9-24-2013

Evaluating the SiteStory Transactional Web Archive with the ApacheBench Tool

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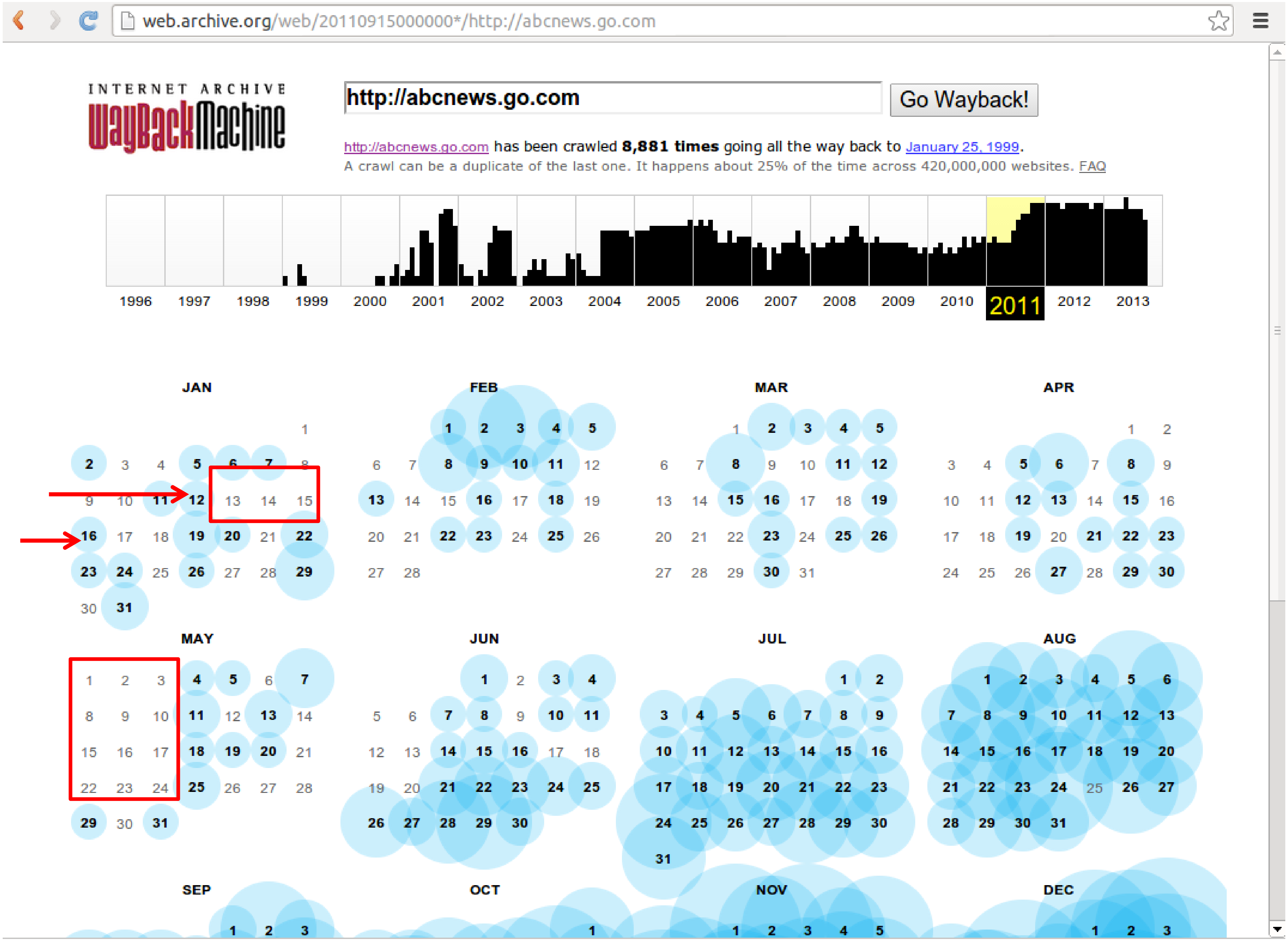
TPDL 2013, Sept 24 2013



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http://abcnews.go.com has been crawled **8,881 times** going all the way back to January 25, 1999.

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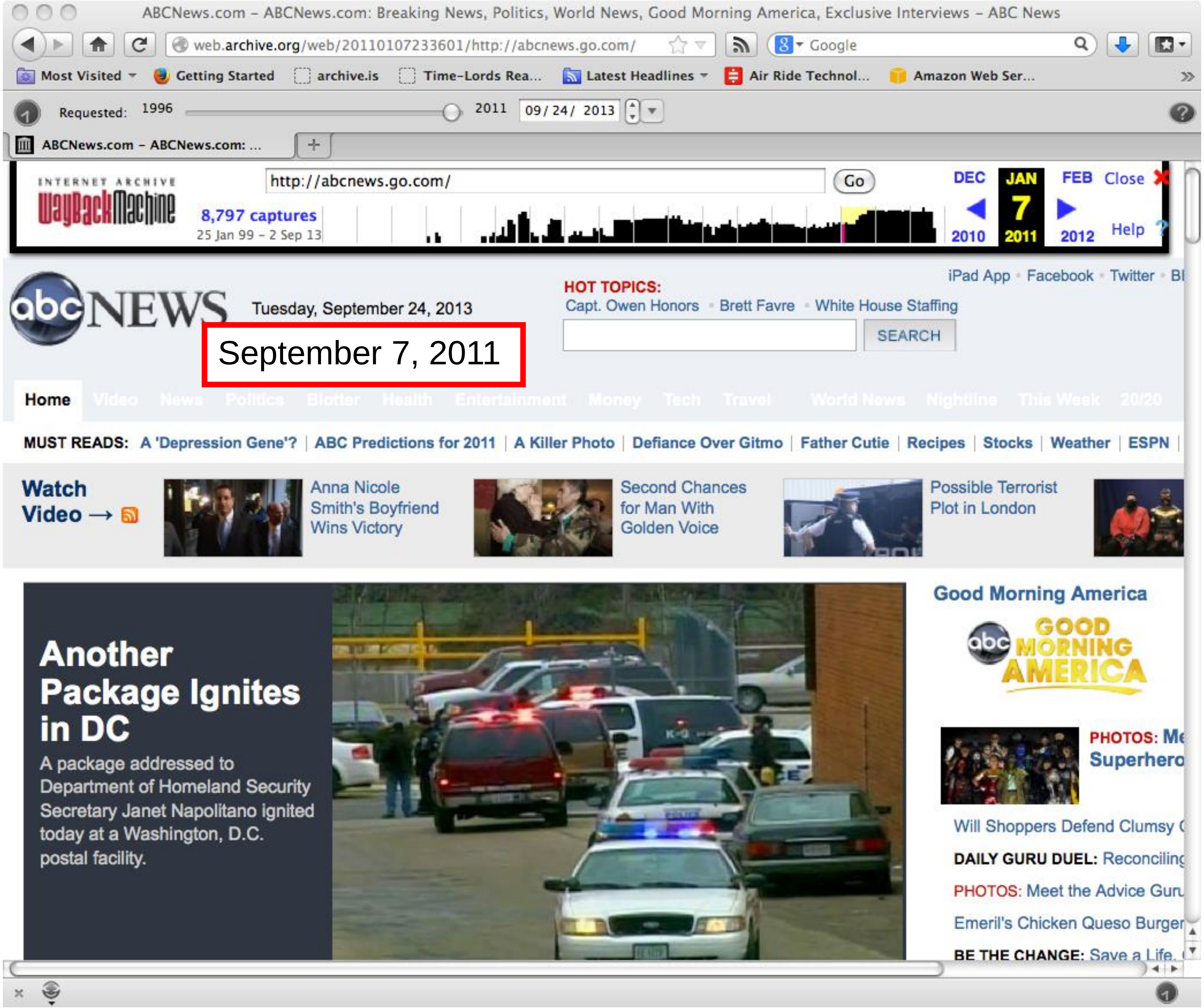

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Good Morning America

GOOD MORNING AMERICA

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Superhero

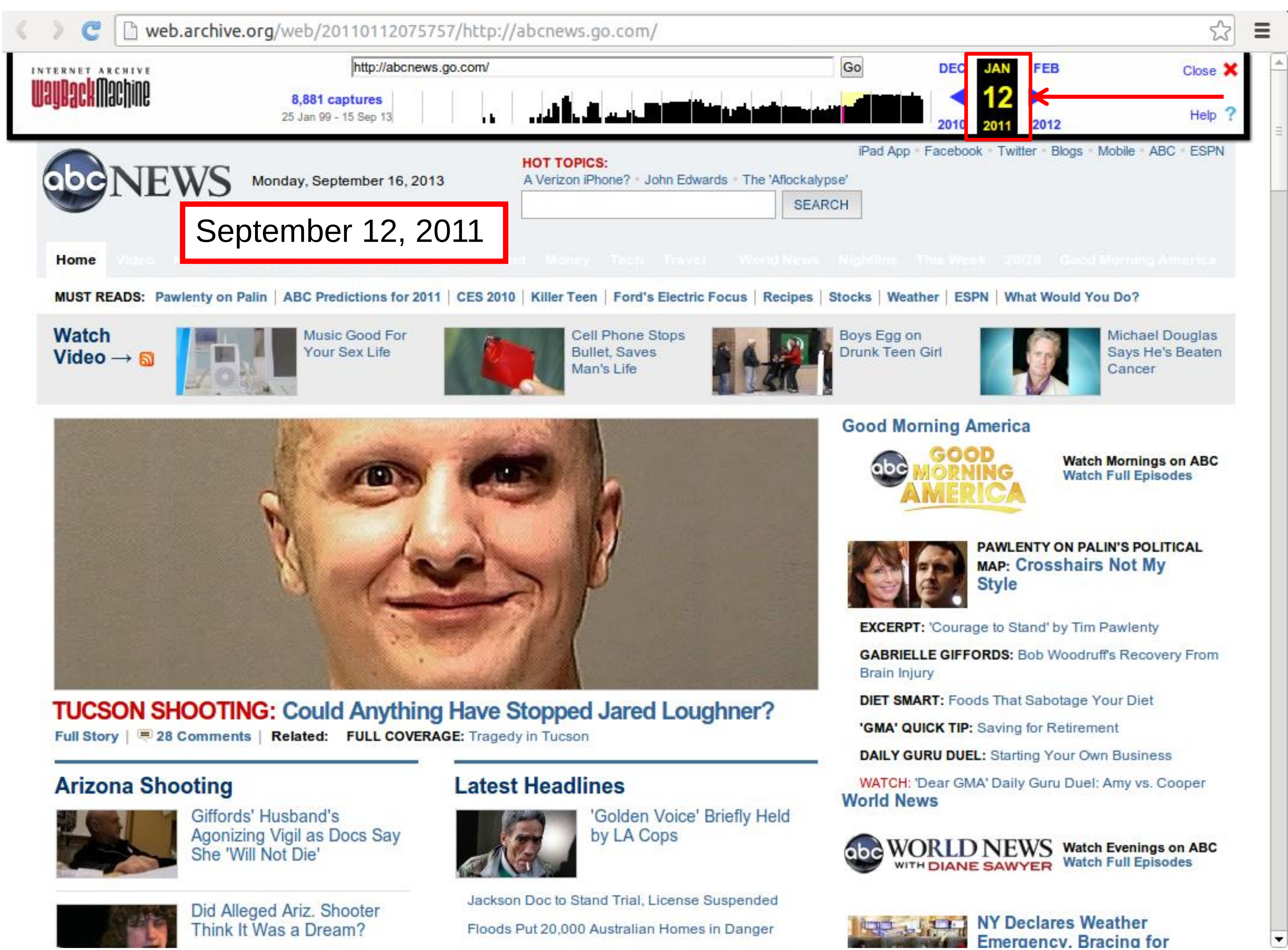
Will Shoppers Defend Clumsy (

DAILY GURU DUEL: Reconciling

PHOTOS: Meet the Advice Guru

Emeril's Chicken Queso Burger

BE THE CHANGE: Save a Life.



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ABC NEWS

Monday, September 16, 2013

September 12, 2011

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Giffords' Husband's Agonizing Vigil as Docs Say She 'Will Not Die'

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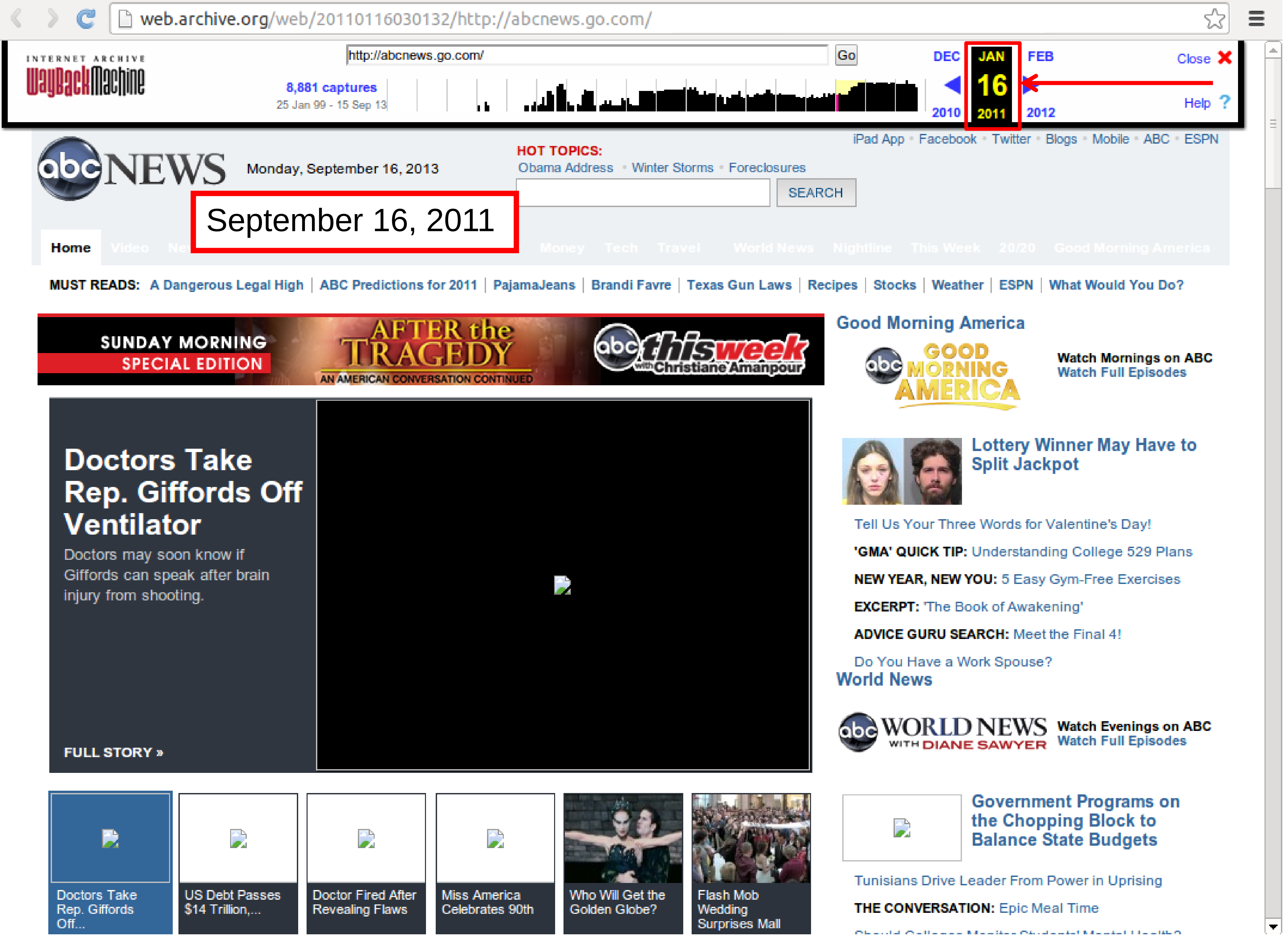

web.archive.org/web/20110116030132/http://abcnews.go.com/

INTERNET ARCHIVE WaybackMachine

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8,881 captures
25 Jan 99 - 15 Sep 13

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abc NEWS Monday, September 16, 2013

HOT TOPICS:
Obama Address • Winter Storms • Foreclosures

SEARCH

September 16, 2011

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SUNDAY MORNING SPECIAL EDITION
AFTER the TRAGEDY
AN AMERICAN CONVERSATION CONTINUED
abc thisweek with Christiane Amanpour

Doctors Take Rep. Giffords Off Ventilator

Doctors may soon know if Giffords can speak after brain injury from shooting.

FULL STORY »

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THE CONVERSATION: Epic Meal Time

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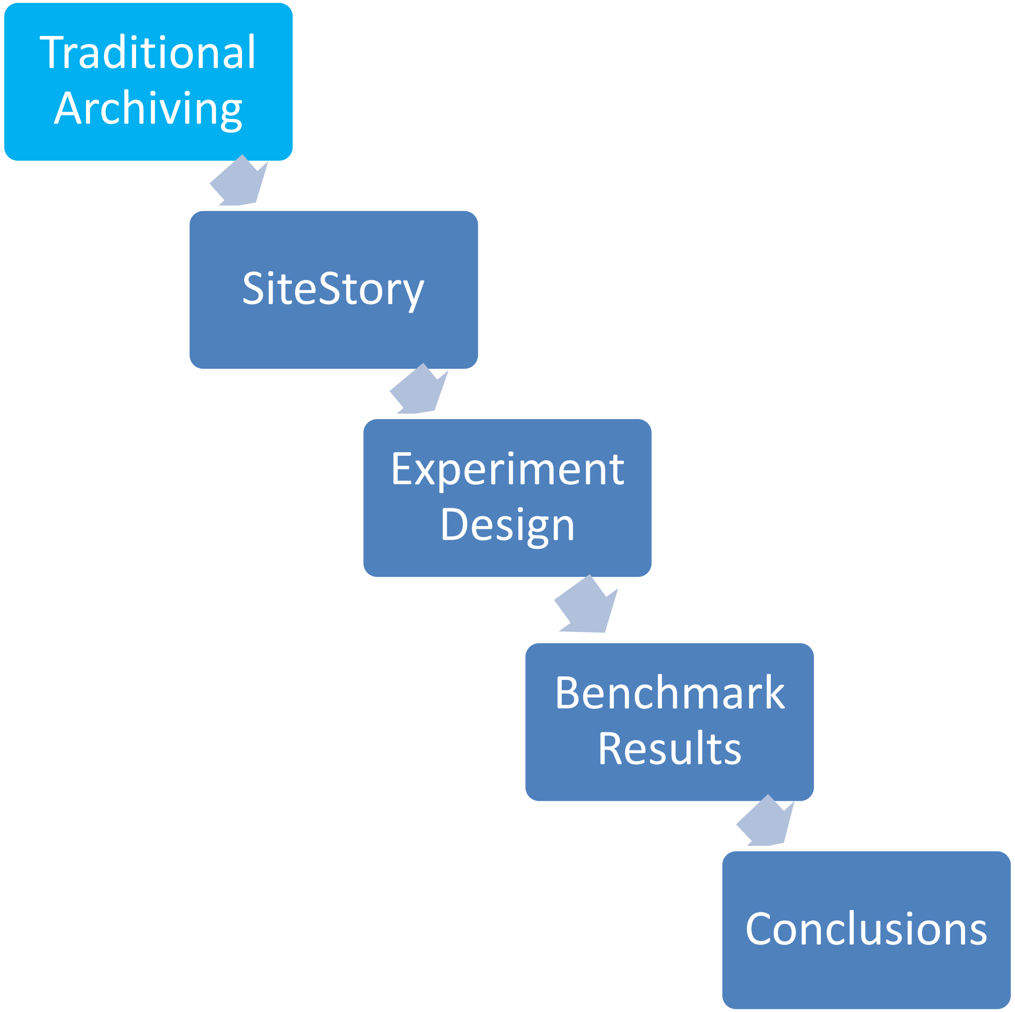
Problem

- People view ABC News all the time
- No mementos for "all the time"
  - Stories missing or incomplete
- Possible solutions:
  - archive.org: crawl more often (how often is often enough?)
  - abcnews.com: install a ***Transactional Web Archive***

Agenda



Traditional Archiving

SiteStory

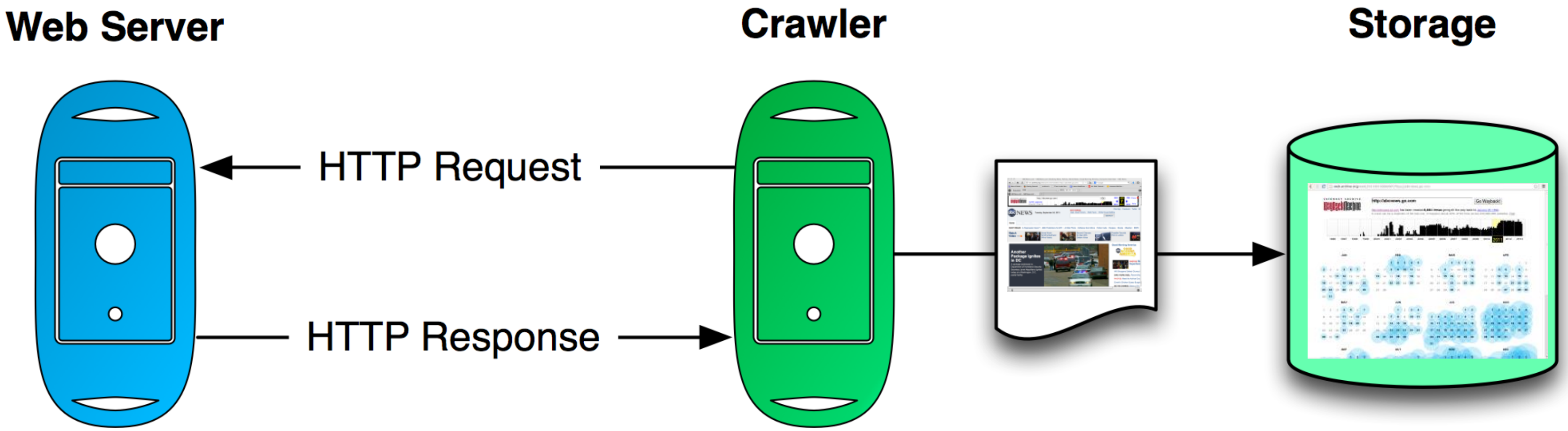
Experiment Design

Benchmark Results

Conclusions

Traditional Web Archiving

- Active crawling
- Heritrix



Web Server

Crawler

Storage

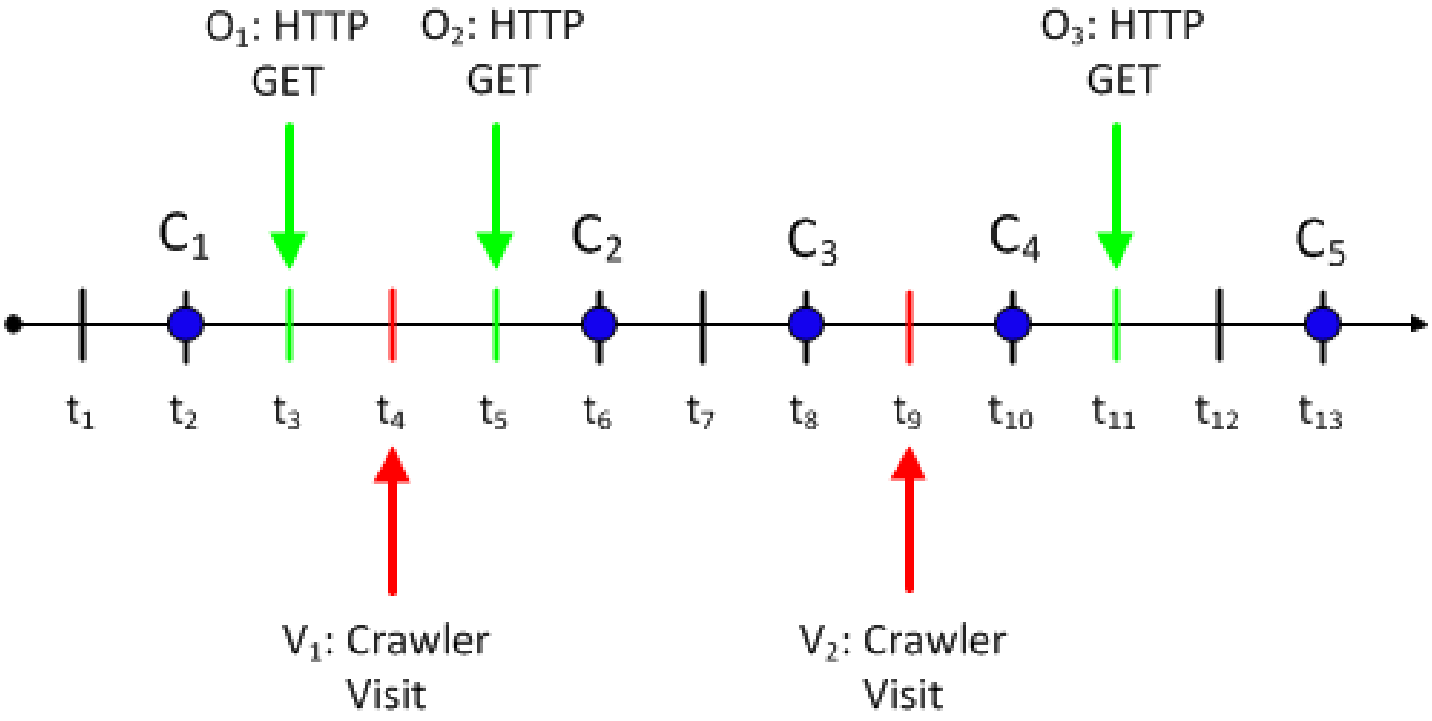
HTTP Request

HTTP Response

Issues with Traditional Web Archiving

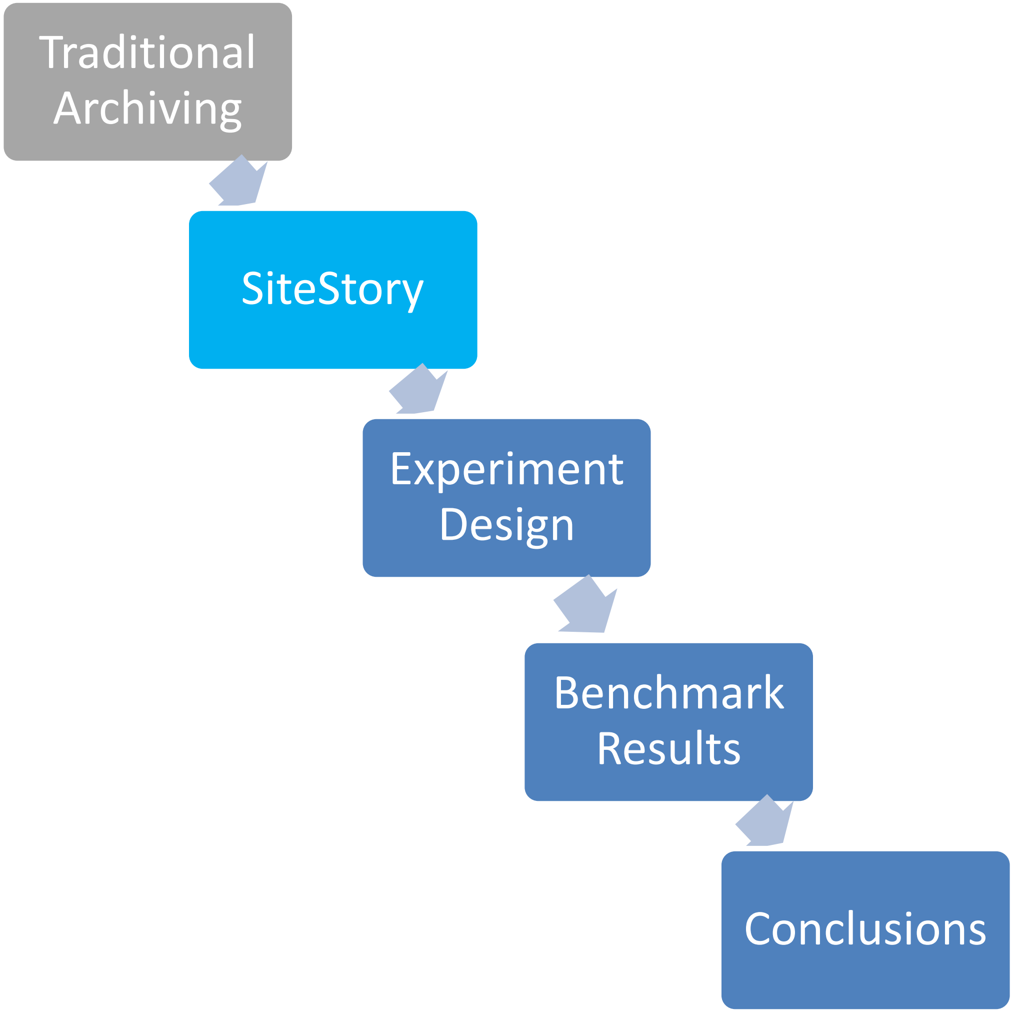
- Request can be rejected (robots.txt, user-agent, IP)
- Can be deceived (geo-location, user-agent)
- Can be trapped (crawl my calendar!)
- Resource-intense (bandwidth)
- Recrawl vs. change-rate

Missed Updates



seen by humans: C_1, C_3, C_4; archived by crawler: C_1, C_3

Agenda



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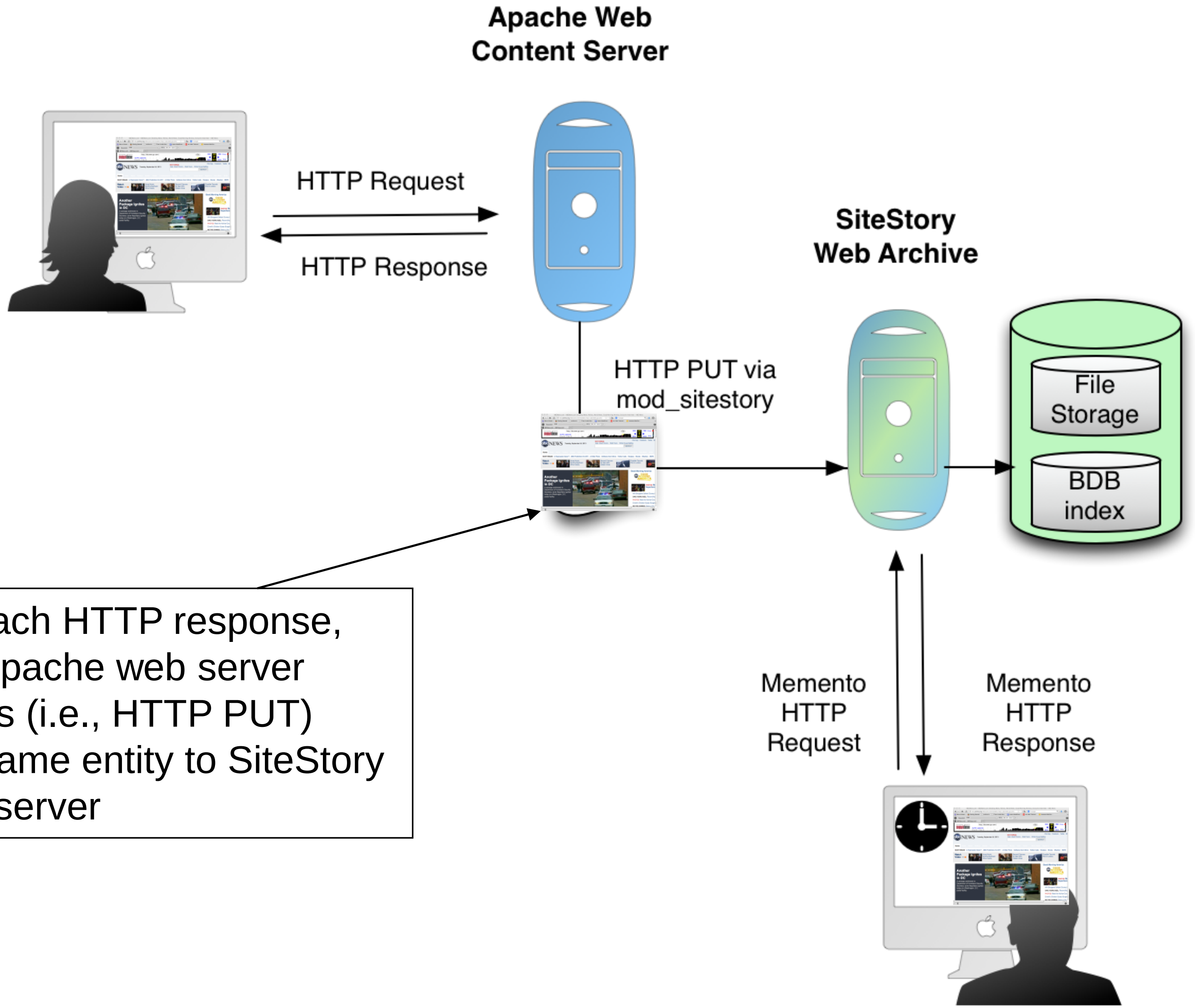
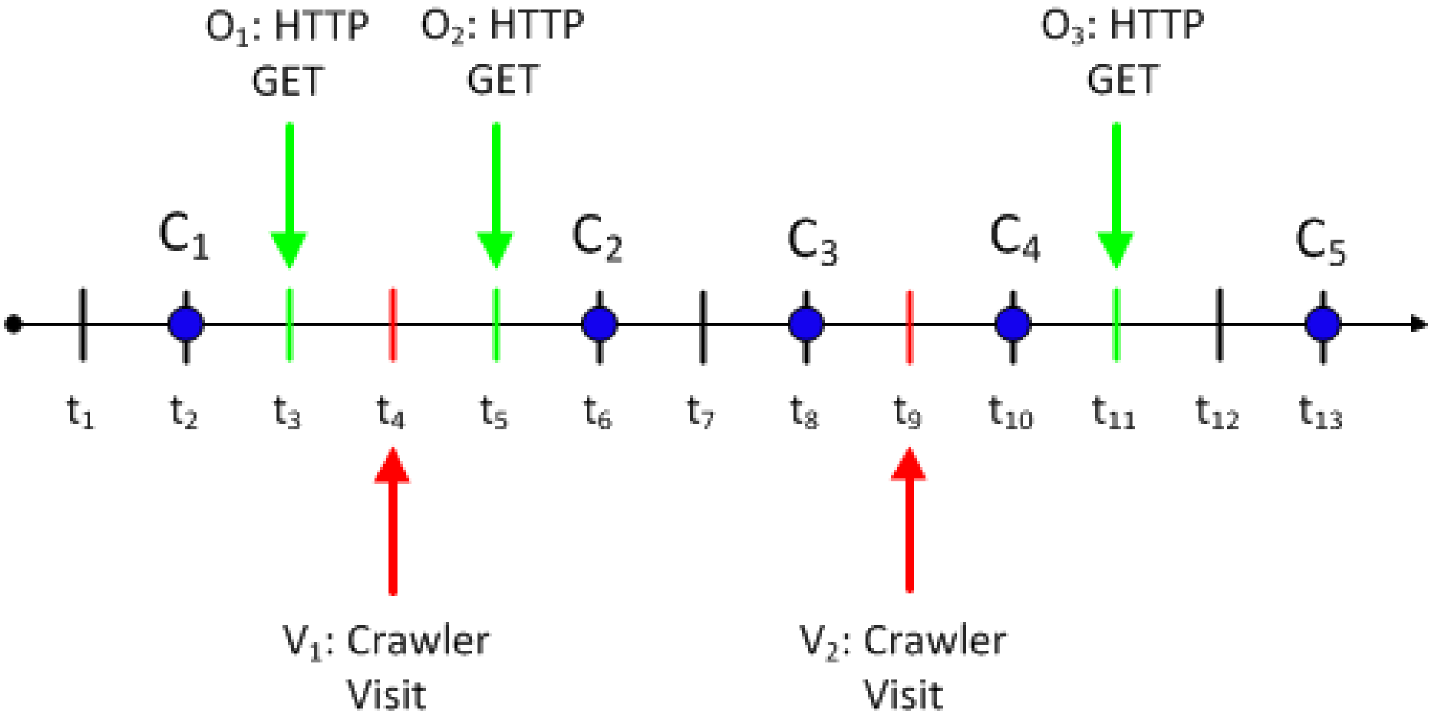


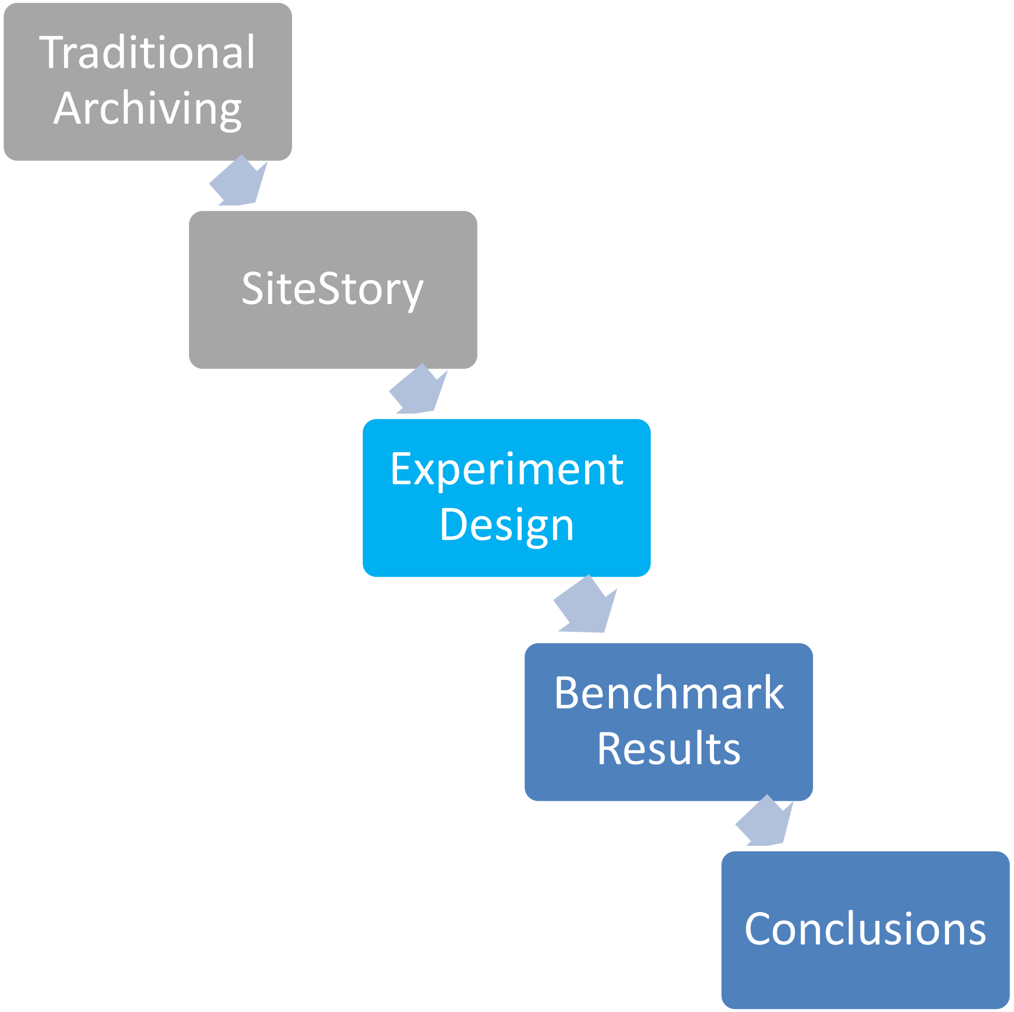
for each HTTP response,
the Apache web server
sends (i.e., HTTP PUT)
the same entity to SiteStory
web server

Now we have them all



seen by humans: C_1, C_3, C_4; archived by transactional archive: C_1, $C_{3,}$ C_4

Agenda



Traditional Archiving

SiteStory

Experiment Design

Benchmark Results

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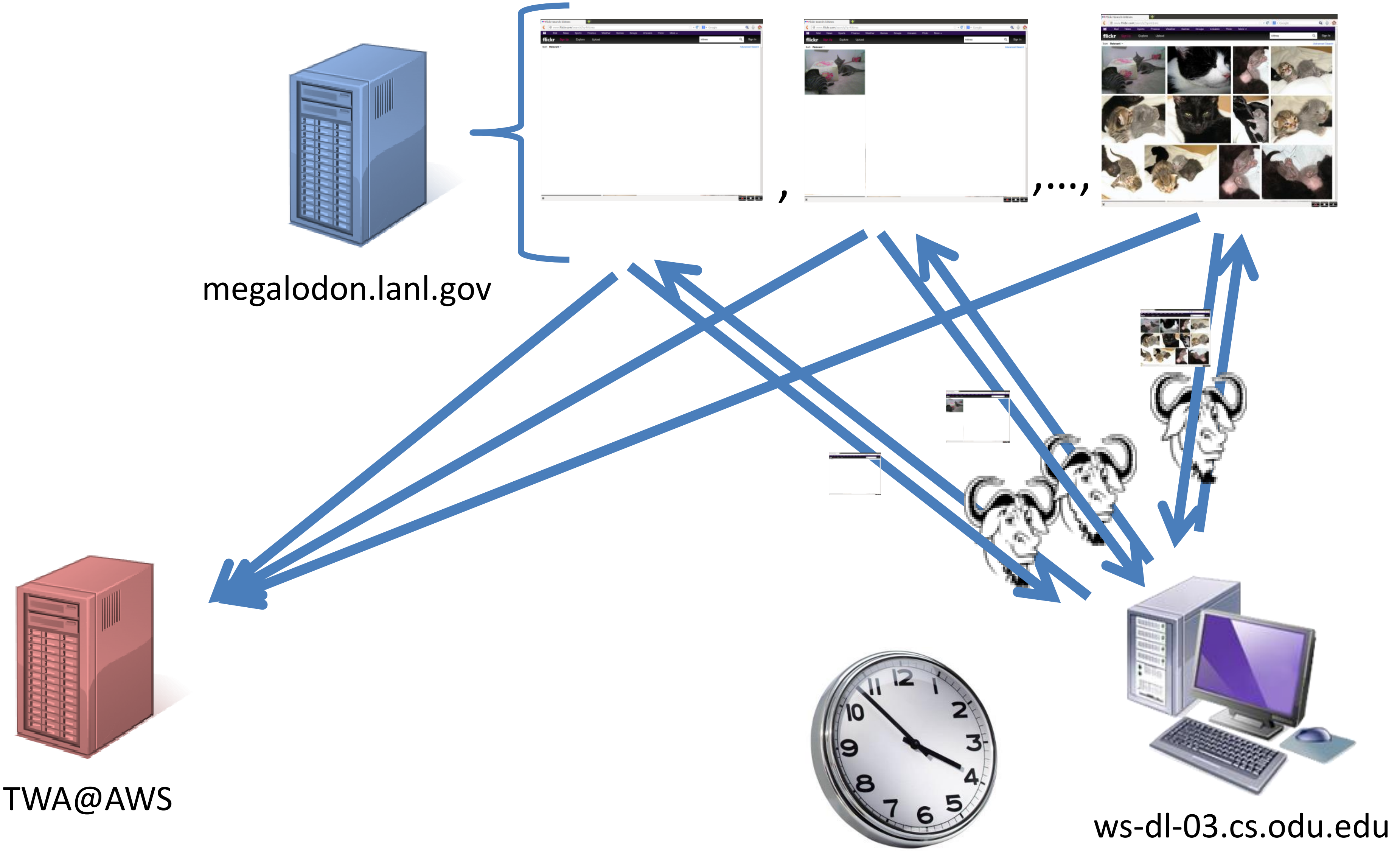
Benchmark with ab

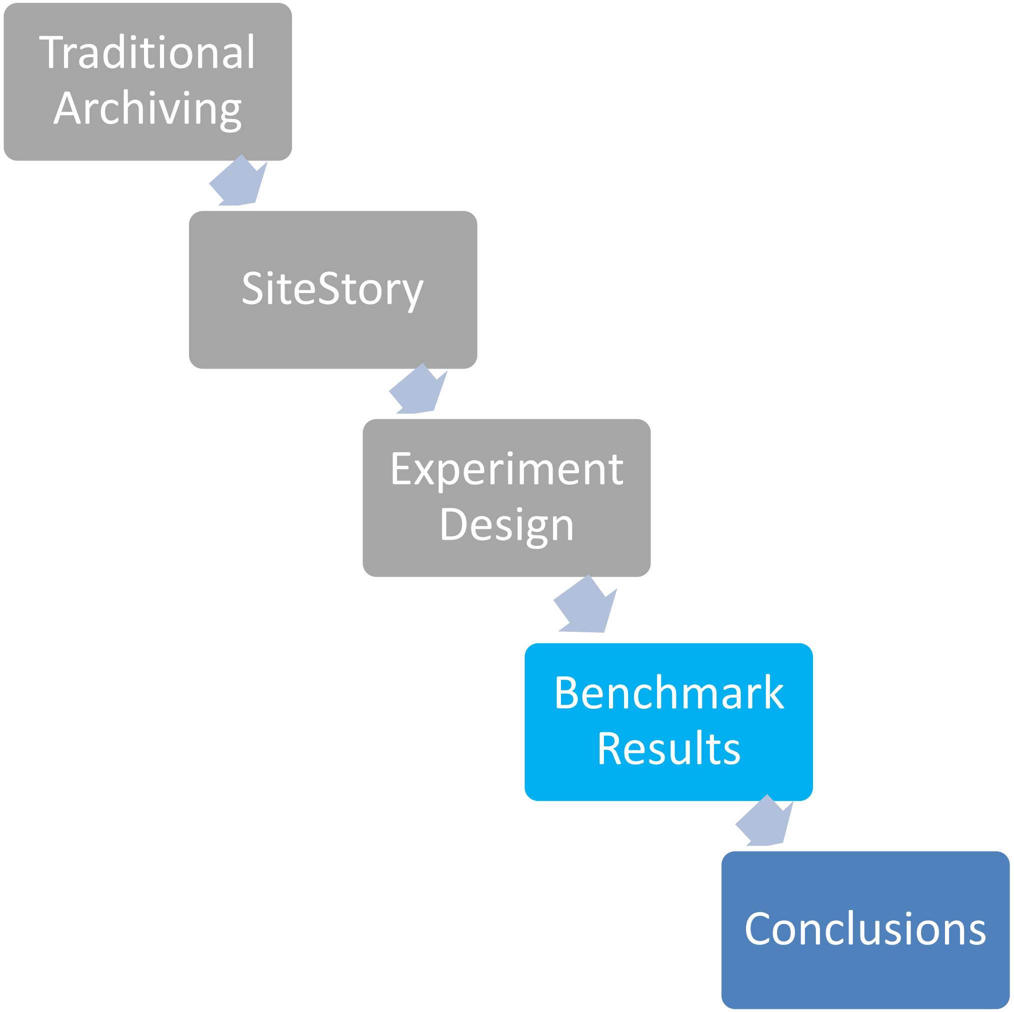
- ApacheBench: ab
  - -n [Number of Connections]
  - -c [Concurrency]
- Benchmarked with SiteStory on & off

x99

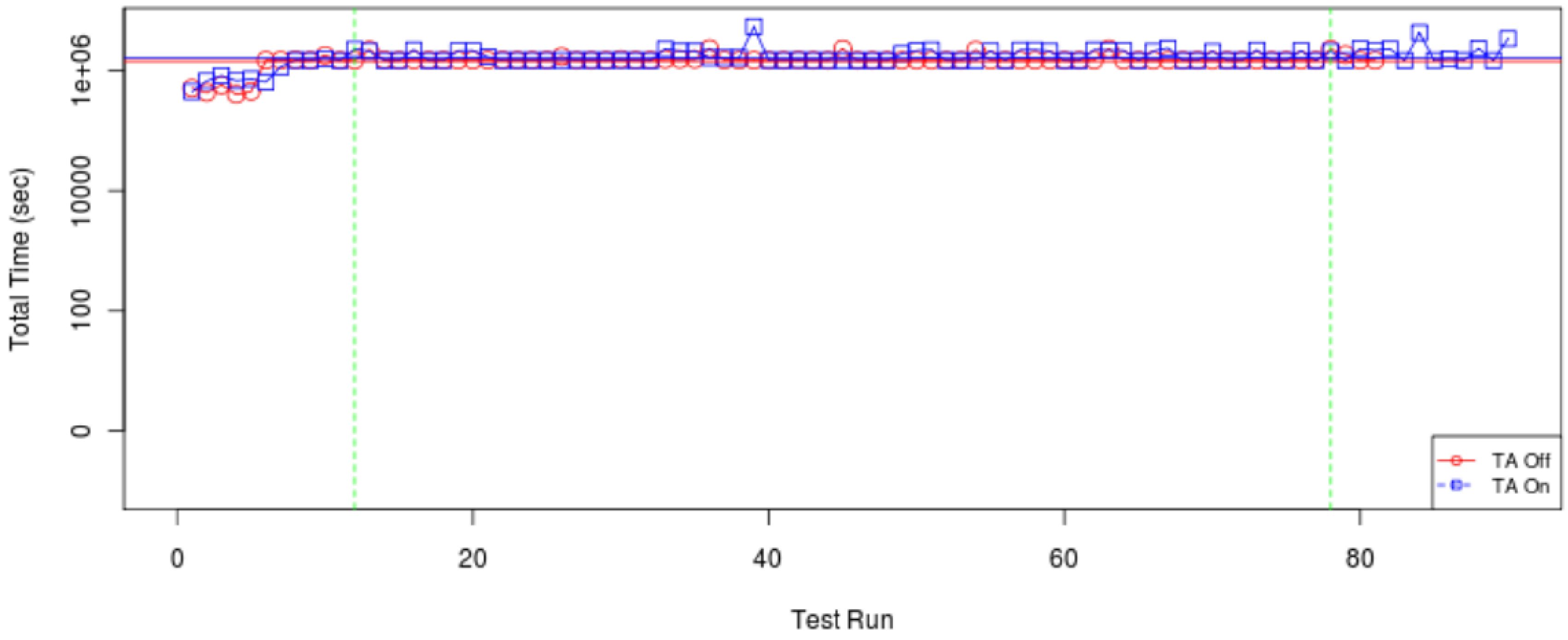
Benchmark with wget



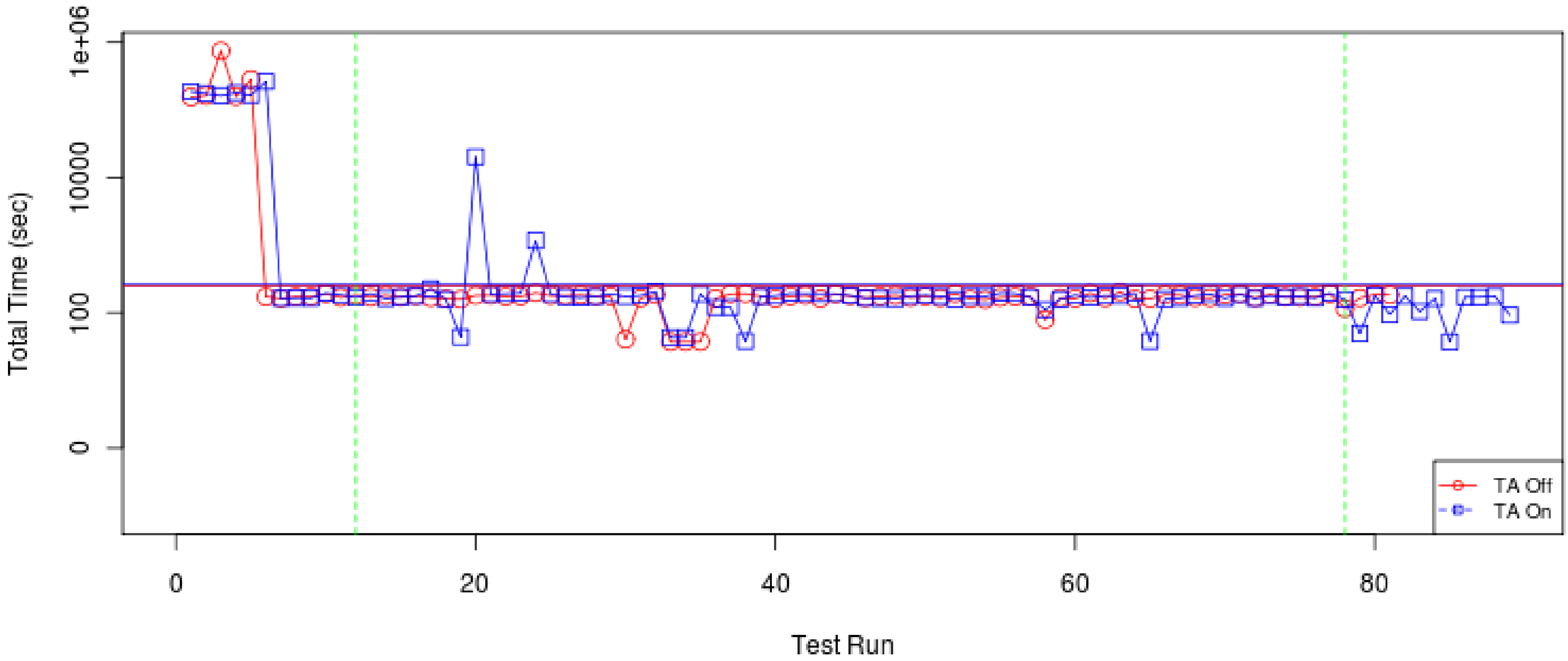
Agenda


Traditional Archiving
SiteStory
Experiment Design
Benchmark Results
Conclusions

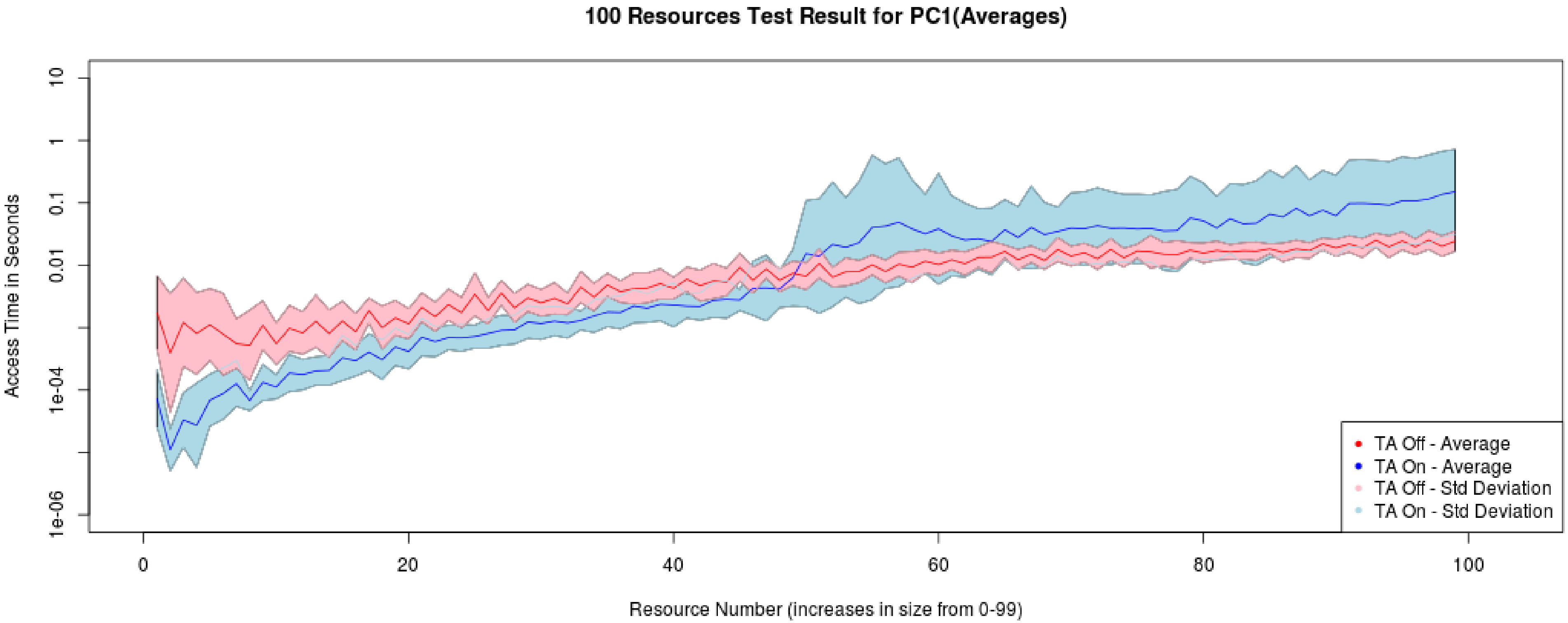
Testing LAN with ab



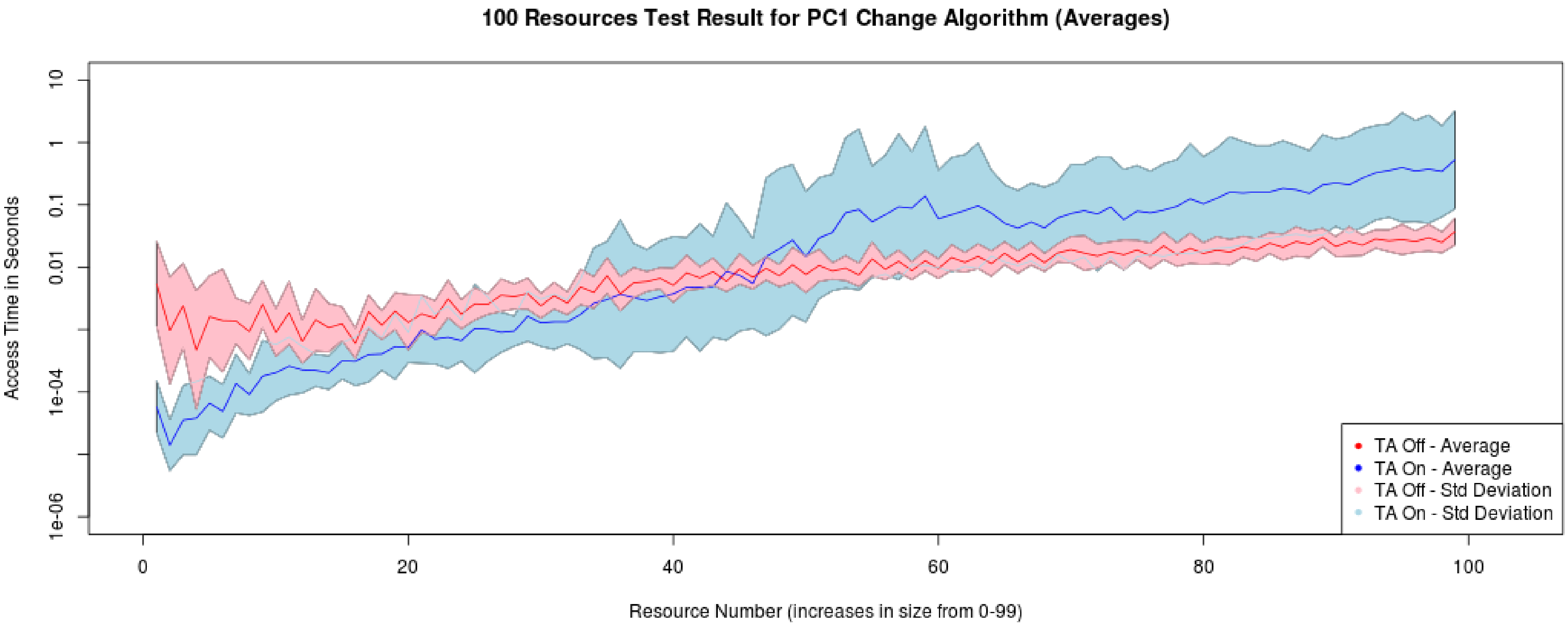
Testing LAN with ab



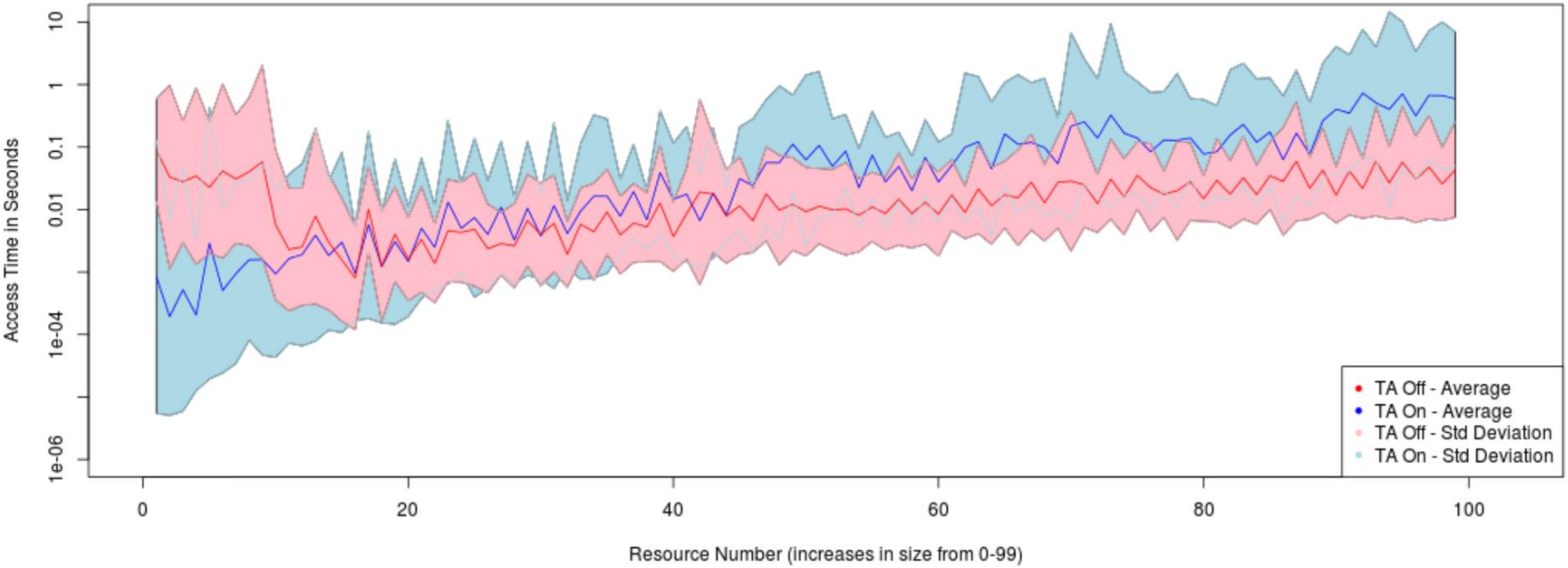
Benchmark with wget (unburdened)



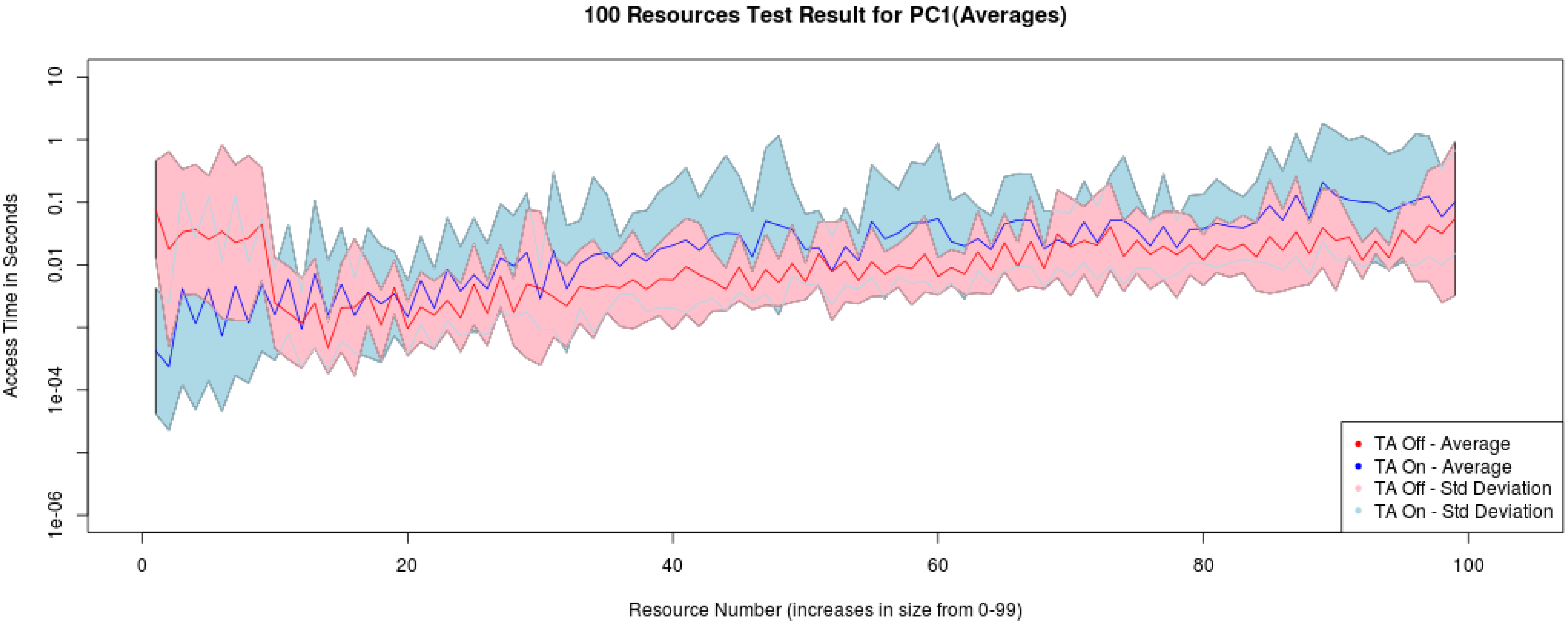
Benchmark with wget (unburdened)



Benchmark with wget (burdened)



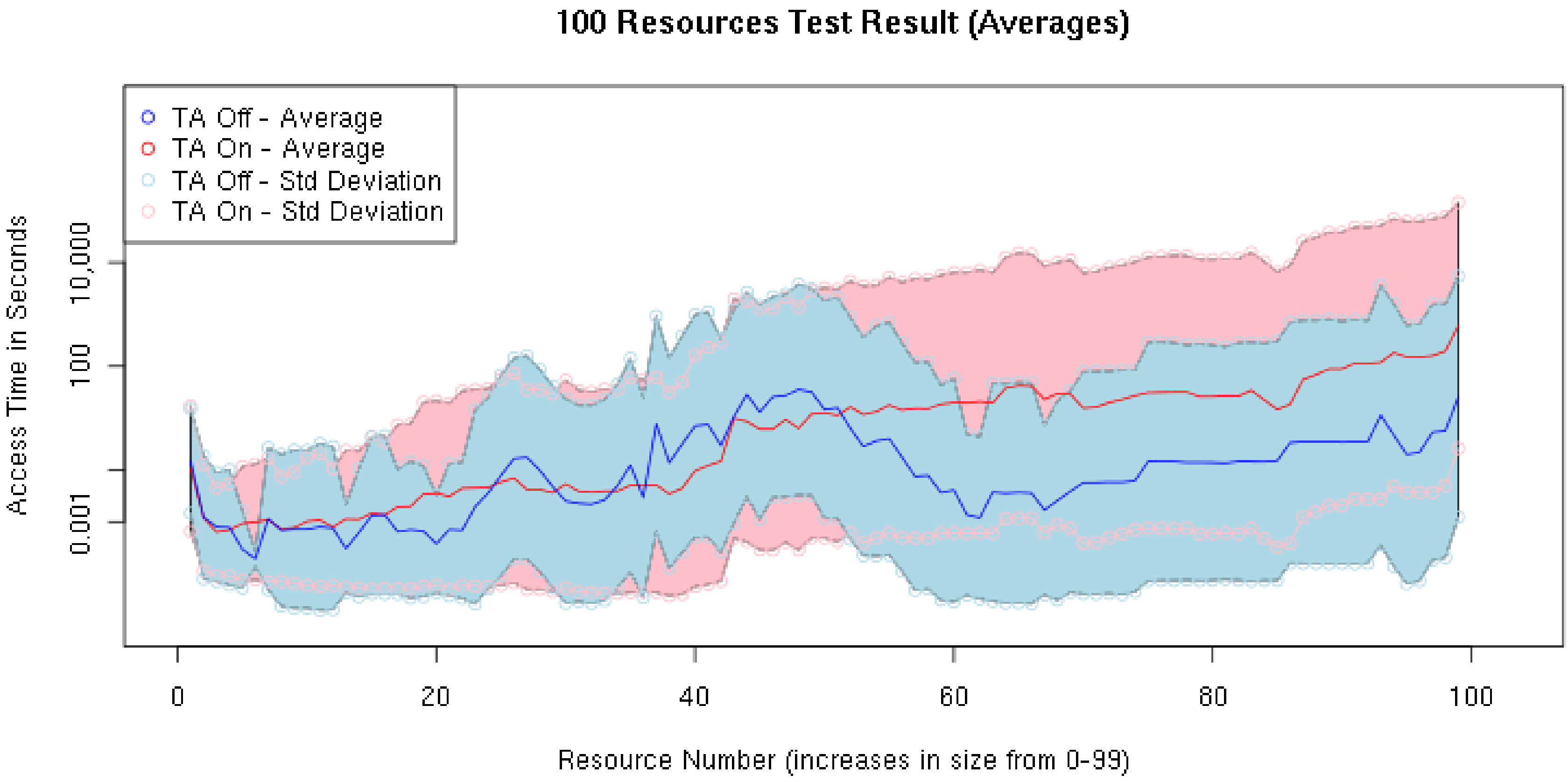
Benchmark with wget (burdened)



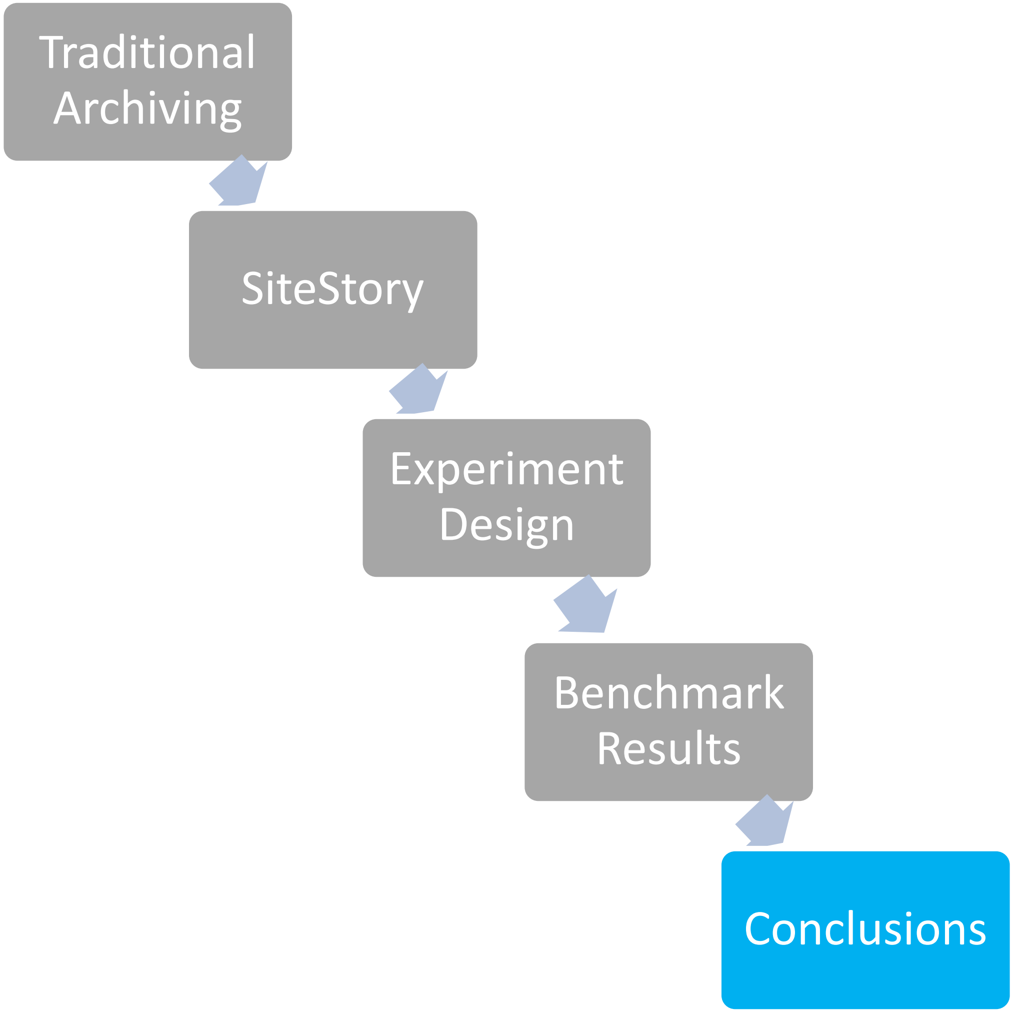
Results

- Negligible difference SiteStory On vs Off
- Limited to local LAN
- Performance over WAN?

WAN Testbed Performance



Agenda



Traditional Archiving

SiteStory

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Conclusions

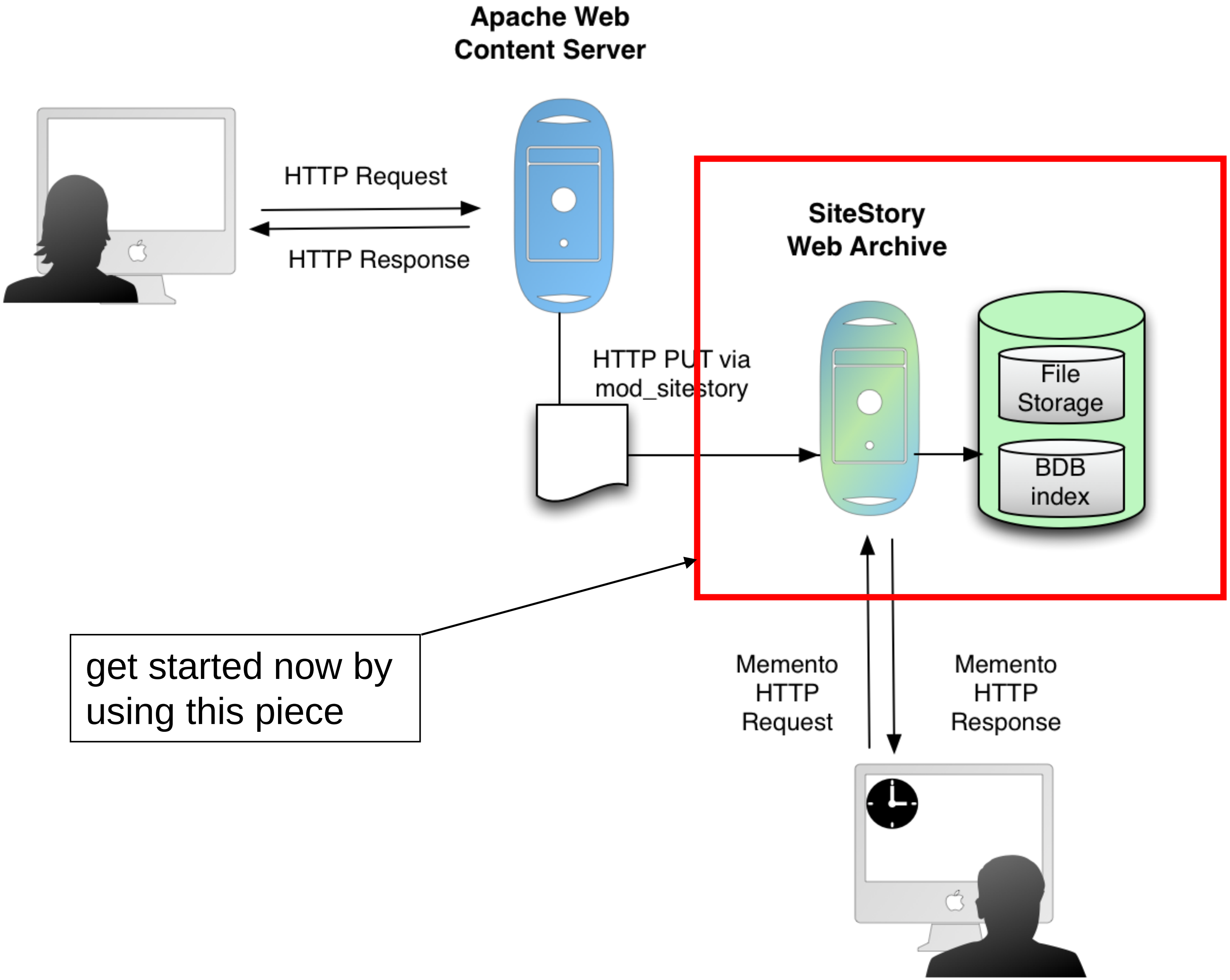
Results

- Distributed: Higher variance
- Increased delay due to network
- On vs. Off Comparison still comparable

Conclusions

- Small performance difference
- No gaps in coverage -- archives *every* HTTP response sent (optimizations possible)

http://mementoweb.github.io/SiteStory/



get started now by using this piece

SiteStory Testbed

- Use *our* SiteStory web archive on *your* server!

1. Install and configure *mod_sitestory* on your Apache Server
2. Send an email containing:
   1. Your contact info
   2. Web server IP address
   3. Web server domain name
3. Happy Sitestory’ing!

- mailto: SiteStory-Testbed@googlegroups.com

Backups

Sample ab output

```
$ ab -n 10 -c 2 "http://www.cs.odu.edu/"
This is ApacheBench, Version 2.3 <$Revision: 655654 $>
…

Server Software:       Apache/2.2.17
Server Hostname:       www.cs.odu.edu
Server Port:           80

Document Path:         /
Document Length:       62289 bytes

Concurrency Level:     2
Time taken for tests:  0.213 seconds
Complete requests:     10
Failed requests:       0
Write errors:          0
Total transferred:     624810 bytes
HTML transferred:      622890 bytes
Requests per second:   47.01 [#/sec] (mean)
Time per request:      42.540 [ms] (mean)
Time per request:      21.270 [ms] (mean, across all concurrent requests)
Transfer rate:         2868.66 [Kbytes/sec] received
```

```
…
Connection Times (ms)
              min  mean[+/-sd] median   max
Connect:        0    1   0.0      1       1
Processing:    27   41  10.8     45      62
Waiting:        3    3   0.4      4       4
Total:         27   41  10.8     45      63

Percentage of the requests served within a certain time (ms)
  50%     45
  66%     46
  75%     46
  80%     46
  90%     63
  95%     63
  98%     63
  99%     63
 100%     63 (longest request)
```