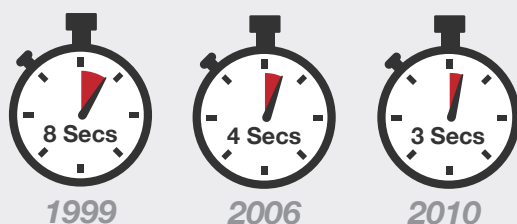


TEST HOW PAGE SPEED IMPACTS YOUR KPI'S

The Importance of Page Speed



Internet users are increasingly demanding
In 1999, the average user was willing to wait 8 seconds for a page to load. By 2010, 57% of online shoppers said they would abandon a page after 3 seconds.



Insights + Action = EVOLVE

The one critical aspect that's missing from the analysis above is that companies do not know how page speed **directly impacts** their businesses KPI's.

We've created a script to address this challenge. Implementing the script and using it as part of an A/B test on the Optimize 360 platform will give your team the ability to see how an increase or decrease in page speed impacts KPI's that matter to you, such as transactions, revenue per visitor, or lead completions.

Example: Improving average page speed by 1 second led to a +__% in revenue per visitor for the cart page.



The Page Speed Script

To test how page load speed impacts your business KPI's you will need to:

1. Configure a custom dimension within Google Analytics to receive this page load data
2. Load the Blast script that calculates page load speed on your site; and
3. Launch an A/B test within Optimize 360



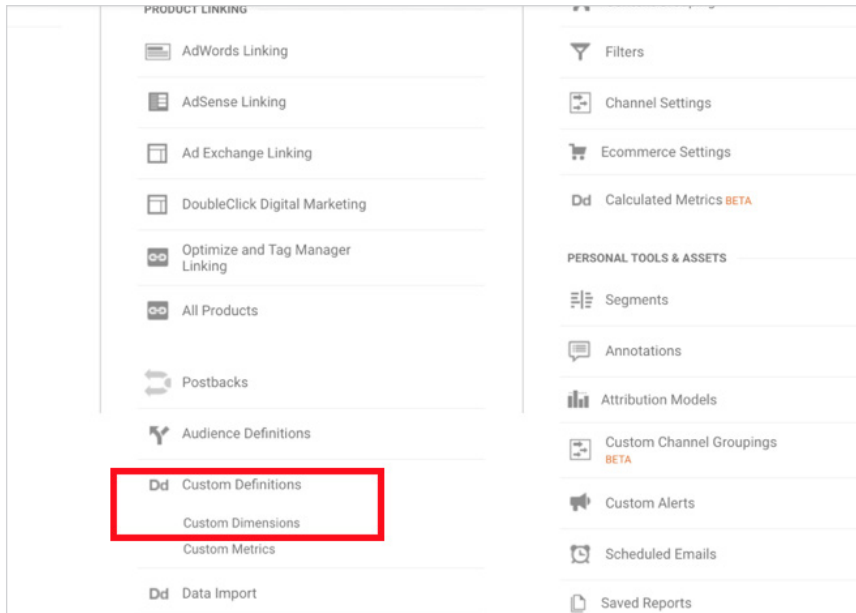
The easiest way to deploy the script will be via Google Tag Manager. Instructions on how to deploy the script are included in the next page.





1. Create a Custom Dimension in Google Analytics

The Blast script is configured to push the page load speed value of a page into the data layer. The additional tag you'll setup will then send this value to Google Analytics. To ensure Google Analytics is setup to receive this data you will need to create a custom dimension slot for it within your Google Analytics Property.



1. Within your Google Analytics Account go to the Admin page. Within the Property column select the Property in which you'll be reviewing your test data. Then select Custom Definitions and Custom Dimensions.

2. Once you're in the Custom Dimension menu select 'New Custom Dimension'. Name the Dimension 'Optimize Page Speed', set it's scope to 'Session' and ensure it is marked as active. Save the new dimension.

Edit Custom Dimension

Name

Scope

Session

Active

☒

Save **Cancel**

Example Codes for This Dimension

Copy the following code snippet for your platform. DO NOT FORGET to replace dimensionValue with your own.

JavaScript (gtag.js)

For instructions on how to setup custom dimensions using gtag.js, please refer to the [gtag.js developer documentation](#).

JavaScript (Only works for Universal Analytics properties)

```
var dimensionValue = 'SOME_DIMENSION_VALUE';
ga('set', 'dimension22', dimensionValue);
```

Android SDK

```
String dimensionValue = "SOME_DIMENSION_VALUE";
tracker.set(Field.customDimension(22), dimensionValue);
```

iOS SDK

```
NSString *dimensionValue = @"SOME_DIMENSION_VALUE";
[tracker set:[GAIFields customDimensionForIndex:22] value:dimensionValue];
```

3. Once you've saved the new dimension make a note of it's Index number - you'll need it in Step 7 of the next section: "Load the page speed script via Google Tag Manager". In the example below the dimension created has an Index number of 22.

Optimize - Page Speed	22	Session	Oct 24, 2017	Active
-----------------------	----	---------	--------------	--------

4. Your new Custom Dimension is finished! In the next set of instructions you'll learn how to deploy the page speed script itself.





Optimize Page Speed Script Tracking

Trigger Configuration

Trigger type
☒ Custom Event

Event name
 pageSpeed

This trigger fires on
 All Custom Events

References to this Trigger

- Optimize Page Load Speed Integration Tag

5. Create a new Trigger called 'Optimize Page Speed Script Tracking'. Set the trigger-type as 'Custom Event' and then the event name to 'pageSpeed'. The Trigger should be set to fire on all Custom Events.

6. Create a new Tag called 'Optimize Page Load Speed Integration'. Set the tag type to 'Universal Analytics'. The track type should be set to 'Event', the event category to 'Optimize Page Speed Script' and the event action 'Script Triggered'. Adjust the 'Non-Interaction Hit' setting to 'true'.
7. You'll now need to create a new Google Analytics Setting Variable for the Google Analytics Setting portion of this tag. Name the variable 'Optimize Page Speed Script Settings'. The variable type should be 'Google Analytics Settings' and you should input your GA Property ID into the Tracking ID field. Leave Cookie Domain as auto and then open 'More Settings' and 'Custom Dimensions'. The Index of the Custom Dimension you're adding should be the index of the new custom dimension you added previously in your Google Analytics Property. The dimension value should be '{{Optimize Page Load Time Range}}' to reference the new variable we created in Step 4.

Optimize Page Speed Script Settings

Google Analytics Settings

Tracking ID

Cookie Domain

More Settings

- Fields to Set
- Custom Dimensions

Index	Dimension Value
<input type="text" value="22"/>	<input type="text" value="{{Optimize Page Load Time Range}}"/>
- Custom Metrics
- Content Groups

+ ADD CUSTOM DIMENSION

8. Preview your change, ensuring the tags "Optimize Page Load Script" and "Optimize Page Load Speed Integration" fire on the expected pages.
9. Publish the changes you have made in GTM.



Blast's Page Speed Script to load:

```

1  <script type="text/javascript">
2
3  (function() {
4      var pageLoadTimeRange;
5      if(!window.pageLoadTime){
6          var timeStamp=new Date().getTime();
7          var performanceTiming=window.performance?performance.timing:0;
8          var requestStart=performanceTiming?performanceTiming.requestStart:window.in-
HeadTS||0;
9          window.pageLoadTime=requestStart ? Math.round((timeStamp-requestStart)/100) :
'';
10     }
11
12     // Group page load times
13     if (pageLoadTime < 20)
14         pageLoadTimeRange = "1_sec";
15     else if (pageLoadTime >= 20 && pageLoadTime < 30)
16         pageLoadTimeRange = "2_sec";
17     else if (pageLoadTime >= 30 && pageLoadTime < 40)
18         pageLoadTimeRange = "3_sec";
19     else if (pageLoadTime >= 40 && pageLoadTime < 50)
20         pageLoadTimeRange = "4_sec";
21     else if (pageLoadTime >= 50 && pageLoadTime < 60)
22         pageLoadTimeRange = "5_sec";
23     else if (pageLoadTime >= 60 && pageLoadTime < 70)
24         pageLoadTimeRange = "6_sec";
25     else if (pageLoadTime >= 70 && pageLoadTime < 80)
26         pageLoadTimeRange = "7_sec";
27     else
28         pageLoadTimeRange = "8_sec";
29
30
31     //GTM Integration Example
32     if (window.dataLayer && typeof(dataLayer) == "object") {
33         dataLayer.push({
34             'event': 'pageSpeed',
35             'pageLoadTimeRange': pageLoadTimeRange
36         });
37     }
38
39 })();
40
41 </script>

```



If you have followed these steps then you're good to go! The script you deployed via your tag manager will calculate page load speeds for the specific page(s) you have targeted for each session that is in your experiment and send this data onto the custom dimension setup in Google Analytics.



A | B 3. Launch an A/B Test with the Page Speed Script

After you have the Blast script and accompanying custom dimension implemented, the final step is to set up your A/B test. Your team will want to test a variation that either has a faster or slower page speed than the original page.

If your team is unsure which one to test, a good place to start is to understand the page load speed for your current site. While it is easy to reference Google Analytics for this information, we often find that the **data included in GA's Site Speed report to be misleading**. Instead, we would recommend using other tools that provide similar data, such as Pingdom or WebPageTest.

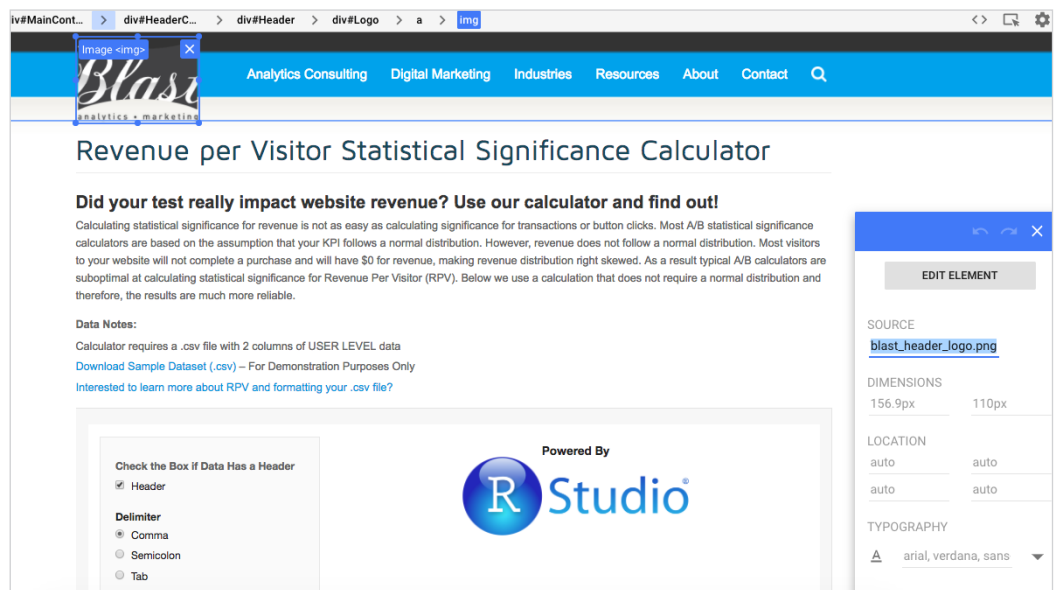
If your site already has a fast page speed (ex. 1 sec), it may be useful to test a variation with a slower page speed. So why would your team want to test a slower page? **The purpose of a page speed test is to understand IMPACT.** While the site in its current state may load quickly, there may be upcoming plans for a redesign or addition of new media assets that can potentially slow down a page. Understanding how a slower page speed affects your business KPI's allows your team to **fully assess** the impact of future design/UX changes, outside of whether these design changes fit the style of the site.



Alternatively, if your site has a slower page speed (ex. 6 sec) then your test variant could load faster. **While we understand generally that improving page speed improves performance, this test will allow your team to prove it.** If test results show a positive impact due to a quicker page speed, your team can leverage this data to make a case for investing resources into improving page speed for the site overall.

Test Variation: How to Slow Down the Page

If your team is interested in testing the original page against a slower variation, then one easy way to create this test variation is to target images that are already in use on the page. In Optimize 360's visual editor you can simply swap out current image files with larger versions of the same image.



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Test Variation: How to Speed Up the Page

Speeding up the variation page can be accomplished in a few different ways. If you utilize the page speed tools mentioned above (ex. Pingdom), you should receive specific recommendations on how to accomplish this, such as:

 Compressing Images

 Leveraging Browser Caching

 Minify Code

 Content Delivery Network (CDN)

Similar to slowing down a page, if the targeted page contains images, this is an easy way to impact page speed. In this case, your team would focus on compressing these image files. You can utilize tools, like [ImageOptim](#), to compress images and then upload the new file to the variation via Optimize 360's visual editor.

If your team is looking to implement other recommendations (ex. leverage browser caching), they can build out a separate test page with recommendations implemented, and then use Optimize 360 to serve a redirect to this new page.

X
Create experiment
CREATE

Name your experiment *
Test #100 - Revenue Per Visitor Calculator
42 / 255

What is the URL of the page you'd like to test? This is called your editor page. *
http://www.blastam.com/rpv-calculator

What type of experiment would you like to create?

A/B test
Tests two or more variants of a page. Also called an A/B/n test.

Multivariate test BETA
Tests variants with two or more different sections.

Redirect test
Tests separate web pages identified by different URLs or paths.

DETAILS
REPORTING

Draft. Some setup steps must still be completed. SHOW STEPS

Variants
Original
Faster Page Load

Conf
Pageviews
Session Duration
Bounces
Revenue
Secondary object
Transactions

Track Business KPI's

As part of the test buildout you'll want to ensure that you track your businesses KPI's. Optimize 360 makes it easy since you'll be able to choose from any of the Google Analytics goals (ex. transactions, revenue, lead completions) in your linked account.

Adding your primary KPI's as objectives for your A/B test will allow you to see if the test variant overall has a statistically significant impact on your goals.

AB Testing (Goal 15 Completions)						
Variant	Improvement	Probability to be Best	Probability to beat baseline	Conversion Rate	Conversions	
Original 146,040 sessions	Baseline	5%	Baseline	1.84% - 2.62%	1,951	
Variant 1 147,535 sessions	-3% to 57%	95%	95%	2.29% - 3.19%	2,606	

Optimize 360 Reporting Dashboard



To tie test performance to page speed for each variation you'll need to create a custom report.

General Information

TitleOptimize Example Custom Report

Report Content

Report Tab

+ add report tab

Name

Report Tab

Type

ExplorerFlat TableMap OverlayFunnelBETA

Dimensions

Experiment NameVariantOptimize - Page Speed+ add dimension

Metrics

SessionsGoal 7(Goal 7...)+ add metric

Filters - optional

Include

Experiment Name

Exact

Testing Page Speed Scri

and

Include

Variant

Exact

1

+ add filter

Views - optional

All views associated with this account

1 view selected

Custom Dimension for the Page Speed Script

Your Business KPI

Filter for a specific variant if you want to look at data one variation at a time. You'll either see the variant name or you'll see a number (ex. 0 – Control; 1 – Variant 1)

By creating this custom report your team will be able to see test performance segmented by the various speed buckets (ex. 1 sec, 2 sec).

Optimize Example Custom Report

SAVEEXPORTSHAREEDIT

All Users

0.70% Sessions

+ Add Segment

Report Tab

advanced

Experiment Name	Variant	Optimize - Page Speed	Sessions	(Goal 7 Completions)	(Goal 7 Conversion Rate)
1. Testing Page Speed Script II	1	1_sec	33.33%	28.57%	%
2. Testing Page Speed Script II	1	2_sec	26.67%	28.57%	%
3. Testing Page Speed Script II	1	3_sec	20.00%	28.57%	%
4. Testing Page Speed Script II	1	4_sec	(6.67%)	(0.00%)	%
5. Testing Page Speed Script II	1	5_sec	(6.67%)	(0.00%)	%
6. Testing Page Speed Script II	1	6_sec	(6.67%)	14.29%	%

Finally, your team can utilize our page speed test results template to calculate the average page load speed for each variation and analyze the percentage change for metrics that are important to your business.

Page Speed Test Results

Original Treatment									
Page Speed	Sessions	Conversions	Total Revenue	Conversion Rate	Revenue Per Visitor	Percentage of Total Traffic	Percentage of Total Conversions	Percentage of Total Revenue	
1	250	11	\$ 5,038.00	4.40%	\$ 20.15	0.41%	0.91%	15.36%	
2	209	9	\$ 1,772.00	4.31%	\$ 8.48	0.34%	0.75%	5.40%	
3	40,670	640	\$ 15,004.00	1.57%	\$ 0.37	66.94%	53.16%	45.75%	
4	12,191	300	\$ 9,000.00	2.46%	\$ 0.74	20.06%	24.92%	27.44%	
5	4,137	125	\$ 1,058.00	3.02%	\$ 0.26	6.81%	10.38%	3.23%	
6	1,900	60	\$ 536.00	3.16%	\$ 0.28	3.13%	4.98%	1.63%	
7	901	40	\$ 190.00	4.44%	\$ 0.21	1.48%	3.32%	0.58%	
8	500	19	\$ 201.00	3.80%	\$ 0.40	0.82%	1.58%	0.61%	
TOTAL	60,758	1,204	\$ 32,799.00	1.98%	\$ 0.54	100.00%	100.00%	100.00%	

Variation Treatment									
Page Speed	Sessions	Conversions	Total Revenue	Conversion Rate	Revenue Per Visitor	Percentage of Total Traffic	Percentage of Total Conversions	Percentage of Total Revenue	
1	39,670	677	\$ 25,038.00	1.71%	\$ 0.63	66.45%	50.71%	54.68%	
2	12,100	328	\$ 11,772.00	2.71%	\$ 0.97	20.27%	24.57%	25.71%	
3	4,137	149	\$ 5,004.00	3.60%	\$ 1.21	6.93%	11.16%	10.93%	
4	1,899	71	\$ 2,045.00	3.74%	\$ 1.08	3.18%	5.32%	4.47%	
5	906	57	\$ 1,058.00	6.29%	\$ 1.17	1.52%	4.27%	2.31%	
6	503	30	\$ 536.00	5.96%	\$ 1.07	0.84%	2.25%	1.17%	
7	275	13	\$ 190.00	4.73%	\$ 0.69	0.46%	0.97%	0.41%	
8	209	10	\$ 145.00	4.78%	\$ 0.69	0.35%	0.75%	0.32%	
TOTAL	59,699	1,335	\$ 45,788.00	2.24%	\$ 0.77	100.00%	100.00%	100.00%	

Instructions

Enter your data from the Optimizely X Results Dashboard for applicable columns

Do not edit these fields

Summary

Treatments	Average Page Speed (seconds)	Revenue Per Visitor (RPV)	Percentage Change in RPV
Original	3.52	\$ 0.54	N/A
Variation	1.59	\$ 0.77	23%

Treatments	Average Page Speed (seconds)	Conversion Rate (CR)	Percentage Change in CR
Original	3.52	1.98%	N/A
Variation	1.59	2.24%	13%

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