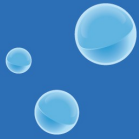




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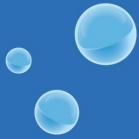


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Varnish Software

The Varnish Academy & Certification

Our Tools: VAC, Bans, Purges, VCS



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Agenda

- Varnish Academy
 - Courses
 - Certification
- Commercial tools
 - Varnish Administration Console (VAC)
 - Cache Invalidation (Ban + Purge)
 - Varnish Custom Statistics (VCS)
- Debugging from development to production

Benefits

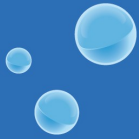
Varnish Academy

“ I was better because I spent time sharpening my axe. ”

Anon(ymous?)

“ If you think training is expensive, try ignorance. ”

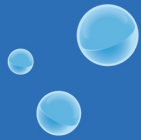
Peter Drucker



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Varnish Academy

**Varnish Competence Epicenter
Ecosystem Growth
Certified Training and Knowledge**



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Varnish Academy

Courses:

- **Varnish Administration Course**
- **Developing Scalable Web Applications with Varnish**
- **Extending Varnish with Modules**

What is VAC?

Your Varnish Cluster controller:

- **Manages Caches, VCLs & Params**
 - **Groups caches via Martin's Law**
 - **Cache Invalidation (Bans & Purges)**
- Realtime graphs**

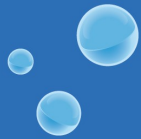
Martin's Law

Martin's first rule

- A group should always be consistent wrt configuration and parameters
- So it follows that when a cache is added to a group the group's vcl and parameters must be applied
- No changes can be made on any single cache

Martin's second rule

- A cache must always belong to one and only one group
- So it follows that when we add a cache it must be added directly into a group

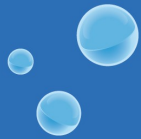


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Cache Invalidation

Ban API

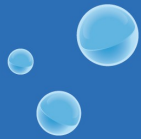
```
curl -X POST -H 'Content-type:text/plain' -u vac:supersecret  
http://vacdemo.varnish-software.com/api/v1/cachegroup/Production/ban  
-d 'req.url ~ .png$'
```



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Super Fast Purger

- Leverages VCL for flexibility
- Secure – HMAC and Timestamp
 - * No passwords sent over the wire
 - * Stops Replay attack
- Fast
- Production ready

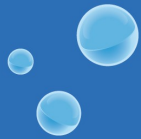


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Cache Invalidation

Super fast purger

```
curl -X PURGE -H 'X-Cache-Group: Production' -H 'X-HMAC: key' -H  
'X-Timestamp: 1212' http://vacdemo.varnish-software.com:8088/index.html
```



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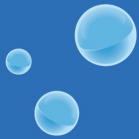
More Cache Invalidation

Secondary Hash*

Adds secondary hashes to objects, allowing fast purging on all objects with this hash key.

Purges all the objects that were hashed on the given key. Returns the number of objects that were purged.

*** aka Surrogate Key, Order 66 or Great Jedi Purge**



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Secondary Hash

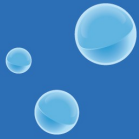
```
import hashtwo;
sub vcl_recv {
    if (req.http.x-hashtwo-purge) {
        if (hashtwo.purge(req.http.x-hashtwo-purge) != 0) {
            error 200 "Purged";
        } else {
            error 404 "Key not found";
        }
    }
}

sub vcl_fetch {
    # Use the header vmod to add multiple headers for multiple keys
    set beresp.http.X-HashTwo = "secondary_hash_key";
}
```

What is VCS?

Varnish Custom Statistics (VCS): Debugging for your production website

*** formerly known as vstatd**



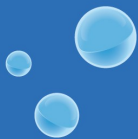
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VCS

- Leverages power of VCL – Flexible
- Log anything!

```
std.log("vcs-key:" + req.http.host + req.url);
```

```
vcs_vcl + (~/Dropbox/Marketing_updated folder/Marketing Material/Presentations/Webina...
1 backend betelgeuse {
2     .host = "localhost";
3     .port = "5080";
4     .probe = { .url = "/1k"; }
5 }
6
7
8 # VCS uses logging support from the standard library
9 import std;
10
11 sub vcl_recv {
12     // logs the host + url
13     std.log("vcs-key:" + req.http.host + req.url);
14
15     // logs the host + url + referrer
16     std.log("vcs-key:" + req.http.host + req.url + req.http.referer);
17 }
18
19 sub vcl_deliver {
20     if( obj.hits > 0 ) {
21         // logs the total hits
22         std.log("vcs-key:TOTAL_HITS");
23
24     } else {
25         // logs the total misses
26         std.log("vcs-key:TOTAL_MISSES");
27
28         // logs the misses, including the host and url, and the backend varnish fetched from
29         std.log("vcs-key:MISS" + req.http.host + req.url + req.backend );
30
31         // logs the specific User-Agent that incurs misses
32         std.log("vcs-key:MISS_USERAGENTS" + req.http.user-agent);
33
34         // log which Client ip that incurs misses and on which host and url
35         std.log("vcs-key:MISS_CLIENTIP" + req.http.host + req.url + client.ip);
36     }
37
38     // log the total number of content deliveries
39     std.log("vcs-key:TOTAL_DELIVERY");
40
41     // log specific delivery numbers for a specific domain
42     std.log("vcs-key:DELIVERY_" + req.http.host);
43 }
44
```

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```
security_vcs_vcl (~/.Dropbox/Marketing_u...g Material/Presentations/Webinars) - VIM2
1 sub vcl_recv {
2     // Low Orbit Ion Cannon attacks
3     if (req.url ~ "^/0_0") {
4         std.log("vcs-key:LOIC_WEB");
5         error 591 "Web LOIC";
6     }
7     if (req.url == "/" && req.request == "POST") {
8         std.log("vcs-key:LOIC_POST");
9         error 592 "LOIC not allowed";
10    }
11    if (req.url ~ "^/id=") {
12        std.log("vcs-key:LOIC_POST");
13        error 593 "LOIC not allowed";
14    }
15
16    //SQL Injection
17    if (req.url ~ "(?i)select.*from") {
18        std.log("vcs-key:SQL_SELECT");
19        error 594 "SQL select not allowed";
20    }
21    if (req.url ~ "in.*\([^0-9]") {
22        std.log("vcs-key:SQL_SUBSELECT");
23        error 595 "SQL subselect not allowed";
24    }
25
26 }
27
```

<ing_updated folder/Marketing Material/Presentations/Webinars/security_vcs_vcl" 27L, 708C written

The benefits



This is what our customers are saying...

“Using VAC has helped us make our deployment strategy much quicker and more streamlined.”

Are Egner-Kaupang
System Consultant
Boklink





This is what our customers are saying...

"VCS, this new thing I have been playing with, made by Varnish Software, is debug heaven."

Audun Ytterdal

Head of IT Operations, Verdens Gang, Norway





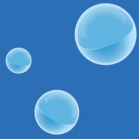
This is what our customers are saying...

"We have found that Varnish Cache, combined with VAC high-speed purging, provides an excellent solution for our web service APIs. We also rest assured that VCS gives our Service Operations team the visibility that we need into the performance of our data delivery system."

Matt O'Keefe

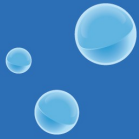
Senior Technology Architect, Morningstar, Inc.





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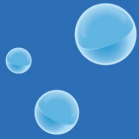
A little look ahead...



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VAC Roadmap

- Access control
- Integration with vagent2
- Full API support



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VCS Roadmap

- Cross key aggregation
- Counting unique requests
- Aggregate time series

varnish-agent2

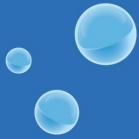
Restful interface for varnish administration

<https://github.com/varnish/vagent2>





Summing up...



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Questions?

For more info:

<http://www.varnish-software.com>

<http://www.youtube.com/user/varnishsoftware>