# OffloadPro

by APETech

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## Stop Losing Machines to Proxy Rendering.

A dedicated proxy transcode farm that works in the background so your team keeps working.

Product Overview

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**CONFIDENTIAL**

THE PROBLEM

# Your AEs shouldn't be waiting on renders

Every post-production facility faces the same bottleneck: generating proxy files ties up expensive editing workstations for hours. When an Assistant Editor launches a proxy render in DaVinci Resolve, their machine becomes unusable — no editing, no organizing, no work gets done until the render finishes.

With camera formats getting larger (6K, 8K, RAW), proxy generation takes longer than ever. Multiply that by dozens of camera cards per shoot day, and you have a serious workflow problem:

- AE workstations locked up for hours during proxy renders
- Editorial timelines delayed waiting for proxies to finish
- Expensive hardware sitting idle on actual editing work
- No visibility into what's rendering, what's done, or what failed
- No centralized system — every AE runs their own renders independently

**OffloadPro eliminates this problem entirely.**

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THE SOLUTION

# How OffloadPro Works

OffloadPro is a self-hosted proxy transcoding system built for post-production. It offloads all proxy rendering to dedicated machines so your editorial team never loses a workstation.

| Step | Action | Details |
|---|---|---|
| 1 | Open Browser | AE navigates to OffloadPro on the local network — nothing to install |
| 2 | Browse NAS | Select files or folders directly from shared storage |
| 3 | Choose Format | Pick output codec, container, resolution, and optional LUT |
| 4 | Submit | Click submit and go back to work immediately |
| 5 | Get Notified | Receive in-app and email alerts when proxies are ready |

## System Architecture

| Component | Role | What It Does |
|---|---|---|
| Manager | The Brain | Runs the web interface, manages the job queue, dispatches work, sends notifications |
| Workers | The Muscle | Dedicated render machines that transcode using FFmpeg with GPU acceleration. Add as many as needed. |

| | | |
|---|---|---|
| NAS | Shared Storage | Your existing network storage. All machines mount the NAS. Source files read, proxies written here. |

FEATURES

# Built for Professional Post-Production

## Timecode & Metadata Preservation

This is non-negotiable in a professional workflow. OffloadPro extracts the original timecode from every source file and writes it into the proxy. Reel names, camera IDs, scene/take metadata — all carried over. After every transcode, the system verifies the output timecode matches the source. If it doesn't, the job is flagged as failed so nothing slips through.

## GPU-Accelerated Encoding

OffloadPro automatically detects GPU hardware on each worker machine and leverages hardware encoding when available. H.264 and H.265 proxy renders can be 3–10x faster than CPU-only encoding.

| GPU Vendor | Technology | Speed Benefit |
|---|---|---|
| NVIDIA | NVENC | Up to 10x faster than CPU for H.264/H.265 |
| Intel | Quick Sync Video | Up to 5x faster, available on most Intel CPUs |
| AMD | AMF / VCE | Up to 5x faster on Radeon GPUs |

If a machine doesn't have a supported GPU, OffloadPro automatically falls back to optimized CPU encoding.

## LUT Application

Camera-native log footage (S-Log3, LogC, C-Log3) looks flat without color management. OffloadPro can apply a LUT during proxy generation, converting log footage to Rec.709 or a custom look so editorial proxies are immediately viewable in any NLE.

- Supports industry-standard .cube, .3dl, .csp, and .clf LUT formats
- Admins upload and organize LUTs by project or camera type
- Default LUTs auto-assigned per folder path
- LUT is optional per job — users can choose "No LUT" for untouched proxies

## Job Scheduling & Blackout Windows

Users can schedule proxy renders for a specific time — submit during the day, render overnight. Admins can set blackout windows that prevent workers from picking up new jobs during certain hours.

| Capability | Description |
|---|---|
| Immediate Submit | Job enters the queue and starts as soon as a worker is free (default) |
| Scheduled Start | User picks a date/time; job automatically enters the queue at that time |
| Blackout Windows | Admin defines hours when workers pause (e.g., Mon–Fri 9 AM–6 PM) |

| | |
|---|---|
| Per-Worker Control | Blackouts can apply to all workers or specific machines |

## Usage Analytics & Reporting

Full analytics dashboards give admins complete visibility into system utilization.

| Dashboard | What It Shows |
|---|---|
| Overview | Total jobs, transcode hours, active workers, queue depth, average speed |
| Worker Performance | Per-machine utilization, GPU vs CPU ratio, uptime history |
| User Activity | Jobs submitted per user, storage consumed per user, most active projects |
| Storage Report | Total proxy storage over time, compression ratios by codec, per-project breakdown |

All data exportable as CSV for external reporting.

## Smart Notifications

| Event | In-App | Email (configurable) |
|---|---|---|
| Job submitted to queue | Yes | Optional |
| Job started on a worker | Yes | On by default |
| Job completed successfully | Yes | On by default |
| Job failed (with error details) | Yes | On by default |
| Entire batch finished | Yes | On by default |

FORMAT SUPPORT

# Speaks Every Camera's Language

| Accepts (Input) | Proxy Codecs (Output) | Containers |
|---|---|---|
| Sony X-OCN | DNxHD 36 / 45 / LB | MXF (Avid-native) |
| ARRIRAW | DNxHR LB / SQ | MOV (QuickTime) |
| Canon Cinema RAW | ProRes Proxy / LT | MP4 |
| Apple ProRes (all flavors) | H.264 | |
| DNxHD / DNxHR | H.265 / HEVC | |
| XAVC / XAVC-S | | |
| Canon XF-AVC | | |

| | | |
|---|---|---|
| H.264 / H.265 (camera) | | |
| MPEG-2 | | |

Invalid codec/container combinations are automatically blocked. The UI only shows valid pairings.

USER EXPERIENCE

# For Assistant Editors & Post Team

No software to install. No training required. AEs open a browser, log in, and see a familiar file browser showing the NAS. They select clips, pick their proxy settings, and submit.

| What They Can Do | Details |
|---|---|
| Browse the NAS | Navigate folders in a clean file browser — only shows supported media files |
| Submit proxy jobs | Select codec, container, resolution, and optional LUT — invalid combos blocked |
| Schedule renders | Submit now or pick a time (e.g., "tonight at 10 PM") |
| Monitor their jobs | Live progress bars, status updates, which worker is handling each file |
| Cancel jobs | Cancel their own queued or in-progress jobs |
| Get notified | In-app bell notifications + email when jobs start, finish, or fail |

## For Admins & Supervisors

| What They Can Do | Details |
|---|---|
| Manage users | Create/edit/disable accounts, assign admin or user roles |
| Mount NAS shares | Add, mount, unmount, and test NAS connections from the web UI — no SSH |
| Monitor workers | See every render machine: online/offline, GPU info, current job, utilization |
| Manage LUTs | Upload LUT files, organize by project/camera, set auto-defaults per folder |
| Control scheduling | Set blackout windows to reserve machines during business hours |
| View all jobs | See every job from every user, cancel/retry/delete any job |
| View analytics | Full dashboards: transcode hours, worker performance, storage, user activity |
| Configure system | SMTP for email, default output paths, worker settings — all from the UI |

BEFORE & AFTER

# The Difference Is Immediate

| Without OffloadPro | With OffloadPro |
|---|---|
| AE machines locked during renders | AE machines stay free — 100% uptime for editing |
| No visibility into render progress | Real-time progress dashboard for every job |
| Each AE renders independently | Centralized queue with full team visibility |
| CPU-only encoding in Resolve | GPU-accelerated encoding on dedicated hardware |
| Log proxies look flat and unwatchable | LUTs applied automatically during generation |
| Renders start whenever an AE triggers them | Schedule overnight renders with blackout windows |
| No usage data or reporting | Full analytics: hours, utilization, storage |
| No notifications — AEs check manually | Instant in-app + email notifications |
| Scaling means more Resolve licenses | Add workers for free — FFmpeg is open source |
| Requires software on every machine | Nothing to install — browser only |

SCALABILITY

# Grows With Your Facility

| Scenario | Setup | Capacity |
|---|---|---|
| Small Facility | 1 Manager + 1 Worker | Daily proxy needs for a small editorial team |
| Mid-Size Facility | 1 Manager + 3–5 Workers | Parallel rendering; batch a full shoot day overnight |
| Large Facility | 1 Manager + 10+ Workers | Enterprise-level throughput; multiple shows simultaneously |

**Adding a new worker takes about 15 minutes:**

- Install the OS and FFmpeg on the machine
- Run the worker setup script
- Mount the NAS
- Point it at the Manager — it auto-registers and starts pulling jobs

No Manager restart. No reconfiguration. No downtime for the rest of the system.

TECHNICAL REQUIREMENTS

# What You Need

## Manager Machine

| Requirement | Specification |
|---|---|
| OS | Ubuntu 22.04+ (or compatible Linux) |
| CPU | Any modern CPU (minimal load) |
| RAM | 4 GB minimum |
| Storage | Minimal — database is typically under 100 MB |
| Network | Gigabit ethernet, NAS access, reachable by all workers and AE machines |

## Worker Machines (Render Nodes)

| Requirement | Specification |
|---|---|
| OS | Ubuntu 22.04+ (or compatible Linux) |
| CPU | High core-count recommended for DNx/ProRes (CPU-based codecs) |
| GPU (optional) | NVIDIA (NVENC), Intel (QSV), or AMD (AMF) for H.264/H.265 |
| RAM | 8 GB minimum, 16 GB+ recommended |
| Storage | Minimal — all I/O goes to/from NAS |
| Network | 10GbE recommended for high-throughput NAS access |

## AE / User Machines

Nothing to install. Any machine with a modern web browser (Chrome, Firefox, Safari, Edge) on the same network can access OffloadPro. Works from Mac, Windows, Linux, even tablets.

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SECURITY

# Access Control

| Feature | Details |
|---|---|
| User Accounts | Admin-created accounts only — no self-registration |

| | |
|---|---|
| Password Security | Industry-standard bcrypt hashing |
| Role-Based Access | Admin and User roles with different permission levels |
| Session Management | Secure session cookies with configurable timeout |
| Worker Auth | Workers authenticate with unique keys from the admin panel |
| NAS Credentials | Mount credentials stored encrypted in the database |
| Network Scope | Runs entirely on your internal network — no cloud dependencies |

# OffloadPro

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**Your editors should be editing. Let the machines do the rendering.**

For inquiries, demos, or deployment discussions:

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