

# VLC 4.0

*FOSDEM 2019*



---

VLC 3.0

3.0.X...

---

VLC 4.0

- **Vetinari**
- 18000 commits
  - 3600 Android
  - 2800 WinRT
  - 2300 iOS
- A bit long to come (!)
- One **very** strong release
- Focus on Mobile convergence, as announced, previously
- libVLC, and libVLC++, and bindings
- 1900+ bugs closed



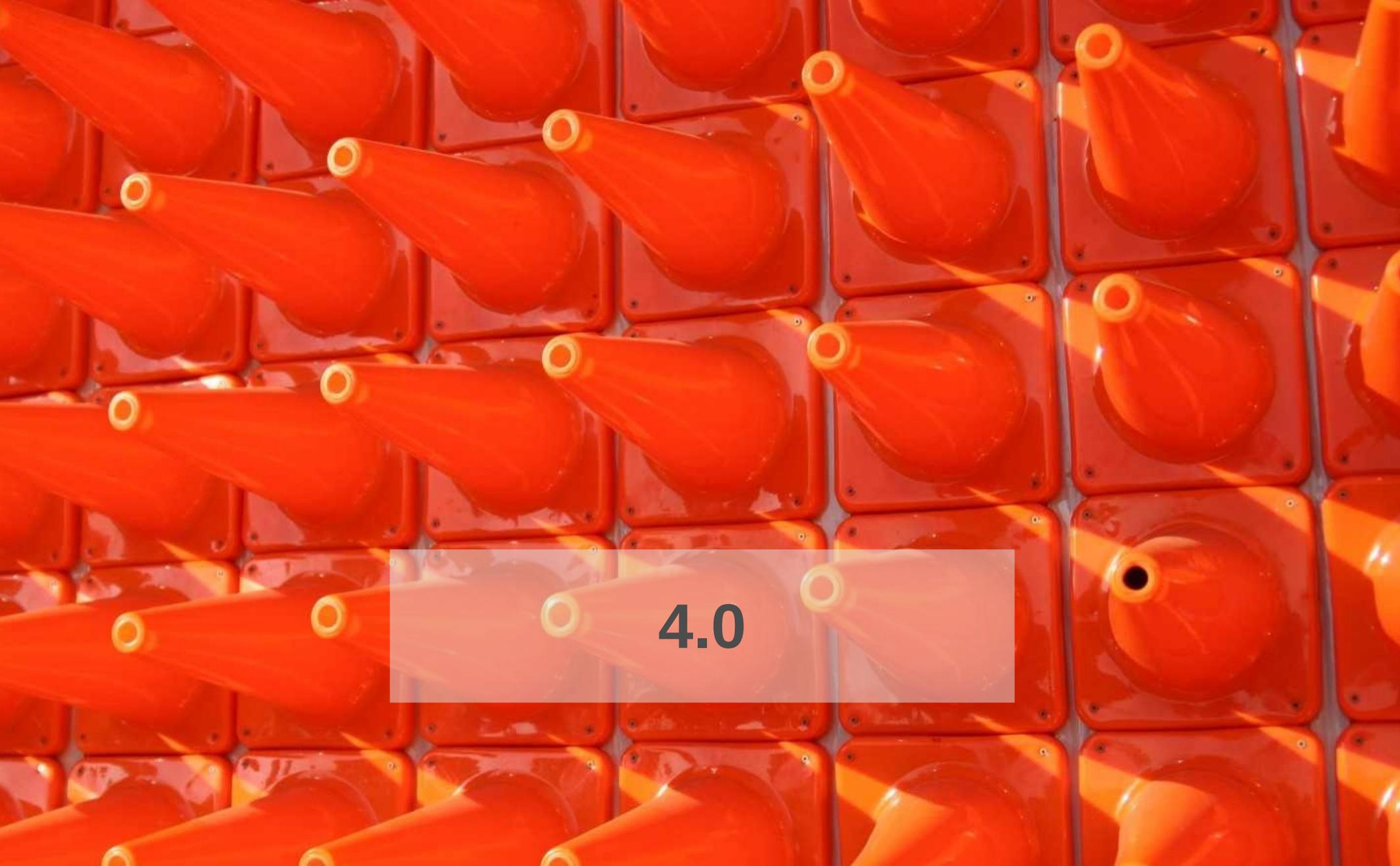
- **HW decoding** on by default everywhere
- **360 video** and **3D** Audio
- Network shares browsing (+passwords)
- Common codebase
- **10bits** / 12bits / **HDR** support
- Audio **HDMI** rework passthrough
- **HTTP/2**
- Lots of new formats (adaptive, subtitles)
- OpenGL and Wayland (*part 1*)
- New subtitle rendering stack
- **Chromecast**





# 200+ million

89 for 3.0.4

The image features a dense, repeating pattern of orange traffic cones. Each cone is mounted on a square, orange-tinted tile. The tiles are arranged in a grid, and the cones are oriented in various directions, creating a complex, textured visual. The lighting is bright, casting soft shadows and highlighting the glossy surface of the cones and tiles. In the center of the image, there is a semi-transparent white rectangular box containing the text "4.0".

**4.0**

## FOSDEM 2019 promises

- New input/playlist
- Media Library
- Interface
- New video output architecture
- VR/3D
- Dropping old platforms



Otto Chriek

## Otto Chriek

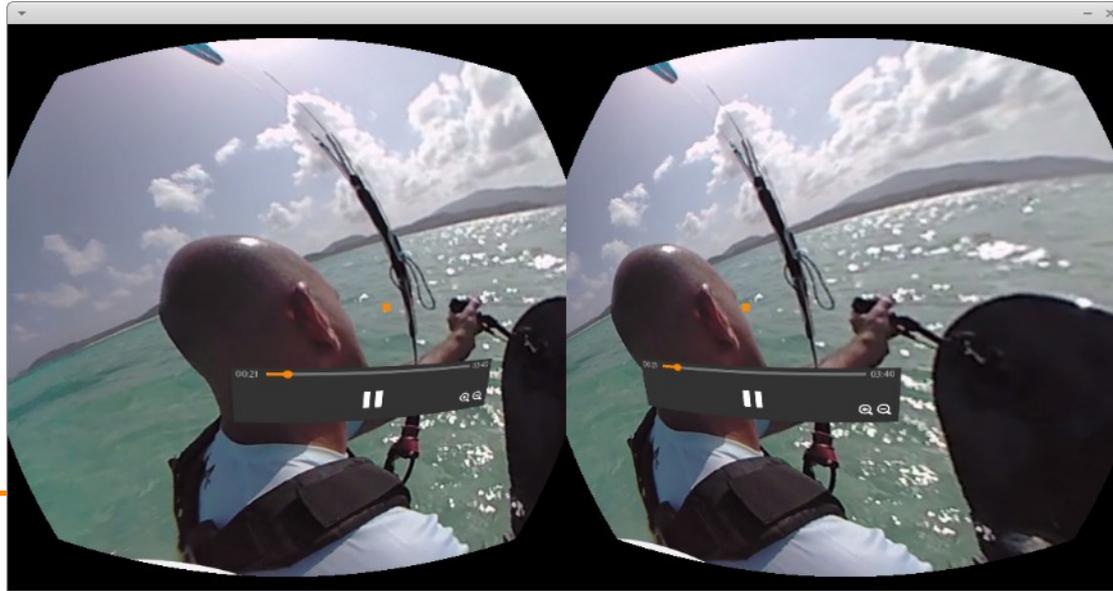
- New input/playlist
- **Clock**
- Media Library
- Interface
- New video output architecture
- VR/3D
- Dropping old platforms



- 360 video
  - Equirectangular
  - Cubemap
- Platforms
  - OpenGL (*Everywhere*)
  - D3D11 (*but Windows*)
- 3D Audio
  - 3<sup>rd</sup> order ambisonic
  - libspatialaudio
  - Ambisonic + binaural



# VLC VR





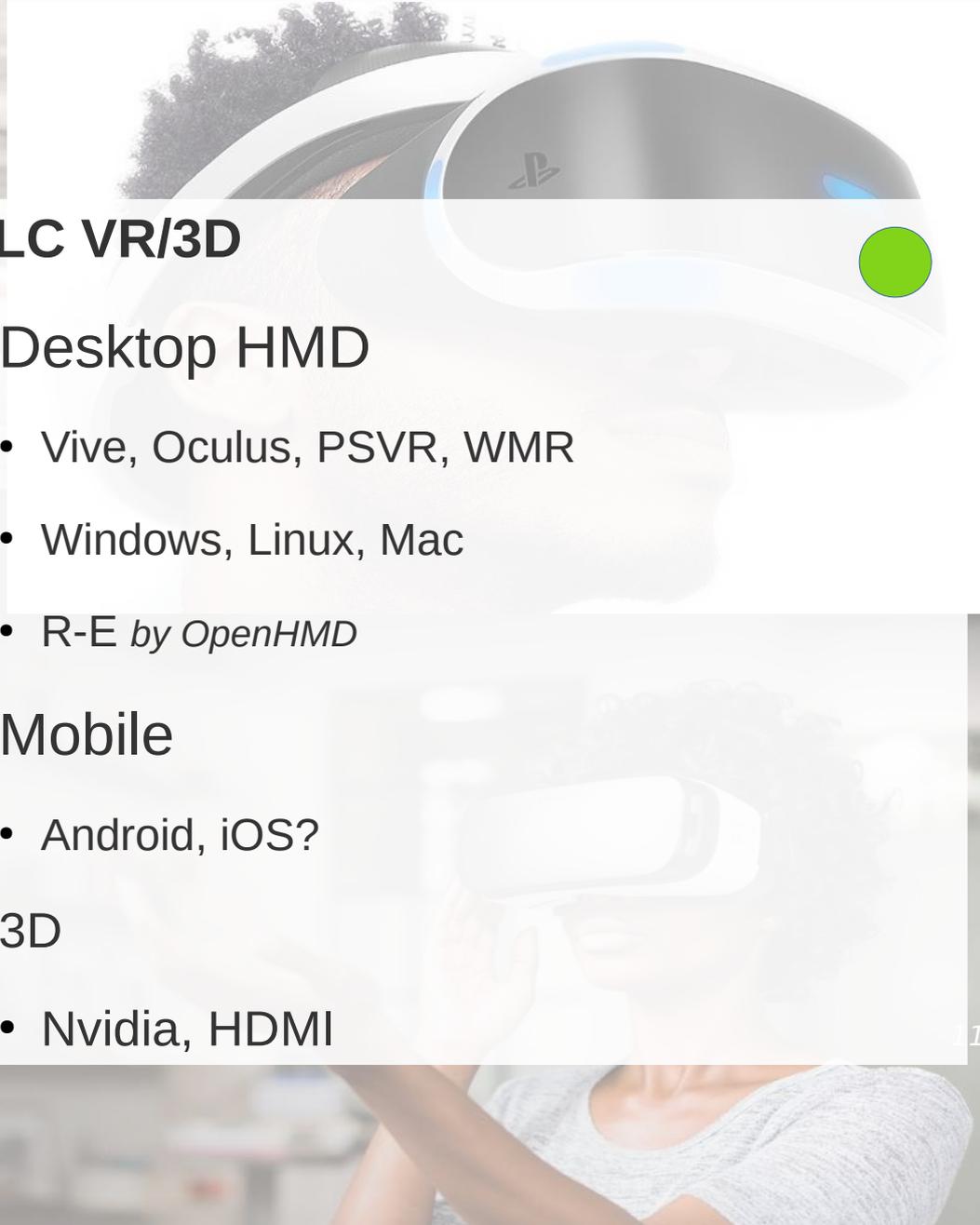
## VLC VR/3D

- Desktop HMD

- Vive, Oculus, PSVR, WMR
- Windows, Linux, Mac
- R-E by *OpenHMD*

- Mobile

- Android, iOS?
- 3D
- Nvidia, HDMI



- Input Manager → Player
  - Good ongoing work (*almost merged*)
  - Owner of the resources
  - Privatizing numerous APIs
    - *input\_item, input\_thread, input\_\**
  - libvlc\_media\_player & input, vlm sharing
    - libVLC and libVLCcore similarity
  - Events simplification
  - Gapless ready

- Input Manager
  - Split between playlist and input manager
  - Owner of Aout and Vout
  - Identical for playlist, vlm, libvlc\_media\_player
  - Gapless (!)
- Rewrite of the playlist
  - Simple (flat, fast)
  - 1 ↔ 1 relation with IM
  - *Powers also libvlc and VLM*

- Current Clock of VLC

- Input-PCR controlling

- New Clock

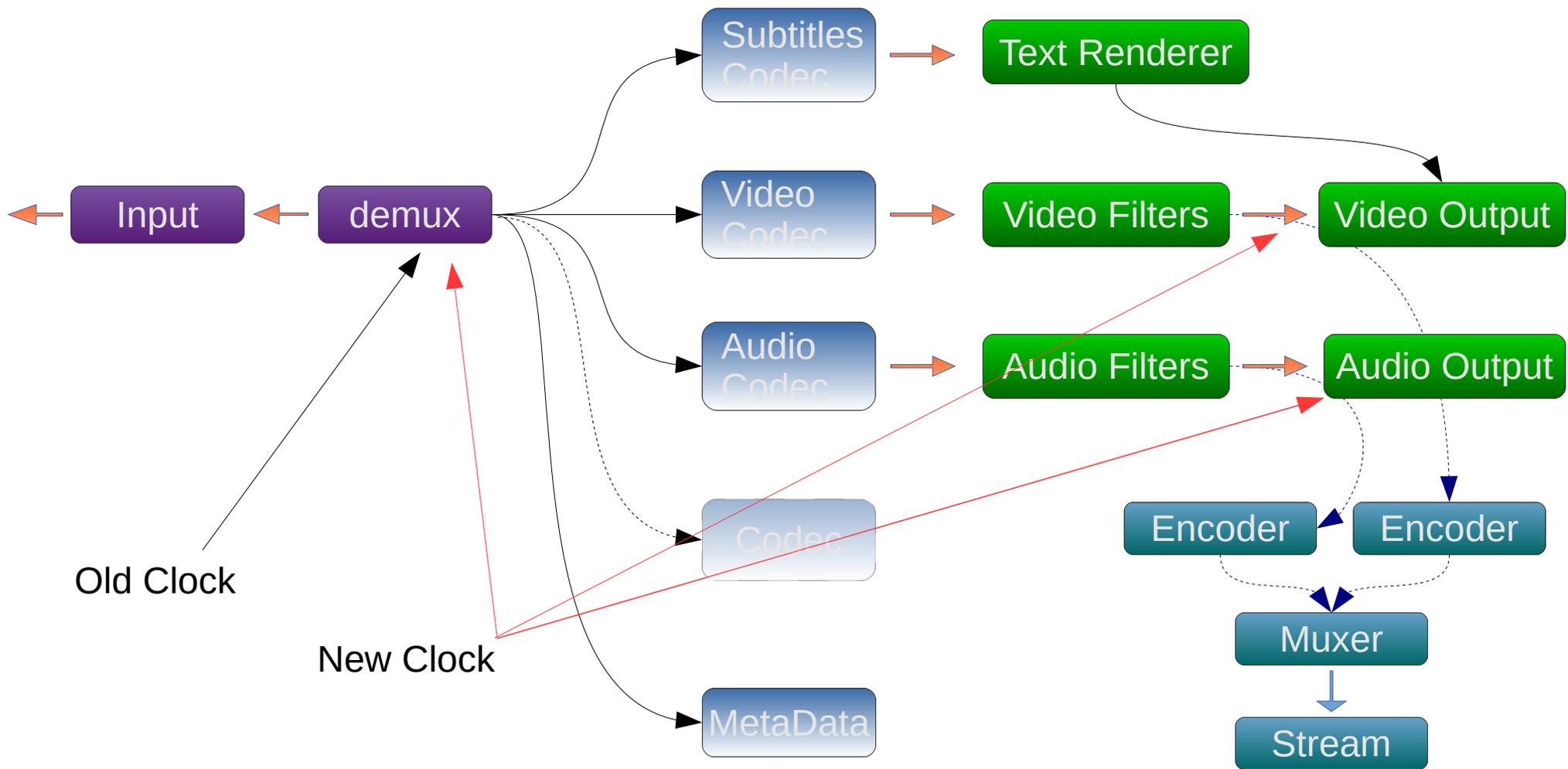
- Main clock
  - Monotonic clock of the CPU
- Master clock
  - Audio, SDI, network, PCR...
- Slave clock
  - Video, Subtitles,....

- Code

- We understand it!

- Gains

- Frame accuracy
- No resampling
- Better synchro
- V-Sync, HMD,

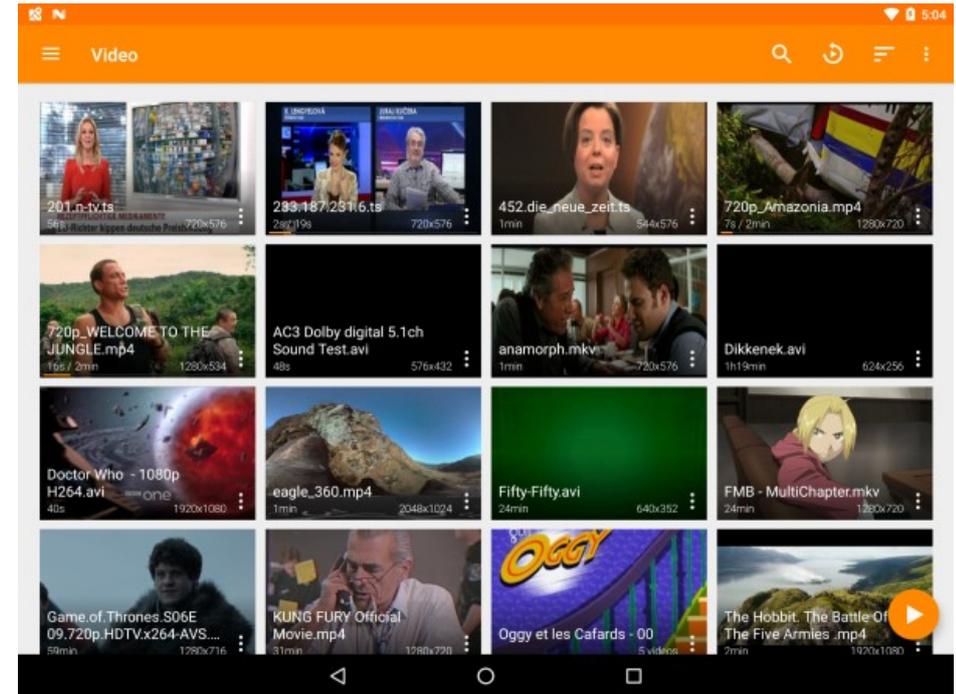




- Video Output changes
  - push instead of pull model
    - HW are now smarter
    - Rewrite of all video outputs :-)
  - More recycling
  - Support for 3D/VR
  - More HDR
- Video Filter API
  - Finally!



- Media Library
  - Used on Android
  - coming to the desktop & iOS
- Details
  - C++ & SQLite
  - Simple & Light
  - Audio + Video
  - Playlists
  - Distant Shares index





- VLC UX/UI
  - UX OK, UI, not so much
  - Gnome, KDE Plasma 5, Windows 10
- 2 main use cases
  - Play from Explorer, Nautilus, Dolphin, Finder to launch VLC
  - Open VLC to find a media
- Discussions ongoing
  - Actual screenshots



*DO NOT SCREAM*

sheep.mp4 - VLC media player



01:39

12:10



sheep.mp4





- Pigs On The Wing 1 01:25
- 02 Dogs.mp3 17:05
- 03 Pigs (Three Different Ones).mp3 11:26
- 04 Sheep.mp3 10:18
- 05 Pigs On The Wing 2.mp3 01:28
- Plan 9 from Outer Space - [http://www.archive.org/details/Plan\\_9\\_fro01\\_00000](http://www.archive.org/details/Plan_9_fro01_00000)
- ▶ interlaced.ts 00:45

Der aktuelle Vodafone-Song: „Strangers“ von Sigrid

00:12



interlaced.ts



00:45

VLC media player



Music



Video



Network



16stairstep.ts



1920x1080-afc0...



4k.mkv



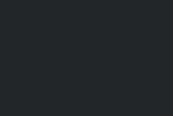
ac3\_gap.ts



Amazing\_Caves\_...



ball.mkv



bardata\_demo.ts



Big Buck Bunny, ...



big-buck-bunny\_...



blue.mkv



cablevision-ch83...



Clip AXIS VR 01\_...



cnni\_test1.ts



eagle\_injected....



first.mkv



first.ts



free.mkv



good.mp4



green.mkv



h264\_interlaced...



interlaced.ts



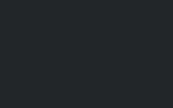
KGO-HD.mkv



KGO-HD.ts



lol.mkv



lol.ts



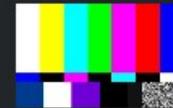
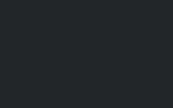
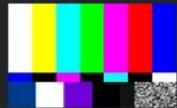
lol2.mp4



lolilol.mkv



medusa\_h264\_b...





Music



Video



Network



Albums

Artists

Genres

Tracks

filter

Alphabetic



Unknown title  
Unknown Artist



2003 - Live (CD) ...  
Coldplay



A Moment Of Sti...  
God Is An Astronaut



A Momentary La...  
Pink Floyd



A Rush Of Blood ...  
Coldplay



A Saucerful of Se...  
Pink Floyd



A Thousand Suns  
Linkin Park



Absolution  
Muse



Acoustic (CD Pro...  
Coldplay



Animals  
Pink Floyd



Atom Heart Mot...  
Pink Floyd



Best Of Linkin P...  
Linkin Park



Black Holes And ...  
Muse



Clocks (Japanese...  
Coldplay



Every Teardrop I...  
Coldplay



Ghost Stories  
Coldplay



Hybrid Theory  
Linkin Park



iTunes Festival: L...  
Coldplay



Left Right Left Ri...  
Coldplay



Live 2012  
Coldplay



Live In Texas  
Linkin Park



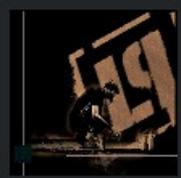
Living Things



Lost! (CDr Prom...



Meddle



Meteora



Midnight (Remix...



Mince Spies (Chr...



Minutes To Midn...



Music



Video



Network



Albums

Artists

Genres

Tracks

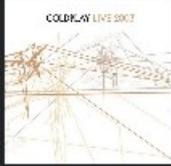
filter

Alphabetic



Unknown title

Unknown Artist



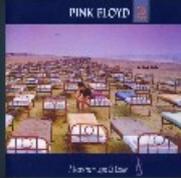
2003 - Live (CD) ...

Coldplay



A Moment Of Sti...

God Is An Astronaut



A Momentary La...

Pink Floyd



A Rush Of Blood ...

Coldplay



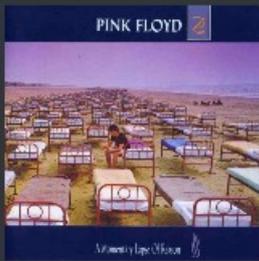
A Saucerful of Se...

Pink Floyd



A Thousand Suns

Linkin Park



## A Momentary Lapse Of Reason

By Pink Floyd - 2011 - 00:03

#	TITLE	DURATION
1	Signs Of Life	00:00
2	Learning To Fly	00:00
3	The Dogs Of War	00:00
4	One Slip	00:00
5	On The Turning Away	00:00
6	Yet Another Movie	00:00
7	Round And Around	00:00
8	A New Machine Pt.1	00:00
9	Terminal Frost	00:00
10	A New Machine Pt.2	00:00
11	Sorrow	00:00



Absolution

Muse



Acoustic (CD Pro...

Coldplay



Animals

Pink Floyd



Atom Heart Mot...

Pink Floyd



Best Of Linkin P...

Linkin Park



Black Holes And ...

Muse



Clocks (Japanese...

Coldplay

- ▶ Pigs On The Wing 1 01:25
- 02 Dogs.mp3 17:05
- 03 Pigs (Three Different Ones).mp3 1:26
- 04 Sheep.mp3 10:18
- 05 Pigs On The Wing 2.mp3 01:28



00:06

01:25



Pigs On The Wing 1  
Pink Floyd



## *More screaming*

---



- Disable Media Library
  - Fast to start
- Enable the menus
- Gnome and KDE adpatations
- CSD and SSD
- Wayland & x11

Connect Search Videos

Video Audio LAN Internet

### Recents

**The square**  
02:24:31

**Dieter Rams Documentary**  
02:25:31

**Lost highway**  
02:25:31

### Videos

**Le grand silence**  
02:24:31

**Bladerunner and the seven dwarfs**  
02:24:31

**Lost in Translation**  
02:24:31

**Goodtime**  
02:24:31

**American Beauty**  
02:24:31

Connect Search Videos

Video Audio LAN Internet

### Recents

**The square**  
02:24:31

**Dieter Rams Documentary**  
02:24:31

**Lost highway**  
02:25:31

### Videos

**Le grand silence**  
02:24:31

**Bladerunner and the seven dwarfs**  
02:24:31

**Lost in Translation**  
02:24:31

**Goodtime**  
02:24:31

**American Beauty**  
02:24:31

Connect Search Videos

Video Audio LAN Internet

### Videos

**Le grand silence**  
02:24:31

**Bladerunner and the seven dwarfs**  
02:24:31

**Lost in Translation**  
02:24:31

**Goodtime**  
02:24:31

**American Beauty**  
02:24:31

**Bladerunner and the seven dwarfs**  
02:24:31

A failed movie star and an neglected young woman form an unlikely bond after meeting parties in Tokyo.

Director: Sofia Coppola  
Music: Sofia Coppola  
Cast: Bill Murray, Scarlett Johansson, Giovanni Ribisi

Remove Video  
Add to Playlist  
Share  
Delete

### Videos

**Les films Dardenne filmography**  
4 videos

**Westworld season 2**  
8 videos

**Willy ler**  
02:24:31

**Spirited away**  
02:24:31

**Man Onck**  
02:24:31

Connect Search Videos

Video Audio LAN Internet

### Recents

**The square**  
02:24:31

**Dieter Rams Documentary**  
02:24:31

### Videos

**Le grand silence**  
02:24:31

**Bladerunner and the seven dwarfs**  
02:24:31

**Lost in Translation**  
02:24:31

**Goodtime**  
02:24:31

#### Up Next

- Goodwin Lavin
- Gone Girl
- Drake-Viewump2
- La silence de l'ama
- Pat Garrett & Billy...
- Pat Garrett & Billy...
- La silence de l'ama
- La silence de l'ama
- Pat Garrett & Billy...

Clear queue

4:00 📶 🔋

Sort Video  Edit

Movies Episodes Playlist

Ellen (1994) - 1x03.mp4  
NEW 23:26

Howls Moving Castle Trailer (English version 2...)  
NEW 01:43

Le fabuleux destin d'Amlie Poulain (2001) - Theatri...  
NEW 03:40

Rollin France - what if animals were round 1.mp4  
NEW 02:13

Rollin France - what if animals were round.mp4  
NEW 02:13

ROLLIN WILD - Giraffe - what if animals were rou...  
NEW 00:40

Video Audio Local Network Settings

4:00 📶 🔋

# Local Network

 Cloud Services >  
0 logged in services

 Open Network Stream >  
Play streams directly without downloading

 Downloads >  
Download files directly to your device

 Sharing via WiFi >  
<http://172.17.229:8888>  
<http://Caro.local:8888>

Video Audio Local Network Settings

4:00 📶 🔋

About

# Settings

Privacy >  
Open in Settings

Dark Theme >   
Change app colors

## Generic

Passcode Lock   
Secure access to your content

Optimize item names for display

Network Caching Level  
Normal

Default playback speed  
1.00x

Continue audio playback  
Always

Play video in fullscreen

Continue video playback  
Always

Automatically play next item

Video Audio Local Network Settings

- More Features
  - Wayland actually working
  - UPnP Rendering, AirPlay output, like ChromeCast
  - HEIF, Dash/Webm, TTML images, AV1 encoding, WebVTT encoding
  - SDI as stream output
  - SMBv2/v3
  - RIST (*in and out*)

- Windows
  - XP, Vista
- MacOS
  - 10.7 → 10.10
- Linux
  - OpenGL required
- Android
  - 2.2 → 4.2
- iOS
  - IOS 7, 8



Thanks!  
Questions?

VLC 4.0