



# VLC Davinci port

Embedding VLC  
by  
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# Jean-Paul Saman

- Working in ICT since 1994
- Founded M2X in 2004
  - Productising open source software
  - Providing solutions for problem areas of Networking, Embedded and Multimedia.
- Since 2001 a member of the VideoLAN team
  - DVB-C/S/T, DV Camcorder, Streaming
  - Ported VLC to iPAQ (H3600/3800/3900), TI-Davinci (dm6446), Intel Xscale, Roku Picture bridge
  - Various ...



Get **VLC** !



# VideoLAN

Project founded in 1996 and open sourced its first product in 2001 under a GPLv2 license.

VideoLAN association founded in 2009.





# VideoLAN history

- 2001: VLC released under GPLv2
- 2003: VLC gains streaming capabilities
- 2003: Runner up Apple Design Award
- 2004: Open Source Merit Award
- 2008: Wins Tim Award (PC Welt)
- 2008: First VideoLAN Developer Days
- 2009: Second VideoLAN Developer Days
- 2010: VLC for iPad





# Solutions

- VLC media player, transcoder and streamer
- Libvlc (library interface to vlc)
- Libdvbpsi (DVB PSI table parser and generator)
- Libdvdcss (DeCSS)
- X264 (H264 encoder)
- DVBlast (low latency DVB to IP gateway)
- VLMa (VideoLAN manager)
- VLMC (VideoLAN movie creator)





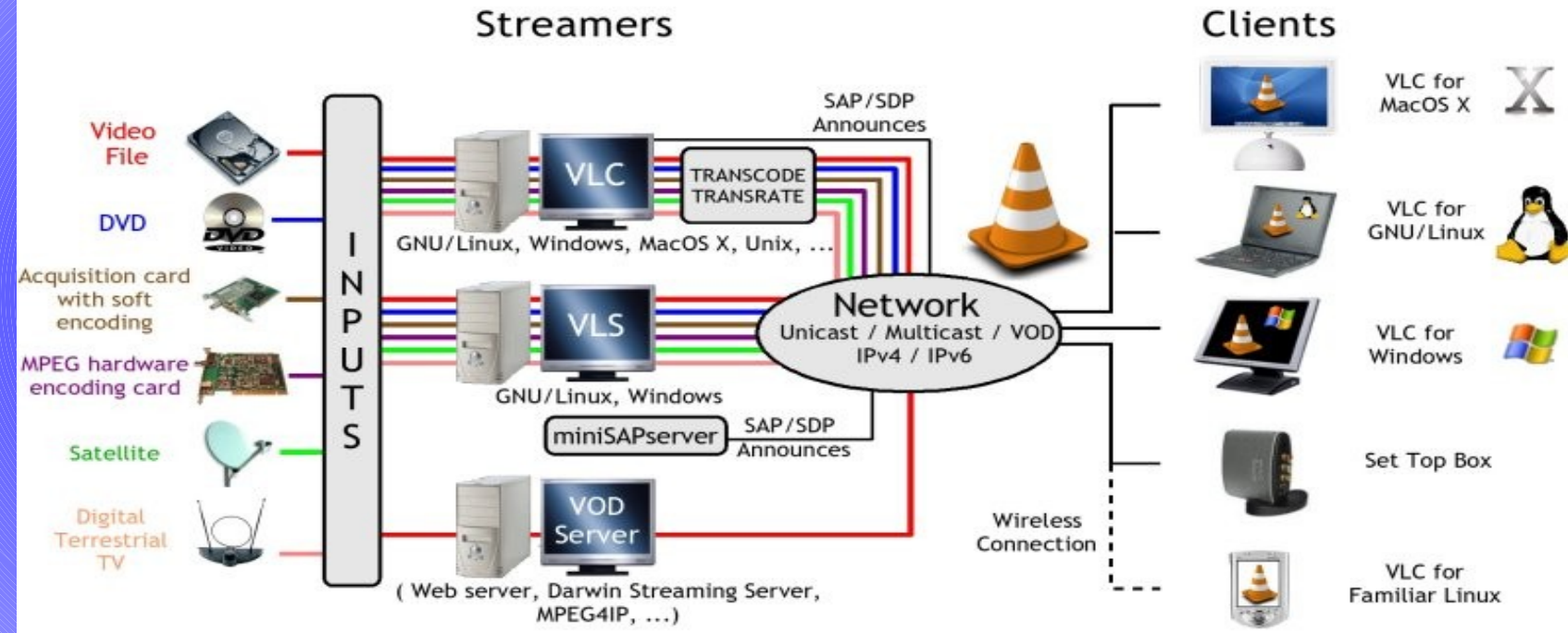
# VLC

**VLC media player** is a highly portable multimedia player supporting almost all audio and video formats from **files**, **physical media** (Blueray, DVD, VCD, Audio-CD), TV **capture cards** (v4l2, PVR) and many **network** streaming protocols.





# VideoLAN Streaming Solution





# Hardware

- Webcams
- DV camcorders (1394/iLINK/Firewire)
- DC cameras
- Network cameras
- Encoder cards (PVR, etc.)
- Satelite (DVB-C/S/T)
- DVD
- Blueray

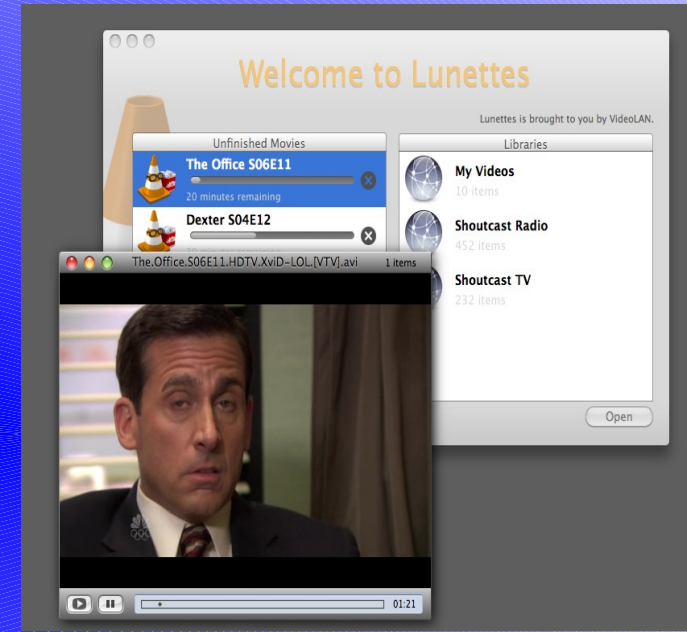






# Interfaces

- Qt based User Interface
  - Windows
  - Linux
- MacOS X (Lunettes)
- Webbased
- Customizable interface (skins2)
- Remote control
  - Infrared (lirc, apple remote)
  - telnet





# Codecs and formats





# Codecs

- H.264, MPEG 1/2/4, MP3
- Ogg, Vorbis, Theora, WebM, Dirac
- AAC, A52, DTS, PCM
- DVB subtitles, Teletext
- WMV 1/2/3, WMA, VC-1
- AMR-nb/wb, RealVideo, On2
- and more.



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# Formats

- DivX
- MKV
- MPEG-PS/TS
- Kate
- 3GPP
- QuickTime
- PNG, JPEG, GIF
- and more.



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# Network

- IPv4, IPv6
- RTSP, RTP/SRTP/RTCP
- RTMP
- MPEG-TS
- HTTP, SHOUT, ASF
- Multicast (SDP/SAP)
- Unicast
- Broadcast





# Codecs and Formats

## Input formats

### Video formats

### Audio formats

### Subtitle/Tag formats

### A/V outputs

### A/V filters

### Interfaces

### Miscellaneous

<b>Input media</b>	UDP/RTP Unicast	✓	✓	✓	✓	✓	✓
	UDP/RTP Multicast	✓	✓	✓	✗	✓	✓
	HTTP / FTP	✓	✓	✓	✓	✓	✓
	MMS	✓	✓	✓	✓	✓	✓
	TCP/RTP Unicast	✓	✓	✓	✓	✓	✓
	DCCP/RTP Unicast	✗	✗	✓	✗	✗	?
	File	✓	✓	✓	✓	✓	✓
	DVD Video <sup>1</sup>	✓	✓	✓	✓	✓	-
	Video CD / VCD	✓	✓	✓	✗	✓	-
	SVCD <sup>2</sup>	⊖	⊖	⊖	✗	⊖	-
	Audio CD (no DTS-CD)	✓	✓	✓	✗	✓	-
	DVB (Satellite, Digital TV, Cable TV)	✓	✗	✓	✓	✗	-
	MPEG encoder <sup>3</sup>	✓	✗	✓	✗	✗	-
	Video acquisition	✓ Direct Show	⊖ iSight, EyeTV <sup>4</sup>	✓ V4L, V4L2	✗	✗	? V4L, V4L2
	<b>Input formats</b>	MPEG (ES,PS,TS,PVA,MP3)	✓	✓	✓	✓	✓
AVI		✓	✓	✓	✓	✓	✓
ASF / WMV / WMA		✓	✓	✓	✓	✓	✓
MP4 / MOV / 3GP		✓	✓	✓	✓	✓	✓
OGG / OGM / Annodex		✓	✓	✓	✓	✓	✓
Matroska (MKV)		✓	✓	✓	✓	✓	✓
Real		⊖	⊖	⊖	⊖	⊖	⊖
WAV (including DTS)		✓	✓	✓	✓	✓	✓
Raw Audio: DTS, AAC, AC3/A52		✓	✓	✓	✓	✓	✓
Raw DV		✓	✓	✓	✓	✓	✓
FLAC		✓	✓	✓	✓	✓	✓
FLV (Flash)		✓	✓	✓	?	✓	?
MXF		✓	✓	✓	?	✓	?
Nut		✓	✓	✓	?	✓	?
Standard MIDI / SMF		?	✓	?	?	?	?
Creative™ Voice		✓	✓	✓	✓	✓	✓



# Languages

- Translated to more than 68 languages (including some dialects)
  - English, USA
  - Belgian, Dutch, French, Germany, Italian, Spanish
  - Danish, Finnish
  - Chinese, Japanese, Korean
  - Hungarian, Polish, Russian
  - And more





# Portable

- Operating Systems (32/64 bit)
  - Linux (Debian, Fedora, SuSE, Ubuntu, etc)
  - BSD (OpenBSD, FreeBSD, NetBSD, etc)
  - MacOS X
  - Solaris
  - Win32, Win64
  - BeOS
  - QNX



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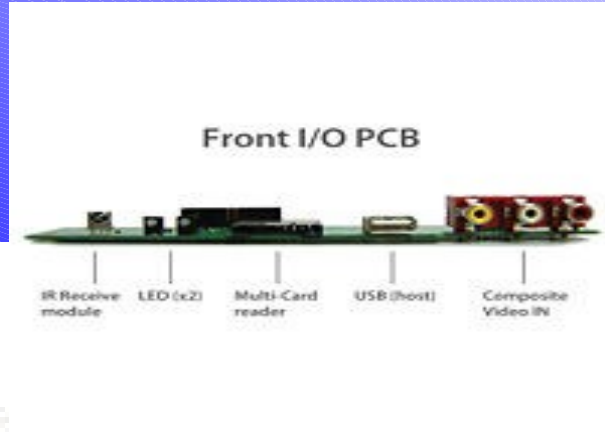
# VLC



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# Neuros OSD v2



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# Hardware

- TI-Davinci SoC
  - DM6446-549
    - 300 Mhz ARM CPU
    - 500 Mhz Cx64 DSP
    - 512 Mb DDR RAM
  - Resizer hardware
  - Previewer hardware

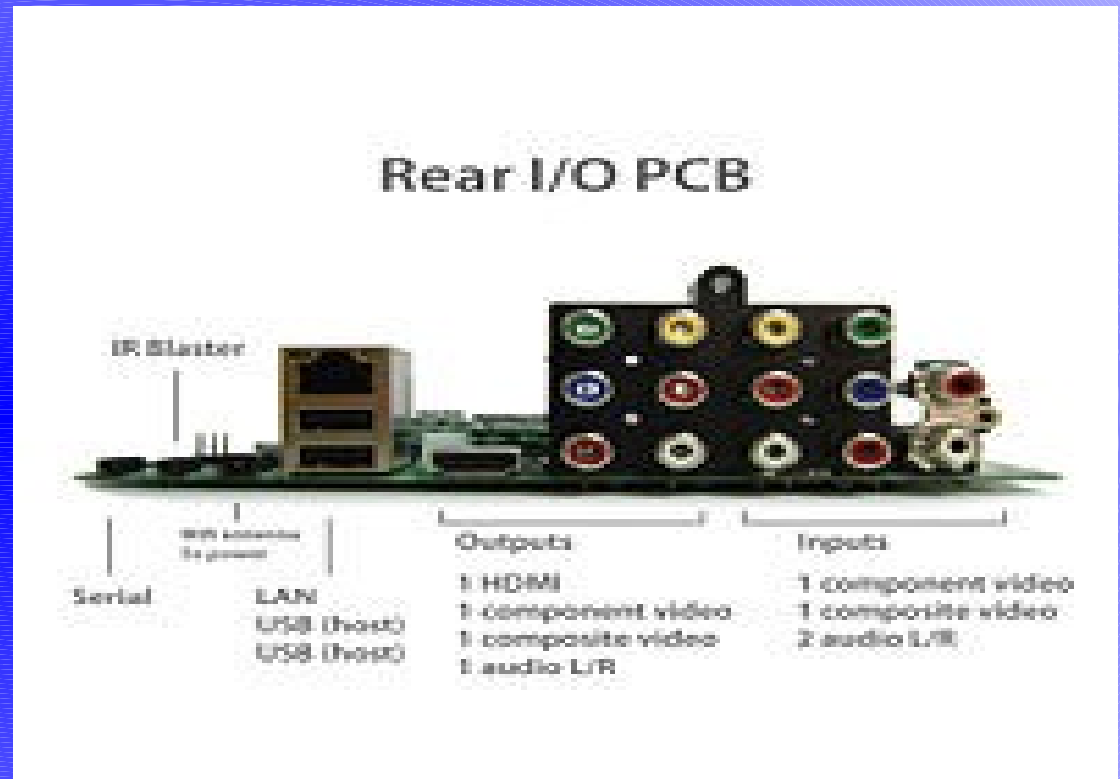


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# Hardware inputs

- capture tvp7000
  - Component
  - Composite
  - Stereo L/R audio

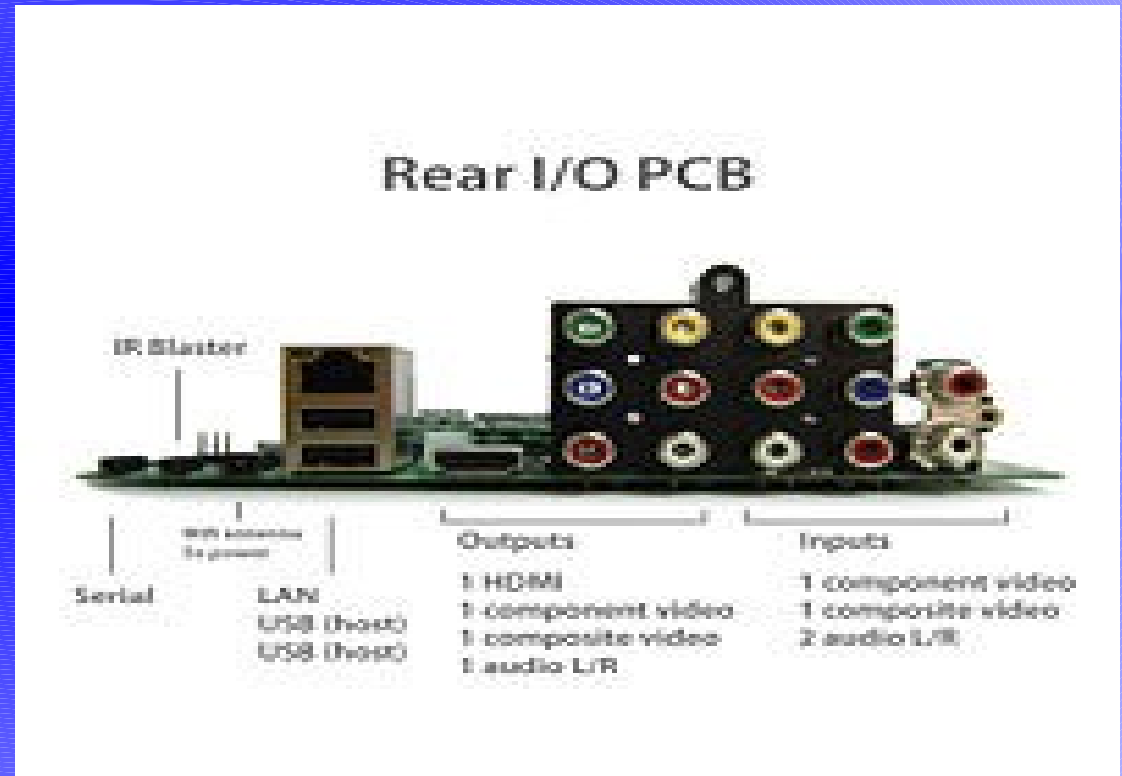


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# Hardware outputs

- Network 10/100 Mbps NIC
- Video
  - PAL
  - NTSC
  - 720p Component
  - HDMI
- Audio
  - stereo L/R



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# VLC

- Portable (Linux, \*BSD, Windows, MacOSX)
- Modular
  - > 300 modules (access, demux, codec, mux, audio/video filters, interface, video output, audio output, resamplers, chroma, etc.)
- Configurable
  - Autoconf (--disable-(feature) or --disable-<plugin>)
- Plugins are build as lib<feature>\_plugin.so
  - `${installdir}${prefix}/lib/vlc/*`





# VLC configurable

- Remove what you do not need
  - `--disable-nls --disable-freetype` (no languages)
  - `--disable-dvnav --disable-dvread` (no dvd)
  - `--disable-vcd --disable-cddax --disable-cdda` (no VCD)
  - `--disable-qt4 --disable-skins2` (no GUI)
  - `--disable-x11 --disable-xvideo --disable-xinerama --disable-opengl --disable-glx` (no X11, OpenGL, etc)
  - `--disable-libmpeg2 --disable-x264`
  - etc.





# VLC

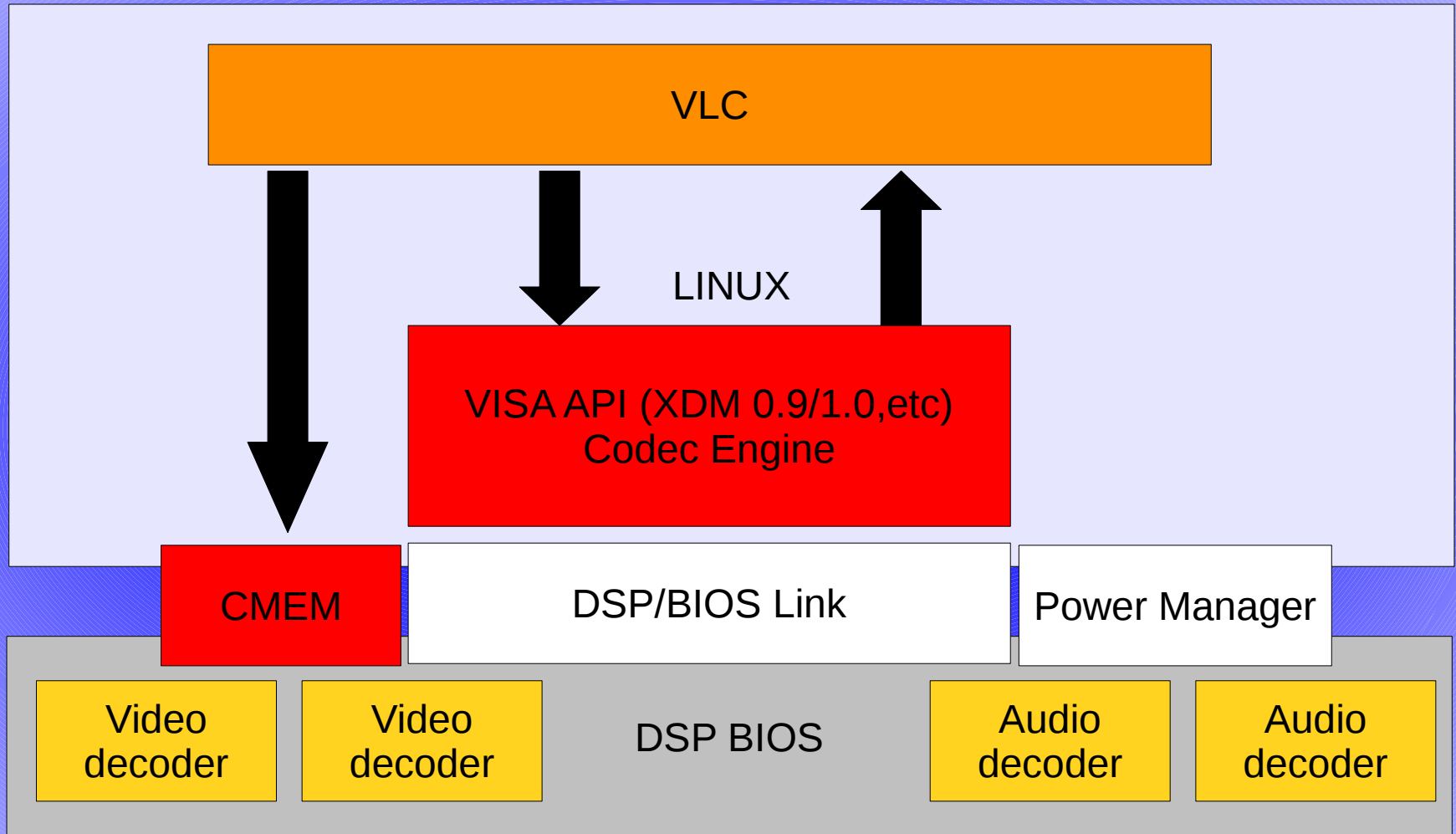
- Enable fixed point audio codecs)
  - --enable-a52 --with-a52-fixed
  - --enable-faad (with #define FIXED\_POINT)
  - --enable-mad (mp3 decoder)
  - --enable-shine (mp3 encoder)
  - --enable-wmafixed
- Outputs
  - --enable-fb --enable-v4l
  - --enable-oss (or --enable-alsa)





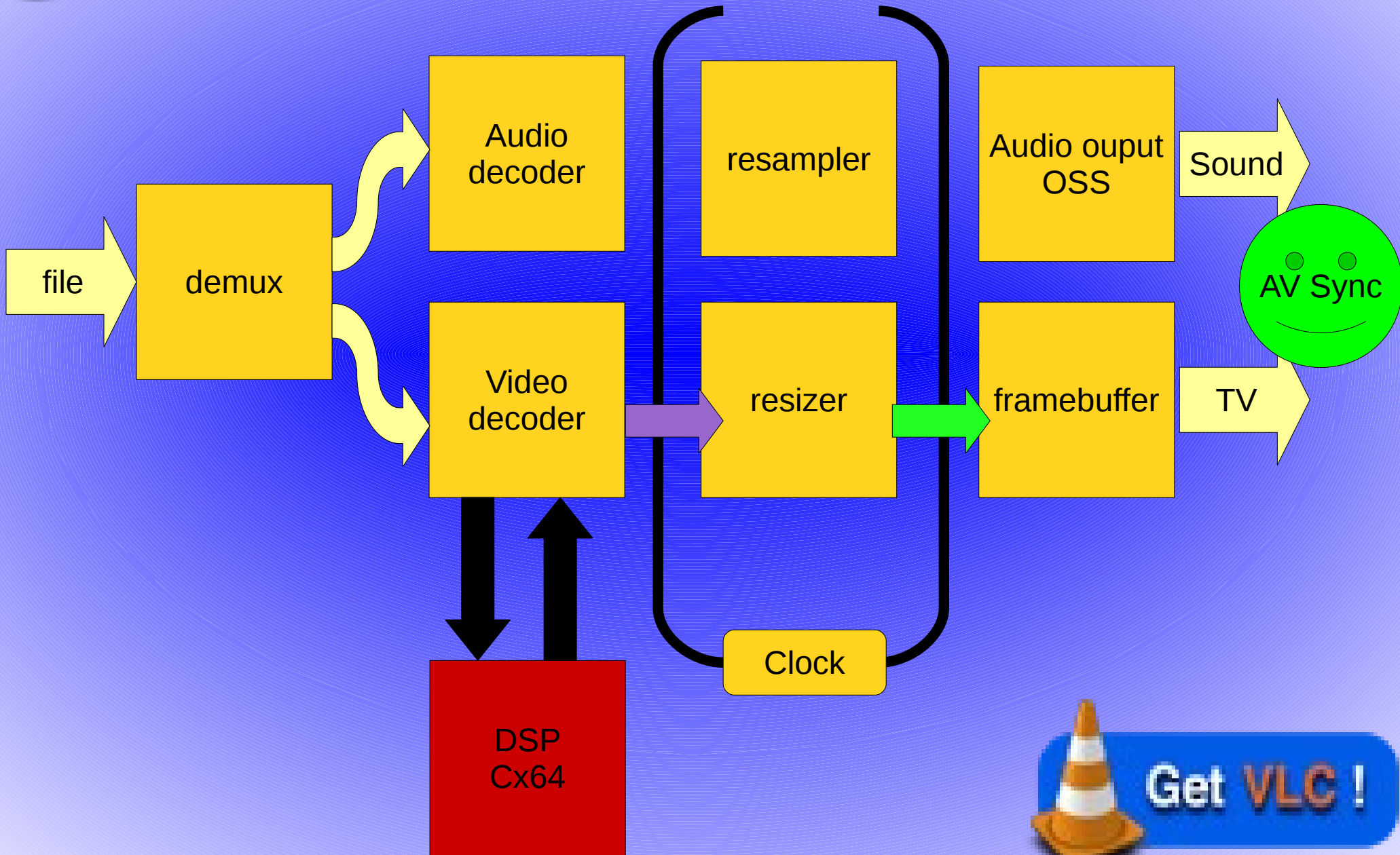


# DSP Bridge and Linux



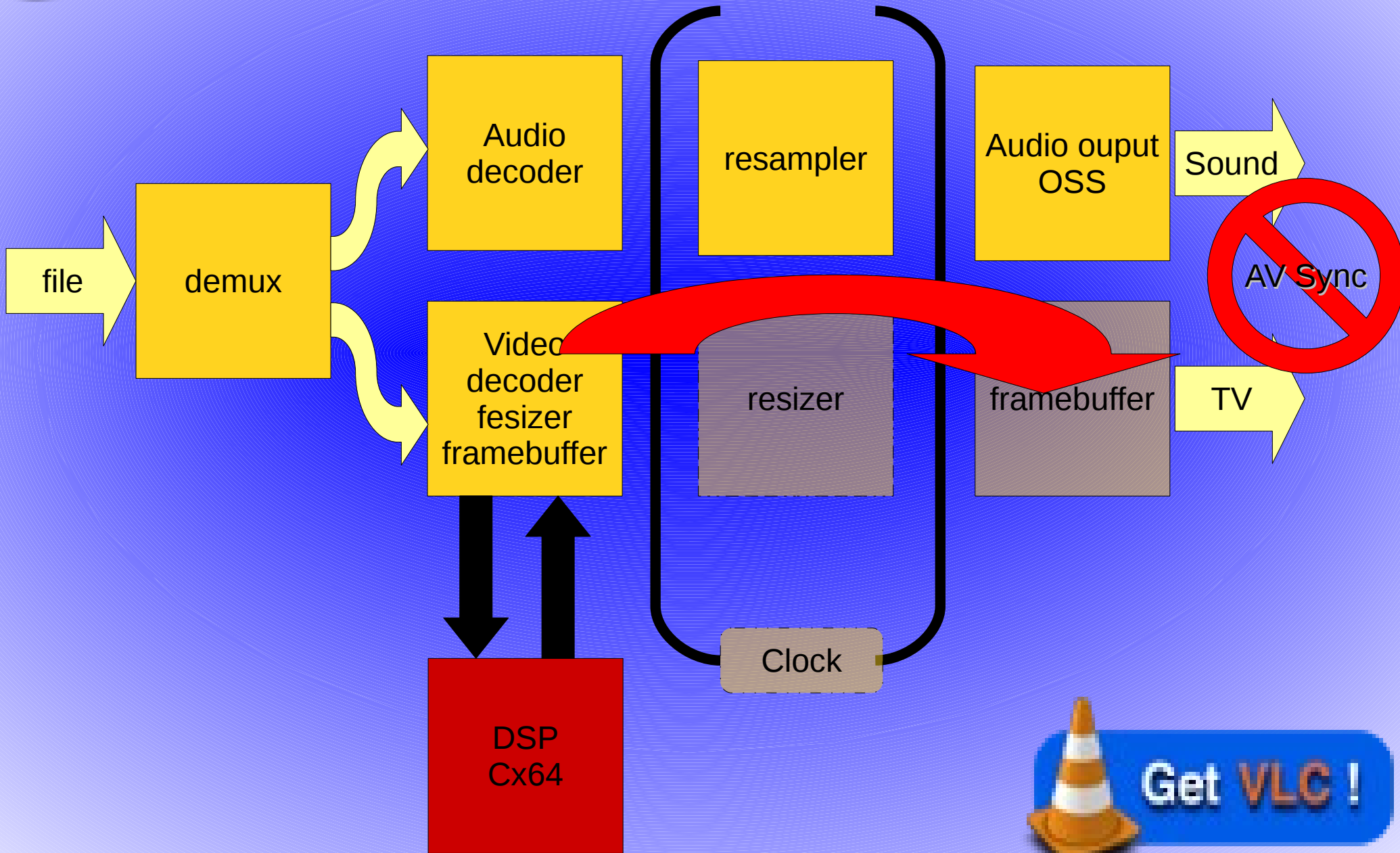
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# VLC

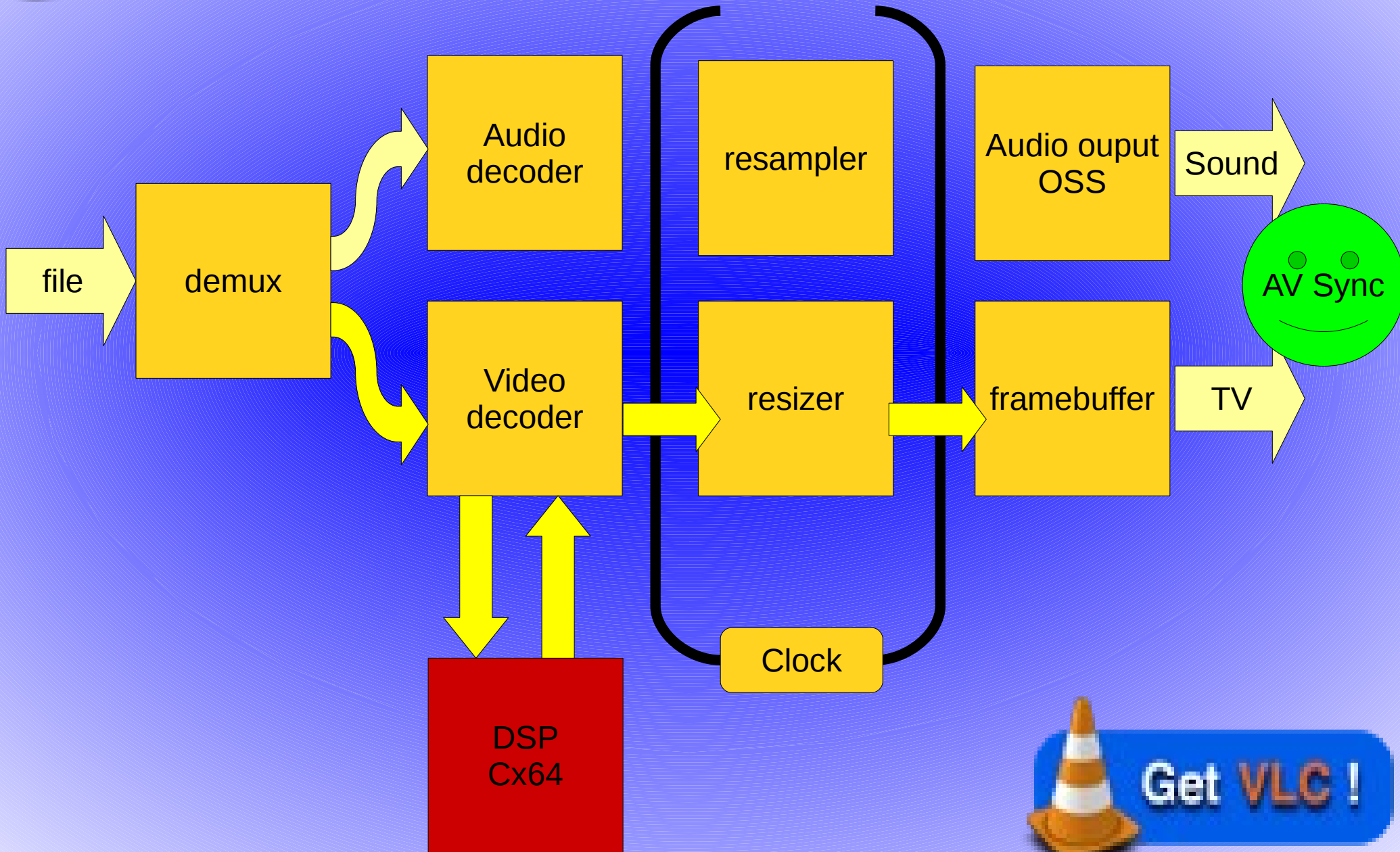


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# VLC



# VLC



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# Status

- VLC 0.8.6/1.0.2 neuros branch ([git.m2x.eu](http://git.m2x.eu))
  - Input formats:
    - udp, rtsp, mov, mpg, ps, ts, mp4, avi, asf, ogg, wmv, wma
  - Audio/Video Playback in NTSC/PAL
    - Video: avc1, h264, mpeg 1/2/4
    - Audio: pcm, mpeg layer 1/2, mp3, aac, ac3, wav, tremor, wma, flac, g726, ogg, flac
  - Audio/Video Encoding
    - Audio: mpeg layer 1/2, mp3, aac-lc, g726, pcm
    - Video: mpeg1/2/4, h264





# Status

- SD Playback: component (720p) and HDMI
- SD Capturing: component (720p)
- V4I2 Capturing: NTSC, PAL
- Streaming:
  - udp, tcp, multicast, MPEG-TS
  - rtsp, rtp/rtcp





# Future

- HD Playback
  - component (720p) and HDMI
- HD Capturing:
  - component (720p)
- Audio:
  - tremor
- DBUS control (MPRIS)
- Support OMAP
- Integrate in vlc.git 'master' branch



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[www.videolan.org](http://www.videolan.org)



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