

End of Term Web Archive US Federal Government Websites 2008-2009

The United States End of Term Web Archive

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CNI Project Briefing – April 3, 2012

Building the 2008 Archive

Background
 2008 Project & Nomination of URLs
 Demo of public interface
 Data transfer
 Preparing for Access

Collaborating Institutions

Library of Congress
 Internet Archive
 California Digital Library
 University of North Texas
 US Government Printing Office

Why Archive .gov? Why Collaborate?

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- Fit with partner missions to collect and preserve at-risk (born-digital) government information
- Potential for High Research Use/Interest in Archives
- It Takes a Village
- Experienced Partners

Project Goals

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- Work collaboratively to preserve public U.S. Government Web sites at the end of the current presidential administration ending January 19, 2009.
- Document federal agencies' presence on the Web during the transition of Presidential administrations.
- To enhance the existing research collections of the five partner institutions.

URL Nomination Tool

 Facilitates collaboration
 Ingest seed lists from different sources
 Record known

metadata

- Branch
- Title
- Comment
- Who nominated

Create seed lists for crawls

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Volunteer Nominators

- Call for volunteers targeted:
 - Government information specialists
 - Librarians
 - Political and social science researchers
 - Academics
 - Web archivists
- 31 individuals signed up to help

Nominator To-Dos

- Nominate the most critical URLs for capture as "in scope
- Add new URLs not already included in the list
- Mark irrelevant or obsolete sites as "out of scope"
- Add minimal URL metadata such as site title, agency, etc.

🕹 Nominator Tool - Mozilla Firefox Bookmarks Tools <u>E</u>dit <u>V</u>iew Hi<u>s</u>tory Help File URL http://www.DOL.gov 🗗 Domain SURT http://(gov.dol, Nominations 7 Nomination Score 7 Nominated By June 2008 usa.gov list - Internet Archive Stanford WebBase: .gov data - California Digital Library Mary Searles - New Hampshire Law Library Mark Randazzo - U.S. Dept. of Labor, Office of Public Affairs-Division of Enterprise Communications Content Manager - U.S. Dept. of Labor, Office of Public Affairs-Division of Enterprise Communications Suzanne Cohen - Cornell University ILR School Comment The Department of Labor fosters and promotes the welfare of the job seekers, wage earners, and retire United States by improving their working conditions, advancing their opportunities for profitable employ protecting their retirement and he Agency U.S. Department of Labor U.S. Dept. of Labor Branch executive Title Home Page The United States Department of Labor Related URLs

http://dol.gov http://www.oalj.dol.gov http://www.oig.dol.gov http://www.dol.gov/arb/welcome.html

In Scope vs. Out of Scope

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- In scope: Federal government Web sites (.gov, .mil, etc.) in the Legislative, Executive, or Judicial branches of government. Of particular interest for prioritization were sites likely to change dramatically or disappear during the transition of government
- Out of scope: Local or state government Web sites, or any other site not part of the above federal government domain
- Not captured: intranets, deep web content

Prioritized URLs

~500 URLs nominated by volunteers



Selected Researcher/Curator Interests

- Homeland Security
- Department of Labor
- Department of Treasury
- Education/"No Child Left Behind"
- Health Care Reform
- Stem Cell Research
- Bush Administration Budget Justifications
- Federal Program Assessments (ExpectMore.gov)

Crawl Schedule

	Septe	embe	r	Octo	ber			Nove	embe	r		Dece	mber				Janu	ary			Febru	iary		- Ç	March-April-May
	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	2	9	16	23	
IA	Broad	d Cra	wl								6	8								N.	Broad	Cra	wi		
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IA/LC						6					9			1	Priori	tized	URLs	Ĩ					0	3	Prioritized URLs

- Two Approaches:
 - Broad, comprehensive crawls
 - Prioritized, selective crawls
- □ Key dates:
 - Election Day, November 4
 - Inauguration Day, January 20

Results

Between September 2008 and November 2009: Over 3,000 "sites" archived (or is it 4,622?*)

 160 million files/documents
 Over 15 TB of data

*counting is tricky: sites are loosely defined

http://after-school.gov http://afterschool.gov http://www.afterschool.gov http://gears.tucson.ars.ag.gov http://www.tucson.ars.ag.gov http://www.uswcl.ars.ag.gov http://agingstats.gov http://www.agingstats.gov http://agoa.gov http://www.agoa.gov http://ahcpr.gov http://www.ahcpr.gov http://meps.ahrq.gov http://www.ahrq.gov http://aids.gov http://airnow.gov http://alc.gov http://amberalert.gov http://amc.gov http://amembassy-fiji.gov http://americaslibrary.gov http://www.americaslibrary.gov http://americasoutdoors.gov http://americasstory.gov http://americastory.gov http://americore.gov http://americorp.gov http://americorps.gov http://americorpse.gov http://www.etd.ameslab.gov http://www.external.ameslab.gov http://www.msg.ameslab.gov http://sc94.ameslab.gov http://www.scl.ameslab.gov

Data Transfer

- Goal: Distribute 15.9 TB of collected content among partners
- LC's central transfer server used:
 "Pulled" and "pushed" data from and to partners via Internet2, May 2009 Mid 2010
 - Common transfer tools, specifications were key

More info here: http://blogs.loc.gov/digitalpreservation/2011/07/theend-of-term-was-only-the-beginning/

Transfer Tools: Bagger

Spring Rich Client Application		
File Window Help	ate Bag In Place Validate Bag Is Bag Complete Close Bag Save Bag Save Bag As	
• Bagger	a 🔯 🔀 Bag Info	4 🖸 53
Payload	File name: O:\web capture\Bagger\cybercemetery Profile: <no profile=""> Bag-Info Serialize Type?: Image: Standard Image: Standard Bag-Size 85.6 KB Payload-Oxum 87248.2 Bagging-Date 2011-10-14</no>	Add X X X
Tag Files Tag Files Cybercemetery Bagit.txt Bag-info.txt manifest-md5.txt		4 8 53
	Complete: 😑 Valid: 😑 Profile Compliant: 🐼	
	[Fri Oct 14 15:07:01 EDT 2011]: This space will contain messages generated by the creating and updating of bags. Mouse over the status label to see it's description. [Fri Oct 14 15:08:31 EDT 2011]: Opened the bag O:\AndersonTeamWork [Fri Oct 14 15:09:26 EDT 2011]: Failed to create bag: Unknown format [Fri Oct 14 15:10:17 EDT 2011]: Opened the bag O:\web capture\Bagger\cybercemetery	• •

Preparing for Access

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1st Tuesday of each month, 12:00 pm:

Anything to report on public access?



No, nothing to report on public access.

Internet Archive also had:

- A full copy of the content from all EOT partners
- A QA "Playback" tool (takes screen images of archived materials)
- An export of the Nomination Tool metadata from UNT
- MODS record extractor tool

CDL had:

Browse by: All Results: 196 Items Results: 196 Items Browse by: Face1 Itels Author Browse by: Face1 Itels Author Page: 1 2 3 4 5 Net Sorted by: relevance I Author: Alfred Greene, Photographer Page: 1 2 3 4 5 Net Subject I Author: Alfred Greene, Photographer Requires cookie* Museum Subjects: School children California Dublin Schools California Dublin Students		eXtensible Tex					graphic
1 Author: Alfred Greene, Photographer Collection of the Dublin Heritage Museum (196) Heritage Museum Schools California Dublin (1935) Schools California Dublin (39) California Dublin Students California Dublin California Students Dublin California Students California Dublin Students California Dublin California Students California Dublin Requires cookie* 2 Author: Unknown California California Dublin Title: Elizabeth Flanagan Nevin (1901-1902), photograph Image 2 Author: Unknown Title: Elizabeth Flanagan Nevin (1901-1902), photograph Image Potrait photographs (25) Subjects: Teachers California Dublin California Dublin Collection	Results:	196 Items	<mark>.</mark> €0!			Browse b	y Facet <u>Title</u> <u>Author</u>
Dublin (Calif.) 2 Author: Unknown School (30) Title: Elizabeth Flanagan Nevin (1901-1902), photograph image California Dublin Published: 1902 Portrait (25) Subjects: Teachers California Dublin Nevin, Elizabeth Flanagan Collection of the Dublin Heritage Museum	Subjec	<u>Collection of</u> <u>the Dublin</u> <u>Heritage</u> <u>Museum</u> <u>Schools</u> <u>California</u> <u>Dublin</u> <u>Pioneer</u>	(39)	·	Title: Published: Subjects:	Murray Public School, (1935), photograph Image 1935 School children California Dublin Teachers California Dublin Schools California Dublin Req Students California Dublin Collection of the Dublin Heritage Museum Req	uires cookie*
Dublin Similar Items: Find Requires cookie* cookie* cookie*	•	Dublin (Calif.) School children California Dublin Portrait photographs - - California	(30)	-	Title: Published: Subjects:	Elizabeth Flanagan Nevin (1901-1902), photograph Image 1902 <u>Teachers California Dublin Nevin, Elizabeth Flanagan Collection of the Dublin Heritage Museum</u>	



Caveats

As with any web archive, the crawler is good, but not always perfect!

 Full-text index of 16 TB of data
 Some behaviors designed to help rank and navigate such a large body of content

Beta Interface

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End of Term Web Archive

US Federal Government Websites 2008-2009

Home

Search Full Text

Site List

Overview

Project Background

Project Partners

End of Term 2012

The End of Term Web Archive documents the United States Government's World Wide Web presence during the transition between the administrations of President George W. Bush and President Barack Obama.



Committee on Natural Resources, Republican Site – Sep. 15, 2008

Use this archive to:

Browse over 3000 U.S. Govt. websites Search the full text of over 160 million files

Explore Data

Contact Us Help

The 2008 End of Term web archive contains over 16 terabytes of data collected from U.S. Government agency websites between September 2008 and November 2009.

eotarchive on Twitter

Join us Monday, Oct 17th at the Federal Depository Library Conference for a project overview & demo! http://t.co/T0w9ZP6V

Jul 2011 – Cooperative Archiving: Event Harvesting in Perspective @NDIIPP #pub http://t.co/myzfecWj

Jul 2011 – The End of Term Was Only the Beginning @NDIIPP #pub http://t.co/2gyDHAd4

May 2011 – Curation of the End of Term Archive. #UNT #pub http://t.co/50J3nnW4

Dec 2010 – Findings of the Web Archive Survey of Federal Depository Libraries #UNT

Full text search

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Archival Search Sample XSLT

This simple XSLT demonstrates the transformation of OpenSearch XML results into a fully-functional, human-friendly HTML search page. No JSP needed.

Search for no child left behind	Search	🗆 HTML	🗆 PDF	🗆 MS Word	
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Results 1-10 of about 548,834 (2.341 seconds)

1. No Child Left Behind - ED.gov

No Child Left Behind - ED.gov Advanced Search Students Parents Teachers Administrators NCLB Overview Stronger Accountability More Local Freedom Proven Methods Choices for Parents A-Z Index About ED Budget & Performance Press Room Publications Teaching Resources FAQs Contact Help Jobs at ED Online Services Recursos en español State Information Web Survey Features A-Z Index Find your way around the NCLB section. GO > NCLB Policy Policy documents on accountability, choice, SES, teacher quality, and more. GO > NCLB State Status See the status of your state's efforts to achieve NCLB goals. GO... Program NCLB Policy Letters No Child Left Behind Programs By Subject By Title By CFDA# Search News... Contacts Budget Annual Reports and Plans Jobs at ED Inspector General No FEAR Act Data Site Policies...

http://www.ed.gov/ndb/landing.jhtml - 35k - text/html <u>All versions (1)</u> - <u>More from ed.gov</u>

2. Friday, January 12, 2007 - Texas Times: Reinvigorating No Child Left Behind

Friday, January 12, 2007 - Texas Times: Reinvigorating **No Child Left Behind**... http://cornyn.senate.gov/calendar/2007/01/12/reinvigorating-no-child-left-behind/index.html - 1k - text/html <u>All versions (1)</u> - <u>More from senate.gov</u>

3. President Bush Discusses No Child Left Behind

President Bush Discusses **No Child Left Behind** Skip Main Navigation PRESIDENT | VICE PRESIDENT... Audio Photos En Español Fact Sheet: The **No Child Left Behind** Act: Challenging Students... objective. And the **No Child Left Behind** Act was all part of making sure that we get it right in the schools... **No Child Left Behind** says, look, we trust the local folks. I don't want Washington, D.C. running... the education system functions for all. And that's the spirit of **No Child Left Behind**. By measuring... things that I think is most important about the **No Child Left Behind** Act is that when you measure... unfair to the children. And the **No Child Left Behind** Act demands result for every **child**, for the good... time to reauthorize the **No Child Left Behind** Act, my attitude is, instead of softening **No Child Left**...

http://www.whitehouse.gov/news/releases/2006/10/20061005-6.html - 43k - text/html All versions (1) - More from whitehouse.gov

4. No Child Left Behind

No Child Left Behind Skip Main Navigation PRESIDENT | VICE PRESIDENT | FIRST LADY | MRS. CHENEY... Education So That No Child is Left Behind As America enters the 21 st Century full of hope and... met. In America, no child should be left behind. Every child should be educated to his or her full... establishing annual assessments in grades 3-8, within two years of enacting this plan. "No Child Left Behind... of disadvantaged students will be recognized and rewarded with "No Child Left Behind" bonuses... in closing the achievement gap will be honored with awards from a "No Child Left Behind" school... eligible to receive a one-time the achievement gap.

Site List

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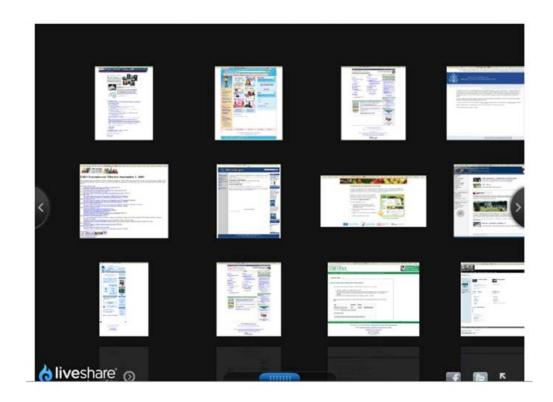


in these catalogs is also searchable over the Internet. This page links to the two methods for search the main Library of Congress Online Catalog and to several

• usa (1)

Browse by Image

Internet Archive tools for visualizing web archived data ("explore data")



Forthcoming: Tag cloud extracted from metadata

109th Congress 110th Congress AIDS AmeriCorps BLM California Congress Congressman DOE Education Employment Environment Federal Federal government FirstGov GIS Government Home Home Page House of Representatives JPL Jet Propulsion Laboratory Jobs NASA NCCC NIH NIST NOAA National Representative Texas U.S. U.S. Congressman U.S. Geological Survey US USA USDA USGS United States VISTA agriculture air quality animals astronomy astrophysics awards basin benefits biology birds budget business cancer cartography chemistry children climate commerce communications CONGRESS congressman conservation council of economic advisors data database department development disability district drought earth earth science earthquake earthquakes earthscience ecology economic indicators ecosystem education electronic employment endangered energy engineering environmental executive agencies exports federal federal government fish fisheries flood geographic geography geology geophysics government grants groundwater habitat health health care history home home page homeland security homepage housing hurricane hydrologic hydrology information insect insurance international jobs lake learning legislative branch mammal manufacturing maps marine medical military national service navigation news non-profit observatory ocean oil opportunities outreach partnerships physics policy pollution publications quality rader recreation refuge regulations remote sensing representative research resources river safety satellite Science security seismic seismicity seismology service services small business software space species standards statistics stream streamflow students technology topography trade training transportation tsunami united states veterans volcances volunteer volunteers Water water quality watershed weather wetland wildlife x-ray youth

Classification of the End-of-Term (EOT) Archive: *Extending Collection Development Practices to Web Archives* University of North Texas Libraries | IMLS National Leadership Grant

Project Background

Archive Classification

SMEs: SuDocs Classification Scheme

Link Analysis: Web graph

Cluster Analysis

SMEs : Cluster Tagging

Conclusion



Background

- Problem
 - The absence of descriptive metadata or classification schemes thwarts discovery & access
 - WARC files (ISO 28500)
 - Specifies formats needed for storage, management, and exchange of data objects (or resources); Not designed for user access
 - Wayback access
 - Need to know a resource's URL
- Objective: Classify materials in accord with the Superintendent of Documents (SuDocs) Classification Numbering System
- Outcome: Enable librarians to utilize existing selection practices to identify materials in the EOT Archive



Classification: Size Challenge

 U	

Domains	# URLs	Subdomains
gov	137,847,822	14,339
mil	3,555,425	1,677

SURTS: Reordering URLs by domain structure

URL: http://marriagecalculator.acf.hhs.gov/marriage/ SURT: http://(gov,hhs,acf,marriagecalculator,)

Domain
$$1$$
 2 3
Subdomains
Unique 1st Level Subdomains = 1,647
After validation = 1,151 Subdomains

Human Classification

- SuDocs Classification Scheme
- 10 SMEs classified 1,151 URLs (230/SME)
 - **70%** agreement (*n* = 808)
 - Unable to classify: 18 in scope; 36 out of scope
 - **30%** disagreement (*n* = 343)
- 3 arbitrators classified 343 URLs
 - Assigned SuDocs authors to 286 URLs
 - Unable to classify: 42 in scope; 15 out of scope



Classification: Findings

- Overall, SuDocs Scheme worked well
- Assigned SuDocs authors to 1,040 subdomains
 - 1,111 authors (1,040 + 71 multiply authored sites)
- Major Classification Challenge
 - Determining primary author among multiple authors
- Weaknesses
 - Lacks sufficient granularity for subordinate agencies
 - Forced to classify at high level



Link Analysis

Web graph

Identified # of outlinks and inlinks for each URL

- Subdomains
 - 1,151 1st level subdomains within .gov & .mil domains
 - Multiple URLs per subdomain
- Explored cluster analysis algorithms

Best result: Linlog Coordinates with Agglomerative Hierarchical Clustering



Cluster Analysis

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Set limit on number of clusters to identify
 First analysis: Set of 55 clusters
 Second analysis: Set of 75 clusters

Cluster Analysis								
55–Set		75–Set						
39	Identical	39						
16	13 / 2 2 / 3 1 / 4	36						

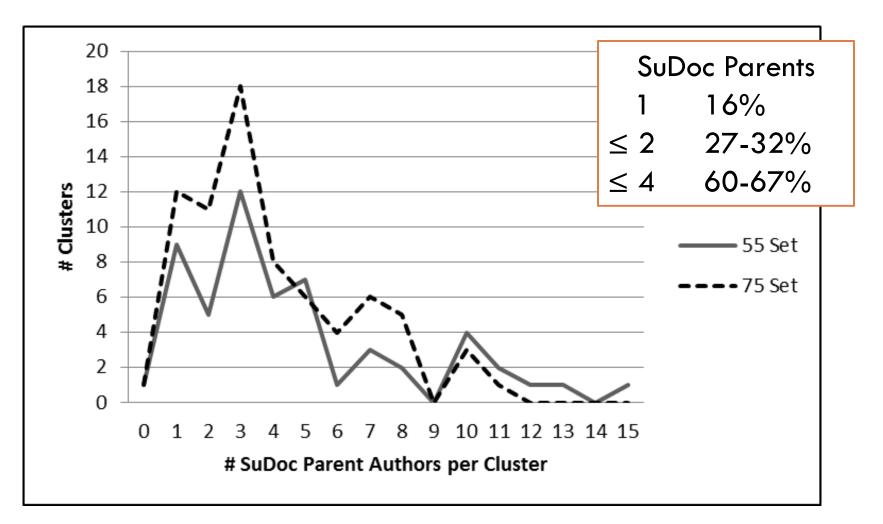
Clusters 55-24 & 75-31

Identical Subdomains

- fdic.gov
- fdicconnect.gov
- fdicig.gov
- fdicoig.gov
- fdicseguro.gov
- myfdicinsurance.gov
- egrpra.gov



Findings: SuDoc Classification





Topical Evaluation of Clusters

Total of 130 clusters tagged (55+75)

- 12 SMEs: Each cluster tagged by 3 SMEs
 - 52 Clusters tagged 3 times
 - 39 Clusters tagged 6 times

Cluster Analysis							
55–Set		75–Set					
39	Identical	39					
16	Unique	36					



Tag Analysis

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- How topically related are the tags?
- Two researchers independently assigned

"relatedness category" (RC)

- RC 1 = little or no relation
- RC 2 = somewhat related
- **RC 3** = strongly related

Cluster 55–19

2 Subdomains

- federalregister.govfedreg.gov
- Cluster **SME 40 SME 32 SME 42** 55-19 federal • federal federal regulations regulations regulations **RC 3** administrative • law



Findings: Topical Evaluation

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Relatedness Categories (N = 130**)**

- **RC** 1 = little or no relation (n = 27; 21%)
- **RC** 2 = somewhat related (n = 24; 18%)
- **RC** 3 = strongly related (*n* = 79; 61%)

Clusters	RC 1	RC 2	RC 3
130	21%	18%	61%
75–Set	21%	17%	61%
55–Set	20%	20%	60%

 Cluster Analysis successfully identified strongly related subject content in the subdomains of 61% of clusters



Impact of Increasing # of Clusters

Clusters	#	RC 1	RC 2	RC 3
Identical	39	18%	10%	72%
All	13 0	21%	18%	61%
Unique in 75– Set	36	22%	14%	64%
Unique in 55– Set	16	25%	31%	44%

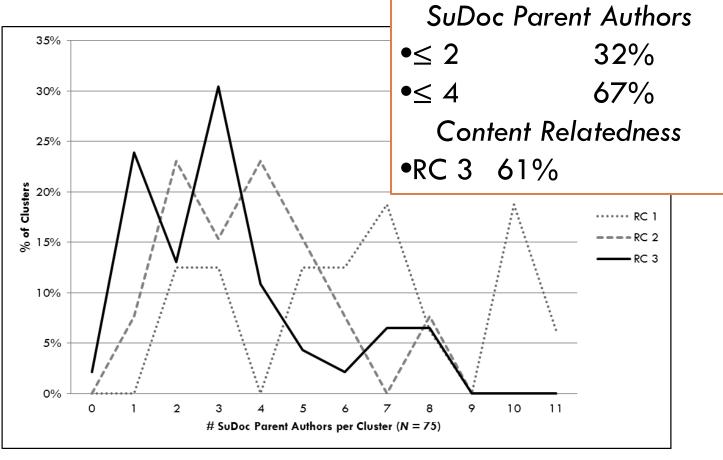
- Identical clusters had the highest percentage of topically related subdomains (72%)
- Unique clusters had a substantially higher percentage of topically related subdomains after subdivision (64% v. 44%)



Conclusion

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Cluster analysis was reasonably effective at organizing the EOT Archive





EOTCD Project Accomplishments

- Selection of Materials in Web Archives
 - **PROBLEM**:
 - Absence of descriptive metadata or classification schemes thwarts discovery & access; URL must be known
 - RESULT:
 - Cluster analysis holds promise for organizing Web archives into topically related groupings
 - Involving SMEs in limited-scope classification activities may generate meaningful descriptive metadata for resources in focused Web archives



What's Next

- Using the Web graph
 - How do we leverage the graph for identifying content?
- Describing the collection
 - How can we engage faculty with our Web archives?
- Identifying change
 - How is the .gov Web changing over time?
- Full-text search
 - What other improvements to Web archive search can be made?



Building the 2012 Archive

End of Term Presidential Harvest 2012	Other Projects Help
Project Home About This Project	Add A URL
	Number of URLs Nominated: 0 Number of Nominators: 0
Search by URL	
http:// Search for an existing URL in the system.	submit
Browse URLs	

Timeframe for 2012 project

2012

- Summer 2012: Recruitment of curators/nominators to help identify additional websites for prioritized crawling.
- July/August 2012: Bookend (baseline) crawl of government web domains begins.
- Summer/Fall 2012: Partners will crawl various aspects of government domains at varying frequencies, depending on selection polices/interests. Team will determine strategy for crawling prioritized websites.
- November February 2012–13: Crawl of prioritized websites.

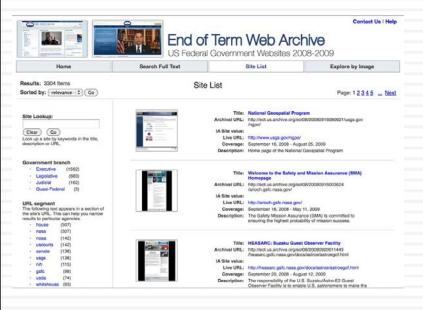
- January 2013: Depending on the outcome of the election, focused crawls will be conducted as needed during this period.
- Spring or Summer 2013: Bookend crawl, plus additional crawl of prioritized websites as determined by team.

What You Can Do to Help

- Help nominate URLs for 2012:
 - Any nominations welcome, any amount of time you can contribute
 - Need particular help with:
 - Judicial Branch websites
 - Important content or subdomains on very large websites (such as NASA.gov) that might be related to current Presidential policies
 - Government content on non-government domains (.com, .edu, etc.)
 - Nomination Tool:

http://digital2.library.unt.edu/nomination/eth2012/

Questions?



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Follow us on twitter! @eotarchive

http://eotarchive.cdlib.org/