Drupal Performance

@tyler_golden

About Me

Tyler Golden

"Jack of All Tech" @ The Industrial Resolution

I like PHP and Good Beer.

Worked in various IT roles for ~7 years, PHP web development for ~3.

Drupal Sites We've Launched

- Children's Hospital of Philadelphia, Research Department

  - http://www.research.chop.edu/

- Ark Safety, E-Commerce Site

  - http://www.arksafety.com

- City of Lancaster, Government Website

  - http://www.cityoflancasterpa.com

Performance

What does that mean?

1. Response time

2. Response time @ a certain load

3. High performance = <1s response @ load

Performance

How do we test it?

1. Curl

2. Apache AB

3. Apache Jmeter

We'll get into these more in the demo.

Performance and Caching - The Goal

Improve site response times by:

- Reducing DB calls per request.

- Reducing CPU cycles per request.

- Reducing requests per page load.

- Moving common data into a faster responding storage area, usually RAM.

Drupal's Built-in Caching
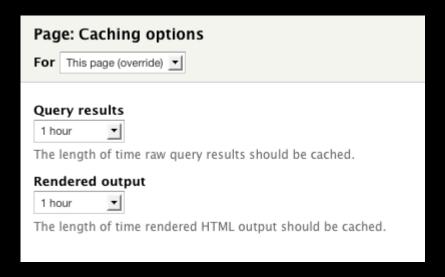
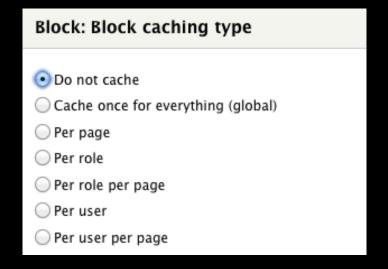## Found in Configuration > Development > Performance

Block Caching

A block provided by a module will only be cached if it provides a caching setting.

- Global
- Per Page
- Per Role
- Per Role Per Page
- Per User
- Per User Per Page

Views Caching

Views has it's own settings for caching, but you need to turn it on for each view.

Page: Caching options

For [This page (override) ▼]

Query results

[1 hour ▼]

The length of time raw query results should be cached.

Rendered output

[1 hour ▼]

The length of time rendered HTML output should be cached.

Block: Block caching type

- ● Do not cache
- ○ Cache once for everything (global)
- ○ Per page
- ○ Per role
- ○ Per role per page
- ○ Per user
- ○ Per user per page

Drupal Caching Modules

Most modules are not "Plug 'n Play", additional server config is needed.

A good list can be found on the Drupal wiki:

https://groups.drupal.org/node/21897

Memory Caching

APC, Memcache, and Redis

APC - Alternative PHP Cache
https://drupal.org/project/apc

- Provides an opcode cache to improve PHP performance.

- Provides a user cache to store application data.

- Requires installation and config on a server.

APC - Alternative PHP Cache

https://drupal.org/project/apc

+ Can yield significant PHP performance increases.

+ Can be used without installing the Drupal module.

-   Can degrade performance further if configured incorrectly or overused.

Memcache

https://drupal.org/project/memcache

An API for using Memcached (caching server) and the PHP Memcached library.

Memcached: Free & open source distributed memory object caching system.

http://memcached.org/

Memcache

https://drupal.org/project/memcache

+ Provides drop-in backends for caching, sessions, and locking.

+ Free memory can be pooled for caching across web servers, or a dedicated caching server.

- Can be overkill for small sites to manage.

Redis

https://drupal.org/project/redis

Provides fast key-value data storage. http://redis.io

+ Module works with both Predis and PhpRedis libraries. (PhpRedis recommended)

+ Faster than file caching or DB caching.

- Consumes additional memory

File Caching

Filecache, Boost

File Cache

https://drupal.org/project/filecache

Allows cache to be stored in the filesystem instead of the DB.

+ Alleviates database load.

+ No additional server components.

-   File I/O may take longer and degrade performance.

Boost

https://drupal.org/project/boost

Provides static page caching.

+ Can run on shared hosting.

+ Automatically compresses page content.

- Not as efficient as other static caches (Varnish, Nginx)

Reverse Proxy Caching

Nginx, Varnish

Nginx

http://wiki.nginx.org/Drupal - Not a module

Nginx is a high performance HTTP and reverse-proxy server with caching support.

\+ Scales better than Apache.

\+ Can be used a webserver and reverse proxy in one.

\-   Cache can be hard to invalidate at-will.

\-   Difficult to configure, lacking thorough Drupal documentation.

Varnish Cache

https://drupal.org/project/varnish

Varnish is a caching HTTP reverse proxy. It caches static pages for anonymous users.

+ Really, really fast.

+ Module provides Drupal integration, functions to dynamically invalidate cache.

+ Abundant documentation.

Hosting and Stuff

Pantheon, HipHop VM

Pantheon Hosting

https://www.getpantheon.com/

The perfect storm of Drupal Performance.

- Varnish
- Nginx
- Redis
- Built on Rackspace's Cloud

All ready to go with almost no configuration.

Disclaimer: We are a customer.

HipHop VM for PHP

http://www.hiphop-php.com

Open source VM for executing programs in PHP. Built by Facebook.

- >5x performance compared to Zend PHP 5.2 engine
- Currently working towards full PHP 5.x compatibility
- 98% of Drupal unit tests pass

Other Drupal 'Gotchas'
Things to watch for and avoid.

- Large, complex taxonomies.

- Cache generation times.

- Cron via page requests.

- Large menu structures.

Demo Time

Caching on the
City of Lancaster's Drupal Site

ab -n 100 -c 5 -C NO_CACHE=1 http://192.168.56.101/

Thanks!

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