

# Memento Time Travel



Herbert Van de Sompel  
@hvdsomp  
<http://public.lanl.gov/herbertv/>  
Los Alamos National Laboratory

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Lyudmila Balakireva  
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# Memento & Memento Infrastructure Status Quo, Last Year

- IETF RFC 7089 approved
- Significant Memento infrastructure – TimeGate and TimeMap Aggregator - operated by my team
- Significant adoption of Memento protocol by web archives
- Significant use of Memento infrastructure for research purposes
- Memento for Chrome extension to allow end-users to experience Memento Time Travel

A lot of investment for ... err ... modest return



# Memento & Memento Infrastructure Focus Areas, This Past Year

- Increase visibility
- Support 3<sup>rd</sup> Party Development
- Increase robustness
- Increase reach




# Memento & Memento Infrastructure Focus Areas, This Past Year

- **Increase visibility**
- Support 3<sup>rd</sup> Party Development
- Increase robustness
- Increase reach




# Time Travel Find – Search Page

 Time Travel  [About API](#) [Privacy Terms](#)

**time travel**

Find Mementos in Internet Archive, Archive-It, British Library, archive.today, GitHub and [many more!](#)

# Time Travel Find – Result Page

 Time Travel ⌵ [About](#) [API](#) [Privacy](#) [Terms](#)

Time Travel ⏪  ⏩

Mementos closest to the requested date 28 Apr 2010 12:34:29 GMT

**20 hours before**, from Internet Archive  
<http://web.archive.org/web/20100427161759/http://www.stanford.edu/>  
27 Apr 2010 16:17:59 GMT  
[ -20 hours from requested date ]

<a href="#">Previous Memento</a> 25 Apr 2010 08:18:46 GMT [ -3 days ]	<a href="#">Next Memento</a> 02 May 2010 14:40:30 GMT [ +4 days ]
<a href="#">First Memento</a> 29 Dec 1996 18:10:22 GMT [ -13 years 122 days ]	<a href="#">Last Memento</a> 17 Apr 2015 01:05:46 GMT [ +4 years 354 days ]

[All captures from Internet Archive between 1997 and 2015](#)

**20 hours before**, from Archive-It  
<//wayback.archive-it.org/all/20100427161759/http://www.stanford.edu/>  
27 Apr 2010 16:17:59 GMT  
[ -20 hours from requested date ]


<a href="#">Previous Memento</a> 09 Apr 2010 23:27:46 GMT [ -18 days ]	<a href="#">Next Memento</a> 28 May 2010 00:27:20 GMT [ +29 days ]
<a href="#">First Memento</a> 10 Mar 2006 16:19:30 GMT [ -4 years 49 days ]	<a href="#">Last Memento</a> 15 Apr 2015 17:45:21 GMT [ +4 years 353 days ]

[All captures from Archive-It between 2006 and 2015](#)



**27 days before**, from Icelandic Web Archive  
<http://wayback.vefsafn.is/wayback/20100401025307/http://www.stanford.edu/>  
01 Apr 2010 02:53:07 GMT  
[ -27 days from requested date ]

<a href="#">Previous Memento</a> 19 Nov 2009 16:15:18 GMT [ -159 days ]	<a href="#">Next Memento</a> 09 Aug 2011 12:09:54 GMT [ +1 year 102 days ]
<a href="#">First Memento</a> 23 Oct 2004 10:27:31 GMT [ -5 years 188 days ]	<a href="#">Last Memento</a> 27 Oct 2014 11:47:35 GMT [ +4 years 182 days ]

[All captures from Icelandic Web Archive between 2004 and 2014](#)




experience web time travel

install Memento for Chrome

enable web time travel



**MEDIAWIKI**

install Memento for MediaWiki

# Time Travel Find – Result Page

**31 days after**, from Portuguese Archive

<http://arquivo.pt/wayback/wayback/20100530081840/http://www.stanford.edu/>

30 May 2010 08:18:40 GMT

[ +31 days from requested date ]

[Previous Memento](#)

26 Dec 2009 00:23:18 GMT  
[ -123 days ]

[First Memento](#)

25 Oct 2008 10:20:54 GMT  
[ -1 year 185 days ]

[Next Memento](#)

06 Aug 2010 10:27:33 GMT  
[ +99 days ]

[Last Memento](#)

06 Nov 2013 17:49:22 GMT  
[ +3 years 193 days ]

[All captures from Portuguese Archive between 2008 and 2013](#)

**95 days before**, from UK Web Archive

<http://www.webarchive.org.uk:80/wayback/archive/20100123040511/http://www.stanford.edu/>

23 Jan 2010 04:05:11 GMT

[ -95 days from requested date ]

[Previous Memento](#)

06 Jan 2009 06:35:00 GMT  
[ -1 year 112 days ]

[First Memento](#)

25 Jun 2008 15:42:39 GMT  
[ -1 year 306 days ]

[Next Memento](#)

data not provided

[Last Memento](#)

23 Jan 2010 04:05:11 GMT  
[ -95 days ]

[All captures from UK Web Archive between 2008 and 2010](#)

**1 year 210 days before**, from Stanford Web Archive

<https://swap.stanford.edu/20080929210031/http://stanford.edu/>

29 Sep 2008 21:00:31 GMT

[ -1 year 210 days from requested date ]

[Previous Memento](#)

data not provided

[First Memento](#)

29 Sep 2008 21:00:31 GMT  
[ -1 year 210 days ]

[Next Memento](#)

10 Nov 2014 18:56:47 GMT  
[ +4 years 197 days ]

[Last Memento](#)

11 Feb 2015 21:06:30 GMT  
[ +4 years 290 days ]

[All captures from Stanford Web Archive between 2008 and 2015](#)

**2 years 228 days after**, from archive.today

<http://archive.today/20121212113307/http://stanford.edu/>

12 Dec 2012 11:33:07 GMT

[ +2 years 228 days from requested date ]

[Previous Memento](#)

data not provided

[First Memento](#)

12 Dec 2012 11:33:07 GMT  
[ +2 years 228 days ]

[Next Memento](#)

14 Feb 2014 11:44:56 GMT  
[ +3 years 292 days ]

[Last Memento](#)

16 Apr 2015 04:12:52 GMT  
[ +4 years 353 days ]

[All captures from archive.today between 2012 and 2015](#)


**3 years 260 days after**, from Web Citation

<http://www.webcitation.org/6MZnlqOEu>





# Time Travel Find – Result Page

 Time Travel ⌵ [About API](#) [Privacy](#) [Terms](#)

Time Travel ⏪  ⏩

Mementos closest to the requested date 28 Apr 2014 03:22:22 GMT

**Active at requested date**, from coptr.digipres.org  
[http://coptr.digipres.org/index.php?title=Main\\_Page&oldid=1748](http://coptr.digipres.org/index.php?title=Main_Page&oldid=1748)  
23 Apr 2014 12:41:35 GMT  
[ -4 days from requested date ]  
[ This version was active between 23 Apr 2014 12:41:35 GMT and 11 Jun 2014 14:35:08 GMT. ]

<a href="#">Previous Memento</a> 27 Nov 2013 15:54:11 GMT [ -151 days ]	<a href="#">Next Memento</a> 11 Jun 2014 14:35:08 GMT [ +44 days ]
<a href="#">First Memento</a> 16 Sep 2013 10:26:57 GMT [ -223 days ]	<a href="#">Last Memento</a> 28 Nov 2014 13:01:56 GMT [ +214 days ]

**98 days after**, from Internet Archive  
[http://web.archive.org/web/20140804152333/http://coptr.digipres.org/Main\\_Page](http://web.archive.org/web/20140804152333/http://coptr.digipres.org/Main_Page)  
04 Aug 2014 15:23:33 GMT  
[ +98 days from requested date ]





<a href="#">Previous Memento</a> 16 Jan 2014 06:21:28 GMT [ -101 days ]	<a href="#">Next Memento</a> 05 Sep 2014 14:21:01 GMT [ +130 days ]
<a href="#">First Memento</a> 21 Nov 2013 16:44:51 GMT [ -157 days ]	<a href="#">Last Memento</a> 28 Nov 2014 13:10:43 GMT [ +214 days ]

[All captures from Internet Archive between 2013 and 2014](#)

**101 days before**, from Archive-It  
[http://wayback.archive-it.org/all/20140116062128/http://coptr.digipres.org/Main\\_Page](http://wayback.archive-it.org/all/20140116062128/http://coptr.digipres.org/Main_Page)  
16 Jan 2014 06:21:28 GMT  
[ -101 days from requested date ]

<a href="#">Previous Memento</a> data not provided	<a href="#">Next Memento</a> data not provided
<a href="#">First Memento</a> 16 Jan 2014 06:21:28 GMT [ -101 days ]	<a href="#">Last Memento</a> 16 Jan 2014 06:21:28 GMT [ -101 days ]

[All captures from Archive-It between 2014 and 2014](#)

  
experience web time travel  
   
install Memento for Chrome  
enable web time travel  
  
**MEDIAWIKI**  
install Memento for MediaWiki

# Time Travel Find – Search Page




<http://timetravel.mementoweb.org/>

# Memento & Memento Infrastructure Focus Areas, This Past Year

- Increase visibility
- **Support 3<sup>rd</sup> Party Development**
- Increase robustness
- Increase reach



# Time Travel APIs

Time Travel [About](#) [API](#) [Privacy](#) [Terms](#)

## Time Travel APIs

Last updated: April 23, 2016

### Abstract

This document describes the APIs that are associated with the Time Travel service.

### Table of Contents

- [URI that redirects to a Memento](#)
- [URI that provides access to a JSON description of a Memento](#)
- [TimeMap for access to version history, as per the Memento protocol](#)
  - ["Do It Yourself" TimeMap - Fast Response, the Client does the Heavy Lifting](#)
  - ["We Do It" TimeMap - Slow Response, the Time Travel service does the Heavy Lifting](#)
- [TimeGate for datetime negotiation, as per the Memento protocol](#)
- [Time Travel Archive Registry](#)

## 1. URI that redirects to a Memento

The Time Travel service provides an easy way to be redirected to a Memento for a given resource with an archival/version datetime that is close to a desired one.

### Request

Simply append the desired datetime and the URI of the resource to the baseURL of this redirection service.


```
http://timetravel.mementoweb.org/memento/YYY<MM|DD|HH|MM|SS>/URI
```

### Request Example

# URI that Redirects to a Memento

You are viewing an archived web page, collected at the request of [Electronic Literature Organization](#) using [Archive-It](#). This page was captured on 16:17:59 Apr 27, 2010, and is part of the [Electronic Literature: Individual Works](#) collection. The information on this web page may be out of date. See [All versions](#) of this archived page. hide

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APR 28 [Wellness Fair](#)  
10 a.m.

APR 30 [Conference: The Future of Journalism](#)  
9 a.m.

[EVENT CALENDAR](#)


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Campus rolls out the Cardinal carpet for more than 1,300 prospective freshmen and their families.



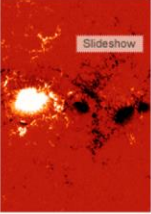
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Danger to airliners from volcano's debris is difficult to assess, Stanford expert says.

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- [Medicine](#)

ACADEMIC DEPARTMENTS

## On Stanford.Edu




# URI that Redirects to a JSON Description of a Memento

```
{
  original_uri: "http://stanford.edu",
  - mementos: {
    - last: {
      datetime: "2015-04-17T01:05:46Z",
      - uri: [
        "http://web.archive.org/web/20150417010546/http://www.stanford.edu"
      ]
    },
    - next: {
      datetime: "2010-05-02T14:40:30Z",
      - uri: [
        "http://web.archive.org/web/20100502144030/http://www.stanford.edu/"
      ]
    },
    - closest: {
      datetime: "2010-04-27T16:17:59Z",
      - uri: [
        "http://web.archive.org/web/20100427161759/http://www.stanford.edu/",
        "//wayback.archive-it.org/all/20100427161759/http://www.stanford.edu/"
      ]
    },
    - first: {
      datetime: "1996-12-29T18:10:22Z",
      - uri: [
        "http://web.archive.org/web/19961229181022/http://www.stanford.edu/"
      ]
    },
    - prev: {
      datetime: "2010-04-25T08:18:46Z",
      - uri: [
        "http://web.archive.org/web/20100425081846/http://www.stanford.edu/"
      ]
    }
  },
  timegate_uri: "http://timetravel.mementoweb.org/timegate/http://stanford.edu",
  - timemap_uri: {
    json_format: "http://timetravel.mementoweb.org/timemap/json/http://stanford.edu",
    link_format: "http://timetravel.mementoweb.org/timemap/link/http://stanford.edu"
  }
}
```

<http://timetravel.mementoweb.org/api/json/20100428103432/http://stanford.edu>

# JSON Format for TimeMaps

 Memento Project [About](#) [Demos](#) [Depot](#) [Guide](#) [Tools](#)

## JSON TimeMaps

Last updated: April 23, 2016

**Archived copy of this version:**  
<http://mementoarchive.lanl.gov/twa/memento/20150423163105/http://mementoweb.org/guide/timemap-json/>

**Latest version:**  
<http://mementoweb.org/guide/timemap-json/>

**Archived copy of prior version:**  
<http://mementoarchive.lanl.gov/twa/memento/20141030220619/http://mementoweb.org/timemap-json/>

**Authored by:**  
Yorick Chollet - Los Alamos National Laboratory  
Harihar Shankar - Los Alamos National Laboratory  
Herbert Van de Sompel - Los Alamos National Laboratory

### Abstract

This document describes how to express TimeMaps in JSON.

### Table of Contents

- [Motivation](#)
- [TimeMap Basic Format](#)
- [TimeMap Paged Format](#)
- [TimeMap Index Format](#)
- [Extensions](#)
- [Values Cardinality](#)

### Motivation

# DIY TimeMap - Index TimeMap Lists Potential TimeMap URIs

```
{
  original_uri: "http://stanford.edu",
  timegate_uri: "http://timetravel.mementoweb.org/timegate/http://stanford.edu",
  - timemap_index: [
    - {
      uri: "http://timetravel.mementoweb.org/webcite/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "webcite"
    },
    - {
      uri: "http://timetravel.mementoweb.org/can/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "gcwa"
    },
    - {
      uri: "http://timetravel.mementoweb.org/cr/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "hr"
    },
    - {
      uri: "http://timetravel.mementoweb.org/po/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "pt"
    },
    - {
      uri: "http://timetravel.mementoweb.org/es/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "es"
    },
    - {
      uri: "http://timetravel.mementoweb.org/si/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "si"
    },
    - {
      uri: "http://timetravel.mementoweb.org/loc/timemap/link/http://stanford.edu",
      memento_compliant: "no",
      archive_id: "loc"
    },
    - {
      uri: "http://wayback.archive-it.org/all/timemap/link/http://stanford.edu",
      memento_compliant: "yes",
      archive_id: "archiveit"
    },
  ],
}
```

SPEED

<http://timetravel.mementoweb.org/timemap/json/http://stanford.edu>



# WDI TimeMap - Regular (Index) TimeMap

COVERAGE

```
<http://stanford.edu>
; rel="original",
<http://timetravel.mementoweb.org/timegate/http://stanford.edu>
; rel="timegate",
<http://labs.mementoweb.org/timemap/link/1/http://stanford.edu>
; rel="timemap"
; type="application/link-format"
; from ="Sun, 29 Dec 1996 18:10:22 GMT"
; until="Sat, 06 Aug 2005 08:16:24 GMT",
<http://labs.mementoweb.org/timemap/link/1000/http://stanford.edu>
; rel="timemap"; type="application/link-format"
; from ="Sat, 06 Aug 2005 23:36:21 GMT"
; until="Sun, 24 Feb 2013 09:07:51 GMT",
<http://labs.mementoweb.org/timemap/link/2000/http://stanford.edu>
; rel="timemap"
; type="application/link-format"
; from ="Tue, 26 Feb 2013 04:20:06 GMT",
<http://labs.mementoweb.org/timemap/link/http://stanford.edu>
; rel="self"
; type="application/link-format"
; from ="Sun, 29 Dec 1996 18:10:22 GMT"
```

# Time Travel Archive Registry

```
<links>
  <!-- Internet Archive -->
  ▼<link id="ia" longname="Internet Archive">
    <timegate uri="http://web.archive.org/web/" redirect="no"/>
    <timemap uri="http://web.archive.org/web/timemap/link/" pagestatus="2"
    redirect="no"/>
    <icon uri="http://archive.org/images/glogo.jpg"/>
    <calendar uri="http://web.archive.org/web/*/"/>
    ▼<domainSuffixes>
      <list-item value="**"/>
    </domainSuffixes>
    <delayPeriod period="2" type="MONTH"/>
    <accessPolicy type="public" mementostatus="yes" rewritestatus="yes"/>
    <memento uri="http://web.archive.org/web/">
    <bestselect host="**"/>
    <archive type="snapshot" bestselect="yes" rewritten-urls="yes" un-rewritten-
    api-url="http://web.archive.org/web/{timestamp}id_{url}"/>
  </link>
  <!-- Proni Web Archive -->
  ▼<link id="proni" longname="PRONI Web Archive">
    <timegate uri="http://webarchive.proni.gov.uk/timegate/" redirect="no"/>
    <timemap uri="http://webarchive.proni.gov.uk/timemap/" pagestatus="2"
    redirect="no"/>
    <icon uri=""/>
    <calendar uri="http://webarchive.proni.gov.uk/*/"/>
    ▼<domainSuffixes>
      <list-item value="**"/>
    </domainSuffixes>
    <delayPeriod period="2" type="MONTH"/>
    <accessPolicy type="public" mementostatus="yes" rewritestatus="yes"/>
    <memento uri="http://webarchive.proni.gov.uk/">
    <bestselect host="**"/>
    <archive type="snapshot" bestselect="yes" rewritten-urls="yes" un-rewritten-
    api-url=""/>
  </link>
```

# Application of the APIs: Robust Links

- Include page date to allow retrieving Mementos of linked resources from around page publication date

```
<html>  
<head lang="en"  
  itemtype="http://schema.org/WebPage"  
  itemid="http://robustlinks.mementoweb.org/spec/">  
<meta itemprop="datePublished" content="2015-01-23">
```

DO



# Application of the APIs: Robust Links

- Decorate links to allow retrieving Mementos subject to link date or from a specific archive

```
<a href="http://www.stanford.edu"  
  data-versiondate="2014-08-15" >
```

DO

```
<a href="http://archive.is/FAy6o"  
  data-originalurl="http://www.stanford.edu"  
  data-versiondate="2014-08-15" >
```

DO

```
<a href="http://archive.is/FAy6o" >
```

DON'T



# Application of the APIs: Robust Links

JavaScript makes the info actionable

Reference List	
1.	Hiberlink <a href="http://hiberlink.org/">http://hiberlink.org/</a> Accessed: 1 Nov 2014
2.	Resolve a DOI Name <a href="http://dx.doi.org">http://dx.doi.org</a> Accessed: 1 Nov 2014
3.	LOCKSS <a href="http://lockss.org/">http://lockss.org/</a> Accessed: 1 Nov 2014
4.	CLOCKSS <a href="http://www.clockss.org/">http://www.clockss.org/</a> Accessed: 1 Nov 2014
5.	Portico - A Digital Preservation and Electronic Archiving Service <a href="http://www.portico.org/">http://www.portico.org/</a> Accessed: 1 Nov 2014
6.	The Keepers Registry <a href="http://thekeepers.org/">http://thekeepers.org/</a> Accessed: 1 Nov 2014
7.	Buckheit JB, Donoho DL (1995) Wavelab and reproducible research. <i>Journal of the Royal Society Series B</i> 62: 55-81.
8.	Berners-Lee T (1998). Cool URIs don't change <a href="http://www.w3.org/Papers/URI-Cool-URIs-dont-change/">http://www.w3.org/Papers/URI-Cool-URIs-dont-change/</a>
9.	Koehler WC (2002) Web Page Change and Persistence - A Four-Year Study. <i>Journal of the American Society for Information Science and Technology</i> 53: 162-171.
10.	The Chesapeake Digital Preservation Group (2013). "Link Rot" and Legal Resources on the Web: A 2013 Analysis by the Chesapeake Digital Preservation Group.
11.	Zittrain J, Albert K, Lessig L (2014) Perma: Scoping and addressing the problem of link and reference rot in legal citations. <i>Harvard Law Review Forum</i> 127.
12.	Wren JD (2004) 404 not found: the stability and persistence of urls published in medline. <i>Bioinformatics</i> 20: 668-672.
13.	Wren JD (2008) Url decay in medlinea 4-year follow-up study. <i>Bioinformatics</i> 24: 1381-1385.
14.	Duda JJ, Camp RJ (2008) Ecology in the information age: patterns of use and attrition rates of internet-based citations in esa journals, 1997-2005. <i>Frontiers in Ecology and the Environment</i> 6: 145-151.
15.	Lawrence S, Pennock DM, Flake GW, Krovetz R, Coetzee FM, et al. (2001) Persistence of Web References in Scientific Research. <i>Computer</i> 34: 26-31.
16.	Spinellis D (2003) The decay and failures of web references. <i>Communications of the ACM</i> 46: 71-77.
17.	Dimitrova DV, Bugeja M (2007) The half-life of internet references cited in communication journals. <i>New Media &amp; Society</i> 9: 811-826.

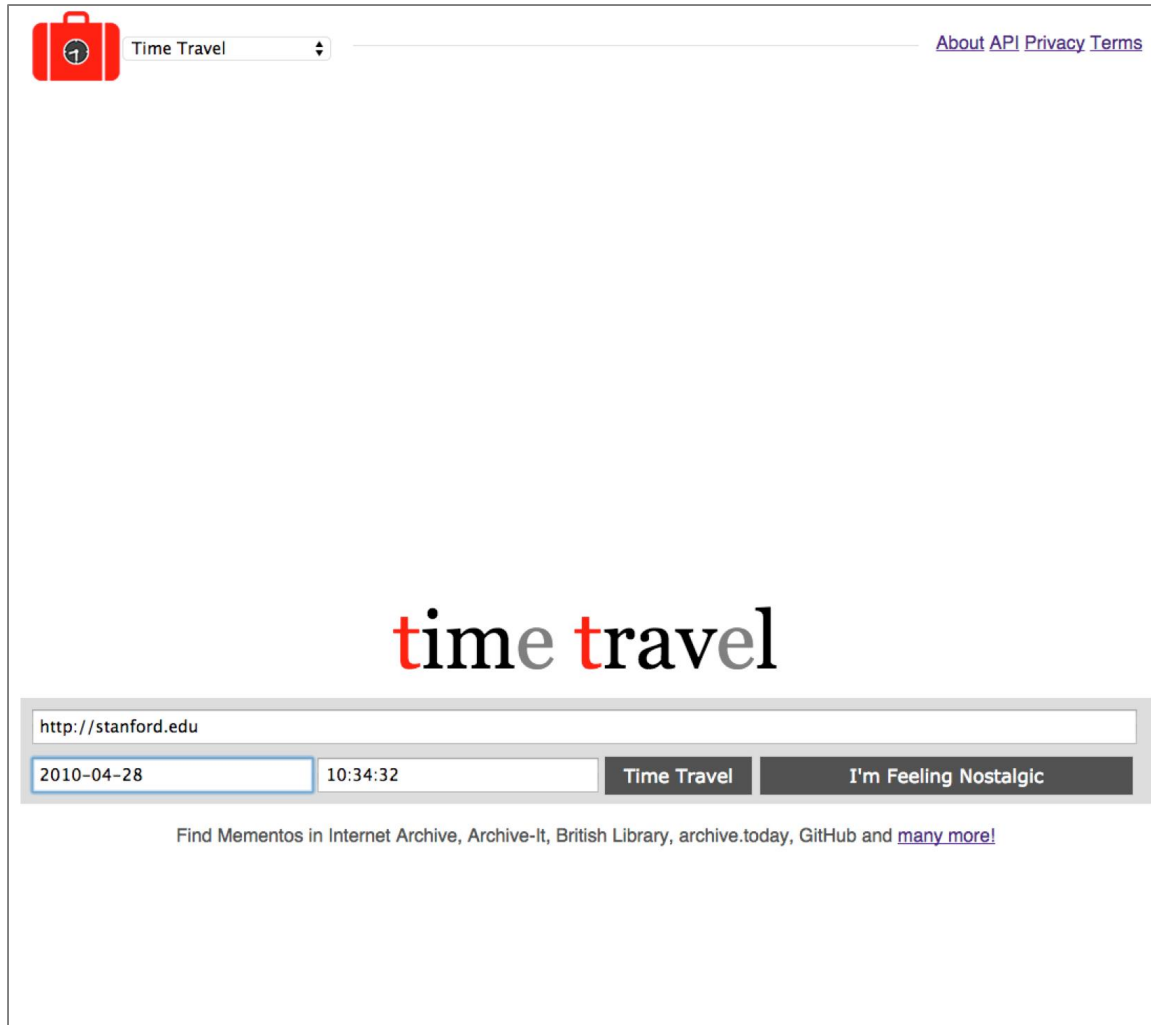
Robust Links

Get near page date 2015-02-18

Get near link date 2014-11-01

Get from archive.today

# Application of the APIs - Time Travel Reconstruct



The screenshot shows the Time Travel web application interface. At the top left, there is a red suitcase icon with a white circular arrow, followed by a dropdown menu labeled "Time Travel". To the right, there are links for "About API", "Privacy", and "Terms". The main content area features the text "time travel" in a large, lowercase, sans-serif font, with "time" in red and "travel" in black. Below this is a search bar containing the URL "http://stanford.edu". Underneath the search bar, there are two input fields: the first contains the date "2010-04-28" and the second contains the time "10:34:32". To the right of these fields are two buttons: "Time Travel" and "I'm Feeling Nostalgic". At the bottom, there is a line of text: "Find Mementos in Internet Archive, Archive-It, British Library, archive.today, GitHub and [many more!](#)".

<http://timetravel.mementoweb.org/>

# Application of the APIs - Time Travel Reconstruct

The screenshot displays the Time Travel Reconstruct application interface. At the top, there is a red suitcase icon with a circular arrow, a dropdown menu labeled "Time Travel", and links for "About API" and "Privacy Terms". Below this is a search bar containing the URL "http://stanford.edu". A date and time selector shows "2010-04-28" and "10:34:32", with "Find" and "Reconstruct" buttons. A timeline below the search bar shows various time intervals from "4 months before" to "2010-04-28 10:34:32". A legend indicates the number of Mementos from different archives: wayback.archive-it.org (39), web.archive.org (2), and wayback.vefsafn.is (3). Below the timeline, a message states: "The page below assembled using 44 Mementos from 3 archives, spanning a year". The reconstructed page is the Stanford University homepage, featuring the "STANFORD UNIVERSITY" logo, navigation links (About Stanford, Admission, Academics, Research, Life On Campus), and various news and event sections. The news section includes articles like "Admit Weekend 2010", "Ash and aircraft", and "Sun in high definition". The events section lists events for April 27 and 28.

<http://timetravel.mementoweb.org/reconstruct/20100428103432/http://stanford.edu>

# Memento & Memento Infrastructure Focus Areas, This Past Year

- Increase visibility
- Support 3<sup>rd</sup> Party Development
- **Increase robustness**
- Increase reach





# Improved Organizational Robustness

- The Memento infrastructure and the Time Travel service is now an official service of the LANL Research Library

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# Improved Technical Robustness

- Operates on AWS
- Front-End Aggregator with focus on minimizing response times
- Back-End Aggregator with focus on maximizing coverage
- Interaction between front-end and back-end Aggregators
- Architecture supports operation of multiple back-end Aggregators that can interact



# Memento Applications (Memento for Chrome, TimeMaps)

7089

TimeGate  
TimeMap  
Aggregator



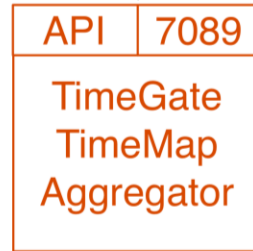
# Memento Applications (Memento for Chrome, Time Travel, DIY TimeMaps, Robust Links)

API	7089
TimeGate TimeMap Aggregator	

SPEED



Memento Applications (Memento for Chrome, Time Travel, DIY TimeMaps, Robust Links)



SPEED

ResourceSync

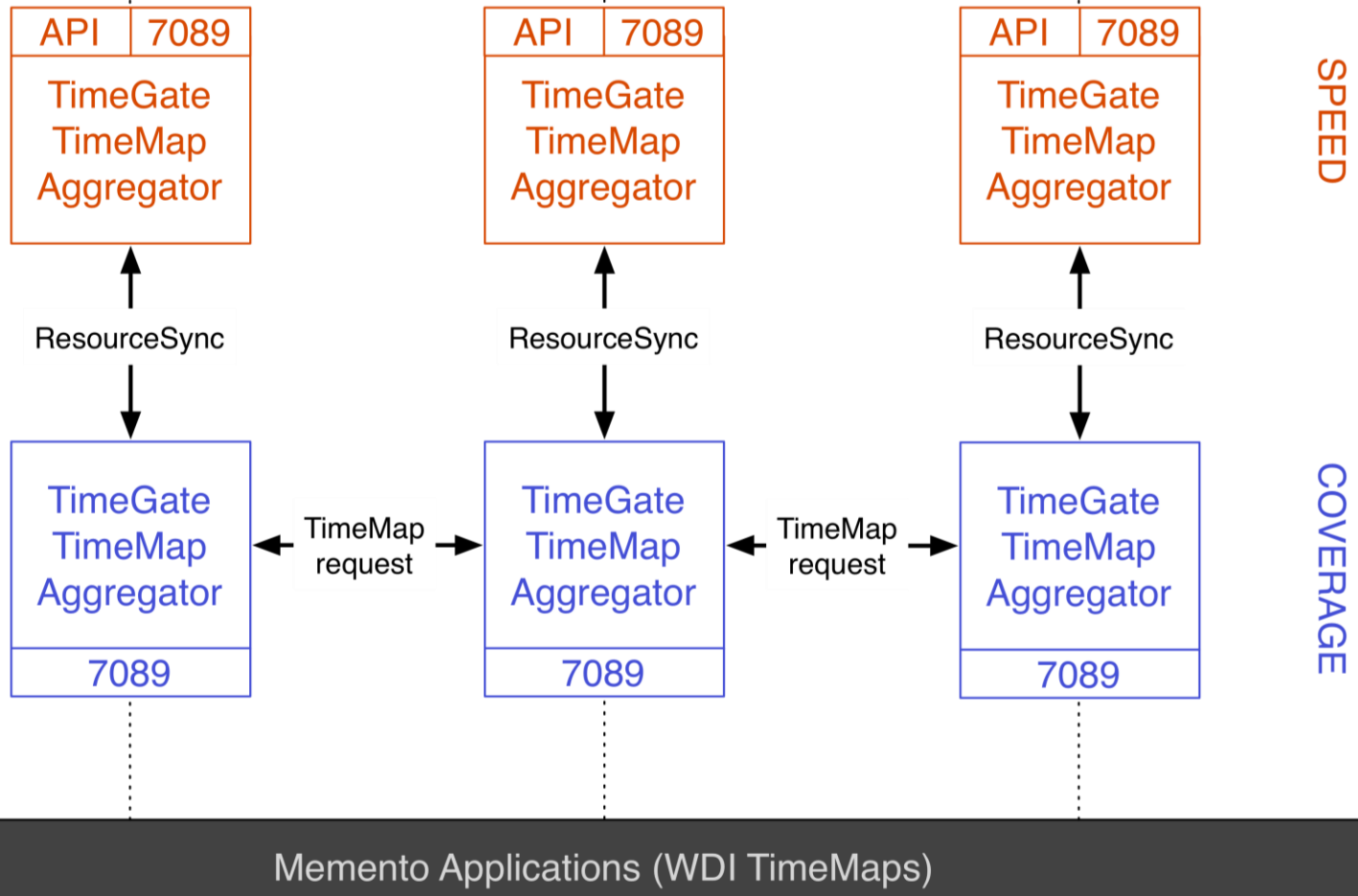


COVERAGE

Memento Applications (WDI TimeMaps)

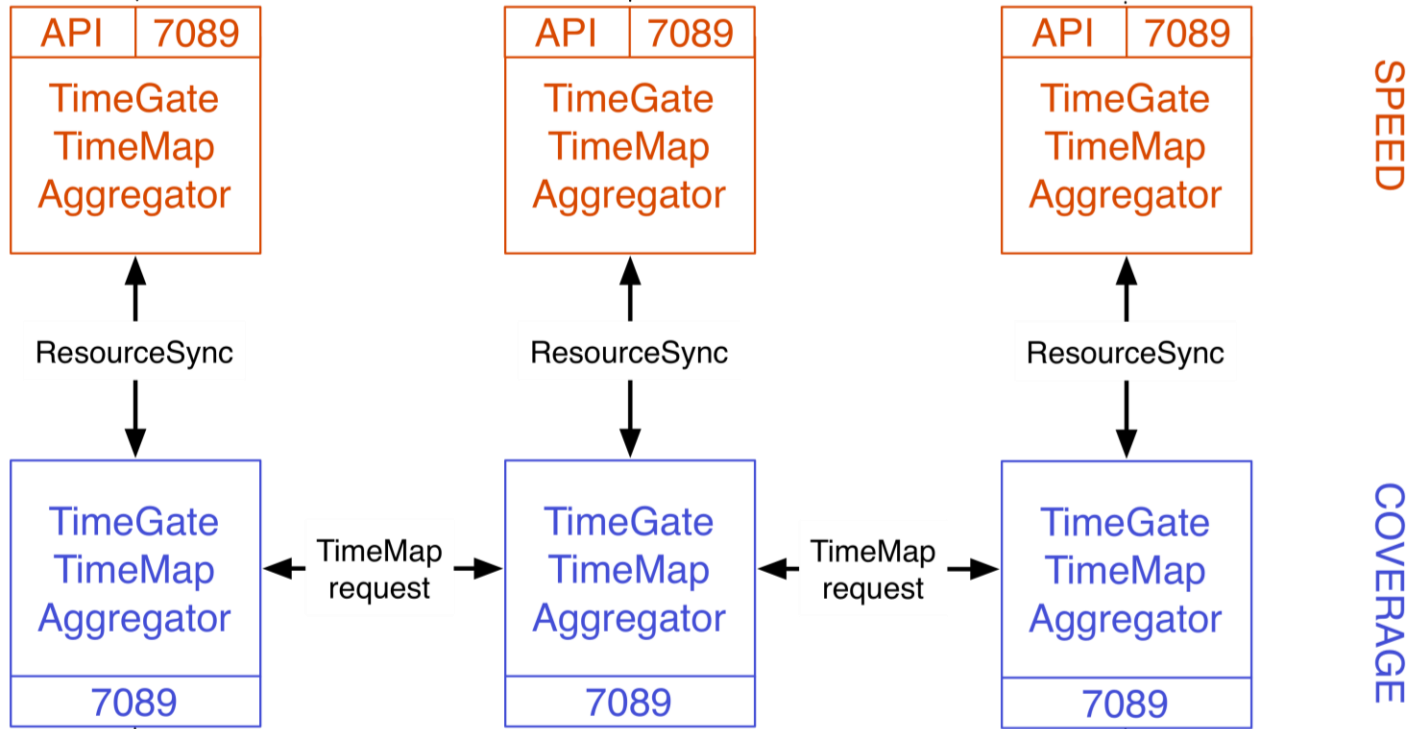


# Memento Applications (Memento for Chrome, Time Travel, DIY TimeMaps, Robust Links)



Memento Applications (Memento for Chrome, Time Travel, DIY TimeMaps, Robust Links)

Geolocation Load Balancing



Geolocation Load Balancing

Memento Applications (WDI TimeMaps)



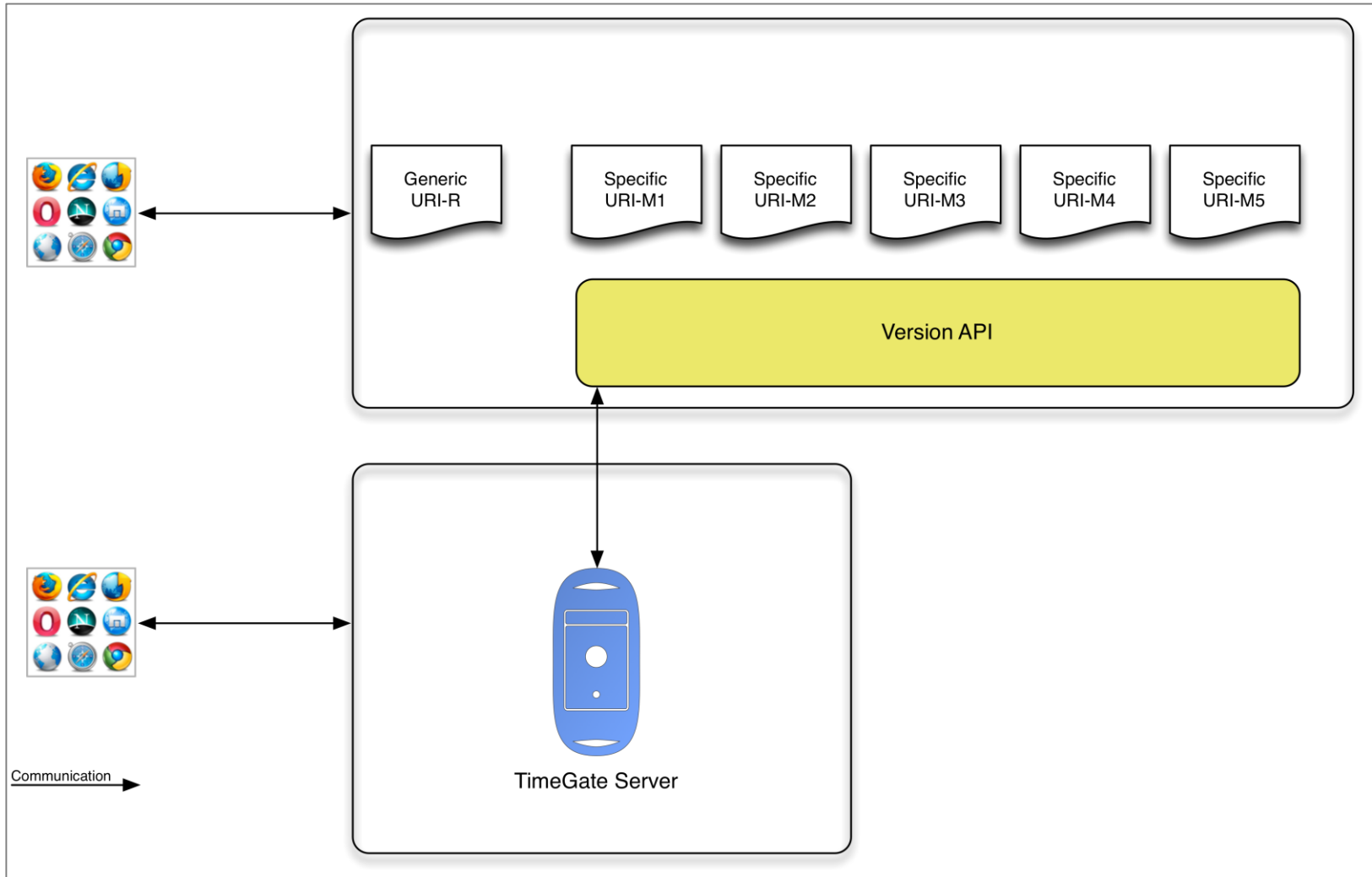
# Memento & Memento Infrastructure Focus Areas, This Past Year

- Increase visibility
- Support 3<sup>rd</sup> Party Development
- Increase robustness
- **Increase reach**

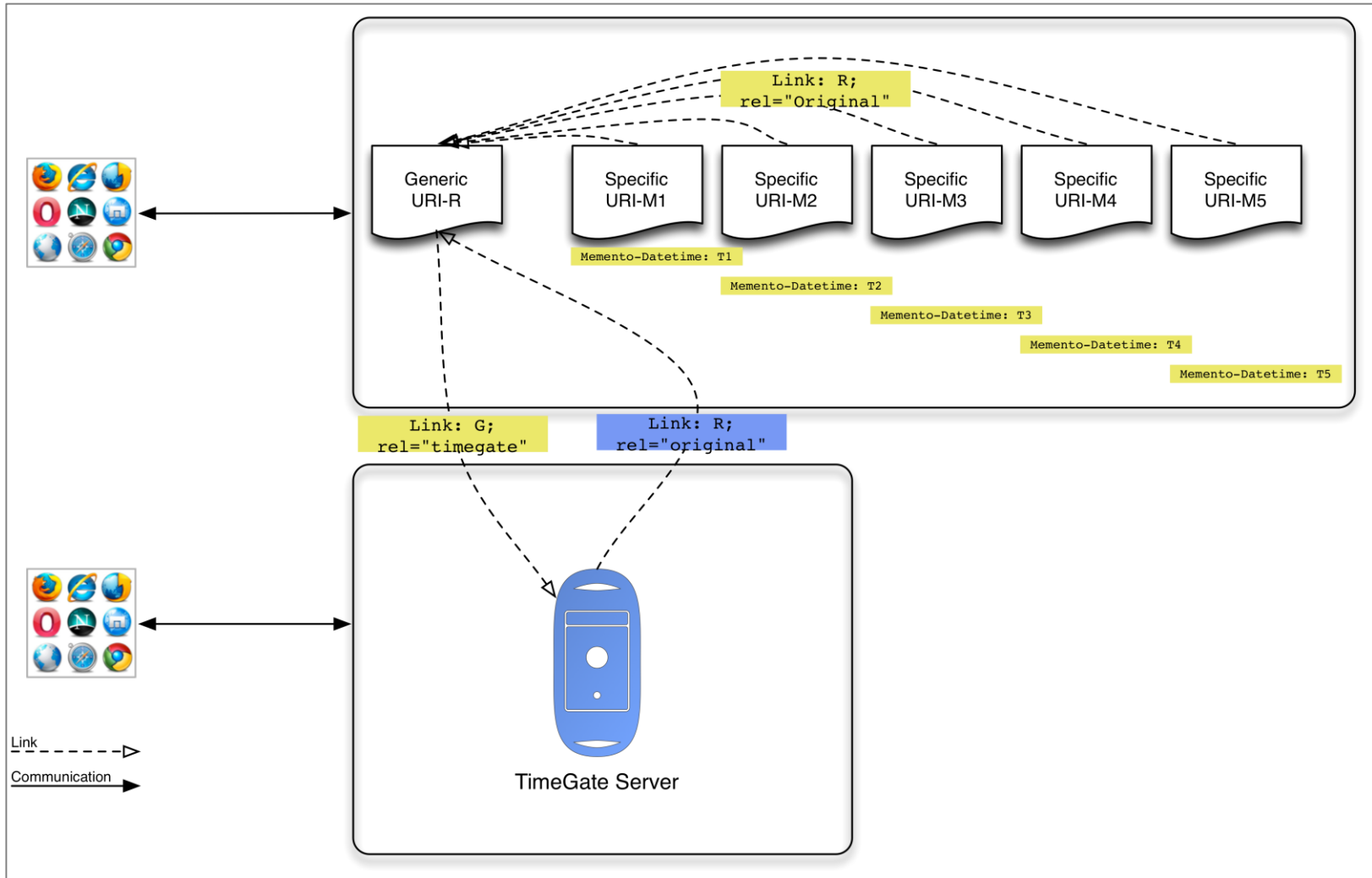





# Generic TimeGate Server for Systems with Version API



# Generic TimeGate Server for Systems with Version API



# MediaWiki Extensions



English Create account Log in

Extension Discussion Read Edit Edit source View history Search

## Extension:Memento

The **Memento** extension allows one to browse an entire MediaWiki site as if it were a date in the past; to do this it adds support for **datetime negotiation** as specified by the Memento protocol to a MediaWiki system. It provides server-side support to allow a Memento client to navigate a MediaWiki system as it was at a time in the past chosen by a user. To gain an understanding about the functionality provided by Memento's time travel, check out this [brief overview](#) that includes temporal navigations across Wikipedia and other web sites.

The Memento "Time Travel for the Web" effort started in 2009 with the overall goal of making it as easy to navigate the past of the web as it is to navigate the current web. The basic idea underlying the Memento protocol is that an old version of a web page, such as a version of a Wikipedia article - [http://en.wikipedia.org/w/index.php?title=Web\\_archiving&oldid=526371727](http://en.wikipedia.org/w/index.php?title=Web_archiving&oldid=526371727) - can be retrieved by accessing its original URI - [http://en.wikipedia.org/wiki/Web\\_archiving](http://en.wikipedia.org/wiki/Web_archiving) - and by applying **datetime negotiation** to it. Datetime negotiation is similar to content negotiation, which is used frequently by browsers, for example, to ask a server for a version of a page in a specific format e.g. HTML or PDF. Datetime negotiation asks the server for a version with a specific date, and uses the special purpose Accept-Datetime HTTP header to do so.

The Memento protocol is meanwhile natively supported by several web archives. Also, all versions of DBpedia are natively accessible via the Memento protocol, and proxy support for all language version of Wikipedia has been implemented.


**Two MediaWiki extensions provide support for Memento. This page shows information for the full Memento Extension.** If you do not need the power of the full Memento Extension, the [Memento Headers Extension](#) also offers support for Memento, but without some of the additional functionality that the full extension provides. The table below highlights the differences between the two extensions.

	Extension:Memento	Extension:MementoHeaders
Provides Memento headers for articles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Provides Memento headers for oldid pages	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Can exclude namespaces from datetime negotiation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Requires external service for datetime negotiation		<input checked="" type="checkbox"/>

**MediaWiki extensions manual**

### Memento

Release status: **stable**



**Implementation** Data extraction, User interface

**Description** Performs content negotiation in the DateTime dimension, allowing one to see past versions of wiki pages using the Memento protocol.

**Author(s)** Shawn Jones, Harihar Shankar

**Latest version** 2.1.1 (2014-11-30)

**MediaWiki** 1.21.1+

**PHP** 5.3.8+

**Database changes** No

**License** GNU General Public License 2.0 or later

**Download** GitHub:

- project page
- git repository URL <sup>[help]</sup>
- commit history

# Memento & Memento Infrastructure - Wish List Going Forward

- Adoption by version control systems including Wikipedia, GitHub, W3C, MediaWikis
- Reduction of Aggregator effort through native Memento-compliance of “by proxy” web archives
- Multiple parties operating back-end Aggregators
- Reduction of Aggregator effort via lighter weight solution, cf. IIPC summarization grant
- Inclusion in Time Travel Find of holdings information from dark archives
- Native browser support 😊



# Memento Time Travel



Herbert Van de Sompel  
@hvdsomp  
<http://public.lanl.gov/herbertv/>  
Los Alamos National Laboratory

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