

Optimizing Drupal Performance

Tips and Tricks

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DrupalCamp Wrocław 2013

About me

- Freelance Drupal consultant
- Working with Drupal since 2006
- Started my journey from building own projects on Drupal
- Share Drupal knowledge at **timonweb.com**
- Co-founder of **Drupal Trójmiasto Users Group** (Gdańsk / Sopot / Gdynia, 3drupal.pl)
- Creator of **Dropbucket.org** – Drupal snippets repository

What is Performance?

Performance refers to how long does it take to produce a page.

It is a result of how long it takes to render a page on the server and on the client side in the browser.

Why do we care about it?

Performance

is

Love and Money

THE HORRIBLE TRUTH ABOUT DRUPAL IS

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Photo by Chris Hoving

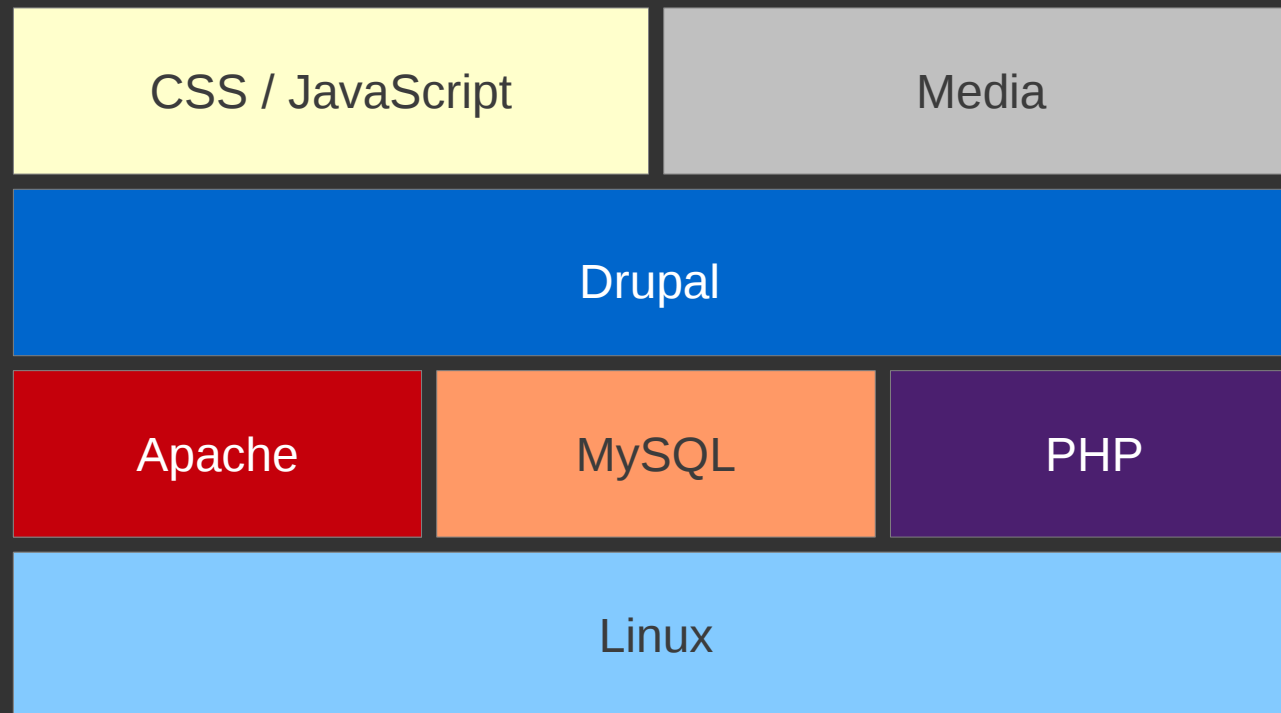
Drupal is

- Database intensive
- Memory intensive
- Can easily become a resource hog

Reasons why most Drupal sites are slow:

- doing full page renders
- serving dynamic content to anonymous users
- slow mysql queries
- module bloat aka „open buffet” syndrome

Typical Drupal Stack



Drupal Performance Tips and Tricks


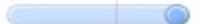













1. Know the Tools

Devel

Executed 75 queries in 18.42 ms. Queries exceeding 5 ms are **highlighted**. Page execution time was 374.61 ms. Memory used at: devel_boot()=14.98 MB

ms	#	where	ops	query
0.22	2	drupal_lookup_path	P A E	SELECT source FROM url_alias WHERE alias = :alias AND language
0.15	2	menu_get_item	P A E	SELECT * FROM menu_router WHERE path IN (:ancestors_0, :ancestors_1) ORDER BY fit DESC LIMIT 0, 1
0.19	1	drupal_lookup_path	P A E	SELECT source, alias FROM url_alias WHERE source IN (:system_1, :system_2, :system_3, :system_4, :system_5, :system_6, :system_7, :system_8, :system_9, :system_10, :system_11, :system_12, :system_13, :system_14, :system_15, :system_16, :system_17, :system_18, :system_19, :system_20, :system_21, :system_22, :system_23, :system_24, :system_25, :system_26, :system_27, :system_28, :system_29, :system_30, :system_31, :system_32, :system_33, :system_34, :system_35, :system_36, :system_37, :system_38, :system_39, :system_40, :system_41, :system_42, :system_43, :system_44, :system_45, :system_46, :system_47, :system_48, :system_49, :system_50, :system_51, :system_52, :system_53, :system_54, :system_55, :system_56, :system_57, :system_58, :system_59, :system_60, :system_61, :system_62, :system_63, :system_64, :system_65, :system_66, :system_67, :system_68, :system_69) AND language
0.16	1	ctools_export_load_object	P A E	SELECT 1 FROM views_view LIMIT 0, 1
0.19	3	ctools_export_load_object	P A E	SELECT t__0.* FROM views_view t__0 WHERE (name IN (:db_condition_placeholder_0))
0.22	2	EntityCacheControllerHelper::entityCacheLoad	P A E	SELECT base.vid AS vid, base.name AS name, base.machine_name AS hierarchy, base.module AS module, base.weight AS weight FROM :db_condition_placeholder_0 ORDER BY base.weight ASC, base.name
0.21	2	views_handler_filter_term_node_tid::value_filters	P A E	SELECT td.* FROM taxonomy_term_data td INNER JOIN taxonomy_vocabulary tv ON (tv.vid = :db_condition_placeholder_0) ORDER BY tv.weight ASC, tv.name
0.23	2	EntityCacheControllerHelper::entityCacheLoad	P A E	SELECT base.vid AS vid, base.name AS name, base.machine_name AS hierarchy, base.module AS module, base.weight AS weight FROM :db_condition_placeholder_0 ORDER BY base.weight ASC, base.name

Developer Tools in a browser

Elements Resources Network Sources Timeline Profiles Audits Console										
Name Path	Method	Status Text	Type	Initiator	Size Content	Time Latency	Timeline	662 ms	993 ms	
 bucket.dev	GET	200 OK	text/html	Other	22.6 KB 188 KB	448 ms 445 ms				
 css_ogjvJnfni1_P_WxvXAHIUOGcs860I /sites/default/files/css	GET	304 Not Modified	text/css	<u>bucket.dev:16</u> Parser	438 B 2.9 KB	21 ms 17 ms				
 css_BYgUzaq4LuhTj556vvnzLBoaHYO /sites/default/files/css	GET	304 Not Modified	text/css	<u>bucket.dev:17</u> Parser	438 B 1.9 KB	26 ms 18 ms				
 css_MTv4khaHylJ_Sxh1YNGoH69lqUbv /sites/default/files/css	GET	304 Not Modified	text/css	<u>bucket.dev:18</u> Parser	439 B 8.5 KB	22 ms 17 ms				
 css_OzllovWIZTmYRR4uDd-J49Xtd61T /sites/default/files/css	GET	304 Not Modified	text/css	<u>bucket.dev:19</u> Parser	439 B 7.5 KB	29 ms 17 ms				
 css_OetA3c4cDLNEY2Qn_rKcO74WgRI /sites/default/files/css	GET	304 Not Modified	text/css	<u>bucket.dev:20</u> Parser	440 B 123 KB	30 ms 25 ms				
 js_xAPI0qlk9eowy_iS9tNkCWXLUVoat9 /sites/default/files/js	GET	304 Not Modified	application/...	<u>bucket.dev:21</u> Parser	454 B 93.9 KB	34 ms 27 ms				
 js_EZXr5aEtel8ql90bWkYcvUAPihGrjkal		304		bucket.dev:21	453 B	60 ms				

Know the Tools

- Pingdom
- YSlow
- Apache benchmark
- XHPprof
- top / htop
- New relic
- mytop / mtop
- PhpMyAdmin
- And lots more

2. Limit number of
installed modules

3. Always check what
installed modules are
doing behind the scenes

4. Develop modules with performance in mind:

- take advantage of caching (`drupal_static()`, `cache_set()`, `cache_get()`)
- split ui part and functional part
- take advantage of Drupal's Ajax Framework
- Use Drupal API!!!

5. Enable css / javascript aggregation:

- built in
- aggregate cache module

6. Cache PHP with APC

7. Export *views* and *Panels* to code

8. Enable `fast_404`

9. Remember, cache
saves the cash! Cache
everything!

10. **Enable** page cache
and page compression
(mod_deflate)

11. **Install Boost** to make
anonymous caching 100 x times
faster or **play with Varnish**
and make things even faster!

12. Enable `views` and
`block caching` for
authorized users

13. Consider using **ESI** and **authcache** to cache pages for authorized users.

WARNING: This solution is for experienced users.

14. Store cache in
memory. Install
memcached or redis

15. Tune SQL

- find slow queries
 - use indexes
- use EXPLAIN on queries

16. Tune MySQL:

Tweak my.cnf:

- `query_cache_size` – caches query results
(32M - 512M)

- `innodb_buffer_pool_size` – caches indexes.

Up to 80% of your memory

- `table_cache` – number of tables mysql keeps in cache. Start with 1000

- `tmp_table_size` and `max_heap_table_size`

17. Tune Apache:

- **StartServers** - number of child server processes created at startup (default 5)
- **MinSpareServers** - minimum number of idle child server processes (default is 5)
- **MaxSpareServers** – maximum number of idle processes (default is 10)
- **MaxClients** - maximum number of connections that will be processed simultaneously, otherwise queued (default 256)
- **KeepAlive.** On / Off depending on circumstances

18. Separate Media and Code

- Move media to CDN
- Move media to separate server

19. Move search from
Database to Solr
search_api + Solr

20. Optimize, measure
and repeat!

Comments, questions?

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