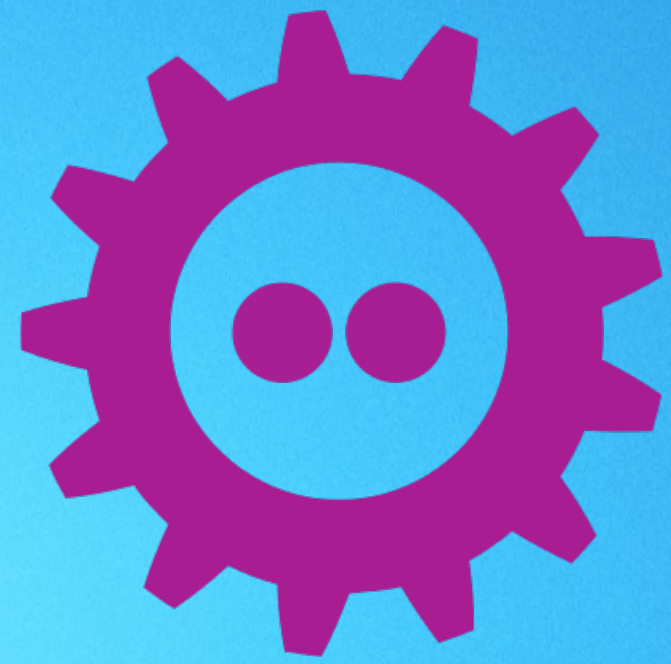
vimeo

EBU



Vimeo and the Open Source Community

Summary

1. Introduction
2. Architecture
3. FOSS
4. Conclusions

Contact

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Introduction

Vimeo – About us

Who are we?

- Top 5 Video Site.

- Content Creators.

- Multimedia Hackers.

- Creative Innovators.

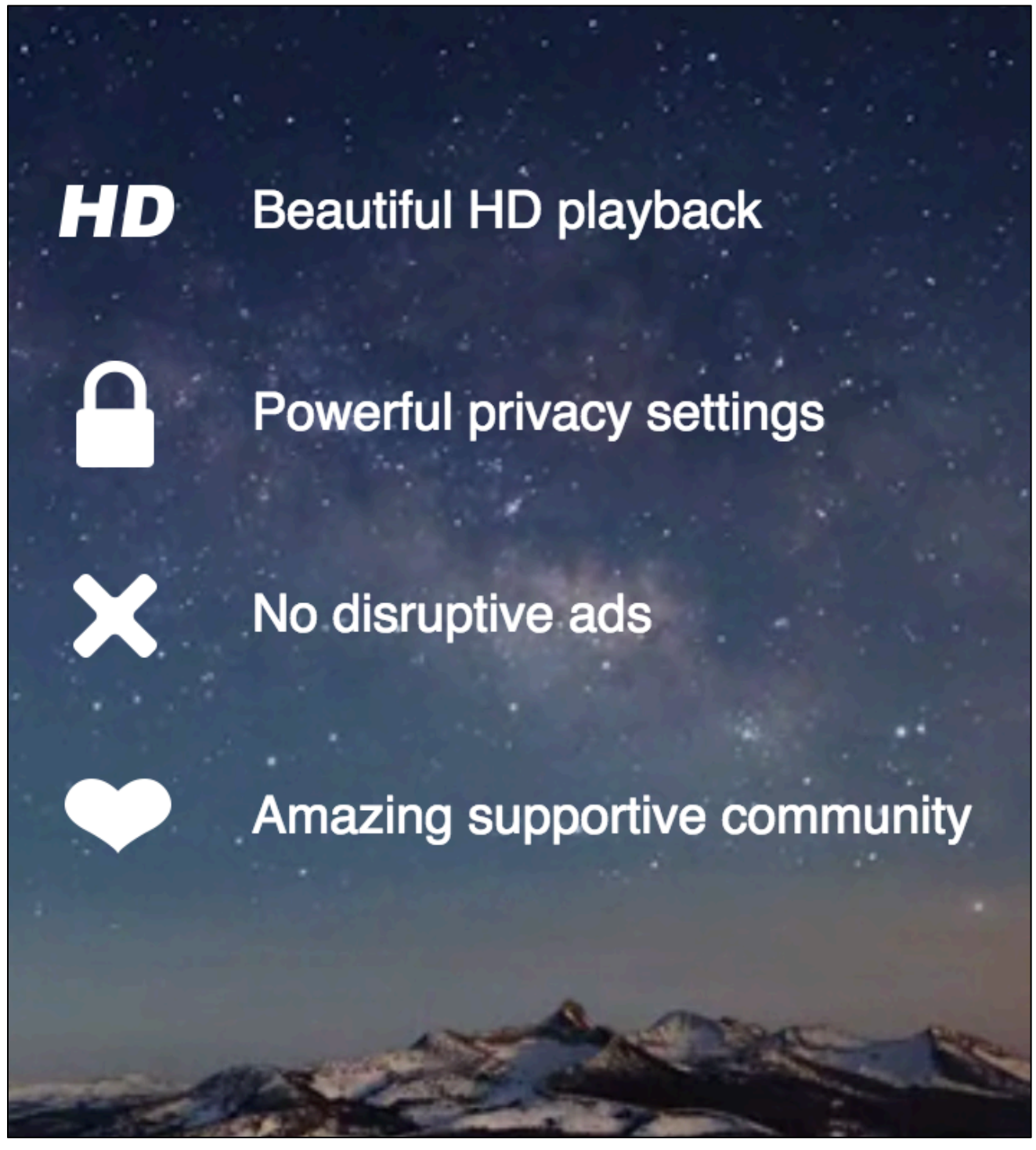
Vimeo – About us

What do we do?

- Transcoding and video hosting at a high level of quality.

- Create educational and entertaining content.

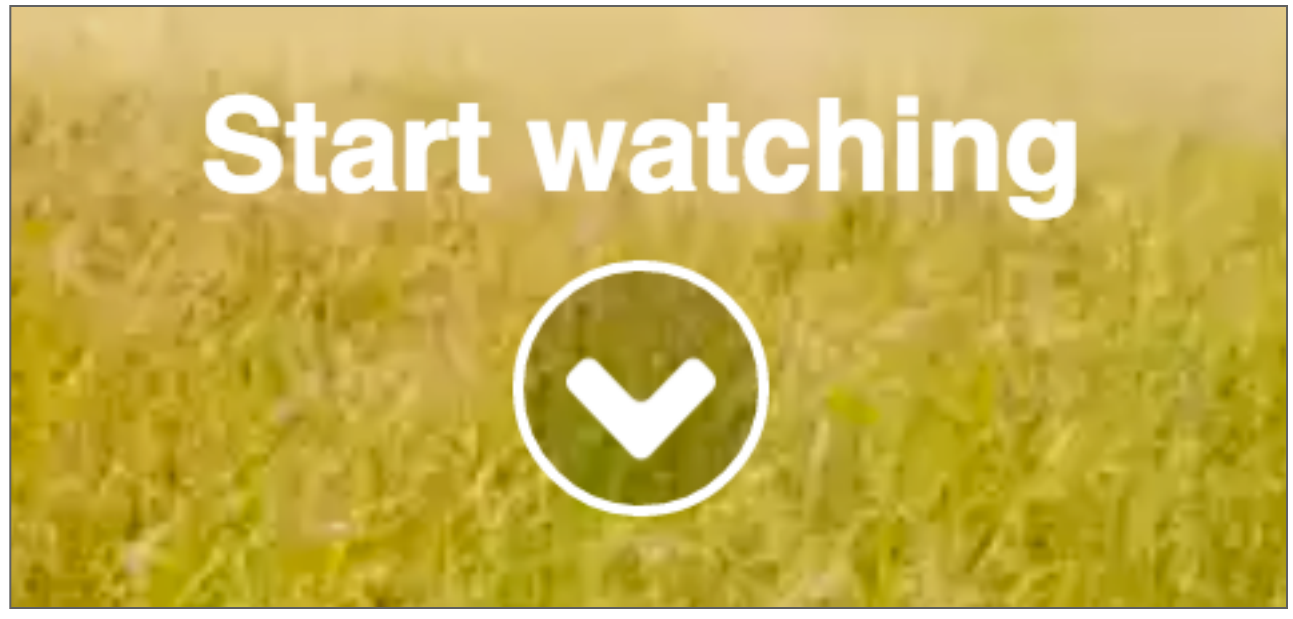
- Video On Demand and tools for professionals.



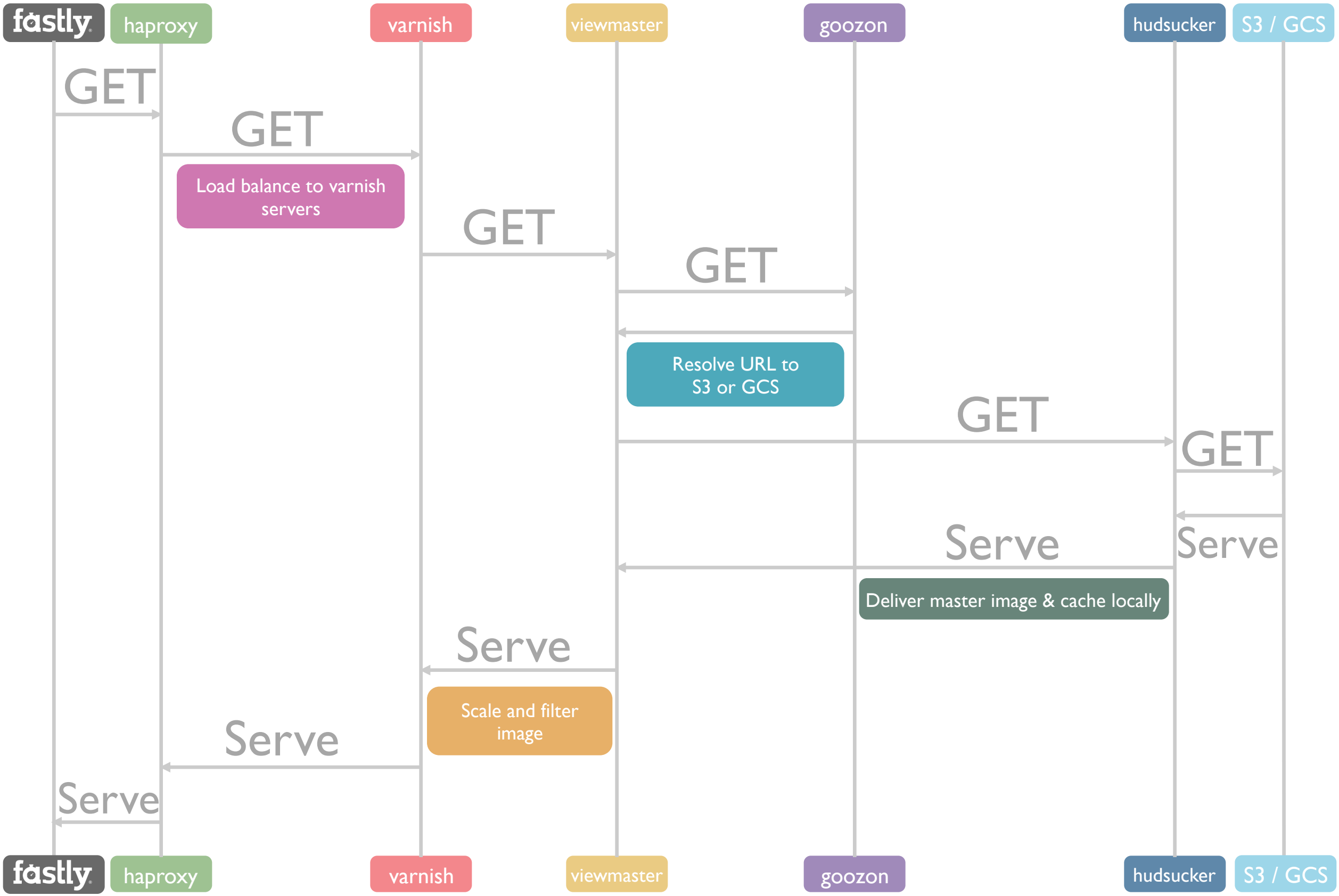
Vimeo – About us

Who uses us?

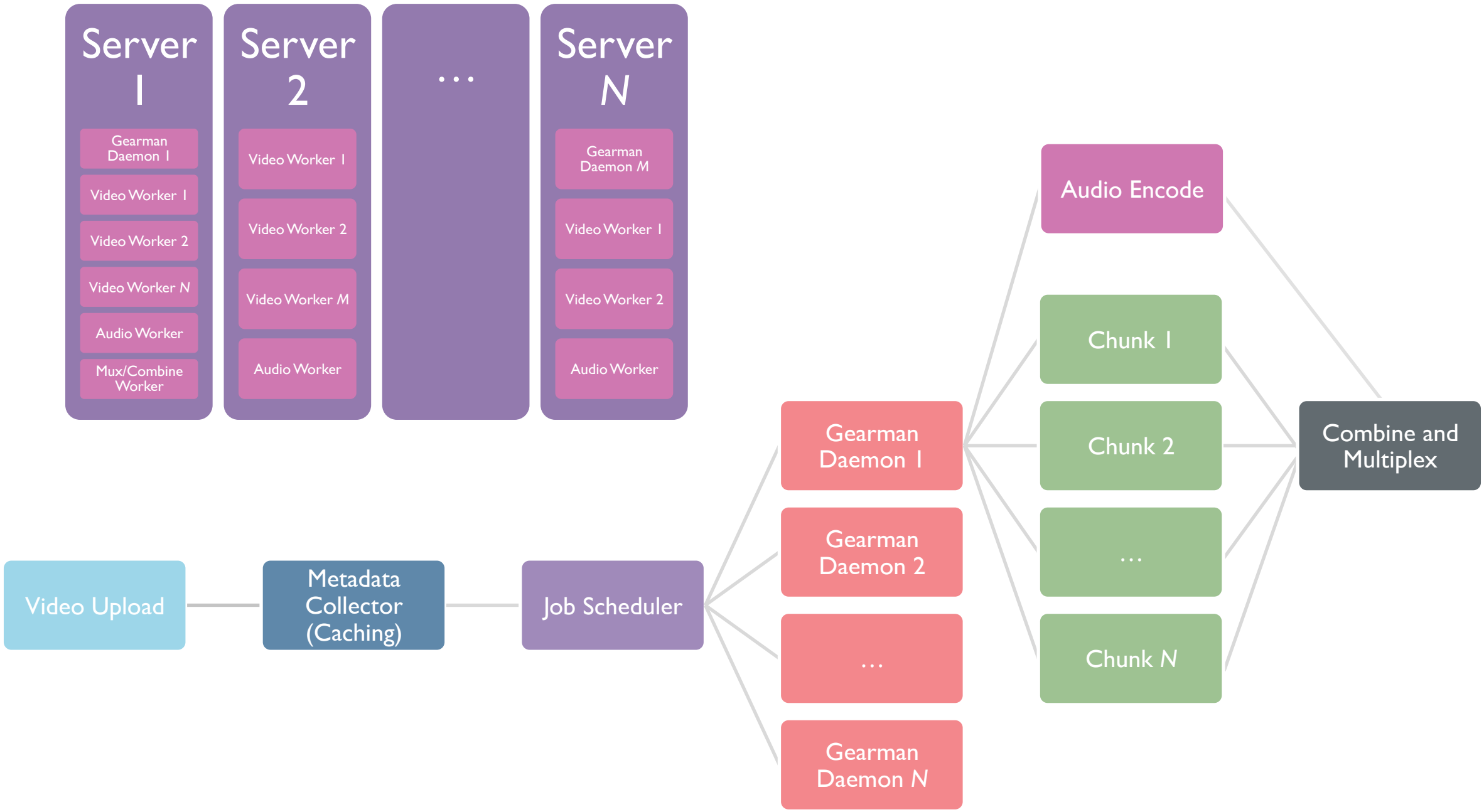
- Independent artists.
- Small to Large Pros.
- Businesses.
- Regular people!

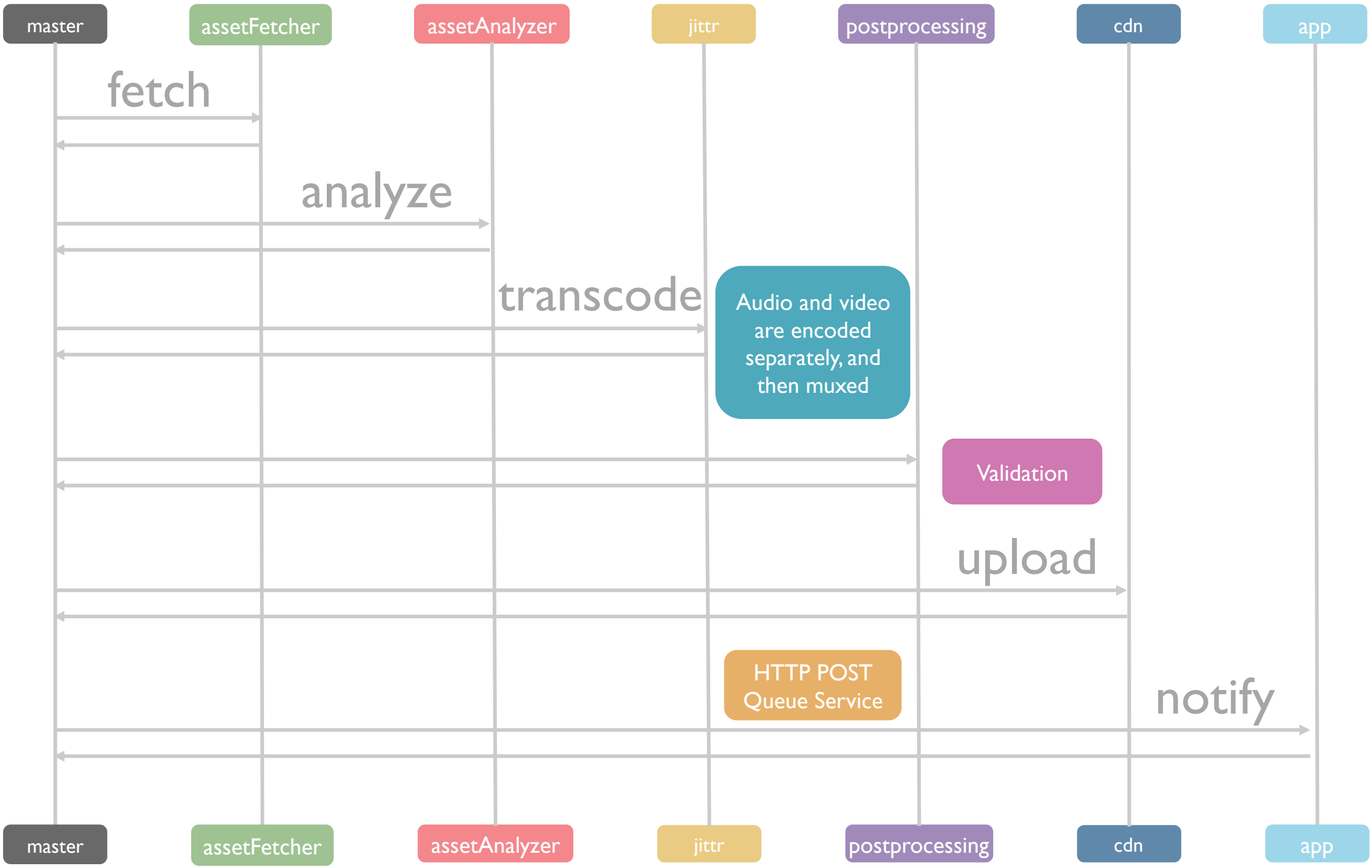


Architecture


fastly
haproxy
varnish
viewmaster
goozon
hudsucker
S3 / GCS
GET
GET
Load balance to varnish servers
GET
GET
Resolve URL to S3 or GCS
GET
GET
Serve
Serve
Deliver master image & cache locally
Serve
Scale and filter image
Serve
Serve
fastly
haproxy
varnish
viewmaster
goozon
hudsucker
S3 / GCS

Transcoding

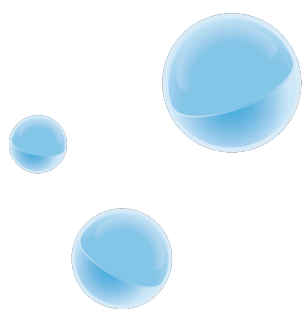



master
assetFetcher
assetAnalyzer
jittr
postprocessing
cdn
app
fetch
analyze
transcode
Audio and video are encoded separately, and then muxed
Validation
upload
HTTP POST
Queue Service
notify
master
assetFetcher
assetAnalyzer
jittr
postprocessing
cdn
app

Software in action

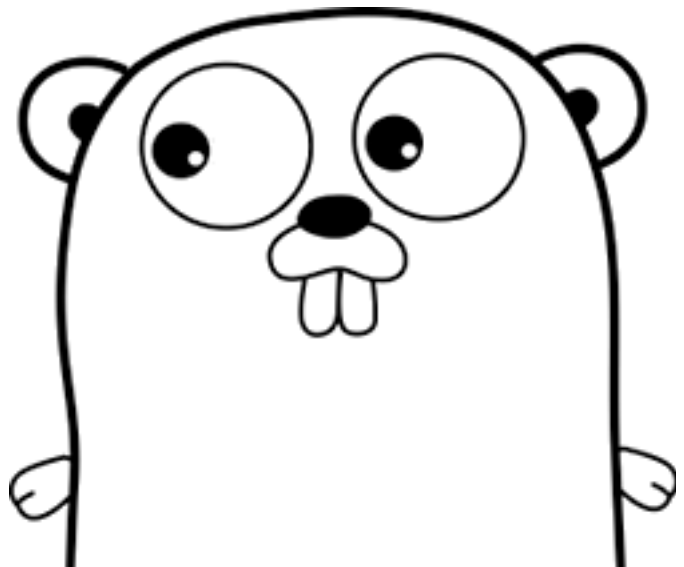
A Few Awesome Media Projects

- **Gearman** – Great distributed job server with a simple protocol usable from any language.
- **FFmpeg/Libav** – First class multimedia toolkit.
- **x264** – The Best H.264 encoder around.
- **L-SMASH** – Our preferred library for MP4 creation and demuxing/info. Rigidly strict to the specs, nice upstream developers, practical and realistic, has fewer LoC than the space shuttle.



VARNISH

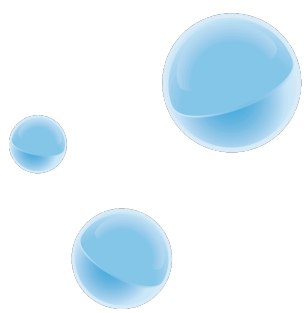
CACHE

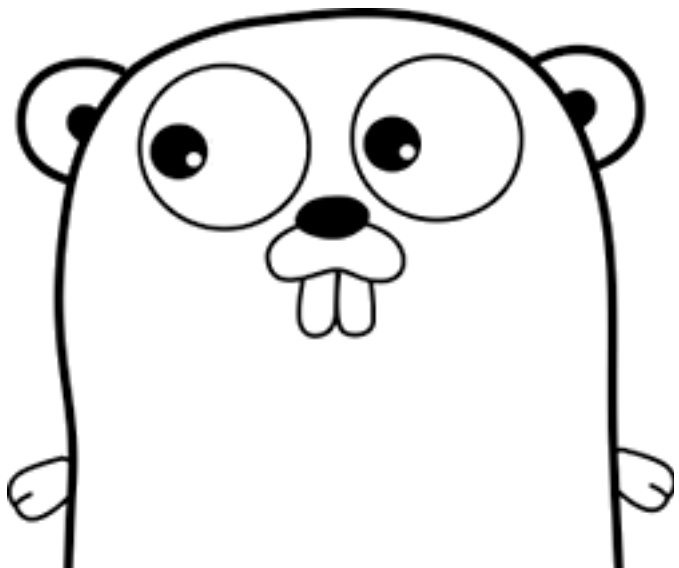


Software in action

A Few Awesome Media Projects

- **ffms2** – Offers frame-accurate, and pre-indexed seeking using the libav* libraries, and has an easy-to-use API.
- **FDK-AAC** – Fraunhofer AAC encoder.
- **MediaInfo** – Very good probe tool.
- Many packages for **Go**.
- Many more!





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Future Software

- **Daala** – Doing interesting, possibly great things. Definitely worth keeping an eye on.
- **DASH** – Using a Vimeo-flavored L-Smash and lavf combination.
- **x265** – Shaping up well, still not useful in production yet.
- **Opus** – Now available in MP4RA.
- **4k** – !

FOSS

Open Source Policies

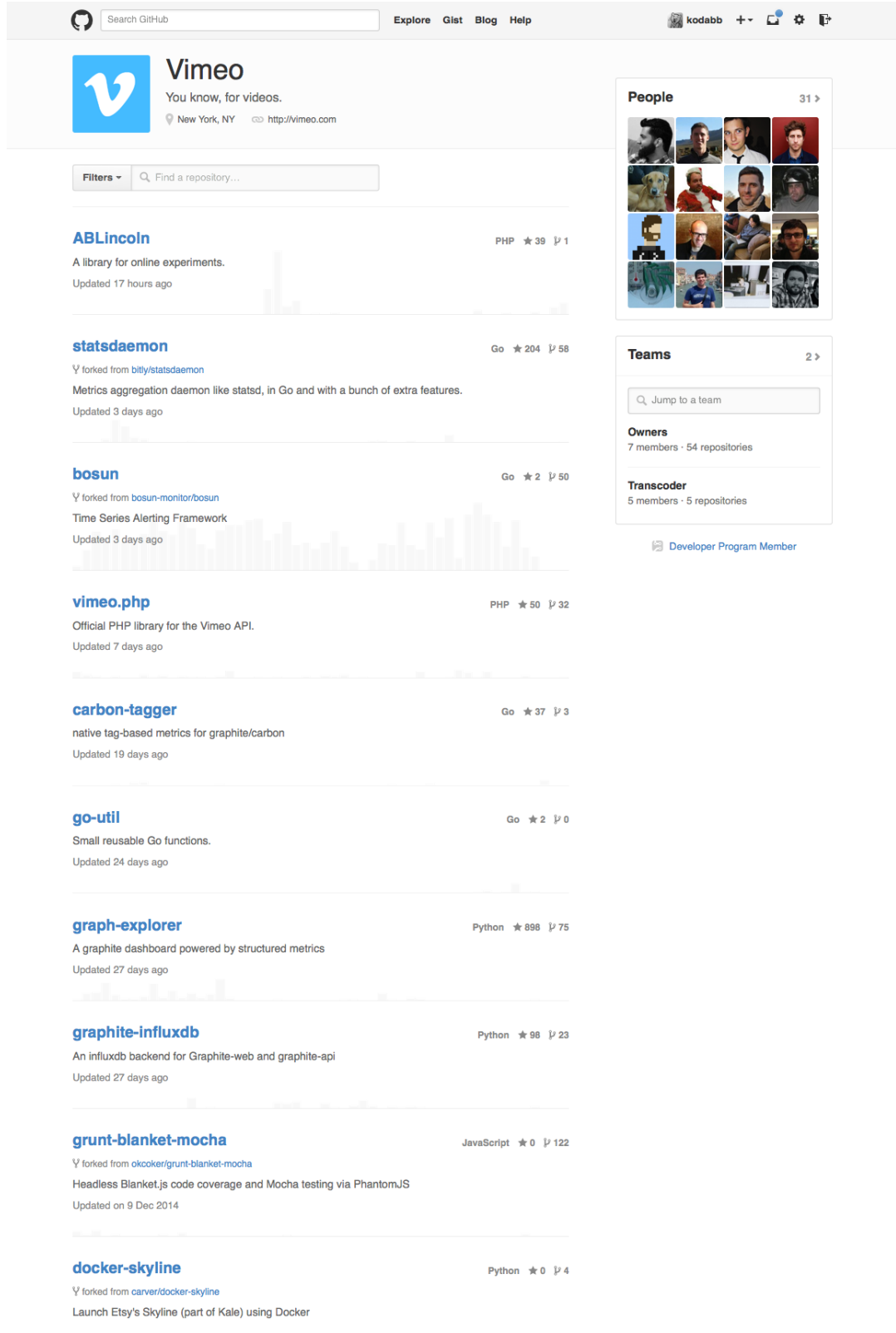
Long Term Maintainability and Benefits

- Going against the trend, we do not use Open Source software in bad faith; we contribute bug fixes, features, and at-scale-testing back, and do not violate licenses.

- 3 of 4 members of the transcode team are or were upstream FFmpeg/Libav developers, and all are active open source contributors.

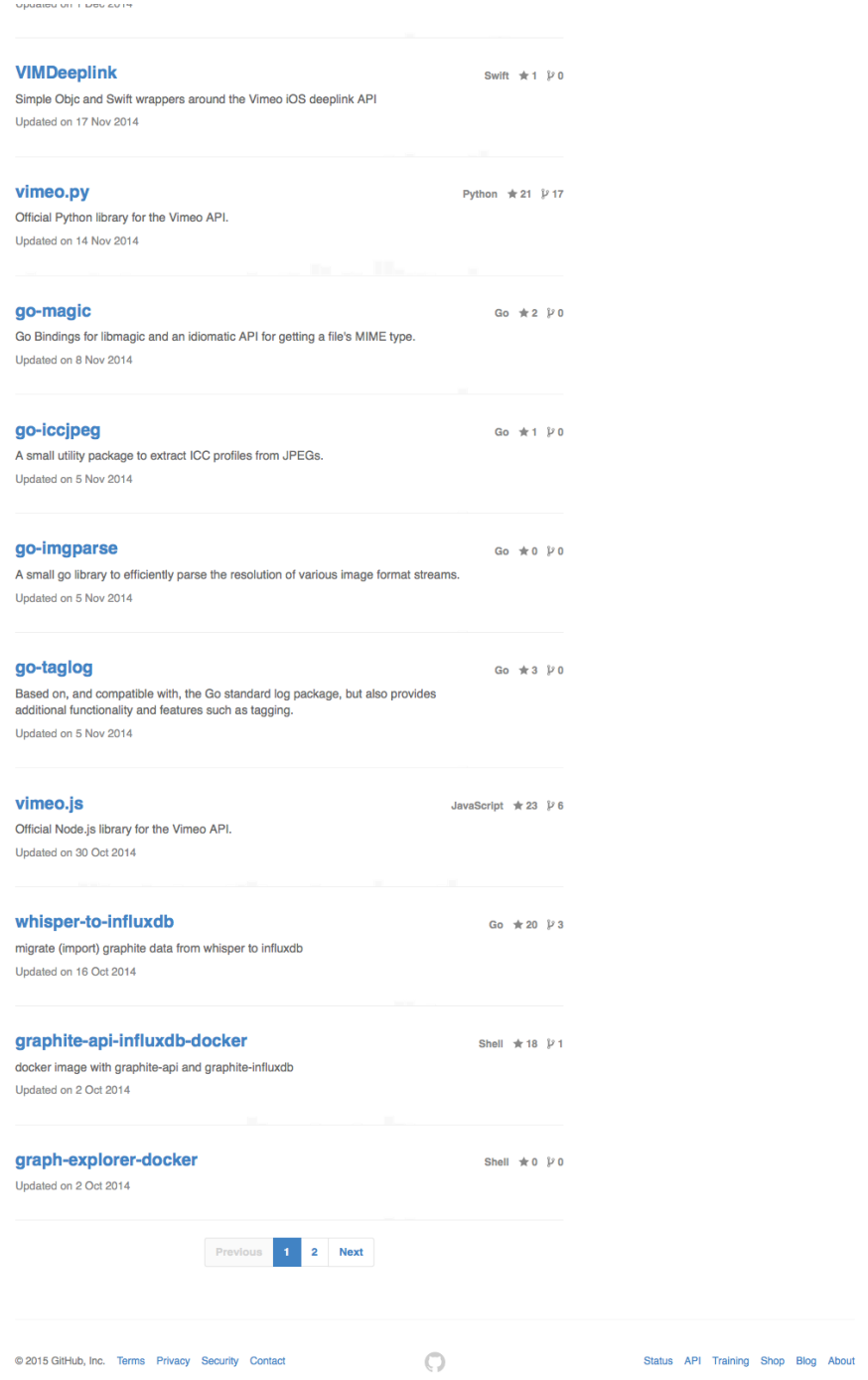
- It is not viable in the long term to fork internally, maintenance-wise, or feature-wise.

- Many things we have needed have been gladly implemented by non-employee Open Source developers who appreciate our contributions and resources.



Open Source Policies

Collaborating with the people whose code you are benefiting from has benefits for everyone. Being a jerk benefits nobody.


Updated on 1 Dec 2014

VIMDeeplink — Swift ★1 ⑂0
Simple Objc and Swift wrappers around the Vimeo iOS deeplink API
Updated on 17 Nov 2014

vimeo.py — Python ★21 ⑂17
Official Python library for the Vimeo API.
Updated on 14 Nov 2014

go-magic — Go ★2 ⑂0
Go Bindings for libmagic and an idiomatic API for getting a file's MIME type.
Updated on 8 Nov 2014

go-iccjpeg — Go ★1 ⑂0
A small utility package to extract ICC profiles from JPEGs.
Updated on 5 Nov 2014

go-imgparse — Go ★0 ⑂0
A small go library to efficiently parse the resolution of various image format streams.
Updated on 5 Nov 2014

go-taglog — Go ★3 ⑂0
Based on, and compatible with, the Go standard log package, but also provides additional functionality and features such as tagging.
Updated on 5 Nov 2014

vimeo.js — JavaScript ★23 ⑂6
Official Node.js library for the Vimeo API.
Updated on 30 Oct 2014

whisper-to-influxdb — Go ★20 ⑂3
migrate (import) graphite data from whisper to influxdb
Updated on 16 Oct 2014

graphite-api-influxdb-docker — Shell ★18 ⑂1
docker image with graphite-api and graphite-influxdb
Updated on 2 Oct 2014

graph-explorer-docker — Shell ★0 ⑂0
Updated on 2 Oct 2014

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Good Practices

- Work with your upstream.
- Report bugs and send patches.
- Release your proprietary software.
  - ✓ *When it makes sense.*
  - ✓ *With an appropriate license.*
- Get your code across as many projects as possible.
- Accept patches.

Bad Practices

- Ignoring bug reports.
- Using an Open Source repository as a code dump.
- “Fork and forget”.
- Claiming ownership of a project.
- Complex CLA.

Conclusions

Advice

- Do not be afraid of using Open Source software.
- Do not be shy of admitting you use Open Source software.
- Do not ignore your Open Source community.
- Do not get involved in Open Source politics.

Quote

"Not everything that can be counted counts, and *not everything that counts can be counted*." - Albert Einstein

Thanks for your attention

Further resources

http://making.vimeo.com/post/101852060824/on-the-fly-image-generation-architecture-and

https://hacks.mozilla.org/2014/11/distributed-on-the-fly-image-processing-and-open-source-at-vimeo/

https://github.com/vimeo/

https://github.com/VFR-maniac/Mp4Opus

https://fosdem.org/2015/schedule/event/vimeo/attachments/slides/606/export/events/attachments/vimeo/slides/606/VimeoFosdem2015.pdf