



INFINITE · AUDIOVISUAL NODE WORKSTATION

The Node *Field Guide*

A friendly tour of Infinite's entire node palette — what each one actually does, why you'd reach for it, and a quick recipe to get you started. No engineering degree required.

Platform **macOS · Apple Silicon & Intel**

This guide **Every node type, 19 chapters**

Style **Plain-English, no jargon**

Five wires, five jobs

Every cable in Infinite is color-coded so you always know what's flowing through it.

-  Image — pictures & video
-  Geometry — 3D shapes
-  Audio — sound
-  Notes — musical events
-  Modulator — a wiggling knob

Infinite ships with 119 distinct node types, plus a 34-filter image effects shelf and a 20-effect audio shelf — 173 spawnable nodes in total. This guide covers all of them.

have fun 

What Even Is Infinite?

Infinite is a node-based studio for making sound and image at the same time. Instead of separate apps for music, visuals, and 3D, you drop blocks called **nodes** onto one canvas and connect them with cables — a synth feeding a filter, a shape feeding a kaleidoscope, a drumbeat feeding a bouncing particle field.

Because everything lives on the same clock, sound and image can react to each other in real time: a kick drum can punch a shape, a camera's motion can bend a synth's pitch, a color can become a chord. There is no "render and wait" — you hear and see the result the instant you plug a cable in.

This guide skips the engineering manual entirely and walks through every node in Infinite's palette — 119 individually-registered node types, plus the 34-filter image effects shelf and the 20-effect audio shelf. For every one you'll find what it does in plain English, why you'd actually use it, and (where it helps) a short recipe showing it wired up with a couple of friends. Two big shared-table shelves — image filters and audio effects — get a compact one-line-per-entry reference instead of a full card each, since dozens of them are close cousins of each other.

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Chapter One

2D Sources & Visual Generators

Every visual patch starts somewhere. These nodes make the first picture — from a photo on disk to a shape drawn from pure math — that everything downstream gets to distort, color, and remix.

Image Source

SOURCE · IMAGE OUT

Drag a photo, PNG, JPEG, TIFF, or BMP straight from Finder onto the canvas and it becomes a live texture. This is the simplest way to get your own artwork, logo, or photography into a patch.

Try it — drop in a piece of your own art and run it through a Kaleidoscope for an instant looping visual.

Image Source → Kaleidoscope → Bloom → Output

Video

SOURCE · IMAGE OUT

Plays back any movie file as a live texture, with a Loop switch and a speed dial — crank speed negative and it plays backwards. The simplest way to get found footage moving inside a patch.

Try it — set Speed to a small negative value for a slow, unsettling reverse loop.

Video → Glitch → Color Adjustments → Output

Syphon In

SOURCE · IMAGE OUT

Pulls a live video feed straight out of another app publishing over the macOS Syphon protocol — OBS, Resolume, TouchDesigner — with no re-encoding. Great for bringing a camera feed or another VJ tool into Infinite's node graph.

Try it — pipe your webcam through OBS, then Syphon it in and cut yourself out with Remove Background.

Syphon In (Camera) → Remove Background → 3D Scene

Shape

SOURCE · IMAGE OUT

Draws crisp, perfectly smooth vector shapes out of pure math — 20 primitives from simple circles and stars to hearts, gears, and blobs — no pixelation no matter how big you scale them. Fill, stroke, and roundness are all wide open.

Try it — wire an LFO into Size so a circle breathes in and out on its own, then glow it up with Bloom.

LFO → Shape (Size) → Bloom → Output

Noise

SOURCE · IMAGE OUT

Generates organic, ever-shifting texture — soft clouds, ridged terrain, cell-like Voronoi and Worley patterns, or plain white static — from six procedural noise algorithms. It's the visual equivalent of static: raw material for almost everything else.

Try it — feed Noise into a 3D Plane's height so the terrain rolls and drifts like real landscape.

Noise → Displacement → 3D Plane → Render 3D

Texture

SOURCE · IMAGE OUT

A pattern factory with ten procedural surfaces on tap — bricks, cell clusters, swirling marble, wood grain, wave bands, checkers, clouds, and rocky Musgrave terrain — all generated live rather than loaded from a file, so they can be animated forever.

Try it — run a Brick pattern through Color Ramp to turn plain masonry into a stylized sunset gradient.

Texture (Brick) → Color Ramp → Material

Ramp

SOURCE · IMAGE OUT

A clean two-color gradient — linear, radial, angular, diamond, or spiral. Perfect as a soft backdrop, a mask, or a blend driver for another effect.

Try it — multiply a radial Ramp over live video to vignette the edges of frame automatically.

Ramp (Radial) → Blend (Multiply) → Video

Formula

SOURCE · IMAGE OUT

A shader playground with more than two dozen ready-made looks baked in — plasma fields, Mandelbrot and Julia fractals, Truchet tiles, Voronoi cells, phyllotaxis spirals — each with four knobs you can wire up to anything else in the patch. For when you want something nobody else's patch has.

Try it — route your track's energy level into one of Formula's knobs so the pattern pulses with the mix.

Audio Analyze → Formula (Param A) → Bloom

Draw

SOURCE · IMAGE OUT

A live paint canvas right inside the node graph — soft round, hard round, square, spray, chalk, and ink-bleed brushes, plus a dedicated eraser toggle. Anything you paint becomes a texture the rest of the patch can use immediately.

Try it — paint a quick stroke and route it through Feedback so every mark trails and echoes forever.

Draw Canvas → Feedback → Output

Typography & Text

Words, on screen or in space. Both nodes read every font already installed on your Mac.

Text

TEXT · IMAGE OUT

Renders crisp type using any font installed on your Mac via CoreText — titles, lyrics, captions. Alignment, size, and letter spacing are all adjustable live.

Try it — drop a title at the top of your Layer Stack and hit it with Bloom for a glowing lower-third.

Text → Bloom → Layer Stack

Text 3D

3D · GEOMETRY OUT

Takes the same lettering and extrudes it into a real, beveled 3D mesh you can light, rotate, and shade like any other object in the scene — logo stings and title cards with actual depth.

Try it — give your extruded word a Gold Chrome material and spin it slowly under a studio HDRI.

Text 3D → Material (Gold Chrome) → Render 3D

Chapter Three

2D Image Effects — Blur, Warp & Glow

Take any picture — a photo, a video, a shape, a render — and push it somewhere else. These sit in the middle of a chain, one image cable in and one out, so you can stack as many as you like. The next chapter lists every remaining filter on the shelf.

Gaussian / Box Blur

EFFECTS · IN/OUT

Two separate blur nodes for smoothing an image out — soft focus, depth-of-field, or just taking the edge off something too sharp. Often used right before a Bloom to make the glow itself feel softer.

Try it — blur at a low radius before Bloom for a dreamy, filmic haze instead of a harsh glow.

Input → Gaussian Blur → Output

Motion Blur

EFFECTS · IN/OUT

Streaks an image in one direction, mimicking a fast camera pan or a subject moving quicker than the shutter can freeze. Instant sense of speed.

Try it — screen-blend a motion-blurred copy of your video back over the original for a racing-game feel.

Video Feed → Motion Blur → Blend (Screen)

Radial Blur

EFFECTS · IN/OUT

Blurs outward from a single focal point you can place anywhere on screen — the classic zoom-punch effect used to slam attention onto one spot.

Try it — trigger a quick burst of Radial Blur on every kick drum hit for a punch-in feel.

Bloom & Diffuse Glow

EFFECTS · IN/OUT

Two related nodes that make bright areas glow and bleed light into their surroundings, the way a real camera lens does when it looks at something dazzling. One of the fastest ways to make flat visuals feel expensive.

Try it — drop Bloom right before your Output on almost any visual patch — it rarely looks worse.

Video / Synth Visuals → Bloom → Output

Glitch

EFFECTS · IN/OUT

Six flavors of broken-signal chaos — sliced frames, RGB channel splitting, scanlines, blocky corruption, waving distortion, and full datamosh. Dial it from a subtle VHS wobble to full digital meltdown.

Try it — fire Glitch's Amount from every drum hit so the visuals corrupt exactly on the beat.

Audio Analyze (Onset) → Glitch (Amount) → Output

Twirl, Pinch/Punch & Ripple

EFFECTS · IN/OUT

Three separate optical-warp nodes: Twirl spins a vortex around a center point, Pinch/Punch magnifies or implodes like a lens, and Ripple sends concentric water rings out from a point. Chain any of them together for compound warps.

Try it — map your Macro XY trackpad to Twirl's angle and "paint" the swirl live during a performance.

XY Motion Pad → Twirl (Angle) → Live Video

Kaleidoscope

EFFECTS · IN/OUT

Slices the frame into mirrored wedges around a center point, instantly turning ordinary footage into a mandala.

Try it — point a webcam or Syphon feed straight into Kaleidoscope for an endless, hypnotic VJ loop.

Live Camera → Kaleidoscope → Color Adjustments

Chapter Four

2D Image Effects — The Full Filter Shelf

Infinite's image filters all share one C++ node class, but each of the 34 entries below spawns as its own node in the palette. The seven in Chapter Three got the full treatment; here's the rest of the shelf, one line each, straight from the shader source.

All 34 entries live in one shared table in the app's source; here they are grouped roughly by what they do — distortion & detail, color, and compositing & glow.

Unsharp Mask	Sharpens the image by comparing it to a blurred version of itself and boosting the difference, controlled by Amount and Radius.
Pixelate	Blocks the image into large flat squares to create a chunky, mosaic look, sized by Block Size.
Add Noise	Sprinkles random per-pixel grain onto the image, with Amount controlling how strong the speckling is.
Vignette	Darkens the corners and edges around a center point, with Amount for strength and Radius/Softness for how far the darkening spreads.
Transform	Moves, scales, and rotates the whole image using Translate, Scale, and Rotation controls, leaving anything pushed outside the frame transparent.
Lens Distortion	Bulges or pinches the image like a camera lens and fringes the edges with color, controlled by Barrel curvature and Chromatic Aberration amount.
Displace	Pushes pixels sideways using either a second connected image as a displacement map or, with nothing plugged in, an animated wavy pattern.
Liquify	Warpes the image with a smooth, flowing animated distortion like moving liquid, shaped by Amount, Scale, and Speed.
Symmetry	Mirrors one half of the image onto the other across a chosen axis and center point, with an option to flip the whole result.
Crop	Trims the edges of the image by set Left/Right/Top/Bottom amounts, then either leaves the trimmed area transparent, zooms in to fill the frame, or fills it with a solid color.
Emboss	Turns the image into a raised, carved-relief look by comparing pixels on either side of a light direction, with Amount and Angle controlling depth and lighting.
Convolve	Runs a custom 3×3 grid of numbers over every pixel and its neighbors, letting you dial in blur, sharpen, edge, or emboss-style looks from nine kernel values.

Halftone

Recreates the image using a grid of dots sized by brightness (like a newspaper print), with Scale controlling dot density.

LUT

Applies a color lookup table by wiring in a second texture as the LUT reference, the same idea colorists use for film-stock emulation.

Lookup

A related color-remap node that reads a reference gradient/table image to redirect each pixel's color.

Gradient Map

Recolors the image by mapping its brightness onto a custom two-color (or multi-stop) gradient.

Posterize

Reduces the image to a limited number of tonal steps per channel for a flat, poster-print look.

Threshold

Converts the image to pure black and white based on a brightness cutoff point.

Exposure

Brightens or darkens the whole image in stops, the same control a camera's exposure dial gives you.

Invert

Flips every color to its opposite, turning the image into its photographic negative.

Outer Glow

Adds a soft colored glow that blooms outward from the image's edges or transparency, with Amount for strength and Color for tint.

Color Overlay

Tints the whole image toward a single flat color, with Opacity controlling how strongly the tint replaces the original colors.

Drop Shadow

Casts a soft offset shadow of the image's silhouette behind it, with Offset X/Y for direction and distance and Opacity/Color for its look.

Color Grading & Tone Mapping

The finishing pass. Once the image is built, these nodes shape its mood — from a quick contrast bump to a full cinema-grade film look.

Color Adjustments

COLOR · IN/OUT

Your all-in-one grading desk: brightness, contrast, levels, color balance, hue, saturation, vibrance, and a black-and-white switch — the same toolkit colorists use, chained together in one node.

Try it — warm the shadows and cool the highlights for an instant "teal and orange" cinematic grade.

Camera In → Color Adjustments → LUT

Curves

COLOR · IN/OUT

Draggable tone curves for the combined RGB channel plus red, green, and blue individually — the precise, hands-on way to push contrast or introduce a color cast exactly where you want it.

Try it — pull an S-curve on the RGB channel to punch up contrast on flat, washed-out noise textures.

Grayscale Noise → Curves (S-Curve) → Output

Color Ramp

COLOR · IN/OUT

Recolors any grayscale source by mapping its brightness onto a custom gradient with up to 32 stops — the classic trick for turning plain noise or a height map into something that looks painted.

Try it — map noise through a five-stop sunset gradient, then use the result as a material's color.

Noise Texture → Color Ramp (Sunset) → 3D Material

LUT

COLOR · IN/OUT

Applies a color lookup table to your image by wiring in a second texture as the LUT reference — the same underlying idea colorists use for film-stock emulation, driven from an image input rather than a loaded file.

Try it — wire a strip-LUT texture into your final Render 3D pass for a consistent, repeatable grade.

Render 3D → LUT → Output

Chapter Six

Compositing & Layering

Where multiple pictures become one, and where you keep a busy graph readable. Everything here speaks the peach Image cable.

Blend

COMPOSITING · IN/OUT

Combines two images with a wide range of blend modes — Multiply, Screen, Overlay, and more — plus an opacity dial. This is how you layer a glowing shape over live video, or double-expose two textures.

Try it — screen-blend a glowing shape over live video for a lightweight double-exposure look.

Video (Bottom) → Blend (Screen) → Output

Layer Stack

COMPOSITING · IN/OUT

A multi-layer compositor with per-layer blend mode, opacity, and visibility — think of it as a mini layers panel living inside your node graph, for building a full scene from separate pieces without a tangle of individual Blend nodes.

Try it — stack a 3D background, particles, live video, and a text title into one finished frame.

Background + Particles + Video + Text → Layer Stack

Fit

COMPOSITING · IN/OUT

Resizes and reflows whatever image comes in to a target width and height, with a mode of Fit (letterbox), Fill (crop to fill), Stretch (ignore aspect ratio), or Native (pass through). A background color and opacity fill any letterboxed edges.

Try it — feed a portrait-shaped camera or image source into a square canvas using Fill mode so it crops to a clean center square.

Image Source → Fit → Output

Switcher

COMPOSITING · IN/OUT

Cycles automatically among up to 4 connected image inputs on a timed interval (beats or seconds, synced to the transport), with a crossfade control blending the outgoing and incoming input, or a manual toggle to freeze on one chosen slot.

Try it — wire four different visual "looks" in and set it to switch every 8 beats with a short crossfade for an automatically evolving VJ set.

4x Image Sources → Switcher → Output

Null

COMPOSITING · IN/OUT

A zero-cost reroute point: it simply reports whatever texture is plugged into it as its own output, without rendering anything itself. Meant purely for tidying up cable runs in a busy patch.

Try it — insert one at a junction where several cables cross so the wiring reads cleanly instead of crisscrossing.

Image Source → Null → Output

Viewport

COMPOSITING · IN/OUT

Functionally identical to Null (a free pass-through, no processing) but drawn with a large canvas, so you can actually inspect the image at a given stage of a patch instead of judging it from a tiny thumbnail.

Try it — drop one mid-chain in a long effects stack to see exactly what the image looks like before the next step touches it.

Effect Chain → Viewport → Continue Chain

Group

COMPOSITING · ORGANIZER

A resizable, colored backdrop for organizing the node editor — not a functional processing node, it has no output of its own. Any node sitting inside it gets dragged along when you move the group's header.

Try it — wrap a whole "generator" section of a big patch in a Group so you can drag the entire subsystem around at once.

Comment

COMPOSITING • ORGANIZER

A plain annotation box — it does no image processing at all and produces no output. It just holds a block of text plus its own size and background color so you can label or explain parts of a patch.

Try it — drop one next to a complex chain to leave yourself a note about what a tricky setting does.

Chapter Seven

Feedback, Trails & AI Vision

Nodes that feed an image back into itself, or reach for on-device machine vision, turning one frame into an ever-evolving loop.

Remove Background

MASK · IN/OUT

Uses Apple's on-device Vision framework to cut a subject or person cleanly out of a live camera feed — no green screen required. Runs fast enough for live performance, with adjustable feather, threshold, and contrast on the cut edge.

Try it — drop yourself into a rotating 3D starfield with nothing but a webcam.

Webcam → Remove Background → 3D Starfield

Feedback & Trails

FEEDBACK · IN/OUT

Two related nodes that feed a frame back into itself with a slight zoom, spin, or fade — the same trick behind classic video-feedback tunnels. Every new stroke or shape leaves a trail that spirals off into infinity.

Try it — paint one stroke on the Draw canvas and watch Feedback turn it into an endless spiral.

Draw / Shape → Feedback (Zoom) → Bloom

Reaction Diffusion

FEEDBACK · IN/OUT

Simulates the same Gray-Scott chemistry that grows animal spots, coral, and cellular patterns in nature — feed it a nudge and organic, living patterns spread and evolve on their own.

Try it — color-map the result and use it as a slowly-crawling texture on a 3D material.

Reaction Diffusion → Color Ramp → 3D Material

Resynthesize

RESYNTH · IN/OUT

An iterative image mutator: instead of reprocessing the original source each frame, it feeds its own previous output back into itself and mutates it again, so the image drifts progressively further from the source over generations. An XY pad cross-fades between eight mutation operators, and its motion can be recorded and looped.

Try it — record a slow FX-pad path with high feedback and low source-pull, then loop it so the image evolves through the same mutation journey every cycle.

Video / Shape



Resynthesize



Output

Chapter Eight

3D Building Blocks & Materials

Meshes and the surfaces they wear. These nodes speak the green Geometry cable, and everything eventually plugs into Render 3D to become a picture.

Geometry Primitives

3D • GEOMETRY OUT

A deep library of 3D building blocks — cube, sphere, icosphere, cylinder, cone, torus, plane, disc, and more exotic forms like torus knots and Möbius strips — with adjustable tessellation so they stay smooth up close.

Try it — drop a sphere, give it a Chrome material, and light it under an HDRI for an instant hero shot.

Geometry (Sphere) → Material (Chrome) → Render 3D

Model 3D

3D • GEOMETRY OUT

Imports your own 3D models — OBJ, PLY, STL, or USD/USDZ — with automatic centering and scale normalization, so anything exported from Blender or elsewhere just drops in and works. (glTF and FBX aren't supported yet.)

Try it — import a character model and spin it live using a rotation modulated by an LFO.

Model 3D → Material → Render 3D

Material

3D • IN/OUT

Overrides the surface material of whatever geometry passes through it, so one authored look can be shared by several shapes. Exposes a full PBR set — color, metallic, roughness, opacity, emission, IOR, transmission, clearcoat, sheen, iridescence — and can take up to eight image inputs to paint any of those channels from a texture.

Try it — feed a Noise texture into the roughness map input to give a single flat color a hand-worn, uneven sheen.

Cube → Material → Render 3D

Displacement

3D · IN/OUT

Physically pushes a mesh's vertices using a texture — real 3D geometry displacement, distinct from the 2D Displace/Liquify image filters, which only warp a flat image and never move actual geometry. Offsets vertices by a strength and midlevel, with flat-shading and normal-flip options.

Try it — drive it with a slow-animated Noise texture to make a flat plane ripple like disturbed water.

Plane → Displacement (texture: Noise) → Render 3D

Mapping

3D · IN/OUT

Changes how a material's texture maps are looked up on a surface without altering the mesh itself — UV, Generated, or Object coordinate space, plus per-axis offset, rotation, scale, and a triplanar-blend control.

Try it — switch to Object space and animate the rotate values to make a tiled pattern slowly spin across a surface independent of its own transform.

Sphere → Mapping → Material

Wrap

3D · IN/OUT

Conforms one mesh onto the surface of another — every source vertex moves to the nearest point on the target's surface, real shrinkwrap-style deformation. Offers Cylindrical, Spherical, and Nearest Surface modes plus a bend radius and blend amount.

Try it — wrap a flat text mesh cylindrically around a bottle-shaped target so the text reads as if printed on the label.

Text 3D + Geometry (target) → Wrap → Render 3D

Curve

3D · GEOMETRY OUT

Generates a spline that works two ways: as visible tube geometry (adjustable radius, sides, taper) and as a path other nodes can follow. Builds from up to 8 control points using Catmull-Rom, Bezier, B-spline, or linear interpolation, closeable into a loop.

Try it — set it to a closed loop and route a Path-follower along it to fly a camera or object in a continuous circuit.

Curve → Path → Render 3D

Null 3D

3D · IN/OUT

A pure pass-through for a geometry cable — forwards the mesh, material, and mapping from its single input unchanged. Exists purely to route or organize a 3D chain, the geometry equivalent of the plain Null node.

Try it — use it as a labeled junction point where a rig's main geometry chain splits off to several downstream effects.

Torus → Null 3D → Material

3D Points, Instancing & Mesh Ops

Scatter, stamp, and clean up geometry at scale — the toolkit for turning one shape into a thousand, or a cloud of points into solid form.

Instance on Points

3D · IN/OUT

Stamps a copy of one mesh onto the points of another, turning a single object into a scattered crowd drawn as GPU instances — one draw call for thousands of copies. Points can come from vertices, edges, faces, or a point cloud, with per-instance scale/rotation randomization and normal alignment.

Try it — scatter thousands of tiny cubes across a sphere's surface with align-to-normal on so they bristle outward like fur.

Distribute Points on Faces → Instance on Points → Render 3D

Distribute Points on Faces

3D · IN/OUT

Scatters points evenly across the surface area of an input mesh (area-weighted, not vertex-based) so coverage stays uniform even on meshes with uneven face sizes. Offers Random or Poisson Disk (even minimum spacing) methods.

Try it — scatter Poisson-Disk points across a terrain mesh's faces for evenly spaced grass instances with no clumping.

Geometry → Distribute Points on Faces → Instance on Points

Distribute Points in Grid

3D · GEOMETRY OUT

Generates a plain rectangular lattice of points from scratch — no geometry input needed — with adjustable count, spacing, jitter, and per-point size. Its point ordering deliberately matches Image to Points, so the two line up point-for-point at equal counts.

Try it — build a 20×20 point grid and instance small spheres on it for a uniform matrix-style array.

Distribute Points in Grid → Instance on Points → Render 3D

Image to Points

3D · IN/OUT

Converts an image into a point cloud — one particle per sampled pixel on a density grid — with brightness pushing each point out of a flat plane by a depth amount, and darker pixels dropped entirely so a cutout image reads as a shape.

Try it — feed a photo of a face in and instance small spheres on the points to build a pointillist 3D portrait.

Image → Image to Points → Instance on Points → Render 3D

Points to Vertices

3D · IN/OUT

Converts an incoming point cloud into a bare mesh made only of vertices — no edges, no faces — so cloud data can re-enter mesh-only operators like Merge by Distance.

Try it — turn a Particle System's live cloud into vertices, then run it through Merge by Distance to weld nearby particles into clusters.

Particle System → Points to Vertices → Merge by Distance

Set Color

3D · IN/OUT

Writes a color onto every vertex or particle of whatever geometry feeds it, from a flat color, a position/normal-driven gradient ramp, per-element random color, a palette swatch, or a texture lookup.

Try it — feed a Distribute Points node in with source set to Position for a smooth color gradient across a scattered field.

Distribute Points in Grid → Set Color → Instance on Points

Join Geometry

3D · IN/OUT

Merges up to four geometry inputs into a single mesh, using plain concatenation or real CSG Union/Intersect/Difference. Each input's own transform is baked in before combining.

Try it — feed two overlapping spheres in Difference mode to carve a hole through one with the other.

Cube + Sphere → Join Geometry (Difference) → Render 3D

Merge by Distance

3D · IN/OUT

Welds vertices that lie within a threshold distance of each other — the cleanup pass that closes seams left behind by a scatter or conversion node, or, cranked up, collapses geometry together outright.

Try it — run Points to Vertices output through Merge by Distance with a larger threshold to fuse nearby particles into solid clumps.

Points to Vertices → Merge by Distance → Render 3D

Metaballs

3D · IN/OUT

Generates blobs that smoothly merge into one another rather than intersecting with hard edges, surfaced via marching cubes over a summed field of up to 8 balls. Can also take a point-cloud input, letting a particle system be surfaced as a liquid-like blob.

Try it — feed a particle emitter's point cloud in to turn a scattering of points into a single flowing liquid mass.

Particle System → Metaballs → Render 3D

Resynthesize 3D

3D · IN/OUT

The 3D counterpart to the image Resynth node — each generation mutates the previous generation, not the original input, so the mesh drifts progressively over time via displace, jitter, smooth, twist, bulge, extrude, subdivide, and squash operators.

Try it — set a high displace weight and low smooth weight, then auto-step it to slowly grow an organic, coral-like form from a simple starting mesh.

Icosphere → Resynthesize 3D → Render 3D

Chapter Ten

3D Simulation, Scene & Render

Physics, the camera, the lights, and the render pass that turns geometry into a picture.

Ocean Surface

3D • GEOMETRY OUT

A physically-inspired ocean built from real Gerstner wave mathematics — tune amplitude, wavelength, steepness, direction, choppiness, and speed for anything from glassy calm to a churning storm.

Try it — drive wave amplitude straight from your track's bass so the sea swells with the low end.

Audio Analyze (Bass) → Ocean (Amplitude) → Render 3D

Cloth Simulation

3D • IN/OUT

Takes any mesh — usually a flat plane — and drapes it like real fabric using position-based dynamics, with stiffness, damping, mass, gravity, and wind you can push around live for anything from a stiff flag to a silky drape.

Try it — crank wind sideways and watch a plane billow like a flag caught in a gust.

Plane Mesh → Cloth Simulation (Wind) → Render 3D

Particle System

3D • GEOMETRY OUT

Spawns and simulates a stream of moving points with adjustable emit rate, lifetime, initial speed, and turbulence — sparks, dust, snow, or drifting motes, all reacting in real time.

Try it — trigger a burst of particles on every kick drum for a fireworks-on-the-beat effect.

Audio Analyze (Kick) → Particle System (Emit Rate) → Bloom

Camera

3D · OUT

Defines the viewpoint for Render 3D — perspective or orthographic, field of view, distance/azimuth/elevation orbit around a target, roll, and clip planes. An orbit-per-beat value spins the camera automatically for turntable shots.

Try it — set orbit-per-beat to a nonzero value for an automatic slow turntable rotation, synced to the transport clock.

Camera → Render 3D

Light

3D · OUT

Defines a single light source for Render 3D — Directional, Point, Sun, Ambient, or Spot — with azimuth/elevation/distance placement, color, intensity, falloff, and cone angle/softness for spots. Can also orbit automatically over time.

Try it — use a Spot light with a narrow cone angle and low penumbra for a hard-edged theatrical spotlight look.

Light → Render 3D

HDRI

3D · OUT

Loads an equirectangular HDR/EXR image and hands it to Render 3D as a real image-based environment, replacing the built-in sky gradient. Exposes intensity and a rotation so you can dial in brightness and spin where reflections and light come from.

Try it — load an HDRI of a sunset and slowly animate its rotation to sweep studio-quality reflections across a metallic object.

HDRI → Render 3D

Switcher 3D

3D · IN/OUT

Cycles between up to four connected 3D geometry inputs, forwarding whichever is currently active rather than blending them — a hard cut, timed by beats/seconds or set manually. The geometry-side counterpart to the image Switcher.

Try it — wire four different Geometry shapes into the four slots and let it hard-cut between them every 2 beats for a stop-motion-style shape change.

Geometry A/B/C/D → Switcher 3D → Render 3D

Audio Displacement

3D · IN/OUT

Deforms a mesh in real time from live audio, with five modes: waveform push, FFT-spectrum warp, concentric ripples, Chladni-plate standing-wave patterns, or a straight axis push. Includes attack/decay smoothing and a real-time subdivision level.

Try it — patch a kick-drum track in using Acoustic Ripples mode to make a sphere pulse outward on every hit.

Audio In → Audio Displacement (geo: Sphere) → Render 3D

Audio Ribbon

3D · OUT

Builds its own ribbon-shaped mesh directly from an audio signal — no upstream geometry needed. Width, height scale, segment count, gain, and smoothing are all adjustable, alongside its own transform and material.

Try it — route a vocal track in and place several ribbons at different rotations to build a waveform sculpture.

Audio In → Audio Ribbon → Render 3D

Render 3D

3D · IMAGE OUT

The camera and lighting engine that turns every 3D node into a real picture — physically-based Cook-Torrance/GGX materials, ACES tonemapping, and MSAA antialiasing, all live, with up to 4 geometry inputs plus camera, light, and HDRI. This is where the green Geometry cables turn back into a peach Image cable.

Try it — plug in geometry, a material, a light, and an HDRI, then send the result straight into Bloom.

Geometry + Material + Light + HDRI → Render 3D → Bloom

Audio Synthesizers

Where sound is born. These nodes turn silence — or notes coming in from an arpeggiator or MIDI controller — into audio you can hear and process.

Wavetable Synth

SYNTHS · AUDIO OUT

The flagship synthesizer: 64 wavetables you can morph smoothly between across 8 frames, up to 8-voice unison for thickness, a resonant filter, and three independent ADSR envelopes shaping amplitude, filter, and pitch over time.

Try it — modulate the table-morph position with an LFO for a synth patch that never quite settles.

Arpeggiator → Wavetable Synth → Reverb

Oscillator

SYNTHS · AUDIO OUT

A single-voice synth on the wavetable engine, offering four waveforms (Sine, Triangle, Saw, Square) with pitch, glide, pitch bend, and an audio-rate FM/PM input whose depth and mode you control directly.

Try it — patch a second Oscillator into the FM input and sweep FM depth for classic bell/metallic tones.

MIDI Notes → Oscillator → Audio Out

Wave Terrain

SYNTHS · AUDIO OUT

Turns any 2D image or video texture into a "terrain" surface and reads audio by tracing a closed orbit across it — Circle, Lissajous, Lemniscate, Spiral, or Scanline — with full unison, an amp envelope, and a multi-mode filter.

Try it — feed a slowly-animating Reaction Diffusion texture in and let scan speed drift the orbit for an evolving drone.

Noise/Shapes Texture → Wave Terrain → Audio Out

Spectral Synth

SYNTHS · AUDIO OUT

Reads an image as a spectrogram: it scans horizontally while each row of pixels defines the amplitude of one of a bank of up to 256 sine partials, so a picture's brightness pattern literally becomes the sound's harmonic content.

Try it — draw a simple shape in a Draw node and route it in — the silhouette becomes an audible spectral sweep as the playhead crosses it.

Draw/Video Texture → Spectral Synth → Audio Out

Metallic Resonator

SYNTHS · AUDIO OUT

Physically models how real metal and glass actually ring when struck — eight material presets from Steel and Bell Bronze to Glass/Crystal and Vibraphone Bar — a genuinely resonant, inharmonic decay rather than a synthetic approximation.

Try it — trigger it from Bouncing Balls for a gamelan-like patter of chiming, decaying notes.

Bouncing Balls → Metallic Resonator → Reverb

Sampler

SYNTHS · AUDIO OUT

Load a file or record incoming audio, then play it back one-shot or looping (forward, reversed, or ping-pong) with independent pitch, finetune, and varispeed, and two playback lanes — polyphonic (MIDI-driven) and monophonic (free-running).

Try it — record a vocal phrase via record-in, then trigger it polyphonically from MIDI Notes with pitch mapped per key.

MIDI Notes → Sampler → Audio Out

Granular

SYNTHS · AUDIO OUT

A real-time granular synthesizer that shreds a loaded or recorded sample into micro-grains and re-stitches them, with grain length, density, scan speed/position (with freeze), and stochastic randomization on position, length, pitch, and pan.

Try it — load a field recording, freeze the scan, and crank the position/pitch randomization for a shimmering granular cloud from a single still moment.

Recorded Sample → Granular → Audio Out

PaulStretch

SYNTHS · AUDIO OUT

Stretches any audio file up to 1000 times longer without changing its pitch, turning a two-second vocal snippet into an hours-long, slowly shifting ambient texture. The classic "everything sounds like a choir of angels" trick.

Try it — stretch a spoken-word sample 20x and drown it in reverb for an instant soundscape bed.

Vocal Sample → PaulStretch (20x) → Reverb

Drum Sequencer

SYNTHS · AUDIO OUT

An 8-track, 8-step sequencer for your own samples, complete with swing groove, mutes, and solos — build a full beat without leaving the canvas, and tap any lane's trigger to drive visuals too.

Try it — send the kick lane's trigger into a Glitch node so the picture stutters with the beat.

Drum Sequencer → Audio Out

Audio Effects & Plugin Hosting

Shape sound after it's been made — filters, space, grit, and a doorway to Audio Units already installed on your Mac. Like the image filter shelf, every effect below shares one C++ class but spawns as its own node.

Audio Filter

AUDIOEFFECTS · IN/OUT

A classic analog-style filter with 12 types on tap — low-pass and high-pass at 12/24/36 dB per octave, band-pass, notch, shelves, and peak — with an envelope follower for auto-wah and a sidechain input so another sound can sweep the cutoff for you.

Try it — sweep the cutoff with an LFO for a slow, breathing filter-sweep synth part.

Wavetable Synth → Audio Filter (LFO Mod) → Audio Out

EQ

AUDIOEFFECTS · IN/OUT

A five-band studio equalizer with a live filter-response curve you can see and drag — carve out mud, add air, or fix a harsh frequency, watching the curve move as you turn each knob.

Try it — scoop the low-mids on your master bus before it hits a Limiter for extra clarity.

Master Mix → EQ → Audio Out

Plugin

AUDIOEFFECTS · IN/OUT

Loads any Audio Unit you already own — synth or effect — right into the graph, with its native interface and up to 32 of its parameters exposed for modulation like any other Infinite node.

Try it — load your favorite Audio Unit synth and drive it straight from the Arpeggiator.

Arpeggiator → Plugin → Audio Out

Delay

AUDIOEFFECTS · IN/OUT

A tempo-synced ping-pong delay with feedback, tone shaping, panning, and ducking — everything from a tight slapback to a rhythmic, bouncing echo.

Try it — set the rate division to a dotted-eighth for a classic, rhythmic bouncing echo.

Melody Synth → Delay (1/8 Dotted) → Audio Out

Reverb

AUDIOEFFECTS · IN/OUT

An algorithmic reverb with room size, decay time, damping, pre-delay, and stereo width — a wash big enough to sound like a cathedral, or small enough to feel like a tiled room.

Try it — stack Reverb after Delay for echoes that themselves bloom into space.

Delay → Reverb (Cathedral) → Audio Out

Drive

AUDIOEFFECTS · IN/OUT

Warm analog-style tube-and-transistor saturation with drive, bias, tone, and color controls — a gentle glow at low settings, real grit when you push it.

Try it — hit a drum mix with a few dB of Drive for extra punch and glue.

Drum Mix → Drive → Audio Out

Bitcrush

AUDIOEFFECTS · IN/OUT

A separate lo-fi crusher: independent sample-rate (down to 200 Hz) and bit-depth (down to 1 bit) reduction for anything from a subtle vintage-sampler grit to full digital destruction.

Try it — crush a clean synth line down to 8 bits for an instant retro-game feel.

Synth → Bitcrush → Audio Out

The Audio Effects category holds 20 entries sharing one DSP-hosting node class; the seven above got the full treatment, here's the rest of the shelf.

Dynamics

A compressor that squashes loud peaks down once they cross a Threshold, tightening dynamics by a set Ratio, with Attack/Release/Makeup rounding out the feel.

Limiter	A brick-wall ceiling that catches anything above the Threshold and prevents it from getting louder, with In/Out Gain to drive it harder or make up level.
Stereo	Widens or narrows the stereo image with a Width knob (0 collapses to mono), plus Pan and a Bass Mono control that keeps low end centered.
Pitch Shifter	Shifts pitch up or down by semitones (up to two octaves either way) using a delay-line pitch shifter, with Grain size shaping the artifacts.
Chorus	Thickens the sound with multiple slightly detuned, delayed copies, with Delay time and Depth of the wobble and a free or tempo-synced Rate.
Flanger	Creates a sweeping, jet-plane whoosh by mixing a short modulating delay with Feedback back into the signal.
Phaser	Sweeps notches through the sound for a swirling effect, set by a Cutoff center frequency, Depth, and Rate.
Transient Shaper	Reshapes the punch of a sound by independently boosting or cutting the Attack (the initial hit) and the Sustain (the tail).
Stutter	Repeats a short slice of audio like a glitchy loop, with tempo-synced or free timing and a step/gate mask controlling which repeats play.
Ring Mod	Multiplies the signal by an oscillator to produce bell-like, metallic, robotic tones, with adjustable frequency and waveform.
Frequency Shifter	Shifts every frequency in the sound up or down by a fixed Hz amount (not musically, like pitch), creating inharmonic textures, with Feedback adding spiraling "barber pole" motion.
Tremolo	Pulses the volume up and down with an LFO, set by Depth and a free or tempo-synced Rate.
Formant Filter	Gives the sound a vowel-like, talking/singing quality by morphing between A-E-I-O-U formant shapes, with Q controlling resonance.
Wavetable Shaper	Distorts the sound by running it through a chosen wavetable, with Table picking the waveform set, Position scanning through it, and Drive controlling intensity.

Chapter Thirteen

Audio Utility & Routing

The plumbing that gets sound in, mixed, split, and out — plus a node for turning sound into a picture.

Gain

AUDIOUTILITY · IN/OUT

A simple audio level control: one dB knob raises or lowers the volume of the signal running through it, with an inline meter showing the output level.

Try it — turn a hot oscillator or sampler down a few dB before it hits a Mixer so it doesn't clip.

Audio Source → Gain → Audio Out

Audio In

AUDIOUTILITY · OUT

Taps the computer's live input device (microphone or line-in) and brings it into the patch, with a gain trim and its own input-level meter.

Try it — feed a live microphone into a reactive visual patch so the visuals respond to whatever's happening in the room.

Audio In → Gain → Audio Out

Audio Out

AUDIOUTILITY · IN

The terminal endpoint of an audio chain — takes exactly one audio input and sends it to the real output device, and can record straight to a file in WAV, FLAC, or MP3.

Try it — route your final mixed signal here and hit record in FLAC to capture a lossless bounce of a live performance.

Mixer → Audio Out

Mixer

AUDIOUTILITY · IN/OUT

The app's dedicated summing node, taking up to 8 input slots, each with its own gain, pan, and mute, plus a per-channel peak meter and an overall summed-output meter.

Try it — pan several looped instrument stems across the stereo field and mute/unmute them live to build up an arrangement.

8x Audio Sources → Mixer → Audio Out

Splitter

AUDIOUTILITY · IN/OUT

The explicit fan-out point for audio: since an audio output can only feed one destination, Splitter takes one input and makes it available to up to 4 downstream consumers as a passthrough copy.

Try it — split one synth's output to feed both a Mixer channel and a separate effects-only chain in parallel.

Synth → Splitter → (Mixer + Effect Chain)

Blend Audio

AUDIOUTILITY · IN/OUT

A two-input crossfader with a single Blend control: 0 plays only input A, 1 plays only input B, and 0.5 gives an equal-power blend of both.

Try it — crossfade smoothly between two different loops by automating the Blend knob over a bar.

Audio A + Audio B → Blend Audio → Audio Out

Audio Texture

AUDIO · AUDIO IN, IMAGE OUT

Turns an incoming audio signal into an image, rendering either a live Waveform or a Spectrum (FFT) view into a GPU texture, with adjustable FFT window size and smoothing.

Try it — feed a bassline in using Spectrum mode with high smoothing for a slowly pulsing frequency-bar texture to layer under other visuals.

Audio Out (any synth) → Audio Texture → Compositing Chain

Chapter Fourteen

MIDI & Note Shaping

The note stream comes in from a keyboard or controller; these nodes reshape it — filtering, transposing, humanizing, and timing-correcting — before it reaches a synth. All flow over the lavender Note cable.

MIDI Notes

NOTES · OUT

The note source — reads live MIDI input and turns it into note events for the rest of the chain, with a channel selector, a transpose knob, a velocity scale, and an option to snap incoming notes to the global key/scale.

Try it — set channel to a single MIDI device's channel so you can layer two controllers into different chains without them colliding.

MIDI Notes → Note Transpose → Wavetable

Note Filter

NOTES · IN/OUT

A gate on which notes get through, combining a scale/key filter, a pitch range, and a percent chance — a note only passes if it clears all three checks.

Try it — set a low chance percentage to turn a busy MIDI part into a sparse, randomly-thinned one.

MIDI Notes → Note Filter → Arpeggiator

Note Transpose

NOTES · IN/OUT

Shifts every note by a fixed number of semitones, with an option to snap the result to the global scale. The shift is applied once at note-on and remembered for that note, so a held note's release always lands on the matching pitch.

Try it — stack two Note Transpose nodes at +12 and -12 semitones off the same MIDI source to build instant octave doubling.

MIDI Notes → Note Transpose → Sampler

Pitch Bend

NOTES · IN/OUT

A live pitch-bend knob (± 2 semitones) that adds into each note's continuous bend amount rather than re-triggering the note, so moving it while a note is held slides that note's pitch in real time.

Try it — automate the bend knob for a slow pitch-drift or vibrato-like wobble on a sustained note.

MIDI Notes → Pitch Bend → Oscillator

Velocity Curve

NOTES · IN/OUT

Reshapes how hard you hit the keys maps to output velocity, using a single curve exponent — below 1 boosts soft hits, above 1 favors hard hits.

Try it — set the curve well below 1 to make a light, breathy playing style trigger notes at near-full velocity.

MIDI Notes → Velocity Curve → Sampler

Gate

NOTES · IN/OUT

Controls how long each note rings out with a single hold-time knob. At 0 it's a passthrough; above 0 it ignores the real note-off and schedules its own fixed duration for every note.

Try it — set a short fixed hold time to turn held chords into a clean, staccato pattern.

MIDI Notes → Gate → Wavetable

Humanizer

NOTES · IN/OUT

Adds random imperfection to a note stream with two independent knobs: timing jitter (when a note actually fires) and velocity jitter (how hard it hits). Both default to off.

Try it — add a little timing and velocity jitter to a rigid quantized sequence to make it feel played by hand.

Note Sequencer → Humanizer → Sampler

Quantizer

NOTES · IN/OUT

Snap each note-on forward in time to the nearest grid line, never earlier than when the note actually arrived, at a chosen musical division.

Try it — use a coarse quantize division to lock loose, off-grid playing onto the beat without losing the original note order.

MIDI Notes → Quantizer → Arpeggiator

Glide

NOTES · IN/OUT

Fills the gap between one played note and the next with a fast run of very short in-between notes, approximating a portamento slide since the note system has no continuous pitch to bend smoothly.

Try it — set the glide time to around 300–500ms on a bass line for a slippery, portamento-like slide between notes.

MIDI Notes → Glide → Wavetable

Note Echo

NOTES · IN/OUT

Repeats every incoming note a set number of times, each repeat spaced further apart, getting quieter and optionally shifting in pitch. The original note always plays first unchanged.

Try it — use a short delay with a +12 semitone shift per repeat to turn single notes into an ascending octave echo trail.

MIDI Notes → Note Echo → Wavetable

Generative & Physical Note Nodes

Nodes that write their own music — from a classic arpeggio pattern to a physics playground that composes melodies from bouncing balls.

Arpeggiator

NOTES · IN/OUT

Takes held notes and breaks them into a rhythmic, tempo-locked pattern — Up, Down, Up-Down, Random, As-Played, and a dozen more traversal modes — with 1 to 4 octaves of range.

Try it — hold a chord from Chorder and let the Arpeggiator turn it into a driving pattern.

Chorder → Arpeggiator (Up-Down) → Wavetable Synth

Chorder

NOTES · IN/OUT

Turns a single held note into a full chord, with adjustable chord size, a strum offset, humanized timing and velocity, and scale quantization so nothing plays a wrong note.

Try it — play a single key and let Chorder voice it into a lush, gently strummed chord for an instant pad.

MIDI Notes → Chorder → Wavetable Synth

Note Sequencer

NOTES · OUT

A dedicated step sequencer for melody — up to 16 steps, each with its own note, velocity, and on/off toggle, plus a gate-length control for how long each step rings out.

Try it — program a simple 8-step bassline and send it straight into a synth for an instant groove.

Note Sequencer → Wavetable Synth → Audio Filter

Bouncing Balls

NOTES · OUT

A physics playground that turns bouncing balls into music — balls glide inside a container shape and fire a note, quantized to a musical scale, every time they hit a wall. Gravity doesn't pull them down; the bounce pattern writes the melody.

Try it — set the scale to Minor Pentatonic and let the balls compose a hypnotic, generative loop.

Bouncing Balls (Pentatonic) → Metallic Resonator → Reverb

Note Router

NOTES · IN/OUT

The system's note fan-out node: one input split across four separate outputs, chosen by Round Robin, Random, Probability, or Chain mode. A note's matching note-off always replays to the same output it was sent to.

Try it — use Round Robin mode to alternate incoming notes between four different synths for a call-and-response texture.

MIDI Notes → Note Router → (four Wavetable instances)

Random Note Generator

NOTES · OUT

A self-running generator that produces its own note stream via a bounded random walk — each new note is the previous note plus a small random offset, clamped and quantized to a chosen scale and root. No note input needed.

Try it — set a narrow pitch range with a small max step for a meandering, ambient melodic line that never strays far.

Random Note Generator → Wavetable Synth

Note Stack

NOTES · IN/OUT

Layers up to 8 extra transposed copies on top of every note that passes through, with the original note always passing through underneath. Each voice has its own semitone offset and on/off switch.

Try it — enable the +12 and +7 voice offsets to turn single played notes into instant octave-and-fifth power chords.

MIDI Notes → Note Stack → Wavetable Synth

Note Capturer

NOTES · IN/OUT

Records whatever note stream feeds it — with tempo-relative timing so it stays in sync even if the BPM changes — then loops that recording back on top of the live input, which always keeps passing through.

Try it — record a short improvised phrase, then keep playing live on top while it loops underneath.

MIDI Notes → Note Capturer → Wavetable Synth

Note Strum

NOTES · IN/OUT

Takes a chord's simultaneous notes and spreads their onsets across time in ascending pitch order, like a strummed guitar, while keeping each note's original gate length intact.

Try it — feed it block chords and set the spacing to 20–40ms for a natural strummed-guitar feel instead of a stabbed chord.

MIDI Notes → Note Strum → Wavetable Synth

Modulators — Shape & Combine

The wiggling knobs that bring a patch to life. These nodes generate or reshape a signal on the sapphire Modulator/CV cable, which can plug into almost any parameter in the app.

LFO

MODULATORS · OUT

A slow, repeating wave — sine, triangle, saw up, saw down, square, or sample-and-hold — that you plug into almost any knob in the patch to make it move on its own, in time with the music if you like.

Try it — sync an LFO to a quarter note and wire it to a filter's cutoff for an automatic wobble.

LFO (Sine, 1/4) → Audio Filter (Cutoff)

Random

MODULATORS · OUT

Generates a new target value on a timer, then eases toward it using a smoothing amount — 0 for hard stepped changes, higher for a fully eased curve. Low/High rescale the range, and each node spawns with its own seed.

Try it — feed two Random nodes with different rates into separate destinations for uncorrelated wandering motion.

Random → Mod Depth → Rotation

Pattern

MODULATORS · OUT

A 16-step sequencer whose value steps through hand-set slots once per set beat length, looping back to the start, with a smoothing option to ease between adjacent steps instead of jumping.

Try it — draw a rising-then-falling step shape and route it into a filter cutoff for a rhythmic sweep locked to the beat.

Pattern → Range to Range → Filter Cutoff

Math

MODULATORS · OUT

Combines two other modulator signals using one of ten operations — add, subtract, multiply, divide, min, max, average, and more — then scales and offsets the result.

Try it — multiply an LFO by a Random node so the wobble's depth itself wanders over time.

LFO + Random → Math (Multiply) → Mod Depth

Compare

MODULATORS · OUT

Tests two modulator inputs against each other using >, >=, <, <=, ==, or != and outputs a hard 1 or 0, with a tolerance value for the equality checks.

Try it — compare a Random node against a fixed threshold to fire an on/off switch at unpredictable moments.

Random → Compare (A > B) → Mod Depth

Range to Range

MODULATORS · OUT

Linearly remaps an input modulator from one span to a different output span, with an option to clamp the result inside the output bounds.

Try it — remap an LFO's 0..1 swing down to a narrow 0.3..0.7 band for a subtler wobble.

LFO → Range to Range → Mod Depth

Smoothing

MODULATORS · OUT

Runs an exponential moving average over an input modulator, with an amount knob setting the filter strength, taking the edge off a stepped or noisy source.

Try it — smooth a Pattern node's stepped output to turn a staircase into a gentle glide.

Pattern → Smoothing → Mod Depth

Invert

MODULATORS • OUT

Mirrors an input modulator around a low/high pivot, so rises become falls and vice versa — and it still behaves correctly on signals that run outside the usual 0..1 range.

Try it — invert an LFO feeding one destination while the un-inverted LFO feeds another, so two parameters move oppositely together.

LFO → Invert → Mod Depth

Mod Curve

MODULATORS • OUT

Reshapes an input modulator through a user-drawn transfer curve, with a mix knob blending between the raw input and the fully-curved result.

Try it — draw a steep S-curve to make a smooth LFO snap more decisively between its extremes.

LFO → Mod Curve → Mod Depth

Modulators — Control & Performance

Knobs, pads, and hardware bridges meant to be touched live, plus the utility nodes that hold a modulation chain together.

Mod Depth

MODULATORS · OUT

Scales how much of an incoming modulator's swing reaches its destination with a single depth knob from -1 to 1 — at 0 the signal has no effect, negative values invert it while still scaling.

Try it — automate depth itself with a slow LFO to fade a modulation effect in and out over time.

LFO → Mod Depth → Filter Cutoff

Macro Knob

MODULATORS · OUT

A single manually-set control meant to be performed rather than left alone, with a curve exponent to ease the response in or out and an invert switch.

Try it — map Macro Knob to several destinations at once as a single "intensity" performance control for a whole patch.

Macro Knob → Mod Depth → Reverb Mix

Macro XY

MODULATORS · OUT

A 2D performance pad — grab it with a mouse or trackpad to fling two parameters around at once, live. It can also record a path you drag out and loop it back for hands-free, repeating motion.

Try it — map X to a filter cutoff and Y to Glitch amount, then perform both with one finger.

Macro XY → Filter Cutoff (X) & Glitch Amount (Y)

MIDI CC

MODULATORS · OUT

MIDI Learn for a single physical control on your USB MIDI hardware — click Learn, twist the knob, and it remembers that device's exact channel and controller number.

Try it — map a hardware filter-cutoff knob to sweep a Blur radius live during a performance.

MIDI CC → Mod Depth → Filter Cutoff

MIDI Trigger

MODULATORS · OUT

Turns a MIDI pad hit into a decaying envelope pulse (Pad mode, bound to one note), or reports whichever note was last played on the channel (Keyboard mode).

Try it — trigger a camera-shake or flash burst every time you hit a specific pad.

MIDI Trigger (Pad) → Shape Opacity Flash

Path

MODULATORS · OUT

Moves a point along a shape over time — Circle, Line, Figure Eight, Helix, Spiral, or Lissajous — outputting separate X, Y, Z, and progress channels, tempo-synced by default.

Try it — send the X and Y outputs to a Geometry node's position to orbit an object in a circle.

Path (X/Y/Z) → Mod Depth → Geometry Position

Constant

MODULATORS · OUT

Outputs one fixed, unmoving value — exists because math-utility nodes only take other modulators as input, so this supplies a literal number.

Try it — use it as a fixed offset added to an LFO to keep a modulation from ever reaching zero.

Constant → Math (Multiply) → Mod Depth

Null Modulator

MODULATORS • IN/OUT

A zero-cost pass-through junction for a modulator cable, useful as a named point in a chain where you can read a live value meter or branch one signal to several destinations.

Try it — insert one mid-chain to visually confirm what value an LFO chain is actually producing.

LFO → Null Modulator → (branches)

Palette

MODULATORS • OUT

Extracts a small color palette from a reference image or live video, clustering colors in Oklab space with sort, chroma, and mood-shaping controls (hue shift, saturation, brightness).

Try it — feed in a still-life photo and pipe its palette into every Ramp and material color in the patch for one cohesive mood.

Palette (image) → Ramp / Material Color

Modulators — Audio/Note Bridges & Analysis

The converters that translate between worlds — audio into control voltage, notes into control voltage, and raw sound or image into a stream of numbers a patch can react to.

CV to Pitch

MODULATORS · OUT

Quantizes a continuous modulation signal into semitone steps, optionally snapped onto a chosen scale and root, with a glide option for portamento smoothing on the stepped output.

Try it — feed a slow Random node through it set to a major scale for generative, in-key melodic-feeling movement.

Random → CV to Pitch → Oscillator Pitch

Note to CV

MODULATORS · OUT

Converts an incoming note stream's pitch into a normalized control voltage, holding the last played note's pitch rather than falling back to zero on release — a pitch tracker, not a gate.

Try it — track incoming melody pitch and use it to modulate a filter cutoff so higher notes open the filter.

MIDI Notes → Note to CV → Filter Cutoff Mod

Audio to CV

MODULATORS · OUT

An envelope/amplitude follower that converts a live audio signal into a modulation signal, with gain, attack/release smoothing, and a peak/RMS detection mode.

Try it — feed a vocal or instrument track in and use the follower's output to pulse a Shape's scale in time with the performance.

Audio File → Audio to CV → Mod Depth

Vibrato

MODULATORS · OUT

A simple free-running sine LFO with one control — rate in Hz — meant as a substitute for true per-note vibrato, since note events have no continuous pitch channel of their own.

Try it — patch it into an oscillator's fine-tune modulation input for a subtle, continuous pitch wobble.

Vibrato → Oscillator Fine-Tune

Envelope

MODULATORS · OUT

Applies a classic ADSR contour to a continuous modulation signal rather than a note trigger — the "gate" is derived from the input crossing a threshold rather than a note-on/off.

Try it — feed a slow LFO in to get a rhythmic swell-and-release pulse instead of a raw sine wave.

LFO → Envelope → Mod Depth

Audio File

MODULATORS · OUT

Loads and plays back an audio file independently of the live mic/line input, exposing the same analysis taps as live input so a backing track can drive visuals deterministically.

Try it — load a pre-mixed track and drive the whole visual patch from it so a live performance is reproducible.

Audio File → Audio Analyze → Mod Depth

Audio Analyze

MODULATORS · OUT

Listens to any audio and splits it into 8 frequency bands plus a transient onset trigger — the node that lets visuals genuinely react to music, band by band, hit by hit.

Try it — route a bass band into the Ocean node's amplitude so the sea pulses with the low end.

Audio Master → Audio Analyze (Bass) → Ocean (Amplitude)

Image Analyze

MODULATORS • OUT

The visual mirror of Audio Analyze — reads brightness, color channels, saturation, hue, motion, and where the action is happening on screen, turning all of it into modulation.

Try it — drive a synth's pitch or filter straight from webcam motion for a fully vision-controlled instrument.

Webcam → Image Analyze (Motion) → Synth Pitch/Filter

Output & Sharing

The final door out — to your speakers, your screen, another app, or a real projector.

Output

OUTPUT · TERMINAL

The last node in every patch — sends your visuals and audio to the screen and speakers, and can record both to disk at once as an H.264 movie, ready to share or edit further.

Try it — hit Record on your finished Layer Stack and audio mix to bounce a performance straight to file.

Layer Stack (Visuals) + Audio Mix → Output

Syphon Out

OUTPUT · IN

Broadcasts whatever image, 3D render, or shader is plugged into it out to other Mac apps in real time — Resolume, OBS, TouchDesigner, MadMapper — via zero-copy GPU memory sharing, with a customizable server name.

Try it — send your generative render live into a VJ app like Resolume for a live show while still tweaking the patch in Infinite.

3D Scene → Syphon Out → (external app)

Projection

OUTPUT · IN

A projection-mapping and warping node for driving real projectors — 4-corner perspective warping or a subdivided mesh-grid warp, with built-in alignment test patterns for lining up a physical projector.

Try it — use the Grid test pattern to line up a projector on an odd-shaped surface, then switch to real content once corners are pinned.

Rendered Scene → Projection → Syphon Out

That's the field guide.

119 individually-registered node types, a 34-filter image effects shelf, and a 20-effect audio shelf — every node Infinite ships with, across nineteen chapters and five cable colors.

The best way to learn Infinite isn't to read about it — it's to grab two or three nodes and see what happens when you wire them together. For exact parameter ranges and engine internals, see the full technical reference at n1m21n.github.io/Infinite.

