

# Historical Page Load Time Monitoring Using WebPageTest and Drupal

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# Why is Page Load Time Important?

Because people are impatient.

# Why is Page Load Time Important?

Akamai State of Online Retail Performance Report

In 2017, Akamai released these findings in their State of Online Retail Performance report:

- "A 100-millisecond delay in website load time can hurt conversion rates by 7 percent"
- "A two-second delay in web page load time increase bounce rates by 103 percent"
- "53 percent of mobile site visitors will leave a page that takes longer than three seconds to load"

SOURCE: Akamai Online Retail Performance Report: Milliseconds Are Critical

<https://www.akamai.com/uk/en/about/news/press/2017-press/akamai-releases-spring-2017-state-of-online-retail-performance-report.jsp>

# Why is Page Load Time Important?

## Google's Industry Benchmarks for Mobile Site Performance

Around the same time, Google provided new industry benchmarks for mobile site performance:

from Find Out How You Stack Up to New Industry Benchmarks for Mobile Page Speed



As page load time goes from:

**1s to 3s** the probability of bounce **increases 32%**



**1s to 5s** the probability of bounce **increases 90%**



**1s to 6s** the probability of bounce **increases 106%**



**1s to 10s** the probability of bounce **increases 123%**



Source: Google/SOASTA Research, 2017.

think with **Google**

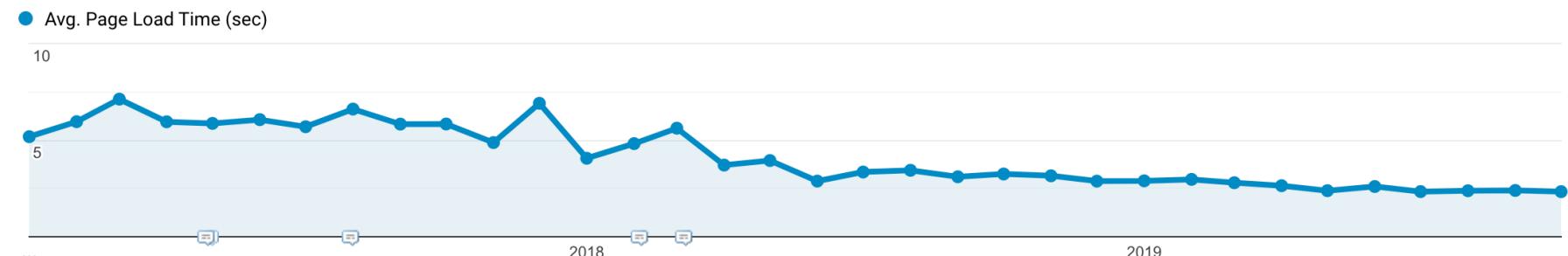
thinkwithgoogle.com

SOURCE: thinkwithgoogle.com - Find out how you stack up to new industry benchmarks for mobile page speed  
<https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/>

# Why is Page Load Time Important?

Real user data for Rackspace.com

- Average Page Load Time since January 1, 2017



- Average Bounce Rate from September 1, 2016 through October 18, 2019



# How to Measure Page Load Time

# How to Measure Page Load Time

## Important Terms and Metrics\*

\*as defined by WebPageTest

- **Metrics**

- **Time to First Byte (TTFB)** – When very first byte received by the client.
- **Start Render/First Paint** – When anything is first rendered on the screen. (not necessarily content)
- **First Contentful Paint** – When content is first rendered on the screen.
- **Load Time** – When document complete event is triggered (i.e. DOM Ready).
- **Fully Loaded** – Last network activity within 2 seconds of document complete.
- **Speed Index** – How quickly page rendered user-visible content.
- **DOM Elements** – Count of total DOM elements at the end of the test.

- **Views**

- **First View** – All metrics are captured on a browser with cleared cookies/cache. Simulates a first-time visitor.
- **Repeat View** – All metrics are captured again without clearing cookies/cache. Simulates a returning visitor.

SOURCE: WebPageTest Documentation – Metrics

<https://sites.google.com/a/webpagetest.org/docs/using-webpagetest/metrics>

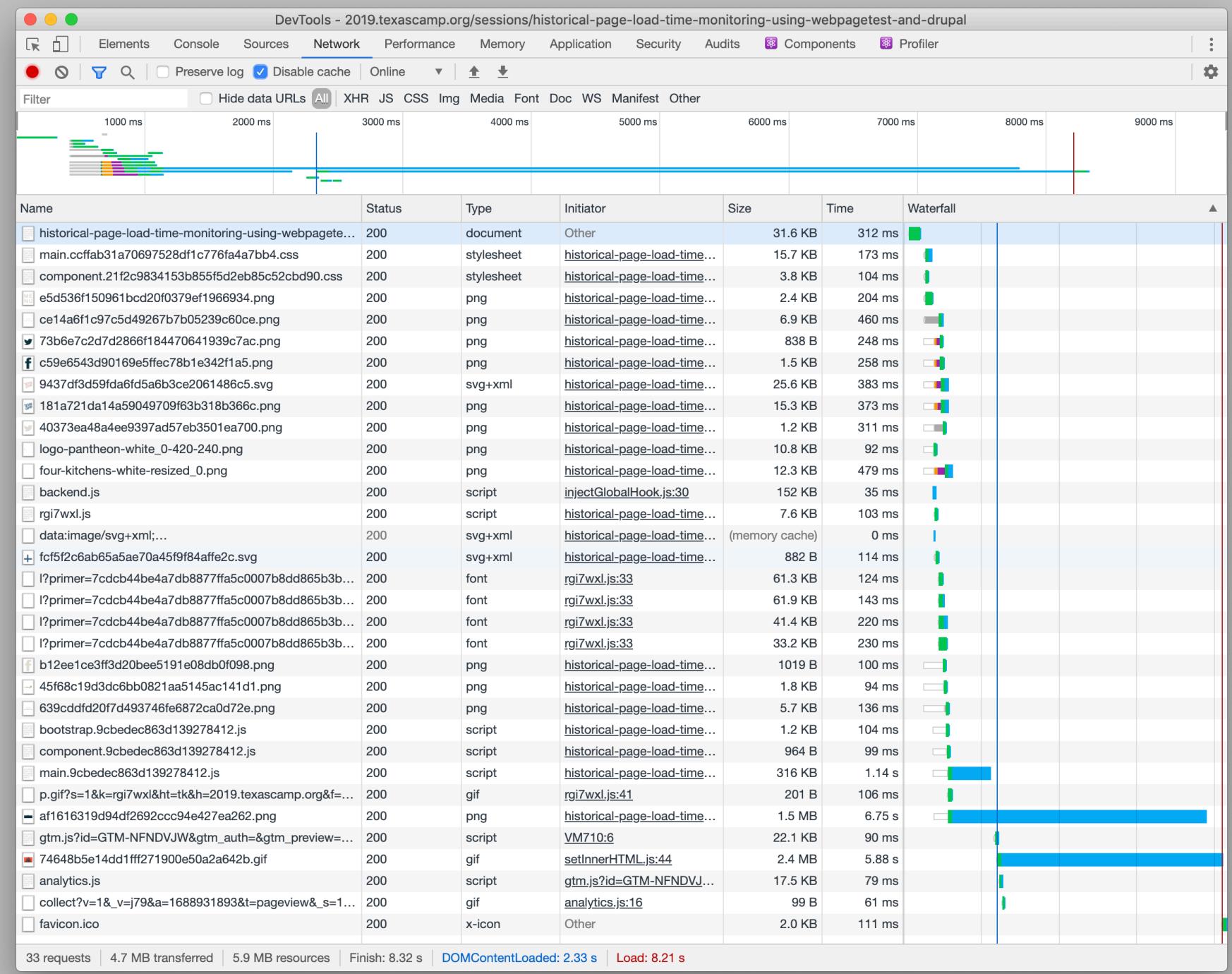
# How to Measure Page Load Time

## Tools and Resources

- There are many tools out there for measuring page load times. We will focus on:
  - **Google Chrome Developer Tools:**  
<https://developers.google.com/web/tools/chrome-devtools/network>
  - **WebPageTest.org:**  
<https://webpagetest.org/>
- Additional tools worth exploring:
  - **Google PageSpeed Insights:**  
<https://developers.google.com/speed/pagespeed/insights/>
  - **Google Mobile Speed Report:**  
<https://www.thinkwithgoogle.com/feature/testmysite/>
  - **GTmetrix:**  
<https://gtmetrix.com>

# How to Measure Page Load Time

Google Chrome Developer Tools



# How to Measure Page Load Time

## WebPageTest (WPT) Sample Overview



### Web Page Performance Test for <https://2019.texascamp.org/sessions/historical-page-load-time-monitoring-using-webpagetest-and-drupal>

From: Dulles, VA - Chrome - Cable  
 10/15/2019, 3:40:37 PM

[Summary](#) [Details](#) [Performance Review](#) [Content Breakdown](#) [Domains](#) [Processing Breakdown](#) [Screenshot](#) [Image Analysis](#) [Request Map](#)

Tester: VM02-07-172.16.20.224  
**First View only**  
 Test runs: 3  
[Re-run the test](#)

[Raw page data - Raw object data](#)  
[Export HTTP Archive \(.har\)](#)  
[View Test Log](#)



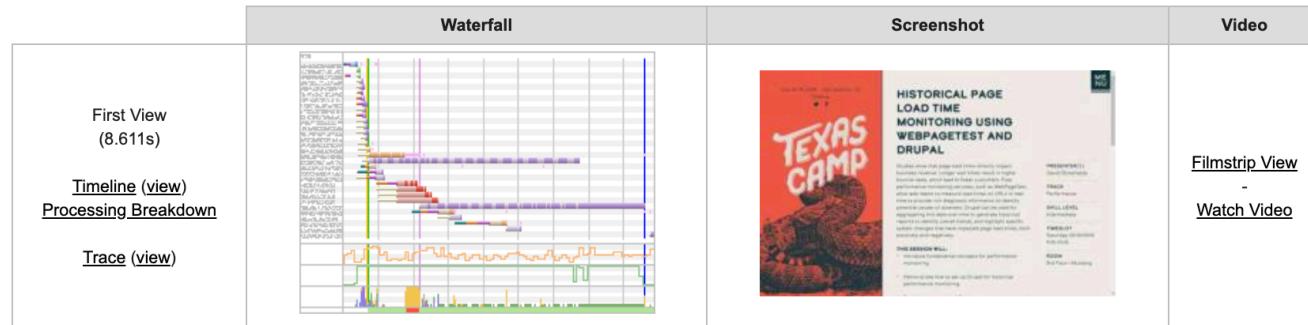
#### Performance Results (Median Run)

	Load Time	First Byte	Start Render	First Contentful Paint	Speed Index	Last Painted Hero	First CPU Idle	Document Complete			Fully Loaded			
								Time	Requests	Bytes In	Time	Requests	Bytes In	Cost
First View (Run 2)	8.664s	0.342s	0.700s	0.658s	1.010s	4.100s	2.306s	8.664s	30	4,614 KB	8.849s	31	4,616 KB	\$\$\$\$\$

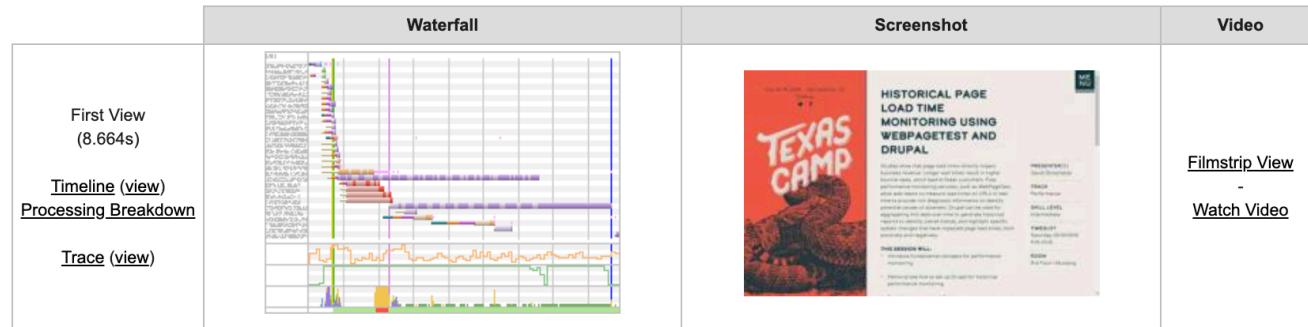
[Plot Full Results](#)

#### Test Results

Run 1:

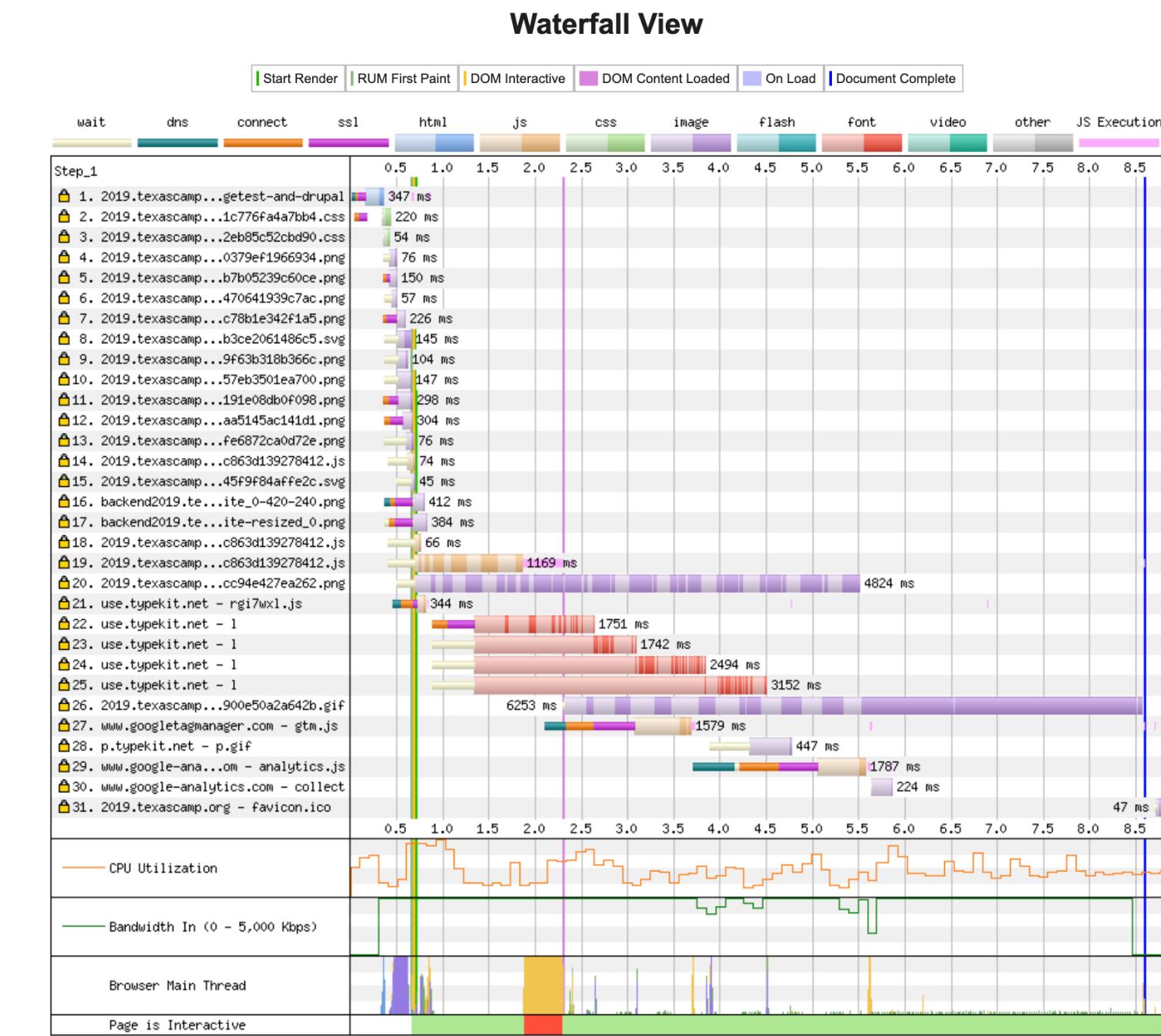


Run 2:



# How to Measure Page Load Time

WebPageTest (WPT)  
Sample Waterfall View



# How to Measure Page Load Time

WebPageTest (WPT)  
Sample Request Details

## Request Details

Before Start Render | Before On Load | After On Load

#	Resource	Content Type	Request Start	DNS Lookup		Initial Connection	SSL Negotiation	Time to First Byte	Content Download	Bytes Downloaded	Certificates	Error/Status Code	IP
				Start	End								
1	<a href="https://2019.texascamp.org/bpagetest-and-drupal">https://2019.texascamp.org/bpagetest-and-drupal</a>	text/html	0.163 s	28 ms	35 ms	87 ms	151 ms	46 ms	30.4 KB	-	200	34.237.122.21	
2	<a href="https://2019.texascamp.org/8df1c776fa4a7bb4.css">https://2019.texascamp.org/8df1c776fa4a7bb4.css</a>	text/css	0.347 s	-	36 ms	95 ms	41 ms	48 ms	15.2 KB	-	200	34.237.122.21	
3	<a href="https://2019.texascamp.org/f5d2eb85c52cbd90.css">https://2019.texascamp.org/f5d2eb85c52cbd90.css</a>	text/css	0.362 s	-	-	-	48 ms	6 ms	3.4 KB	-	200	34.237.122.21	
4	<a href="https://2019.texascamp.org/20f0379ef1966934.png">https://2019.texascamp.org/20f0379ef1966934.png</a>	image/png	0.422 s	-	-	-	63 ms	13 ms	2.1 KB	-	200	34.237.122.21	
5	<a href="https://2019.texascamp.org/267b7b05239c60ce.png">https://2019.texascamp.org/267b7b05239c60ce.png</a>	image/png	0.427 s	-	34 ms	41 ms	71 ms	4 ms	6.5 KB	-	200	34.237.122.21	
6	<a href="https://2019.texascamp.org/184470641939c7ac.png">https://2019.texascamp.org/184470641939c7ac.png</a>	image/png	0.444 s	-	-	-	56 ms	1 ms	0.5 KB	-	200	34.237.122.21	
7	<a href="https://2019.texascamp.org/ffec78b1e342f1a5.png">https://2019.texascamp.org/ffec78b1e342f1a5.png</a>	image/png	0.507 s	-	31 ms	114 ms	78 ms	3 ms	1.1 KB	-	200	34.237.122.21	
8	<a href="https://2019.texascamp.org/5a6b3ce2061486c5.svg">https://2019.texascamp.org/5a6b3ce2061486c5.svg</a>	image/svg+xml	0.507 s	-	-	-	81 ms	64 ms	25.2 KB	-	200	34.237.122.21	
9	<a href="https://2019.texascamp.org/9709f63b318b366c.png">https://2019.texascamp.org/9709f63b318b366c.png</a>	image/png	0.509 s	-	-	-	99 ms	5 ms	14.9 KB	-	200	34.237.122.21	
10	<a href="https://2019.texascamp.org/7ad57eb3501ea700.png">https://2019.texascamp.org/7ad57eb3501ea700.png</a>	image/png	0.51 s	-	-	-	144 ms	3 ms	0.8 KB	-	200	34.237.122.21	
11	<a href="https://2019.texascamp.org/ee5191e08db0f098.png">https://2019.texascamp.org/ee5191e08db0f098.png</a>	image/png	0.511 s	-	50 ms	96 ms	147 ms	5 ms	0.7 KB	-	200	34.237.122.21	
12	<a href="https://2019.texascamp.org/821aa5145ac141d1.png">https://2019.texascamp.org/821aa5145ac141d1.png</a>	image/png	0.569 s	-	53 ms	151 ms	95 ms	5 ms	1.5 KB	-	200	34.237.122.21	
13	<a href="https://2019.texascamp.org/746fe6872ca0d72e.png">https://2019.texascamp.org/746fe6872ca0d72e.png</a>	image/png	0.605 s	-	-	-	68 ms	8 ms	5.4 KB	-	200	34.237.122.21	
14	<a href="https://2019.texascamp.org/edec863d139278412.js">https://2019.texascamp.org/edec863d139278412.js</a>	application/javascript	0.617 s	-	-	-	57 ms	17 ms	0.8 KB	-	200	34.237.122.21	
15	<a href="https://2019.texascamp.org/70a45f984affe2c.svg">https://2019.texascamp.org/70a45f984affe2c.svg</a>	image/svg+xml	0.654 s	-	-	-	43 ms	2 ms	0.5 KB	-	200	34.237.122.21	
16	<a href="https://backend2019.texascamp.org/-white_0-420-240.png">https://backend2019.texascamp.org/-white_0-420-240.png</a>	image/png	0.682 s	48 ms	51 ms	196 ms	114 ms	3 ms	10.3 KB	-	200	34.237.122.21	
17	<a href="https://backend2019.texascamp.org/-white-resized_0.png">https://backend2019.texascamp.org/-white-resized_0.png</a>	image/png	0.683 s	-	51 ms	196 ms	134 ms	3 ms	11.9 KB	-	200	34.237.122.21	
18	<a href="https://2019.texascamp.org/edec863d139278412.js">https://2019.texascamp.org/edec863d139278412.js</a>	application/javascript	0.688 s	-	-	-	58 ms	8 ms	0.5 KB	-	200	34.237.122.21	
19	<a href="https://2019.texascamp.org/edec863d139278412.js">https://2019.texascamp.org/edec863d139278412.js</a>	application/javascript	0.688 s	-	-	-	60 ms	1109 ms	315.7 KB	-	200	34.237.122.21	
20	<a href="https://2019.texascamp.org/92ccc94e427ea262.png">https://2019.texascamp.org/92ccc94e427ea262.png</a>	image/png	0.689 s	-	-	-	183 ms	4641 ms	1,506.2 KB	-	200	34.237.122.21	
21	<a href="https://use.typekit.net/rqi7wxl.js">https://use.typekit.net/rqi7wxl.js</a>	text/javascript	0.724 s	74 ms	125 ms	58 ms	75 ms	12 ms	7.4 KB	-	200	104.111.222.25	
22	<a href="https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3">https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3</a>	application/font-woff2	1.343 s	-	156 ms	302 ms	330 ms	963 ms	61.0 KB	-	200	104.111.222.25	
23	<a href="https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3">https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3</a>	application/font-woff2	1.343 s	-	-	-	1293 ms	449 ms	33.0 KB	-	200	104.111.222.25	
24	<a href="https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3">https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3</a>	application/font-woff2	1.343 s	-	-	-	1743 ms	751 ms	61.6 KB	-	200	104.111.222.25	
25	<a href="https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3">https://use.typekit.net/2257a9191&amp;fvd=n4&amp;v=3</a>	application/font-woff2	1.343 s	-	-	-	2496 ms	656 ms	41.1 KB	-	200	104.111.222.25	
26	<a href="https://2019.texascamp.org/271900e50a2642b.gif">https://2019.texascamp.org/271900e50a2642b.gif</a>	image/gif	2.312 s	-	-	-	248 ms	6005 ms	2,416.6 KB	-	200	34.237.122.21	
27	<a href="https://www.google-analytics.com/ga.js">https://www.google-analytics.com/ga.js</a>	application/javascript	3.073 s	211 ms	308 ms	446 ms	493 ms	121 ms	22.0 KB	-	200	172.217.11.8	
28	<a href="https://p.typekit.net/ejs&amp;v=1570590574677">https://p.typekit.net/ejs&amp;v=1570590574677</a>	image/gif	4.323 s	-	-	-	433 ms	14 ms	0.0 KB	-	200	104.111.222.25	
29	<a href="https://www.google-analytics.com/collect.js">https://www.google-analytics.com/collect.js</a>	text/javascript	5.051 s	432 ms	412 ms	422 ms	457 ms	64 ms	17.4 KB	-	200	172.217.15.110	
30	<a href="https://www.google-analytics.com/collect.js">https://www.google-analytics.com/collect.js</a>	image/gif	5.633 s	-	-	-	220 ms	4 ms	0.0 KB	-	200	172.217.15.110	
31	<a href="https://2019.texascamp.org/favicon.ico">https://2019.texascamp.org/favicon.ico</a>	image/x-icon	8.718 s	-	-	-	44 ms	3 ms	1.6 KB	-	200	34.237.122.21	

# How Does Drupal Come Into Play?

# How Does Drupal Come Into Play?

## Introducing the Performance Budget Module



## Performance Budget

[View](#) Version control Automated testing

By [bighappyface](#) on 8 February 2017, updated 8 June 2017



Web page performance is as important as ever and, using best-of-breed tooling, performance budgets can be defined and automated to help us keep things the best that they can be.

### Key Features

- Multiple budgets
- Plugin design to facilitate adding providers
- Stored results broken out by budget dimension
- Customizable schedule for budget analysis

### 8.x-1.0 goals

- High test coverage / Dominant unit tests
- Budget Entity, List, and CRUD
- Cron integration for budget analysis schedules
- Pass/Fail alerts
- Pass/Fail thresholds (may be plugin specific)
- Budget enable/disable
- WebPageTest plugin (High Priority)
- Google PageSpeed Insights plugin (Medium Priority)

### Supporting organizations:

Rackspace Hosting

### Project information

Module categories: [Performance and Scalability](#)

364 downloads

This project is not covered by the [security advisory policy](#).

Use at your own risk! It may have publicly disclosed vulnerabilities.

### Downloads

**8.x-1.0-alpha6** released 11 September 2019

[tar.gz \(1000.98 KB\)](#) | [zip \(1.02 MB\)](#)

Development version: **8.x-1.x-dev** updated 11 Sep 2019 at 21:53 UTC

Testing result: **PHP 7.2 & MySQL 5.5, D8.8 31 pass** [all results](#)

[View all releases](#)

### Maintainers for Performance Budget

**WidgetsBurritos** – 14 commits  
last: 4 weeks ago, first: 2 months ago

**bighappyface** – 6 commits  
last: 2 years ago, first: 2 years ago

[View all committers](#)  
[View commits](#)

### Issues for Performance Budget

To avoid duplicates, please search before submitting a new issue.

[Advanced search](#)

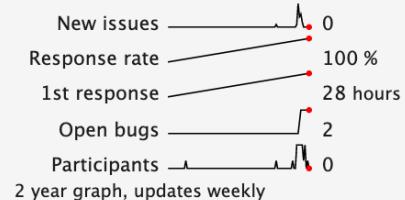
All issues

**9 open, 24 total**

Bug report

**2 open, 5 total**

Statistics



### Documentation

No documentation guides

### Resources

[Read license](#)  
[View project translations](#)

# How Does Drupal Come Into Play?

## About the Performance Budget Module

- Alpha release module for Drupal 8 (Drupal 9 support is on the roadmap)
- Provides historical performance trending capabilities
- Built on the web page archive (WPA) ecosystem
  - [https://www.drupal.org/project/web\\_page\\_archive](https://www.drupal.org/project/web_page_archive)
  - Originally a screenshot archiving tool (built on Headless Chrome/PhantomJS)
    - Crawls a list of URLs or XML sitemaps
    - Runs automatically on a custom recurring schedule
  - We later added other functionality (e.g. HTML capturing and visual regression)
  - Became generic capture & compare system
- Early in WPA development cycle we had idea for performance budget module
  - Built WebPageTest capture utility
- Project fell off our radar for almost 2 years
  - Picked back up again to fix D9 deprecation issues
- Then we realized we were sitting on 2 years of performance data.  
We became curious!

Stop talking already  
and show us!

# Looking Ahead

Goals of the  
performance budget  
module

1. Threshold Monitoring (i.e. actual performance budgeting)  
[https://www.drupal.org/project/performance\\_budget/issues/3074048](https://www.drupal.org/project/performance_budget/issues/3074048)
2. Plugin-based notification system (e.g. email, slack)  
[https://www.drupal.org/project/web\\_page\\_archive/issues/3074051](https://www.drupal.org/project/web_page_archive/issues/3074051)
3. Support private WPT instances  
[https://www.drupal.org/project/performance\\_budget/issues/3086671](https://www.drupal.org/project/performance_budget/issues/3086671)
4. Advanced data normalization  
[https://www.drupal.org/project/performance\\_budget/issues/3088194](https://www.drupal.org/project/performance_budget/issues/3088194)
5. Google PageSpeed Insights support  
[https://www.drupal.org/project/performance\\_budget/issues/3088196](https://www.drupal.org/project/performance_budget/issues/3088196)
6. Plus several other bug fixes, feature improvements and lots of documentation.

# Getting Started

# Getting Started

## Request an API Key from WebPageTest.org



HOME TEST RESULT TEST HISTORY FORUMS DOCUMENTATION ABOUT

### Request API Key

Akamai is providing resources for automated testing through the public WebPagetest instance.

This form allows you to request an API key to use for limited automation of WebPagetest testing. The API key is provisioned for up to 200 "page loads" per day. Each run, first or repeat view counts as a page load (10 runs, first and repeat view would be 20 page loads). That should be sufficient for most low-volume use cases and for building a proof-of-concept for larger testing. If you need to do more testing than that allows then you should consider a [private instance](#). There are [pre-packaged AMIs available](#) on EC2 for running a full WebPagetest instance.

Registering for multiple keys, using disposable email addresses or anything else that looks like suspicious activity may result in the keys being cancelled or, in more extreme cases, all testing of the URLs your are trying to test or the networks you are testing from may be blocked across all of WebPageTest.

The API keys are limited to testing from a subset of locations (EC2 regions and the Dulles Chrome, Firefox, IE 9 and Mobile agents). The EC2 locations will offer consistent performance from location to location and can be scaled as necessary to meet demand. If you need to automate testing from other locations then email me directly ([pmeenan@webpagetest.org](mailto:pmeenan@webpagetest.org)).

The results for tests run with the API keys will be available for 30 days from when the test was run.

Once you fill out the details below, you will receive an email with information on how to retrieve your API key.

Email Address (Required):

Name:

Sponsored by:



Company:

Web Site:

To help prevent bots, please complete the captcha:

I'm not a robot   
reCAPTCHA  
Privacy - Terms

Allow Akamai to contact me periodically with offers

### Terms of Service

It is important to note that the service is offered on a best-effort basis and there are no guarantees on anything (including but not limited to the availability of the service, the performance of the test agents and the availability of test results). If we detect what appears to be malicious use of the service we reserve the right to block access as

# Getting Started

Install the modules  
inside Drupal

```
$ composer require drupal/performance_budget
$ drush pm:enable -y performance_budget
```

# Getting Started

Setup a new web page archive capture job

- Navigate to /admin/config/system/web-page-archive

The screenshot shows the 'Configuration' page with the 'System' tab selected. In the 'SYSTEM' section, the 'Web page archive' link is highlighted in blue, indicating it is the current section being viewed.

**PEOPLE**

- Account settings**  
Configure default user account settings, including fields, registration requirements, and email messages.

**CONTENT AUTHORING**

- Text formats and editors**  
Select and configure text editors, and how content is filtered when displayed.

**SYSTEM**

- Basic site settings**  
Change site name, email address, slogan, default front page, and error pages.
- Cron**  
Manage automatic site maintenance tasks.
- Web page archive**  
Settings for Web Page Archives

- Click “+ Add Archive”

The screenshot shows the 'Web Page Archive' page. The 'Web Page Archive' tab is active. A prominent blue button labeled '+ Add Archive' is visible at the top left of the main content area.

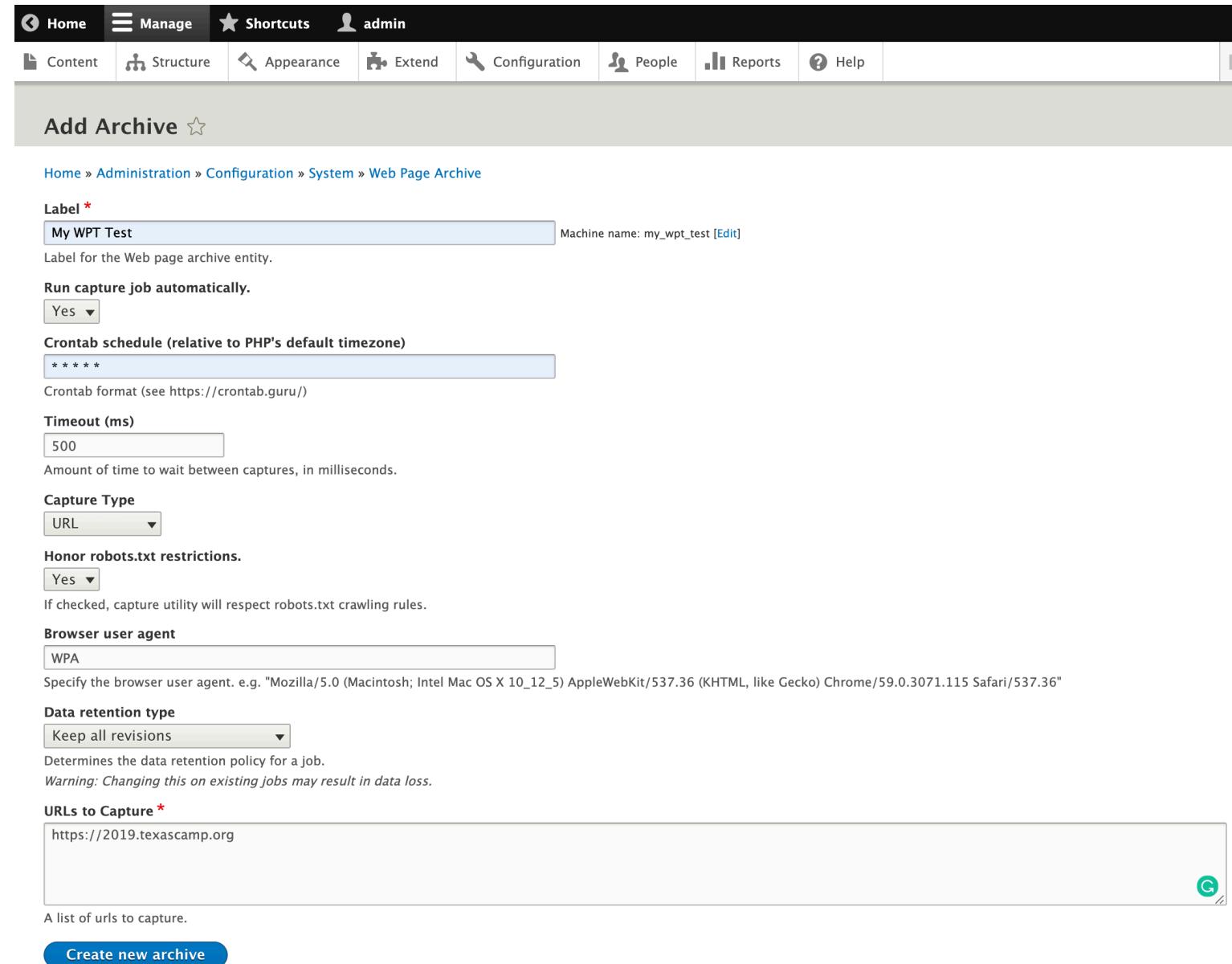
**WEB PAGE ARCHIVE ENTITY**

WEB PAGE ARCHIVE ENTITY	MACHINE NAME	RUNS	SCHEDULE	OPERATIONS
There are no web page archive entities yet.				

# Getting Started

## Create a new WPA capture job

- Fill out the job details and click “Create new archive”  
*(NOTE: Only automatic jobs work currently – Drupal.org Issue #3088126)*



The screenshot shows the 'Add Archive' page in the Drupal administration interface. The top navigation bar includes links for Home, Manage, Shortcuts, and the current user (admin). Below the navigation is a toolbar with links for Content, Structure, Appearance, Extend, Configuration, People, Reports, and Help.

The main content area has a title 'Add Archive' with a star icon. The page displays the following fields:

- Label \***: A text input field containing 'My WPT Test'. A note below it says 'Machine name: my\_wpt\_test [Edit]'. A description below the field says 'Label for the Web page archive entity.'
- Run capture job automatically.**: A dropdown menu set to 'Yes'.
- Crontab schedule (relative to PHP's default timezone)**: A text input field showing the crontab entry '\* \* \* \* \*'. A note below it says 'Crontab format (see <https://crontab.guru/>)'.
- Timeout (ms)**: A text input field containing '500'. A note below it says 'Amount of time to wait between captures, in milliseconds.'
- Capture Type**: A dropdown menu set to 'URL'.
- Honor robots.txt restrictions.**: A dropdown menu set to 'Yes'. A note below it says 'If checked, capture utility will respect robots.txt crawling rules.'
- Browser user agent**: A text input field containing 'WPA'. A note below it says 'Specify the browser user agent. e.g. "Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_12\_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/59.0.3071.115 Safari/537.36"'.
- Data retention type**: A dropdown menu set to 'Keep all revisions'. A note below it says 'Determines the data retention policy for a job.' A warning note below says 'Warning: Changing this on existing jobs may result in data loss.'
- URLs to Capture \***: A text input field containing 'https://2019.texascamp.org'. A note below it says 'A list of urls to capture.'

At the bottom right of the form is a small green circular icon with a white letter 'G' and a diagonal line through it. At the very bottom center is a blue button labeled 'Create new archive'.

# Getting Started

## Configure the WPT Capture Utility

- Under “Capture Utility” at the bottom, select “Web page test capture utility”

The screenshot shows a configuration interface for 'Capture Utility'. At the top right is a link 'Show row weights'. Below it, a section titled 'CAPTURE UTILITY' has a dropdown menu where 'Web page test capture utility' is selected. To the right of this section is a 'OPERATIONS' column with a 'Delete' link. At the bottom left are 'Update archive' and 'Add' buttons.

- Add API key and specify the “Standard Page Load KPIs” KPI group, and leave the chart.js settings as-is.

The screenshot shows a Drupal administrative interface for adding a 'Web page test capture utility'. The top navigation bar includes 'Home', 'Manage', 'Shortcuts', and 'admin'. Below the navigation is a breadcrumb trail: Home > Administration > Configuration > System > Web Page Archive. A success message in a green box states 'Saved the My WPT Test Web page archive entity.' The form fields include:

- 'webpagetest.org API Key \*': A text input field containing a series of dots (...).
- 'KPI Groups \*': A dropdown menu set to 'Standard Page Load KPIs (standard\_page\_load\_kpis)'.
- 'Chart.js Settings': A code editor window containing the following JavaScript object:

```
{  
  title: {  
    display: true,  
    text: Drupal.t('@group: @url', {'@group': group, '@url': url}),  
  },  
}
```

A note below the code editor says: 'Use this field to define the chart options as a javascript object. You are allowed to use existing javascript functions, such as Drupal.t(), the url variables is available to represent the captured URL, and the group variable is available to represent the KPI group. See [Chart.js documentation](#) for more information about available options.'

# Getting Started

Trigger job on  
webpagetest.org and  
retrieve the results

- Run cron once to queue on the job (Note: ignore the “Failed to process” error)

```
[davi0040@local:[...ers/davi0040/tmp/pbdemo]$ drush cron
[notice] Starting execution of comment_cron().
[notice] Starting execution of dblog_cron(), execution of comment_cron() took 7.2ms.
[notice] Starting execution of field_cron(), execution of dblog_cron() took 0.42ms.
[notice] Starting execution of file_cron(), execution of field_cron() took 0.98ms.
[notice] Starting execution of history_cron(), execution of file_cron() took 33.78ms.
[notice] Starting execution of node_cron(), execution of history_cron() took 0.93ms.
[notice] Starting execution of search_cron(), execution of node_cron() took 10.22ms.
[notice] Starting execution of system_cron(), execution of search_cron() took 12.89ms.
[notice] Starting execution of update_cron(), execution of system_cron() took 7.77ms.
[notice] Starting execution of web_page_archive_cron(), execution of update_cron() took 979.61ms.
[notice] Deleted directory: public://web-page-archive/pb_wpt_capture/wpt_test
[notice] Execution of web_page_archive_cron() took 955.73ms.
[notice] Cron run completed.
[error] Message: Failed to process 0 URLs.

[notice] Message: The capture has been completed.
```

```
[davi0040@local:[...ers/davi0040/tmp/pbdemo]$ echo $?
0
```

- Wait ~5 minutes for webpagetest.org to finish processing and run cron again

```
[davi0040@local:[...ers/davi0040/tmp/pbdemo]$ drush cron
[notice] Starting execution of comment_cron().
[notice] Starting execution of dblog_cron(), execution of comment_cron() took 3.78ms.
[notice] Starting execution of field_cron(), execution of dblog_cron() took 0.56ms.
[notice] Starting execution of file_cron(), execution of field_cron() took 0.78ms.
[notice] Starting execution of history_cron(), execution of file_cron() took 14.76ms.
[notice] Starting execution of node_cron(), execution of history_cron() took 0.44ms.
[notice] Starting execution of search_cron(), execution of node_cron() took 5.86ms.
[notice] Starting execution of system_cron(), execution of search_cron() took 6.77ms.
[notice] Starting execution of update_cron(), execution of system_cron() took 6.99ms.
[notice] Starting execution of web_page_archive_cron(), execution of update_cron() took 13.91ms.
[notice] Execution of web_page_archive_cron() took 10471.26ms.
[notice] Cron run completed.
[notice] Message: Processed 1 URLs.
```

```
[notice] Message: The capture has been completed.
```

# Getting Started

## View Run Results

- Return to main WPA page and click “View Run History” next to your job

The screenshot shows the WPA main interface. At the top, there's a navigation bar with links for Back to site, Manage, Shortcuts, and admin. Below the navigation is a secondary menu with links for Content, Structure, Appearance, Extend, Configuration, People, Reports, Help, and a back arrow. The main content area is titled "Web Page Archive" with a star icon. A horizontal menu bar below the title includes "Web Page Archive", "Compare Runs", "Previous Run Comparisons", "Settings", "Web Page Test KPI Groups", and "Prepare uninstall". Underneath this is a breadcrumb trail: Home > Administration > Configuration > System. A blue button labeled "+ Add Archive" is visible. The main table displays one row of data:

WEB PAGE ARCHIVE ENTITY	MACHINE NAME	RUNS	SCHEDULE	OPERATIONS
My WPT Test	my_wpt_test	1 run	Next run: 2019-10-16 @ 4:05am UTC	<a href="#">View Run History</a> ▾

- Click “View Details” see details about the particular run

The screenshot shows the details page for the "My WPT Test" entry. The top navigation and secondary menu are identical to the main WPA page. The main content area is titled "My WPT Test" with a star icon. A breadcrumb trail shows Home > Administration > Configuration > System > Web Page Archive. A blue button labeled "+ View Historical Report" is visible. Below it are filtering options: "Capture utilities" dropdown set to "- Any -", "Sort by" dropdown set to "Revision create time", "Order" dropdown set to "Desc", and "Items per page" dropdown set to "10". An "Apply" button is present. The main table displays one row of data:

CREATED	CAPTURE UTILITIES	ITEMS CAPTURED	CAPTURE SIZE (BYTES)	OPERATIONS
Tue, 10/15/2019 – 21:36	Web page test capture utility	1	455.5 KB	<a href="#">View Details</a> ▾

# Getting Started

## Report Summary

- View report summary or click “View Detailed Report” for more information

The screenshot shows a web-based administration interface for managing a website's performance data. At the top, there is a navigation bar with links for Back to site, Manage, Shortcuts, admin, Content, Structure, Appearance, Extend, Configuration, People, Reports, Help, and Edit. Below the navigation bar, the title "My WPT Test" is displayed with a star icon.

The main content area shows the URL <https://2019.texascamp.org>. Below the URL, the "From:" field indicates "Dulles, VA - Chrome - Cable".

A section titled "Standard Page Load KPIs" contains the following details:

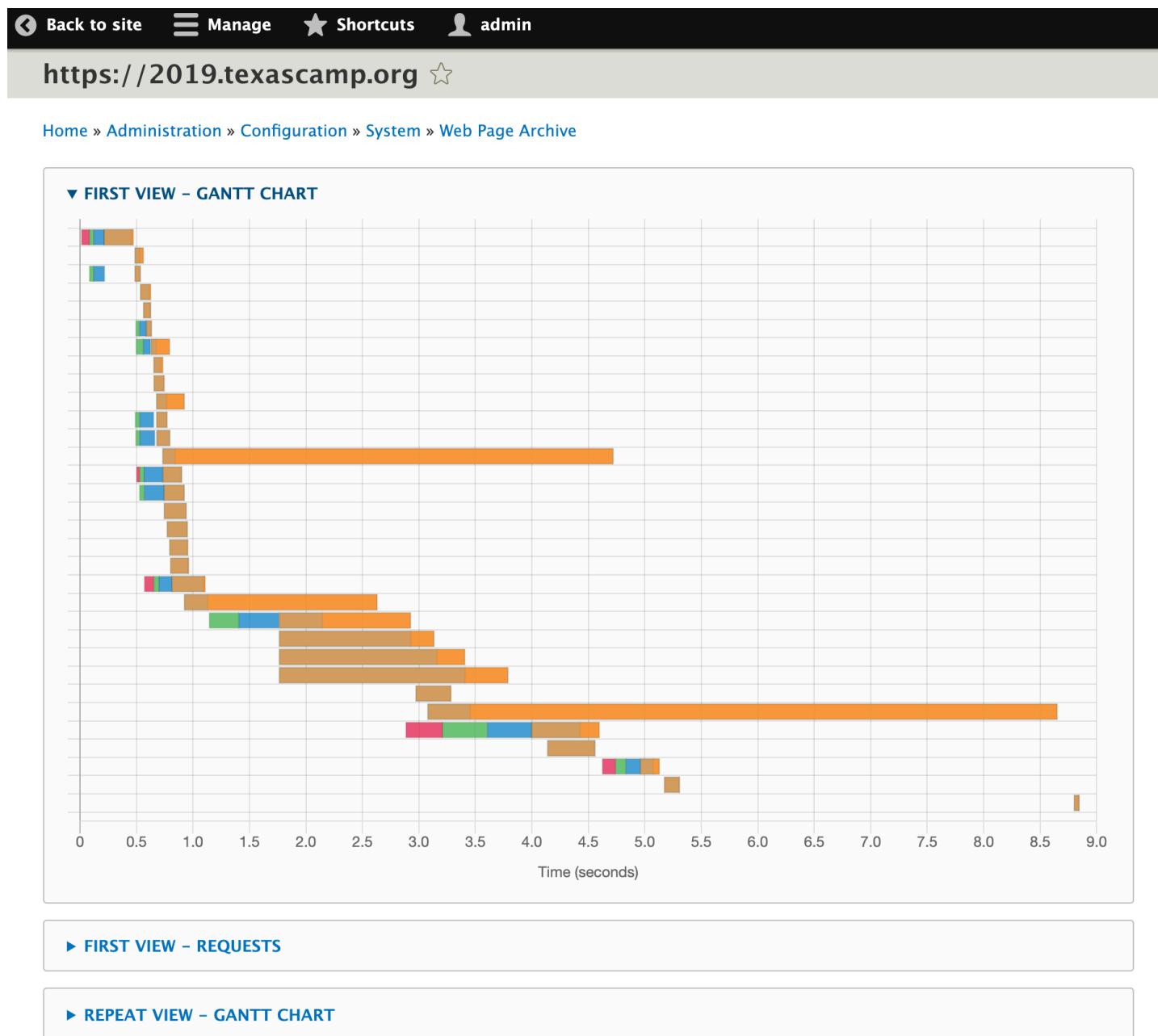
- Average/First View:**
  - Load Time: 8.664s
  - Fully Loaded: 8.845s
  - TTFB: 0.456s
  - Start Render: 0.8s

At the bottom of the page, there is a button labeled "View Detailed Report".

# Getting Started

## Detailed Report

- Expand and Collapse various sections to investigate further.



# Getting Started

Navigate to the Historical Report

- Rerun cron a few more times to generate additional results then return to the run history page, and click “+ View Historical Report”

The screenshot shows a web-based administrative interface for managing a 'My WPT Test' configuration. At the top, there's a navigation bar with links for 'Back to site', 'Manage', 'Shortcuts', and a user account for 'admin'. Below the navigation is a title bar with the text 'My WPT Test' and a star icon. Underneath the title bar, a breadcrumb navigation path is displayed: Home > Administration > Configuration > System > Web Page Archive. A prominent blue button labeled '+ View Historical Report' is centered above a search and filter section. This section includes dropdown menus for 'Capture utilities' (set to '- Any -'), 'Sort by' (set to 'Revision create time'), 'Order' (set to 'Desc'), and 'Items per page' (set to '10'). An 'Apply' button is located below these controls. The main content area is a table with the following data:

CREATED	CAPTURE UTILITIES	ITEMS CAPTURED	CAPTURE SIZE (BYTES)	OPERATIONS
Wed, 10/16/2019 – 01:16	Web page test capture utility	1	449.53 KB	<button>View Details</button>
Tue, 10/15/2019 – 21:36	Web page test capture utility	1	455.5 KB	<button>View Details</button>

# Getting Started

Generate the initial historical report

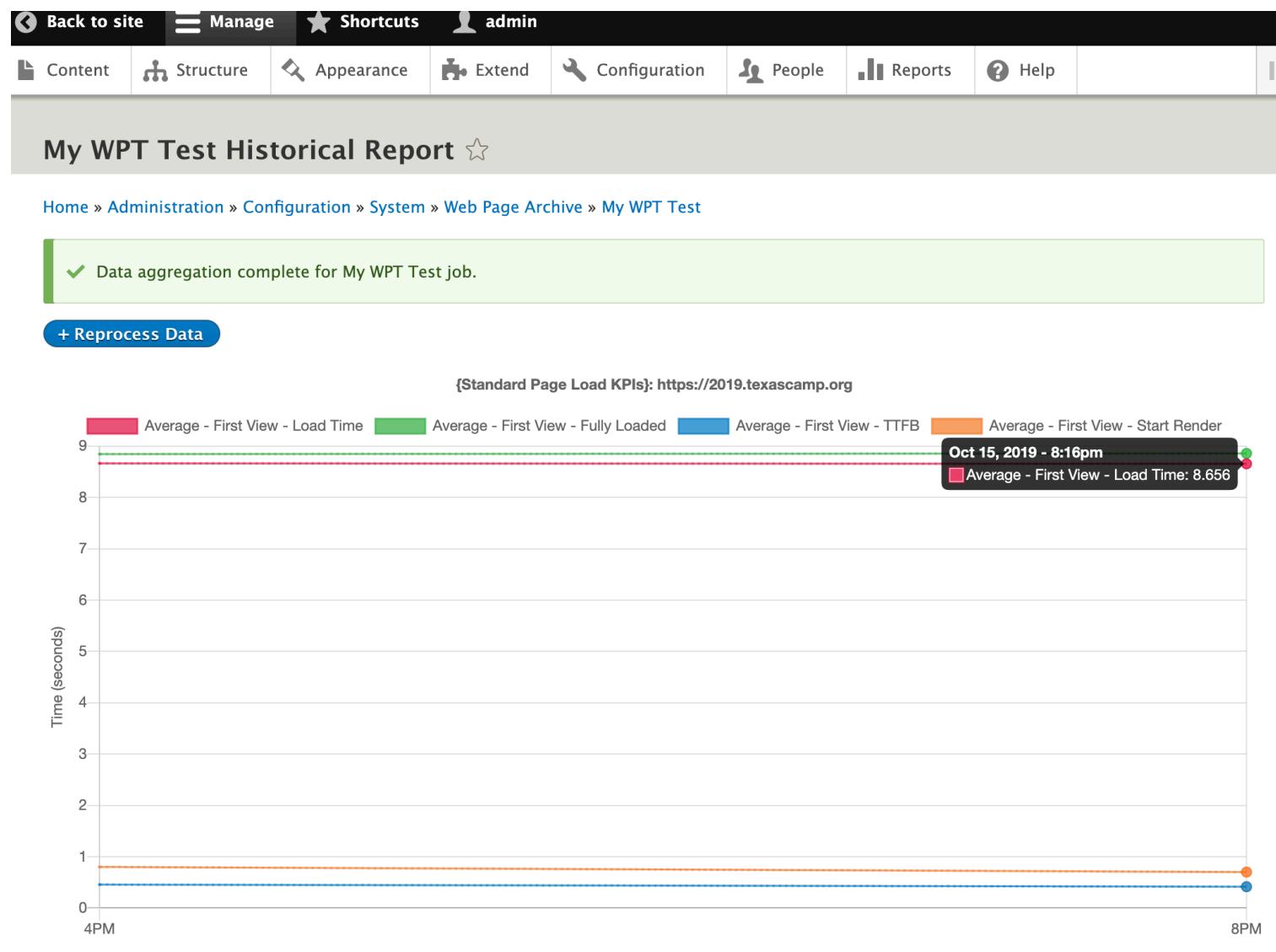
- If it's your first time viewing it, you will need to generate a historical report by specifying a date range (this can be changed later)

The screenshot shows the Drupal administrative interface. At the top, there is a navigation bar with links: Back to site, Manage, Shortcuts, and a user account for admin. Below the navigation bar is a horizontal menu with icons and labels: Content, Structure, Appearance, Extend, Configuration, People, Reports, and Help. The main content area has a title "My WPT Test Historical Report" with a star icon. Below the title, a breadcrumb trail shows the path: Home » Administration » Configuration » System » Web Page Archive » My WPT Test » My WPT Test Historical Report. A sub-instruction below the breadcrumb says "Press the button below to process all captured webpagetest.org data for this job." A dropdown menu labeled "Date range:" is set to "All time". A note below the dropdown says "Specify the date range you want to aggregate KPIs on. Drupal will remember this setting on subsequent reports." A blue "Process data" button is at the bottom of the form.

# Getting Started

Use the historical report charts

- Move your cursor over the chart to identify individual run information and click if you want to see more detailed run results.



# Getting Started

Use the historical report request summary

- Additionally, you can expand and collapse request summary data, which is grouped by hostname.

▼ FIRST VIEW – REQUEST SUMMARY

REQUESTED URL	FIRST TIME CAPTURED	LAST TIME CAPTURED	TOTAL REQUESTS MADE	AVERAGE LOAD TIME
https://www.googletagmanager.com	10/15/2019 - 21:36	10/16/2019 - 01:16	2	1.515s
https://use.typekit.net	10/15/2019 - 21:36	10/16/2019 - 01:16	10	1.380s
https://2019.texascamp.org	10/15/2019 - 21:36	10/16/2019 - 01:16	42	0.680s
https://backend2019.texascamp.org	10/15/2019 - 21:36	10/16/2019 - 01:16	4	0.519s
https://p.typekit.net	10/15/2019 - 21:36	10/16/2019 - 01:16	2	0.354s
https://www.google-analytics.com	10/15/2019 - 21:36	10/16/2019 - 01:16	4	0.342s

▼ REPEAT VIEW – REQUEST SUMMARY

REQUESTED URL	FIRST TIME CAPTURED	LAST TIME CAPTURED	TOTAL REQUESTS MADE	AVERAGE LOAD TIME
https://2019.texascamp.org	10/15/2019 - 21:36	10/16/2019 - 01:16	2	0.351s
https://p.typekit.net	10/15/2019 - 21:36	10/16/2019 - 01:16	2	0.167s
https://www.google-analytics.com	10/15/2019 - 21:36	10/16/2019 - 01:16	3	0.112s

# Help Wanted

# Help Wanted

## Ways you can help

1. Test the module
2. Report bugs
3. Become a case study
4. Work on issues
5. Write documentation
6. Review the code
  - Performance reviews
  - Security reviews
  - Drupal best practice reviews
7. Drupal 9 preparations and testing

# Resources

List of helpful resources related to this training

- **Learning resources**

- Akamai Online Retail Performance Report: Milliseconds Are Critical  
<https://www.akamai.com/uk/en/about/news/press/2017-press/akamai-releases-spring-2017-state-of-online-retail-performance-report.jsp>
- thinkwithgoogle.com - Find out how you stack up to new industry benchmarks for mobile page speed  
<https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/>
- WebPageTest Documentation – Metrics  
<https://sites.google.com/a/webpagetest.org/docs/using-webpagetest/metrics>

- **Performance Tools**

- Google Chrome Developer Tools – <https://developers.google.com/web/tools/chrome-devtools/network>
- WebPageTest.org – <https://webpagetest.org/>
- Google PageSpeed Insights – <https://developers.google.com/speed/pagespeed/insights/>
- Google Mobile Speed Report – <https://www.thinkwithgoogle.com/feature/testmysite/>
- Gtmetrix – <https://gtmetrix.com>

- **Drupal Modules**

- Performance Budget – [https://www.drupal.org/project/performance\\_budget](https://www.drupal.org/project/performance_budget)
- Web Page Archive – [https://www.drupal.org/project/web\\_page\\_archive](https://www.drupal.org/project/web_page_archive)
- Resource Hints – [https://www.drupal.org/project/resource\\_hints](https://www.drupal.org/project/resource_hints)

# Thank You

[https://www.drupal.org/project/performance\\_budget](https://www.drupal.org/project/performance_budget)

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