

ffmpeg4archivists

#amia12 2012-12-04
@dericed @mistydemeo

Question
06

Indicate your current use of ffmpeg and other open source audiovisual tools.

Answers
35
100%

Skips
0
0%

	VERY FAMILIAR	SOMEWHAT FAMILIAR	USED ONCE OR TWICE	TRIED ONCE, GAVE UP	NEVER USED	NEVER HEARD OF IT
FFmpeg	2	7	4	5	16	1
FFmpeg	0	1	2	0	16	16
libav	1	4	1	1	12	15
VLC	14	12	4	0	2	3
Mplayer	5	5	4	1	8	12
Audacity	6	7	8	0	8	6
exiftool	1	4	2	1	11	16
Shell Scripting	0	7	4	2	8	14
Ruby Scripting	0	1	1	0	19	14
Command Line use	4	14	5	2	8	2

Question
07

Indicate your familiarity with the following concepts of digital media.

Answers
35
100%

Skips
0
0%

	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	NOT AT ALL FAMILIAR
Chroma subsampling	5	8	11	11
Bit Depth	11	13	6	5
Lossness Encoding	11	16	7	1
Containers & Codecs	15	17	2	1
Aspect Ratio	21	13	0	1
Colorspace	8	12	9	4
Data Rate	11	15	6	2
Interframe Compression	3	15	8	9
I Frames	5	12	13	5
Checksums	13	16	3	2
Four-character Codes (fourCC)	4	6	9	16

Question
08

What do you hope to get from this workshop?

Answers
32
91%

Skips
3
9%


35,812,507

I want Dave Rice to love and honor me 4eva!

Thursday, Nov 29th
5:04PM


35,746,313

As a non-technical person but expert in AV archives and technology, I would like to gain an indepth understanding of ffmpeg/ffmbc and all the issues,challenges,reasons for implementing these tools in a digitisation process. Working with a team of technical experts it is more to understand the technologies to help future decision making.

Thursday, Nov 29th
5:07AM


35,709,942

I'm hoping to learn some useful techniques for using ffmpeg to inspect files and help with quality control. I'd also hope to come away with some useful compression techniques in dealing with analog video tape noise.

Wednesday, Nov
28th 4:43PM


35,692,102

Learn how ffmpeg works and, by extension, come away with a better understanding of transcoding in general.

Wednesday, Nov
28th 1:30PM


35,638,359

Better understanding of ffmpeg

Tuesday, Nov 27th
6:42PM


35,631,892


tips for transcoding and more awareness of good options for streaming and/or archiving digital video

Tuesday, Nov 27th
4:54PM

FFmpeg

https://ffmpeg.org

Google

 **FFmpeg**

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Project Description


FFmpeg is a complete, cross-platform solution to record, convert and stream audio and video. It includes **libavcodec** - the leading audio/video codec library. See the [documentation](#) for a complete feature list and the [Changelog](#) for recent changes.

FFmpeg is free software licensed under the **LGPL** or **GPL** depending on your choice of configuration options. If you use FFmpeg or its constituent libraries, you **must** adhere to the terms of the license in question. You can find basic compliance information and get licensing help on our [license and legal considerations page](#).

Looking for help? [Contact us](#), but before you report any bugs, read the [guidelines](#) that we created for this purpose.

Want to participate in the active development of FFmpeg? Keep up with the latest developments by subscribing to both the [ffmpeg-devel](#) and [ffmpeg-cvslog](#) lists.

News



November 14, 2012, Winter Website Banner Contest


As the days are getting shorter for some of us, we are proud to announce a new episode of our FFmpeg seasonal banners contest! This is your chance to get your art on top of this website for the coming winter season.

Please read on [here](#) for further directions.

The deadline is on December 14th.

If you are member of an artist community we encourage you to spread the word about this contest.

Frosty painting!



git.videolan.org Git - ffmpeg.git/shortlog

git.videolan.org / ffmpeg.git / shortlog

summary | shortlog | log | commit | commitdiff | tree

first · prev · next

commit search:

ffmpeg.git

22 min ago	Clément Bœsch	lavfi: add subtitles filter. master	commit commitdiff tree snapshot
4 hours ago	Clément Bœsch	lavfi: remove some video w/h settings after avfilter_co...	commit commitdiff tree snapshot
5 hours ago	Clément Bœsch	lavfi/gradfun: remove check for AV_PERM_PRESERVE.	commit commitdiff tree snapshot
6 hours ago	Reimar Döffinger	libspeex: allow custom sample rates again.	commit commitdiff tree snapshot
8 hours ago	Michael Niedermayer	mpegs: check that codec is not open in mpegs_find_str...	commit commitdiff tree snapshot
8 hours ago	Michael Niedermayer	mpegs_set_stream_info: remove unneeded codec id check	commit commitdiff tree snapshot
8 hours ago	Michael Niedermayer	ff_mp4_read_dec_config_desc: check that the codec...	commit commitdiff tree snapshot
9 hours ago	Peter Ross	doc: describe micro versioning policy	commit commitdiff tree snapshot
9 hours ago	Paul B Mahol	takdec: add .sample_fmts	commit commitdiff tree snapshot
9 hours ago	Paul B Mahol	shorten: update .sample_fmts	commit commitdiff tree snapshot
10 hours ago	Michael Niedermayer	Merge remote-tracking branch 'qatar/master'	commit commitdiff tree snapshot
12 hours ago	Stefano Sabatini	lsnr/swresample: use AV_OPT_TYPE_SAMPLE_FMT for sample...	commit commitdiff tree snapshot
13 hours ago	Martin Storsjö	configure: Strip ordinals from mingw generated def...	commit commitdiff tree snapshot
14 hours ago	Mans Rullgard	configure: arm: detect default thumb state of compiler	commit commitdiff tree snapshot
15 hours ago	Piotr Bandurski	ra144enc: reject unsupported sample rates	commit commitdiff tree snapshot
22 hours ago	Michael Niedermayer	fate: fix typos in wtv seek test	commit commitdiff tree snapshot
23 hours ago	Michael Niedermayer	Merge remote-tracking branch 'qatar/master'	commit commitdiff tree snapshot
23 hours ago	Michael Niedermayer	Merge commit 'e816034a5fa131b13c4ad87bb0b5065b4f5697c6'	commit commitdiff tree snapshot
24 hours ago	Michael Niedermayer	Merge commit '0b300daad2f5cb59a7c06dde5ac701685e6edf16'	commit commitdiff tree snapshot
24 hours ago	Michael Niedermayer	vp56: Ignore reconfiguration from the alpha plane.	commit commitdiff tree snapshot
24 hours ago	Diego Biurrun	fate: fft: Fix libavcodec dependency	commit commitdiff tree snapshot
24 hours ago	Diego Biurrun	build: Make the ISMV muxer select the MOV muxer	commit commitdiff tree snapshot
24 hours ago	Mans Rullgard	configure: move arm arch extensions to a separate variable	commit commitdiff tree snapshot
25 hours ago	Janne Grunau	fate-seek: remove use of gnu make 3.82 only private...	commit commitdiff tree snapshot
25 hours ago	Janne Grunau	fate: move vsynth reference files to their own directory	commit commitdiff tree snapshot
25 hours ago	Janne Grunau	fate: move fate-acodec reference files to their own dir	commit commitdiff tree snapshot
26 hours ago	Diego Biurrun	configure: avplay now depends on avresample	commit commitdiff tree snapshot
26 hours ago	Janne Grunau	fate: split dependencies for fate-seek tests	commit commitdiff tree snapshot
26 hours ago	Janne Grunau	h264: error out on unset current_picture_ptr for h...	commit commitdiff tree snapshot
26 hours ago	Janne Grunau	avprobe: report per stream bit rate if set by the decoder	commit commitdiff tree snapshot
27 hours ago	Michael Niedermayer	wtvdec: fix null pointer dereference	commit commitdiff tree snapshot
29 hours ago	Christophe...	aac: avoid a memcpy in sbr_qmf_analysis	commit commitdiff tree snapshot
29 hours ago	Michael Niedermayer	asfdec: check extradata size before alloc and read	commit commitdiff tree snapshot
29 hours ago	Michael Niedermayer	h264: check for integer overflow, fix null pointer...	commit commitdiff tree snapshot

Open+New Tickets - FFmpeg							
https://ffmpeg.org/trac/ffmpeg/query?status=new&status=open&status=reopened&col=id&col=summary&col=status&col=t							
Ticket	Summary	Status	Type	Component	Version	Created	Mod
#228	FFserver: reordering of "<Stream>"s in config file makes difference	new	defect	FFserver	git	19 months	19 m
#236	Floating point exception error with -dcodec copy on QuickTime timcode track	open	defect	avformat	git-master	19 months	8 m
#1227	crash in ff_put_h264_chroma_mc8_neon	reopened	defect	avcodec	git-master	8 months	2 m
#1285	rtsp stream from dreambox dm800 via ffserver	new	defect	FFserver	unspecified	7 months	4 m
#1326	non-existing SPS XX referenced in buffering period - error while encoding UDP stream	new	defect	undetermined	git-master	7 months	4 m
#1476	rtp pcm_alaw/pcm_mulaw streaming from ALSA	new	defect	FFmpeg	git-master	5 months	5 m
#1493	Transcoding MOV file from Rhozet Carbon Server creates video with double duration (needs edit list duration support)	open	defect	undetermined	git-master	5 months	3 m
#1509	H264 Encoding Broken with pthreads > 1 on windows	new	defect	undetermined	git-master	5 months	2 m
#1541	flv hangs on ff_vp3_idct_add_neon on ARM Cortex-A8	new	defect	avcodec	git-master	5 months	2 m
#1570	libv4l2: error dequeuing buf: Resource temporarily unavailable	open	defect	avdevice	git-master	4 months	8 w
#1763	Audio encoding assumes a channel layout	open	defect	undetermined	git-master	2 months	10 d
#1764	Wrong channel layout for files with uncommon audio	open	defect	undetermined	git-master	2 months	2 m
#1865	sctp.c: abort() call can be hit by bad user input	open	defect	avformat	git-master	5 weeks	5 w
#1870	review merges from libav	new	task	undetermined	git-master	5 weeks	2 w
#1876	vc1dec.c multi-threading decode crash issue	reopened	defect	avcodec	unspecified	5 weeks	3 w
#1886	avformat_write_header crashes on writing Live Smooth Streaming video	new	defect	avformat	git-master	4 weeks	4 w
#1898	configure --as broken	new	defect	build system	git-master	4 weeks	4 w
#1900	h264: huge memory allocation and a memleak, possible race condition	open	defect	avcodec	git-master	4 weeks	3 w
#1905	wmv2 In wav: fix timer when seeking	open	defect	avformat	git-master	3 weeks	2 w
#1907	use-after-free in matroska demuxer	new	defect	avformat	unspecified	3 weeks	3 w
#1908	error when copying eia_608 track	reopened	defect	avformat	git-master	3 weeks	4 d
#1916	mxv format pcm_s24le decoding is broken.	open	defect	avformat	git-master	3 weeks	3 w
#1917	Crash with -acodec libfdk_aac -f latm	new	defect	avcodec	git-master	3 weeks	3 w
#1966	first field missing playing dvd with commit 8824a9ed	new	defect	avcodec	git-master	8 days	8 d
#1970	ffserver ignores ffmpeg command line arguments	open	defect	FFserver	git-master	7 days	18 h
#1986	ffserver crashes while playing h264 video from matroska container over rtsp	new	defect	FFserver	1.0	5 hours	3 h
#5	jp2k muxed into mov by FFmpeg can't be played by QuickTime	open	defect	avformat	git	21 months	2 m

From	Subject	Date Received	
Daniel Verkamp	Re: [FFmpeg-devel] [PATCH] IRCAM demuxer	Today 5:19 PM	
Michael Nieder...	Re: [FFmpeg-devel] [PATCH] examples: add resampling_audio.c file	Today 4:56 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] lavfi: add subtitles filter.	Today 4:54 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] lavfi: remove some video w/h settings after avfilter_copy_buffer_ref_props.	Today 4:39 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] lavf: split packets before muxing.	Today 4:33 PM	
Reimar Döffinger	Re: [FFmpeg-devel] [PATCH] lavfi: remove mp=denoise3d filter.	Today 4:05 PM	
Stefano Sabatini	Re: [FFmpeg-devel] [PATCH] lavfi: remove mp=denoise3d filter.	Today 3:31 PM	
Stefano Sabatini	Re: [FFmpeg-devel] [PATCH] lavfi: remove some video w/h settings after avfilter_copy_buffer_ref_props.	Today 3:28 PM	
Stefano Sabatini	Re: [FFmpeg-devel] Releases 1.1 2.0 1.0.1 ?	Today 3:26 PM	
Stefano Sabatini	Re: [FFmpeg-devel] [PATCH] examples: add resampling_audio.c file	Today 3:13 PM	
Reimar Döffinger	Re: [FFmpeg-devel] [PATCH] lavf: split packets before muxing.	Today 3:01 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] lavf: split packets before muxing.	Today 2:36 PM	
Reimar Döffinger	Re: [FFmpeg-devel] [PATCH] lavf: split packets before muxing.	Today 2:26 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] lavfi/vf_super2xsai: fix output ref size.	Today 2:24 PM	
Clément Boesch	[FFmpeg-devel] [PATCH] lavf: split packets before muxing.	Today 2:15 PM	
Michael Nieder...	Re: [FFmpeg-devel] Releases 1.1 2.0 1.0.1 ?	Today 1:42 PM	
Clément Boesch	[FFmpeg-devel] [PATCH] lavfi: remove mp=denoise3d filter.	Today 1:24 PM	
Clément Boesch	Re: [FFmpeg-devel] Releases 1.1 2.0 1.0.1 ?	Today 1:03 PM	
Clément Boesch	Re: [FFmpeg-devel] Releases 1.1 2.0 1.0.1 ?	Today 1:01 PM	
Clément Boesch	Re: [FFmpeg-devel] [PATCH] av_assert should you AV_LOG_PANIC.	Today 12:52 PM	
Clément Boesch	[FFmpeg-devel] [PATCH] lavfi: remove some video w/h settings after avfilter_copy_buffer_ref_props.	Today 12:51 PM	
Michael Nieder...	Re: [FFmpeg-devel] [PATCH] av_assert should you AV_LOG_PANIC.	Today 12:16 PM	
Reimar Döffinger	Re: [FFmpeg-devel] [PATCH 3/3] Add assert that the avcodec lockisheld when initializing static VLC tables.	Today 12:06 PM	
Reimar Döffinger	[FFmpeg-devel] [PATCH] av_assert should you AV_LOG_PANIC.	Today 11:43 AM	
Reimar Döffinger	Re: [FFmpeg-devel] [PATCH 3/3] Add assert that the avcodec lockisheld when initializing static VLC tables.	Today 11:41 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH] mmfdec: fix seeking	Today 10:29 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 6/6] rsodec: use ff_pcm_read_packet()	Today 10:02 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 5/6] soxdec: use ff_pcm_read_packet()	Today 10:02 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 4/6] audec: use ff_pcm_read_packet()	Today 10:02 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 3/6] pvfdec: use ff_pcm_read_packet()	Today 10:02 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 2/6] avr: use ff_pcm_read_packet()	Today 10:01 AM	
Paul B Mahol	[FFmpeg-devel] [PATCH 1/6] pcmdec: move read_packet function to pcm.c so it can be shared with other d...	Today 10:01 AM	
Paul B Mahol	Re: [FFmpeg-devel] [PATCH 2/2] Ensoniq Paris Audio File demuxer	Today 9:01 AM	
Michael Nieder...	Re: [FFmpeg-devel] [PATCH 2/2] Ensoniq Paris Audio File demuxer	Today 8:42 AM	
Hendrik Leppkes	Re: [FFmpeg-devel] [PATCH 2/3] libavcodec: ac3 floating point decoder fixes	Today 8:13 AM	
Babic, Nedeljko	Re: [FFmpeg-devel] [PATCH 2/3] libavcodec: ac3 floating point decoder fixes	Today 8:09 AM	
Paul B Mahol	Re: [FFmpeg-devel] [PATCH 2/2] Ensoniq Paris Audio File demuxer	Today 7:55 AM	
Michael Nieder...	Re: [FFmpeg-devel] [PATCH] examples: add resampling_audio.c file	Today 7:43 AM	
Michael Nieder...	Re: [FFmpeg-devel] [PATCH 3/3] lavfi/matroskaenc: make sure we don't mux side data magic.	Today 7:38 AM	

ffmpeg family

- ffprobe
- avprobe
- ffmpeg
- avconv
- ffserver
- avserver
- ffplay
- avplay
- ffmbc

ffmpeg has

- libavcodec
- libavformat
- libswscale
- libavfilter

Enabling comprehensive audiovisual transformations but also vital tools to empower archivists in ongoing battles against the obsolescence monster.

[summary](#) | [shortlog](#) | [log](#) | [commit](#) | [commitdiff](#) | [tree](#)
[raw](#) | [patch](#) | [inline](#) | [side by side](#) (from parent 1: [b14629e](#))

commit search: ☐ re

Apple ProRes decoder

author Maxim Foliakovski <max_pole@gmx.de>
Wed, 21 Sep 2011 04:09:32 -0700 (13:09 +0200)
committer Martin Storsjö <martin@martin.st>
Thu, 22 Sep 2011 04:54:46 -0700 (14:54 +0300)

Signed-off-by: Martin Storsjö <martin@martin.st>

Changelog	patch blob blame history
doc/general.texi	patch blob blame history
libavcodec/Makefile	patch blob blame history
libavcodec/allcodecs.c	patch blob blame history
libavcodec/proresdec.c [new file with mode: 0644]	patch blob
libavcodec/version.h	patch blob blame history

diff --git a/Changelog b/Changelog

index 24fa85c..3cd2c0d 100644 (file)

--- a/Changelog

+++ b/Changelog

@@ -47,6 +47,7 @@ easier to use. The changes are:

- split filter
- libcdio-paranoia input device for audio CD grabbing
- select filter
+- Apple ProRes decoder

version 0.7:

diff --git a/doc/general.texi b/doc/general.texi

index 50278e1..2c463cb 100644 (file)

--- a/doc/general.texi

+++ b/doc/general.texi

@@ -341,6 +341,7 @@ following image formats are supported:

 @tab Used in Chinese MP3 players.
@item ANSI/ASCII art @tab @tab X
@item Apple MJPEG-B @tab @tab X

```

"codec_type": "video",
"codec_time_base": "1001/30000",
"codec_tag_string": "[0][0][0][0]",
"codec_tag": "0x0000",
"width": 720,
"height": 480,
"has_b_frames": 0,
"sample_aspect_ratio": "8:9",
"display_aspect_ratio": "4:3",
"pix_fmt": "yuv411p",
"level": -99,
"r_frame_rate": "30000/1001",
"avg_frame_rate": "0/0",
"time_base": "1001/30000",
"start_time": "0.000000",
"duration": "0.333667",
"bit_rate": "28771229"
},
{
  "index": 1,
  "codec_name": "pcm_s16le",
  "codec_long_name": "PCM signed 16-bit little-endian",
  "codec_type": "audio",
  "codec_time_base": "1/32000",
  "codec_tag_string": "[0][0][0][0]",
  "codec_tag": "0x0000",
  "sample_fmt": "s16",
  "sample_rate": "32000",
  "channels": 2,
  "bits_per_sample": 16,
  "r_frame_rate": "0/0",
  "avg_frame_rate": "0/0",
  "time_base": "1/30000",
  "start_time": "0.000000",
  "duration": "0.333667",
  "bit_rate": "1024000"
}

```

ffprobe

- analyze file formats, codecs, embedded metadata, structural errors, and presents metadata in json, xml, csv, etc

```
ffmpeg -i v210.avi -aspect 16:9 -r:v 5 -b:v 1000k -c:v libx264  
-pix_fmt yuv420p stretched.avi
```

**Gotta Demux
to Assess**

“well-formed and valid”



Photo Credit: CC-BY by flickr:jw_nerd

ffmpeg

- transcode digital media from one type to another, audiovisual analysis, error detection, silence and black detection

-celim	<int>	E.V.. single coefficient elimination threshold for chrominance (ne
-strict	<int>	EDVA. how strictly to follow the standards
very		EDV.. strictly conform to a older more strict version of the spec
strict		EDV.. strictly conform to all the things in the spec no matter wha
normal		EDV..
unofficial		EDV.. allow unofficial extensions
experimental		EDV.. allow non standardized experimental things
-b_goffset	<float>	E.V.. qp offset between P and B frames
-err_detect	<flags>	.DVA. set error detection flags
crccheck		.DVA. verify embedded CRCs
bitstream		.DVA. detect bitstream specification deviations
buffer		.DVA. detect improper bitstream length
explode		.DVA. abort decoding on minor error detection
careful		.DVA. consider things that violate the spec and have not been seen
compliant		.DVA. consider all spec non compliancies as errors
aggressive		.DVA. consider things that a sane encoder should not do as an erro
-mpeg_quant	<int>	E.V.. use MPEG quantizers instead of H.263

“[ffv1 @ 0x7f9855046e00] CRC mismatch FC686A4F! frame 215”

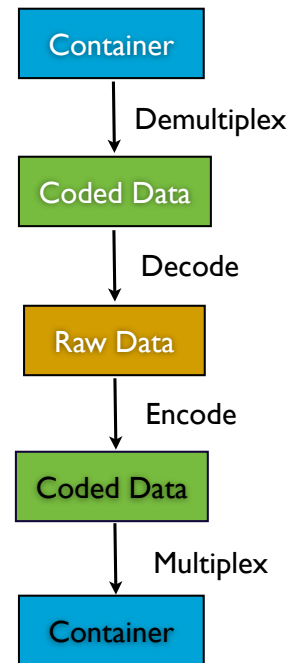


- `ffmpeg -i camels.avi -vn -acodec libfaac -ab 64k -ac 2 temp.aac`
- `ffmpeg -an -deinterlace -i camels.avi -s 320x240 -r 20 -vcodec rawvideo -pix_fmt yuv420p -f rawvideo - 2>/dev/null | ffmpeg -an -f rawvideo -s 320x240 -r 20 -i - -f yuv4mpegpipe - 2>/dev/null | x264 --bitrate 512 --vbv-maxrate 768 --vbv-buFSIZE 1024 --profile baseline --pass 1 /dev/stdin --demuxer y4m -o temp.h264`
- `ffmpeg -an -deinterlace -i camels.avi -s 320x240 -r 20 -vcodec rawvideo -pix_fmt yuv420p -f rawvideo - 2>/dev/null | ffmpeg -an -f rawvideo -s 320x240 -r 20 -i - -f yuv4mpegpipe - 2>/dev/null | x264 --bitrate 512 --vbv-maxrate 768 --vbv-buFSIZE 1024 --profile baseline --pass 2 /dev/stdin --demuxer y4m -o temp.h264`
- `mp4creator -c temp.h264 -r 20 t2.mp4`
- `mp4creator -c temp.aac -interleave t2.mp4`
- `ffmpeg -i t2.mp4 -acodec copy -vcodec copy -metadata title="Camels at a Zoo - http://www.archive.org/details/camels" -metadata year="2004" -metadata comment="license:http://creativecommons.org/licenses/by-nc/3.0/" camels_512kb.mp4`
- `mp4creator -optimize camels_512kb.mp4`

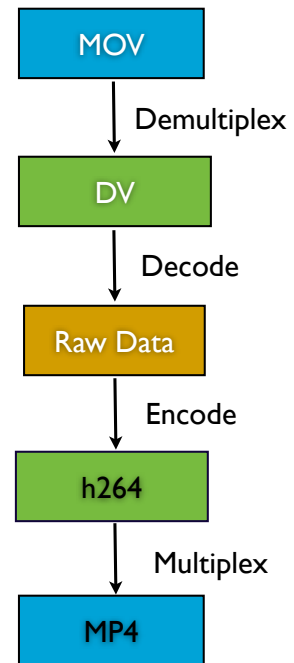
Types of Data within AV Containers

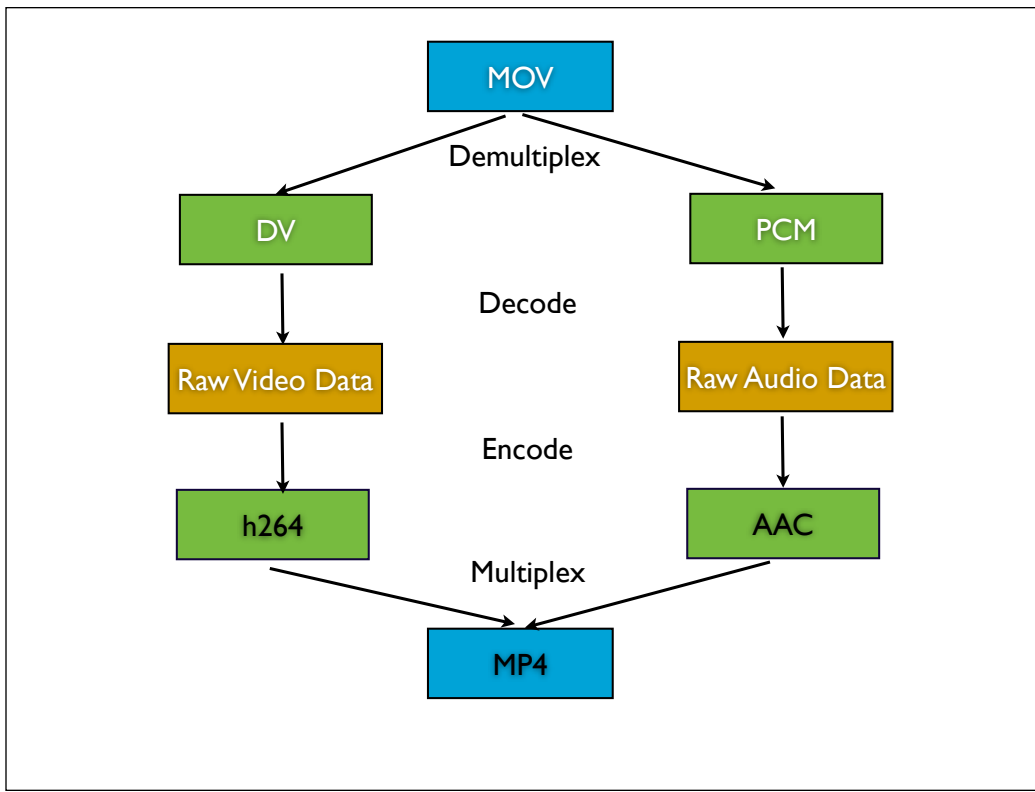
- Video
- Audio
- Text
- Metadata
- Image
- Captions
- Subtitles
- Chapters
- Haptics
- Attachments
- Timecode

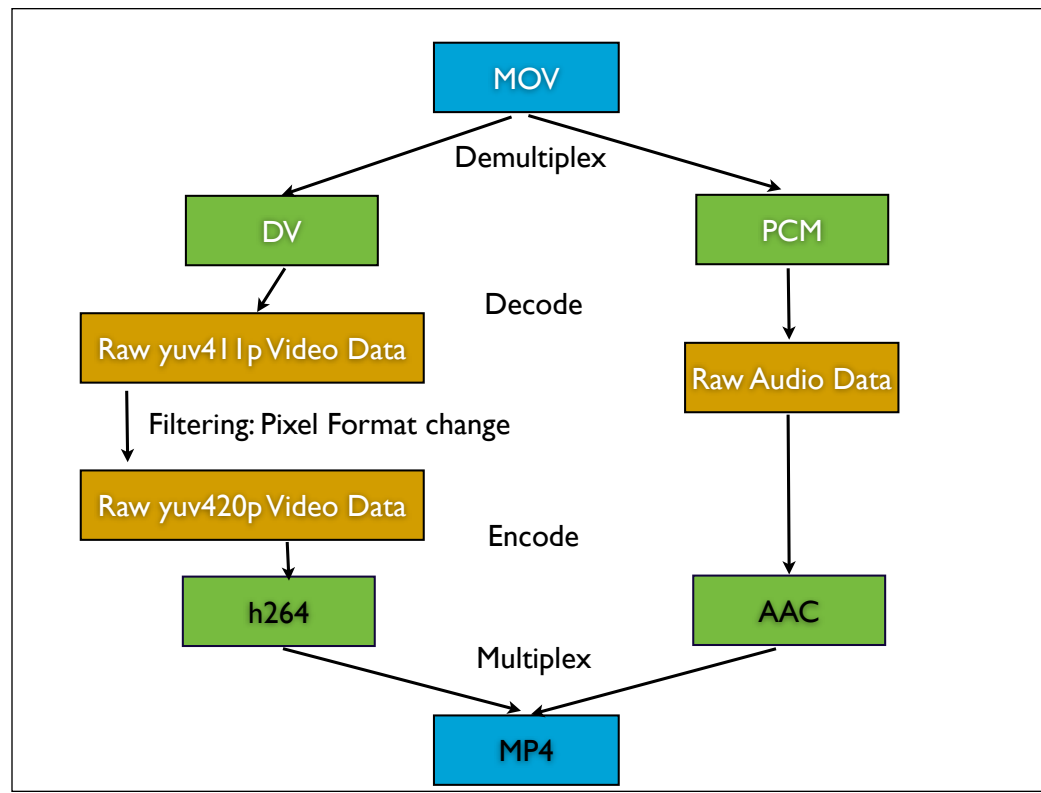
Transcoding Assembly Line

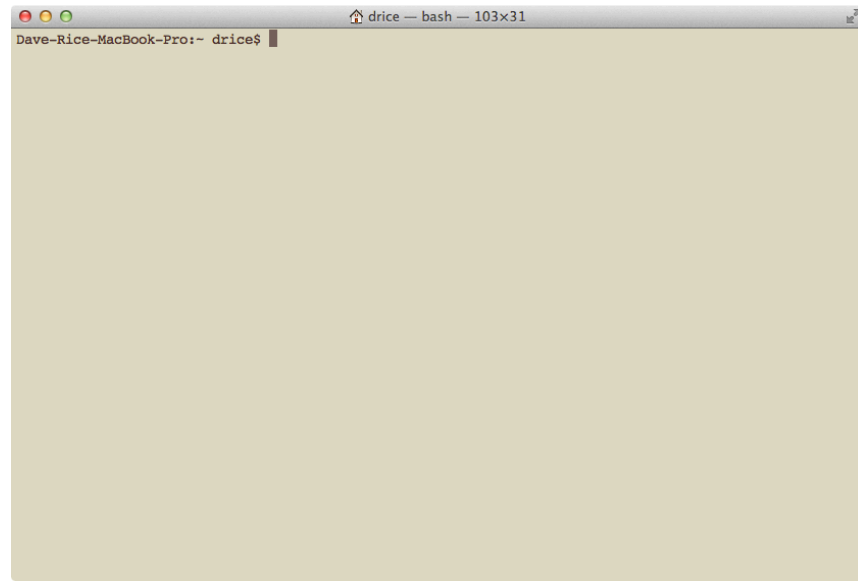


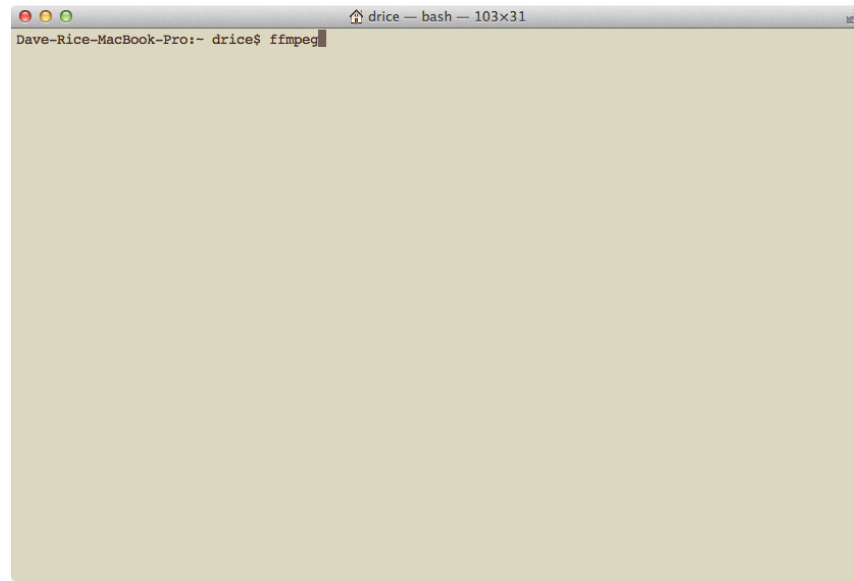
Transcoding Assembly Line











```
drice — bash — 103x31
Dave-Rice-MacBook-Pro:~ drice$ ffmpeg
ffmpeg version 1.0.git-ffmpeg4archivists Copyright (c) 2000-2012 the FFmpeg developers
built on Nov 29 2012 11:38:09 with gcc 4.2.1 (GCC) (Apple Inc. build 5666) (dot 3)
configuration: --prefix=/Users/digitilization/github/ffmpeg4archivists/ffmpeg --as=yasm --extra-versi
on=ffmpeg4archivists --extra-libs=/Users/digitilization/github/ffmpeg4archivists/libs --disable-share
d --enable-static --disable-ffserver --enable-gpl --enable-pthreads --enable-postproc --enable-libmp3la
me --enable-libtheora --enable-libvorbis --enable-libx264 --enable-libxvid --enable-libspeex --enable-b
zlib --enable-zlib --enable-libopencore-amrnb --enable-libopencore-amrwb --enable-version3 --enable-lib
vo-aacenc --enable-libvpx --enable-libopus --enable-filters --enable-runtime-cpudetect --disable-debug
--enable-libfreetype --enable-libopenjpeg --cc=/usr/bin/gcc-4.2
libavutil      52.  9.102 / 52.  9.102
libavcodec     54. 77.100 / 54. 77.100
libavformat    54. 39.100 / 54. 39.100
libavdevice    54.  3.100 / 54.  3.100
libavfilter    3. 23.104 / 3. 23.104
libswscale     2.  1.103 / 2.  1.103
libswresample  0. 17.101 / 0. 17.101
libpostproc   52.  2.100 / 52.  2.100
Hyper fast Audio and Video encoder
usage: ffmpeg [options] [[infile options] -i infile]... [{outfile options} outfile]...

Use -h to get full help or, even better, run 'man ffmpeg'
Dave-Rice-MacBook-Pro:~ drice$
```

```
ffmpeg [global options] [[infile options][-i infile]]... {[outfile options] outfile}...
```

<http://github.com/mistydemeo/ffmpeg4archivists/>

Making Samples

`ffmpeg [global options] [[infile options][-i infile]]... {[outfile options] outfile}...`

```
ffmpeg -f lavfi -i mandelbrot -t 10 -c:v v210 v210.avi
```

```
ffmpeg -f lavfi -i mandelbrot -t 10 -c:v rawvideo -vtag 2vuy  
v210.avi
```

```
ffmpeg -f lavfi -i testsrc -t 10 -target ntsc-dv test.dv
```

```
ffmpeg -f lavfi -i aevalsrc="sin(440*2*PI*t)" -t 10 sine.wav
```

Video Transcoding Options

-s 720x480		
-r 44100	-r:v 29.97	video frame rate
-vcodec v210	-c:v v210	audio codec
-b 500k	-b:v 500k	video bitrate
-vn	-n:v	don't encode video
-aspect 4:3		aspect ratio
-pix_fmt yuv420p		pixel format

Audio Transcoding Options

-ac 2		audio channel count
-ar 44100	-r:a 44100	audio sample rate
-acodec aac	-c:a:2 mp3	audio codec
-ab 500k	-b:a 500k	audio bitrate
-an	-n:a	don't encode audio

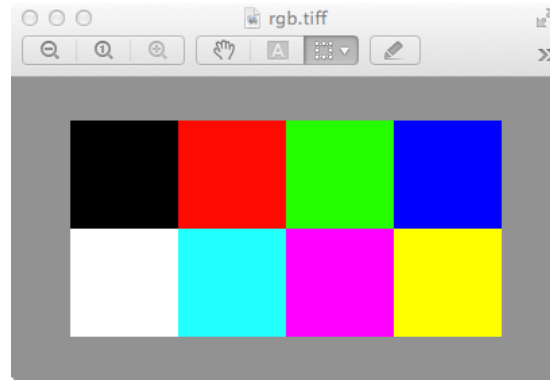
Pixel Format

- Bit Depth
- Colorspace
- Chroma Subsampling
- Channels

```
ffmpeg -pix_fmts
```


Pixel Format

yuv420p	YUV 4:2:0	8 bit	planer
yuv422p	YUV 4:2:2	8 bit	planar
yuyv422	YUV 4:2:2	8 bit	
uyvy422	YUV 4:2:2	8 bit	
yuv422p_10le	YUV 4:2:2	10 bit	planar
rgb24	RGB N/A	8 bit	planar



R:00000000	R:11111111	R:00000000	R:00000000
G:00000000	G:00000000	G:11111111	G:00000000
B:00000000	B:00000000	B:00000000	B:11111111
R:11111111	R:00000000	R:11111111	R:11111111
G:11111111	G:11111111	G:00000000	G:11111111
B:11111111	B:11111111	B:11111111	B:00000000

RGB to YUV

$$Y = (0.257 * R) + (0.504 * G) + (0.098 * B) + 16$$

$$Cr = V = (0.439 * R) - (0.368 * G) - (0.071 * B) + 128$$

$$Cb = U = -(0.148 * R) - (0.291 * G) + (0.439 * B) + 128$$

YUV to RGB

$$B = 1.164(Y - 16) + 2.018(U - 128)$$

$$G = 1.164(Y - 16) - 0.813(V - 128) - 0.391(U - 128)$$

$$R = 1.164(Y - 16) + 1.596(V - 128)$$



8 bit color values
expressed in YUV
and RGB

8 bits allow for 2^8
values of 256

Values can be expressed in:

Decimal: 000 - 255

Binary: 0b00000000 - 0b11111111

Hexadecimal: 0x00 - 0xFF

	R	G	B	=	Y	U	V
202	017	175		=	090	170	226
202	017	176		=	090	170	226
202	017	177		=	091	170	225
202	017	178		=	091	171	225
202	017	179		=	091	171	225
202	017	180		=	091	172	225
202	017	181		=	091	172	225
202	017	182		=	091	173	225
202	017	183		=	091	173	225
202	017	184		=	091	174	225
202	017	185		=	091	174	225
202	017	186		=	092	174	224
202	017	187		=	092	175	224
202	017	188		=	092	175	224
202	017	189		=	092	176	224
202	017	190		=	092	176	224
202	017	191		=	092	177	224
202	017	192		=	092	177	224

some significant properties

- frame size
- frame rate
- pixel format
- colorspace
- bitdepth

libavfilter

`ffmpeg -filters`

lut (lookup table) filter

- lut, lutrgb, lutyuv
- objective: make the input black and white

- one liner (pipe to ffplay)

```
ffmpeg -f lavfi -i testsrc -vf "lutyuv=u=128:v=128" -c:v rawvideo -f  
nut - | ffplay -
```

- one liner (output to avi file)

```
ffmpeg -f lavfi -i testsrc -vf "lutyuv=u=128:v=128" bwBars.avi
```

lut (lookup table) filter

- lut, lutrgb, lutyuv
- objective: display Y, U, and V channels separately
- one liner

```
ffmpeg -f lavfi -i testsrc -filter_complex "split=4[a][b][c][d];[a]pad=iw*4:ih[w];[b]lutyuv=u=128:v=128[x];[c]lutyuv=y=0:v=128[y];[d]lutyuv=y=0:u=128[z];[w][x]overlay=w:0[wx];[wx][y]overlay=w*2:0[wxy];[wxy][z]overlay=w*3:0" -f nut - | ffplay -
```

- with line break escaping

```
ffmpeg -f lavfi -i testsrc -filter_complex "split=4[a][b][c][d];\  
[a]pad=iw*4:ih[w];\  
[b]lutyuv=u=128:v=128[x];\  
[c]lutyuv=y=0:v=128[y];\  
[d]lutyuv=y=0:u=128[z];\  
[w][x]overlay=w:0[wx];\  
[wx][y]overlay=w*2:0[wxy];\  
[wxy][z]overlay=w*3:0" -f nut - | ffplay -
```


lut (lookup table) filter

- lut, lutrgb, lutyuv
- objective: display Y, U, and V channels separately
- one liner

```
ffmpeg -f lavfi -i testsrc=d=10 -filter_complex "split=4[a][b][c][d];  
[a]pad=iw*4:ih[w];[b]lutrgb=g=0:b=0[x];[c]lutrgb=r=0:b=0[y];[d]  
lutrgb=r=0:g=0[z];[w][x]overlay=w:0[wx];[wx][y]overlay=w*2:0[wxy];  
[wxy][z]overlay=w*3:0" -f nut - | ffplay -
```

- with line break escaping

```
ffmpeg -f lavfi -i testsrc=d=10 -filter_complex "split=4[a][b][c][d];\  
[a]pad=iw*4:ih[w];\  
[b]lutrgb=g=0:b=0[x];\  
[c]lutrgb=r=0:b=0[y];\  
[d]lutrgb=r=0:g=0[z];\  
[w][x]overlay=w:0[wx];\  
[wx][y]overlay=w*2:0[wxy];\  
[wxy][z]overlay=w*3:0" -f nut - | ffplay -
```

drawtext filter

- one liner

```
ffmpeg -f lavfi -i color=color=black:d=100:s=720x480 -vf  
"drawtext=fontcolor=white:fontfile='/Library/Fonts/Courier New  
Bold.ttf':text='Hello archivists':fontsize=48:x=(w-text_w)/2:y=  
(h-text_h-line_h)/2,fade=in:0:120" -f nut - | ffplay -
```

- with line break escaping

```
ffmpeg -f lavfi \  
-i color=color=black:d=100:s=720x480 \  
-vf "drawtext=fontcolor=white:\br/>fontfile='/Library/Fonts/Courier New Bold.ttf':\  
text='Hello archivists':\  
fontsize=48:\br/>x=(w-text_w)/2:y=(h-text_h-line_h)/2,\br/>fade=in:0:120" -f nut - | ffplay -
```

overlay filter

- takes two inputs, makes one output
- list details about the two inputs (logo and video)
`ffmpeg -i v210.avi -i ffmpeg_logo.png`
- just to play (if you have ffplay)

```
ffmpeg -i v210.avi -i ffmpeg_logo.png -  
filter_complex "[0:0][1:0]overlay" -f nut - |  
ffplay -
```

- to encode to a file

```
ffmpeg -i v210.avi -i ffmpeg_logo.png -  
filter_complex "[0:0][1:0]overlay"  
dn_with_logo.avi
```

crop/cropdetect filter

- run cropdetect to determine possible cropping dimensions

```
ffmpeg -i v210.avi -vf cropdetect -f null -
```

- use the result in a crop filter

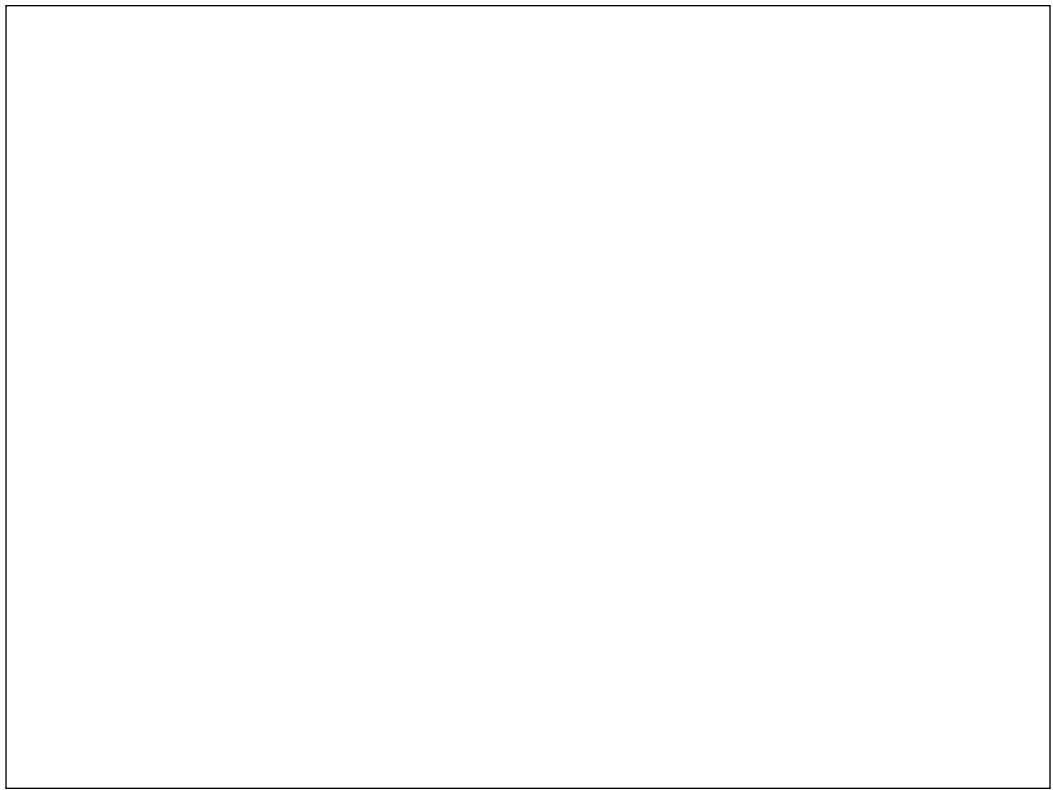
```
ffmpeg -i v210.avi -vf crop=160:120:100:60  
cropped.avi
```

yadif filter

deinterlacement

- example use

```
ffmpeg -i v210.avi -vf yadif deinterlaced.avi
```



thanks

ffmpeg4archivists

#amia12 2012-12-04
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