noisypeak

THE APEX OF VIDEO OVER IP SOLUTIONS

AI MEDIA ORCHESTRATION · PRODUCT BROCHURE

Media2Flow

Visual, AI-assisted media workflows: ingest, transcode, package and deliver files and live channels at any scale.



Media2Flow turns media processing into visual workflows that AI agents help build, run and keep healthy: 53 nodes, up to 250 steps per graph, 2 to 500 transcoding nodes, file and live, in your cloud or ours.

250
PROCESSING STEPS PER WORKFLOW

53
NODE TYPES IN 14 FAMILIES

2–500
TRANSCODING NODES

111k+
TASKS RUN ON THE NOISYPEAK CLOUD

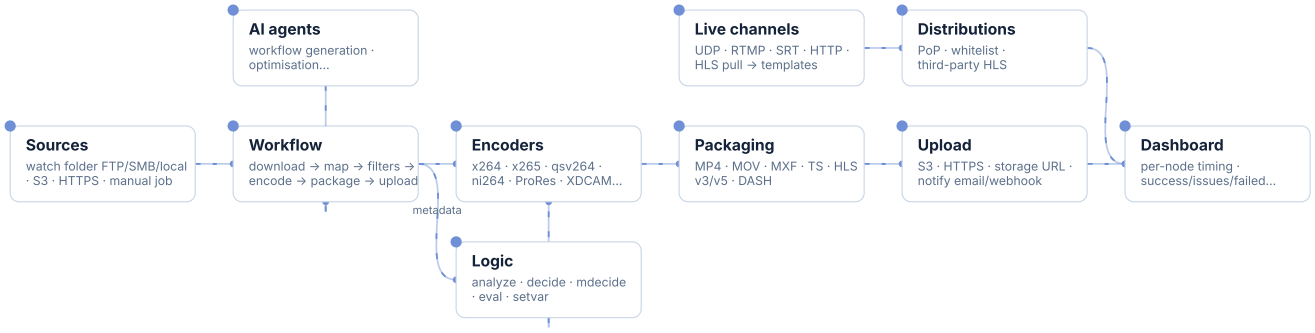
NOISYPEAK SÀRL · EPFL INNOVATION PARK · LAUSANNE · SWITZERLAND · 2026

MEDIA2FLOW — AI MEDIA ORCHESTRATION

Media2Flow is Noisypeak's visual media workflow orchestrator. A workflow is a graph of single-purpose nodes — download, demux, filter, encode, package, upload — drawn in a drag-and-drop editor; a job is one input file run through one workflow. Jobs arrive by hand, from watch folders on FTP, SMB or local storage, or through URLs such as signed S3 and HTTPS. It runs in the Noisypeak Cloud, on AWS, Google Cloud, Azure, Kubernetes or Docker.

Beside file processing, the same platform runs live channels (UDP, RTMP, SRT, HTTP/HTTPS, HLS pull) against encoder templates in availability zones, and a Distributions layer that exposes origin, live and third-party HLS channels through a point-of-presence with a network whitelist. AI agents generate and optimise workflows, predict load and resolve common issues; the dashboard profiles every node and exports every chart.

How Media2Flow runs a job

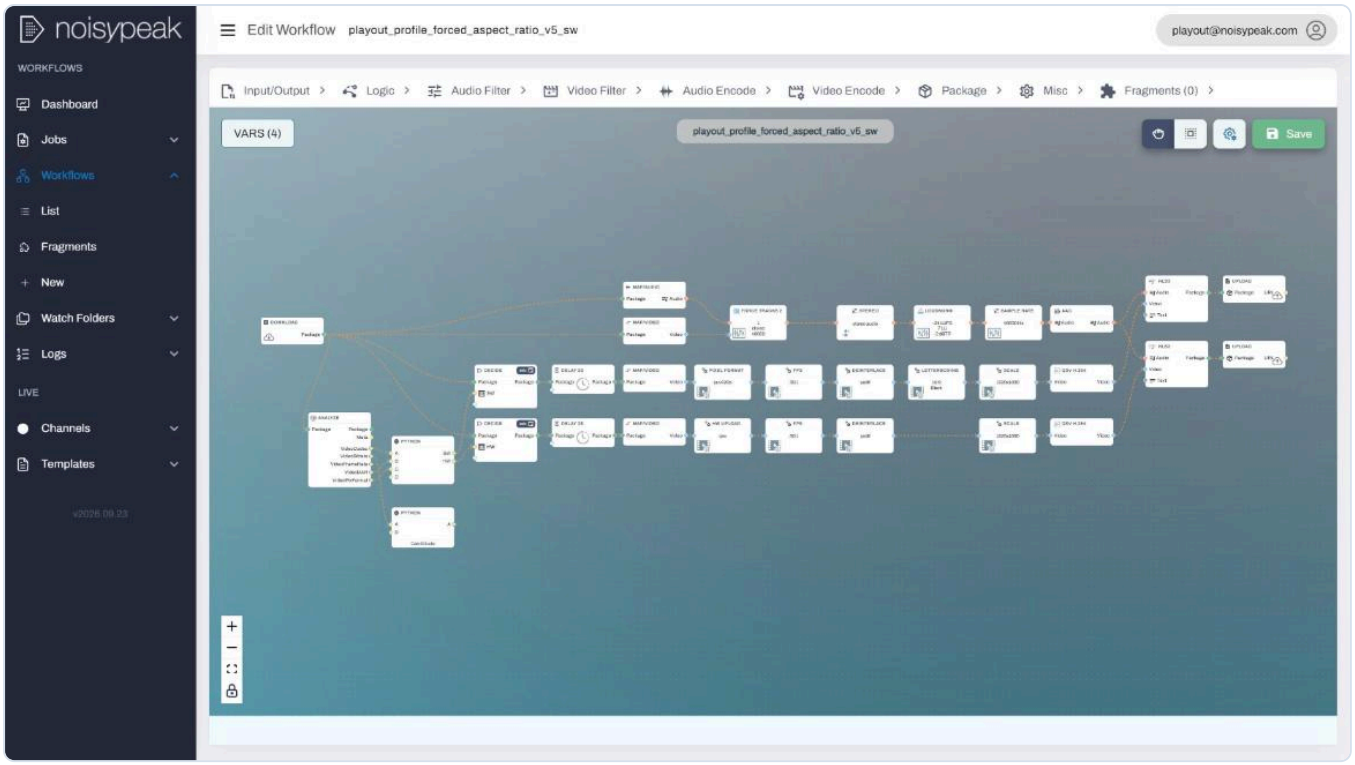


Workflows are the recipes; jobs are the runs. Live channels and distributions share the same platform and dashboard.

VISUAL WORKFLOW DESIGNER

Every workflow starts with an input and ends with an output. Between them you drop nodes from the palette — Input/Output, Logic, Audio Filter, Video Filter, Audio Encode, Video Encode, Package, Misc and reusable Fragments — and connect their pins. Node options can reference workflow variables such as $In and $Out, so one graph serves many jobs. Fragments are sub-graphs saved once and dropped into a parent workflow as a single tile.

The editor shows the live graph of a production workflow: download → analyze → decide between software and hardware paths → scale, frame rate, letterbox and aspect-ratio filters → H.264 encode → HLS and MP4 packaging → upload, with Python nodes for custom logic. Workflows are grouped by folder, imported, exported and versioned by name.



Workflow editor: playout_profile_forced_aspect_ratio_v5_sw — a 30-node production graph with a software/hardware decision branch.

AGENTIC AI — WORKFLOWS THAT BUILD AND HEAL THEMSELVES

AI agents generate optimal processing and transcoding workflows from content analysis, target delivery requirements and the resources available. Content-aware processing picks encoding profiles, resolution scaling and quality settings per asset using SSIM and VMAF; automated A/B testing compares encoding approaches and keeps the best-performing configuration.

Predictive analytics forecast processing time and resource needs before a workflow starts, and automated scaling balances load across cloud and on-premise resources. Self-healing agents detect and resolve common issues without manual intervention. An AI knowledge base assists operators — especially new users — and integrated machine-learning models keep improving encoding efficiency from historical performance data.

- Agentic workflow creation from content and delivery targets
- Content-aware encoding tuned with SSIM / VMAF
- Predictive scaling across cloud and on-premise
- Self-healing operations — less downtime, less ops
- OpenAI Whisper subtitles and closed captions from audio
- Automated A/B testing of encoding configurations

THE NODE CATALOGUE — 53 NODES, 14 FAMILIES

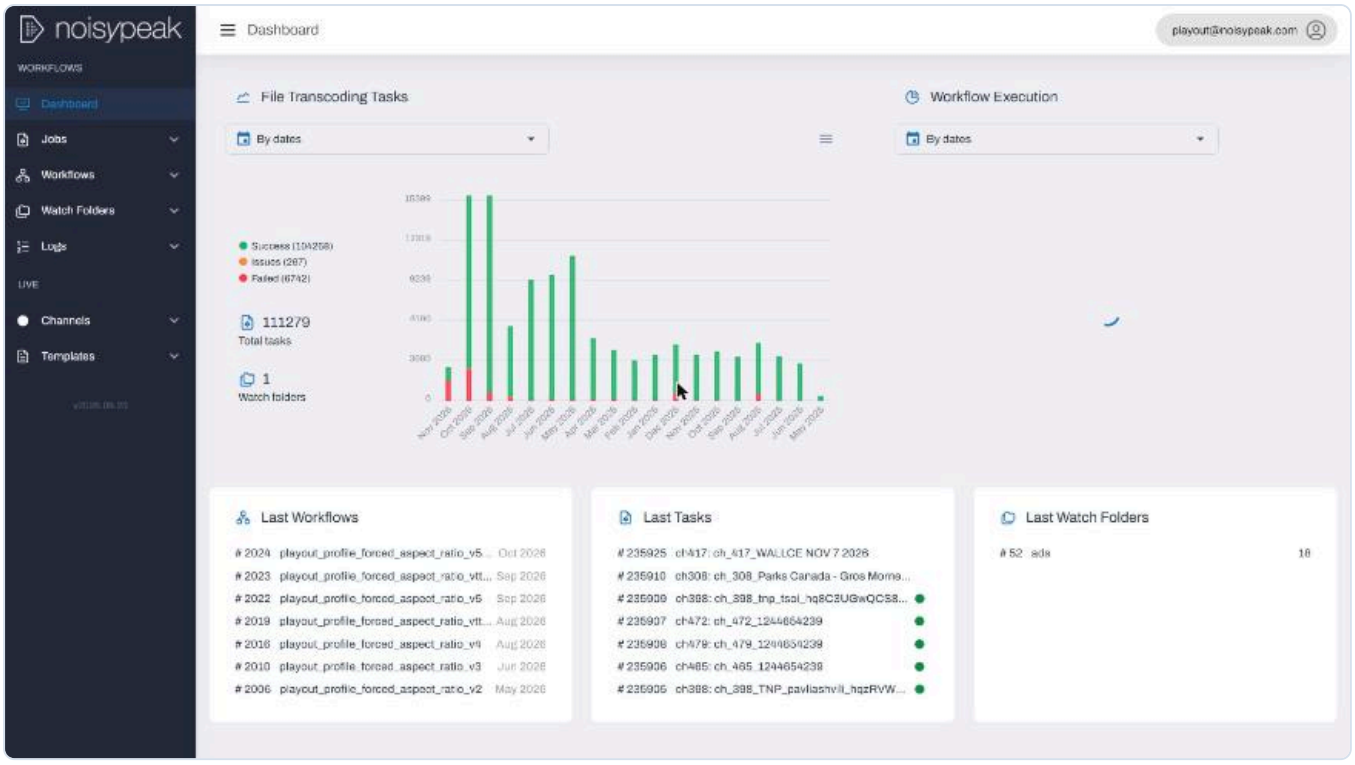
Each node does one thing; chains do the rest. Stream mapping (map/video, map/audio, map/text, map/timecode) splits a package into tracks right after the source. Video filters cover scale, crop, dar, deinterlace, fieldorder, format, fps, hwupload, letterbox and overlay; audio filters aformat, aresample, join and stereo.

Video encoders: x264 and x265 in software, qsv264 on Intel Quick Sync and ni264 on NetInt hardware, plus AVC-Intra, DV, ProRes and XDCAM MXF OP1a mezzanines. Audio: AAC, Dolby Digital AC-3, Dolby Digital Plus E-AC-3 and PCM. Containers MP4, MOV, MXF and TS; streaming packagers hls3 (TS segments), hls5 (fMP4) and dash, with optional subtitle tracks.

- Logic: analyze probes codec, raster, frame rate, duration, channels; decide / mdecide branch; eval runs Jinja-style expressions; setvar writes $Variables; delay holds a package
- Stream processing: concat stitches up to 16 sources into one timeline; copy passes through with no re-encode
- Subtitles: ccinject adds caption tracks without re-encoding; whisper transcribes speech to captions
- File operations: move and delete on storage URLs; notify sends e-mail or webhooks

JOBS, WATCH FOLDERS AND LOGS

Watch folders poll an FTP, SMB or local folder on a schedule; every file matching a name mask becomes a job through the chosen workflow. One-off jobs are submitted by hand with a priority and workflow variables. The Jobs list finds any task by ID, title, workflow, state or date and shows outputs and per-node timing; Job Logs is a chronological stream of every per-node event, filterable by workflow, watch folder, phase and time range.



Dashboard on the Noisypeak Cloud: file-transcoding throughput by date, last workflows, last tasks and watch folders.

DASHBOARD AND REPORTING

The dashboard is the control centre: total tasks with success, issues and failed counts, a monthly throughput chart with date range, an execution-outcome pie, job count by workflow, a hot-nodes treemap that shows which node types consume the processing time, and a filter by run-time option values such as codec, container or HEVC preset. Every chart exports as SVG, PNG or CSV; Prometheus and Grafana carry the same metrics to your monitoring.

- Per-node execution time and call count in a treemap
- File-size-versus-time scatter plot across the account
- Status dots on last workflows, tasks and watch folders
- Prometheus, Grafana and AI-powered anomaly detection

LIVE CHANNELS, TEMPLATES AND DISTRIBUTIONS

A live channel binds an input stream — UDP, RTMP, SRT, HTTP/HTTPS or HLS pull — to an encoder template and an availability zone, with DVR depth and a passthrough toggle per channel. Templates hold the audio block and one or more video streams for ABR: one template, many channels; a change propagates on the next restart.

Distributions expose a bundle of origin and live channels through a chosen point-of-presence, optionally restricted by a network whitelist — one audience, one PoP, one set of channels. Third-party HLS feeds are registered by URL and forwarded through the edge without re-encoding, side by side with platform-encoded channels.

- Inputs: UDP · RTMP · SRT · HTTP/HTTPS · HLS pull

- Per-channel DVR depth, passthrough and availability zone
- Encoder templates with multi-stream ABR ladders
- PoP selection and network whitelist per distribution
- Third-party HLS channels forwarded without re-encoding

FEATURES

Agentic workflow creation

AI agents design processing and transcoding pipelines from content analysis, delivery targets and available resources.

Visual designer

Drag-and-drop graphs of up to 250 steps; fragments, variables, import and export; Python nodes for custom logic.

Content-aware encoding

Per-asset profiles tuned with SSIM and VMAF; automated A/B testing keeps the best configuration.

CPU, GPU and ASIC encoding

x264 and x265 in software; qsv264 on Intel Quick Sync; ni264 on NetInt; hwupload for accelerator memory.

Watch folders

FTP, SMB or local folders polled on a schedule; every matching file becomes a job through the chosen workflow.

Captions and transcription

OpenAI Whisper speech-to-text produces subtitle files; ccinject adds caption tracks without re-encoding.

Live channels and distributions

UDP, RTMP, SRT, HTTP and HLS pull channels on encoder templates; PoP-based distributions with whitelists and third-party HLS.

Self-healing and predictive scaling

Agents detect and resolve common issues; load is forecast and balanced across cloud and on-premise nodes.

Reporting

Per-node timing, success and failure counts, hot-node treemap; charts export to SVG, PNG, CSV; Prometheus and Grafana.

SPECIFICATIONS

PLATFORM

Host OS	Ubuntu · Amazon Linux
Environments	Noisypeak Cloud · AWS · Google Cloud · MS Azure · Kubernetes · Docker
Delivery	Dockerized software · Ansible playbook setup and update
Media processing nodes	1 to 100, auto-scaling
Transcoding nodes	2 to 500
Workflow complexity	Up to 250 processing steps per workflow

INPUTS

Files	Watch folders on FTP, SMB or local storage · signed S3 · HTTPS · manual submission with priority and variables
Live	UDP · RTMP · SRT · HTTP/HTTPS · HLS pull
Formats	All major video and audio codecs, live streams and file-based content

PROCESSING NODES

Stream mapping	map/video · map/audio · map/text · map/timecode
Video filters	scale · crop · dar · deinterlace · fieldorder · format · fps · hwupload · letterbox · overlay
Audio filters	aformat · aresample · join · stereo
Video encoders	x264 · x265 · qsv264 (Intel QSV) · ni264 (NetInt) · avcintra · dv · prores · xdcam
Audio encoders	aac · ac3 · eac3 · pcm
Logic	analyze · decide · mdecide · eval · setvar · delay
Stream processing	concat (up to 16 sources) · copy
Subtitles and AI	ccinject · whisper (OpenAI Whisper)
Files and notifications	download · upload · move · delete · notify (e-mail, webhook)

OUTPUTS

Containers	MP4 · MOV · MXF · TS · WebM · AVI
Streaming	HLS v3 (TS) · HLS v5 (fMP4) · MPEG-DASH, optional subtitle tracks
Destinations	Any storage URL — S3, HTTPS and other supported schemes

AI AND ANALYTICS

AI model types	Content analysis · quality prediction · resource optimisation
Content analysis	Scene detection · quality assessment with SSIM / VMAF · complexity scoring
Auto-scaling	Predictive scaling based on AI forecasting
Machine learning	Continuous learning · custom model training

INTEGRATION AND MONITORING

APIs	RESTful API · GraphQL · webhook notifications
Monitoring	Prometheus · Grafana · AI-powered anomaly detection
Reports	Every dashboard chart exports as SVG, PNG or CSV

WHERE IT IS USED

VOD library processing

Watch folders and workflows turn every delivered file into mezzanines, MP4 ladders, HLS and DASH packages with captions — the asset library behind Noisypeak Playout.

Broadcast mezzanines

AVC-Intra and XDCAM MXF OP1a, ProRes and DV masters, MPEG-TS pre-encodes and 5.1 AC-3 deliverables from one graph.

Conditional pipelines

analyze and decide route interlaced, odd-aspect or oversized sources to the right filter chain and to software or hardware encoders automatically.

Live channels at the edge

Contribution feeds encoded on templates and exposed per audience through distributions and points of presence, next to third-party HLS channels.

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