BROADCAST MANAGEMENT GROUP

Media Command™

OPERATOR & ENGINEERING GUIDE

Organization: Broadcast Management Group (BMG)

Version: Media Command™ v0.91

Reference Data: 12,353 Indexed Broadcast Assets

Date: October 2026

PRODUCTION · VERIFIED WITH REAL MEDIA

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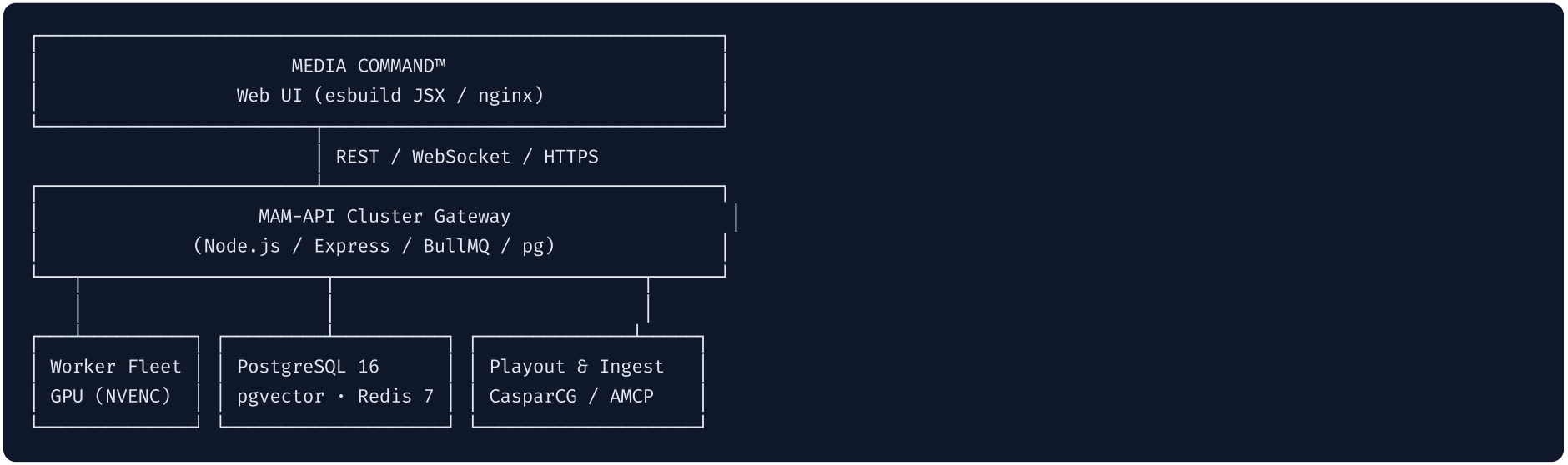
1. System Overview

Media Command is a broadcast media asset management, live capture, and playout platform.

Architecture



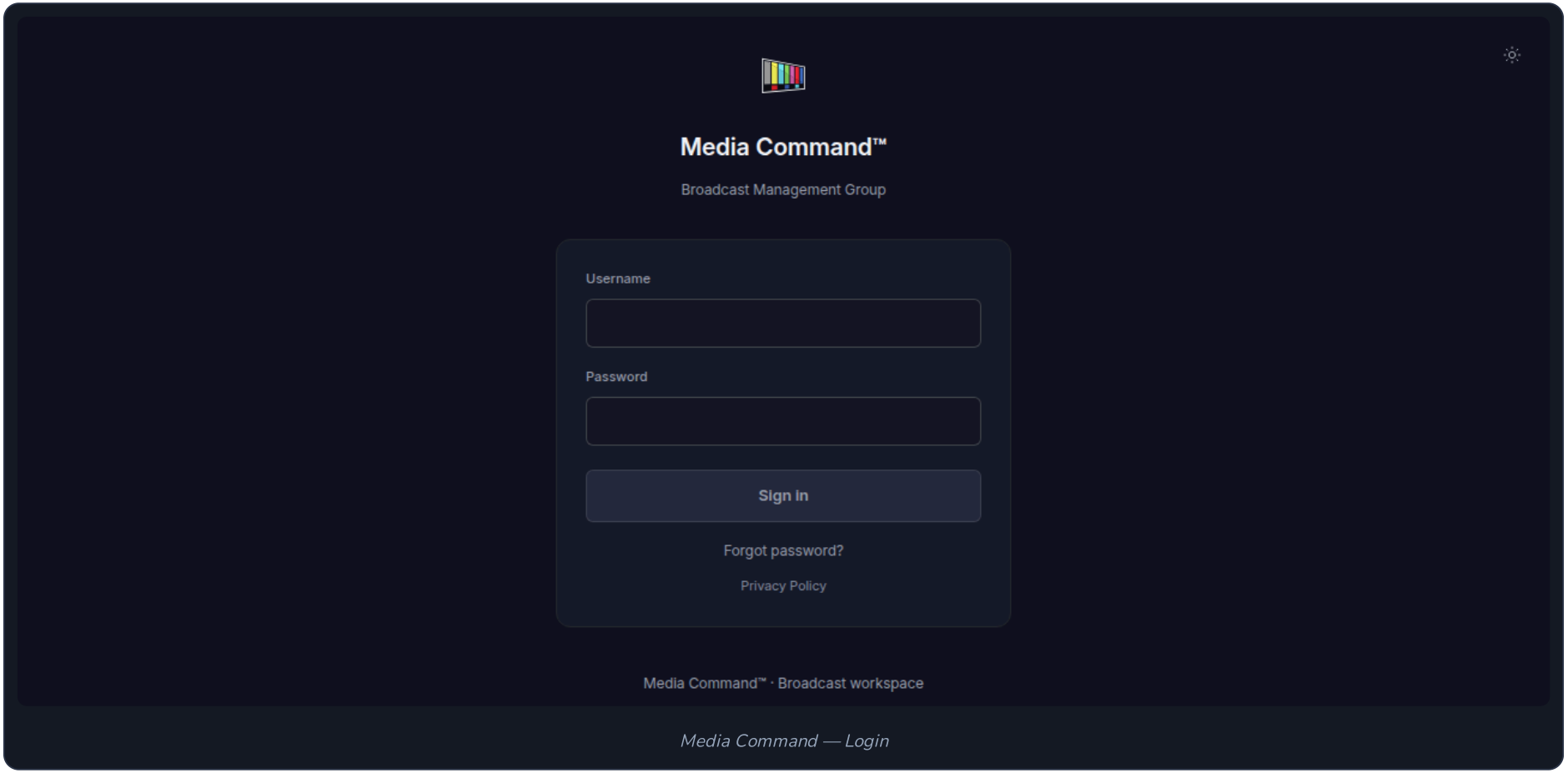
Technology Stack

- **Web UI:** JSX components bundled by esbuild, served by nginx. HLS.js for adaptive playback, WebRTC (WHEP) for sub-second monitoring.
- **API:** Node.js / Express (ESM), PostgreSQL 16 with pgvector, Redis 7, BullMQ job queues.
- **Workers:** GPU-accelerated transcoding (NVIDIA NVENC/NVDEC) across a distributed compute fleet.
- **Playout:** CasparCG sidecar containers driven over AMCP, with HTML graphics overlay layers.

TAMS fMP4 Master Flows

Media Command records into **fragmented MP4 (CMAF)** containers. Segments are written sequentially to NVMe, allowing editors to scrub up to the live record edge while capture is still in progress. H.264 and HEVC feeds are stream-copied directly — no transcode required.

2. Authentication & Access Control



Media Command — Login

Authentication Methods

- **Local credentials:** bcrypt-hashed passwords (cost 12).

- **SSO via Authentik:** OAuth2/OIDC brokering @broadcastmgmt.com (M365) and @bmgremi.com (Google Workspace).
- **MFA:** TOTP enforcement available for administrative accounts.

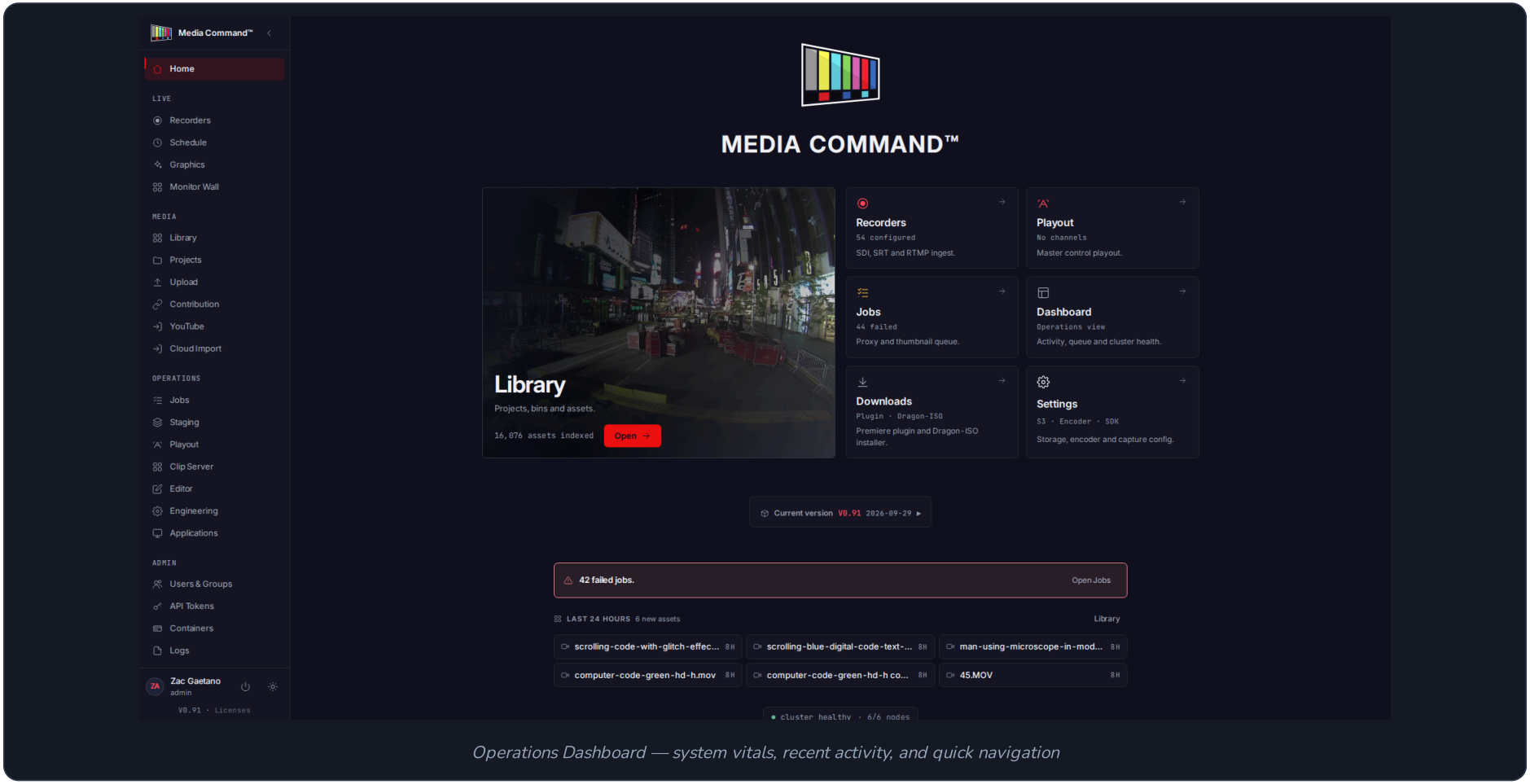
Session: `express-session` with `connect-pg-simple` store. Cookie: `dragonflight.sid`, httpOnly, 30-day lifetime.

Roles

Role	Scope
Admin (`platform_admin`)	Full cluster control, user/token provisioning, container management, storage configuration.
Operator	Recorder control, schedule automation, playout queue manipulation, graphics triggering.
Viewer	Read-only access to metadata and proxy streams. Default for new SSO users.

Per-project and per-organization permissions provide granular access beyond the global role.

3. Dashboard



Operations Dashboard — system vitals, recent activity, and quick navigation

- **Asset count:** total indexed assets across all projects.
- **Queue status:** running and failed BullMQ worker tasks.
- **Recorder summary:** enabled and configured capture ports.

- **Recent activity:** files ingested in the last 24 hours.

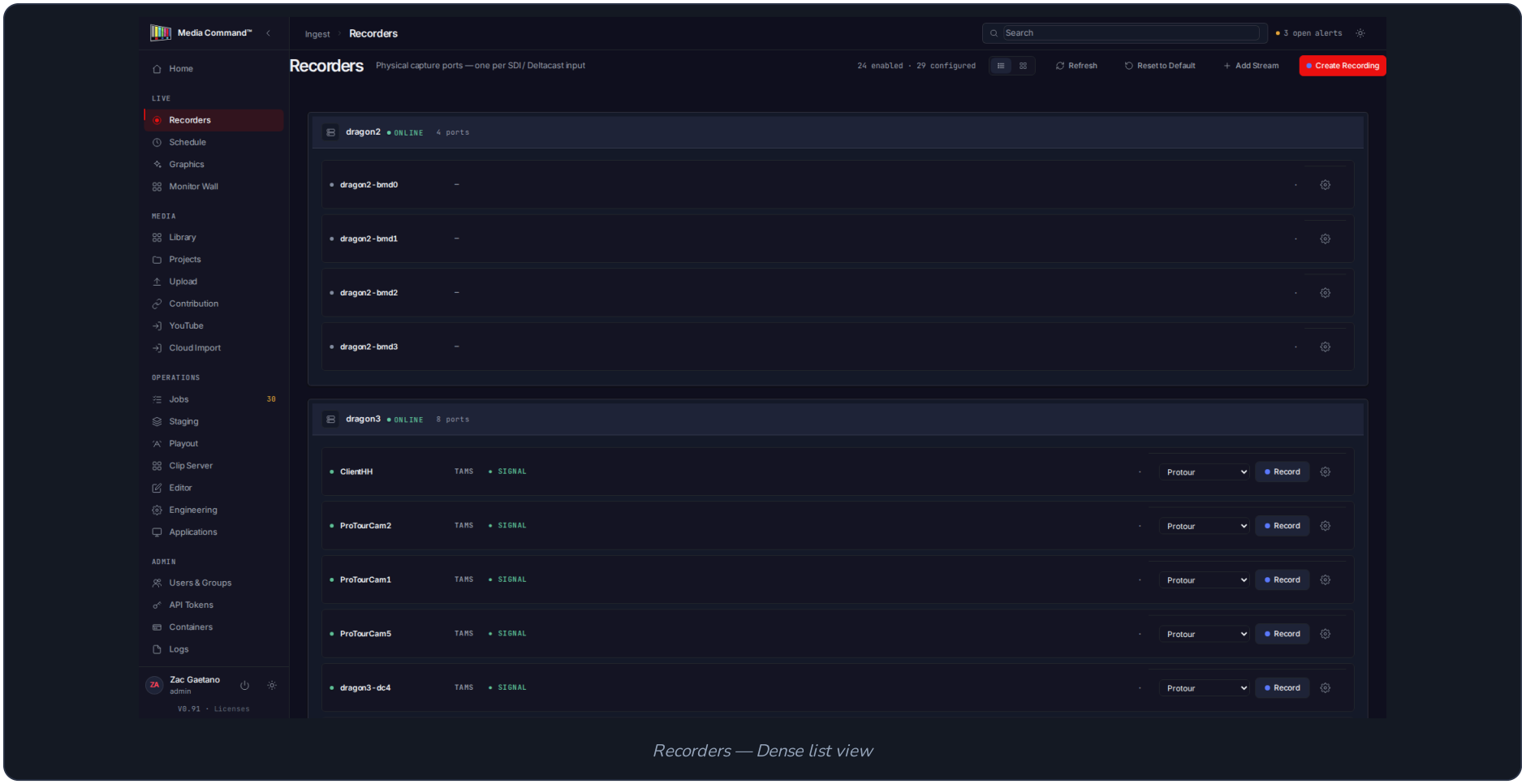
Quick-access tiles link to Library, Recorders, Playout, Jobs, Downloads, and Settings.

4. Recorders

One card per physical capture port (Blackmagic SDI and Deltacast) plus network streams, grouped by node. The header shows *enabled · configured* counts (e.g. 24 enabled · 29 configured).

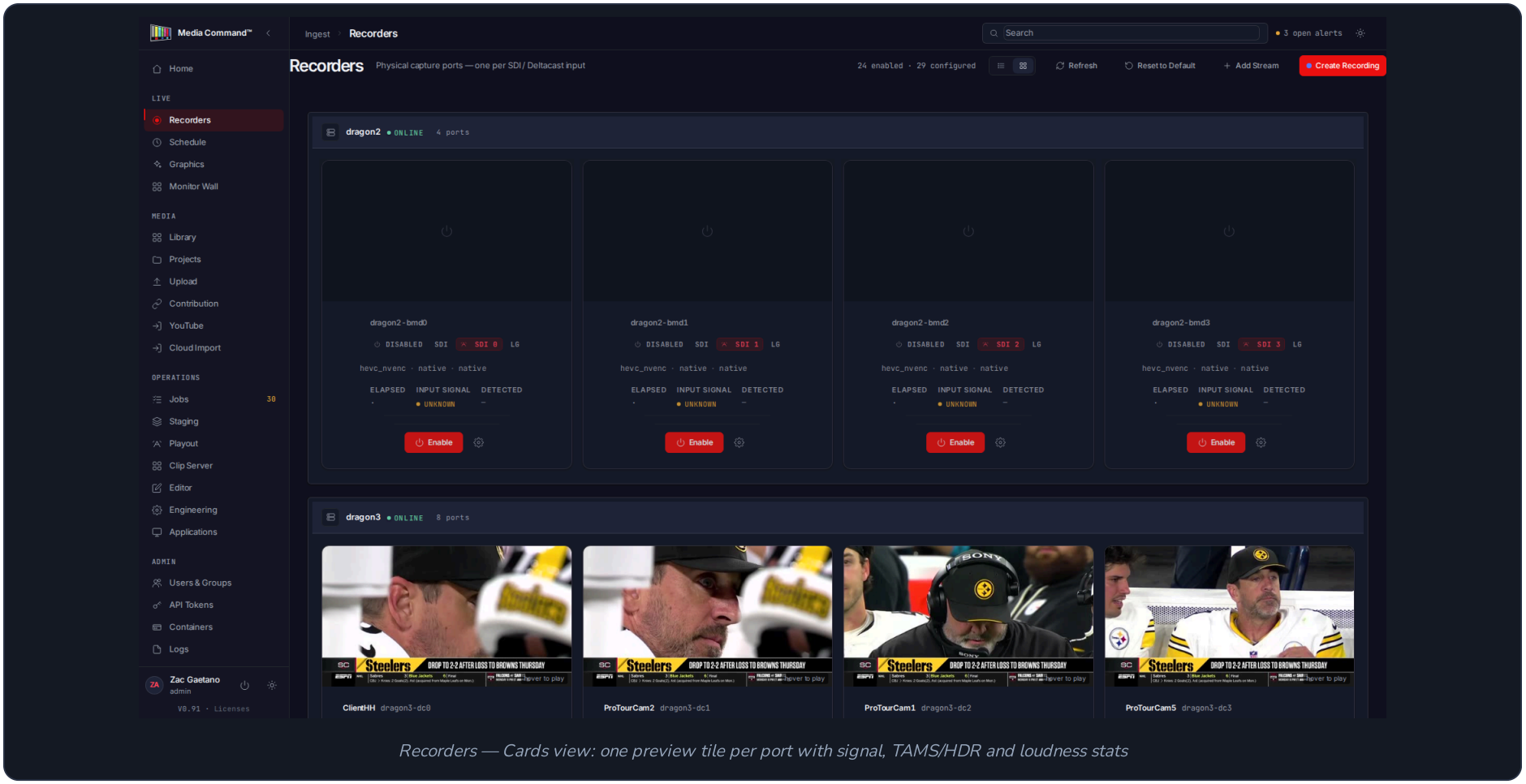
Toolbar

- **Density toggle:** *Dense list* (one line per recorder) or *Cards* (full preview + stats per recorder).
- **Refresh**, **Reset to Default** (disabled while anything is recording), **Add Stream**, **Create Recording**.

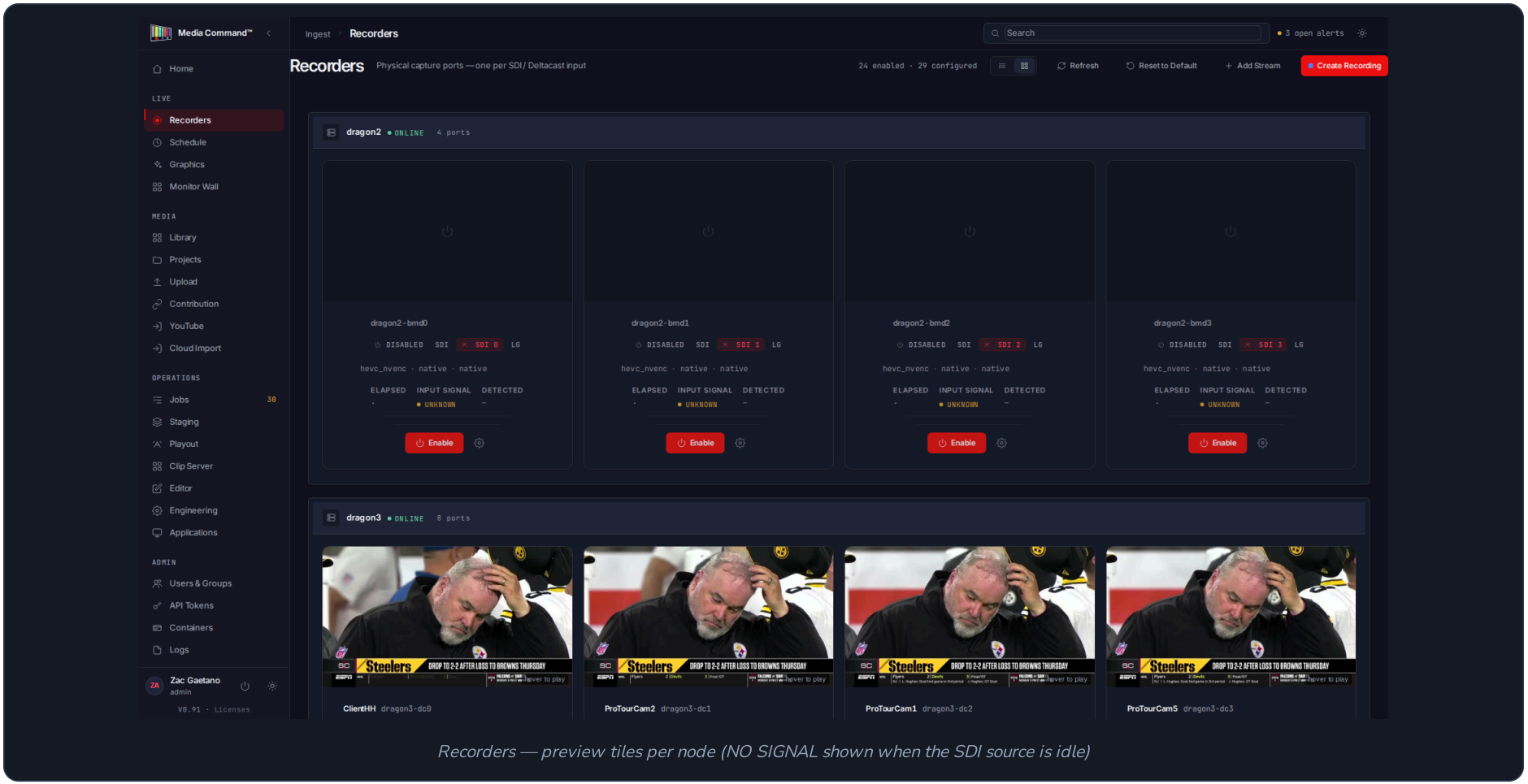


Recorders — Dense list view

Cards view — previews broken out



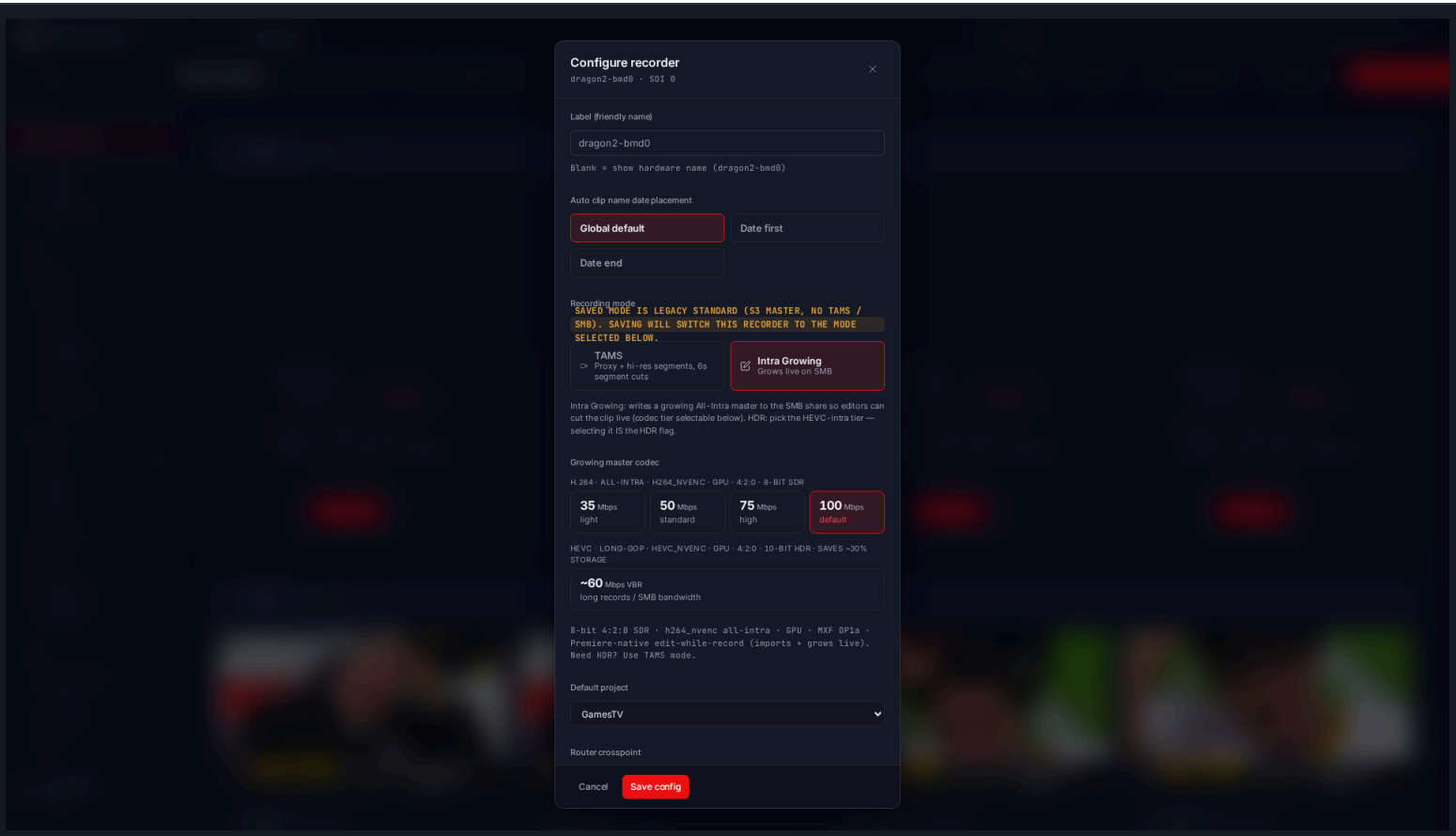
Recorders — Cards view: one preview tile per port with signal, TAMS/HDR and loudness stats



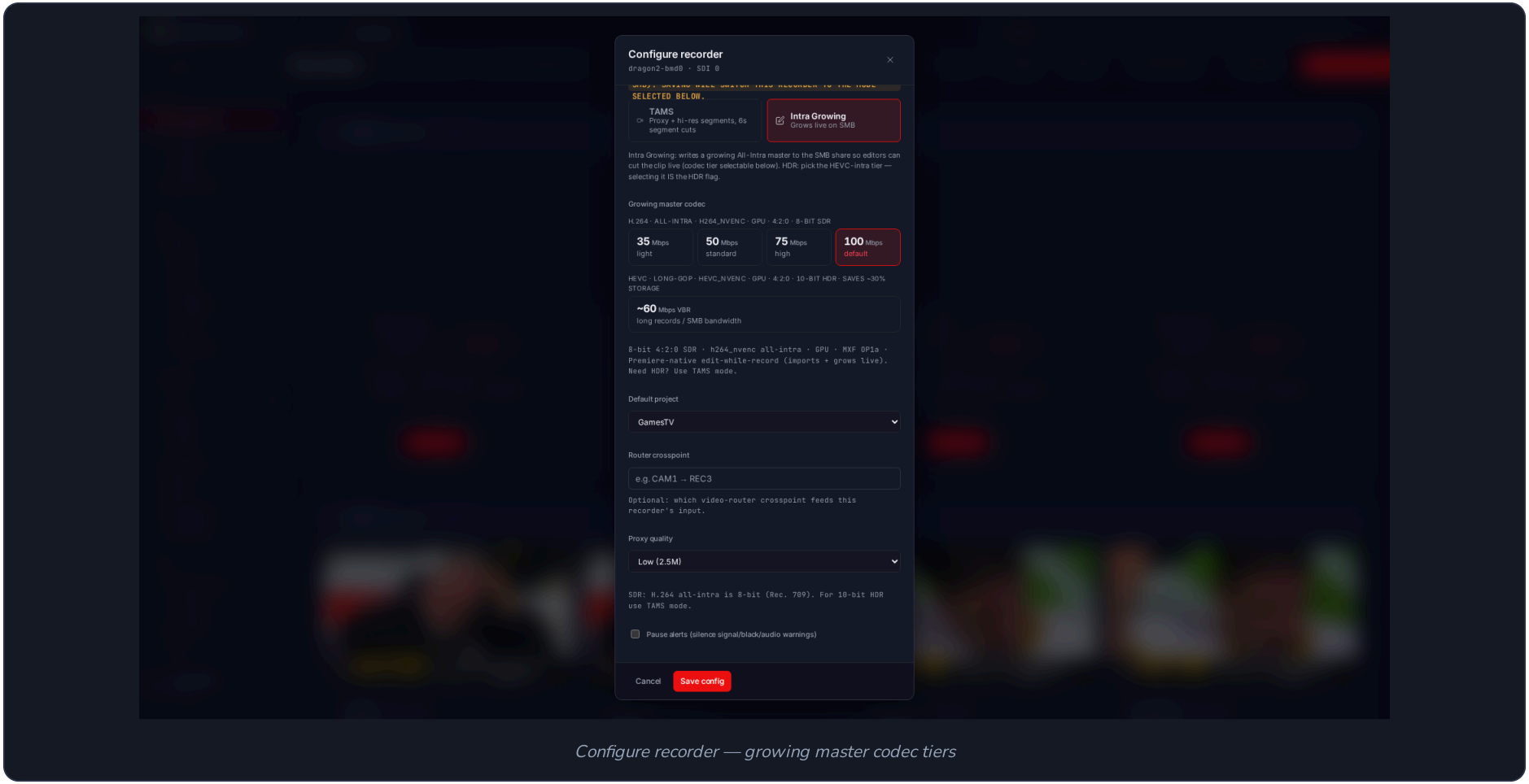
Recorders — preview tiles per node (NO SIGNAL shown when the SDI source is idle)

Each card shows the live preview, detected input signal, elapsed record time, TAMS / HDR badges, loudness, router crosspoint, and a per-recorder **Take project** picker. A **NO SIGNAL** badge means the port has no SDI input; if it appears mid-recording, recording continues but writes no frames.

Configure recorder (gear icon)



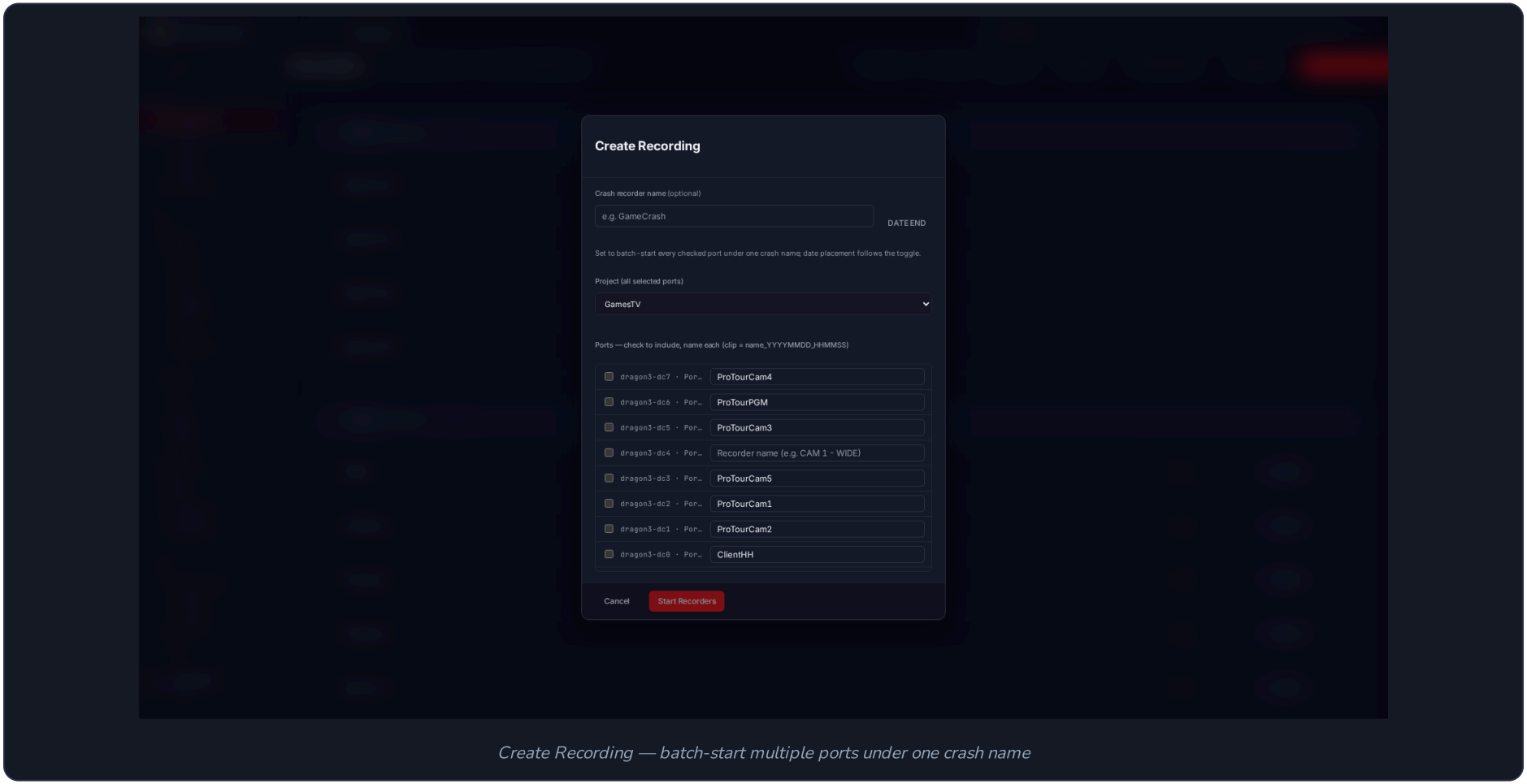
Configure recorder — label, clip-name date placement, recording mode



Configure recorder — growing master codec tiers

- **Label:** friendly name (blank = hardware name, e.g. `dragon2-bmd0`).
- **Auto clip name date placement:** Global default · Date first · Date end.
- **Recording mode:** *TAMS* (proxy + hi-res segments, 6 s segment cuts) or *Intra Growing* (grows live on the SMB share for edit-while-record).
- **Growing master codec:** H.264 all-intra (h264_nvenc, 8-bit SDR) at 35 / 50 / 75 / 100 Mbps, or HEVC long-GOP (hevc_nvenc, 10-bit HDR, ~60 Mbps VBR, ~30% smaller).
- **TAMS hi-res codec:** HEVC long-GOP or AV1 long-GOP (~15% smaller than HEVC; needs an AV1-capable NLE), plus rate control and bitrate.

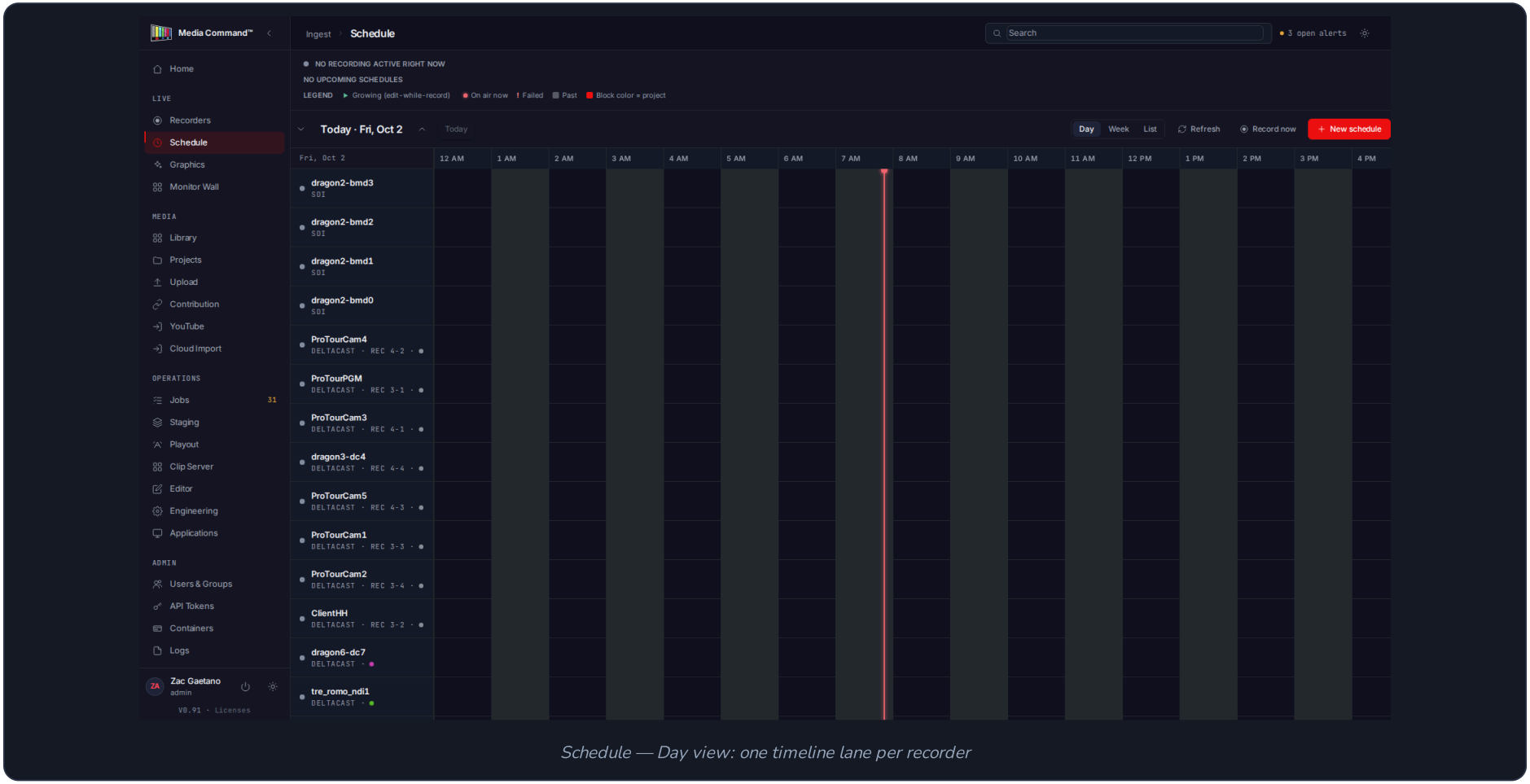
Create Recording (batch start)



Create Recording — batch-start multiple ports under one crash name

- **Crash recorder name** (optional) with a **Date end** toggle for date placement.
- **Project** applied to all selected ports.
- **Ports:** check each port to include and name it; clips are named `name_YYYYMMDD_HHMMSS`.

5. Schedule

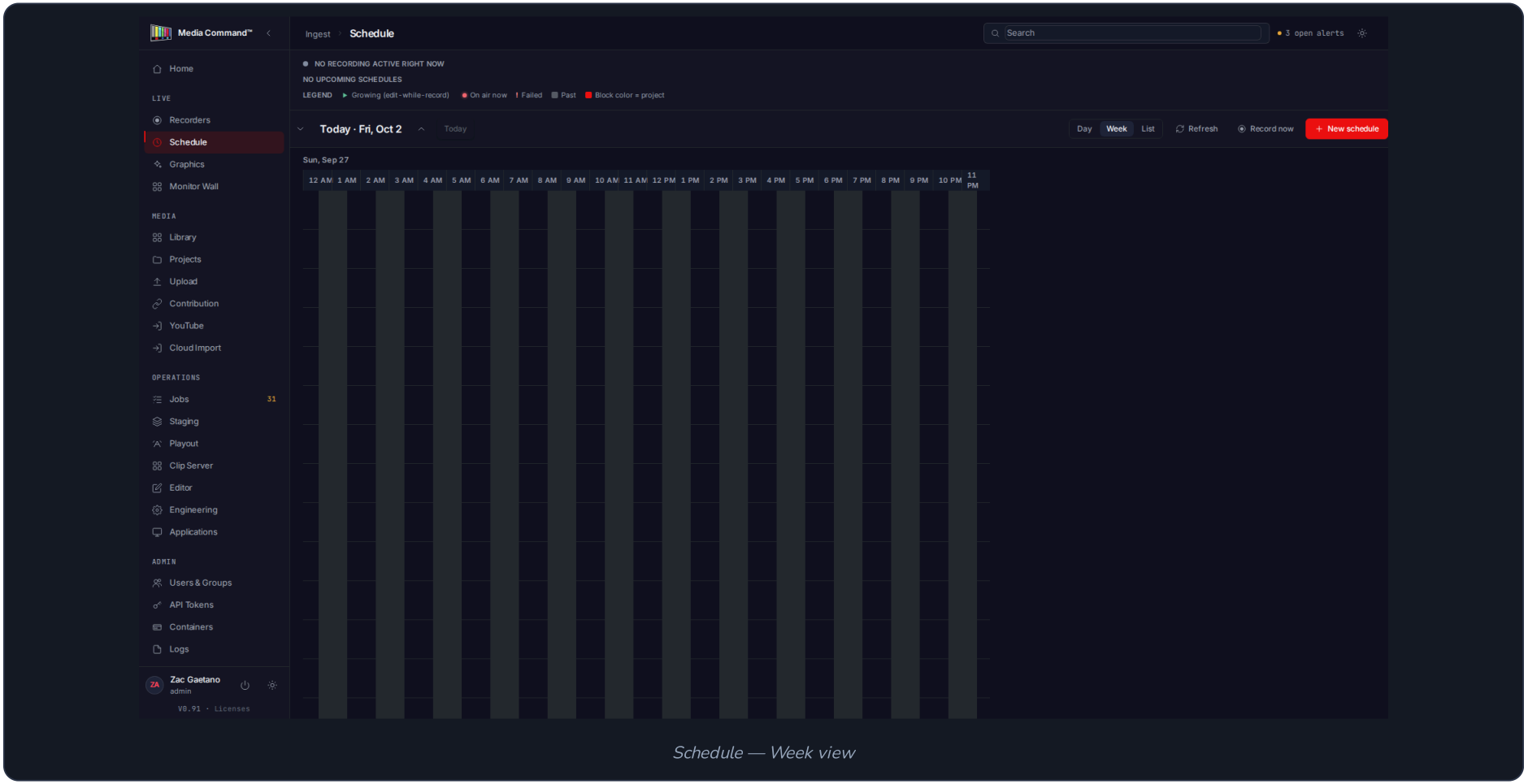


Schedule — Day view: one timeline lane per recorder

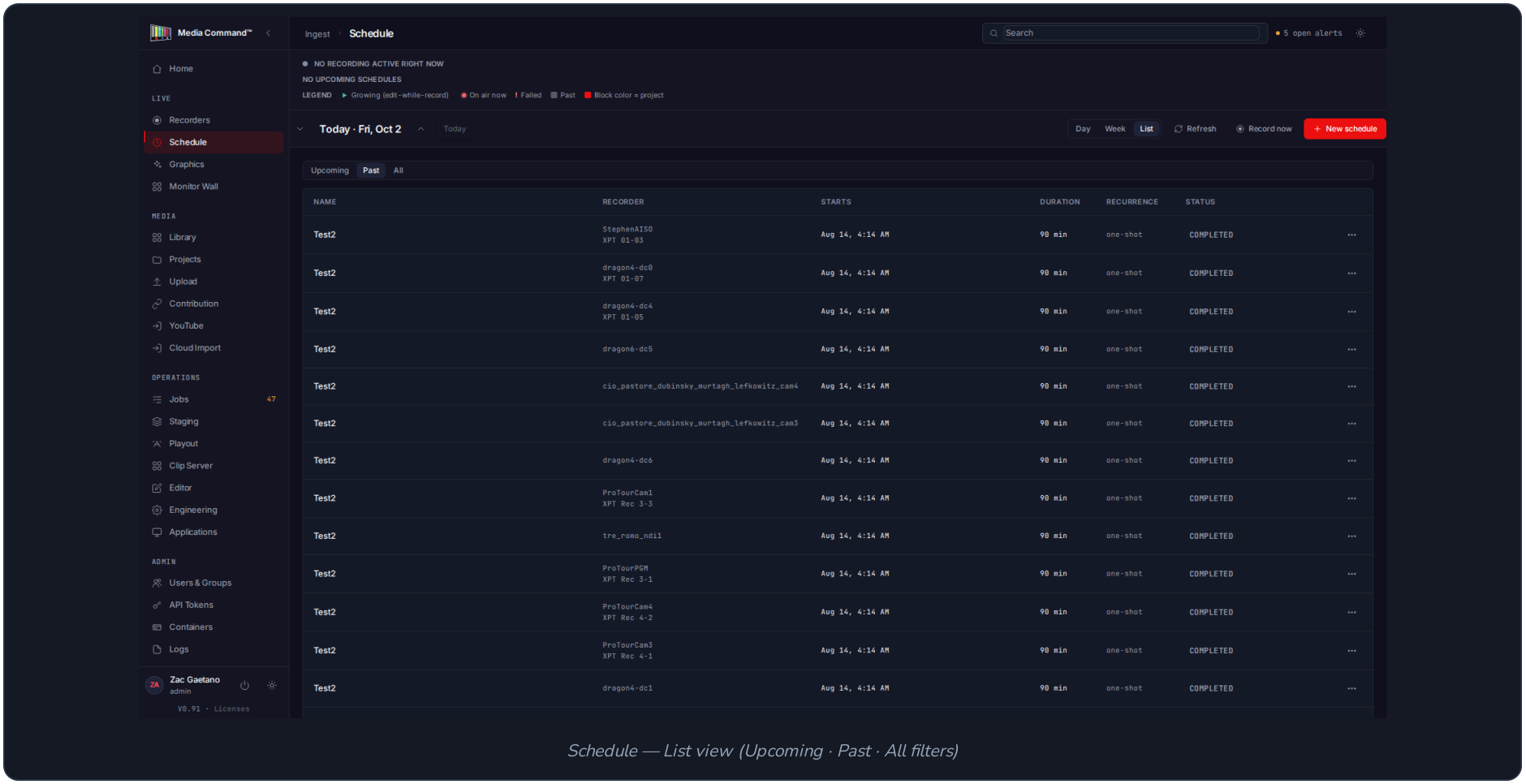
The status strip at the top shows what is recording now and what's next. The legend covers *Growing (edit-while-record)*, *On air now*, *Failed* and *Past*; block colour = project.

Toolbar

- **Date:** previous / next day arrows and **Today**.
- **Views:** Day · Week · List.
- **Refresh**, **Record now** (start recording on multiple recorders immediately), **New schedule**.



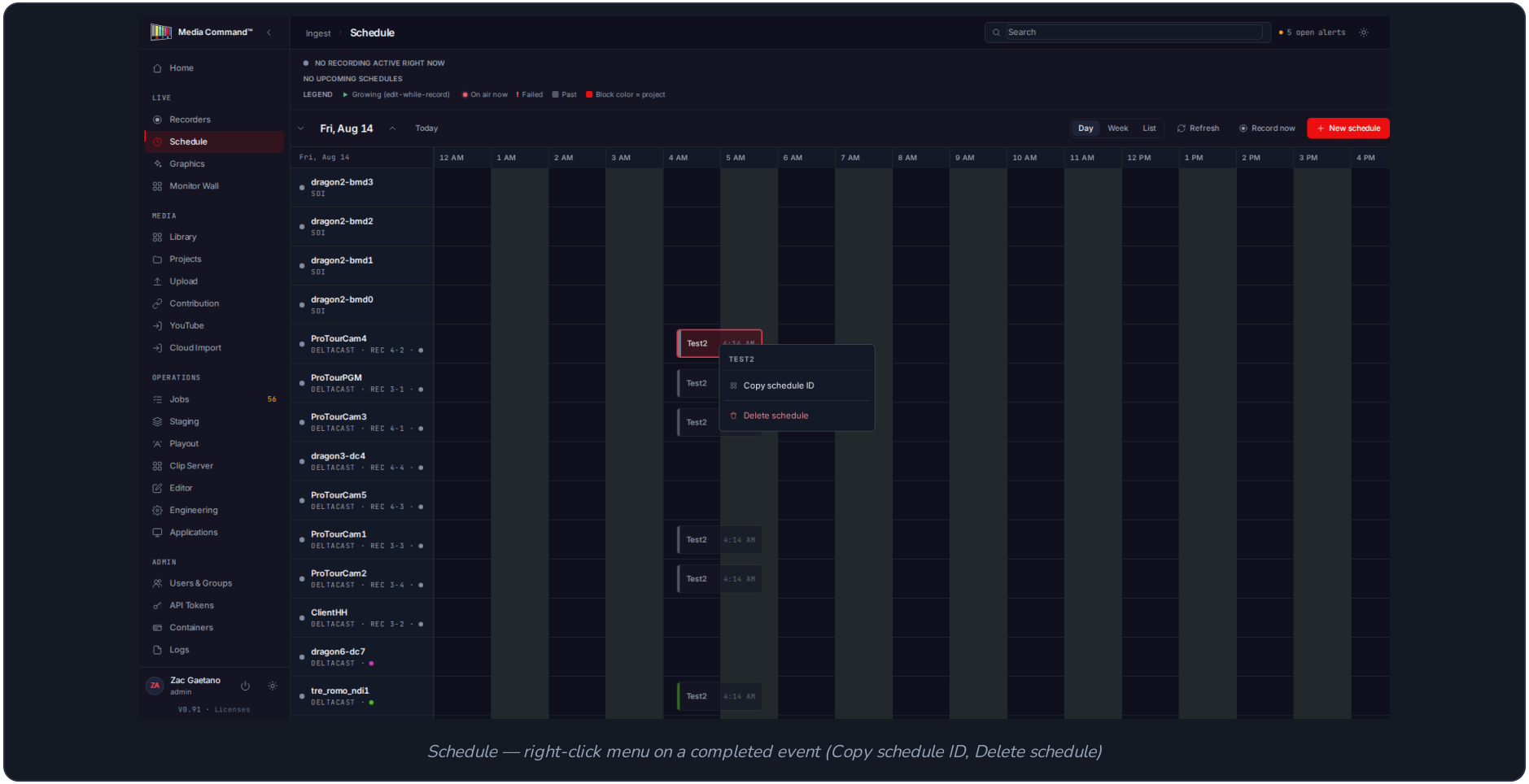
Schedule — Week view



Schedule — List view (Upcoming · Past · All filters)

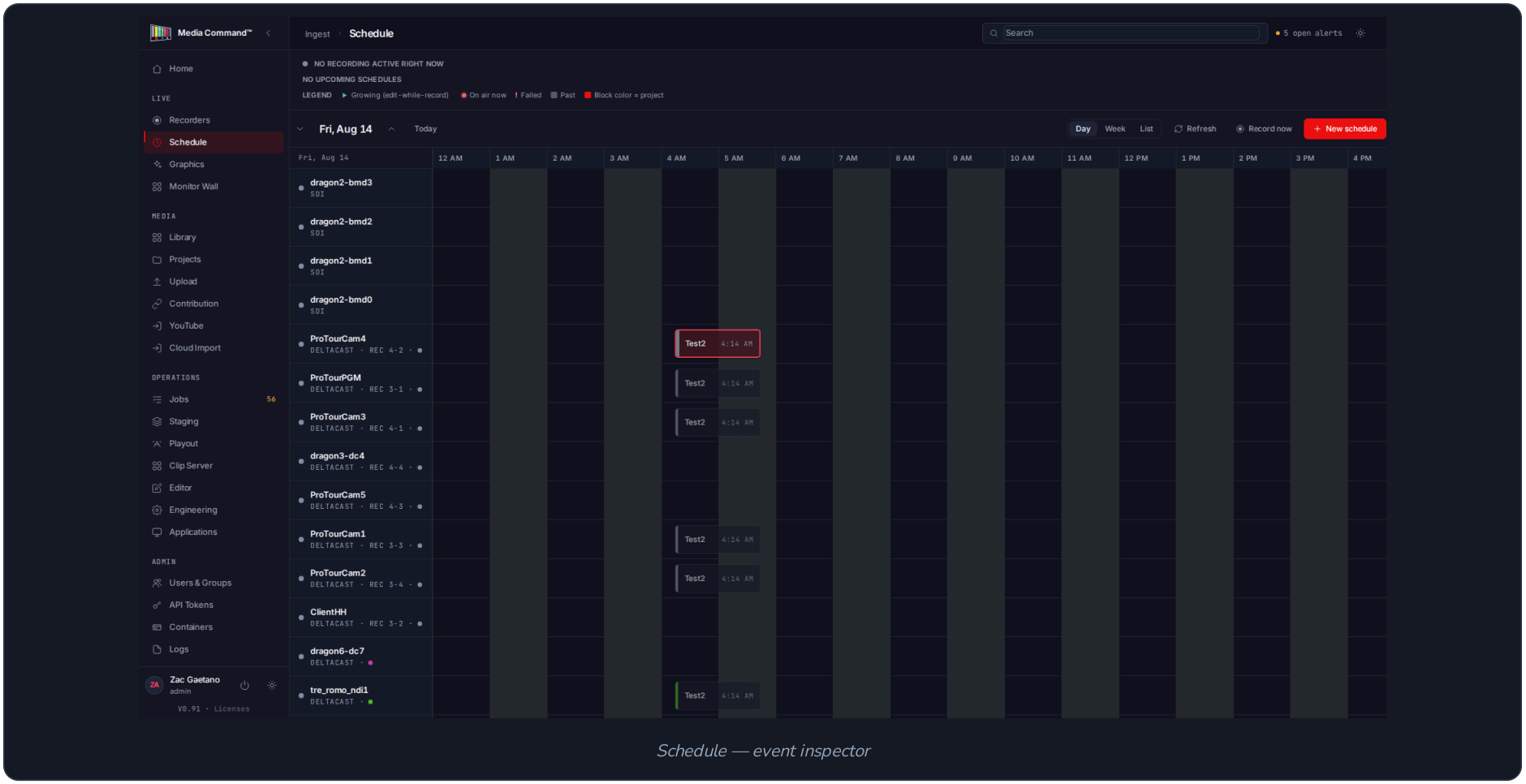
List view columns: Name, Recorder, Starts, Duration, Recurrence, Status (pending · recording · completed · cancelled · failed).

Event menu (right-click a block)



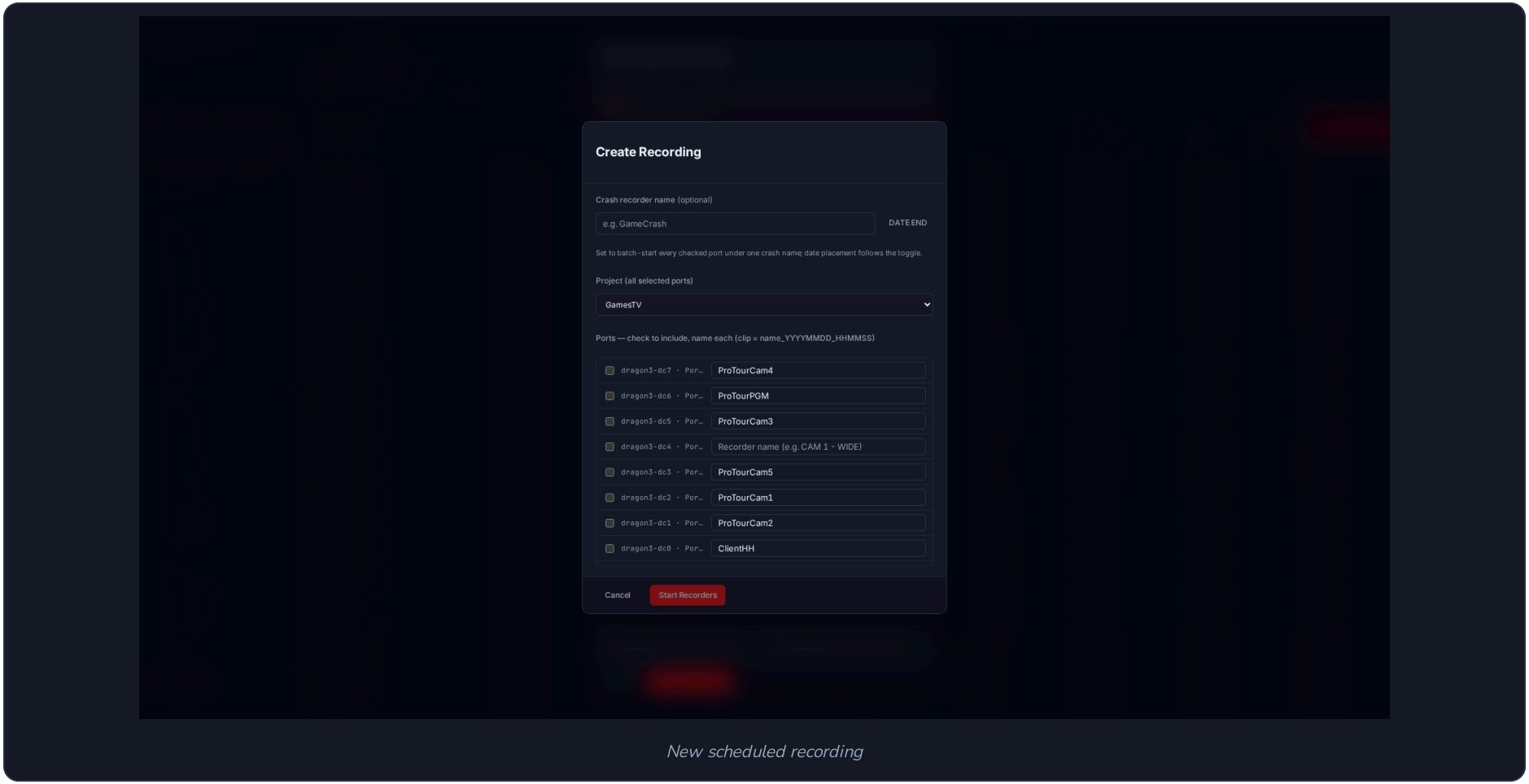
Schedule — right-click menu on a completed event (Copy schedule ID, Delete schedule)

- **Edit…** (pending or failed events) · **Cancel run** (pending or recording) · **Copy schedule ID** · **Delete schedule** (anything not currently recording). The menu only shows actions valid for the event's state; the example is a completed event.
- Left-click a block to open the inspector panel; blocks can be resized on the timeline to change start/end. Marquee and Shift/Ctrl multi-select are supported.



Schedule — event inspector

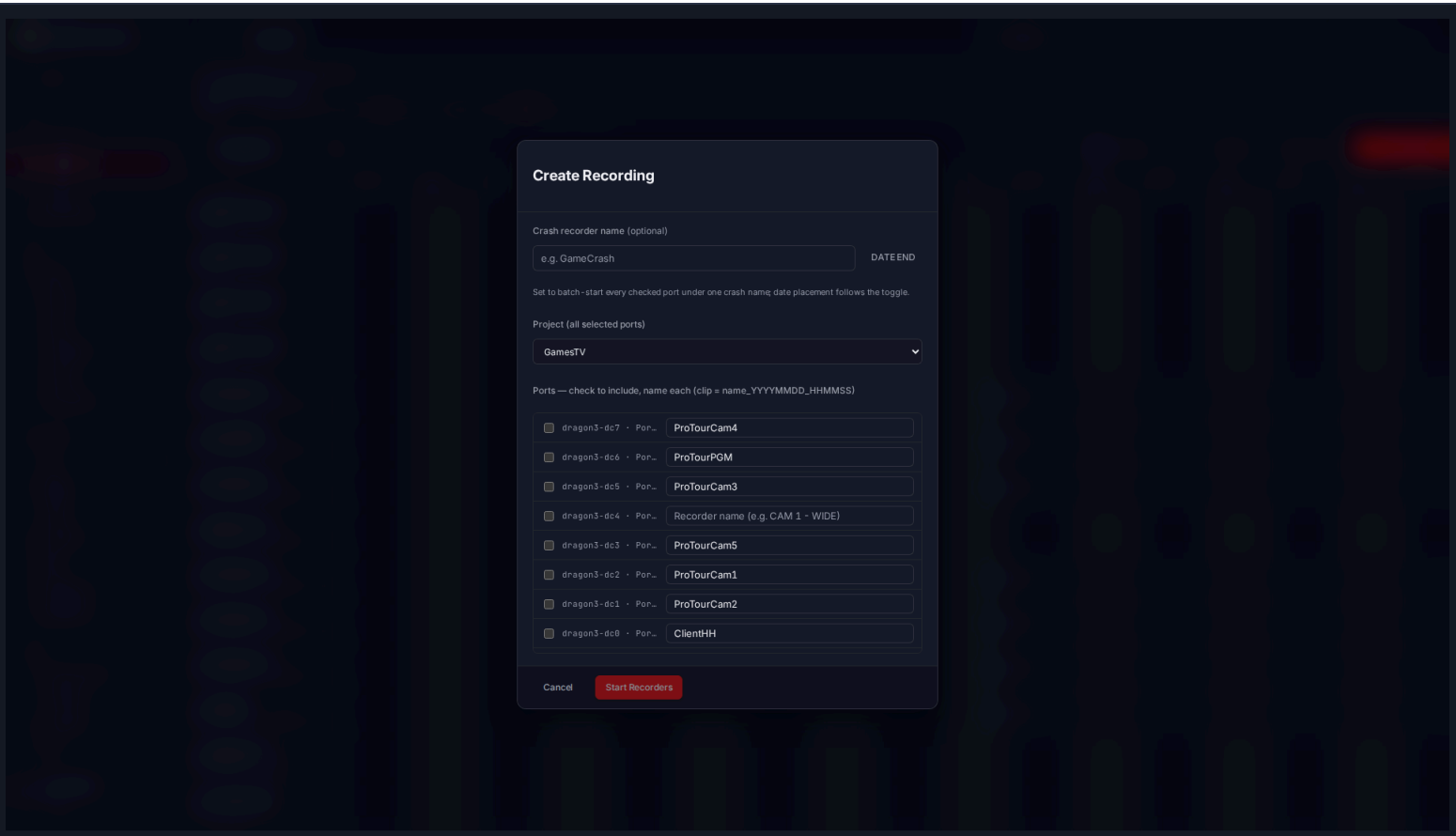
New schedule



New scheduled recording

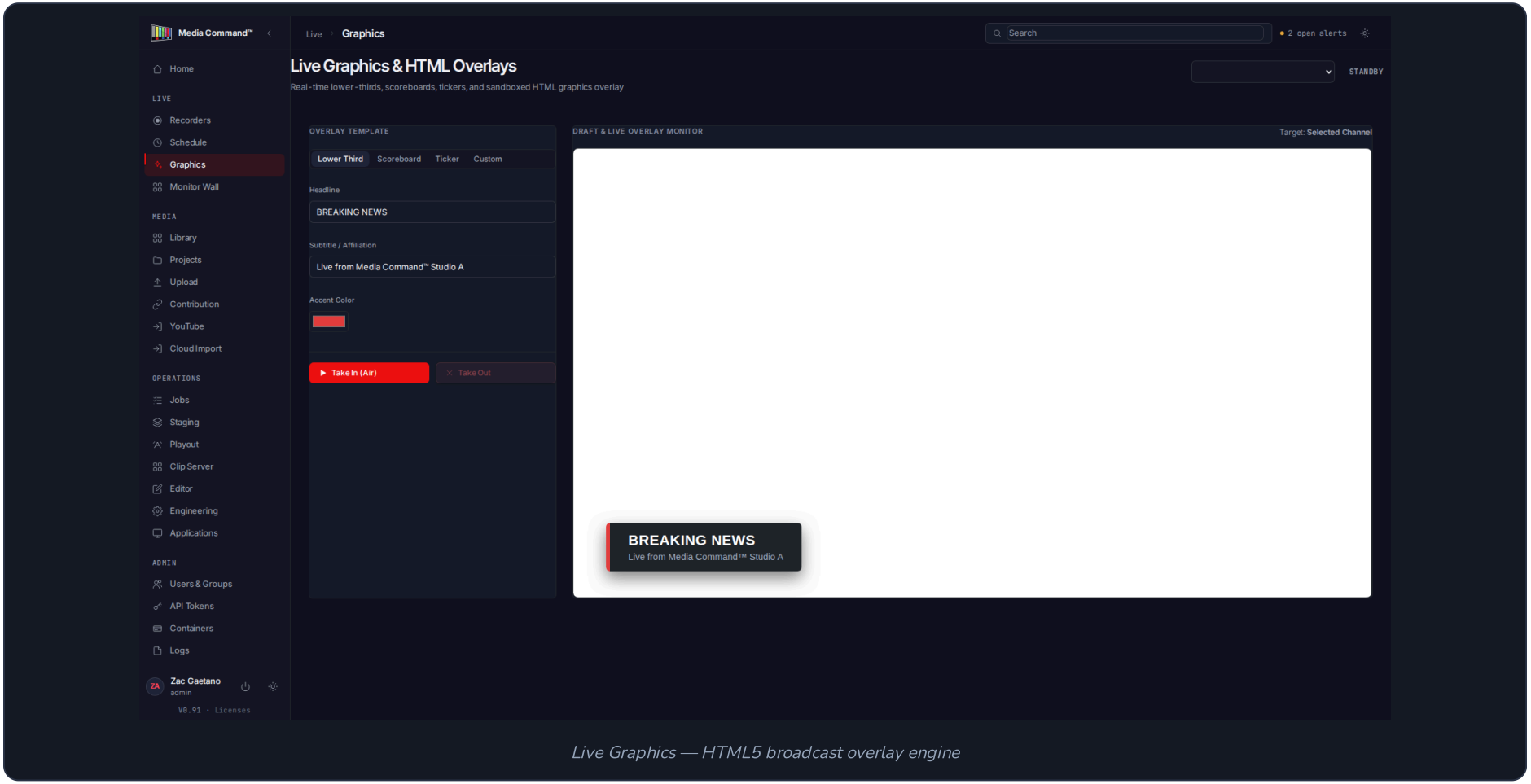
- **Name**, **Recorders** (multi-select with Select all), **Project** (default: recorder's own project), **Bin**, start/end time and recurrence.

Record now



Record now — opens the same batch Create Recording dialog as Recorders

6. Live Graphics



Live Graphics — HTML5 broadcast overlay engine

- Sandboxed Chromium offscreen rendering for lower-thirds, scoreboards, and bugs.
- DSK layer stacking over playout or recorder preview streams.

7. Monitor Wall

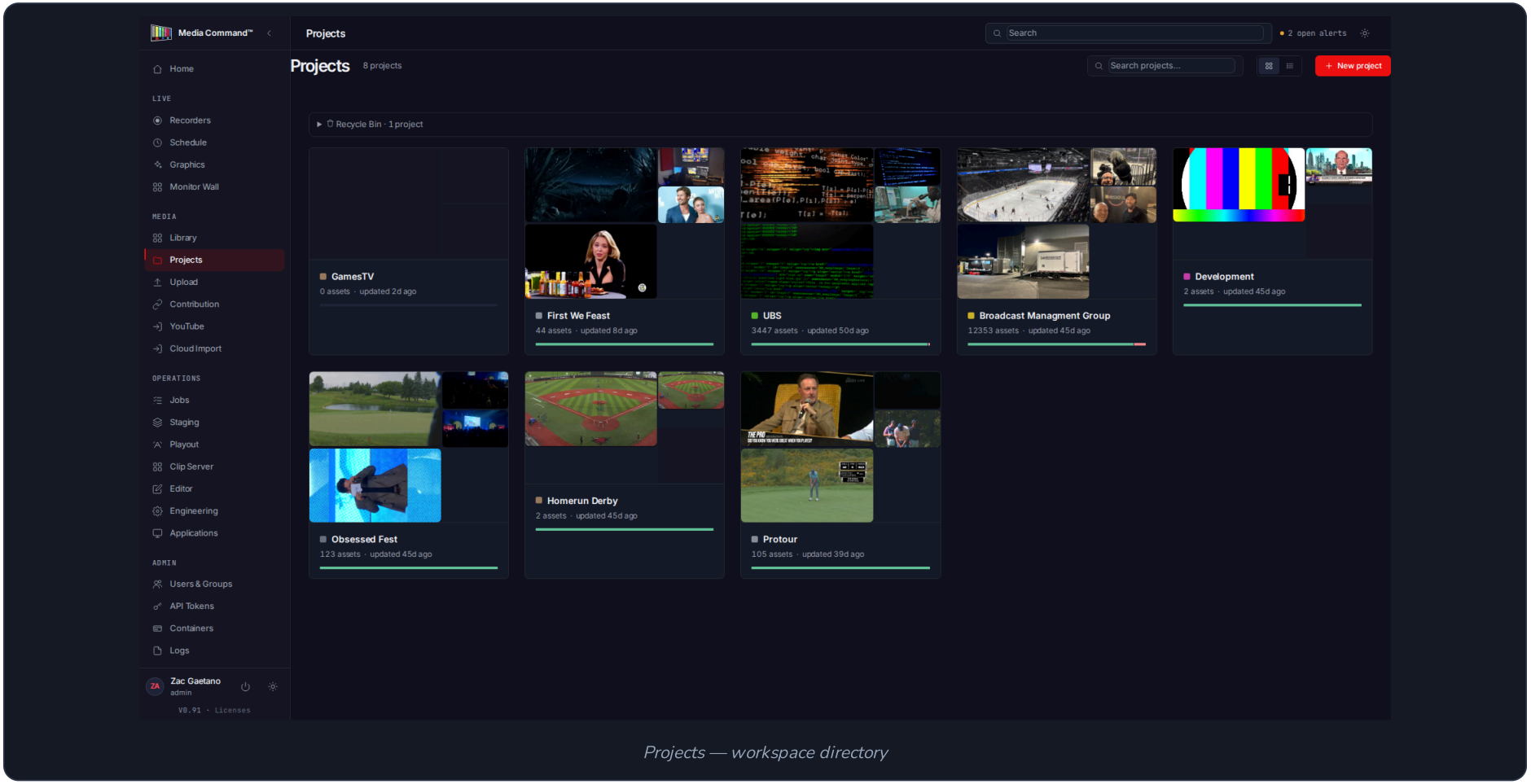


Monitor Wall — high-density WebRTC multiviewer

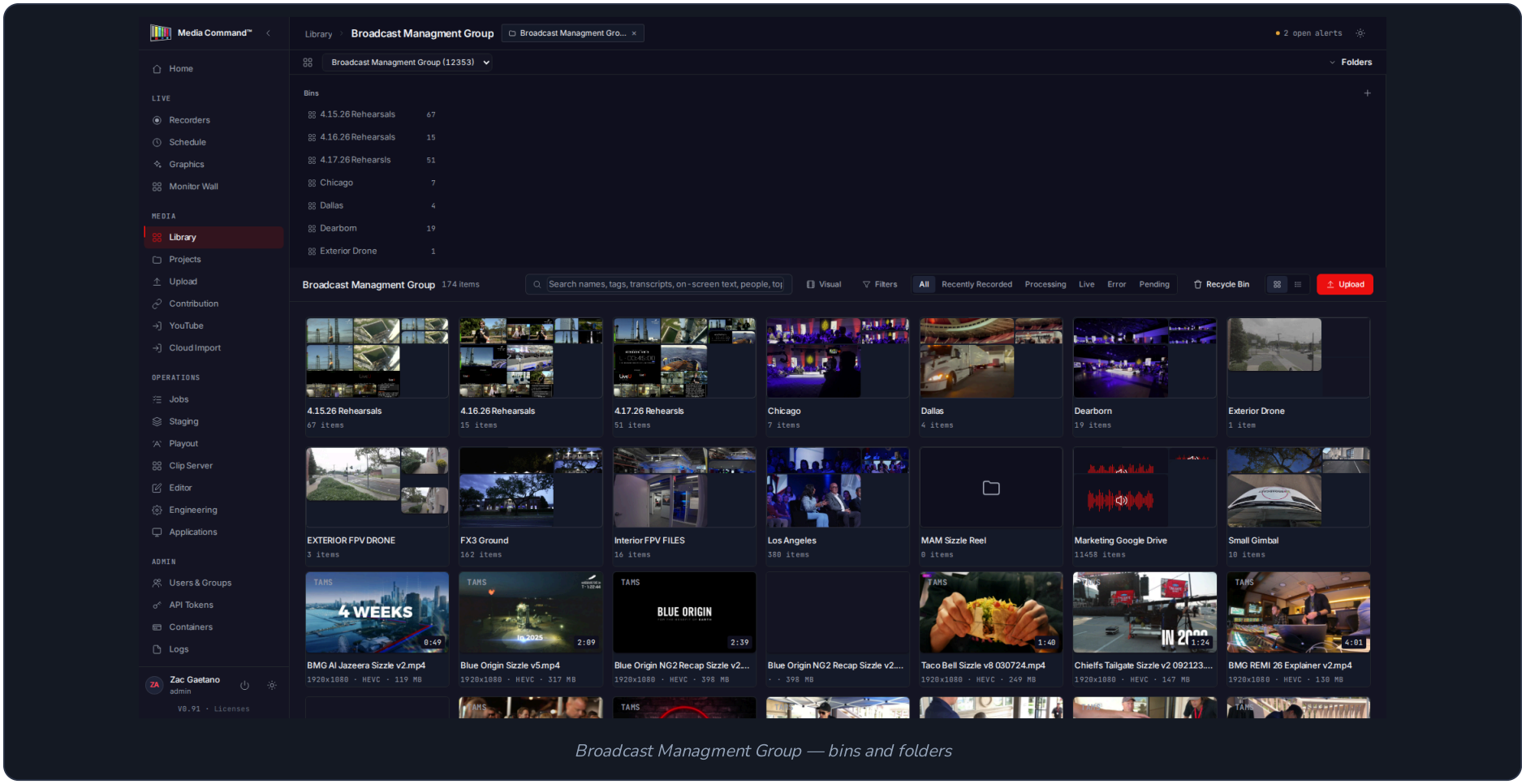
- Grid layouts: `Auto`, `2×2`, `3×3`, `4×4`, `6×6`.
- Feed filters: Recorders, WebRTC, Playout Channels.
- WHEP/WebRTC with sub-second latency.

- Multi-channel audio meters on active tiles.

8. Projects



Projects — workspace directory

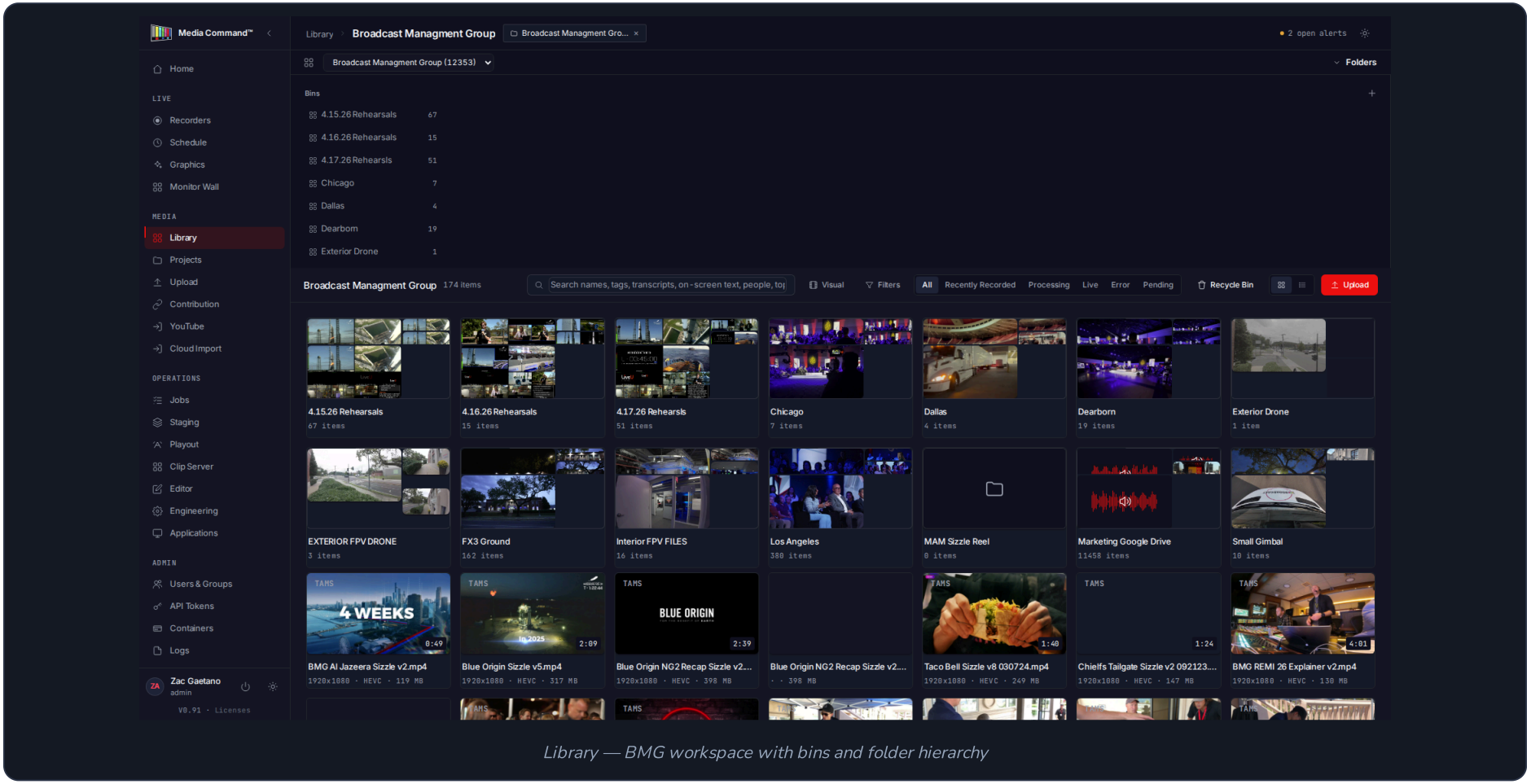


Broadcast Managment Group — bins and folders

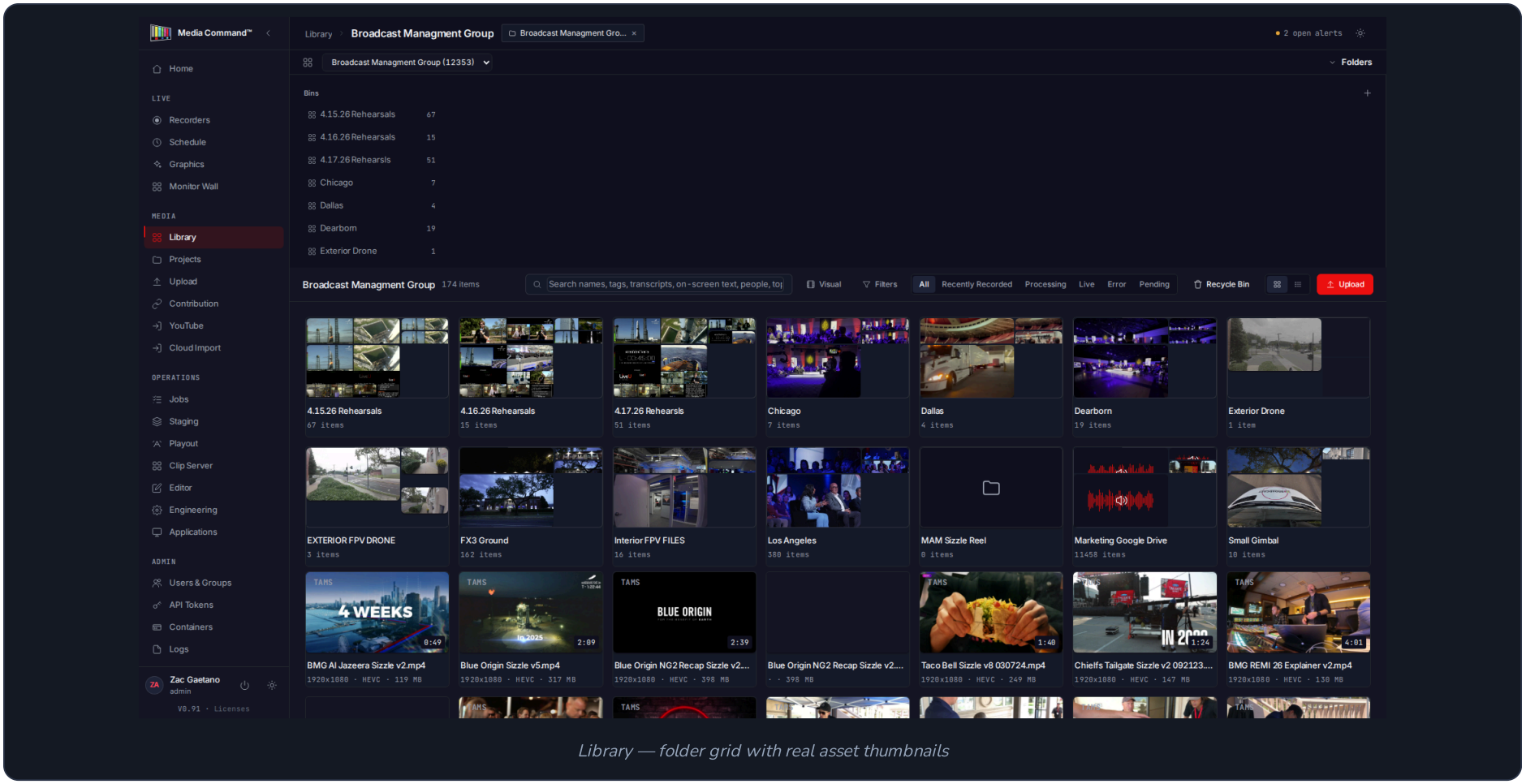
Projects are opened from the Library project switcher and breadcrumbs (there is no Projects button in the sidebar). They isolate media, permissions, and bins. Active projects include Broadcast Management Group (12,353 assets), UBS, Protour, First We Feast, and others.

- **Project creation:** define name, storage allocation, and assigned user groups.
- **Recycle Bin:** deleted assets quarantine separately per project.

9. Library



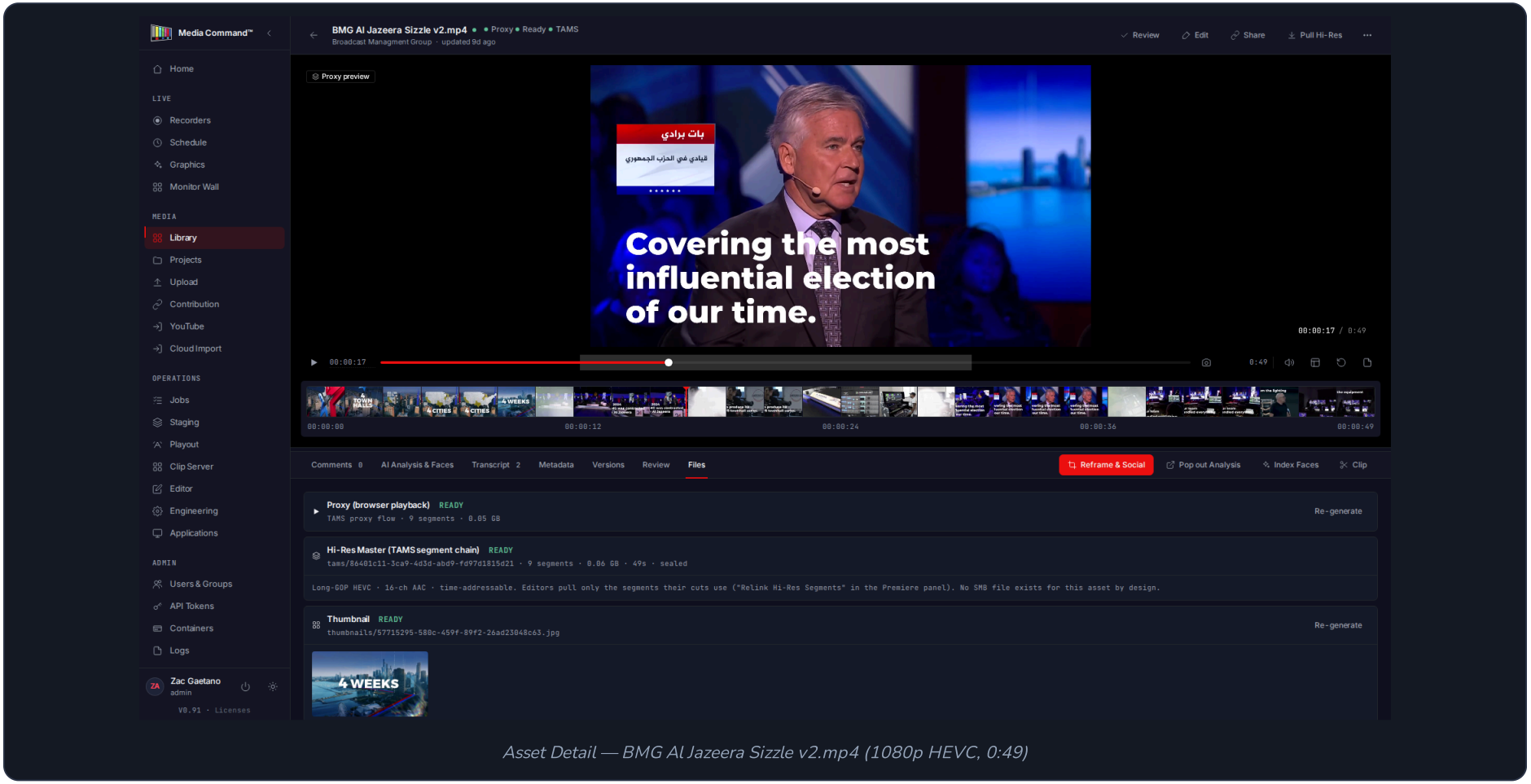
Library — BMG workspace with bins and folder hierarchy



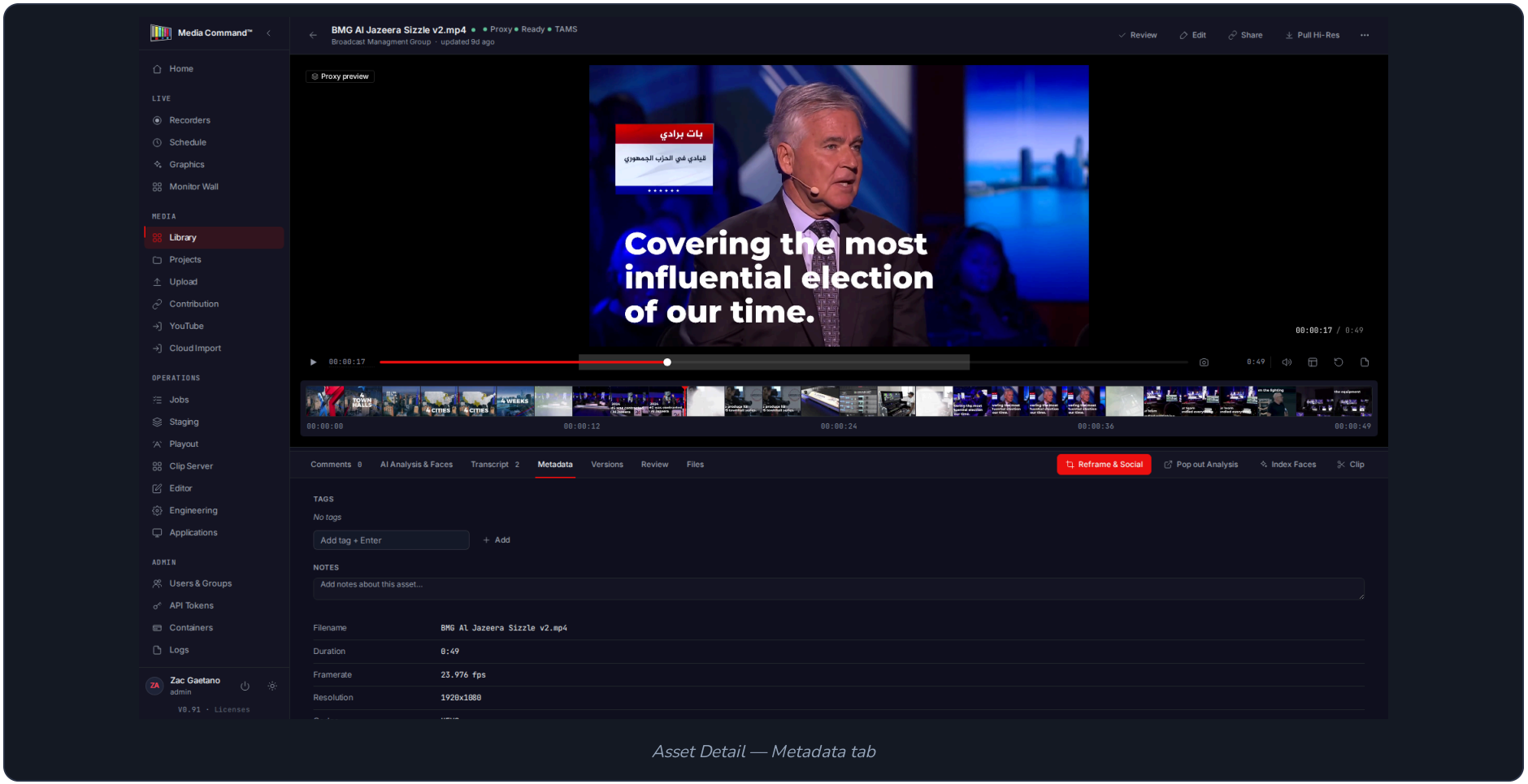
Library — folder grid with real asset thumbnails

- **Project switcher:** dropdown to switch between assigned projects or `★ All Projects (Admin View)`.
- **Search:** full-text across filenames, tags, and metadata.
- **Faceted filters:** file type, codec, resolution, date range.
- **Display modes:** list view and thumbnail grid.
- **Bins:** hierarchical folders. Saved searches provide per-user named filter presets.

10. Asset Detail & Player



Asset Detail — BMG Al Jazeera Sizzle v2.mp4 (1080p HEVC, 0:49)

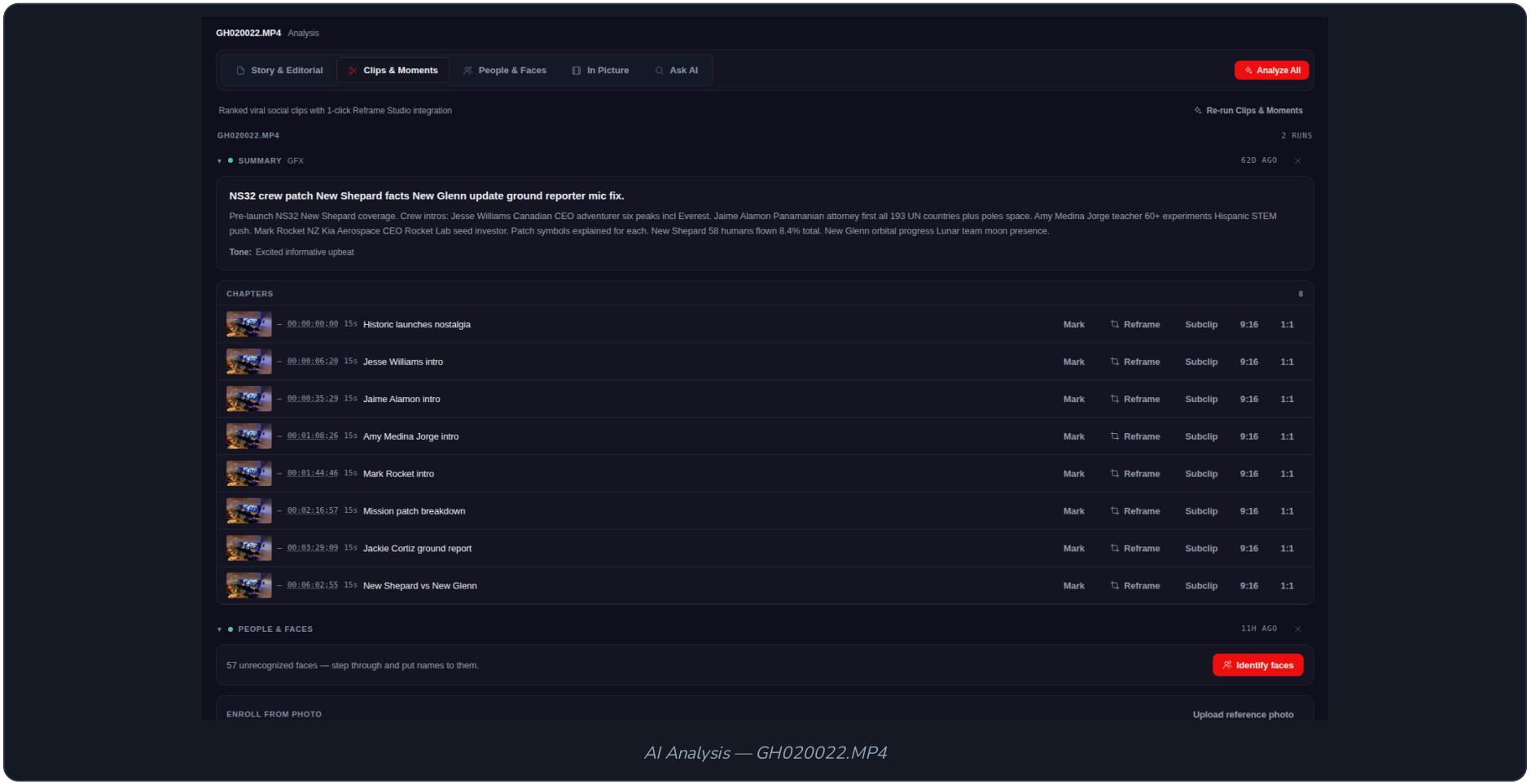


Asset Detail — Metadata tab

- **Video player:** proxy playback with timecode scrubbing, J-K-L shuttle, in/out points (`I` / `O`).
- **Tabs:** Files, Metadata, Transcript, AI Analysis & Faces, Versions, Comments, Review.
- **Actions:** Review, Edit, Share, Pull Hi-Res, Reframe & Social, Clip. *Reframe & Social* and *AI Analysis* open in their own windows (sections 10a and 10b).

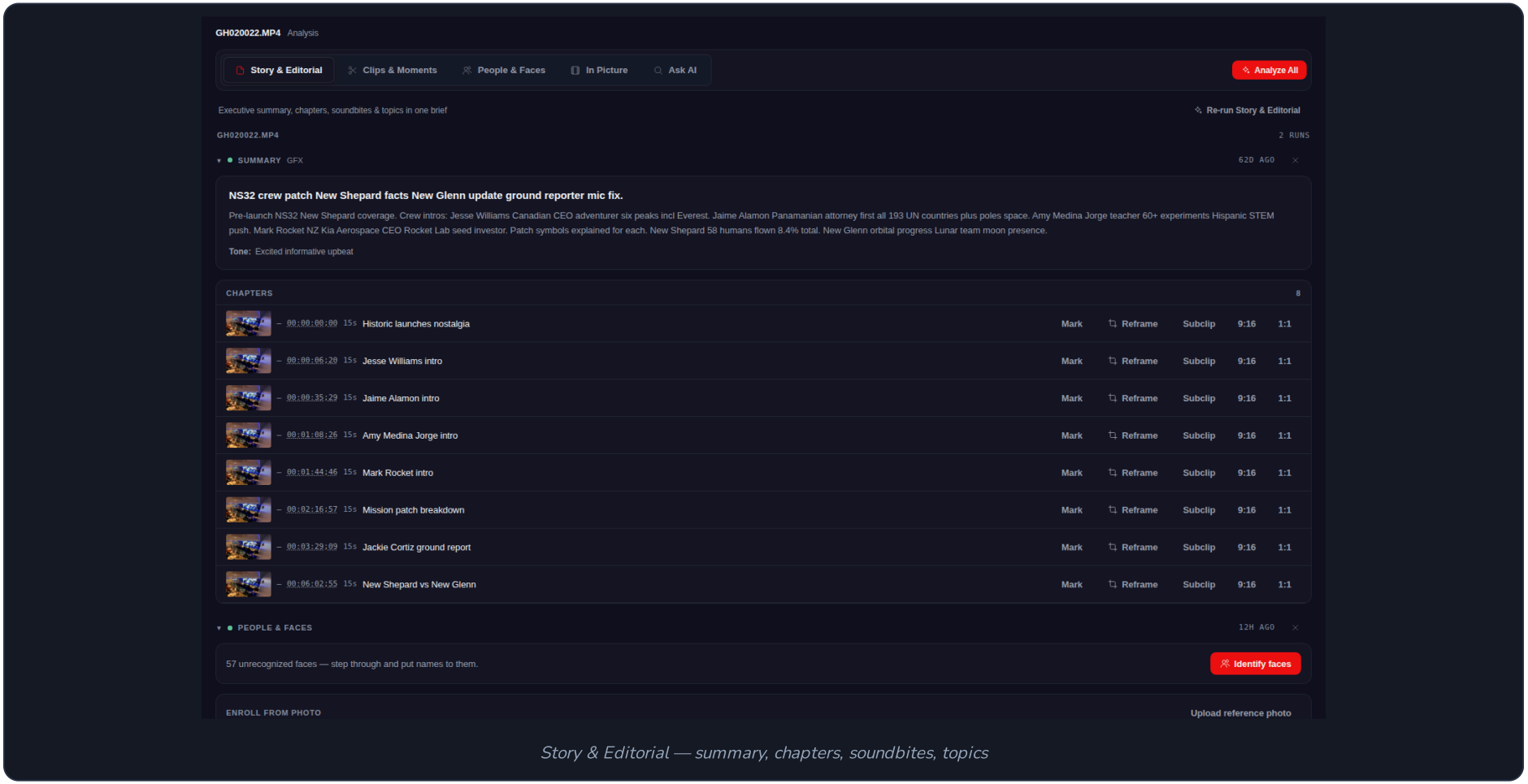
10a. AI Analysis

Opened from an asset (or the Analysis screen) as a dedicated window. Example asset: `GH020022.MP4` (Broadcast Management Group, NS32 launch coverage). Each tab can be run on its own or with **Analyze All**; previous runs are kept and can be re-run.



AI Analysis — GH020022.MP4

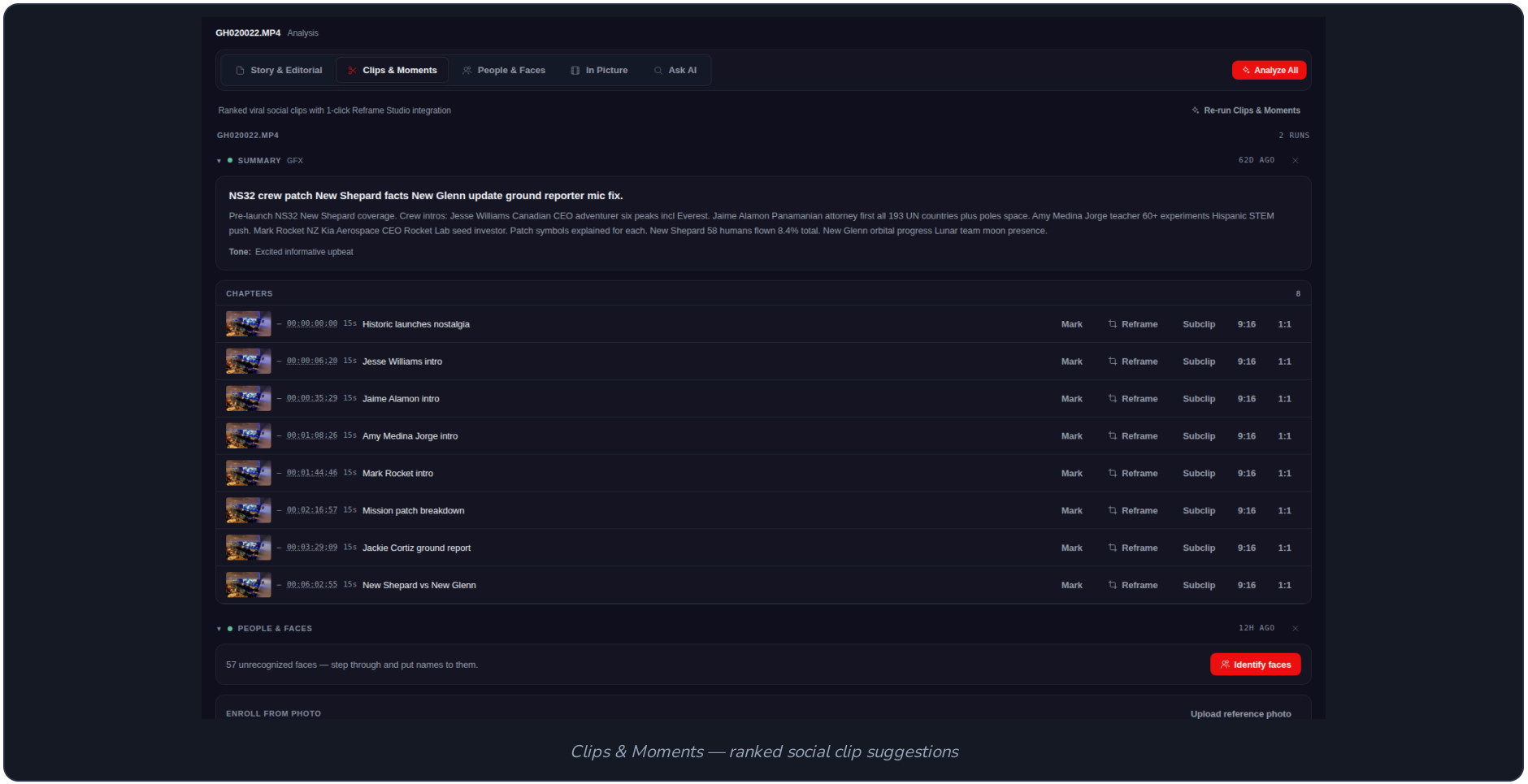
Story & Editorial



Story & Editorial — summary, chapters, soundbites, topics

Executive summary, chapters, key soundbites & quotes, topics & entities and Q&A in one brief.

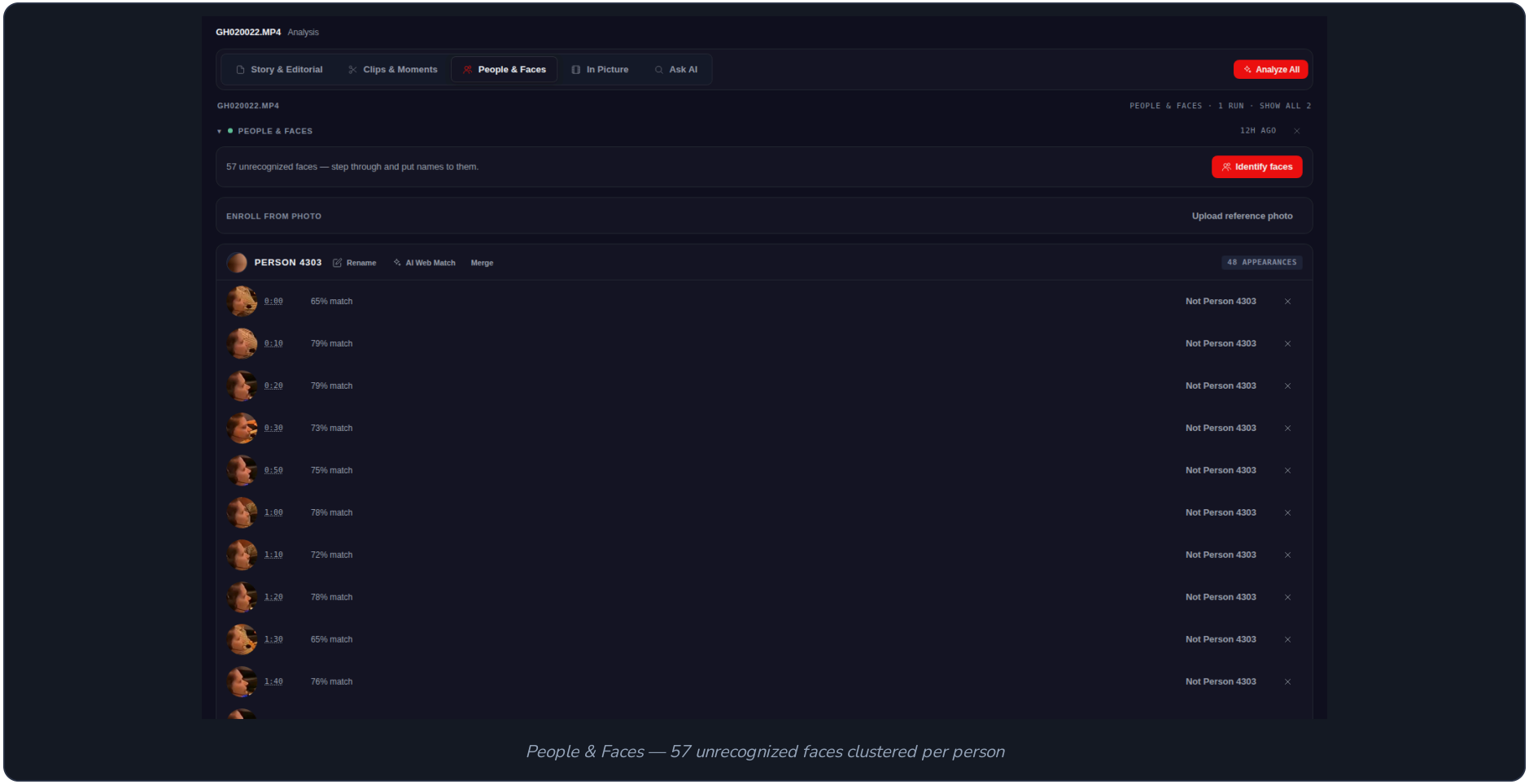
Clips & Moments



Clips & Moments — ranked social clip suggestions

Ranked social clip suggestions. Each clip can be previewed, cut as a **Subclip** (an instant TAMS subclip, no render), or sent to Reframe in **9:16** or **1:1**.

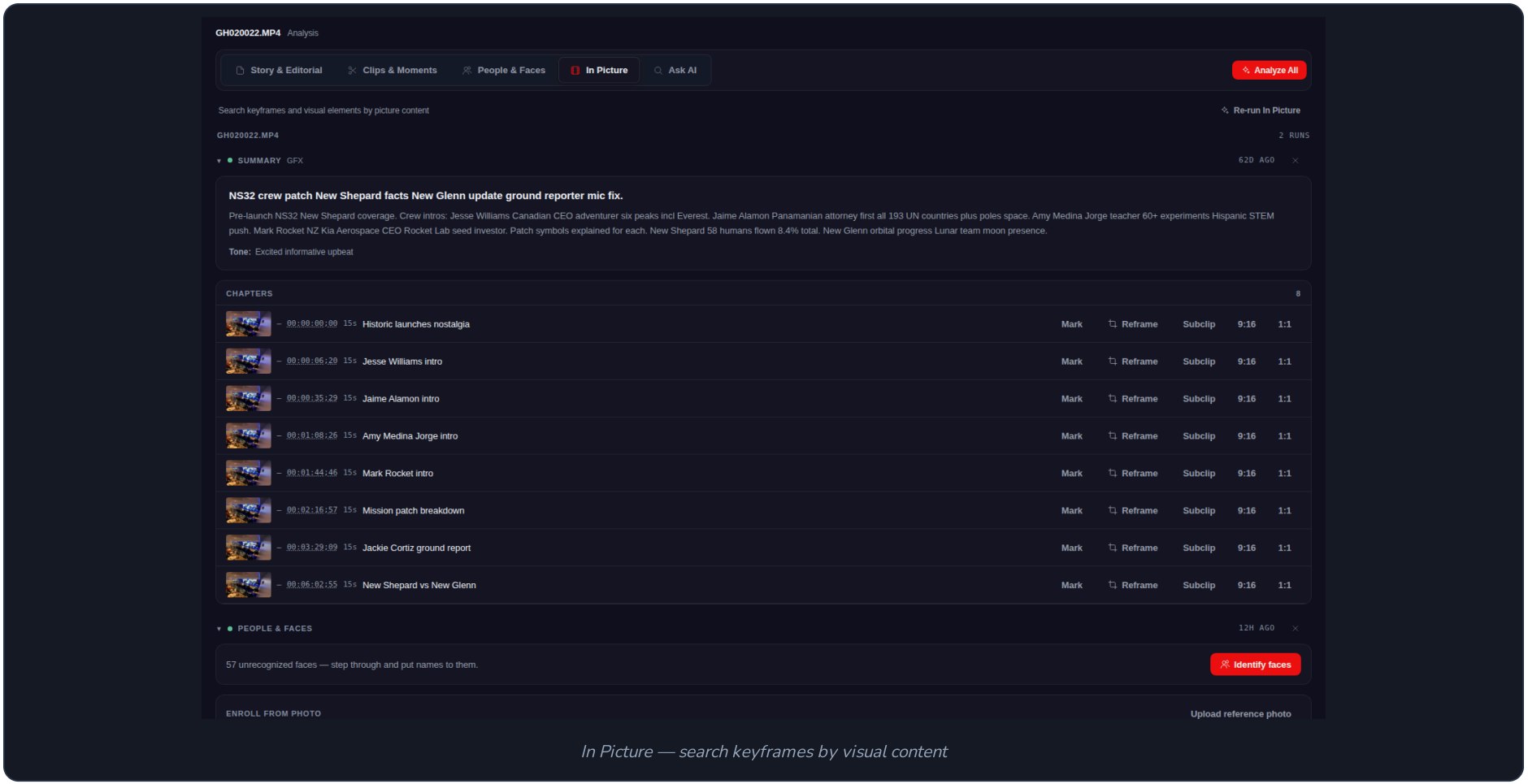
People & Faces



People & Faces — 57 unrecognized faces clustered per person

- Faces are clustered per person within the video, with appearance counts and timestamps.
- **Identify faces:** step through unrecognized faces and name them (Name this person · Not a face).
- **Enroll from photo:** upload a reference photo to recognise a person across the library.
- Per person: **Rename**, **AI Web Match**, **Merge**.

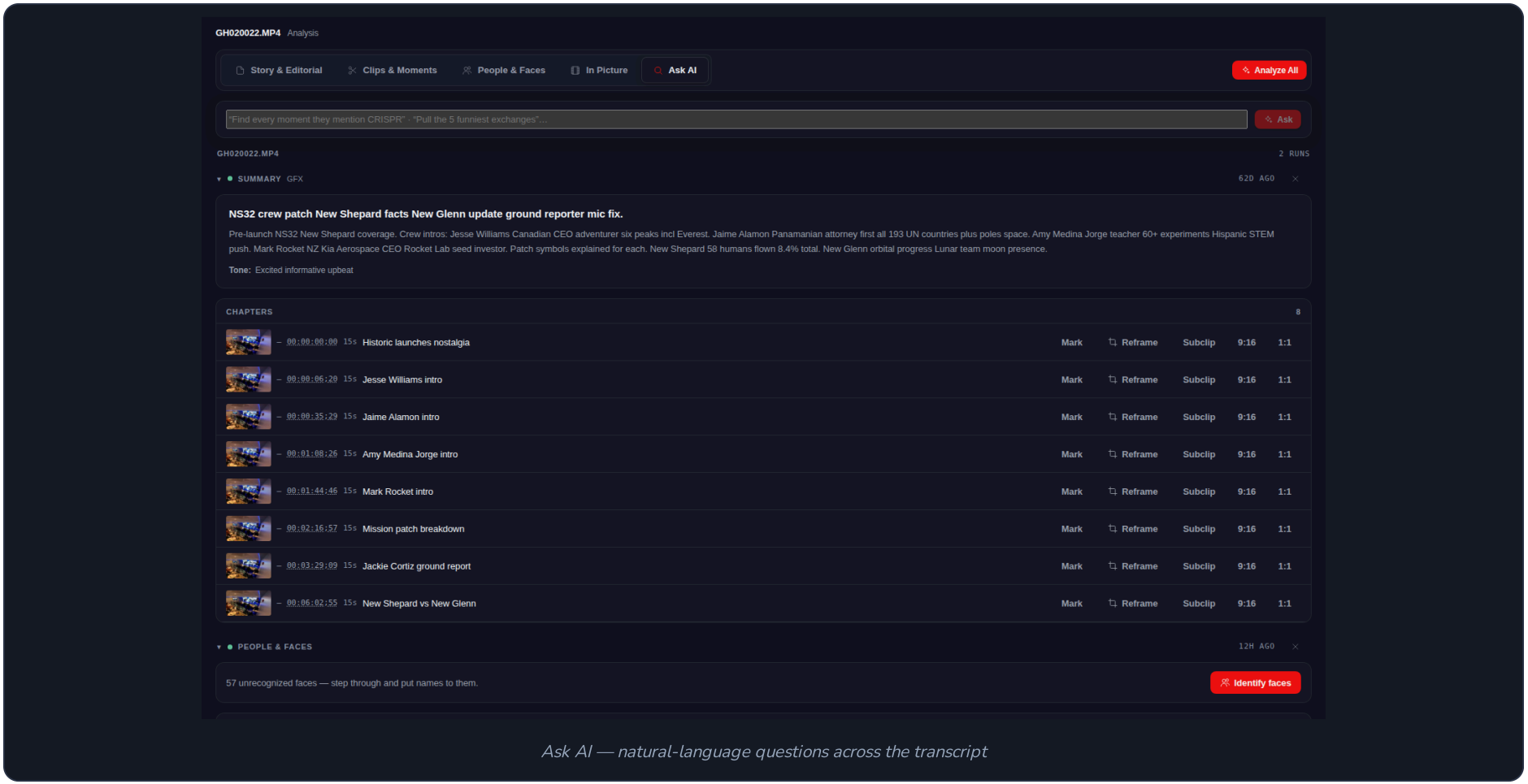
In Picture



In Picture — search keyframes by visual content

Search keyframes and visual elements by picture content, with a frame log.

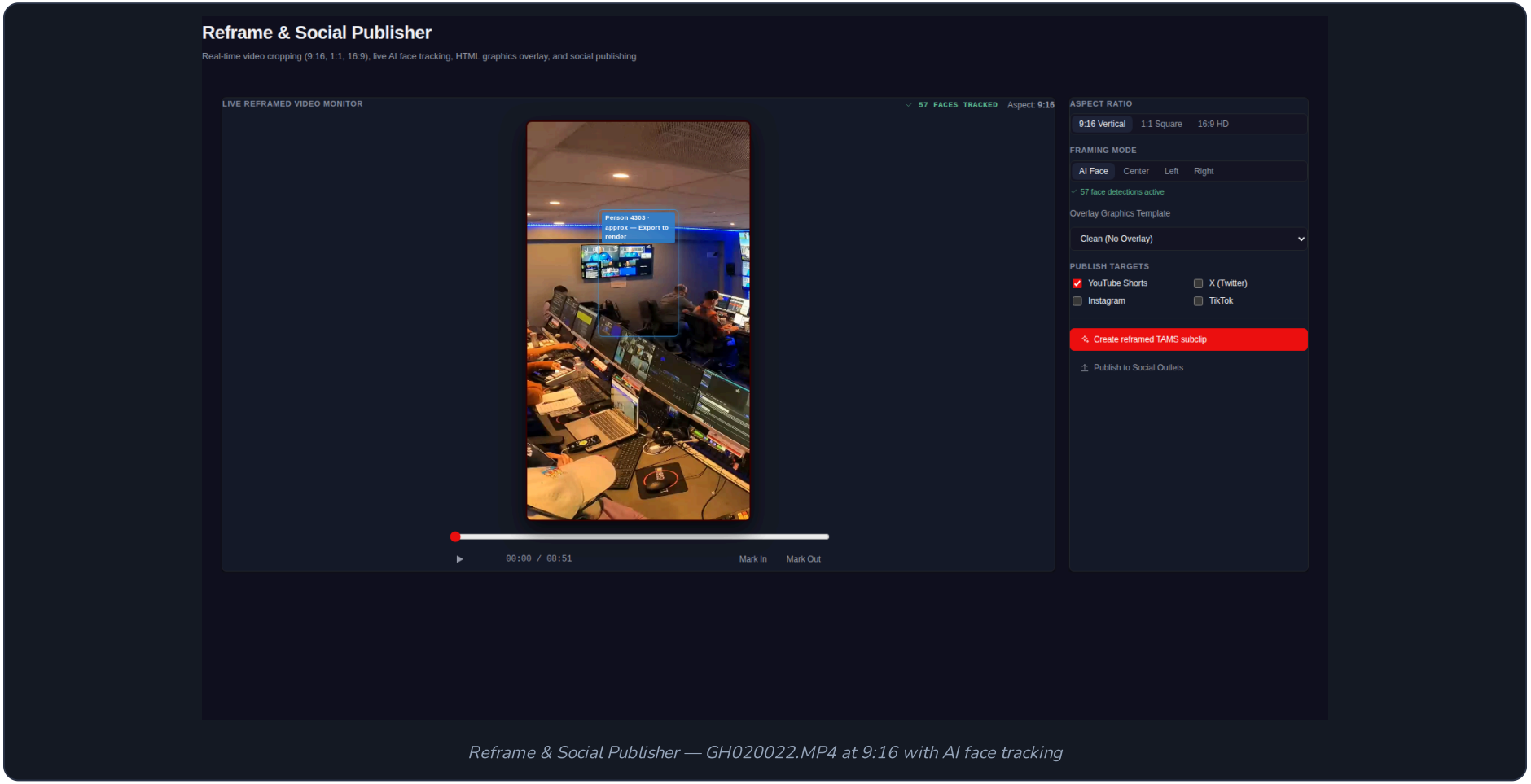
Ask AI



Ask AI — natural-language questions across the transcript

Natural-language search and custom questions answered from the transcript.

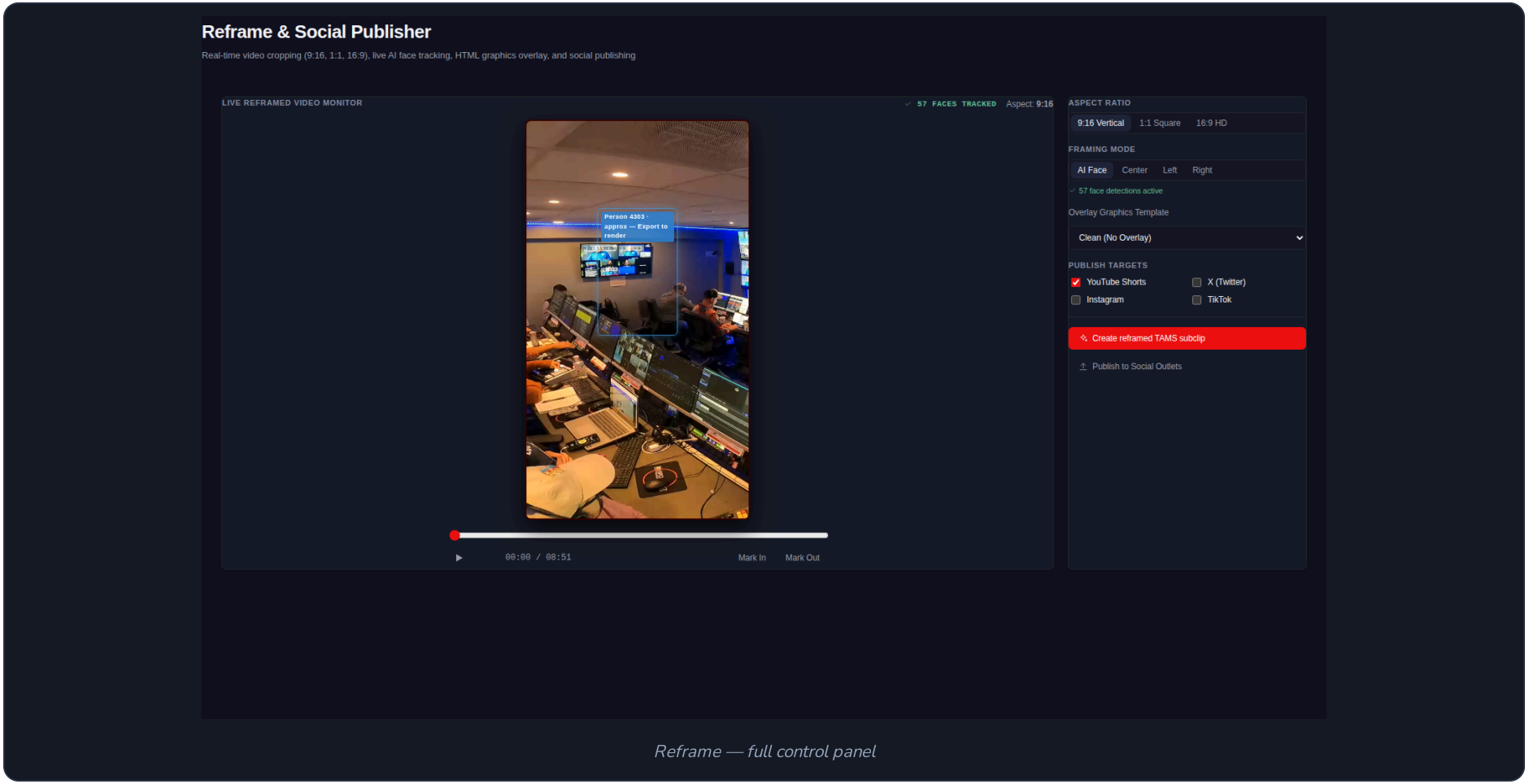
10b. Reframe & Social Publisher



Reframe & Social Publisher — GH020022.MP4 at 9:16 with AI face tracking

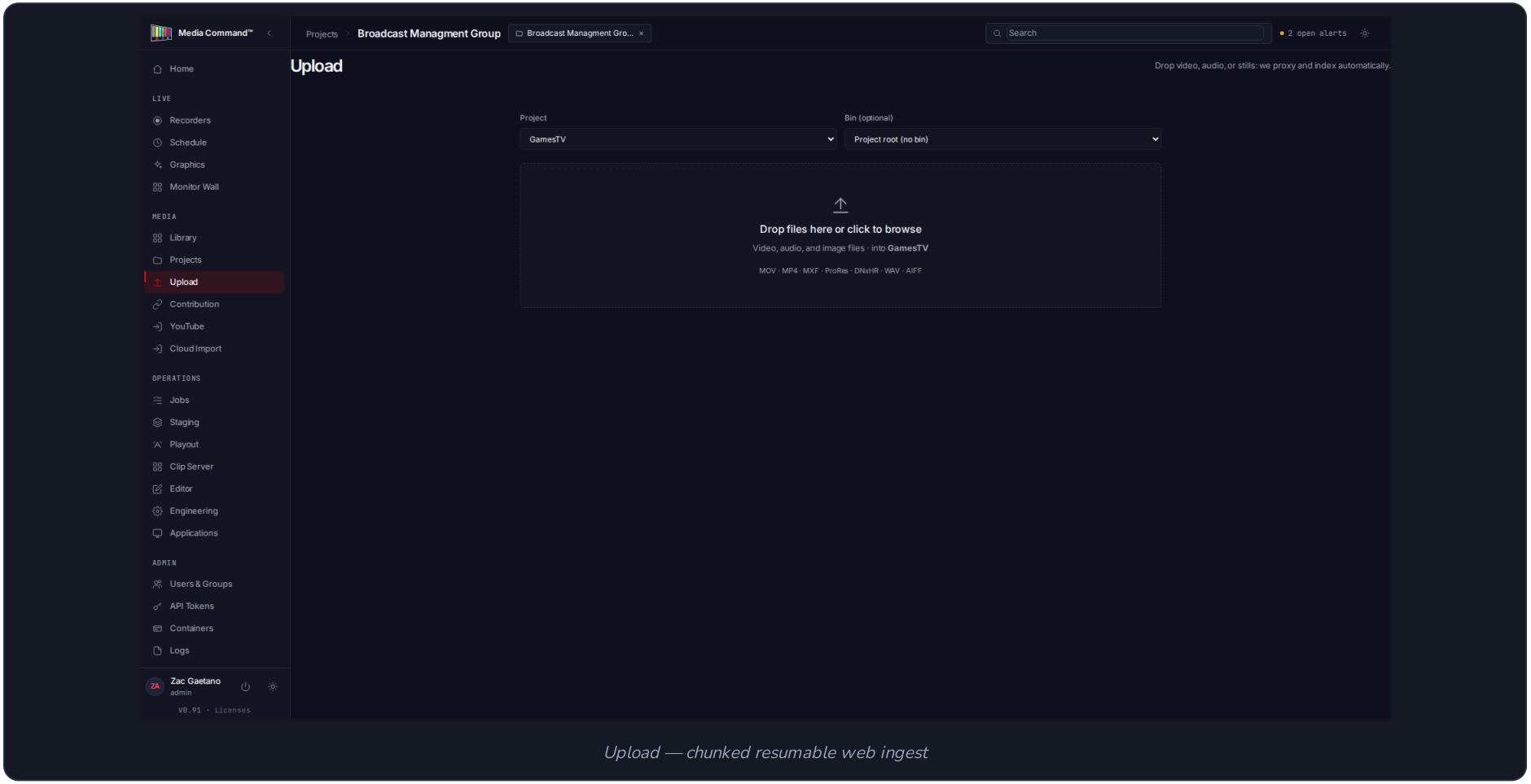
- **Live Reframed Video Monitor:** real-time crop preview with the tracked face highlighted, a play/scrub timeline, and **Set In / Set Out / Clear In-Out**.
- **Index Faces (AI):** runs face recognition on the video so the crop can follow a person.
- **Aspect Ratio:** 9:16 Vertical · 1:1 Square · 16:9 HD.

- **Framing Mode:** AI Face · Center · Left · Right.
- **Overlay Graphics Template:** Clean (No Overlay) · Lower-Third Speaker Badge · Headline Title Banner, with Headline / Title, Subtitle / Description and Accent Bar Color fields.
- **Output:** *Create reframed TAMS subclip* (lands in the Library).
- **Publish Targets:** YouTube Shorts · TikTok · Instagram · X (Twitter), then *Publish to Social Outlets*.



Reframe — full control panel

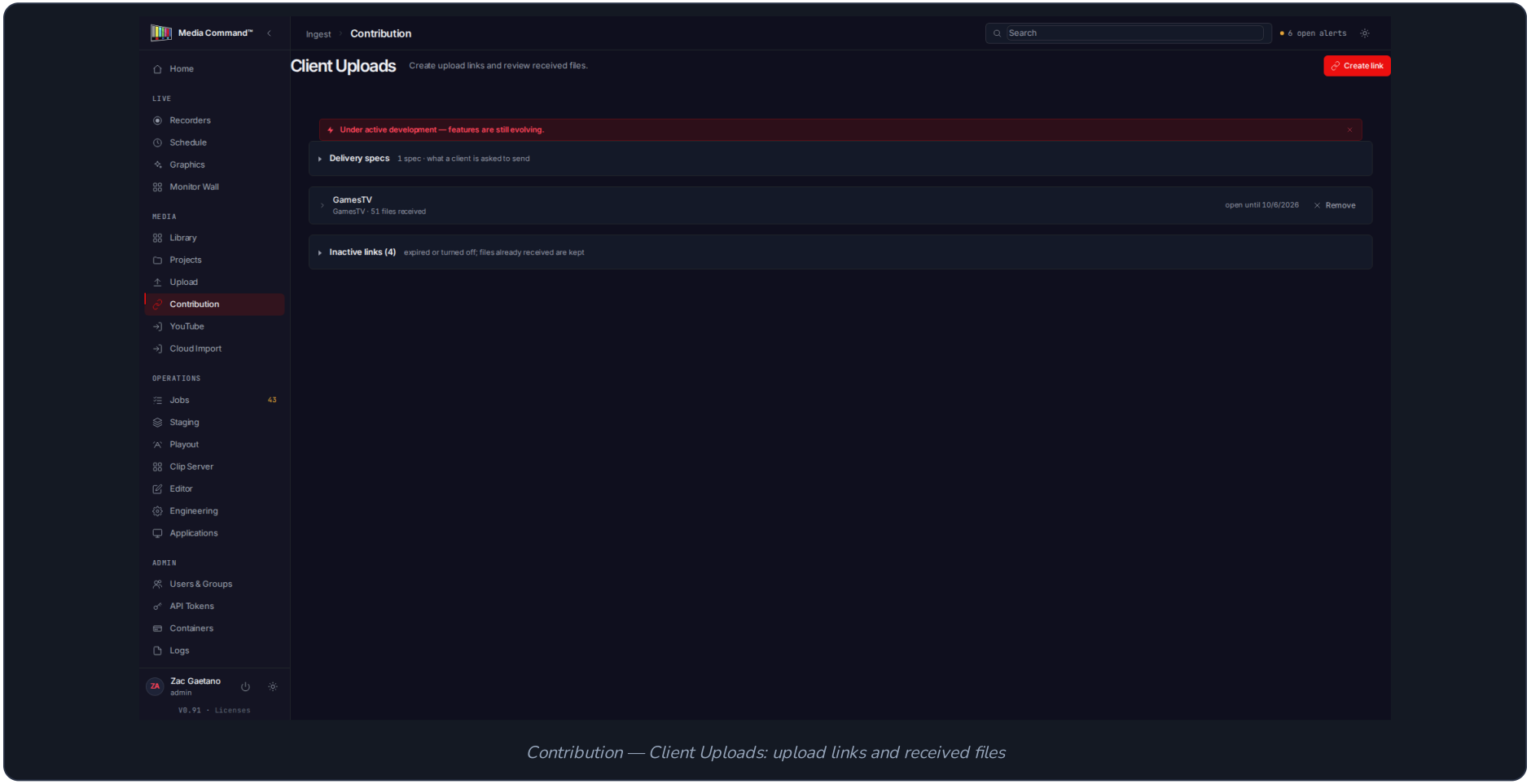
11. Upload



Upload — chunked resumable web ingest

Chunked resumable upload with target bin selection. Proxy, thumbnail, and waveform generation trigger automatically on completion.

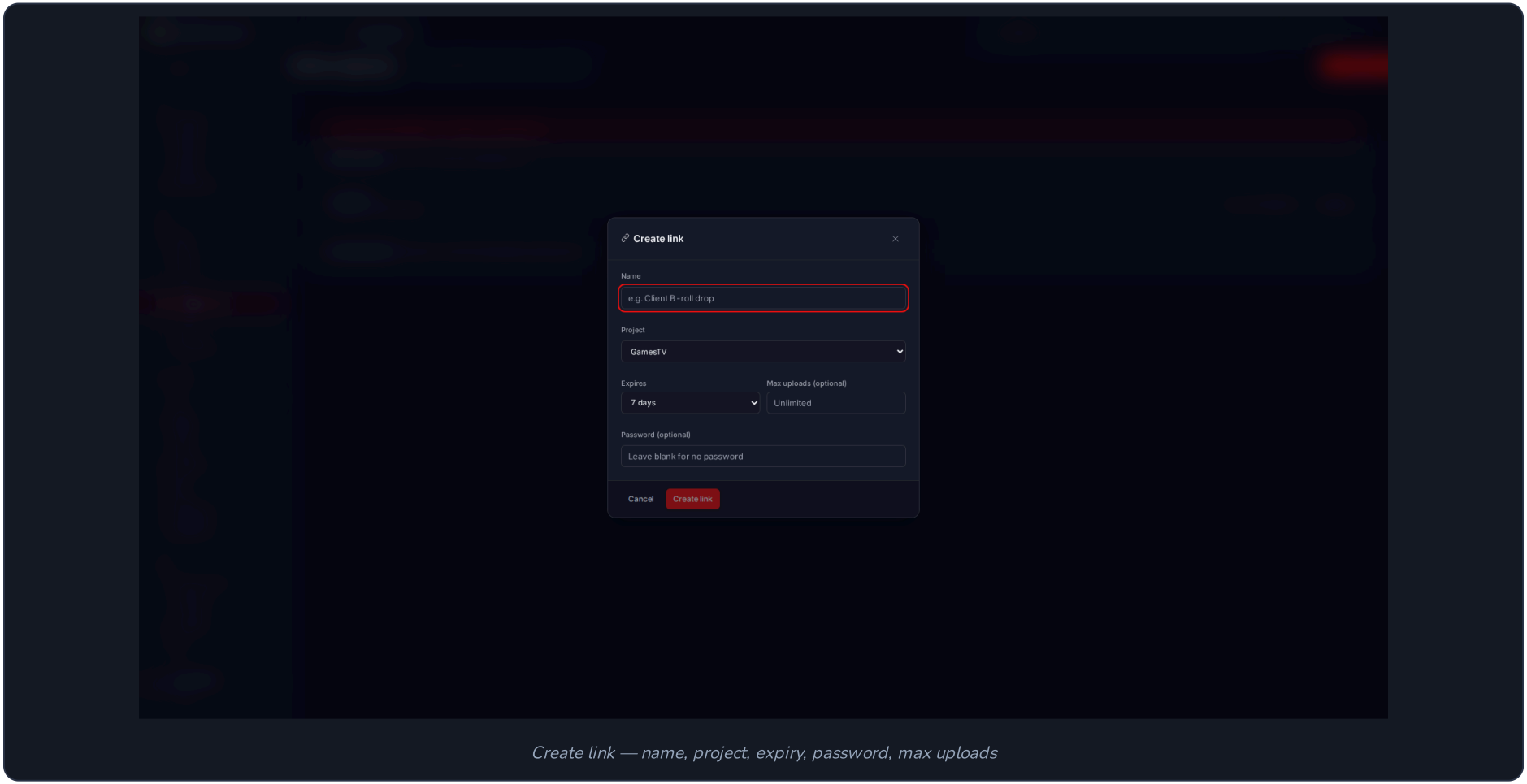
12. Contribution (Client Uploads)



Contribution — Client Uploads: upload links and received files

Contribution is for **file deliveries from clients**. You create a link, send it to the client, and they upload through a branded drop page; no Media Command account is needed. Received files land in the chosen project and are checked against a delivery spec.

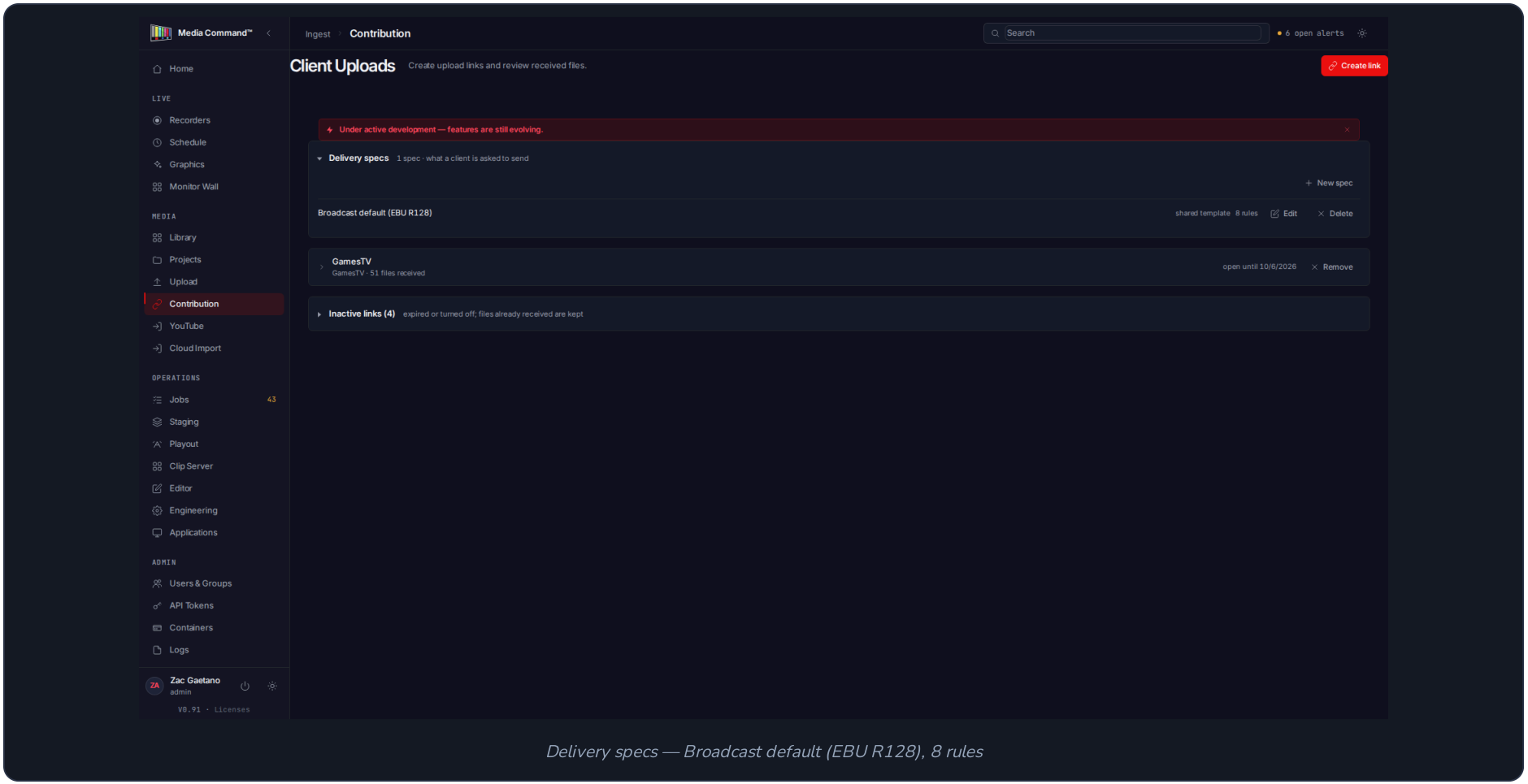
Create link



Create link — name, project, expiry, password, max uploads

- **Name** (e.g. "Client B-roll drop"), **Project**, **Expires** (default 7 days, or Never), **Max uploads** (optional, default unlimited), **Password** (optional), and the delivery spec to check against.
- Copy the link and share it. The client sees "Drop files here", plus a password prompt if one was set.

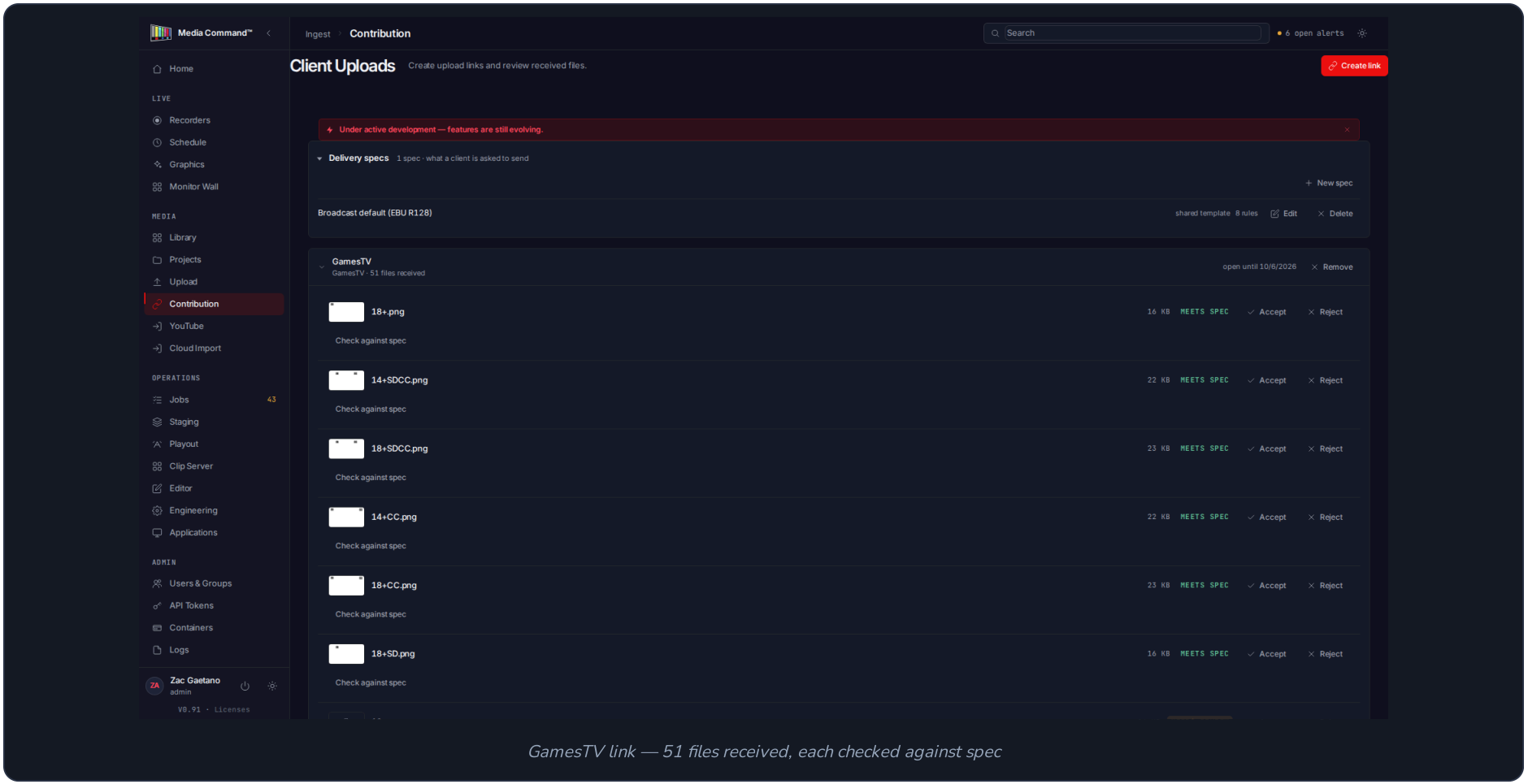
Delivery specs



Delivery specs — Broadcast default (EBU R128), 8 rules

A spec defines what a client is asked to send ("What to send"), e.g. the shared *Broadcast default (EBU R128)* template with 8 rules, including a loudness target and tolerance. Specs can be created, edited and deleted.

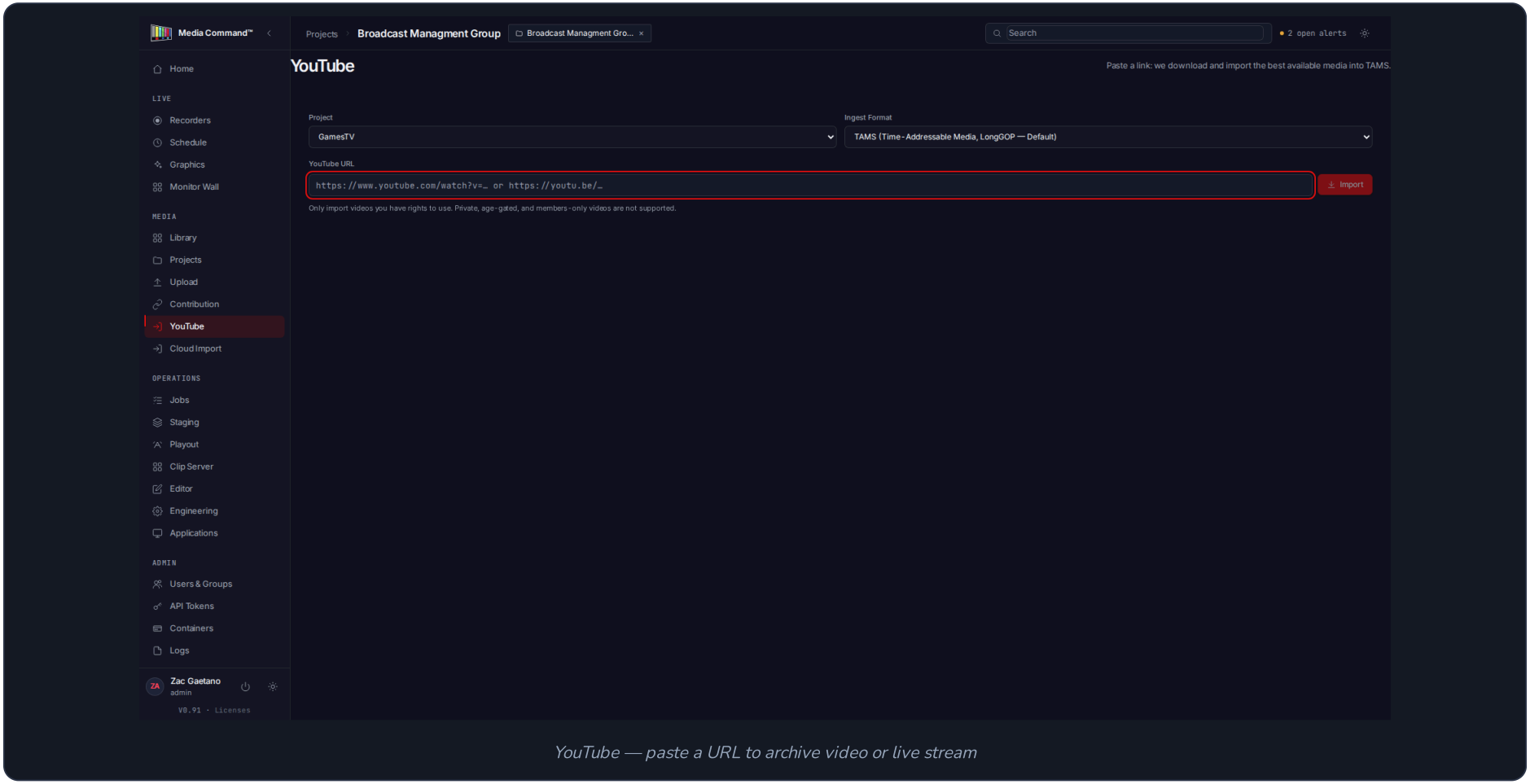
Received files



GamesTV link — 51 files received, each checked against spec

- Each file shows its size and a spec verdict: **MEETS SPEC** or **NEEDS REVIEW** (with "What differs from the spec").
- Per file: **Accept**, **Reject**, **Check against spec**.
- **Inactive links:** expired or turned-off links are kept in a collapsed list, along with the files already received.

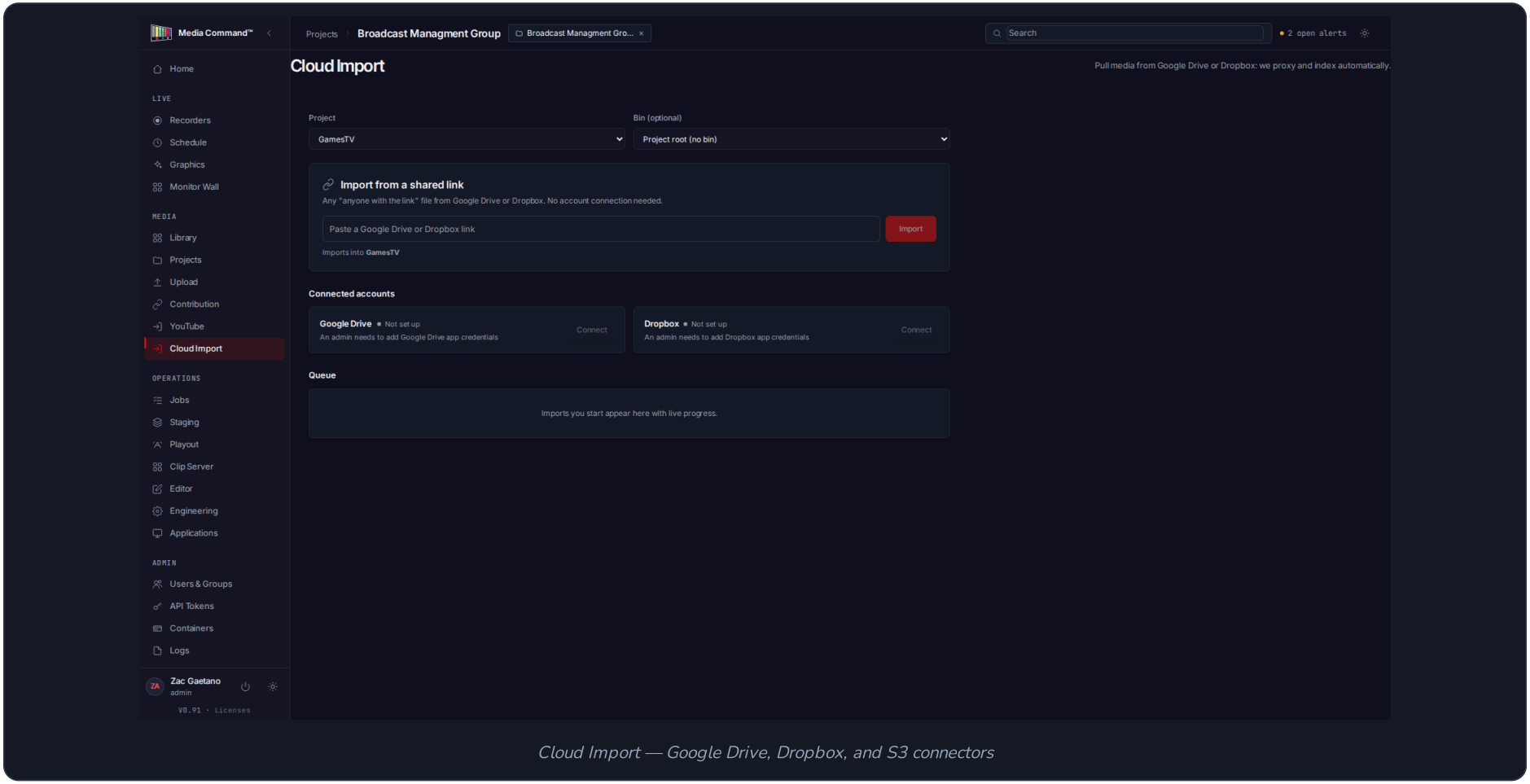
13. YouTube Ingest



YouTube — paste a URL to archive video or live stream

Paste any YouTube video or live stream URL for background download into the Library.

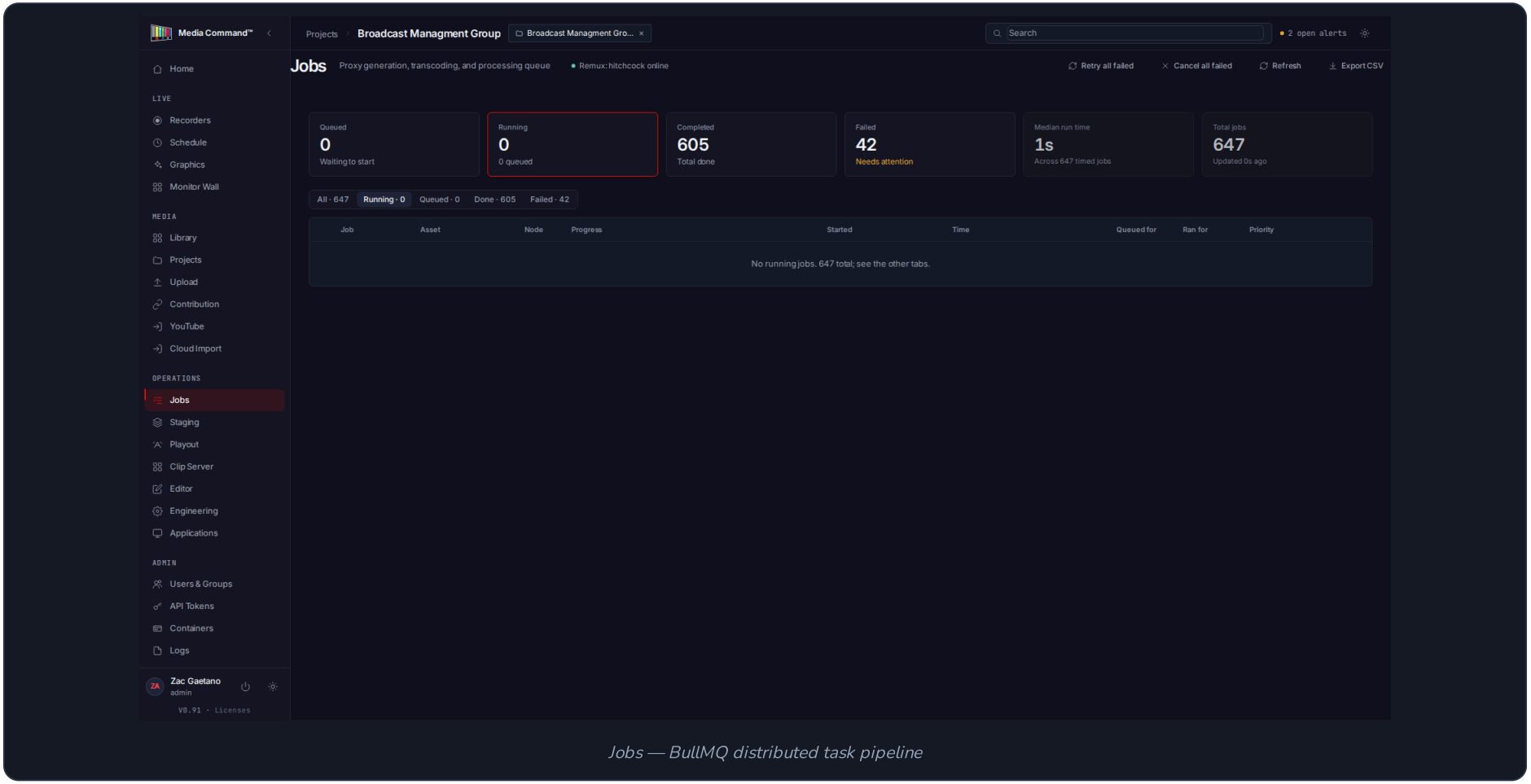
14. Cloud Import



Cloud Import — Google Drive, Dropbox, and S3 connectors

- **Google Drive** and **Dropbox** connectors.
- **S3-compatible storage:** Amazon S3, Wasabi, Backblaze B2, MinIO.

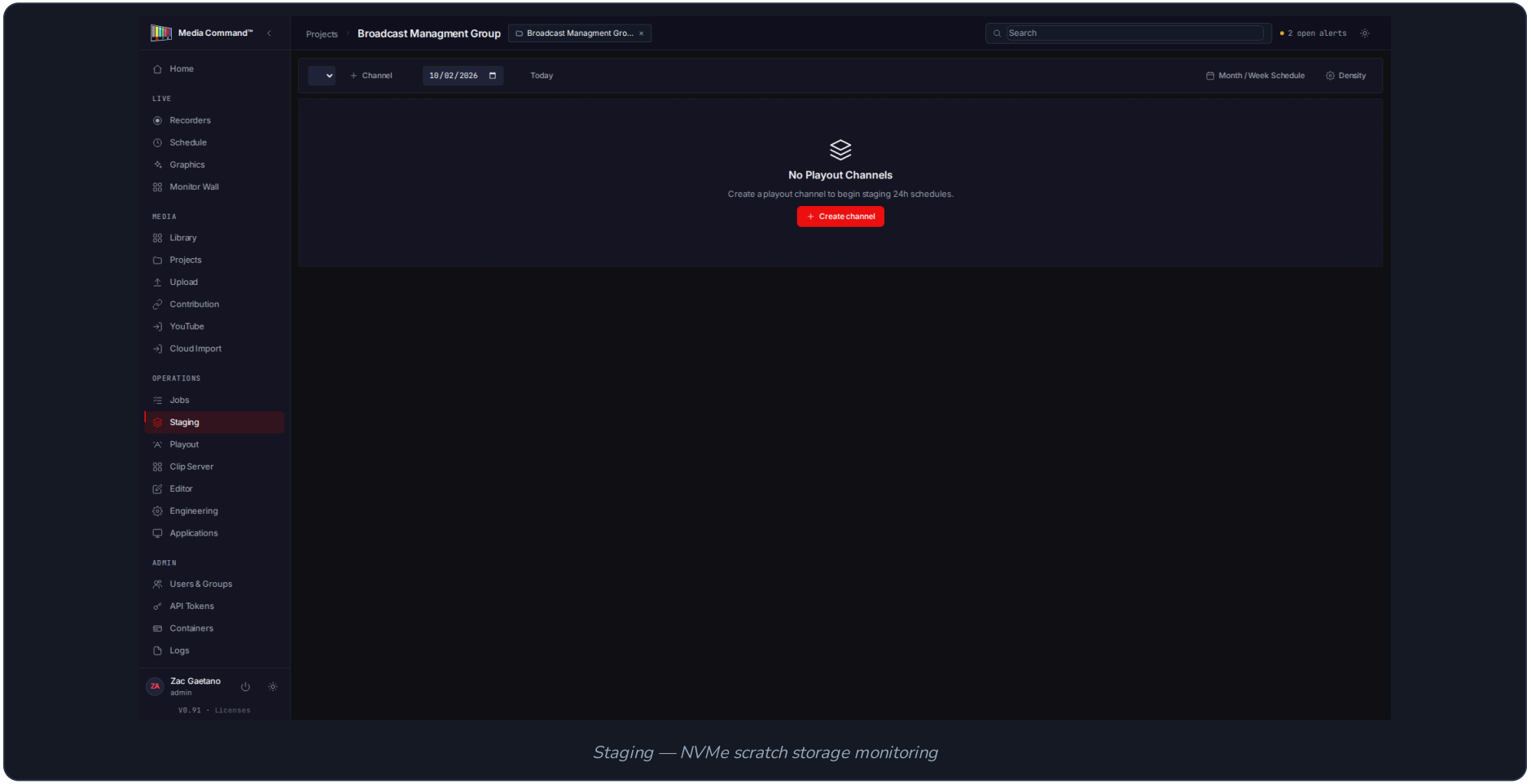
15. Jobs



Jobs — BullMQ distributed task pipeline

Queues cover transcoding, thumbnail/waveform generation, conform/export, and cloud sync. Per-job controls: progress, error log, retry, priority, flush.

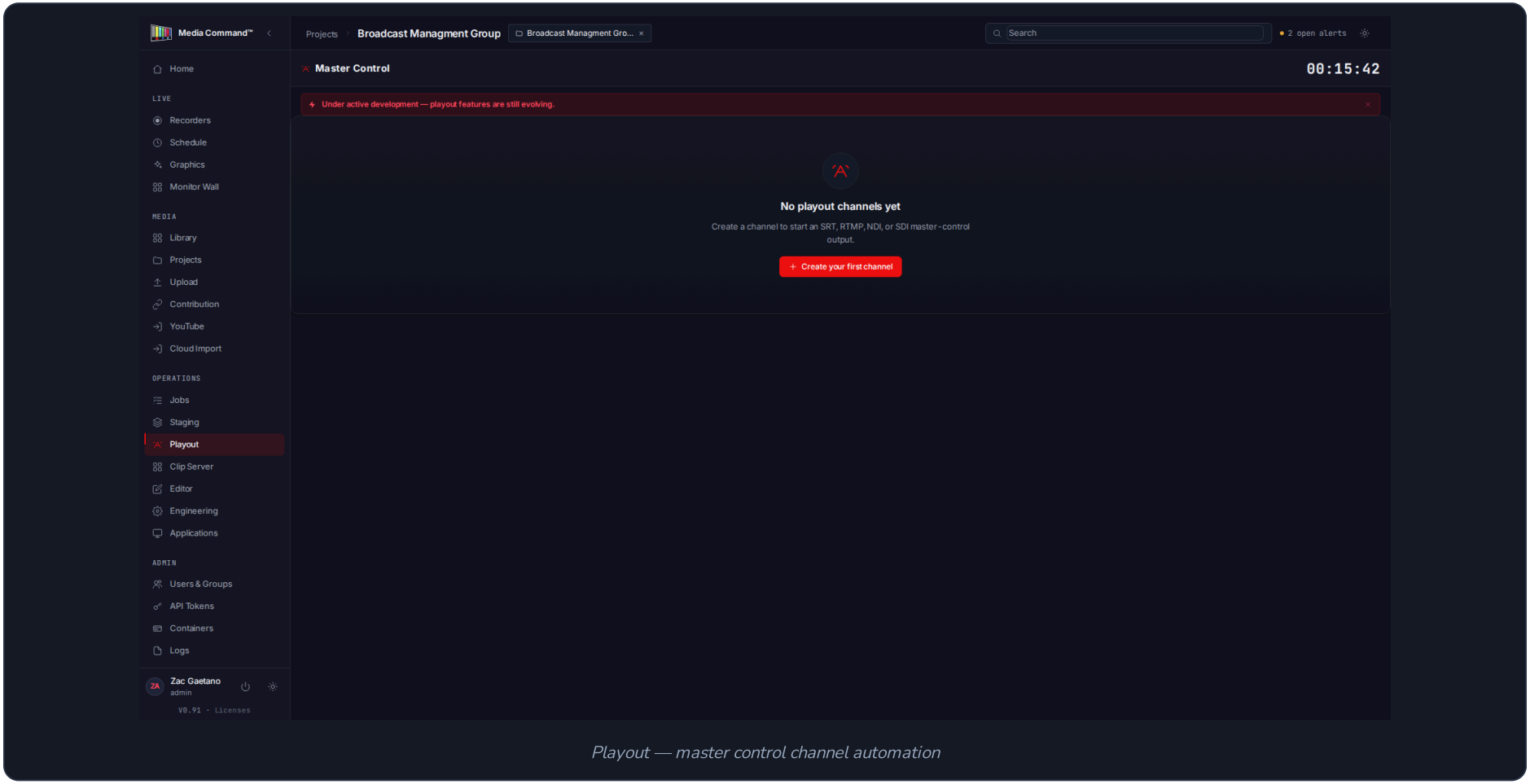
16. Staging



Staging — NVMe scratch storage monitoring

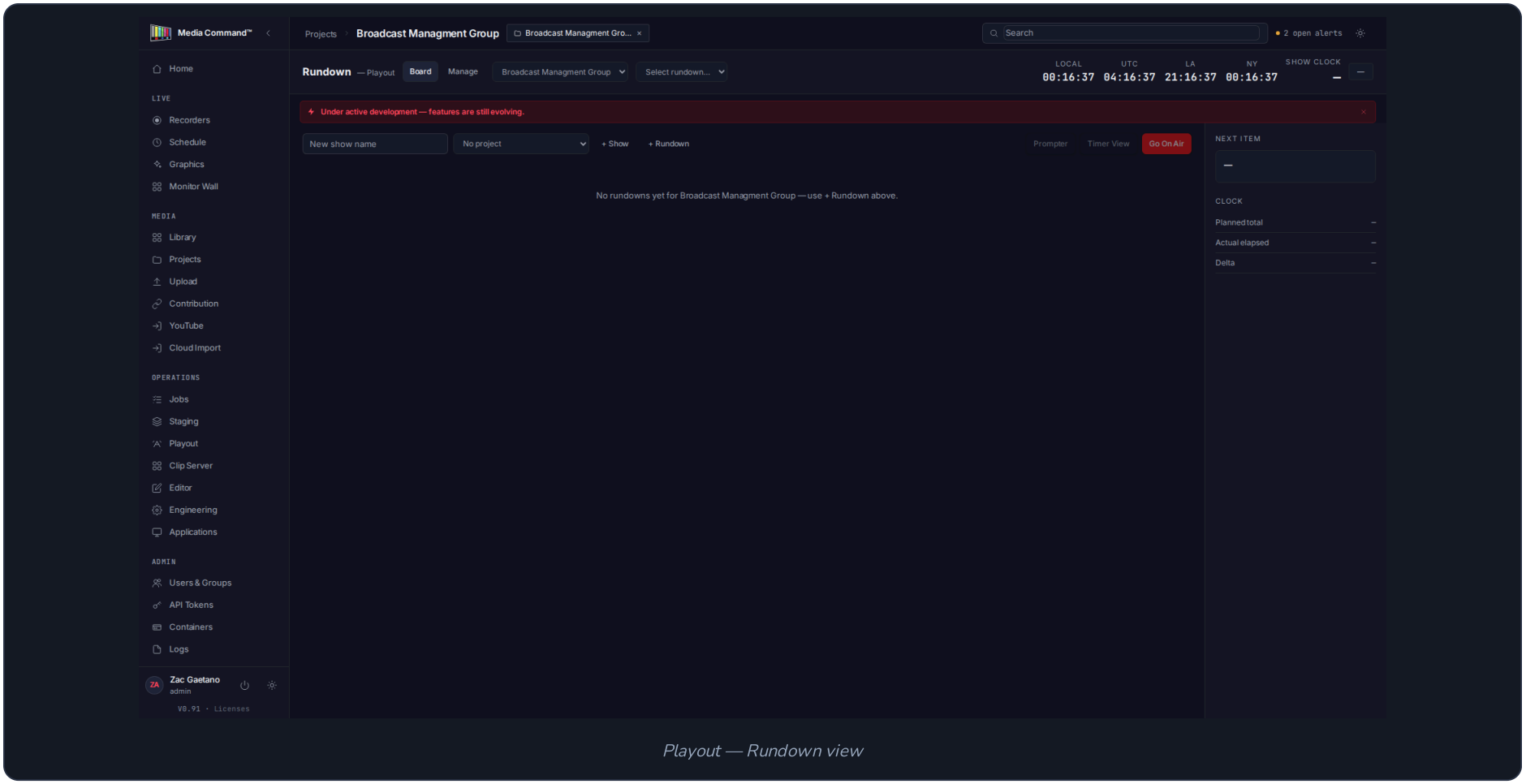
Tracks free space across cluster scratch disks and enforces retention policies.

17. Playout



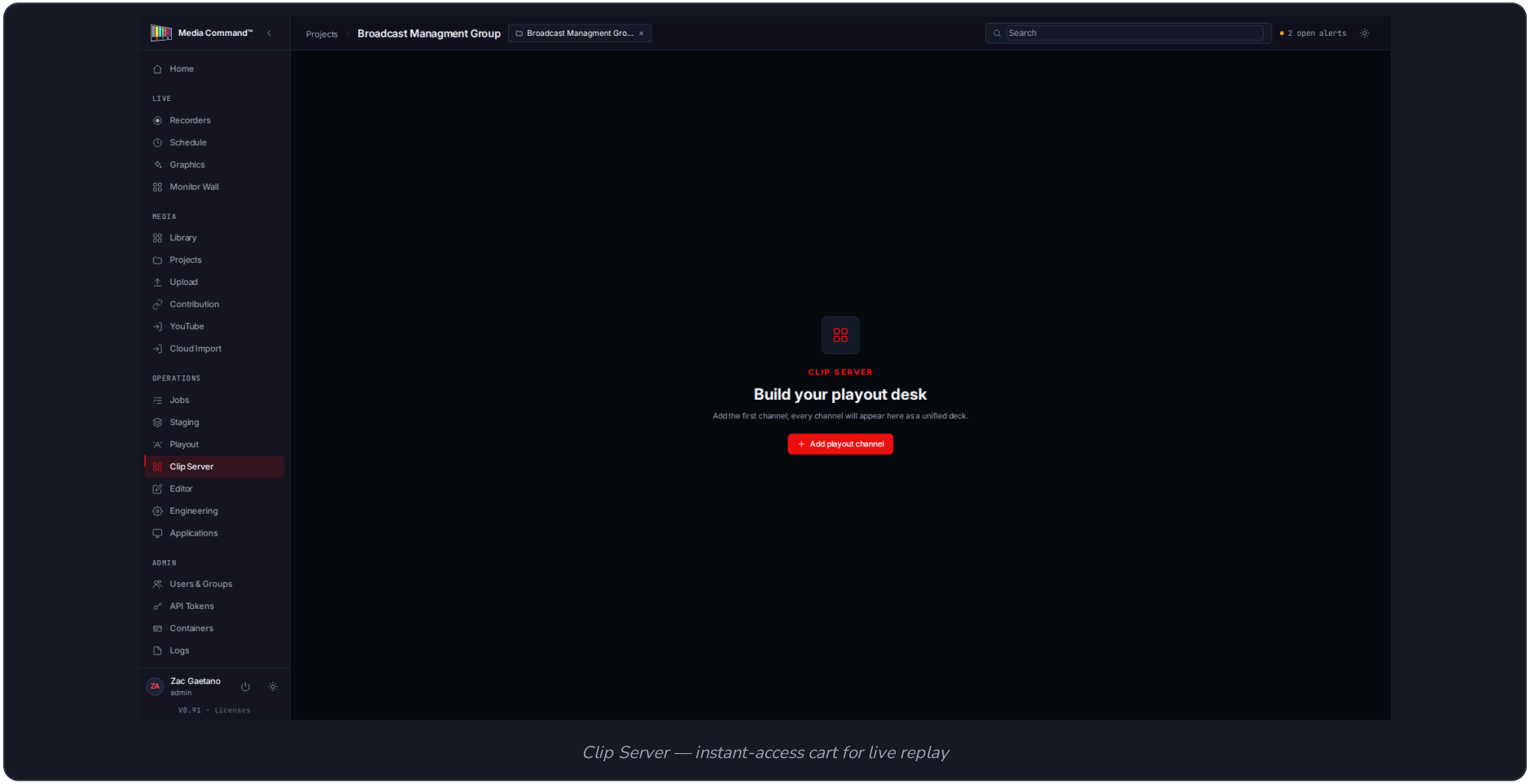
Playout — master control channel automation

- CasparCG sidecar containers driven over AMCP, one per channel.
- Drag-and-drop rundown builder with CUE, PLAY, PAUSE, STOP, LOOP.
- Program and preview confidence monitoring.



Playout — Rundown view

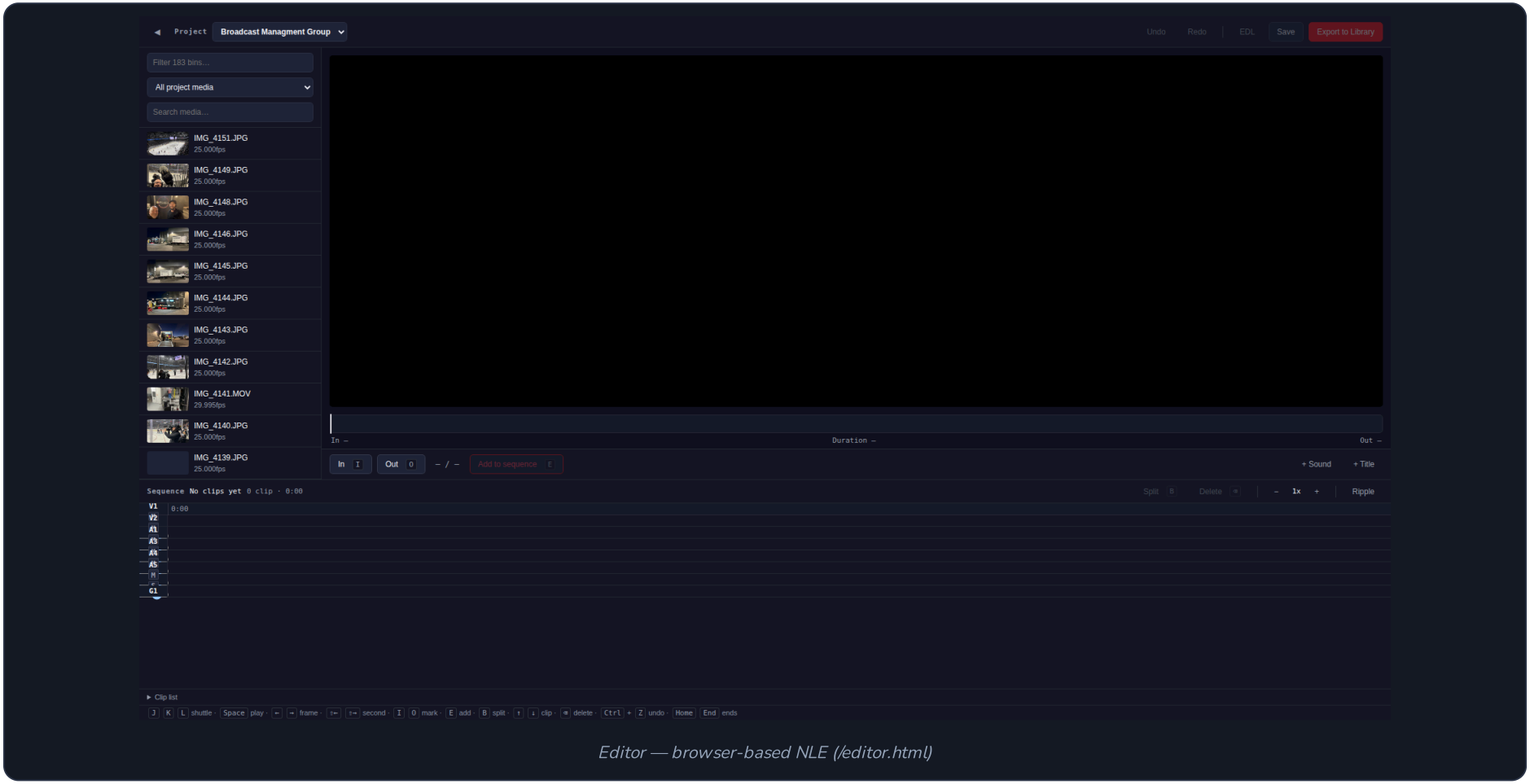
18. Clip Server



Clip Server — instant-access cart for live replay

Pre-loaded frames in shared memory (`/dev/shm`) for frame-accurate playback.

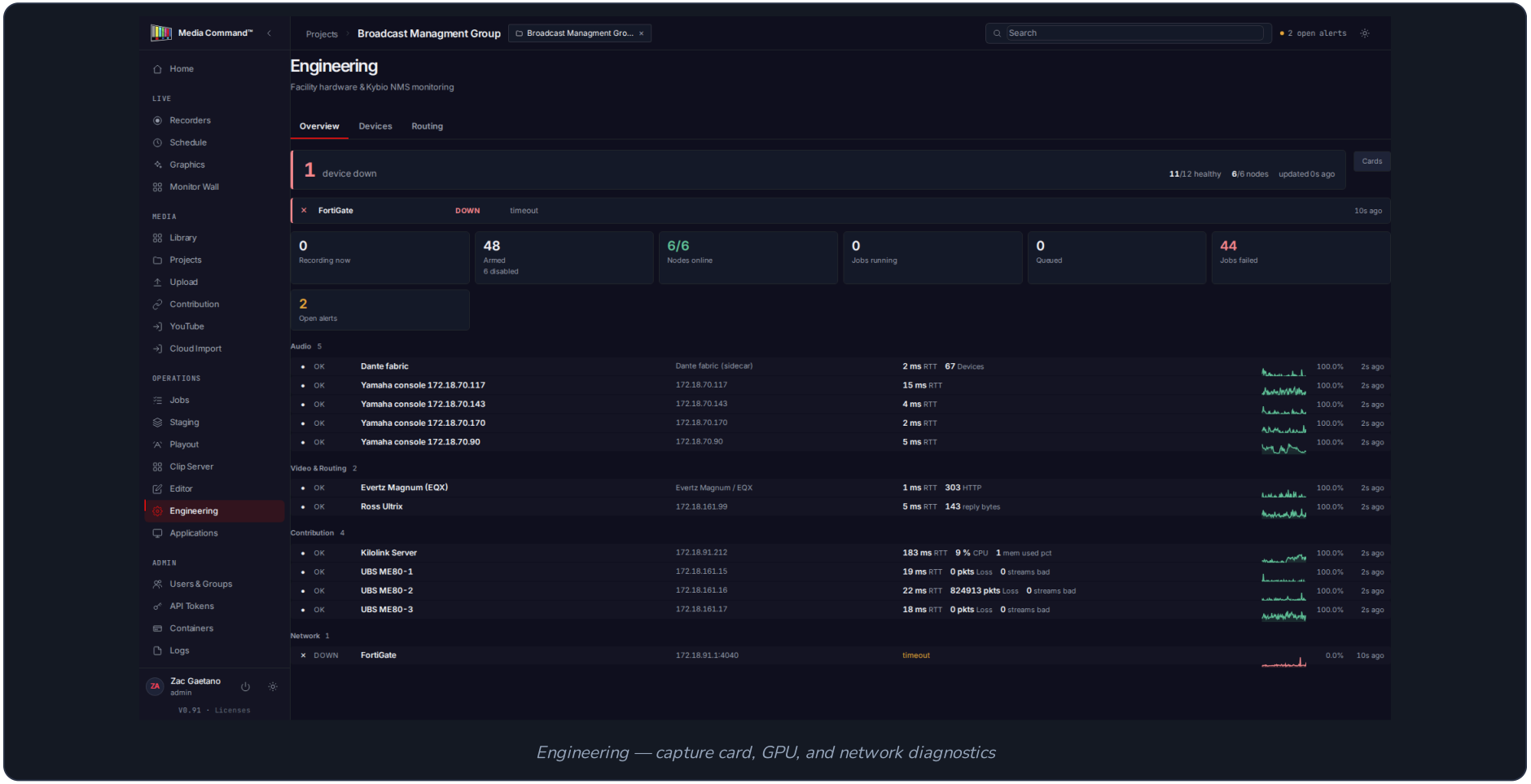
19. Editor



Editor — browser-based NLE (/editor.html)

- Multi-track timeline (V1, V2, A1–A5).
- In/out trimming on TAMS master flows.
- Export to Library with codec presets and crop-to-fill options.

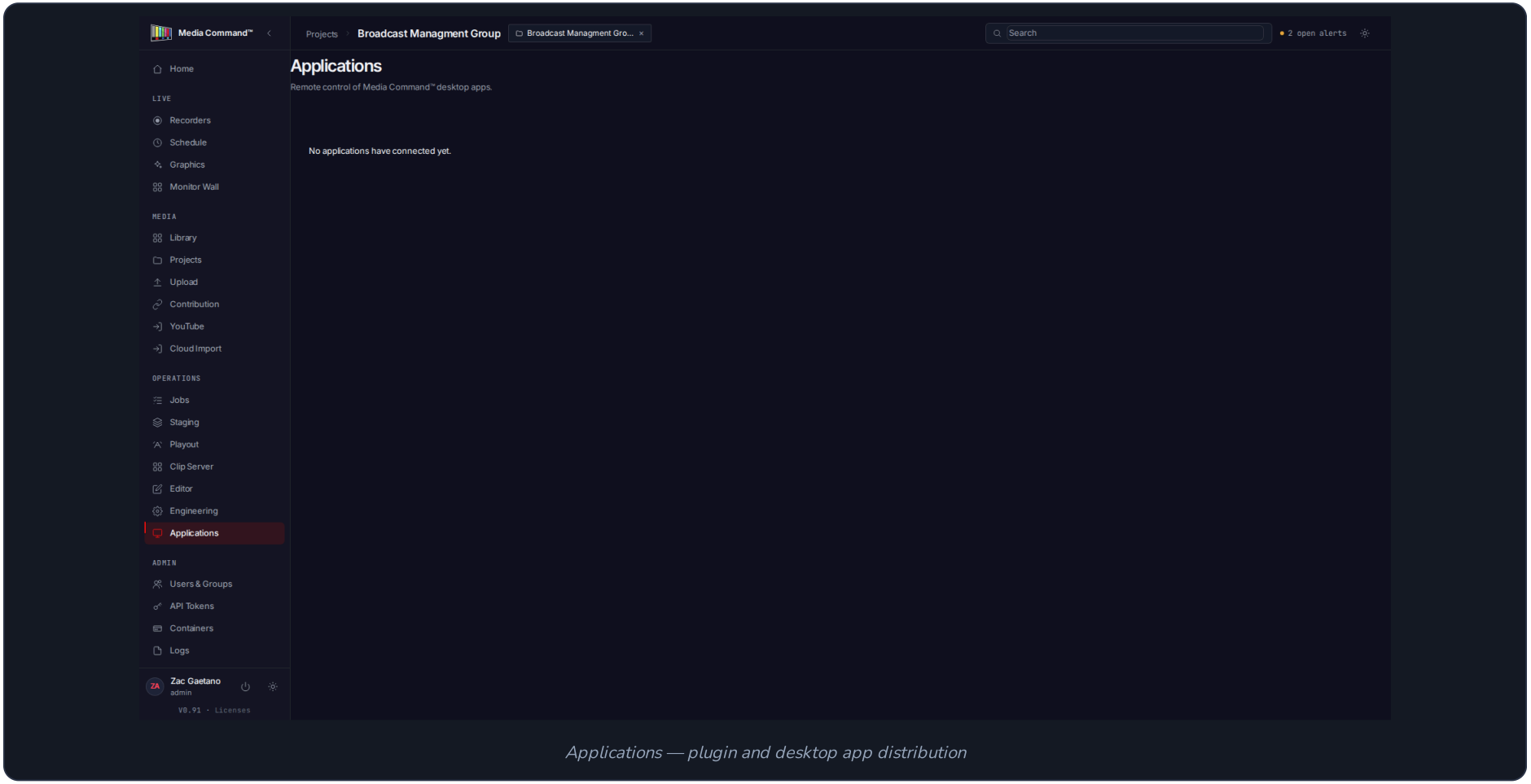
20. Engineering



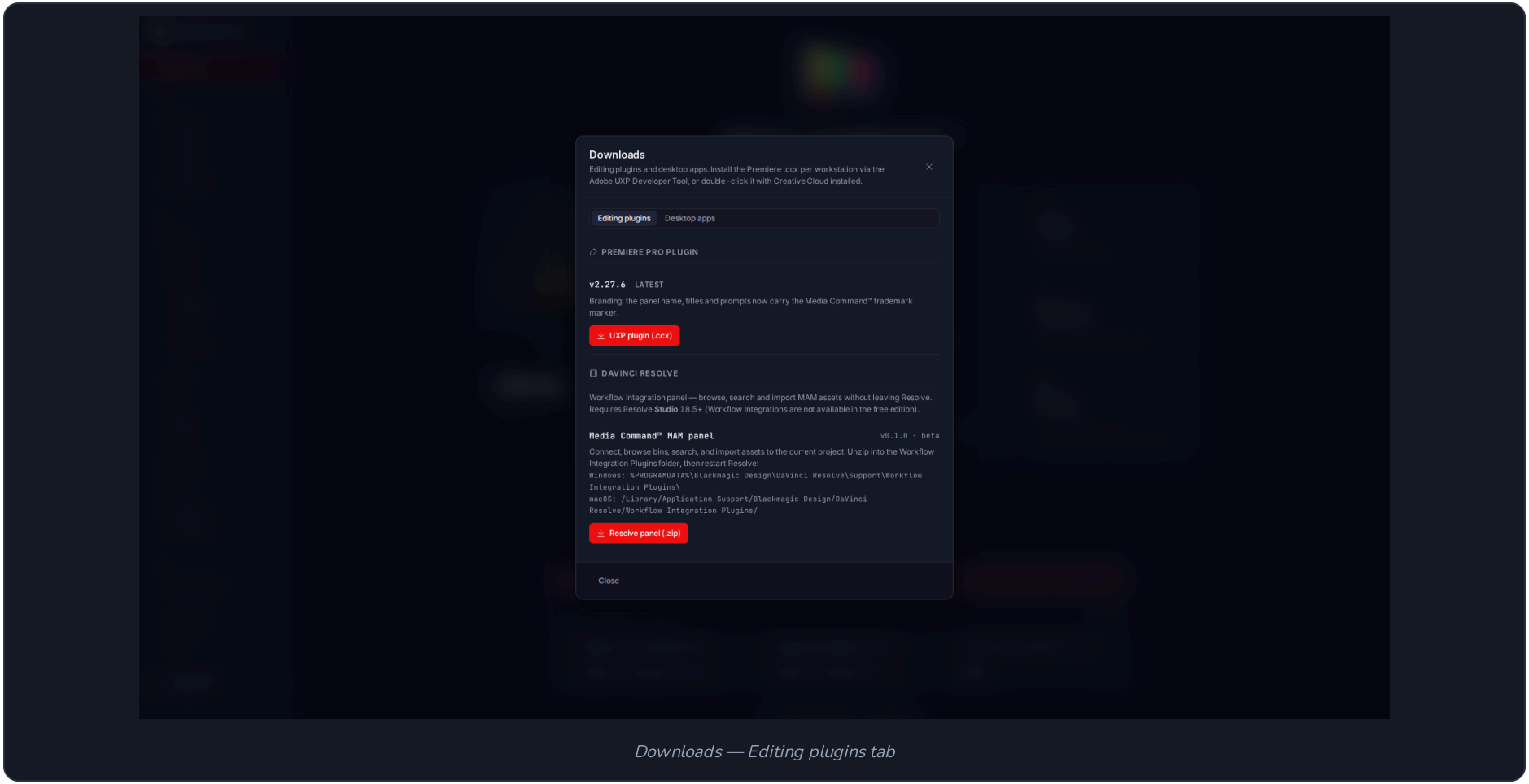
Engineering — capture card, GPU, and network diagnostics

Broadcast engineering diagnostics: capture card status, GPU acceleration metrics, and network interface statistics.

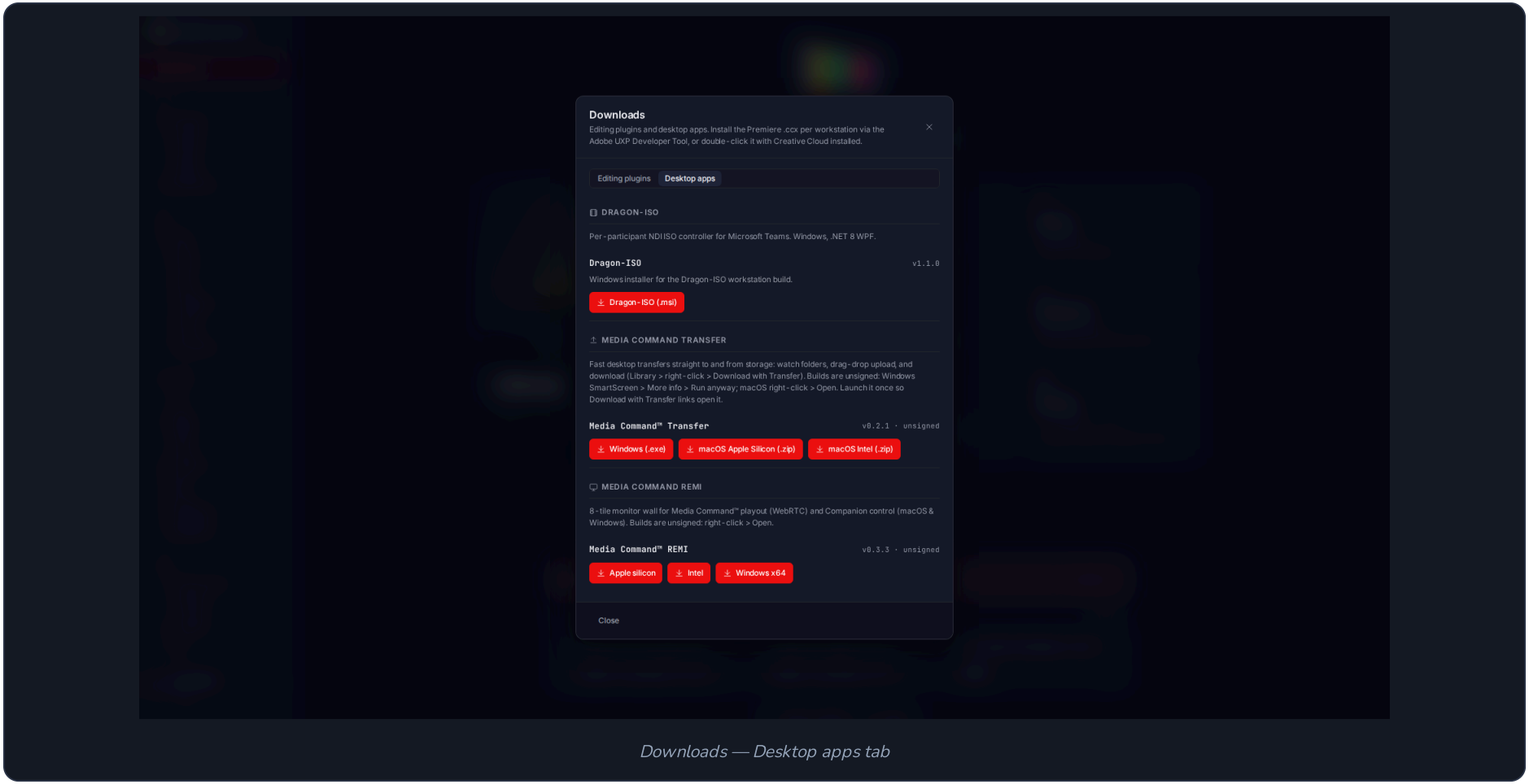
21. Applications & Downloads



Applications — plugin and desktop app distribution



Downloads — Editing plugins tab

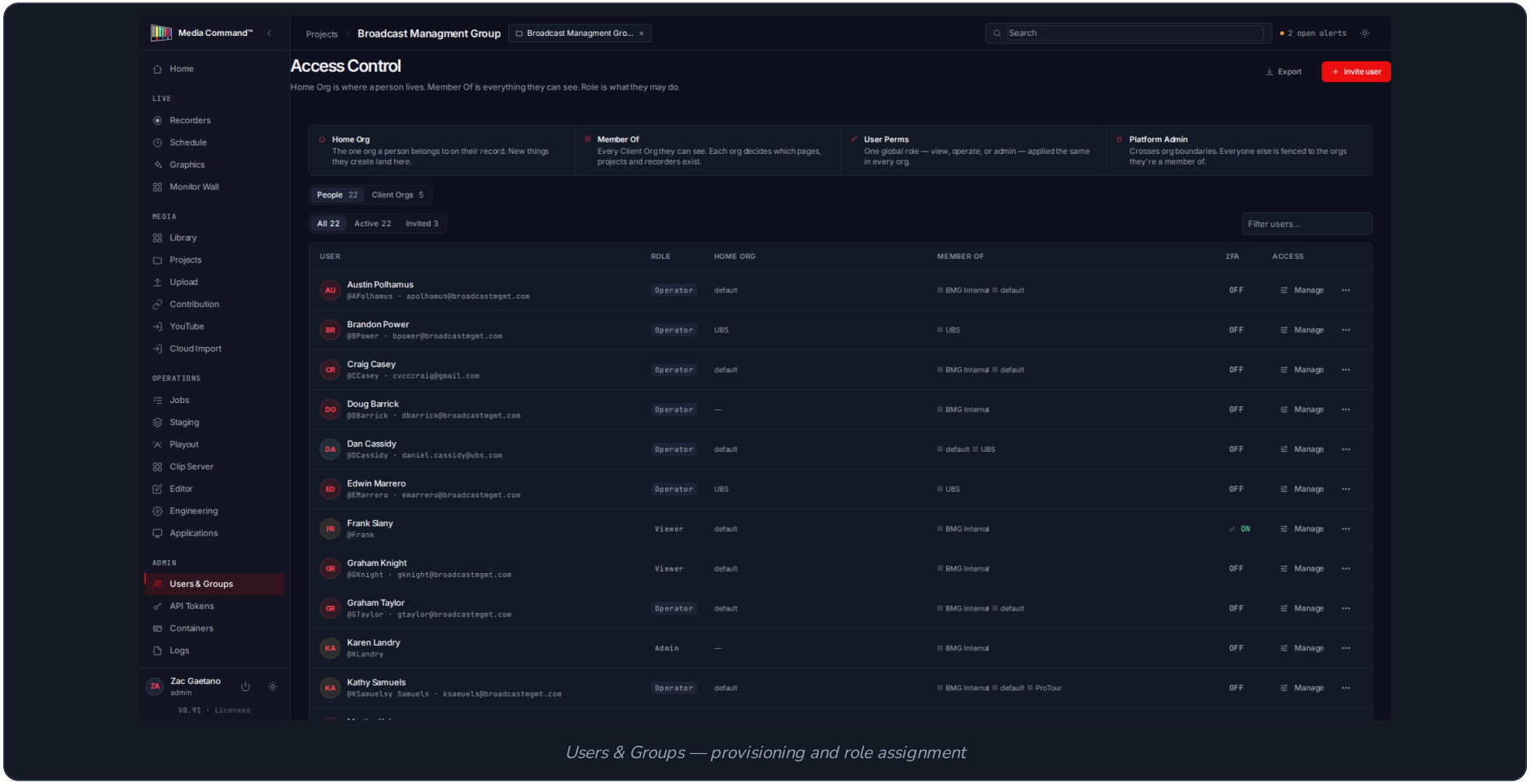


Downloads — Desktop apps tab

Application	Platform	Installer
Premiere Pro UXP Plugin	macOS / Windows	`dragonflight-mam-2.27.6.ccx`
DaVinci Resolve Plugin	macOS / Windows	`dragonflight-resolve-0.1.2.zip`
Media Command Transfer	macOS / Windows	`Media-Command-Transfer-0.2.1`
Media Command REMI	macOS / Windows	`Media-Command-REMI-0.3.3`

Dragon-ISO	Windows	`Dragon-ISO-Setup-1.1.0.msi`

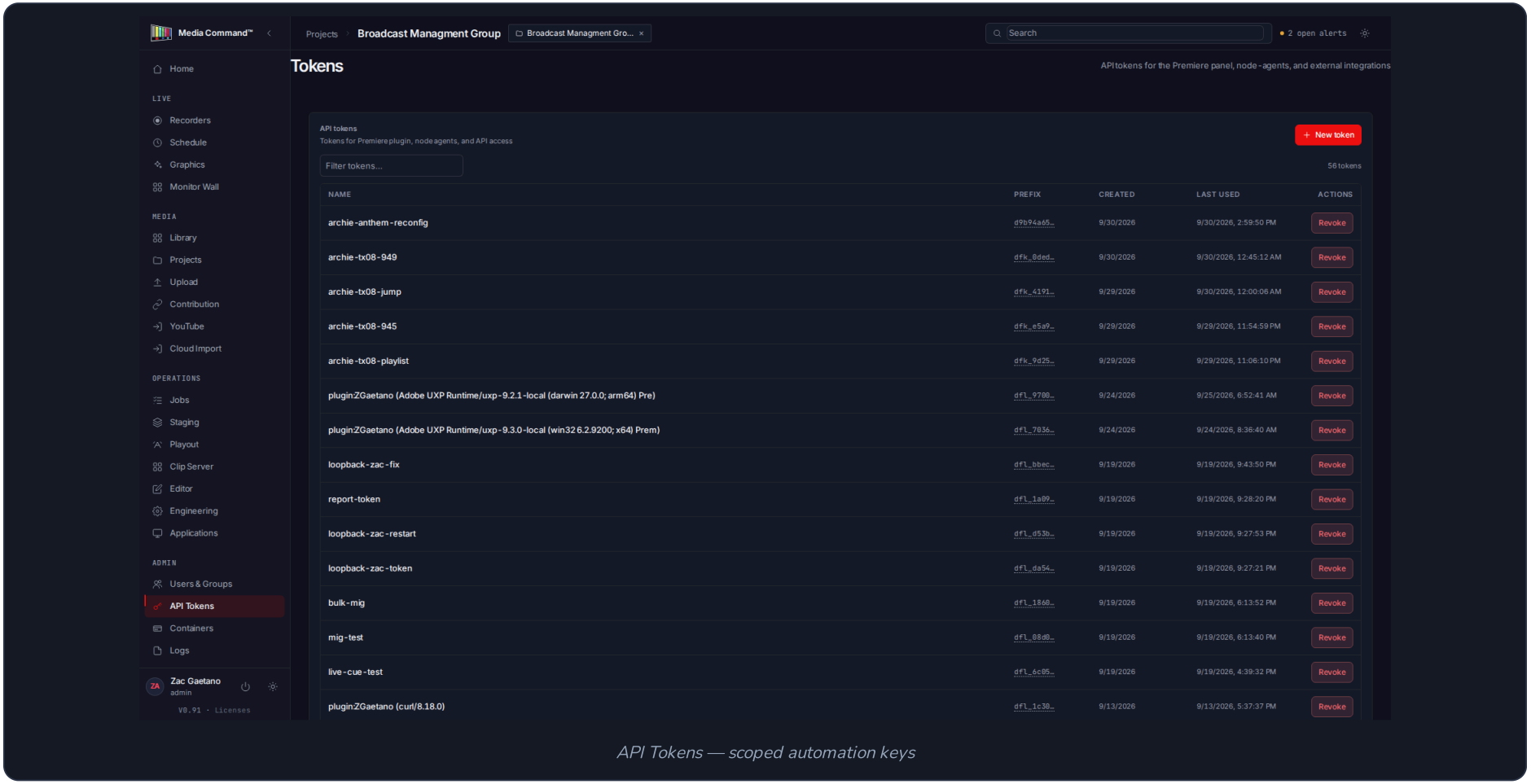
22. Users & Groups



Users & Groups — provisioning and role assignment

User provisioning, group management, and role assignment with per-project access boundaries.

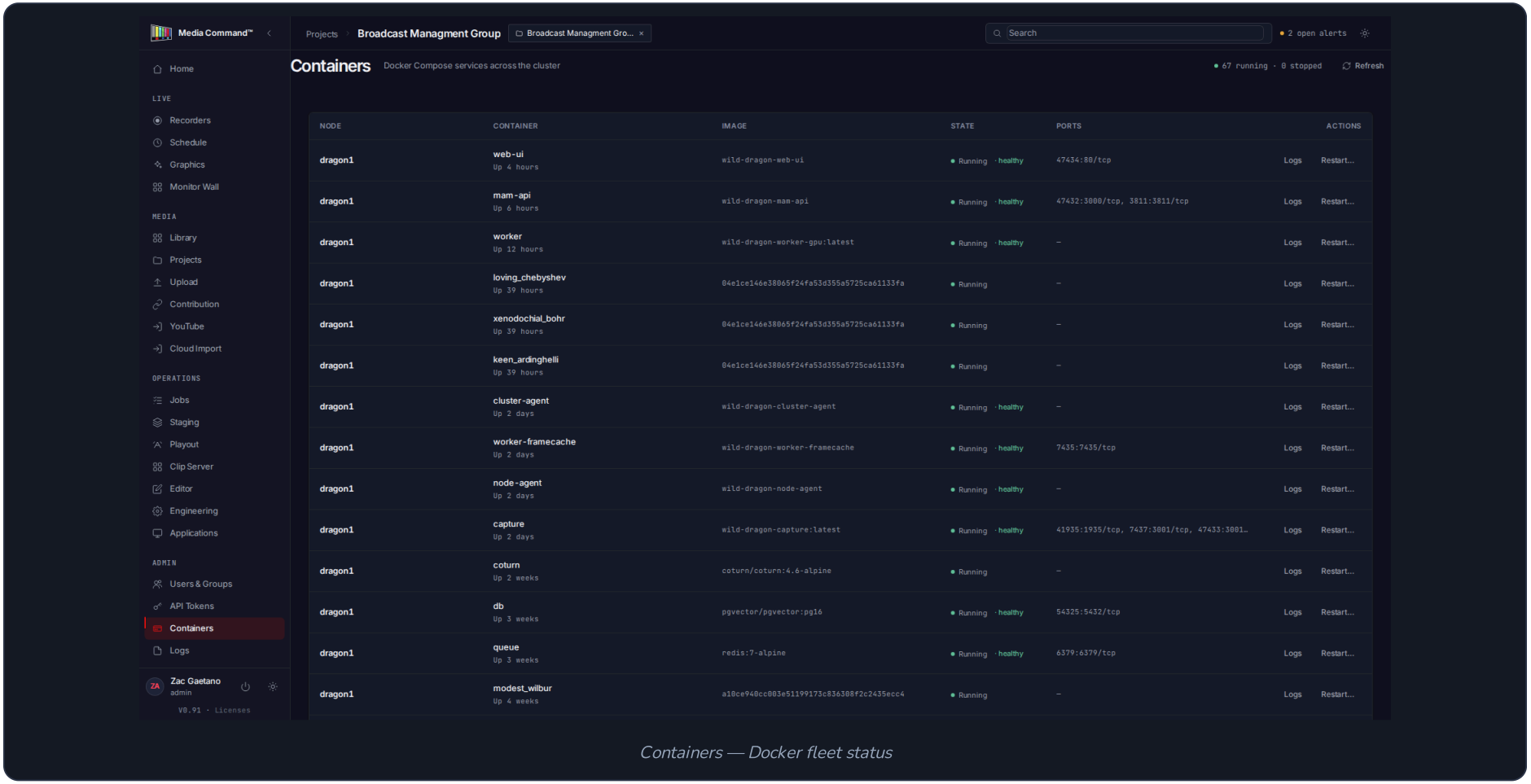
23. API Tokens



API Tokens — scoped automation keys

Scoped API keys for automation pipelines. Supports expiration and instant revocation.

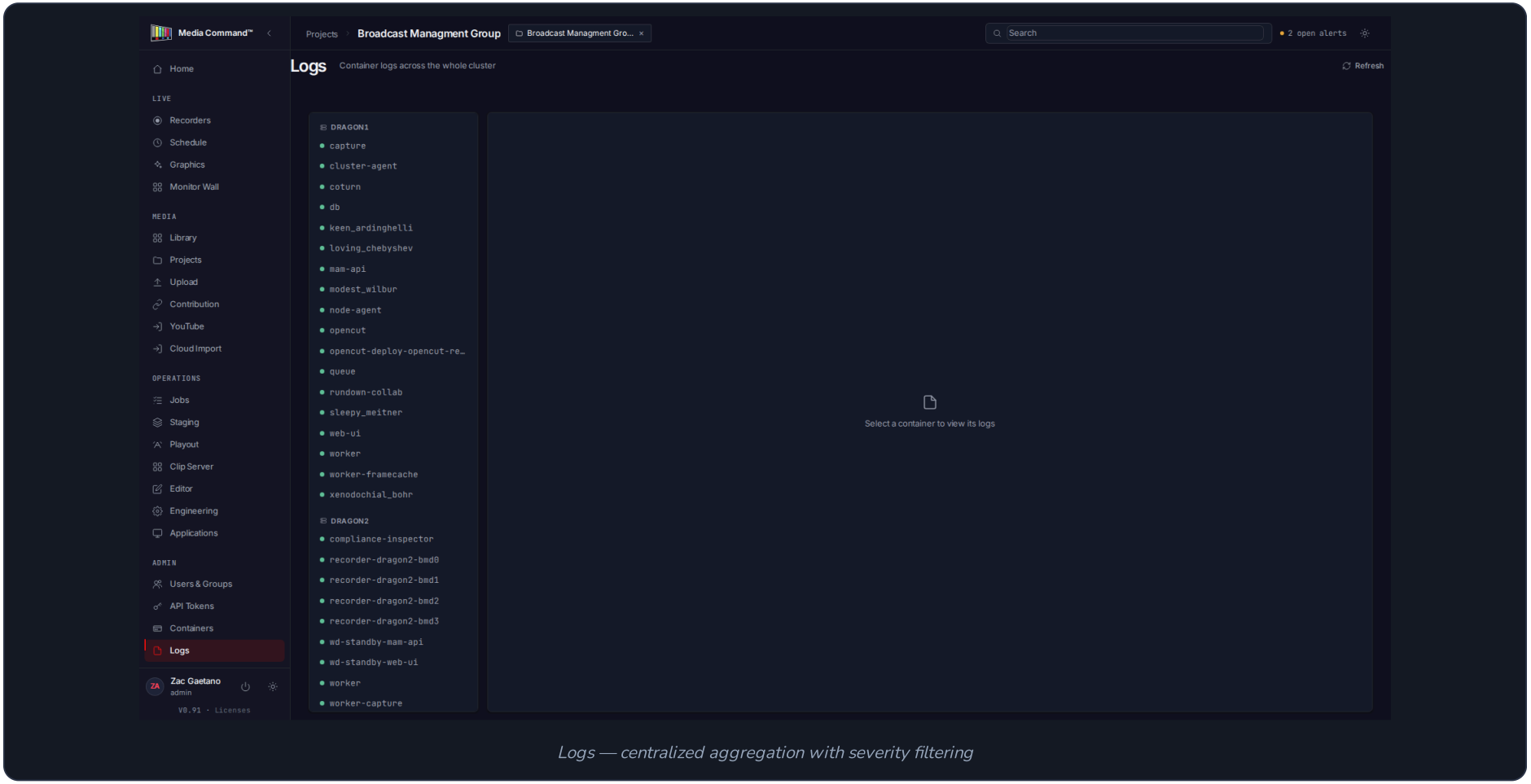
24. Containers



Containers — Docker fleet status

Docker container fleet status across all cluster nodes with resource metrics and lifecycle controls.

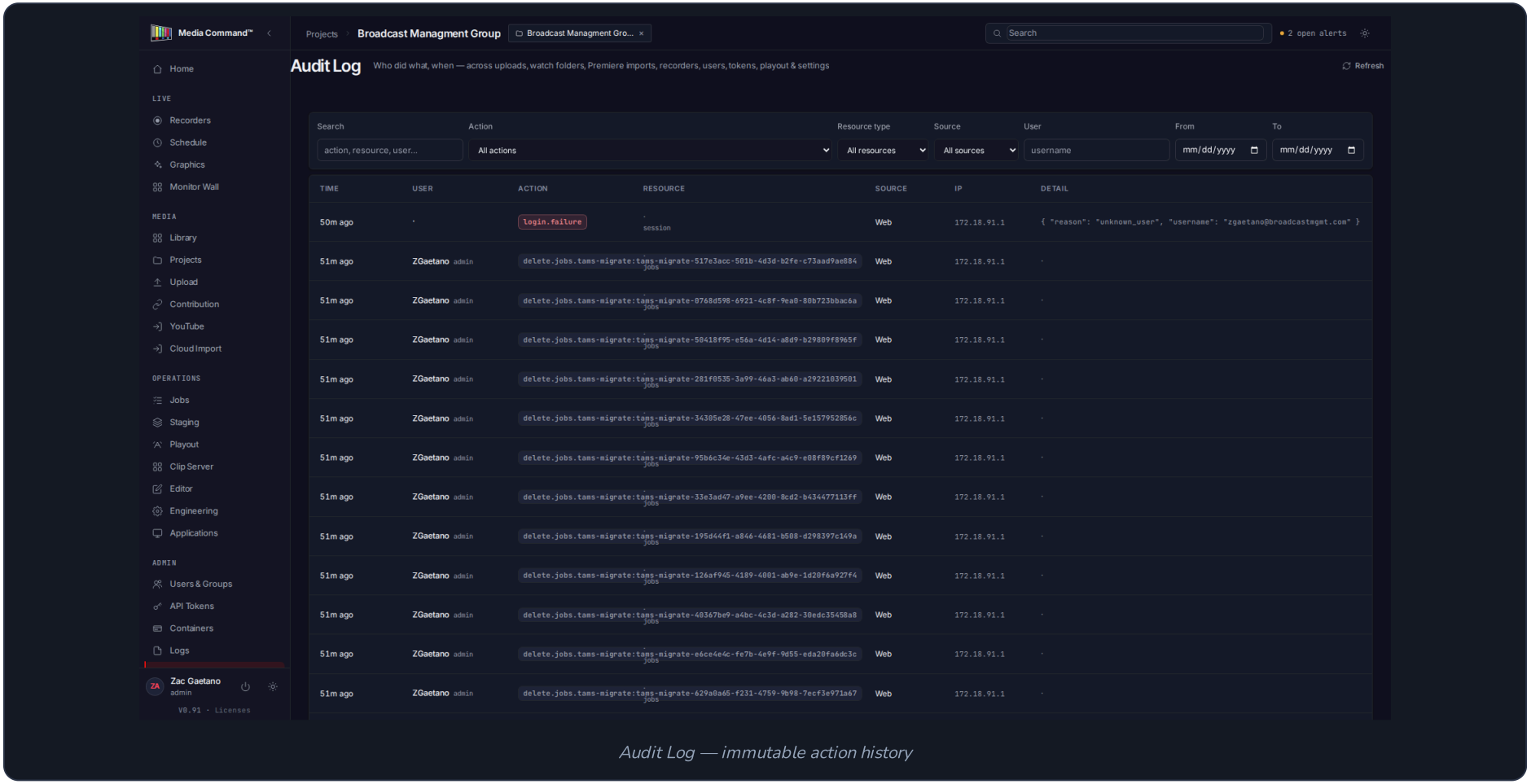
25. Logs



Logs — centralized aggregation with severity filtering

Centralized log aggregation from all nodes with severity filtering and regex search.

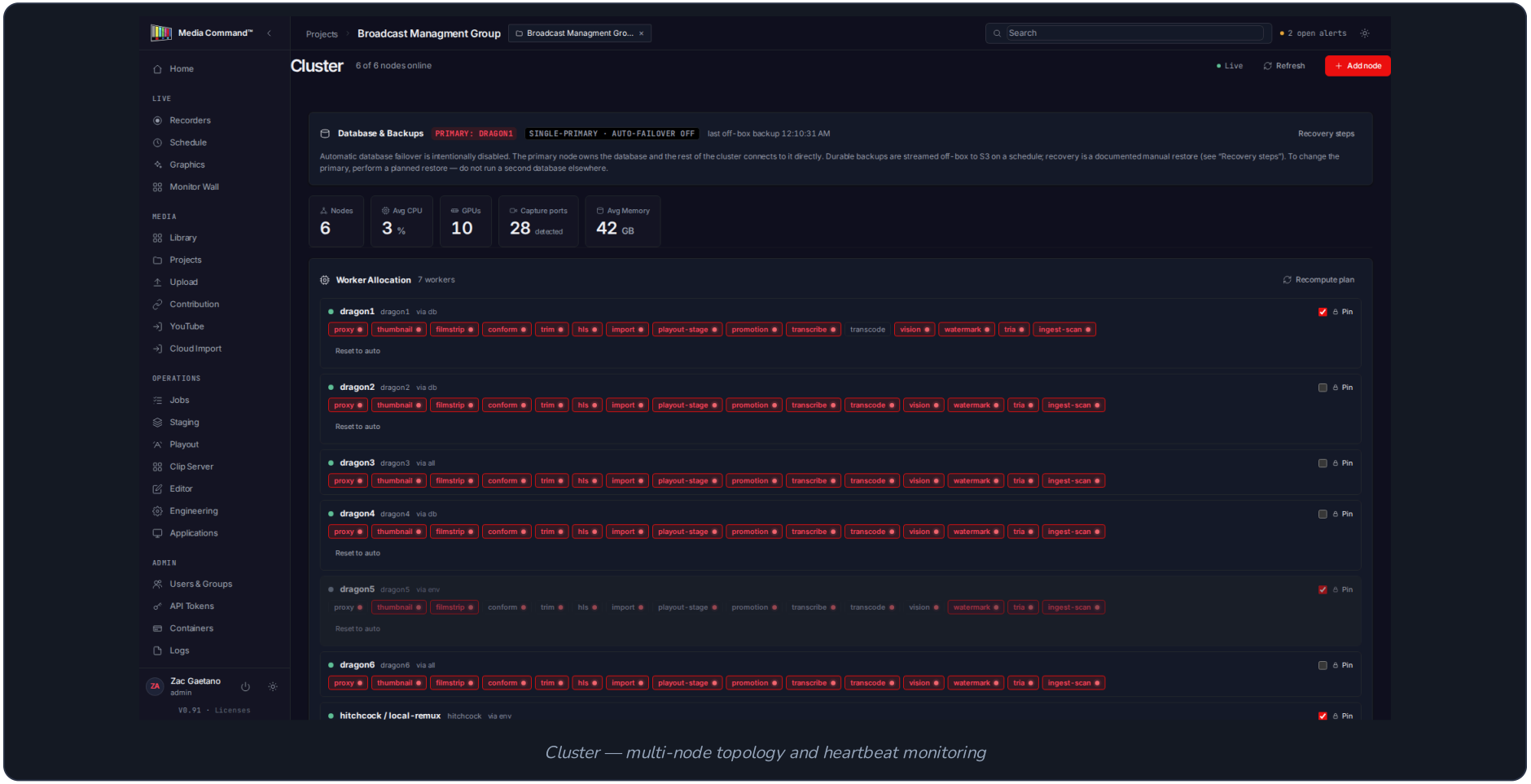
26. Audit Log



Audit Log — immutable action history

Immutable record of all user actions. Captures user ID, IP, timestamp, and state changes.

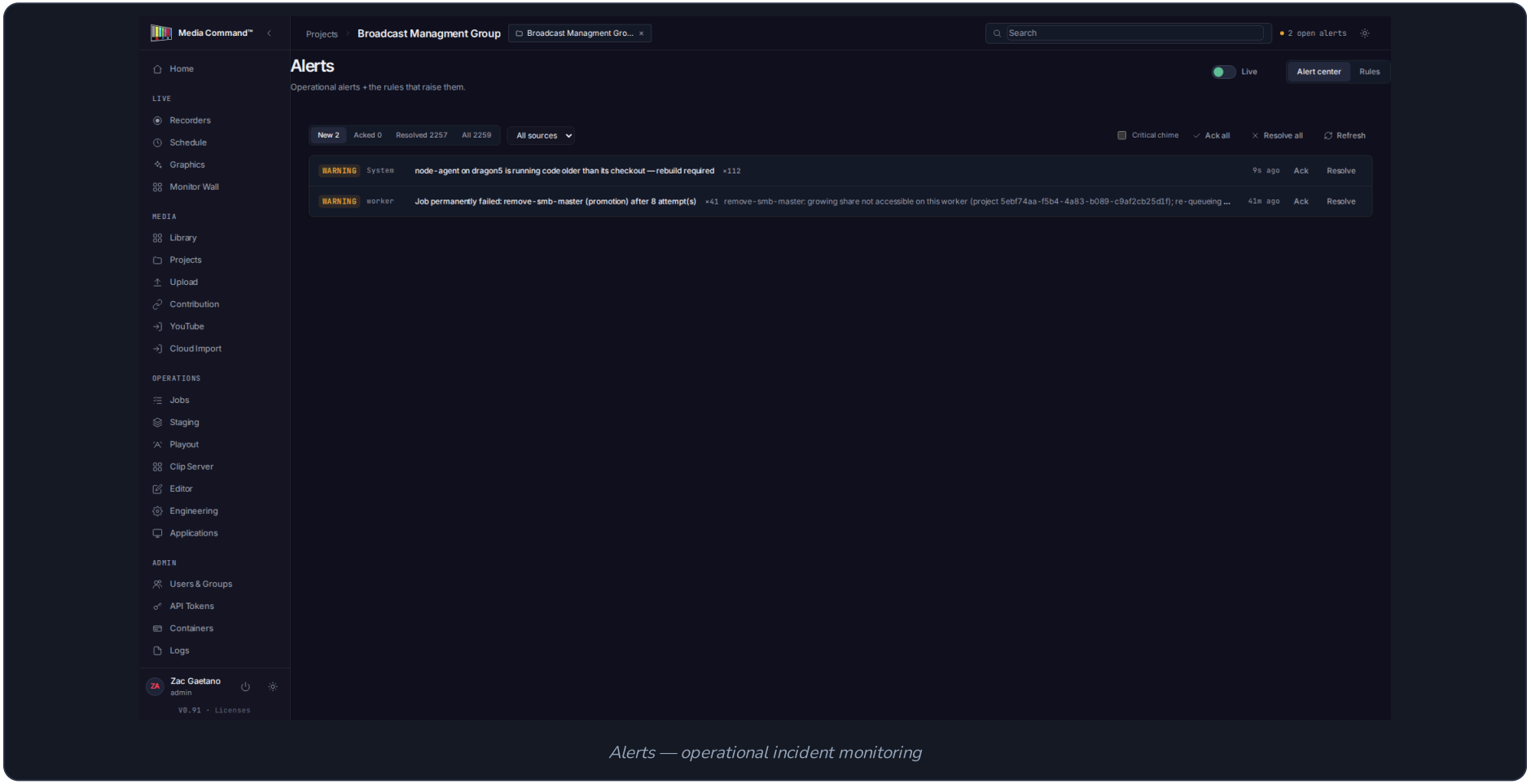
27. Cluster



Cluster — multi-node topology and heartbeat monitoring

Cluster topology visualizer with heartbeat and connectivity monitoring.

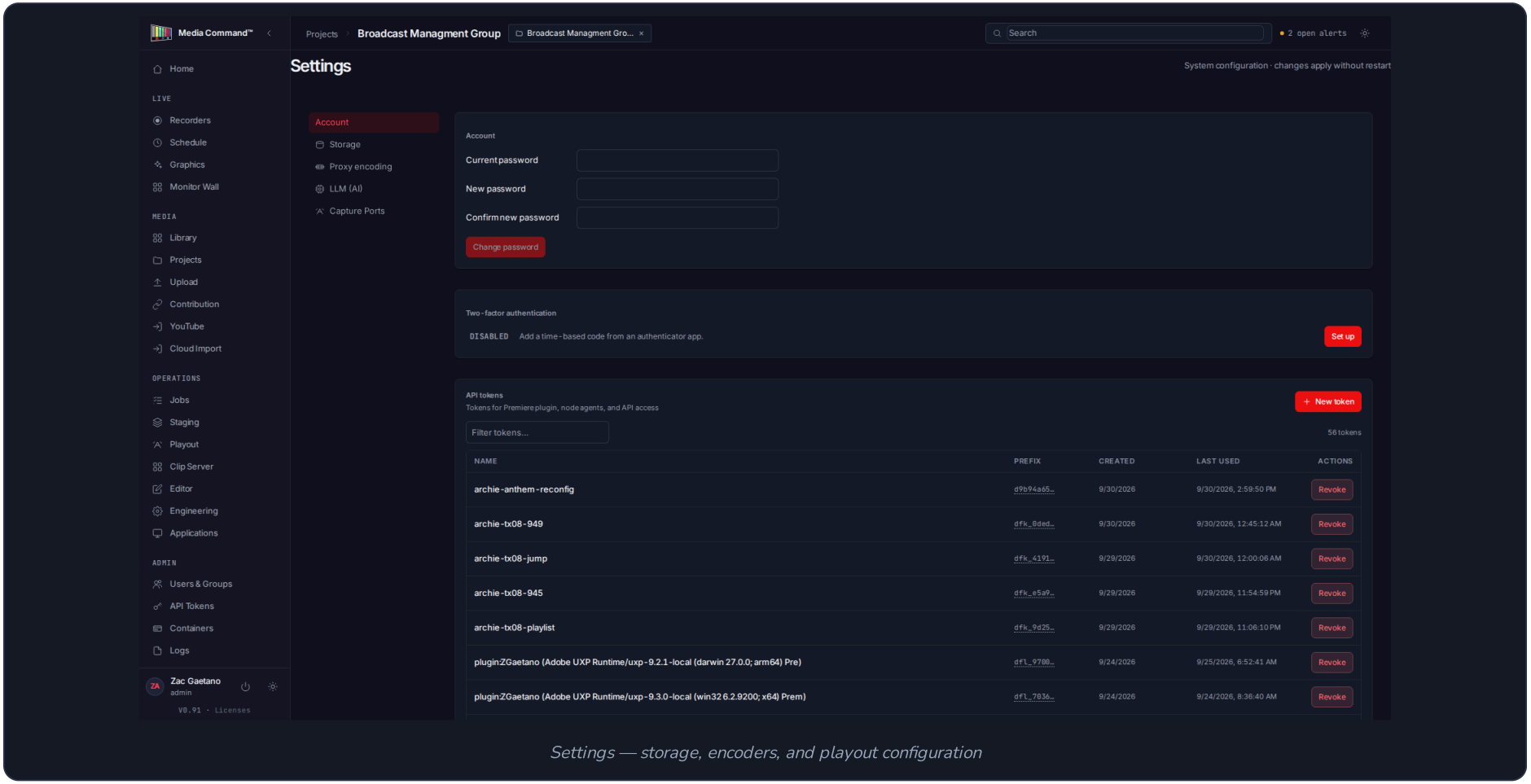
28. Alerts



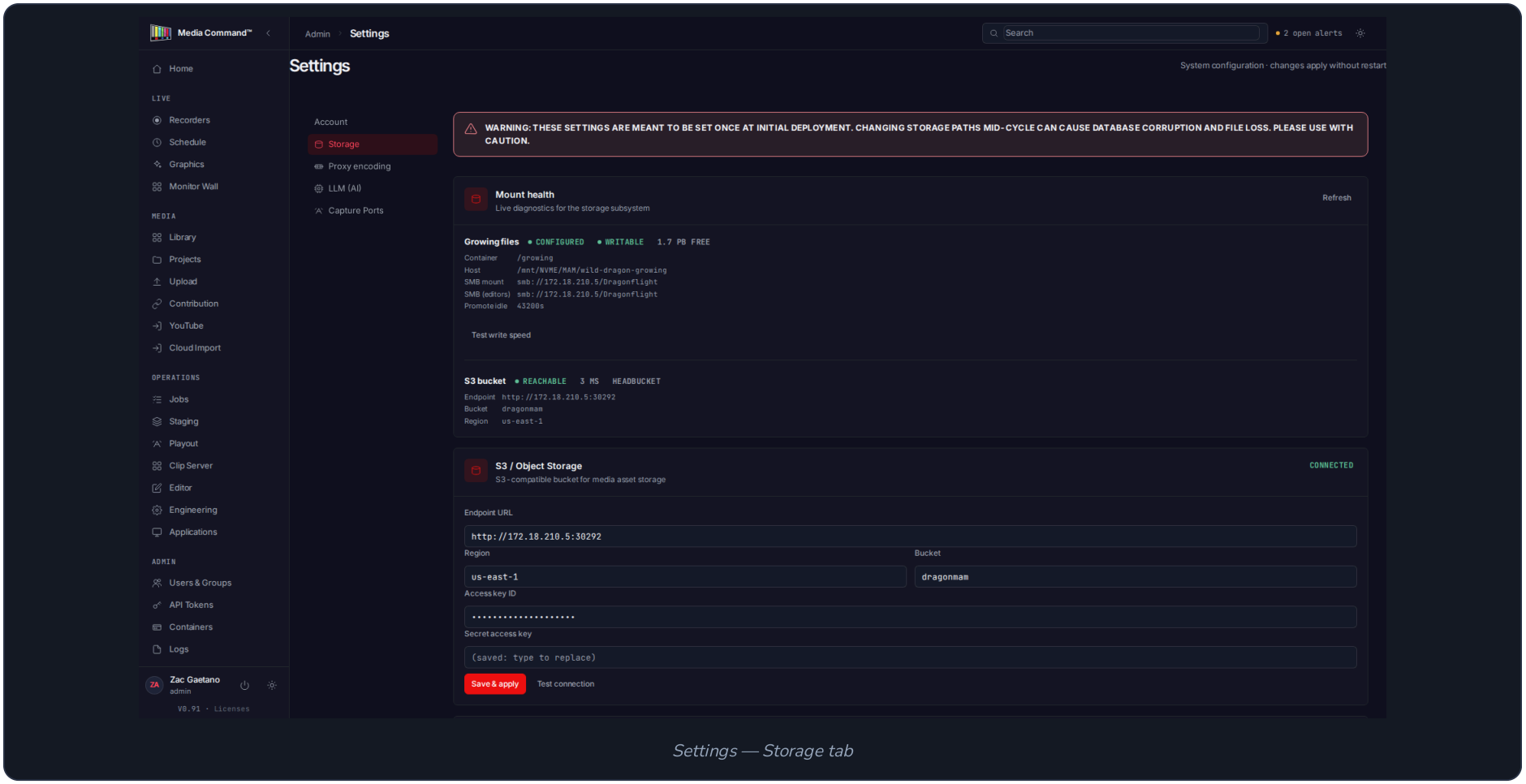
Alerts — operational incident monitoring

Active alerts (storage thresholds, signal loss, worker heartbeat drops). Webhook notifications to Discord, Slack, or email.

29. Settings



Settings — storage, encoders, and playout configuration



Settings — Storage tab

Central configuration for storage paths, S3 endpoints, transcoder profiles, and playout channel topologies.

30. Adobe Premiere Pro UXP Plugin

Package: `dragonflight-mam-2.27.6.ccx` · **Requires:** Premiere Pro 2026 (v26+)

Installation

1. Download the `.ccx` from the Downloads menu.
2. Double-click to install via Creative Cloud, or use the UXP Developer Tool.
3. In Premiere: **Window → Extensions → Media Command™**.

Capabilities

- Browse the MAM library, search assets, import proxy or hi-res renditions.
- Mount live growing TAMS capture streams for edit-while-record.
- Relink proxy edits to full-resolution masters.
- Export sequences directly to MAM project bins.

31. DaVinci Resolve Studio Plugin

Package: `dragonflight-resolve-0.1.2.zip` · **Requires:** Resolve Studio 18.5+

Installation

1. Download and extract to the Workflow Integration Plugins directory.
2. In Resolve Studio: **Workspace** → **Workflow Integrations** → **Media Command™ MAM**.

Capabilities

- Browse and search the MAM catalog.
- Import assets directly into the Resolve Media Pool.

32. Media Command Transfer

Platform	File
macOS Apple Silicon	`Media-Command-Transfer-0.2.1-mac-arm64.zip`
macOS Intel	`Media-Command-Transfer-0.2.1-mac-x64.zip`
Windows x64	`Media-Command-Transfer-0.2.1-win-x64.exe`

High-speed desktop uploader with watch folder automation, drag-and-drop upload, and `mediacommand://` deep-link protocol for browser-initiated downloads. Builds are unsigned.

33. Media Command REMI

Platform	File
macOS Apple Silicon	`Media-Command-REMI-0.3.3-mac-arm64.zip`
macOS Intel	`Media-Command-REMI-0.3.3-mac-x64.zip`
Windows x64	`Media-Command-REMI-0.3.3-win-x64.exe`

- Up to 8 tiles per window with configurable grid layouts.
- Proxy / QC mode toggle for full-quality NVENC streams.
- Audio metering with channel pair selection, solo, and mute.
- Broadcast OSD overlays (tally, timecode, safe area, crosshairs).
- Multi-window, multi-display support.
- HTTP REST API and WebSocket for Bitfocus Companion / Stream Deck.
- Builds are unsigned.

34. Dragon-ISO

Package: `Dragon-ISO-Setup-1.1.0.msi` · **Platform:** Windows 10/11

Microsoft Teams NDI ISO controller. Extracts individual participant streams, normalizes to broadcast standards, and re-emits as clean NDI sources with optional disk recording.

- REST & WebSocket on `127.0.0.1:9755`.
- OSC server on UDP `127.0.0.1:9000` for Companion and TouchOSC.
- Mobile web controller at `http://localhost:9755/ui`.

35. Safety & Runbooks

> **Media Deletion Protocol:** Deleting an asset moves it to the project's Recycle Bin. Permanent purge requires admin credentials and confirmation dialogs.

Live Growing File Editing

1. In **Recorders**, select the target port and set codec to H.264 intra or HEVC intra.
2. Click **Create Recording**.
3. In the **Premiere Pro plugin**, locate the active recording (red `LIVE` badge) and click **Mount Growing File**.
4. Edit immediately — new segments are recognized dynamically.