

Varnish

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Agenda

- Overview
- Installation
- Architecture & Configuration
- Caching, Drupal and the OS
- Administration Tools
- More information

What is Varnish?

- “Reverse Proxy”
- Web caching front-end
- Flexible, highly configurable
- 100% HTTP, completely platform independent

Why use it?

- Cached, pre-rendered pages returned in 1/10th the time
- Faster web server performance
- Higher web server capacity

New design issues

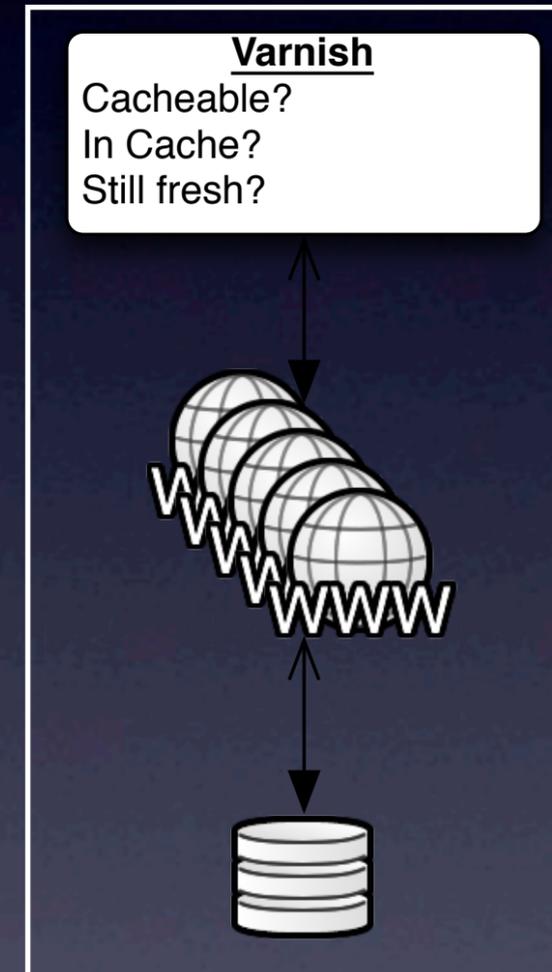
- Only really useful for anonymous pages
- Cached responses don't touch web server or Drupal
 - No PHP code is run (consider JS callbacks)
 - No entry in Apache log (but see varnishncsalog)

Installation

- Debian / Ubuntu / deb-based
 - apt-get install varnish
- Red Hat / Fedora / rpm-based
 - yum install varnish
- vendor supported > latest

Architecture

- Logically sits in front of web server(s)
- Can do load balancing
- Can run on the same machine or dedicated machine
- Can do HTTPS
- Supports *protocols*, not *products*.



Configuration (part I)

- OS service launch scripts
 - `/etc/default/varnish` (Debian / Ubuntu)
 - `/etc/sysconfig/varnish` (Red Hat / Fedora)

Varnish Daemon Options

```
DAEMON_OPTS="-a :80 \  
             -T localhost:6082 \  
             -b localhost:8080 \  
             -u varnish -g varnish \  
             -S /etc/varnish/secret \  
             -s file,/var/lib/varnish/$INSTANCE/  
varnish_storage.bin,1G"
```

Storage: malloc vs file

- `-s file,/var/lib/varnish/$INSTANCE/varnish_storage.bin,1G`
- `-s malloc,256m`
- `-s persistent (experimental)`

Configuration (part 2)

- Varnish
 - `/etc/varnish/default.vcl`
 - `/etc/varnish/secret`

default.vcl

- Determines how Varnish caches
- Real default.vcl is appended
- For configuration: set a backend
 - Single server
 - Director with multiple servers
 - Both 80 & 443? (Depends on your setup)

Backend Simple Config

```
backend default {  
    .host = "127.0.0.1";  
    .port = "8008";  
}
```

Backend Complex Config

```
backend one {  
    .host = "web1";  
    .port = "80";  
}  
  
director cluster1 round-robin {  
    { .backend = one; }  
    { .backend = two; }  
    { .backend = { .host = "localhost"; .port = "82"; } }  
}
```

Example pulled from "The Varnish Book"

Configuration (part 3)

- Web server
 - Set listen ports so to match Varnish backend in default.vcl
 - Don't conflict with Varnish ports (same-server setup)

Drupal Varnish Module

- Uses terminal (-T) to manage Varnish caches
- Flushes the Varnish cache
- Pre 3.0, can show Varnish stats

Varnish Sysadmin Tools

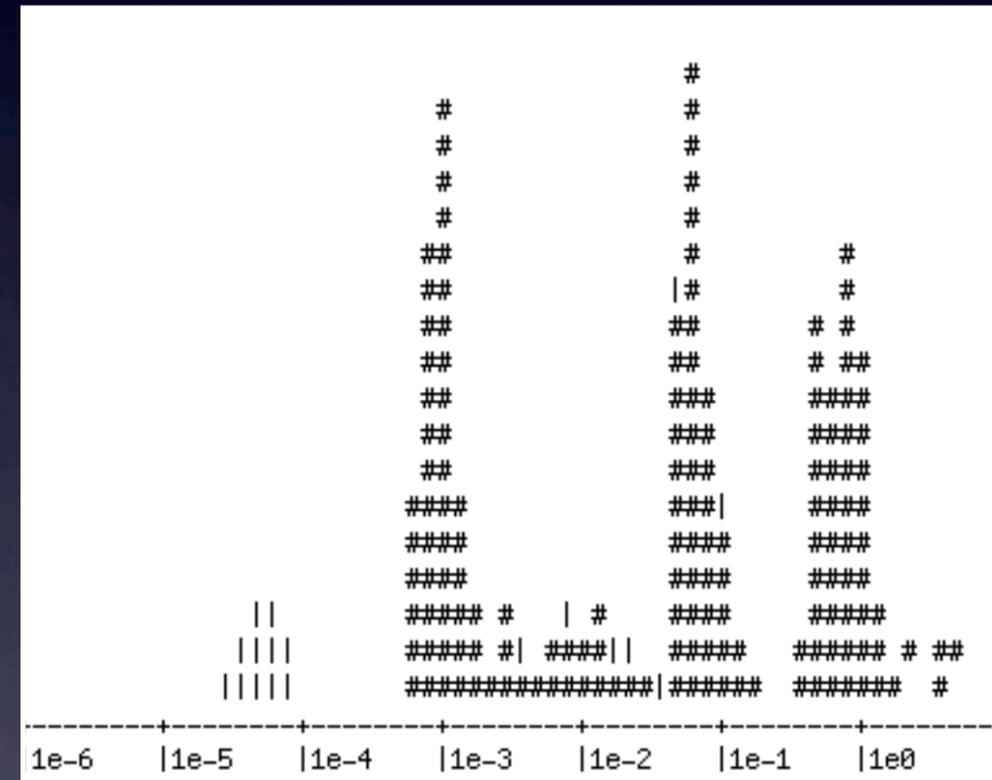
- `varnishncsa`
- `varnishhist`
- `varnishtop`
- `varnishstat`
- `varnishadm`

varnishncsa

- Creates an Apache “combined” format log file
 - For use with log file analyzers like AWStats
- NCSA = National Center for Supercomputing Applications

varnishhist

- Shows a histogram of time to complete requests
- # = Cache miss
- | = Cache hit



varnishtop

- Shows varnish activities
- Command line options allow admin to filter data.
- `varnishtop -i RxHeader -C -l ^User-Agent`

```
t length 35
58.49 RxHeader      User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10
36.70 RxHeader      User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10
26.36 RxHeader      User-Agent: Mozilla/4.0 (compatible; MSIE 8.0; Windov
19.34 RxHeader      User-Agent: Mozilla/5.0 (iPad; CPU OS 5_1_1 like Mac
19.32 RxHeader      User-Agent: Mozilla/5.0 (compatible; bingbot/2.0; +hf
12.97 RxHeader      User-Agent: Pingdom.com_bot_version_1.4_(http://www.p
11.21 RxHeader      User-Agent: Mozilla/5.0 (Windows NT 6.1; rv:20.0) Ge
 8.14 RxHeader      User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windov
 7.95 RxHeader      User-Agent: Opera/9.80 (Windows NT 6.1; WOW64; MRA 8
 5.63 RxHeader      User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windov
 4.60 RxHeader      User-Agent: FeedBurner/1.0 (http://www.FeedBurner.com
 3.71 RxHeader      User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:20
 3.59 RxHeader      User-Agent: Mozilla/5.0 (compatible; Googlebot/2.1; -
 3.53 RxHeader      User-Agent: Mozilla/4.0 (compatible;)
 3.47 RxHeader      User-Agent: msnbot-media/1.1 (+http://search.msn.com/
 3.00 RxHeader      User-Agent: Feedfetcher-Google; (+http://www.google.c
 2.99 RxHeader      User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; Windov
 2.89 RxHeader      User-Agent: Feedfetcher-Google; (+http://www.google.c
 2.86 RxHeader      User-Agent: Feedfetcher-Google; (+http://www.google.c
 2.83 RxHeader      User-Agent: check_http/v1.4.15 (nagios-plugins 1.4.15
 2.74 RxHeader      User-Agent: Mozilla/5.0 (iPhone; U; CPU iPhone OS 4_
 2.71 RxHeader      User-Agent: Mozilla/5.0 (compatible; YandexImages/3.0
```

varnishstat

- Provides a list of internal counters
- Primarily useful for developers
- A few counters worth noting:
 - `cache_hit`, `cache_hitpass`, `cache_miss` - cache performance
 - `client_drop`, `n_lru_nuked` - both should be zero
 - `backend_*` - general health of backend servers

varnishadm

- Directly show or set values in Varnish during runtime
- Restart or reload (used by init scripts)
- ** Non-persistent changes **
- Provides a single command or CLI interface to Varnish

More Information

- <http://www.varnish-cache.org/>
- <https://www.varnish-software.com/book>