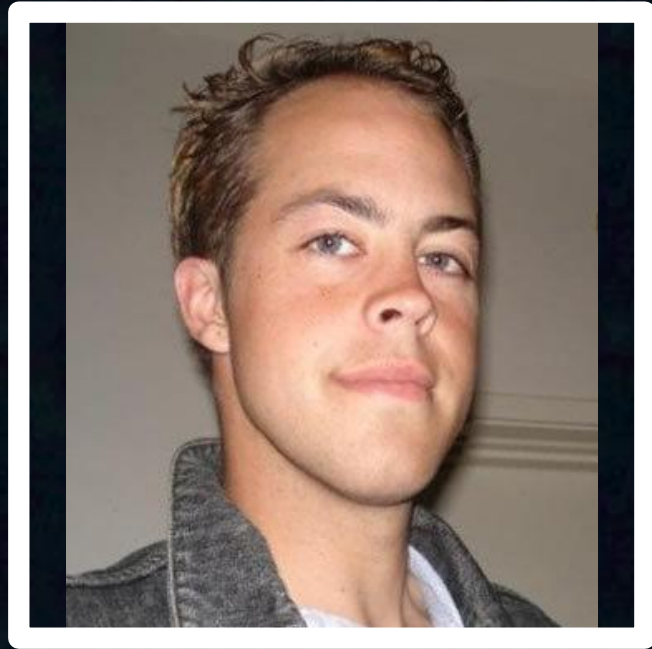


Drupal Varnish & ESI

Drupalcamp Toulouse
November 2011



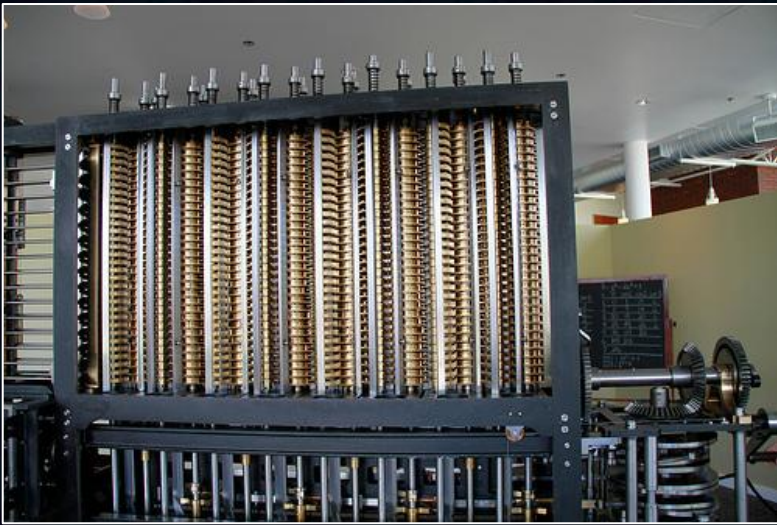
Marcus
Deglos

@manarth

#cdl2011

DELIVERING WEBSITES

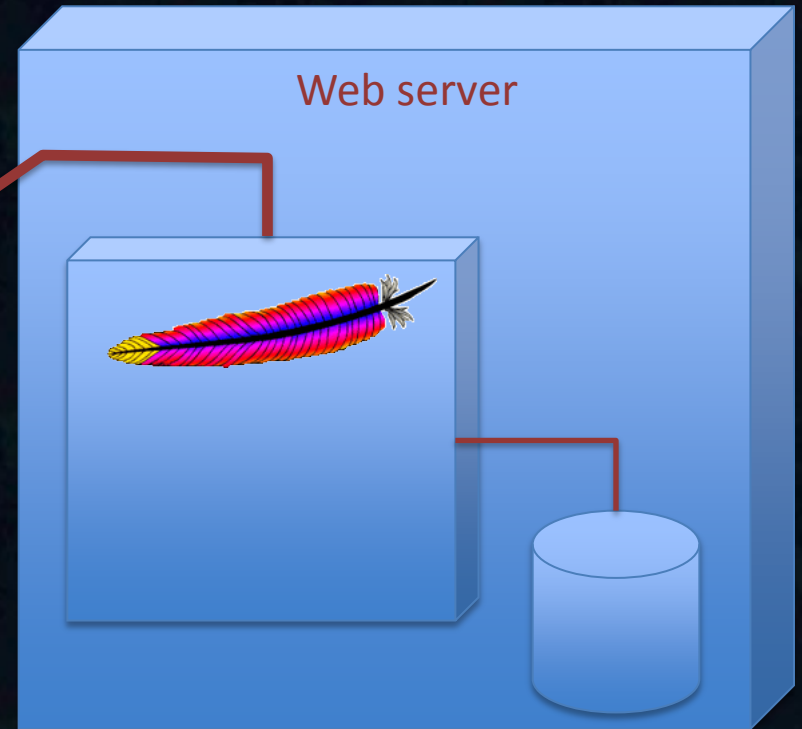
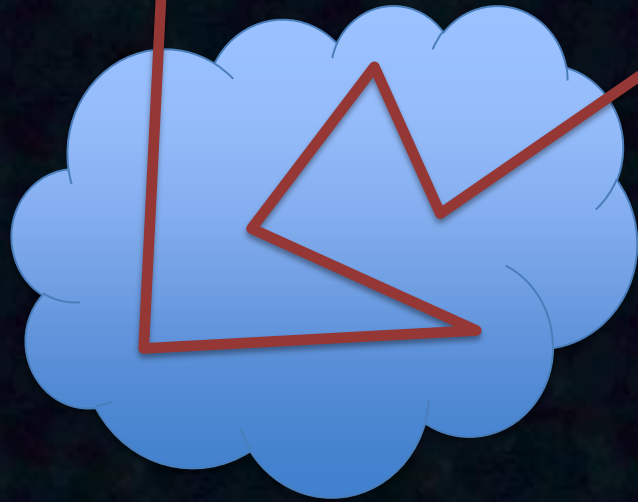
Back to basics



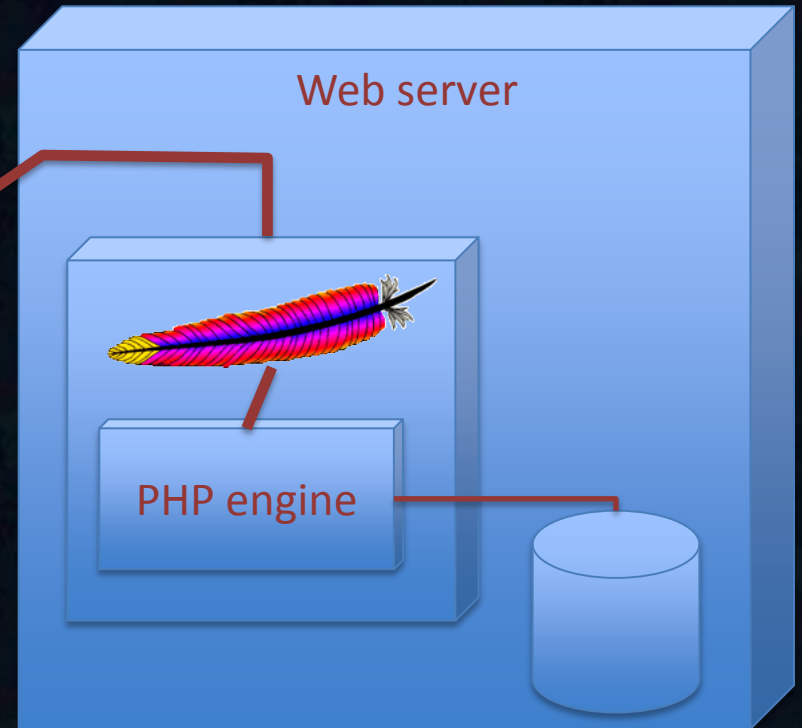
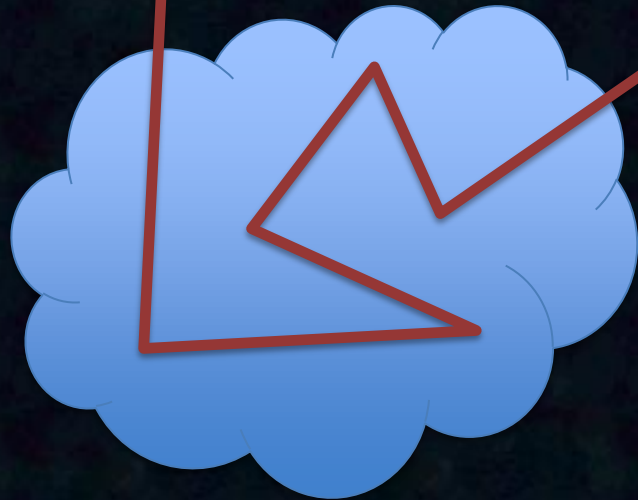
Apache

- > Old faithful, serving sites since 1996.
- > Quick
- > Simple

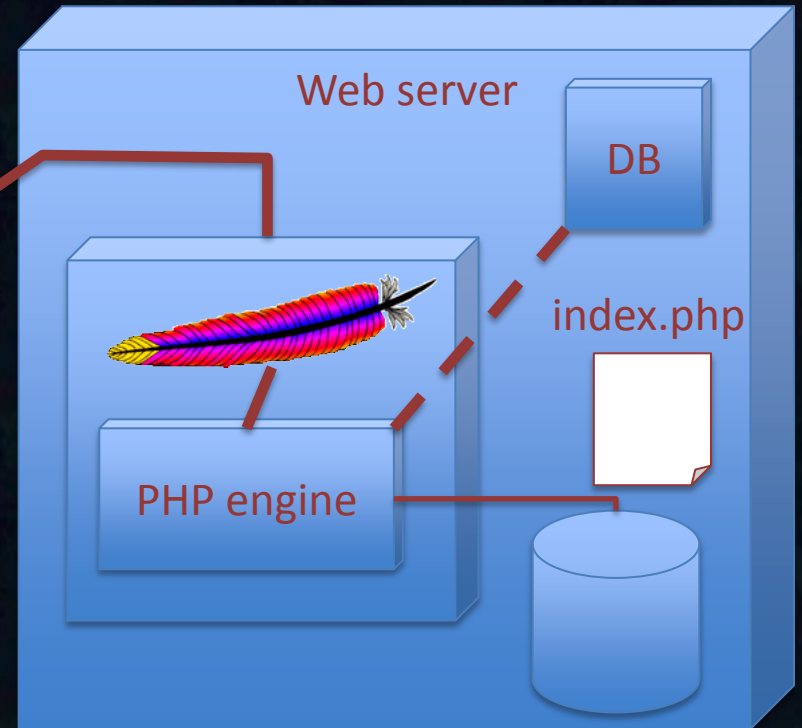
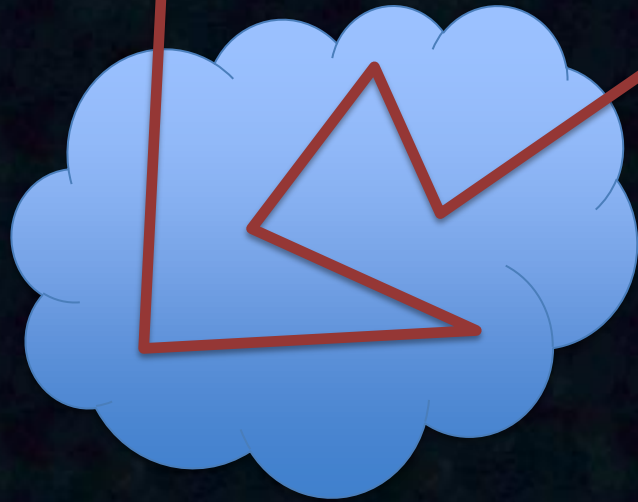
Apache's model



Apache's model with PHP



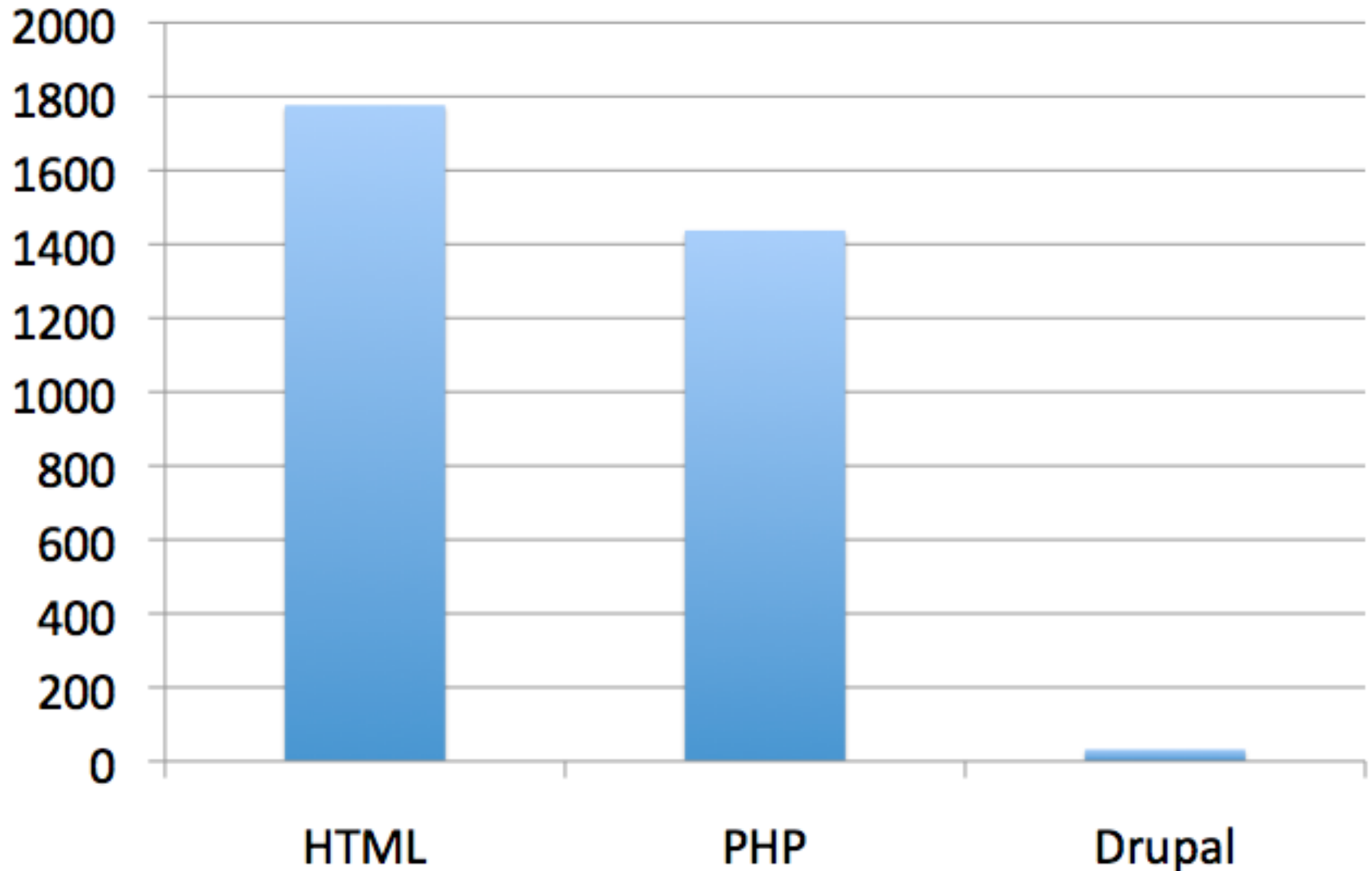
Do it with Drupal



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
"http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd"> <html
xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" version="XHTML+RDFa 1.0" dir="ltr"
xmlns:content="http://purl.org/rss/1.0/modules/content/"
xmlns:dc="http://purl.org/dc/terms/" xmlns:foaf="http://xmlns.com/foaf/0.1/"
xmlns:og="http://ogp.me/ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
xmlns:sioc="http://rdfs.org/sioc/ns#" xmlns:sioc="http://rdfs.org/sioc/types#"
xmlns:skos="http://www.w3.org/2004/02/skos/core#"
xmlns:xsd="http://www.w3.org/2001/XMLSchema#"> <head
profile="http://www.w3.org/1999/xhtml/vocab"> <meta http-equiv="Content-Type"
content="text/html; charset=utf-8" /> <link rel="shortcut icon"
href="http://testbed.local/misc/favicon.ico" type="image/vnd.microsoft.icon" /> <meta
name="Generator" content="Drupal 7 (http://drupal.org)" /> <title>Welcome to Site-Install |
Site-Install</title>
```

HTML from homepage after
running **drush si**

Drag race results



CONCLUSION

We're choosing the **slow** way

WHY ARE WE USING PHP AND DRUPAL?

- > Dynamic pages – gazillions of combinations
- > Ease of site maintenance – can change templates without changing every file
- > User-specific features
for business logic

HOW DO YOU LIKE YOUR WEBSITES?

A history of web publishing:
baked or fried?



Baked

- > Prepared in advance
- > Typically uses a build-script
- > Produces static pages
- > Quick
- > No complex behaviour
- > Boost module is an example

- Pages created on the fly
- CMS or other complex dynamic system
- Allows complex behaviour
- Drupal does this
- Slow



Fried

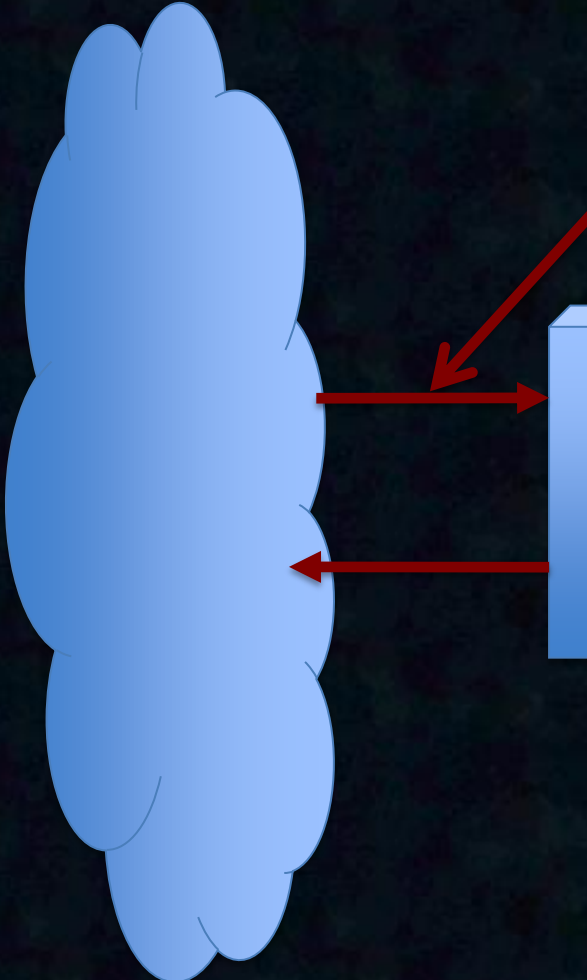
VARNISH
Baked AND fried?



What is Varnish?

- > Software package (daemon) for linux
- > Reverse proxy, such as Squid, Nginx and Zeus
- > Cache

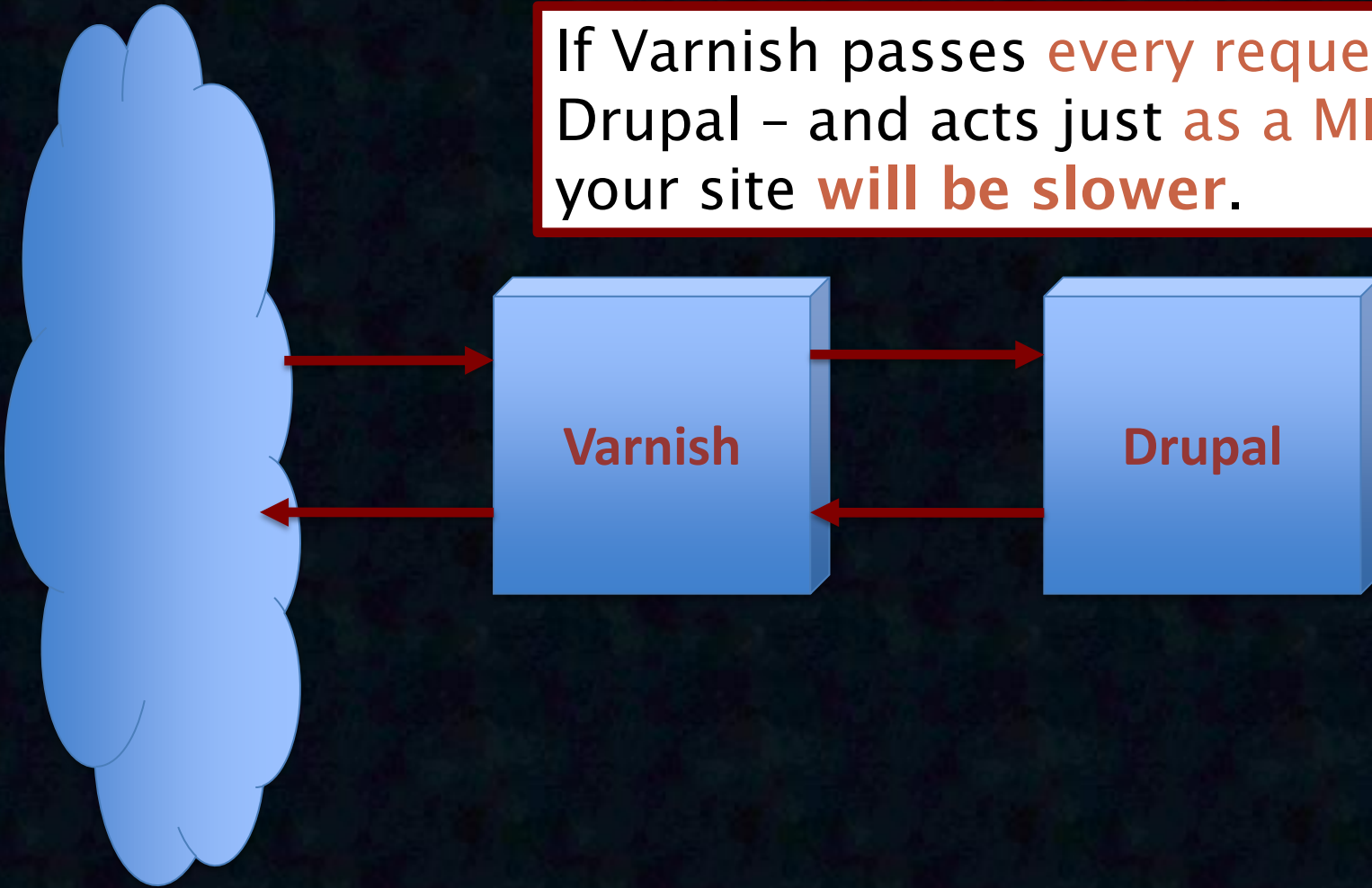
How Varnish works



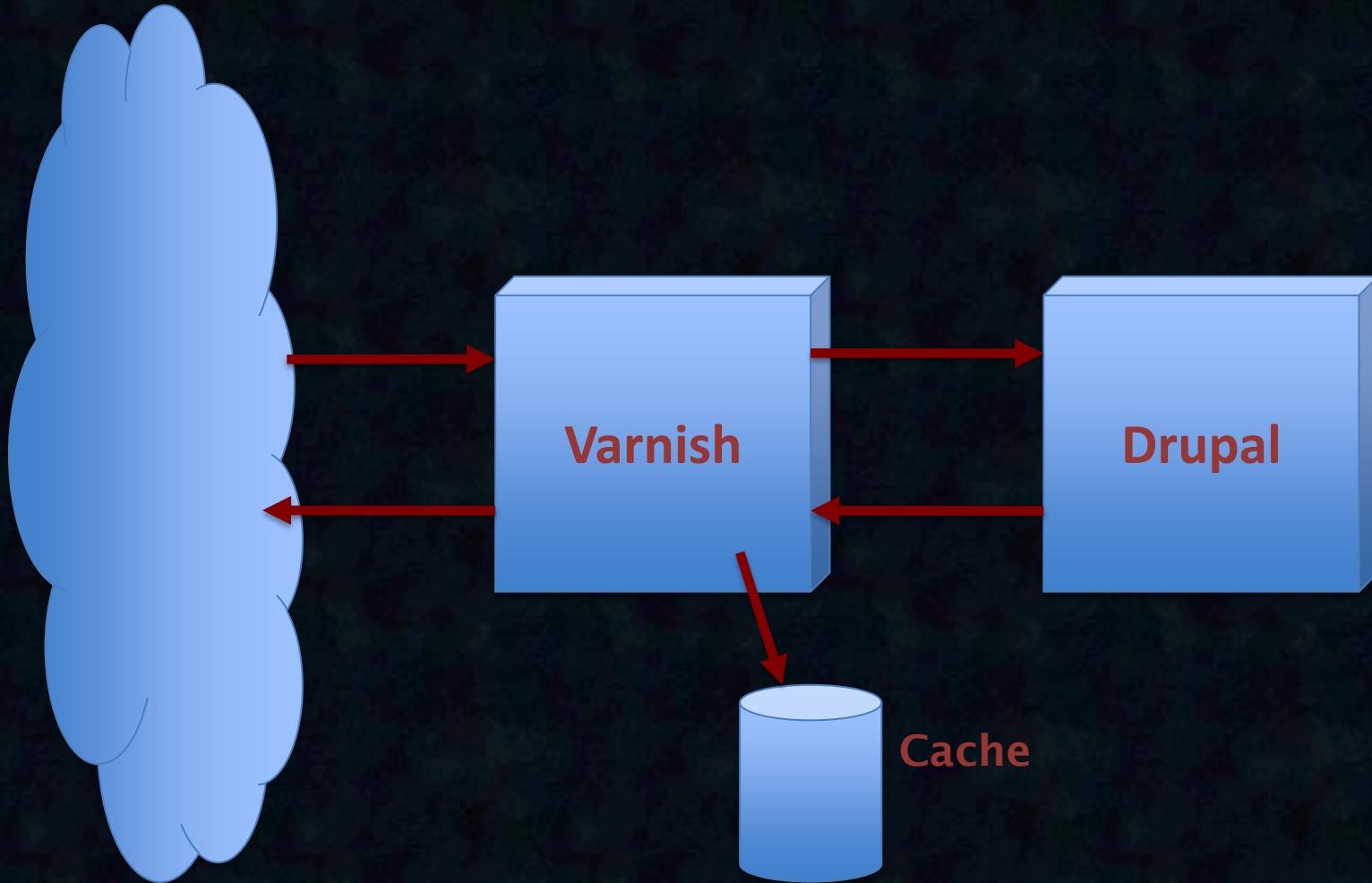
```
GET /blog
Host    deglos.com
User-AgentMozilla/5.0 (Macintosh; Intel
Mac OS X 10.6; rv:8.0.1) Gecko/20100101
Firefox/8.0.1
Accept
    text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language    en-us,en;q=0.5
Accept-Encoding    gzip, deflate
Accept-Charset     ISO-8859-1,utf-8;q=0.7,*;q=0.7
Connectionkeep-alive
```

Varnish is slower

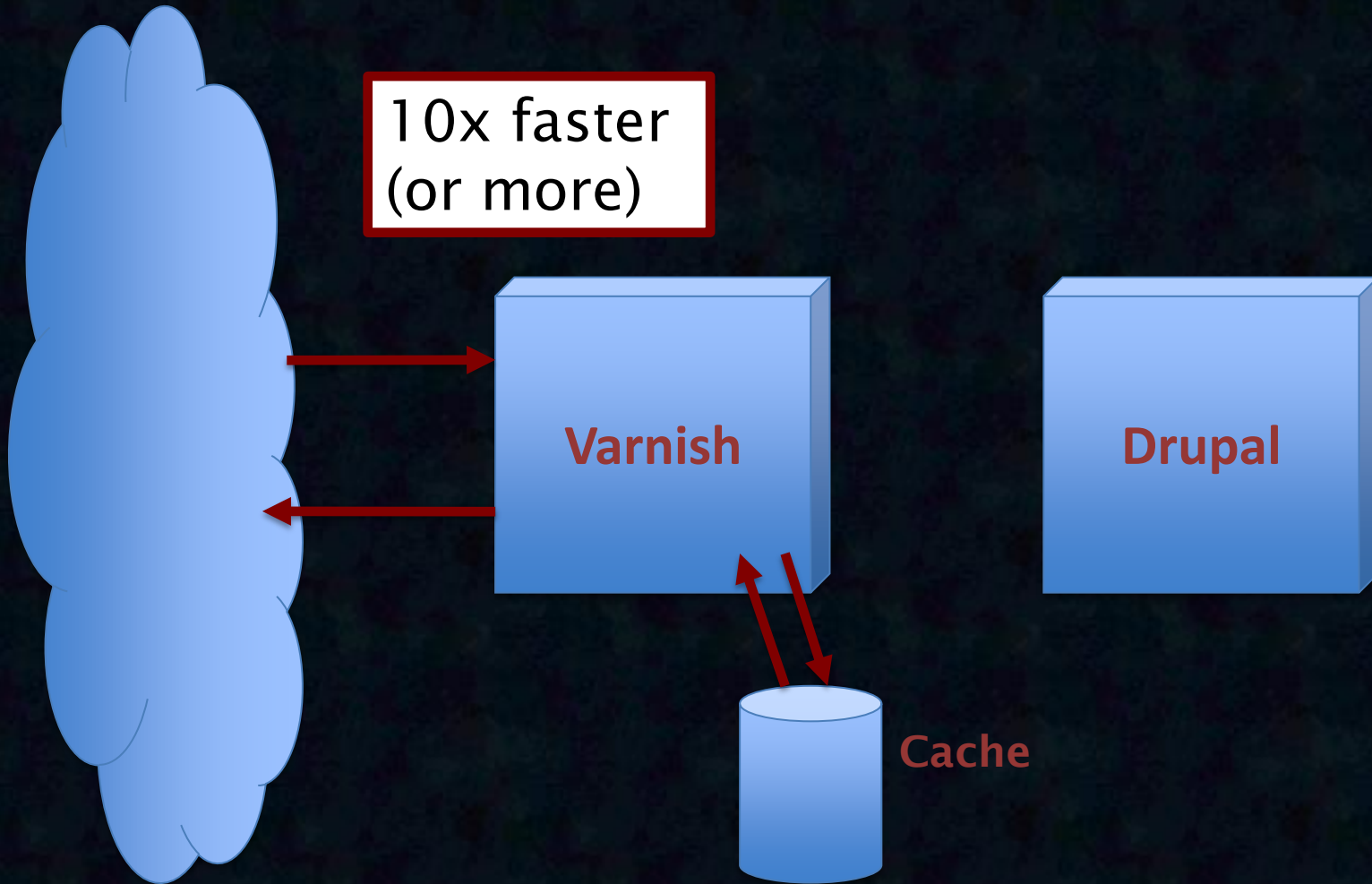
If Varnish passes **every** request to Drupal – and acts just as a MITM – your site **will be slower**.



Varnish needs to cache



Varnish + cache is quicker



Personalisation is a problem



The screenshot shows the Drupal website interface. At the top, there is a blue header with the Drupal logo and navigation links for "Get Started" and "Community & Support". Below the header, a secondary navigation bar contains "Drupal Homepage", "Your Dashboard", and "Logged in as dries Logout". The "Logged in as dries Logout" text is circled in red. The main content area is titled "Community & Support" and includes a sub-navigation bar with "Community Home", "Getting Involved", "Chat", "Mailing Lists", and "Member Directory". Below this, there is a section titled "Where is the Drupal Community?" with a Drupal logo icon. Underneath, there are two sub-sections: "Online & Local Groups" and "Events & Meetups", each with a brief description of how to find community members.

Get Started Community & Support

Drupal™

Drupal Homepage Your Dashboard **Logged in as dries Logout**

Community & Support

Community Home Getting Involved Chat Mailing Lists Member Directory



Where is the Drupal Community?

Online & Local Groups
[Groups.drupal.org](#) provides a place for groups to organize, meet, and work projects based on interest or geographic location. It's a great way to get involved, learn, and get support.

Events & Meetups
Community members can also be found at Drupal [events](#) where you can meet face to face, get tips, and get inspiration for your next Drupal project, making friends along the way.

The Uncacheable



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CONCLUSION

Personalised pages cannot be cached.

(or can they?)

VARNISH PITFALLS

- > Same problems as Baked – no personalisation
- > Can be slower – benchmark!
- > Can break functionality (POSTs should always hit the backend)

VARNISH CONFIGURATION

VCL: Varnish Configuration

Language

WHAT IS VCL?

- > It's a DSL: Domain-Specific Language

- > Configures Varnish: tells it **what to cache**, **how to behave** with requests...

- > Default is **/etc/varnish/default.vcl**

- > VCL commands have changed – **version-dependent.**

- > **VCL will not cache**

Example VCL:

```
#This is a basic VCL configuration file for  
varnish.
```

```
backend default {  
    .host = "127.0.0.1";  
    .port = "80";  
}
```

```
sub vcl_fetch {  
    unset obj.http.Cache-Control;  
    unset obj.http.Expires;  
    set obj.ttl = 86400s;  
}
```

UNDER CONTROL

The Varnish admin port

VARNISH HAS AN ADMIN INTERFACE

- > Listens on port 6082 by default
- > Can connect over telnet
- > Uses plain-text commands
- > See <https://www.varnish-cache.org> for docs

vcl.list

```
telnet localhost 6082
```

```
Trying ::1...
```

```
Connected to localhost.
```

```
Escape character is '^]'.  
vcl.list
```

```
200 23
```

```
active          1 boot
```

help

```
telnet localhost 6082
Trying ::1...
Connected to localhost.
Escape character is '^]'.
help
200 376
help [command]
ping [timestamp]
status
start
stop
stats
...
```

url.purge

```
telnet localhost 6082
Trying ::1...
Connected to localhost.
Escape character is '^]'.
url.purge .*
200 0
```


SETTING UP VARNISH

A brief installation guide

Setting up Varnish

- > Download varnish daemon
debian: `apt-get install varnish`
redhat: `yum install varnish`
- > Re-configure Apache to listen on port 8080
(or other non-standard port)
- > Configure Varnish to listen on port 80
- > Configure Varnish VCL to connect to Apache
- > VCL tweaks (default **does not cache** Drupal)
- > Install Drupal modules: varnish and expire

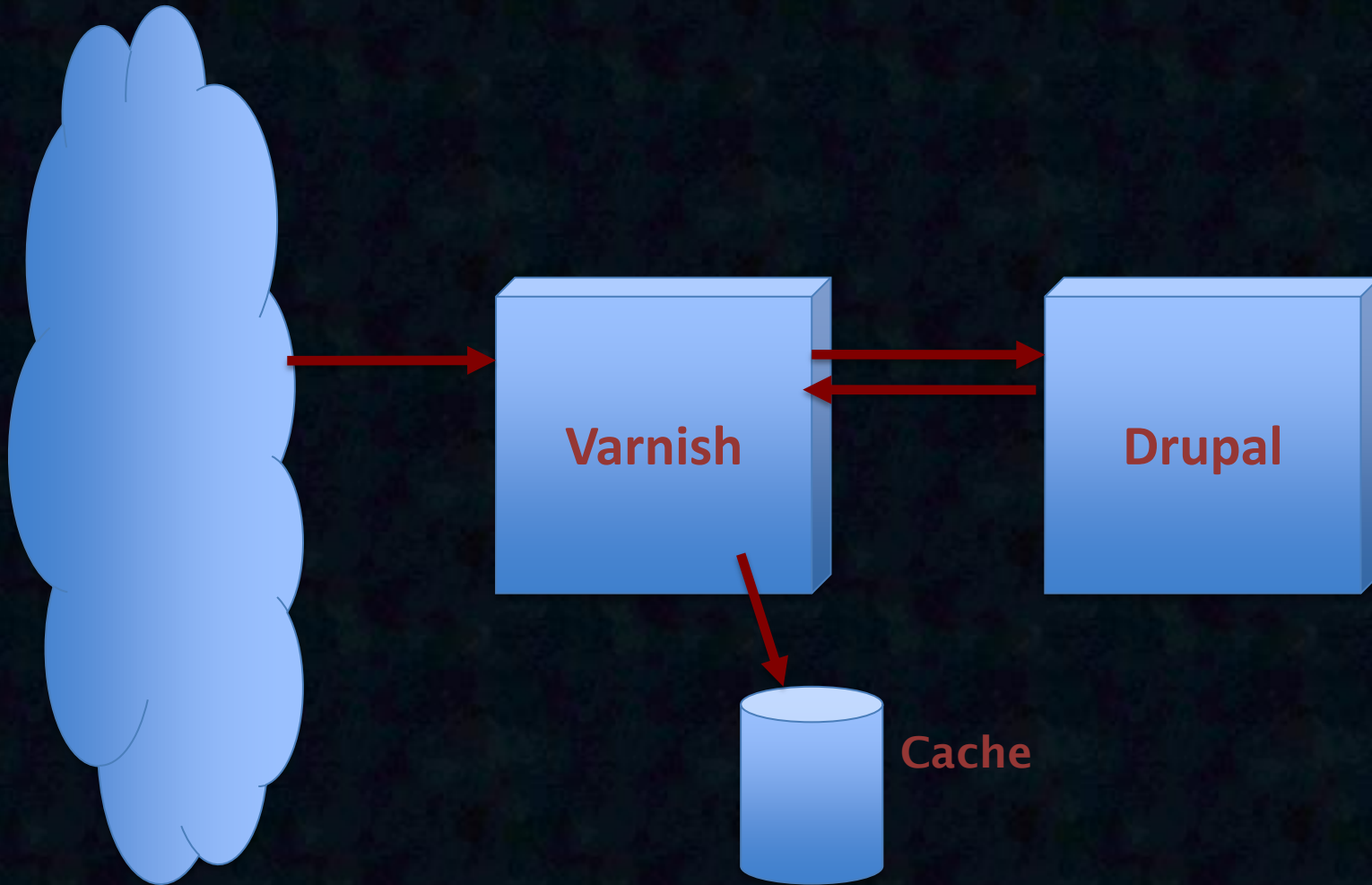
ESI

The **grail** of performance

WHAT IS ESI?

- > **Edge Side Includes**
- > Allows full caching of **personalised pages**
- > A **W3C** standard
- > Requires a **proxy** or an **advanced CDN** such as Akamai

Serving ESIs



Serving ESIs



Get Started Community & Support

Drupal™

Drupal Homepage Your Dashboard **Logged in as dries Logout**

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Serving ESIs

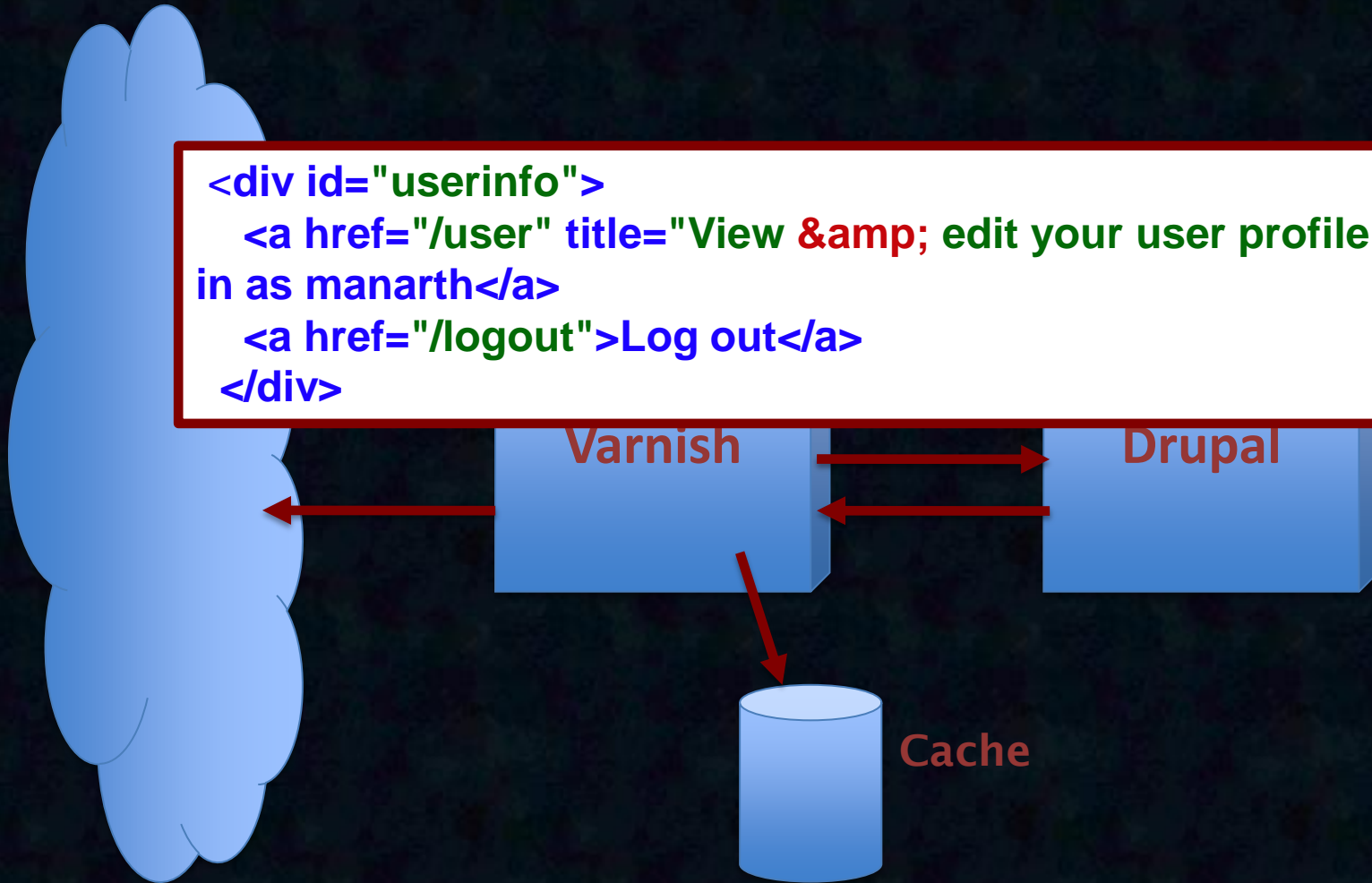
```
<div id="nav-masthead" class="grid-12">
  <ul>
    <li class="homepage active first active">
      <a href="/home" class="active active">Drupal Homepage</a>
    </li>
    <li class="dashboard last">
      <a href="/user/dashboard">Your Dashboard</a>
    </li>
  </ul>
  <div id="userinfo">
    <a href="/user" title="View & edit your user profile">Logged in as
manarth</a>
    <a href="/logout">Log out</a>
  </div>
</div><!-- /#nav-masthead -->
```

Serving ESIs

```
<div id="nav-masthead" class="grid-12">
  <ul>
    <li class="homepage active first active">
      <a href="/home" class="active active">Drupal Homepage</a>
    </li>
    <li class="dashboard last">
      <a href="/user/dashboard">Your Dashboard</a>
    </li>
  </ul>
  <esi src="http://example.com/esi/userinfo" />
</div><!-- /#nav-masthead -->
```


Serving ESIs

```
<div id="userinfo">  
  <a href="/user" title="View & edit your user profile">Logged  
in as manarth</a>  
  <a href="/logout">Log out</a>  
</div>
```



What do you need in order to do ESIs?

- > Replace **personalisation** with **ESI tags**
Theme-alter?
- > Provide backend **hook_menu** handlers for each ESI tag
- > Ensure that Varnish **is caching**
- > Rule 35 applies

ESI PITFALLS

- > Unless you cache, site will be slower
- > Complex
- > Some blocks might rely on global state
- > Not ready for primetime D7 use (we're working on it!)

CONCLUSIONS
Cache all the things

VARNISH MODULES

Drupal and Varnish: a happy family

VARNISH

- > Allows Drupal to send **control commands** to Varnish – such as **clear cache**
- > **Optional**: you can cache with Varnish without this module
- > Adds hooks to integrate with **expire**
- > Limited use without **expire**

EXPIRE

- > Originated in **Boost**
- > Looks for **changes** – such as nodes that are edited – and **notifies external proxies** to expire their cache
- > Requires a proxy module – such as **Varnish** – to handle the notifications

ESI

- > Implements **Edge Side Includes**
- > **Stable** (but primitive) for **Drupal 6**
- > Currently **blocks only**
(experimental panels support)
- > Some **D7 patches** – looking promising
- > New **ground-up re-architecture** in-progress for **7.x-2.x**

Configuring ESI Blocks

Block specific settings

Block title:

Override the default title for the block. Use *<none>* to display no title, or leave blank to use the default block title.

ESI settings

Control how this block is cached on an ESI-enabled reverse proxy.

Enable ESI

TTL:

Time-to-live on the proxy-cache.

PERFORMANCE TIPS

Zoom zoom!

OTHER SPEED TIPS

- > Ensure **APC** is installed, running, and **adequately sized**
- > Use **memcache**
- > Use **CSS** and **JS** aggregation
- > Monitor MySQL's **slow query log**
- > Enable **anonymous page cache**, unless using a proxy / all traffic is authenticated

Flickr Credits

> **Babbage engine**

<http://www.flickr.com/photos/melgart/4444251225>

> **Cookies**

<http://www.flickr.com/photos/sabine01/2485502578>

> **Frying wok**

<http://www.flickr.com/photos/18403292@N00/3048993>

> **Varnish**

<http://www.flickr.com/photos/dawniecakes/4686467791>

THANK YOU!

Questions?