FRONTEND DEVELOPER & UX INTERFACE DESIGNER

KEVIN EULENBERG
WE CREATE COOL WEBAPPS & USER EXPERIENCES

FROUX
CO-FOUNDER OF kunstoff
I LOVE CYCLING
I LOVE WORKING WITH

Woo

WordPress
ACCELERATE WP IN 2018
LET'S CLARIFY THE

WHY, HOW, WHAT
WHY PERFORMANCE MATTERS
WHY

FACTS

YAHOO INCREASED TRAFFIC BY 9% FOR EVERY 400MS OF IMPROVEMENT
WHY

FACTS

AMAZON INCREASED REVENUE BY 1% FOR EVERY 100MS OF IMPROVEMENT
WHY FACTS

According to Google, 53% of users will abandon a site or web page if it doesn’t load within 3 seconds.
THE NEGATIVE SIDE

FACTS

90% OF FACEPALMS ARE CAUSED BY SLOW WEBSITES
WAIT...

LET’S GO A STEP BACK
WEB-PERFORMANCE AFFECTS USER-EXPERIENCE
USER-EXPERIENCE AFFECTS CONVERSION
LET ME INTRODUCE...

THE 6 PILLARS OF PERFORMANCE ISSUES
THE INFAMOUS 6

EYE FRONTEND-ASSETS (MARKUP, STYLESHETS, SCRIPTS)

JPEG VISUAL COMPONENTS (IMAGES & VIDEOS)

SECRET FONTS (WEBTYPO & ICON-FONTS)
THE INFAMOUS 6

WORDPRESS CONFIGURATION

SERVER AND DATABASE MANAGEMENT

THE CLIENT-SIDE BOTTLENECK (DEVICES)
LET’S TALK ABOUT
DO’S AND DONT’S
PILLAR 1
FRONTEND ASSETS
PLUGINS AND SCRIPTS
SLAP YOUR PAGESPEED DRAMATICALLY
FRONTEND ASSETS

👍 USE A LIGHTWEIGHT WP THEME

👍 USE FEW AND MORE LIGHTWEIGHT PLUGINS

👍 DELETE UNUSED PLUGINS AND THEMES

👎 DON’T USE PAGE TRANSITIONS FX on $(document).ready()
FRONTEND ASSETS

👍 REDUCE AMOUNT & SIZE OF HTTP REQUEST

/ UNLOAD UNNECESSARY SCRIPTS, FONTS, STYLES IN YOUR FUNCTION.PHP (CHILD-THEME)

/ MINIFY STYLES, JAVASCRIPT & MARKUP

/ CONCATENATE AND LOAD CRITICAL CSS FIRST (FOR THE FIRST VISIBLE PARTY OF THE PAGE)
FRONTEND ASSETS

👍 SPLIT YOUR SCRIPTS FROM GLOBAL TO LOCAL

👍 LOAD YOUR SCRIPTS ASYNCHRONOUS AND AT LAST
FRONTEND ASSETS

👎 DON’T USE A CPU HUNGRY SLIDER

👎 DON’T USE @IMPORT CSS DECLARATION

👎 IF A PLUGIN OR SCRIPT DOESN’T BENEFIT THE UX, ASK YOURSELF IF YOU REALLY NEED IT
ATTENTION

IF USING PAGE-BUILDERS:

DON'T USE THEM IF YOU DON'T NEED THEM
I'VE GOT
SOME GOOD NEWS FOR YOU
ACF SUPPORT
FOR GUTENBERG
THIS SEPTEMBER

Big News Regarding our Free Version 🎉

The free version of ACF is also getting some love when it comes to Gutenberg. But it does come with some important changes that we want to make you aware of: Gutenberg Compatibility Will Only Be Available in ACF Free Version 5.

Our work regarding ACF free version 5 has been ongoing for some time and we’re happy to say that it’s finally going to make its public release! Look for it to replace version 4 within the WordPress plugin repository in early September 2018.
PILLAR 2

VISUAL COMPONENTS
DID YOU KNOW?

80% OF LOADING TIME ARE CAUSED BY UN-COMPRESSED IMAGES 👎
VISUAL COMPONENTS

👍 USE THE CORRECT FILE FORMAT FOR IMAGE TYPES

👍 USE SRCSET & SIZE ATTRIBUTE FOR RESPONSIVE IMAGES

👍 OPTIMIZE IMAGES MANUALLY OR THROUGH A PLUGIN

👎 AVOID PNG-24 WHEN POSSIBLE
IMAGE COMPRESSION

/ SAVE IMAGES FOR WEB BY:
   SKETCH OR PHOTOSHOP

/ MANUAL COMPRESSION (RECOMMENDED):
   IMAGEOPTIM OR COMPRESSOR.IO

/ AUTOMATION COMPRESSION IN WP:
   SMUSH
SMUSH IMAGE COMPRESSION

Smush Image Compression and Optimization

Von WPMU DEV
VISUAL COMPONENTS

👍 USE THIRD PARTY PLATFORMS FOR VISUAL CONTENT

/ FOR VIDEO: YOUTUBE, VIMEO... (ENHANCED BUFFERING)

👍 USE VIDEOS INSTEAD OF GIFS

👍 LAZY-LOAD IMAGES

👍 LOAD IFrames & Videos at Last
USAGE OF SVG

👍 You can use Inline-SVG Images

👍 Inline-SVG Images will prevent an additional HTTP request

👎 Be aware of that your SVG isn’t bigger than a PNG

👎 Be aware of the code of your SVG for security reasons
PILLAR 3
WEB-FONTS
DID YOU KNOW?

WEB FONTS ARE EXPENSIVE

I DON'T MEAN THE LICENSE FEES
WEB-FONTS

👍 USE THE NATIVE-FONT STACK
THE NATIVE FONT-STACK

👍 GITHUB, MEDIUM.COM & LINKEDIN KNOWS IT BEST

CSS

/* System Fonts as used by GitHub */
body {
    font-family: -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto, Helvetica, Arial,
}

EXAMPLE BY: https://css-tricks.com/snippets/css/system-font-stack/
WEB-FONTS

👍 USE THE NATIVE-FONT STACK

👍 USE MAXIMUM ONE WEB-FONT WITH TWO FONT-WEIGHTS

👍 MAKE SURE TO USE WOFF2 FILE FORMAT

👎 AVOID USING BIG SETS OF ICON-FONTS
QUICK-WIN WEB-FONTS

👍 USE THE REL="PRECONNECT" ATTRIBUTE

/ THE FONTS ARE FETCHED MUCH EARLIER
(BEFORE CSS IS PARSED)

👍 YOU SHOULD ONLY LOAD FONT-STYLES YOU NEED
AND TAKE CONTROL OF IT
QUICK-WIN WEB-Fonts

```html
<link rel="preload" href="/googlefont/quicksand.woff2" as="font" crossorigin>
<style>
  @font-face {
    font-family: 'Quicksand';
    font-style: normal;
    font-weight: 400;
    src: local('Quicksand Regular'),
        local('Quicksand-Regular'),
        url(https://fonts.gstatic.com/s/quicksand/v7/6xKtdSZaM9iE8KbpRA_hK1QNYuDyPw.woff2) format('woff2');
    unicode-range: U+0000-00FF, U+0131, U+0152-0153, U+02BB-02BC, U+02C6, U+02DA, U+02DC, U+2000-206F, U+2074, U+20AC, U+2122, U+2191, U+2193, U+2212, U+2215, U+FEFF, U+FFFD;
  }
</style>
```

EXAMPLE BY: Chris Ashton - http://ashton.codes/preload-google-fonts-using-resource-hints/
WEB-FONTS

👍 HELVETICA AND ARIAL OR GEORGIA AND TIMES HAVE A GOOD READABILITY & LEGIBILITY

🤔 AMAZON USES FONTS IN IMAGES

👎 AVOID FLICKERING OF UNCACHED FONTS BY UNDERSTANDING THE WAY OF RENDERING FONTS
THE FOIT & FOUT OF WEB-FONTS

👩‍💻 MONICA DINCULESCU EXPLAINS IT IN „FONTASTIC WEB PERFORMANCE“

🎉 PERFORMANCE AT SMASHINGCONF BARCELONA 2017
THE FOIT & FOUT OF WEB-FONTS

- **Block**: Invisible 3s, Fallback 0s, Webfont 100ms
- **Swap**: Invisible 0s, Fallback 3s, Webfont 100ms
- **Fallback**: Invisible 100ms, Fallback 3s, Webfont 100ms
- **Optional**: Invisible 100ms, Fallback 100ms, Webfont 100ms
PILLAR 4

WP CONFIGURATION
LET’S FACE IT

WORDPRESS IS NEARLY PERFECT

LET’S MAKE IT BETTER WITH SOME TWEAKS
WP CONFIGURATION

👍 **LIMIT** BLOG POSTS AND MAKE USE OF EXCERPTS

- Blog pages show at most 9 posts
- Syndication feeds show the most recent 9 items
- For each article in a feed, show Summary
- Search Engine Visibility: Discourage search engines from indexing this site

*It is up to search engines to honor this request.*
WP CONFIGURATION

👍 DISABLE GRAVATARS

Avatar Display
- Show Avatars

Maximum Rating
- G — Suitable for all audiences
- PG — Possibly offensive, usually for audiences 13 and above
- R — Intended for adult audiences above 17
- X — Even more mature than above

Default Avatar
- For users without a custom avatar of their own, you can either display a generic logo or e-mail address.
  - Mystery Man
  - Blank
  - Gravatar Logo
WP CONFIGURATION

👍 DISABLE GRAVATARS
👍 OR DISABLE COMMENTS COMPLETELY
# WP Configuration

**Optimize**

👍 Show Comments as **Pagination**

<table>
<thead>
<tr>
<th>Other comment settings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment author must fill out name and email</td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Users must be registered and logged in to comment</td>
<td></td>
</tr>
<tr>
<td>Automatically close comments on articles older than 14 days</td>
<td></td>
</tr>
<tr>
<td>Enable threaded (nested) comments 5 levels deep</td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Break comments into pages with 25 top level comments per page and the last page displayed by default</td>
<td><strong>✓</strong></td>
</tr>
</tbody>
</table>

Comments should be displayed with the **newer** comments at the top of each page.

<table>
<thead>
<tr>
<th>Email me whenever</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anyone posts a comment</td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>A comment is held for moderation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Before a comment appears</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment must be manually approved</td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Comment author must have a previously approved comment</td>
<td></td>
</tr>
</tbody>
</table>
WP CONFIGURATION

👍 **LIMIT REVISIONS** OF YOUR POST & PAGES

/ CODE BELOW WILL LIMIT IT TO ONLY 3 REVISIONS

/ CODE GOES INTO WP-CONFIG.PHP

```
1 define('AUTOSAVE_INTERVAL', 300); // seconds
2 define('WP_POST_REVISIONS', 3);
```

SOURCE: https://www.wpblog.com/disable-limit-wordpress-post-revisions/
WP CONFIGURATION

👍 REMOVE UNNECESSARY WIDGETS

👎 DON’T USE ANY SHARING BUTTON PLUGIN

👍 TEST EVERY WIDGET & PLUGIN YOU WANT TO USE WITH CARE AND MONITOR WHAT HAPPENS
WP CONFIGURATION

👍 TAKE UPDATES SERIOUSLY

✅ UPDATE: CORE

✅ UPDATE: THEMES

✅ UPDATE: PLUGINS

⚠️ FOR SECURITY & PERFORMANCE

Seal with it.
YOU CAN USE AMP FOR MOBILE IN WORDPRESS

YOU DON’T HAVE TO - BUT GIVE IT A TRY
CACHING WITH WP-ROCKET
CACHING WITH WP-ROCKET

❤ IT OFFERS YOU AMAZING FEATURES:

/ EASY CDN CONNECT AND CACHING
/ LAZY LOADING
/ DNS PREFETCH & PRECONNECT CONTROL
/ QUICK SET UP AND EASY TO USE
DID YOU KNOW?

CACHING CAN HELP TO OVERCOME OVERBLOATED DOM, FONTS & SCRIPTS
BUT IT’S NOT ALWAYS THE SOLUTION
FOR THE PROBLEM ITSELF
PILLAR 5
SERVER & DATABASE
OH NO....

YOUR PAGE IS TOO SLOW?
MAYBE IT'S NOT YOUR PC
SERVER & DATABASE

👍 USE A HIGH QUALITY HOSTING PROVIDER
SERVER & DATABASE

👍 USE A **HIGH QUALITY HOSTING PROVIDER**

✅ KNOW THE **DIFFERENCE BETWEEN:**
- **SHARED** (GODADDY, BLUEHOST, HOSTEUROPE)
- **DEDICATED** (SITEGROUND, GODADDY, HOSTEUROPE)
- **VPS** (DIGITAL OCEAN)
- **CLOUD** (AMAZON EC2, LINODE, GOOGLE COMPUTE ENGINE)
- **MANAGED** (SITEGROUND, RAIDBOXES, DREAMHOST)

❤ I PERSONAL PREFER 🌟
SERVER & DATABASE

👍 USE A **HIGH QUALITY HOSTING PROVIDER**

👍 **NGINX** IS THE OBVIOUS CHOICE OVER APACHE

👍 USE ALWAYS THE **LATEST PHP VERSION**

👍 **ONLY USE HTTP/2** FOR MULTIPLE PARALLEL REQUESTS

👍 MAKE USE OF **BROTLI** OR **GZIP** COMPRESSION
WHAT MAKES BROTLI BETTER?

👍 14 PERCENT SMALLER COMPRESSED JAVASCRIPT BUNDLES

👍 21 PERCENT SMALLER COMPRESSED HTML

👍 14 PERCENT SMALLER COMPRESSED CSS THAN GZIP
SERVER & DATABASE

👍 USE A CONTENT DELIVERY NETWORK (CDN)
/ YOU CAN USE IT FOR IMAGES, STYLES, JS AND HTML
/ IT MAKES YOUR ASSETS FAST WORLDWIDE
/ SERVED FROM THE NEAREST SERVER TO THE USER
SERVER & DATABASE

👍 USE A CONTENT DELIVERY NETWORK (CDN)

👍 REDUCE CALLS TO DATABASE (FIX BROKEN THEMES)

👍 TRY A DATABASE CACHING LIKE REDIS OBJECT CACHE

👍 OPTIMIZE DATABASE BY CLEANING IT FREQUENTLY
CLEANING WITH WP-OPTIMIZE

WP Optimize

KEEP YOUR DATABASE FAST & EFFICIENT

WP-Optimize

Von David Anderson, Ruhani Rabin, Team Updraft
CLEANING WITH WP-OPTIMIZE

- Removes Trashes/Unapproved/Spam Pingbacks/Expired Transient Options
- Compact/De-Fragment MySQL Tables
- Clean-Up Automation & Benchmarks
SERVER & DATABASE

🚨 TRY MARIADB OR POSTGRESQL INSTEAD OF MYSQL
👍 DISABLE HOTLINKING IN .HTACCESS
👍 ADD AN EXPIRES HEADER TO YOUR .HTACCESS
🚨 TRY ADD 'PRIORITIZE CRITICAL CSS' FILTER TO YOUR APACHE OR NGINX CONFIGURATION

READ MORE ABOUT THE FILTER:
SERVER & DATABASE

👍 USE A STATIC SITE GENERATOR FOR WP (ONLY IF YOUR PAGE IS LESS DYNAMIC)

👍 MAKE USE OF THE POWERFUL WP REST-API TO DELIVER SMALLER PACKAGES OF DYNAMIC DATA
THE CLIENT-SIDE BOTTLENECK
JS PROCESSING FOR CNN.COM

SOURCE: Addy Osmani - The Cost of JavaScript
HOW DOES MOBILE MATTER IN 2018?
AMOUNT OF MOBILE TRAFFIC ON WEBSITES FROM 2014 - 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of Mobile Phone Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>48.8%</td>
</tr>
<tr>
<td>2015</td>
<td>52.7%</td>
</tr>
<tr>
<td>2016</td>
<td>56.1%</td>
</tr>
<tr>
<td>2017</td>
<td>58.9%</td>
</tr>
<tr>
<td>2018</td>
<td>61.2%</td>
</tr>
<tr>
<td>2019</td>
<td>63.4%</td>
</tr>
</tbody>
</table>

SOURCE: https://www.statista.com
DID YOU KNOW?

BROWSERS ARE BOTTLENECKS, TOO.

TEST IT WITH CARE
WHAT DOES IT MEAN TO BE FAST?
Performance of top 50 e-commerce websites
Homepage loading time distribution

Fastest: 0.457 s
Average: 2.51 s
Slowest: 8.32 s

Data sources: Alexa.com (top 50 list), Pingdom.com (performance data)
MONITORING: THE KEY TO SUCCESS

HOW CAN I ACHIEVE THAT?
MONITORING

/ GOOGLE PAGESPEED INSIGHTS
/ WEBPAGETEST. ORG
/ PINGDOM
/ SONARWHALE (WEBHINT.IO)
DID YOU KNOW?

THE BROWSERS DEV-CONSOLE IS YOUR FRIEND
GOOGLE LIGHTHOUSE
Results for: https://alorner.com/
Jun 15, 2017, 11:41 AM AOT + Runtime settings

Progressive Web App 100
Performance 89
Accessibility 97
Best Practices 92

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

View 11 passed items
Manual checks to verify

Performance
These encapsulate your app's performance.

Metrics
These metrics encapsulate your app's performance across a number of dimensions.

First meaningful paint: 2,770 ms
First meaningful paint measures when the primary content of a page is visible. Learn more.
Auditing giphy.com...

💡 By reducing the response size of JSON needed for displaying comments, Instagram saw increased impressions [Source: WPO Stats]
LOOKUP FOR 404-ERRORS IN YOUR CONSOLE
CONCLUSION
CONCLUSION

1. ✅ REDUCE REQUEST IN QUANTITY AND SIZE
2. ✅ IT DEPENDS ON HOW YOU PROVIDE REQUESTED DATA
3. ✅ RENDERING CAPABILITY ALWAYS MATTERS
CONCLUSION

 LESS HTTP REQUEST MEANS:

 LESS ENERGY EFFORT IS REQUIRED

 LESS COSTS ARE REQUIRED
CONCLUSION

 LESS HTTP REQUEST LEADS TO:

⚡ BETTER PERFORMANCE

✌ BETTER UX

📈 BETTER CONVERSION

🌳 BETTER FOR THE ENVIRONMENT BECAUSE OF LESS ENERGY EFFORT
GET THIS KEYNOTE:

https://performance.froux.co/

THANK YOU

soundcloud.com/kevineulenberg

twitter.com/snyoz

medium.froux.co
REFERENCES

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http://instantshift.com/2018/03/02/gzip-vs-brotli-compression/

**PREVENT HOTLINKING:**
http://webcraft.tools/how-to-prevent-hotlinking-in-wordpress/

**FILTER NGINX & APACHE PRIORITIZE CRITICAL CSS:**

**BEST WP CDN SERVICES:**
https://www.wpbeginner.com/showcase/best-wordpress-cdn-services/

**THE NATIVE FONT-STACK BEST PRACTICES:**
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**PRELOAD FONTS BY USING HINTS:**
http://ashton.codes/preload-google-fonts-using-resource-hints/

**RESPONSIVE IMAGES:**

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https://yoast.com/setting-up-wordpress-for-amp-accelerated-mobile-pages/

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https://www.wpbeginner.com/showcase/best-wordpress-cdn-services/

**APACHE VS. NGINX:**
https://code.tutsplus.com/tutorials/apache-vs-nginx-pros-cons-for-wordpress--cms-28540
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WHY PERFORMANCE MATTERS:

THE COST OF JAVASCRIPT:

MOBILE MARKETING REPORT:

SMASHING CONF: TALKS ABOUT WEBFONTS:

WORDPRESS OPTIMIZATION: