CDS

Video Submission (Backend)

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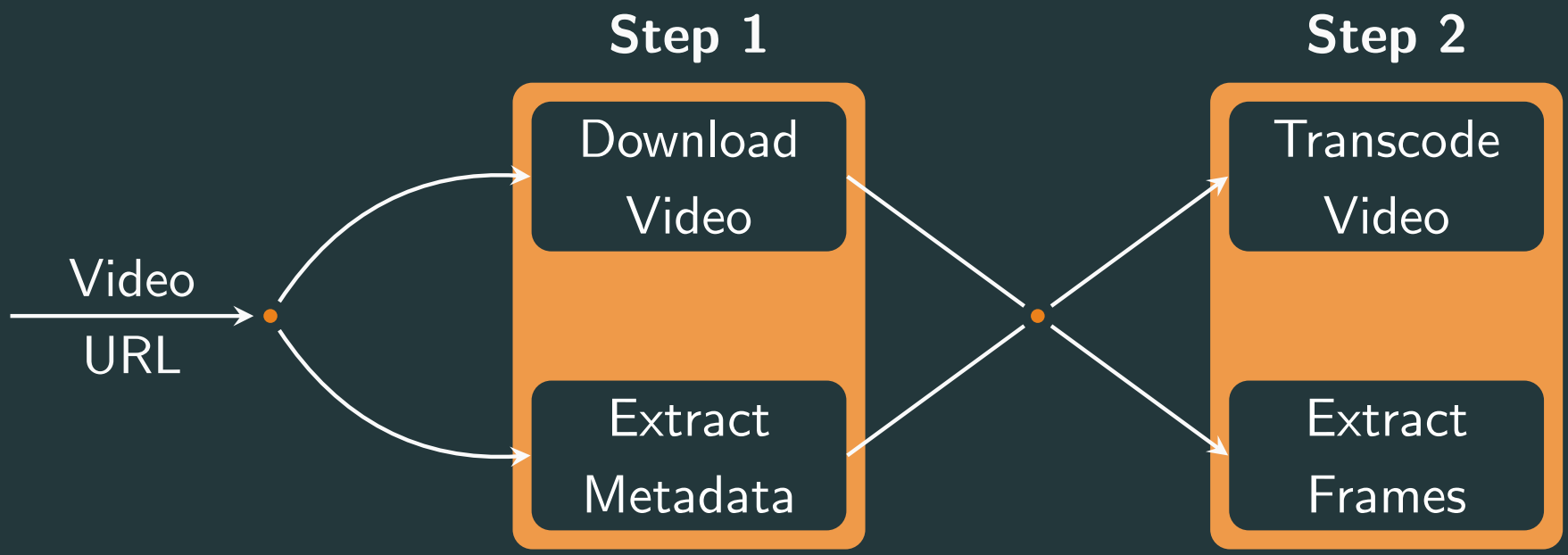
Overview

- Currently, submission is handled externally
- Moved towards an in-house solution
- Single page with multiple deposits (i.e. Project)
- Specific workflow in the background for each project

The AV Workflow

Workflow


Step 1
Step 2
Video
URL
Download
Video
Extract
Metadata
Transcode
Video
Extract
Frames

Invenio Video Toolkit

(Name in Progress)

Video Processing API

- Transcoding
  - *start_encoding*
  - *stop_encoding*
  - *get_encoding_status*
- *extract_metadata*
- *extract_frames*
- Configured as import strings, in order to allow multiple backends

Invenio Framework

This work will lead to the creation of a general video toolkit for *Invenio*, which will include the wrappers for FFmpeg and Sorenson.

Server-sent Events (SSE)

Motivation

- A way to update the UI asynchronously
- Better alternative to polling
  - Responsive
  - Data-driven

Usage

- Channel per project
- Type per task
- Access rights

Invenio Framework

Basic SSE functionality and integration with *InvenioDeposit* is implemented on the new *Invenio* module InvenioSSE.

Tasks

Webhooks

Extended REST API of *InvenioWebhooks*

- `hooks/receivers/<rid>/events/<eid>/tasks/<tid>`
- Allows fine-grained control of individual tasks on a single event
- DELETE $\rightarrow$ cancel
- PUT $\rightarrow$ restart

SSE Tasks

Extended *Celery's* task base class for SSE integration.

Overloaded some task methods to additionally send appropriate SSE:

- *update_state*
- *on_success*
- *on_failure*
- *on_revoke*

Cancelable & Undo-able Tasks

Extended *Celery's* task base class for safe cancel/undo.

- Every task must implement the clean method, which should undo any side-effects from its execution.
- Imposes explicit resource management

Miscellaneous

File Tags

- Store video's metadata
- File relationships (e.g. *master file*)
- File types (e.g. *video*, *frame*)

Invenio Framework

Tags were added as an extra feature in InvenioFilesRest.

Data Model

- Defined new schemas for Project and Video
- Inspired by widely-used solutions (e.g. schema.org)

Report Number Generation

- Project
  - Report number is automatically generated on publish
  - Uses the record's metadata (i.e. *category*, *type*, *year*)
- Video
  - Utilizes hierarchical sequences
  - Child sequence of *Project*

Invenio Framework

Complete rewrite of InvenioSequenceGenerator.