



# CDN API

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## Overview

User need: convert large amount of materials in various batch and formats  
( example: video materials 720p -> 480p , docx to pdf)

Earlier solutions:

1. The classic manual option - Runs on physical machines, resource intensive, may require personnel.
2. Same earlier automated video conversion solution for Videotorium (Video knowledge sharing service repository)

Idea:

- develop a service package and interface for KIFÜ's internal developments (Videotorium) and its external partners,
- serve the conversion background processes and storage needs of a Video On Demand service based on a dedicated Simple Storage Service (S3) and Kubernetes. .



# How does it work?

User logs in:

- The basic form of API authentication is HTTP Basic authentication. In a transparent way is designed as a backend for authentication for a given user assigned resource S3.
- This allows the user to access the API with the S3 ID provided for upload authenticate!

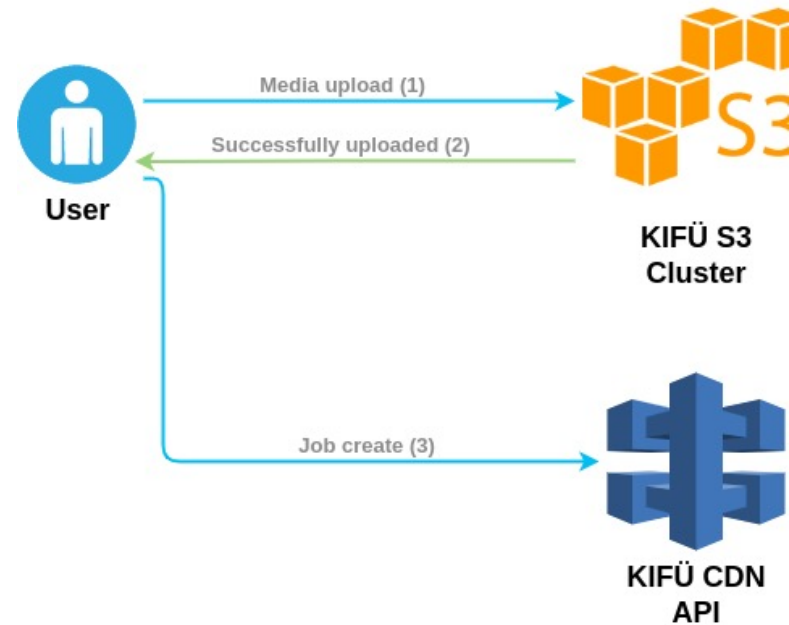
The objects are placed on S3.

User calls API by creating a **job**.

Parameters and variables:

- **bucket:** S3 bucket where uploaded
- **type:** media type (video, audio,...) based on MIME Type filtering also
- **profile:** a conversion profile created for a partner
- **filename:** access to object S3 (without bucket).

The API starts a converter container internally. (for a given format)





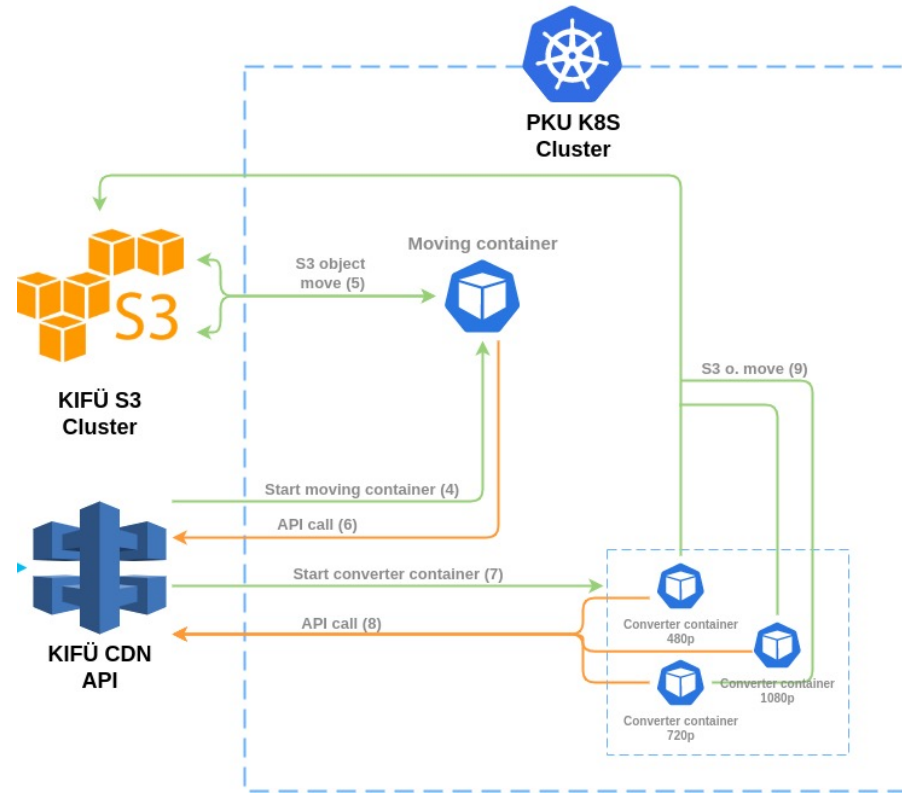
# How does it work?

Files are moved from S3 to the container.

Container gets called.

Container does the **task**.

**Job** is complete and output is moved to S3 ( if necessary, it may be different from input S3 )





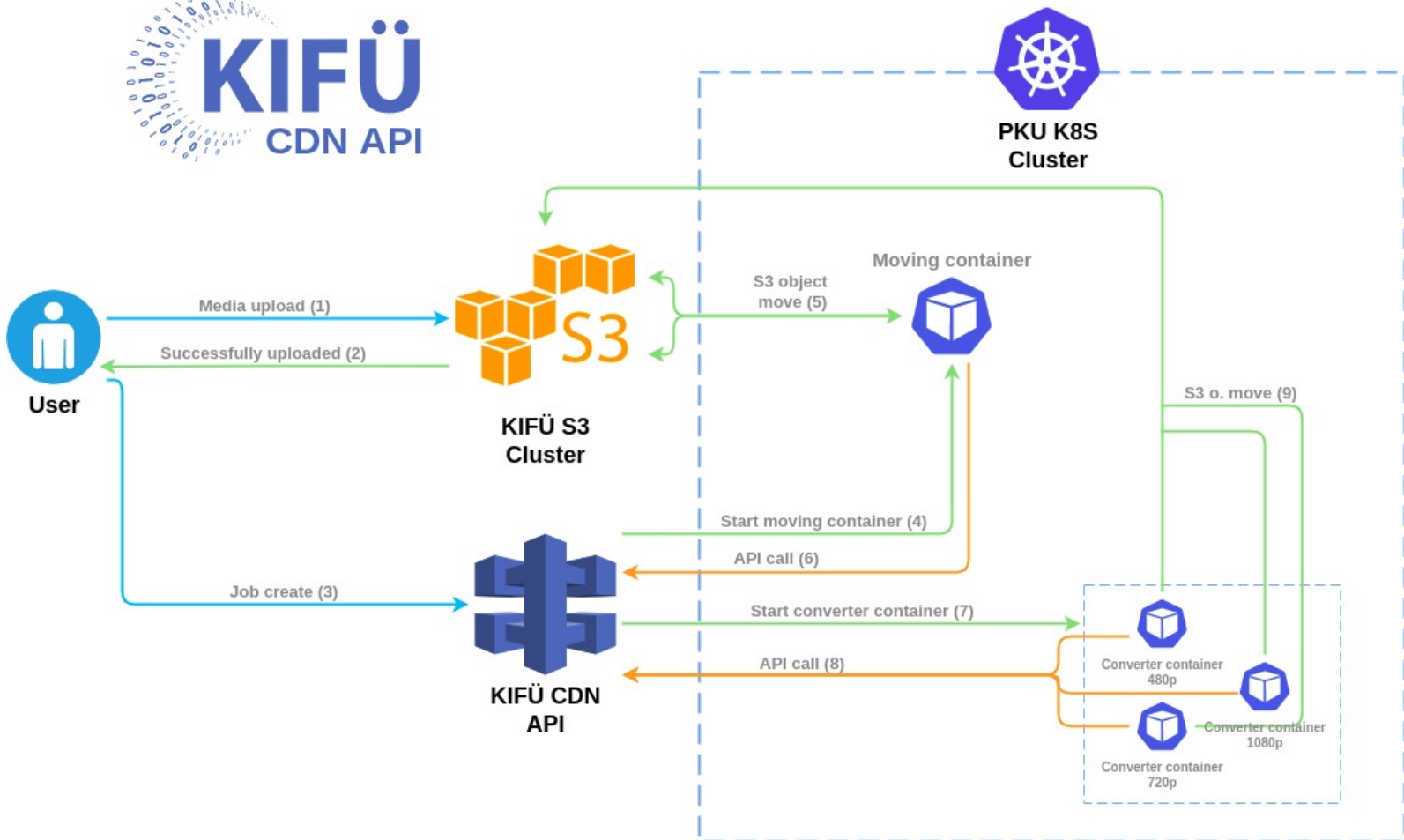
# Advantages

Easy access to **S3** files - persistent storage.

**K8s** good for running multiple services,

scaling up and down

containers provide an easy way to scale your application, compared to VMs.



Operational flowchart



# Further development

- Current development directions
  - API (new features)
  - container conversion lib (performance optimization)
  - UI
- Parameters for services
  - How many jobs , what file size ... can the user run?
- Document/ standardise the conversion job description
- Scaling CDN - We can serve limited number of videos at once, but we have scaling capability. ( hardware under procurement )
  - Independent S3 can be parameterized.
  - Containers can also be run anywhere (after configuration).
- Future goals:
  - Integration with Videotorium
  - Digital signing capability



Thank you for your attention