

ARKs in the Open: 3.2 Billion Persistent Identifiers

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2. Bess Missell, Smithsonian Libraries
3. Karen Hanson, Portico, ITHAKA
4. Tom Creighton, Family Search International

April 2020



Why care about ARK identifiers?



Because persistent, reliable web links are lacking.

- The average URL lifetime is 44 days
- Maybe ok for the rest of the world, but not for archives and libraries
- URLs in vendor content management tools (a) can break between major system releases and (b) aren't generally portable to another vendor's system



Wanted: a flexible, low cost, vendor- and software-independent persistent identifier

ARK (Archival Resource Key)

- ARK: a persistent link for any kind of thing
- 3.2 billion ARKs created by 600 institutions – libraries, archives, museums, publishers, educators, etc.



Internet Archive

sample

Bodleian Libraries

Berkeley Law Library

Bibliothèque Mazarine

New York Public Library

French National Archives

National Library of Austria

Library and Archives Canada

University of California
Berkeley

Smithsonian National Museum

National Library of France

University of Chicago

Musée du Louvre

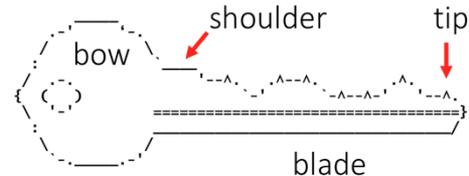
Family Search

British Library

Google

ARK anatomy

A labelled URL with a globally unique identity inside it



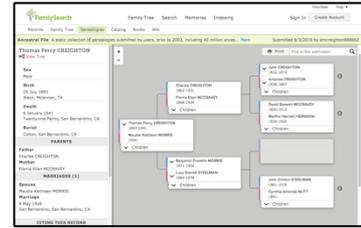
`https://n2t.net/ark:/12345/fk1234`

makes ARK
actionable
(the
resolver)

core globally
unique identity
(independent of
web and
hostname)

What are ARKs used for?

- genealogical records (3 billion [FamilySearch](#))
- publisher content (100 million [Portico](#))
- scientific datasets and records (22 million [INIST](#))
- scanned books and texts (23 million [Internet Archive](#))
- bibliographic records (15 million [BnF main catalog](#))
- museum specimens (15 million [Smithsonian Institution](#))
- public health documents (14 million [UCSF IDL](#))
- historical documents (21 million CDL, 5 million [BnF Gallica](#))
- historical authors and scholars (4 million [SNAC](#))
- vocabulary terms (9,000 [Periodo](#), [YAMZ](#))



Why ARKs and not DOIs (or Handles or PURLs or URNs)?

- G**gle for “ten persistent myths about persistent identifiers”
- Flexible resolution: centralized (n2t.net) or via your own server
- University of California’s history of *open*
 - 1968 Free speech movement
 - 1982 Open source Berkeley UNIX – FreeBSD – Mac OS X
 - 2013 Groundbreaking open access research policy
 - 2019 Termination of Elsevier journal subscription
 - 2001–2020 Non-paywalled, decentralized persistent identifiers – ARKs

ARKs and DOIs

404



DOIs (Digital Object Identifiers) – publishing industry solution

- requires membership, per-identifier fees, rigid metadata requirements

ARKs – cultural heritage solution

- no fees or membership, and highly flexible creation and metadata policies
- like DOIs, ARKs are also stable, linked to metadata, and found in the Data Citation Index (linked to the Web of Science), HathiTrust, Wikipedia articles, Wikidata records, Internet Archive collections, ORCID researcher profiles, etc.

The Covenant of the ARK

The ARK scheme

- will not charge fees to create or use ARKs
- will not limit the number of ARKs you assign
- will not limit the kind of content you identify
- will not require metadata, nor even persistence
- will not mandate use of any particular resolver



Getting involved in ARKs

- Learn more: “ARK Identifiers FAQ”
- Start assigning: n2t.net/e/naan_request



S Infrastructure



- Join us at ARKsInTheOpen.org
- Community owned infrastructure
- Collaboration between CDL and LYRASIS

ARKs at the Smithsonian Institution

**Bess
Missell**

Metadata Librarian

Smithsonian
Libraries

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Smithsonian
Libraries

Overview

- **Who we are:**
 - The Smithsonian Libraries & The Smithsonian Institution.
- **What we assign ARKs to:**
 - Collection metadata & multimedia objects.
- **When did we start and how many are assigned so far:**
 - 2015: The Natural Museum of Natural History began assigning ARKs to their collections (over 10 million metadata & 3 million multimedia records).
 - January, 2020: new datasetIDs for collection systems were registered in EZID & assigning ARKs in our collection systems began.
 - February 26, 2020: Smithsonian Open Access launch with 11,486,102 ARKs on CC0 metadata records and 2,794,786 ARKs on CC0 multimedia records.
 - We have assigned over 15 million ARKs and counting
- **Why we chose ARKs**
 - Project size.
 - Cost.
 - Ease of implementation.
 - Permanence.
- **Why we are involved in ARKsInTheOpen**
 - ARKs are a perfect fit for the Smithsonian collections.



Smithsonian *Libraries*

21 Libraries
2.2M Library Volumes
80K Smithsonian Research
Online
772K Website visitors
239K Social Media Followers

Smithsonian Libraries is a network of 21 specialized research libraries, as well as central support services which include Smithsonian Research Online, a bibliography of Smithsonian publication citations and the Institution's repository. library.si.edu



The Smithsonian Institution is the world's largest museum, education, and research complex, with 19 museums and the National Zoo.

www.si.edu

19 Museums + 1 Zoo
23.2M Visits by Public
155.5M Museum Objects &
Specimens
2.2M Library Volumes
2,633 Scholarly Publications
154M Website Visitors
16.6M Social Media Followers

The Smithsonian is Assigning ARKs to our Collection Systems

Examples include records and images for:

Scientific specimens from the National Museum of Natural History

<http://n2t.net/ark:/65665/381440f27-3f74-4eb9-ac11-b40b3a7a436>

Cultural artifacts from the National Museum of American History

<http://n2t.net/ark:/65665/ng49ca746b2-42dc-704b-e053-15f76fa0b4fa>

Sculpture from the Freer Gallery of Art & Arthur M. Sackler Gallery

<http://n2t.net/ark:/65665/ye3080ce305-a705-49cc-a70d-99aff8cb65da>

Photographs from the National Museum of African American History and Culture

<http://n2t.net/ark:/65665/fd5ad97cb86-caaf-4209-8fde-98d70f52f072>

Paintings from the Smithsonian American Art Museum

<http://n2t.net/ark:/65665/vk7a466371d-0413-451f-bd76-ca0becc46f94>



National Museum of Natural History

2015

- The National Museum of Natural History began assigning ARKs to their metadata collections.
- The National Museum of Natural History later began assigning ARKs to their multimedia collections.
- Over 10 million ARKs have been assigned to NMNH metadata records.
- Over 3 million ARKs have been assigned to NMNH multimedia records.

Over 15 million ARKs and counting ...

Smithsonian Open Access Project

February 26th, 2020

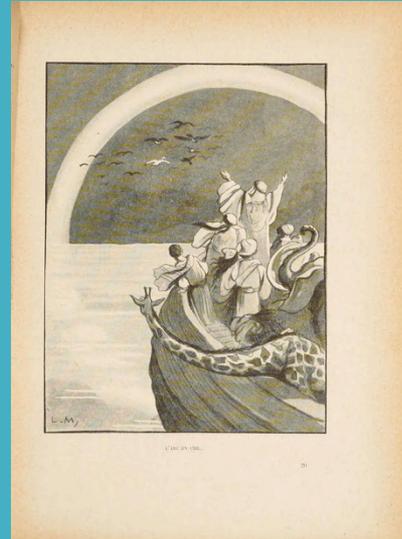
- The Smithsonian released 11.5 million metadata records and 2.8 million multimedia records into the Public Domain.
- The Smithsonian chose ARKs to be the global unique identifier (GUID) for these open access images and records.
- <https://www.si.edu/OpenAccess>
- #SmithsonianOpenAccess



Smithsonian
Libraries

ARKs were chosen because

- A large number of ARKs will be needed: over 15 million ARKs and growing;
- cost;
- ease of implementation;
- the growth of the ARKs in the Open project encouraged the Smithsonian to choose ARKs as a viable, sustainable identifier.



Courtesy of the Smithsonian Libraries
Alexandre, Arsène. *Noé dans son arche*. Combet et Cie,
1902,
<https://doi.org/10.5479/sil.720005.39088010288199>
[https://library.si.edu/digital-library/book/
noevdanssonarch00alex](https://library.si.edu/digital-library/book/noevdanssonarch00alex)



Smithsonian
Libraries

Smithsonian Libraries

- issues, registers, maintains ARKs for Smithsonian collection systems;
- registers DOIs for Smithsonian publications and research;
- maintains a Smithsonian GUID webpage for SI staff and researchers
<https://library.si.edu/research/guids-help-make-your-data-findable>

GUIDs help make your data findable

Find out how The Smithsonian is using GUIDs (global unique identifiers) to identify our research data, research publications, people, organizations, grants, laboratories, and a growing number of places and things. GUIDs increase discovery and improve metrics.



<http://n2t.net/ark:/65665/vk7a466371d-0413-451f-bd76-ca0becc46f94>

<http://n2t.net/> is the resolver that takes the web call to the EZID service, who then uses the Name Assigning Authority Number (NAAN) to identify who is the registered naming authority. The Smithsonian also has registered datasetIDs (or shoulders) so that EZID passes the web traffic to a specific Smithsonian collection system.

Each Smithsonian collection system is configured to receive the web call from EZID, read the datasetID, and direct the call to the correct server for metadata records or multimedia.

vk7 in the ARK above is registered to metadata records in the Smithsonian American Art Museum (SAAM) collection management system. If vk7 were replaced with bj9 the call would change and go to the image delivery server for SAAM.

vc9 resolves to the Cooper Hewitt image server

<https://collection.cooperhewitt.org/ark/vc9>

ye3 resolves to the Freer Sackler metadata server

<https://collections.si.edu/search/record/ark:/65665/ye3>

jy5 resolves to the Freer Sackler image server

<https://ids.si.edu/ids/deliveryService?id=ark:/65665/jy5>

Using EZID, I register each Smithsonian collection system with our NAAN AND a datasetID with a URL to where the datasetID should resolve.

The Smithsonian wrote a datasetID schema which I follow when I create and register new collection systems:

Two randomly selected lowercase letters (no lowercase L, rm, nm, or fu)

+

One randomly selected number (2-9)

The screenshot shows the EZID website interface. At the top left is the University of California logo and the EZID logo with the tagline "Identifiers made easy". At the top right is a search icon and the word "SEARCH". Below this is a navigation bar with three options: "DASHBOARD", "MANAGE IDS", and "CREATE ID". The "CREATE ID" option is highlighted with a downward-pointing arrow. Below the navigation bar is a teal header that says "Create an Advanced Identifier". Underneath this header are two tabs: "Simple" and "Advanced", with "Advanced" selected. The main content area shows a step indicator with the number "2" in an orange box, followed by the text "Optional: Enter a custom remainder (suffix)" with a help icon. Below this is a text input field containing "ws6". Underneath the input field is the text "Identifier Preview:" followed by a text box containing the preview "ark:/65665/ws6".

Image from the website:
<https://ezid.cdlib.org/>

The Reader

Record Link Print Share Contact Info

Search Results

Catalog Data

Add to My List

ATTRIBUTED TO: Honoré-Victorin Daumier, French, b. Marseilles, 1808–1879

MEDIUM: Bronze

DIMENSIONS: 6 3/4 x 2 1/2 x 3 3/4 in. (17.2 x 6.4 x 9.6 cm)

TYPE: Sculpture

DATE: 1840-1845, cast 1951-1962

PROVENANCE: M. Knoedler, Paris, to 18 April 1963
Joseph H. Hirshhorn, New York, 18 April 1963-17 May 1966
Gift of Joseph H. Hirshhorn, 1966

PUBLISHED REFERENCES: See file for further info.

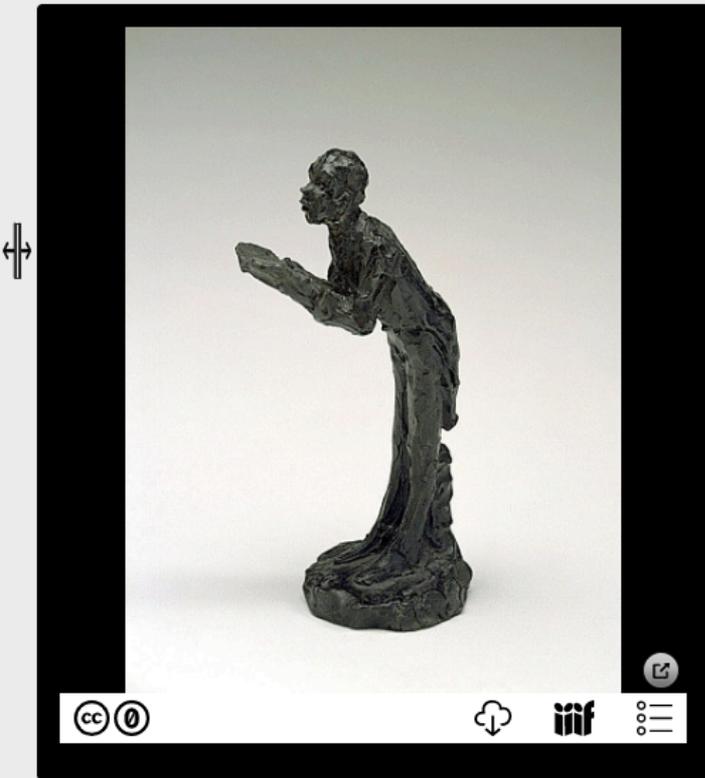
CREDIT LINE: Hirshhorn Museum and Sculpture Garden, Smithsonian Institution, Washington, DC, Gift of Joseph H. Hirshhorn, 1966

ACCESSION NUMBER: 66.1085

SEE MORE ITEMS IN: [Hirshhorn Museum and Sculpture Garden Collection](#)

DATA SOURCE: Hirshhorn Museum and Sculpture Garden

GUID: <http://n2t.net/ark:/65665/py2c96202be-b7fe-439b-9bd3-b64b5c49d829>



Each Smithsonian collection system is now configured to automatically generate an ARK when a metadata or multimedia record is saved. The ARK includes the SI NAAN and the datasetID assigned to the collection system.

Challenges for the ARK implementation included...

- **tight schedule to meet the February 2020 SI Open Access launch;**
- **multiple collection management systems, administrators, and IT support;**
- **encountering IT problems such as:**
 - o identifying the correct syntax for the URL which needs to be registered with EZID:

The datasetID needs to be included in the URL:

<https://collections.si.edu/search/record/ark:/65665/ye3>

- o how to configure each system to receive the URL with ARK datasetID



Smithsonian
Libraries

Phase II of Open Access

Implementing ARKs with archival management systems

- What if collections are split between two collection systems?
- What if objects get moved from one collecting unit to another?

Implementing ARK inflections

ARKs in Action – Inflections

An ARK provides extra services above and beyond that of an ordinary URL. Instead of connecting to one thing, an ARK should connect to three things:

- the object itself,
- a brief metadata record if you append a single question mark to the ARK, and
- a maintenance commitment from the current server when you append two question marks.

This is achieved through the use of "inflections", or different kinds of endings. With no ending, the ARK (in a URL) gives you what you expect from a web browser. If you add a single '?' to the end, for example,

```
http://texashistory.unt.edu/ark:/67531/metaph346793/?
```

it returns a brief machine- and eye-readable metadata record; in this case, an Electronic Resource Citation (ERC) using Dublin Core Kernel metadata., such as

```
erc:  
who: Dallas (Tex.). Police Dept.  
what: [Photographs of Identification Cards]  
when: 1963  
where: http://texashistory.unt.edu/ark:/67531/metaph346793/
```

Adding '??' to the end should return a policy statement. It is a side-benefit of ARKs that an object's metadata doesn't need an identifier different from that for the object, which cuts in half the number of identifiers that need to be generated and managed.

Image from the website:
https://n2t.net/e/ark_ids.html

<http://n2t.net/ark:/65665/ng49ca746aa-75f3-704b-e053-15f76fa0b4fa>



Commercial resolver:
n2t.net

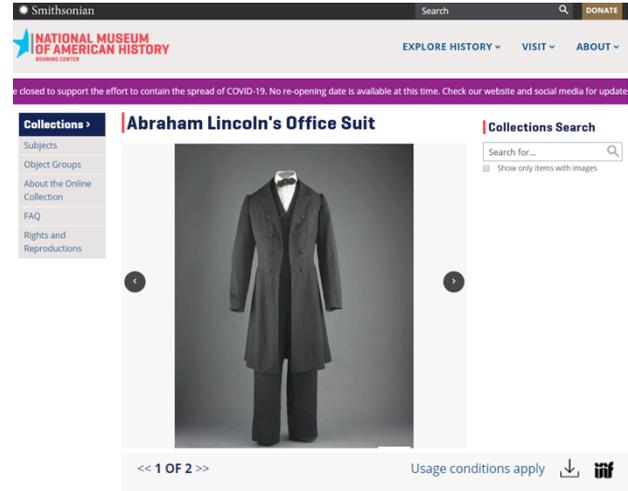
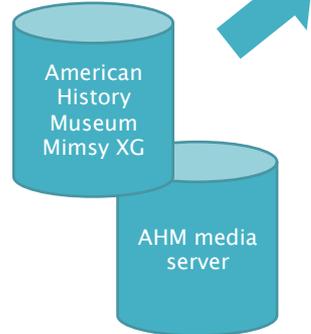
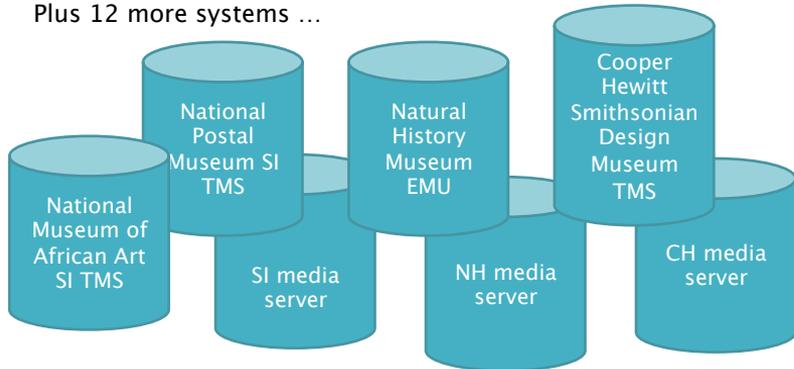


UNIVERSITY OF CALIFORNIA
EZID *Identifiers made easy*

Resolve to:

<https://americanhistory.si.edu/collections/search/object?ark=ng4>

Plus 12 more systems ...



DESCRIPTION

Abraham Lincoln wore this black broadcloth coat, vest, and trousers, as his office suit during his presidency. The shirt and tie are reproductions. Lincoln's office suit was used in a preliminary study for a posthumous portrait by Boston artist William Morris Hunt. In May 1865 Mary Lincoln sent Thomas Pendel, the White House doorkeeper, to deliver the suit. Pendel, being about the same size as Lincoln, posed in the clothing for the artist. Hunt kept the suit, and in 1894 his widow donated the clothing to the Smithsonian. Gift of Mrs. William Hunt, 1894

LOCATION

Currently not on view

OBJECT NAME

Lincoln Suit Coat
Lincoln suit coat

ASSOCIATED PERSON

Lincoln, Abraham

PHYSICAL DESCRIPTION

broadcloth (overall material)
black (overall color)

MEASUREMENTS

overall: 72 in x 35 in x 12 in; 182.88 cm x 88.9 cm x 30.48 cm

Thank you!

**Bess
Missell**

Metadata Librarian

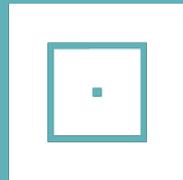
Smithsonian
Libraries

missellb@si.edu

ARKs at the **Smithsonian Institution**



Smithsonian
Libraries



PORTICO

ARKs in the Portico Archive

Karen Hanson, Senior Research Developer

April 23rd 2020

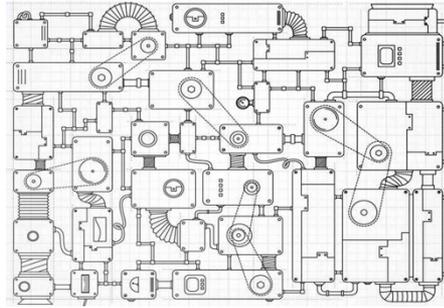
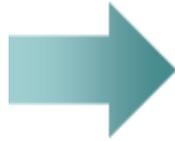
Overview

- Who we are
 - Portico - a community supported preservation archive. Work with libraries and publishers to preserve electronic scholarly publications
- What we assign ARKs to
 - Every package going into the archive, and a lot of other things (more on that later)
- When did we start and how many are assigned so far
 - Started ~2006; Assigned >2 billion ARK IDs
- Why we chose ARKs
 - Flexible, opaque, unique, easy to generate, recognized by the community
- Why we are involved in ARKsInTheOpen
 - Use ARKs extensively; may adopt some of the new specifications

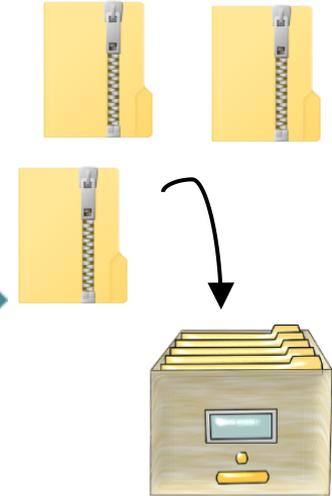
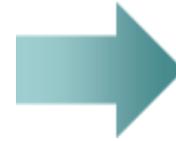
Portico workflow



Batch of files received e.g. PDF and XML version of articles in a journal issue



Files checked, normalized, and packaged to prepare for preservation

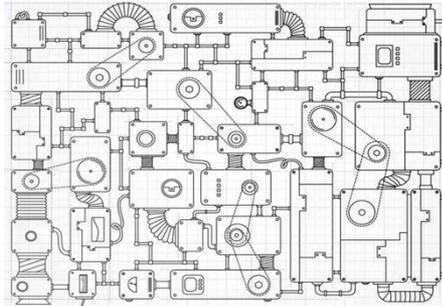
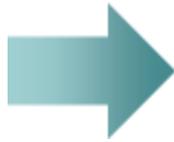


Resulting “archival units” deposited into archive. Each unit = e.g. 1 article

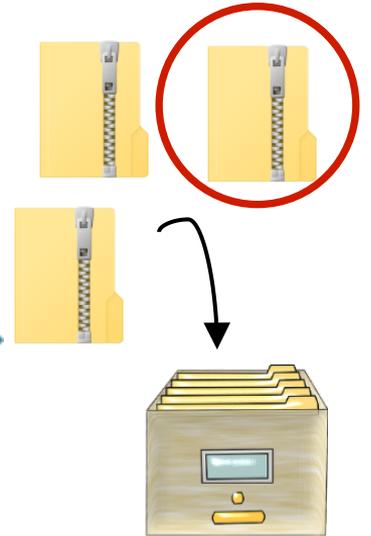
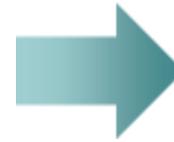
Portico workflow



Batch of files received e.g. PDF and XML version of articles in a journal issue

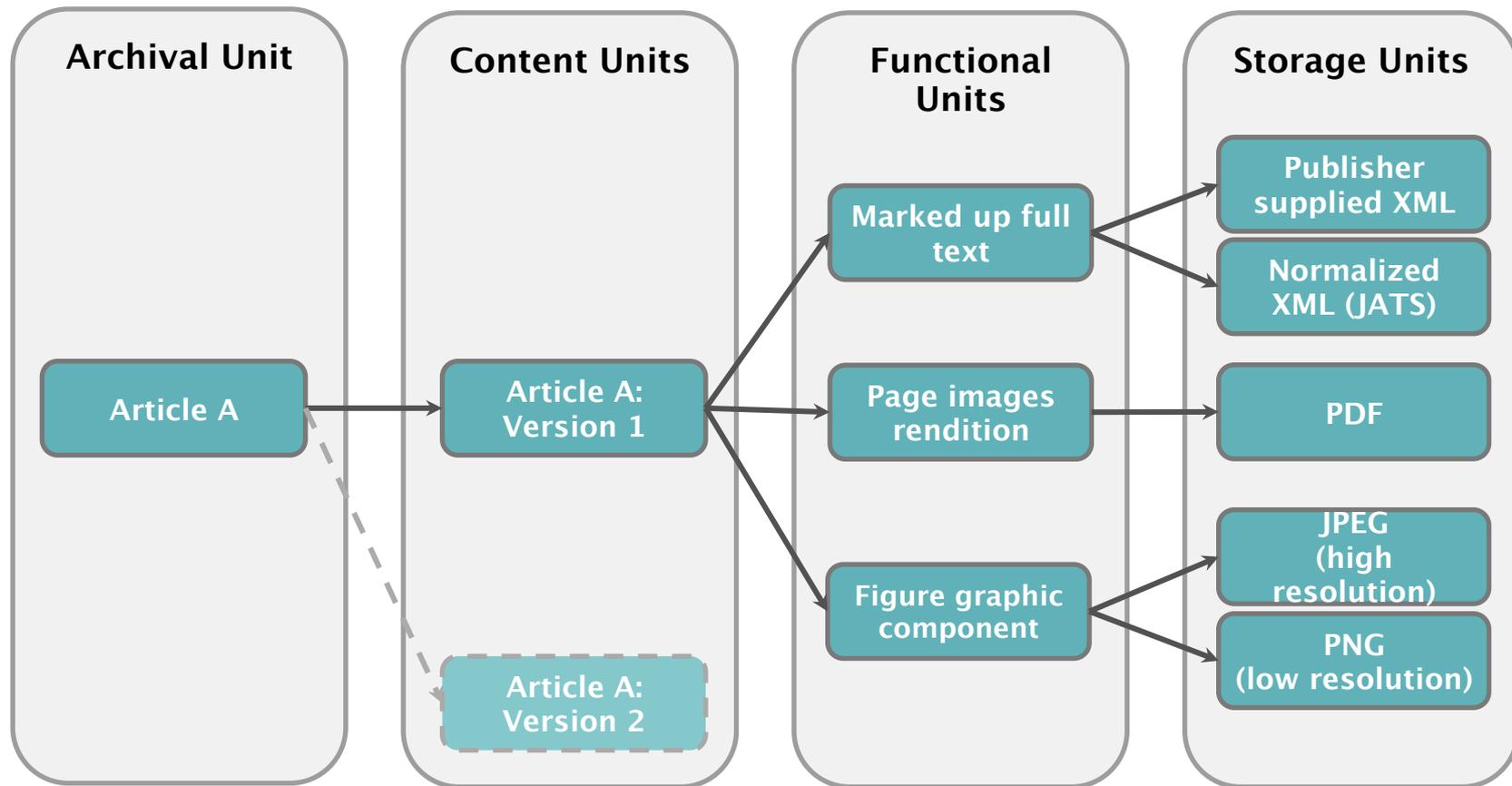


Files checked, normalized, and packaged to prepare for preservation



Resulting “archival units” deposited into archive. Each unit = e.g. 1 article

Archival unit content structure

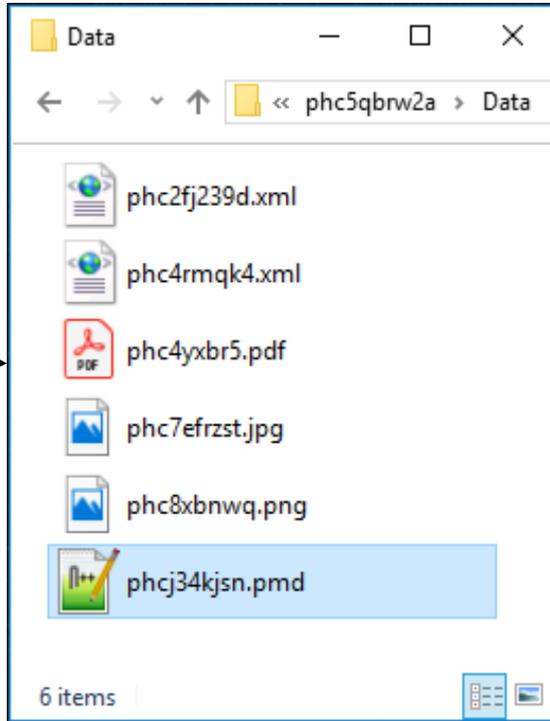


Structure described in metadata



Archival unit:
phc5qbrw2a.zip

Open
BagIt "Bag"



Storage Units

Publisher
supplied XML

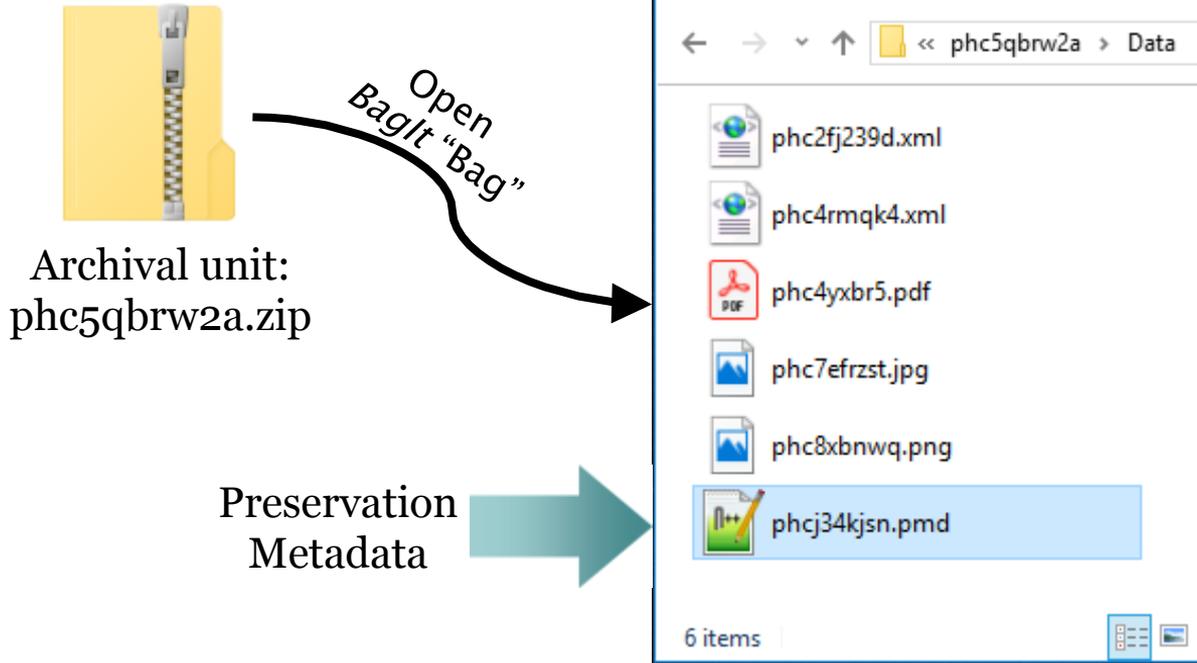
Normalized
XML (JATS)

PDF

JPEG
(high
resolution)

PNG
(low resolution)

Structure described in metadata



Storage Units

Publisher
supplied XML

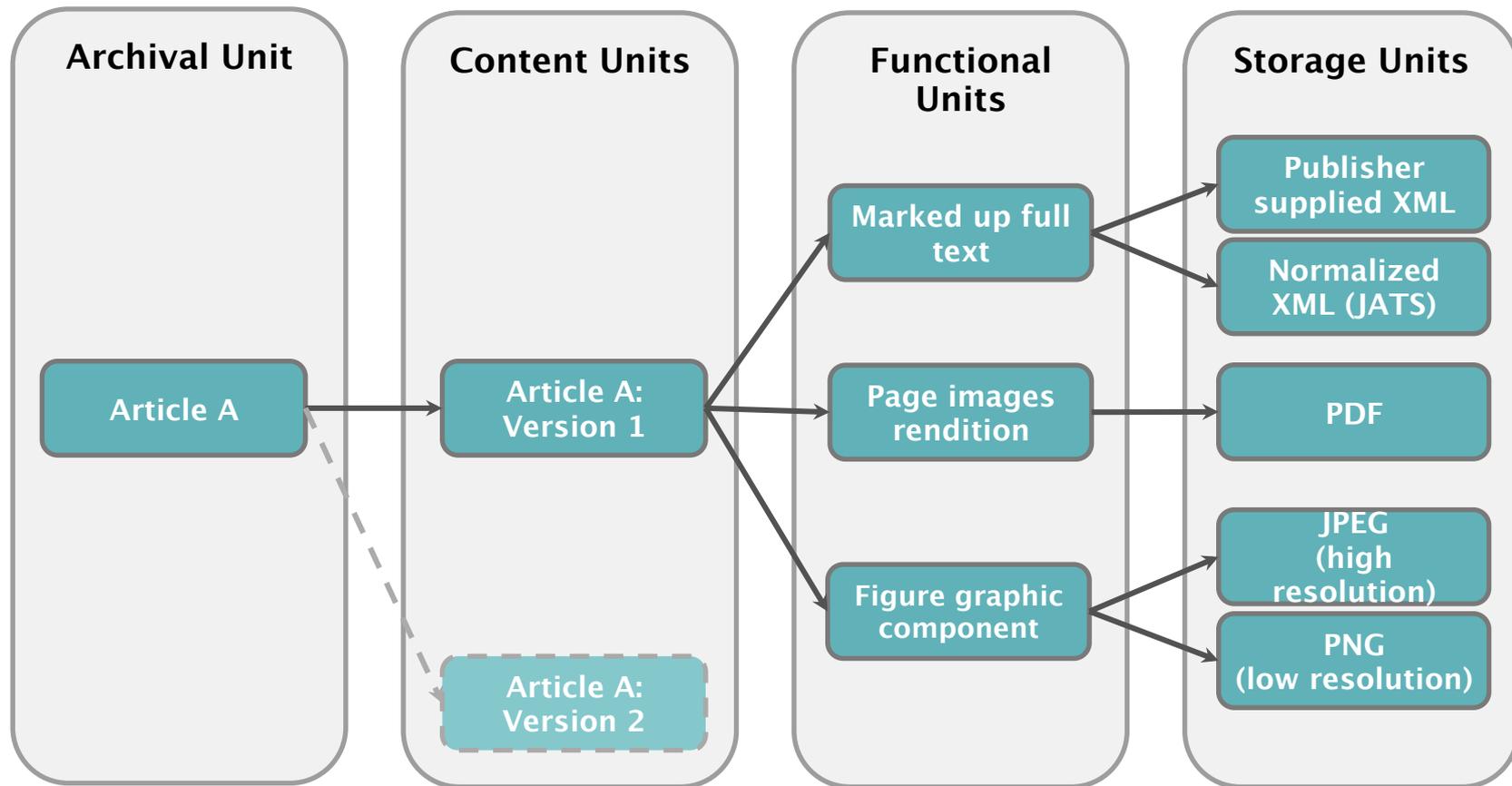
Normalized
XML (JATS)

PDF

JPEG
(high
resolution)

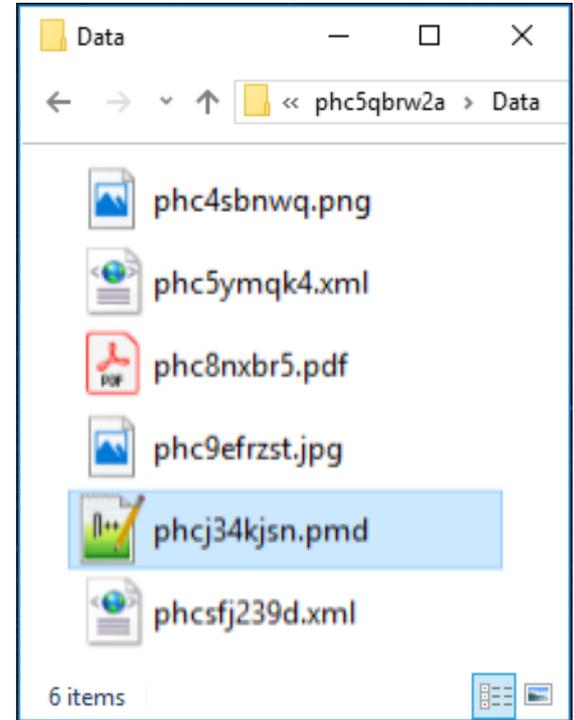
PNG
(low resolution)

Archival unit content structure

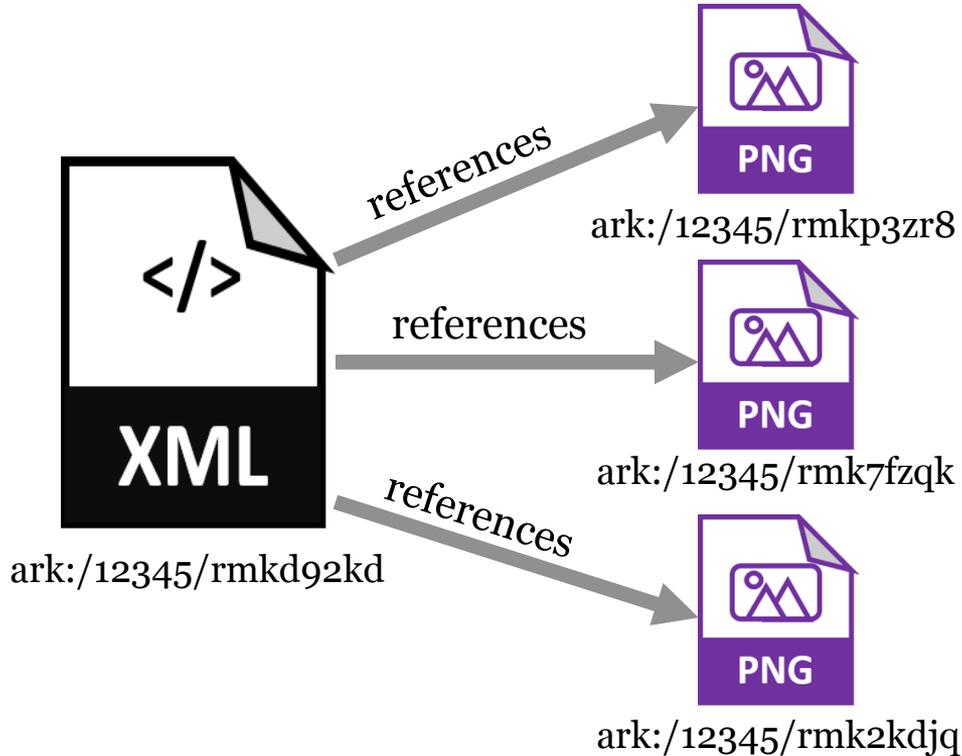


Use of ARKs supports a self describing archive

- The files *are* the archive
- The system manages the archive, but the files can exist independently
- ARKs are assigned to abstract concepts and sections of metadata, as well as digital objects



Full text XML with image references



```
<fig id="fig1" position="float">  
  <label>Fig. 1</label>  
  <caption>  
    <p>Example figure!</p>  
  </caption>  
  <graphic  
    position="anchor"  
    xlink:href="ark:/12345/rmkp3zr8"  
    alt-version="no"  
    xlink:type="simple"/>  
</fig>
```

What did we assign billions of ARKs to?

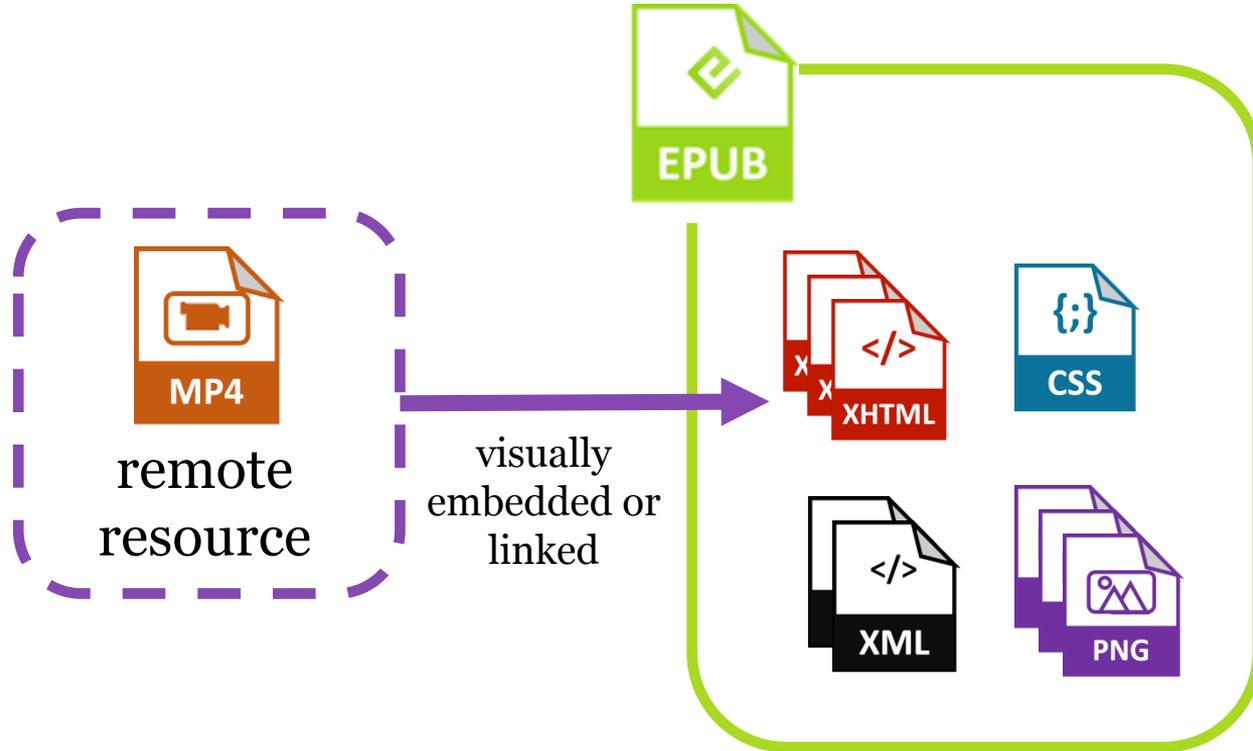
- Archival units (~110 million) – the “interesting” ones
- Versions of the content (~121 million)
- Archived files... including metadata files (~1.8 billion)
- Sections of metadata (technical metadata, event metadata)

... over 2 billion ARKs

ARK resolver use case: Enhanced Monographs

- “Enhancing Services to Preserve New Forms of Scholarship” – Mellon funded project, a collaboration with NYU Libraries, CLOCKSS and university presses
- Looks at monographs that go beyond text and images (embedded multimedia, interactive features etc.)
- Identify what can be preserved at scale

EPUB Challenge: Remote Resources



Problem of external content embedded in EPUBs

The image shows a screenshot of an EPUB viewer interface. On the left, a video player is embedded, showing a man with dark hair and a patterned shirt speaking. The video player has a 'Faster' button, a progress bar, and a 'Speed: 1x' indicator. The video is titled 'Cat Lady' and is hosted on 'fulcrum.org'. On the right, a text block is visible, with a purple box highlighting a video thumbnail. The thumbnail shows the same man speaking, with a subtitle that reads '>> [LAUGH] >> My mother returns.' Below the thumbnail, the name 'Keckler.' is visible. The text block contains a paragraph of text, partially obscured by the video player and the highlighted thumbnail. The EPUB viewer interface includes a search bar, a 'Citation' button, and a 'Search in this text...' field. The bottom of the viewer shows a progress bar and the text '24% • Location 85 of 368'.

Species Today

Citation Search in this text...

Amico 3 Citations 6

Cat Lady

fulcrum.org/embed?hdl=2027%2Ffulcrum...

fulcrum

ed that *Cat Lady* by Joseph Keckler is
er the copyright laws of the United States of
International Copyright Law (including
British Commonwealth) and of all
reciprocal copyright relations. All rights,
reproduction, translation, public reading,
of translation into foreign languages, are
rights for readings, productions, etc., should
d.

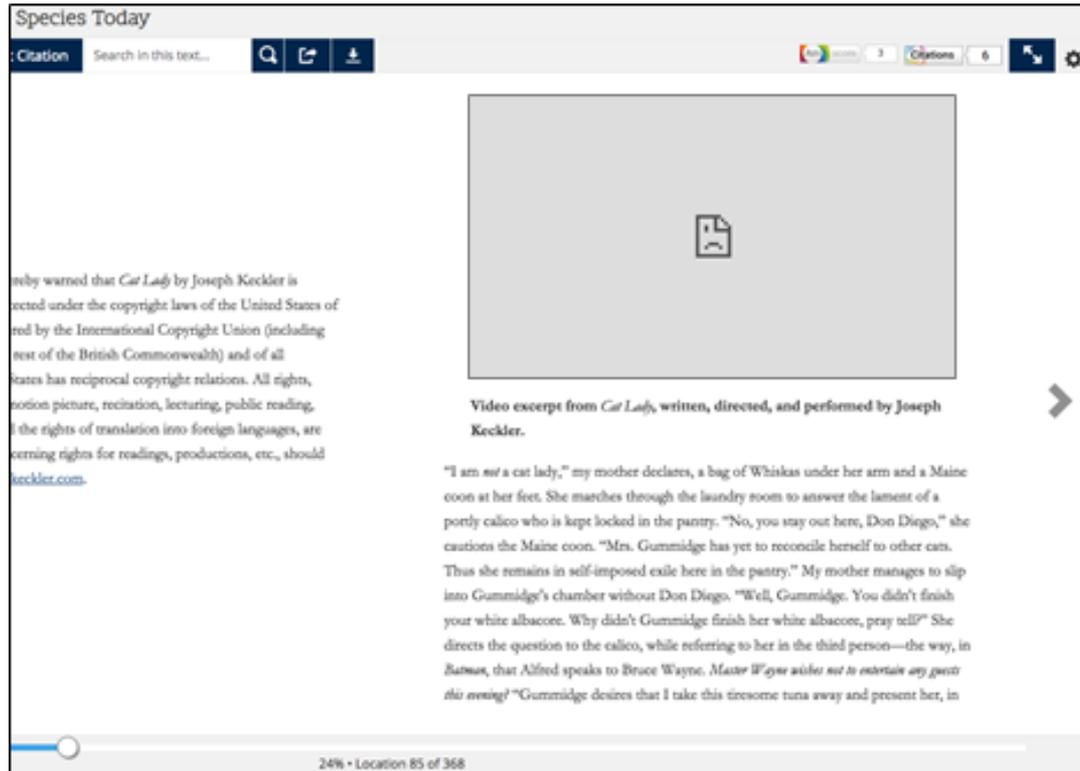
>> [LAUGH]
>> My mother returns.

Keckler.

"I am *not* a cat lady," my mother declares, a bag of Whiskas under her arm and a Maine coon at her feet. She marches through the laundry room to answer the lament of a portly calico who is kept locked in the pantry. "No, you stay out here, Don Diego," she cautions the Maine coon. "Mrs. Gummidge has yet to reconcile herself to other cats. Thus she remains in self-imposed exile here in the pantry." My mother manages to slip into Gummidge's chamber without Don Diego. "Well, Gummidge. You didn't finish your white albacore. Why didn't Gummidge finish her white albacore, pray tell?" She directs the question to the calico, while referring to her in the third person—the way, in *Batman*, that Alfred speaks to Bruce Wayne. *Master Wayne wishes not to entertain any guests this evening?* "Gummidge desires that I take this tiresome tuna away and present her, in

24% • Location 85 of 368

Problem of external content embedded in EPUBs



The screenshot shows a digital reading interface for 'Species Today'. At the top, there is a search bar and navigation icons. The main content area is split into two columns. The left column contains text about copyright laws, mentioning 'Cat Lady' by Joseph Keckler. The right column features a large grey rectangular placeholder with a document icon, indicating a video excerpt that is not rendered. Below the placeholder, there is a caption: 'Video excerpt from *Cat Lady*, written, directed, and performed by Joseph Keckler.' To the right of the caption is a right-pointing arrow. Below the caption is a block of text, which is a quote from the book. At the bottom of the page, there is a progress indicator showing '24% • Location 85 of 368'.

Species Today

Citation Search in this text...

reily warned that *Cat Lady* by Joseph Keckler is
ected under the copyright laws of the United States of
red by the International Copyright Union (including
rest of the British Commonwealth) and of all
states has reciprocal copyright relations. All rights,
sion picture, recitation, lecturing, public reading,
l the rights of translation into foreign languages, are
arning rights for readings, productions, etc., should
keckler.com.

Video excerpt from *Cat Lady*, written, directed, and performed by Joseph Keckler.

"I am *not* a cat lady," my mother declares, a bag of Whiskas under her arm and a Maine coon at her feet. She marches through the laundry room to answer the lament of a portly calico who is kept locked in the pantry. "No, you stay out here, Don Diego," she cautions the Maine coon. "Mrs. Gummidge has yet to reconcile herself to other cats. Thus she remains in self-imposed exile here in the pantry." My mother manages to slip into Gummidge's chamber without Don Diego. "Well, Gummidge. You didn't finish your white albacore. Why didn't Gummidge finish her white albacore, pray tell?" She directs the question to the calico, while referring to her in the third person—the way, in *Batman*, that Alfred speaks to Bruce Wayne. *Master Wayne wishes not to entertain any guests this evening!* "Gummidge desires that I take this tiresome tuna away and present her, in

24% • Location 85 of 368

What if we could resolve an ARK to the video?

The image illustrates a workflow for resolving an ARK ID to a video. On the left, a video player window shows a video of a man speaking. A white banner with the ARK ID `https://ids.portico.org/ark:/12345/rmkrq29x8` is overlaid on the video. On the right, a citation page from 'Species Today' shows the same video player embedded within the text. A purple arrow points from the video player in the left window to the video player in the citation page. The citation page also shows the text of the video and the name 'Keckler.' Below the video, the text reads: "I am *not* a cat lady," my mother declares, a bag of Whiskas under her arm and a Maine coon at her feet. She marches through the laundry room to answer the lament of a portly calico who is kept locked in the pantry. "No, you stay out here, Don Diego," she cautions the Maine coon. "Mrs. Gummidge has yet to reconcile herself to other cats. Thus she remains in self-imposed exile here in the pantry." My mother manages to slip into Gummidge's chamber without Don Diego. "Well, Gummidge. You didn't finish your white albacore. Why didn't Gummidge finish her white albacore, pray tell?" She directs the question to the calico, while referring to her in the third person—the way, in *Batman*, that Alfred speaks to Bruce Wayne. *Master Wayne wishes not to entertain any guests this evening?* "Gummidge desires that I take this tiresome tuna away and present her, in

Thank you!

karen.hanson@ithaka.org

Thanks also to my colleague Amy Kirchhoff for helping me put together this presentation.

ARK Identifiers In Genealogy

FamilySearch International

Presented at CNI, Spring 2020
N. Thomas Creighton
tc@familysearch.org



Who we are

- FamilySearch International

What we assign ARKs to

- Digital images of genealogically significant documents (eg. census records)
- Transcriptions of the data from the digital images
- ‘Persona’ data from those transcriptions
- Genealogies collected from patrons and interviews

When did we start and how many are assigned so far

- We started minting ARKs in 2012, but it took several months to switch over in full.
- We have minted several billion so far.

Why we chose ARKs

- We chose ARK because we wanted something recognizable as an industry effort to standardize long-lived URIs.
- Minting so many identifiers made other options cost prohibitive.
- We needed to control URI, resolution, redirects, etc.

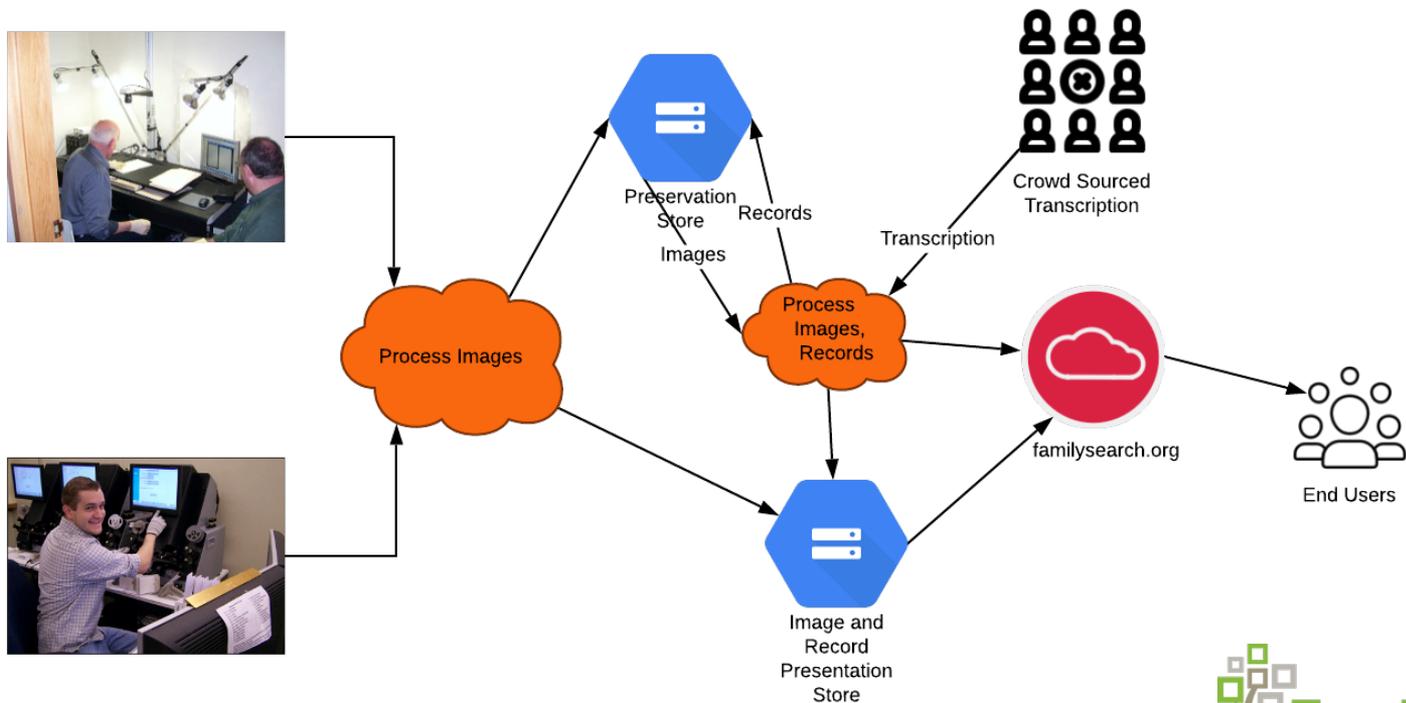
Why we are involved in ARKsInTheOpen

- We are involved in ARKsInTheOpen to contribute our experience.

FamilySearch International - A Brief Introduction

- Originally The Genealogical Society of Utah
- We help people connect with their families through:
 - Providing engaging discovery experiences
 - Publishing guidance on how to do family history research
 - Acquiring and publishing billions of source records from around the world
 - Creating software systems to aid in researching and collaborating on family history
 - Providing all of this at no cost to our patrons - It's free!
- We also maintain significant long-term digital preservation systems
 - Two independently implemented and maintained systems each holding two copies of all artifacts
 - One system in the public cloud; one system literally in a cave in the mountains
 - Tens of petabytes and billions of artifacts
- Open to anyone at no cost; Fully supported by the Church of Jesus Christ of Latter-day Saints

Artifact Processing Abstraction



Searching For Ancestors

Refine your search:

Deceased Ancestor's Information

First Names

Last Names

Search with a life event:

Birthplace

Birth Year (Range)
From To

[Marriage](#)
[Residence](#)
[Death](#)
[Any](#)

Search with a relationship:

[Spouse](#)
[Father](#)
[Mother](#)
[Other Person](#)

Restrict records by:

[Location](#)
[Type](#)
[Batch Number](#)
[Film Number](#)

Match all terms exactly

Open "https://www.familysearch.org/ark:/61903/1:1:K98H-2G2" in a new tab

Records Collections

Search Results from Historical Records [Filter by collections](#)

1-20 of 1,739 Results for Name: **Thomas P Creighton** Birthplace: **Texas**

Number of results to show:

[Export Results 1-20](#)

Name	Events	Relationships	View
Thomas P Creighton Head United States Census, 1940	birth: 1894 Texas residence: 1940;1935 Ward 4, San Bernardino, San Bernardino Judicial Township, San Bernardino, California, United States; San Bernardino, San Bernardino, California	spouse: Maudie M Creighton children: David M Creighton, Robert T Creighton	
Thomas P Creighton Principal United States Muster Rolls of the Marine Corps, 1798-1937	residence: 110th Company 8th Regiment Fort Crockett Galveston Texas military service: 29 June 1917 Galveston, Texas, United States		
Thomas P Creighton Principal United States Muster Rolls of the Marine Corps, 1798-1937	residence: 110th Company 8th Regiment M C Fort Crockett Galveston Texas military service: 29 June 1917 Galveston, Texas, United States		
Thomas P Creighton Principal United States Muster Rolls of the Marine Corps, 1798-1937	residence: 110th Company 8th Regiment Fort Crockett Galveston Texas military service: 29 June 1917 Galveston, Texas, United States		
Thomas William Creighton Principal Texas Birth Certificates, 1903-1927	birth: 23 February 1927 Mineral Wells, Palo Pinto, Texas, United States	father: J R Creighton mother: Flora Boynton	

Feedback

Thomas P Creighton
United States Census, 1940

Tools

Attached to:  **Thomas Percy Creighton**
1893-1941 • 25V8-3J5

Name: Thomas P Creighton • [Edit](#)

Event Type: Census

Event Date: 1940 • [Edit](#)

Event Place: Ward 4, San Bernardino, San Bernardino Judicial Township, San Bernardino, California, United States • [Edit](#)

Last Place of Residence: San Bernardino, San Bernardino, California

Gender: Male

Age: 46

Marital Status: Married

Race: White

Race (Original): White

Birth Year (Estimated): 1894

Birthplace: Texas

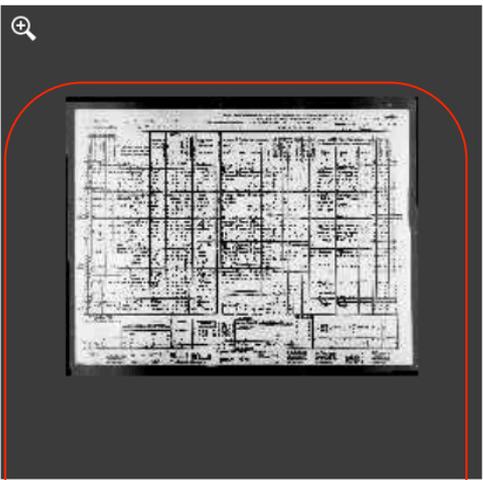
Relationship to Head of Household: Head

Relationship to Head of Household (Original): Head

Sheet Letter: B

Sheet Number: 66

Digital Folder Number: 005456358



[View the original document](#). The original may contain more information than was indexed.

Record Collection:
United States Census, 1940

Document Information:

Household	Role	Sex	Age	Birthplace
Thomas P Creighton	Head	Male	46	Texas
Maudie M Creighton	Wife	Female	35	Texas
David M Creighton	Son	Male	10	California
Robert T Creighton	Son	Male	6	California

Similar Historical Records

- [T P Creighton](#)
United States Census, 1930
- [Thomas Percy Creighton](#)
California Death Index, 1910-1997

Maudie M. Creighton --
.../ark:/61903/1:1:K98H-2GL
David M. Creighton --
.../ark:/61903/1:1:K98H-2GG
Robert T. Creighton --
.../ark:/61903/1:1:K98H-2GP

Thomas Percy Creighton Details --
.../ark:/61903/4:1:25V8-3J5

Census page with context --
.../ark:/61903/3:1:3QSQ-G9MT-N9ZF?
personaUrl=%2Fark%3A%2F61903%2F1%3A1%3AK98H-2G2

35	749	79	0	6000	70	Newton, Lou	Head	0	F	W	52	S	70	05	16	New York	56	Bloomington	San Bernardino	California	70	X001	9/24	-	-	-	-	1	30
36						Maudie M	Wife	5	M	W	47	S	70	01	40	New York	56	Bloomington	San Bernardino	California	70	X001	7/0	7/0	7/0	7/0	4/24	2	30
37	579	172	0	2800	70	Scott, Charles H.	Head	0	M	W	28	M	70	13	20	California	58	Bloomington	San Bernardino	California	70	X001	7/0	7/0	7/0	4/24	1	30	
38						Helen	Wife	1	F	W	22	M	70	14	30	Colorado	71	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	30
39	577	172	R	25	70	Thomas, Paul R.	Head	0	M	W	40	M	70	9	8	Missouri	66	St. Louis	St. Louis	Missouri	70	X000	4/24	7/0	-	-	-	1	30
40						Dolores L.	Wife	0	F	W	35	M	70	14	30	Mississippi	65	St. Louis	St. Louis	Missouri	70	X000	7/0	7/0	7/0	7/0	4	5	-
41	664	182	R	28	70	Abdel, Josephine A.	Wife	0	F	W	35	W	70	02	50	Illinois	63	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	4
42						George E.	Son	2	M	W	15	S	70	13	10	Nebraska	69	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	5	-	-
43						Gabaldino T.	Daughter	2	F	W	12	S	70	7	7	Iowa	65	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	5	-	-
44	572	182	0	3600	70	Creighton, Thomas P.	Head	0	M	W	46	M	70	14	30	Texas	67	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	4/24	1	-
45						Maudie M	Wife	1	F	W	35	M	70	14	30	Texas	67	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
46						David M	Son	2	M	W	10	S	70	5	5	California	68	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	5	-	-
47						Robert T.	Son	2	M	W	6	S	70	1	1	California	78	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
48	868	182	R	28	70	Agredo, John Jr.	Head	0	M	W	35	M	70	7	7	California	98	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
49						Marguerite	Wife	1	F	W	32	M	70	13	20	California	98	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	4	5	-
50						Hazel B.	Daughter	2	F	W	11	S	70	5	5	California	98	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
51						Edward D.	Son	2	M	W	9	S	70	14	4	California	98	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
52	40	70				Mueller, Arthur H.	Head	0	M	W	43	M	70	04	70	Illinois	61	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	40
53						Lenna C.	Wife	1	F	W	40	M	70	01	40	Missouri	66	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	4	5	-
54						Arthur H Jr	Son	2	M	W	16	S	70	13	10	California	98	San Bernardino	San Bernardino	California	70	X000	7/0	7/0	7/0	7/0	5	-	-
55	880	182	R	26	70	Lee, Daisy	Daughter	0	F	W	60	W	70	12	10	Tennessee	76	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	30
						Frances	Wife	0	F	W	82	D	70	05	10	Oklahoma	86	San Bernardino	San Bernardino	California	70	X000	4/24	-	-	-	-	1	30

<https://www.familysearch.org/>

ark:/61903/3:1:3QSQ-G9MT-N9ZF

?
i=35&personUrl=%2Fark%3A%2F61903%2F1%3A1%3AK98H-2G2

Image Index	Information	Name	Titles and Terms	Last Place of Resi...	Gender	Age	Marital Status	Race	Birth Year (Estim...	Birthplace
		Thomas P Creighton		San Bernardino, San Bernardino, California	Male	46	Married	White	1894	Texas
		Maudie M Creighton		San Bernardino, California	Female	35	Married	White	1905	Texas
		David M Creighton		San Bernardino, California	Male	10	Single	White	1930	California
		Robert T Creighton		San Bernardino, California	Male	6	Single	White	1934	California



Image Index	Information	Item Number	Film/Digital Note										
36	749 770 0 6000 70	Wood, Louis	Head 0 F W 22 S 70 05 16	New York 56	Bloomington	San Bernardino California 70	X001	92a	-	-	-	-	35
56		Wood, Albert H.	Wife 5 M W 47 S 70 01 14	New York 56	Bloomington	San Bernardino California 70	X001	70	70	70	70	44	2
57	579 170 0 2800 70	Wood, Charles H.	Head 0 M W 25 M 70 13 20	California	San Bernardino California 70	X001	70	70	70	70	42a	-	34
58		Wood, Helen	Wife 1 F W 22 M 70 14 08	Colorado	San Bernardino California 70	X001	92a	-	-	-	-	-	38
59	577 170 R 25 70	Wood, Paul R.	Head 0 M W 46 M 70 8 8	Missouri	St. Louis	San Bernardino California 70	X001	92a	-	-	-	-	8
60		Wood, Delores L.	Wife 1 F W 35 M 70 14 20	Mississippi	St. Louis	San Bernardino California 70	X001	70	70	70	70	44	5
61	664 180 R 28 70	Wood, Josephine A.	Head 0 F W 37 W 70 02 50	Illinois	St. Louis	San Bernardino California 70	X001	92a	-	-	-	-	40
62		Wood, George E.	Son 2 M W 15 S 94 12 10	Nebraska	San Bernardino California 70	X001	70	70	70	70	44	-	-
63		Wood, Baldwin T.	Daughter 2 F W 12 S 94 7 7	Nebraska	San Bernardino California 70	X001	70	70	70	70	44	-	-
64	572 180 0 3000 70	Wood, Thomas P.	Head 0 M W 44 M 70 14 20	Texas	San Bernardino California 70	X001	70	70	70	70	44	-	-
65		Wood, Maurine M.	Wife 1 F W 30 M 70 14 20	Texas	San Bernardino California 70	X001	70	70	70	70	44	-	-
66		Wood, David M.	Son 2 M W 10 S 94 5 2	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
67		Wood, Robert J.	Son 2 M W 6 S 94 1 1	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
68	868 180 R 28 70	Wood, John Jr.	Head 0 M W 35 M 70 7 7	California	San Bernardino California 70	X001	92a	-	-	-	-	-	45
69		Wood, Marguerite	Wife 1 F W 32 M 70 13 20	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
70		Wood, Hazel B.	Daughter 2 F W 11 S 94 5 2	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
71		Wood, Edward D.	Son 2 M W 9 S 94 4 9	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
72	651 180 R 40 70	Mueller, Arthur H.	Head 0 M W 43 M 70 04 70	Illinois	San Bernardino California 70	X001	92a	-	-	-	-	-	48
73		Mueller, Emma E.	Wife 1 F W 40 M 70 01 70	Missouri	San Bernardino California 70	X001	70	70	70	70	44	-	-
74		Mueller, Arthur H. Jr.	Son 2 M W 16 S 94 12 10	California	San Bernardino California 70	X001	70	70	70	70	44	-	-
75	880 180 R 25 70	Lee, Daisy	Head 0 F W 60 W 70 13 20	Texas	San Bernardino California 70	X001	70	70	70	70	44	-	-
		Lee, Daisy	Wife 1 F W 32 D 70 05 10	Oklahoma	San Bernardino California 70	X001	92a	-	-	-	-	-	30

Catalog Record

California, 1940 population census : population schedules

Film/Digital Note

California (San Bernardino County)

Citation

"United States Census, 1940," database with images, FamilySearch (https://familysearch.org/ark:/61903/3:1:3QSQ-G9MT-N9ZF?cc=2000219&wc=QZX5-SYQ%3A790105301%2C803459401%2C803540201%2C803546201 : accessed 19 April 2020), California > San Bernardino > San Bernardino Judicial Township, San Bernardino, Ward 4 > 36-125 San Bernardino Judicial Township, San Bernardino City Ward 4 bounded by (N) Highland Av; (E) E; (S) 16th; (W) I > image 36 of 40; citing Sixteenth Census of the United States, 1940, NARA digital publication T627. Records of the Bureau of the Census, 1790 - 2007, RG 29. Washington, D.C.: National Archives and Records Administration, 2012.

<https://www.familysearch.org/ark:/61903/1:1:K98H-2G2> (Thomas Percy Creighton) as json

A small snippet of 3438 lines

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  },
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    "descriptionId": "sd2"
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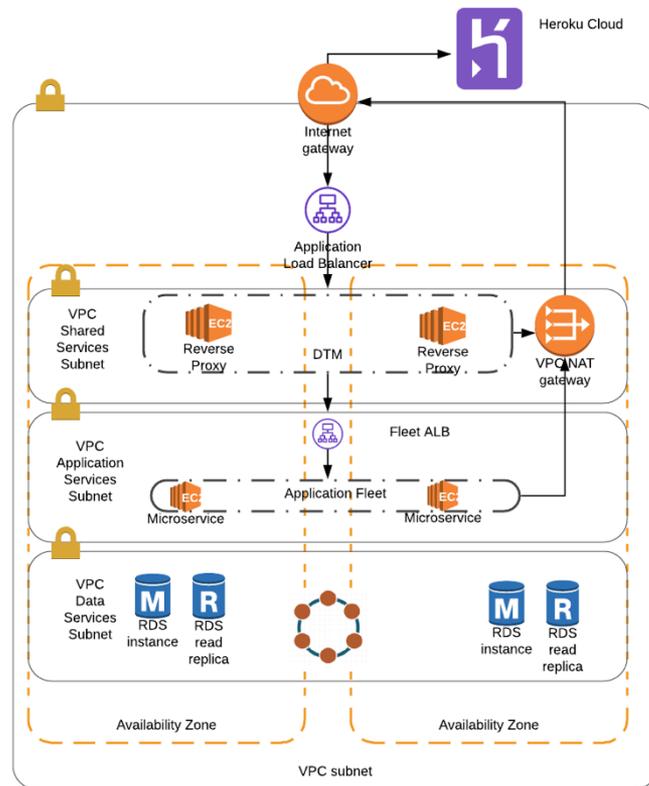
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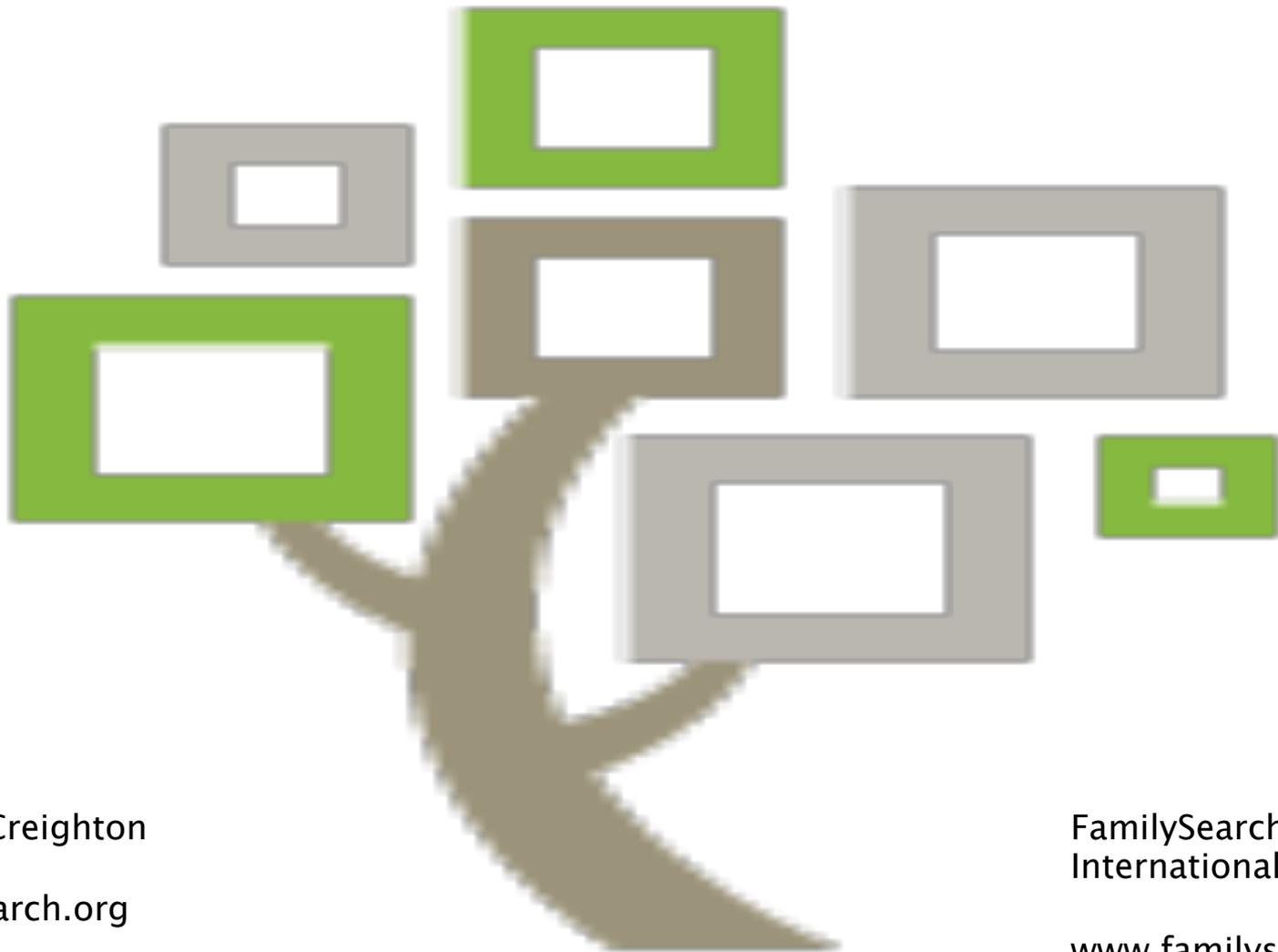
Organization and Volume of Minting

Namespace or Name Assigning Authority	Description	Approximate Count In Millions	Annual Increase In Millions
1:1	Historical record persona	8800	1,511
1:2	Historical record	5300	452.27
2 (1-3)	Pedigree data	1500	73.05
3 (1-4)	Digital images of documents	4300	344.64
4	FamilyTree person records	1400	43.2
Total:		21300	2,424

Managing Access and Routing

- Routing of ARNs is basically the same as all other resources managed at familysearch.org.
- <https://www.familysearch.org/ark:/61903/1:1:K98H-2G2> is seen by DTM. If Accept header specifies html, forward to appropriate application (typically in Heroku); if json, forward to the 1:1 resolver.
- <https://www.familysearch.org/ark:/61903/3:1:3QSO-G9MT-N9ZF> is seen by DTM. Based on Accept header it forwards to the image viewer app (Heroku) or the 3:1 resolver. The 3:1 resolver will authorize and redirect to a temporary signed S3 URL.





N. Thomas Creighton

tc@familysearch.org

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