





Get a perfect 100 in Google PageSpeed and what will happen if you don't





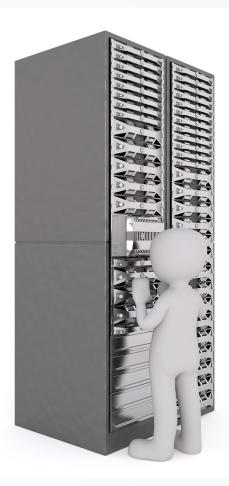


Your site just went live after being under construction for months





You have varnish, redis, fastly, and cloudfront! Hosted on a x-large superjumbo instance with failovers for the failovers







You are ready for anything.



But how well will your site perform on a slow internet connection?





You have HTTP 2 up and running! The site should be faster than lighting since it's behind a CDN!





But you wonder, is there a tool that will show me if my site is fast?





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

PageSpeed Tools > Insights

guides Ri	REFERENCE SAMPLES	SUPPORT
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PageSpeed Insights



Make your web pages fast on all devices.

Enter a web page URL

Web Performance

Learn more about web performance tools at Google.

Give Feedback

Have comments or questions about PageSpeed Insights? Discuss on our mailing list.

ANALYZE

About PageSpeed Insights

PageSpeed Insights analyzes the content of a web page, then generates suggestions to make that page faster. Learn more.



Ideally this is what you want.

Optimization Speed Unavailable Good 100 / 100

Data about the real-world performance of this page was unavailable. PageSpeed Insights was still able to analyze this page to find potential optimizations. Applying these optimizations may improve the speed of this page. Please investigate the recommendations below. Learn more.

Speed data is available for https://www.google.com.

Page Stats

PSI estimates this page requires 0 additional round trips to load render blocking resources and 0.0 MB to fully render. The median page requires 4 round trips and 2.7 MB. Fewer round trips and bytes results in faster pages.

Optimizations Already Present

Avoid landing page redirects Your page has no redirects. Learn more about avoiding landing page redirects.

Eliminate render-blocking JavaScript and CSS in above-the-fold content You have no render-blocking resources. Learn more about removing render-blocking resources.

Enable compression You have compression enabled. Learn more about enabling compression.

Leverage browser caching You have enabled browser caching. Learn more about browser caching recommendations.

Minify CSS Your CSS is minified. Learn more about minifying CSS.

Minify HTML Your HTML is minified. Learn more about minifying HTML

Minify JavaScript Your JavaScript content is minified. Learn more about minifying JavaScript.

Optimize images Your images are optimized. Learn more about optimizing images.

Prioritize visible content You have the above-the-fold content properly prioritized. Learn more about prioritizing visible content.

Reduce server response time Your server responded quickly. Learn more about server response time optimization.

Optimization

Good









Let's say this is your site, and you got a 13/100

Mobile Desktop Average Low

Data from the Chrome User Experience report indicates this page's median FCP (1.2s) and DCL (1.9s) ranks it in the middle third of all pages This page has a low level of optimization because most of its resources are render-blocking. Learn more.

Report for: http://fox17.com

1.2s FCP 1.9s DCI

Page Load Distributions



The distribution of this page's FCP and DCL events, categorized as Fast (fastest third), Average (middle third), and Slow (bottom third).

Page Stats

PSI estimates this page requires 14 additional round trips to load render blocking resources and 6.7 MB to fully render. The median page requires 4 render blocking round trips and 1.5 MB. Fewer round trips and bytes results in faster pages.

Optimization Suggestions

Enable compression Show how to fix

Optimize images

Show how to fix

Eliminate render-blocking JavaScript and CSS in above-the-fold content Show how to fix

Leverage browser caching

Show how to fix

Reduce server response tin Show how to fix

Prioritize visible conter

Show how to fix

Minify JavaScrip

Show how to fix

Minify CSS Show how to fix

Minify HTML Show how to fix

Optimizations Already Present

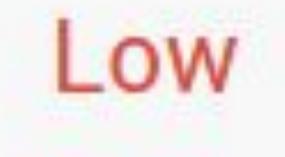
Show details

Download optimized image, JavaScript, and CSS resources for this page.

The speed data is updated weekly, and the optimization results are cached for 30s. To see updated optimization analysis, please wait for 30s before re-running the



Optimization



13 / 100







Big deal...

Why does getting a high score matter?

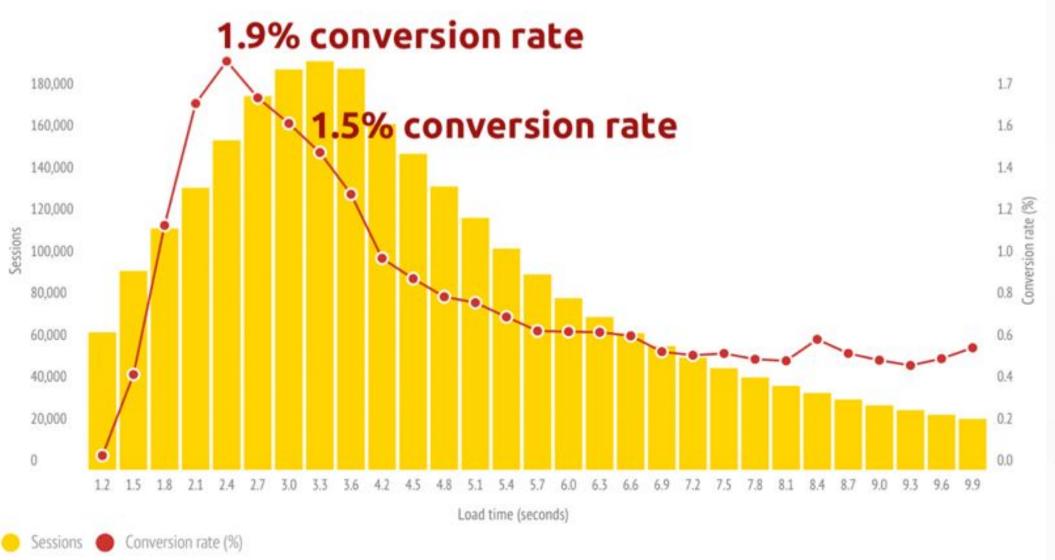


Google recently announced that in July 2018 page speed will be a ranking factor for mobile searches.

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



Case study: Mobile pages that are 1 second faster experience up to 27% increase in conversion rate



Source: https://www.soasta.com/blog/mobile-web-performance-monitoring-conversion-rate/



Users will not wait for a slow site to load. They will leave.

Make your site work even in the slow lane of net neutrality



OK I get it. This really matters. How can I solve this issue?



It's easy, you just need to "Eliminate render-blocking JavaScript and CSS in above-the-fold content"



I know all of them words, but in that order... $(\gamma)_{(\gamma)}$



I'm here to guide you on your journey to that elusive perfect score.

Source: https://developers.google.com/speed/docs/insights/rules



The metrics Google uses when ranking your site and how to get that 100



Remove Render-Blocking JavaScript

Don't use JS to paint the page. Do server-side rendering. Progressive Enhancement and Graceful degradation is what you want.

Once that has been taken care of, Defer the loading of all JavaScript. This has a tendency to break things sometimes. Have some inline js that uses jQuery? Broken.

Drupal

https://www.drupal.org/project/advagg

AdvAgg will defer js and inline js in a way where it works.



- This one's tricky; inlining critical css is what it means.
- Well, what is critical css?
- It's the set of CSS rules needed to render the above the fold content.
- Take that small subset of CSS and inline it in the actual HTML.
- It sounds complicated because it is.
- This is the hardest thing to get right.

e fold content. I HTML.



meta name="Generator" content="Drupal 7 (http://drupal.org)" />

<link rel="shortcut icon" href="https://my.datasphere.com/files/mydatasphere/favicon 0.ico" type="image/vnd.microsoft.icon" /:</pre> <meta property="og:locale" content="en US" /> <meta property="fb:app_id" content="280044935386687" /> <meta name="google-site-verification" content="lhouTVZJKB9Rm89i0xfBjyk1FjngKXMIExPL5cT1JxY" /> <title>DataSphere | MvDataSphere</title> <style type="text/css" media="all">
<![CDATA[*/</pre> Gont-face(font-family:'Raleway':font-style:normal:font-weight:400:src:local('Raleway'), local('Raleway'), local('Raleway amily: 'Raleway'; font-style:normal; font-weight: 700; src:local ('Raleway Bold'), local ('Raleway-Bold'), url (https://fonts.gstatic.com/s/raleway/v12/JbtMzqLaYbbbCL9X6EvaIxsxEYwM7FgeyaSgU71cLG0.woff) format ('woff'), url (https://fonts.gstatic.com/s/raleway/v12/JbtMzqLaYbbbCL9X6EvaIxsxEYwM7FgeyaSgU71cLG0.woff) format('truetype');} clearfix::after{content:'.';display:block;height:0;clear:both;visibility:hidden}form{margin-top:lem;m color:rgb(247,154,30);color:rgb(255,255,255);font-weight:700)#fix-footer-wrapper{background-color:rgb(242,243,245);border-top-width:20px;border-top-width: color:rgb(255,255,255);padding:0 15px;margin-bottom:20px;position:relative;border-top-left-radius:10px;border-top-right-radius:10px;border-top-right-radius:10px;border-top-right-radius:10px;border-top-left-radius:10px;border-top-left-radius:10px;border-top-left-radius:10px;border-top-right-radius:10px;border-top-left-radius:10px;borderroup{margin-bottom:15px}.myds-module .styled-group .region-group:first-child{padding-top:15px}html{font-family d-repeat:initial initial)stro -weight: 700) small {font-size: 80%} img {border: 0} button, input {margin: 0; fontsizing:border-box}html{font-size:10px}body{font-family:Helvetica,Arial,sans-serif;font-size:14px;line-height:1.42857143;color:rgb(51 ,51,51); background-color:rgb(255,255,255) input, button{font-family:inherit;font-size:inherit;line-height:inherit}a{color:rgb(66,139,202);text-decoration:none}img{vertical pp:10px;margin=bottom:10px}h2{font=size:30px}h4{font=size:18px}p{margin:0 0 10px}.lead{margin=bottom:20px;font=size:16px;font=weight:300;line=height:1.4}@media (min=width:768px align:middle}h2.h4{font-family:inherit:font-weight:500:line-height:1.1:color:inherit}h2{margin -top:20px:margin lead{font-size:21px}}small{font-size:85%}.text-center{text-align:center}.container{padding-right:15px;padding-left:15px;margin-right:autors autors autor .container{width:1170px}.col-sm-4,.col-sm-4,.col-sm-3,.col-sm-3,.col-sm-4,.col-sm-4,.col-sm-4,.col-sm-4,.col-sm-4,.col-sm-4,.col-sm-12(float:left).col m-12{width:100\$}.col-sm-8{width:50\$}.col-sm-4{width:25\$}}@media (min-width:992px){.col-md-12{float:left}.col-md-12{width:50\$}.col-md-3{width:25\$}}abel{display:inline-block:max-width:100\$:margin-left:25\$}}abel{display:inline-block:max-width:100} ottom:5px;font-weight:700}.form-control{display:block;width:100%;height:34px;padding:6px (204,204,204);border-top-left-radius:4px;border-top-right-radius:4px;border -right-radius:4px;border-b weight:400;line-height:1.42857143;text-align:center;white-space:nowrap;vertical-align:middle;background-image:none;border:1px order-bottom-left-radius: 4px }.btn-default { color:rgb (51, 51, 51) ; 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background-repeat: initial initial form input{border:lpx solid rgb(204,204,204,204,204,204,204); padding:5px}#fix-footer-content{padding-bottom:50px}html, body{margin:0; padding:0; height:100%; position:relative}#fix-footer-content{padding-bottom:80px}}@media (max-width:545px) {#fix-footer-content{padding-bottom:120px}}.form-item label{display:inline-block}input[type="submit"] {display:inline-block; margin:0 10px; font-weight:400; text-align:center; vertical-align:middle; background-image:none; white-space:nowrap; border-top-left-radius:4px; border-top-right-radius:2px; border-bottom-left-radius:2px; border-top-left-radius:2px; border-top-left-radius:2px; border-top-left-radius:2px; border-top-left-radius:2px; border-bottom-left-radius:2px; border-bottom-left-radius:2px; border-bottom-left-radius:2px; border-top-right-radius:2px; border-bottom-left-radius:2px; border-bottom-lef primary{color:rgb(255,255,255);text-shadow:none;background-color:rgb(75,150,208);border:1px solid rgb(75,150,208);background-position:initial initial;background-repeat:initial initial}.btn-default{background-position:initial} color:rgb(225,225,225);border-color:rgb(204,204,204);background-position:initial initial;backgrou repeat: initial initial } </style> cnoscript id="advagg_loadcss_1">
cnoscript id="advagg_loadcss_1">
clink type="text/css" rel="stylesheet" href="https://my.datasphere.com/files/mydatasphere/advagg_css/css__-xXpH3QpTPBL-T6HeT23qhvRfXZpndDBKc6LuV9cIfo_tC2bkpLxiRr6Mbkbb-X-kXuYizxv-enjKZ_YtYscy9Q_Q9P3d7110WTsV-6D3-OUqBjZT0GZ8V4tew-CANLILOM.css" media="all" />
css/css__css/cs -xXpH3QpTPBL-T6HeT23qhvRfXZpndDBKc6LuV9cIfo tC2bkpLxiRr6Mbkbb-X-kXuYizxv-enjKZ YtYscy9Q Q9P3d7110WTsV-6D3-OUqBjZTOGZ8V4tew-CANLILOM.css" media="all" as="style" onload="this.onload=null; ydatasyn /ad ce e eg ha i Fi4vC0kGRVsAGTgCWmtuUVmcmmt? ClU_DibGUrHKXQ2PTGAYEmFdq0017-VIR3pEJ2RTCTKVLM_Q9P3dT10WTsV-6D3-0UqBj27G /filesnyd a the / tva cester ecWP2cg dFi4vC0kGRVsAGTgCWmtuUVmcmmt? ClU_DibGUrHKXQ2PTGAYEmFdq0Fd-VIR3pEJ2RTCTKVLM_Q9P3dT10WTsV-6D3-0UqBj27G ydataster alag cv/c__6LI sF queetvb1172-cE6FtyFEv05 7/35th_Utg2 S9G3 FF6 VVGV syDWKiLtpNk_9Ff6c_9Ff4110TsV-6D-1dq174G28 /files/tdataster alag cv/c__6LI sF queetvb1172-cE6FtyFEv05 7/35th_Utg2 S9G3 FF6 VVGV syDWKiLtpNk_9Ff6c_9Ff4110TsV-6D-1dq174G28 media="all" as="style" onload="this.onload="

//www.ss isi-sylesneet nrer="nttps://my.datasphere.com/files/mydata /noscript><link type="text/css" rel="preload" href="https://my.datasphere.com/file his.rel='stylesheet'" />

noscript id="advagg loadcss 4">

choseript ld=avagg_isudss_i /setudss_i gBiZTOGZ8V4tew-CANLTLOM.css" media="all" / ZXpXShOBntLDEIWCBjPdTg Q9P3d7llOWTsV-6D3-OUqBjZTOGZ8V4tew-CANLILOM.css" media="all" as="style" onload: ;this.onload=null;this.rel='stylesheet'" /> 3Me8GVf4RqcLIu8qLSnX1ZXpX8h0BntLDEIWCBjPdTg <script type="text/javascript">

//--><![CDATA[//>

var preconnect support = false; try {if (document.createElement("link").relList.supports("preconnect")) document.createElement("link"); prefetch.href = "https://stats.g.doubleclick.net/robots.txt"; prefetch.rel="prefetch" ment.getElementsByTagName("head")[0].appendChild(prefetch);)

//--><!]]>

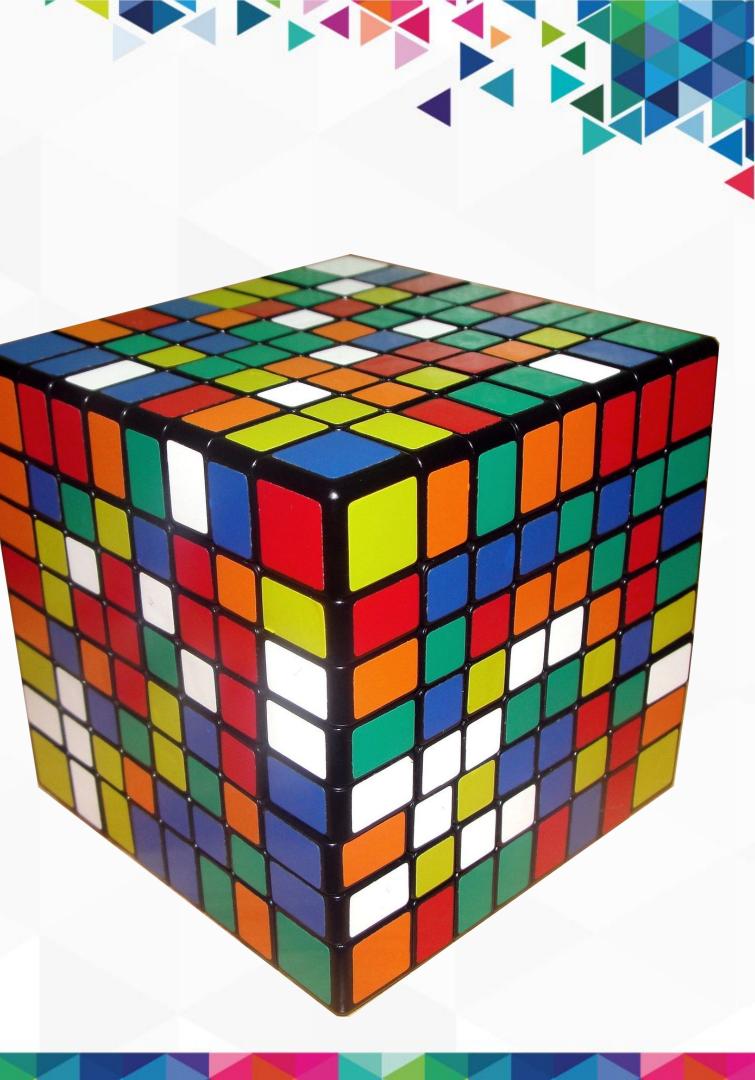
</script>

<script type="text/javascript">



Inline CSS changes on almost every page.

No easy way out.





Luckily there are some tools to help with this.

For the adventurous: https://github.com/pocketjoso/penthouse

For the slightly easier route https://www.sitelocity.com/critical-path-css-generator https://jonassebastianohlsson.com/criticalpathcssgenerator/ https://criticalcss.com/ https://chrome.google.com/webstore/detail/critical-style-snapshot/gkoeffcejdhhojognlon afnijfkcepob?hl=en



If using Drupal - https://www.drupal.org/project/advagg

AdvAgg will take care of everything including picking the correct inline css for the given page. But the inline css will still need to be generated using a tool.

I plan on starting a service to fully automate critical css generation http://www.fixrenderblocking.com/



Now that you have the critical CSS, the tool of choice for using JavaScript to load the rest of your CSS files via preload is

https://github.com/filamentgroup/loadCSS





You can check this box off until you change your CSS or HTML.





Optimize Images

Highly recommend using this module to auto optimize image styles for you https://www.drupal.org/project/imageapi optimize

Command line tools to do this for existing images jpegtran pngquant





Leverage Browser Caching

Set the Cache-Control to 1 week or longer for everything, Except for the html. Sounds good until you see that google analytics is in this list. You have 2 options:

- 1. Locally host the remote analytics is and update that regularly
- 2. Use https://github.com/jehna/ga-lite

- Drupal https://www.drupal.org/project/advagg
- AdvAgg will use option 1 and has a cron job to check if the remote file has changed.



Improve Server Response Time

- Turn on the page cache!
- This is what Varnish does for you.
- This is where most of the effort for performance goes.
- A CDN like cloudflare, which will serve the HTML will also help here.





Minify Resources (HTML, CSS, JS) What about gzip? Nope this is different. All that extra whitespace needs to go. Drupal CSS - Core has this covered, advagg does too JS - https://www.drupal.org/project/advagg HTML - https://www.drupal.org/project/minifyhtml



Prioritize visible content

The amount of data to start rendering exceeds 14.6kB gzip compressed.

Make your site simpler and you should see this improve. Luckily this warning is rare if everything else has been taken care of.

White text on a white div that loads a dark background image can cause this.





Avoid Landing Page Redirects

Use a responsive web design; your mobile theme and non mobile theme are the same page. Don't use m. domains.

Make sure redirects don't lead to other redirects. One level is ok if adding/removing www or redirecting to https; make sure its a 301 redirect. .htacces (server config) changes will be needed most likely.





Enable Compression

- Turn on Gzip and/or Brotli!
- Drupal
- https://www.drupal.org/project/advagg
- AdvAgg will gzip/brotli the CSS and JS for you.
- .htacces (server config) changes may be needed.





Quick Recap - This is the Goal

Optimization Speed Unavailable Good 100 / 100

Data about the real-world performance of this page was unavailable. PageSpeed Insights was still able to analyze this page to find potential optimizations. Applying these optimizations may improve the speed of this page. Please investigate the recommendations below. Learn more.

Speed data is available for https://www.google.com.

Page Stats

PSI estimates this page requires 0 additional round trips to load render blocking resources and 0.0 MB to fully render. The median page requires 4 round trips and 2.7 MB. Fewer round trips and bytes results in faster pages.

Optimizations Already Present

Avoid landing page redirects Your page has no redirects. Learn more about avoiding landing page redirects.

Eliminate render-blocking JavaScript and CSS in above-the-fold content You have no render-blocking resources. Learn more about removing render-blocking resources.

Enable compression You have compression enabled. Learn more about enabling compression.

Leverage browser caching You have enabled browser caching. Learn more about browser caching recommendations.

Minify CSS Your CSS is minified. Learn more about minifying CSS.

Minify HTML Your HTML is minified. Learn more about minifying HTML

Minify JavaScript Your JavaScript content is minified. Learn more about minifying JavaScript.

Optimize images Your images are optimized. Learn more about optimizing images.

Prioritize visible content You have the above-the-fold content properly prioritized. Learn more about prioritizing visible content.

Reduce server response time Your server responded quickly. Learn more about server response time optimization.

Optimization

Good









AdvAgg covers the following rules - Eliminate render-blocking JavaScript (defer JS) and CSS in above-the-fold

- content (inline critical CSS*)
- Enable compression (gzip CSS & JS)
- Leverage browser caching (locally host external CSS and JS)*
- Minify JavaScript

Some of these are really hard to do, luckily AdvAgg has you covered. https://www.drupal.org/project/advagg





The other rules not covered by AdvAgg

- Optimize Images (use the imageapi_optimize module & setup cron scripts) https://www.drupal.org/project/imageapi optimize
- Minify html

https://www.drupal.org/project/minifyhtml

- Improve Server Response Time (use a page cache and a html CDN)
- Prioritize visible content (make your site's interface simpler)
- Gzip compression (change server config if needed)
- Avoid Landing Page Redirects (unify theme and/or change server config)



This sounds hard to do for every page.

Luckily you only need to do this for landing pages.





simplytest.me AdvAgg Demo

Critical Path CSS Generator

Internal CSS Style Sheet Generator for the above the fold content.

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UNATE DISTRIAL PRIME

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Load combined CSS file after page load

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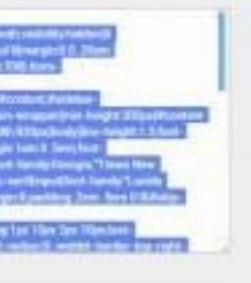
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Pitfalls to Avoid if goal is 100/100

- CSS/JS hacked in VS using the API
- JS that renders the page on the client
- Inline JS that doesn't work well if deferred
- External fonts that are not loaded from Google
- Very strict Content-Security-Policy headers
- Server config that can't be adjusted if needed



Congratulations!

You now know what to do to get a 100/100!

You beat the boss at the end of the internet. Good job!

High Performance Group wiki on this subject https://groups.drupal.org/node/517292

Al Catpone - Boss at the end of the Internet level



What are some alternatives?

I don't know about all these Drupal modules.

How to get a high score if not using Drupal or don't want to use certain modules



Google's mod pagespeed

Works with Apache or Nginx as a server side plugin. It requires some configuration and testing but it should work on almost any site. It tackles some of the issues but it will rarely get you the perfect 100.





Google's mod pagespeed

<IfModule pagespeed module>

ModPagespeed on

</IfModule>

ModPagespeedEnableFilters rewrite style attributes, rewrite css, prioritize critical css ModPagespeedEnableFilters resize images, recompress images, responsive images ModPagespeedEnableFilters convert jpeg to webp, convert to webp lossless ModPagespeedEnableFilters convert to webp animated, recompress webp ModPagespeedEnableFilters convert jpeg to progressive, recompress jpeg ModPagespeedEnableFilters convert gif to png, recompress png ModPagespeedEnableFilters rewrite javascript, defer_javascript, ModPagespeedEnableFilters collapse whitespace, remove comments, insert dns prefetch ModPagespeedEnableFilters inline google font css,flatten_css_imports,extend_cache



github.com/blinkloader/blinkloader

Node JS package that hits most of the marks for Google PageSpeed





Google Accelerated Mobile Pages (AMP)

Mobile pages are hosted on google with a very limited set of JS and all CSS is inlined.

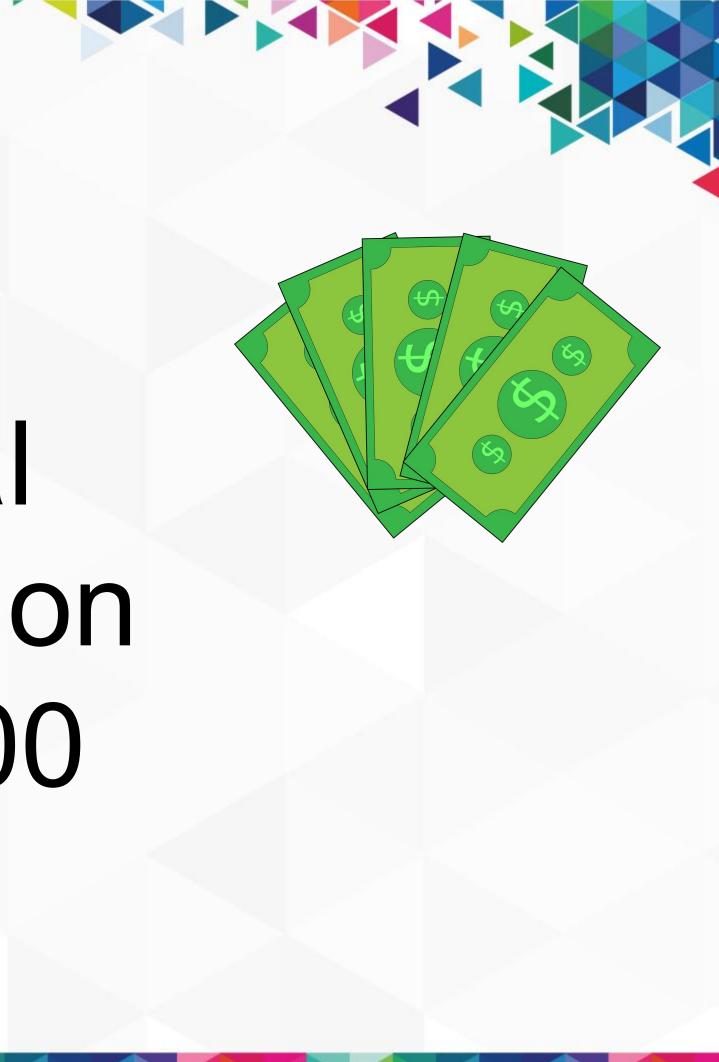
Will get you close to a 100 but almost never a perfect score. You do get the lightning bolt icon on search results, and the site might be included in the mobile search carousel.

Some people really don't like what Google is doing with AMP. When you look into it, it's very controversial due to your site being served from google's servers.

The Challenge



I'll give you \$5 if the homepage of a Drupal site you have worked on gives you a perfect 100 under Optimization.





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

PageSpeed Tools > Insights

| guides Ri | REFERENCE SAMPLES | SUPPORT |
|-----------|-------------------|---------|
|-----------|-------------------|---------|

PageSpeed Insights



Make your web pages fast on all devices.

Enter a web page URL

Web Performance

Learn more about web performance tools at Google.

Give Feedback

Have comments or questions about PageSpeed Insights? Discuss on our mailing list.

ANALYZE

About PageSpeed Insights

PageSpeed Insights analyzes the content of a web page, then generates suggestions to make that page faster. Learn more.



What popular site is working to improve its pagespeed score?



Ongoing work on Drupal.org



Drupal.org Ongoing Case Study

Started out as a couple settings to get the page to load slightly faster After 2+ years of work there is now a clear path to getting a 100/100 on most Drupal.org pages.

The AdvAgg module is key to making this happen.



Drupal.org Ongoing Case Study

One of the more interesting things we noticed was from Google Analytics with the average load time broken down by browser.

The UC Browser's average page load time went from 13.3 seconds down to 5.4 seconds. This is a mobile only browser that has over 500 million users in China, India and Indonesia.



Drupal.org Ongoing Case Study

More recent AdvAgg development was done with a goal of getting a perfect 100 on Drupal.org. This goal in now attainable with a little bit more effort. Generating Critical CSS is the final key; this needs to be automated. After seeing this need I decided to create http://www.fixrenderblocking.com/ in order to make the generating of critical css easy to automate. It's still a work in progress, but it should be available soon and it can be used on any host.



OK So a quick show of hands.

Did anyone get a 100/100?



What's next after getting a 100/100?



Webpagetest

https://www.webpagetest.org/

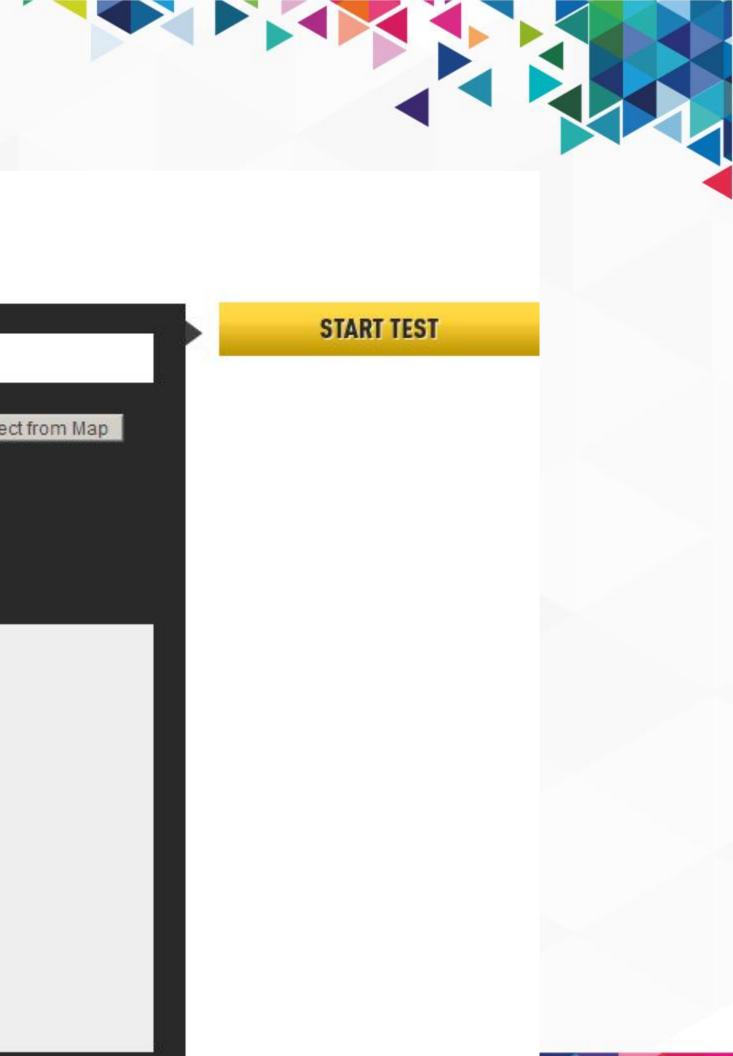
- I almost always test using a "Mobile Edge" Connection
- The start render metric is one of the best ones to look at
- Look to preload resources to optimize the Speed Index metric
- Gives you a loading video
- Very helpful for speed debugging.
- https://webpagetest.org/easy if you don't want to customize things





Test a website's performance

| Advanced Test | ing S | imple Testing | C | D Visual | Comparis | ion V | 🗠 Tracerou | te | |
|-------------------------|------------|---------------|---------|-------------|---------------------------|-----------|------------|----|------|
| https://ww | /w.drupal | .org/proj | ect/d | Irupal | | | | | |
| Test Location | | Dulles, VA US | SA (Des | sktop, Andi | roi <mark>d, i</mark> OS) | 0 | | | Sele |
| Browser | | Chrome | | | | | | × | |
| Advanced Setti | ngs 🔻 | | | | | | | | |
| Test Settings | Advanced | Chrome | Auth | Script | Block | SPOF | Custom | i. | |
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| Number of Te
Up to 9 | sts to Run | 1 | | | | | | | |
| Repeat View | | C First Vi | iew and | d Repeat V | 'iew 🕶 Fi | irst View | Only | | |
| Capture Video | D | | | | | | | | |
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Web Page Performance Test for

https://www.drupal.org/project/drupal



From: Dulles, VA - Chrome - Edge 1/20/2018, 5:16:08 PM

| Summary | <u>Details</u> | Performance Review | Content Breakdown | Domains | Processing Breakdown | Scree |
|-----------------------------|---------------------|--------------------|-------------------|---------|----------------------|-------|
| Tester: VM3
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nly | 11.108 | | | | |

| | | | | | | | Doc | ument Com | olete | (1 | Fully Loaded | l . |
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| Load
Time | First
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Index | <u>First Interactive</u>
(beta) | Result
(error code) | Time | Requests | Bytes
In | Time | Requests | Bytes
In |
| 11.339s | 3.789s | 7.500s | 9.100s | 7636 | 9.135s | 0 | 11.339s | 21 | 341 KB | 12.207s | 22 | 349 KB |

| First Interactive (beta) | Colordepth | RUM First Paint | domInteractive | domContentLoaded | loa |
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Waterfall View

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| 🖰 3. www.drupal.orgZUWoU | J2SpeUCzo.css | | | | - | 1533 | MS | |
| 🖞 4. www.drupal.org – icon- | w-menu.svg | | | | | 1532 | MS | |
| 👌 5. www.drupal.org – icon- | -w-search.svg | | | | | 171 | 3 ms | |
| 👌 6. www.drupal.org – icon- | | | | | | 17 | 54 ms | |
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| 18. www.drupal.orglue-b | olueprint.jpg | | | | | | | |
| 19. www.drupal.orgray−s | | | | | | | | |
| 20. www.google-analytics.c | com - collect | | | | | | | |
| 21. stats.g.doubleclick.ne | et - collect | | | | | | | |
| 22. www.drupal.org – favic | con.ico | 1 | 2 | 3 | 4 | 5 6 | 5 7 | , 8 |
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| Bandwidth In (0 - 240 |) Kbps) | | | | | | | |
| Browser Main Thread | | | | | | | | |
| Page is Interactive | | | | | - Lul - i | | | |

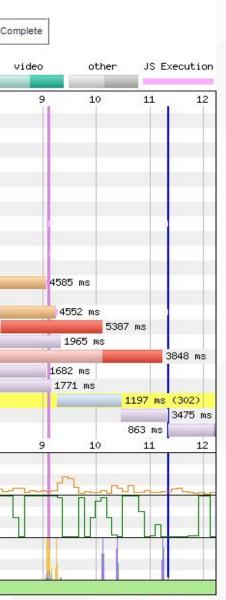


Image Analysis & n Shot

Export HTTP Archive (.har) Custom Metrics

oadEvent

- 11.340s (0.000s)





| | | | | | | | Doc | ument Com | plete | | Fully Loaded | |
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Complete | <u>Speed</u>
Index | First Interactive
(beta) | Result
(error code) | Time | Requests | Bytes
In | Time | Requests | Bytes
In |
| 11.339s | 3.789s | 7.500s | 9.100s | 7636 | 9.135s | 0 | 11.339s | 21 | 341 KB | 12.207s | 22 | 349 KB |

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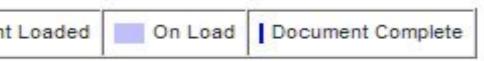


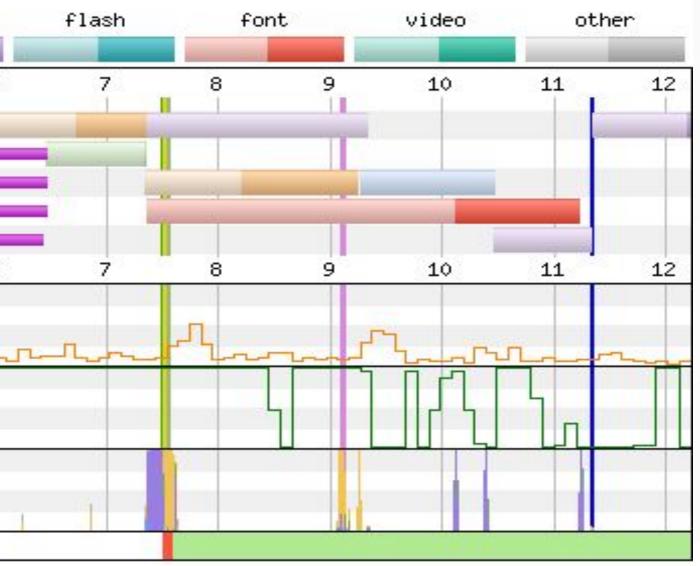
HTTP 2

Connection View

| | DNS Look | up 📕 In | itial Connection | SSL Nego | tiation | Start Render | DOM | Content |
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| | g.doubleclick.net | | 1 | 2 | 3 | 4 | 5 | 6 |
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| Page | is Interactive | | | | | lud | | kut |









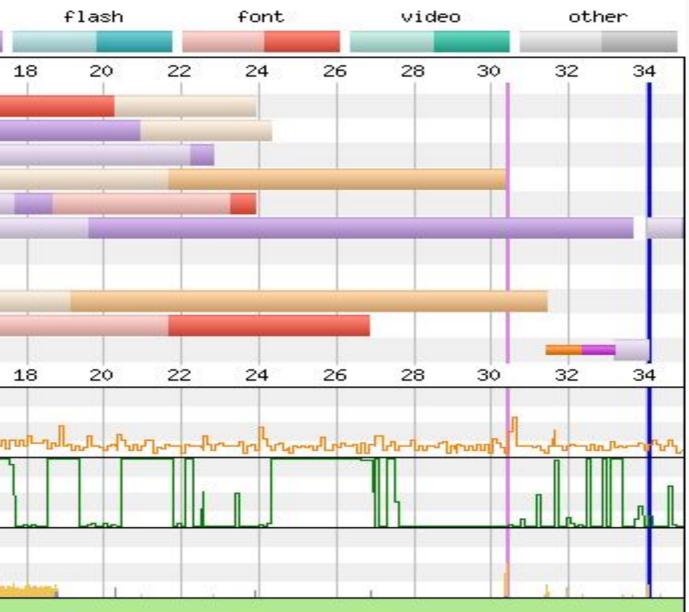
HTTP 1.1

Connection View

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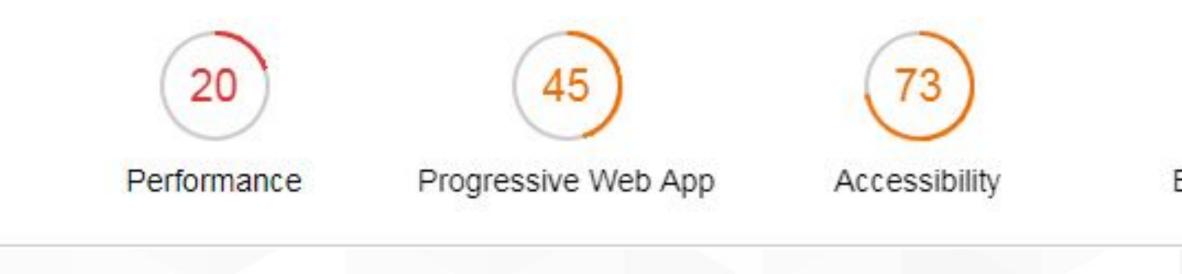




Lighthouse

https://developers.google.com/web/tools/lighthouse/

- Built into Chrome under the Audits tab.
- Works on local sites.
- A lot more info in comparison to Google PageSpeed Insights.





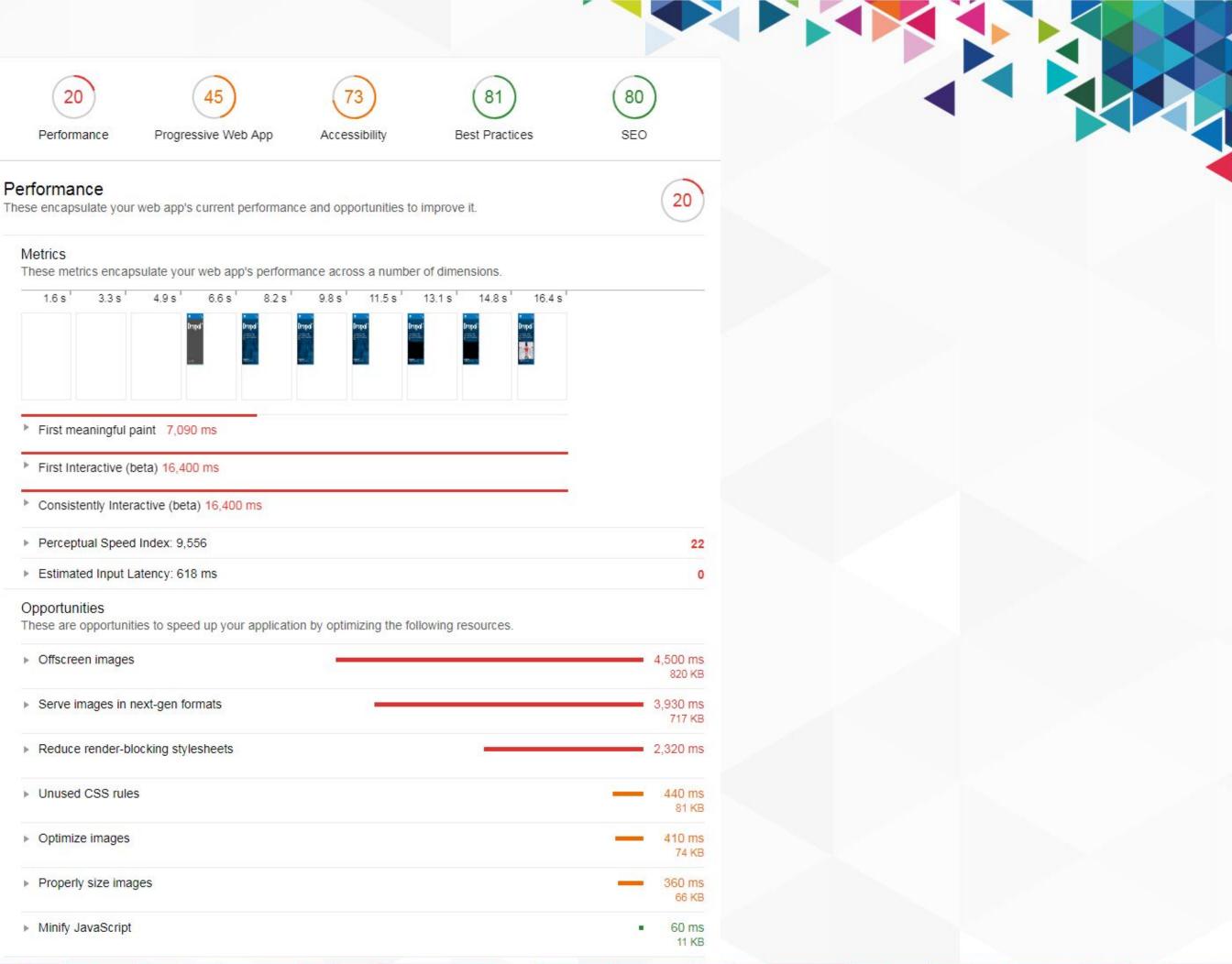
Best Practices







Performance





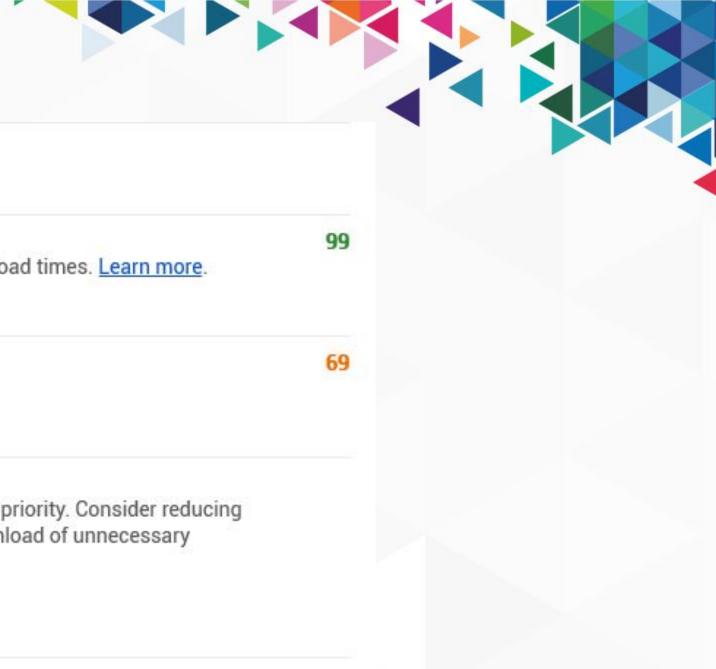
Diagnostics

More information about the performance of your application.

- Has enormous network payloads: Total size was 1,848 KB Large network payloads cost users real money and are highly correlated with long load times. Learn more.
 - View Details
- Uses inefficient cache policy on static assets: 39 assets found A long cache lifetime can speed up repeat visits to your page. Learn more.
 - View Details
- Critical Request Chains: 6

The Critical Request Chains below show you what resources are issued with a high priority. Consider reducing the length of chains, reducing the download size of resources, or deferring the download of unnecessary resources to improve page load. Learn more. Longest chain: 4,679.3ms over 2 requests, totalling 13.23 KB

- View critical network waterfall:
- User Timing marks and measures: 3 Consider instrumenting your app with the User Timing API to create custom, real-world measurements of key user experiences. Learn more.
 - View Details
- JavaScript boot-up time is too high: 2,080 ms Consider reducing the time spent parsing, compiling and executing JS. You may find delivering smaller JS payloads helps with this.
 - View Details
- 6 Passed Audits





Progressive Web App

These checks validate the aspects of a Progressive Web App, as specified by the baseline PWA Checklist.

6 Failed Audits

Does not register a service worker

The service worker is the technology that enables your app to use many Progressive Web App features, such as offline, add to homescreen, and push notifications. Learn more.

- Does not respond with a 200 when offline If you're building a Progressive Web App, consider using a service worker so that your app can work offline. Learn more.
- Page load is not fast enough on 3G A fast page load over a 3G network ensures a good mobile user experience. Learn more. First Interactive was at 14,640 ms. More details in the "Performance" section.
- User will not be prompted to Install the Web App Browsers can proactively prompt users to add your app to their homescreen, which can lead to higher engagement. Learn more.

Failures: No manifest was fetched, Site does not register a service worker, Service worker does not successfully serve the manifest's start_url.

- Is not configured for a custom splash screen A themed splash screen ensures a high-quality experience when users launch your app from their homescreens. Learn more. Failures: No manifest was fetched.
- Address bar does not match brand colors The browser address bar can be themed to match your site. Learn more. Failures: No manifest was fetched, No `<meta name="theme-color">` tag found.
- 5 Passed Audits
- Additional items to manually check



Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

Elements Have Discernable Names

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

Links do not have a discernable name

Link text (and alternate text for images, when used as links) that is discernible, unique, and focusable improves the navigation experience for screen reader users. Learn more.

View failing elements

Elements Describe Contents Well

These are opportunities to make your content easier to understand for a user of assistive technology, like a screen reader.

- <frame> or <iframe> elements do not have a title Screen reader users rely on frame titles to describe the contents of frames. Learn more.
- View failing elements

Color Contrast Is Satisfactory

These are opportunities to improve the legibility of your content.

- Background and foreground colors do not have a sufficient contrast ratio. Low-contrast text is difficult or impossible for many users to read. Learn more.
- View failing elements
- 13 Passed Audits
- 19 Not Applicable Audits
- Additional items to manually check





Best Practices

We've compiled some recommendations for modernizing your web app and avoiding performance

2 Failed Audits

- Includes front-end JavaScript libraries with known security vulnerabilities: 3 vulnerabilitie
- Manifest's short_name will be truncated when displayed on homescreen
- 14 Passed Audits

SEO

These checks ensure that your page is optimized for search engine results ranking. There are ad Lighthouse does not check that may affect your search ranking. Learn more.

2 Failed Audits

- Links do not have descriptive text: 2 links found Descriptive link text helps search engines understand your content. Learn more.
 - ► View Details
- Document does not have a valid rel=canonical Canonical links suggest which URL to show in search results. Read more in <u>Use canonica</u> Multiple URLs (https://www.drupal.org/home, https://www.drupal.org/home)

8 Passed Audits

Additional items to manually check

Run these additional validators on your site to check additional SEO best practices.

- Page is mobile friendly Take the <u>Mobile-Friendly Test</u> to see how easily a visitor can use your page on a mobile determined.
- Structured data is valid Run the <u>Structured Data Testing Tool</u> and the <u>Structured Data Linter</u> to validate structured

| ice pitfalls. | 88 |
|-----------------------------|----|
| es detected. | |
| dditional factors | 80 |
| | |
| al URLs. | |
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| levice. <u>Learn more</u> . | |
| d data. <u>Learn more</u> . | |



Chrome User Experience Report

https://developers.google.com/web/tools/chrome-user-experience-report/

Provides a lot of metrics from real users

- First Paint
- onload
- Browser started to render the page
- First Contentful Paint Browser rendered text
- DOMContentLoaded HTML document has been fully parsed - Page and dependent resources have finished loading

https://www.youtube.com/watch?v= srJ7eHS3IM



What will happen if I don't go for a 100/100?



Google Webmaster Central Blog

Official news on crawling and indexing sites for the Google index

Using page speed in mobile search ranking Wednesday, January 17, 2018

People want to be able to find answers to their questions as fast as possible - studies show that people really care about the speed of a page. Although speed has been used in ranking for some time, that signal was focused on desktop searches. Today we're announcing that starting in July 2018, page speed will be a ranking factor for mobile searches.





Users on a slow connection will give up and leave before the page loads.

Your competitor's site will rank higher in search results if they are faster; and you'll lose traffic to them.



Slow sites leave money on the table



Join us for contribution sprints Friday, April 13, 2018

Mentored **Core sprint**

9:00-12:00 Room: Stolz 2

First time sprinter workshop

> 9:00-12:00 Room: Stolz 2

#drupalsprint

General sprint

9:00-12:00 Room: Stolz 2



What did you think?

Locate this session at the DrupalCon Nashville website:

http://nashville2018.drupal.org/sessions/get-perfect-100-google-pagespeed-what-will-happen-if-you-dont

Take the Survey!

https://www.surveymonkey.com/r/DrupalConNashville













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| The second | | Experience Optimized Drupal
Hosting |

drupal.org 56/100 CDN, HTTP2 Takes time to turn a big ship my.datasphere.com 100/100 No CDN, HTTP 1.1

Go to <u>http://www.fixrenderblocking.com/</u> and receive 10% off when the service goes live





"unnamed site" 96/100 No CDN, HTTP 1.1 Cheating doesn't fool the user