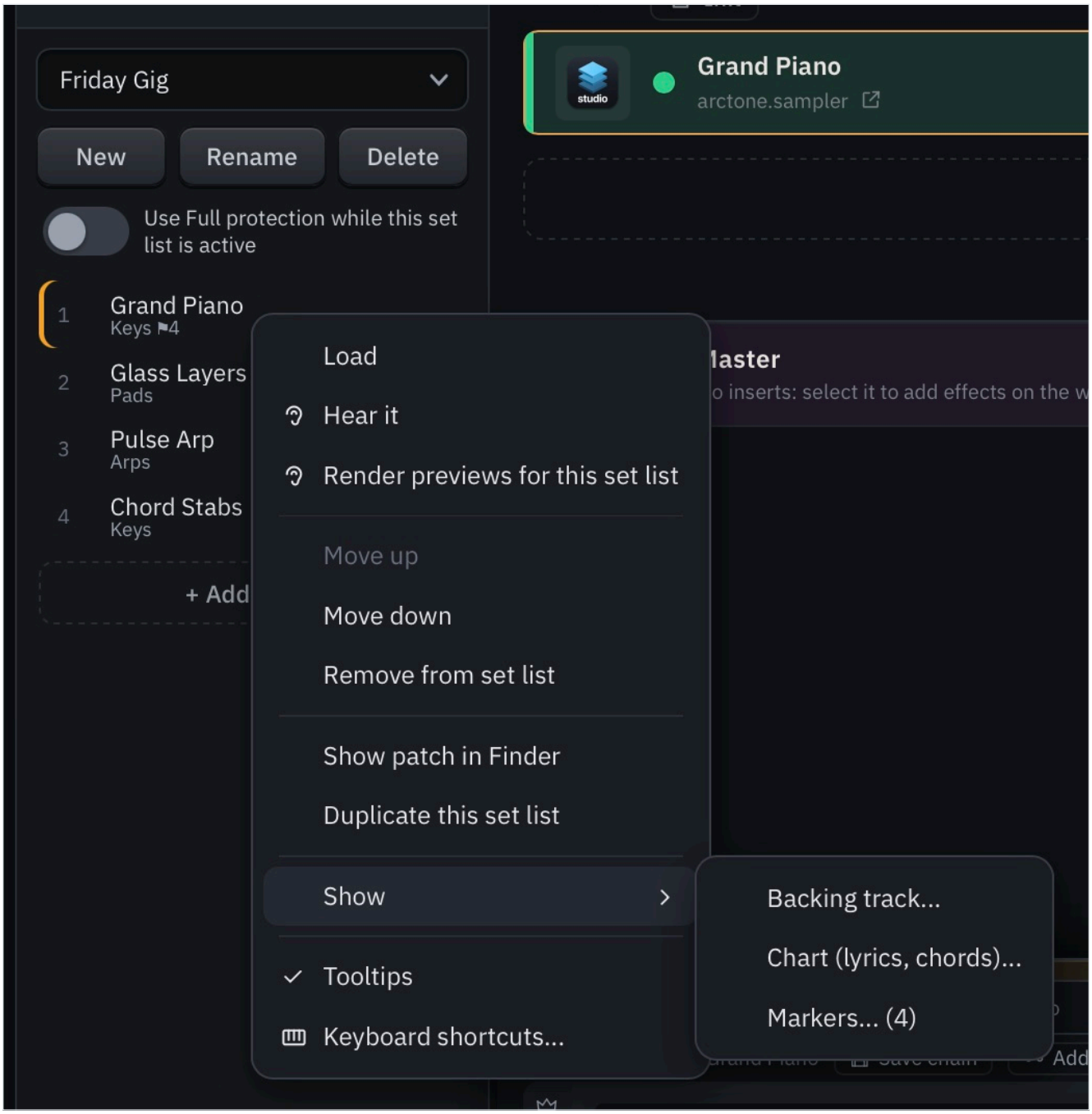


The Set List panel, before any set list is made.

The panel sits on the **left** of the main window. Show or hide it with the **Set list** button in the View bar, **Show > Set list** (**Cmd+L**), or the **×** in its title bar. With the window layout unlocked it can be dragged to another edge of the window, like the Browser. See Docking and floating panels (p. 155).

From the top:

- The **chooser** picks the set list. **Library (all patches)** means no set list: Previous / Next then step through the whole library. arctone.studio opens on the set list you had open last time (on the library if that set list has been deleted since).
- **New**, **Rename** and **Delete** manage set lists. See Making and managing set lists (p. 108).
- **Use Full protection while this set list is active** (shown once a set list is chosen): every plug-in in a helper process from the first patch loaded under this set list, whatever Settings > Audio & MIDI > Plug-in protection says, and the setting back when the set list ends. See Plug-in protection and crash recovery (p. 195).
- The **list** shows the songs in order, each with its number and name; under the name its category (or, for a song with a title of its own, its patch), its key and tempo, a ♪ when it has a backing track and a flag with the number of its markers. The ▶ on a row plays a short preview of the patch without loading it (a row's right-click menu has **Render previews for this set list**). See Hear a patch before loading it (p. 100). The patch that is playing is highlighted.
- **+ Add patch**, under the last song, adds to the list. See Adding patches (p. 108).
- **Remove**, **up** and **down** work on the selected song. See Changing the order (p. 109).
- **Right-click a song** for **Load**, **Hear it**, **Render previews for this set list**, **Move up**, **Move down**, **Remove from set list**, **Show patch in Finder**, **Duplicate this set list** and **Show** (Show mode (p. 105)).
- The big **Previous** and **Next** buttons at the bottom load the neighbouring patch. See Loading patches from the set list (p. 109).



The Set List panel with a set list chosen, a song's right-click menu and its Show submenu.

Show mode

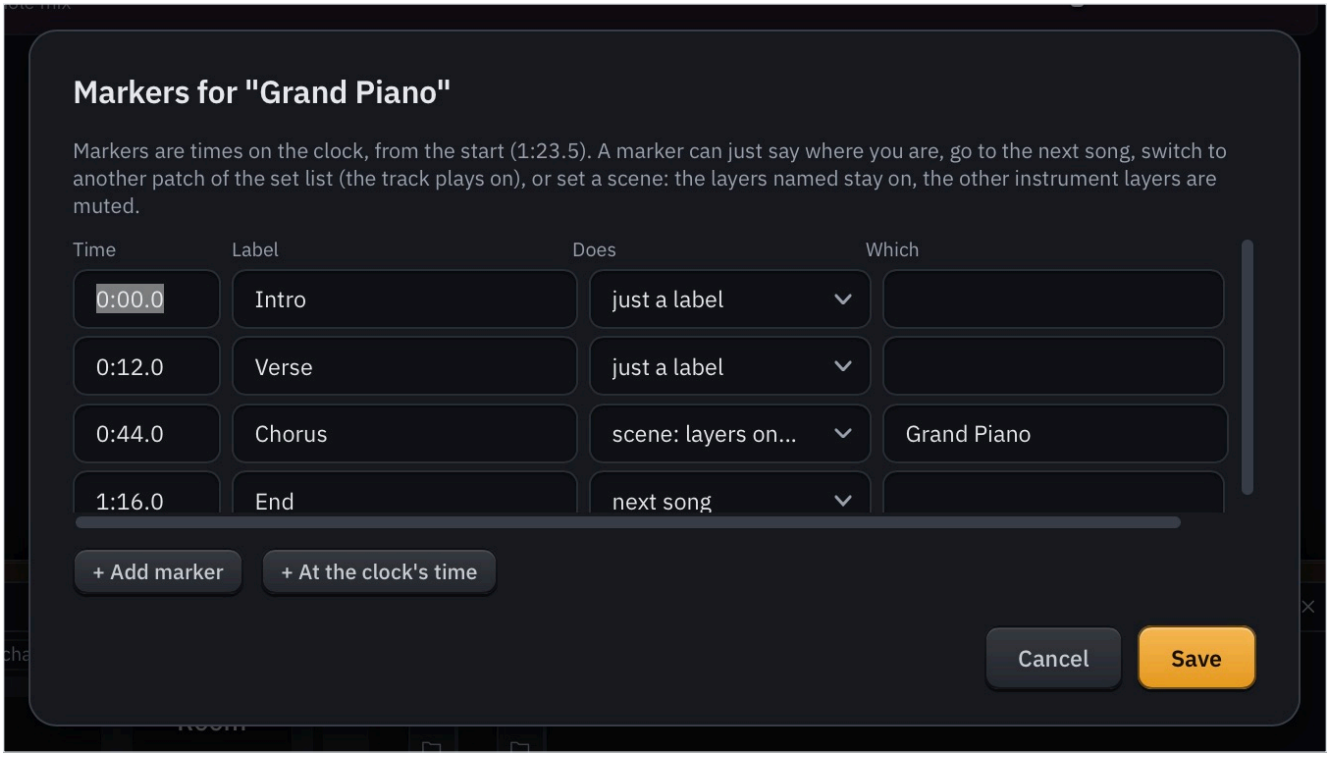
Each song of a set list can carry its **show**: right-click the song in the Set List panel > **Show**, which has **Backing track...**, **Chart...** and **Markers...** (and, once a track is chosen, **Track level** and **Remove the backing track**).

- **Backing track:** an audio file (WAV, AIFF, FLAC, OGG, MP3) that plays with the clock - press Play and it starts from the beginning, with the metronome if it's on, under whatever you play; Stop stops it, rewind takes it back to the top. **Track level** sets how loud, in dB. It is heard in a recording too.

- **Chart:** lyrics, chords, cues - any text - shown on the Perform page while the song is current.
- **Markers:** times on the clock, from the start (`1:23.5`), each with a label; the Perform page shows where you are and what's next ("Verse · next: Chorus in 12 s"). A marker can also *do* something when the clock passes it: **next song** (the next patch of the set list loads, with its own track, and the clock starts again from the top); **patch number** (another patch of the set list, within the song - the track plays on, and the patch you came from rings out, so nothing cuts off); or a **scene**: the layers named (comma-separated, `Pad, Lead`) stay on and the other instrument and audio layers are muted, so one patch can have a verse mix and a chorus mix; `*` turns everything on. In the Markers window each line has its **Time**, its **Label**, what it **Does** (just a label, next song, patch number, scene: layers on) and **Which**; **+ Add marker** adds a line, and **+ At the clock's time** adds a marker where the clock is now - play the song through once and drop the markers as you go.

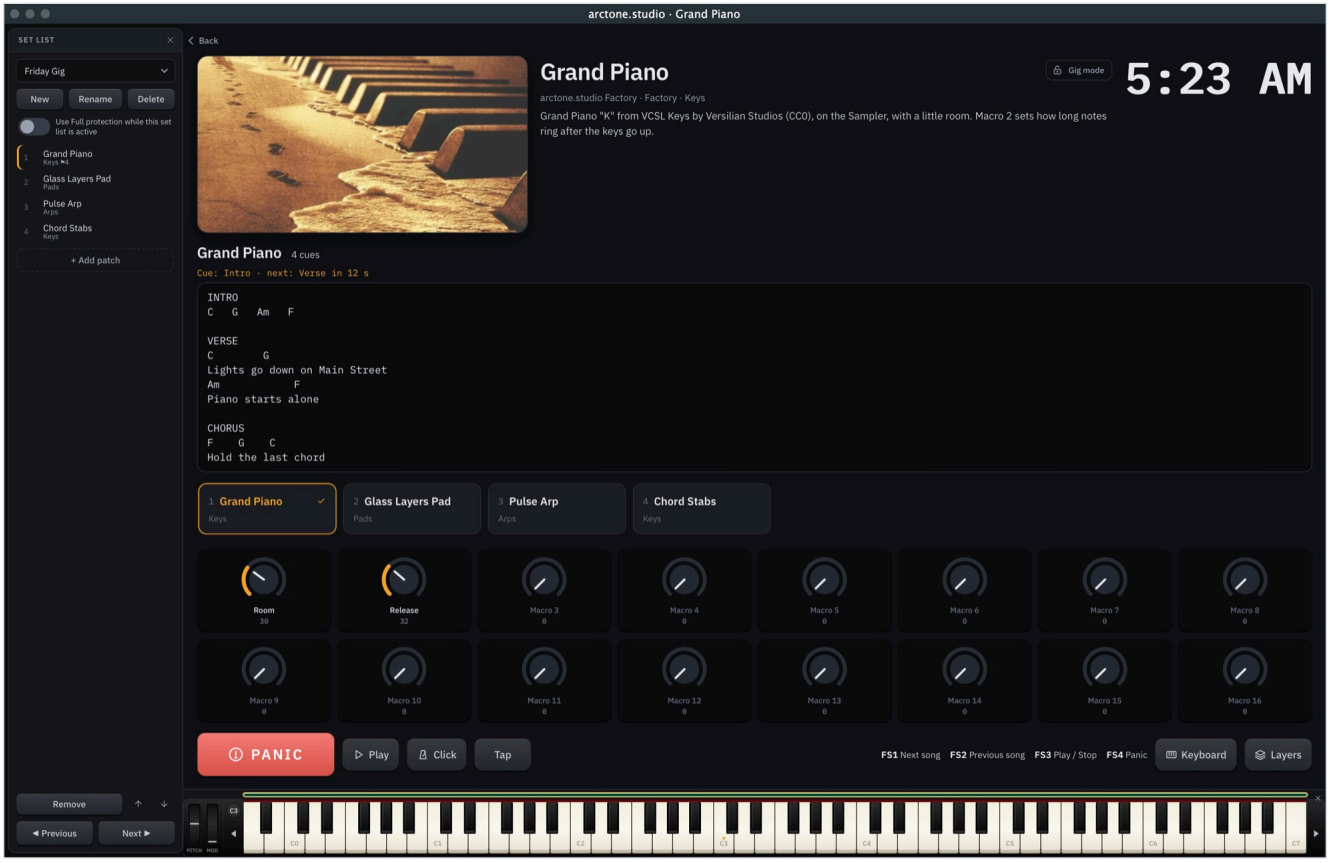
A song's show is kept in the set list file with it. Choosing a song (by double-click, the Previous / Next buttons, a footswitch or OSC) makes its show current; markers already passed don't fire, so you can start anywhere. On the Perform page the markers are called **cues**, with the marker's label as the cue's name. See The Set List panel (p. 103) and The transport bar (p. 43).

Besides its show, a song carries its own details, kept in the set list file with it: a **title** of its own (empty, it goes by the patch's name), its **key** ("Em" - shown, nothing more), its **tempo** (the transport takes it when the song loads; 0 leaves the tempo alone), its **duration** and its **notes** - what you need on stage ("capo 2, count in"), apart from the chart's lyrics and chords. The set list itself can carry a **curfew** - the time the set must end - and its **footswitch** assignments (Perform with a set list (p. 107)). The Show menu edits the track, the chart and the markers; the other details are read from the set list's file (Where set lists are saved (p. 110)). An old set list file has none of this and loads exactly as before.



Markers for a song: the time, the label, what the marker does and which patch or layers.

Perform with a set list



The Perform page with a set list: the song and its cue line, the chart, the songs as tiles, 16 macros, the time of day, and the footswitch legend in the bottom bar.

With a set list chosen, the Perform page is the stage view of the show:

- **The song**: its title, with its key and tempo (**Em · 92**), and the patch under it.
- **The cue line**: the cue you are in and the next one with the time to it ("Verse · next: Chorus in 12 s").
- **The track bar**, when the song has a backing track: how far in and how long, with a tick for each cue on it.
- **CHART and NOTES**: two tabs - the chart scrolls with the song, the notes stay put.
- **The time of day**, large at the top right, readable from a few metres, running whether the clock plays or not (12 or 24 hours as your system has it). Under it, smaller: how long the set has run (from the first Play) and, when the set list has a curfew, the time left to it.
- **The bottom bar**, always there: **PANIC** - the largest button, in the alert colour; one press and every note and every sound is off on every layer, the backing track and clips stop, sustain and pitch bend reset, no questions asked (**Esc** does the same) - then **Play / Stop**, **Click** (the metronome), **Tap** (tap tempo) and the footswitch legend.

Footswitches. Each set list has four: FS1 **Next song**, FS2 **Previous song**, FS3 **Play / Stop**, and FS4 assignable - next cue, tap tempo, panic, or a macro. The bottom bar's legend shows what each does.

Loading a song never starts the clock: Play, Space or FS3 does (Show mode (p. 105)). The set list keeps the next song ready ahead of time, so Next is immediate (Getting the next patches ready (p. 113)).

Making and managing set lists

- **New** asks for a name and makes an empty set list, which becomes the active one.
- **Rename** changes the name (and the file's name).
- **Delete** asks first and moves the set list's file to the Trash, so it can be recovered. The patches in it are untouched.
- Right-click a patch in the list and choose **Duplicate this set list** to make a copy to adapt for another gig.
- Names are kept unique: a second "Friday Gig" becomes "Friday Gig 2".

Adding patches

+ Add patch, under the last song, has three ways:

- **Current patch** - the one you are playing.
- **Choose patches...** - pick one or more from your library.
- **Find in the Browser** - opens the Browser's Sounds tab to drag from.

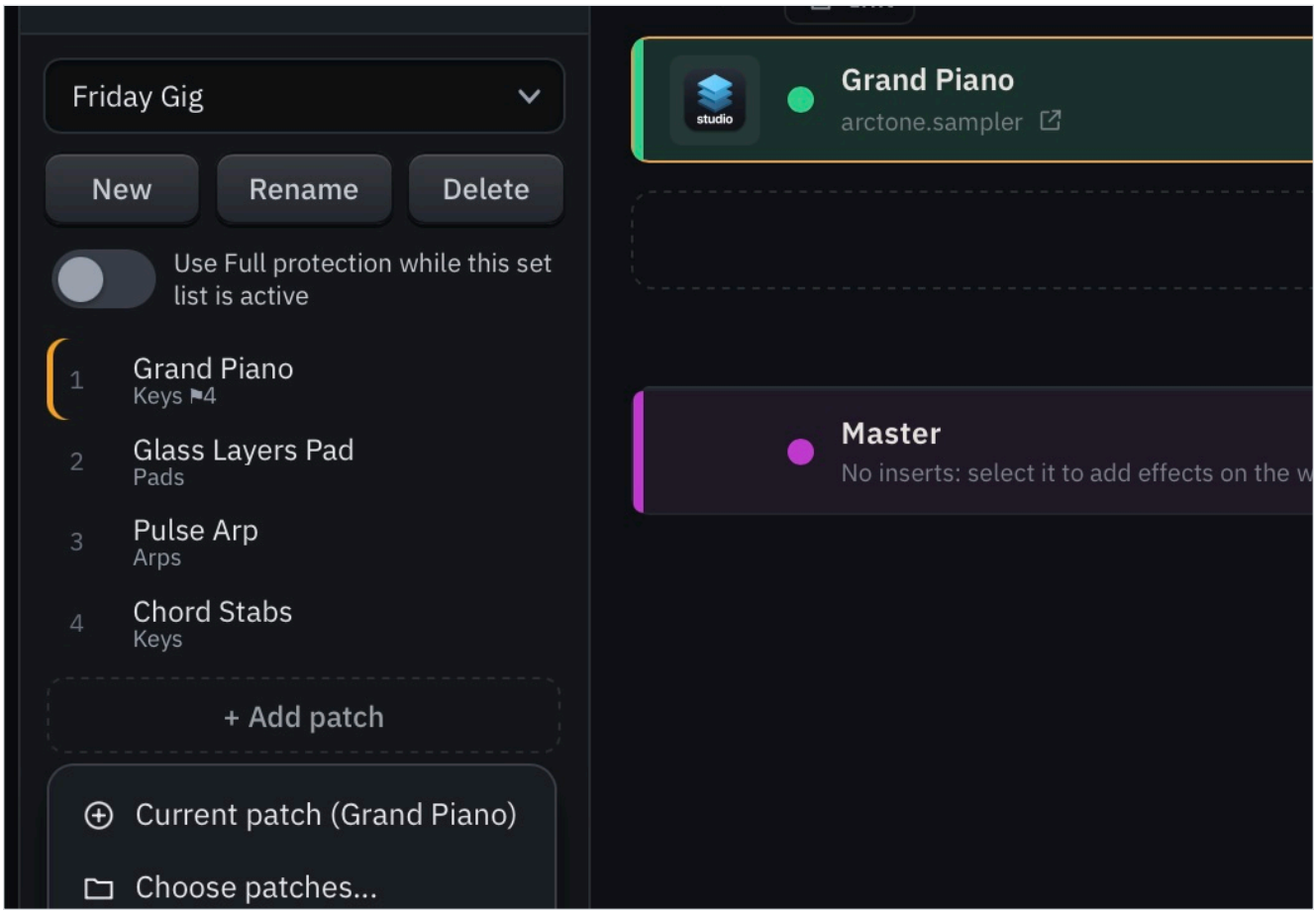
And from the Browser:

- **Drag patches** from its Sounds tab onto the Set List panel: select one or more (Cmd- or Shift-click) and drag. Drop on the list to put them where the line is, or anywhere else on the panel to add them at the end. The panel lights up while a drop is possible.
- Right-click a patch in the Sounds tab and choose **Add to set list**.

If no set list is chosen yet, adding a patch asks for a name and **starts a new set list** with it, so nothing is lost.

Remove takes the selected patch out of the list. The patch file stays in the library. The **up** and **down** arrows move the selected patch.

> NOTE **Current patch** needs the patch to be saved. An unsaved patch has no file to point to, and arctone.studio says so. See Saving a patch (p. 97).



+ Add patch, under the last song.

Changing the order

Drag a row up or down; a line shows where it will land. Or select it and press the **up** and **down** buttons, or use **Move up / Move down** in the right-click menu. Every change is saved at once.

Loading patches from the set list

- **Double-click** a row to load that patch, or right-click it > **Load**.
- **Previous / Next** at the bottom of the panel load the neighbouring patch. From the last patch, Next goes back to the first; from a patch that is not in the list, Next loads the first and Previous the last.
- The **header's Previous / Next buttons** follow the chosen set list too. Choose **Library (all patches)** to make them step through everything again.
- The **patch picker** - a click on the patch's name in the header, or **Cmd+O** - lists the chosen set list first, numbered, with the patch playing ticked: move to the one you want, or type a few letters of its name, and press Return. See Choose a patch (p. 24).
- A patch whose file cannot be found is shown in red as *missing* and is skipped by Previous / Next.

A patch is loaded exactly as if you had chosen it in the library. See The patch library (p. 100).

Where set lists are saved

Each set list is one file, `<name>.assetlist`, in `~/Documents/Arctone/arctone.studio/Library/SetLists/`. It is a small XML file that lists, for every patch, its name, category and path.

- Paths are stored **relative to the Patches folder**, so a set list keeps working when you copy your library to another machine.
- If a patch was moved or renamed, arctone.studio looks for a patch with the same name and category and updates the entry by itself. Only a patch that is really gone shows as missing.
- Files are written safely (a temporary file first), and damaged or unrelated files in the folder are ignored, never deleted.

Chapter 8

Continuous audio

Continuous audio

When you change patch on stage, the sound you were playing should not be cut off. With **continuous audio** (on by default) arctone.studio keeps the patch you leave running until its sound has finished, while the new patch is already ready to play:

- notes you are holding go on sounding, and end when you let go of the keys;
- notes held by the sustain pedal go on until you lift the pedal;
- reverb and delay tails die away naturally instead of stopping dead;
- new notes you play go to the new patch straight away.

Two patches (or more, if you switch fast) are heard together for a moment; the old one is removed quietly once it has finished, never with a click.

Turn it on or off under **Settings > Continuous Audio** (see Continuous Audio (p. 171)). A patch can also override the global setting. See Choosing per patch (p. 112). **RING** in STATUS shows how many old patches are still sounding. See RING (p. 45).

Related: What happens when you switch (p. 111), Sustain pedal and other controllers (p. 112), How long an old patch rings (p. 112), Getting the next patches ready (p. 113), Test checklist (p. 114).

What happens when you switch

At the moment you load another patch:

1. The new patch becomes the **current** patch. It is the one you see and edit.
2. The patch you left becomes an **outgoing** patch. It keeps running, with its own layers, plug-ins, master effects, macros and LFOs, but it is no longer shown.
3. **New notes** go to the current patch only.
4. A **note-off** goes to the patch that received the matching note-on, however many switches ago that was. Hold a chord, change patch, let go: the chord ends in the old patch.
5. When the outgoing patch has finished, it is removed. See How long an old patch rings (p. 112).

If you strike a key that an outgoing patch is still holding, that patch lets its note go first and the new note plays in the current patch.

Sustain pedal and other controllers

- **Sustain (CC 64)** and **sostenuto (CC 66)** always go to the current patch. They also go to an outgoing patch that has keys held or notes the pedal is holding, so lifting the pedal releases the old notes as well as the new ones.
- If the pedal is **down when you switch**, the new patch starts with the pedal down, so what you play next is sustained too.
- **Pitch bend, mod wheel, expression and other controllers** go to the current patch. Turn on **Controllers also reach the patch ringing out** to send them to outgoing patches with notes sounding as well (see Continuous Audio (p. 171)).
- **Key pressure** (polyphonic aftertouch) follows its note to the patch that is playing it.
- **All notes off** and **all sound off** go to every patch and clear all held notes.
- Macro CCs you have learned act on the current patch.

How long an old patch rings

An outgoing patch is removed when the first of these happens:

- **It is silent.** Nothing is held (no keys, no pedal) and its output has stayed below the **silence level** (-80 dBFS by default) for about a third of a second. It is then simply removed; nothing audible is lost.
- **It has rung for the longest tail time** (10 seconds by default). It is then faded out, even if a key is still held.
- **Too many patches are ringing.** Only a few outgoing patches (3 by default) may ring at once. When you switch again and again, the oldest is faded out to make room.

Fading always takes a short, fixed time (about 30 milliseconds by default): there is never a hard cut. If a patch is silent at the moment you switch, it is released at once.

All four numbers can be changed. See Continuous Audio (p. 171).

Choosing per patch

Some patches should ring out (a pad, a piano with pedal), others should stop at once (a loud lead, a drum kit). **This patch, when you switch away** in the patch's menu (the ▾ beside its name) sets it for the patch you are on:

Choice	Meaning
Follow the global setting	Ring out if continuous audio is on in Settings.
Always ring out	Ring out even when continuous audio is switched off.
Never ring out	Fade out quickly (about 30 ms) even when continuous audio is on.

The choice belongs to the patch you are **leaving**, and is saved with the patch (press Save).

Live audio input

An **Audio In** layer passes your live input (a guitar or microphone) through its effects. The new patch has its own Audio In layer, so an old patch that kept listening would double your signal. By default the outgoing patch's Audio In layers stop listening at the switch, and only their effects tails (reverb, delay) ring out. Turn off **Mute audio inputs in the patch you leave** in Settings to let them keep listening.

Macros and LFOs in the old patch

An outgoing patch keeps its macros exactly as they were when you left, and its **LFOs keep running**, so a filter sweep or a tremolo carries on smoothly while the sound decays. The macro knobs and macro CCs now belong to the new patch.

Getting the next patches ready

Creating a patch's plug-ins takes time, and a heavy instrument can take seconds. arctone.studio can build the patches you are likely to need next **in the background**, while you play, so switching to them is instant. The choices, under **Settings > Continuous Audio > Preloading**:

- **Off:** patches are loaded when you choose them.
- **The patches either side in the set list** (default): the previous and next patch of the chosen set list. See Set lists (p. 102).
- **The whole set list:** up to eight patches, nearest first.

Preloading only happens when a set list is chosen. It starts a moment after you load a patch (so paging quickly through patches does not load them all) and builds one patch at a time. A prepared patch is thrown away if its file changes on disk. Prepared patches do not use CPU, but they do use memory, and their plug-ins are loaded (some plug-ins show start-up windows or need a licence seat for each copy).

In a DAW

Inside a DAW, when the host **restores a saved session** (opens a project), the restored patch replaces everything at once: nothing rings on from before, so a project always starts clean. Switching patches from arctone.studio's own interface behaves as described above. The host's tempo and transport are followed by the current patch and by patches ringing out. Macro parameters exposed to the host belong to the current patch.

Limits and costs

- While a patch rings out, it uses CPU like a playing patch. Two heavy patches together cost roughly double. The **RING** box tells you when this is happening.
- Some plug-ins allow only one running copy, or a licence per copy. Those cannot ring out beside a new copy of themselves, or be preloaded.
- Plug-ins in the outgoing patch keep their editor closed: their windows close when you switch.

- Editing an old patch is not possible; only the current patch can be changed.

The log

Turn on **Write a log of what happens** in Settings > Continuous Audio to record every switch: which patch became current, which is ringing out (and how many notes it is holding), which faded and why, and which were released. The file is `ContinuousAudioLog.txt` in arctone.studio's app-data folder (**Show log file** opens it). Nothing is written while the setting is off.

Test checklist

Try these before a gig, with a patch that has a long release or reverb, and a second, different patch:

1. **Hold a chord** and switch patch. The chord keeps sounding; let go and it ends. The new patch plays new notes at once.
2. **Hold the sustain pedal**, play and release a chord, switch patch, keep the pedal down. The chord keeps sounding. Lift the pedal: it ends. Play a note in the new patch while the pedal is still down: it is sustained too.
3. **Long reverb tail:** play and release a note, switch patch while the reverb rings. The tail finishes naturally, with no cut.
4. **Switch quickly, ten times in a row,** with a note held. There are never more than the allowed number of patches ringing (watch **RING**), no note hangs, and everything ends when you let go.
5. **Nothing sticks:** press the panic button on your keyboard (all notes off) after the test. Silence.
6. **Turn continuous audio off** and switch: the old patch fades out within a fraction of a second, with no click.
7. **Audio input:** with a patch that has an Audio In layer, switch away: the old patch stops listening (unless you turned that off).
8. **CPU and memory:** compare **CPU** with one patch loaded and with Preloading set to **The whole set list**. Activity Monitor shows the memory of the extra patches.
9. **Change the audio buffer size** in Settings while a patch rings out: no crash, sound continues.
10. **Save a project in your DAW** with a patch ringing, and open it again: it opens clean, with the saved patch only.

Chapter 9

Built-in devices

Built-in MIDI effects

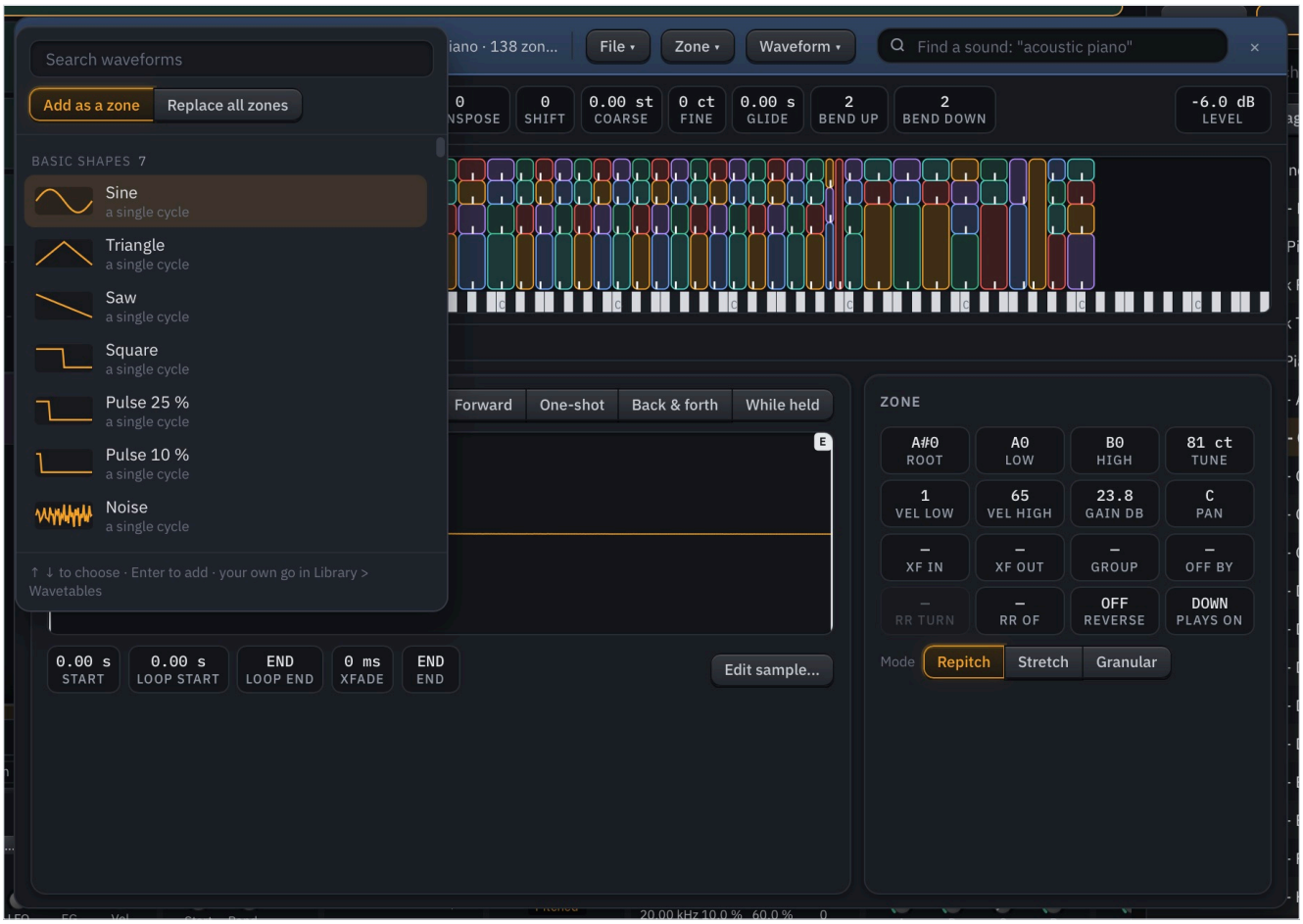
Every built-in is drawn as a device in the Device Panel (The plug-in chain (p. 69)), its controls grouped by section, with knobs you drag up and down (double-click one to reset it). Every control is a parameter: macros, modulators and the host can drive them (Assigning: what a modulator moves (p. 88)). **Show Item Help** on a device's strip explains each control (Help for a device, in place (p. 70)).

- **Arpeggiator.** A **rate** (a note value, **straight, dotted or triplet**) with **swing**; modes **Up, Down, Up/Down, Up/Down (ends twice), Random, As played, Chord** (the held notes together each step), **Converge** (outside in) and **Diverge**; **octaves** 1 to 4, walked up, down or alternately; **gate**; velocity **as played, fixed, or accent the first**; **latch**; and an eight-step **rhythm** - a step switched off is a rest.
- **Step Sequencer.** 16 steps in a grid: each step's on/off, **velocity**, **note offset**, **length** (10 % to 200 % of the gate, so a step can be a short stab or run into the next - legato) and **chance** (0 to 100 %: how likely it plays). The pattern runs **forward, in reverse, back and forth or at random**, with swing and a straight, dotted or triplet rate; **chord mode** plays every held note.
- **Chord.** Adds up to four intervals to each note - choose a chord from the list (major, minor, sus2, sus4, major 7, minor 7, dominant 7, diminished, augmented, power, octaves) or set your own - with a **strum** (milliseconds between the notes, up or down) and the added notes **quieter** if wanted.
- **NoteMate.** Sends notes to two channels: by **split point**, by **top note**, by **velocity** (hard notes to the high channel), in **turn** (round robin) or at **random** - so layers listening on different channels split one keyboard.

Built-in instruments

- **Basic Synth.** Two anti-aliased oscillators (saw, square, triangle, sine; the second an octave or two up or down and detuned), a **sub** oscillator an octave below, **noise**, **unison** (up to four voices detuned and spread across the stereo field), a state-variable filter with its own envelope, an amp envelope, an **LFO** to pitch and cutoff, velocity sensitivity, and **mono** with **glide** (seconds per octave).
- **arctone.sampler.** Any number of zones - multisamples, velocity layers, loops - from files, a folder or an SFZ, with a filter, envelopes and an LFO. See The arctone.sampler (p. 116). The patch saves the samples' *file paths*, not the audio.

The arctone.sampler



The arctone.sampler's window on its Zone tab: the settings along the top, the zones over the keyboard, the selected zone's sample and its settings.

The built-in **arctone.sampler** plays any number of **zones** - a sample with its root note, key and velocity range, gain, tune and loop - through an amp envelope, a per-voice filter with its own envelope and an LFO, with up to 128 voices. Its sound controls are on its device in the Device Panel; its samples and zones are edited in its own window, opened with the window button on the device's strip.

The window. Opening the arctone.sampler opens its window over the page: the master settings across the top as cells (drag one up or down, click a list, double-click for its default), the **zone map** (drag a zone's middle to move it, its left or right edge for its keys, its top or bottom edge for its velocities), then tabs: **Zone** (the selected zone's waveform - drag **S**, **L** and **E** to set its start, loop and end - and its settings), **Filter & amp**, **Modulation**, and **Grains** for a granular zone. Drag its title bar to move it; Esc closes it. Every drag is one undo step.

Waveform ▾ adds a waveform as a zone of its own (or in place of every zone): the basic shapes (sine, triangle, saw, square, pulses, noise), arctone.studio's wavetables, and yours from Library > Wavetables. ↑ ↓ choose, Enter adds. Its frame is chosen by **Position** (Modulation > Waveform).

Find a sound (the search box, ⌘F): say what you want - "make me an acoustic piano", "dark lush pad", "bright electric piano", "not vintage keys". It shows how it understood you (a kind of sound, qualities, what it rules out, sound words) and answers from everything on this computer: plug-in presets (by the preset map's

measurements where it has them - Search by sound (p. 148) - and by name), the arctone.sampler's instruments (SFZ, SF2, Decent Sampler files in your Samples folders and arctone.studio's Sounds), sample files and waveforms. ▶ previews; **Load on the layer** puts a preset there, **Add as a zone** or **Replace zones** puts the rest into this arctone.sampler. It works offline, inside arctone.studio.

Its presets. The title bar shows the arctone.sampler preset loaded, or **No preset**. Click the name for your saved presets, or step through them with ‹ and ›; moving to another preset replaces what's there, and Undo brings it back. **File** ▾ has **New (clear all zones)**, **Open**, **Save** and **Save as...**, then the ways to get samples in and **Export as SFZ...**. A preset recorded by dragging shows its name too, though it isn't in the list until you save it. A factory preset loaded from the Browser shows **No preset**.

Getting samples in:

- **Drag a preset from the Browser onto the arctone.sampler's window:** it records the preset note by note, set for the most accurate copy: all 88 piano keys with none repitched, 8 velocity layers, each note held until it dies away (up to 30 seconds) and its tail waited for (up to 60 seconds). That's up to 704 samples and about 7 GB, and it can take hours, so the form shows the settings first and you can ask for less. A loaded arctone.sampler's zones are replaced unless you turn that off. Notes aren't looped, so one held past the end of its recording stops; turn on **Loop sustaining notes** for a sound you hold longer.
- **Drop audio on a layer** in the main window (WAV, AIFF, FLAC, OGG, MP3, a folder of them, or an SFZ): it goes into the layer's arctone.sampler, which is loaded onto the layer if there isn't one yet. Several files at once are mapped across the keys. (A file dropped from the desktop is copied to Documents > Arctone > arctone.studio > Samples > Dropped first.) The arctone.sampler's own window takes drops too.
- **Drop a MIDI file** on a layer with no instrument (or with an arctone.sampler that has no samples), or below the layers: the arctone.sampler is loaded with the Grand Piano to play it, as the layer's MIDI clip (MIDI clips on layers (p. 78)).
- **Add samples...**: each file becomes a zone over the whole keyboard. The root note comes from the file's own metadata if a sampler wrote one, else from its name (`Piano_C4.wav`, `Grand A#3 soft.wav`, `kick_060.wav`), else middle C. A WAV with loop points loops.
- **Import a folder...**: every audio file in it becomes a zone, then **Auto-map** spreads the key ranges - each root from halfway to the previous root to halfway to the next - and files with the same root become velocity layers, split evenly in name order (`y_C4_v1.wav`, `y_C4_v2.wav`). Auto-map can be run again after you change roots.
- **Import an instrument (SFZ, SF2, Decent Sampler)...** - an SFZ: the instrument's regions become zones - sample, lokey / hikey / key, pitch_keycenter, lovel / hivel, volume (with `global_volume`, `master_volume` and `group_volume` added to it), tune, transpose, loop_mode, loop_start / loop_end, offset, end - and its amp envelope opcodes set the envelope (`amp_veltrack` sets **Vel**). Regions played when a key is let go (`trigger=release`, `release_key`) are left out: the arctone.sampler has no key-up samples, and they would sound as notes. The samples are looked for next to the file (`default_path` respected), and decoded on several threads at once.
- The SFZ import also reads **pan**, **group** / **off_by** (choke), **seq_position** / **seq_length** (round robin), **loop_crossfade**, the **xfin / xfout** key and velocity crossfades, **direction=reverse**, **loop_sustain** (loops while the key is held, plays on to the end when it goes up), **trigger=release** (release samples) and the keyswitches **sw_lokey / sw_hikey / sw_last / sw_default** (keys in the switch range choose which zones play instead of sounding).
- The same item, an SF2: a SoundFont's first preset - each zone's key and velocity range, root, loop, attenuation, tuning and pan. Its samples are written out as WAVs to Documents > Arctone > arctone.studio

> Samples > Imported > *the font's name*, so they work in any sampler.

- The same item, a .dspreset: a Decent Sampler instrument's samples (path, root, key and velocity range, start / end, loop, volume, pan, tuning), each group's volume and pan added in. Its interface is left out. **Add samples...** and drops take SFZ, SF2 and .dspreset files too, each to the right importer.
- **Slice into zones** (the zone's menu, which also has **Edit sample...**, **Make a wavetable**, **Duplicate**, **Remove** and **Auto-map**): the selected zone's file cut at its onsets (where its notes and hits start) into one-shot zones on the file itself, a key each from C1 - nothing new is written; the slices replace the zone. The audio editor's **Slice** mode does the same with markers you can move (The audio editor (p. 83)).
- **Export as SFZ...**: the zones and the amp envelope written as an SFZ, the files they play copied into a *name* Samples folder beside it - an instrument any SFZ player opens (a frozen patch too: Freeze to arctone.sampler (p. 98)).

The zone map shows every zone over the keyboard: keys across, velocity up, a tick for the root. Click a zone to select it; its settings are below: **Root**, **Key** range, **Vel** range, **Gain**, **Tune** (cents), **Loop** (Off, Forward, One-shot - the sample plays to its end whatever the key does - or Alternate, back and forth) with the **loop start** and **end** in frames. **Remove** takes the selected zone out, **Clear** all of them.

Playback: Direction (forward, or reversed from the end), **Start** (where in the sample each note starts) and **Random** (a random offset either side of it, up to anywhere in the sample - a little makes repeated hits less identical), and **Zones** when several cover the same key: all of them, round robin (one after another), or one at random.

The zone's other settings (the **Zone** row): **Pan**; **Group** and **Off by** - a zone of group G starting silences, over 5 ms, the playing zones whose Off by is G (a closed hi-hat cuts the open one; not the same key); **Seq** *n* **of** *m* - the zone plays on turn *n* of every *m* (a round robin of its own; each key counts its turns); **Loop xfade** - the last milliseconds before the loop's end blended, equal power, with the audio as far before its start, so a loop that doesn't quite match is seamless; the **XF** key and velocity crossfades - the zone fades in from the bottom of its range to *in to*, and out from *out from* to its top, so neighbouring zones blend instead of switching; **Reverse**; **On key up** - a release sample, played (as a one-shot, at the velocity the key went down with) when the key goes up, or when the pedal does.

Play mode (each zone): **Repitch** reads the sample faster or slower to change its pitch (4-point Hermite interpolation); **Stretch** keeps its speed and moves only its pitch (Signalsmith Stretch), its **Formant** kept or shifted - a voice or a drum loop played across the keyboard without chipmunks or tempo changes (it starts about 50 ms late: the stretcher's own latency); **Granular** plays it as a cloud of grains - **Size**, **Density** (grains a second), **Spray** (how irregular their timing), **Position**, **Pan** and **Pitch** (how far each grain strays at random), and **Freeze** (the grains stay where the note started instead of travelling through the sample).

Master: Polyphonic, **Mono** (one voice, each key retriggers) or **Mono legato** (one voice; a key pressed while another is held slides to it without restarting the envelopes, and letting it go returns to the key still held); **Pitched** (each key tunes the sample) or not (every key plays the sample at its own pitch - drums); **Voices** (1 to 128, 64 to start with: when they run out, the oldest released voice gives way, else the oldest); **Level**; **Shift** (picks the sample mapped lower and plays it faster for a brighter sound, or higher and slower for a darker one, without changing the pitch of the key); **Transpose** (the key, in semitones, both which zone and the pitch); **Coarse** (semitones) and **Fine** (cents) tuning; **Glide** (seconds per octave, mono legato).

Amplitude envelope: Attack, Decay, Sustain, Release and **Vel** (how much velocity sets the level: 0 = every note the same).

Filter (per voice): the type - Off, Low-pass, High-pass, Band-pass, Notch - and the **slope**, 12 to 48 dB per octave (one to four stages); **Cutoff**, **Res**, **Gain** (turn it down with high resonance, up when a high-pass is too quiet), **Vel** (velocity to cutoff: harder notes brighter to the right, darker to the left) and **Key trk** (the cutoff follows the key: 100 % tracks exactly). **Filter envelope: Env amt** (how far it opens the filter, or closes it when negative), its own Attack, Decay, Sustain, Release, and **Vel** (velocity to the envelope's depth).

LFO: one for the instrument, started by the first note after all keys are up, or locked **to the bar** when synced (then **Phase** is the offset from beat 1). Sync **Hertz** (**Rate** in Hz), or **Notes**, **Dotted** or **Triplet** (a note value, with the tempo). Shapes: Sine, Triangle, Square, Saw up, Saw down, S/Hold (stepped random), Random (smoothed), or **Custom** - drag the points of the curve display to draw it. **Bi** swings both ways, **Uni** stays above zero. **Phase** sets where it starts (all the way up: at random). **1 shot** plays one cycle and stops. **Amp**, **Pitch** (cents) and **Cutoff** are its depths.

Pitch bend: its range **down** and **up** separately (0 to 48 semitones) and **Lag** (smoothing of the wheel). **Mod wheel** (CC 1): to **Pitch**, to **Cutoff**, to the LFO's pitch depth (**LFO-P**) and cutoff depth (**LFO-C**), with **Lag**; each is bidirectional, centre is no effect.

LFO 2 is one per voice, started with each note: the same shapes and sync, to amp, pitch, cutoff, the waveform's position and the grain position. The **Mod envelope** (attack, hold, decay, sustain, release) goes to pitch (semitones), cutoff and the grain position. **Expression:** channel pressure and poly aftertouch add to the mod wheel for their notes (the wheel's depths apply); CC 74 (MPE slide) moves the cutoff up to two octaves either way, as far as **Slide>Cut** says; the sostenuto pedal (CC 66) holds just the notes down when it went down. **Character** (in Master): **Clean**, **Vintage 12-bit** (each voice through a 26 kHz, 12-bit converter and its 11 kHz filter) or **Drive** (a soft saturation). A stolen voice fades out over 3 ms instead of stopping dead, and a note starting part way into its sample gets at least a 1 ms attack, so neither clicks.

All of these are parameters, so macros, MIDI learn and the host can drive them (Assigning: what a modulator moves (p. 88)). The sustain pedal holds notes; all-notes-off lets them go. A patch saves each zone's **file path** and settings, not the audio: a patch moved to another computer needs the samples at the same paths (a backup doesn't carry them either, see Backup and Reset (p. 198)). Samples in arctone.studio's own Sounds folder are the exception: they are found again by their place in it, wherever it is installed.

Memory. Each sample file is read into memory once for the whole program: every arctone.sampler that plays it - on a layer, in a set list's preloaded patch, a preset preview, the Files tab's MIDI files, each copy of the plug-in in a DAW - shares that one copy, and it is let go of a few seconds after the last of them. 16-bit files are kept as 16-bit, half the memory of the floating-point copy a sampler usually keeps, with nothing lost. Settings > Presets shows how much the samples take (Presets (p. 175)). **Streaming:** a sample longer than the **Sample preload** (Settings > Presets > arctone.sampler, 1 second to start with, 0.2 to 10) and bigger than 8 MB keeps only its first seconds in memory; the rest is read from disk while it plays, a little ahead. **All in RAM** keeps every sample whole. The change applies to samples loaded after it.

Make a wavetable (the zone's menu) makes a wavetable of the selected zone: its cycles taken from the sustain, found near the root note's pitch, up to 256 of them as frames; the zone keeps the sample too, and **Play the wavetable** switches between them. Needs a steady, pitched part.

The Grand Piano. arctone.studio comes with a sampled grand piano: **Grand Piano "K" from VCSL Keys by Versilian Studios**, in the public domain (CC0 1.0) - the whole keyboard, A0 to C8, in up to four velocity layers, each note kept to its first 8 seconds with a fade. It is the arctone.sampler's factory preset **Grand Piano** (in the Browser under arctone.sampler > Factory) and the factory patch **Grand Piano** (Keys: the arctone.sampler, a Reverb, and the macros **Room** and **Release**) - the patch the standalone app opens with when it has no

session to go back to (a new installation, or the first start after Initialize), so there is sound at once; saving it keeps your own copy, and **New patch** (Cmd+N) is still "Init", with OB-Xf (New patch (p. 99)). The piano is also the sound the Files tab plays MIDI files on (The Files tab (p. 142)), and what plays a MIDI file dropped on a layer with no instrument (MIDI clips on layers (p. 78)); when it isn't installed, the Basic Synth's Soft keys plays those instead. Its samples are in arctone.studio's own Sounds folder (see Where your files live (p. 16)), with its licence and where it came from; they take about 170 MB of memory while something plays them. The preset and the patch are written again at the next start if they have gone (after Initialize, say). One envelope serves every key, so the top octaves' long natural release is cut to the preset's 0.4 s; turn up **Release** for more.



The Filter & amp tab: the filter, the amp envelope and the filter envelope.



The Modulation tab.

Built-in effects

- **Reverb.** Room size, damping, width, **pre-delay** (up to 200 ms), the wet signal cut **below** and **above**, wet and dry levels, and **freeze** (the room holds its sound).
- **Delay.** Free (ms) or synced to the tempo (a note value, **straight, dotted or triplet**), **ping-pong**, feedback and mix, the repeats cut **above** and **below**, and **modulation** (rate and depth, for a tape-like wobble).
- **Filter.** Low-pass, high-pass, band-pass or **notch**, **12 or 24 dB** per octave, cutoff and resonance, **drive** (saturation before the filter), an **LFO** on the cutoff (rate, depth in octaves), an **envelope follower** (the cutoff opens with the level: auto-wah) and mix.
- **Chorus. Chorus, flanger or ensemble** (two choruses together): rate, depth, centre delay, feedback, stereo **width** and mix.
- **Compressor.** Threshold, ratio, **knee** (soft or hard), attack, release, makeup or **auto makeup**, a **mix** for parallel compression, a **sidechain low cut** (so the bass doesn't drive it), and a **gain reduction meter** in its window.
- **EQ.** Four bands - a **low shelf**, a **low** and a **high peak**, a **high shelf** - each its frequency, gain (up to 24 dB either way) and Q, and an output gain.
- **Utility.** Gain, pan, stereo width, **invert** either side, **mono**, **swap** left and right, **remove DC**, and **mute**.

Chapter 10

Plug-ins and the browser

Scanning for plug-ins

arctone.studio finds VST3, Audio Unit and VST2 plug-ins by scanning (VST2: see VST2 plug-ins (p. 123)). The list appears at once from the last scan, and only new or changed plug-ins are checked.

The first scan starts by itself. A new installation of the standalone app, or one reset together with its plug-in list (Backup and Reset (p. 198)), scans for plug-ins at its first start, with a card in the middle of the window showing how far it has got (Getting started (p. 10)); nothing is asked first, and the window keeps working. In a DAW nothing scans by itself: click **Scan** in the Plug-in Manager or Settings > Plug-ins, or **Scan now** in the Getting started panel. Once you have scanned, each start checks for plug-ins installed since. A rescan shows its progress on every page, whichever tab or page is showing.

- **+ Folder** adds an extra scan folder. **Clear Paths** removes them.
- **Rescan All** ignores what is known and probes every plug-in again, including ones that failed before.
- In the standalone app each plug-in is probed in a **separate worker process**, several at once and every format in parallel. A plug-in that crashes is blacklisted; one that hangs is given up on after the timeout (60 seconds by default). Neither can take arctone.studio down.
- Inside a DAW plug-ins are probed in the same process, one at a time, protected by a "dead man's pedal" file.
- **iLok licence windows:** a plug-in protected by iLok (PACE) whose licence is missing, has expired (a lapsed subscription, say) or needs activating opens an iLok licence window and waits for an answer. Other alerts a plug-in raises while it is scanned ("License Error - ...", "Fatal Error - ...") are not shown either. During a scan arctone.studio closes that window within a second, puts the plug-in on the block list, writes `NEEDS iLOK LICENCE` for it in the scan log and moves on, instead of leaving the window up and waiting for the time limit. After renewing or activating the licence, **Rescan all** looks at it again. (macOS; on Windows the time limit still applies.) See iLok licence windows during scans (p. 123).
- Each scan writes `ScanLog.txt` to `~/Library/Application Support/Arctone/arctone.studio/`.

Scanning options (workers per format, the give-up time) are in Settings > Plug-ins. See Plug-ins (p. 173).

Plug-ins that come with arctone.studio. arctone.studio installs **OB-Xf**, a free Oberheim-style synthesizer by the Surge Synth Team, in a plug-in folder of its own: `/Library/Application Support/Arctone/arctone.studio/Plug-Ins` on a Mac, `C:\Program Files\Arctone\arctone.studio\Plug-Ins` on Windows. Only arctone.studio looks there, so your DAW's own plug-in list doesn't change. Its tooltip in the Browser says it comes with arctone.studio. OB-Xf is free software under the GNU General Public License 3.0; its licence and where to get its source code are next to it in that folder, and at github.com/surge-synthesizer/OB-Xf.

Gig mode stops a scan. Turn on gig mode (Gig mode (p. 95)) - or full plug-in protection (Plug-in protection and crash recovery (p. 195)) - partway through a scan and it stops; the plug-ins it has already looked at are kept, and the Browser offers **Resume** once gig mode is off again, carrying on from there. A new installation never starts scanning by itself while gig mode is on.

iLok licence windows during scans

Plug-ins protected by iLok check their licence when they are opened. If the licence is missing, has expired or needs activating, iLok's own program (**Software Activation**, part of PACE's `PACEEdenExperience`) shows a window and the plug-in waits for it. That program runs on its own, so the window used to stay on screen after the scan had moved on, one per plug-in.

Now arctone.studio's plug-in scan and the Plug-in Manager's scans watch for these windows while they have a plug-in open. When one appears for the plug-in being looked at, it is closed straight away and the plug-in is put on the block list, with the reason in `ScanLog.txt`. Only windows opened for arctone.studio's own scanning are closed: an iLok window for another program, or iLok's background service, is never touched, and loading a plug-in onto a layer yourself is not watched, so you can still activate it there.

When the licence is sorted out, use **Rescan all (clears failures)** in Settings > Plug-ins to bring the plug-in back.

VST2 plug-ins

arctone.studio also hosts **VST2** plug-ins: the older format many plug-ins still come in, and some come only in. They are scanned with the others, shown in the Browser with a teal **VST2** tag, and load onto layers like any other plug-in. They play, open their own window, follow arctone.studio's tempo and transport, and are saved with your patches.

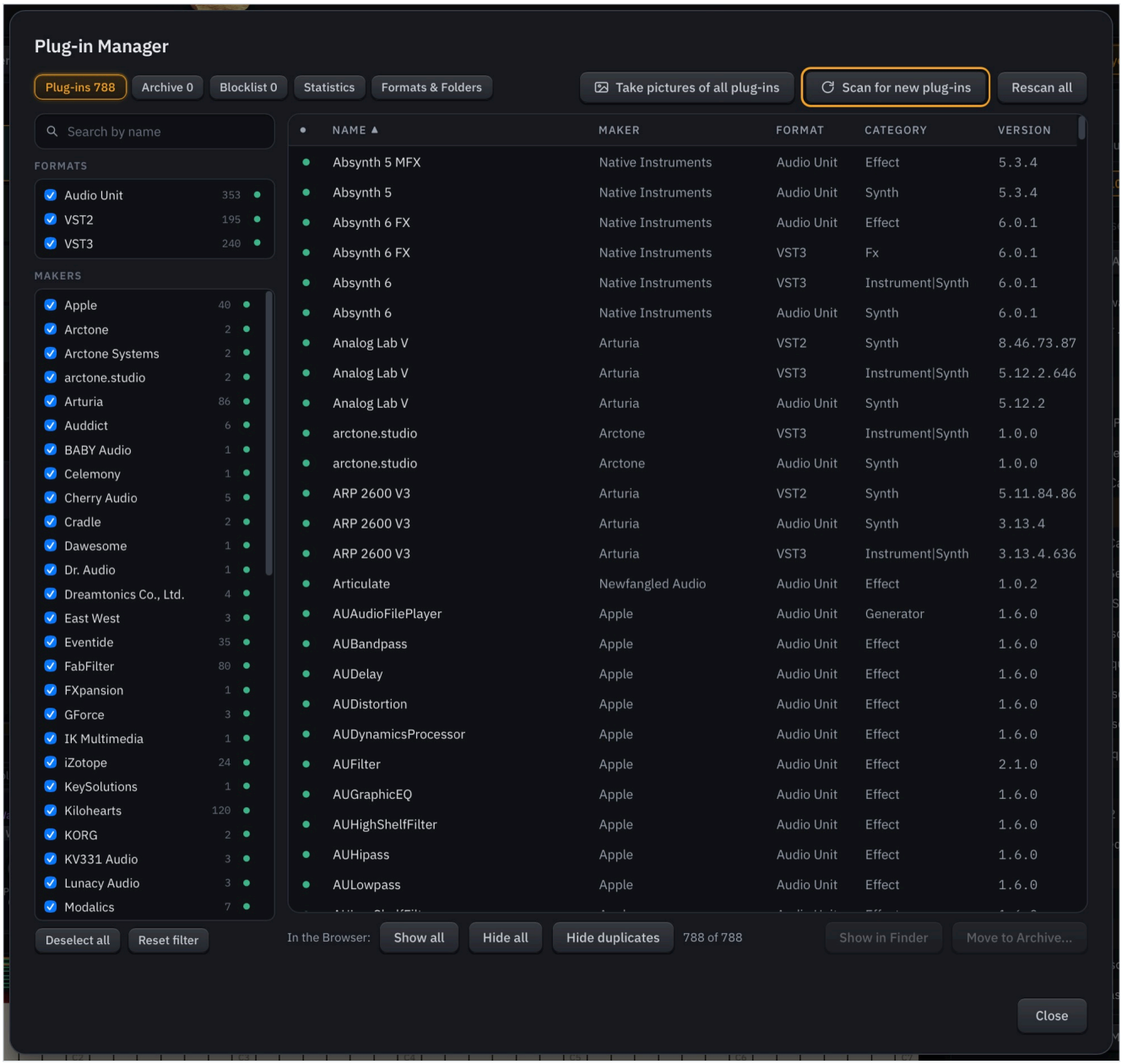
- **Every VST2 plug-in found is listed**, including VST2 copies of plug-ins you also have as VST3 or Audio Unit. To keep just one format of each, use **Hide Duplicates** in the Plug-in Manager (The Plug-in Manager (p. 124)). VST2 comes last in its format priority unless you move it up.
- **Where they are looked for:** on a Mac, `~/Library/Audio/Plug-Ins/VST` and `/Library/Audio/Plug-Ins/VST`. On Windows, `C:\Program Files\Common Files\VST2`, `Common Files\Steinberg\VST2`, `C:\Program Files\Steinberg\VstPlugins`, `C:\Program Files\VstPlugins`, and the folder set in the registry as `VSTPluginsPath`. Add others under **Extra folders to scan** in Settings > Plug-ins.
- **Turning them off: Settings > Plug-ins > VST2 plug-ins** (Plug-ins (p. 173)). They leave the Browser until you turn them on again, which scans for them.
- **Presets:** a VST2 plug-in's own programs are its factory presets. Its `.fxp`, `.fxb` and NKS presets come in through arctone.PresetImporter and load straight into it when it has no VST3 or Audio Unit version; otherwise they are listed with that version (VST2 presets: NKS, .fxp and .fxb (p. 159)).
- **Apple Silicon Macs:** arctone.studio runs natively, so it can open only VST2 plug-ins built for Apple Silicon (most current ones are). Older Intel-only VST2 plug-ins fail the scan and go on the blocklist.
- **iLok:** VST2 plug-ins protected by iLok are treated like those in other formats (iLok licence windows during scans (p. 123)).

How it works: Steinberg no longer licenses its VST2 developer kit. So arctone.studio talks to VST2 plug-ins through **vst2sdk**, an independent "clean-room" description of the VST2 interface by Xaymar (BSD licence, see Third-party notices (p. 203)). Testing with real plug-ins found two places where vst2sdk was wrong or incomplete, and arctone.studio corrects them:

- how a list of MIDI notes is laid out;
- the tempo and transport information plug-ins ask for while they play.

VST is a trademark of Steinberg Media Technologies GmbH.

The Plug-in Manager



The Plug-in Manager on its Plug-ins tab: the filter by format and maker at the left, the list, and what is shown in the Browser.

Opened with the **Plug-in Manager** button in the View bar (switch it on with **Show > Plug-in Manager button**), **Plug-in Manager...** in the ⋯ of the Browser's title bar, or Settings > Plug-ins > **Manage plug-ins...**. It opens over the window, with **Close** at its foot. Along its top are its tabs - **Plug-ins**, **Archive**, **Blocklist** (each with its count), **Statistics** and **Formats & Folders** - and three buttons: **Take pictures of all plug-ins** (Thumbnails and the gallery (p. 154)); **Scan for new plug-ins**, which picks up plug-ins installed (or changed) since the last scan - no need to restart; and **Rescan all**, which looks inside every plug-in again.

Plug-ins - the filters on the left, the table on the right:

- **Search** by name. Tick or untick **formats** and **makers** to filter the table; **Deselect all** unticks them all (then tick the ones you want), **Reset filter** ticks them all again.
- The **dot** beside a format or maker hides all of its plug-ins from the Browser at once (or shows them again).
- The table has each plug-in's **Name**, **Maker**, **Format**, **Category** and **Version**. Its **dot** is green when it shows in the Browser: click it to hide or show it. Click a column heading to sort (the dot's column too).
- Under the table, **In the Browser: Show all** and **Hide all** do that for every plug-in in the table (as filtered), with how many of how many are listed. **Hide duplicates**: a plug-in that comes as more than one format shows only the format first in the format priority (see Formats).
- **Show in Finder** (Audio Units have no file: the system identifies them) and **Move to Archive...** act on the plug-ins selected: an archived plug-in is taken out of the scan and listed on the **Archive** tab, to put back from there (its folder is chosen in Settings > Plug-ins > Plug-in Archive). Select with a click, Shift-click for a range, Cmd-click for more.

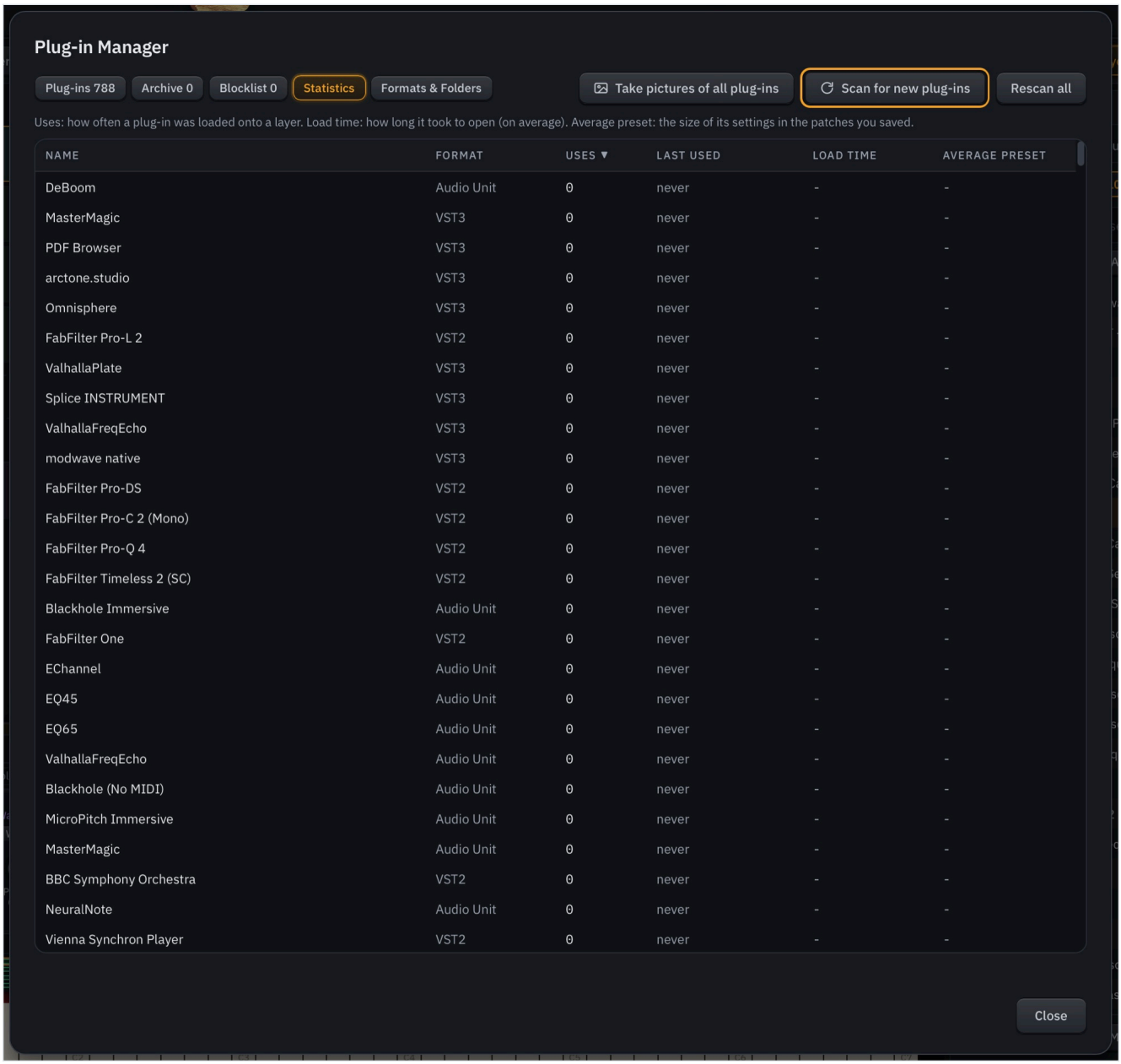
Statistics: for each plug-in, how often it was loaded onto a layer (**Uses**), when it was **last used**, how long it takes to open (**Load time**, on average) and the **average preset** size (its settings in the patches you saved). Click a heading to sort.

Blocklist: plug-ins that failed the scan - their files missing, waiting for activation, crashing or hanging when opened. Later scans skip them. Select one and press **Delete** (or **Remove from blocklist**, or its **Try again**) for the next scan to try it again; **Reset Blocklist** does that for all of them.

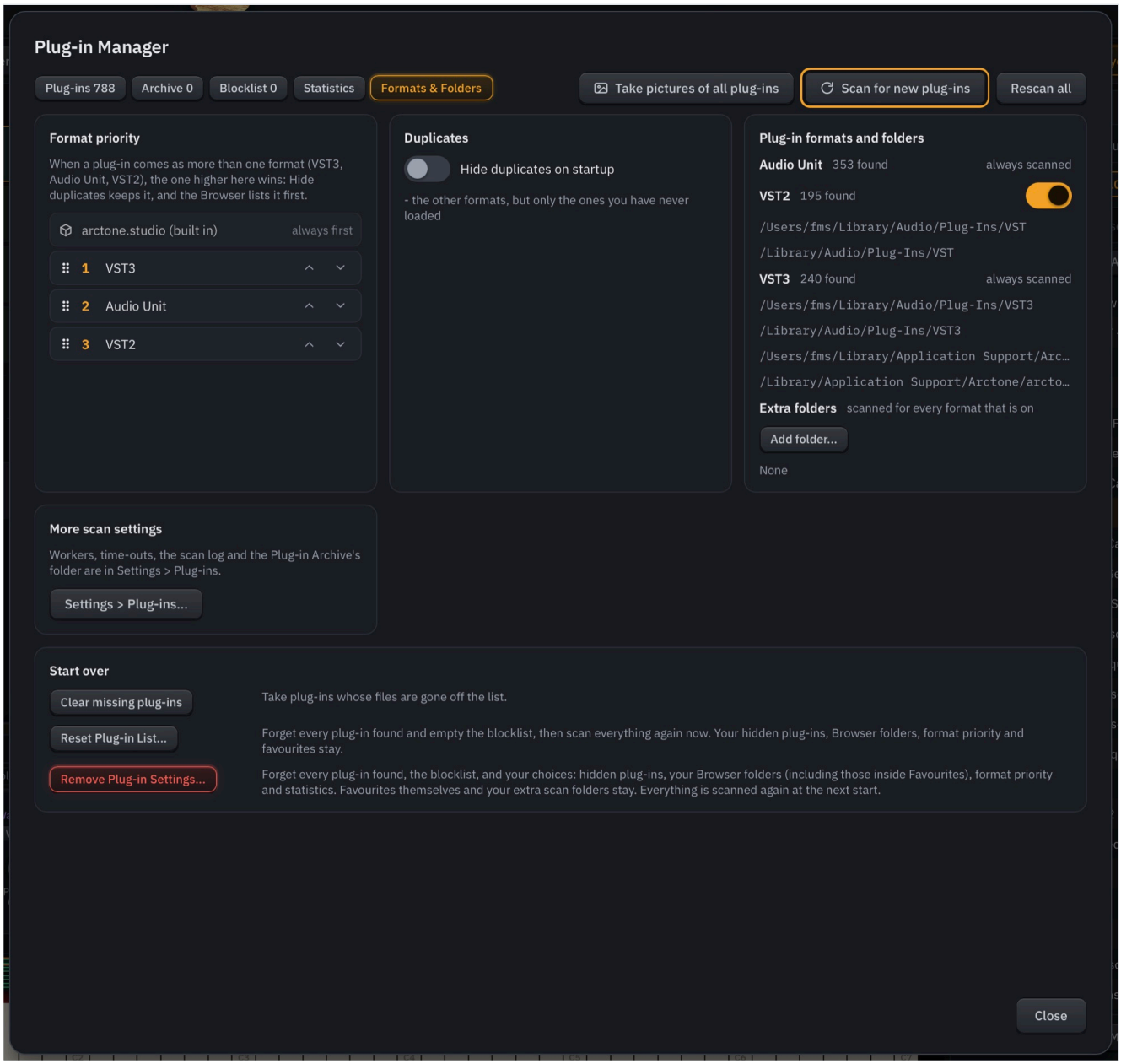
Formats & Folders:

- **Format priority**: which format wins when a plug-in comes as more than one (VST3, Audio Unit, VST2 - VST2 last unless you move it). Drag a format up or down (or use its arrows). arctone.studio's own devices always come first. Hide Duplicates keeps the winner, and the Browser lists it first.
- **Hide duplicates on startup**: at each start, the other formats of a plug-in are hidden - but only the ones you have never loaded.
- **Plug-in formats and folders**: each format with how many plug-ins were found and the folders scanned for it - Audio Unit and VST3 are always scanned, VST2 has a switch - and **Extra folders**, scanned for every format that is on, with **Add folder...**.
- **More scan settings**: **Settings > Plug-ins...** opens that page, for the workers, the time-outs, the scan log and the Plug-in Archive's folder.
- **Start over**: **Clear missing plug-ins** takes plug-ins whose files are gone off the list; **Reset Plug-in List...** forgets every plug-in found and empties the blocklist, then scans every plug-in again straight away (your hidden plug-ins, folders, format priority and favourites stay); **Remove Plug-in Settings...** forgets every plug-in found, the blocklist and the manager's choices (hidden plug-ins, folders, format priority, statistics - your favourites and extra scan folders stay), and arctone.studio scans every plug-in again the next time it starts.

Scans are as safe as ever: in the standalone app every plug-in is opened in a separate worker process, so one that crashes takes down only its worker and is listed on the blocklist. In the classic interface the Plug-in Manager is the older window with an **Options...** menu. See Scanning for plug-ins (p. 122).



The Statistics tab.



The Formats & Folders tab: format priority, duplicates, the folders scanned, and Start over.

The Browser



The Browser on its Sounds tab: Library, the All / Patches / Presets counts, the search box, Category, Tags, Author, favourites, View and Refresh, the list, and Load, Hear and More.

The Browser is one panel for finding sounds and plug-ins and dropping them onto layers. It sits on the right of the window, under its button (with **Lock the window layout** off in Settings > Interface, its title bar drags it to the left), and the View bar's **Browser** button shows or hides it. Drag the line beside it to make it wider, or all the way to the edge to hide it (Docking and floating panels (p. 155)).

Its tabs run along the top:

- **Sounds**: your patches, and every instrument's presets, with a search, filters, **Load**, **Hear** and **More**. See The Sounds tab (p. 133). **F8** opens it.
- **Instruments**: every instrument plug-in, to drag onto layers. See The Instruments tab (p. 130). **F6** opens it.
- **Effects**: every audio effect - the plug-ins, and behind its **Plug-ins | Presets** switch their presets. See The Effects tab (p. 137). **F7** opens it.
- **Files**: your recordings and preset files, to hear and to drag out. See The Files tab (p. 142). **F9** opens it.

The ⋯ menu in the Browser's title bar is the same on every tab. **Folders**: **Add a preset folder...** (Where presets are kept (p. 157)), **Show presets folder** and **Show user patches folder**. **Plug-ins**: **Plug-in Manager...** (The Plug-in Manager (p. 124)), where **Scan for new plug-ins** and **Take pictures of all plug-ins** (Thumbnails and the gallery (p. 154)) are. The Preset Importer has its button on the toolbar (arctone.PresetImporter (p. 160)), and the Sounds tab's ↻ after View reads the presets on disk again, so new imports show up. **Panel**: **Detach into its own window**, **Dock left** / **Dock right** (with the window layout unlocked) and **Reset panel layout**. There is no Home tab any more (Where the Home tab's controls went (p. 154)).

In the standalone app the Browser can also have a **window of its own**: see The Browser in its own window (p. 129). Keys (standalone app): **F5** shows or hides the Browser, **F6** the Instruments tab, **F7** the Effects tab (on its plug-ins), **F8** the Sounds tab, **F9** the Files tab. They can be changed: Key Commands (p. 192).

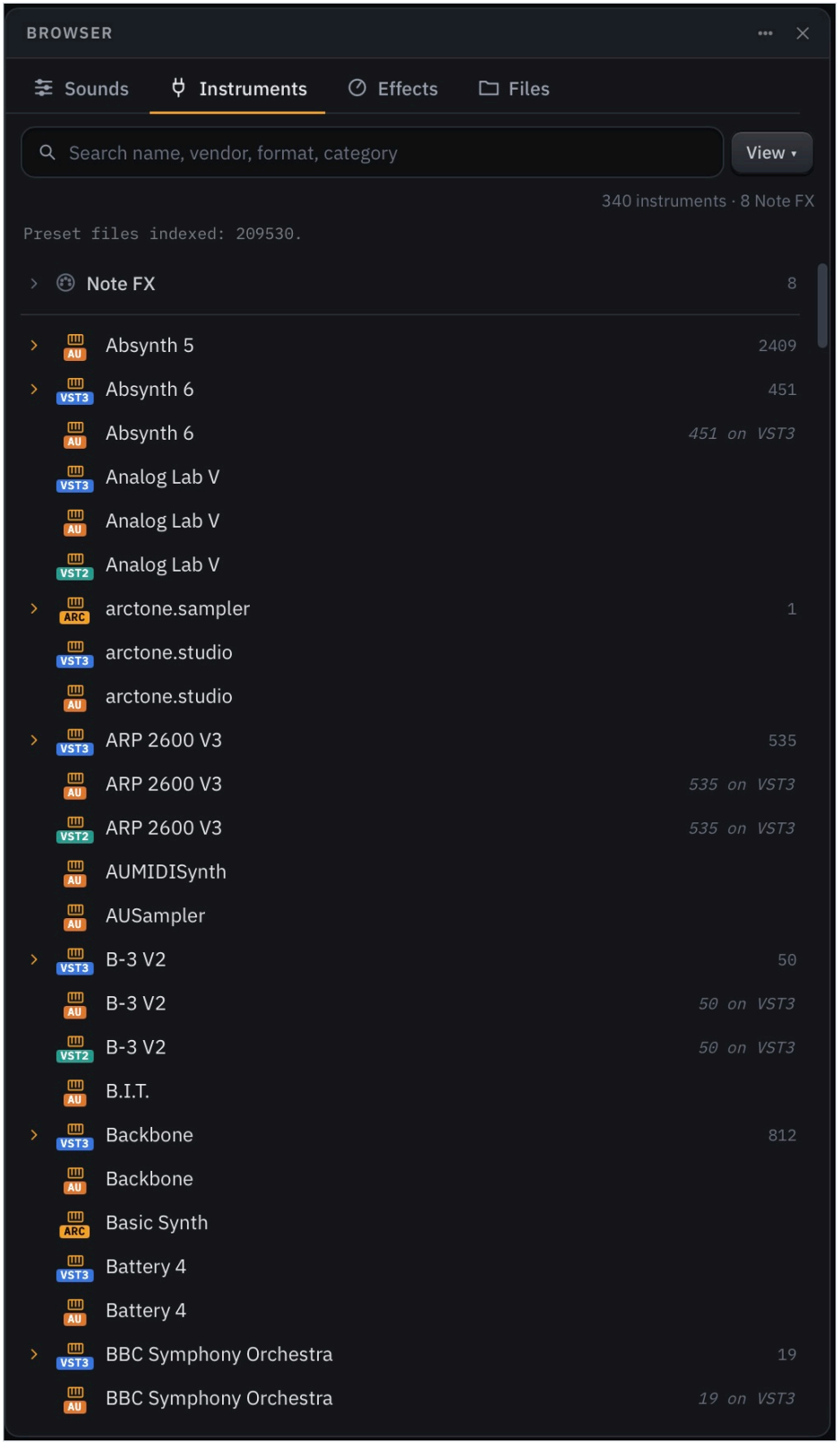
The Browser in its own window

In the standalone app, the Browser's panel menu (the **...** in its title bar) offers **Detach into its own window**: the Browser moves into a window you can put anywhere - on a second screen, say - and size as you like; arctone.studio remembers where it was and how big, and opens it again the next time it starts.

Everything works there as in the main window: the tabs, dragging plug-ins and presets onto layers in the main window, double-clicking to load onto the layer selected there. The View bar's **Browser** button (and **F5**) shows or hides the window; **F6** - **F9** bring it to the front at that tab. Closing the window hides the Browser; **Dock in the main window** at its top puts it back on the side of the main window. The Files tab's playhead keys work there too, with the keys of the set in use (The Files tab (p. 142)), and a right-click menu's **Keyboard shortcuts...** opens Settings > Key Commands in the main window. **Cmd+P** (Ctrl+P) opens the command palette in the main window, and brings it to the front (The command palette (p. 26)); **Cmd+O** (Ctrl+O) does the same with the patch picker (Choose a patch (p. 24)). The interface size's keys (**Cmd+=**, **Cmd+-**, **Cmd+Option+0**) work there as well, and every window follows (Interface size (p. 42)).

Inside a DAW, arctone.studio's Browser stays in its window (many hosts handle a plug-in's extra windows poorly): fold it out of the way by dragging its line to the edge (Docking and floating panels (p. 155)). The F-keys are the standalone app's only: in a host, the DAW keeps its own.

The Instruments tab



The Instruments tab.

The **Instruments** tab lists every instrument plug-in, and the **Effects** tab, on its **Plug-ins**, every audio effect in the same way (The Effects tab (p. 137)). Each keeps its own grouping, its place in the list and the folders you opened, so you can go back and forth.

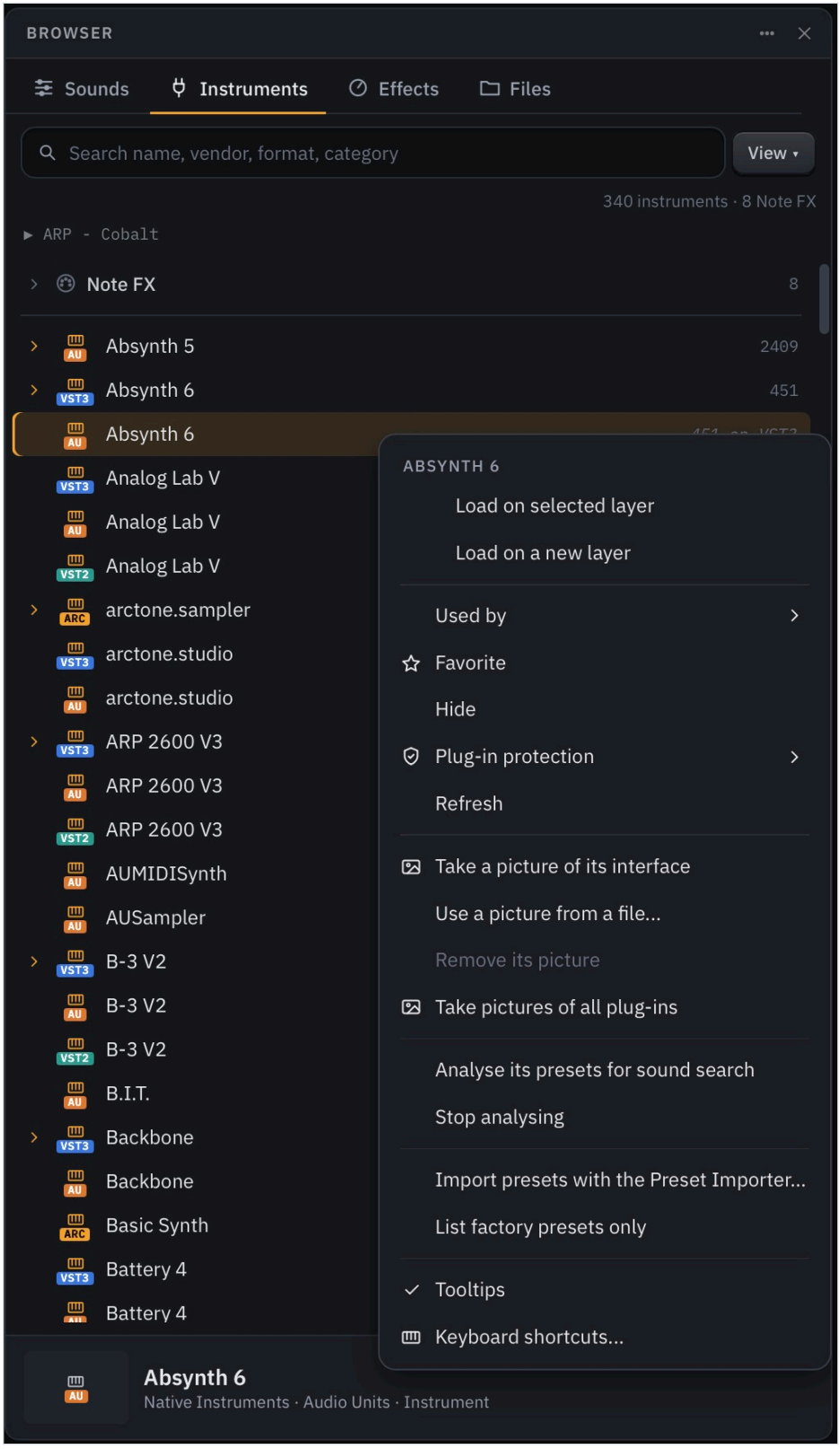
- In **Instruments**, folders sit at the top: **Note FX** (MIDI effects: arctone.studio's Arpeggiator, Chord and the rest, and MIDI-effect plug-ins), **Favorites** and **Recent**, then a line, then the instruments.
- In **Effects**: **Favorites** and **Recent**, a line, then every audio effect.

At the head: the search (Searching the Browser (p. 152)) and **View** ▾ - how the list is grouped (Sorting the Browser (p. 152)), a **List** or the **Gallery**, **Pictures** (Thumbnails and the gallery (p. 154)), and the **Manage view** (The Manage view (p. 148)). Under it, how many plug-ins there are, and the scan's progress while one runs. The scan and the Plug-in Manager are in the Browser's ⋯ menu (The Browser (p. 128)).

See Favorites, Recent and hiding plug-ins (p. 145) for favourites, Recent and hiding plug-ins.

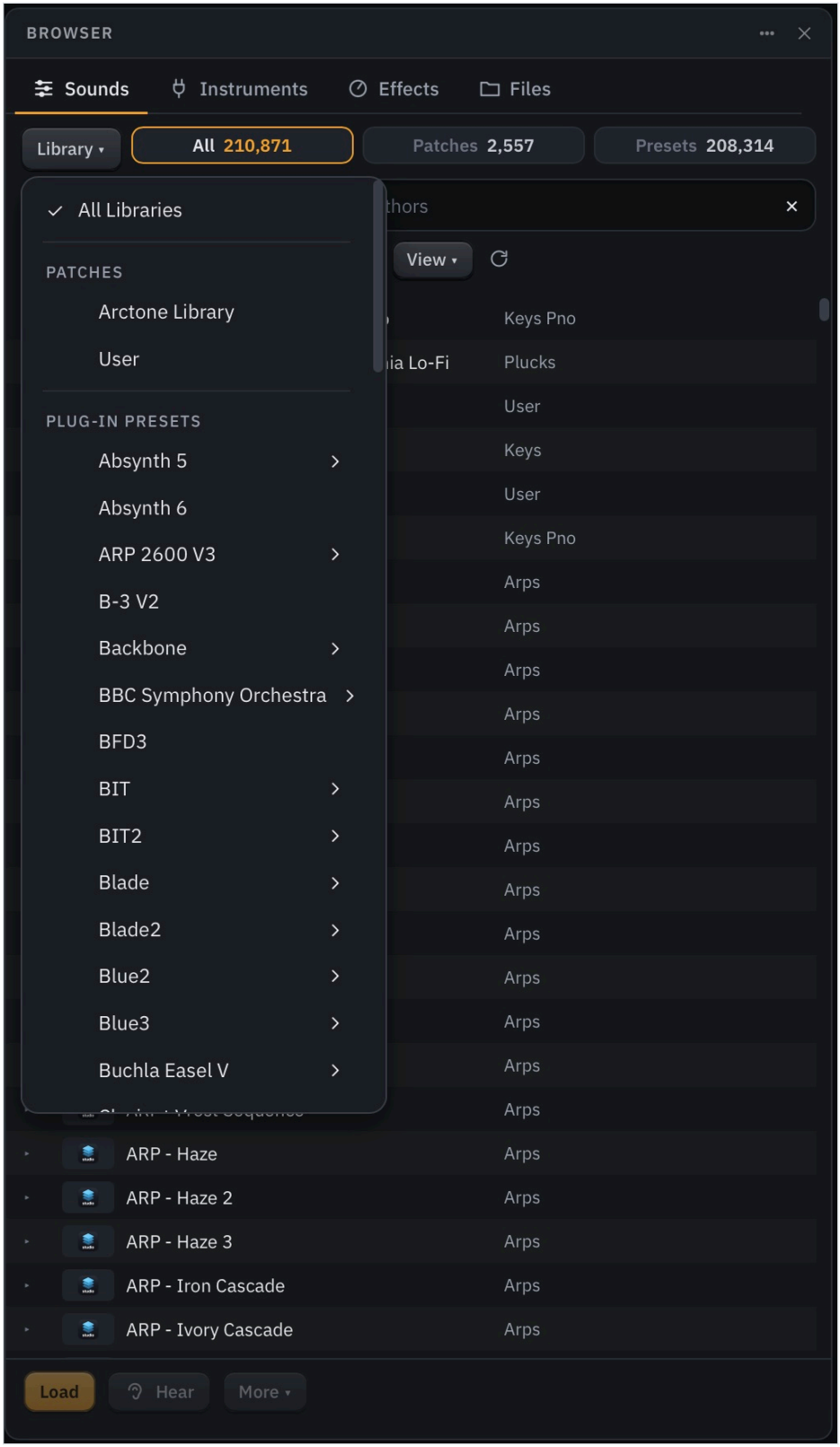
Each plug-in shows what it is (a keyboard for an instrument, sliders for an effect, a MIDI socket for a Note FX) over a coloured tag with its format: **VST3** (blue), **AU** (orange), **VST2** (teal, VST2 plug-ins (p. 123)) or **ARC** (arctone.studio's own, built in). A plug-in that has presets has an arrow and a count: click the arrow to see them, grouped by folder; click a preset to hear it, double-click it to load it, drag it onto a layer.

Click a plug-in to see it at the foot of the list (its picture, maker, format and kind); **double-click** loads it on the selected layer; **drag** it onto a layer, onto a slot, or into the empty space under the layers for a new layer (Loading plug-ins onto layers (p. 155)). Right-click for its menu: load it, give it a picture, import, capture or record its presets (Capturing presets (p. 158)). Drop one of a layer's plug-ins on its own entry (or one of its preset folders) to save what it is set to as a preset (Saving a preset by dragging (p. 157)).



An instrument's right-click menu.

The Sounds tab



The Library menu: all libraries, the patches, then each plug-in's presets.

The **Sounds** tab finds a sound among your patches and every instrument's presets. At its head:

- **Library** ▾ (beside the All / Patches / Presets switch) and **the search**: every patch and preset, or one library's - one of your patch libraries, or one plug-in's presets (and, where they came from several places, one library of them).
- **Category** ▾, **Tags** ▾, **Author** ▾ and ★. Category, Tags and Author each open their values over the list (the list keeps its height), with how many sounds each has; tick as many as you like - values in one filter combine with **or**, the filters with **and** - and it stays open while you do (a click outside or **Esc** closes it, **Clear** unticks them). Each button shows what it is set to (the value, or "Category · 3" for several) and is lit while it filters. **Tags** choose user patches (The tag filter (p. 138)); ★ shows only the favourites (Favorites, Recent and hiding plug-ins (p. 145)).
- **View** ▾: **Sort by** Preset, Plug-in, Author, Folder or Source (and **Descending**), **Show as** a **List** or a **Grid**, and **Pictures** (Thumbnails and the gallery (p. 154)).
- Under them, how many patches and presets are showing - and, at its left while anything filters, **Clear filters**: the search, the library, Category, Tags, Author, ★ and a sound search cleared in one click.

Your patches (whole arctone.studio setups: the layers and their plug-ins) come first, your own before the Arctone Library's, then the presets. The patch playing is in amber.

The search finds patches by name, category, tags, notes and author, and presets by the preset's name and folder and by the plug-in's name, vendor, category and format. Several words all have to match, in any order - **analog bass** finds the same as **bass analog** - and the best matches come first: a preset whose name is what you typed, then names that start with a word, then the rest. A search that finds more than 300 presets shows the best 300 and says how many there are: add a word to narrow them down. Type ~ and some words to search by sound (Search by sound (p. 148)). **Esc** clears it.

Loading:

- **Double-click** a patch (or select it and press Return, or **Load**) to load it. If the patch playing has changes that aren't saved, arctone.studio asks first.
- Drag a patch **into the empty space under the layers** to add its layers to the patch playing, or **onto the patch name** in the header to load it (asking first, as above). Drag patches onto the **set list** to add them.
- **Click** a preset to hear it; **double-click** (or Return, or **Load**) loads it on the selected layer - into that plug-in, if the layer has it already. Drag a preset onto a layer, onto a slot, or into the empty space for a new layer with that plug-in set to that preset. ↑ and ↓ move through the presets, hearing each.
- **Hear first:** the ▶ on a row (shown under the mouse), **Hear** at the foot, or **Space** plays a patch's short preview without loading it, or a preset's; with **Preview presets and patches when clicked** on in Settings > Presets (as it is to start with) a click plays it too. **Esc** stops a patch's preview. See Hear a patch before loading it (p. 100).

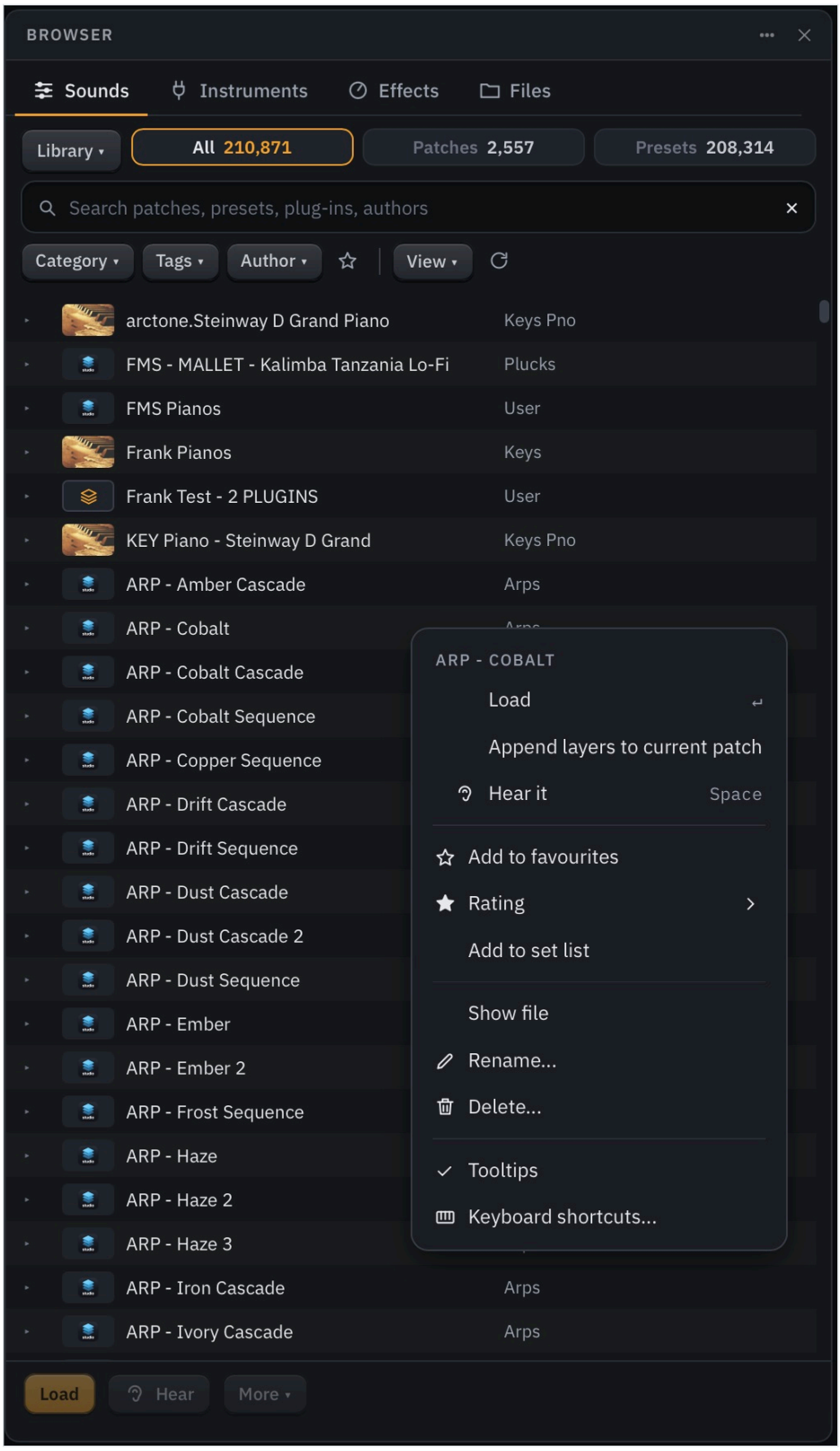
At the foot: Load, **Hear**, **More** ▾ - everything else for the selected sound, the same list as its right-click.

Right-click a patch for **Load**, **Append layers to current patch**, **Hear it**; **Add to favourites**, **Rating** (one to five stars, or none), **Add to set list**; **Show file**, **Rename...** and **Delete...** (Rename and Delete (p. 53)) - and, on the patch playing, what acts on it. **Right-click a preset** for **Load on selected layer**, **Load on a new layer**, **Hear it** (and **Play MIDI files with this** on a built-in instrument's preset: The Files tab (p. 142)); **Add to favourites**; **More like this (by sound)** (Search by sound (p. 148)), **Find more Saxophones (by name)** - or Pianos, Pads, Strings..., whatever instrument the preset's name, folder or category says: every plug-in's presets that say it, best first - and **Layer assistant with this preset...** (Layer assistant (p. 64)); **Show file** and **Picture** ▸ (Thumbnails and the gallery (p. 154)). Both menus show their keys (↵ loads, Space hears) and end

with **Tooltips** and **Keyboard shortcuts...** (Right-click menus, Reset, Revert and Refresh (p. 146)). After **Save**, the patch just saved is selected.

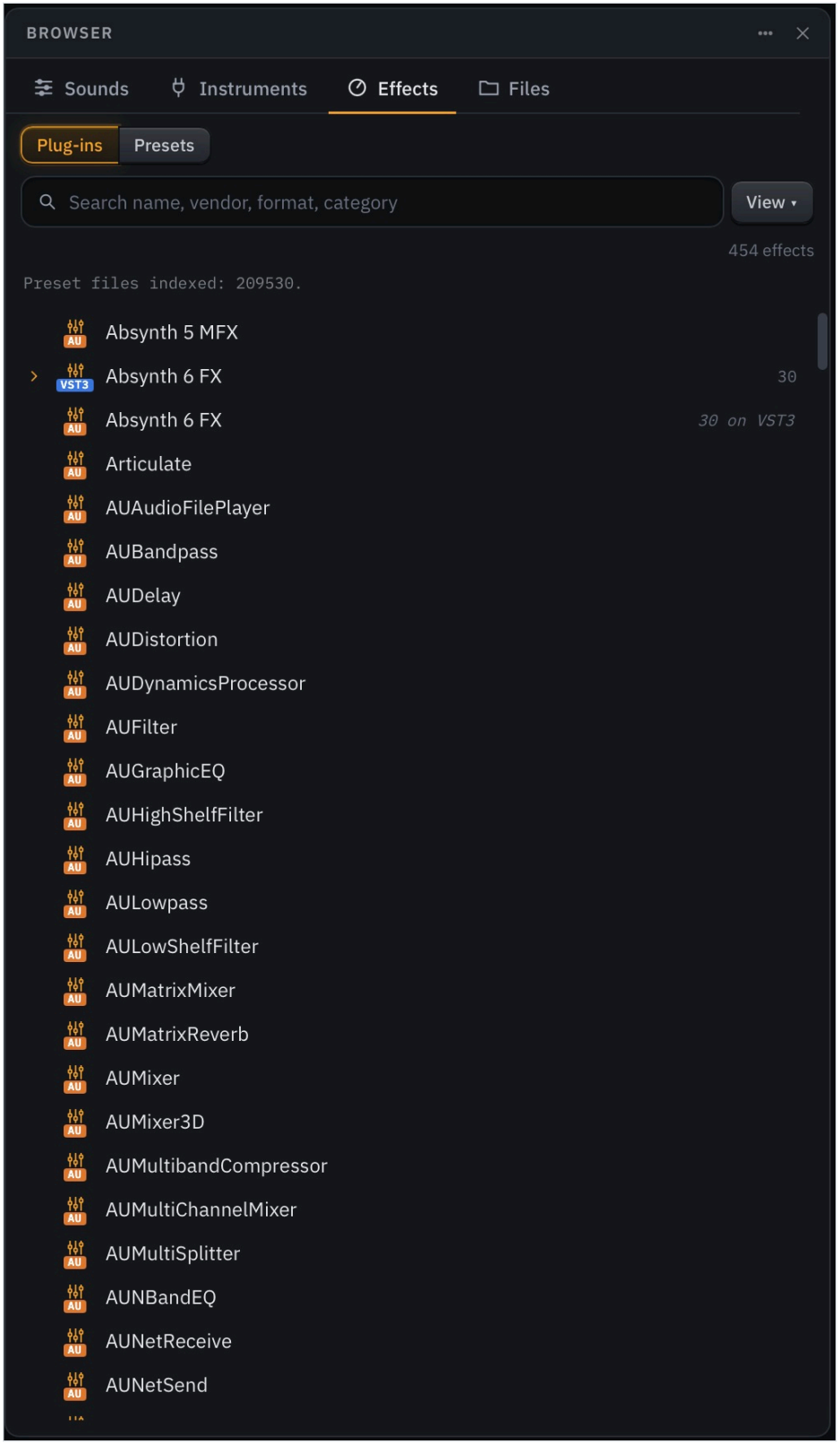
The folders - **Add a preset folder...** (Where presets are kept (p. 157)), **Show presets folder** and **Show user patches folder** - are in the Browser's ⋯ menu (The Browser (p. 128)); ↻ after View reads the presets on disk again.

The preset map and gig mode. The preset map's background rendering of previews doesn't run during a gig: gig mode stops it (Gig mode (p. 95)) and it doesn't start again on its own - restart it from the map (**Generate Previews**: The preset map (p. 149)) or with **Resume** in the Browser.



A patch's right-click menu.

The Effects tab



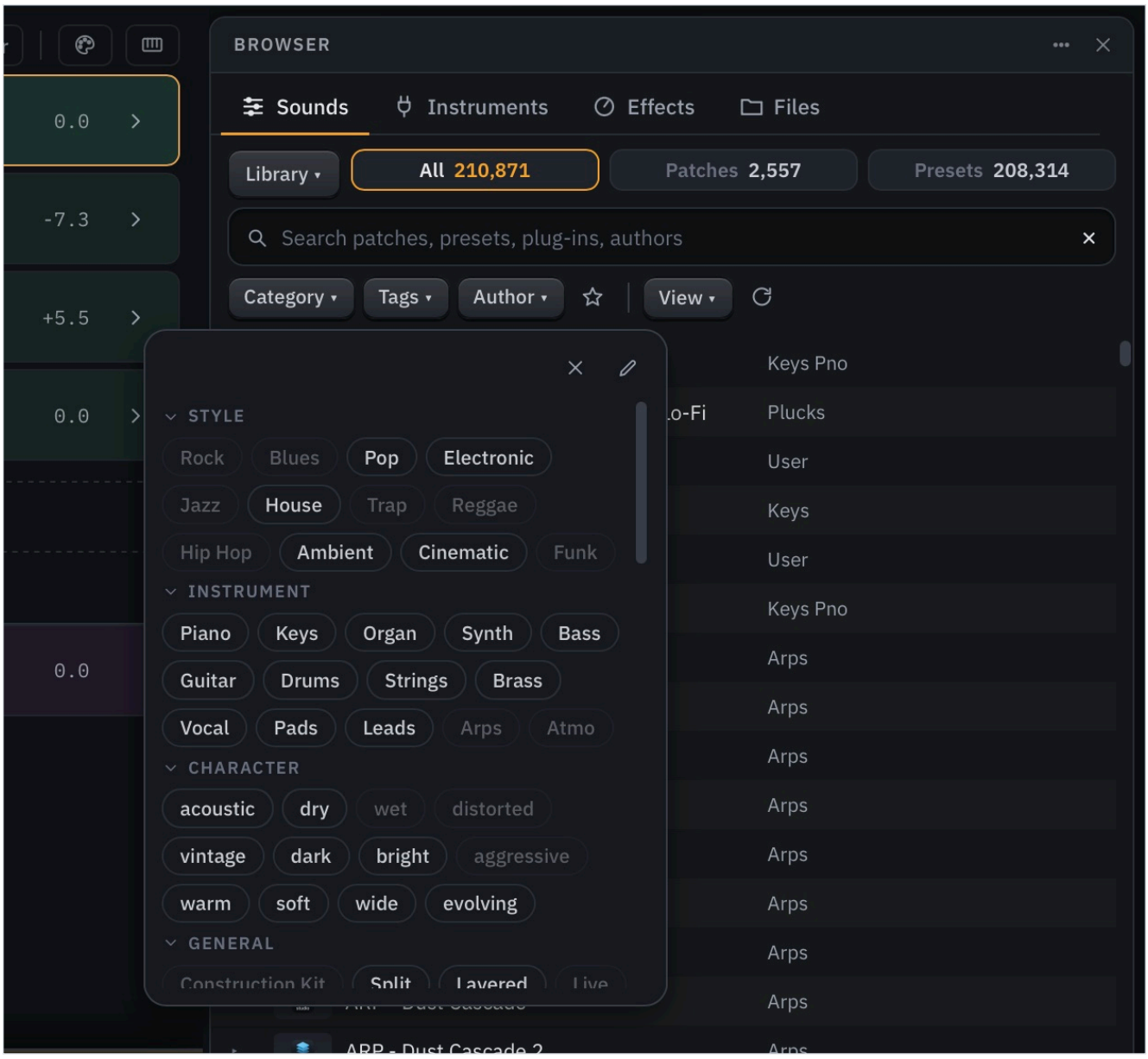
The Effects tab.

The **Effects** tab holds the audio effects. The switch under the tabs chooses what it shows:

- **Plug-ins** (as it opens, and with **F7**): every effect plug-in, as the Instruments tab lists the instruments - **Favorites**, **Recent**, then every audio effect - with the same search, View and Manage view (The Instruments tab (p. 130)).
- **Presets**: every effect's presets, as the Sounds tab lists sounds - the same head, foot, right-click menu and keys (The Sounds tab (p. 133)) - with no patches and no tag filter (patches are in the Sounds tab).

Double-click an effect or one of its presets (or **Load**) to load it on the selected layer; drag it onto a layer's effects or a slot to put it exactly there.

The tag filter



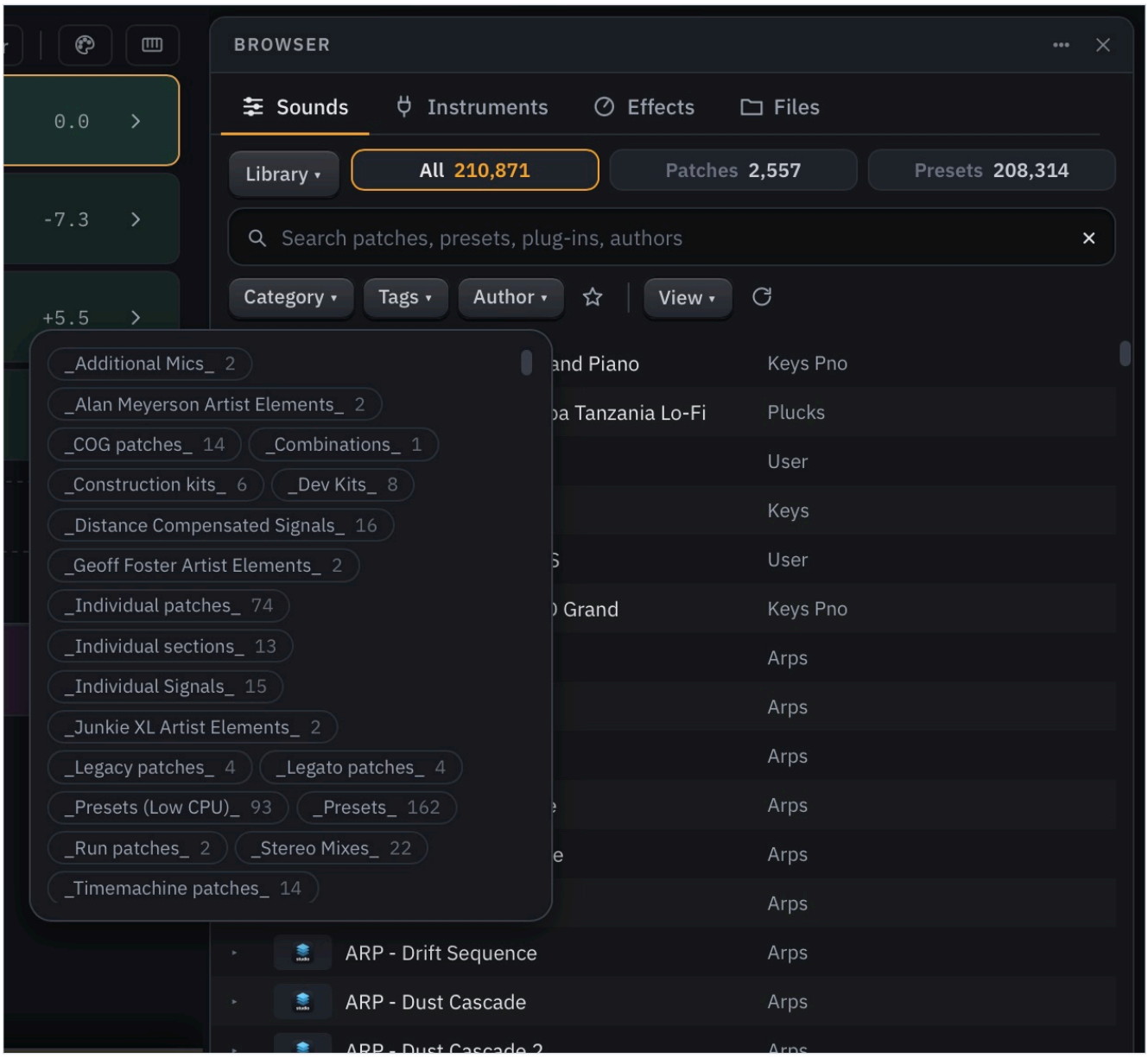
The Tags filter.

Tags ▾, at the Sounds tab's head, opens the patches' **tags** over the list, in groups: **Style** (Rock, Pop, Electronic, Jazz, House...), **Instrument** (Piano, Synth, Bass, Guitar, Drums, Pads...), **Character** (acoustic, dark, bright, warm...), **General** (Construction Kit, Split, Layered...), and **Other** - the tags your patches have that aren't in those groups. Click a tag to choose it (it turns amber); click again to drop it. The tags stay open while you choose; a click outside them or **Esc** closes them.

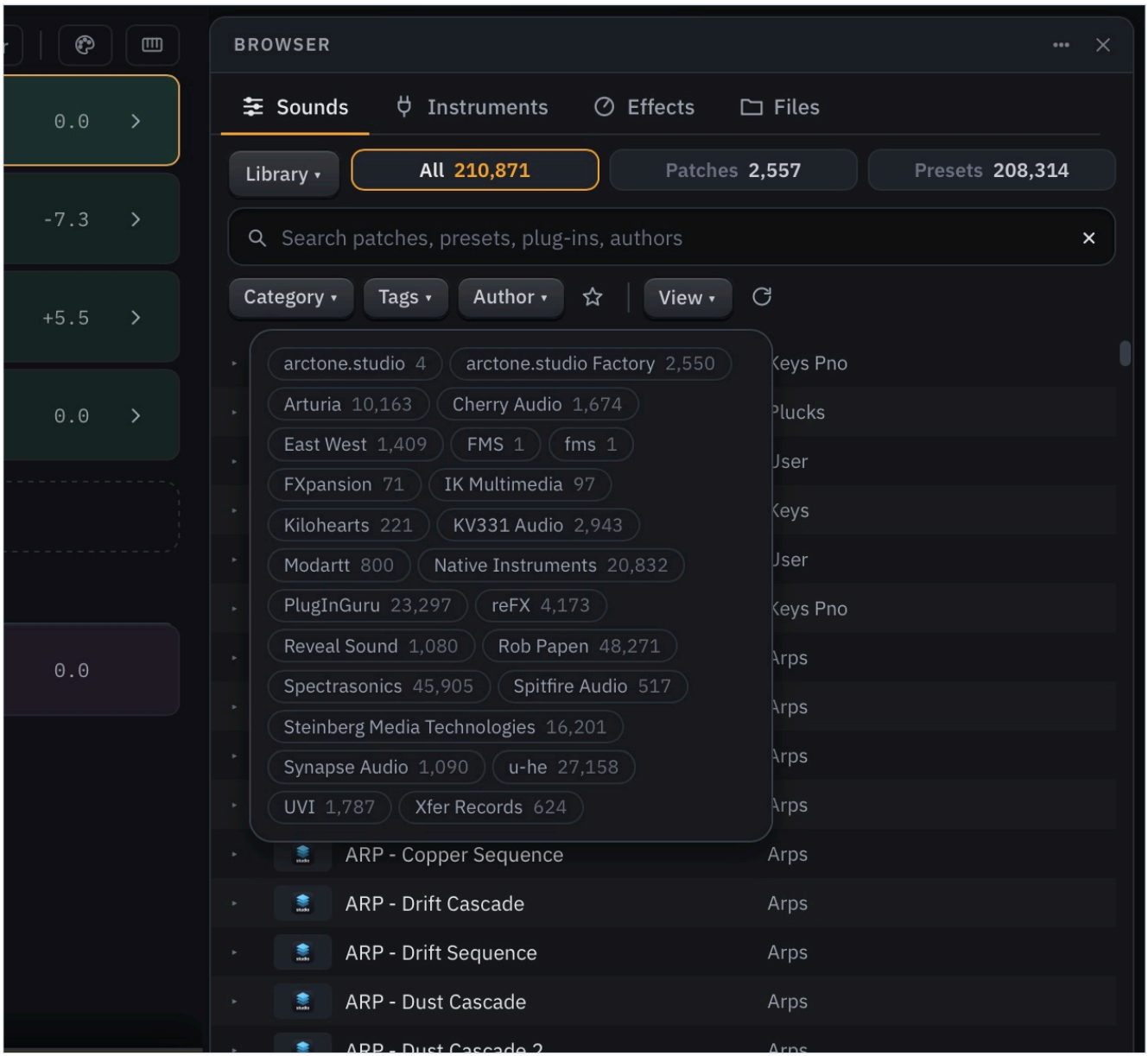
- Tags in the **same group** combine with **or**: Rock + Blues shows patches with either.
- **Groups** combine with **and**: Rock + Guitar shows rock patches that are also guitar patches.
- The search applies as well.
- A tag that would show nothing under the filter is **dimmed** (not hidden, so the panel stays put).
- The **x** clears the search and the tags in one click.
- Click a group's name to fold it away.

While tags are chosen, the list shows only patches (plug-in presets have no tags) and the count says **Tags choose user patches**. The button shows the tag chosen (or "Tags · 3" for several) and is lit while tags filter.

Tagging patches: select patches (Cmd- or Shift-click for several), open **Tags**, press the **pencil**, then click tags to give them to the selected patches, or take them away (a dashed tag is on some of them). While the pencil is on, the list can still be clicked to pick other patches. **+** adds a tag of your own. Press the pencil again to finish. Tags are saved in the patches, separated by commas.

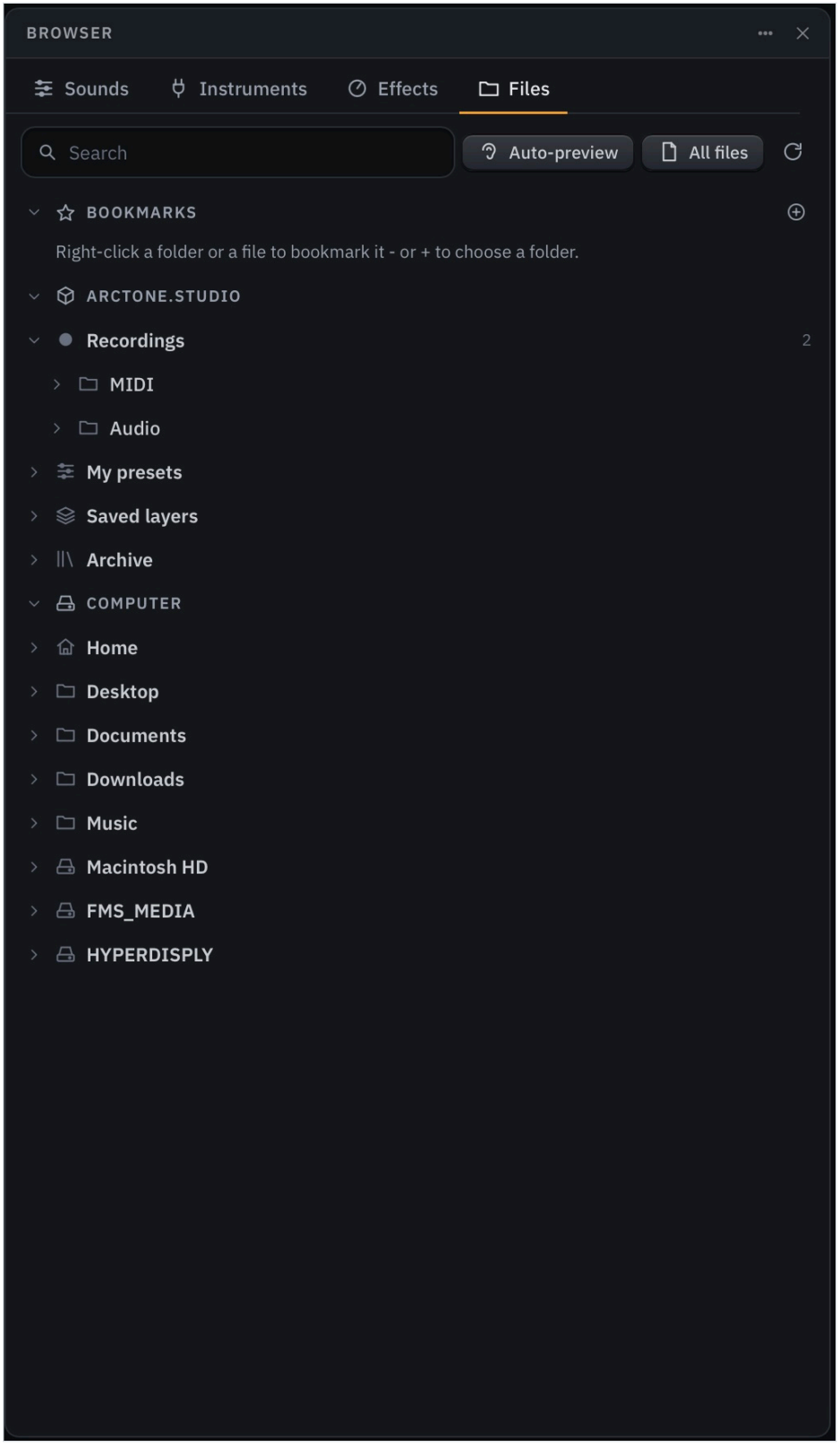


The Category filter.



The Author filter.

The Files tab



The Files tab: bookmarks, arctone.studio's own folders, and the computer.

A file browser for your whole computer, in three sections (click a section's name to fold it away):

- **Bookmarks** - the folders and files you bookmarked, at the top: see Bookmarks (p. 145).
- **arctone.studio** - its own folders: **Recordings** (what the Recorder saved - Recording the mix (p. 205)), **My presets** (the presets you saved, captured or recorded), the preset folders you added (**Add a preset folder...** in the Browser's ⋯ menu), **Saved layers** (layers kept as files: Adding, removing and arranging layers (p. 76); double-click one to add it to the patch) and the **Archive**, where deleted patches go (Rename and Delete (p. 53)).
- **Computer** - your **Home** folder, **Desktop**, **Documents**, **Downloads** and **Music**, and every **drive** (an external drive too, while it is plugged in).

Click a folder to open it and look inside, as far down as you like. At first only the files arctone.studio uses are shown: audio (WAV, AIFF, FLAC), MIDI, presets and patches. **All files** shows every file (the others dimmed); click it again for the short list. The search finds files in the folders that are open; the arrows button reads the folders again. (The first time you open your Desktop, Documents or Downloads, macOS asks whether arctone.studio may look in it.)

- **Select an audio file** to see it in the player strip at the foot, much as the audio editor shows it: its waveform with a time ruler (left above right; one lane for a mono file, or a stereo one whose two sides are the same), and what it is - "3:45 · 48 kHz · stereo · 24-bit · WAV". Click the waveform to play from there; drag across it to select a part, which plays when you let go; the wheel zooms in where the pointer is, and Shift and the wheel scroll. The play button (or Space) plays the selection, or the whole file, over arctone.studio's output, and stops it. **Loop** plays it round and round - the selection, or the whole file - and turning it on or off while it plays carries on from where it is. **Edit** opens the file in the audio editor (The audio editor (p. 83)): every sample, and the edits. **Auto-preview** plays one as soon as it is selected - handy for going through samples.
- **A long file** is read once, in the background: the strip shows it as it comes ("Reading... 43%" over the rest), and after that zooming never reads the file again. The strip zooms in as far as one of that summary's steps a pixel (16 to 256 samples, the longer the file the more); Edit shows every sample. Starting, stopping, a click elsewhere in the file and Loop fade in and out over a few milliseconds, and a loop's end blends into its start, so none of them clicks.
- **The level control** at the end of the strip sets how loud files play there: drag it, or use the wheel or the arrow keys (0.5 dB a step); double-click it for its default. Audio files go from -40 to +6 dB (0 dB at first: the file as it is); above 0 dB a limiter keeps the loudest samples at 0 dBFS, so a quiet take can be turned up without clipping (the dB readout turns orange while it holds the file down). A MIDI file's own sound (the Grand Piano, the Basic Synth) goes from -24 to 0 dB (-3 dB at first); while MIDI files play into **The patch's layers** the control is greyed out, as the layers' own faders set their level. Both are remembered, and are in Settings > Presets too (Presets (p. 175)).
- **Select a MIDI file** (`.mid`, `.midi`) to see its notes in the strip, as a piano roll, with its tempo and how many tracks and notes it has. It plays the same way - the play button, Space, a click on the notes to play from there, Auto-preview - on the **Grand Piano** unless you choose another sound (see **MIDI files** below).
- **Up and Down** step through the files in the list (with Auto-preview on, each one plays as you reach it), **Space** plays or stops the file selected (an audio file's selection, or all of it), **Esc** stops (and, pressed again, lets go of the selection), **Enter** opens it. With an audio file selected, **L** turns Loop on or off, **E** opens it in the audio editor, **+** and **-** zoom and **0** shows all of it. These work in the list and in the strip (click it first).
- **Left and Right** move the playhead of the file in the strip back and forward: an audio file's by a second, a MIDI file's by a beat (a quarter note, at the file's tempo there). With **Shift**: 10 seconds, or a bar - to the same place in the bar before or after, in the file's time signature (4/4 if it has none), or to that bar's start

when it is too short to have that place (from the last beat of a 4/4 bar into a 3/4 one). With **Option** (Alt on Windows): a tenth of a second, or a 16th note. **Home** and **End** go to the file's start and its end (in the Files tab Home is this, not the transport's Back to the start). The playhead stays in the file, and while an audio file's selection plays, in the selection.

- **While a file plays**, moving the playhead jumps there and playing goes on, as a click there does (a MIDI file lets go of every note first). **Stopped**, the playhead stays where you put it - a line in the waveform or the notes, and the time shows where - and the play button or Space starts there. With a selection, that plays the selection: from the playhead if it is inside it, else from the selection's start, as before. A playhead put at the very end plays from the start. After Stop the line goes and Space plays from the start (or the selection) again; the time still says where it stopped, and the keys move the playhead on from there.
- **The playhead keys are key commands**, in the **Files** group of Settings > Key Commands: give them other keys there (Key Commands (p. 192)). They work in the list and in the strip (also just after a click on one of its buttons), in the main window and in the Browser's own window, and in a DAW too.
- **Double-click** a preset to load it on the selected layer (into its plug-in), or a patch to load it.
- **Drag a file out** of the list onto the desktop, a Finder window or a DAW's arrange window: it is copied there, as an ordinary file.
- **Drag a MIDI file onto a layer** in the main window: it becomes the layer's **MIDI clip**, which the layer plays with the clock - below the layers, a new layer plays it (MIDI clips on layers (p. 78)). The strip says so ("Drag onto a layer...") until you have done it once. **Put on a layer** in a MIDI file's right-click menu does the same.
- **Right-click** a file or folder for **Copy**, **Copy path**, **Add to Bookmarks** and **Show in Finder** (an audio file also has **Play** and **Edit...**, a MIDI file **Play**, **Play with** and **Put on a layer**). In arctone.studio's own folders there is also **Paste** (what you copied - from anywhere on the computer - into that folder, or next to that file; a name that's taken gets " copy" added), **Duplicate**, **New folder...**, **Rename...** and **Delete (move to the Trash)**. Elsewhere on the computer arctone.studio only looks and copies - rename or tidy those in the Finder - and nothing is ever deleted for good from inside arctone.studio: whatever you remove goes to the Trash (Recycle Bin on Windows), where you can take it back.

MIDI files. By default a MIDI file plays on arctone.studio's own **Grand Piano** (The arctone.sampler (p. 116)): a sound of its own, never one of your layers, so it sounds the same whatever patch is loaded, with no patch at all, in safe mode and inside a DAW, and it can't move your macros or end up in Capture. The first time, the piano takes a moment to load ("Loading the Grand Piano..." in the strip); selecting a MIDI file starts that, so Play is usually heard at once.

- **The sound button** in the strip (it shows the sound's name) chooses what MIDI files play on: the **Grand Piano**, the **Basic Synth** (**Soft keys**, **Pad** or **Pluck**), a built-in instrument's preset - right-click a preset of the arctone.sampler or the Basic Synth in the Browser and choose **Play MIDI files with this** - or **The patch's layers**. **Play with** in a MIDI file's right-click menu chooses the sound and plays the file. The choice is remembered (also in Settings > Presets: Presets (p. 175)); changing it while a file plays carries on from where it is. Its level is the strip's level control.
- **The patch's layers** plays the file into the patch as if played on a keyboard: its notes go to the layers after Capture and macro learn have seen your playing, so they are never captured as MIDI, learned or sent to the macros. What the layers make of them is ordinary output, though: it goes through the master and its effects, into a recording and Capture's audio; MIDI layers and a layer's MIDI out pass the notes on to your MIDI device or the DAW; arpeggiators and tempo-synced effects follow arctone.studio's clock, not the file's tempo; and a key you hold that the file also plays is one note between you. Starting a recording pauses the file.

- **When the chosen sound can't play, another does, and a message says why** (your choice is kept): no Grand Piano installed - the Basic Synth's Soft keys; The patch's layers with no instrument layer switched on, or with a layer that latches its notes (the file's notes would hang there) - the default sound, also when that happens while a file plays into them (another patch loaded, a layer latched or switched off): the file carries on from where it was on the default sound; a preset that has been deleted - the default sound; a sound that can't be loaded (the piano's samples, or an arctone.sampler preset's, gone or damaged) - the Basic Synth's Soft keys, until its files change or you choose it again. A file that can't be read says so in a message and in the strip, and the file that was playing stops.
- **What plays:** the notes, the sustain, soft and sostenuto pedals, the mod wheel, expression, pitch bend and channel pressure, at the file's own tempo and tempo changes. Program changes, volume and pan, sysex and the like are left out, and so are the drums on channel 10 when other channels have notes (a piano would play them as pitched notes). Into the layers only the notes go, the pedals folded into their lengths, and a file that uses one channel plays on channel 1.
- Stop, Esc, another file, a click elsewhere in the notes or a playhead key, the file's end and **Panic** let every note go. MIDI files of up to 16 MB, two million events and an hour are played; a damaged one plays as far as it can be read. A MIDI file plays over arctone.studio's output like an audio file - not recorded, not through the master's effects, at its own level (the strip's level control, or Settings > Presets) - and isn't part of a DAW's offline bounce: a bounce pauses it, and the layers let go of its notes first, so none hangs through the bounce.

Bookmarks

Bookmark the folders and files you go back to - your sample library, a project folder, a favourite loop - and they are at the top of the Files tab, under **Bookmarks**, every time.

- **Add one:** right-click a folder or a file anywhere in the Files tab and choose **Add to Bookmarks**; or click **+** beside **Bookmarks** and choose a folder in the usual folder window. A bookmarked folder opens in the list like any other; a bookmarked file plays or loads from there. Something bookmarked shows a small star where it is.
- **Right-click a bookmark** to **Rename bookmark...** (only the bookmark's name changes, not the folder's), **Move up** or **Move down** the list, **Show in Finder** or **Remove bookmark** (the folder or file itself stays where it is).
- A bookmark to something that has been moved or deleted, or is on a drive not plugged in, says **not found**.

Bookmarks are kept (in `Browser.xml` in arctone.studio's app-data folder, with the Browser's other choices) and the Plug-in Manager's Reset and Revert leave them alone.

Favorites, Recent and hiding plug-ins

- **Favorites.** Right-click a plug-in and choose **Favorite** (again to take it out). Favourites are in the **Favorites** folder at the top of their tab, and marked with a small star in the list.
- **Favourite sounds.** In the Sounds and Effects tabs, right-click a patch or a preset (or use **More** ▾ at the foot) and choose **Add to favourites**. ★ at the head then shows only the favourites, patches and presets alike; press it again for everything.
- **Recent.** The ten plug-ins you loaded onto layers last, newest first, in the **Recent** folder.
- **Hide.** Right-click a plug-in and choose **Hide** to take it out of the Browser (the count under the search says

how many are hidden). It isn't removed from arctone.studio: patches that use it still load it. Bring it back in the Manage view (**View > Manage view**): The Manage view (p. 148).

arctone.studio keeps them all (in `Browser.xml` in its app-data folder), named the way plug-ins are identified, so they survive rescans.

Folders of your own

The **Folder** sort shows the plug-ins in folders. The first time, each view gets a set of folders by kind - for instruments **Synth**, **arctone.sampler**, **Drums**, **Piano & Keys**, **Orchestral**, **Guitar & Bass**; for effects **Reverb**, **Delay**, **EQ**, **Dynamics**, **Distortion**, **Modulation**, **Filter**, **Pitch**, **Stereo & Space**, **Utility & Analysis** - and each plug-in goes into the one its category (as the scan found it) belongs to. The rest are listed under **Not in a folder**.

Then arrange them as you like:

- **Drag a plug-in onto a folder** to move it there. Drag it onto **Not in a folder** to take it out of its folder.
- **Right-click a folder** for **New Folder** (a folder inside it), **Rename Folder...** and **Delete Folder**. Right-click the list itself (between plug-ins) for **New Folder** at the top level.
- Click a folder and press **Delete** (or Backspace) to delete it. arctone.studio asks first; the plug-ins in it go back among those not in a folder (they aren't hidden or removed).

Favorites can have folders too, as many levels deep as you like: right-click **Favorites** for **New Folder**, and drag favourites (or any plug-in, which becomes a favourite) onto them.

The folders are kept with the favourites and hidden plug-ins (`Browser.xml`).

Right-click menus, Reset, Revert and Refresh

Every right-click menu ends with the same two lines: **Tooltips** (the tips that show when the pointer rests on something, on or off; Settings > Interface > Tooltips sets how soon) and **Keyboard shortcuts...** (Settings > Key Commands: Key Commands (p. 192)). A list opened from a button - All Libraries, the filters, View, ⋯ - doesn't have them; **More** ▾ at the Sounds tab's foot, which is a sound's right-click list, does.

Right-click a **plug-in** for: load it, **Used by** (point at it for the layers using the plug-in now), **Favorite**, **Hide**, **Refresh** (look for plug-ins installed since the last scan), its pictures, and importing, capturing or recording its presets.

Right-click **the list itself** (not a plug-in or folder) for three ways back:

- **Reset**: every hidden plug-in shown again, and all favourites cleared (it asks first). Your folders stay.
- **Revert**: back to how the favourites, hidden plug-ins and folders were when you last left the Manage view - or, if you haven't since, when arctone.studio started.
- **Refresh**: picks up plug-ins installed while arctone.studio was running.



The Browser's ... menu, in its title bar.

The Manage view

View ▾ > Manage view, in the Instruments and Effects tabs, switches the list to the Manage view (View is lit while it is on): every plug-in of the tab, hidden ones too (dimmed), in the grouping you chose, without the folders at the top. Each row has:

- a **circle**: green and filled when the plug-in is shown, empty when it is hidden. Click to hide or show it.
- a **star**: lit for a favourite. Click to make it a favourite or take it out.

Choose **Manage view** again to go back to browsing.

Search by sound

Searching by sound uses the preset map's measurements (The preset map (p. 149)): every preset the map has rendered can be found by what it sounds like - how bright, how noisy, how much it moves, how slow its attack, how much it sustains, how long its tail, how wide, how loud - across every plug-in you own. The map and the search are filled by the same render, so there is one thing to fill, not two:

- **More like this:** right-click a preset in the Sounds or Effects tab > **More like this (by sound)**, and the presets that sound closest come up at the top of the list, from any plug-in, with how close each is - compared on everything the map measures, the triad as well as the single note. Click one to hear it, double-click to load it, as always.
- **Words:** type `~` and some words in the Sounds tab's search - `~warm evolving pad`, `~bright pluck`, `~wide slow strings`, `~noisy short hit` - and the closest presets come up. Words it knows: bright, dark, warm, mellow, sharp, airy, sub, bass, noisy, gritty, clean, pure, pad, drone, sustained, evolving, moving, static, pluck, short, percussive, stab, keys, piano, bell, lead, slow, swell, strings, fast, wide, stereo, mono, long, tail, reverb, dry, loud, quiet, and a few more. Words it doesn't know are ignored, and listed. A word that names a kind of sound - pad, bass, sub, pluck, strings, lead, keys, organ, bells, choir, brass - looks in that area of the map only, and the rest of the words choose within it. "Bright", "dark", "long" and the rest are measured against your own library: bright means brighter than most of what you have.

A preset is measured the first time it is heard: clicking it plays the quick preview at once (The Sounds tab (p. 133)), and behind it the map renders it properly, in a helper process, a moment later. To measure a whole plug-in at once, right-click the plug-in in the Browser > **Analyse its presets for sound search**: the map renders every one of its presets in the background - which also puts them on the map - and a message says when they are all searchable (a plug-in with thousands of presets takes a while; **Stop analysing** in the same menu stops it). Nothing is rendered during a gig (Gig mode (p. 95)). The measurements are kept with the map's and survive restarts.

The preset map



The preset map, Areas: every mapped preset as a dot, one circle for each kind of sound.

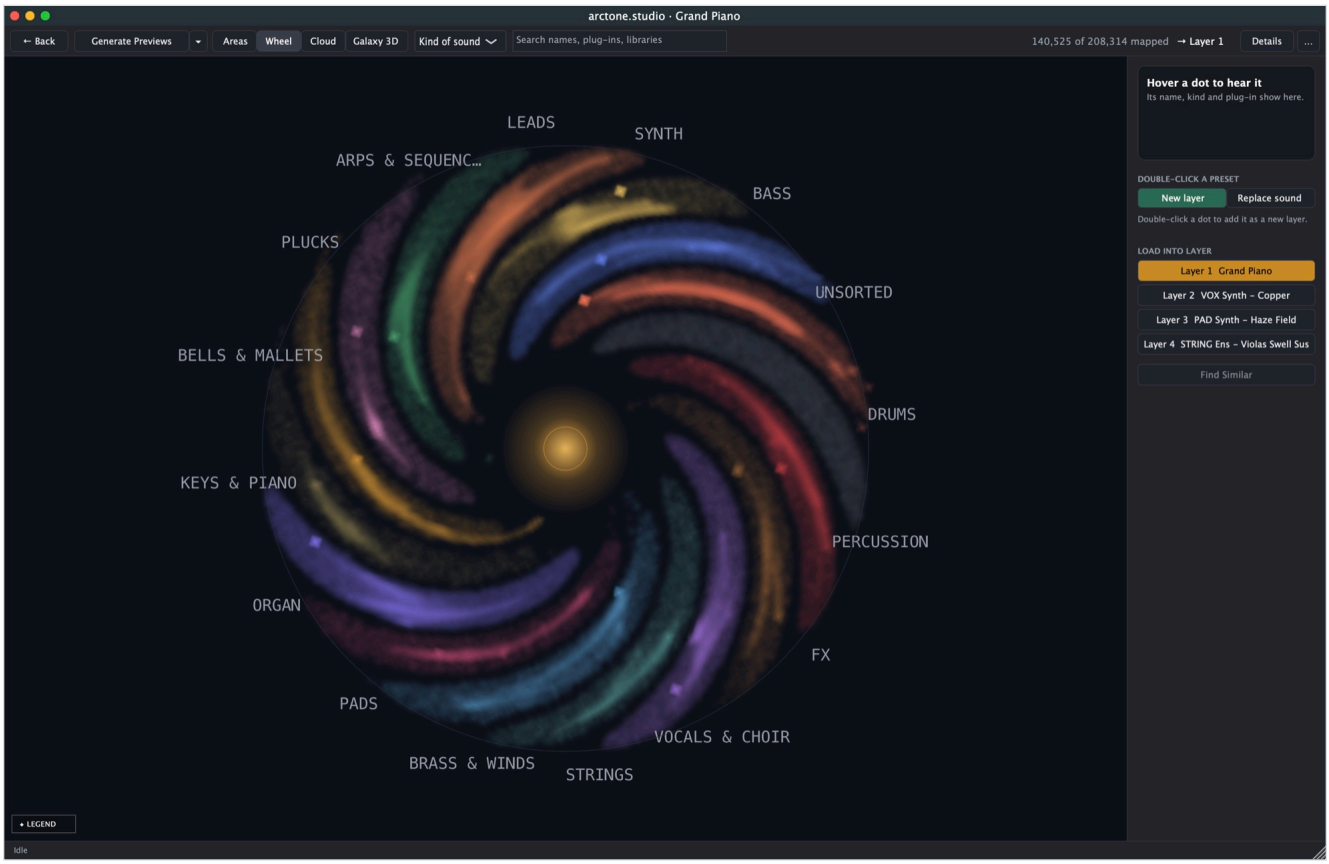
The **preset map** puts every preset arctone.studio has measured where it sounds: similar sounds together, whatever plug-in they come from. Open it with **Preset map** in the View bar, with **Cmd+M** (Ctrl+M; the command palette's **Preset map**), with **Find on map** in an instrument layer's menu, or from an empty instrument slot. It takes the place of the page while it shows; **Back** returns. The layer selected is its **target**: a click on a dot loads that preset there.

Four views of one map, side by side at its top:

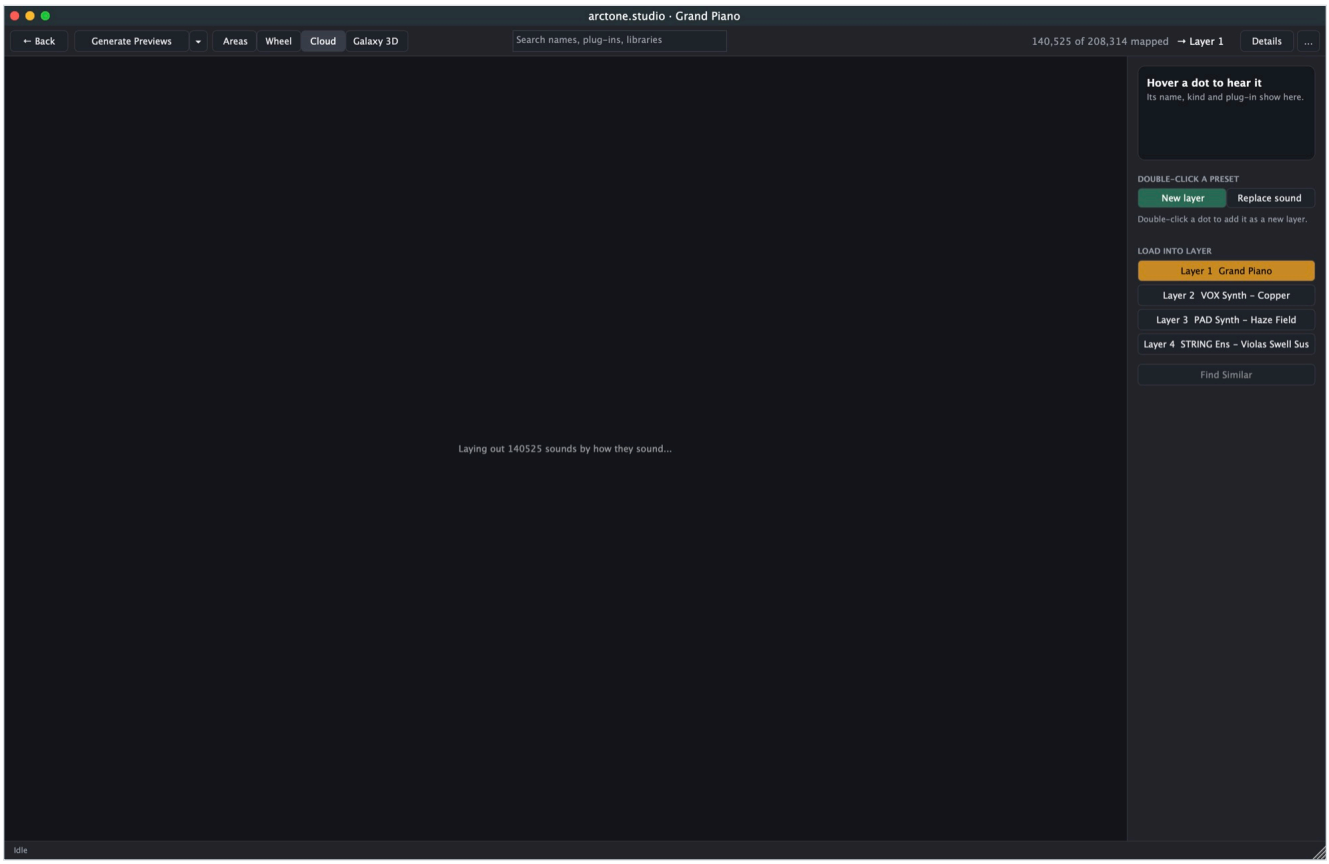
- **Areas**: a circle for each kind of sound (pads, basses, keys, leads...), the presets in it placed by how they sound.
- **Wheel**: the same areas as glowing spiral arms round a hub, the kinds named round the outside.
- **Cloud**: every measured preset together, placed by how it sounds and coloured by its kind; it swells where you point.
- **Galaxy 3D**: the same cloud in space, turning slowly, each kind named with how many presets it has; drag to turn it, scroll to fly in, **Space** stops and starts the turning. Its side panel lists the kinds of sound with their counts.

At the top are also **Kind of sound** (one kind alone), how many presets are mapped, the target layer, **Details** and **...**. The panel down the right shows what is under the pointer (**Hover a dot to hear it**: its name, kind and plug-in), what a double-click does - **New layer** or **Replace sound** - the patch's layers to **load into**, and **Find Similar**.

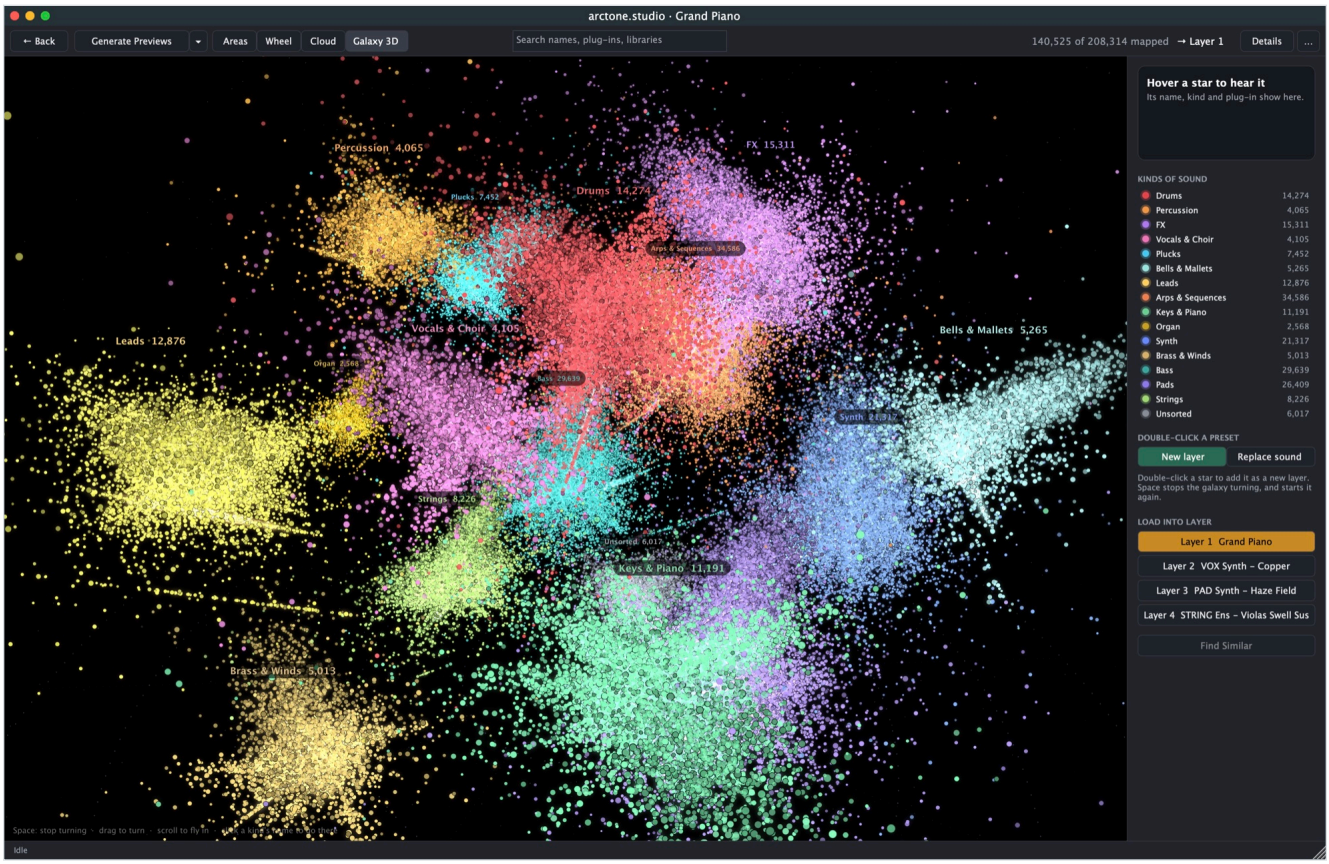
The search finds presets on the map by name. **Generate Previews** renders the presets not measured yet, in a helper process, while you work (a line across the window shows how far; **Pause** and **Cancel** stop it); the map holds still meanwhile and says **N new presets - Refresh**, so dots don't move under the mouse. Gig mode stops the rendering (Gig mode (p. 95)). The same measurements drive search by sound (Search by sound (p. 148)) and the arctone.sampler's **Find a sound** (The arctone.sampler (p. 116)).



The Wheel view.



The Cloud view.



Galaxy 3D.

Searching the Browser

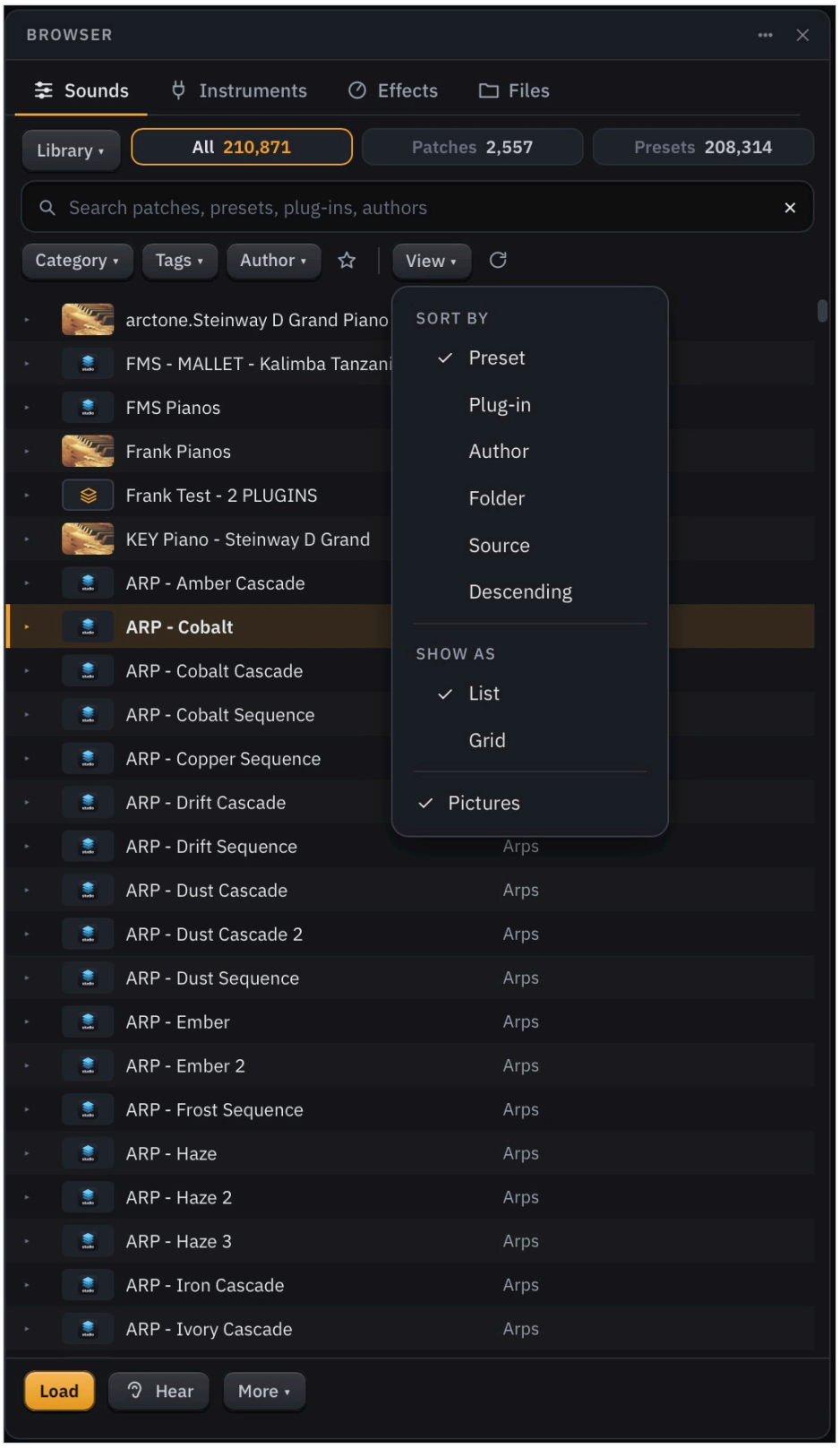
The search box at the top of the Instruments and Effects tabs filters the list as you type. It looks at the name, the maker, the format (VST3, AU, Built-in) and the category, so typing **Reverb** or **Dynamics** shows every plug-in of that kind. Folders open by themselves while you search. **Esc** clears the search. The Sounds tab's search finds sounds, plug-ins and authors: see The Sounds tab (p. 133).

Sorting the Browser

In the Instruments and Effects tabs, **View ▾ > Group by** (beside the search) offers:

- **Flat**: every plug-in in one alphabetical list.
- **Folder**: folders of plug-ins, your own to arrange. See Folders of your own (p. 146).
- **Author**: a folder per maker.
- **Type**: a folder per format: arctone.studio's own, VST3, then Audio Units.

Instruments and Effects each keep their own. Click a folder to open or close it. In the Sounds tab, **View ▾ > Sort by** sorts the patches and presets by Preset, Plug-in, Author, Folder or Source (The Sounds tab (p. 133)).



The Sounds tab's View menu: what to sort by, List or Grid, and Pictures.

Thumbnails and the gallery

In the Instruments and Effects tabs, under **View** ▾:

- **Pictures**: each plug-in's picture under its name.
- **Show as Gallery**: the plug-ins as a grid of pictures; **List** for the list again.

In the Sounds tab, **View** ▾ **> Pictures** puts each plug-in's picture beside its presets; **Show as Grid** shows the sounds as cards. **Plug-in Manager > Take pictures of all plug-ins** takes a picture of each plug-in that has none yet, one at a time in the background.

A plug-in's picture is one taken of its interface. To take it (or take it again, as the plug-in looks now), open the plug-in's window and choose **Update Plug-in Thumbnail** from the window's menu: the **...** button at the right of its title bar (on Windows, the **Plug-in** menu at the top of the window). The same is in the right-click menu of the plug-in in its layer, while its window is open. Or right-click a plug-in in the Browser: **Take a picture of its interface**, or **Use a picture from a file...** (a preset's right-click has the same under **Picture** ▸). Pictures are managed in Settings > Plug-ins. A patch's picture is the one chosen for it (Pictures for the patch and the layers (p. 33)).

Where the Home tab's controls went

The Browser had a **Home** tab for its housekeeping; it has gone, and what it held is where it is used:

- **Plug-ins** - in the Browser's ⋯ menu: **Plug-in Manager...** (The Plug-in Manager (p. 124): rescanning, VST2 and the scan folders are there) and **Scan for new plug-ins**; the scan's progress shows under the Instruments tab's head. See Scanning for plug-ins (p. 122).
- **Presets** - in the Browser's ⋯ menu too: **Add a preset folder...** (Where presets are kept (p. 157)), **Show presets folder** (where your presets are saved) and **Show user patches folder**.

To save what a layer's plug-in is set to as a preset, drop it on its own entry in the Instruments or Effects tab (Saving a preset by dragging (p. 157)).

The plug-in tree

In the classic window. (The main window has the Browser instead: The Browser (p. 128).) The tree groups plug-ins by **format**, then **manufacturer**, then plug-in. Plug-ins with presets open to show them, grouped by folder. The search box filters the tree. Above it, the totals: how many plug-ins and how many presets arctone.studio knows (while searching, how many match). Drag a plug-in (or a preset) onto a layer, or double-click it to load it on the selected layer.

Beside a preset you may see a **badge** showing whether it has been checked: a tick, an "almost equal" sign, P or a cross. See Verification badges (p. 163).

Right-click a plug-in for its menu: pictures, presets, capture and import. See Capturing presets (p. 158) and Importing from a plug-in's preset files (p. 159). The buttons above the tree show the folder your presets are saved in and add preset folders. See Where presets are kept (p. 157).

The plug-in list

In the classic window. (In the main window, the Browser's Show Thumbnails and Gallery do this: Thumbnails and the gallery (p. 154).) The list shows every plug-in with a small picture, name, maker and format, either as rows or as a grid of cards. It includes arctone.studio's built-in devices. You can give a plug-in a picture (right-click it) in the list; pictures are managed in Settings > Plug-ins.

Loading plug-ins onto layers

- **Drag** a plug-in onto a layer: an instrument goes into the instrument slot, a MIDI effect into the MIDI chain, an effect onto the inserts.
- **Drop onto a specific slot** in the layer to choose exactly where it goes.
- **Double-click** to load onto the selected layer.
- Drop onto the **empty area below the layers** to make a new layer.

The plug-in's editor opens automatically. If the same plug-in is already in the slot, dropping a preset on it only changes the preset.

Docking and floating panels

The Browser and the set list are panels. In the main window, turn off **Lock the window layout** in Settings > Interface, then drag a panel's title bar to the other side of the window. In the classic window, the plug-in tree and list are panels: drag a panel's title bar onto a highlighted edge of the window to **dock** it there, or drop it anywhere else to **float** it in its own window.

Wider, narrower, or out of the way. Drag the line between the panels and the middle of the window to make them wider or narrower. Drag it **all the way to the edge** of the window and that side's panels are pushed off it: they are hidden, and the line stays at the edge as a thin bar with a grip. Drag the bar back out (or just click it) and they return. While a panel is hidden there its toolbar button is not lit; pressing it brings the panel back too. The master column on the right does the same; see The master meter and loudness (p. 34). You can also use the panel's ⋮ menu, double-click its title bar, or right-click the Browser toolbar button. A docked panel has an **x** at the right of its header that hides it (its toolbar button shows it again); a floating panel has its window's own x, and closing it docks the panel again. The layout is saved; **Settings > Interface > Browser layout > Reset** puts it back on the right. Several arrangements can be kept and switched between as window layouts (Window layouts (p. 40)).

Plug-in editor windows

A hosted plug-in's own interface opens in its own window. **Settings > Plug-ins > Plug-in windows** can keep them above other windows. Plug-in windows have the full-screen button too; see Full screen and the title bar (p. 59).

Chapter 11

Presets

Each plug-in window has a menu - the **...** button at the right of its title bar (on Windows, **Plug-in** at the top of the window): **Update Plug-in Thumbnail** (the window as it is now becomes the plug-in's picture in the Browser), **Keep plug-in windows on top**, and **Close**.

The Presets page

In the main window, your plug-ins' presets are in the Browser's Sounds and Effects tabs: The Sounds tab (p. 133), The Effects tab (p. 137). In the classic window, the **Presets** button opens a page that lists **your plug-ins' presets** in one place, so you can find a sound without opening plug-ins one at a time in the tree.

- **Search** at the top matches the preset's name, the plug-in's name, its maker and the folder the preset is in. Type several words and each must match (`warm pad` finds Warm Pad in any plug-in).
- **All plug-ins** narrows the list to one plug-in. **All presets** narrows it by where the preset comes from: arctone.studio presets (captured, recorded or saved), factory programs, preset files (`.vstpreset`, `.aupreset`), or VST2 / NKS presets brought in by arctone.PresetImporter (VST2 presets: NKS, .fxp and .fxb (p. 159)). The total is at the bottom.
- Click a column heading to sort. Within a plug-in, presets stay in the plug-in's own order unless you sort by name.
- **Click** a preset to hear it (or press Space, or **Hear it**). **Double-click** it, press Return, or press **Load on selected layer** to load it. You can also **drag** it onto a layer. Right-click for more.
- The coloured mark at the left of a row shows whether the preset has been checked. See Verification badges (p. 163).
- **Presets Folder** shows the folder your presets are saved in. To bring in more, use the Preset Importer. See Where presets are kept (p. 157) and arctone.PresetImporter (p. 160).

The page shows what the plug-in tree shows: the same presets, the same previews and the same loading. It updates when a preset is saved, here or in another copy of arctone.studio. See Presets in the plug-in tree (p. 157).

What a arctone.studio preset is

A plug-in's presets normally live inside the plug-in, where no host can reach them. arctone.studio solves this by keeping its own preset file for any plug-in, the `.aspreset`. It is one XML file that holds:

- the plug-in's description (name, maker, format, version),
- its **complete saved state** (what the plug-in itself returns when a host saves a session),
- a **snapshot of every parameter** at the moment of capture,
- a **checksum** of the state, the sample rate and block size used, and the preset's position in the plug-in's own list.

Because the file is self-contained, arctone.studio can open it from the plug-in tree, or you can drop it onto a layer from Finder. Presets come from four places:

From	How	Where it is saved
The plug-in's published programs	Capturing presets (p. 158)	`Presets/<Vendor>/<Plug-in> (<Format>)/`
The plug-in's own preset files	Importing from a plug-in's preset files (p. 159)	`Presets/User/<Plug-in>/<Format>/<Collection>/<Category>/`

All of these are under `~/Documents/Arctone/arctone.studio/Library/`. How the files are stored safely is explained in How preset files are stored (p. 161).

Presets in the plug-in tree

In the plug-in tree a plug-in that has presets opens to show them, grouped by folder. Captured presets appear directly; recorded and imported ones appear under **User**. Presets are listed in the plug-in's **own order** (the order stored in each file), not alphabetically, so a bank reads the way the plug-in shows it. File names are simply the preset's name.

- **Click** a preset to hear it: Preset previews (p. 158).
- **Double-click** or **drag** it onto a layer to load it: Loading a preset (p. 161).
- A **badge** at the right shows whether the preset has been verified: Verification badges (p. 163).
- Standard `.vstpreset` and `.aupreset` files from `~/Library/Audio/Presets` and `/Library/Audio/Presets` are listed too, and VST2 / NKS presets (VST2 presets: NKS, .fxp and .fxb (p. 159)). Formats only the plug-in can read (`.h2p`) are not.
- **Save a preset by dragging:** Saving a preset by dragging (p. 157).

Saving a preset by dragging

To keep what a plug-in in a layer is set to as a preset, **drag it into the plug-in tree**: the instrument (or any plug-in) from the layer's chain, or the whole layer by its grip (its instrument). Drop it on

- **the same plug-in** in the tree: the preset goes in its **User** folder;
- **one of that plug-in's preset folders**: it goes in that folder, or, for a folder arctone.studio didn't make ("Captured", "NKS / Bass", a maker's "Factory / Leads"), in a folder of yours with that name ("Bass").

A box asks for the name. It starts with the plug-in's own name for what it is playing, or the layer's name. If there is already a preset of that name there, you are asked before it is replaced. The preset is saved as a `.aspreset` (state and parameters) under `Presets/User/<Plug-in>/<Format>/...`, appears in the tree at once (the folder opens to show it). The tree only takes the plug-in onto its own entry, in the same format: a VST3's settings can't go into the Audio Unit version.

Where presets are kept

The Browser's ⋯ menu, in its title bar, has under **Folders**:

- **Show presets folder** opens, in Finder, the folder the presets you save are kept in (one folder per plug-in).
- **Add a preset folder...** adds another folder of presets to search. Lay it out as `<folder>/<Vendor>/<Plug-in>/...`.

- **Show user patches folder** opens the folder your own patches are saved in.

Presets the Preset Importer brings in go to the Imported Presets folder instead (arctone.PresetImporter (p. 160)).

The same folders are listed in **Settings > Plug-ins > Preset folders** (right above the plug-in folders) and in **Settings > Presets**. See Presets in the plug-in tree (p. 157) and Presets (p. 175).

Preset previews

Click a preset in the plug-in tree to hear about two seconds of it: a C major chord, held and released. Every preview is rendered three seconds long, the chord let go at 70 %; **How long a preview plays** in Settings > Presets only trims what you hear, from one to three seconds, so changing it never renders anything again. It is rendered on a separate copy of the plug-in, so your layers are not touched, and it plays over arctone.studio's output. Previews are cached (`Previews/*.ogg` in the app-data folder), so a second click is instant. Plug-ins that stream samples from disk are rendered at real-time speed. Previews work for instruments only, the built-in ones too (the arctone.sampler's **Grand Piano**). Settings > Presets controls on/off (**Preview presets and patches when clicked**: the Library tab's patches follow the same switch), how long a preview plays, and clearing the cache. See Presets (p. 175).

Right-click a preset of a built-in instrument (the arctone.sampler, the Basic Synth) for **Play MIDI files with this**: the Files tab then plays MIDI files on it (The Files tab (p. 142)).

Patches have previews of their own - a short phrase through the whole patch, from the ▶ on a patch's row in the Sounds tab or in the set list: Hear a patch before loading it (p. 100).

Capturing presets

Many plug-ins publish their factory presets to the host as a numbered list of *programs*. **Capture** steps through that list and saves each program as a `.aspreset`.

- Right-click a plug-in in the Browser's Instruments or Effects tab and choose **List factory presets only**: its published programs are read and listed under it. For everything else a plug-in has, the same menu has **Import presets with the Preset Importer...** (arctone.PresetImporter (p. 160)).
- Blank slots ("Program 12", "Init", empty names) and repeats are skipped. So are slot names a VST3 plug-in gives when it has no list of presets of its own ("ProgramChange1", "MIDI channel 0 program 0", "<empty>", "disabled"), and lists where every program has the same name: such a plug-in is noted as publishing no presets. Most such plug-ins ship their library as NKS or VST2 presets, which are listed with their real names instead: VST2 presets: NKS, .fxp and .fxb (p. 159).
- Presets that live only inside a plug-in's own browser cannot be reached by any host. arctone.studio can't bring those in.
- A plug-in that crashes during capture is put on the **crash blocklist** and skipped from then on, with the reason in `PresetLog.txt`. The list is `CaptureCrashed.txt` in arctone.studio's app-data folder: delete it to try those plug-ins again (Where your files live (p. 16)).
- Each program gets a moment to load before it is saved: at least 60 ms, then until the plug-in has moved off the previous program and stopped changing, at most 2 s (as in How verification works (p. 163), *Settling*).
- A **VST2** plug-in's preset is saved as that program alone, not as the plug-in's whole bank of programs, which is the same whichever program is chosen; so is one saved by hand from a layer. (A plug-in that gives

its whole bank even when asked for one program is saved with the bank, as before.) A preset that holds the bank (captured, recorded or saved by hand from a layer with an earlier arctone.studio) doesn't say which program it was, so it always loads with its parameters applied on top, also beside new captures. Capture the old ones again to give each one its own state: until then they verify from their parameters only (badge P).

> **NOTE** Capture also records a parameter snapshot for every preset and warns if a plug-in's saved state is identical for all its presets (which means the state does not hold the preset). See Which side is the truth (p. 164).

VST2 presets: NKS, .fxp and .fxb

Many plug-ins keep their factory library as presets made for their **VST2** version: **NKS** presets (`.nksf`, the Komplete Kontrol format, used by Arturia, u-he, Modartt, KV331, Native Instruments and others, and `.nksfx`, the same for effects: iZotope's Ozone 12 modules, u-he's Zebrify, Native Instruments' Choral, Raum, Bite...) and VST2 preset files (`.fxp`, and banks `.fxb`: reFX Nexus, Synapse DUNE...). A VST2 preset holds the plug-in's own data, which its VST3 version reads too.

They come in through arctone.PresetImporter. arctone.studio no longer looks for them itself (it listed every one twice once the importer had read them): **arctone.PresetImporter** reads them from the makers' folders (`/Library/Application Support/<Maker>`, `/Library/Arturia/<Plug-in>`, `/Users/Shared`, `/Library/Audio/Presets`, NKS User Content) into your Imported Presets library, under their real names, grouped by bank or category (arctone.PresetImporter (p. 160)). They then show in the Sounds and Effects tabs under their plug-in, and load like any other preset. To read a newly installed library, open the Preset Importer again: it offers only what is new (Importing again: only what is new (p. 234)).

- They go with the plug-in's **VST3** version (with the Audio Unit only when there is no VST3 version).
- The first time you load one, arctone.studio works out how that plug-in takes them: as a whole VST3 preset (NKS presets made for VST3, like Absynth's), as the two blocks of Steinberg's VST2 wrapper (Arturia), or as the plug-in's saved state, with or without its size in front (u-he, reFX, Modartt, KV331, Synapse). The way counts only if two different presets leave the plug-in different; it is remembered from then on.
- A plug-in that loads presets in the background (Massive X takes about a second) is given the likeliest way, with a note that it could not be checked.
- `.fxp` / `.fxb` files that hold only parameter values are not imported: the VST3 version can't be trusted to read them the same way.

Importing from a plug-in's preset files

For a few plug-ins arctone.studio can convert their own preset libraries straight into `.aspreset` files, keeping collections and categories. It is faster and exact. Supported today: **Cherry Audio** instruments (GX-80, Memorymode and others) and **Spectrasonics Omnisphere** (its patch archives and loose patches in STEAM), VST3 and AU, and **Native Instruments Kontakt** 7 and 8 (every instrument and multi of your Kontakt libraries), VST3. arctone.studio finds each library where the vendor's installer records it, loads the plug-in once to use its real saved state as a template, swaps each preset in, and checks the first result by loading it back before anything is saved. A preset in a newer format than this version of arctone.studio reads (a Cherry Audio preset file of a later version, an Omnisphere patch of a later engine) is left out, counted and named in the log - never

imported wrong.

Bringing presets in is now the job of **arctone.PresetImporter**, the importer inside arctone.studio: a plug-in's right-click menu in the Browser has **Import presets with the Preset Importer...**, and **Import presets** in Getting started (Getting started (p. 10)) starts it for every plug-in. It writes into your Imported Presets library only (arctone.PresetImporter (p. 160)).

A library that isn't where the vendor's record says - moved to another folder or drive - can be pointed to in **Settings > Presets > Vendor libraries**: each vendor's row says whether its library was found and where, or why not, with **Add folder...** for your own folder (for Omnisphere, the STEAM folder or any folder inside it). Your folder is used while the vendor's record finds nothing. See Presets (p. 175).

Importing from Unify

arctone.studio can bring in your **PlugInGuru Unify** library - the commercial libraries and your own - as presets of Unify itself: pick one in the browser and Unify opens on the layer with that patch, playing it exactly as Unify does - its layers, its own effects, MIDI effects and macros, and every plug-in in it. The Preset Importer does it (arctone.PresetImporter (p. 160)). It finds Unify's library where Unify keeps it (the data folder in Unify's own settings, or Unify's default folder); if Unify isn't installed but its library is here, choose its data folder in **Settings > Presets > Vendor libraries** (**Unify data folder**).

Where they go. Under Unify2 in the plug-in tree, each in its library's folder as it is in Unify's Libraries folder: **Unify2 > <library> > <patch>** (a library inside another, as the BBC DiscoverStation BONUS's, stays inside it). A patch that is byte for byte the same as one already brought in (the BONUS's copies of other libraries) is brought in once, under its own library. Each keeps Unify's author and tags.

Nothing but Unify is loaded to import them, so the whole library takes minutes. Unify's encrypted `.upf` patches are counted and left out (only Unify itself opens them), and so are its auto-saves. A later import brings in only new or changed patches.

arctone.PresetImporter

arctone.PresetImporter is the importer inside arctone.studio. It reads most of your plug-ins' presets - Kontakt's instruments, Opus', Falcon's, NKS libraries and plug-ins' own preset files - and saves them into your **Imported Presets** library. Not every preset can be imported: some plug-ins keep theirs where no host can reach them. It writes nothing for other programs and never changes your plug-ins or their files. Its own chapters are Getting started (p. 223) and The importer's window (p. 227).

Start it with **Import now** when arctone.studio asks **Import your presets?** after its first plug-in scan (Getting started (p. 10)), **Import presets** in Getting started, the **Preset Importer** button in the View bar (after **Preset map**; lit while it runs, and the **Show** menu turns it off the bar), or **Open Preset Importer...** in the command palette (The command palette (p. 26)). For one plug-in, right-click it in the Browser and choose **Import presets with the Preset Importer...** (Starting an import from arctone.studio (p. 224)).

It opens on the analysis: it finds your plug-ins and counts their presets, writing nothing. Then it shows what it found, the room it needs and where the library is, and the big sample libraries that take longer, for you to tick. **Import N presets** imports the quick part first, then the libraries one by one; **Stop import** keeps everything imported so far. The Results screen says what came in, and **Open my library in arctone.studio** shows it (Analyze & Import (p. 228), Results (p. 231)). You can keep playing while it runs: presets show up in the Browser

as they are imported.

Later imports offer only what is new. When the standalone app starts and the importer's background check finds new presets, one line says "New presets found: ... Import now?", with **Import now** and **Not now**, and it is kept in **Messages** (Importing again: only what is new (p. 234)).

Where they go: the **Imported Presets** folder - `~/Music/arctone.studio/Imported Presets` on a Mac, `Documents\arctone.studio\Imported Presets` on Windows (a library made before November 2026 stays where it was, in `arctone.studio Library`). Find them in the Browser's Sounds and Effects tabs. **Settings > Presets > Imported Presets (Arctone.PresetImporter writes here)** shows the **Location** and has **Move imported presets...** (to another folder or drive - a large library may live on an external one), **Open the Imported Presets folder**, **Capture presets as you play** (for a plug-in the importer found nothing for, each preset its own browser loads while you play is saved into Imported Presets once) and the last import's summary (Presets (p. 175), Where your presets go (p. 237)). The importer takes the location from arctone.studio each time; only its first import can choose another one.

Some content can't be imported: encrypted files, and libraries that aren't activated or are missing samples. Keep the original plug-in installed and licensed: imported presets are for use in arctone.studio with that plug-in.

Loading a preset

When you load a preset onto a layer, arctone.studio applies these rules, and tells you if it had to deviate:

1. A file that fails its checksum or is not a valid preset is **refused**, with the reason.
2. A preset for a **different plug-in** (a different name) is refused.
3. The **same plug-in in another format** (for example a VST3 preset onto the Audio Unit): saved states are not interchangeable, so the parameters are used, with a note. A preset with no parameter snapshot cannot cross formats.
4. If the plug-in's version differs from the one it was captured with, a note says so.
5. If verification found the plug-in only accepts a state *before* it starts, arctone.studio loads it that way.
6. The stored **parameters are applied on top of the state only when the state does not hold the preset** (identical for every preset, or empty), or when it is a VST2 plug-in's whole bank, which doesn't say which of its programs the preset was. Otherwise stale parameters could spoil a preset the state restored correctly. See Which side is the truth (p. 164).
7. If the preset once failed verification, you are told it may not sound exactly as captured.

The notes appear in a small message after loading and are written to `PresetLog.txt`.

How preset files are stored

Preset files are written so that they cannot end up half-written or silently damaged. The reasoning is in Why files are stored the way they are (p. 211).

- **Atomic writes.** The file is written to a temporary file beside the target and only then replaces it; a failed write leaves the old file intact.
- **Checksum.** A SHA-256 of the state is stored in the file and checked when it is read. A mismatch is reported and the file is not loaded.
- **History.** When a preset is overwritten with a *different* state, the previous version is kept in a

hidden `.history` folder next to it (the last 10 versions). In Finder press Cmd-Shift-. to see hidden folders.

- **Order.** The preset's position in the plug-in's list is stored in the file, so the tree keeps the plug-in's own order without numbering file names. Older files named `0002 Name` still work: their number is used.
- **Versions.** Format version 2 is current; version 1 files still open.

Chapter 12

Verification and health

Why verify presets

A captured preset is only useful if it *comes back the same*. Some plug-ins do not restore their saved state completely, some are in demo mode, some hide part of their sound in parameters they never report. **Verification** checks a preset by restoring it into fresh copies of the plug-in and measuring the result, and it records the outcome so you know which presets to trust. It never fails silently: every finding is shown beside the preset and written to `PresetLog.txt`.

Verification badges

The badge beside a preset in the plug-in tree shows its last result:

Badge	Meaning
✓	**Verified.** It restores exactly: parameters match, a second restore matches the first, and the audio nulls.
≈	**Soft-verified.** It restores, with a small difference that has an explanation (random oscillator phase, parameters the plug-in does not report, or content that is not repeatable). Hover the badge for the reason.
P	**Parameter-only.** The saved state does not hold the sound, so the preset can only be rebuilt from parameters.
✗	**Failed.** It could not be restored reliably.
(none)	Not verified yet.

Hover a badge for the note. See How verification works (p. 163) for how the result is reached.

How verification works

Each preset goes through these stages:

1. **Round-trip.** Restore the preset into a fresh copy of the plug-in, let it settle (at least 300 ms, without blocking; see *Settling* below), take a snapshot of its parameters and compare with the snapshot stored in the preset (tolerance 0.0001). If that fails, the other restore order (state before *prepare to play*) is tried, then rebuilding from the stored parameters.
2. **Reload stability.** Restore into a second fresh copy; it must match the first.
3. **Null test (optional).** The same test signal goes through both copies: seeded noise and a sweep for effects, a chord, a single note and a velocity sweep for instruments (0.5 s warm-up, then 3 s). The residual is measured. At –60 dB or below it passes. If the waveforms do not cancel (random phase, unison detune, noise, free-running LFOs), the sound is compared instead: loudness within 1.5 dB and the average

spectrum within 1 dB (2.5 dB for uncorrelated waveforms) is a soft pass.

Audio that is not repeatable (random, arpeggiated or sequenced content) with matching loudness is soft-verified with a note. A difference of more than 3 dB in loudness fails. The reasons for these thresholds are in Why the null test judges "the same sound" (p. 212).

Settling. Some plug-ins apply a state a moment after they are given it, and an instrument that loads a model or samples can take a second or more. So each restore waits at least 300 ms, then until the plug-in's parameters are where the preset has them (for the second copy: where the first copy's are), at most 2 s. A plug-in that is already there waits no longer than 300 ms. A wait that took longer, or reached the 2 s cap, is a *Settle* line in the stages; one that reached the cap is also written to PresetLog.txt. After five waits that reached the cap, a plug-in's waits are 300 ms again, so one whose state doesn't restore can't slow the whole run down.

Which side is the truth

A preset stores two descriptions of the same sound: the plug-in's **saved state** and a **parameter snapshot**. Usually the state is the truth. But there are exceptions in both directions:

- Some plug-ins do not tell the host about every parameter when a preset changes, so the snapshot taken from the live plug-in is **stale** for those parameters (BIT2 does this for about 100 of its 3,105 parameters). The state has the right values.
- Some plug-ins give the *same* state for every preset, or none at all (demo mode). Then only the parameters differ from preset to preset.

arctone.studio tells them apart by **comparing all of a plug-in's presets**. If their states differ, the state is the source of truth and a small number of differing parameters (up to 10%) is only a note. If the states are identical (three or more presets) or empty, the parameters are the truth and are applied on top when loading. The same rule decides what happens when you load a preset in arctone.studio. See Why the state is trusted over the parameters (p. 211).

A VST2 plug-in's presets are compared only with those holding the same kind of state: its programs with its programs, and its whole banks (presets from an earlier arctone.studio) with its banks. Two programs that differ only in their names count as the same state.

When presets are checked

arctone.studio checks presets as it brings them in:

- **Import presets** checks what it imports by loading it back before anything is saved. See Importing from a plug-in's preset files (p. 159).

A badge beside a preset in the Browser shows its result, where it has one (Verification badges (p. 163)).

Reading the results

Hover a preset's badge in the plug-in tree, or its coloured mark on the Presets page, for its result and the note that goes with it (Verification badges (p. 163)).

- The note names what was found. Every finding is explained in the *Finding reference* at the end of this manual, with what it means and what to do. See The plug-in crashed (p. 218) for an example.

- `PresetLog.txt` in arctone.studio's app-data folder has every finding, with the stage it came from (Where your files live (p. 16)).

Chapter 13

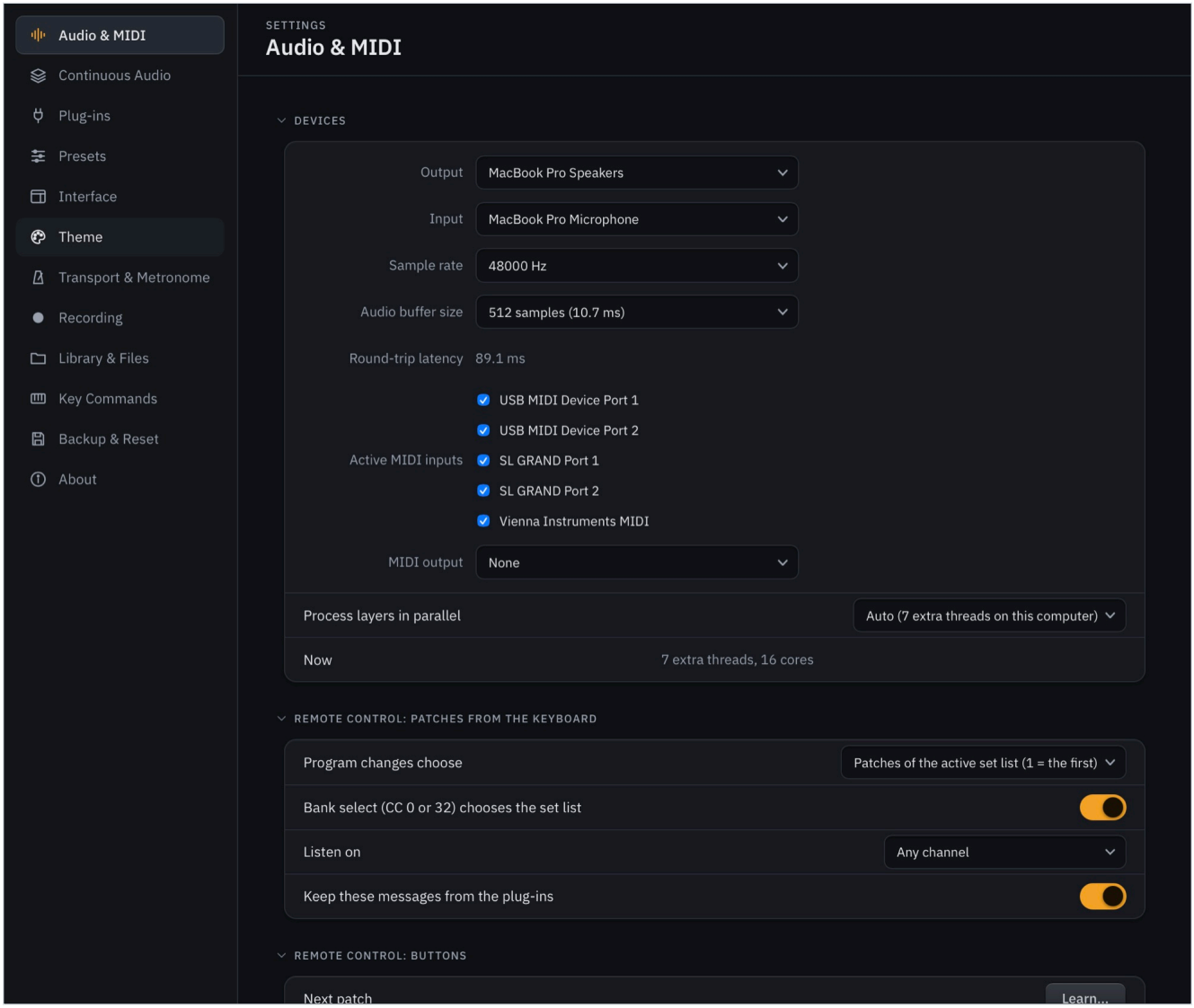
Settings

The web interface and the classic interface

arctone.studio has two interfaces with the same layout and the same controls. The **web** one, which is the default, is a web page drawn by the system's web engine (WebKit on macOS, Microsoft Edge WebView2 on Windows); the **classic** one is drawn by arctone.studio itself. Everything in this manual applies to both. Settings > Interface > **Interface** switches between them; the change takes effect the next time arctone.studio starts (or the plug-in window is reopened in your DAW).

In the web interface, the panels (set list, plug-ins, plug-in list) dock on the left or the right of the window: with **Lock the window layout** off, drag a panel's title bar to the other side; drag the divider to resize, and use the panel's ⋯ menu or Settings > Interface > **Panel layout > Reset** to put them back. To keep whole arrangements of the window and switch between them, use window layouts (Window layouts (p. 40)). The Plug-in Manager and messages such as "Quit arctone.studio?" appear inside the window. This Help window is a window of its own, drawn the same way (pages too); plug-in editor windows show the plug-ins' own interfaces.

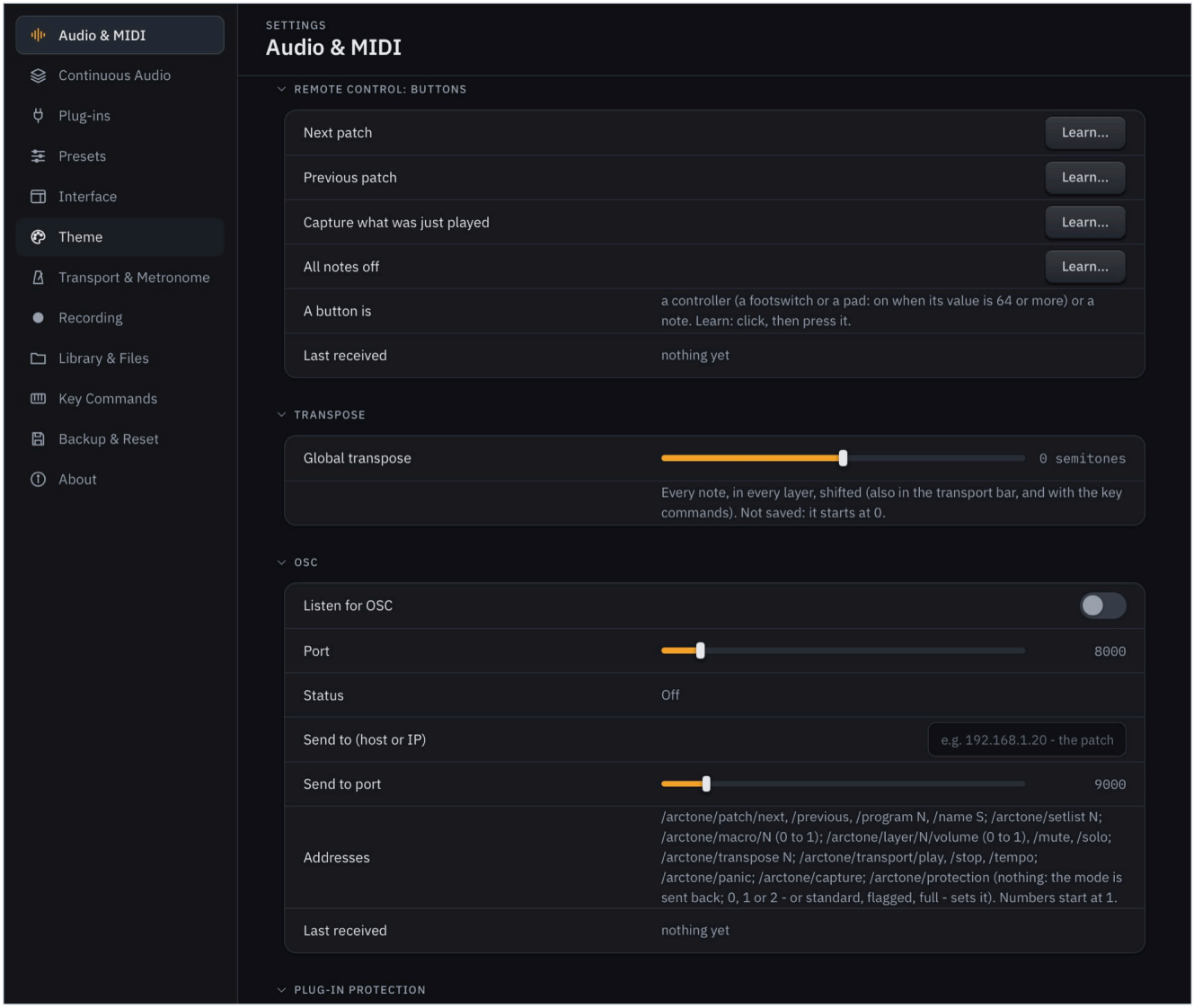
The Settings window



Settings, with its pages down the left side. Here: Audio & MIDI.

≡ > **Settings...**, the first item of the main menu at the far left of the header (or **Cmd+,**, Ctrl+, on Windows), opens the **Settings** page in the main window, in place of the layers: the list of pages down the left, the page chosen beside it, and **Close Settings** (the × at the top right, or Esc) to go back. The pages are **Audio & MIDI**, **Continuous Audio**, **Plug-ins**, **Presets**, **Interface**, **Theme**, **Transport & Metronome**, **Recording**, **Library & Files**, **Key Commands**, **Backup & Reset** and **About**. Audio & MIDI also holds **OSC** (OSC control (p. 183)) and **Plug-in protection** (Plug-in protection and crash recovery (p. 195)). Hover over any setting and press F1 for its help.

Audio & MIDI



Audio & MIDI, further down.

Process layers in parallel (multi-core): the layers of a patch run on several threads at once - each layer's MIDI effects, instrument, effects and fader on its own thread, then everything summed in order - so a heavy patch (many large synths) stays glitch-free on a computer with several cores. **Auto** uses the cores but two (one for the audio thread, one for the interface); choose a number to set it yourself, or **Off** to run everything on the audio thread. The sound is the same either way, sample for sample. The line below says what is in use.

Devices: choose the audio device, its inputs and outputs, sample rate and buffer size, enable MIDI inputs, and choose the **MIDI output** device that layers with MIDI out send to (The layer inspector (p. 73)). Standalone app only; inside a DAW the host owns the audio and MIDI.

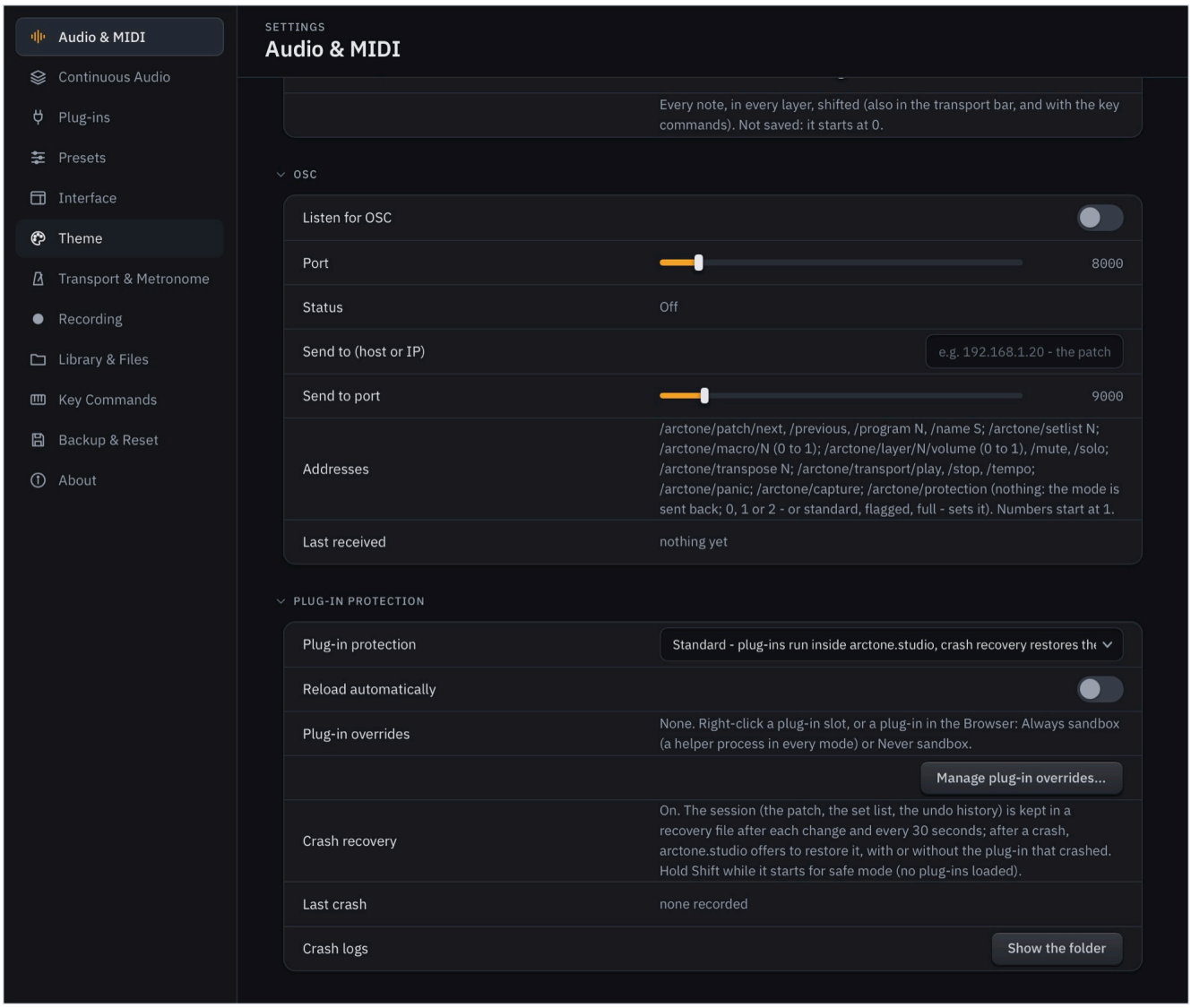
Remote control: patches from the keyboard. Switch patches without touching the mouse:

- **Program changes choose** the patches of the active set list (program 1 = the first patch in it; the first by default), the patches of the library in order, or nothing (the program changes reach the plug-ins instead).

- **Bank select (CC 0 or 32) chooses the set list**: bank 0 is the first set list in name order, and the program change that follows picks the patch in it. Keyboards that send both MSB and LSB are read by the LSB.
- **Listen on** any channel or one channel.
- **Keep these messages from the plug-ins** (on by default): a program change, bank select or button press that arctone.studio uses stops there. Off, the plug-ins get them too; most plug-ins change their own preset on a program change, which is rarely what you want on stage.

Remote control: buttons. A footswitch, a pad or a key can step to the **next** or **previous** patch (as the set list's buttons do: Set lists (p. 102)), **Capture what was just played** (The recording tracks (p. 81)), or send **all notes off**. A button is a controller (on when its value reaches 64, as footswitches send) or a note. Click **Learn...** and press it; **Last received** shows what a pedal sends if you aren't sure; **Clear** forgets it. Everything here works with the window closed and inside a DAW, as long as the MIDI reaches arctone.studio.

Transpose: the global transpose, the same control as the transport bar's: Transpose (p. 170).

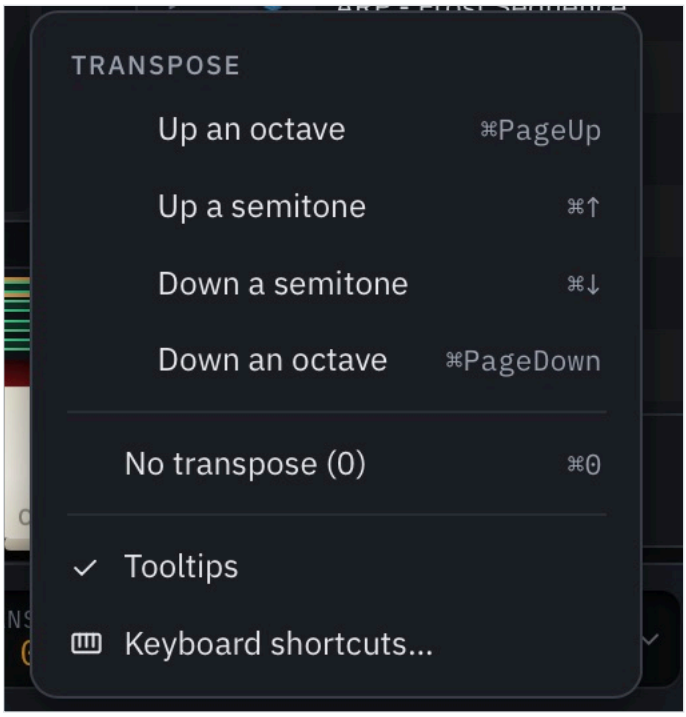


Audio & MIDI, the end of the page.

Transpose

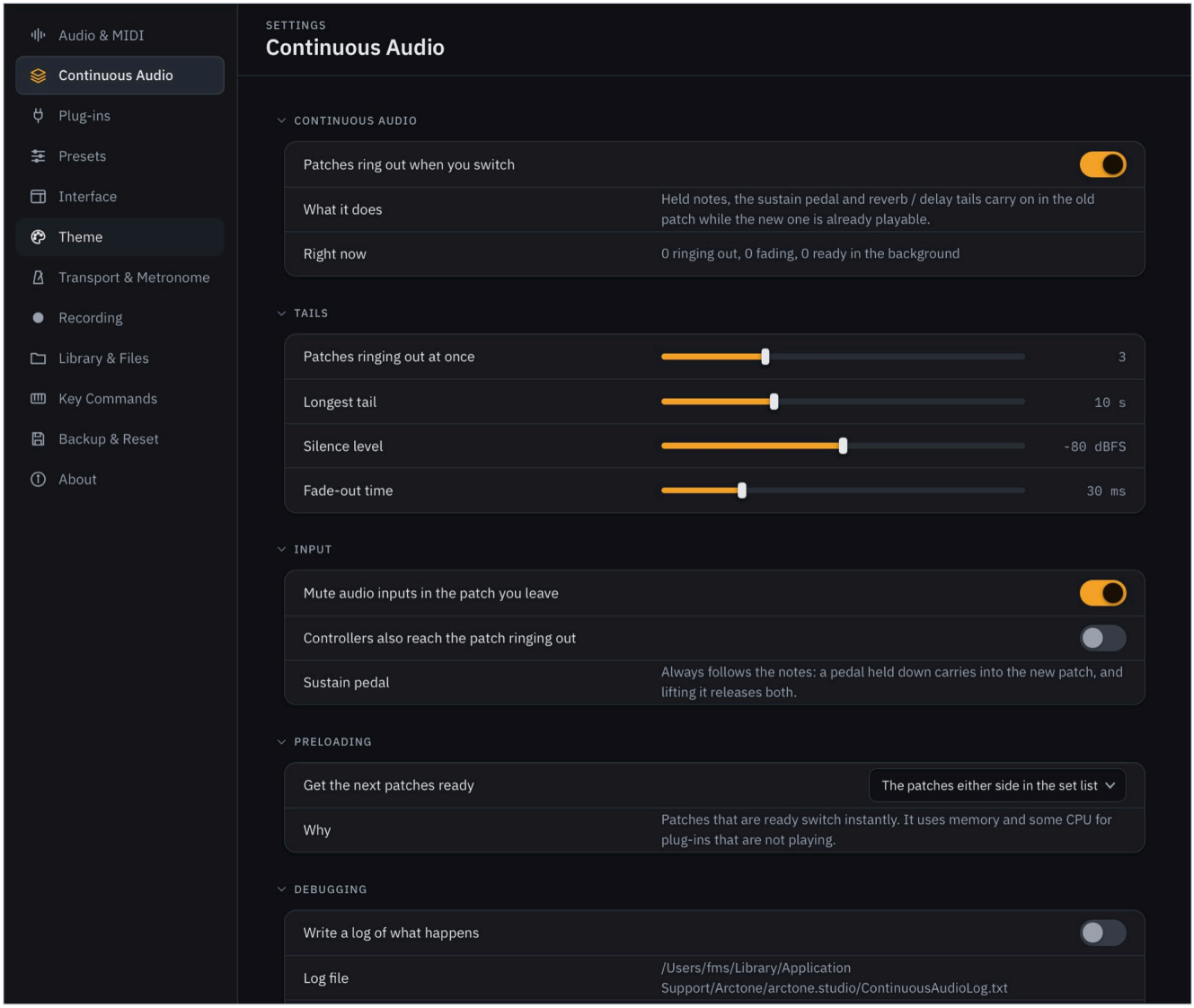
TRANSPOSE in the transport bar shifts every note that reaches the layers, in semitones, from -48 to +48: a singer wants the song a tone down, you play it as written. Drag the readout up or down (or scroll it), double-click it for 0, or right-click it for a semitone or an octave either way. The key commands: Cmd+Up / Cmd+Down a semitone, Cmd+PageUp / Cmd+PageDown an octave, Cmd+0 back to 0 (Ctrl on Windows; Key Commands (p. 192)). It's in Settings > Audio & MIDI too.

Notes you're holding when you change it keep sounding at the pitch they started, and stop properly when you let go; the new transpose applies from the next note. Each layer's own transpose (The MIDI line: what reaches the plug-ins (p. 65)) is added on top. The global transpose isn't saved: it starts at 0, so a patch always plays as it was made.



TRANSPOSE's right-click menu in the transport bar.

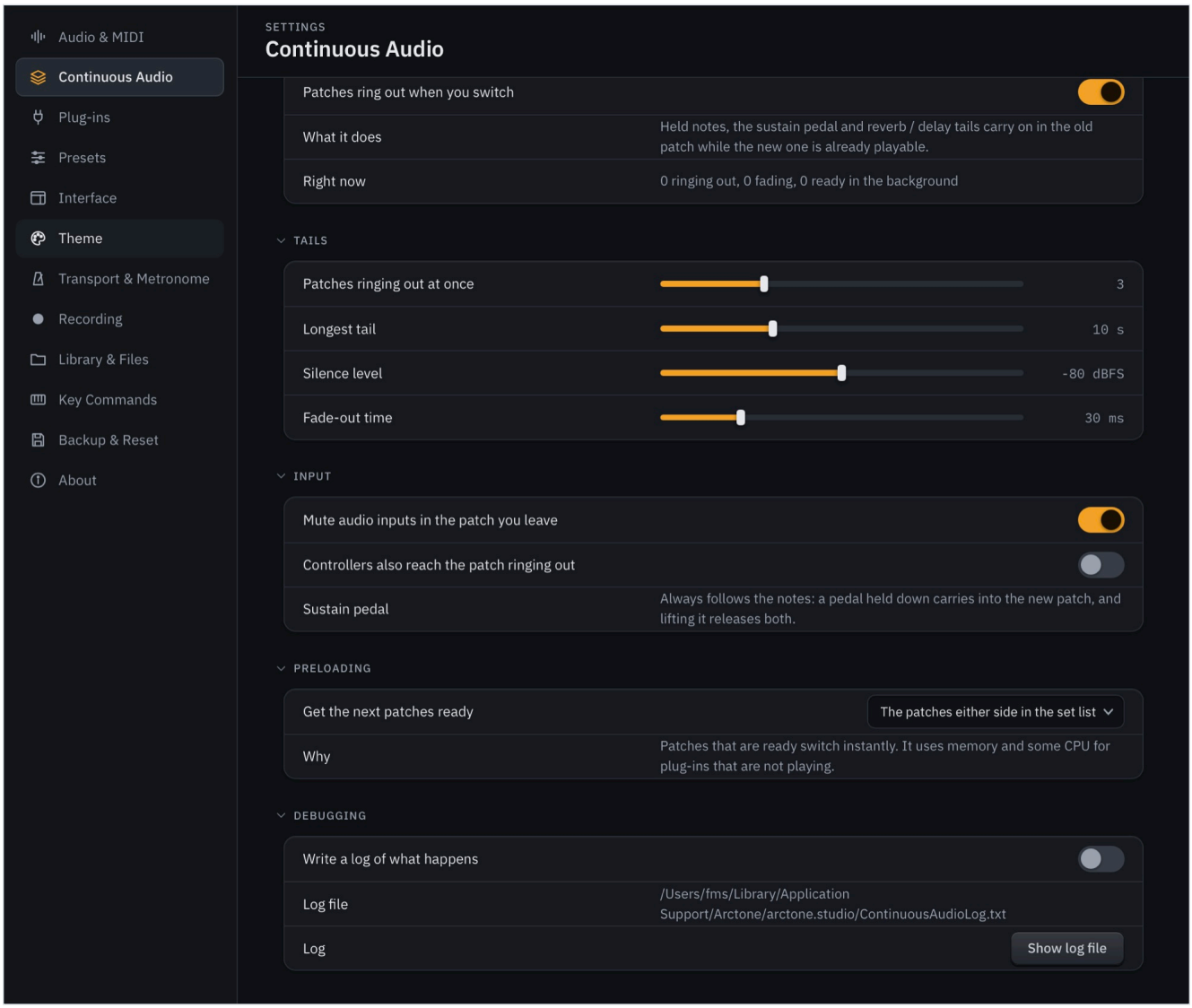
Continuous Audio



Settings > Continuous Audio.

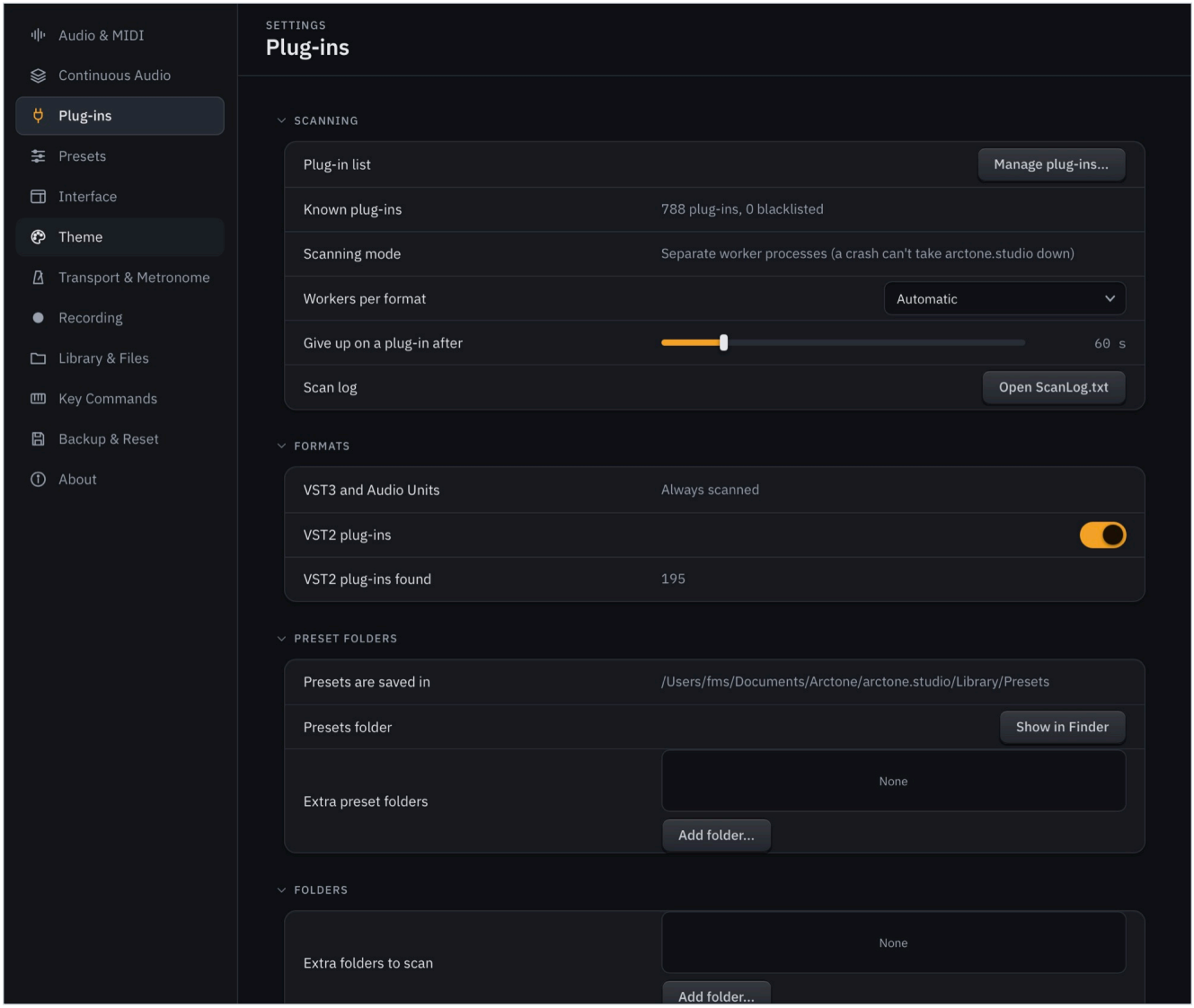
- **Patches ring out when you switch:** the main switch. See Continuous audio (p. 111).
- **Tails: Patches ringing out at once** (1 to 8), **Longest tail** (seconds), **Silence level** (dBFS) and **Fade-out time** (ms). See How long an old patch rings (p. 112).
- **Input: Mute audio inputs in the patch you leave** (Live audio input (p. 113)) and **Controllers also reach the patch ringing out** (Sustain pedal and other controllers (p. 112)).
- **Preloading:** off, the patches either side in the set list, or the whole set list. See Getting the next patches ready (p. 113).
- **Debugging: Write a log of what happens** and **Show log file**. See The log (p. 114).

The panel also shows how many patches are ringing out or fading right now.



Continuous Audio, the end of the page.

Plug-ins

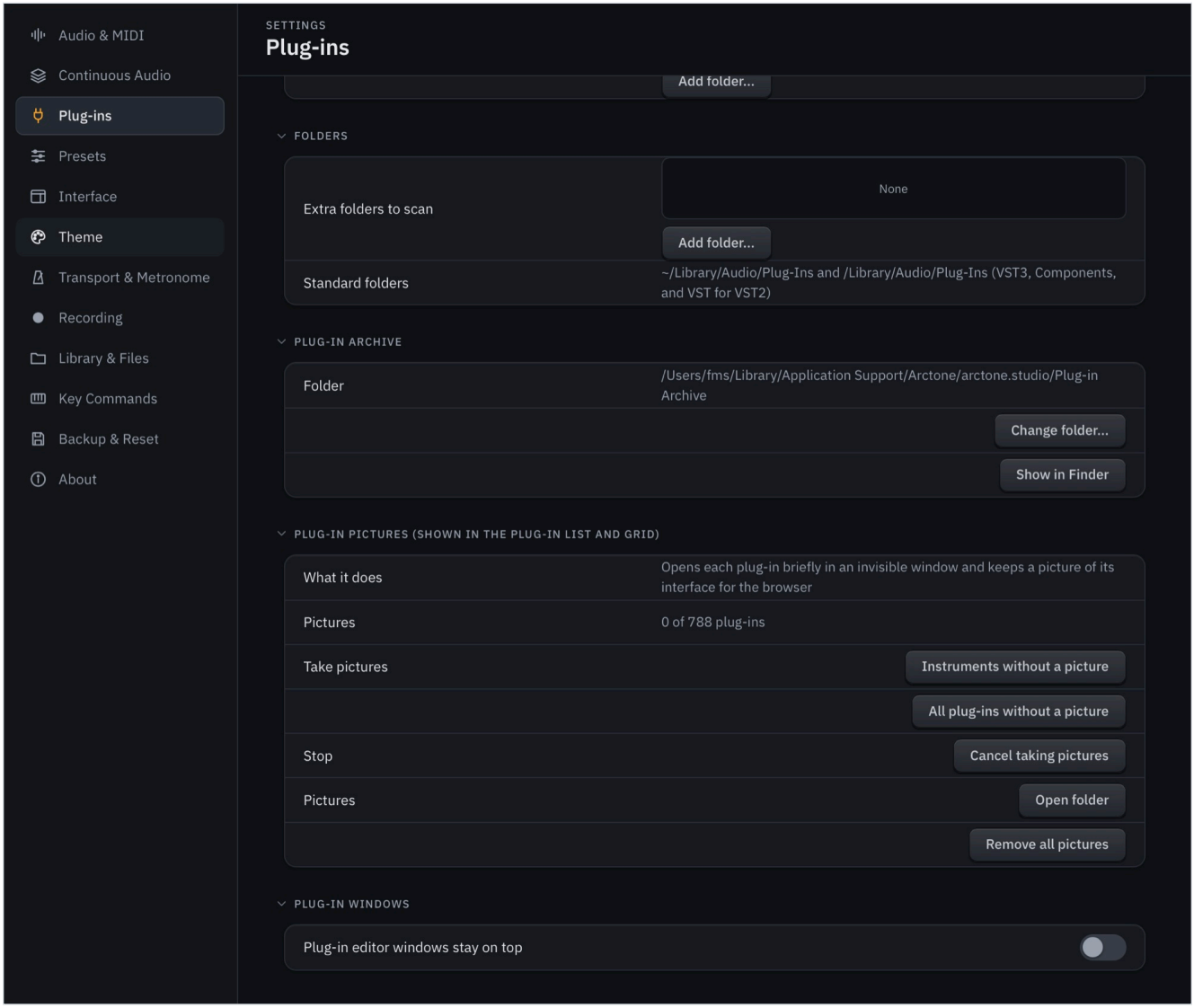


Settings > Plug-ins.

- **Scanning: Manage plug-ins...** opens the Plug-in Manager, where scans are started (The Plug-in Manager (p. 124)); how many plug-ins are known; the scanning mode; **Workers per format** (Automatic, or 1 to 8); **Give up on a plug-in after** (seconds); and **Open ScanLog.txt**.
- **Formats:** VST3 (and on a Mac, Audio Units) are always scanned. **VST2 plug-ins** turns VST2 on or off (on by default), with how many were found. See VST2 plug-ins (p. 123).
- **Preset folders:** where presets are saved (with a button to show it) and the **Extra preset folders**, just above the plug-in folders. See Where presets are kept (p. 157).
- **Folders: Extra folders to scan** and the standard folders (VST2's included).
- **Plug-in Archive:** the folder archived plug-ins are kept in, with **Change folder...** and **Show in Finder** (The Plug-in Manager (p. 124)).
- **Plug-in pictures** shown in the list and grid: how many plug-ins have one, **Instruments without a picture**, **All plug-ins without a picture**, **Cancel taking pictures**, **Open folder** and **Remove all pictures**.

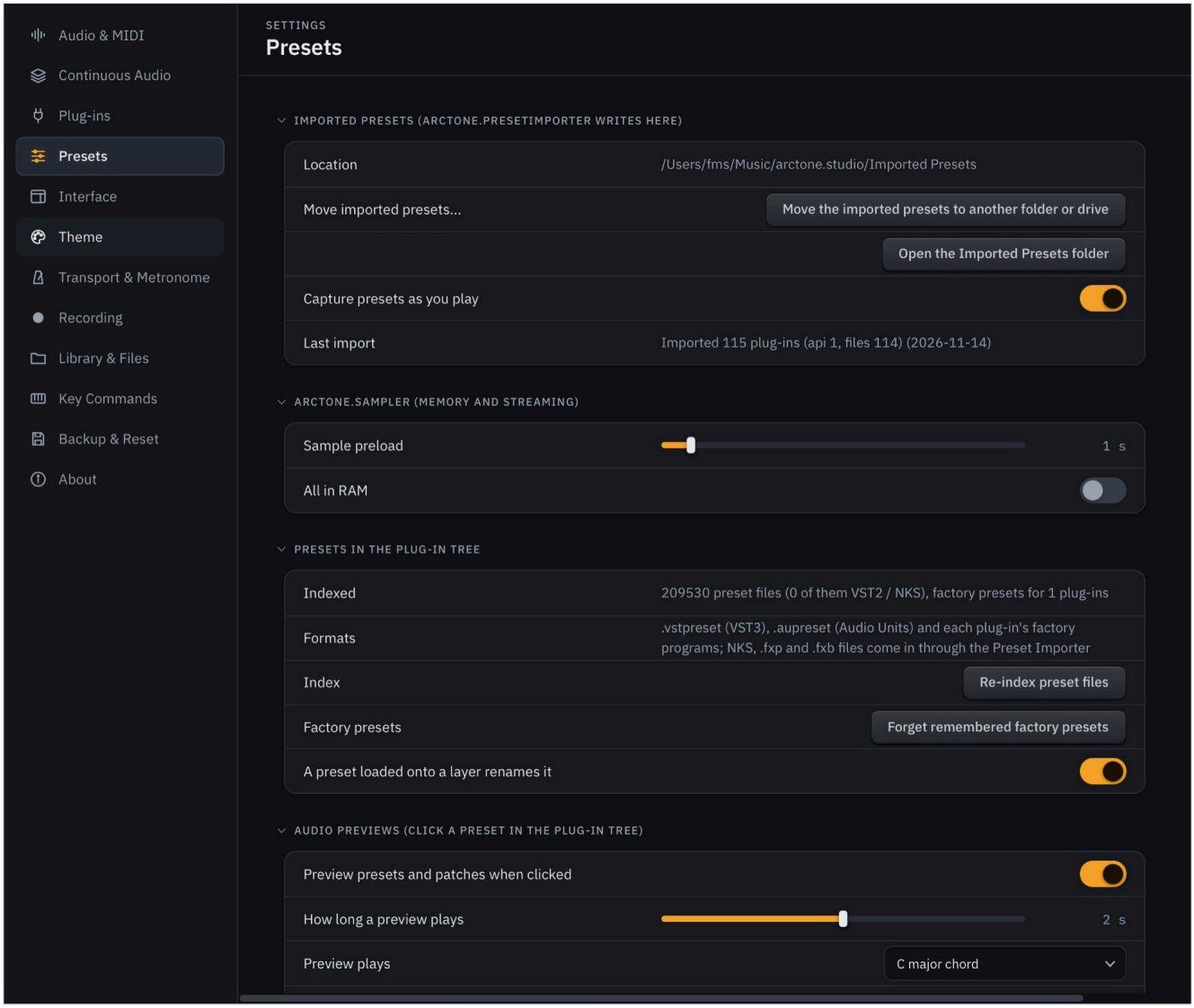
- **Plug-in windows: Plug-in editor windows stay on top.**

See Scanning for plug-ins (p. 122).



Plug-ins, further down.

Presets

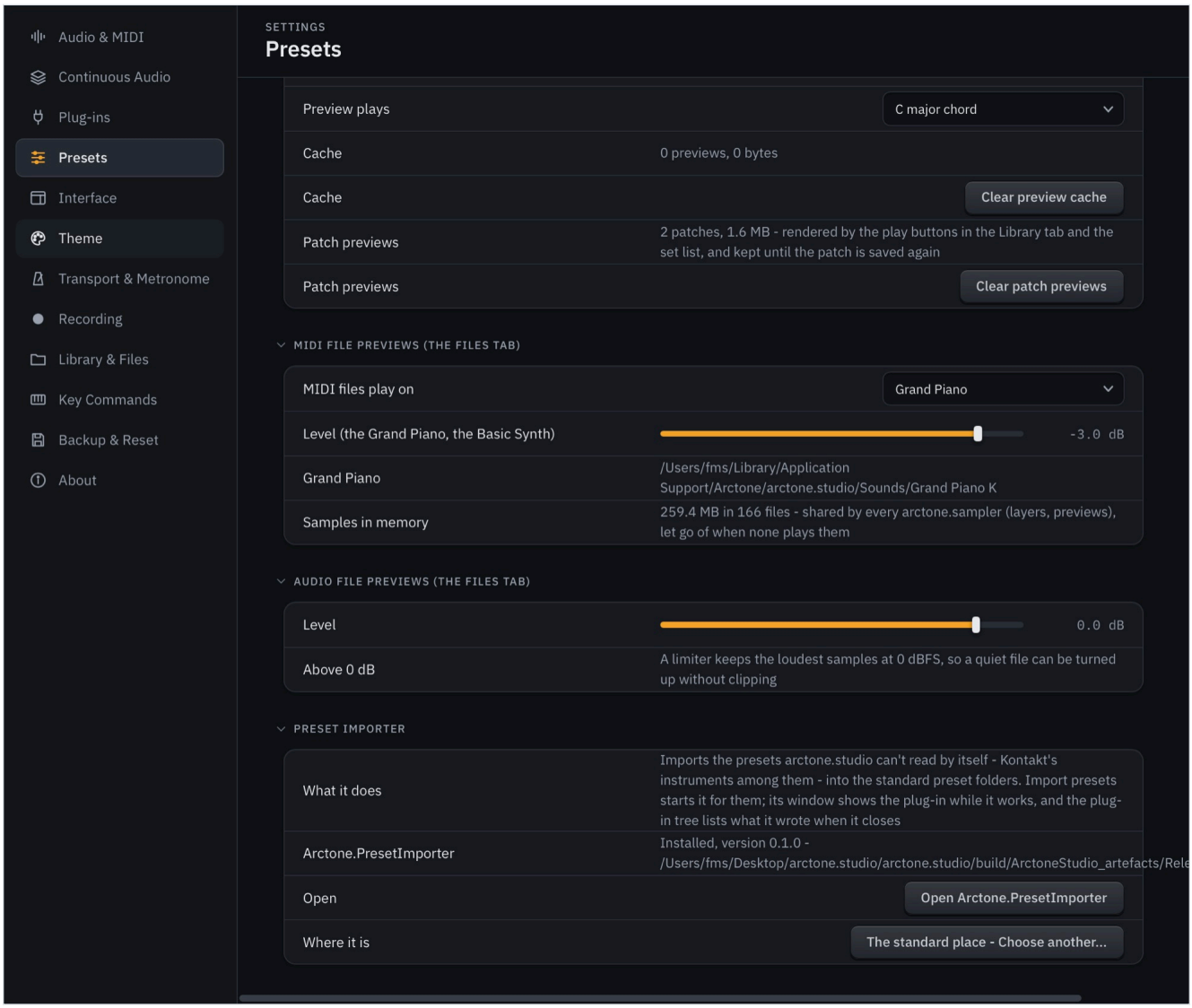


Settings > Presets.

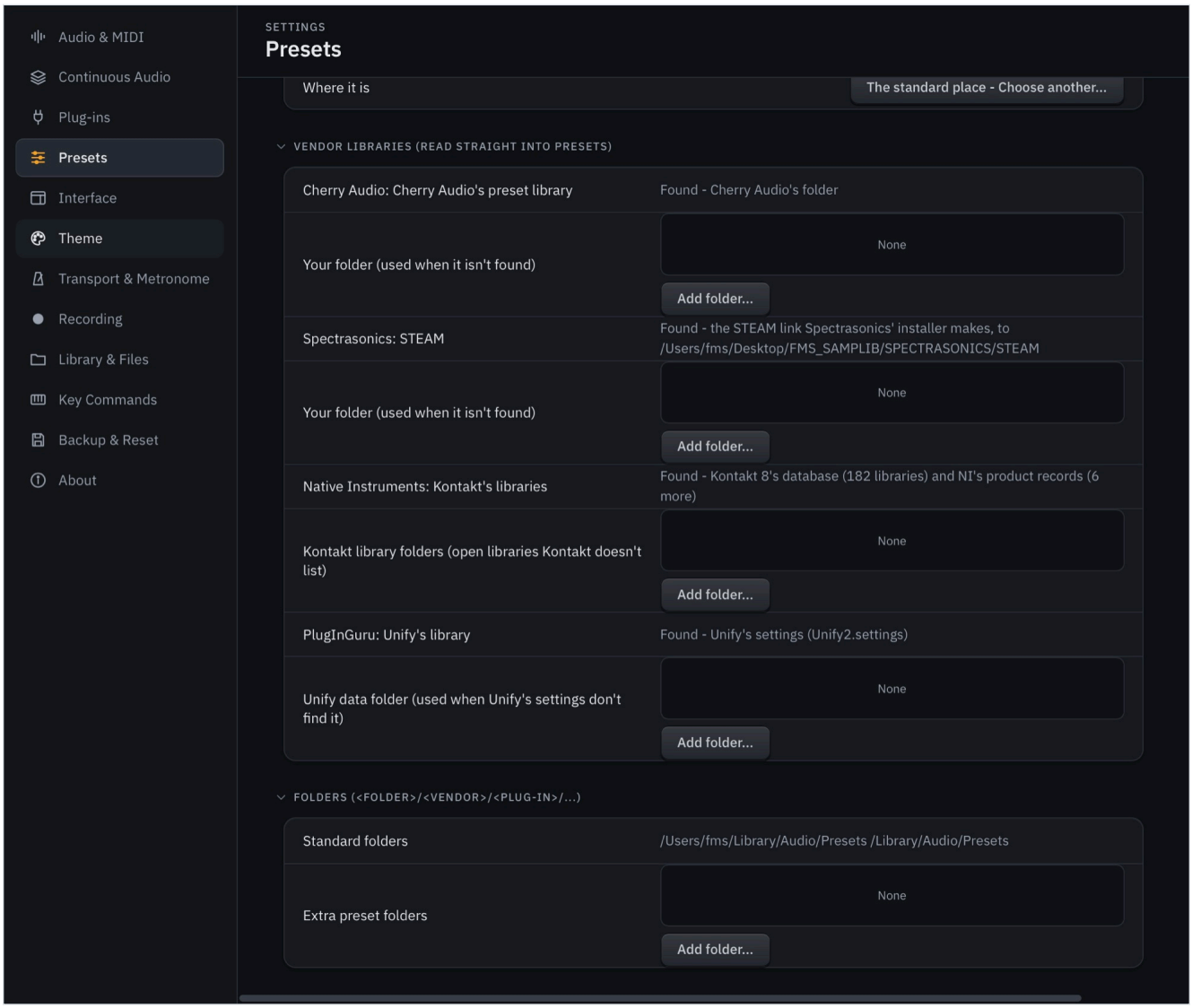
- **A preset loaded onto a layer renames it** (on at first): a preset dropped on a layer, or chosen for its instrument, names the layer, even a name you typed; off, a typed name stays. See Adding, removing and arranging layers (p. 76).
- **Imported Presets (Arctone.PresetImporter writes here)** (first): where the library is, **Move imported presets...**, **Open the Imported Presets folder**, **Capture presets as you play** and the last import. See arctone.PresetImporter (p. 160).
- **arctone.sampler (memory and streaming): Sample preload** - how much of each sample is kept in memory, the rest read from disk as it plays; at the far end, **All in RAM**. See The arctone.sampler (p. 116).
- **Presets in the plug-in tree:** how many preset files (and how many of them VST2 / NKS presets) and factory programs are known - NKS, `.fxp` and `.fxb` files come in through arctone.PresetImporter (VST2 presets: NKS, .fxp and .fxb (p. 159)); re-index; forget remembered factory presets.
- **Audio previews: Preview presets and patches when clicked** - a click on a plug-in preset in the Browser

plays its preview, and a click on a patch in the Sounds tab plays the patch's (the play buttons, Space and Hear it play either way) -, how long a preset preview plays (up to the three seconds every preview is rendered: it trims what you hear, it doesn't change what is rendered), what **Preview plays** (Middle C, a C major chord, or a low C for basses), and clear the cache. See Preset previews (p. 158). Then the **patch previews** - the patches heard before loading them: how many are kept and their size, and **Clear patch previews** (the ticks on the rows go with them). See Hear a patch before loading it (p. 100).

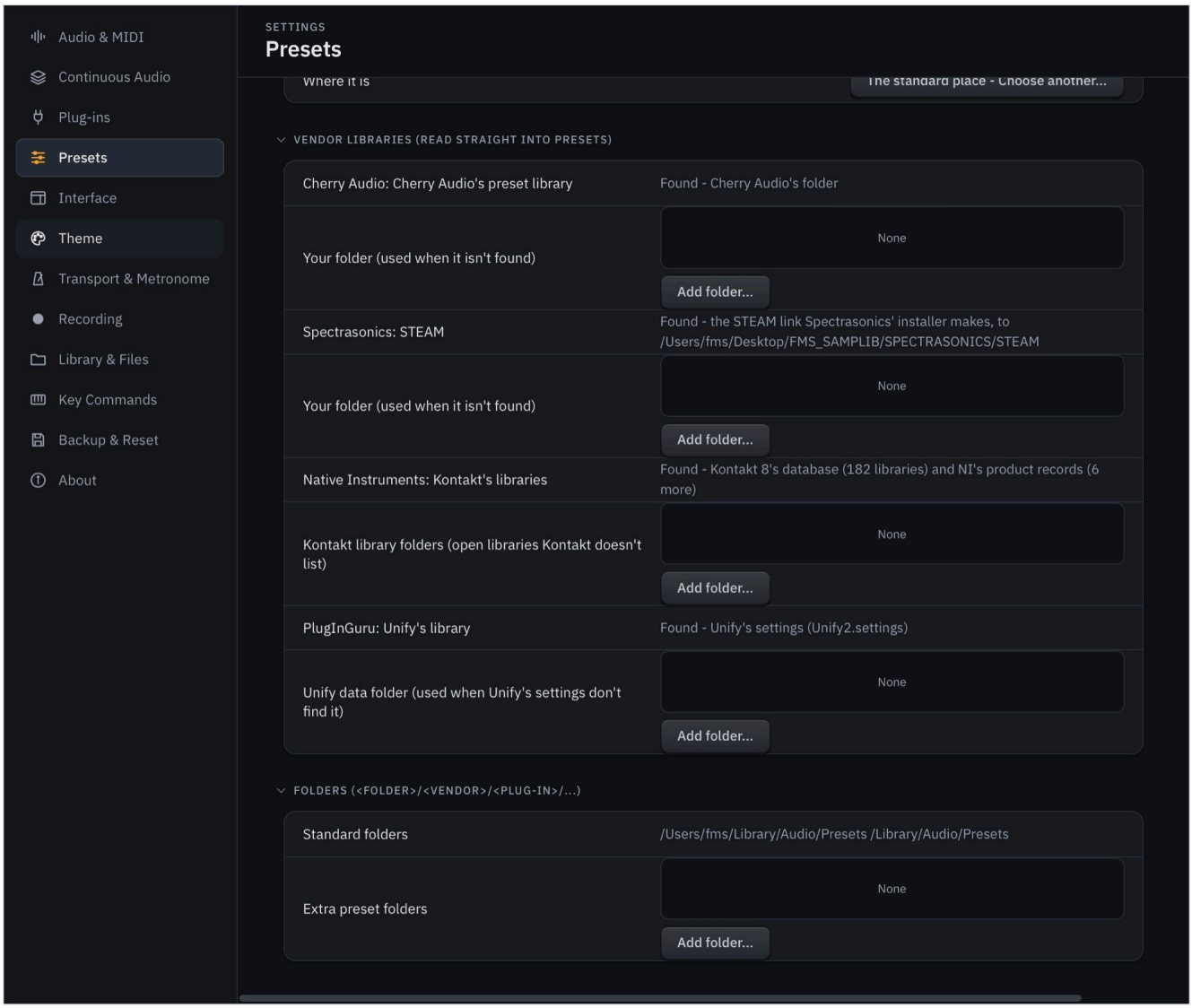
- **MIDI file previews (the Files tab):** what MIDI files play on (the same list as the sound button in the Files tab's strip), the **level** of the Grand Piano and the Basic Synth there (-24 to 0 dB, -3 dB at first; the strip's level control is the same one), what plays instead when the sound chosen can't play now and why, where the **Grand Piano** is installed (or that it isn't), and how much memory the Samplers' samples take now. See The Files tab (p. 142).
- **Audio file previews (the Files tab):** the **level** of audio files played there (-40 to +6 dB, 0 dB at first; the strip's level control is the same one). Above 0 dB a limiter keeps the loudest samples at 0 dBFS, so turning a quiet file up never clips.
- **Preset importer:** arctone.PresetImporter, the importer that **Import presets** and the **Preset Importer** button start - whether it is there and its version (with **Download** when it isn't), **Open Arctone.PresetImporter**, and **Where it is** for an unusual install. See arctone.PresetImporter (p. 160).
- **Vendor libraries (read straight into presets):** a row for each vendor arctone.studio imports from - Cherry Audio, Spectrasonics, Native Instruments (Kontakt) and PlugInGuru (Unify) - saying where its library is now: **Found** and how (the folder the vendor's installer records, or Spectrasonics' STEAM link), **Found in your folder**, **Offline** (on a drive that isn't connected, named) or **Not on this computer** and why. Under it, **Your folder (used when it isn't found)**: **Add folder...** picks a folder of your own for that library - for Spectrasonics the STEAM folder or one inside it, for Cherry Audio the CherryAudio folder - used whenever the vendor's record finds nothing; the cross takes it out again. Unify's row is **Unify data folder**: the folder Unify keeps its Libraries and Presets in, used when Unify's own settings don't find it (see Importing from Unify (p. 160)). Kontakt's row is **Kontakt library folders (open libraries Kontakt doesn't list)**: the libraries Kontakt knows are always read, and the folders you add here are read beside them - several are allowed, each one a library named by its folder. See Importing from a plug-in's preset files (p. 159).
- **Folders:** the standard preset folders and your **Extra preset folders**, searched as `<folder>/<Vendor>/<Plug-in>/...`.



Presets, further down.

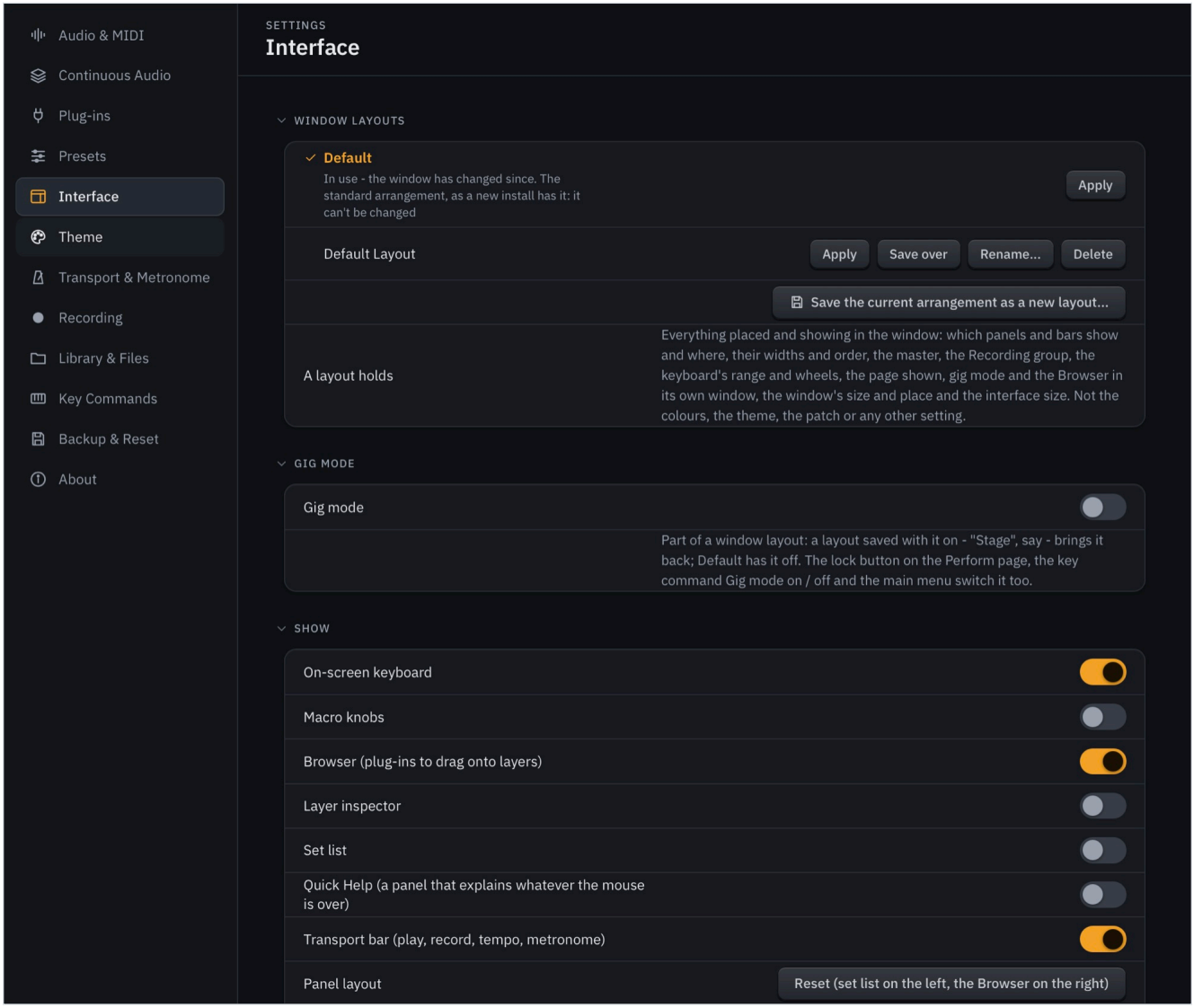


Presets, further down still.



Presets, the end of the page.

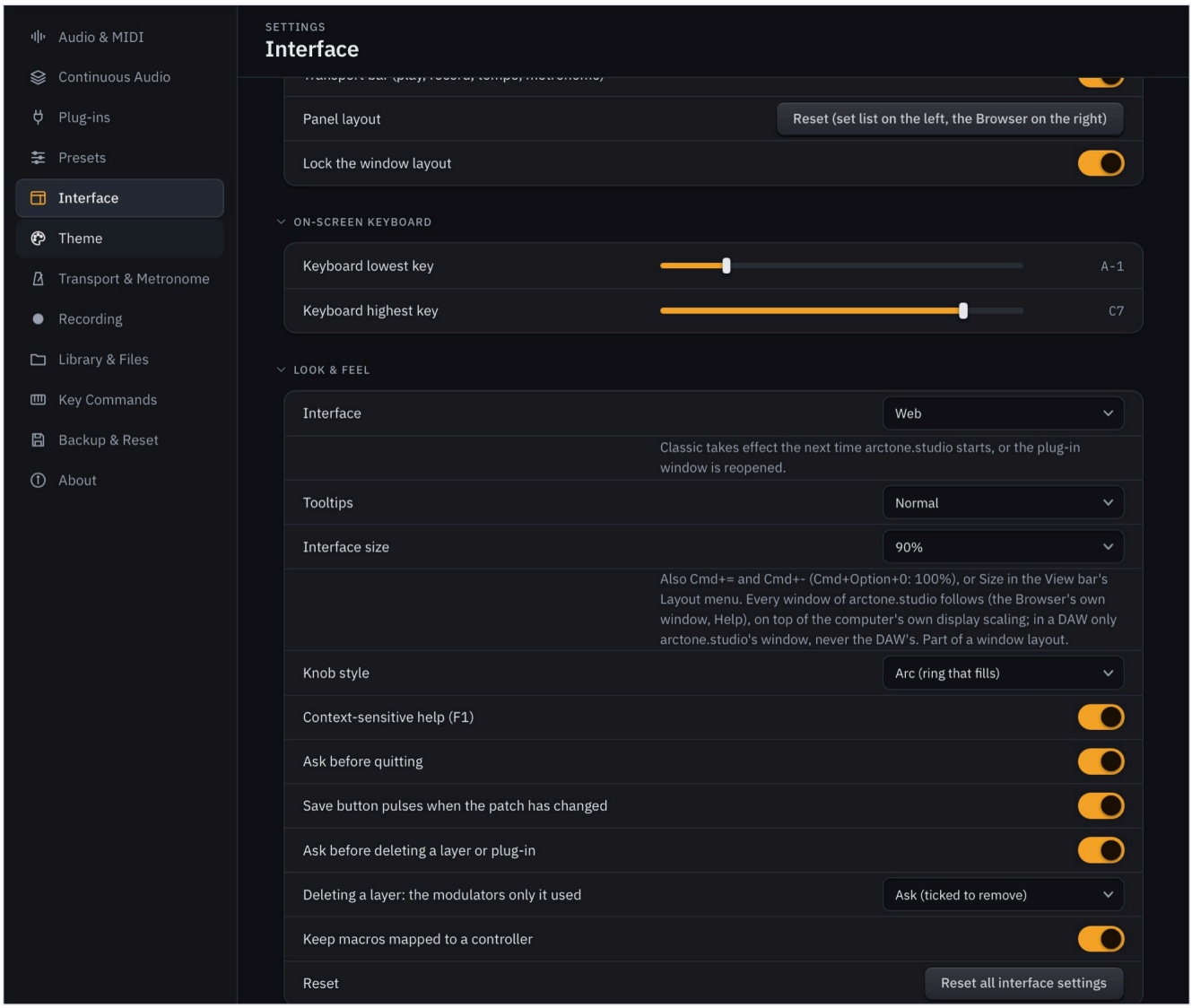
Interface



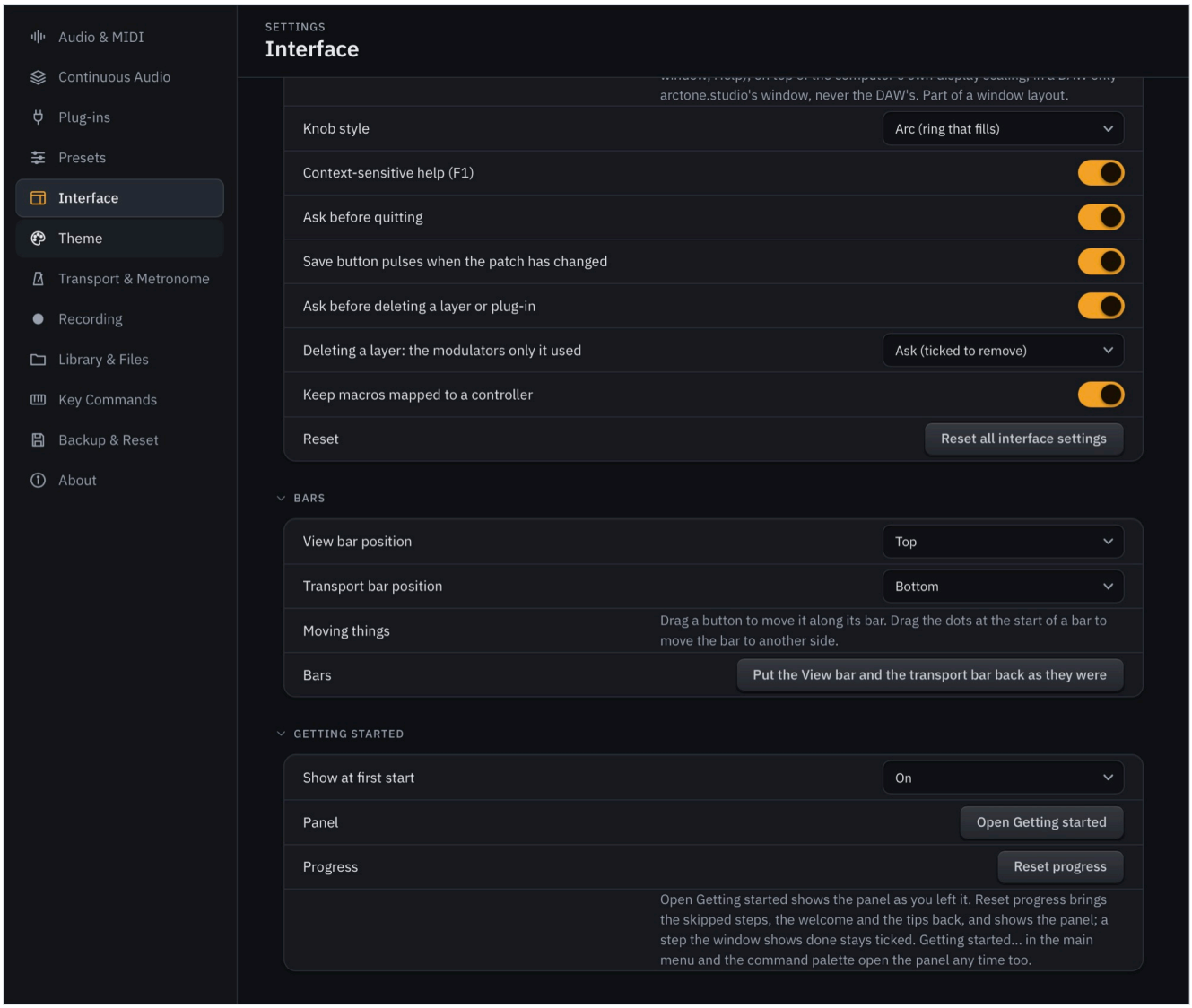
Settings > Interface.

- **Window layouts** (first): Default and your own, the one in use ticked - **Apply** on each; on your own **Save over**, **Rename...** and **Delete**; and **Save the current arrangement as a new layout...**. See Window layouts (p. 40).
- **Gig mode** (next): the Perform page locked for the stage - the same switch as the lock button on that page and the key command **Gig mode on / off**. Part of a window layout; Default has it off. See Gig mode (p. 95).
- **Show:** On-screen keyboard, Macro knobs, Browser, Layer inspector, Set list, Quick Help (Quick Help (p. 57)) and Transport bar; **Panel layout > Reset** (the set list on the left, the Browser on the right); and **Lock the window layout** (on at first: nothing in the window can be dragged out of place until you turn it off, Moving the bars and their buttons (p. 39)).
- **On-screen keyboard:** lowest and highest key.
- **Ask before quitting** (in Look & feel): on by default. See Quitting (p. 60).
- **Save button pulses when the patch has changed** (in Look & feel): on by default. See Save (p. 53).

- **Ask before deleting a layer or plug-in** (in Look & feel): on by default. Covers a layer or plug-in dragged off the window, **Delete layer** in the layer menu, and deleting a window layout (Window layouts (p. 40)). See Adding, removing and arranging layers (p. 76).
- **Bars: View bar position** (the top to start with) and **Transport bar position** (the bottom) - bottom, top, left or right - and a button that puts both back as they were, STATUS and PLAYING too. See Moving the bars and their buttons (p. 39) and The transport bar (p. 43). (**Show > Transport bar** shows or hides the transport bar, and PLAYING or STATUS with it if they are in it.)
- **Look & feel: Interface** (Web or Classic, see The web interface and the classic interface (p. 166)), **Tooltips** (Off, Fast, Normal, Slow), **Context-sensitive help (F1)** on or off, **Interface size** (75% to 200%, the whole window zoomed, in the plug-in too: Interface size (p. 42)), **Deleting a layer: the modulators only it used** (Ask, with them ticked to remove; Remove them; or Keep them), **Keep macros mapped to a controller**, and **Reset all interface settings** (the window goes back to the Default layout, at 100%; your own layouts are kept; the command palette forgets what you ran last, and the patch picker the patches you loaded lately: Choose a patch (p. 24); Getting started forgets its progress and whether you put it away: Getting started (p. 10)).
- **Getting started** (last): **Show at first start** - On (what a new installation has): a new installation, or one just initialized, opens the Getting started panel by itself, the standalone app first asking whether to find your plug-ins now; Off: neither, and the panel waits until you open it. **Open Getting started** shows the panel as you left it. **Reset progress** starts the panel again from the top: the skipped steps, the welcome and the tips come back, and it shows (a step the window shows done stays ticked). See Getting started (p. 10).
- **Knob style** (in Look & feel): how the macro knobs, the pan knobs and the sends are drawn - **Arc** (a ring that fills; what a new installation uses), **Dot on the rim**, **Filled pie**, **Thin ring**, **Vintage** (a pointer and ticks), **Vertical fader** or **Bar meter**. The knobs work the same whatever the style: drag up and down, scroll, double-click to reset. See Macros (p. 87).



Interface, further down.



Interface, the end of the page.

OSC control

arctone.studio can be controlled over the network with **OSC** (Open Sound Control) - from a tablet running TouchOSC or Lemur, or from a show-control system - and sends back what a tablet's display needs. In Settings > Audio & MIDI > **OSC**: **Listen for OSC** on a **port** (8000 unless you change it; the status line says whether it is listening), and a **host to send to** with its port for the feedback. The **Last received** line shows the last message that came in, whatever its address, so you can see what a controller is sending.

Address	Argument	Does
`/arctone/patch/next`, `/arctone/patch/previous`	(none, or 1)	the next / previous patch of the set list
`/arctone/patch/program`	number	that patch - of the active set list, or the library, as program changes do (see Audio & MIDI (p. 168))

`/arctone/patch/name`	text	the patch with that name
`/arctone/setlist`	number	that set list
`/arctone/macro/N`	0 to 1	macro N (1 to 32); a whole number 0 to 127 works too
`/arctone/layer/N/volume`	0 to 1	layer N's fader, from -60 to +6 dB
`/arctone/layer/N/mute`, `/arctone/layer/N/solo`	1 or 0	on / off
`/arctone/transpose`	semitones	the global transpose
`/arctone/transport/play`, `/stop`, `/tempo`	(1 / 0), bpm	the transport
`/arctone/panic`, `/arctone/capture`	(none, or 1)	all notes off; Capture what was just played
`/arctone/protection`	(none), or 0 / 1 / 2, or `standard` / `flagged` / `full`	with nothing: the protection mode is sent back; with a number or a name: Settings > Audio & MIDI > Plug-in protection set to it - the plug-ins reload with their settings (Plug-in protection and crash recovery (p. 195))

Numbers start at 1. A pad that sends 1 when pressed and 0 when released only acts on the 1. Sent back, when a host is set: `/arctone/patch/name` (text), `/arctone/patch/number` (its place in the set list), `/arctone/macro/N` (0 to 1, whenever a macro moves), `/arctone/transport/tempo`, and `/arctone/protection` (0, 1 or 2) with `/arctone/protection/name` (its name) whenever the mode that holds changes - a set list's Full protection too - and when asked. The MIDI remote control does the same things from a keyboard or a footswitch: see Audio & MIDI (p. 168).

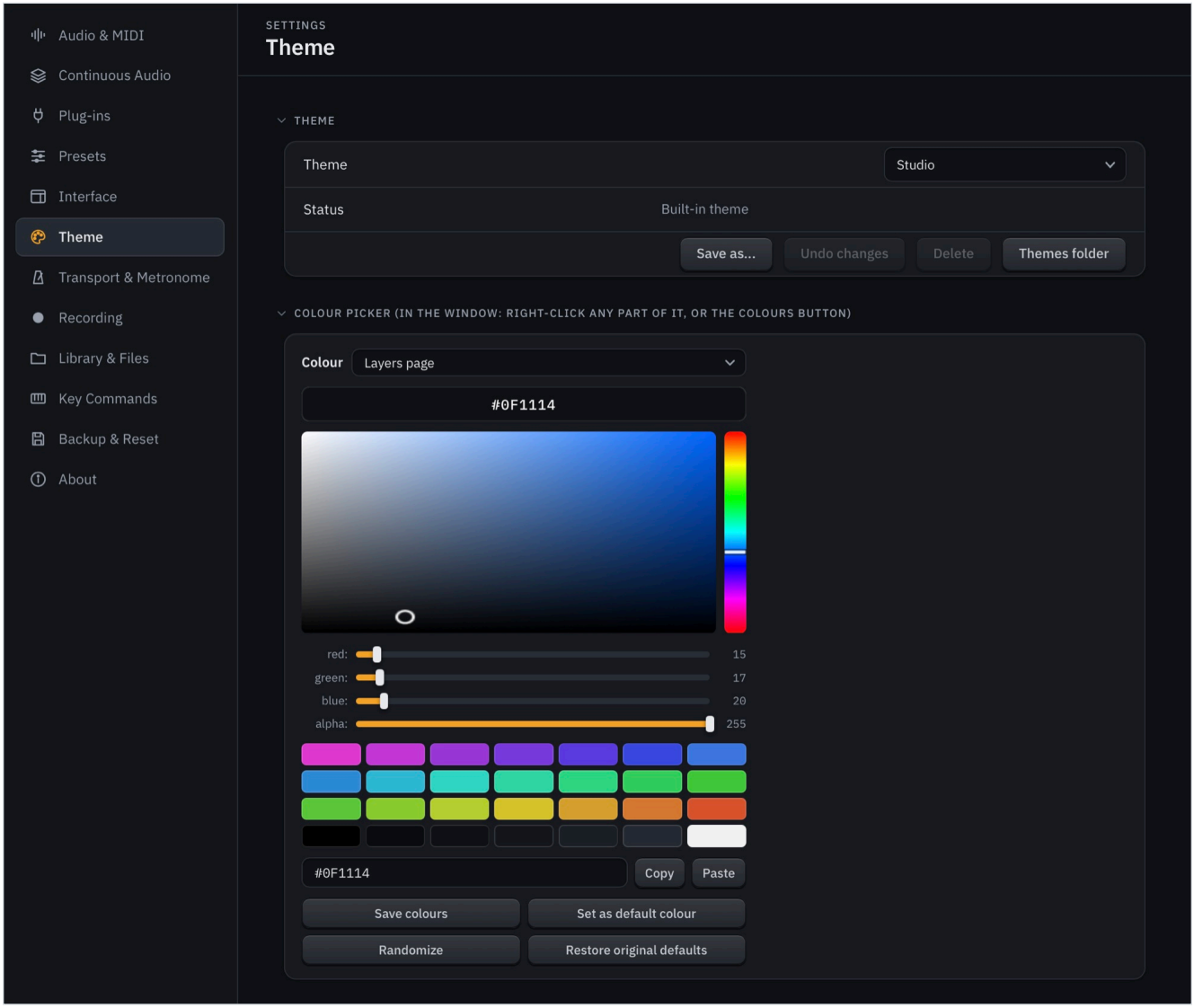
Keyboard access and screen readers

The web interface can be worked from the keyboard:

- **Tab** moves between controls - buttons, switches, knobs, sliders and the drag-to-edit cells (tempo, transpose, key ranges...) - and a ring shows which has the focus. **Shift+Tab** goes back.
- A knob, slider or cell with the focus changes with the **arrow keys** (Shift for finer steps), **Page Up / Page Down** in tenths, and **Home / End** to the ends. A volume fader moves in dB: 0.5 (Shift 0.1) and 6.
- In a menu, the **arrows** move, **Right** opens a submenu, **Left** closes it, **Enter** chooses and **Escape** closes. In a dialog, **Tab** stays inside it, **Enter** is the main button and **Escape** cancels.
- The key commands (Settings > Key Commands) do everything else: layers, transport, patches. See Key Commands (p. 192).

Controls carry names and values for screen readers (VoiceOver, Narrator): knobs and sliders report their value, switches their state, and the messages that appear at the foot of the window are read out. If the system asks for less motion (**Reduce motion** in its accessibility settings), the interface's animations are switched off.

Theme



Settings > Theme.

Settings > Theme changes how arctone.studio looks: its colours, how rounded the corners are, how deep the shadows are, and pictures behind the big areas. Changes show at once, everywhere: the main window, the Settings window and the Help window. Everything is drawn by arctone.studio itself, so a theme looks the same on macOS and Windows.

- **Theme:** pick one of the seven built-in themes (**Studio**, the web interface's design: graphite greys with an amber accent, the theme a new installation starts with; **Classic**, the original look; **Graphite**, lighter charcoal; **Midnight**, violet-black with mint, the logo's colours; **Forest**, deep green; **Ember**, warm brown with orange; **Mono**, black and white) or one of your own. See Saving and sharing themes (p. 188).
- **Colour picker:** the same picker as in the window (Colours of the window (p. 32)), for any colour of the theme: choose it in the list at the top, or click a colour's swatch below.
- **Main colours:** click a colour to change it in the colour picker. See Colours and the colour picker (p. 186).

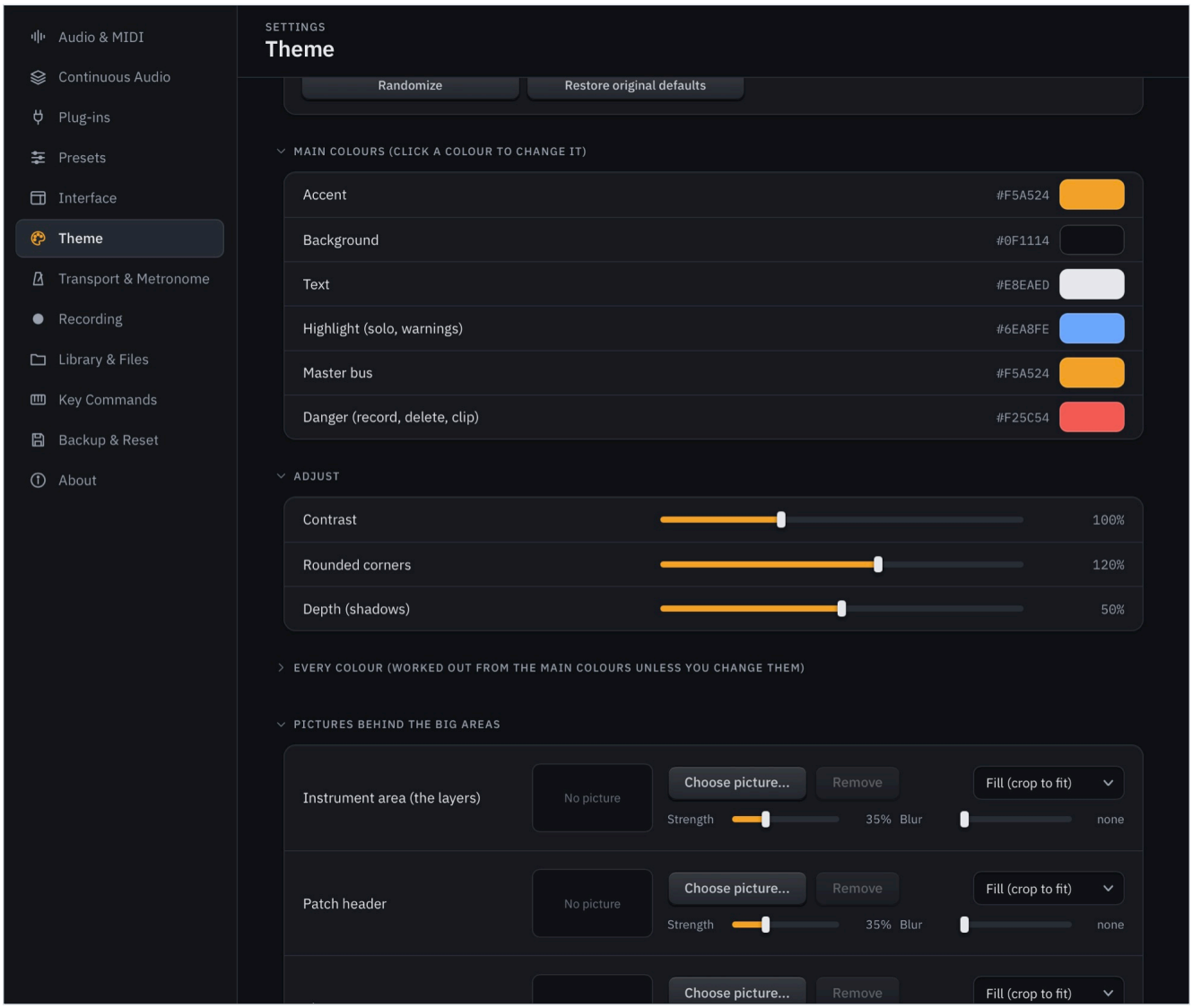
- **Adjust: Contrast** (how far apart the background levels are), **Rounded corners** (0 = square) and **Depth** (the shadows under cards and panels, and how much the header and the layer tracks stand out - lit along the top edge, shaded along the bottom; 0 = flat).
- **Every colour:** click the arrow to open it. Each colour of the interface, worked out from the main colours unless you change it. See Colours and the colour picker (p. 186).
- **Pictures behind the big areas.** See Pictures behind the big areas (p. 187).

Colours and the colour picker

There are six **main colours**: **Accent** (instrument layers, the patch name, selections, switches), **Background**, **Text**, **Highlight** (solo, warnings), **Master bus** and **Danger** (record, delete, clipping). Click a colour's swatch and the colour picker at the top of the page switches to it: drag in the colour square and the hue strip, use the red / green / blue / alpha sliders, type a code such as `#35E0BB`, or click one of the ready-made colours. The whole program changes colour as you drag. The picker and its buttons are described in Colours of the window (p. 32).

Each page also has a colour of its own - **Layers page** and **Perform page** - the background unless you change it (right-click the page, or choose it in the picker's list).

The other colours (panels, cards, toolbar, header, borders, dim and faint text...) are **worked out** from the background and the text colour, so changing just those two re-colours everything in step; **Contrast** spreads them further apart or closer together. They are marked "(auto)". Open **Every colour** to set any of them by hand; a colour set by hand gets an **Auto** button that goes back to the worked-out colour.



Theme: the main colours and Adjust.

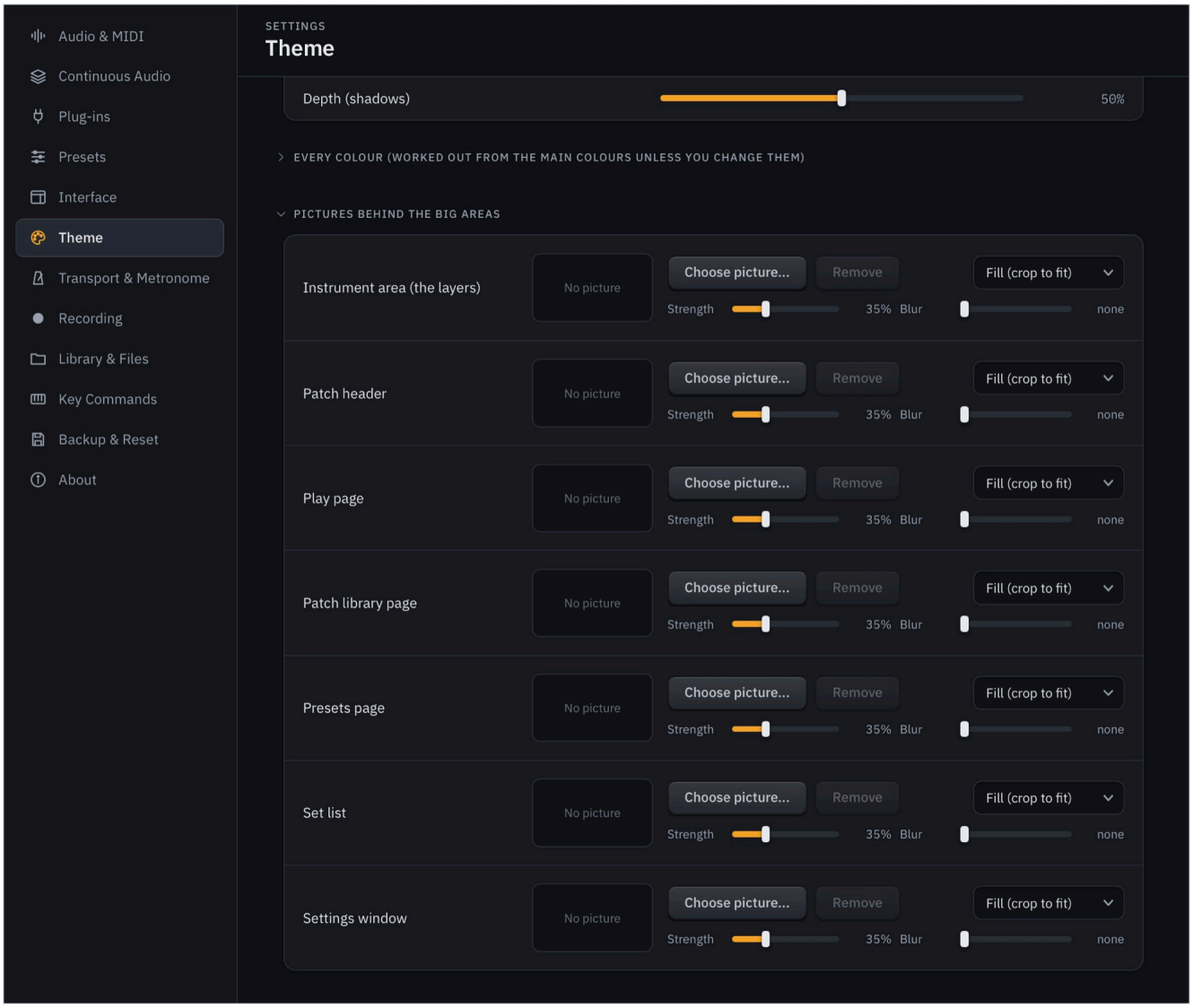
Pictures behind the big areas

You can put a picture behind the **Instrument area** (the layers, in the middle of the main window), the **Patch header**, the **Play page**, the **Patch library** page, the **Presets** page, the **Set list** and the **Settings** window. In Settings > Theme > Pictures, click **Choose picture...** for an area and pick a JPEG, PNG or GIF. A copy is kept in `~/Documents/Arctone/arctone.studio/Themes/Pictures/`, so moving or deleting the original doesn't lose it.

- **Fit: Fill** (covers the area, cropping what doesn't fit), **Fit inside** (the whole picture, with gaps), **Stretch**, **Tile** or **Centre** (actual size).
- **Strength:** how strongly it shows through (5% to 100%). Around 25 to 45% keeps text easy to read.
- **Blur:** softens the picture (up to 40 pixels), which keeps busy photos from fighting with the controls.
- **Remove** takes the picture away.

Lists in an area with a picture (the patch library, the presets list, the set list) become see-through so the picture shows behind their rows. Pictures belong to the look in use, not to a theme: they stay when you switch

themes.



Theme: every colour, and the pictures behind the big areas.

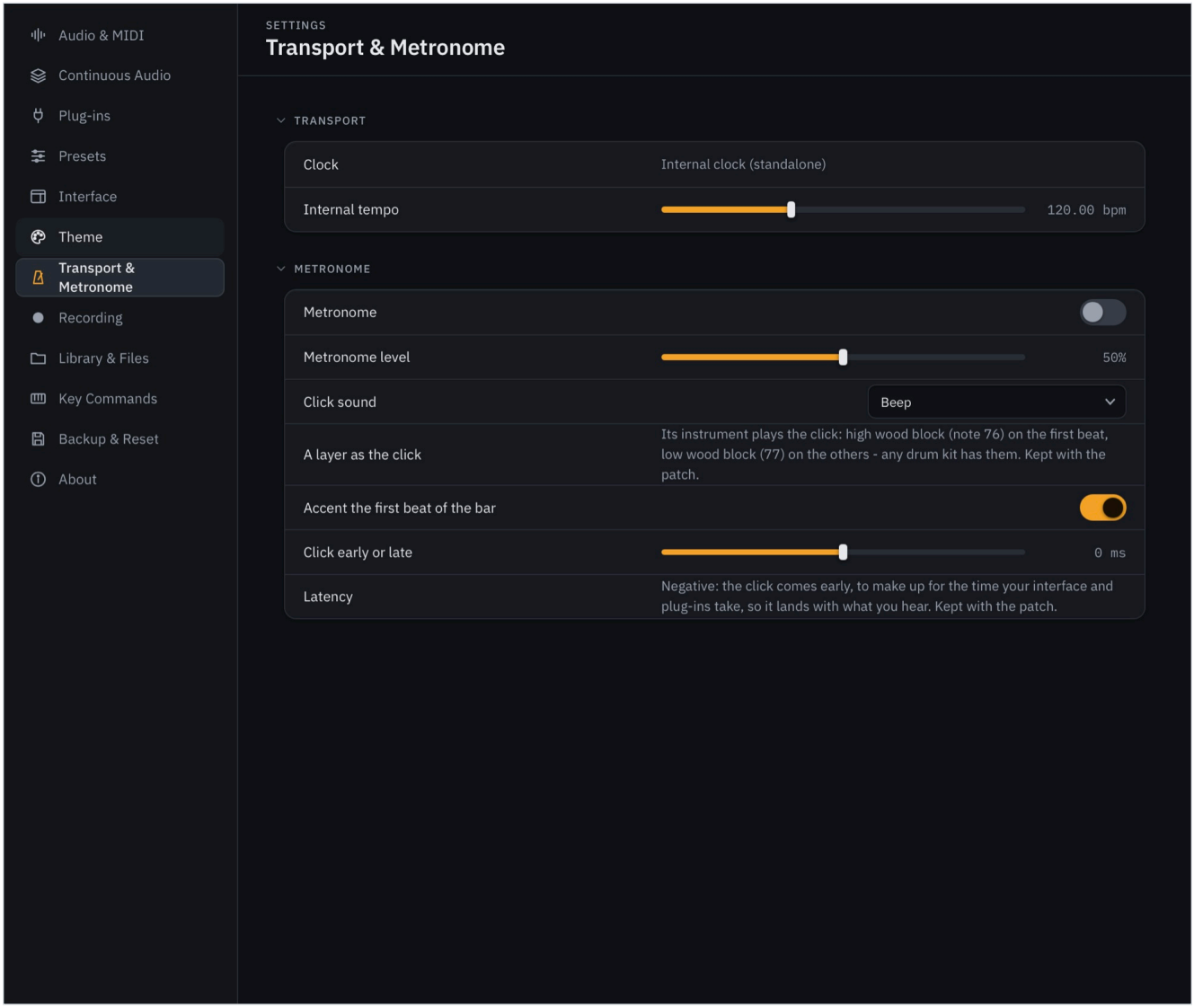
Saving and sharing themes

After you change a theme, **Status** says it has changed. **Save as...** keeps it as a theme of your own under a name you choose; **Undo changes** goes back to the theme as it was saved; **Delete** moves one of your themes to the Bin (built-in themes can't be deleted or overwritten).

Your themes are small `.json` files in `~/Documents/Arctone/arctone.studio/Themes/` (**Themes folder** opens it). To share one, send the file; to use one you were sent, drop it into that folder and pick it from the list.

The look in use is kept in `Appearance.json` in the app-data folder. arctone.studio in your DAW and the standalone app both use it: change the look in one and the other follows within a couple of seconds.

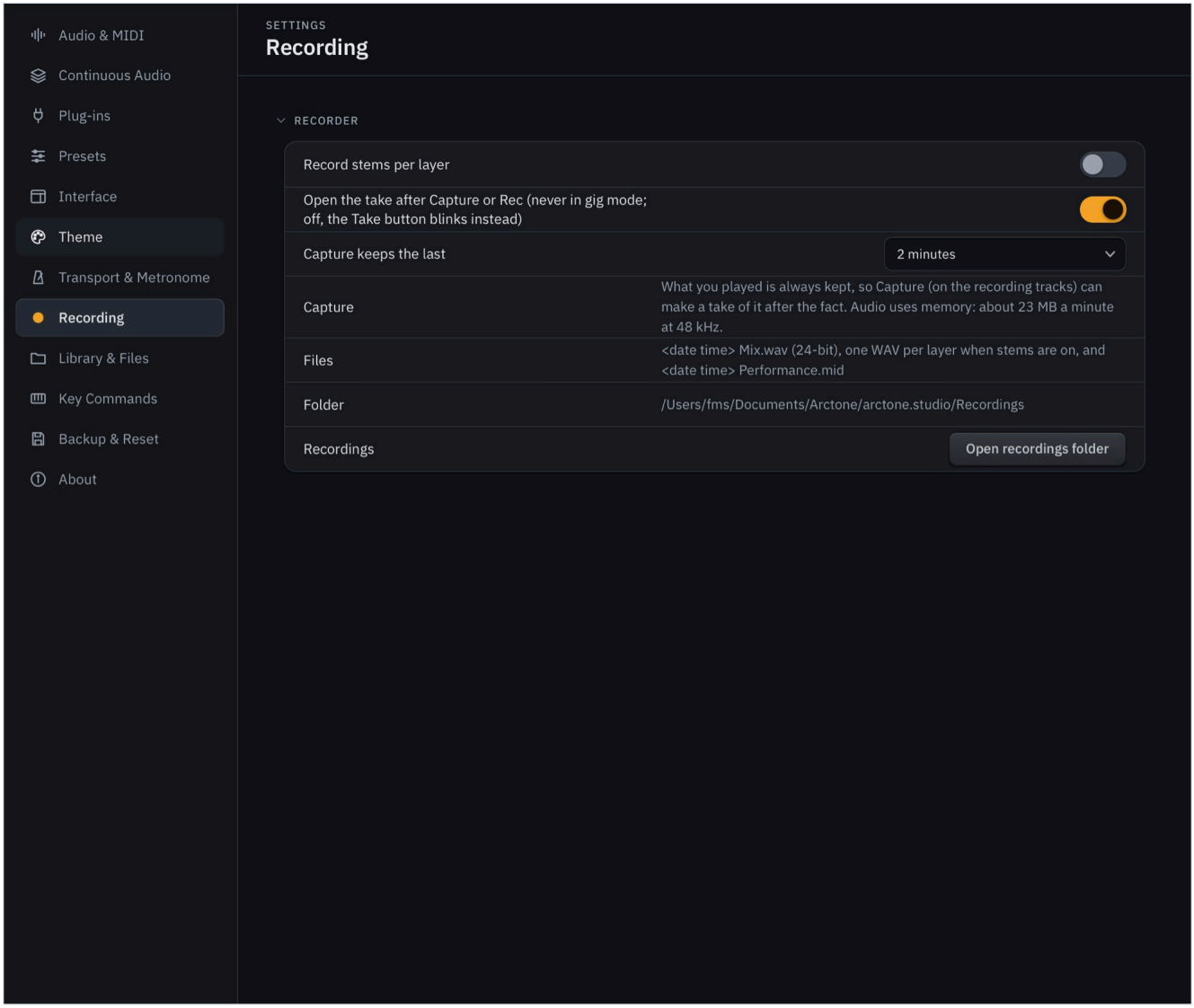
Transport and Metronome



Settings > Transport & Metronome.

Clock chooses where tempo comes from (internal or the host) and **Internal tempo** sets the BPM for the standalone transport. **Metronome** turns the click on or off and sets its **level**, its **sound** (beep, wood block, or a layer of the patch that plays it), the **accent** on the first beat, and how many ms **early or late** it comes (latency compensation). The sound, accent and offset are kept with the patch. See Metronome (p. 51). Inside a DAW the host's tempo is always followed.

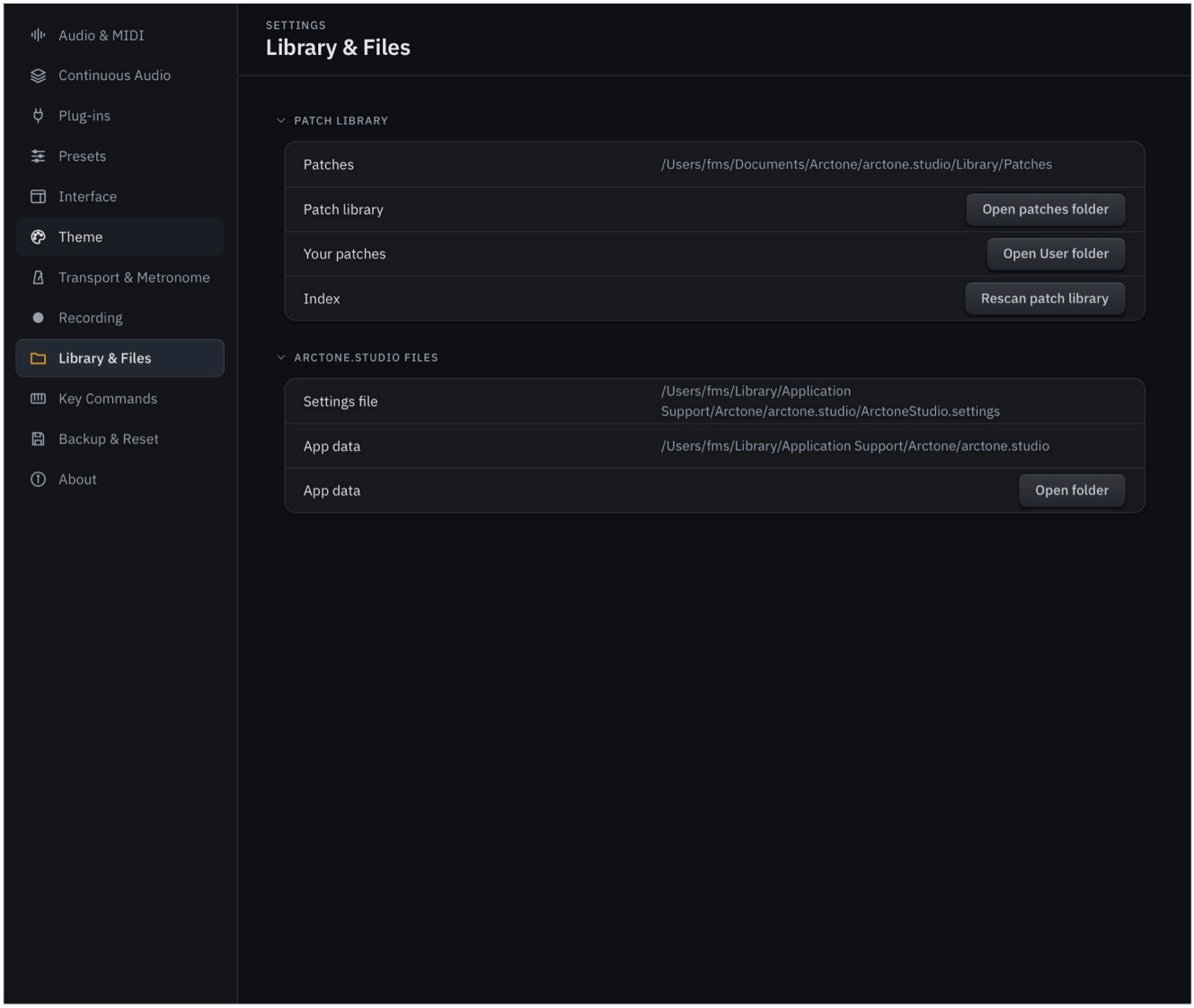
Recording



Settings > Recording.

Record stems per layer also writes one file per layer next to the mix. See Recording the mix (p. 205). **Open the take after Capture or Rec** shows the Take strip with the new take as soon as it is made (never in gig mode); off, the Take button blinks instead. **Capture keeps the last** sets how much of what you play is always kept for Capture (1 to 10 minutes, or MIDI only): see The recording tracks (p. 81). The page also says how the files are named, shows the Recordings folder and has **Open recordings folder**.

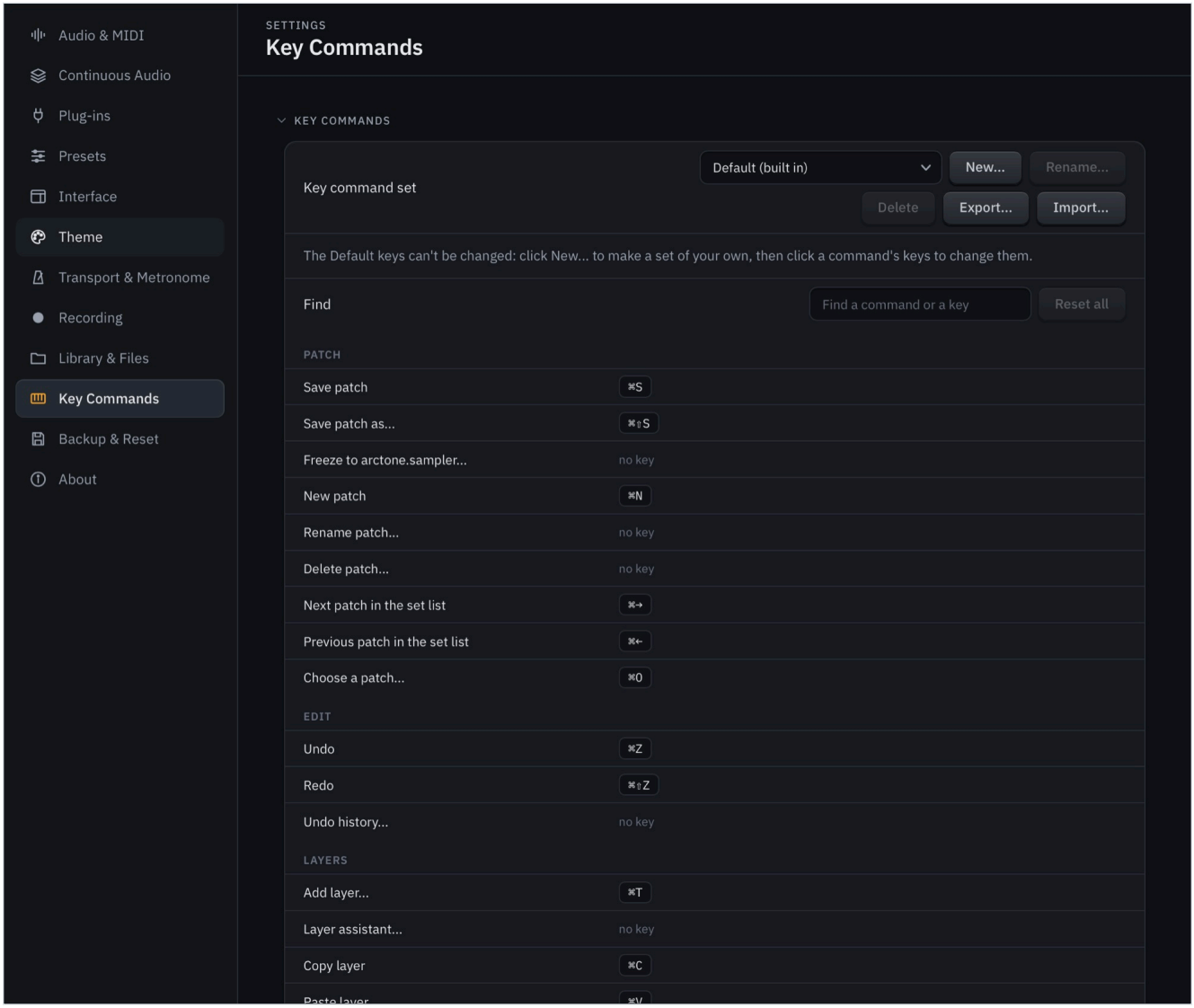
Library and Files



Settings > Library & Files.

Patch library: where the patches are, **Open patches folder**, **Open User folder** (your own patches) and **Rescan patch library**. **arctone.studio files:** where the settings file and the app-data folder are, with **Open folder**. See Where your files live (p. 16).

Key Commands



Settings > Key Commands.

Settings > **Key Commands** lists every command that has a key (or can have one), grouped as **Patch**, **Edit**, **Layers**, **Transport**, **Transpose**, **Files** and **View**, with its keys, shown the way your system writes them (⌘⇧S on a Mac, Ctrl+Shift+S on Windows). Right-click menus show each item's key on the right, and end with **Keyboard shortcuts...**, which opens this page (in the Browser's own window, it opens it in the main window). The command palette (**Cmd+P**, Ctrl+P on Windows) finds every command by its name or its group and runs it, with its key beside it: see The command palette (p. 26).

Command	Mac	Windows
Save patch / Save patch as...	Cmd+S / Cmd+Shift+S	Ctrl+S / Ctrl+Shift+S
New patch	Cmd+N	Ctrl+N
Next / previous patch in the set list	Cmd+Right / Cmd+Left	Ctrl+Right / Ctrl+Left

Choose a patch... (the patch picker: Choose a patch (p. 24))	Cmd+O	Ctrl+O
Undo / Redo	Cmd+Z / Cmd+Shift+Z	Ctrl+Z / Ctrl+Y (or Ctrl+Shift+Z)
Add layer...	Cmd+T	Ctrl+T
Copy / Paste / Duplicate layer	Cmd+C / Cmd+V / Cmd+D	Ctrl+C / Ctrl+V / Ctrl+D
Paste over the layer (replace)	Cmd+Shift+V	Ctrl+Shift+V
Delete layer	Cmd+Backspace	Delete
Rename layer...	F2	F2
Select the next / previous layer	Option+Down / Option+Up	Alt+Down / Alt+Up
Move layer down / up	Cmd+Option+Down / Cmd+Option+Up	Ctrl+Shift+Down / Ctrl+Shift+Up
Fold / unfold all layers	Cmd+Option+E	Ctrl+Shift+E
Bottom panel: Devices / MIDI editor / Audio editor	Option+1 / Option+2 / Option+3	Alt+1 / Alt+2 / Alt+3
Play / stop	Space	Space
Back to the start	Home (Fn+Left on a laptop)	Home
Record	Cmd+Shift+R	Ctrl+Shift+R
Metronome on / off	Cmd+Shift+M	Ctrl+Shift+M
Capture what was just played	Cmd+Shift+C	Ctrl+Shift+C
All notes off (panic)	Cmd+Shift+Backspace	Ctrl+Shift+Backspace
Transpose up / down a semitone	Cmd+Up / Cmd+Down	Ctrl+Up / Ctrl+Down
Transpose up / down an octave	Cmd+PageUp / Cmd+PageDown	Ctrl+PageUp / Ctrl+PageDown
No transpose (0)	Cmd+0	Ctrl+0
Files tab: playhead back / forward - 1 s (MIDI: a beat)	Left / Right	Left / Right
Files tab: playhead back / forward - 10 s (MIDI: a bar)	Shift+Left / Shift+Right	Shift+Left / Shift+Right
Files tab: playhead back / forward - 0.1 s (MIDI: a 16th note)	Option+Left / Option+Right	Alt+Left / Alt+Right
Files tab: playhead to the start / the end	Home / End (Fn+Left / Fn+Right on a laptop)	Home / End
Layers page / Perform page	Cmd+1 / Cmd+2	Ctrl+1 / Ctrl+2
Preset map	Cmd+M	Ctrl+M
Settings	Cmd+,	Ctrl+,

Show / hide the Browser; its instruments, effects, presets, files	F5; F6, F7, F8, F9	F5; F6, F7, F8, F9
Show / hide the layer inspector, the set list, the on-screen keyboard	Cmd+I, Cmd+L, Cmd+K	Ctrl+I, Ctrl+L, Ctrl+K
Show / hide Quick Help	Cmd+/	Ctrl+/
Command palette...	Cmd+P	Ctrl+P
Larger interface (Interface size (p. 42))	Cmd+= (also Cmd+Shift+=, Cmd and the keypad's +)	Ctrl+= (also Ctrl+Shift+=, Ctrl and the keypad's +)
Smaller interface	Cmd+-	Ctrl+-
Actual size (100%)	Cmd+Option+0	Ctrl+Alt+0

The keys follow each system's habits: on Windows, Delete deletes and nothing but Actual size uses Ctrl+Alt (on many keyboards Ctrl+Alt is AltGr, which types characters such as € and @; Actual size is Ctrl+Alt+0 because Windows keeps Ctrl+Shift+0 for itself). Keys that belong to the system - Cmd+Q, Cmd+H, Cmd+M, Cmd+Tab, Cmd+Space on a Mac; Alt+F4, Alt+Tab, Ctrl+Esc on Windows - can't be given to a command. An exported set works on either: its Cmd or Ctrl keys become the other system's. On a Mac laptop the F keys may need **Fn** held down (or "Use F1, F2, etc. keys as standard function keys" in System Settings > Keyboard).

Rename patch, Delete patch, Freeze to arctone.sampler, Layer assistant, Getting started, Fold / unfold layer, Solo on selected layer, Save instrument preset, MIDI clip on / off, MIDI clip loop on / off, Remove the MIDI clip, showing or hiding the macro knobs or the transport bar, the window layouts' **Choose a layout...** (the Layout button's list) and **Save the layout as...** (Window layouts (p. 40)), **Gig mode on / off** (the Perform page locked for the stage: Gig mode (p. 95)), **Undo history...** (the list on Undo's ▾: The undo history (p. 85)), **Messages...** (the list under the bell: Messages (p. 29)) and **Close all plug-in windows** (every plug-in editor, the helper processes' too: Plug-in protection and crash recovery (p. 195)) have no key until you give them one. **All notes off (panic)** presses the transport bar's Panic button (Panic (p. 46)), which flashes.

The Files commands move the playhead of the audio or MIDI file in the Browser's Files tab (The Files tab (p. 142)), and only while the Files tab has the focus: its list or its player strip (click it first), in the main window or in the Browser's own window. There they come first - so Home moves the file's playhead, not the transport's - and elsewhere their keys do what they always did. With no audio or MIDI file in the strip (a preset selected, say) they let the key go on. They work in a DAW too, since the focus is in the Files tab. A key can be a Files command's and another command's at once; when you give it, arctone.studio says which does what where. The Files tab's own keys - Space, Enter, Up and Down, and L, E, +, - and 0 - can't be Files commands: they stay the tab's (arctone.studio says so if you try).

Key command sets. The **Default** set is built in and can't be changed. **New...** makes a set of your own (starting from the one shown), which you can then change; **Rename...** and **Delete** do what they say, and the list at the top picks the set in use. In a set of your own:

- Click a command's keys (or the **+** next to it), then press the keys: it gets them (as well as any it has). If another command has them, arctone.studio asks whether to move them.
- **x** on a key takes it away; **Reset** puts a command's keys back to the default; **Reset all** does that for every command.
- **Find** narrows the list to commands or keys that match what you type ("save", "F5", "⌘D").

Export... saves the set shown as an XML file (every command with its keys - readable, and editable in any text editor); **Import...** opens one as a new set, to share keys between computers or people. A file from another version simply leaves out commands this one doesn't have; ones it lacks keep their default keys.

Keys work wherever you aren't typing in a text box (there Cmd+C and Cmd+V copy and paste text as usual) - except the command palette's, Choose a patch's and the interface size's, which work there too. Keys without Cmd, Ctrl or Alt - Space, Home, the F keys, a plain letter - only work in the standalone app: in a DAW, the DAW keeps its own keys (except the Files commands, in the Files tab). A plain letter given to a command no longer plays a note from the computer keyboard (The on-screen keyboard (p. 55)). F1 (help) and Esc aren't key commands: see Keyboard shortcuts (p. 209). The key commands are in the web interface; the classic interface keeps its few fixed keys.

Plug-in protection and crash recovery

A plug-in that crashes takes arctone.studio with it - but not your work. **Crash recovery** is always on: the session (the patch with every plug-in's settings, the set list you are in, the undo history) is kept in a recovery file after each change and every 30 seconds while there are unsaved changes, written on a background thread so the audio never waits. When arctone.studio starts after a crash it asks **Restore your session?** - **Restore** brings everything back as it was moments before; **Restore without** *plug-in* (when the crash log names one) brings it back with that plug-in's slots as placeholders, their settings kept - and that plug-in stays out, in every patch, until you re-enable it under Settings > Audio & MIDI > Plug-in protection (its placeholders load again at once); **Start fresh** opens the last patch as it was saved. A plug-in that crashes twice in a row is pointed out. Whatever you choose, the session from before the crash is kept as "previous-session.xml" in the Recovery folder (Arctone > arctone.studio in Application Support), for a restore by hand.

Hold **Shift** while arctone.studio starts for **safe mode**: no plug-in is loaded, every slot is a placeholder with its settings - for when a plug-in crashes at once on loading. Start again without Shift for your plug-ins.

Every crash writes a log (the time, the version, the system, the plug-in the crashing thread was calling and for what, every other call in flight, a stack trace) to the Logs folder - Settings > Audio & MIDI > Plug-in protection > **Crash logs** shows the folder. On a Mac the crash itself only writes raw notes (nothing else is safe at that moment); they become the readable log when arctone.studio next starts. Nothing is sent anywhere. In a DAW the session's recovery is the DAW's own (its project holds arctone.studio's settings), and safe mode is the app's; Plug-in protection itself works there too (below).

Plug-in protection chooses how far this goes. **Standard** runs every plug-in inside arctone.studio at full speed, with crash recovery. **Protect flagged plug-ins** runs the plug-ins you mark **Always sandbox** in a helper process of their own (arctone-plugin-host, inside the app), so a crash in one of them silences its layer and nothing else: the other layers play on, and arctone.studio stays up. **Full protection** runs every plug-in in a helper process - but the ones you mark **Never sandbox**, and arctone.studio's own built-in plug-ins, which always run inside it - for the stage: some extra CPU time for the hand-over, and on a Mac the plug-ins' windows float above arctone.studio. Changing the setting asks first: **Plug-ins will reload. Audio will stop for a moment.** - **Apply** loads the patch again with every plug-in's settings as they are (it isn't an edit: nothing to undo), **Cancel** leaves everything as it was.

While a mode that sandboxes holds, the top bar shows a small **shield** with the mode's word beside the readouts - **FLAGGED** or **FULL** - so you know on stage which mode is on; point at it for the details (the set list asking for it, how many helper processes run and what they cost, the blocks missed), and click it (or Tab to it

and press Enter) for the setting. A dashed shield means the patch playing was loaded under another mode than the one that holds now: its plug-ins stay where they were put until the next patch is loaded.

Reload automatically (Full protection) brings a plug-in whose helper crashed, or stopped answering, back by itself - a new helper process, its last known settings, typically within a second or two - without anyone touching the computer. A plug-in that stops three times in a minute is left stopped, and the message says so; it stays stopped when another helper goes and comes back (only that helper's plug-ins are brought back), and Reload on its slot still works. Off, the slot waits for Reload.

A helper that can't be started this time - the machine busy, the program slow to come up - keeps only that plug-in inside arctone.studio: a message says so, and the next plug-in loaded tries a helper again after a moment. When none can run here at all (the helper program missing from the bundle, a DAW that forbids it: below), every plug-in runs inside until Apply, and Settings says why.

Use Full protection while this set list is active is a box in the Set List panel (The Set List panel (p. 103)), one per set list: when that set list is chosen, Full protection holds - whatever the setting - from the first patch loaded under it, and the setting comes back when another set list, or the library, is chosen. The patch playing when the set list is chosen keeps its plug-ins where they are (no dropout); the patches got ready in the background are built again under the mode that holds, so the switch to the next patch costs no more than usual. Settings > Audio & MIDI > Plug-in protection says what holds **Right now** when it isn't simply the setting. Changing the setting while a set list holds Full protection keeps it for when the set list ends - nothing reloads, since what holds hasn't changed (the same over OSC). Over the network, `/arctone/protection` asks for the mode and sets it (OSC control (p. 183)).

Always sandbox and **Never sandbox** are a plug-in's own choice, in every patch: right-click a plug-in slot in a layer's chain, or a plug-in in the Browser, for **Plug-in protection** - **Always sandbox this plug-in** (a helper process in every mode, including Standard), **Never sandbox this plug-in** (inside arctone.studio even under Full protection: for a plug-in that doesn't work out of process, or a very light one) or **Use default**. When the plug-in is loaded in the current patch, arctone.studio asks whether to reload it there and then (its settings are kept). Settings > Audio & MIDI > Plug-in protection > **Manage plug-in overrides...** lists every plug-in with an override, to change or clear. The overrides live in the app's settings, not in patches, so they follow you from patch to patch.

A plug-in in a helper process shows a small **shield** on its slot ("Running in sandbox" when you point at it, or read out by a screen reader). When its helper crashes, or makes no progress for three blocks in a row and a tenth of a second at least (a block answered late is a dropout - silence for that block, counted in the meter - not a crash), the slot is greyed and dashed and says **Plug-in stopped**, with a **Reload** button (and Reload in its right-click menu; Enter on the slot does the same): a new helper process starts and the plug-in comes back with the settings it was last known to have. Its layer is silent meanwhile; the other layers never notice. Every such crash goes in the crash log with the plug-in's name, like a crash of arctone.studio itself, and a plug-in that crashes twice in a row is offered **Always sandbox** by the Restore dialog. Presets, patches, the autosave and undo reach a sandboxed plug-in as they do any other (its state travels over a pipe between the processes); a VST2 preset meant for the VST3 or Audio Unit version of a plug-in is the one thing that needs the plug-in inside arctone.studio. The Browser's own jobs - a preset's preview (and the sound analysis), a picture of a plug-in's window, importing or capturing its presets, finding its factory presets - make a plug-in inside arctone.studio, so for one you keep out of it (marked Always sandbox, or any under Full protection) they aren't done, and say so; mark it Never sandbox, or choose Standard, for those. A patch heard before loading it (the set list's ▶, the Browser's patch preview) and a freeze are rendered with the plug-ins where Plug-in protection puts them.

A sandboxed plug-in's window is the helper's, since one program can't put its window inside another's on a Mac: a **floating window** of its own, opened next to its slot - to the right of the pill, or to the left or below it when there is no room - and kept above arctone.studio's window. It follows the pill: when you move arctone.studio's window, scroll the layers or lay them out again, the window moves along, keeping any offset you dragged it to; it hides while neither arctone.studio nor the plug-in's window is in front (so it doesn't float over other programs) and shows again when either is; and it closes with arctone.studio. Click it and it has the keys, as any window: **Esc** closes it, and a key the plug-in doesn't use goes to arctone.studio - its key commands (Key Commands (p. 192): Save, the next patch, Panic...) work from a plug-in's window as from its own; Cmd+Q there asks arctone.studio to quit, as from its own window (the helper never ends on its own account). On Windows the window goes inside arctone.studio's window instead, where the slot is, as a plug-in's window does in a DAW (Esc closes it there too); a plug-in whose window won't go inside (the system refuses it once) gets a floating window from then on, and Settings lists it under **Floating windows**, with a button to try again. A window inside arctone.studio's ties the two programs' windows together, as Windows does with a child window from another process: a plug-in that freezes its helper's window can hold arctone.studio's window up with it (the audio plays on, since that never waits on a window) - a floating window keeps them apart, so a plug-in that does that belongs under Floating windows. **Close all plug-in windows** in the main menu (≡), a key command with no key until you give it one, closes every plug-in window - arctone.studio's own and the helpers' - as does switching patches.

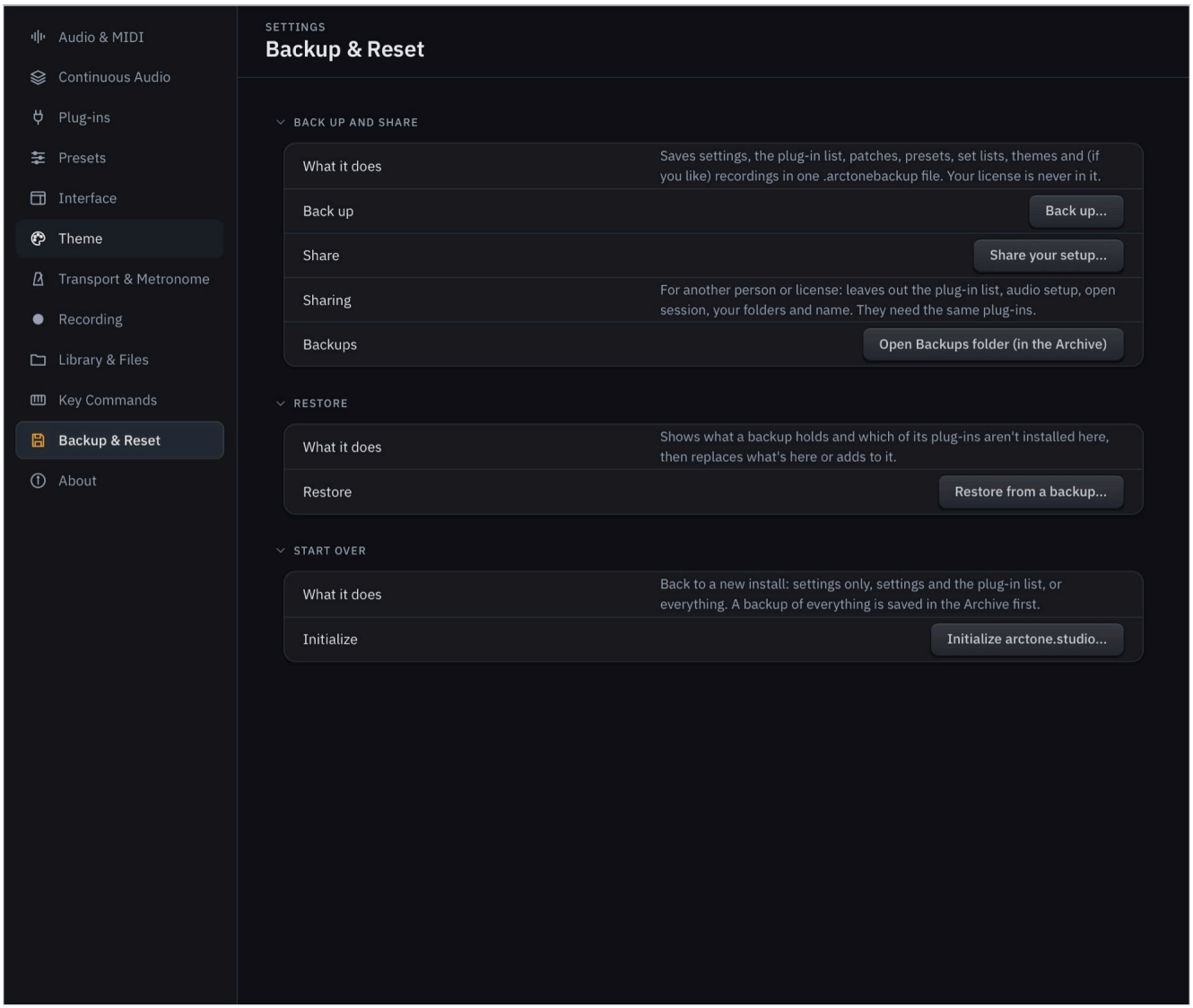
In a DAW (the VST3, the Audio Unit) Plug-in protection works as in the app: the plug-in starts helper processes of its own, found inside its bundle, so a plug-in sandboxed inside arctone.studio is protected even though arctone.studio itself is only as safe as the DAW. A DAW that keeps its plug-ins from starting processes, or from running them at real-time priority, or that runs in Apple's App Sandbox (one from the Mac App Store), gets Standard for that instance instead: its plug-ins run inside arctone.studio, Settings > Audio & MIDI > Plug-in protection says so under **In this host** with the reason, and the top bar's shield is struck through. Apply (or an override changed) tries again. The session's crash recovery is the DAW's own there.

Plug-in protection: advanced (shown once something runs in a helper) has **Sandbox grouping** - which helper process a sandboxed plug-in shares: **Per layer** (one helper per layer, so a crash silences one layer: the default), **Per plug-in** (every plug-in instance in a helper of its own: the most isolation, the most processes), **By manufacturer** (one helper per plug-in maker: fewer processes; some makers' plug-ins share resources between instances) or **All together** (every sandboxed plug-in in one helper: the least overhead, and it protects arctone.studio but not the other plug-ins) - and **Buffered**: one block of latency for sandboxed plug-ins in exchange for less CPU time, for very heavy setups. Changing either reloads the plug-ins, with their settings. A helper whose plug-ins have gone (the patch switched away from) is kept warm for a minute, so the next patch with the same plug-ins takes it over and switches no slower than Standard. A patch got ready in the background (the next in a set list) has helpers of its own while it waits, so with Per layer there is one process per sandboxed layer of the patch playing, one per layer of each patch ready ahead, and up to four kept warm.

What the helpers cost shows in the meters: each layer's first row says what its plug-ins' helpers spend beside its own CPU figure ("12% CPU · 4% sandbox") and how many blocks a helper didn't answer in time ("2 missed": silence for that block on that layer) - the count since the plug-ins were loaded, red only while the last miss is less than ten seconds back (the top bar's shield the same) - and STATUS's menu has the helper processes in all (STATUS (audio, CPU, HD, RING) (p. 48)). A recording made while a sandboxed plug-in stops carries on: its layer's stem has silence for the gap, and the gap is marked - a marker in the take's MIDI file (a DAW shows it on the ruler) and a line in a notes file beside the take, "<stamp> Notes.txt" - with a second mark where the plug-in came back; Capture keeps the last minutes' marks too.

Full protection stops background work. Full protection - set here, or forced by the set list - stops plug-in scanning, the preset map's rendering and preset analysis the same way gig mode does (Gig mode (p. 95)), and keeps them from starting while it holds.

Backup and Reset



Settings > Backup & Reset.

Settings > **Backup & Reset** saves everything arctone.studio keeps in one file, puts it back, shares your setup with someone else, or initializes it: starts over as a new install. These are in the standalone app only: inside a DAW the plug-in shares its files with the app, so open the app to use them.

Back up... saves a `.arctonebackup` file, named with the date and time (`arctone.studio backup 2026-10-08 14.30.05`), in `~/Documents/Arctone/arctone.studio/Archive/Backups/` unless you choose another place. Every file in it keeps its own date and time, and gets it back when restored. Choose what goes in it:

- **Settings and preferences:** the interface, your window layouts, the look in use, the Browser's favourites, every setting.
- **Audio and MIDI setup, and the open session.**
- **Plug-in list:** what scans found, the scan folders, plug-in pictures and factory programs, so a restore needn't scan again.
- **Patches, presets and set lists.**
- **Themes and pictures:** your themes, pictures chosen for areas, pictures for patches and layers.
- **Recordings** (off unless you tick it: they can be large).
- **Logs and caches** (off unless you tick it): the logs, crash notes and preset previews - not needed, but everything as it was.

Your license is never in a backup, and nor are other backups. The **Archive** folder's deleted patches go with the patches.

Share your setup... makes the same kind of file for **another person or another license**. It holds your patches, presets, set lists, themes and settings, and leaves out what belongs to your computer and to you: the plug-in list, audio and MIDI setup, the open session, your folders, your name and where the windows are on your screen (your window layouts go without it). **They need the same plug-ins installed** (the same versions are best) for your patches and presets to play.

A backup is a ZIP file: its `manifest.xml` lists what's inside, when and where it was made, and every plug-in its patches and presets use; the rest are arctone.studio's own files (settings are XML). It can be opened with any ZIP tool.

Restore from a backup... opens a backup and shows what it holds - the same list as **Back up...**, each part with how many files and how much, ticked: untick what you don't want back - and **which of the plug-ins it needs aren't installed here**: those its patches use (layers that use them open empty until you install them, as in Missing plug-ins (p. 83)) and those it only has presets for (the presets are kept and show once the plug-in is installed). The same plug-in in another format (VST3 instead of Audio Unit, say) counts as installed. If nothing has been scanned on this computer yet, it can't check: scan first, or restore the backup's plug-in list with it. Then choose:

- **Replace what's here with it:** for your own backups. arctone.studio first saves a backup of everything as it is now (Archive > Backups, named with the date and time), then restarts and puts the chosen parts in place before anything reads them. What it replaces goes to the Trash (Recycle Bin on Windows). Paths that pointed at the old computer's folders are put right for this one. Restoring someone else's shared setup this way replaces your preferences but keeps your plug-in list, audio setup, session, name and folders.
- **Add to yours:** adds its patches, presets, set lists, themes and recordings next to yours, without restarting. A file you already have is never overwritten. Your settings are left alone. This is the usual way to take in a shared setup.

Initialize arctone.studio... puts back how a new install starts, at one of three levels:

- **Settings:** preferences, interface, the look in use, the audio and MIDI setup and the open session. The plug-in list, your patches, presets, set lists and themes stay.
- **Settings and the plug-in list:** also every plug-in scan result, picture and cache. **No plug-ins are scanned** until you start a scan yourself (Scanning for plug-ins (p. 122)).
- **Everything:** also your patches, presets, set lists, themes and recordings. Only the **Archive** folder (backups and deleted patches) stays.

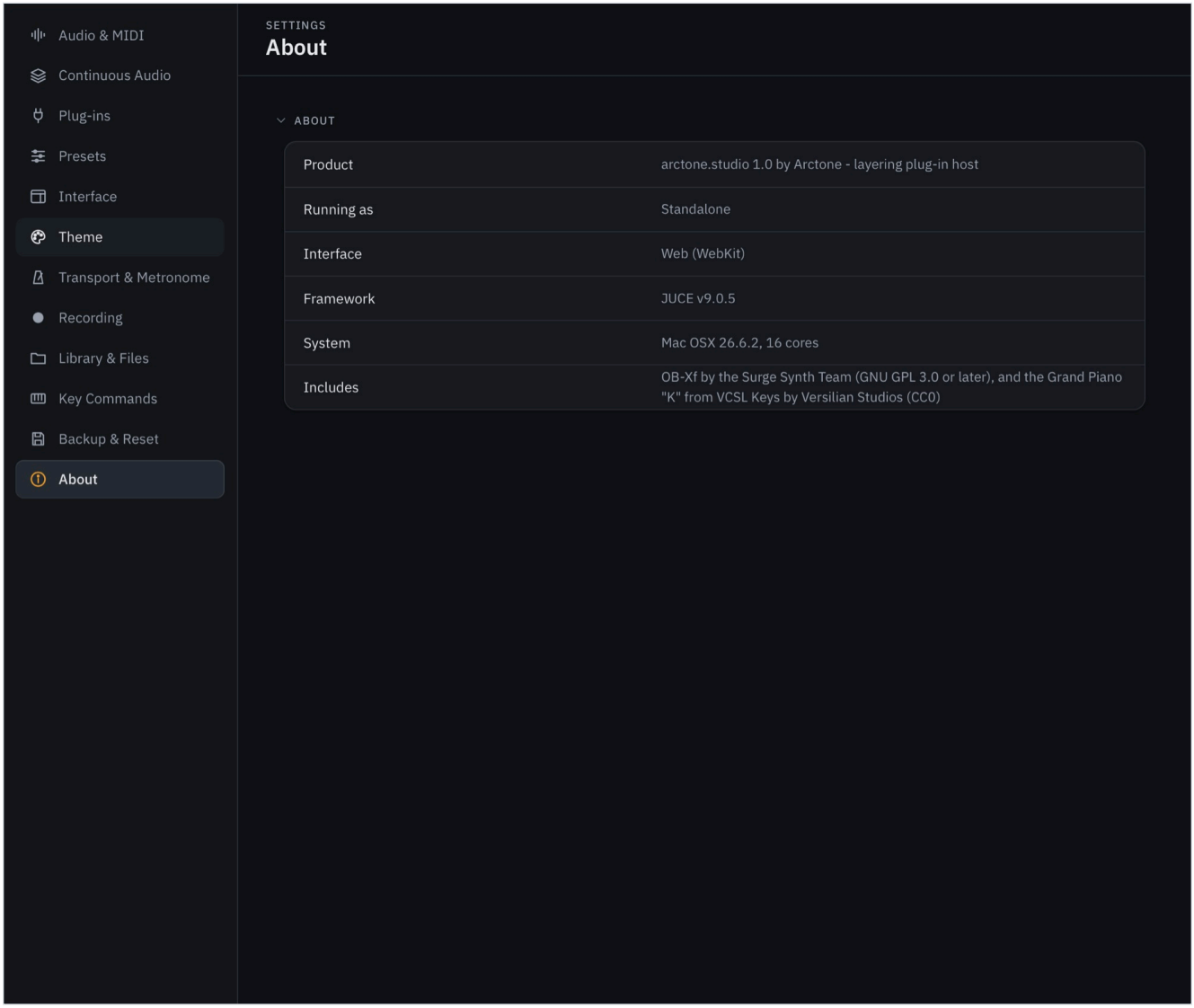
At every level the window layouts you saved go with the settings, and arctone.studio starts with the **Default** layout in use: the window as a new install has it (Window layouts (p. 40)). It starts as a new install does in other ways too: on the factory **Grand Piano** patch (when the piano is installed: The arctone.sampler (p. 116)), and with the **Getting started** panel open on its welcome card - the standalone app first asking whether to find your plug-ins now, if none are scanned (Getting started (p. 10)).

At every level, what comes with arctone.studio stays installed: **OB-Xf** and the **Grand Piano**, in arctone.studio's own folders (Where your files live (p. 16)), are never in a backup and never removed. The Grand Piano's preset and patch, like the other factory patches, are written again when arctone.studio starts.

Initialize always saves a backup of **everything** first - every part, recordings, logs and caches included - as one file named with the date and time (`Before initialize 2026-10-08 14.30.05`) in `Documents/Arctone/arctone.studio/Archive/Backups/`; **Restore from a backup...** brings back all of it, or just the parts you tick. Then it moves what it removes to the Trash, and restarts arctone.studio. Your activation isn't touched; when you're licensed, **Also deactivate this computer's license** frees it to activate on another computer (Activating arctone.studio (p. 14)).

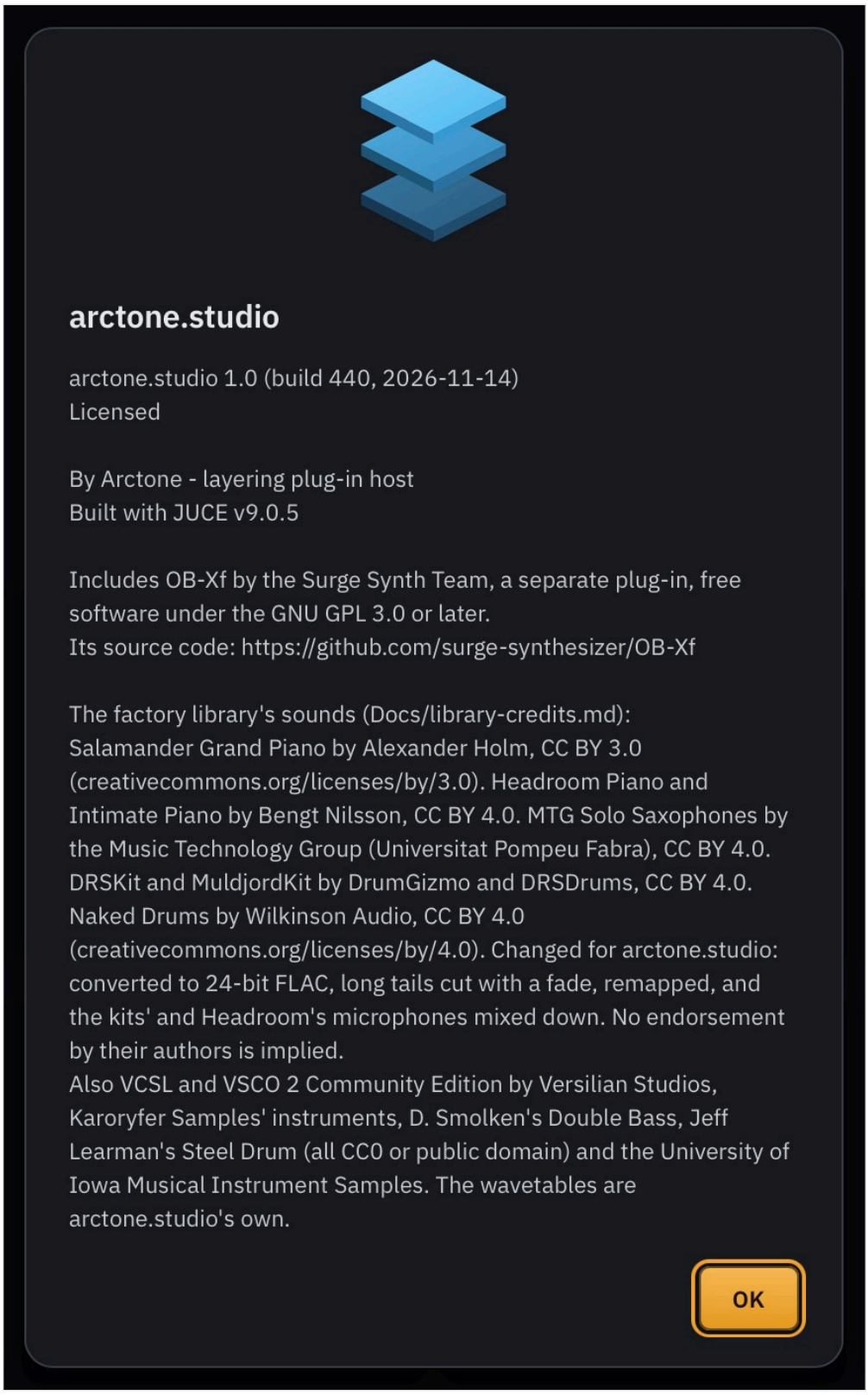
Open Backups folder shows the folder backups go in (Archive > Backups), including the automatic ones, named "Before restore ..." and "Before initialize ..." with the date and time. Backups saved in the older `Documents/Arctone/arctone.studio/Backups/` folder stay where they are.

About



Settings > About.

The product, the format it is running as (Standalone, VST3, AU), the interface in use, the JUCE framework version and the system, and what comes with arctone.studio: OB-Xf, the Grand Piano "K" from VCSL Keys by Versilian Studios (CC0), and the credits for the factory library's sample sets. See Third-party notices (p. 203).



About arctone.studio, from the main menu.

Third-party notices

Grand Piano "K" - the Grand Piano that comes with arctone.studio (The arctone.sampler (p. 116)) is from **VCSL Keys** (the Versilian Community Sample Library) by **Versilian Studios**, released into the public domain under **CC0 1.0** (creativecommons.org/publicdomain/zero/1.0). arctone.studio uses its sustain samples, each kept to its first 8 seconds with a fade; `LICENSE.txt` and `SOURCE.txt` in its folder say where it came from (versilian-studios.com/vcsl-keys).

The factory library - its sampled instruments are made from these free sample sets. The wavetables and single cycles are arctone.studio's own.

These are used under Creative Commons Attribution licences, which ask for this credit:

- **Salamander Grand Piano V3** by **Alexander Holm** (FreePats edition), CC BY 3.0 (creativecommons.org/licenses/by/3.0).
- **Headroom Piano** and **Intimate Piano** by **Bengt Nilsson** (SFZ mapping by kinwie), CC BY 4.0 (creativecommons.org/licenses/by/4.0).
- **MTG Solo Saxophones** by the **Music Technology Group, Universitat Pompeu Fabra** (from freesound.org; SFZ by kinwie), CC BY 4.0.
- **DRSKit** and **MuldjordKit** by **the DrumGizmo team** and **Jes Eiler of DRSDrums** (SFZ by kinwie), CC BY 4.0.
- **Naked Drums** by **Wilkinson Audio**, CC BY 4.0.

What was changed for arctone.studio: the samples are converted to 24-bit FLAC, very long tails are cut with a fade, the instruments are remapped for the arctone.sampler, and the drum kits' and Headroom's microphones are mixed down to one stereo sample a hit. No endorsement by their authors is implied.

These need no credit, but they get one:

- **VCSL** and **VSCO 2 Community Edition** by **Versilian Studios**, CC0 1.0.
- **Karoryfer Samples**' instruments (github.com/sfzinstruments), CC0 1.0: the saxes, basses, guitars (Emilyguitar, Shinyguitar, Black and Green Guitars), String Cyborgs, drums, pianos and more.
- **Double Bass** by **D. Smolken**, CC0 1.0.
- **Steel Drum** by **Jeff Learman**, The Unlicense.
- The **University of Iowa Musical Instrument Samples**, University of Iowa Electronic Music Studios: free to use for any project, without restrictions.

OB-Xf - by the Surge Synth Team, a separate plug-in that comes with arctone.studio, free software under the GNU General Public License 3.0 or later; its source code is at github.com/surge-synthesizer/OB-Xf (Scanning for plug-ins (p. 122)).

vst2sdk - arctone.studio hosts VST2 plug-ins (VST2 plug-ins (p. 123)) using Xaymar's clean-room description of the VST2 interface (github.com/Xaymar/vst2sdk), under this licence:

```
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```

Chapter 14

Recording

Recording the mix

Rec, in the transport bar, records the mix to a 24-bit WAV file. With **Record stems per layer** on (Settings > Recording) it also writes one file per layer, and it always saves the MIDI performance. Files go to `~/Documents/Arctone/arctone.studio/Recordings/`; **Folder** in the Take strip and **Open recordings folder** in Settings > Recording open that folder. **Capture**, beside Rec, makes a take of what you just played without Rec having been pressed (Capture (p. 46)).

Each take goes in a folder of its own, named with the date and time you pressed Rec and the patch's name - `2026-10-10 14-30-05 Lead` (a take made with Capture: `2026-10-10 14-30-05 Captured Lead`) - so the Recordings folder lists your takes in the order you played them. Every file in it begins with the same date and time:

- `2026-10-10 14-30-05 Mix.wav` - the mix;
- `2026-10-10 14-30-05 01 Piano.wav`, `2026-10-10 14-30-05 02 Strings.wav`... - a stem for each layer, numbered in the layers' order, when stems are on;
- `2026-10-10 14-30-05 Performance.mid` - what you played, when you played anything.

A file dragged into a DAW, copied to another folder or exported from an editor keeps the date and time, so you can always tell which take it came from. Takes recorded before the files were named this way (`Mix.wav` and `Performance.mid`, the date and time at the end of the folder's name) keep their names, and still open and play.

Reading a take's file name. `2026-10-10 14-30-05 Mix.wav` reads:

Part	Here	What it is
Year-month-day	`2026-10-10`	10 October 2026
Hours-minutes-seconds	`14-30-05`	2:30:05 in the afternoon, on a 24-hour clock
What the file holds	`Mix`	see below

- **The moment you pressed Rec or Capture**, in your computer's local time. Every file of one take - its folder, the mix, the stems and the MIDI - has the same stamp, so they always belong together.
- **Year first** so files sort in the order they were played - in the Finder, in Windows Explorer and in a DAW's file browser - oldest first.
- **Dashes, not colons**, in the time: Windows doesn't allow ":" in a file name, and the Mac's Finder shows it as "/".
- **A 24-hour clock**, so 2 in the afternoon (`14-30-05`) and 2 in the morning (`02-30-05`) can't be mixed up.

After the date and time comes what the file holds:

- **Mix** - arctone.studio's main stereo output as you heard it: every layer through the master and its effects (and the metronome, when it's on), as a 24-bit WAV at the audio device's sample rate.

- **01 Piano**, **02 Strings**... - one layer each (a stem), before the master, numbered in the layers' order; only when **Record stems per layer** is on.
- **Performance** - the MIDI you played (`.mid`): the notes, the sustain pedal and the controllers, at the tempo you recorded at.
- **Mix (original)** and **Performance (original)** - what the take was before you first saved an edit of it in the audio or MIDI editor (The audio editor (p. 83), The MIDI editor (p. 82)).
- **Take** - a take's mix put on a layer's arctone.sampler with **To arctone.sampler**, in Library > Samples > Takes (`2026-10-10 14-30-05 Take.wav`, then `Take 2`...).

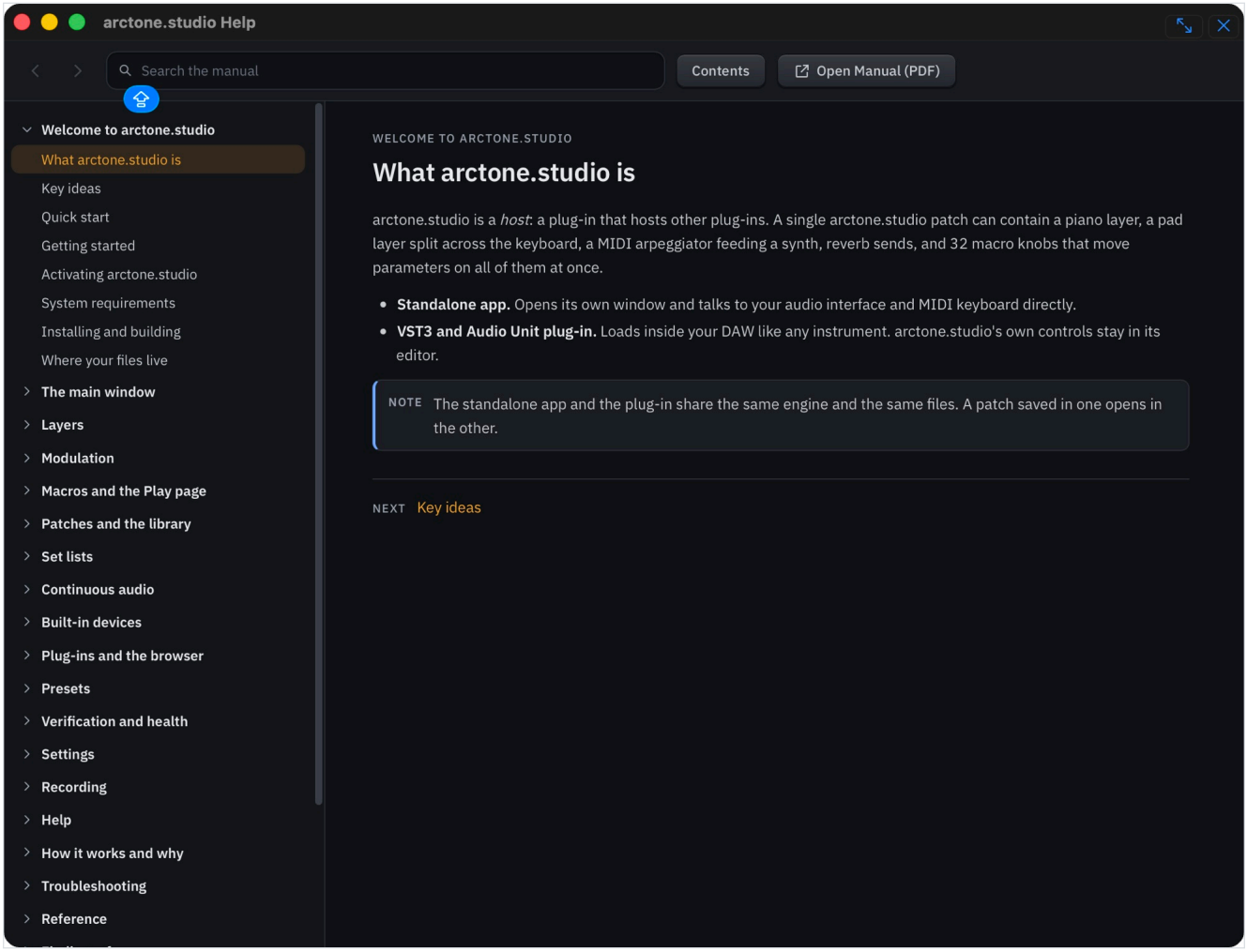
Chapter 15

Help

Ways to learn arctone.studio as you go:

- **Getting started** - a panel of five first steps, in the window itself, that tick themselves off as you do them (Getting started (p. 10)). ≡ **> Getting started...** brings it back any time.
- **Quick Help** - a panel that explains whatever the mouse is over (Quick Help (p. 57)).
- **F1** - this manual, at the topic for the control under the pointer (Context-sensitive help (F1) (p. 208)).
- **Help...** and the command palette - search this manual, or find any command by name (Searching the help (p. 209), The command palette (p. 26)).
- **The manual as a PDF**, to read or print (Searching the help (p. 209)).

Context-sensitive help (F1)



The Help window: the chapters at the left, the topic at the right, the search box and Open Manual (PDF) at the top.

Hover the pointer over anything in arctone.studio and press **F1**. The help window opens at the section about that control. If nothing specific is known for what is under the pointer, you get the section for its window.

- **On a Mac keyboard**, F1 is often the screen-brightness key. Hold **Fn** as well (Fn+F1), or switch on "Use F1, F2, etc. keys as standard function keys" in System Settings > Keyboard. **Cmd+Shift+/** (Cmd+?) does the same thing.
- **Shift+F1** ("explain") shows which control is under the pointer and which topic it maps to. It is meant for people extending the help. See Explaining what is under the pointer (p. 209).
- The pointer must be over the control, not just the window.
- **Over a device or a modulator in the Device Panel**, F1 opens that device's own help in place, with a note on every control (Help for a device, in place (p. 70)).
- **To turn it off**, untick **Settings > Interface > Look & feel > Context-sensitive help (F1)**, or **Help > Enable Context-Sensitive Help** in the menu bar. With it off, F1 does nothing; the Help menu, search and the PDF still work. The setting is shared by the standalone app and the plug-in, and is on by default.

Searching the help

Choose **Help > arctone.studio Help...** from the menu bar (or ≡ **> Help...** in the View bar) to open the help window with the cursor in the search box. Type words: every word must appear, titles and keywords count most, and results are listed best first with a snippet. Clear the box to see the **contents**. Links in the text jump to other sections. **Open Manual (PDF)** opens this same manual as a PDF you can print. The PDF and the help window are built from one source, so they always agree.

Keyboard shortcuts

Most keys are **key commands** that you can change, in sets of your own: see Key Commands (p. 192), which lists them all. **Cmd+P** (Ctrl+P) opens the command palette, which finds any of them by name (The command palette (p. 26)); **Cmd+O** (Ctrl+O) the patch picker (Choose a patch (p. 24)). These are fixed:

Key	What it does
F1 (or Fn+F1, Cmd+Shift+/)	Help for what is under the pointer
Shift+F1	Explain what is under the pointer and its help topic
Esc	Leave full screen; close a dialog or menu
Cmd+F	In the Help window: go to the search box
Cmd+[/ Cmd+]	In the Help window: back / forward through the sections you looked at
Return	In the Help window's search: open the first result
Double-click a title bar	Full desktop, and back
Right-click a bar's button	Extra options (Browser: layout; Metronome: level; the top bar's Save: Save As)
Double-click a slider or knob	Reset it (pan to centre, volume to 0 dB, velocity curve to linear)

Explaining what is under the pointer

Shift+F1 does not open help; it shows a small message naming the control under the pointer, its parent controls, and the help topic it maps to. If the topic is only the window default, that control has no specific help yet. The same lookup is checked automatically for the whole arctone.studio window by the test suite, which lists every control that falls back to the window default. To give a control its own help, tag it with `HelpSystem::setHelpId (component, "topic.id")` or add its name to the table in `HelpContext.cpp`. See How the help finds the right page (p. 214).

Chapter 16

How it works and why

This chapter explains the design choices behind the preset tools, including the problems that shaped them. You do not need it to use arctone.studio, but it explains why things behave the way they do.

Architecture in one page

arctone.studio and the tests share one body of code:

- **Engine** (layers, slots, macros, mixer, recorder) lives in arctone.studio only.
- **Preset storage and verification** (`Source/Preset/`) is shared. It has no user interface, so it is unit-tested with small pretend plug-ins: one that behaves, one with hidden state, one that applies state late, one with random output, one that ignores its state, one with no state, one that only accepts state before it starts, one with a random oscillator phase, and one with 120 parameters.
- **Preset browser, recorder and native helpers** (`Source/Browser/`, `Source/UI/`) are also shared, and so is the reading and loading of VST2 / NKS presets (`Vst2Presets`).
- **Help** (`Source/Help/`) is one Markdown manual parsed once and used for the window, its search, the F1 lookup and this PDF.
- **What you see** is web pages (the `Web/` folder, embedded in the app and the plug-in) shown in the system's web view: the main window (`index.html`), and the Help window (`help.html`), all with the same look and theme (`Source/Web/`). Messages and questions from the program ("Quit arctone.studio?") appear in whichever page is showing (`Source/UI/Dialogs`). Only plug-in editors, are native.

The guiding rule for the preset tools: *never fail silently*. Every warning, fallback and failure is shown in the interface and written to `PresetLog.txt`.

Why work happens in worker processes

Third-party plug-ins crash and hang. If arctone.studio loaded every plug-in it scans itself, one bad plug-in would end your session. So the standalone app probes plug-ins in a **worker**: a second copy of itself, started with a special command line, that looks at one plug-in at a time and reports what it found.

Two watchdogs guard each worker:

1. **Process liveness.** The two processes exchange a tiny ping. A crashed or frozen worker stops answering and the connection is declared lost within seconds; the plug-in it was on is blocklisted.
2. **Give-up time.** A plug-in that blocks while the process stays alive is caught by a separate timer (60 seconds by default, in Settings > Plug-ins); a timeout keeps the old entry, since the plug-in may just be slow today.

Inside a DAW there are no workers: plug-ins are probed in the same process, one at a time, protected by a file that names the plug-in being probed. See Scanning for plug-ins (p. 122).

In gig mode (Gig mode (p. 95)) the worker processes are closed rather than left idle - the scan's, and the plug-in copies the preset map keeps loaded for its previews - so nothing of theirs stays in memory while you play.

Why the hardened runtime needs extra permissions

Apple's *hardened runtime* is required for notarised apps, and it restricts what an app may load and modify. arctone.studio's apps declare these exceptions in the build (`CMakeLists.txt`):

- **`disable-library-validation`.** Without it macOS refuses to load plug-ins signed by other developers, which is every plug-in you own.
- **`allow-unsigned-executable-memory`** and **`disable-executable-page-protection`.** Copy-protected plug-ins (PACE / iLok, for example UVI Falcon and Opus) decrypt and patch their own code in memory when they load. When the hardened runtime was first switched on without these, macOS killed the host with "*Code Signature Invalid*" the instant such a plug-in loaded. The crash reports showed the fault inside the copy-protection wrapper, and adding the two entitlements cured it.
- **`device.audio-input`.** Some plug-ins ask for audio input.

Why the state is trusted over the parameters

A preset stores the plug-in's *state* and a *snapshot of its parameters*. Early on, verification compared the two and blamed the state whenever they disagreed. Real data disproved that. On BIT2, about 100 of 3,105 parameters differed after every restore, by large amounts (an oscillator volume of 0 against 1). The values were identical across different presets, the signature of a **stale snapshot**: BIT2 does not tell the host about those parameters when a preset changes, so what the host reads from the live plug-in never updates, while the state has the right values.

The consequence was serious: arctone.studio, believing the state was broken, applied the stale parameters *on top of* the correct state, which would have spoiled the sound of every BIT2 preset. The rule now is to **compare all of a plug-in's presets**: if their states differ from one another, the state is the truth; if the states are identical or empty, only the parameters can distinguish the presets, so those are the truth. See Which side is the truth (p. 164).

Why files are stored the way they are

A preset may be the only copy of a sound you cannot reproduce, and a library has thousands of them, so the format is defensive:

- **Atomic writes** mean a crash or full disk mid-save cannot leave a half-written preset in place of a good one.
- A **checksum** turns silent corruption into a clear message. A corrupted file is refused, never loaded wrongly.
- **History** keeps the previous version when a preset is overwritten with a different state; an identical rewrite adds none.
- The **header** holds the checksum, size and order in the first bytes, so the browser can sort and compare thousands of presets without parsing the large files.
- **Order** is stored as data instead of numbering file names, so names stay clean and the plug-in's own order is kept.
- **Version numbers** let the format grow; older files keep opening.

Why the null test judges "the same sound"

The strictest test of a restore is to play the same signal through two copies and subtract: a perfect restore leaves silence (below −60 dB). But many synths start each note with a random oscillator phase or a random unison detune. Two copies then never cancel; they produce two *uncorrelated* signals of equal level, and the residual of such a pair is always about **+3 dB** (twice the energy, 10·log10(2)). That was exactly what BIT2 gave, and it is a property of the synth, not of the restore.

So when the waveforms do not cancel, the test compares what a listener would hear: the **loudness** and the **average spectrum** of the two renderings. Equal loudness and a matching spectrum means the same sound with different samples, a soft pass. A difference of more than 3 dB in loudness, which no amount of randomness explains, is a failure. Audio that is not repeatable but matches in loudness, with parameters that restore identically each time, is reported as soft with a note instead of "failed", because the restore itself is not what differs.

Why the title bar has its own button

The arctone.studio main window is JUCE's standalone window, which **draws its own title bar** (minimise and close at the upper right). The other windows use the **native macOS title bar**. Each needed a different approach:

- The main window has a third drawn button (the JUCE "maximise" button) that toggles full desktop; JUCE already turns a double-click on the title bar into a click on that button.
- Native windows get a small button in a **title-bar accessory** on the right, and a **local event monitor** catches a double-click on the bar and runs the same toggle instead of macOS's zoom. Clicks on the bar's own buttons are left alone.
- Full desktop uses JUCE's kiosk mode and remembers the previous bounds, so the second double-click returns to the last size. A fixed-size plug-in editor is kept at its own size and centred.

Why arctone.studio learns of new presets through a file

Several copies of arctone.studio can run at once: the standalone app, and the plug-in in one or more DAWs. Rather than open connections between programs that can start in any order, a copy that saves a preset or new check results touches one tiny file (`PresetsChanged.txt`), and every copy checks its modification time once a second and refreshes its preset tree. A file survives any program restarting, needs no handshake, and costs nothing to check.

Why every patch is an engine of its own

Continuous audio needs several patches running at once, so the patch stopped being "the layers inside the processor" and became an object, a **PatchEngine**: its layers, master, macros, audio buffers and its own lock. Then:

- The processor keeps one **current** engine, the one the interface edits.
- The **EngineHost** runs the current engine together with the ones still ringing out, and mixes them.

- **Switching is a hand-off, not a lock.** The message thread builds the whole new patch off to the side (plug-ins created and prepared), then publishes it with one atomic pointer store. The audio thread takes it with one atomic exchange at the start of a block. Nothing waits on anything.
- **Nothing is created or destroyed on the audio thread.** A finished patch is passed back through a fixed-size lock-free queue and destroyed on the message thread, after a short grace period so no window or knob is left pointing at it.
- A **MidiRouter**, with no audio in it so it can be tested alone, decides where each MIDI message goes: it remembers, for every key on every channel, which patch received the note-on, and keeps sustain and sostenuto state for each patch.
- A small set of rules (**TailPolicy**) decides when a tail is over: silent for long enough, or too old, or crowded out. Fades are linear over about 30 ms.
- A DAW restoring a session publishes with "replace everything": all older patches are dropped, none rings on.
- The macro parameters the host sees always belong to the current patch. The patch you leave stops following them at once, so its macros and LFOs carry on from where they were.

Patches for the set list are built ahead of time on the message thread, one at a time, and handed over the same way, so a prepared patch costs nothing while it waits except memory.

The unit tests cover the routing (new notes, note-offs to the old patch, sustain, ten quick switches), the tail rules, and the whole engine (held notes, the cap, per-patch override, a DAW restore, live input, LFOs, preloading).

Threading in the engine

- The structure (layers, slots, clips, the macros' assignments) only changes on the message thread. Plug-ins are created and prepared before a change, outside it.
- The audio thread never takes the patch's lock and never waits for an edit. Each change ends by handing it a new plan of the patch - its layers in order, their plug-ins and clips, the macros' assignments - with one atomic exchange; it takes the newest plan at the start of a block, so a block plays the plan it began with and never sees the patch's structure half changed. Switching patch is handed over the same way. See Why every patch is an engine of its own (p. 212).
- What a change takes out of the patch (a layer, a plug-in, the polyphony expander's copies) is destroyed on the message thread once the audio thread has moved on to a plan without it, never while it may still be playing it. While the audio is stopped, the message thread moves on to the newest plan itself, so it goes at once; a DAW that keeps the plug-in running but stops sending it audio (Logic, with a track that isn't live) keeps it until the next block.
- Mixer, MIDI-filter, clip and macro settings are atomics, so the interface and macros can change them at any time without locking; they take effect at the next block, in a change or not. A macro's MIDI controller is one of them, so a controller moving a macro takes no lock either.
- Outside the patch, a few short locks remain on the audio thread: the recorder's while recording (the MIDI file is written without it), the built-in arctone.sampler's while its samples are changed, the Basic Synth's, the on-screen keyboard's. The previews and the MIDI output only try theirs.
- Plug-in state is read and written on the message thread only, with processing suspended around the call, because many plug-ins require it.

How the help finds the right page

When you press F1 the help system looks at the control under the pointer and tries, in order, each control from the innermost to its parents:

1. An explicit **help id** set on the component (`HelpSystem::setHelpId`).
2. The control's **tooltip** (for example "Mute" or "Velocity curve").
3. The control's **name or label** (for example the classic toolbar's "Keyboard").
4. The **kind of component** (a layer track, the keyboard, the plug-in tree).
5. Finally, the **window** it is in.

The first match wins, so a specific control beats its container. The test suite builds the real arctone.studio window, asks the lookup about every control in it, and lists the ones that only reach the window default, so gaps show up as a to-do list. All of it reads the one manual, so the help can never point at a page that does not exist: the test also checks every link and every help target.

Chapter 17

Troubleshooting

No sound

1. Check the **Audio/MIDI** settings: is the right output selected? See Audio & MIDI (p. 168).
2. Is the layer **powered on**, not muted, and is its volume up? See The folded line: name, key range, mixer (p. 62) and The mixer: pan, volume, M and S (p. 68).
3. Does the layer's **MIDI filter** accept the notes you are playing (key range, velocity range, channel)? See The MIDI line: what reaches the plug-ins (p. 65).
4. Is the layer's **MIDI source** set to something that is producing notes? See The layer inspector (p. 73).
5. Does the layer have an instrument? An empty instrument slot is silent.

Plug-ins are missing from the list

Open the Plug-in Manager and press **Scan for new plug-ins**. Its **Blocklist** tab lists the plug-ins that failed, each with **Try again**; **Rescan all** looks inside every plug-in again. Read `ScanLog.txt` (Settings > Plug-ins > **Open ScanLog.txt**) for the reason. Intel-only or 32-bit plug-ins do not load on Apple silicon. See Scanning for plug-ins (p. 122).

A preset sounds wrong after loading

Look at its badge and the note shown after loading. **P** (parameter-only) or **✗** presets rest on parameters and may be approximate. Hover the badge for the note, and look the finding up in the Finding reference. Importing the preset again can help. See Loading a preset (p. 161) and Reading the results (p. 164).

The old patch keeps sounding

That is continuous audio doing its job, but it should always end. Check the **RING** box. If a key is stuck down, or the pedal is down, the old patch holds its notes until the **longest tail** time, then fades. Send **all notes off** from your keyboard to end it at once. To stop old patches sooner, lower the **Longest tail** or turn continuous audio off (or set the patch to **Never ring out**). See How long an old patch rings (p. 112) and Choosing per patch (p. 112).

Switching patch cuts the old sound

Check that continuous audio is on (Settings > Continuous Audio) and that the patch you are leaving is not set to **Never ring out** (the patch's menu, **This patch when you switch away**). The sound is also removed when it has been silent for a third of a second, or is older than the longest tail. See How long an old patch rings (p. 112).

macOS keeps asking for Documents or Microphone access

macOS remembers "Allow" for an app by its **code signature**. A build you make yourself is signed *ad hoc*, and an ad-hoc signature is different for every build, so after each rebuild macOS sees a new app and asks again: once for your **Documents** folder (your patches, presets and set lists live in `~/Documents/Arctone/arctone.studio`) and once for the **microphone** (audio input).

To stop it, sign the builds with a real code-signing certificate, so every build looks like the same app:

1. Get a certificate. The easiest is free: in Xcode, **Settings > Accounts**, add your Apple ID, then **Manage Certificates > + > Apple Development**. (Or make a self-signed one in Keychain Access: Certificate Assistant > Create a Certificate, type Code Signing.)
2. Find its name with `security find-identity -v -p codesigning`.
3. Configure once with that name and build as usual:

```
cmake -B build -G Xcode -DARCTONESTUDIO_SIGN_IDENTITY="Apple Development: Your Name (TEAMID)"
```

The first build with the new signature asks once more; after that macOS keeps your answers. A finished, notarised release build has a stable signature and only asks once. **System Settings > Privacy & Security** lists and changes what has been allowed.

arctone.studio does not open its window

If arctone.studio seems stuck at start, macOS may be waiting for you to allow **microphone access** (each rebuilt or re-signed app can ask again), and the audio system waits on that prompt. Look for the permission dialog and click Allow.

Chapter 18

Reference

Environment variables

`ARCTONESTUDIO_NO_TITLEBAR_BUTTON=1` switches off the title-bar additions (Why the title bar has its own button (p. 212)).

Glossary

Term	Meaning
Aux layer	A send/return bus that layers feed through their sends.
Blocklist	Plug-ins that crashed a scan or a capture and are skipped from then on.
Capture	Saving a plug-in's published programs as arctone.studio presets.
Null test	Subtracting two renderings of a preset to see if they are the same.
Parameter-only	A preset that can only be rebuilt from parameters (badge P).
Patch	Everything you hear, saved as a `.aspatch`.
Slot	A position in a layer's chain holding one plug-in.
Soft-verified	Restores with an explained, harmless difference (badge ≈).
State	The data a plug-in returns when a host saves it.
Worker	A helper process that does risky work so a crash cannot reach the app.

Chapter 19

Finding reference

Every finding a preset check can report, with what it means and what to do. This chapter is generated from the same list the program uses, so it always matches the note beside a preset. See Reading the results (p. 164).

The plug-in crashed

Problem. Loading this plug-in, or restoring one of its presets, made it crash. The plug-in was put on the crash list so it isn't tried again.

What to do:

- Open the plug-in on its own (in your DAW or its standalone app) and finish any first-run set-up: licence activation, iLok / PACE authorisation, sample-library download.
- Update or reinstall the plug-in.
- Press "Clear crash list" in Settings > Presets > Capture presets, and try again. If it still crashes, PresetLog.txt and ~/Library/Logs/DiagnosticReports say which module crashed.

Didn't respond in time

Problem. The plug-in took longer than the time it is given to load or restore a preset. Usual causes: a licence or activation window waiting for a click, a very large sample library loading, or a hang.

What to do:

- Open the plug-in on its own and complete any activation or licence window.
- Big libraries (Kontakt, Falcon, Vienna) can be slow the first time: try again.

The helper process failed (not the plug-in)

Worth a look. The helper process died, or wouldn't start, before it began this job. Nothing was tested, and the plug-in was not blamed or put on the crash list.

What to do:

Try again. If it repeats, quit and reopen arctone.studio. Details are in PresetLog.txt.

The helper process reported an error

Worth a look. The helper process could not complete this job and said why (shown with the example presets).

What to do:

Read the message, fix what it names (often a missing file or a plug-in that is not licensed), then run the check again.

Plug-in could not be loaded

Problem. The plug-in did not load. It may have been moved or uninstalled, may need a licence, or may not be built for this Mac (for example Intel-only on Apple silicon).

What to do:

Reinstall or update the plug-in, then press "Rescan All" in arctone.studio so its plug-in list is refreshed. If it is an old or Intel-only plug-in, look for a newer version.

The plug-in's file no longer exists

Worth a look. This plug-in is in arctone.studio's list, but its file has gone (uninstalled or moved).

What to do:

Press "Rescan All" in arctone.studio to update the list. If you no longer use the plug-in you can delete its folder in ~/Documents/Arctone/arctone.studio/Library/Presets.

Preset file is damaged or unreadable

Problem. The file failed its checksum or is not a valid preset: a damaged copy, a disk problem, or a hand-edited file. arctone.studio refuses to load such a file rather than load it wrongly.

What to do:

Restore the previous version from the ".history" folder next to the file (), or capture / record that preset again.

The plug-in gave no saved state

Worth a look. The plug-in returned nothing when asked for its state. Typical causes: demo mode, not authorised, or a plug-in that doesn't use state chunks. These presets can only be rebuilt from parameters, which is approximate.

What to do:

Activate or authorise the plug-in, then capture again. If it never gives a state, parameter-only is the best that can be done: load a few of the presets in arctone.studio and check them by ear.

Saved state is identical for every preset

Worth a look. The plug-in's saved state doesn't change from preset to preset, so the sound only shows in its parameters (or the plug-in is in demo mode). When loading, arctone.studio applies the stored parameters on top of the state.

What to do:

Load two or three of these presets in arctone.studio and listen. If they sound right, nothing to do. If they all sound the same, the plug-in isn't really switching presets: check that it is authorised, then capture again or use the Preset recorder.

The saved state doesn't restore the sound

Problem. Restoring the saved state left the plug-in's parameters different from what was captured, in both restore orders. arctone.studio falls back to the stored parameters (badge P).

What to do:

The presets will work, but only as accurately as their parameters describe them. Capture again with the plug-in fully loaded and authorised. If the sound is clearly wrong, tell the plug-in's developer that its state does not restore.

Some parameters aren't reported by the plug-in

Information. After a preset changes, the plug-in doesn't tell the host about a few of its parameters, so the parameter snapshot is stale for those. The saved state has the right values and arctone.studio uses it.

What to do:

Nothing to do. This is normal for some large synths.

Same sound, but not identical samples

Information. Two loads of the preset match in loudness and average spectrum but not sample for sample: the plug-in uses random oscillator phase, unison detune, noise or free-running LFOs.

What to do:

Nothing to do. This is how the plug-in is meant to behave.

Audio isn't repeatable between loads

Worth a look. Two loads of the same preset sound somewhat different (random, arpeggiated or sequenced content), although loudness matches and the parameters restore identically.

What to do:

Usually fine. If you want a steady sound, switch off the arpeggiator, sequencer or randomisation in the plug-in and capture again.

No sound during the audio test

Worth a look. The plug-in produced no audio for the test signal (instruments: a chord, a single note and a velocity sweep; effects: noise and a sweep), so the audio check was skipped.

What to do:

Instruments: make sure the sample library is installed and the plug-in is authorised; some need a patch loaded. Effects driven by sidechain or MIDI are expected to be silent. Load one of the presets in arctone.studio and check it.

Restoring twice gives different results

Problem. Two fresh loads of the same preset ended with different parameter values, so it can't be relied on to come back the same.

What to do:

Run the check again (the plug-in may have been busy loading). If it repeats, the plug-in resets or randomises parameters when it loads a state; report it to the plug-in's developer.

Loudness differs between loads

Problem. Two loads of the preset differ by more than 3 dB in loudness.

What to do:

Capture the preset again. If it persists, the plug-in takes its level from something other than its saved state (a host-linked volume, or a licence-limited output).

Saved by an older arctone.studio

Information. The preset has no parameter snapshot, so it could only be checked by comparing two loads of it.

What to do:

Optional: capture or record it again to upgrade the file.

Needs its state set before it starts

Information. This plug-in only accepts a saved state before audio starts. arctone.studio remembers that and loads it that way.

What to do:

Nothing to do.

Verification failed

Problem. The preset did not pass verification for a reason not covered by the other findings.

What to do:

Look at the log (PresetLog.txt) for the stage that failed, then capture the preset again.

On the crash list

Worth a look. An earlier run crashed on this plug-in, so it is skipped and none of its presets were checked.

What to do:

Fix the cause (see "The plug-in crashed"), then press "Clear crash list" in Settings > Presets > Capture presets and try again.

Chapter 20

The Preset Importer

For arctone.PresetImporter 0.1 on the Mac and Windows. Made by Arctone Systems Inc.

arctone.PresetImporter is the part of arctone.studio that reads most of your plug-ins' presets and puts them into your arctone.studio preset library. arctone.studio starts it; you look at what it found, press its **Import** button, and the presets show up in arctone.studio's Browser as they come in.

Getting started

What arctone.PresetImporter does, what it needs, how arctone.studio starts it, and what happens the first time.

What arctone.PresetImporter does

Every plug-in keeps its presets its own way: in a list it gives hosts, in preset files, in its maker's own library, or only inside its own browser. arctone.PresetImporter finds the plug-ins on your computer, counts the presets it can import from each one, and - once you press **Import** - reads them and saves each one as an arctone.studio preset (`.aspreset`), with its original name, in your **Imported Presets** library (Where your presets go (p. 237)).

- **One place only.** Everything goes into the arctone.studio library. Nothing is written for other programs or into the plug-ins' own folders.
- **Read only on your side.** Your plug-ins, their presets and your files are only read, never edited, moved or deleted.
- **Nothing is written until you press Import.** Finding your plug-ins and counting their presets only reads.
- **One version of each plug-in.** A plug-in installed as a VST3, a VST2 and an Audio Unit is imported once, in one format (One version of each plug-in: VST3, VST2 and AU (p. 236)).
- **Next time, only what is new.** Once your library is there, an import offers only the presets added since (Importing again: only what is new (p. 234)).

It never breaks a plug-in's protection and never opens an encrypted file. A preset is what the plug-in itself reports, or a file its maker ships in a readable form.

System requirements

- **arctone.studio:** arctone.PresetImporter comes inside arctone.studio and is started by it (Installing and removing it (p. 224)).
- **Mac:** macOS 11 or later. Its window uses the Safari engine built into macOS and needs Safari 16.2 or newer (System Settings > General > Software Update; on macOS 11 and 12, System Preferences > Software Update).
- **Windows:** 64-bit Windows, with Microsoft's WebView2 Runtime for its window.
- **Disk space:** the library takes room - for a big collection, gigabytes. The Analyze & Import screen says how much the import needs and how much the drive has before anything is written (Where your presets go (p.

237)).

- **Plug-ins:** VST3, VST2 and, on the Mac, Audio Units. On Apple Silicon a plug-in built only for Intel Macs can't be loaded.

Installing and removing it

There is nothing to install: arctone.PresetImporter is a helper inside arctone.studio (on the Mac, inside the arctone.studio app; on Windows, in the `Helpers` folder of arctone.studio's install folder). It has no icon in Applications or the Start menu of its own. Removing arctone.studio removes it too.

Your Imported Presets library is arctone.studio's, not the importer's, and stays where it is. The importer's own folder - its settings, plug-in list, logs and the record of where each import got to - is left too (Where things are kept (p. 244)).

Opened by itself (double-clicked), it shows only "This tool is part of arctone.studio. Open arctone.studio and choose Import presets.", with **Open arctone.studio** and **Close**.

Starting an import from arctone.studio

arctone.studio starts arctone.PresetImporter for you and tells it where your library is. The ways in:

- **At the first start.** After the welcome's tour - or **I know my way around** - the standalone app asks once, on a card: **Bring in your presets**. **Start import** opens the importer; **Later** leaves it for step 4 of Getting started (Getting started (p. 10)), and a line is kept in **Messages** with an **Import now** button, so you can find it again.
- **Getting started**, step **Bring in your presets**: **Import presets**.
- **The Preset Importer button** in the View bar (after **Preset map**), or **Open Preset Importer...** typed in the search box (The command palette (p. 26)). If an import is already running, its window comes to the front again.
- **One plug-in:** right-click it in the Browser and choose **Import presets with the Preset Importer...**. The importer imports that plug-in's presets and closes when it is done.
- **New presets found.** Each time the standalone app starts with a library already there, it checks in the background, unseen and read only, whether anything is new. If there is, one line says so - "New presets found: Kontakt 8 (1,204) and 2 more plug-ins. Import now?" - with **Import now** and **Not now**. It never stops what you are doing, and it is kept in **Messages** with its **Import now** button.

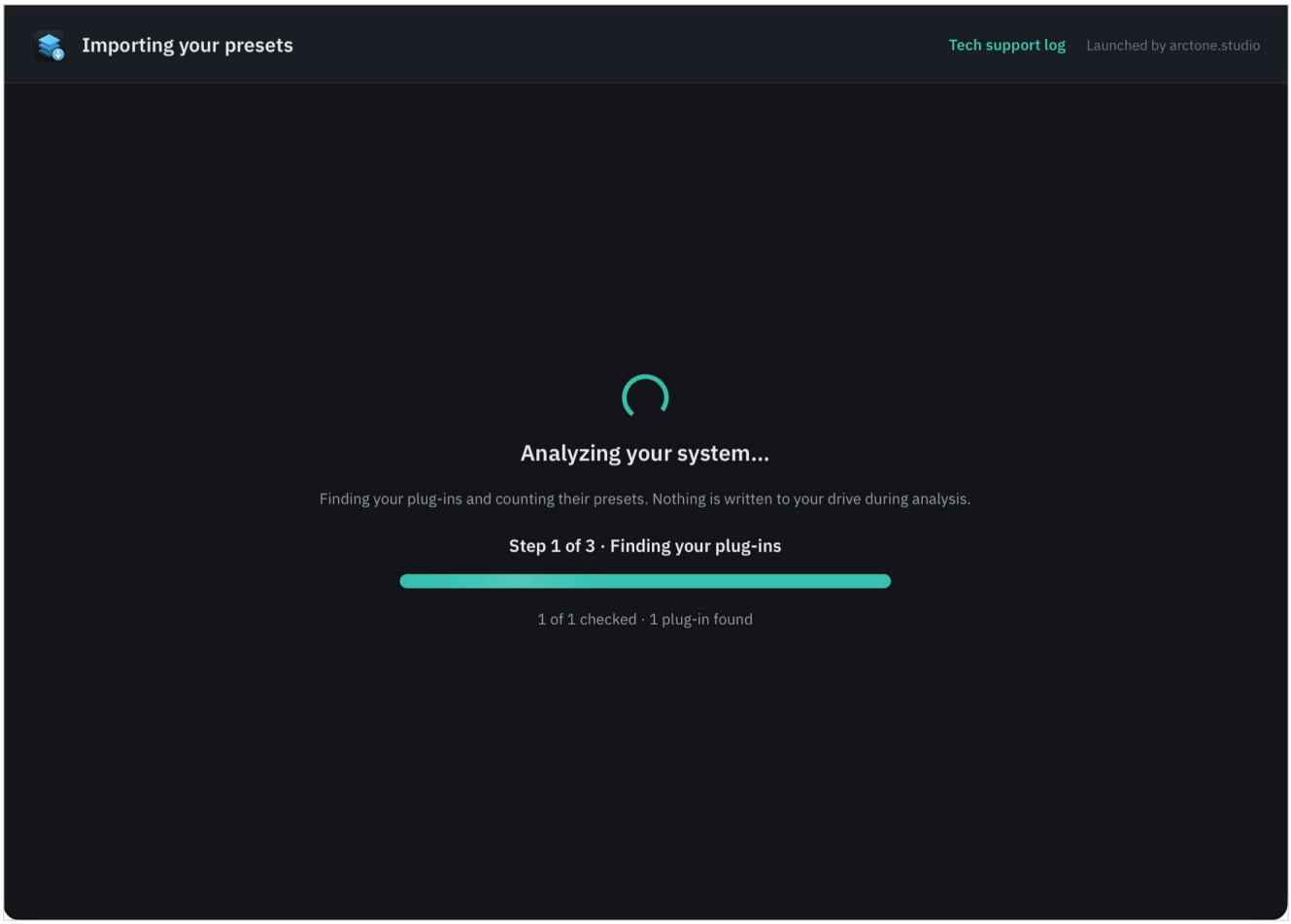
While the importer runs you can keep using arctone.studio: presets show up in the Browser as they are imported. When it closes, arctone.studio refreshes its preset list.

The first import

1. Press **Start import** when arctone.studio asks, or the **Preset Importer** button in the View bar (Starting an import from arctone.studio (p. 224)).
2. The importer opens on its welcome - **Welcome to arctone.PresetImporter** - for a moment, then goes on by itself to **Analyzing your system…**: it finds your plug-ins and counts their presets (Analyze & Import (p. 228)). Nothing is written yet.
3. Read what it found: the presets that import in minutes, how much room they need and where your library

is, and the big sample libraries that take longer. None of those is ticked to start with: tick the ones you want now.

4. Press **Import N presets** (the number follows what is ticked). The quick part goes first, then the big libraries one by one (Importing (p. 229)). Keep using arctone.studio, or leave the computer to it: it doesn't go to sleep until the import ends.
5. When it ends, the Results screen says what came in (Results (p. 231)). Press **Open my library in arctone.studio**.



The importer's welcome, shown for a moment as it opens.

What stays on your computer

- **Everything.** Your presets, your plug-in list and the logs stay on this computer. Nothing found or imported is uploaded or shared, and arctone.PresetImporter sends no statistics about you or your use of it.
- It goes online only to look for updates, and only when you choose to (Updates (p. 242)).
- **Copy this list for support** puts a list on your clipboard and in arctone.studio's Messages; nothing is sent. You decide what to send, and to whom (Help and support (p. 242)).

macOS permissions

arctone.PresetImporter needs no special permission for an import of plug-ins in the usual places. The one question you may see is macOS's own:

Permission	When it is asked	Without it
Files and Folders	When an import reads a library in Documents, Downloads, on the Desktop, in iCloud Drive or on an external or network drive (a Kontakt library on a sample drive, say), or when your Imported Presets library is there. macOS asks by itself, once for each place. arctone.PresetImporter doesn't reach into these places when it opens - only once you start something.	That library is left out of the import; allow it in System Settings > Privacy & Security > Files and Folders, then import again.
Accessibility, Screen Recording, Microphone	Never.	-

Your answer holds across updates: arctone.studio and its importer are signed by Arctone Systems Inc. with the same Developer ID in every version. Keeping the Mac awake during an import needs no permission.

Chapter 21

Importing your presets

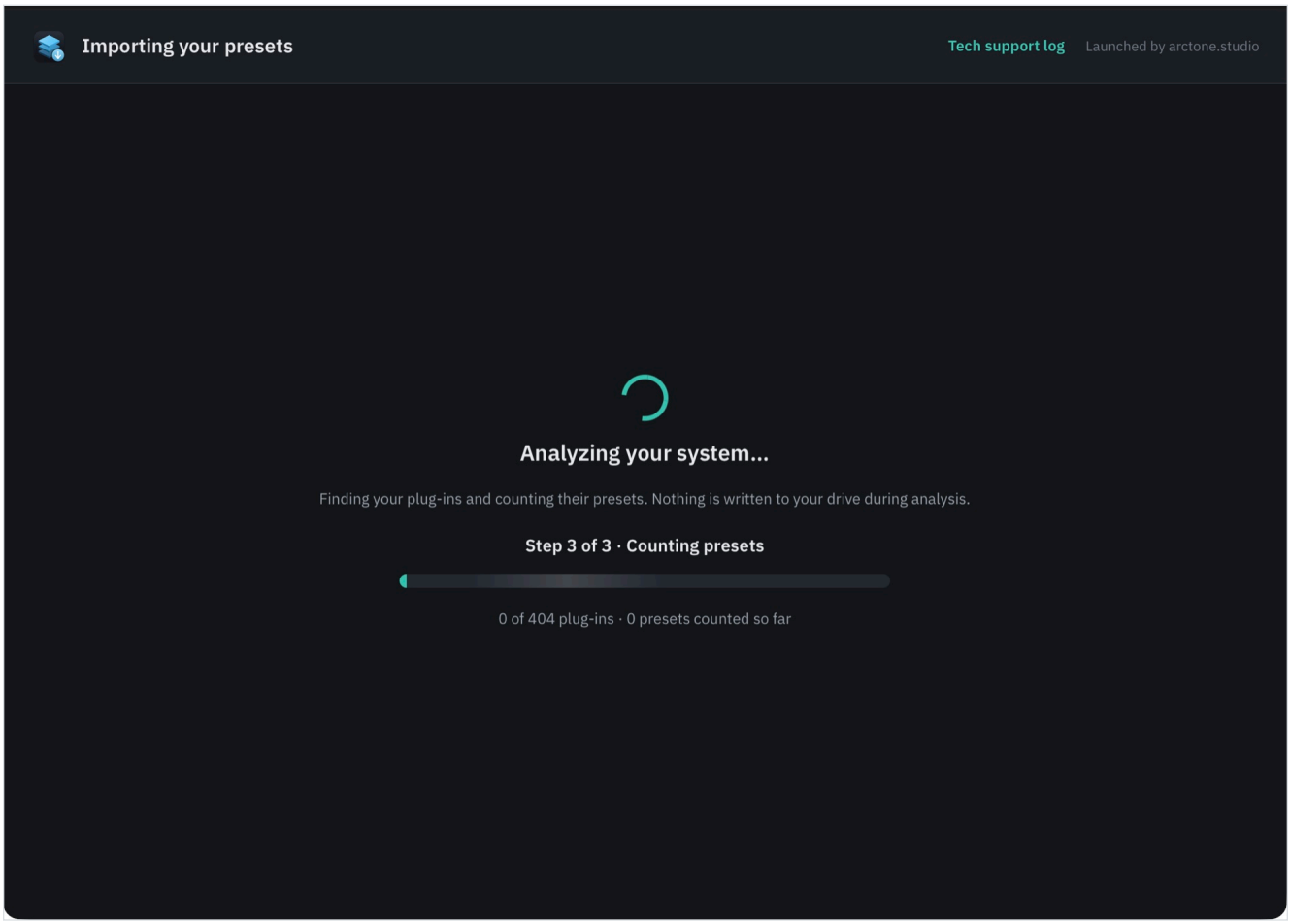
The importer's window

At the top left are the importer's icon and **Importing your presets**. At the top right are **Tech support log** (The log (p. 233)) and "Launched by arctone.studio". There are no Settings and no options: where your library is, is arctone.studio's setting (Where your presets go (p. 237)).

The screens follow each other:

Screen	What it is for
Welcome	Shown for a moment as the importer opens; it goes on by itself
[[importer.screen.analyze	Analyze & Import]]
[[importer.screen.importing	Importing]]
[[importer.screen.results	Results]]
[[importer.screen.retry	Import more presets]]

The analysis and the end of an import move the screens on by themselves; your buttons do the rest.



Analyzing your system: step 3 of 3, counting presets. Nothing is written during analysis.

Analyze & Import

While it analyzes, the screen shows **Analyzing your system…** - "Finding your plug-ins and counting their presets. Nothing is written to your drive during analysis." - and where it has got to, with a bar:

1. **Step 1 of 3 · Finding your plug-ins** - each plug-in on your computer checked ("120 of 412 checked · 96 plug-ins found").
2. **Step 2 of 3 · Checking what changed in your plug-ins' folders**.
3. **Step 3 of 3 · Counting presets** - plug-in by plug-in ("40 of 96 plug-ins · 18,420 presets counted so far").

Each plug-in is opened in a process of its own while it is looked at, so one that crashes or hangs can't take the importer down. The first time this takes longest; later, only plug-ins that are new or changed are opened again.

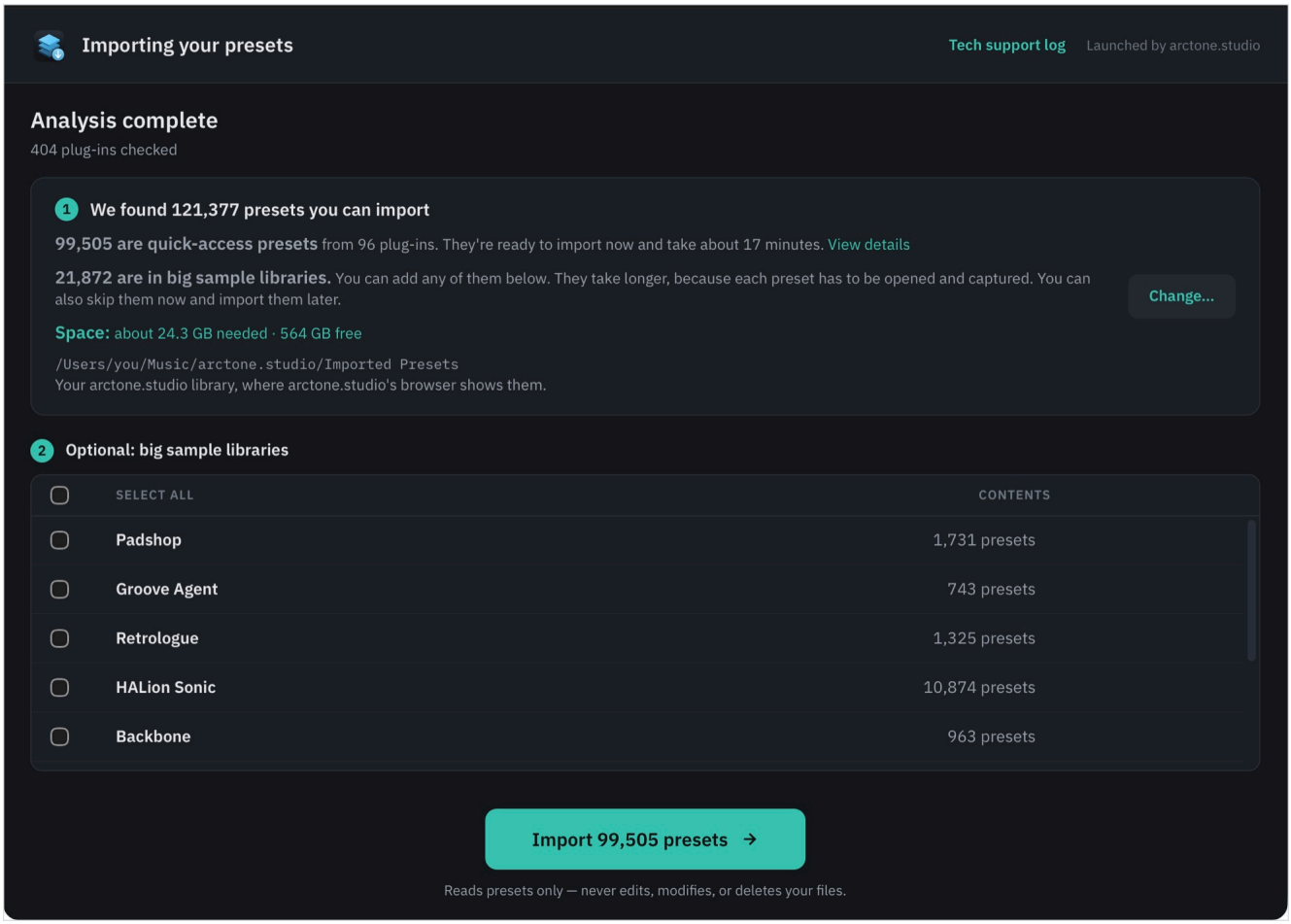
When the analysis is done, the screen shows, from the top:

- **The headline:** "Analysis complete", and under it how many plug-ins were checked. If a plug-in stopped on its last scan (a dialog or a crash), the line says so: it may need a hand again.
- **1 - "We found N presets you can import".** "N are quick-access presets from M plug-ins. They're ready to import now and take about X." - read straight from preset files. **View details** lists those plug-ins with their **Presets** and **Format** (a note such as "VST2 only — no VST3 installed" or "AU only — no VST installed"); **Hide details** folds it again. These are always imported. Then "N are in big sample libraries. You can add

any of them below." In the same card: **Space** - what the import needs and what the drive has free - and your library's folder, "Your arctone.studio library, where arctone.studio's browser shows them.", with **Change…** (Where your presets go (p. 237)).

- **2 - Optional: big sample libraries:** libraries that have to be opened and captured preset by preset. Each row has a tick, the plug-in and its **Contents** (how many presets, or a dash when the count is only known as it is read). None is ticked at first: tick the ones you want now; **Select all** ticks or unticks them all. Anything you leave out can be imported later (The quick part and the libraries that take longer (p. 235)).

The button at the foot reads **Import N presets**, the number following what is ticked, and starts the import ("Reads presets only — never edits, modifies, or deletes your files."). It can't be pressed while the drive hasn't enough room or nothing is chosen.



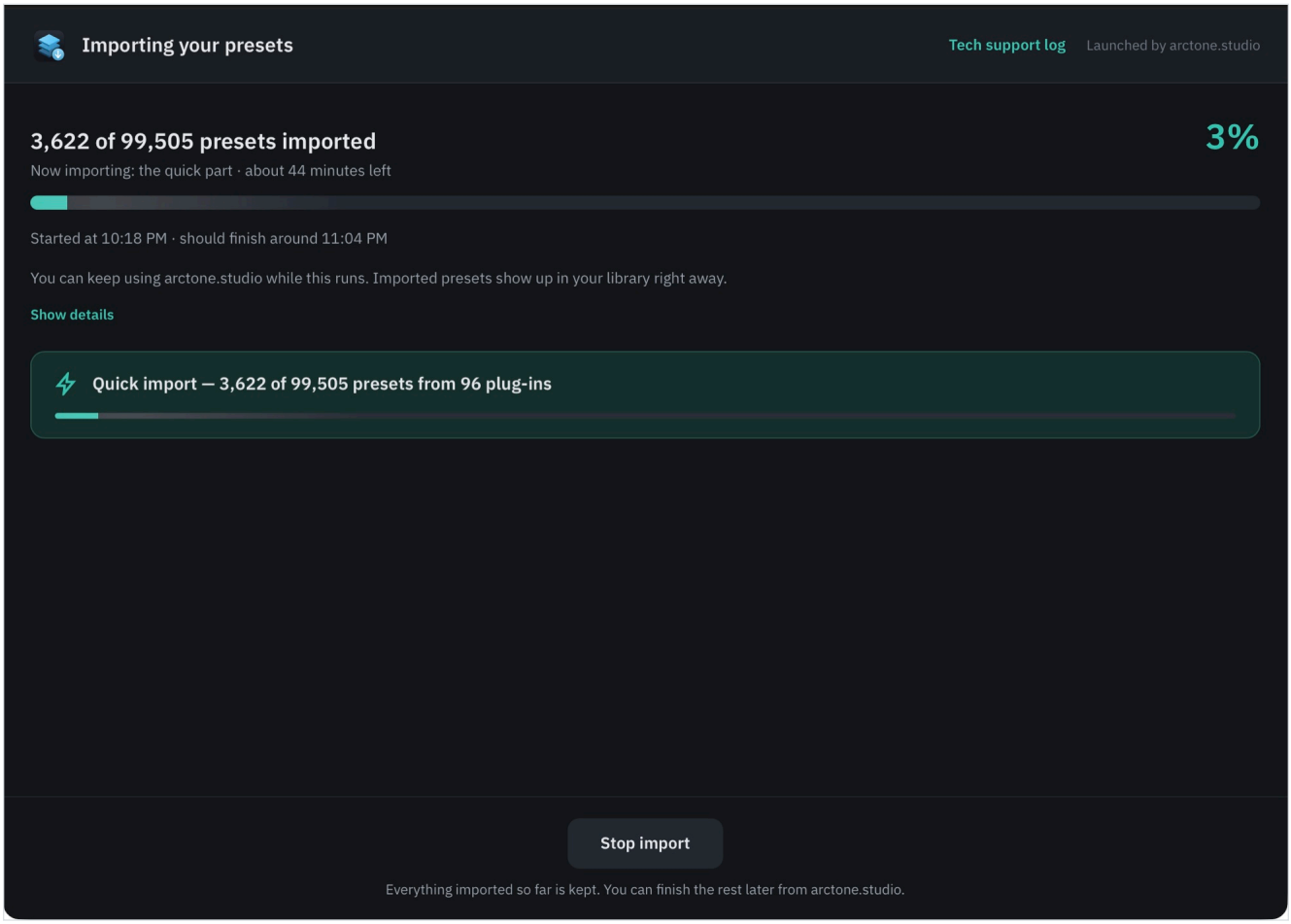
Analysis complete: how many presets were found, the quick part with View details, the space needed and the library's folder with Change..., the optional big sample libraries, and the Import button.

Importing

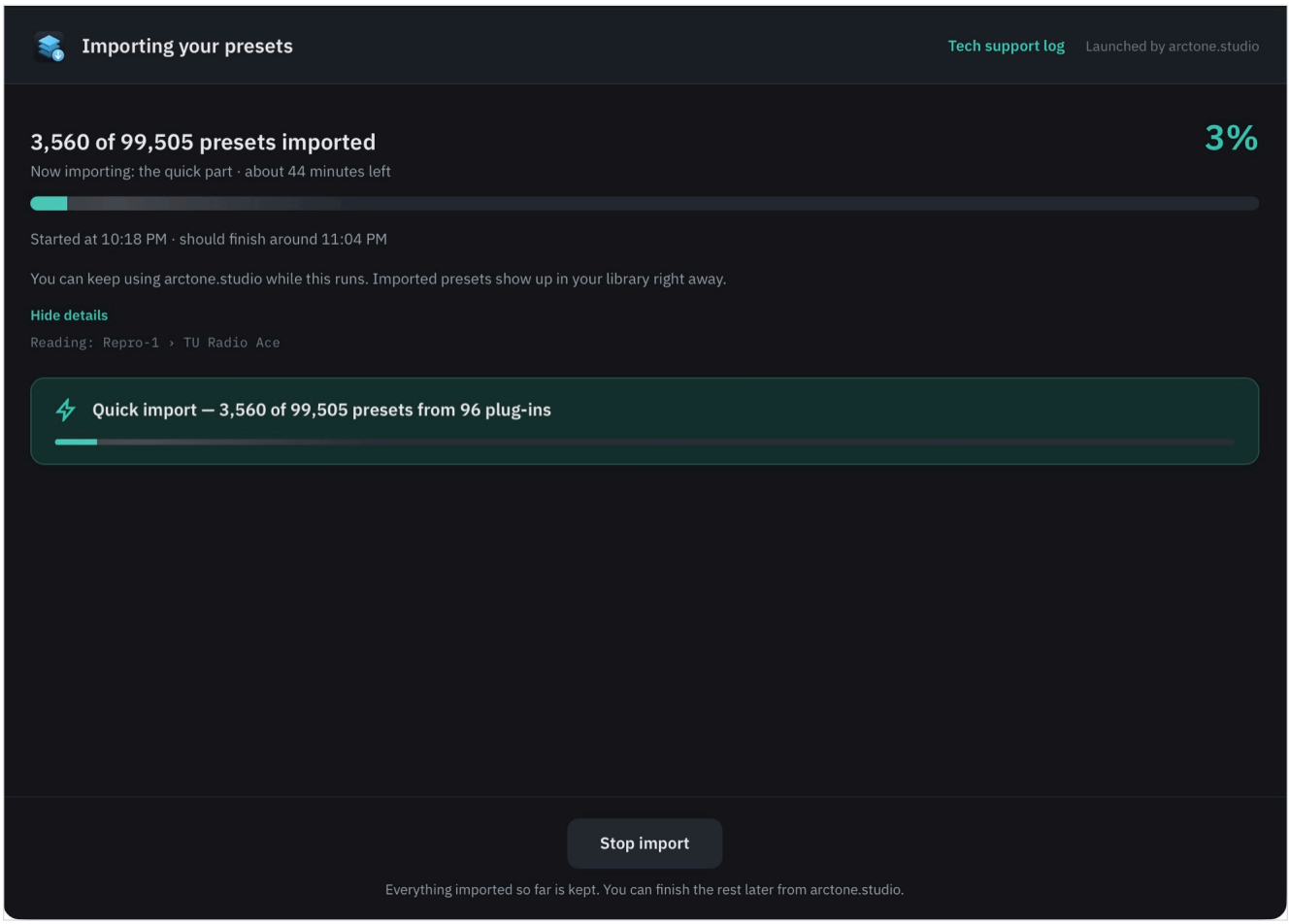
- **At the top:** "N of M presets imported", the percent and a bar, and **Now importing:** the plug-in, with about how long is left. Some plug-ins keep presets inside themselves that are found only as they are read; once the import passes the first count, the bar just runs and the line says so.
- **Started at** the time it started, and about when it should finish.
- "You can keep using arctone.studio while this runs. Imported presets show up in your library right away."

- **Show details** adds one line - "Reading: *plug-in* › *preset*" - with the preset being read; **Hide details** takes it away. The importer remembers which you chose.
- **The quick-import card:** "Quick import — N of M presets from K plug-ins" with its bar; then "Quick import complete", with how long it took.
- **Libraries:** the big libraries you ticked, in the order they run. One done shows a tick and "done · *time*"; the one in hand its own bar, "*done* / *total*" and the time left ("measuring…" until its pace is known); the next one "up next", the rest "waiting"; one stopped "stopped".

Stop import finishes the preset in hand, keeps everything imported so far, and goes to Results: "Everything imported so far is kept. You can finish the rest later from arctone.studio." While it waits for that preset, the button reads **Stopping…**. See Leaving it to run, stopping and quitting (p. 237).



Importing: how many of how many, the time left, the percentage, and when it started and should finish. Stop import keeps everything so far.

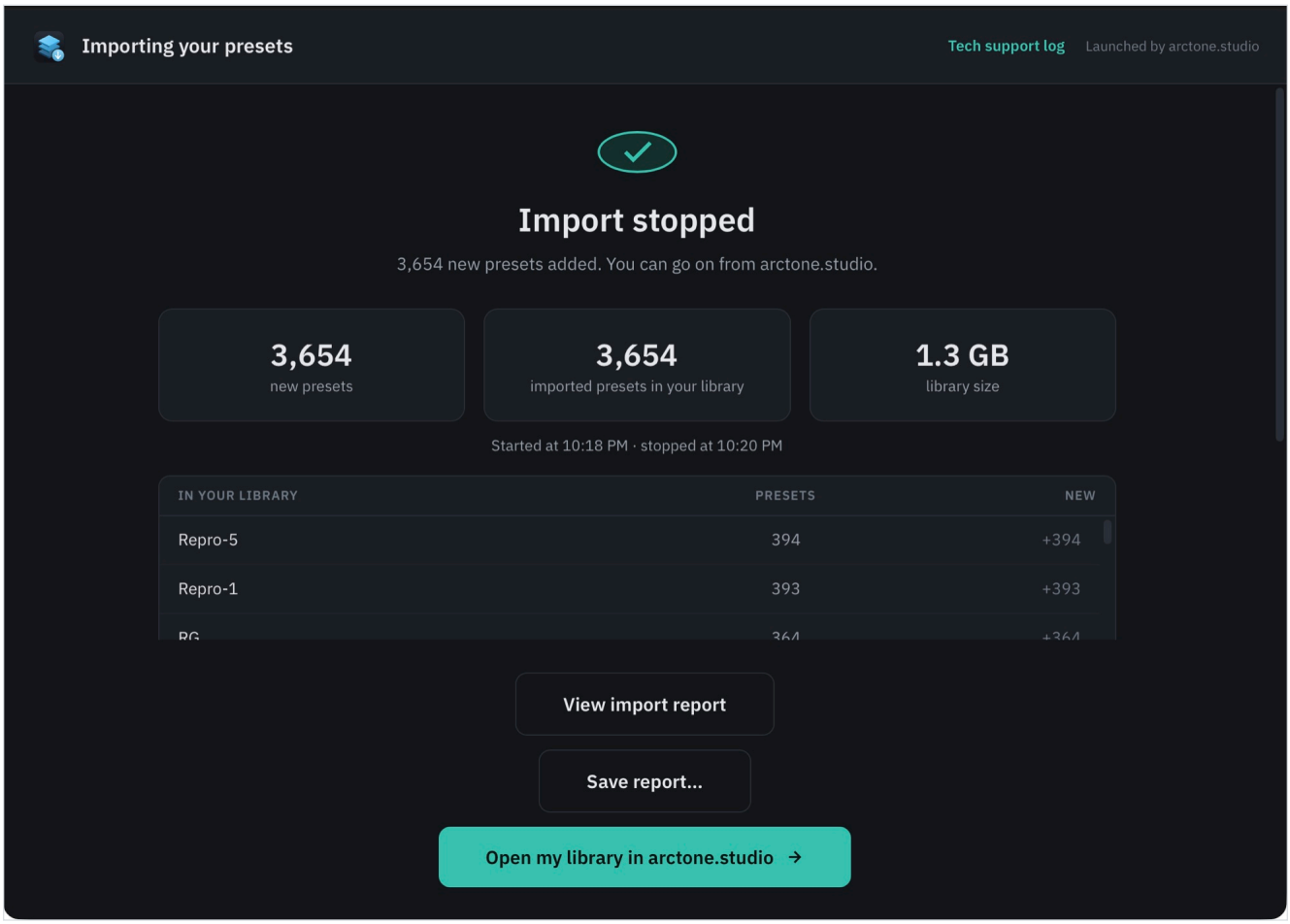


Show details adds the preset being read and the quick import's line.

Results

- **Import complete** - "N new presets from M plug-ins have been added to your arctone.studio library." - or **Import stopped** - "N new presets added. You can go on from arctone.studio." When nothing new was found: "No new presets were added this time."
- **Three tiles:** new presets, imported presets in your library, library size; under them, when it started and finished (or stopped).
- **In your library:** each plug-in with its **Presets** and how many of them are **New**.
- **Import more presets**, a link, when anything is left: libraries not chosen, libraries the import stopped before finishing, plug-ins to try again (Import more presets (p. 232)).
- "These plug-ins are Intel-only and need Rosetta, so their presets weren't imported:" and their names, on a Mac with Apple Silicon that has any.
- **View import report** opens the report of this import as a page in your web browser; **Save report…** saves it where you choose. The reports are kept in the importer's own folder (Where things are kept (p. 244)).
- "Presets keep their original names. Your plug-ins and files were only read, never changed." and "When you add new plug-ins or libraries, arctone.studio will offer to import just the new sounds."

Open my library in arctone.studio closes the importer and shows your presets in arctone.studio's Browser.



The results, here of an import that was stopped: the three tiles, the times, the In your library list, View import report, Save report... and Open my library in arctone.studio.

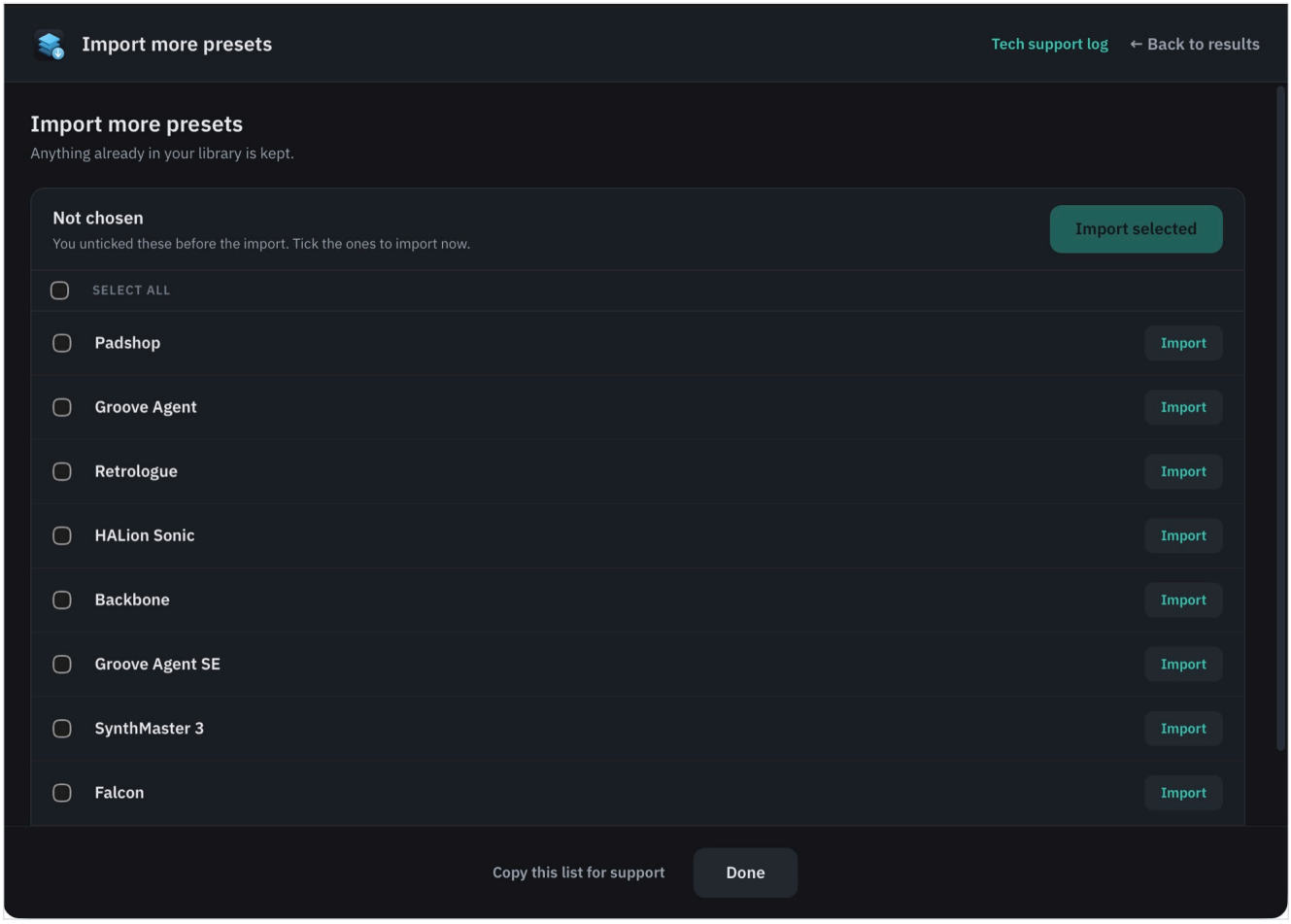
Import more presets

The screen's title is **Import more presets** - "Anything already in your library is kept." ← **Back to results** and **Done** go back. What is listed, in groups:

- **Go on with these:** "Each goes on from where it stopped." - big libraries the import stopped before finishing. **Import the rest** goes on with them.
- **Not chosen:** "You unticked these before the import. Tick the ones to import now." - with **Select all**. **Import selected** (it reads **Import N selected** once some are ticked, and **Import all N** with all of them), or **Import** on a row.
- **Try these again:** "These can be read again." - grouped by plug-in, with the reason: "Plug-in closed unexpectedly", "Plug-in stopped responding while loading", "Plug-in couldn't be loaded", "Library drive isn't connected — connect it, then retry", or "Library not authorized — open *plug-in* once, then retry". **Try all again**, or **Try again** on a row. While it does, a line says how far it has got ("Retrying *plug-in* (2 of 5)… N presets imported so far"); presets that come in leave the list.

Presets that can't be imported at all - a preset file that wouldn't read, or one made with a newer version of the plug-in than you have - and plug-ins that may not be installed correctly aren't listed on the screen: they are named in the list **Copy this list for support** makes.

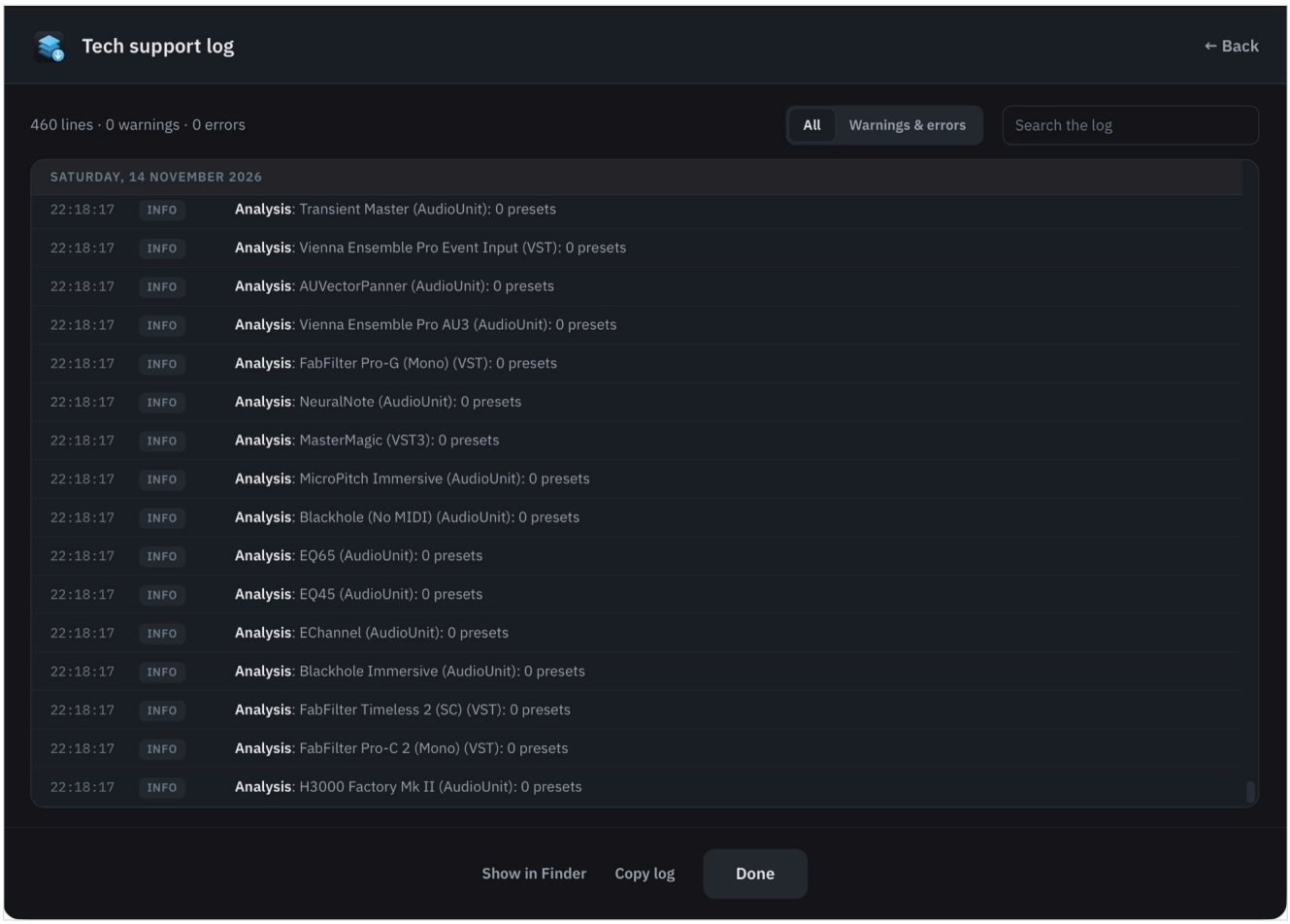
Copy this list for support copies the whole list as text (each plug-in, how many, why, and the file when there is one), opens the log, and puts the list and the end of the log into arctone.studio's **Messages** ("Presets that didn't import", and "Preset Importer log" with **Open log**) - ready to paste into an e-mail. Nothing is sent (Help and support (p. 242)).



Import more presets: the libraries not chosen, each with Import, and Import selected.

The log

Tech support log, at the top of every screen, shows the importer's log (`PresetLog.txt`) in its window - the last megabyte of a long one: a heading for each day, then each line with its time, its kind (Info, Warning, Error) and what happened, the plug-in it is about in bold. It follows new lines as they are written, unless you scroll up. At the top, how many lines, warnings and errors; **All** or **Warnings & errors**; and **Search the log**. **Show in Finder** shows the file in its folder, **Copy log** copies the lines shown, **Done** or ← **Back** goes back to the screen you were on. It is the first place to look when a plug-in misbehaves, and what support asks for.



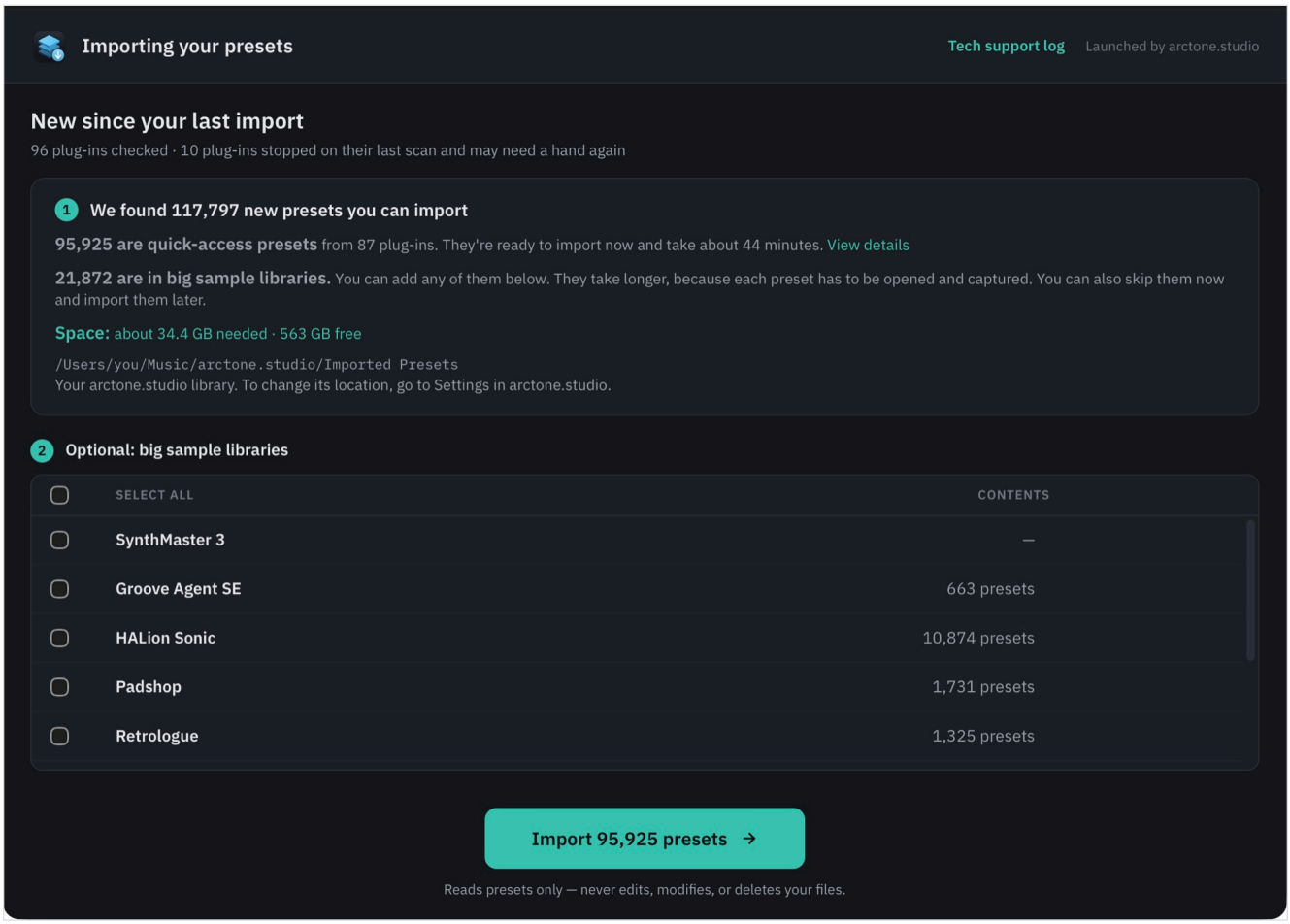
The Tech support log.

Importing again: only what is new

Once your library is there, every import is a rerun: the importer finds what is new or changed since the last import and offers only that.

- **The headline** reads "New since your last import", and the card "We found N new presets you can import": it counts only new presets. The big-library list shows only libraries not imported yet, the ones you left out before among them.
- **Space** says what this import needs, and the library's folder is shown without **Change…**: "Your arctone.studio library. To change its location, go to Settings in arctone.studio." (Where your presets go (p. 237)).
- **While it imports**, the top says how many presets your library already has and how many more were found.
- **Nothing new:** "Your library is up to date" - "Nothing new since your last import." - and **Close**.

Presets already in the library keep their names; a preset is never imported twice. Plug-ins that haven't changed since the last import aren't opened again. Started with `--full-rescan` (The command line (p. 244)), the importer looks at every plug-in again, those that failed before too, and still imports only what is new.



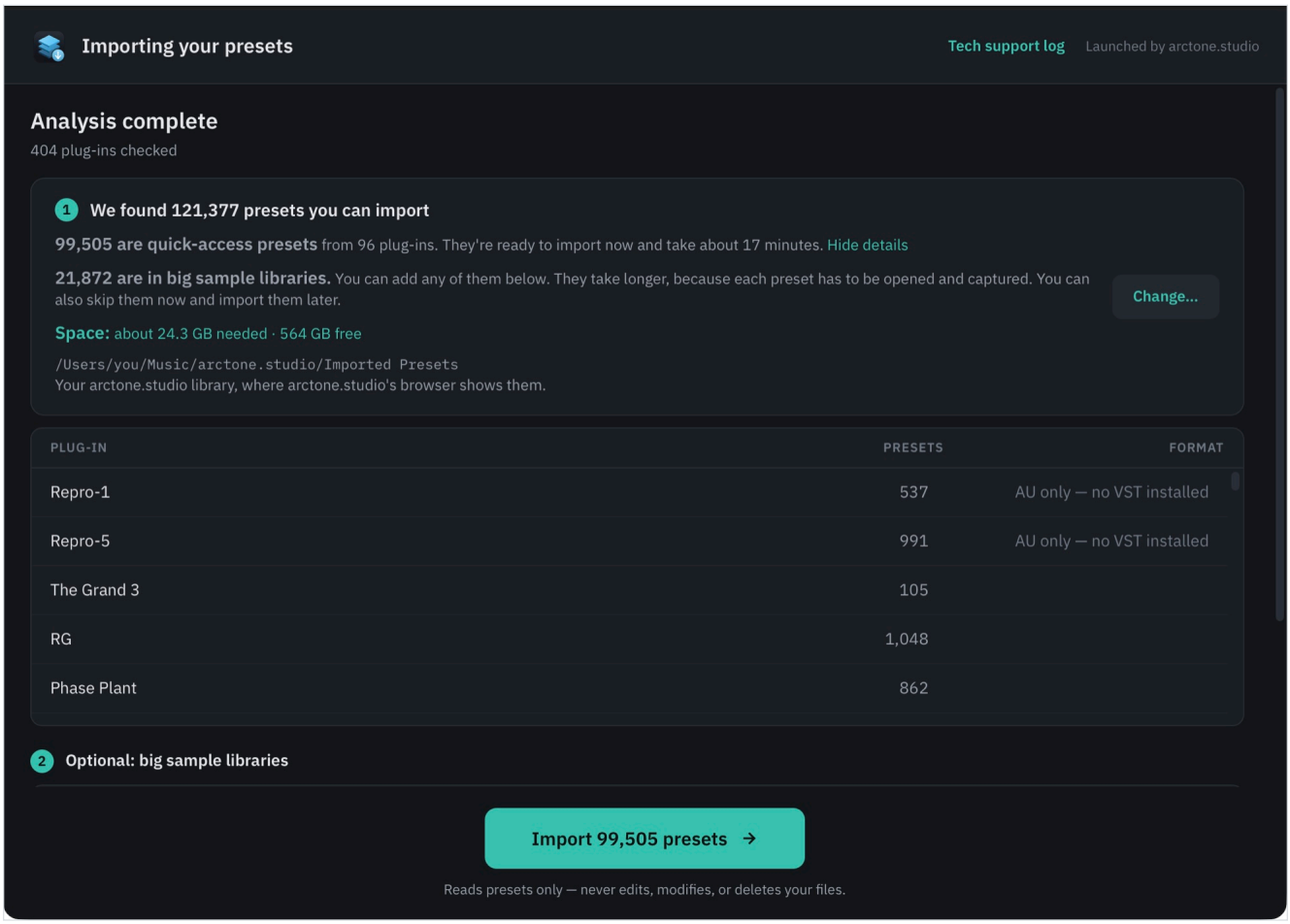
A second run: New since your last import, and only the new presets.

The quick part and the libraries that take longer

How each plug-in's presets are read decides where it is listed:

- **The quick part:** presets read from preset files, from the list the plug-in gives hosts, or from its maker's library files. The plug-in is never stepped through preset by preset, so thousands import in minutes. These are always imported, first.
- **Libraries that take longer:** presets that only the plug-in itself can make, so each one is loaded into the plug-in and its state saved - a few seconds a preset. Kontakt's instruments (Kontakt (p. 240)) and the players read through their own browser (Players read through their own browser (p. 241)) are these. They run after the quick part, one at a time, in the order listed.

The times are estimates: the importer learns each kind's pace from earlier imports on this computer, and once a library has run for a little while its own time left is measured. Until then a library's time may read "measuring…" or "time not known yet".



View details opens the quick part's list: each plug-in, its presets and its format.

One version of each plug-in: VST3, VST2 and AU

Many plug-ins are installed in two or three formats. Their presets are the same, so each plug-in is imported **once**, in the first format of this order that is installed:

- **Mac:** VST3 → VST2 → AU. An Audio Unit is imported only when it is the plug-in's only format.
- **Windows:** VST3 → VST2.

The other formats are left out by themselves - no choice to make. A VST2 is recognised as the same plug-in as its VST3 by what the VST3 says it replaces, or else by the same maker and name. **View details** on Analyze & Import says when a plug-in is imported in its VST2 or AU because there is no VST3 ("VST2 only — no VST3 installed", "AU only — no VST installed"). Install the VST3 later and the next import switches to it, adding only presets not already in your library. Every format is imported into the same folder of the library, and arctone.studio loads the presets with whichever version of the plug-in you use.

Where your presets go

Your presets go into arctone.studio's **Imported Presets** library: `~/Music/arctone.studio/Imported Presets` on the Mac and `Documents\arctone.studio\Imported Presets` on Windows, unless you chose another place. (A library made before November 2026 stays where it was, in `arctone.studio Library` in the same folder.) Each plug-in has a folder in it, `<Maker> – <Plug-in>`, with its presets as `.aspreset` files, and a maker's library its own category folders below.

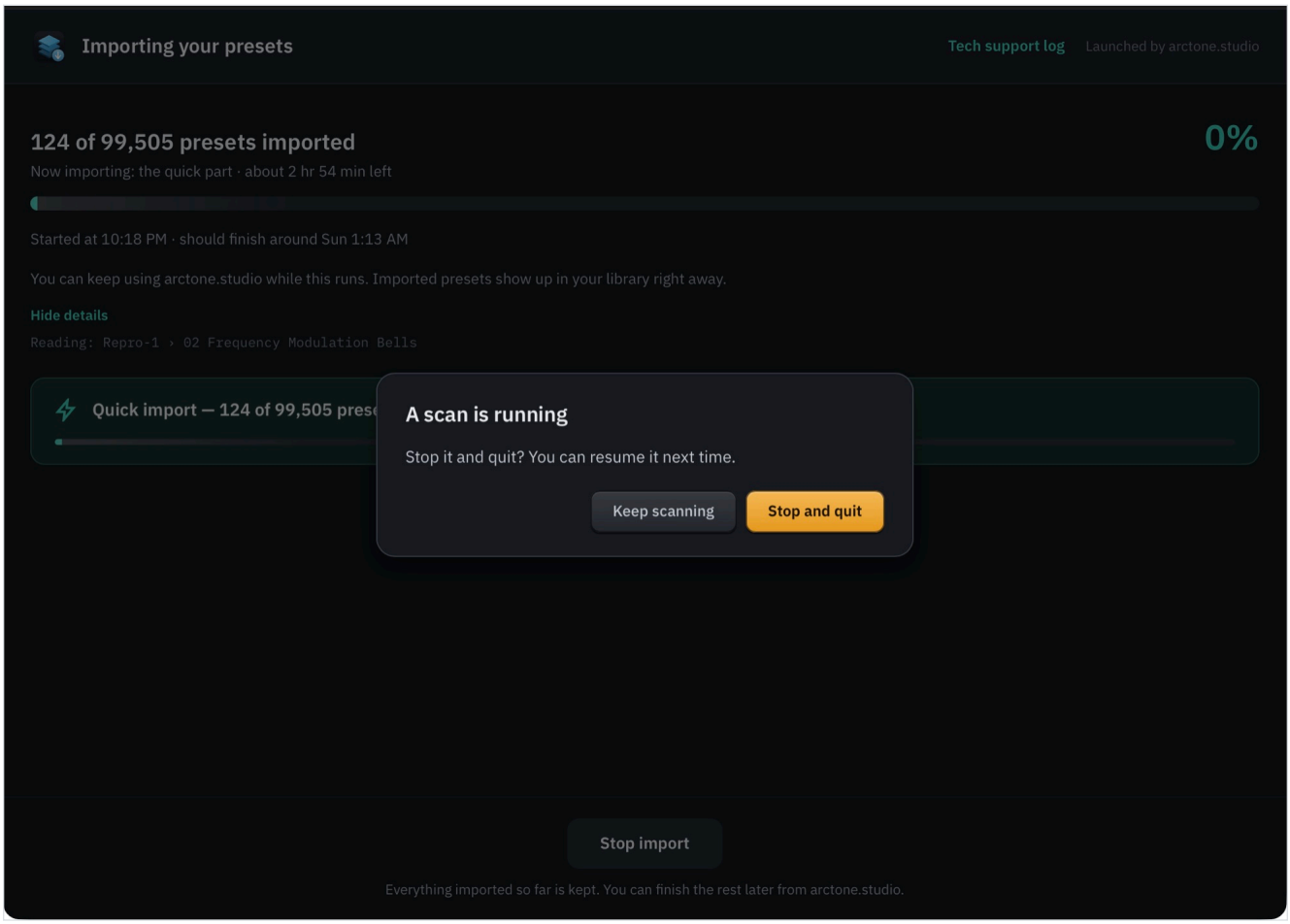
Where the library is, is **arctone.studio's setting**: arctone.studio tells the importer each time it starts it.

- **On the first import**, the first card shows the folder and checks the drive: "Space: about 24.3 GB needed · 564 GB free" (the estimate has a margin over what the presets you ticked will take, and changes as you tick and untick libraries). **Change…** picks another folder before the import starts ("Where should your presets be saved?"): a folder that is a library already is used as it is; any other folder gets an `Imported Presets` folder made inside it. The space is checked again for that drive at once, and arctone.studio's setting is changed with it.
- **Not enough space:** the Space line turns red, with "Not enough space: this import needs about X and the drive has Y free. Choose another location or untick some libraries.", and the Import button waits until there is.
- **Later**, the location is shown but can't be changed in the importer. Move it in arctone.studio: **Settings > Presets > Imported Presets (Arctone.PresetImporter writes here) > Move imported presets...** (Presets (p. 175)). On the same drive the folder is renamed at once; on another drive the free space is checked first, every file is copied with a progress window and checked (the number of files and their total size), arctone.studio is pointed at the new place, and only then does the old folder go to the Trash. If anything fails, the old library is left as it was, and you are told what failed. It waits until no import is running.

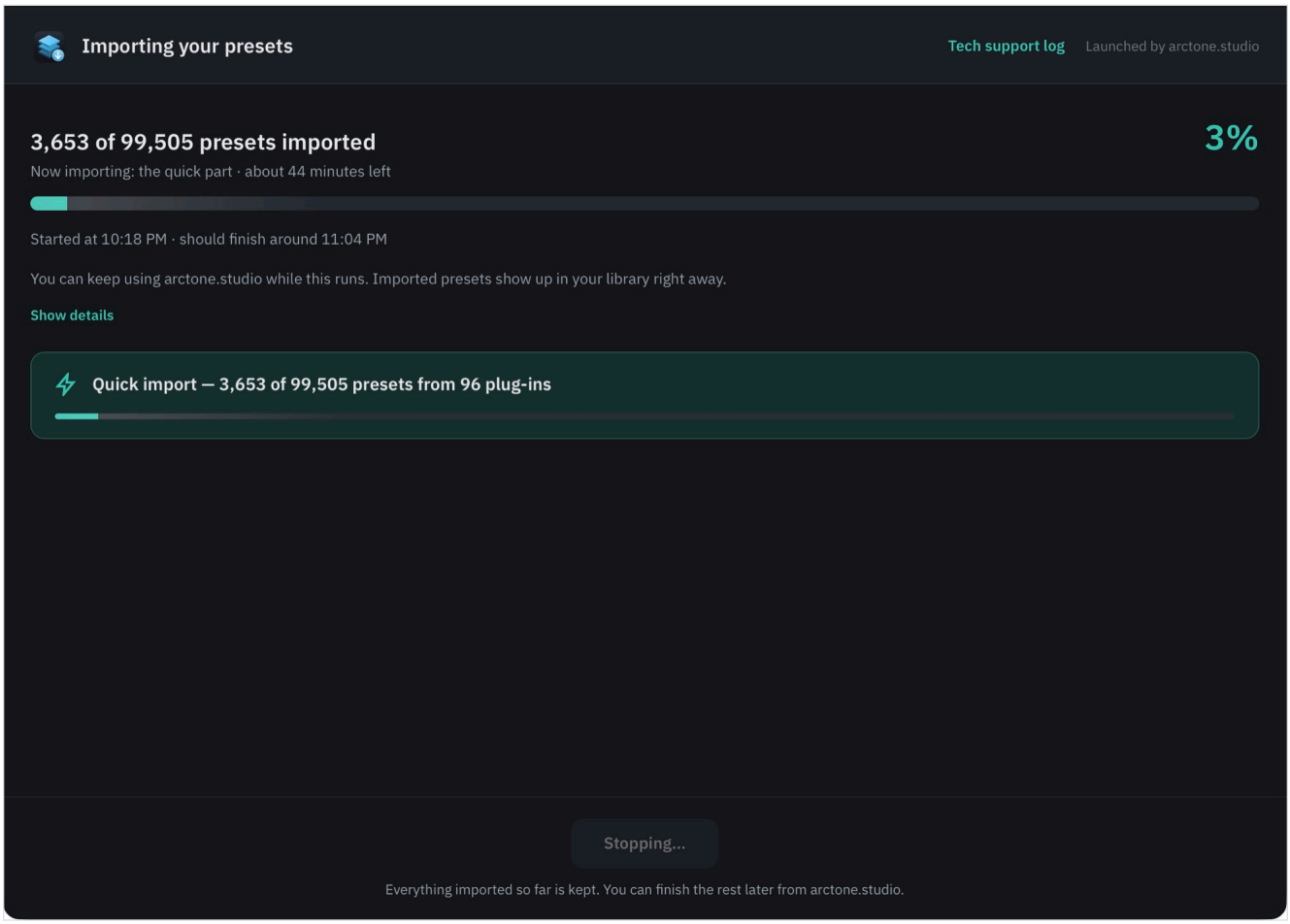
During an import, the importer stops cleanly when the library's drive gets down to 500 MB free, keeping everything imported so far (Not enough disk space (p. 243)).

Leaving it to run, stopping and quitting

- **The computer stays awake** while the importer looks for plug-ins or imports: no sleep, the display on. It goes back to normal when the import ends.
- **Stop import** finishes the preset in hand and keeps everything imported. The libraries not finished are listed under **Go on with these** on Import more presets, where **Import the rest** goes on with each from where it stopped (Import more presets (p. 232)).
- **Quitting during an import** asks first ("A scan is running - Stop it and quit? You can resume it next time.", **Stop and quit** or **Keep scanning**). Stopped this way, or cut short by a crash or a power cut, what was imported stays in the library, and the next import goes on from there: a big library picks up where it left off.
- **Quitting while it looks for plug-ins** keeps the plug-ins found so far; the next look goes on from there.



Quitting while an import runs asks first.



After Stop import: the button reads Stopping... until the preset in hand is done.

Chapter 22

Vendor libraries

Vendor libraries

For some plug-ins arctone.PresetImporter reads their maker's own library directly - faster than going through the plug-in, and exact. It finds each library where the maker's installer records it. A preset in a newer format than this version reads is left out and named in the log, never imported wrong. Among them:

- **Cherry Audio** instruments: their preset files.
- **Spectrasonics Omnisphere, Keyscape and Trilian:** their patches in STEAM.
- **Native Instruments Kontakt** 7 and 8: the instruments of your Kontakt libraries (Kontakt (p. 240)).
- **Native Instruments Absynth 5:** its sounds.
- **Xfer Records Serum 2:** its presets.
- **Reveal Sound Spire:** its presets.
- **FXpansion BFD3** and **IK Multimedia Hammond B-3X:** their presets.
- **PlugInGuru Unify:** its patches (Unify (p. 241)).
- **Players read through their own browser:** Steinberg's HALion Sonic, Groove Agent, Groove Agent SE, Padshop, Retrologue and Backbone, EastWest Opus, UVI Falcon and KV331 SynthMaster 3 (Players read through their own browser (p. 241)).

NKS presets (`.nksf`, `.nksfx`) and VST2 preset files (`.fxp`, `.fxb`) in the makers' usual folders are read too (VST2 presets: NKS, .fxp and .fxb (p. 159)).

Kontakt

Only Kontakt can turn an instrument into its state, so arctone.PresetImporter opens Kontakt and hands it each instrument the way you would drag one in, then saves what Kontakt reports. Nothing of the instrument's file is opened by the importer. It takes a few seconds an instrument, so a big collection is one of the libraries that take longer (The quick part and the libraries that take longer (p. 235)): it is listed with its instruments, and runs only when ticked. It goes on from where it stopped, any time. Its instruments are listed in arctone.studio's Browser at once; each one's sound is captured the first time you load it.

The libraries are the ones Kontakt itself knows. An instrument that loads as a demo or with missing samples, or that Kontakt won't load (a library not activated), is left out and listed, never worked around. Instruments that already came in through their NKS presets aren't loaded again. Kontakt's VST3 and its Audio Unit are one plug-in: it is imported once (One version of each plug-in: VST3, VST2 and AU (p. 236)).

Players read through their own browser

Some players keep their presets sealed, where only their own browser can load them: Steinberg's HALion Sonic, Groove Agent, Groove Agent SE, Padshop, Retrologue and Backbone, EastWest Opus, UVI Falcon and KV331 SynthMaster 3. HALion Sonic is asked to load each preset itself, with no window and no click; for the others arctone.PresetImporter opens the player and presses its own next-preset control. Either way it saves what the player reports, one preset at a time. They are libraries that take longer (The quick part and the libraries that take longer (p. 235)): HALion Sonic's whole library can take many hours. An import of one gives up by itself when the player stops producing presets - too few of the last presses loaded one, or a long while with none saved - and its row says so. The next import goes on from where it stopped.

Unify

arctone.PresetImporter brings in your Unify library - the commercial libraries and your own - as presets of Unify itself: a preset opens Unify with that patch, playing it exactly as Unify does. It finds the library where Unify keeps it (the data folder in Unify's own settings, or Unify's default folder). Unify's encrypted `.upf` patches are counted and left out, and so are its auto-saves.

Plug-ins' windows, their questions and licence apps

- **The plug-in's window.** Kontakt and most of the players above are worked through their own window. arctone.PresetImporter opens it in a window of its own and never takes the keyboard from you. That window is kept all but a thin sliver past the left edge of your main screen, so you can keep working; leave it be.
- **A plug-in's own questions.** A message a plug-in shows while it is imported is closed with nothing in it chosen; the import goes on. One that asks for a serial or a sign-in ends that plug-in's import for now: it is listed under **Try these again** ("Library not authorized — open *plug-in* once, then retry").
- **Licence apps.** A licence app a plug-in opens during an import - Steinberg Activation Manager, eLicenser Control Center, iLok License Manager, Native Access, Arturia Software Center, Waves Central, IK Product Manager and the like - is quit as soon as it appears; nothing in it is ever clicked. The plug-in's line in the results names the app that opened. A licence app already open before the import, or one that opened while no plug-in was being imported, is left alone. To activate a plug-in, stop the import, activate it in its maker's app, then **Try again**.

Chapter 23

Preset Importer reference

Help and support

- **Tech support log** on every screen: the importer's log, with what each import did and the reasons when something went wrong (The log (p. 233)).
- **Copy this list for support** on Import more presets: the list of what didn't import, on the clipboard and in arctone.studio's Messages with the end of the log (Import more presets (p. 232)). Paste it into an e-mail to support, with the log if they ask for it.
- The logs (`PresetLog.txt`, `ScanLog.txt`, `WebLog.txt`) are in the importer's own folder (Where things are kept (p. 244)). Nothing is sent anywhere by the importer.

About and updates

About (the app menu on the Mac, the Help menu on Windows) shows the importer's version and build, who made it, and the third-party notices for the code it is made with.

Updates

Check for updates... (the app menu on the Mac, the Help menu on Windows) looks for a newer version and offers to install it - on the Mac when the importer quits, on Windows after it has closed, never during an import. It looks by itself only if you said yes when it asked. All it sends is the request for the list of versions.

Troubleshooting

What to do when a plug-in, the disk or macOS gets in the way.

A plug-in crashes, or the import stops on it

Each plug-in runs in a process of its own, so a crash takes only that plug-in down and the import goes on. It is listed on Import more presets under **Try these again** ("Plug-in closed unexpectedly", "Plug-in stopped responding while loading"). Press **Try again**: these often work on a second try. If it fails again, open the plug-in once on its own (in arctone.studio or its maker's app) and finish its set-up - an activation, a content download - or update it, then Retry. The log names the plug-in and what happened (The log (p. 233)).

A plug-in needs its licence, or asks to be activated

The importer never clicks a licence window: it quits the licence app and lists the plug-in (Plug-ins' windows, their questions and licence apps (p. 241)). Activate the plug-in in iLok License Manager or its maker's app, or open it once in arctone.studio and sign in, then **Try again** on Import more presets.

My presets aren't in arctone.studio

- Look in the Browser's Sounds and Effects tabs, under the plug-in. arctone.studio refreshes its list when the importer closes; presets imported while it runs show up as they come in.
- Check that the library is where arctone.studio looks: **Settings > Presets > Imported Presets (Arctone.PresetImporter writes here)** shows its **Location**, and **Open the Imported Presets folder** shows it (Where your presets go (p. 237)).
- A big library you left out, or one the import stopped before, isn't in yet: Import more presets lists it, with **Import the rest** or **Import** (Import more presets (p. 232)).
- A plug-in that gave nothing, or almost nothing, of what its catalogue lists may not be installed correctly - usually missing content or an incomplete install. It is named in **Copy this list for support**: reinstall or repair it, then import again (Import more presets (p. 232)).

Not enough disk space

Before the import, Analyze & Import says "Not enough space" in red and the Import button waits: untick some of the big libraries, free some space, or (on the first import) **Change…** to another drive. Later, move the library with **Move imported presets...** in arctone.studio's Settings (Where your presets go (p. 237)). During an import, the importer stops cleanly when the drive gets down to 500 MB free; everything imported is kept, and **Import the rest** goes on once there is room.

macOS asks for access

Reading a library on the Desktop, in Documents or Downloads, or on an external drive can make macOS ask whether arctone.PresetImporter may. Allow it: macOS remembers it, across updates too. After a **Don't Allow**, turn it on in System Settings > Privacy & Security > Files and Folders, then import again (macOS permissions (p. 225)).

The window shows only a message

The window needs a newer web engine: on the Mac, Safari 16.2 or newer (**Open Software Update** in the message); on Windows, Microsoft's WebView2 Runtime. The message says what to install; then start the import from arctone.studio again.

"This tool is part of arctone.studio"

arctone.PresetImporter was opened by itself. It works only when arctone.studio starts it: press **Open arctone.studio**, then choose Import presets there (Starting an import from arctone.studio (p. 224)).

The command line

arctone.studio starts the importer with its job on the command line. For scripts and for support:

```
--run import [--plugin *identifier*] [--library *folder*] [--close-when-done] [--full-rescan]
--check-new [--library *folder*]
```

- `--run import` opens the screens: the first import's, or a rerun's when the library is there.
- `--plugin` imports only that plug-in (its identifier or its name; more than once for several).
- `--library` is the Imported Presets library to write into - arctone.studio passes its own setting.
- `--close-when-done` quits when the import ends (arctone.studio adds it for one plug-in).
- `--full-rescan` looks at every plug-in again, those that failed before too, and still imports only what is new.
- `--plugin-list`, `--instrument` and `--unseen` are arctone.studio's own: the plug-ins it has already found, one Kontakt instrument to capture when you first load it, and a run without a window.
- `--check-new` is arctone.studio's check at start: unseen and read only, it writes what a rerun would offer to `NewPresets.json` in the importer's folder, then quits.

Where things are kept

What	Mac	Windows
Your presets: the Imported Presets library (arctone.studio's)	`~/Music/arctone.studio/Imported Presets` (or where arctone.studio's Settings say)	`Documents\arctone.studio\Imported Presets`
A plug-in's presets in it	`<Library>/<Maker> - <Plug-in>/*.aspreset`	the same
The library's record of each plug-in	`<Library>/manifest.json`	the same
The importer's own folder	`~/Library/Application Support/Arctone/Arctone.PresetImporter`	`%APPDATA%\Arctone\Arctone.PresetImporter`
The logs: `PresetLog.txt`, `ScanLog.txt`, `WebLog.txt`	`Logs` in its folder	the same
Settings and the plug-in list	`Settings.settings`, `Plugins.settings`	the same
Where each scan got to, and the plug-ins it skips	`ScanResults.json`, `ScanRun.json`, `ScanJournal*.txt`, `ScanBlocklist.json`	the same
Where each big library's import got to	`VendorImports`	the same
The import reports (**View import report**)	`Reports`	the same

`~/Library` and `%APPDATA%` are hidden at first: on the Mac, Finder's **Go > Go to Folder...** (**Cmd+Shift+G**) and the path; on Windows, type `%APPDATA%` in File Explorer's address bar.

Deleting the importer's own folder resets it - its settings, plug-in list and the record of where it got to - and leaves the library where it is: the next import looks at everything again and adds only what isn't in the library. Deleting a plug-in's folder in the library removes its presets; the next import brings them back.

Words used here

- **Library:** arctone.studio's Imported Presets folder, where every imported preset goes.
- **Preset:** one plug-in's saved sound, with its name and category. (A patch is arctone.studio's whole layered setup.)
- **Quick part:** the presets read from files and lists, imported in minutes.
- **Libraries that take longer:** presets that have to be loaded into the plug-in one by one.
- **Rerun:** an import once the library is there: only what is new.
- **Format:** a kind of plug-in - VST3, VST2, Audio Unit.
- **Worker:** a copy of the importer with no window that loads the plug-ins, so a crash takes only it down.

Trademarks

VST is a registered trademark of Steinberg Media Technologies GmbH.

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Kontakt, Komplete Kontrol, NKS, Absynth, Omnisphere, Keyscape, Trilian, Cherry Audio, Serum, BFD3, Hammond B-3X, HALion Sonic, Groove Agent, Padshop, Retrologue, Backbone, Opus, Falcon, PlugInGuru, Unify, iLok and the other names of products here are the trademarks of their owners. They are named only to say which presets arctone.PresetImporter can read.