Varnish HTTP cache

CONCEPTS

Varnish is a caching reverse proxy: clients hit varnishd, which answers from cache or fetches from the backend. Behaviour is set in VCL, changed live with varnishadm.

Client HTTP request
↓ vcl_recv
Cache hit: serve object
↓ miss
Backend fetch, vcl_backend_response
↓ store
Client vcl_deliver

RUN VARNISHD

varnishd -a :*<port>* -f *<file.vcl>*
Listen on a port with a VCL file

varnishd -a :*<port>* -b *<host>*:*<port>*
Quick start with a single backend

varnishd -T localhost:6082 -S *<secretfile>*
Open the management CLI

varnishd -s malloc,*<size>*
Cache in memory, e.g. malloc,1G

VARNISHADM

varnishadm
Interactive CLI to varnishd

varnishadm *<command>*
Run one CLI command

varnishadm -T *<host>*:*<port>* -S *<secretfile>*
Connect over the management port

varnishadm help
List all CLI commands

varnishadm status
Is the cache process running?

VCL MANAGEMENT

varnishadm vcl.load *<name>* *<file>*
Compile and load a VCL

varnishadm vcl.use *<name>*
Make a loaded VCL active

varnishadm vcl.list
List VCLs, state and temperature

VCL MANAGEMENT (cont.)

varnishadm vcl.show *<name>*
Print the VCL source

varnishadm vcl.discard *<name>*
Unload a VCL

BANS AND PURGING

varnishadm ban req.url ~ "*<regex>*"
Invalidate by URL pattern

varnishadm ban req.http.host == "*<host>*" && req.url ~ "*<regex>*"
Combine conditions with &&

varnishadm ban.list
Show active bans

BACKENDS AND HEALTH

varnishadm backend.list
List backends and health

varnishadm backend.list -p
Include probe details

varnishadm backend.set_health *<backend>* sick
Take a backend out of rotation

varnishadm backend.set_health *<backend>* auto
Return control to the probe

PARAMETERS

varnishadm param.show
List parameters and values

varnishadm param.show changed
Only non-default parameters

varnishadm param.set *<param>* *<value>*
Change a parameter live

VARNISHSTAT

varnishstat
Live counters (curses)

varnishstat -1
Print all counters once

varnishstat -1 -f MAIN.cache_hit -f MAIN.cache_miss
Select counters (globs)

VARNISHLOG

varnishlog
Log every transaction

varnishlog -g request
Group by client request tree

varnishlog -c
Client side only

varnishlog -b
Backend side only

varnishlog -q '*<VSL query>*'
Filter transactions

varnishlog -q 'RespStatus ⩾ 500'
Only server errors

VARNISHTOP AND FRIENDS

varnishtop -i ReqURL
Most requested URLs

varnishncsa
Apache-style access log

VCL ESSENTIALS

backend default { .host = "*<host>*"; .port = "*<port>*"; }
Declare a backend

sub vcl_recv { ... }
Request arrives; choose hash, pass, purge

sub vcl_backend_response { set beresp.ttl = 5m; }
Set cache lifetime

RECIPES

Deploy a new VCL with rollback

```
varnishadm vcl.load v2 /etc/
varnish/v2.vcl
varnishadm vcl.use v2
# something wrong? roll back:
varnishadm vcl.use v1
varnishadm vcl.discard v2
```

Cache ratio at a glance

```
varnishstat -1 -f MAIN.cache_hit
-f MAIN.cache_miss
# live and updating:
watch -n2 'varnishstat -1 -f
MAIN.cache_hit -f
MAIN.cache_miss'
```

Debug one URL end to end

```
varnishlog -g request -q 'ReqURL
~ "^/checkout"'
# in another terminal
curl -sI http://localhost/
checkout
```