

How to Scale WordPress

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@nullbytes



Scaling WordPress

PHP8

- ***It's supported! PHP 5/7 isn't.***
- ***Performance!***
- ***Enables better Code***
- ***Update only on testing environment!***
- ***You want to move to PHP 8.x asap***
- ***Plugins/Themes that breaks can be indicator of performance hogs***



<https://www.php.net/supported-versions.php>

Update WordPress to save the planet

WordPress 6.2 brings some major performance wins to WordPress core, visible in the benchmarks for both [Web Vitals](#) and [Server Timing](#) metrics. Performance is further improved for block themes performance with ~20% faster [TTFB](#) and ~14% faster [LCP](#). On pages with hero images, the LCP improvements are even greater at ~19%.

- The new filter `pre_wp_load_alloptions` allows short-circuiting the loading of WordPress's autoloaded options with custom logic. View ticket [#56045](#).
- The results of the `get_adjacent_post()` function are now being cached. View ticket [#41131](#).
- Cache keys for `WP_Term_Query` are now based on SQL without placeholders so that they can actually result in cache hits. View ticket [#57298](#).
- `WP_Query` is now no longer priming post caches twice. View ticket [#57373](#).
- Lazy-loading term metadata from the cache is now faster due to using `wp_cache_get_multiple()`. View ticket [#57150](#).
- The results of `wp_get_global_settings()` are now cached within a single request, resulting in a faster response time of ~8% for WordPress core. View ticket [#57502](#).

<https://make.wordpress.org/core/2023/03/09/wordpress-6-2-field-guide/>

Update WordPress to save the planet

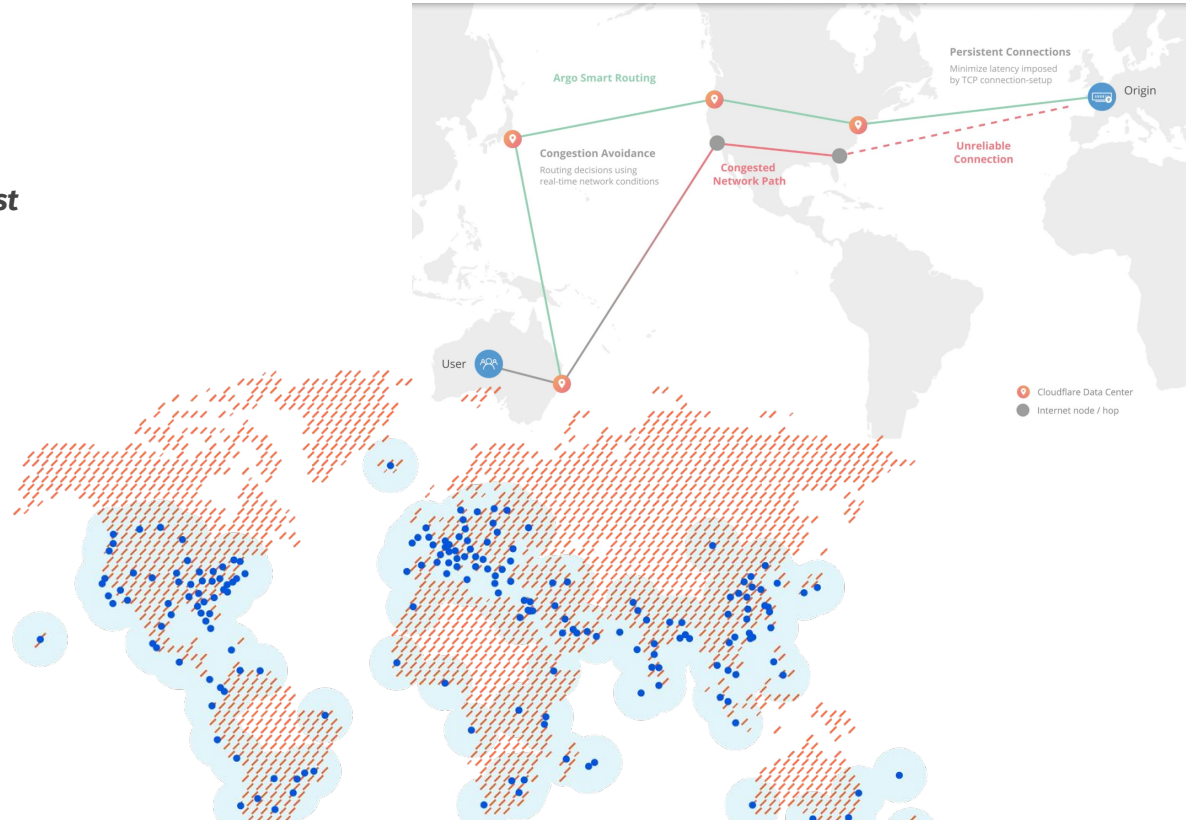
Priorities for 2023

The priorities on this roadmap are grouped in a few broader categories, each dedicated to optimizing a certain aspect of WordPress performance.

- [Server response time](#)
- [Database optimization](#)
- [JavaScript & CSS](#)
- [Images](#)
- [Measurement](#)
- [Ecosystem tools](#)

Content Delivery Network

- **Reverse Proxy**
- **Not on the same server**
- **Closer to the visitor -> faster request**
- **Can also mitigate Attacks**
- **Your server can be offline**
- **Only use your server run PHP**



Core Web Vitals

- **Largest Contentful Paint (LCP)**
- **First Input Delay (FID)**
- **Cumulative Layout Shift (CLS)**
- **Everything influences that:**
 - a. **How much is going on the server**
 - b. **How fast is PHP**
 - c. **Object caching**
 - d. **Cold Caches**
 - e. **MySQL**

<https://web.dev/vitals/>

Object Cache

- *Server that serves data from Memory*
- *Memory is faster than disk*
- *Memcached or Redis Plugins for WordPress*
- *Perfect base to scale to multiple servers*
- *WordPress will speed up right away*
- *Look out for the right Invalidation*
- *Object caching in code*
- *Be careful with E-Commerce Pages*

Advanced Optimization

Hard Steps for WordPress Scaling

- *ElasticSearch and Custom Development*
- *Write MySQL queries on a different server*
- *Use a Load Balancing*
- *Debug your Performance with tools like New Relic or Blackfire.io*
- *Review every line of plugins and themes*
- *Exit early and other coding patterns*

- **State of the Art Search**
- **WordPress is not for searching**
- **External Server**
- **Facet Search**
- **Weight**
- **Synonyms**

Site Search Engines Documentation Support Swifttype Team Account

searching-goodness SWIFTYPE TEAM A...

Overview
Search Preview

METRICS
Analytics
Insights

CUSTOMIZE
Result Rankings
Weights
Synonyms

MANAGE
Content
Logs

INTERFACE
Install Search
Interface Designer
Engagement Modules
Conversions

Manage Weights

Your search relevance function determines the order of your search results.

RESTORE DEFAULTS

Field: body Impact: 5.5

Field: excerpt Impact: 1

Field: title Impact: 1

Field: author Impact: 1

SAVE ADD FIELD

post SEARCH

HELLO WORLD!

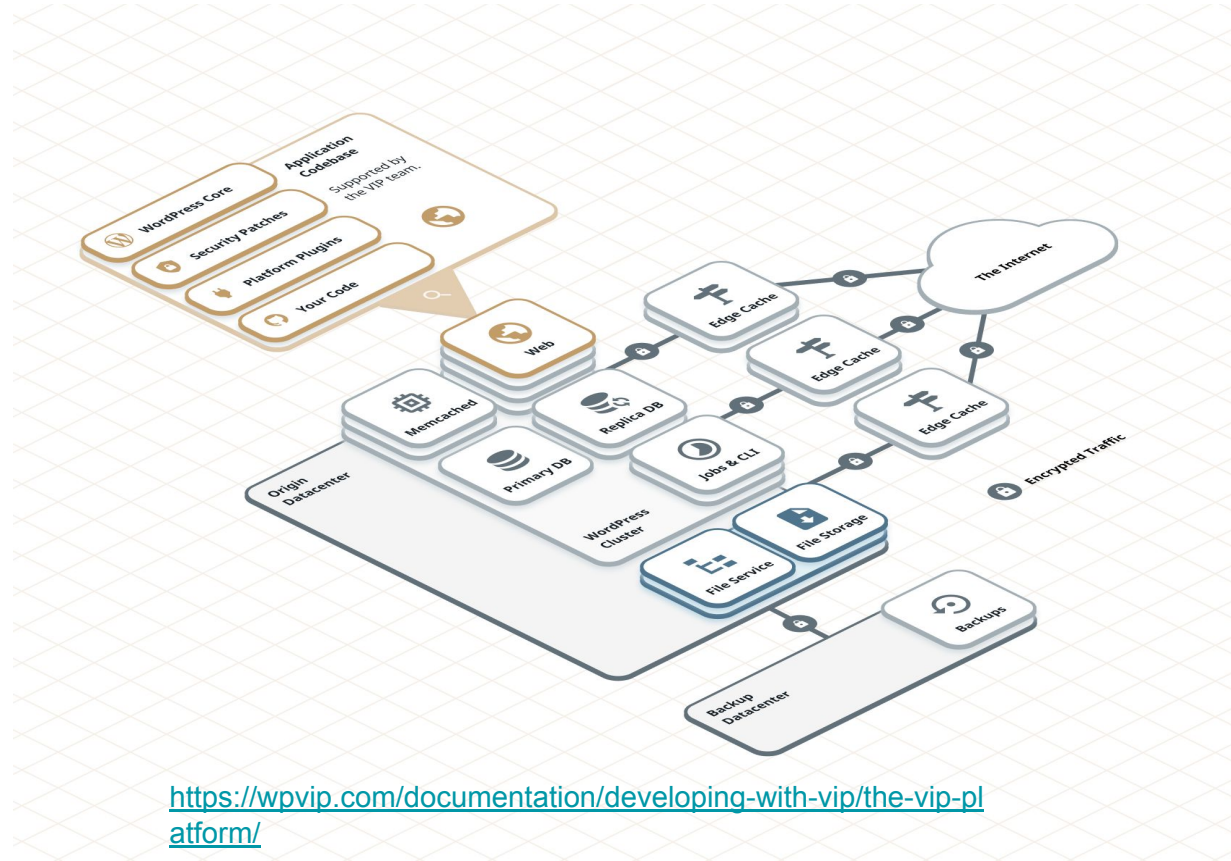
Welcome to WordPress. This is your first *post*. Edit or delete it, then start writing!

SAMPLE PAGE

This is an example page. It's different from a blog *post* because it will stay in one place and will show up in your site navigation (in most themes). Most people start with an About page that introduces them to potential site visitors. It might say something like this: Hi there! I'm a bike

MySQL / Loadbalancing

- **MySQL Read only Server**
- **That's how the big hosting does it**



<https://wpvip.com/documentation/developing-with-vip/the-vip-platform/>

New Relic

APPS
Plan Service

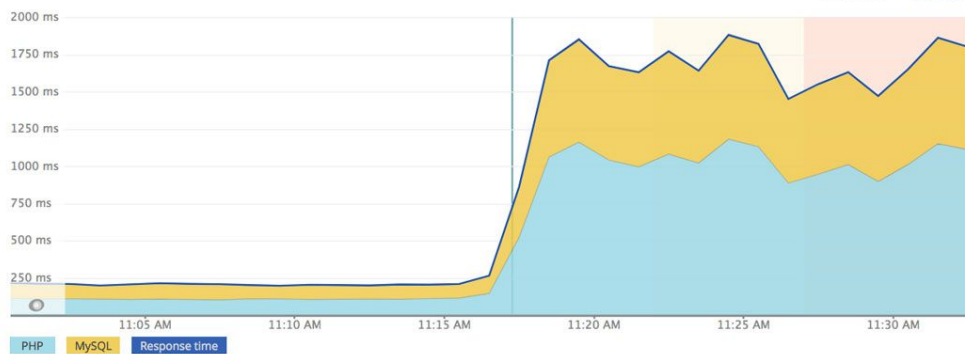
TIME PICKER
33 minutes ending today, 11:33

SERVERS
All servers

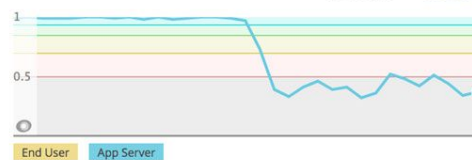
- MONITORING
 - Overview
 - Service maps
 - App map
 - Transactions
 - Databases
 - External services
- EVENTS
 - Error analytics
 - Errors
 - Violations
 - Deployments
- REPORTS
 - SLA
 - Availability
 - Scalability
 - Web transactions
 - Database
 - Background jobs
- SETTINGS
 - Application

Time window has been set to 33 minutes ending 11:33

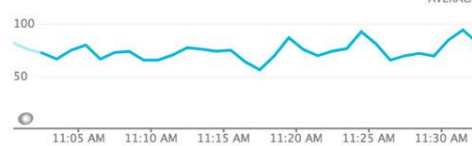
Web transactions time



Apdex score



Throughput



Transactions

Transaction	App server time
/App\Http\Controllers\GetPlansController@getPlans	1,850 ms
Transaction traces: 4.9 s 4.8 s 4.8 s	
/App\Exceptions\Handler@render	615 ms
Transaction traces: 4.3 s	
/App\Http\Controllers\GetPlansController@getPlan	562 ms
Transaction traces: 1 s 1 s 1 s	
/App\Http\Controllers\TronController@statusMessage	62 ms

Error rate





















Application activity

In progress Event log Filter



There are no violations in progress right

New Relic

Duration (ms)	Duration (%)	Segment	Drilldown	Timestamp
9,310	 100.00%	/wp-admin/nav-menus.php		0.000 s
22.0	 0.24%	> 15 fast method calls		0.001 s
18.0	 0.19%	> do_action		0.024 s
1.0	 0.01%	SuperSecretCompanyNamespace :D\Auth\App\CoreServiceProvider::SuperSecretCompanyNamespace :D\Auth\App\{closure}		0.043 s
0	 0.00%	WPSEO_Sitemaps::init_sitemaps_providers		0.044 s
1.0	 0.01%	> AutomatticWP\Cron_Control\Events_Store::get_option		0.044 s
81.0	 0.87%	> do_action		0.045 s
12.0	 0.13%	> 12 fast method calls		0.126 s
89.0	 0.96%	> do_action		0.139 s
27.0	 0.29%	> 19 fast method calls		0.228 s
206	 2.21%	> do_action		0.255 s
2.0	 0.02%	> do_action		0.461 s
0	 0.00%	Jetpack::admin_body_class		0.463 s
6.0	 0.06%	> _wp_menu_output		0.463 s
9.0	 0.10%	> do_action		0.471 s
1.0	 0.01%	> 7 fast method calls		0.480 s
122	 1.31%	> do_accordion_sections		0.481 s
2.0	 0.02%	> 9 fast method calls		0.603 s

New Relic

8,710		93.50%	▼ shutdown_action_hook		0.605 s
8,710		93.50%	▼ do_action		0.605 s
8,710		93.50%	▼ WP_Hook::do_action		0.605 s
8,710		93.50%	▼ WP_Hook::apply_filters		0.605 s
78.0		0.84%	> QM_Dispatcher_Html::dispatch		0.605 s
58.0		0.62%	> VaultPress::do_pings		0.683 s
0		0.00%	Yoast_Notification_Center::update_storage		0.741 s
8,540		91.71%	▼ AutomaticJetpack\Sync\Sender::do_sync		0.741 s
8,540		91.71%	▼ AutomaticJetpack\Sync\Sender::do_sync_and_set_delays		0.741 s
8,540		91.71%	▼ AutomaticJetpack\Sync\Sender::do_sync_for_queue		0.741 s
13.0		0.14%	> 5 fast method calls		0.741 s
8,530		91.54%	▼ apply_filters		0.754 s
8,530		91.54%	▼ WP_Hook::apply_filters		0.754 s
8,530		91.54%	▼ AutomaticJetpack\Sync\Actions::send_data		0.754 s
0		0.00%	MySQL wp_*_options select		0.754 s
0		0.00%	MySQL wp_*_options select		0.754 s
8,520		91.53%	▼ Jetpack_IXR_Client::query		0.755 s
8,520		91.53%	▼ AutomaticJetpack\Connection\Client::remote_request		0.755 s
8,520		91.53%	▼ AutomaticJetpack\Connection\Client::wp_remote_request		0.755 s
8,520		91.53%	▼ wp_remote_request		0.755 s
8,520		91.53%	▼ WP_Http::request		0.755 s
8,520		91.53%	▼ Requests::request		0.755 s
8,520		91.53%	▼ Requests_Transport_cURL::request		0.755 s
8,520		91.53%	https://jetpack.wordpress.com/xmlrpc.php >		0.755 s
3.0		0.03%	> AutomaticJetpack\Sync\Queue::close		9,279 s

Xdebug

ezini::instance

Types	Callers	All Callers	Call Map	Source
Incl.	Distance	Called	Caller	
94.95	1-25 (1)	166	main	
20.61	5-24 (6)	110	eztemplate->fetch	
14.12	1	2	ezupdatedebugsettings	
13.61	4-23 (11)	588	eztemplate->executecompiledtempl...	
13.61	3-22 (10)	588	eztemplatedesignresource->execut...	
13.61	2-21 (9)	600	eztemplatecompiler::executecompil...	
13.36	6-20 (8)	95	eztemplatecompiler::executecompil...	

Incl.	Self	Distance	Calling	Callee
96.51	0.56	1	ezini->ezini	
95.90	0.31	2	ezini->load	
95.60	30.89	3	ezini->loadcache	
42.48	5.71	4	ezini->findinputfiles	
23.99	23.99	5	php::file_exists	
16.45	16.45	4	php::stat	

Ports | Calls | Call Graph | All Calls | Caller Map | As

Flat Profile

Incl.	Self	Called	Function
100.00	7.24	(0)	main
53.31	0.02	1	eztemplate->fetch
50.41	0.01	6	eztemplate->executecompile
50.40	0.02	6	eztemplatedesignresource->
50.38	0.05	6	eztemplatecompiler::execute
50.14	0.42	6	eztemplatecompiler::execute
49.71	3.15	1	include::home/httpd/ez_34/v
25.72	2.00	456	compiledfetchattribute
23.35	0.47	49	ezmysqldb->arrayquery
22.74	0.73	50	ezmysqldb->query
21.81	21.81	50	php::mysql_query
15.22	1.30	1	include::home/httpd/ez_34/v
12.94	0.31	2	ezuser->hasaccesssto

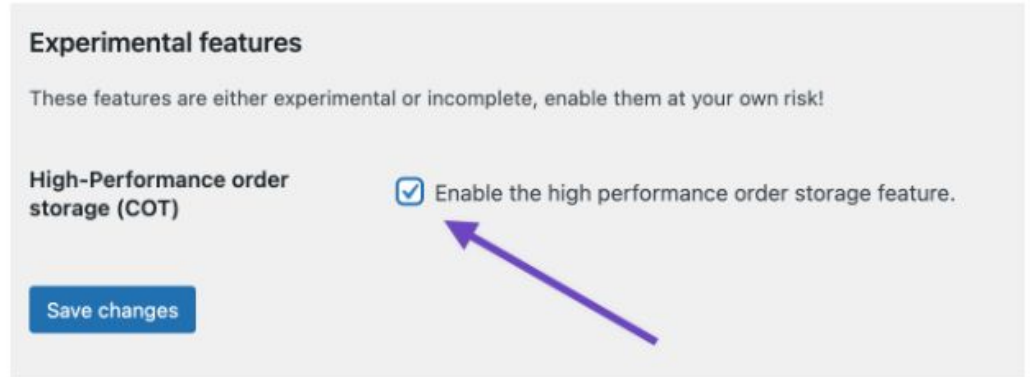
Review the Code

- *Not everything should be loaded with the init hook*
- *Read every line of code!*

Scaling WooCommerce

High-Performance Order Storage

- *Will be active with WooCommerce 8*
- *Custom tables*
- *Test your plugins*



<https://woocommerce.com/document/high-performance-order-storage/>

Thank you

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