
bizbudding™
Site Speed
Should it be a priority?
https://bizbudding.com/site-speed-matters

# David Schmeltzle

**BizBudding Inc.**
President | Founder
@bizbudding or david@bizbudding.com

Software geek – real-time coder

Network geek – understand TCP/IP

Prefer vi to a visual editor

Excel at business process optimization

Love trail running and beer

Lead our ***professional services*** and ***infrastructure-as-a-service*** divisions.

bizbudding™

We deliver high-quality innovative work. We we pay attention to detail.

We love WordPress.

Most importantly, we love what we do, and we treasure that we get to choose who we work with.

# The Importance of Site Speed

## Should it be your first priority?

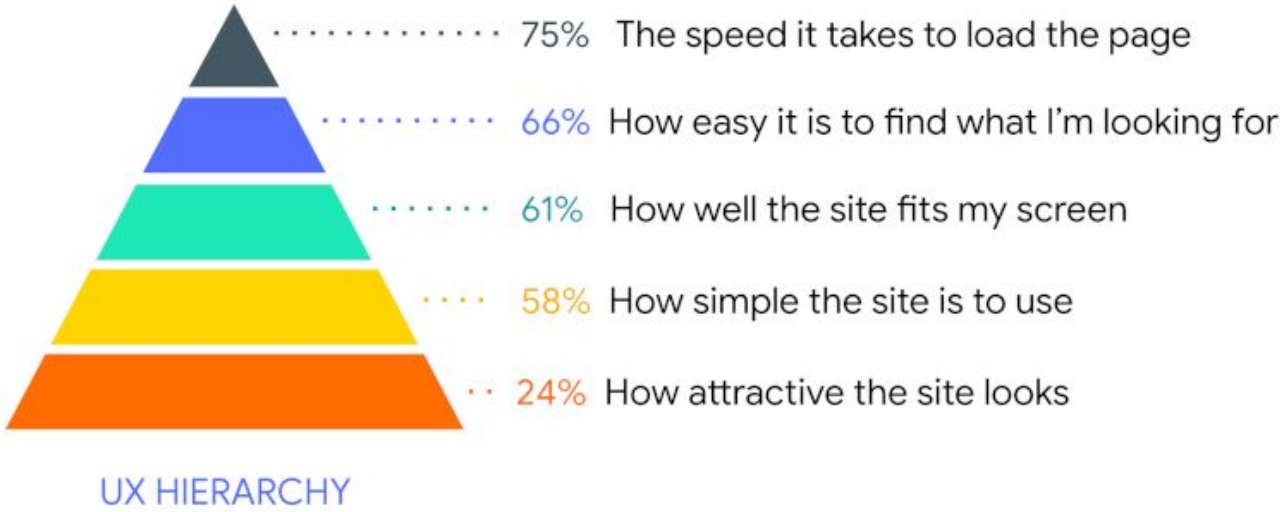
"For 70% of the mobile landing pages we [Google] analyzed, it took more than ***five seconds*** for the visual content above the fold to display on the screen, and it took more than ***seven seconds*** to fully load all visual content above and below the fold." -- February 2018, Google

https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/

# Site Speed Affects Users

*“Most users rate speed at the very top of their UX needs.” -- Google*

**The most important aspects of a website have become:**




https://developers.google.com/web/updates/2018/08/web-performance-made-easy

# Site Speed Affects Conversions

*"Today, it's critical that marketers design fast web experiences across all industry sectors." -- Google*

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%**

https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/

# Site speed affects SEO

*“Update July 9, 2018: The Speed Update is now rolling out for all users.” -- Google*


https://webmasters.googleblog.com/2018/01/using-page-speed-in-mobile-search.html

# Site Speed might be your #1 priority in 2018.

**What if a 1mo website performance refresh project delivered...**

**25%** increase in sessions

**31%** increase in session duration

**10%** increase in pages / session

**26%** reduction in bounce rate

**...during its first month?**

ALL » DEFAULT CHANNEL GROUPING: Organic Search

Apr 1, 2018 - Aug 31, 2018
Compare to: Apr 1, 2017 - Aug 31, 2017

All Users
+5.41% Users

+ Add Segment

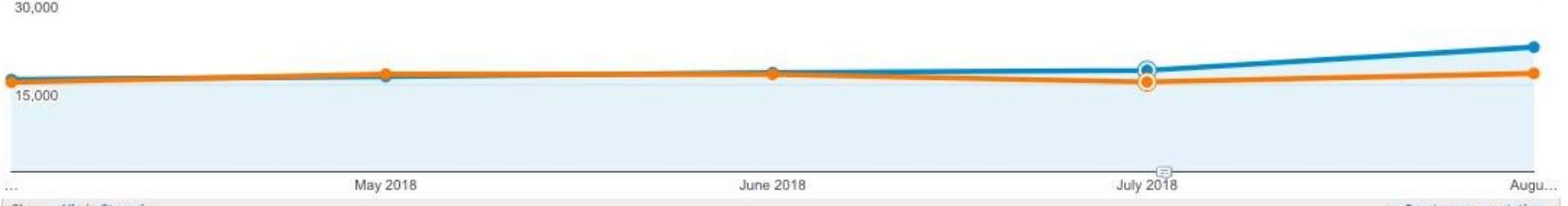
Explorer

Summary | Site Usage | Ecommerce

Sessions vs. Select a metric

Day | Week | Month

**Apr 1, 2018 - Aug 31, 2018:** Sessions
**Apr 1, 2017 - Aug 31, 2017:** Sessions




Show: All | Starred

+ Create new annotation

| | | | | |
|---|---|---|---|---|
| ☆ | Jul 31, 2018 | new site live; https enabled | edit | david@bizbudding.com |

Primary Dimension: **Keyword** Source Landing Page Other

Plot Rows | Secondary dimension | Sort Type: Default | advanced

| Keyword | Acquisition | | | Behavior | | | Conversions | | |
|---|---|---|---|---|---|---|---|---|---|
| | Users | New Users | Sessions | Bounce Rate | Pages / Session | Avg. Session Duration | Goal Conversion Rate | Goal Completions | Goal Value |
| | 2.14%<br>59,158 vs 57,918 | 1.97%<br>56,240 vs 55,154 | 8.42%<br>87,770 vs 80,952 | 26.24%<br>23.73% vs 32.17% | 9.82%<br>2.81 vs 2.56 | 30.61%<br>00:02:05 vs 00:01:36 | 0.00%<br>0.00% vs 0.00% | 0.00%<br>0 vs 0 | 0.00%<br>$0.00 vs $0.00 |

# Site Speed would be your #1 priority in 2018.

**What if a 6mo website performance refresh project delivered...**

**4,038,455**

new sessions from organic search

**3,074,958**

new users from organic search

**...during its first three months?**

ALL » DEFAULT CHANNEL GROUPING: Organic Search

Jan 1, 2018 - Aug 31, 2018

All Users
Users

+ Add Segment

Explorer

Summary Site Usage Ecommerce AdSense

Users vs. Sessions

Day Week Month


Avg. Page Load Time (sec) vs. Select a metric

Day Week Month

# Here's how you start.

## Measure the Total User Experience

*Only focusing on and tracking common KPIs will not lead to the results you are seeking. You must focus on your Total User Experience.*

Focus on these areas, in this order:

1) Real-Time Data and Analytics
2) Secure, Scalable, Reliable Infrastructure
3) Fast, Flexible Website Development
4) Synergistic Tools

# Set Up Real-Time Data and Analytics Tracking

Focus on how you align internal metrics to the criticality of your business. Create your own EPMV equation to maximize revenue per visitor.

Speed To Insight

Google Analytics

Google Tag Manager

Google Search Console

Chrome Dev Tools

Page Speed Insights

Pingdom

WebPageTest

# Configure Infrastructure that is Secure, Scalable, and Reliable

**Who is your I&OL?**

*Infrastructure & Operations Leader*

Treat your hosting environment like the **mission-critical infrastructure** it is.

Create a Purpose-built System

Anycast DNS/IPv4/IPv6

SSL - HTTP/2

Network Acceleration

PHP 7, PHP OpCache

Persistent Object Cache

Web Application Firewall

Server Firewall & Backups

CDN Proximity Routing

Network Monitoring

Border Gateway Protocol

# Once You Have a Purpose-built System

**What to Measure** - when does something start happening?

Secure, Scalable, Reliable Infrastructure

DNS Response Time

Server Response Time

Time to First Byte - TTFB

Render Start

First Paint

# Develop Fast, Flexible Website Software

Hosting hardware is not enough, you must focus on the integration of hardware technology and software development.

Robust Code

Fast Themes

Solid Plugins

Responsive Design

Non-blocking Code

Static File Caching

Modern Development Tools

Solid Plugins

Fast Themes

# Once You Have Robust Code

**What to Measure -** Is the page useful?

Has enough content rendered that you can engage with it?

Fast, Flexible Software Development

First Contentful Paint

DOM Interactive

DOM Content Loaded

# Deploy Synergistic Tools

Digital businesses are designed to keep customers seamlessly connected. Ensure your tools, processes, and messaging work well together.

Work Well Together

- Dynamic Content
- Display Ads
- Personalized Content
- Lead Generation
- Customer Segmentation
- Marketing Automation
- Help Desk Support

# Once Your Tools Work Well Together

**What to Measure:**

Are the interactions smooth, free of jumpiness and lag when scrolling?

Synergistic Tools

First Interactive

Document Complete

Web Page Response

# Actionable Steps

## (It takes work.)

### Five Ways to Make a Difference

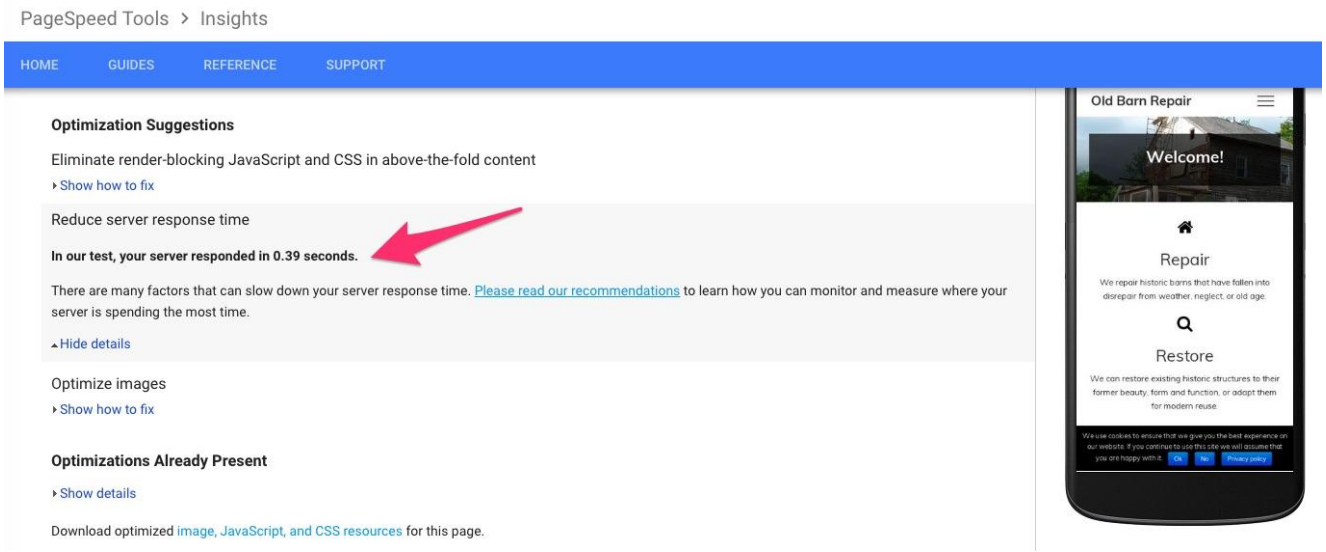
*Disclaimer: We are WordPress experts, and only work on WordPress sites.*

Start by implementing these projects:

1) Reduce Server Response Time
2) Implement Google Tag Manager
3) Fix/optimize your images
4) Minify, concatenate, optimize delivery of CSS, JavaScript, and HTML
5) Correctly position render blocking CSS and JS

# Google PageSpeed Insights

*“You should reduce your server response time under 200ms”. -- Google*




https://developers.google.com/speed/pagespeed/insights/

# Google PageSpeed Insights

| Page Speed | Optimization |
| --- | --- |
| Unavailable | Medium |
| | 65 / 100 |

PSI is currently showing a single-page report. Chrome User Experience Report does not have sufficient real-world speed data for this page, but PSI was still able to analyze this page to identify potential optimizations that may improve the speed of this page. Please investigate the recommendations below. Learn more.

**Page Stats**

Statistics show that the median page on the internet requires 4 render-blocking round trips and ~75 resources (1MB) to load. But this page appears to use fewer resources. PSI estimates this page requires 4 render-blocking round trips and 27 resources (0.9MB) to load. Fewer round trips and bytes results in faster pages.

**Optimization Suggestions**

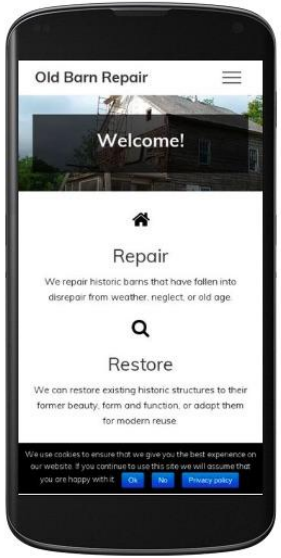
Eliminate render-blocking JavaScript and CSS in above-the-fold content

**Your page has 3 blocking script resources and 6 blocking CSS resources. This causes a delay in rendering your page.**

None of the above-the-fold content on your page could be rendered without waiting for the following resources to load. Try to defer or asynchronously load blocking resources, or inline the critical portions of those resources directly in the HTML.

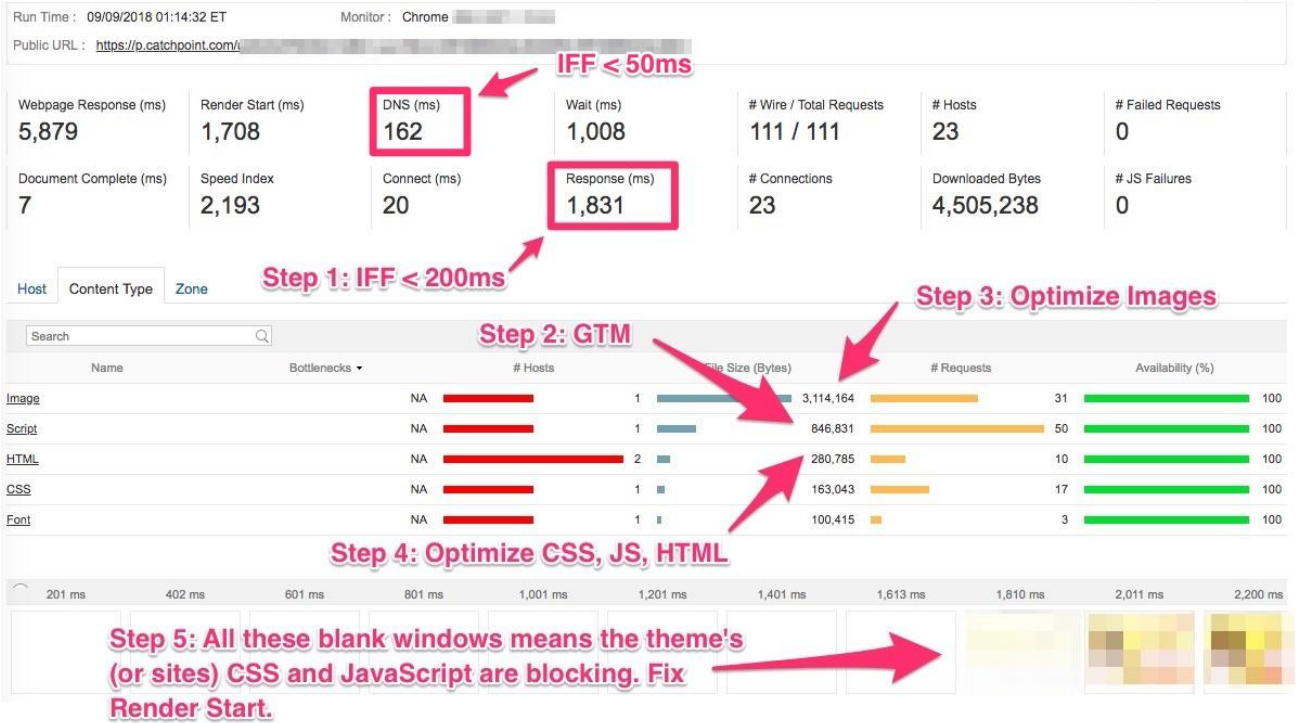
Remove render-blocking JavaScript:

- https://maisites.com/...rnrepair.com%2F&site=11&nonce=fc9caa753c
- https://oldbarnrepair.com/...-includes/js/jquery/jquery.js?ver=1.12.4
- https://oldbarnrepair.com/...s/jquery/jquery-migrate.min.js?ver=1.4.1



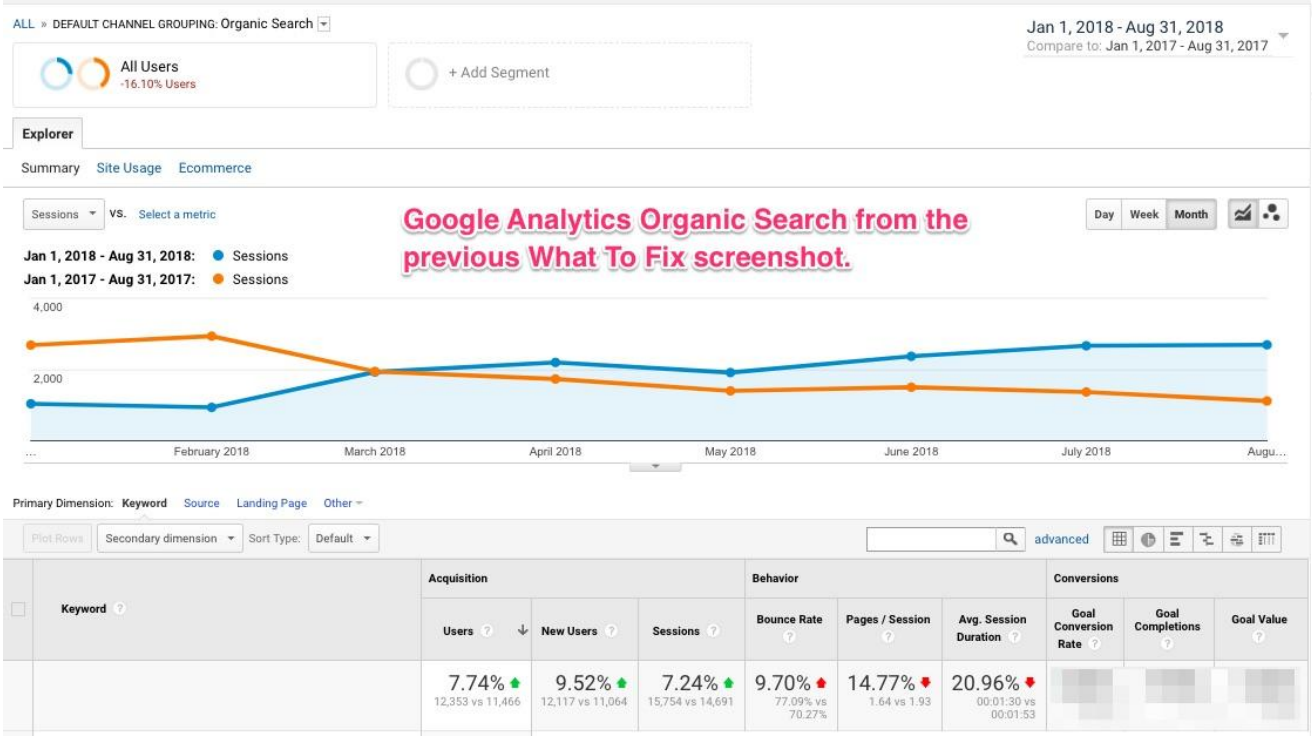

https://developers.google.com/speed/pagespeed/insights/

# CatchPoint Synthetic Monitoring Example



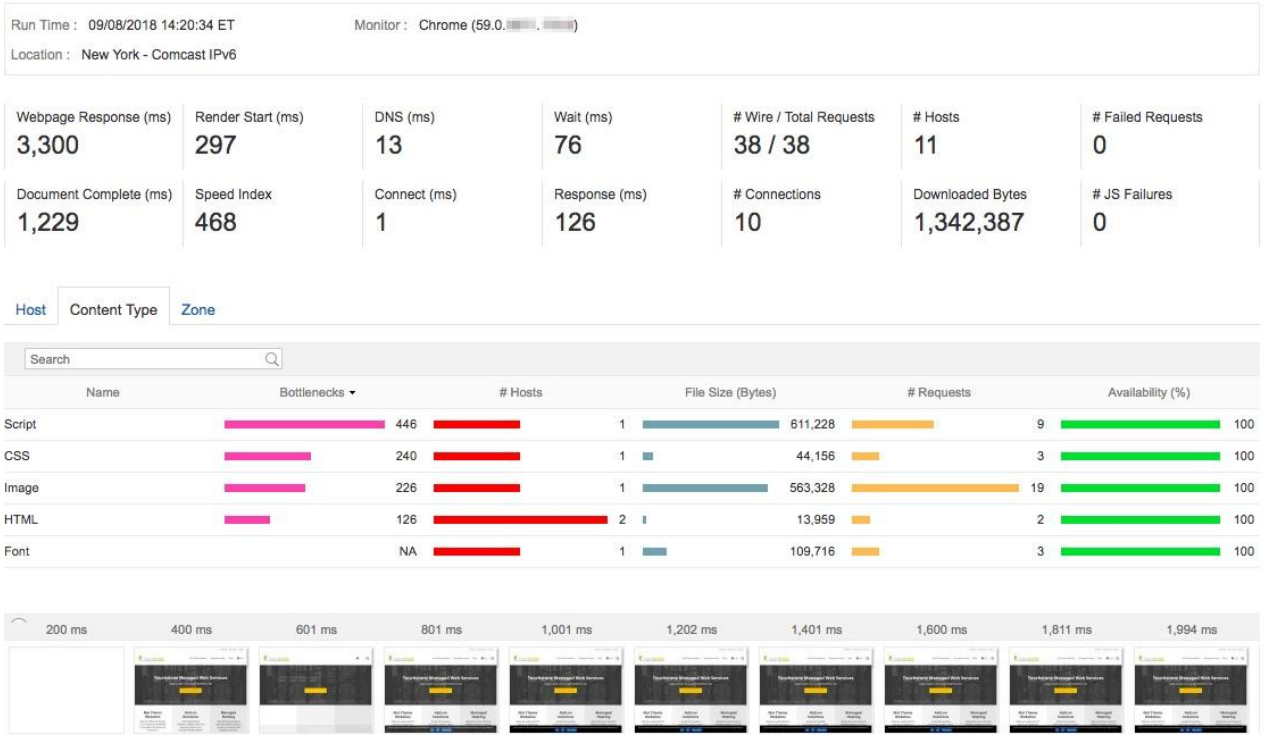

http://www.catchpoint.com/synthetic-monitoring/

# Google Analytics




https://analytics.google.com

# CatchPoint Synthetic Monitoring




http://www.catchpoint.com/synthetic-monitoring/

# WebPageTest

Need help improving?

## Web Page Performance Test for

https://touchstone.io

**From:** Dulles, VA - **Chrome - Cable**
9/8/2018, 10:57:30 PM

| A | A | A | B | C | ✓ |
|---|---|---|---|---|---|
| First Byte Time | Keep-alive Enabled | Compress Transfer | Compress Images | Cache static content | Effective use of CDN |

**Summary** | **Details** | **Performance Review** | **Content Breakdown** | **Domains** | **Processing Breakdown** | **Screen Shot** | **Image Analysis** | **Request Map**

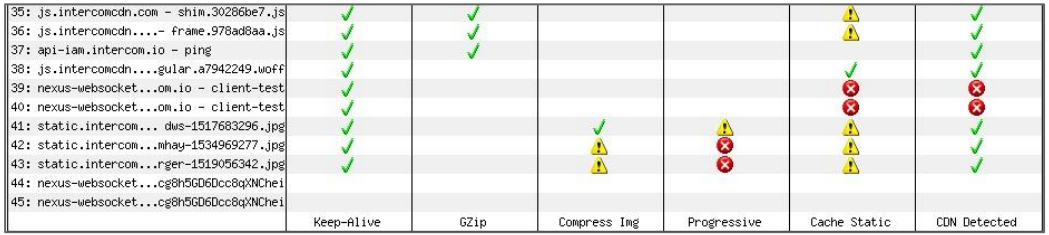
Tester: VM3-08-192.168.11.116
**First View only**
Test runs: **3**
Re-run the test

Raw page data - Raw object data
Export HTTP Archive (.har)
View Test Log

### Performance Results (Median Run)

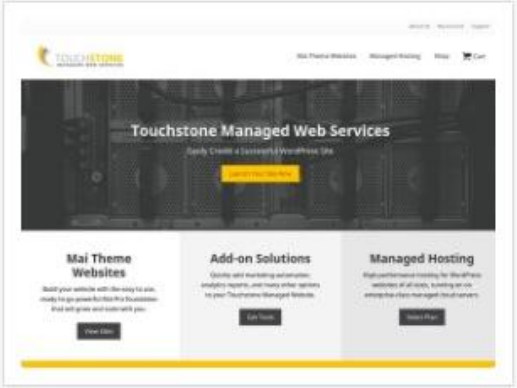
| | | | | | | Document Complete | | | Fully Loaded | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Load Time | First Byte | Start Render | Speed Index | First Interactive (beta) | Time | Requests | Bytes In | Time | Requests | Bytes In | Cost |
| First View (Run 1) | 2.287s | 0.242s | 0.500s | 941 | > 5.036s | 2.287s | 25 | 750 KB | 5.595s | 45 | 1,417 KB | $$$– |

Plot Full Results




https://www.webpagetest.org

# Pingdom Website Speed Test



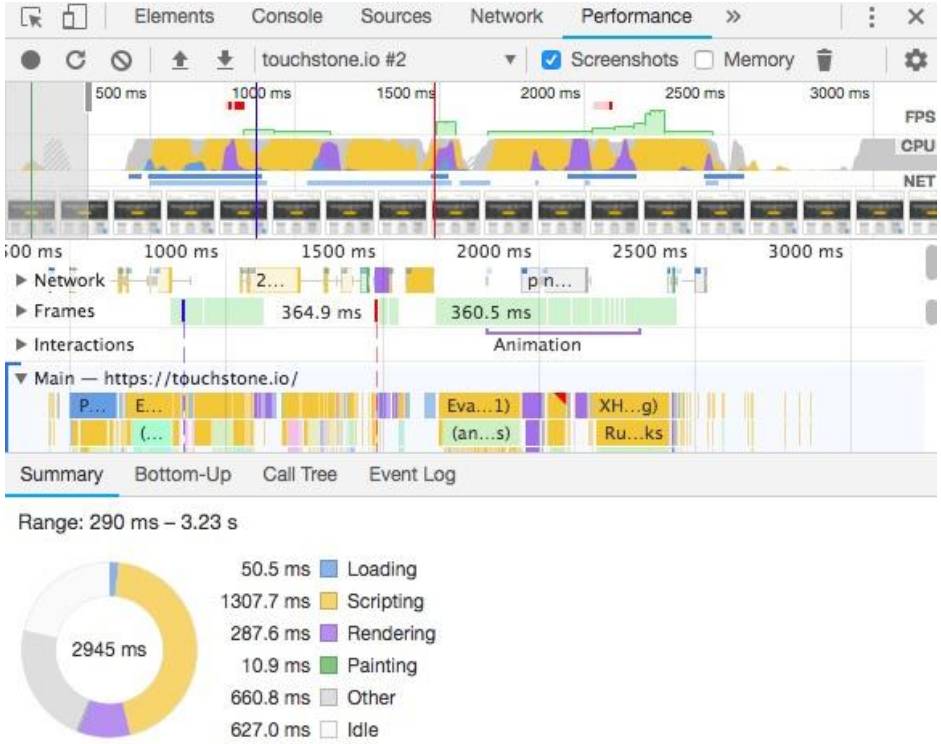

| Performance grade | Load time | Faster than |
|---|---|---|
| A 92 | 312 ms | 99 % of tested sites |

| Page size | Requests | Tested from |
|---|---|---|
| 709.3 kB | 19 | New York City on Sep 7 at 20:46 |

pingdom

https://tools.pingdom.com

# Chrome Developer Tools




https://developers.google.com

# Advanced Steps

**(It takes know how.)**

## Bonus: Eight Additional Ways to Make THE Difference

Continue by implementing these projects:

1) Static File Caching
2) Configure CDN
3) Get rid of sucky plugins/tools
4) Implement Persistent Object Caching
5) Implement a WAF at the Edge of your network
6) Prioritize Visible Content
7) Implement Border Gateway Protocol with DNS for network traffic routing
8) Implement Cloudfare Railgun

# Tools We Love

**We use these everyday.**

1) WP Rocket
2) Optimus
3) Imsanity
4) YoImages
5) Cloudflare
6) Heartbeat Monitor
7) WP Crontrol

bizbudding™

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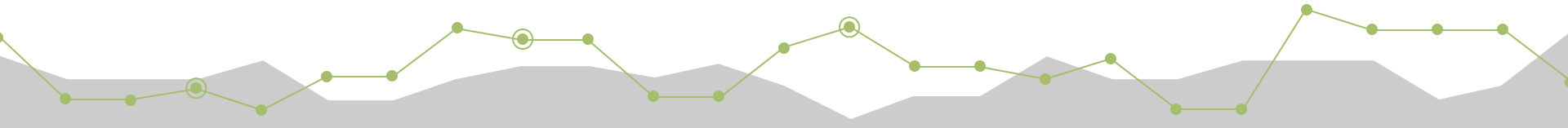
# Object Caching

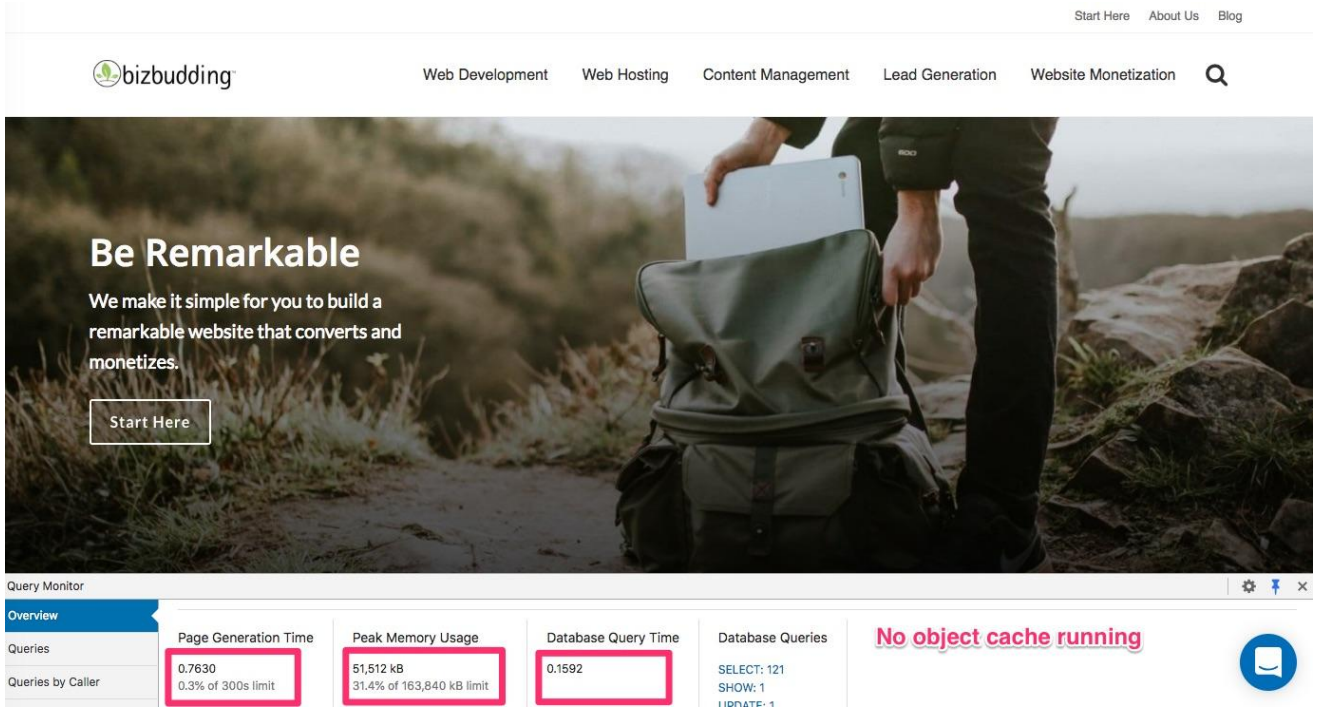
Properly configuring  a Persistent Object Cache will greatly improve the performance of your website, especially the WordPress admin screens.

**67%**

Reduction in page generation time



# Page Generation Time (no object cache)



# Page Generation Time  (with object cache)