HED102

Preserving TV News as Cultural Heritage in Perpetuity

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aws

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VANDERBILT UNIVERSITY
Jean *and* Alexander Heard Libraries
Vanderbilt Television News Archive

James Pilkington, Administrator 1970 - 1986

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About the Archive

- Founded in 1968
- A division of the Vanderbilt University Libraries
- A collection of TV news recordings
- AND metadata catalog
- Primary User Groups:
  - Academic Scholarship
  - Film and Media Industry
  - Open to the public

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Demo Video:
Advanced Computing & Society

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Challenges

Storage

Preservation

Automation

Transcripts

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Challenge: Storage

In 2018, The TV News Archive included 175 TB of archival video storage and added 7 TB every year. The department needed sustainable and cost-efficient storage.

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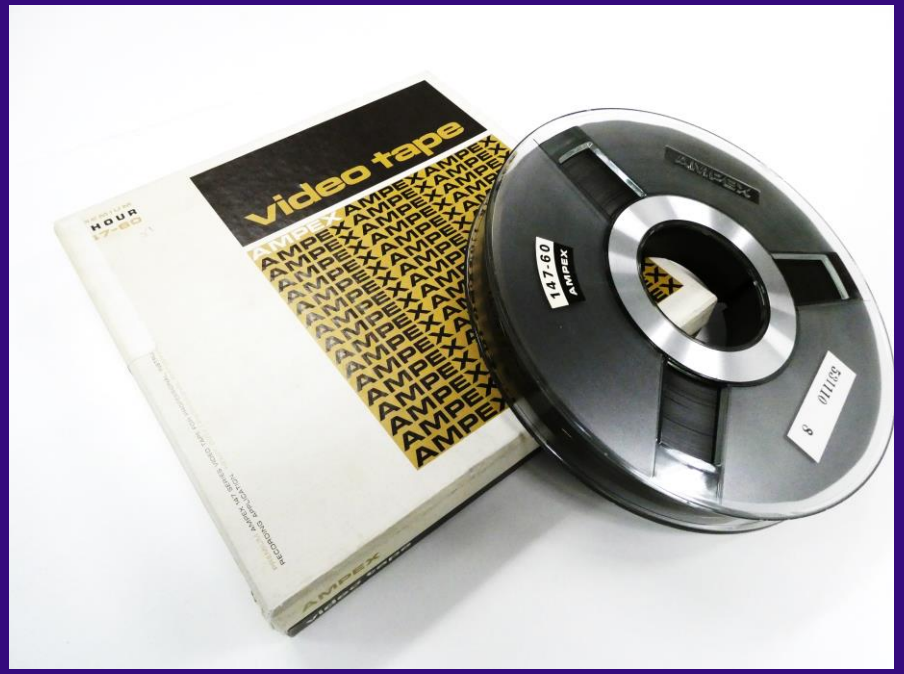
1st transfer project: 1-inch open reel to 3/4

- AMPEX 1-inch Open Reel



- U-MATIC ¾ Video Cassette

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Second Transfer Project: *Digitization*

- Grant Funded
- 2000 to 2006
- Over 45,000 broadcasts digitized

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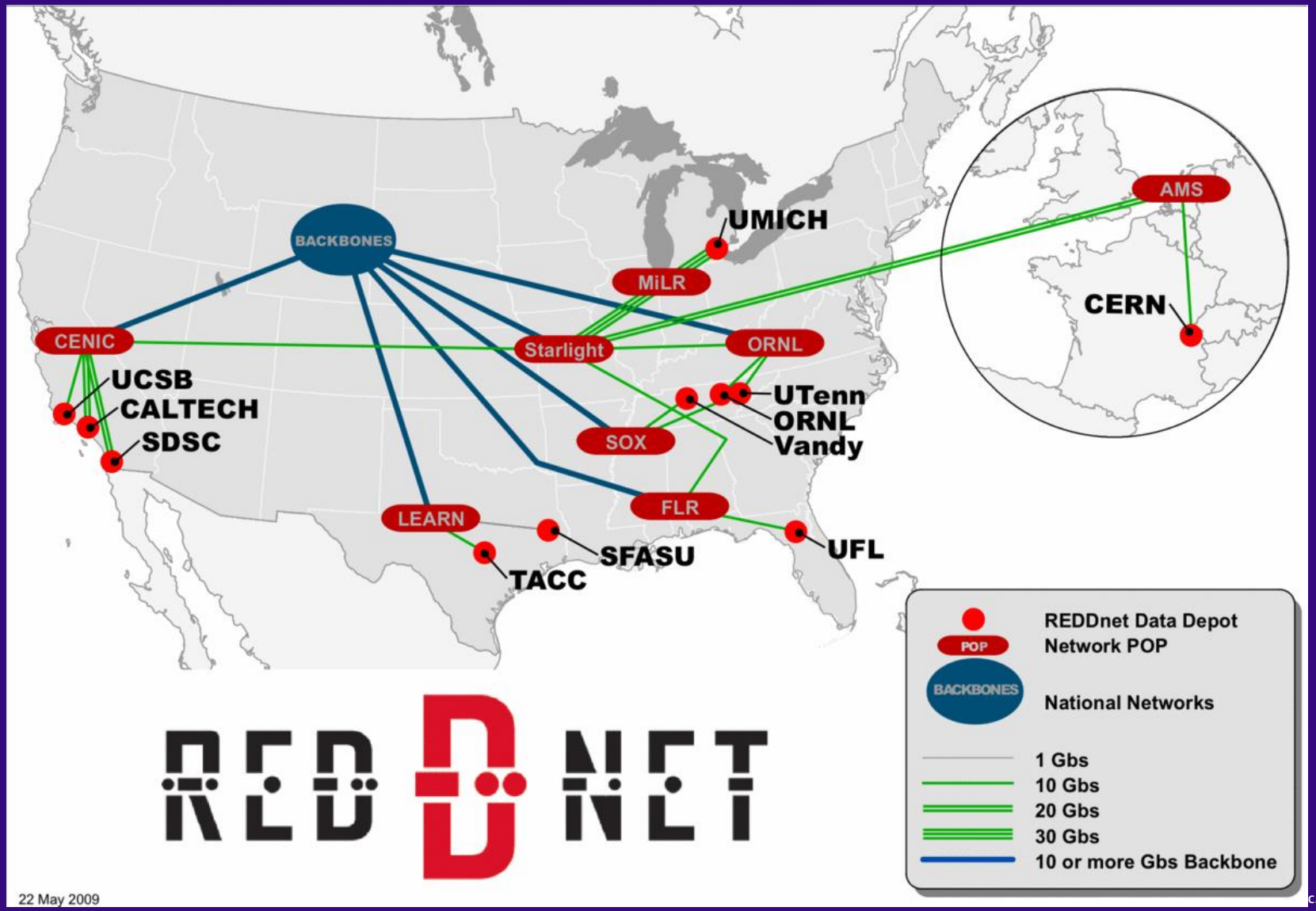
Storage Solutions and Requirements



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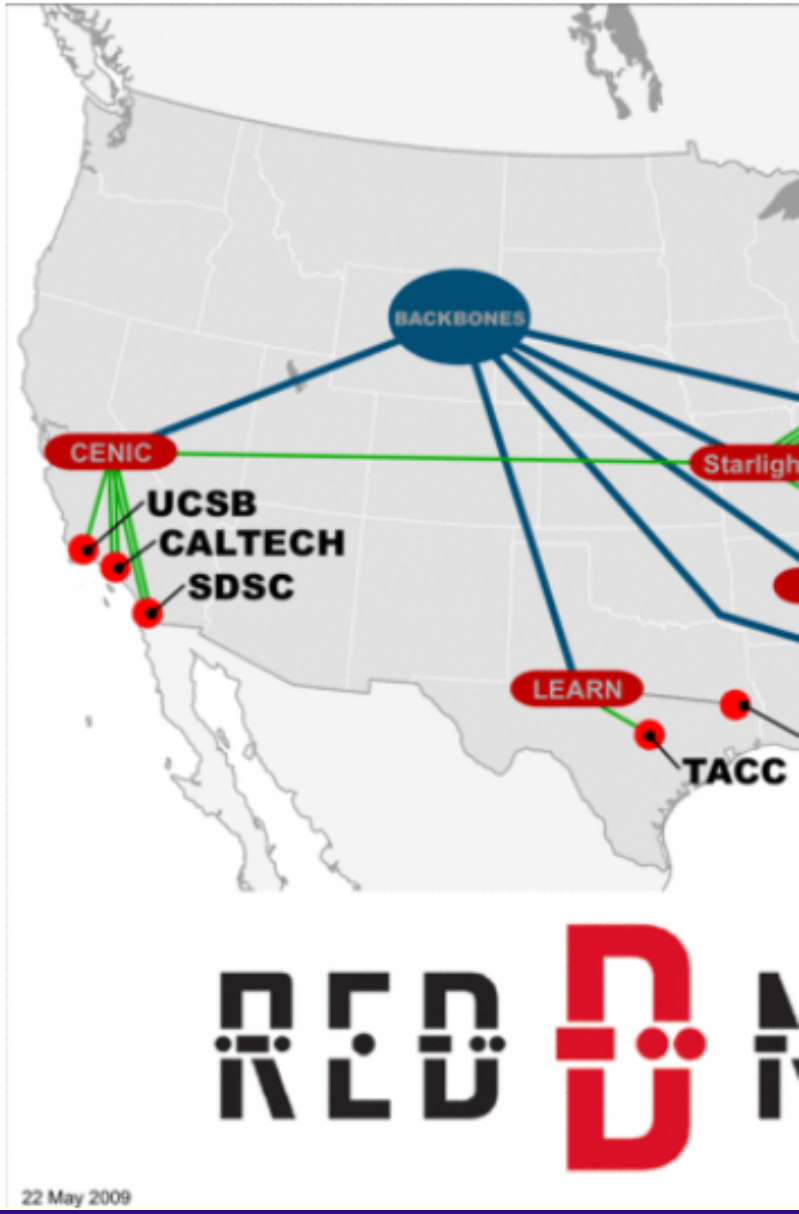
REDDnet: Enabling Data Intensive Science in the Wide Area

REDDnet (Research and Education Data Depot network) is an NSF-funded infrastructure project designed to provide a large distributed storage facility for data intensive collaboration among the nation's researchers and educators in a wide variety of application areas. Its mission is to provide "working storage" to help manage the logistics of moving and staging large amounts of data in the wide area network, e.g. among collaborating researchers who are either trying to move data from one collaborator (person or institution) to another or who want share large data sets for limited periods of time (ranging from a few hours to a few months) while they work on it. REDDnet is not designed or intended to be a replacement for reliable archival or long term personal storage and users must make separate arrangements to insure that the data they are sharing via REDDnet's "best effort" storage is also preserved independently with stronger guarantees.

One example comes from the CMS collaboration, a high energy physics experiment that will be taking data soon at the Large Hadron Collider (LHC) at



AWS S3

Started with new files written directly to AWS

Uploaded the 175 TB archive

- Could not use Snowball
- Set to Glacier Deep Archive

Proxy File

- Intelligent Tiering

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Challenge: Preservation

To ensure the long-term preservation of this cultural heritage, VTNA sends a 2nd copy of every news episode to the Library of Congress. The transfer process required an update.

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Direct Transfer to Library of Congress

- Previously used REDDNET
- New system uses bucket to bucket connection
- Verified with checksums
- Initiated with the creation of a new file

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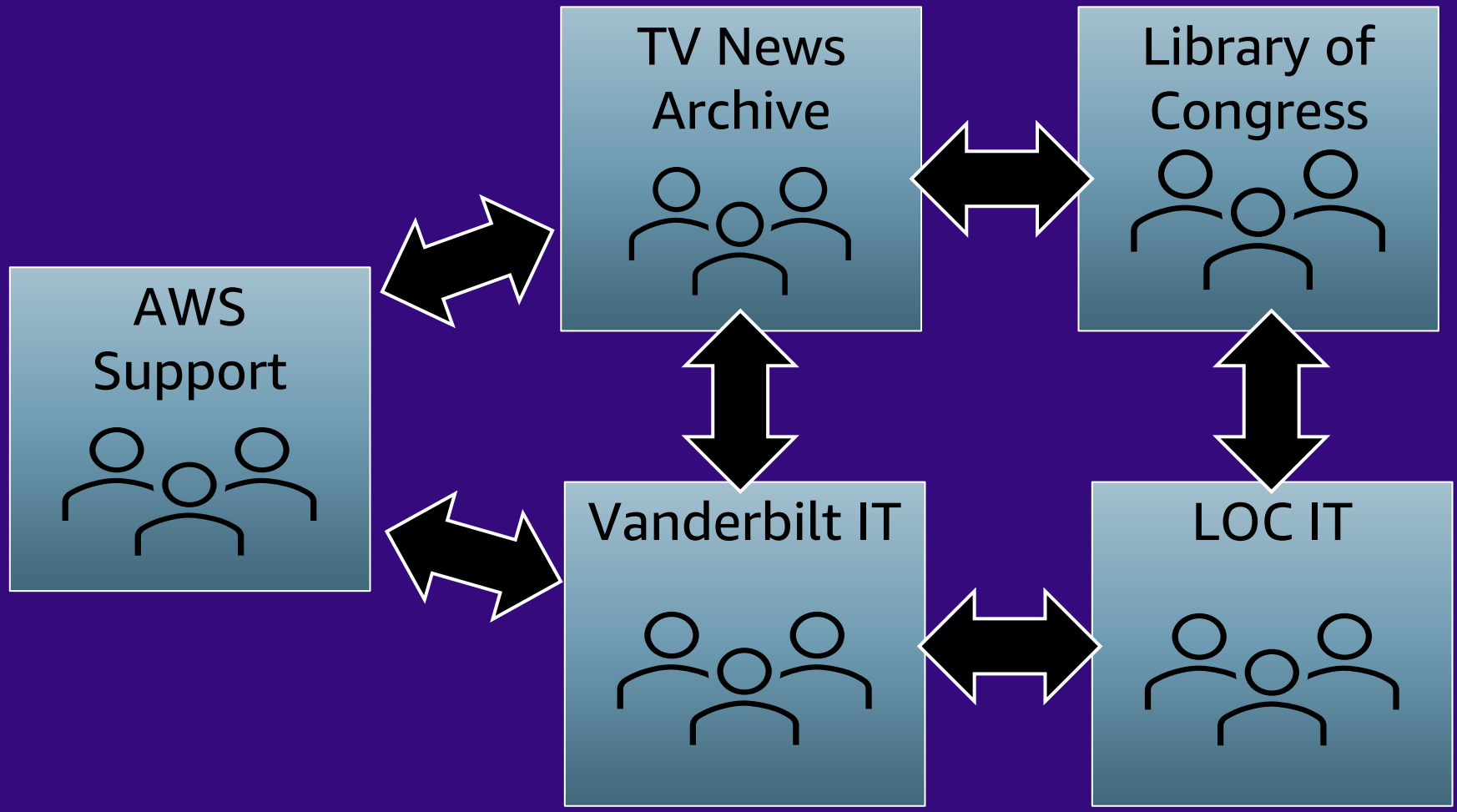
Communication & Teamwork



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Challenge: Automation

The TV News Archive requires a highly reliable recording system that records the nightly news on five channels and maintains a 40-day buffer of television to monitor breaking news events.

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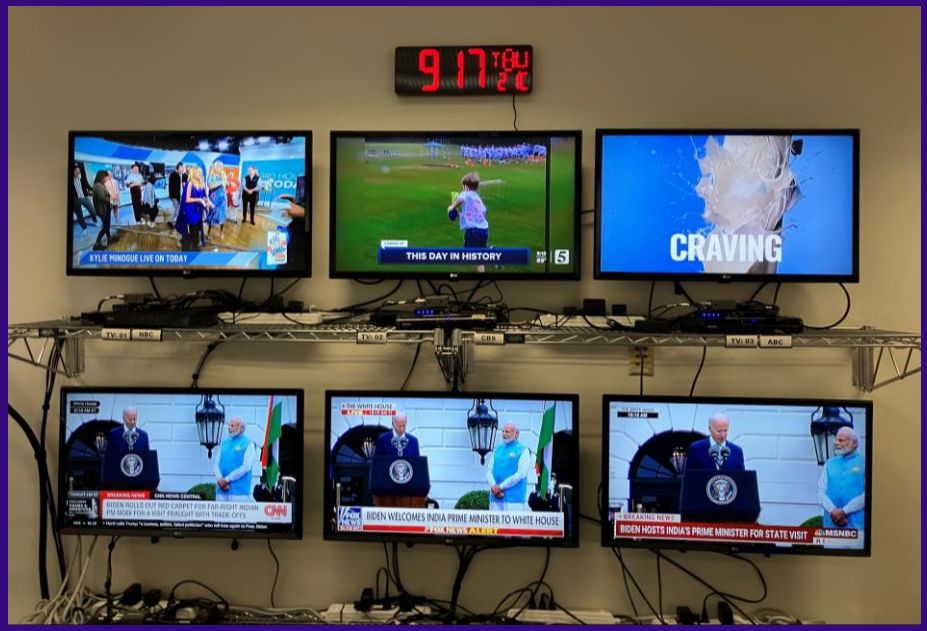
Automated Recording



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Lambda

Runs code without servers or clusters

1 million requests per month for free

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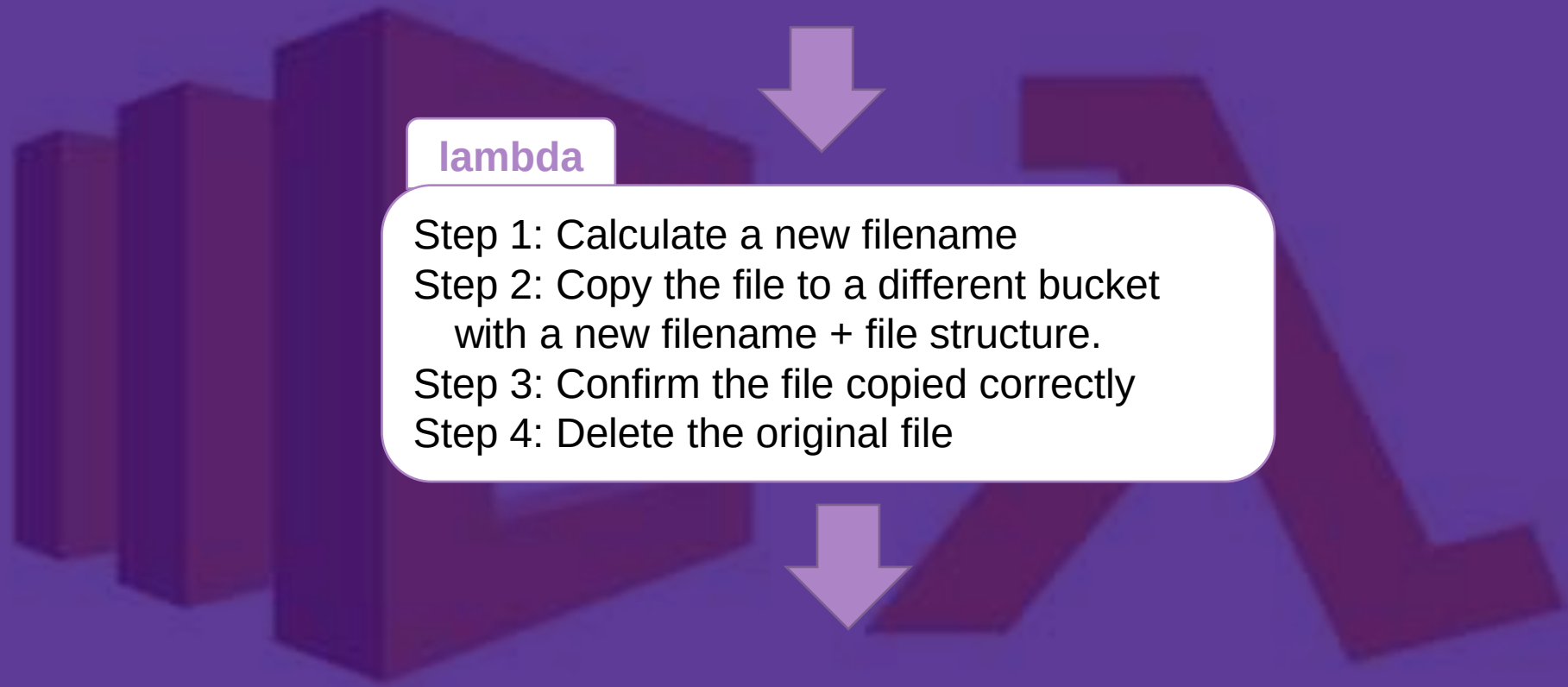
Executes a snippet of code

```
New File = "VID_20221207T082900.mp4"
```



lambda

Step 1: Calculate a new filename
Step 2: Copy the file to a different bucket
with a new filename + file structure.
Step 3: Confirm the file copied correctly
Step 4: Delete the original file

```
Different Name & Location = "2022/12/VID20221207.mp4"
```

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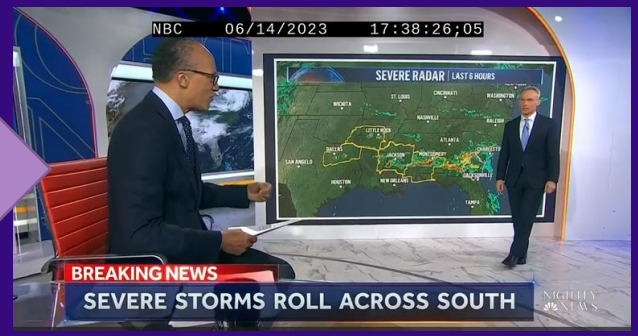
MediaConvert

Type: Primary Archive Version
Bitrate: 6 Mbps



Type: Proxy Access Version
Bitrate: 3 Mbps
Network, Date, Timestamp

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Lambda + MediaConvert

```
New File = "ABC_20190807T222901.mp4"
```

lambda

Step 1: Calculate Network, Date
Step 2: Convert Start time to Central Time
Step 3: Prepare settings for transcode job
Step 4: Start transcode job with watermark

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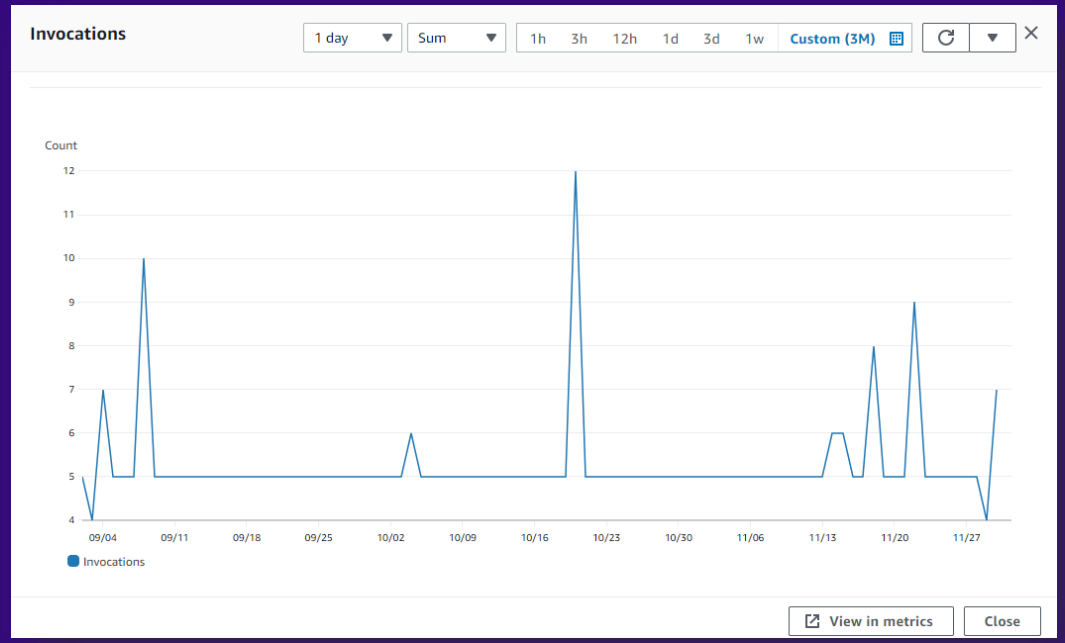
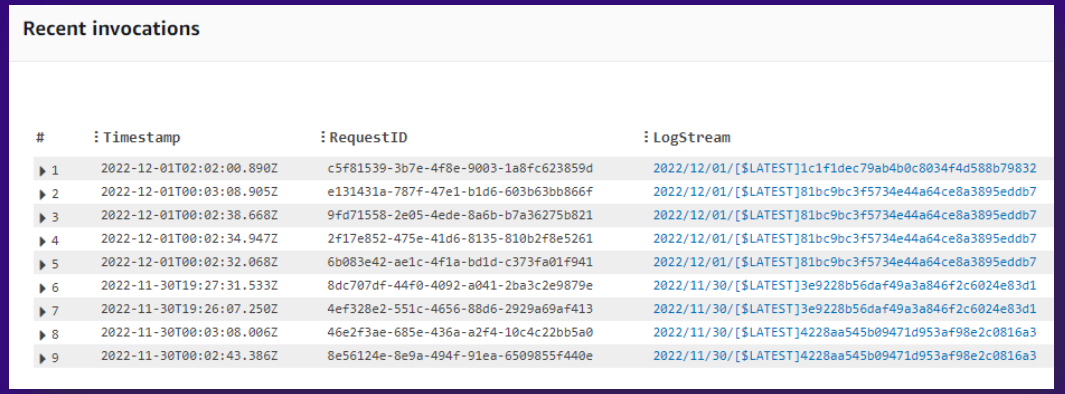
Dashboards & Logs





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Challenge: Transcripts & Captions

While summaries are helpful, many forms of research require a full account of what was said on TV. Closed captions are also essential for universal access.

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62,000 hours transcribed in 2 months!

SPLIT THE COLLECTION BY PRESIDENTIAL ADMINISTRATION, THEN FOR EACH GROUP:

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Challenges Addressed

- Automation
- Storage
- Preservation
- Enhanced research

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Thank you!

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