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Implementing an Ingest Workspace

Using AWS S3, FSx for Lustre and Lambda to Stage Content at Scale

DPC Workflow Webinar Series – 2025-02-05

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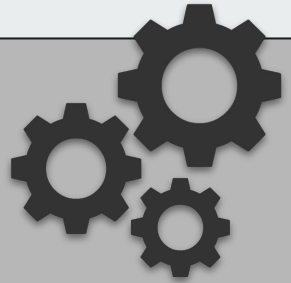
Problem definition

- Across UC campuses, many libraries and departments interested in digital preservation have limited resources to apply toward archiving their content.
- Though they have control over catalog records and associated metadata, many tend to work with vendors or other library units to acquire digitization services.
- Resulting digitized content may be relayed to CDL on HDDs or is copied to an S3 bucket or another local staging volume.

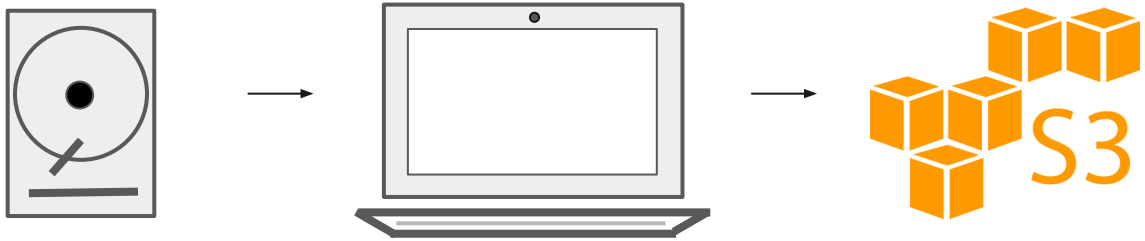
Context and requirements

- To enable acquisition from devices and have a space to work on preparing content for ingest, we discussed a dedicated workstation, use of individuals' laptops, etc. Understandably, internal IT pushed back on these approaches due to cost and maintenance.
- Connectivity: The staging volume and/or bucket must be accessible to the repository's Ingest service.
- Lifecycle: We needed an environment that could be created when a project is active, and then destroyed post-project, to make it economically feasible.

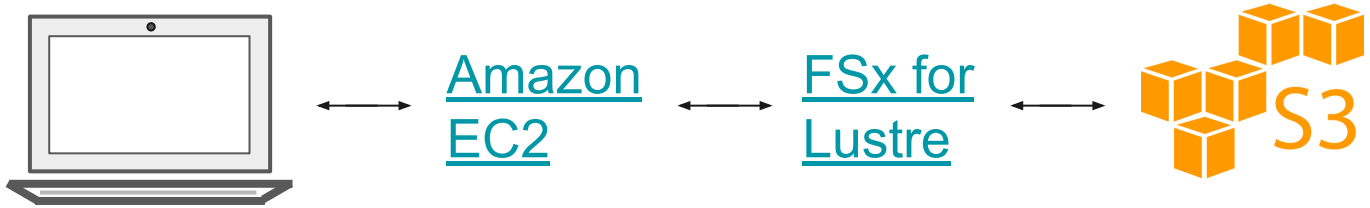


Solution – S3-based Workspace

- We created an “ingest workspace” which serves as a bridge between a linux shell (running on an EC2 instance) and an S3 bucket.
- Users are able to push content to S3, interact with files via the shell and incorporate metadata into batch submissions.
- On submission, content is pulled from S3, combined with metadata via manifest files and ingested into the repository.



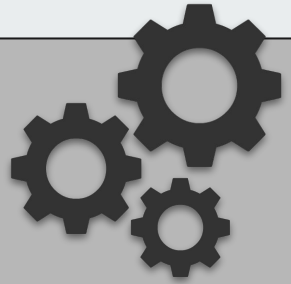
A: Authenticate via AWS Systems Manager in shell, then push content from HDD to S3 – or use (e.g.) VS Code to drag and drop.



B: Interact with S3 through connection provided by EC2 and Amazon FSx for Lustre File representation using POSIX semantics. S3 object store becomes transparent.

Underlying resources

- Configuration management with Sceptre
  - Drives CloudFormation tasks
  - Quickly instantiate a workspace instance
- AWS Lambda
  - Lists content of S3 Bucket
  - Generates pre-signed URL's to download S3 content
  - ALB provides web access to Lambda
  - Enables merging metadata with object manifests



Demo!

Using zsh, Excel & Visual Studio Code

Questions/comments? Have you built a similar solution?

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