

# HTTP APIs for Tape

**WLCG GDB**  
**13 Jan 2021**

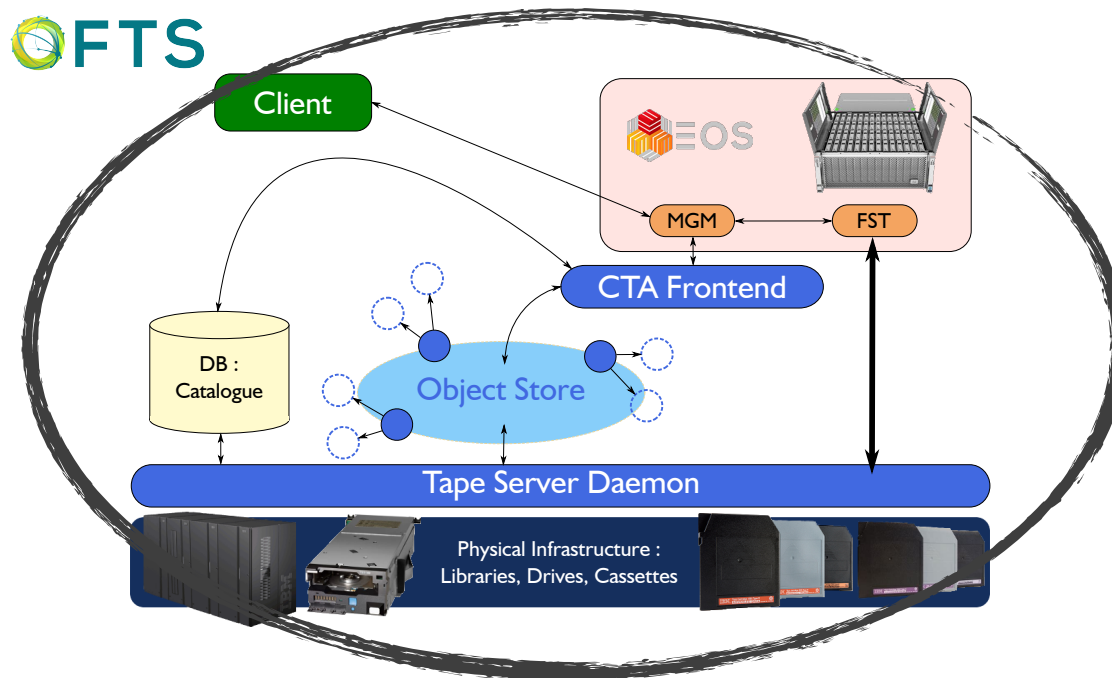
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# HTTP APIs for Tape

## Background at CERN

- ongoing CTA deployment and migration out of CASTOR
- avoid running with Tier-0 and Tier-1s mixed protocol operations



# HTTP APIs for Tape

## WLCG workshop 2020

- discussion started during the StoRM roadmap
  - continued in shared doc about possible way to “standardise” HTTP tape APIs
- Brian B. proposed to standardise based on the dCache API
- as part of the XDC project EOS already implemented some QoS based on the dCache REST API

## Follow up end of December

- meeting between CERN Storage team (EOS+CTA+FTS) and dCache team
- agreed to harmonise HTTP APIs for Tape between EOS+CTA and dCache
  - based on minimal set of feature from dCache bulk REST APIs [1]
  - these APIs are not yet fixed
    - perfect moment to standardise them within WLCG
- some development required in FTS to allow these requests on http tape endpoints



[1]: <https://prometheus.desy.de:3880/api/v1/>  
<https://docs.google.com/document/d/14sdrRmJts5JYBFKSvedKCxT1tcrWtWchR-PJhxdunT8/edit?usp=sharing>

# What do we need? What is the minimal set?

For the **Tape HTTP APIs**, we need the following functionalities:

- equivalent for the **bringonline/prepare** operation
  - returns a **bringonline\_ID**
- equivalent for the **polling** operation
- equivalent for the **cancel-bringonline** operation
- equivalent for the **cache-evict** operation

All these APIs calls should accept **bulk requests**

# Alternatives? Industry standard?

## Amazon S3 - Glacier

Amazon Simple Storage Service (S3) > API Reference

### Request Syntax

```
POST /{Key+}?restore&versionId=VersionId HTTP/1.1
Host: Bucket.s3.amazonaws.com
x-amz-request-payer: RequestPayer
x-amz-expected-bucket-owner: ExpectedBucketOwner
<?xml version="1.0" encoding="UTF-8"?>
<RestoreRequest xmlns="http://s3.amazonaws.com/doc/2006-03-01/">
  <Days>integer</Days>
  <GlacierJobParameters>
    <Tier>string</Tier>
  </GlacierJobParameters>
  <Type>string</Type>
  <Tier>string</Tier>
  <Description>string</Description>
  <SelectParameters>
    <Expression>string</Expression>
    <ExpressionType>string</ExpressionType>
    <InputSerialization>
      <CompressionType>string</CompressionType>
      <CSV>
        <AllowQuotedRecordDelimiter>boolean</AllowQuotedRecordDelim
        <Comments>string</Comments>
        <FieldDelimiter>string</FieldDelimiter>
        <FileHeaderInfo>string</FileHeaderInfo>
        <QuoteCharacter>string</QuoteCharacter>
        <QuoteEscapeCharacter>string</QuoteEscapeCharacter>
        <RecordDelimiter>string</RecordDelimiter>
```

BringOnline:  
POST /{Key+}?restore

Poll:  
HEAD reqID

# Discussion Time...

## Align (WLCG) Storage Providers for HTTP tape APIs

- Main WLCG Storage providers with Tape backed
  - EOS+CTA
  - dCache
  - StoRM
  - ...
  - native xrootd?
- is the (simplified) dCache bulk request API a good direction to standardise?
- should we look in-depth at other standards?



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