

Checking AV Properties Basics

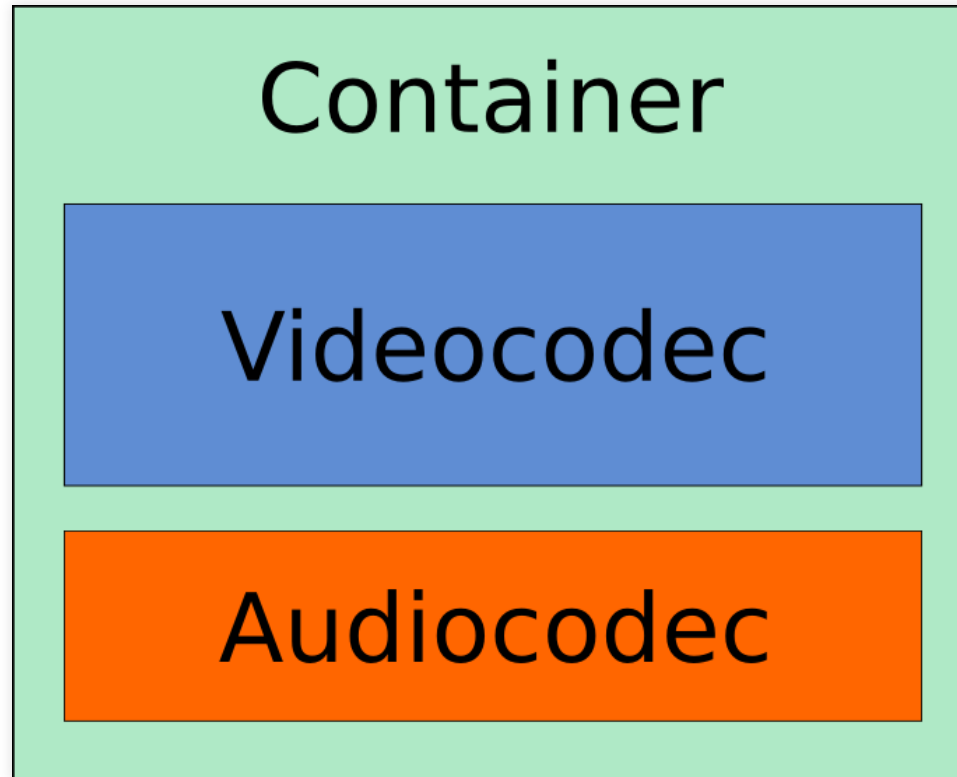
**Peter Bubestinger-Steindl
(p.bubestinger @ AV-RD.com)**

March 2019

Abstract

This is about technical properties of audiovisual files,
how to identify and check/validate them.

Trinity



Structure



Tools

We'll show these here:

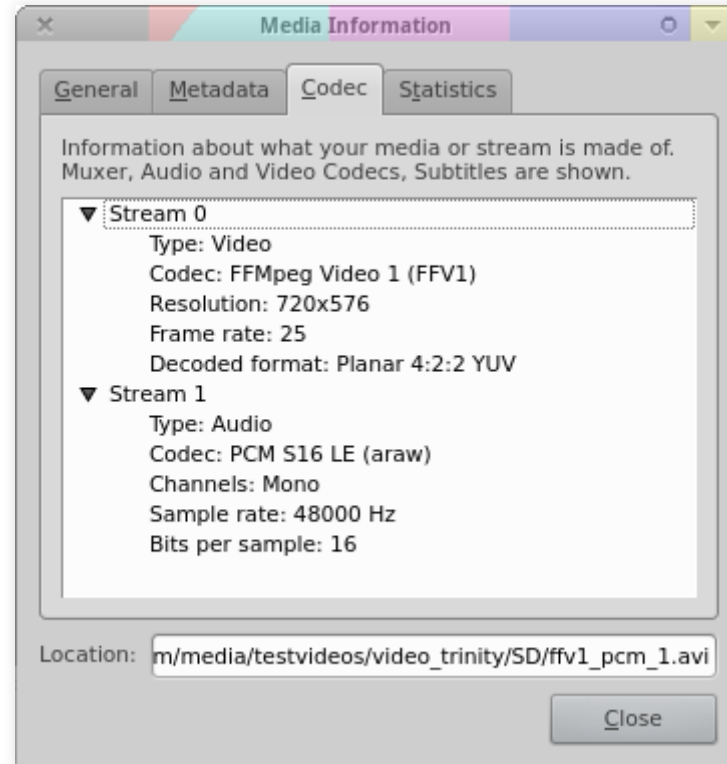
- VLC
- MediaInfo
- ffprobe

VLC

- Great videoplayer
- 99% chance you have it on the computer
- Allows quick-check of tech-MD
(Ctrl + J)
- For all formats it can play!

Website: videolan.org/vlc

VLC



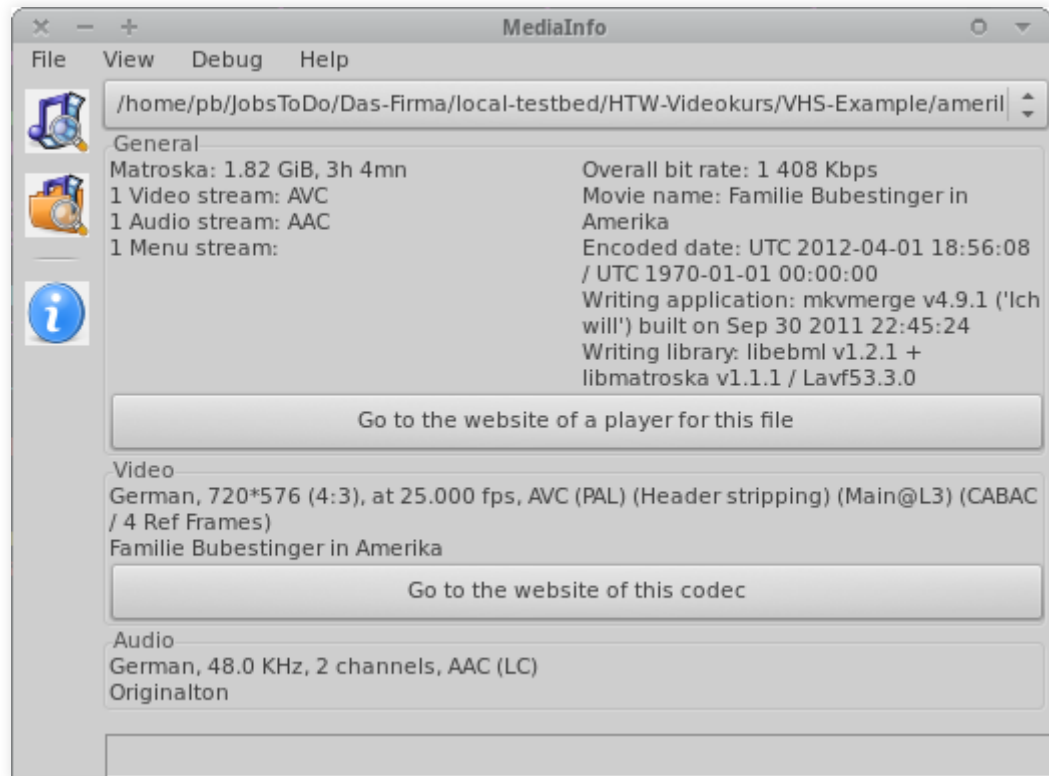
Very handy, but not the best for this job.

MediaInfo

"MediaInfo is a convenient unified display of the most relevant technical and tag data for video and audio files."

Website: mediaarea.net/MediaInfo

MediaInfo



MediaInfo GUI

View 'Easy'

- General = container level
- Video / Audio
- Other

A/B comparison

(Only in view 'Easy')

- Load more than 1 file:
 - Select multiple files
 - *or* drag/drop a whole folder
- Scroll dropdown = switch between files

Excellent for a quick spotting of common/different values in a given set.

View 'HTML'

- Nicier to read than view 'Text'.
- Identical content.

Machine Readable

(aka "parsable output formats")

- More suited for automated workflows.
- Can be saved from GUI.
- But: Usually commandline.

Machine Readable Output Formats

- XML
- JSON
- CSV
- EBUCore
- PBCore
- MPEG-7
- FIMS
- ...

Machine readable

Text

- Tradeoff between *human-* and *machine-readable*
- Spaced "Name:value" pairs
- No hierarchy!

Machine readable

XML

- Schema definition:
mediaarea.net/mediainfo/mediainfo_2_0.xsd
(is referenced inside XML)
- Hierarchy: Yes!

```
--output=XML
```

Machine readable

CSV

- Comma **S**eparated **V**alues. Literally.
- Nice option to use in e.g. spreadsheet tables.

```
--output=CSV
```

Machine readable

JSON

- XML vs JSON:
 - JSON is quicker to read and write
 - JSON was designed for web

```
--output=JSON
```

MedialInfo CLI

CLI = Command Line Interface

CAUTION:

Mediainfo's arguments are often case sensitive!

Example: `--output=XML` is not `--output=xml`

View only

```
$ mediainfo input.mov  
$ mediainfo --full input.mov  
$ mediainfo --full --output=XML input.mov
```

Save to file

```
# Redirect output:
```

```
$ mediainfo --full input.mov > info.txt
```

```
# Nicer:
```

```
$ mediainfo --full --output=XML --logfile=info.xml input.mov
```

Advanced

Extract individual values:

```
$ mediainfo
--inform="Video;%Format%,%Width%,%Height%,%FrameRate%"
input.mov

$ mediainfo
--inform="Audio;%Format%,%Channels%,%SamplingRate%,%BitDepth%"
input.mov
```

ffprobe

- Comes with `ffmpeg`
- CLI only
- Extremely powerful
- Allows analysis of media streams
- Output different parsable formats

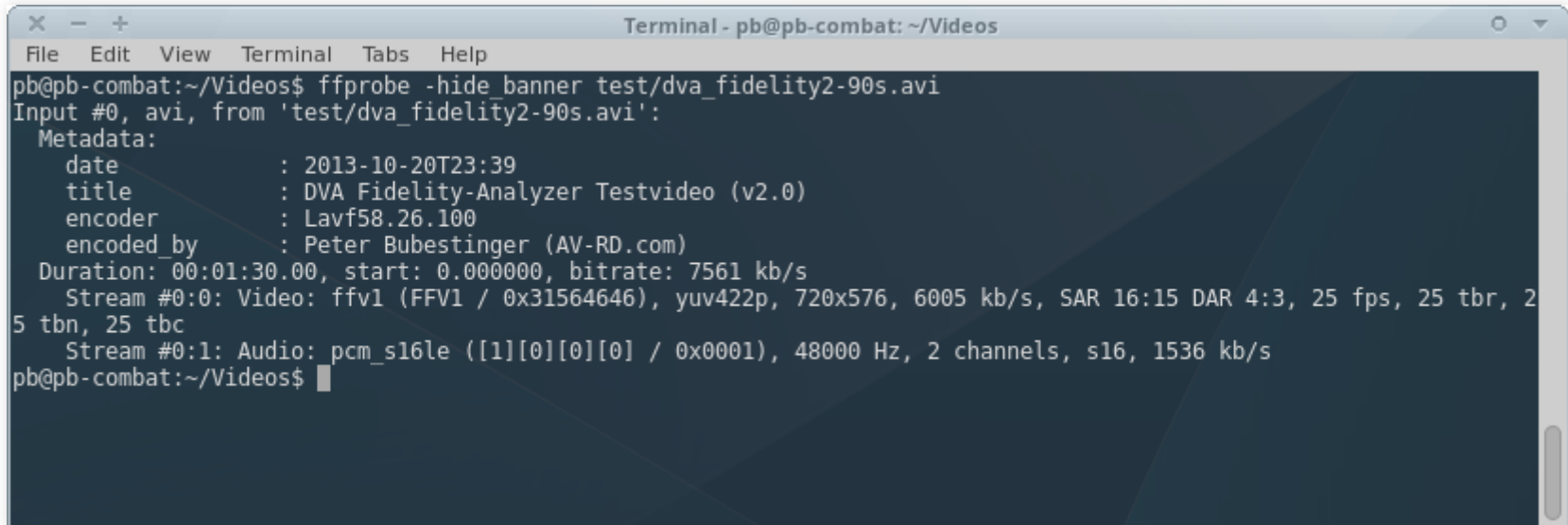
Website: ffmpeg.org/ffprobe.html

ffprobe

Basic infos (streams, resolution, fps, duration, etc):

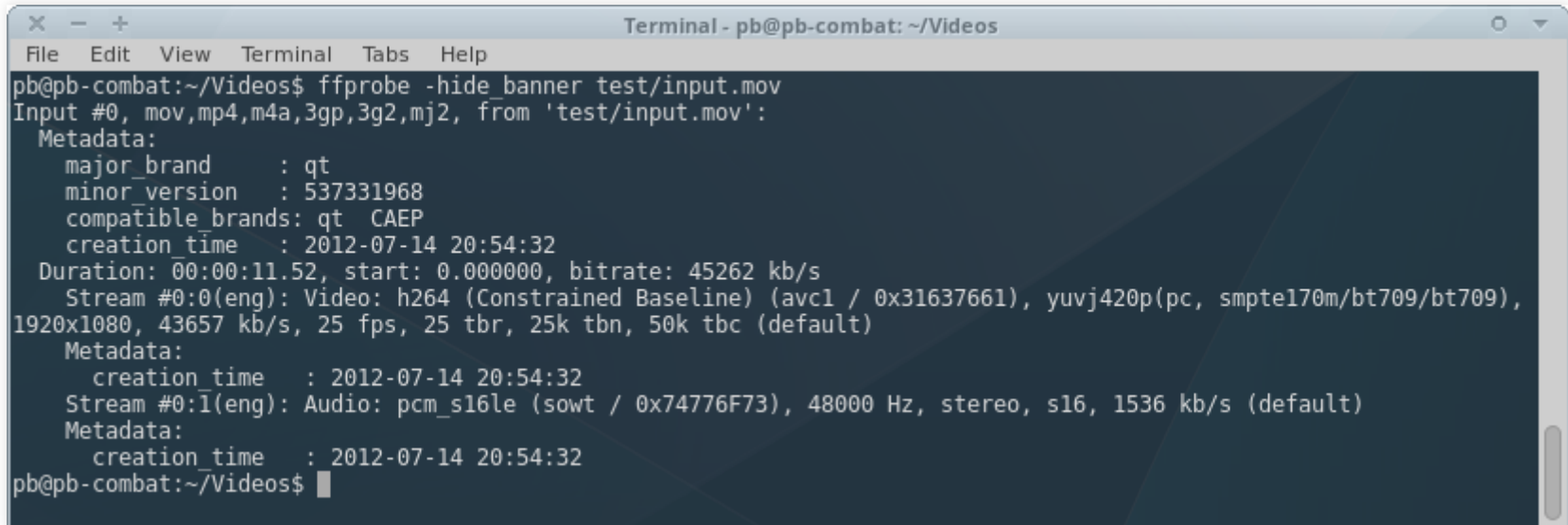
```
$ ffprobe -hide_banner MEDIAFILE
```

ffprobe - Example 1

A screenshot of a terminal window titled "Terminal - pb@pb-combat: ~/Videos". The window shows the command "ffprobe -hide_banner test/dva_fidelity2-90s.avi" being executed. The output displays metadata for the video file, including date, title, encoder, and duration, followed by stream information for video and audio.

```
pb@pb-combat:~/Videos$ ffprobe -hide_banner test/dva_fidelity2-90s.avi
Input #0, avi, from 'test/dva_fidelity2-90s.avi':
  Metadata:
    date       : 2013-10-20T23:39
    title      : DVA Fidelity-Analyzer Testvideo (v2.0)
    encoder    : Lavf58.26.100
    encoded_by : Peter Bubestinger (AV-RD.com)
  Duration: 00:01:30.00, start: 0.000000, bitrate: 7561 kb/s
    Stream #0:0: Video: ffv1 (FFV1 / 0x31564646), yuv422p, 720x576, 6005 kb/s, SAR 16:15 DAR 4:3, 25 fps, 25 tbr, 2
5 tbn, 25 tbc
    Stream #0:1: Audio: pcm_s16le ([1][0][0][0] / 0x0001), 48000 Hz, 2 channels, s16, 1536 kb/s
pb@pb-combat:~/Videos$
```

ffprobe - Example 2

A terminal window titled "Terminal - pb@pb-combat: ~/Videos" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command "ffprobe -hide banner test/input.mov" and its output. The output includes input details, video stream metadata, duration, and audio stream metadata.

```
pb@pb-combat:~/Videos$ ffprobe -hide banner test/input.mov
Input #0, mov,mp4,m4a,3gp,3g2,mj2, from 'test/input.mov':
  Metadata:
    major_brand      : qt
    minor_version    : 537331968
    compatible_brands: qt CAEP
    creation_time     : 2012-07-14 20:54:32
  Duration: 00:00:11.52, start: 0.000000, bitrate: 45262 kb/s
  Stream #0:0(eng): Video: h264 (Constrained Baseline) (avc1 / 0x31637661), yuvj420p(pc, smpte170m/bt709/bt709), 1920x1080, 43657 kb/s, 25 fps, 25 tbr, 25k tbn, 50k tbc (default)
    Metadata:
      creation_time     : 2012-07-14 20:54:32
  Stream #0:1(eng): Audio: pcm_s16le (sowt / 0x74776F73), 48000 Hz, stereo, s16, 1536 kb/s (default)
    Metadata:
      creation_time     : 2012-07-14 20:54:32
pb@pb-combat:~/Videos$
```

Questions?

[Back to index](#)