# HTML5 video

Chaos is a bitrate ladder

This is a video about video

fasterthanlime
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...more

# I already have a great image pipeline

```
<p data-bo- 1194 >
▼ <a href="https://sdr-podcast.com" class>
  ▼ <picture>
      <source type="image/jxl" srcset="https://cdn.fasterthanli.me/content/articles/state-of-the-fasterthanlime-2024/sdr@2x~ee0b065120a8dcde.jxl">
      <source type="image/avif" srcset="https://cdn.fasterthanli.me/content/articles/state-of-the-fasterthanlime-2024/sdr@2x~b0dc00dda39409e6.avif">
      <source type="image/webp" srcset="https://cdn.fasterthanli.me/content/articles/state-of-the-fasterthanlime-2024/sdr@2x~3702f9f2d8ca9b65.webp">
    ▶ <img src="https://cdn.fasterthanli.me/content/articles/state-of-the-fasterthanlime-2024/sdr@2x~ee0b065120a8dcde.jxl" loading="lazy" width="940"
    height="619" title="The Self-Directed Research Podcast website" alt="The Self-Directed Research Podcast website"> = $0
    </picture>
  </a>
</p>
```

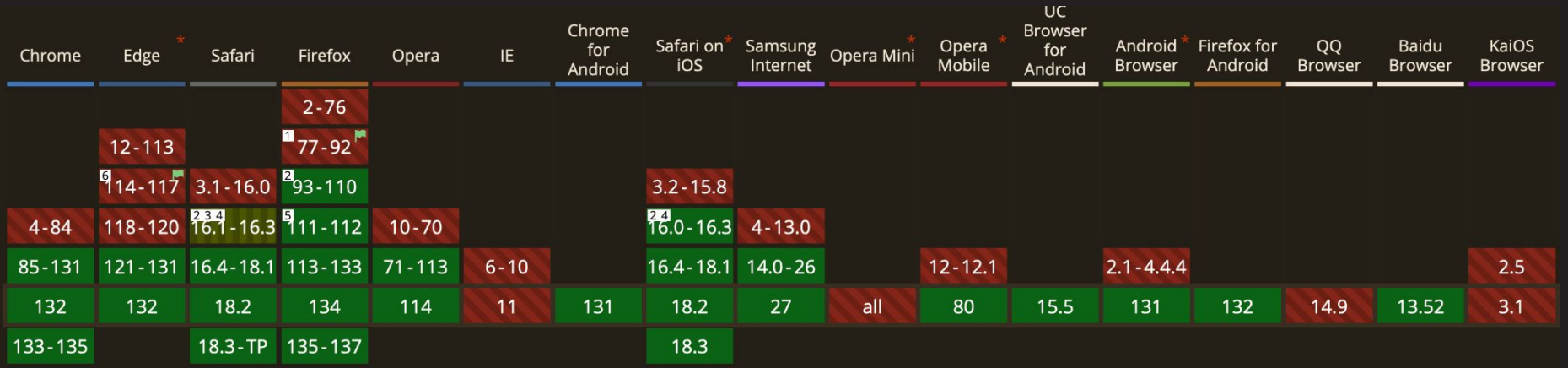
# JXL is *so good*

(so so good)

| Chrome | Edge * | Safari | Firefox | Opera | IE | Chrome for Android | Safari on iOS * | Samsung Internet | Opera Mini * | Opera Mobile * | UC Browser for Android | Android Browser * | Firefox for Android | QQ Browser | Baidu Browser | KaiOS Browser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-90 | 12-90 | | | 10-76 | | | | | | | | | | | | |
| [1] 91-109 | [3] 91-109 | 3.1-16.6 | 2-89 | [1] 77-95 | | | 3.2-16.7 | | | | | | | | | |
| 110-131 | 110-131 | [4] 17.0-18.1 | [2] 90-133 | 96-113 | 6-10 | | [4] 17.0-18.1 | 4-26 | | 12-12.1 | | 2.1-4.4.4 | | | | 2.5 |
| 132 | 132 | [4] 18.2 | [2] 134 | 114 | 11 | 131 | [4] 18.2 | 27 | all | 80 | 15.5 | 131 | 132 | 14.9 | 13.52 | 3.1 |
| 133-135 | | [4] 18.3-TP | [2] 135-137 | | | | [4] 18.3 | | | | | | | | | |

# AVIF is AV1 in a trenchcoat

(I also like it a bunch)



| Chrome | Edge * | Safari | Firefox | Opera | IE | Chrome for Android | Safari on iOS * | Samsung Internet | Opera Mini * | Opera Mobile * | UC Browser for Android | Android Browser * | Firefox for Android | QQ Browser | Baidu Browser | KaiOS Browser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2-76 | | | | | | | | | | | | | |
| | 12-113 | | 1 77-92 | | | | | | | | | | | | | |
| | 6 114-117 | 3.1-16.0 | 2 93-110 | | | | 3.2-15.8 | | | | | | | | | |
| 4-84 | 118-120 | 2 3 4 16.1-16.3 | 5 111-112 | 10-70 | | | 2 4 16.0-16.3 | 4-13.0 | | | | | | | | |
| 85-131 | 121-131 | 16.4-18.1 | 113-133 | 71-113 | 6-10 | | 16.4-18.1 | 14.0-26 | | 12-12.1 | | 2.1-4.4.4 | | | | 2.5 |
| 132 | 132 | 18.2 | 134 | 114 | 11 | 131 | 18.2 | 27 | all | 80 | 15.5 | 131 | 132 | 14.9 | 13.52 | 3.1 |
| 133-135 | | 18.3-TP | 135-137 | | | | 18.3 | | | | | | | | | |

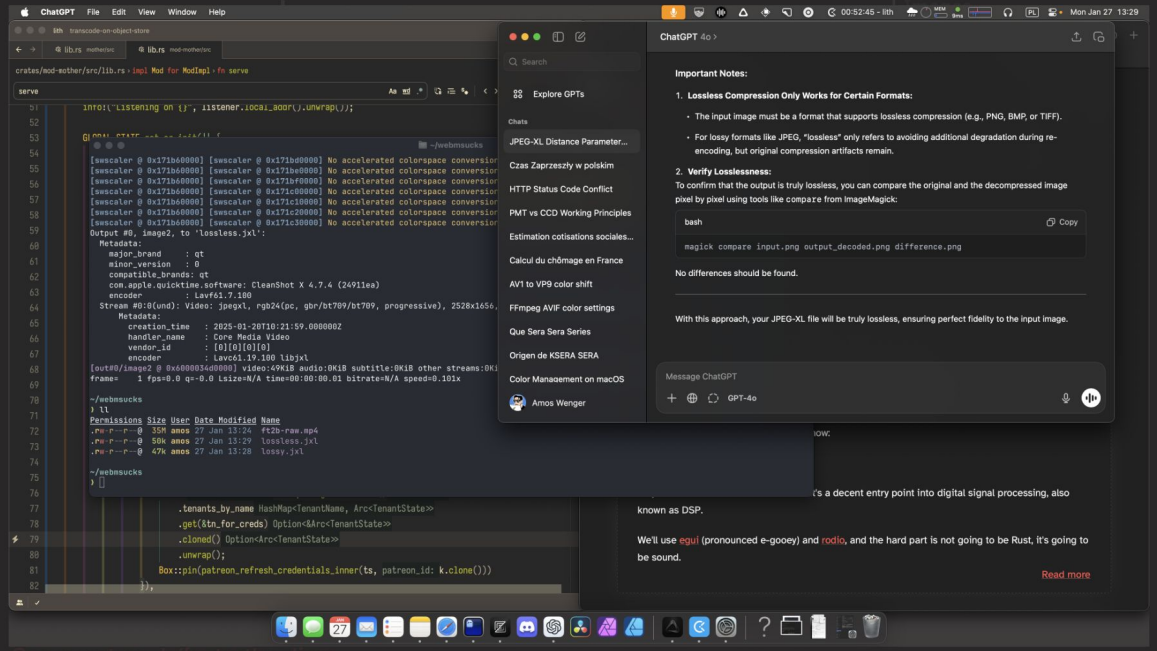
# WebP is VP8 in a trenchcoat

(I don't care for it)

| Chrome | Edge * | Safari | Firefox | Opera | IE | Chrome for Android | Safari on iOS * | Samsung Internet | Opera Mini * | Opera Mobile * | UC Browser for Android | Android Browser * | Firefox for Android | QQ Browser | Baidu Browser | KaiOS Browser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-8 | | | | 10.1 | | | | | | | | | | | | |
| [1] 9-22 | | 3.1-13.1 | | [1] 11.5 | | | | | | | | 2.1-3 | | | | |
| [2] 23-31 | 12-17 | [3] 14-15.6 | 2-64 | [2] 12.1-18 | | | 3.2-13.7 | | | | | [1] 4-4.1 | | | | |
| 32-131 | 18-131 | 16.0-18.1 | 65-133 | 19-113 | 6-10 | | 14-18.1 | 4-26 | | 12-12.1 | | 4.2-4.4.4 | | | | 2.5 |
| 132 | 132 | 18.2 | 134 | 114 | 11 | 131 | 18.2 | 27 | all | 80 | 15.5 | 131 | 132 | 14.9 | 13.52 | 3.1 |
| 133-135 | | 18.3-TP | 135-137 | | | | 18.3 | | | | | | | | | |

# PSA:

modern image formats are **good**.
be annoyed at your OS.




4k-screenshot .jxl

A 4K resolution screenshot of my desktop used for sample purposes to illustrate something on the Self-Directed Research Podcast.

Press ⌘↵ to replace

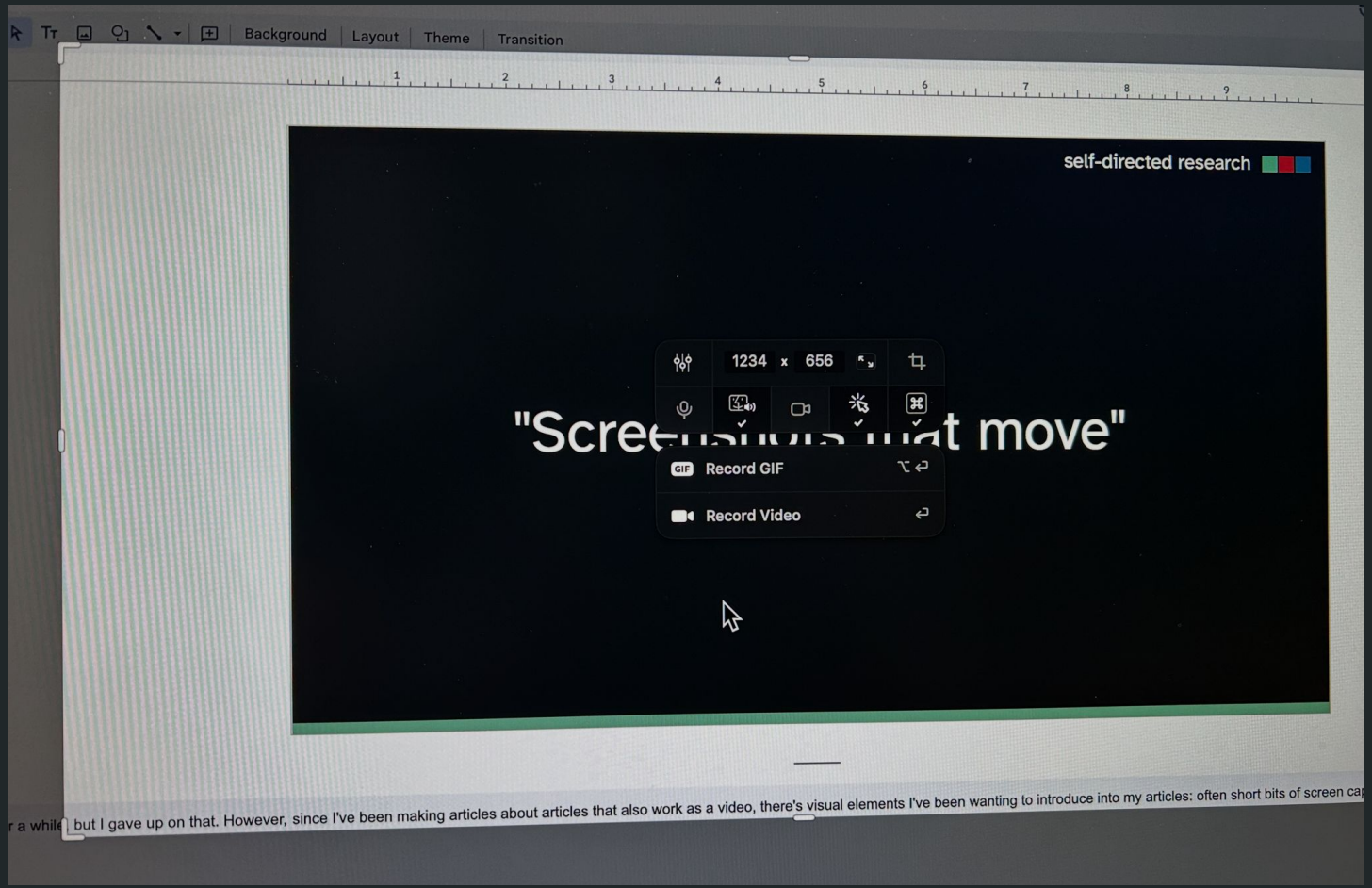
2.50 MiB PNG → 203.88 KiB JXL

(92% smaller)

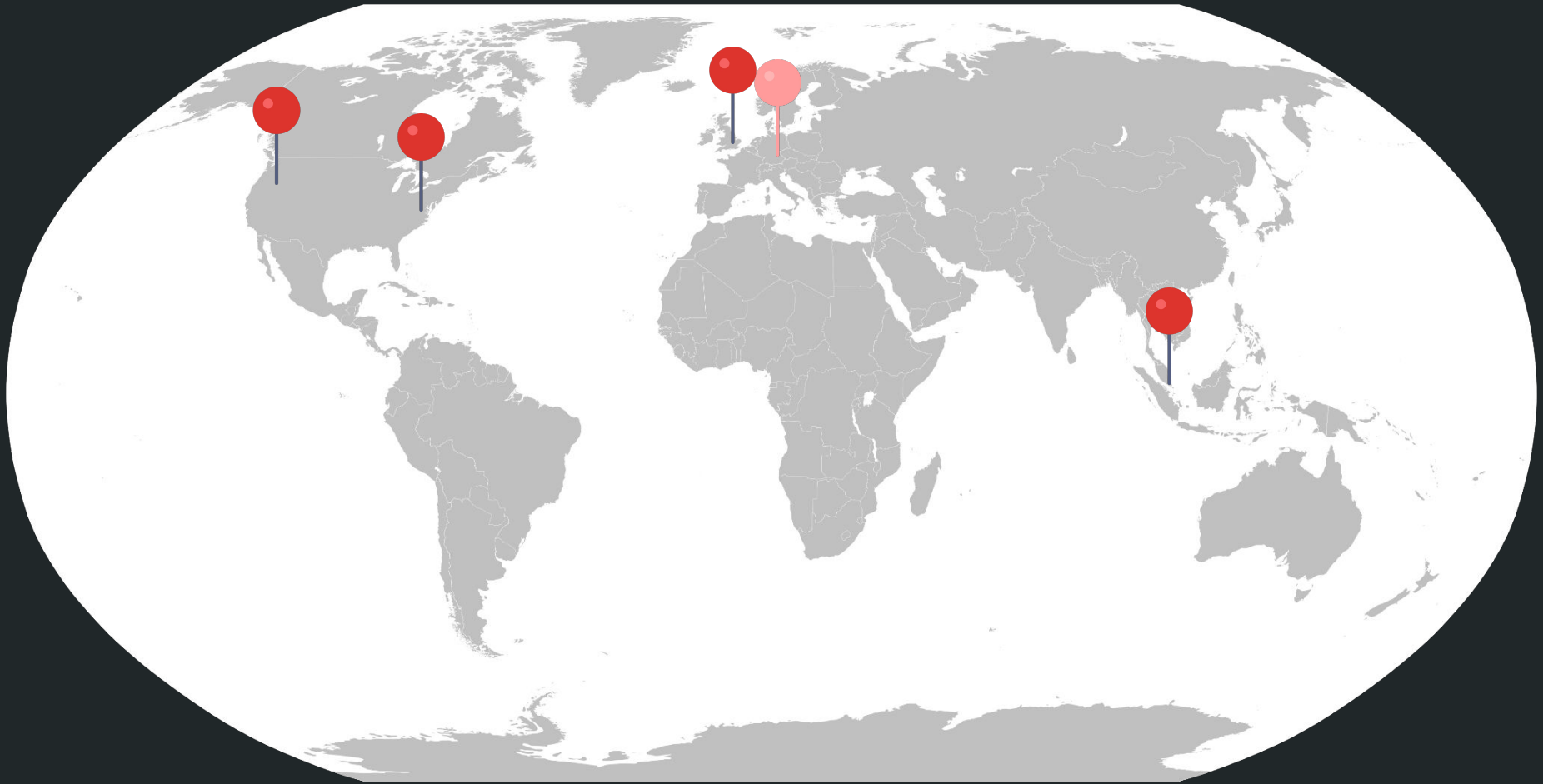
```
ffmpeg
   -i lossless-source.png
   -i encoded.jxl
   -lavfi ssim
   -f null -
```

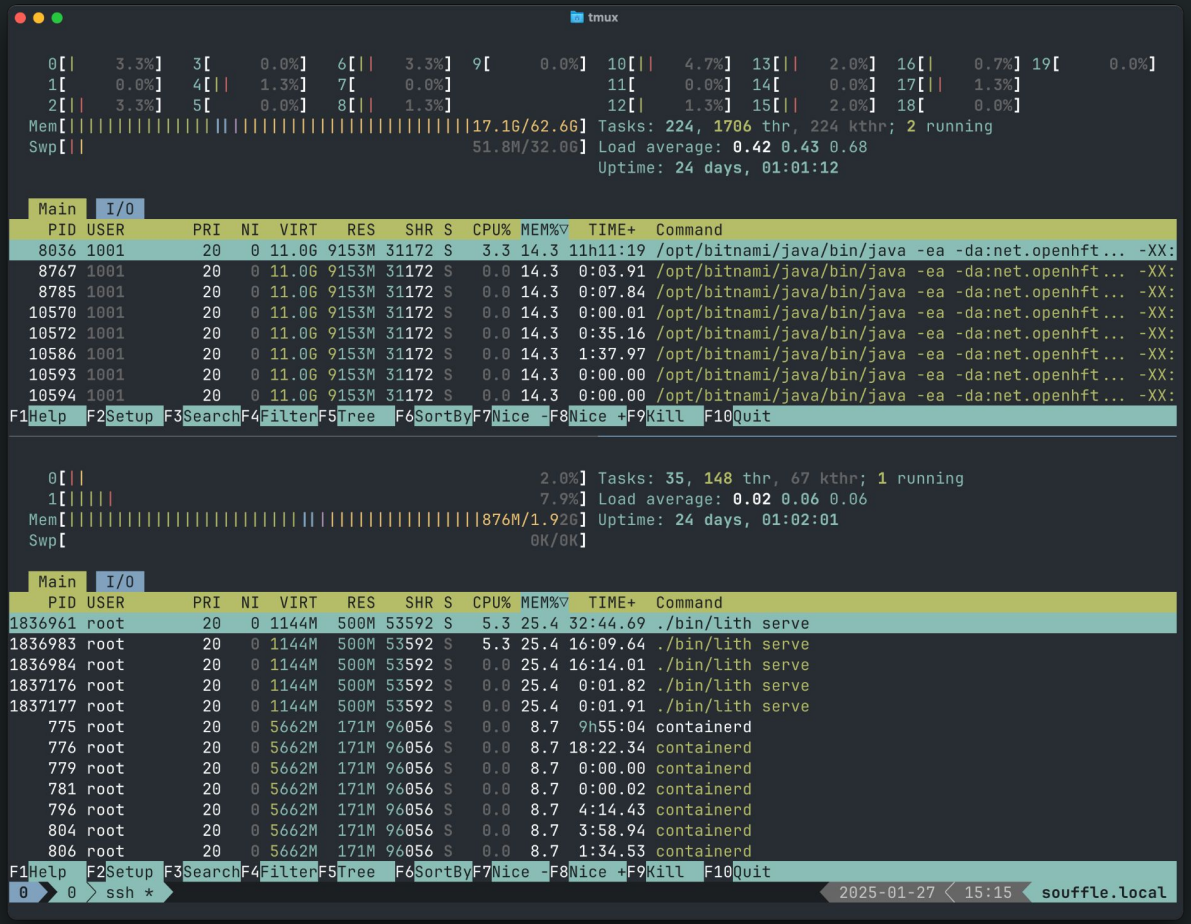
| Format | Parameters | Size | SSIM |
|---|---|---|---|
| PNG | - | 2.6MB | 1 (Inf dB) |
| **JXL** | distance 5.5<br>effort 7<br>(squirrel) | 204KB | 0.991934 (20.93 dB) |
| AVIF | quality 80<br>alpha_quality 80<br>speed 4 | 271KB | 0.994978 (22.99 dB) |
| WebP | quality 75 | 300KB | 0.992875 (21.47 dB) |

"Screenshots that move"


Background
Layout
Theme
Transition
self-directed research
1234 x 656
Record GIF
Record Video
but I gave up on that. However, since I've been making articles about articles that also work as a video, there's visual elements I've been wanting to introduce into my articles: often short bits of screen

# ffmpeg-sidecar






64GB RAM
20 cores (i5-13500)
2x0.5TB NVME SSD
(RAID 0, YOLO)

2GB RAM
2 vCPUs
60GB "SSD"

# Which "storage" format?

# AVC: yes but no

(aka H.264)

# HEVC: super no

(aka H.265)

# VP9: we're in 2025

(so... no)

# AV1: yes please!

(thanks AOM!)

## slow screen capture (drag & drop in Finder)

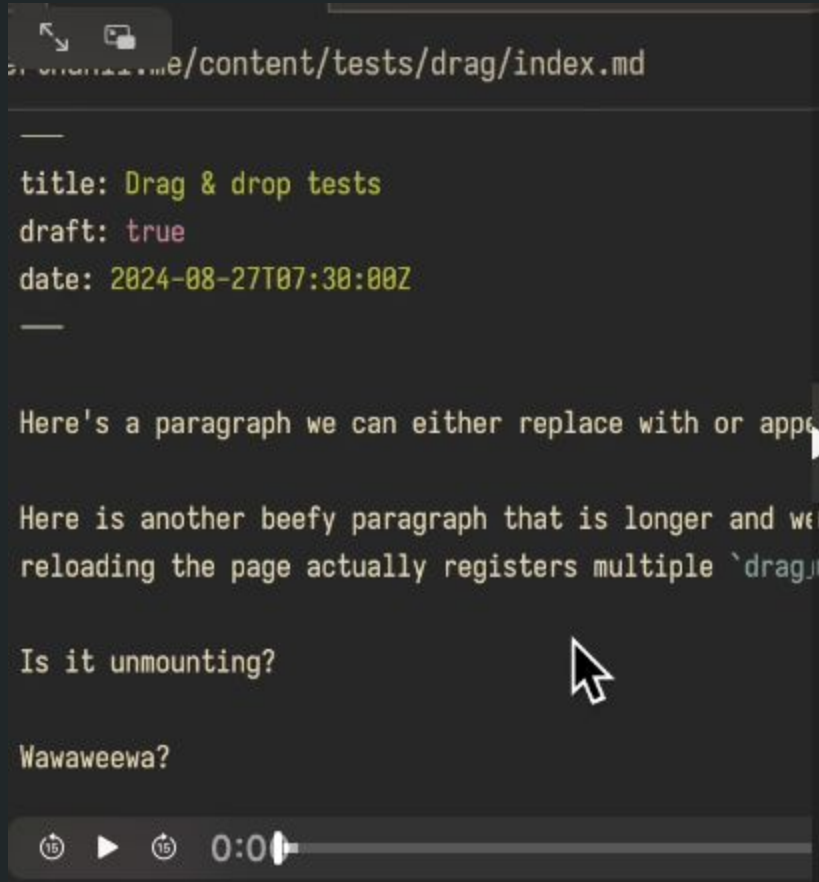
| Format | Parameters | Size | VMAF |
|---|---|---|---|
| H.264 | (from CleanShot) | 2.1MB | **97.449695** |
| **AV1** | **libsvtav1**<br>crf 35<br>tile-columns 2<br>tile-rows 2<br>preset 5 | 750KB | 97.155218 |
| VP9 | **libvpx-vp9**<br>crf 24<br>b:v 0 (CQ)<br>speed 4<br>row-mt 1<br>tile-columns 6 | 1.1MB | 96.577180 |

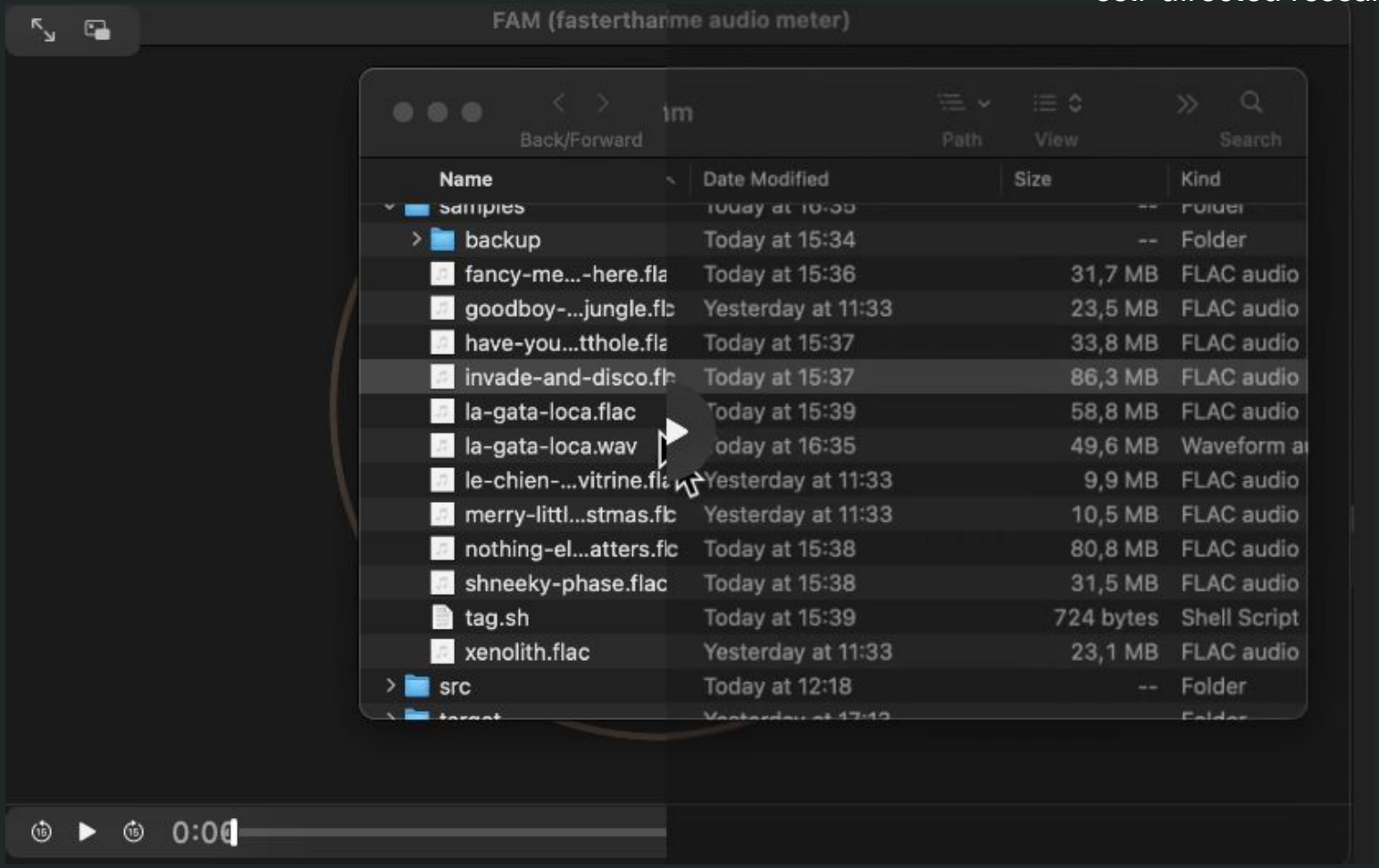
## fast screen capture (Fasttracker 2)

| Format | Parameters | Size | VMAF |
|---|---|---|---|
| H.264 | (from CleanShot) | 1.5MB | **98.906779** |
| **AV1** | **libsvtav1**<br>crf 35<br>tile-columns 2<br>tile-rows 2<br>preset 5 | 372KB | 98.905066 |
| VP9 | **libvpx-vp9**<br>crf 24<br>b:v 0 (CQ)<br>speed 4<br>row-mt 1<br>tile-columns 6 | 928KB | 98.891297 |

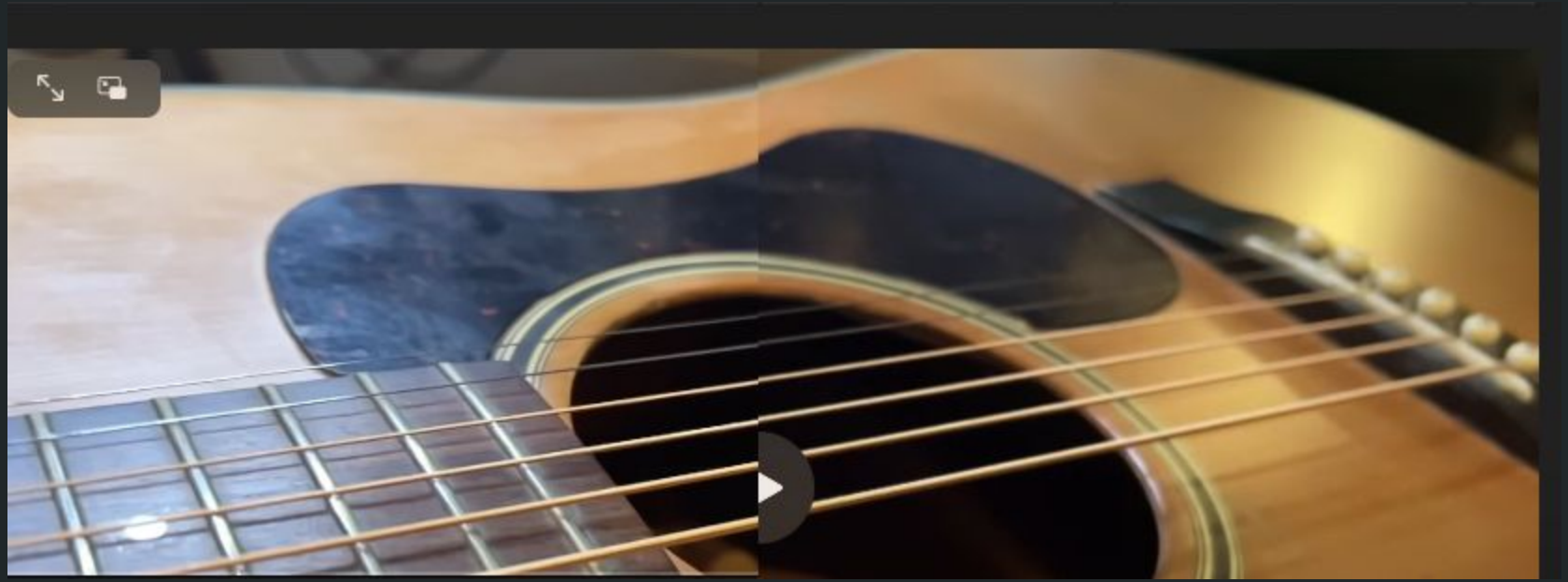
## iPhone slow mo footage (strumming a guitar)

| Format | Parameters | Size | VMAF |
|---|---|---|---|
| HEVC | (from iPhone) | 26MB | **99.353358** |
| **AV1** | **libsvtav1**<br>crf 35<br>tile-columns 2<br>tile-rows 2<br>preset 5 | 2.8MB | 93.846746 |
| VP9 | **libvpx-vp9**<br>crf 24<br>b:v 0 (CQ)<br>speed 4<br>row-mt 1<br>tile-columns 6 | 7.4MB | 92.841357 |

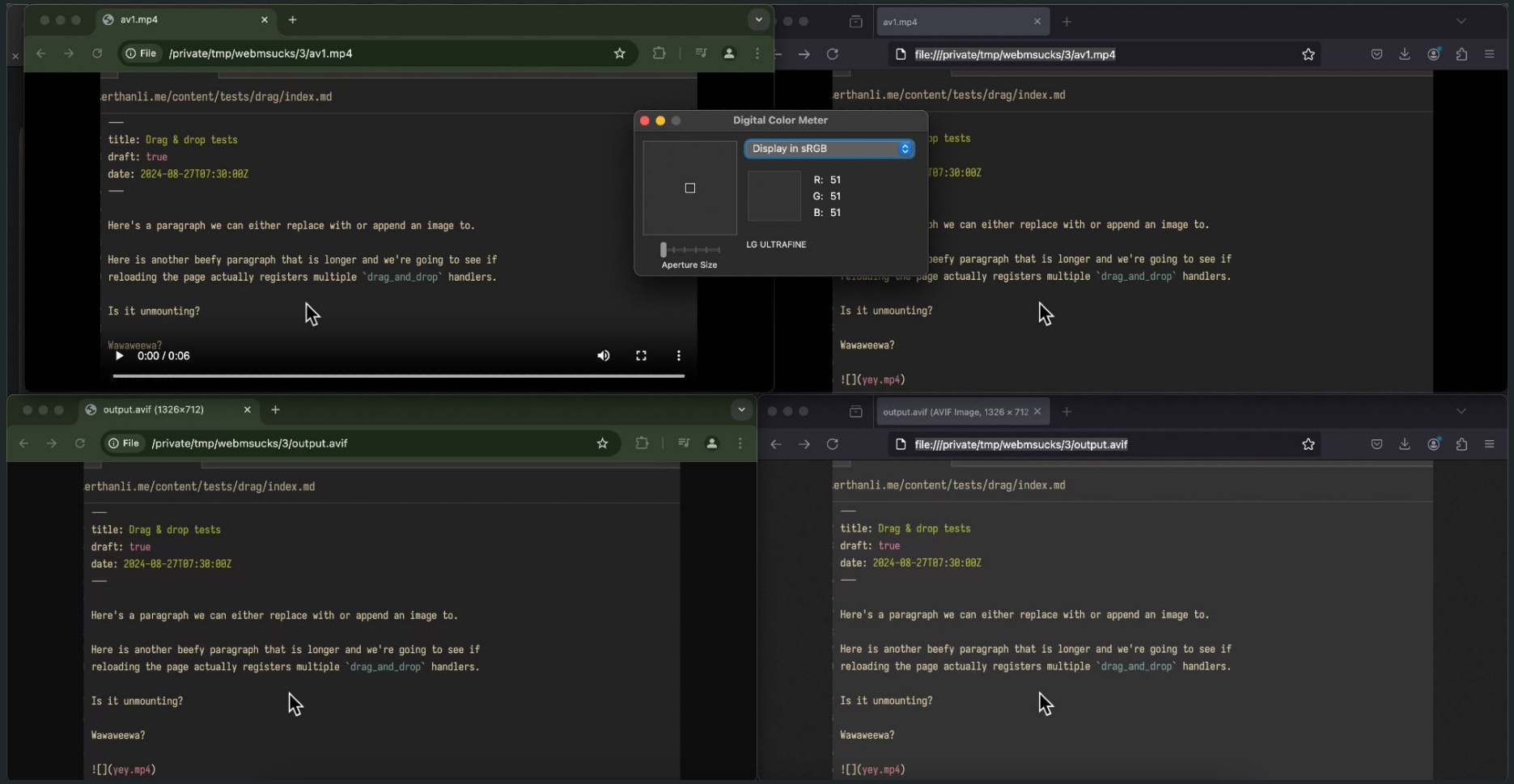

/content/tests/drag/index.md
---
title: Drag & drop tests
draft: true
date: 2024-08-27T07:30:00Z
---
Here's a paragraph we can either replace with or appe image to.
Here is another beefy paragraph that is longer and were going to see if reloading the page actually registers multiple `drag_and_drop` handlers.
Is it unmounting?
Wawaweewa?
0:0


FAM (fasterthanme audio meter)
Back/Forward
Path
View
Search
Name
Date Modified
Size
Kind
backup
Today at 15:34
Folder
fancy-me...-here.fla
Today at 15:36
31,7 MB
FLAC audio
goodboy-...jungle.fla
Yesterday at 11:33
23,5 MB
FLAC audio
have-you...tthole.fla
Today at 15:37
33,8 MB
FLAC audio
invade-and-disco.fla
Today at 15:37
86,3 MB
FLAC audio
la-gata-loca.flac
58,8 MB
FLAC audio
la-gata-loca.wav
49,6 MB
le-chien-...vitrine.fla
Yesterday at 11:33
9,9 MB
FLAC audio
merry-littl...stmas.fla
Yesterday at 11:33
10,5 MB
FLAC audio
nothing-el...atters.fla
Today at 15:38
80,8 MB
FLAC audio
shneeky-phase.flac
Today at 15:38
31,5 MB
FLAC audio
tag.sh
Today at 15:39
724 bytes
Shell Script
xenolith.flac
Yesterday at 11:33
23,1 MB
FLAC audio
src
Today at 12:18
Folder
0:00

Fasttracker II clone v1.93 - "cabin_fever.xm"
Fasttracker
BY TRITON PROD. 1996
Ins.
Del.
Songlen. 27
Repstart 00
BPM 132
Spd. 03
Add. 01
Ptn. 1C
Ln. 040
Expd.
Srnk.
Global volume 64
Time 00:01:36
Play sng.
Stop
Rec. sng.
Rec. ptn.
Disk op.
Instr. Ed.
Smp. Ed.
Config
Help
Ad
Sub
..::DROZERiX::..
Winter Chip IX
Drozerix@gmail.com
Cabin Fever!
Swap Bank
01-08
09-10
11-18
19-20
21-28
29-30
31-38
39-40
0:00



# Don't trust ffmpeg with AVIF

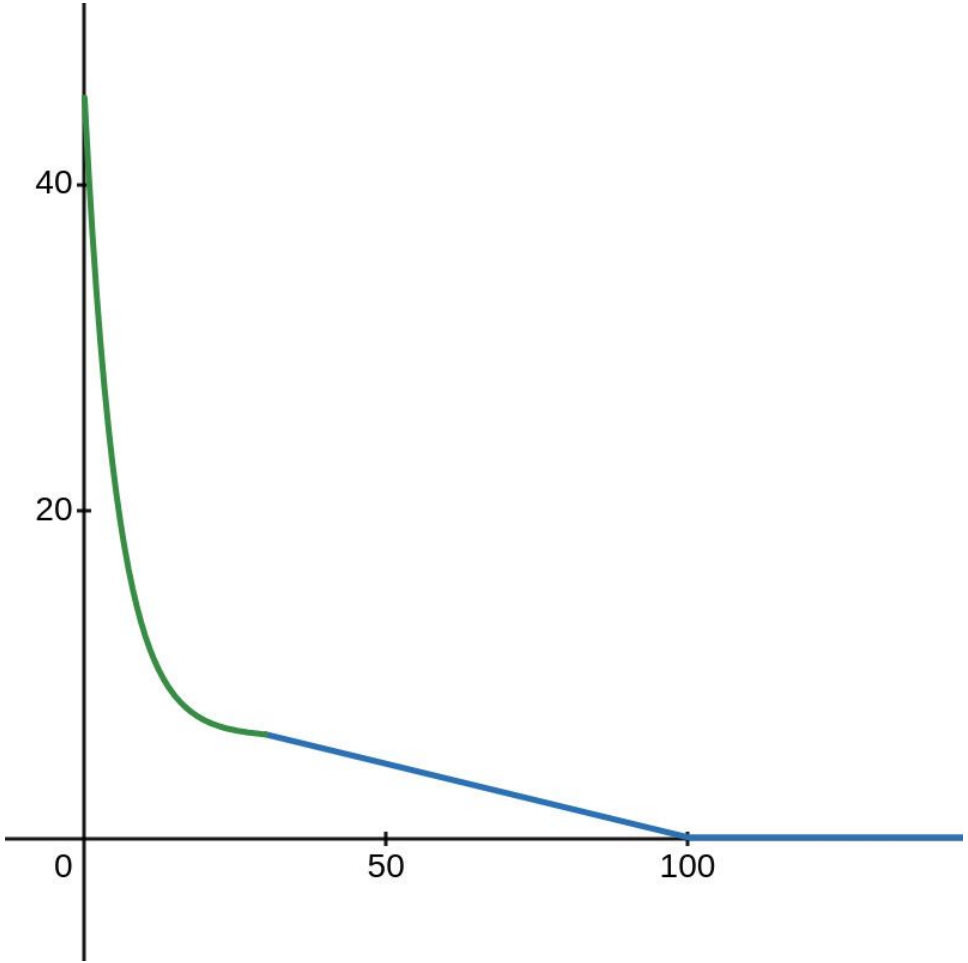

av1.mp4
File /private/tmp/webmsucks/3/av1.mp4
erthanli.me/content/tests/drag/index.md
title: Drag & drop tests
draft: true
date: 2024-08-27T07:30:00Z
Here's a paragraph we can either replace with or append an image to.
Here is another beefy paragraph that is longer and we're going to see if reloading the page actually registers multiple `drag_and_drop` handlers.
Is it unmounting?
Wawaweewa?
0:00 / 0:06
Digital Color Meter
Display in sRGB
R: 51
G: 51
B: 51
LG ULTRAFINE
Aperture Size
file:///private/tmp/webmsucks/3/av1.mp4
output.avif (1326×712)
File /private/tmp/webmsucks/3/output.avif
output.avif (AVIF Image, 1326 × 712
file:///private/tmp/webmsucks/3/output.avif
![](yey.mp4)

```
~/webmsucks/3
❯ avifdec --info output.avif
Image decoded: output.avif
 * Resolution      : 1326x712
 * Bit Depth       : 8
 * Format          : YUV420
 * Chroma Sam. Pos: 1
 * Alpha           : Absent
 * Range           : Limited
 * Color Primaries: 1
 * Transfer Char. : 1
 * Matrix Coeffs. : 1
 * ICC Profile     : Absent
 * XMP Metadata    : Absent
 * Exif Metadata   : Absent
 * Transformations: None
 * Progressive     : Unavailable
```

```
~/webmsucks/3
❯ avifdec --info output-from-webp.avif
Image decoded: output-from-webp.avif
 * Resolution      : 1326x712
 * Bit Depth       : 8
 * Format          : YUV420
 * Chroma Sam. Pos: 0
 * Alpha           : Absent
 * Range           : Limited
 * Color Primaries: 2
 * Transfer Char. : 2
 * Matrix Coeffs. : 5
 * ICC Profile     : Absent
 * XMP Metadata    : Absent
 * Exif Metadata   : Absent
 * Transformations: None
 * Progressive     : Unavailable
```

# BTW: the Accept header

```
▼ <p data-bo="82318">
  ▼ <video controls playsinline preload="none" loading="lazy" poster=
    "http://cdn.ftl.localhost:1111/content/articles/the-decibels-we-made-
  along-the-way/sounds-wrong.web~a7ec30092905106e.thumb" width="1600"
  height="1016"> Event = $0
    ▶ Shadow Content (User Agent) Event
```


40
20
0
50
100

# Wish me luck