



CEPHALOCON APAC 2018
THE FUTURE OF STORAGE
22-23 March 2018 | BEIJING

RGW beyond Cloud

Live Video Storage with Ceph

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Outline

- Background
- Why we choose Ceph/RGW to store videos
- How we design and implement the live video system
- The problems we meet
- Demo & use cases

Background

共搜索到与「直播」相关应用 100 个



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Background

- Live streaming is a growing industry
- Video monitor: real-time analyse with AI
- Videos need a more powerful cloud storage backend



Why RGW

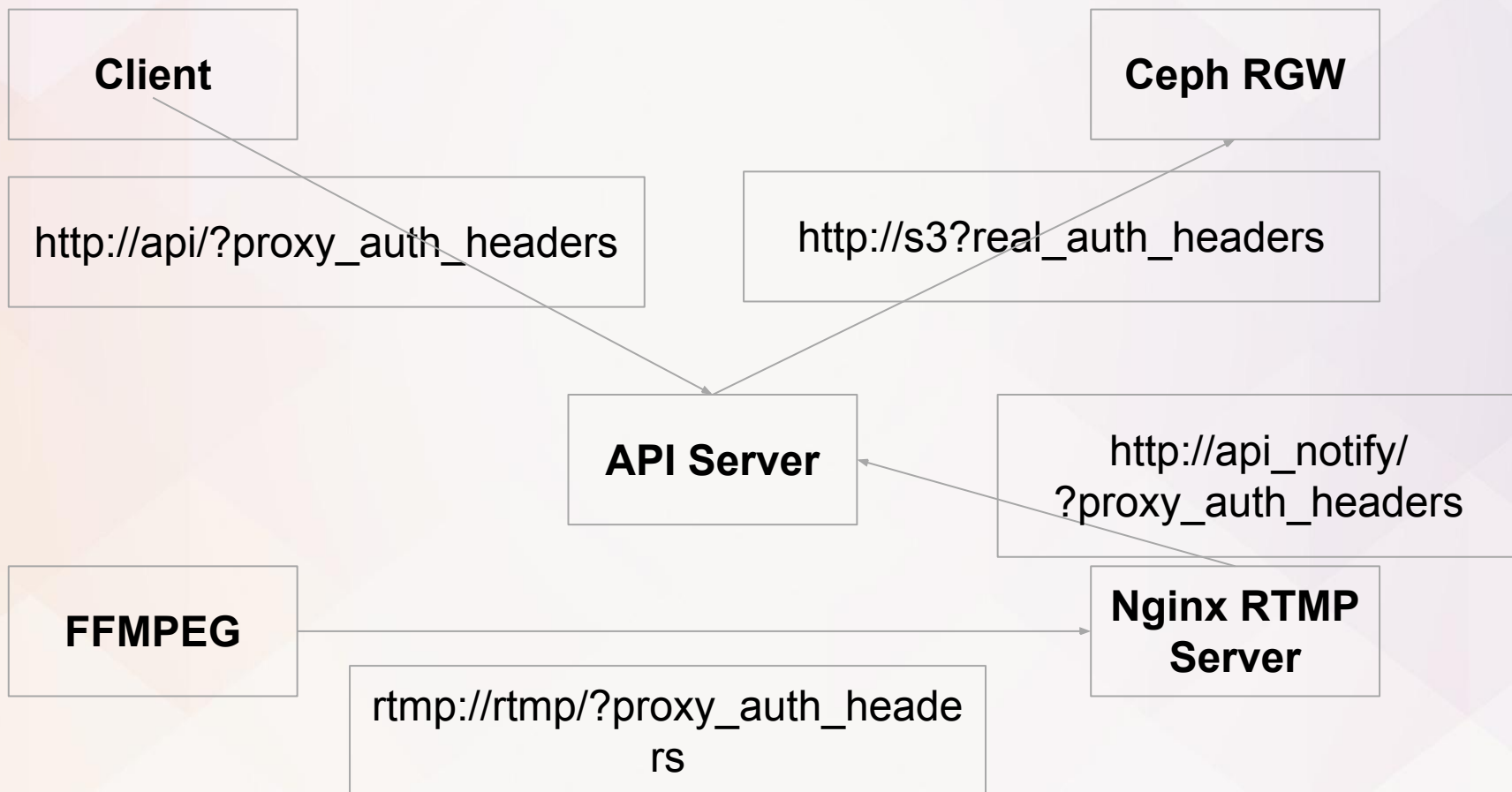
- Ceph powered
 - Distribution
 - Erasure code
- A friendly API to access
 - Big data analyse over RGW
 - Machine learning
- CDN friendly
 - For HLS streaming



Design & Implement

- Architecture overview
 - An API gateway that fully integrates AWS v2/v4 Authorization
 - A high performance Nginx RTMP server integrates RGW with librgw

API Gateway





API Gateway - Authorization proxy

- HTTP endpoint
 - Pass through HTTP auth headers
- RTMP endpoint
 - When RTMP client "connect" server, the auth headers can be set in "tcUrl"



Nginx RTMP

- On top of famous nginx-rtmp-module
- Support HLS encoding
- Store video in RGW
- Easy intergration with API gateway



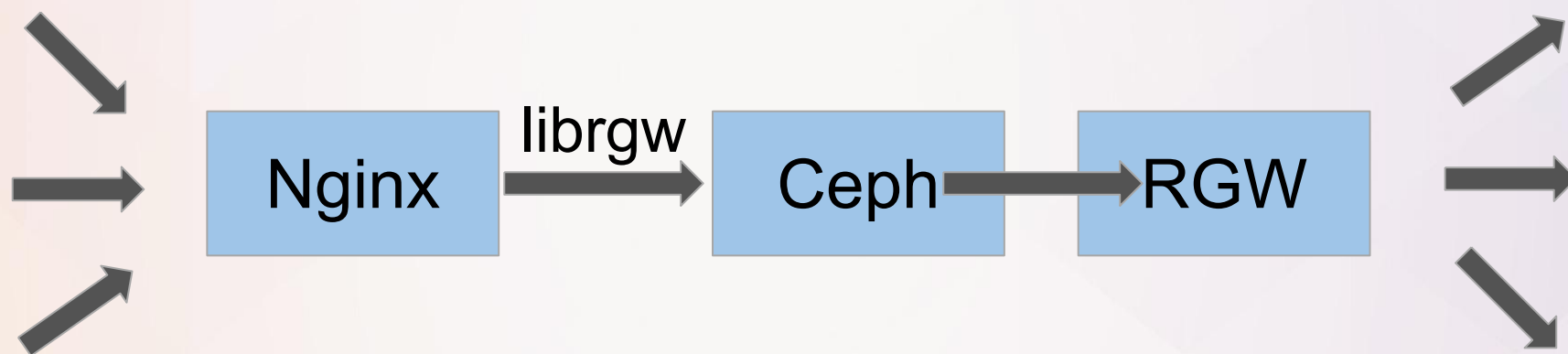
Nginx RTMP - RGW

- S3Fuse
- NFS-Ganesha
- Raw HTTP access RGW
- **librgw ✓**

Pros & Cons ...

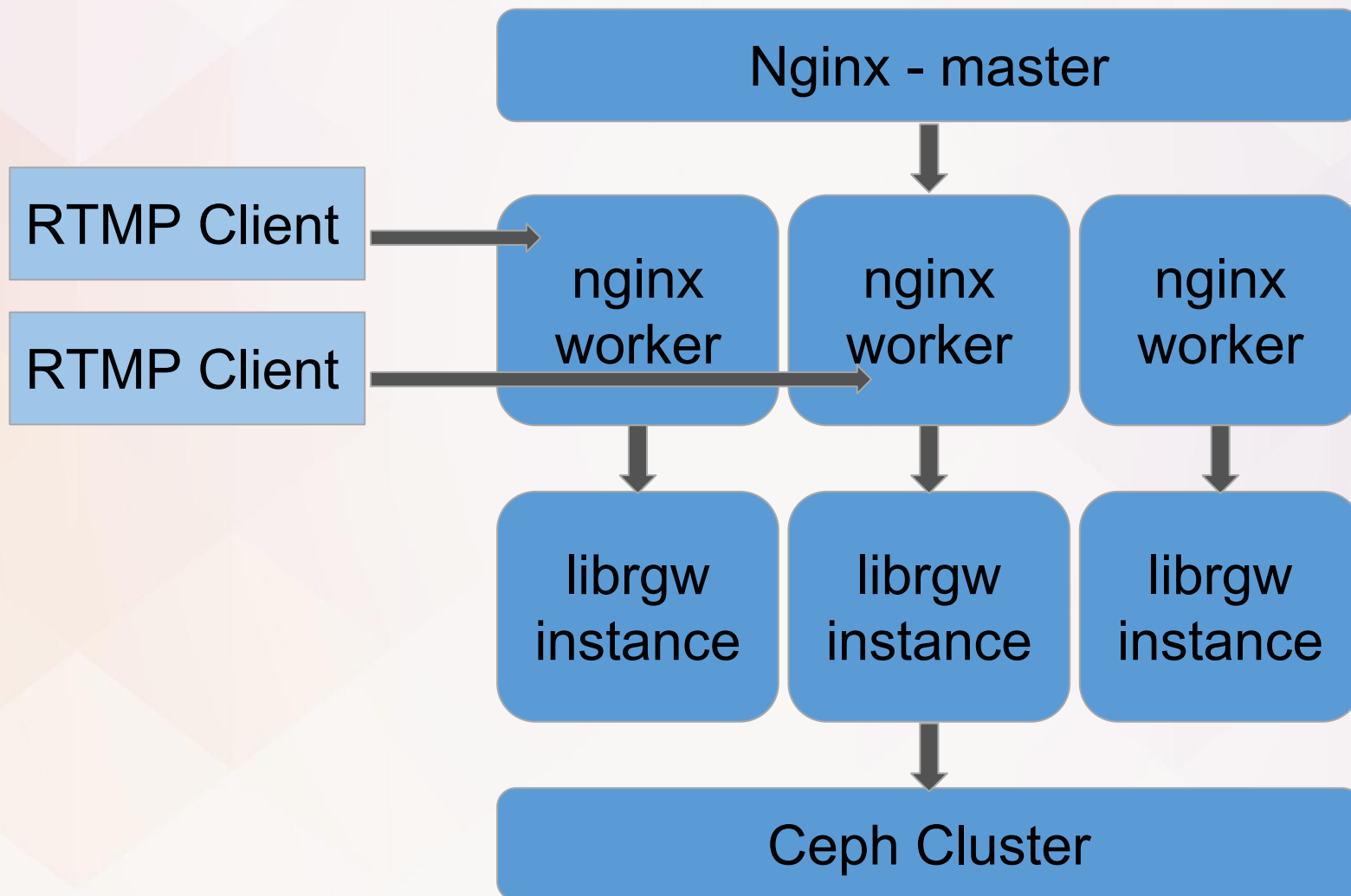


Nginx RTMP - Dataflow



Dataflow path

Nginx RTMP - Worker





Nginx RTMP - Impl Detail

- Nginx worker process creates librgw instance
- Replace API of HLS storage with librgw
- Add ACL control in librgw
- Set API gateway endpoint as notification callback



Problems

- Concurrent
- librgw lacks of features like: ACL
- rename is slow
- AWS v4 authorization tokens are too long
- ...



Demo & User case



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Thanks!

Q&A

